CSI TECHNOLOGIES, INC.

Consulting Engineers

CALCULATION APPROVAL COVER SHEET

Document Title: Indian Point Unit 2
CHECWORKS SFA Model

Document No.: 0705.101-01

Client: Entergy Nuclear Northeast

Project No.: 0705.107

This calculation has been prepared in accordance with Section 4.3 of the CSI Quality System Manual, Revision 2.

Revision: 2 (For-Use) 1276 pages

Prepared: _____ Date: 7/7/10
Ryan D. Doremus (CSI)

Verified: _____ Date: 7/7/10
Brian L. Trudeau (CSI)

Approved: _____ Date: 7/7/10
Brian L. Trudeau (CSI)

Approved: _____ Date: _____
Ian Mew (IPEC)

Revision Control Sheet

Project Number: **0705.107**
Project Name: **Indian Point Energy Center CHECWORKS SFA Pass 2 for Unit 2 and FAC Manager Updates**
Client: **Entergy Nuclear Northeast – Indian Point**
Document Title: **Indian Point Unit 2 CHECWORKS SFA Model**
Document Number: **0705.101-01**

Rev.	Date	Description of Changes	CSI Approval	Client Approval
0	11/17/08	Initial Issue – For Use	B. Trudeau	I. Mew
1A	10/22/09	Updated for Pass 2 Extensive Write-ups – For Comment	N/A	N/A
1	02/26/10	Issued with Pass 2 Extensive Write-ups – For Use	B. Trudeau	I. Mew
2A	06/14/10	Updated for 2R19 and Cycle 19 – For Comment	N/A	N/A
2	07/08/10	Updated for 2R19 and Cycle 19 – For Use	B. Trudeau BT	

Indian Point Unit 2
CHECWORKS SFA Model

CSI Calculation No. 0705.101-01
Revision 2
Issued For-Use

July 8, 2010

prepared for:

Indian Point Unit 2
295 Broadway Suite 3
PO Box 308
Buchanan, NY 10511-0308

prepared by:

CSI TECHNOLOGIES, INC.
One Douglas Avenue, Suite 300
Elgin, IL 60120

Disclaimer and Limitation of Liability

CSI Technologies, Inc. ("CSI") has made efforts to ensure the accuracy and completeness of the information in this document. However, CSI makes no warranties of any kind (whether express, implied, or statutory) with respect to the information contained herein. CSI assumes no liability to any party for any loss or damage (whether direct or indirect) caused by any errors, omissions, or statements of any kind contained in this document.

Further, CSI assumes no liability arising from the application or use of the product, service, or results described herein and specifically disclaims any representation that the products, services, or results described herein do not infringe upon any existing or future intellectual property rights. Nothing herein grants the reader any license to make, use, or sell equipment or products constructed in accordance with this document. Finally, all rights and privileges related to any intellectual property right described herein are vested in the patent, trademark, or service mark owner, and no other person may exercise such rights without express permission, authority, or license secured from the patent, trademark, or service mark owner.

Trademarks

CSI Technologies, Inc., the CSI logo, and other trademarks, service marks, and logos are registered or unregistered trademarks of CSI and its subsidiaries in the United States and in foreign countries. Other trademarks and service marks in this document are the property of their respective owners.

Table of Contents

1. Introduction

Flow-Accelerated Corrosion (FAC) is a form of material degradation that results in thinning of the inside pipe wall in carbon steel piping and fittings under certain flow and chemistry conditions. Undetected FAC-induced wall thinning may cause a pipe to leak or rupture, potentially causing injury to plant personnel and/or plant shutdown. For these reasons, and in response to regulatory requirements, Indian Point 2 Nuclear Power Plant (IP2) has developed and implemented a program to monitor and mitigate FAC-induced wall thinning in high energy, large-bore piping systems [7.1].

This calculation uses plant design and operation information to document the CHECWORKS model for IP2. It documents the CHECWORKS Pass 1 analysis to generate a wear rate prediction for every piping component modeled in CHECWORKS. Component inspection data through Refueling Outage 19 was imported to the model where available. A Pass 2 analysis was performed on all lines to provide wear predictions calibrated to the inspection data, as well as remaining life based upon measured wear rates for inspected components. The results of these analyses can be used to select components for inspection in order to mitigate pipe deterioration due to FAC.

This calculation replaces all previous CHECWORKS model calculations used to document the IP2 model. Previous CHECWORKS model calculations are listed in the References [7.2].

2. Purpose

The purpose of CHECWORKS SFA is to generate relative rankings by wear rate for piping components within the scope, to generate wear rate predictions calibrated to inspection data, and to predict remaining service life for each modeled component based upon predicted wear rate. The results of the CHECWORKS SFA model predictions can be used to select components for inspection in order to monitor pipe deterioration due to FAC.

The purpose of this calculation is to document the calibration of the CHECWORKS SFA Model. Additionally, this calculation provides the results of the CHECWORKS SFA model predictions and evaluates the accuracy of the predictions compared to actual measurements.

3. Scope

The large-bore FAC monitoring program has a clearly defined scope and has been in place for several years. The scope of the current FAC inspection program includes the following systems:

- Condensate
- Extraction Steam
- Feedwater
- Heater Drains
- Main Steam
- Moisture Preseparator Drains
- Moisture Separator Drains
- Reheater Drains

Selected lines from the above systems are modeled in the IP2 CHECWORKS Model. However, not all lines and components in the input model were included in this analysis. The CHECWORKS model also contains "non-modeled" lines and components (typically assigned to CHECWORKS lines with the prefix "NCW" for "Non-CHECWORKS"). These are lines that cannot be accurately evaluated using CHECWORKS. No analysis was performed on these "NCW" lines or any other plant lines and components that were not considered modelable. The scope of modelable lines was determined by all lines listed in Appendix D.

The CHECWORKS model reflects plant design and operation through Refueling Outage 19. All historical records (i.e. inspections, replacements, water chemistry, power levels, etc.) through Refueling Outage 19 were included in this analysis. Note that this model addresses changes due to Appendix K Uprate and Stretch Power Uprate [7.3]. Future updates to the FAC program (additional inspections, replacements, chemistry, power uprates, etc.) should be addressed in subsequent revisions of this document.

This analysis was performed using CHECWORKS SFA version 3.0 (build 105). SFA Service Pack 1 was not used for this calculation due to an error causing CHECWORKS to use an incorrect time in service when calculating predicted wear using point-to-point wear methods.

Assumptions and modeling decisions made during this analysis are documented in Section 4. The methodology employed during this analysis is detailed in Section 5. Results obtained are listed in Section 6 and in the Appendices. Section 7 includes a list of all references used in this analysis.

4. Assumptions and Modeling Decisions

The following assumptions and modeling decisions were made during this analysis. The assumptions and modeling decisions are categorized as General, Global Data, Line and Component, or UT Inspection Assumptions and Modeling Decisions based on the range of their influence.

4.1. General Assumptions and Modeling Decisions

4.1.1. In general, when modeling decisions or matters of interpretation arise, the plant is modeled to reflect actual conditions as closely as possible. This information can be obtained from heat balance diagrams, hydraulic analyses, sample data readings, input from system engineers, etc. This realistic approach results in the most accurate and realistic model possible, not necessarily one that results in a higher predicted wear rate for a particular component. Because the results of the model will be considered when deciding which components to inspect, and because only a finite number of the modeled components will actually be inspected, realistic and accurate modeling is imperative to the decision making process. For instance, entering an unrealistically high flow rate for a particular component will result in a high predicted wear rate for that component. If the model consisted of only that one component, this could be considered a conservative approach. However, because the model consists of many components, artificially or unrealistically raising the predicted wear rate for one component may cause that component to be selected for inspection at the expense of another with a higher actual wear rate. Therefore, the plant was modeled as realistically as possible. If additional conservatism is needed, it can be built into the FAC program by increasing the size of the inspection sample.

4.2. Global Data Assumptions and Modeling Decisions

4.2.1. Parallel trains of equal pipe diameter were assumed to have equal flow unless otherwise indicated.

4.2.2. For a number of lines on the Heat Balance Diagrams [7.3], thermodynamic and flow values (pressure, enthalpy, and flow rate) were listed separately for the steam phase and the water phase or for each train in a parallel train configuration. The overall flow rate, pressure, and enthalpy of these lines were calculated and entered in the CHECWORKS Steam Cycle (see Section 5.1.3). The combined flow rate was calculated as the sum of the liquid and steam flow rates (or the sum of multiple trains), the combined pressure was calculated as the average of all pressures, and the enthalpy was calculated as the weighted average of liquid and steam enthalpy (or the weighted average of multiple trains). These calculations were

performed based on EPRI's "Guidelines for Plant Modeling and Evaluation of Component Inspection Data" [7.4].

4.2.3. Plant period data and water treatment data prior to Cycle 16 was assumed to be complete and accurate in the as-received model [7.5].

4.2.4. When hydrazine data was not available at the Steam Generator Outlet and MSR Drain, the "rules of thumb" [7.4] for a Recirculating Steam Generator were applied to all chemistry cycles. Based on the "rules of thumb", the concentration of hydrazine at the Steam Generator Outlet was assumed to be 60% of the final feedwater concentration, while the concentration of hydrazine at the MSR Drain was assumed to be 120% of the final feedwater concentration.

4.2.5. The Water Treatment for future operating cycles was modeled as equivalent to the most recent operating cycle. The model should be updated with the actual water chemistry when this data becomes available.

4.2.6. Plant period data was estimated for Cycle 20. Start and end dates were estimated based on a 24-month operating cycle duration. An estimation of operating hours was calculated from these dates based on calendar days. The model can be updated with actual values for these inputs when this data becomes available.

4.2.7. See Appendix C for any additional modeling decisions concerning plant global data.

4.2.8. Newly modeled lines were modeled based on the available isometric drawings. In some cases, the isometrics were incomplete or did not exist. In these cases, a temporary component was created as a placeholder, and the line should be walked down and modeled properly before using the Pass 2 data. All isometrics for newly modeled lines should be visually verified, and any resulting changes to the model should be made. Modeling limitations for these lines are documented in Appendix D.

4.2.9. Cycle 19 chemistry was calculated by taking averages from readings occurring at power levels greater than or equal to 90%. Dissolved oxygen values below 2 ppb or above 12 ppb for this cycle were considered outliers and were omitted from the calculation of the average.

4.3. Line and Component Assumptions and Modeling Decisions

4.3.1. All component data in the CHECWORKS model received as input (the as-received model) [7.5] was assumed to be complete and accurate. This assumption was made during the previous model calibration [7.2.2].

4.4. UT Inspection Assumptions and Modeling Decisions

See Appendix F for any changes (excluding points, excluding counterbore rows, etc.) made to the UT data after importation.

4.4.1. UT inspections performed prior to Refueling Outage 19 were assumed to be complete and accurately modeled in the as-received model [7.5]. Inspections crucial to the calibration of the model were analyzed and, if appropriate, changed based on engineering judgment. These changes are listed in Appendix A.

4.4.2. A known bug in CHECWORKS SFA 3.0 uses an improper time in service when calculating predicted wear for components that use both single outage and point-to-point wear calculation methods across the different component sections. In these cases, to alleviate the effects of this bug, component sections using point-to-point wear methods were reanalyzed using the proper single outage wear method.

5. Methodology

Creation of this CHECWORKS SFA model was executed in six major phases. First, plant global data was entered into the CHECWORKS SFA model. These inputs affect every component in the model. Examples of these inputs include the heat balance diagram (HBD), water treatments, plant periods, and power level information. Second, lines were created. This included grouping components into lines and associating these lines to the heat balance diagram. Third, component level data was input. This included component geometry, design data, pipe size, material, replacements etc. Fourth, component connectivity was established to define flow order and group components by flow rate. Fifth, UT inspection data was imported and wear was calculated. In addition, inspection data was screened for model calibration. Finally, water chemistry analysis, network flow analysis, and wear rate analysis was performed. Errors highlighted in these analyses were corrected and the results were reviewed for accuracy and model calibration.

All modeling was done in accordance with EPRI's "Guidelines for Plant Modeling and Evaluation of Component Inspection Data" [7.4] and the CHECWORKS SFA User Guide [7.6].

The CHECWORKS SFA model includes a large database of information used in the prediction of corrosion rates. The database also contains fields for selection, tracking, inspection, and evaluation of components, as well as many other fields. For the purposes of this calculation, only those fields that are used in the prediction of corrosion rate were used. Many fields were left blank (e.g., component elevation, serial numbers of transducers used during inspection, etc.).

Plant global data input is documented in Appendix C. A listing of all the lines in the CHECWORKS SFA model appears in Appendix D. CHECWORKS SFA component input data is documented in the Component Summary Report in Appendix E. All UT inspections that appear in the model since Refuel Outage 16 (see Section 4.4.1) are listed in Appendix F. Wear Rate Analysis Run Definitions appear in Appendix B. Model output is documented in Appendix G for the Water Chemistry Analysis, Appendix H for the Pass 1 Analysis, and Appendix B and I for the Pass 2 Analysis. The results of all analyses are discussed in Section 6 of this calculation.

5.1. Plant Global Data

Global Data entered in this analysis included the CHECWORKS SFA heat balance diagram, Power Level Data, Steam Cycle Data, Water Treatment Data, and Plant Period Data.

5.1.1. Heat Balance Diagram

The Indian Point 2 Heat Balance Diagrams were used to create the CHECWORKS HBD [7.4]. Represented on the HBD are all elements necessary to allow Water Chemistry Analysis to accurately calculate hydrazine and other constituent concentrations around the steam cycle. Also, the association of lines to the HBD allows the correct operating

conditions to be applied to each line. Note that the CHECWORKS HBD numbering of the Feedwater Heaters, Reheaters, and Extraction Steam Lines proceeds from highest pressure item to lowest pressure item. However, IP2 uses the reverse order of the CHECWORKS HBD for the Feedwater Heaters. Therefore, IP2 items are not the same number as the CHECWORKS items. For example, IP2 #21 Feedwater Heater is the CHECWORKS #6 Feedwater Heater, IP2 #22 Feedwater Heater is the CHECWORKS #5 Feedwater Heater, and so on.

5.1.2. Power Level Data

A Power Level was defined for each power level at which the plant has operated for a significant period of time. A brief description of the fields in the CHECWORKS SFA Power Level form follows. The values input to the model and the reference from which the value was obtained is listed in Appendix C.

- **Power Level**: The Power Level can be defined as a percent between 0 and 200. The initial power level that the plant operated at was labeled as 100%. Later power levels were named as a percentage of power output relative to the initial power level. Table 5.1 lists the power levels and the operating cycles they apply to.

Table 5.1 CHECWORKS SFA Power Levels

Power Level (%)	Power (MW)	Operating Cycles	Notes	Ref
100	3090.2	Cycles 1-16A	Original Power Level.	7.3.1
101.19	3127.0	Cycle 16B	Appendix K Uprate	7.3.2
104.48	3228.5	Cycle 17 to End of Life	Stretch Power Uprate	7.3.3

- **Steam Rate**: The steam mass flow rate out of the Boiler (Steam Generator) was taken from the Heat Balance Diagrams [7.3].
- **Steam Generator/Reactor Vessel Pressure**: The pressure at the outlet of the Steam Generator was taken from the Heat Balance Diagrams [7.3].
- **Steam Generator/Reactor Vessel Temperature**: The temperature at the outlet of the Steam Generator was taken Heat Balance Diagrams [7.3].
- **Steam Generator Blowdown Rate**: The blowdown rate was taken from the Heat Balance Diagrams [7.3].
- **Carryover**: The carryover percentage was obtained from the Heat Balance Diagrams [7.3].

- **Feedwater Vent Rate**: This field is not used for a PWR plant.
- **Reheater Vent Rate**: This field is not used for a PWR plant.
- **Moisture Separator Carryunder**: This field is not used for a PWR plant.

5.1.3. Steam Cycle Data

The following Steam Cycle Data is used by CHECWORKS SFA to calculate chemistry conditions during wear rate analysis. It is also used to calculate operating conditions when the Advanced Run Definition feature is implemented (see Section 5.8.2). Steam Cycle Data was entered for each Heat Balance Item at each Plant Power Level. A brief description of the fields in the CHECWORKS SFA Steam Cycle form is given below. For each power level, the values input to the model and the reference from which the value was obtained is listed in Appendix C.

- **Power Level**: A Power Level was selected from the pull down menu, which includes all Power Levels in the model (see Section 5.1.2).
- **HBD Item**: This field displays the name of the HBD Item. Names are automatically generated by CHECWORKS SFA and are un-editable.
- **Steam/Drain Flow Rate**: This is the flow rate through or out of the HBD Item in Mlb/hr. Flow rates were entered for the HBD Items when required. Flow rates were obtained from the Heat Balance Diagrams [7.3].
- **Vent Rate**: Vent rates are not entered for PWR plants.
- **FWH Drain Temperature:** The temperature in the Feedwater Heater drain line, which is taken from the Heat Balance Diagrams [7.3], was entered in this field where appropriate.
- **Quality**: The quality of the steam, which is taken from the Heat Balance Diagrams [7.3], was entered in this location if necessary.
- **Enthalpy**: The enthalpy, which is taken from the Heat Balance Diagrams [7.3], was entered in this field when required.
- **Temperature**: The temperature, which is taken from the Heat Balance Diagrams [7.3], was entered in this field when required.
- **Pressure**: The pressure, which is taken from the Heat Balance Diagrams [7.3], was entered in this field when required.

5.1.4. Water Treatment Data

For each significant change in water chemistry, a new water treatment was defined. Input data for each water treatment was obtained from site

Chemistry [7.7]. Values were either supplied as summary readings or the average was calculated where a range was specified.

A brief description of the fields in the Water Treatment form is given below. For each Water Treatment, the values input to the model and the reference from which the value was obtained is listed in Appendix C.

- **Name & Title**: These two fields contain a descriptive name or title that allows the user to identify the chemistry period.
- **Dissolved Oxygen**: The dissolved oxygen concentration sampled at the condensate is entered into this field.
- **Constituents**: CHECWORKS SFA allows the type of amine, the location in which it was sampled, and the concentration to be entered.
- **Boric Acid Treatment**: If boron is injected, the injection rate, sampling location, and the concentration are entered here. The injection rate is entered only if boron is injected directly into the Steam Generators (Boilers).
- **Hydrazine Treatment:** Separate sampling location and measured concentration data is entered for ammonia and hydrazine. In addition, hydrazine concentrations at the Steam Generator Outlet and MSR Drain are entered (see Section 4.2.4).

5.1.5. Plant Period Data

CHECWORKS SFA divides operating history into two types of periods: operating and maintenance. Whenever a significant change occurs in the power level or water chemistry for the unit, a new operating period was created. For any significant period of plant down time, a maintenance period can be created. A brief description of the fields in the CHECWORKS SFA Plant Period form is given below. For each Plant Period, the values input to the model are listed in Appendix C.

- **Period Name**: A user-designated name for a Plant Period is entered in this field.
- **Period Begin Date**: The beginning date of the Plant Period was entered in this field and was obtained from plant personnel [7.8].
- **Period End Date**: The end date of the Plant Period specified was entered in this field and was obtained from plant personnel [7.8].
- **Operating Hours**: The calculated operating hours per operating period was entered here and was calculated from plant personnel [7.8].
- **Water Treatment**: A water treatment was selected for each period from a pull down menu listing all water treatment names, which have been entered into the CHECWORKS SFA Model (see Section 5.1.4).

- **Power Level**: The appropriate power level was selected for each period from a list of all power levels in the CHECWORKS model. See Table 5.1 for the cycles of each power level.
- **Period Type**: CHECWORKS SFA allows the user to choose from two different Period Types: operating and maintenance. The appropriate choice was selected.

5.2. Line Data

All components in the CHECWORKS SFA model were grouped into lines. Lines contain components with identical thermodynamic conditions and chemistry conditions due to the fact that all components of a line are linked to the same CHECWORKS SFA Heat Balance Diagram Line. A listing of all lines that appear in the CHECWORKS SFA model is in Appendix D.

By convention, lines were divided where flow rate changes. Exceptions may be made for headers, where all components in the header were grouped into the same line. For consistency, the tee where flow rate changed was associated to the line having the greatest flow rate.

Data was entered in the following Line Data fields:

- **Line Name**: Components were grouped into lines by comparing the input CHECWORKS model [7.5] with FAC isometrics [7.9] and flow diagrams [7.10]. Lines were named according to the naming convention, below.

  AABBC-D-E

AA	=	Abbreviation of the system (ex: CD = Condensate, EX = Extraction Steam, etc.)
BB	=	Sketch number the line begins on (ex: 01, 80, etc.)
C	=	Sketch letter if sketch number includes a letter (ex: A for sketch 80A)
D	=	Sequential number for each line on one sketch, numbered in flow order
E	=	Brief description of the line

  New line names were created as required by CHECWORKS, not where plant line names changed. Therefore, lines may contain components located on different sketches but in all cases the sketch number corresponds to the first component in the line.

  For example, line name “CD80-1-FWH 23A to FWH 24A” is located in the Condensate system, on FAC sketch 80, and runs from Feedwater Heater 23A to Feedwater Heater 24A.

- **System**: The name of the system in which the line belongs was entered in this field.

- **Phase**: This is a pull-down menu with three choices: All Water, All Steam, or Wet Steam.
- **Line Group**: This field can be used to sort and display the lines.
- **Line Class**: The pipe class of the line can be entered here.
- **Safety Grade**: The safety class of the line can be entered here.
- **Notes**: The P&ID and a full description of the line were entered in this field.
- **Heat Balance Association**: Each modeled line was linked to the appropriate Heat Balance Diagram line, except Z-type lines (see Section 5.8.3). This allows the calculated chemistry, thermodynamic data, and flow rate to be correctly associated to the lines of the model. This association is not shown on the Line Data Form. Instead, Heat Balance Association appears on the CHECWORKS SFA HBD.

5.3. Component Data

Component data was entered on the Component Data Form. This form has two tabs, the Main tab and the Optional tab. All component input data is presented in Appendix E.

5.3.1. Component Data Form, Main Tab

The Component Data Form, Main Tab contains key information about the component, including its name, geometry, size, material, operating conditions, and design conditions.

- **Component Name**: Component names are based upon the unique identification system employed at Indian Point 2. The component naming convention includes the system, a numerical identifier, and a letter representing geometry type ("P" for pipe, "T" for tee, "N" for nozzle, etc.). Note that there are some exceptions to this naming convention.
- **Geometry**: A description of the component type (e.g., "Reducer") was automatically entered by CHECWORKS when the geometry code was entered.
- **Geometry Code**: The component geometry code was entered in accordance with the CHECWORKS SFA User's Guide [7.6].
- **Pipe Size**: A pull-down menu contains outside pipe diameter, nominal wall thickness, and schedule (see Section 4.3.1).
- **Material**: A pull-down menu contains material choices (see Section 4.3.1).
- **Wear Rate Analysis (WRA) Options**: These buttons give the user four options. "Use Measured Wear for LCF" (LCF is the Line

Correlation Factor, see Section 5.8.6.1) allows CHECWORKS SFA to use inspection data for the component in the Pass 2 Wear Rate Analysis (WRA). "Do Not Use Any Measured Wear" eliminates the inspection data for the component from the Pass 2 WRA. "Exclude From Analysis" eliminates the component itself from WRA. The fourth option, "Use D/S Ext. from Prev. Comp" is available only for piping components. This option allows CHECWORKS FAC to compare the predicted wear for a component with the calculated wear for the downstream extension of the previous component in the calculation of the LCF. For most components, the option "Use Measured Wear for LCF" was selected (Note: the use of UT inspection data is discussed in Section 5.5 of this calculation). Selection of the fourth option "Use D/S Ext. from Prev. Comp" is discussed in Section 5.5.1.2.

- **Operating Data:** Component level operating data (pressure, enthalpy, quality, and temperature) is not used in the calculation of wear rates as all operating data was obtained from the Heat Balance Diagram or the Advanced Run Definition. Data may appear in these fields due to past entry, but it is no longer used.
- **Design Data:** Design pressure and temperature are entered here (see Section 4.3.1).
- **Flow Rate** Flow rate was not entered on the Component Form. Instead flow rate comes from Network Flow Analysis (NFA), the CHECWORKS HBD, or the Advanced Run Definition on a line by line basis as indicated in Appendix D.
- **Orientation Angle**: Component orientation angle is entered here (see Section 4.3.1).
- **Orifice Size**: Orifice size is entered for all orifices and for all piping immediately downstream of an orifice (see Section 4.3.1).
- **Valve Size and Valve Coefficient**: The valve opening size (Valve Size) and valve flow capacity (Valve Coefficient) is entered in these fields, if known. If not entered, CHECWORKS SFA default values are used.
- **Pipe Roughness**: This field specifies the absolute internal roughness for the component. If not entered, CHECWORKS SFA default values are used.
- **Branch or Small End Diameter (Br./S.E. OD)**: Entered in this field is the outside branch diameter for tees, or the small end diameter for reducers, expanders, reducing elbows, or expanding elbows. This data was gathered from the "as received" CHECWORKS Model [7.5] (see Section 4.3.1).

- **Branch or Small End Nominal Thickness (Br./S.E. T_{nom})**: Entered in this field is the nominal pipe thickness for the branch of tees, or the small end of reducers, expanders, reducing elbows, or expanding elbows. This data was gathered from the "as received" CHECWORKS Model [7.5] (see Section 4.3.1).
- **Branch/Bend Angle**: The Branch/Bend Angle may be used to specify the angle between the main run and the branch in the case of a lateral. This data is not used in calculating wear rates and was not entered.
- **Elbow R/D**: For elbows, the radius to diameter ratio was entered in this field. This data was gathered from the "as received" CHECWORKS Model [7.5] (see Section 4.3.1).

5.3.2. Component Data Form, Optional Tab

The Optional Tab of the Component Data Form contains information on component size, critical thickness, insulation, location, installation, adjacent equipment, and notes.

- **Length**: The pipe length can be entered in this field. This field is optional for all lines that do not utilize Network Flow Analysis (NFA). For lines utilizing NFA, only the length of straight piping is needed. This data was gathered from the "as received" CHECWORKS Model [7.5] (see Section 4.3.1).
- **Nominal Thickness**: The nominal thickness of extensions was entered if appropriate. The extension thickness was set equal to the appropriate main component thickness (upstream main, downstream main, or branch). This data is used during UT Analysis wear calculation. This data was gathered from the "as received" CHECWORKS Model [7.5] (see Section 4.3.1).
- **Initial Thickness**: An initial thickness other than nominal thickness can be entered if known. This data was gathered from the "as received" CHECWORKS Model [7.5] (see Section 4.3.1).
- **Screening Thickness**: This field can be used to determine color-setting thresholds in the UT Analysis displays. This data was gathered from the "as received" CHECWORKS Model [7.5] (see Section 4.3.1).
- **Critical Thickness:** CHECWORKS SFA allows the user to define the component critical thickness (T_{crit}). The T_{crit} field is used to establish the critical thickness criteria for calculating all components' remaining life. This data was gathered from the "as received" CHECWORKS Model [7.5] (see Section 4.3.1).

  T_{hoop} was calculated by CHECWORKS SFA using the following equation:

$$T_{hoop} = \frac{(D_O \cdot P_D)}{2\left[S_A + (P_D \cdot Y)\right]} \qquad [7.11]$$

where:
D_O = Outside Diameter
P_D = Design Pressure
S_A = Allowable Stress
Y = (0.4) constant

- **Insulation**: The insulation type and insulation thickness fields can be entered for lines utilizing NFA (see Section 5.7).
- **Installation and Replacement Dates:** The dates components are installed or replaced are entered in these fields. When the install date field is empty, the install date is set equal to the plant start date. When the replacement date field is empty, the component is currently in operation.
- **Location and Adjacent Equipment:** Information on component location and adjacent equipment can be entered in these fields. This information is not required in order to calculate predicted wear rate and was not entered.
- **Notes**: Comments and notes were entered into this field as appropriate.

5.3.3. Replacements

Replacement information from between 2R17 and 2R19 was obtained from the FAC Program Engineer [7.8.1 and 7.12]. A list of replacements appears in Appendix E.

5.4. Component Connectivity

The component connectivity feature tells the CHECWORKS SFA code what the modeled component is connected to. To define component connectivity, components were assigned to flow segments; similar to the way they were assigned to lines. Components were assigned to flow segments in flow order starting where flow began, such as the outlet nozzle of a heater, and terminating where flow ended, such as the inlet nozzle of a heater. Flow segments were further divided where flow changed or could potentially change, such as the upstream main, downstream main, or branch of tee.

Component connectivity is used in Network Flow Analysis run definitions, in the Advanced Run Definition, and in reporting results.

Component connectivity consists of one form, the Flow Segment form. Data was entered on the Flow Segment form as described below.

- **Flow Segment Name**: Flow segments are essentially a further breakdown of CHECWORKS SFA lines. Therefore, flow segments were named by taking the line name, followed by the letters "SEG", and then a sequential numbering 1, 2, 3, etc. For example, line "CD83-2-HDR to BFP21" was broken down into flow segments named "CD83-2-HDR to BFP21 SEG01", "CD83-2-HDR to BFP21 SEG02", etc.
- **Component Name**: Entered in this column is the component name. Components were assigned to flow segments in flow order starting where flow began and terminating where flow ended, changed, or could potentially change, such as at a nozzle or tee.
- **Line Name:** The CHECWORKS SFA line that the component is grouped in appears in this column.
- **Section Code:** Entered in this field is the section of the component (upstream main, downstream main, or branch) that lies on the flow segment. If the last component or first component in a flow segment is a tee, this field is used to specify how the tee is connected to the other components in the flow segment.

  For example, a type 10 tee with flow from the branch to the upstream main and downstream main should appear in three flow segments, one for each section. The branch of the tee will be the last component in one segment, while the upstream main and downstream main will be the first component in the remaining two flow segments.

5.5. UT Inspection Data

UT inspection data recorded through Refueling Outage 18 was imported to the CHECWORKS model for analysis. For Refueling Outage 19, the UT analysis was performed in FAC Manager Web Edition (FMWE) [7.13]. Information crucial to the CHECWORKS Wear Rate Analysis is automatically written from FMWE to CHECWORKS. This information includes inspection period, inspection date, previous inspection period for multiple outage wear calculations, and, for each component section, calculated wear, wear calculation method, minimum measured thickness, and the method used to obtain the minimum measured thickness.

UT inspection data was received as electronic UT grid files [7.14].

All outage UT inspections in the CHECWORKS and FMWE databases were reviewed and verified to ensure correct importation. The grid data manipulation options of transpose, reverse rows, partition, offset, and clockwise/counterclockwise were used to manipulate the UT grid to match electronic grid files as needed. All importation and grid data manipulation techniques were used in accordance with EPRI guidelines [7.4].

When importing, all of the UT data from one inspection file makes up one inspection location. This could include as many as three subsections (U/S Main, D/S Main, and Branch) and three extensions (U/S Extension, D/S Extension, and Branch Extension). This was done according to EPRI guidelines [7.4].

All UT inspection data used for analysis since Refuel Outage 16 (see Section 4.4.1) is listed in Appendix F. For each inspection the following data is listed:

- Line Name
- Component Name
- Period inspection was taken
- Report Number
- Section of the component that was analyzed
- Wear Method used in analysis
- T_{init} value, or T_{nom} when T_{init} was not defined in CHECWORKS
- Measured Wear
- Exclusion criteria for Line Correction Factor (LCF) calculation

5.5.1. Importation and Partitioning of UT Data

The grid data manipulation options of transpose, reverse rows, partition, offset, and measurement direction were used to manipulate the UT grids to match the UT Inspection Reports [7.15] as needed. All grid data manipulation techniques were used in accordance with EPRI's "Guidelines for Plant Modeling and Evaluation of Component Inspection Data" [7.4].

Inspections were partitioned into sections based on interpretation of the UT Inspection Reports [7.15]. Each UT inspection contains inspection data for one or more component section. Inspection files for tees may be present in the following component sections: upstream main, downstream main, branch, upstream extension, downstream extension, and branch extension. Inspection files for reducers and expanders may be present in the following component sections: large end of main, small end of main, upstream extension, and downstream extension. For all others, inspection files may be present in the following component sections: main, upstream extension, and downstream extension.

5.5.1.1. Upstream and Branch Extensions

In some cases, UT data was taken on an upstream extension or branch extension. Inspection data was imported to the appropriate component section. CHECWORKS SFA does not use these component sections in the calibration of the model by default. The data is stored for archival purposes only.

5.5.1.2. Downstream Extensions

Downstream extensions are used in the calibration of the model. The fourth WRA option on the Component Data Form, "Use D/S

Ext. from Prev. Comp" was selected for instances where the following was true:

- Wear calculation data was available for the downstream pipe extension of a particular main component; and
- The downstream pipe extension is represented in the CHECWORKS SFA model by a piping component immediately following the main component; and
- The downstream pipe does not have inspection data imported to it.

This option is selected for the pipe component downstream of the main component containing the UT data.

5.5.2. Single Outage Wear Calculation

Single outage wear is used for components where multiple outage wear calculation methods are not appropriate (see Section 5.5.3). EPRI recommends four different methods for calculating single outage wear [7.16]. CHECWORKS and FMWE use these same methods for calculating wear for a component. The result of only one of the methods can be selected to represent the calculated wear.

5.5.2.1. Band Method

The Band Method calculates the wear for each circumferential band of a component in the range specified. The wear for the entire component is set equal to the maximum value calculated in the range. By default, the range is equal to the entire component, but the range may be altered if regions of the grid are seen to contain questionable or inaccurate readings. For a particular band, wear is calculated as the difference between the minimum thickness and the larger of the maximum thickness or the nominal thickness.

5.5.2.2. Average Band Method

The Average Band Method is similar to the Band Method in that it calculates the wear for each circumferential band of a component in the range specified. The difference is that for a particular band, wear is calculated as the difference between the minimum thickness and the larger of the average thickness or the nominal thickness.

5.5.2.3. Area Method

The Area Method calculates the wear for a rectangular range specified for a component. The wear for the entire component is set equal to the wear calculated for the area. By default, the area

is equal to the entire component, but the range may be altered if regions of the grid are seen to contain questionable or inaccurate readings or if it desired to focus the analysis on a particular portion of the component (i.e. the extrados of an elbow). For the area, wear is calculated as the difference between the minimum thickness and the larger of the maximum thickness or the nominal thickness.

5.5.2.4. Moving Blanket Method

The Moving Blanket Method repeatedly calculates the wear for a rectangular region, called a blanket. The blanket is first located at the "upper left" corner of the grid. The blanket is then moved one grid step at a time down the grid. Having reached the bottom of the grid, the blanket returns to the top, one grid step to the right. This motion continues until the entire grid has been blanketed. At each position of the blanket, wear is calculated as the difference between the greater of the average of the two highest readings or nominal thickness and the average of the two lowest readings. By default, the blanket size is three grid steps in the longitudinal direction and one third of the component diameter in the circumferential direction. Calculated wear for the component is determined by the greatest blanket wear.

5.5.2.5. Method Selection

After component single outage wear is calculated using the methods discussed in Section 5.5.2, the resulting wear value from just one method was selected as the value to be used by CHECWORKS SFA in the model calibration. Selection of the wear calculation method is based upon the component geometry as directed by EPRI's "Guidelines for Plant Modeling and Evaluation of Component Inspection Data" [7.4].

Additionally, a User-Specified value for wear can be entered to override the results of the three methods.

Also, inspection data can be identified as baseline readings (inspection performed before installation) by selection of the Baseline option.

Table 5.2 lists the UT wear calculation method selection criteria.

Table 5.2 Single Outage Wear Calculation Method Selection

Component Geometry	Method
Elbow, Bend, Reducing Elbow, Expanding Elbow, Eccentric Reducer, Eccentric Expander, or Forged Tee	Blanket Method
Pipe (Main or Upstream, Downstream, or Branch Extension), Concentric Reducer, Concentric Expander, Fabricated Tee, or Orifice	Band Method or Average Band Method
All Others	Band Method or Average Band Method
None (selected by Engineering Judgment)	Area Method

The area method is generally not used for any geometry type because it tends to be overly conservative and not as accurate as the band or blanket methods.

5.5.3. Multiple Outage Wear Calculation

Multiple outage wear, also known as Point-to-Point wear, can be calculated for a component between the inspections from two outages, or between baseline data and the first outage inspection.

The Point-to-Point Method calculates wear between two periods at each point of a grid by subtracting the thickness value of the latter period from the former. Wear for the entire component (between the two outages) is set equal to either the maximum wear value calculated, or the average value, depending on the option selected.

The Point-to-Point Method was selected for instances where the following was true:

- Multiple inspections have been performed on the component; and
- The two inspections being compared are at least three outages apart or one of the inspections is baseline data; and
- The two inspections have the same grid layout (equal number of rows and columns, same offset angle, etc.); and
- The two inspections represent successive readings taken at the exact same locations; and

- The calculated Point-to-Point wear is reasonable based on engineering judgment.

5.5.3.1. Non-Lifetime Measured Wear Options

Point-to-Point wear can be calculated by ignoring past (or lifetime) wear and calculating the difference between two inspections. "Max Delta" calculates the maximum measured difference between the two selected outages. "Avg Delta" calculates the average measured difference between the two selected outages. "Cutoff Delta" calculates the maximum delta in the collection of data points (the cutoff region) that are near in thickness to the minimum reading (as calculated by a cutoff value). "Fast Delta" calculates the delta value at the location that has the fastest Time to T_{crit}.

For all delta wear methods, the option "Treat Neg. Wear as Zero" can be selected to eliminate calculated negative wear caused by variances in measurements.

The FMWE Point-to-Point methods, both calculate wear in the same way as the "Max Delta" method in CHECWORKS.

5.5.3.2. Lifetime Measured Wear Options

Each of the methods described in Section 5.5.3.1 can also be combined with past wear to obtain a lifetime measured wear value. Past wear is the lifetime wear calculated upon the first selected outage. Total lifetime wear is then past wear plus the delta value from Section 5.5.3.1.

For all lifetime wear methods, the option "Treat Neg. Wear as Zero" can be selected to eliminate calculated negative wear caused by variances in measurements.

5.5.4. Minimum Measured Thickness

For each inspected component, CHECWORKS SFA allows a number of options to determine the value of the minimum measured thickness (T_{meas}) of a component. The T_{meas} value is involved in predicting thickness and remaining service life. A lower value results in a shorter remaining service life.

The option "Min. Meas Thickness from Region of Max. Wear" (GW) uses the smallest thickness value from the region that has the highest wear. The option "Minimum Measured Thickness" (MT) uses the smallest thickness value from any region.

In FMWE, there are also two methods for determining T_{meas}. For Max Band and Max Point-to-Point, T_{meas} is the minimum measured thickness of any region, similar to the CHECWORKS MT method. The remainder of

calculation methods calculate T_{meas} as the smallest thickness value from the region of shortest remaining service life.

5.5.5. Use of Inspections in Model Calibration

For each inspection and/or component the option "Do Not Use for LCF" is selected if the wear value for the component or inspection will not be included in the calibration of the model. When this option is selected, the results of the inspection are not used in calculation of the Line Correction Factor (LCF) during Pass 2 Wear Rate Analysis (see Section 5.8.6.1). The selection of this option was in accordance with the recommendations made in the EPRI's "Guidelines for Plant Modeling and Evaluation of Component Inspection Data" [7.4].

A complete listing of reasons why an inspection was excluded from model calibration appears in Appendix F. Each inspection is marked as to whether or not it was included for use in the LCF.

It is important to note that when CHECWORKS calculates the LCF it uses the results for the U/S Main, D/S Main, Branch, and D/S Extension separately (the U/S Extension and Branch Extension are not used in calculating the LCF according to EPRI guidelines [7.4]), however for determining if a line is calibrated a minimum of three inspection locations is required, not just three cases of comparing a measured wear and a predicted wear.

Removal of an inspection from the calculation of the LCF is achieved by selecting the option "Do Not Use MW" on the UT Wear Calculation form or by activating the "CoWearUseFlag" field in the "CompInspect" table in the back end. Removal of an entire component (and all inspections on that component) is achieved by selecting "Do Not Use Measured Wear" on the Component Form.

Note that in cases where a component or component section has UT data from multiple outages, only one wear value for that component or component section (if any) is used in the calculation of the LCF. The wear data used comes from the most recent inspection available. For example, consider an elbow that was inspected in outage 16 and outage 17, and both inspections were available for use in the LCF. In this case, only the wear from outage 17 would be used. Since the outage 16 inspection is technically still "available" for use in the calculation of the LCF, the decision was made to label the table in Appendix F with "Yes" in the Used in the LCF column for both inspections.

5.6. Water Chemistry Analysis

Water Chemistry Analysis uses the Plant Global Data (Heat Balance Diagram, Power Level Data, Steam Cycle Data, Water Chemistry Data, and Plant Period

Data) to determine the chemistry conditions at various locations around the steam cycle. These values strongly affect FAC rates.

Water Chemistry Analysis calculates pH, dissolved oxygen concentration, constituent concentration, and hydrazine concentration (depending on plant type) at each location on the CHECWORKS SFA Heat Balance Diagram. The appropriate values are then used in the calculation of predicted wear rates for each component through the association of the line to the HBD (see Section 5.2).

When Water Chemistry Analysis is run, CHECWORKS SFA generates a report displaying the water chemistry results, as well as critical global data. A Water Chemistry Analysis was performed on every Water Chemistry Treatment in order to review the results to ensure that chemistry values were reasonable.

The water chemistry reports are presented in Appendix G.

5.7. Network Flow Analysis

Network Flow Analysis (NFA) is a module within CHECWORKS that can be used to calculate pressure, flow rate, enthalpy, and quality at each component. If used, the results of the analysis are available for access by CHECWORKS during the Wear Rate Analysis to predict corrosion rates.

NFA should be used where a thermodynamic quantity of interest is unknown or unavailable. For example, if flashing across a control valve or orifice is considered possible; NFA can be used to calculate the steam quality at each component. This is necessary for accurate prediction of the FAC wear rate. For lines where thermodynamic conditions are known and the potential for flashing is small, NFA is not needed because the results would not increase the accuracy of the Wear Rate Analysis. There are no NFAs in this model.

5.8. Wear Rate Analysis

Wear Rate Analysis (WRA) calculates a predicted wear rate for each component as well as the predicted time before the component wall thins to critical thickness (T_{crit}). WRA automatically takes into account all global input through the use of the Water Chemistry Analysis results.

5.8.1. Wear Rate Analysis (WRA) Run Definitions

WRA runs were defined to contain the CHECWORKS SFA lines, and a separate WRA was performed upon each. WRA runs are defined by the following inputs.

- **Run Name:** Wear Rate Analysis runs were named for identification purposes.
- **Run Note**: This field contains a more detailed description of the run.

- **Ending Period:** The ending period is used by CHECWORKS SFA to calculate current wear rates based on current operating periods. The ending period selected was the current operating cycle.
- **Lines to Analyze**: Each run was composed of lines from the model. Lines of similar function and operating conditions were grouped together to form a run as recommended by EPRI [7.4]. The runs defined for this model and the lines composing these runs are presented in Appendix B and Appendix D.
- **Analysis Options**: The Wear Rate Analysis Option determines the source of operating conditions (pressure, enthalpy, temperature, quality, and flow rate) in the model. The possible sources are the component form (COMP), the heat balance diagram (HBD), the Advanced Run Definition (ARD), or Network Flow Analysis (NFA). The analysis option was selected based on the desired source of operating conditions for each WRA run (see Appendix D).

  The option "NFA->HBD->ARD->COMP" was selected for all lines since the model includes multiple power levels.
- **Do Not Use Measured Wear**: This option determines whether or not inspection data will be used to calibrate the model. This option was selected during Pass 1 analysis and deselected during Pass 2 Analysis.
- **Global Duty Factor**: The duty factor is used to specify the fraction of the total plant operating hours the lines in this run were in operation.

5.8.2. Advanced Run Definition

The Advanced Run Definition (ARD) function allows operating conditions to be entered at different times throughout plant history. Use of this function is necessary for plants operating with more than one power level (see Section 5.1.2). In addition, the ARD allows for entry of operating and chemistry conditions for lines not modeled on the heat balance diagram (COLA and Z-type lines), as well as part-time lines and parallel trains. The operating conditions listed below (flow factors, duty factors, pressure, temperature, enthalpy, quality, flow rate, and chemistry conditions) can change from cycle to cycle.

- **Flow Factor**: On the CHECWORKS SFA HBD level, flow rates are expressed in totals rather than for each train. For example, feedwater flow rate might be entered as 10 million pounds per hour, where each train of a three train system sees 3.33 million pounds per hour. As a result, flow multipliers had to be entered to the lines so that the actual flow rate is used to calculate wear rate at the component level. Thus for each flow segment a flow multiplier, or flow factor, was calculated. The flow factor is used to adjust the CHECWORKS SFA HBD

calculated flow rate. The calculated flow factor for each flow segment was entered on the ARD form.

There are some possible exceptions to the use of flow factors. The first is for lines and flow segments where NFA or the Component form would be used to calculate operating conditions and flow rate. For these the train flow is directly entered in the NFA definitions or the Component form. Therefore, for these lines the assigned flow factor is 1.0. Other exceptions are made for some lines and flow segments where the ARD form is used as the source of operating conditions. If the input source already listed flow rate per train, then the flow factor is set to 1.0 and the train flow rate is entered.

Flow factors were calculated by consulting the CHECWORKS SFA HBD, the plant heat balance diagram [7.2], and the flow diagrams [7.10]. Flow factors for each line appear in Appendix D.

If the ARD is not used, the flow factor is 1.0 by default.

- **Duty Factor**: The duty factor is used to specify the fraction of the total plant operating hours the lines in this run were in operation. For full-time lines, the duty factor is 1.0. For part-time lines, the duty factor is set to a value less than one based on operation. For example, if a line has full flow half of the time and zero flow half of the time, then the lines would be modeled with full flow and the duty factor would be set to 0.5. Use of the duty factor is in accordance with the recommendations of the EPRI Guidelines for Plant Modeling and Evaluation of Component Inspection Data [7.4].

  If the ARD is not used, the Global Duty factor is used.

- **Thermodynamic Data**: Thermodynamic data (operating pressure, enthalpy, temperature, and quality) were entered on the ARD form for Z-type lines (see Section 5.8.3) and COLA lines (see Section 5.8.4) only. These fields were left blank for all other cases. Only two out of four values are needed to define the thermodynamic conditions (pressure and enthalpy preferred) [7.4]. Data entered in these fields is used as a priority over the CHECWORKS SFA HBD.

- **Flow**: Flow rate was entered on the ARD form for Z-type lines (see Section 5.8.3) and COLA lines (see Section 5.8.4) only. These fields were left blank for all other cases. Data entered in this field is used as a priority over the CHECWORKS SFA HBD.

- **Chemistry Data**: Chemistry data (cold pH, oxygen concentration, and hydrazine concentration) was entered for Z-type lines only. These fields were left blank for all other cases. Data entered in this field is used as a priority over chemistry conditions calculated during Water Chemistry Analysis.

5.8.3. Z-Type Lines

Lines not associated to the CHECWORKS SFA heat balance diagram are called Z-type lines. Because they are not associated to the HBD, CHECWORKS SFA cannot automatically calculate chemistry and operating conditions for these lines. Therefore, when using the ARD function, the user must input not only flow factors and duty factors but also thermodynamic conditions, flow rate, and chemistry conditions for each operating cycle.

Z-type lines are used when the site has chemistry data for a specific line that is more accurate than the chemistry data calculated by CHECWORKS SFA.

No Z-type lines exist in this model. CHECWORKS SFA Water Chemistry Analysis (see Section 5.6) was used as the source of chemistry data in all cases.

5.8.4. Chemistry Only Line Association (COLA)

Chemistry Only Line Association (COLA) lines were created due to limitations in the CHECWORKS SFA HBD. In these cases, the computer model does not obtain the data from the correct location on the HBD, or the CHECWORKS SFA program did not allow the correct data to be entered.

COLA lines are associated to the CHECWORKS SFA HBD, like all other non Z-type lines in the model, but this association is to obtain chemistry data only. The values of pressure, temperature, enthalpy, quality, and flow rate were entered on the ARD form directly.

5.8.5. Pass 1 Wear Rate Analysis

A Pass 1 Wear Rate Analysis was performed to generate predicted wear rate and remaining service life for every component in the CHECWORKS SFA model. Pass 1 Wear Rate Analysis results are not calibrated to inspection data. Pass 1 wear rates and remaining service life predictions are useful only as relative rankings; no credence should be given to the absolute values. The analysis was performed to screen the model input for errors, without the complications of UT data, and to provide a relative ranking of components. The Pass 1 results should not be used for selection of inspection locations if calibrated Pass 2 results are available.

5.8.6. Pass 2 Wear Rate Analysis

A Pass 2 Wear Rate Analysis generates predicted wear rate and remaining service life similar to a Pass 1 Wear Rate Analysis with one significant difference; results are calibrated to inspection data. Calibration is achieved by comparing predicted wear and measured wear of inspected components. Comparison of predicted wear and measured wear is

presented in tabular form in the Wear Report and graphically in the Wear Plot. These results of the Wear Report and Wear Plot are important measurements of the relationship between predicted wear and measured wear. Wear Rate Analysis runs are defined (see Section 5.8.1) to optimize the relationship between predicted wear and measured wear.

5.8.6.1. Line Correction Factor (LCF)

CHECWORKS SFA calibrates Pass 1 Wear Rate predictions to inspection data by calculating a Line Correction Factor (LCF) for each WRA run. For each inspected component in the WRA run where the option "Do Not Use for LCF" is not chosen, CHECWORKS SFA generates a ratio of the measured wear to the predicted wear. The LCF for a run is defined as the median value of these ratios. CHECWORKS SFA multiplies the Pass 1 wear predictions by the LCF to generate the Pass 2 wear predictions.

The LCF indicates the degree to which CHECWORKS SFA over-predicts or under-predicts wear. The range considered reasonable for an LCF is between 0.5 and 2.5 [7.4]. An LCF less than one indicates that CHECWORKS is predicting higher wear rates than are actually occurring. The LCF will lower the predicted wear rates. An LCF greater than one indicates that CHECWORKS is under predicting the wear rates and the LCF will raise the predicted wear rates accordingly. An LCF outside this range may be the result of inaccuracies in the database (e.g., incomplete chemistry history) or non-representative inspection data.

5.8.6.2. Wear Plot

The Wear Plot (or "Comparison of Wear Predictions" plot) graphically displays the relationship between measured wear and predicted wear. Each point on the Wear Plot represents an inspected component section. Points on an ideal plot form a line (with slope equal to one) indicating that measured wear exactly equals predicted wear. For reference purposes, 50% error margins appear on the plot. Points that lay outside of the 50% error margins are termed outliers.

6. Results

6.1. Water Chemistry Analysis Results

The results of the Water Chemistry Analysis are presented in Appendix G. A report was generated for each combination of power level and water treatment that the plant was operated. Water Chemistry Analysis results were input to Wear Rate Analysis.

6.2. Pass 1 Wear Rate Analysis Results

The results of the Pass 1 Wear Rate Analysis are presented in Appendix H. For each WRA run, the following reports are presented:

- Wear Rate Report (sorted by average wear rate)
- Wear Rate Report (sorted by flow order)
- Service Life Report (sorted by remaining service life)
- Service Life Report (sorted by flow order)

6.3. Pass 2 Wear Rate Analysis Results

The wear rate results of the Pass 2 Analysis are presented in Appendix I. For each WRA run, the following reports are presented:

- Wear Rate Report (sorted by average wear rate)
- Wear Rate Report (sorted by flow order)
- Service Life Report (sorted by remaining service life)
- Service Life Report (sorted by flow order)
- Wear Report (sorted by flow order)

The Wear Plots (with LCF values) for each WRA run are presented in Appendix J A summary of the results of the Pass 2 Wear Rate Analysis is presented in Appendix B.

6.4. Discussion of Pass 2 Wear Rate Analysis

A CHECWORKS SFA predictive model was developed. Input was performed in accordance with the CHECWORKS SFA User Guide [7.6] and the latest EPRI recommendations, no error messages were encountered during the execution of the Wear Rate Analysis, and the output was reviewed and found to be reasonable.

The Pass 2 Wear Rate Analysis results of each WRA run were reviewed to determine the relationship between measured wear and predicted wear. Based on this relationship, a WRA run was classified as Calibrated or Non-Calibrated. For Calibrated WRA runs, the Pass 2 Wear Rate Analysis results of predicted wear

rate and remaining service life can be used with reasonable confidence. For runs classified as Non-Calibrated, Pass 2 Wear Rate Analysis results should not be used. Instead, Pass 1 Wear Rate Analysis results should be used to determine relative rankings only. In particular, remaining service life (Time to T_{crit}) should not be used as an estimate of remaining component life.

The criterion used to classify a WRA run as Calibrated or Non-Calibrated is discussed in the sections below. No single criterion is definitive in classifying a WRA run as either Calibrated or Non-Calibrated. Instead, engineering judgment was used to weigh each criterion to determine calibration status.

A summary of the Pass 2 evaluation for each WRA run appears in Appendix B.

- **Number of Inspection Locations**: EPRI recommends that at least five locations be included in a Pass 2 Analysis WRA run to provide reasonable confidence in the results [7.4 and 7.15.3]. In this context, a "location" is a CHECWORKS SFA component and all of its component sections. Thus an inspection on an elbow and the downstream extension of the elbow would count as a single inspection location, even though two components were inspected. Note that this inspection location would be represented by two points on the Wear Plot (see Section 5.8.6.2), one per section.

  For runs in which less than five locations have been included in the calculation of the LCF, the results should be considered preliminary and used with caution because there is insufficient UT data to provide high confidence in the Pass 2 Wear Rate Analysis results.

- **Number of Outliers**: The number of outliers (see Section 5.8.6.2) on the Wear Plot is generally considered on a percentage basis in relation to the number of inspections. If a relatively large percentage of the inspections are outliers, then the WRA run results may not be considered properly calibrated.

- **Wear Plot Correlation**: Aside from the number of inspection locations, the Wear Plot correlation (or scatter) is generally the most important factor when determining calibration status. Good correlation can allow a run with a low number of inspection points and/or a poor LCF to be considered properly calibrated. The categories of Wear Plot correlation are listed in Table 6.1.

Table 6.1 Wear Plot Correlation Categories

Category	Description
Poor	The inspection data exhibits significant scatter that does not adhere to the 45° line or a significant number of outliers is present.
Moderate	The inspections points are within the ± 50% wear boundaries with few outliers, but the inspection points do not form tight clusters around the 45° LCF line.
Good	The inspection points adhere well to the 45° LCF line. There are very few outliers present.

- **Line Correction Factor (LCF) Value**: If there were perfect agreement between the CHECWORKS SFA Pass 2 predictions and measured wall thickness, the analysis of each run would result in an LCF of 1. The range considered reasonable for an LCF is from 0.5 to 2.5 [7.4]. If the LCF is outside this range, additional attention should be paid to the results to understand why there is such a significant difference between predictions and measurements. An LCF significantly outside of the recommended range may result in a WRA run classification of Non-Calibrated. EPRI's "Recommendations for an Effective Flow-Accelerated Corrosion Program" advises that if the LCF is outside this range, a minimum of 10 inspection locations are required for the run to be considered Calibrated [7.15.4].
- **Geometry Coverage**: For a run to be considered calibrated, there should be a representative sample of the different geometries in the run. For example, a run that was calibrated with inspections only on 90° elbows may correctly predict the wear for other elbows, but it may do a poor job of predicting the wear for a reducer.
- **Parallel Train Coverage**: EPRI Guidelines advise that inspections be performed on parallel trains. As a consequence, there should be adequate train coverage to categorize a WRA run as calibrated. In addition, EPRI's "Recommendations for an Effective Flow-Accelerated Corrosion Program" advises inspections on every two-phase line [7.15.4].
- **Inspections on Control Valves and Orifices**: Finally, EPRI recommends inspecting components immediately downstream of control valves and orifices [7.15.4]. In general these locations represent the most severe locations of wear. Also, these locations are often susceptible to cavitation and droplet impingement damage. In general, for a WRA run to be considered calibrated, inspections immediately downstream of control valves and orifices should be performed.

The specific results obtained for each Wear Rate Analysis run are discussed in Appendix B. The results of the Pass 2 Analysis should be used to pick inspections for calibrated runs only. Runs not calibrated should use the results of the Pass 1 Analysis to pick inspections based on relative ranking.

6.5. Discussion of Negative Times to Tcrit

The Service Life Report for each run in Appendix I gives a calculated value for remaining service life for each component. This value is shown in the "Component Time to Tcrit (hrs)" column. When this value is negative, it indicates that the predicted component wear is greater than the allowed wear. In some cases, this value is accurate, and the component should be inspected to ensure it is acceptable for continued service. Other times, the wear can be understood in other ways. Often, negative times to Tcrit occur on components

that cannot be accurately inspected with UT methods, for example, valves and orifices. If UT cannot be taken on a component, CHECWORKS cannot use an inspection to adjust the calculated wear of a component. Wear in valves and orifices with a carbon steel downstream pipe, elbow, tee, or nozzle can be approximated by inspecting the downstream component. When this is not possible, inspections should be handled with alternate inspection methods as per plant procedure. In some cases, an inspected component will show a negative time to Tcrit because inspections on the component have been omitted from the Pass 2 calculation. This occurs for various reasons given in Appendix F. If an inspection exists on one of these components, the wear in that component is assumed to be understood, and reinspections should be driven through analysis of previous inspections.

Appendix K lists the components in the Indian Point Unit 2 CHECWORKS model that have a negative time to Tcrit. Components with names in bold and red require further evaluation by the FAC program to determine the validity of the CHECWORKS predictions.

7. References

7.1. "Erosion/Corrosion-Induced Pipe Wall Thinning", Generic Letter 89-08, U.S. Nuclear Regulatory Commission (NRC), May 2, 1989.

7.2. Previous CSI Calculations

7.2.1. "Indian Point Unit 2 CHECWORKS Power Uprate Analysis", CSI Calculation 040711-02, Revision 0, 3/23/2005

7.2.2. "Indian Point Unit 2 CHECWORKS FAC Model", CSI Calculation 050714b-01, Revision 1, 9/12/2006.

7.2.3. "Indian Point Unit 2 CHECWORKS SFA Conversion" CSI Calculation 0719-01, Revision 0, 7/27/2007.

7.3. Indian Point 2 Heat Balance Diagrams

7.3.1. Original HBD, 3090.2 MWt: Indian Point 2 Nuclear Power Plant "Benchmark PEPSE Model Tuned to 1-22-03 Data", Sheets 1-6, Run Date 1/10/05.

7.3.2. Appendix K HBD, 3127.0 MWt: Indian Point 2 Nuclear Power Plant "Benchmark PEPSE Model Tuned to 1-22-03 Data", Sheets 1-6, Run Date 11/11/04.

7.3.3. Stretch Power Uprate HBD, 3228.5 MWt: Indian Point 2 Nuclear Power Plant "Uprate PEPSE Model with New HP Turbine", Sheets 1-6, S&W Calc 58030-HU(S)-001 Rev. 0, Attachment 8.3 pages 1-6.

7.4. "CHECWORKS Steam/Feedwater Application Guidelines for Plant Modeling and Evaluation of Component Inspection Data". EPRI, Palo Alto, CA and CSI Technologies, Inc., Elgin, IL: 2009. 1019176.

7.5. Indian Point 2 CHECWORKS SFA model, input model (as-received), electronic files uploaded to FAC Manager Web Edition on 3/31/2010.

7.6. "CHECWORKS Flow-Accelerated Corrosion Application, Version 3.0 User Guide," EPRI, Palo Alto, CA: 2006. EPRI Product 1018102.

7.7. Chemistry Data

7.7.1. Cycle 16 Feedwater Chemistry Data, electronic spreadsheet titled "IP2HPFWdatacycle16.xls", received as an attachment to letter IP-PCE-05-004, 3/10/2005.

7.7.2. Cycle 16 Condensate Dissolved Oxygen, electronic spreadsheet titled "IP2 CPD DO.xls", received as an attachment to email 050714b03, 4/27/2005.

7.7.3. Electronic spreadsheet titled "Cycle 17 Chemistry Data.xls", received as an attachment to letter from Harry G. Hartjen to Dan Poe dated 6/22/06.

7.7.4. Electronic spreadsheets title "U2 Cycle 18 CPD.xls" and "U2 Cycle 18 HPFW.xls" received as attachment to email from Ian Mew to Brian Trudeau dated 5/21/2008.

7.7.5. Electronic spreadsheets titled "CPD data.xls" and "HPFW data.xls" received as attachment to email from Ian Mew to Ryan Doremus dated 4/27/2010.

7.8. Referenced Correspondence and Communications (see Attachment A)

7.8.1. Email from Harry Hartjen (IPEC) to Mike Aplington (CSI), dated 8/8/2006, regarding 2R17 replacements, CSI Doc. No. 071704.

7.8.2. Email from Ian Mew (IPEC) to Brian Trudeau (CSI), dated 5/21/2008, regarding IP2 Cycle information, CSI Doc. No. 0507.101.13.

7.8.3. Email from Ian Mew (IPEC) to Ryan Doremus (CSI), dated 5/25/2010, regarding IP2 Cycle information, CSI Doc. No. 0705.107.09.

7.9. Indian Point 2 FAC Program Isometric Drawing Numbers 501955 thru 502157.

7.10. Indian Point 2 Flow Diagrams

System	Drawing Number
Main Steam	9321-F-2017, Rev. 83
Condensate & Boiler Feed Pump Suction	9321-2018, Rev. 137
Boiler Feedwater	9321-F-2019, Rev. 110
Extraction Steam	9321-F-2020, Rev. 41
Heater Drain & Vents	9321-F-2022-52, Rev. 52
Moisture Separator and Reheater Drains & Vents	9321-F-2023-21, Rev. 31
Boiler Feed Pump Turbine Steam Lines Drains & Vents	9321-H-2024-23, Rev. 23
Steam Supply & Condensate Return	9321-F-2027, Rev. 61
Main Steam	227780, Rev. 50

System	Drawing Number
Moisture PreSeparator	A-228272, Rev. 15
Condensate & Boiler Feed Pump Suction	A-235307, Rev. 29
Heater Drain & Vents	A-235304, Rev. 23
Steam Generator Blowdown & Blowdown Sample System	9321-F-2729, Rev. 66

7.11. Case N-597 of ASME Boiler and Pressure Vessel Code, 3/2/1998.

7.12. Replaced Component Information

7.12.1. Replaced Components PDF "IP2 2R18 Replacements.pdf", received as an attachment to email 0705.101.04 from Ian Mew (IPEC) to Gary Daniell (CSI), 8/14/2008.

7.12.2. Replaced Components PDF "WM-00230150-00101-REV0.PDF", received as an attachment to email 0705.107.06 from Ian Mew (IPEC) to Ryan Doremus (CSI), 4/9/2010.

7.12.3. Replaced Components PDF "MS-2B22 replacement Official Weld Map.PDF", received as an attachment to email 0705.107.13 from Ian Mew (IPEC) to Ryan Doremus (CSI), 6/2/2010.

7.13. FAC Manager Web Edition, Entergy Nuclear, Indian Point Unit 2 Database as of 3/31/2010.

7.14. Ultrasonic Examination Grid Files

7.14.1. 2R16 UT Exam Electronic Grid Files, electronic text files received as an attachment to letter IP-PCE-05-004, 3/10/2005.

7.14.2. 2R17 UT Exam Electronic Grid Files, electronic text files received as an attachment to letter from Harry G. Hartjen to Dan Poe dated 6/22/06.

7.14.3. 2R18 UT Exam Electronic Grid Files, electronic text files received as file transfer from Ian Mew to Brian Trudeau, 5/21/2008.

7.14.4. 2R19 UT Exam Electronic Grid Files, electronic text files gathered by Ryan Doremus from Ian Mew during 2R19 Outage Support, 3/31/2010.

7.15. Ultrasonic Examination Reports

7.15.1. 2R16 UT Exam Reports, hardcopy reports received as an attachment to letter IP-PCE-05-004, 3/10/2005.

7.15.2. 2R17 UT Exam Reports, hardcopy reports received as an attachment to letter from Harry G. Hartjen to Dan Poe dated 6/22/06.

7.15.3. 2R18 UT Exam Reports, PDF reports received as a ftp transfer on 5/21/08.

7.15.4. 2R19 Ultrasonic Examination Report Cross-Reference Document, received as an attachment to email 0705.107.11 from Ian Mew (IPEC) to Ryan Doremus (CSI), 5/27/2010.

7.16. "Recommendations for an Effective Flow-Accelerated Corrosion Program", EPRI NSAC-202L-R3, TR 1011838, May 2006.

7.17. Indian Point Energy Center Unit 2 System Susceptibility Evaluation (SSE), Report No. 0700.104-02 Rev. 1, dated 1/22/2010.

7.18. Hand-marked isometric drawings showing the newly modeled 21, 22, 24 and 24 extraction lines in condenser, electronic file "marked up sketches.pdf" provided to CSI on 8/8/2006 (for information only).

7.19. "Flow Accelerated Corrosion Program CHECWORKS Analysis Enhancement", Technical Report No. 00130-TR-001, Volume 1 of 1, Revision 0, December 2000 (for information only).

7.20. Component Names for Newly Modeled Lines Between Feedwater Heaters 22 and Feedwater Heaters 23, electronic file "UNIT 2 COMP NOS.xls" provided to CSI on 11/15/2004 (for information only).

Appendix A

Modeling Changes

This Appendix describes any modeling changes that have been made to the CHECWORKS SFA model since the initial issue of this document. This may include any changes made due to plant modifications, modeling errors, or discoveries of new information. These changes are listed below.

Updates prior to 2R16

Updates to the model prior to 2R16 are not documented in this Appendix.

Updates for 2R16

- The model was updated with all information necessary to run Wear Rate Analysis (WRA) for plant conditions through 2R16, such as updates to the plant period table, water treatments, WRA run definitions, the Advanced Run Definition, replacements, UT inspection data, etc.
- All 2R16 (and some Cycle 16) FAC inspections were imported to the appropriate component. These inspections are listed in Appendix F.
- Cycle 16 water chemistry was updated to reflect measured concentrations. This data appears in Appendix C.
- The plant period table was updated with the actual Cycle 16 start date, end date, and operating hours. Refuel Outage 16 was updated with actual start and end dates. Cycle 17 was updated with the actual start date and estimated end date, operating hours, and water chemistry. Please note, the actual Cycle 17 end date, operating hours, and water chemistry were entered during the update for 2R17. This data appears in Appendix C.
- Several components were shown on the isometric sketches but did not exist in the field. These components were deleted from the model: MS-2B55N, BFD-23P, and BFD-56P [7.9].
- Components MS-2B33P, MS-2B35, MS-2B35P, and MS-2B36 were replaced with chrome-moly. Pipe replacements were A335 Grade P22 seamless, schedule 80; elbow replacements were A234 Grade WP22 seamless, schedule 80 [7.2].
- It was discovered that component 4EXB-14P was replaced in 2R15 (based on the 2R16 inspection). The model was updated with this replacement.
- Vent chamber drain lines to the condensers were replaced with chrome-moly, schedule 40. These lines were replaced on all six MSR's from the control valve though the connection to the condenser. These lines are not part of the "official" model scope, but were updated with replacement information for historical tracking purposes. The following table list the components updated with replacement information [7.2].

Line	Component
xNCW_65A	1A-VCD15
xNCW_65A	1A-VCD15P
xNCW_66A	2A-VCD20
xNCW_66A	2A-VCD36P
xNCW_66A	2A-VCD36
xNCW_66A	2A-VCD36P-1 US
xNCW_66A	2A-VCD41P DS
xNCW_66A	2A-VCD42
xNCW_67A	3A-VCD16
xNCW_68A	1B-VCD16P
xNCW_68A	1B-VCD17
xNCW_68A	1B-VCD17P

Line	Component
xNCW_68A	1B-VCD19P US
xNCW_69A	2B-VCD8E
xNCW_69A	2B-VCD39P
xNCW_69A	2B-VCD39
xNCW_70A	3B-VCD7P
xNCW_273	273-9P DS
xNCW_273	273-10E
xNCW_273	273-1P US
xNCW_273	273-7P DS
xNCW_273	273-8E
xNCW_273	273-9P US
xNCW_285	285-13P DS

Line	Component
xNCW_68A	1B-VCD18P
xNCW_68A	1B-VCD19E

Line	Component
xNCW_285	285-1B-VCD-XE
xNCW_285	285-15P US

- Flow element FE-1102-2 was added to the model as component CD-76FE. This is an original component that was omitted during prior modeling. The orifice size (inner diameter) was assumed to be 80% of the upstream pipe inner diameter. The geometry code of the downstream pipe, CD-76P DS, was updated to type 56 and the orifice size was entered for this pipe as well.
- The table below lists nozzles that were modeled in CHECWORKS due to the Power Uprate Engineering Report and Feedwater Heater 21 and 22 studies. These components were entered in line "xNCW_FWH 21&22 Nozzles". Note that these nozzles are not part of the "official" CHECWORKS model [7.4].

Name	Location	Geometry Code	Diameter (in.)	Tnom (in.)	Material
LPFW21A-1N	Ext Stm inlet nozzle	30	26	0.375	A53 Gr B
LPFW21A-2N	Ext Stm inlet nozzle	30	26	0.375	A53 Gr B
LPFW21A-3N	Ext Stm inlet nozzle	30	26	0.375	A53 Gr B
LPFW21A-4N	Ext Stm inlet nozzle	30	26	0.375	A53 Gr B
LPFW21A-5N	Condensate inlet nozzle	30	14	0.438	A106 Gr B
LPFW21A-6N	Condensate outlet nozzle	31	14	0.438	A106 Gr B
LPFW21A-7N	Heater drain outlet nozzle	31	12	0.250	A106 Gr B
LPFW21B-1N	Ext Stm inlet nozzle	30	26	0.375	A53 Gr B
LPFW21B-2N	Ext Stm inlet nozzle	30	26	0.375	A53 Gr B
LPFW21B-3N	Ext Stm inlet nozzle	30	26	0.375	A53 Gr B
LPFW21B-4N	Ext Stm inlet nozzle	30	26	0.375	A53 Gr B
LPFW21B-5N	Condensate inlet nozzle	30	14	0.438	A106 Gr B
LPFW21B-6N	Condensate outlet nozzle	31	14	0.438	A106 Gr B
LPFW21B-7N	Heater drain outlet nozzle	31	12	0.250	A106 Gr B
LPFW21C-1N	Ext Stm inlet nozzle	30	26	0.375	A53 Gr B
LPFW21C-2N	Ext Stm inlet nozzle	30	26	0.375	A53 Gr B
LPFW21C-3N	Ext Stm inlet nozzle	30	26	0.375	A53 Gr B
LPFW21C-4N	Ext Stm inlet nozzle	30	26	0.375	A53 Gr B
LPFW21C-5N	Condensate inlet nozzle	30	14	0.438	A106 Gr B
LPFW21C-6N	Condensate outlet nozzle	31	14	0.438	A106 Gr B
LPFW21C-7N	Heater drain outlet nozzle	31	12	0.250	A106 Gr B
LPFW22A-1N	Ext Stm inlet nozzle	30	22	0.375	A53 Gr B
LPFW22A-2N	Ext Stm inlet nozzle	30	22	0.375	A53 Gr B
LPFW22A-3N	Condensate inlet nozzle	30	14	0.438	A106 Gr B
LPFW22B-1N	Ext Stm inlet nozzle	30	22	0.375	A53 Gr B
LPFW22B-2N	Ext Stm inlet nozzle	30	22	0.375	A53 Gr B
LPFW22B-3N	Condensate inlet nozzle	30	14	0.438	A106 Gr B
LPFW22C-1N	Ext Stm inlet nozzle	30	22	0.375	A53 Gr B
LPFW22C-2N	Ext Stm inlet nozzle	30	22	0.375	A53 Gr B
LPFW22C-3N	Condensate inlet nozzle	30	14	0.438	A106 Gr B

Update for 2R17

- The model was updated with all information necessary to run Wear Rate Analysis (WRA) for plant conditions through 2R17, such as updates to the plant period table, water treatments, WRA run definitions, the Advanced Run Definition, replacements, UT inspection data, etc.
- All 2R17 (and some Cycle 17) FAC inspections were imported to the appropriate component. These inspections are listed in Appendix F.
- Cycle 17 water treatment was updated to reflect measured concentrations. This data appears in Appendix C.
- The plant period table was updated with actual the actual Cycle 17 start date, end date, and operating hours. Refuel Outage 17 was updated with actual start and end dates. Cycle 18 was updated with the actual start date and estimated end date, operating hours, and water chemistry. This data appears in Appendix C.
- All components in the extraction stream lines from the LP turbine to the 22C feedwater heater were replaced with P22 Cr-Mo during 2R17 [7.2].
- The 1st, 2nd, 3rd and 4th point extraction lines in the condenser were added to the CHECWORKS model [7.2]. The newly created lines appear in Appendix D.
- The Refuel 12 UT grid for component 3EXA-9P was re-imported as the D/S EXT of component 3EXA-10. This was done to avoid a conflict in where CHECWORKS pulled measured wear data for use in the LCF calculation.
- The Interim 13 UT grid for component CD-72P-1 US was re-imported as the D/S EXT of CD-72FE. This was done to avoid a conflict in where CHECWORKS pulled measured wear data for use in the LCF calculation.
- The option “Use D/S Ext of Previous Component” was un-checked for component CD-19P. This was done to avoid a conflict in where CHECWORKS pulled measured wear data for use in the LCF calculation.
- The Refuel 12 UT grid for component BFD-16P was re-imported as the D/S EXT of BFD-16. This was done to avoid a conflict in where CHECWORKS pulled measured wear data for use in the LCF calculation.
- The Refuel 12 UT grid for component MS-2A11P-1 was re-imported as the D/S EXT of MS-2A11N. This was done to avoid a conflict in where CHECWORKS pulled measured wear data for use in the LCF calculation.
- The Refuel 12 UT grid for component MS-2B18P-1 US was re-imported as the D/S EXT of MS-2B18R. This was done to avoid a conflict in where CHECWORKS pulled measured wear data for use in the LCF calculation.

Update for 2R18

The model was updated with all information necessary to run Wear Rate Analysis (WRA) for plant conditions through 2R18, such as updates to the plant period table, water treatments, WRA run definitions, the Advanced Run Definition, replacements, UT inspection data, etc. The CHECWORKS SFA model has been converted from version 2.2 (build 70) to version 3.0 (build 105).

Global Data Updates

- Cycle 18 water treatment was updated to reflect measured concentrations. This data appears in Appendix C.
- The plant period table was updated with actual the actual Cycle 18 start date, end date, and operating hours. Refuel Outage 18 was updated with actual start and end dates. Cycle 19 was updated with the actual start date and estimated end date, operating hours, and water chemistry. Refuel Outage 19 was updated with estimated start and end dates. This data appears in Appendix C.

UT Data Updates

- All 2R18 in-model FAC inspections were imported to the appropriate component. These inspections are listed in Appendix F.
- Inspections within one cycle must all be run using single or multiple outage wear methods. These methods cannot be used interchangeable between different sections of a component within one cycle. Wear method was changed for the USM of components “BFD-99” and “MS-3B14.” Wear method was changed to reflect single outage wear method for Refuel Outage 18. These changes were documented in Appendix F.
- Some UT data was marked as “Do Not Used Measured Wear” due to measured wear below 0.030” or manufacturing variances. These changes have been documented in Appendix F and reflected in Appendix B, I, and J.
- To improve the calibration of the model, inspections on the components in the following table were altered.

WRA Run Name	Component	Change	Reason
1ST POINT EXTRAC STM	LPFW21A-1P1	"Do Not Use MW" was checked to exclude the component from the LCF calculation	It is difficult to obtain an accurate wear calculation from a single inspection on a nozzle.
1ST POINT EXTRAC STM	LPFW21A-3P1	"Do Not Use MW" was checked to exclude the component from the LCF calculation	It is difficult to obtain an accurate wear calculation from a single inspection on a nozzle.

WRA Run Name	Component	Change	Reason
1ST POINT EXTRAC STM	LPFW21A-4P1	"Do Not Use MW" was checked to exclude the component from the LCF calculation	It is difficult to obtain an accurate wear calculation from a single inspection on a nozzle.
3RD POINT EXTRAC STM	3EXC-14	"Do Not Use MW" was checked to exclude the branch from the LCF calculation	It is difficult to obtain an accurate wear calculation from a single inspection on a tee.
3RD POINT EXTRAC STM	3EXA-6P DS	"Do Not Use MW" was checked to exclude the R14 inspection from the LCF calculation	The measured wear was not indicative of FAC.
3RD POINT EXTRAC STM	3EXC-12R	"Do Not Use MW" was checked to exclude the component from the LCF calculation	The component had a user-specified wear value that could not be confirmed.
5TH POINT EXTRAC STM	5EX-1	Recalculated the wear excluding the counterbore	Wear measured on the counterbore is not indicative of FAC. The calculated wear is due to manufacturing variances.
BLOWDOWN	MS47-5	"Do Not Use MW" was checked to exclude the component from the LCF calculation	After the exclusion of the counter bore, only two rows of data exist. Wear in these rows does not appear to be indicative of FAC.
CND FWH 22 TO FWH 23	CD-101N	"Do Not Use MW" was checked to exclude the component from the LCF calculation	It is difficult to obtain an accurate wear calculation from a single inspection on a nozzle.
CND FWH 23 TO FWH 24	CD-42N	"Do Not Use MW" was checked to exclude the component from the LCF calculation	It is difficult to obtain an accurate wear calculation from a single inspection on a nozzle.
CND FWH 23 TO FWH 24	CD-43N	"Do Not Use MW" was checked to exclude the component from the LCF calculation	It is difficult to obtain an accurate wear calculation from a single inspection on a nozzle.

WRA Run Name	Component	Change	Reason
FW BFP TO FWH 26	BFD-14P	"Do Not Use MW" was checked to exclude the replaced and current components from the LCF calculation	Measured wear was due to heavy machining on the component and was not indicative of FAC.
FWH 23 DRNS DSCV	244-9R	"Do Not Use MW" was checked to exclude the U/S Main from the LCF calculation	It is difficult to obtain an accurate wear calculation from a single inspection on a reducer.
FWH 23 DRNS DSCV	242-8R	"Do Not Use MW" was checked to exclude the U/S and D/S Main from the LCF calculation	It is difficult to obtain an accurate wear calculation from a single inspection on a reducer.
FWH 24 DRNS DSCV	4EXD-59	"Do Not Use MW" was checked to exclude the U/S and D/S Main from the LCF calculation	Measured wear was due to heavy machining on the component and was not indicative of FAC.
FWH 24 DRNS DSCV	4EXD-4P	"Do Not Use MW" was checked to exclude the component from the LCF calculation	Data between R11 and R15 inspections was not consistent and wear could not be trusted.
RHTR DTK A DRN DSCV	MS-1A52P DS	Changed inspection method to Band from Blanket	It is improper to use Blanket method on a pipe.
RHTR DTK A DRN DSCV	MS-1A43P US	Changed inspection method to Band from Blanket	It is improper to use Blanket method on a pipe.
RHTR DTK A DRN DSCV	MS-1A47P US	Changed inspection method to Band from Blanket	It is improper to use Blanket method on a pipe.
RHTR DTK A DRN DSCV	MS-1A64P US	Changed inspection method to Band from Blanket	It is improper to use Blanket method on a pipe.
RHTR DTK A DRN DSCV	MS-1A41P-1 US	Changed inspection method to Band from Blanket	It is improper to use Blanket method on a pipe.
RHTR DRN TK 23B USCV	MS-3B25	Changed inspection method for U/S Main to Blanket.	It is improper to use Band method on an elbow.

WRA Run Name	Component	Change	Reason
RHTR DRN TK 23B USCV	MS-3B21P	"Do Not Use MW" was checked to exclude the component from the LCF calculation	Data includes unrealistic high points that skew measured wear values.
RHTR DRN TK 23B USCV	MS-3B22P	"Do Not Use MW" was checked to exclude the component from the LCF calculation	Measured wear is less than 30 mils.
RHTR DRN TK 22B USCV	MS-2B12	Changed inspection method for U/S Main to Blanket.	It is improper to use Band method on an elbow.
RHTR DRN TK 22A USCV	MS-2A11N	"Do Not Use MW" was checked to exclude the component from the LCF calculation	It is difficult to obtain an accurate wear calculation from a single inspection on a nozzle.
RHTR DRN TK 21B USCV	MS-1B14P-1 US	"Do Not Use MW" was checked to exclude the component from the LCF calculation	Data includes unrealistic high points that skew measured wear values.
RHTR DRN TK 21B USCV	MS-1B33R	"Do Not Use MW" was checked to exclude the U/S Main from the LCF calculation	It is difficult to obtain an accurate wear calculation from a single inspection on a reducer.
RHTR DRN TK 21A USCV	MS-1A25P	Removed value at grid point H-10 (0.503) and recalculated wear.	H-10 was an unrealistic high reading that skewed measured wear values.
FW FWH 26 TO STM GEN	BFD-77R	Excluded first row of data on U/S Main due to counterbore and recalculated wear.	Wear measured on the counterbore is not indicative of FAC. The calculated wear is due to manufacturing variances.
FW FWH 26 TO STM GEN	BFD-3R	"Do Not Use MW" was checked to exclude the U/S Main from the LCF calculation	Wear could not be accurately analyzed on this component due to heavy machining.

- Appendix B has been updated to reflect the enhanced Pass 2 write-ups.
- Appendix K has been added to further explain components with negative Times to Tcrit.

Line and Component Data Updates

- The following components were replaced in the 2R18 outage. In all cases the component was replaced with P22 CrMo and the option "Do Not Use Meas Wear" was checked.

Component Name	Line Name	Reference
3EXB-10R	ES2-5-3RDPT ES to FWH 23B	7.12
LPFWH22A-1N	ES?-1-2NDPT ES TO FWH22A	7.12
LPFWH22A-1P1	ES?-1-2NDPT ES TO FWH22A	7.12
LPFWH22A-1P2	ES?-1-2NDPT ES TO FWH22A	7.12
LPFWH22A-1P3	ES?-1-2NDPT ES TO FWH22A	7.12
LPFWH22A-1P4	ES?-1-2NDPT ES TO FWH22A	7.12
LPFWH22A-1P5	ES?-1-2NDPT ES TO FWH22A	7.12
LPFWH22A-2N	ES?-2-2NDPT ES TO FWH22A	7.12
LPFWH22A-2P1	ES?-2-2NDPT ES TO FWH22A	7.12
LPFWH22A-2P2	ES?-2-2NDPT ES TO FWH22A	7.12
LPFWH22B-1N	ES?-1-2NDPT ES TO FWH22B	7.12
LPFWH22B-1P1	ES?-1-2NDPT ES TO FWH22B	7.12
LPFWH22B-1P2	ES?-1-2NDPT ES TO FWH22B	7.12
LPFWH22B-1P3	ES?-1-2NDPT ES TO FWH22B	7.12
LPFWH22B-1P4	ES?-1-2NDPT ES TO FWH22B	7.12
LPFWH22B-1P5	ES?-1-2NDPT ES TO FWH22B	7.12
LPFWH22B-2N	ES?-2-2NDPT ES TO FWH22B	7.12
LPFWH22B-2P1	ES?-2-2NDPT ES TO FWH22B	7.12
LPFWH22B-2P2	ES?-2-2NDPT ES TO FWH22B	7.12
LPFWH22B-2P3	ES?-2-2NDPT ES TO FWH22B	7.12

- The following lines were added to the model as per the Unit 2 System Susceptibility Evaluation [7.17].

WRA Run Name	SFA Line Name	Line Description
ES - BFPT DRN TO COND	ES-BFPT Drain to Condenser 21	THIS LINE IS NOT FULLY MODELED. Boiler Feed Pump Turbine Drain to Condenser #21
ES - BFPT DRN TO COND	ES-BFPT Drain to Condenser 22	THIS LINE IS NOT FULLY MODELED. Boiler Feed Pump Turbine Drain to Condenser #22
HD - FWH 21 TO COND	HD-FWH 21A Drain to Cond 23	Feedwater Heater 21A Drain line to Condenser 23 through valve LCV 1124
HD - FWH 21 TO COND	HD-FWH 21B Drain to Cond 22	Feedwater Heater 21B Drain line to Condenser 22 through valve LCV 1125
HD - FWH 21 TO COND	HD-FWH 21C Drain to Cond 21	Feedwater Heater 21C Drain line to Condenser 21 through valve LCV 1126
HD - FWH 22 TO FWH 21	HD-FWH 22A Drain to FWH 21A	THIS LINE IS NOT FULLY MODELED. Feedwater Heater 22A Drain to Feedwater Heater 21A
HD - FWH 22 TO FWH 21	HD-FWH 22B Drain to FWH 21B	Feedwater Heater 22B Drain to Feedwater Heater 21B

WRA Run Name	SFA Line Name	Line Description
HD - FWH 22 TO FWH 21	HD-FWH 22C Drain to FWH 21C	THIS LINE IS NOT FULLY MODELED. Feedwater Heater 22C Drain to Feedwater Heater 21C
MS - HP TURB TO MOPS	MS-HP Turbine to MPS A	THIS LINE IS NOT FULLY MODELED. HP Turbine Crossunder to Moisture Preseparator A
MS - HP TURB TO MOPS	MS-HP Turbine to MPS B	THIS LINE IS NOT FULLY MODELED. HP Turbine Crossunder to Moisture Preseparator B
MS - HP TURB TO MOPS	MS-HP Turbine to MPS C	THIS LINE IS NOT FULLY MODELED. HP Turbine Crossunder to Moisture Preseparator C
MS - HP TURB TO MOPS	MS-HP Turbine to MPS D	THIS LINE IS NOT FULLY MODELED. HP Turbine Crossunder to Moisture Preseparator D
PD - MPS TO SEP TNK A	PD-MPS A to Separating Tk A	THIS LINE IS NOT FULLY MODELED. Moisture Preseparator A to Separating Tank A
PD - MPS TO SEP TNK A	PD-MPS B to Separating Tk A	THIS LINE IS NOT FULLY MODELED. Moisture Preseparator B to Separating Tank A
PD - MPS TO SEP TNK A	PD-MPS C to Separating Tk B	THIS LINE IS NOT FULLY MODELED. Moisture Preseparator C to Separating Tank B
PD - MPS TO SEP TNK A	PD-MPS D to Separating Tk B	THIS LINE IS NOT FULLY MODELED. Moisture Preseparator D to Separating Tank B
N/A	PD-Sep Tk A Drn thru LCV-5198	Preseparator Separating Tank A Drain through LCV-5198
N/A	PD-Sep Tk A Drn thru LCV-5199	Preseparator Separating Tank A Drain through LCV-5199
N/A	PD-Sep Tk A Drn to Ctrl Valves	Preseparator Separating Tank A Drain to Control Valves upstream of Heater Drain Tank
N/A	PD-Sep Tk A Valves to HD Tk	Preseparator Separating Tank A Drain Control Valves to Heater Drain Tank
N/A	PD-Sep Tk B Drn thru LCV-5205	Preseparator Separating Tank B Drain through LCV-5205
N/A	PD-Sep Tk B Drn thru LCV-5206	Preseparator Separating Tank B Drain through LCV-5206
N/A	PD-Sep Tk B Drn to Ctrl Valves	Preseparator Separating Tank B Drain to Control Valves upstream of Heater Drain Tank
N/A	PD-Sep Tk B Valves to HD Tk	Preseparator Separating Tank B Drain Control Valves to Heater Drain Tank

Lines from the Preseparator Drain Tank to the Heater Drain Tank were not assigned to the CHECWORKS HBD or given WRA Runs. These lines could not be accurately assigned to the HBD, and given operating conditions for previous power levels were not sufficient for modeling. When this information is obtained, these WRA Runs should be created, run, and evaluated. (See Section 4.2.8)

- The WRA Run "4TH POINT EXTRAC STM" was removed, and the associated lines, shown below, and line segments were archived by placing an "x" before the current line name. These lines are superheated and are not susceptible to FAC.

Old Line Name	New Line Name
ES4-1-4THPT ES to FWH 24A	xES4-1-4THPT ES to FWH 24A
ES5-1-4THPT ES to FWH 24B	xES5-1-4THPT ES to FWH 24B
ES6-1-4THPT ES to FWH 24C	xES6-1-4THPT ES to FWH 24C

Update for 2R19

The model was updated with all information necessary to run Wear Rate Analysis (WRA) for plant conditions through 2R19, such as updates to the plant period table, water treatments, WRA run definitions, the Advanced Run Definition, replacements, UT inspection data, etc.

Global Data Updates

- Cycle 19 water treatment was updated to reflect measured concentrations. This data appears in Appendix C.
- The plant period table was updated with the actual Cycle 19 start date, end date, and operating hours. Refuel Outage 19 was updated with actual start and end dates. Cycle 20 was updated with the actual start date and estimated end date, operating hours, and water chemistry. Refuel Outage 20 was updated with estimated start and end dates. This data appears in Appendix C.
- Water treatment values for Cycle 17 and Cycle 18 were rounded to the proper number of significant figures based on the input data. This change is reflected in Appendix C.

UT Data Updates

- All 2R19 in-model FAC inspection results were imported to the appropriate component. These inspections are listed in Appendix F.
- CHECWORKS requires that all component sections for a single inspection use either single outage or multiple outage wear calculation methods. For this reason, the wear method was changed for the USM and DSM of “1A-18”, the USM of “3EXD-39”, and the USM of “MS-3B26” to reflect single outage wear for Refuel Outage 19. These changes were documented in Appendix F.
- Some UT data was marked as “Do Not Used Measured Wear” due to measured wear below 0.030”, wear below 5% of the nominal thickness, or manufacturing variances. These changes have been documented in Appendix F and reflected in Appendix B, I, and J.
- Past inspections for three nozzles, “6EX-1N”, “6EX-6N”, and “6EX-11N”, were determined to be acceptable for the LCF calculation for the WRA Run “6TH POINT EXTRAC STM”. The most recent inspection, 2R15, 2R17, and 2R14 respectively, for each of these three components was analyzed and included in the LCF calculation.

Line and Component Data Updates

- During 2R19, the configuration of the 22B Reheater Drain Tank Drain line, as shown on Isometric Drawing No. 502015 Rev. 0, was found to be incorrect downstream of component “MS-2B22”. Components downstream of “MS-2B22” were archived in

CHECWORKS by moving them to two lines, “xMSD49A-1-RHDT22B to CV” and “xMSD49B-1-RHDT22B CV to FWH26” and placing an “x” in front of the original component name. The actual configuration of the eight components immediately downstream of “MS-2B22” was documented. These components were given temporary names and were added to the model in line “MSD49A-1-RHDT22B to CV”. The names of the components are shown in the table below:

Component Name
MS-TEMP-01P
MS-TEMP-02E
MS-TEMP-03P
MS-TEMP-04P
MS-TEMP-05E
MS-TEMP-06P
MS-TEMP-07E
MS-TEMP-08P

More components exist in the line, but are not documented. When the new revision of the isometric drawing is complete, the remaining components, downstream of “MS-TEMP-08P”, should be added to the model, and the temporary components should be given permanent names.

- The following components in line “MSD49A-1-RHDT22B to CV” were replaced according to supplied replacement information [7.12.2 & 7.12.3].

Component Name
MS-2B21P DS
MS-2B22
MS-TEMP-01P
MS-TEMP-02E
MS-TEMP-03P
MS-TEMP-04P
MS-TEMP-05E
MS-TEMP-06P
MS-TEMP-07E
MS-TEMP-08P

Appendix B

Pass 2 Wear Rate Analysis Summary

B.1 Pass 2 Wear Rate Analysis Summary

The Pass 2 Wear Rate Analysis results of each WRA run were reviewed to determine the relationship between measured wear and predicted wear. Based on this relationship, a WRA run was classified as Calibrated or Not Calibrated. For Calibrated WRA runs, the Pass 2 Wear Rate Analysis results of predicted wear rate and remaining service life can be used with reasonable confidence. For runs classified as Not Calibrated, Pass 2 Wear Rate Analysis results should not be used. Instead, Pass 1 Wear Rate Analysis results should be used to determine relative rankings only. In particular, remaining service life (Time to Tcrit) should not be used as an estimate of remaining component life.

The criterion used to classify a WRA run as Calibrated or Not Calibrated is discussed Section 6.4 for the report. No single criterion is definitive in classifying a WRA run as either Calibrated or Not Calibrated. Instead, engineering judgment was used to weigh each criterion to determine calibration status.

These results can be found in Table B.1.

Table B.1 Pass 2 Wear Rate Analysis Summary

WRA Run Name	Is Run Calibrated?	Inspection Locations	Outliers	Correlation (Scatter)	LCF	Average Current Wear Rate (mils/year)	Average Current Wear Rate of Inspected Comps (mils/year)	Geometry Coverage	Parallel Train Coverage	Insp. D/S of CVs & Orifices
1ST POINT EXTRAC STM	No	14	6	Moderate	0.951	5.01	5.00	Good	Poor	N/A
2ND POINT EXTRAC STM	Yes	16	5	Moderate	0.792	0.01	N/A	Good	Good	N/A
3RD POINT EXTRAC STM	No	59	25	Good	0.781	1.80	2.55	Moderate	Moderate	1 of 6
5TH POINT EXTRAC STM	Yes	21	6	Moderate	0.831	0.44	7.67	Good	Good	N/A
6TH POINT EXTRAC STM	Yes	5	1	Moderate	0.875	0.56	3.31	Good	Good	N/A
BLOWDOWN	Yes	23	6	Moderate	1.020	1.04	0.70	Good	Good	5 of 5

WRA Run Name	Is Run Calibrated?	Inspection Locations	Outliers	Correlation (Scatter)	LCF	Average Current Wear Rate (mils/year)	Average Current Wear Rate of Inspected Comps (mils/year)	Geometry Coverage	Parallel Train Coverage	Insp. D/S of CVs & Orifices
CND DWNSTRM HDPD	Yes	23	4	Good	0.540	1.49	1.71	Good	Good	2 of 2
CND FWH 22 TO FWH 23	No	9	3	Moderate	0.632	1.72	1.93	Poor	Poor	N/A
CND FWH 23 TO FWH 24	Yes	13	5	Good	0.439	2.01	2.04	Good	Good	N/A
CND FWH 24 TO FWH 25	Yes	14	4	Good	0.340	1.82	1.92	Good	Good	N/A
CND FWH 25 TO HEADER	Yes	13	5	Moderate	0.376	1.40	1.38	Good	Good	N/A
CROSSUNDER	N/A	0	N/A	N/A	N/A	0.01	0.00	N/A	N/A	4 of 20
ES – BFPT DRN TO COND	No	0	N/A	N/A	N/A	0.27	N/A	N/A	N/A	N/A
FW BFP TO FWH 26	Yes	48	12	Good	0.490	1.62	1.64	Good	Good	N/A
FW FWH 26 TO STM GEN	Yes	69	16	Good	1.158	1.34	1.30	Good	Good	4 of 4
FWH 23 DRNS DSCV	Yes	5	0	Good	0.994	1.51	1.55	Good	Good	3 of 3
FWH 23 DRNS USCV	Yes	36	4	Good	1.332	1.60	1.44	Moderate	Good	N/A
FWH 24 DRNS DSCV	No	8	5	Poor	1.442	3.16	2.93	Good	Good	2 of 3
FWH 24 DRNS USCV	Yes	19	6	Moderate	1.066	2.32	2.21	Moderate	Good	N/A
FWH 25 DRNS TO HDT	Yes	27	6	Good	0.922	1.00	1.00	Moderate	Good	N/A
FWH 26 DRNS DSCV	No	1	0	N/A	0.485	0.19	1.00	Good	Poor	See B 2.21
FWH 26 DRNS USCV	Yes	8	1	Good	0.664	1.04	1.15	Good	Good	N/A
HD – FWH 21 TO COND	No	2	0	N/A	1.421	1.35	1.00	Poor	Poor	0 of 3
HD – FWH 22 TO FWH 21	No	0	N/A	N/A	N/A	0.79	N/A	N/A	N/A	N/A

WRA Run Name	Is Run Calibrated?	Inspection Locations	Outliers	Correlation (Scatter)	LCF	Average Current Wear Rate (mils/year)	Average Current Wear Rate of Inspected Comps (mils/year)	Geometry Coverage	Parallel Train Coverage	Insp. D/S of CVs & Orifices
HTR DRN PMP DISCH	Yes	13	8	Moderate	0.461	1.84	1.64	Good	Good	2 of 2
HTR DRN TANK DRN	Yes	4	0	Good	0.554	1.04	1.00	Good	Good	N/A
MS – HP TURB TO MOPS	No	0	N/A	N/A	N/A	18.07	N/A	N/A	N/A	N/A
MSDT DRNS TO HDT	Yes	37	9	Moderate	0.976	0.05	0.23	Good	Good	N/A
MSR SHELL DRAINS	No	14	4	Moderate	2.699	0.48	0.71	Moderate	Moderate	N/A
PD – MPS TO SEP TNK	No	0	N/A	N/A	N/A	10.29	N/A	N/A	N/A	N/A
RHTR DRN TK 21A USCV	Yes	46	13	Moderate	1.033	0.99	1.00	Good	Good	1 of 1
RHTR DRN TK 21B USCV	Yes	14	2	Good	0.840	0.79	0.93	Moderate	Good	1 of 1
RHTR DRN TK 22A USCV	Yes	32	11	Poor	1.531	1.20	1.27	Good	Good	1 of 1
RHTR DRN TK 22B USCV	Yes	17	11	Moderate	1.135	0.62	0.91	Good	Good	1 of 1
RHTR DRN TK 23A USCV	Yes	13	1	Good	1.033	0.98	1.00	Good	Good	1 of 1
RHTR DRN TK 23B USCV	Yes	24	12	Good	1.025	0.87	0.97	Moderate	Good	1 of 1
RHTR DTK A DRN DSCV	Yes	73	22	Good	1.102	0.72	1.01	Good	Good	0 of 3
RHTR DTK B DRN DSCV	Yes	49	20	Moderate	1.179	0.93	1.19	Good	Good	0 of 3
RHTR TO RHTR DRN TK	Yes	9	2	Moderate	0.806	1.04	1.00	Good	Moderate	N/A

B.2 Pass 2 Wear Rate Analysis Results

As each of the WRA Runs was analyzed, the results were reviewed and the conclusions for each run, as well as any pertinent information, are listed below.

B 2.01 1st POINT EXTRAC STM

This run consists of 69 components, of which there are 14 inspection locations and 6 outliers. The LCF for the run is 0.951, which is inside the EPRI recommended range. The run has a moderate correlation, with most of the inspections falling inside the 50% error lines. The geometry coverage is good with every type of component having been inspected. Only 4 of the 12 lines have been inspected, giving the run poor parallel train coverage. This run cannot be considered calibrated until more inspections have been performed on the remaining lines.

B 2.02 2ND POINT EXTRAC STM

This run consists of 28 components, of which there are 16 inspection locations and 5 outliers. The LCF for the run is 0.792, which is inside the EPRI recommended range. The run has a moderate correlation, with most of the inspections falling inside the 50% error lines. The geometry coverage is good with every type of component having been inspected except the one existing 90º elbow. All of the 6 lines have been inspected, giving the run good parallel train coverage. This run can be considered calibrated.

B 2.03 3RD POINT EXTRAC STM

This run consists of 151 components, of which there are 58 inspection locations and 25 outliers. The LCF for the run is 0.781, which is inside the EPRI recommended range. The run has a good correlation, with most of the inspections falling inside the 50% error lines and adhering well to the 45º line. The geometry coverage is moderate due to a lack of inspections on any of the 6 inlet nozzles in the run. 11 of the 15 lines have been inspected, giving the run moderate parallel train coverage. Only 1 of the 6 orifices have been inspected. This run cannot be considered calibrated until more inspections have been performed on the remaining orifices and on some inlet nozzles.

B 2.04 5TH POINT EXTRAC STM

This run consists of 65 components, of which there are 21 inspection locations and 6 outliers. The LCF for the run is 0.831, which is inside the EPRI recommended range. The run has a moderate correlation, with most of the inspections falling inside the 50% error lines. The geometry coverage is good with every type of component having been inspected, except the 5 nozzles. Only 2 of the 7 lines have been inspected, but the majority of the components in the lines have been replaced with FAC-

resistant material, so parallel train coverage can be considered good. This run can be considered calibrated.

B 2.05 6TH POINT EXTRAC STM

Most components in this run are stainless steel clad and are not susceptible to FAC. Some nozzles and valves remain carbon steel. Several valves (see Appendix K) have a negative time to Tcrit. The carbon steel nozzles should be inspected based on the analysis of previous inspections. Because the valves are covered by the preventative maintenance program and because the carbon steel nozzles will be inspected according to previous inspections, CHECWORKS is no longer needed for predictions in this line.

B 2.06 BLOWDOWN

This run consists of 126 components, of which there are 23 inspection locations and 6 outliers. The LCF for the run is 1.020, which is inside the EPRI recommended range. The run has a moderate correlation, with most of the inspections falling inside the 50% error lines. The geometry coverage is good with every type of component having been inspected, except the 4 tees and 4 reducers. All 4 lines have been inspected, giving the run good parallel train coverage. All 4 orifices and the control valve have been inspected. Note that this run consists mainly of small-bore, socket-welded components so CHECWORKS predictions may be questionable (see EPRI Guidelines for Plant Modeling). This run can be considered calibrated.

B 2.07 CND DWNSTRM HDPD

This run consists of 55 components, of which there are 22 inspection locations and 4 outliers. The LCF for the run is 0.540, which is inside the EPRI recommended range. The run has a good correlation, with most of the inspections falling inside the 50% error lines and adhering well to the 45º line. The geometry coverage is good with every type of component having been inspected, except the 2 inlet nozzles. 2 of the 3 lines have been inspected, but only 2 components exist in the remaining line, so parallel train coverage can be considered good. Both of the 2 orifices have been inspected. This run can be considered calibrated.

B 2.08 CND FWH 22 TO FWH 23

This run consists of 94 components, of which there are 9 inspection locations and 3 outliers. The LCF for the run is 0.632, which is inside the EPRI recommended range. The run has a moderate correlation, with most of the inspections falling inside the 50% error lines. The geometry coverage is poor due to a lack of inspections on the exit nozzles, expanders, reducer, and expanding elbow. Only 4 of the 9 lines have been inspected, giving the run poor parallel train coverage. This run cannot be

considered calibrated until more inspections have been performed on the remaining lines and geometry types.

B 2.09 CND FWH 23 TO FWH 24

This run consists of 36 components, of which there are 13 inspection locations and 5 outliers. The LCF for the run is 0.439, which is slightly below the EPRI recommended range. The run has a good correlation, with most of the inspections falling inside the 50% error lines and adhering well to the 45º line. The geometry coverage is good with every type of component having been inspected, except the nozzles. All of the 3 lines have been inspected, so parallel train coverage can be considered good. This run can be considered calibrated.

B 2.10 CND FWH 24 TO FWH 25

This run consists of 44 components, of which there are 14 inspection locations and 4 outliers. The LCF for the run is 0.340, which is below the EPRI recommended range. The run has a good correlation, with most of the inspections falling inside the 50% error lines and adhering well to the 45º line. The geometry coverage is good with every type of component having been inspected, except the inlet nozzles. All of the 3 lines have been inspected, so parallel train coverage can be considered good. This run can be considered calibrated.

B 2.11 CND FWH 25 TO HEADER

This run consists of 36 components, of which there are 13 inspection locations and 5 outliers. The LCF for the run is 0.376, which is below the EPRI recommended range. The run has a moderate correlation, with most of the inspections falling inside the 50% error lines. All outliers are overpredicted, and 4 of the 5 outliers are tees. The geometry coverage is good with every type of component having been inspected, except the exit nozzles. All of the 5 lines have been inspected, so parallel train coverage can be considered good. This run can be considered calibrated.

B 2.12 CROSSUNDER

Of the 87 components in this run, none have inspections which are included in the calculation of the LCF. Override material alloy content has been selected for all components in this run (18% Cr). Since all components have 18% Cr, they can be considered non-susceptible to FAC. Since the entire run is non-susceptible, run calibration does not apply.

B 2.13 ES – BFPT DRN TO COND

This run contains lines that need to be modeled. There are no inspections, and the run is not considered calibrated; therefore, this run should be considered Pass 1.

B 2.14 FW BFP TO FWH 26

This run consists of 111 components, of which there are 48 inspection locations and 12 outliers. The LCF for the run is 0.490, which is slightly below the EPRI recommended range. The run has a good correlation, with most of the inspections falling inside the 50% error lines and adhering well to the 45º line. The geometry coverage is good with every type of component having been inspected, except the reducer and 2 exit nozzles. All of the 8 lines have been inspected, so parallel train coverage can be considered good. This run can be considered calibrated.

B 2.15 FW FWH 26 TO STM GEN

This run consists of 196 components, of which there are 69 inspection locations and 16 outliers. The LCF for the run is 1.158, which is within the EPRI recommended range. The run has a good correlation, with most of the inspections falling inside the 50% error lines and adhering well to the 45º line. The geometry coverage is good with every type of component having been inspected, except exit nozzles. All of the 11 lines have been inspected, so parallel train coverage can be considered good. All 4 control valves have been inspected. This run can be considered calibrated.

B 2.16 FWH 23 DRNS DSCV

This run consists of 21 components, of which there are 5 inspection locations and no outliers. The LCF for the run is 0.994, which is within the EPRI recommended range. The run has a good correlation, with the inspections falling inside the 50% error lines and adhering well to the 45º line. The geometry coverage is good with every type of component having been inspected, with the exception of the 1 inlet nozzle. All of the 3 lines have been inspected, so parallel train coverage can be considered good. All 3 control valves have been inspected. This run can be considered calibrated.

B 2.17 FWH 23 DRNS USCV

This run consists of 126 components, of which there are 37 inspection locations and 4 outliers. The LCF for the run is 1.332, which is within the EPRI recommended range. The run has a good correlation, with most of the inspections falling inside the 50% error lines and adhering well to the 45º line. The geometry coverage is moderate, with a lack of inspections on reducers and nozzles. All of the 3 lines have been inspected, so parallel train coverage can be considered good. This run can be considered calibrated.

B 2.18 FWH 24 DRNS DSCV

This run consists of 24 components, of which there are 8 inspection locations and 5 outliers. The LCF for the run is 1.442, which is within the EPRI recommended range. The run has a poor correlation, with a high

percentage of the inspections falling outside the 50% error lines. The geometry coverage is good with inspections on every component type except nozzles. All of the 3 lines have been inspected, so parallel train coverage can be considered good. 2 of the 3 control valves have inspections on the downstream component. In the case where there is no inspection, the downstream component has been replaced, and an inspection would not be an accurate estimate of wear in the valve. This valve is covered by the preventative maintenance program. Due to the poor correlation, this run cannot be considered calibrated.

B 2.19 FWH 24 DRNS USCV

This run consists of 66 components, of which there are 19 inspection locations and 6 outliers. The LCF for the run is 1.066, which is within the EPRI recommended range. The run has a moderate correlation, with most of the inspections falling inside the 50% error lines. The geometry coverage is moderate, with a lack of inspections on tees and nozzles. All of the 3 lines have been inspected, so parallel train coverage can be considered good. This run can be considered calibrated.

B 2.20 FWH 25 DRNS TO HDT

This run consists of 54 components, of which there are 27 inspection locations and 6 outliers. The LCF for the run is 0.922, which is within the EPRI recommended range. The run has a good correlation, with most of the inspections falling inside the 50% error lines and adhering well to the 45º line. The geometry coverage is moderate, with a lack of inspections on any of the 6 nozzles. All of the 3 lines have been inspected, so parallel train coverage can be considered good. This run can be considered calibrated.

B 2.21 FWH 26 DRNS DSCV

This run consists of 12 components, of which there is 1 inspection location. The LCF for the run is 0.485, which is slightly below the EPRI recommended range; however, this value is not a good representation of the run as there is only one inspection location. There are 3 nozzles and 3 valves in this run that are of FAC susceptible material. The valves are A217 WC6 material, which has some Cr, but is not guaranteed to have enough to resist FAC. It is recommended to test the Cr content of the valves. If the Cr content is below 1.25% or if testing cannot be done, an inspection should be performed on the valve per plant procedure. Inspections on the downstream components will not be an accurate estimate of valve wear because the downstream component is composed of FAC-resistant material. Inspections are also recommended on the two uninspected nozzles. The remaining components consist of Chrome-Moly materials. This run cannot be considered calibrated until the remaining nozzles have been inspected.

B 2.22 FWH 26 DRNS USCV

This run consists of 33 components, of which there are 8 inspection locations and 1 outlier. The LCF for the run is 0.664, which is within the EPRI recommended range. The run has a good correlation, with most of the inspections falling inside the 50% error lines and adhering well to the 45º line. The geometry coverage is good, with inspections on every component type except nozzles. All of the 3 lines have been inspected, so parallel train coverage can be considered good. This run can be considered calibrated.

B 2.23 HD – FWH 21 TO COND

This run consists of 18 components, of which there are only 2 inspection locations and no outliers. The LCF for the run is 1.421, which is within the EPRI recommended range. Because of the method used by CHECWORKS to adjust the predicted wear to the inspections, it is difficult to determine the correlation between measured and predicted wear using only 2 inspections. The geometry coverage is poor with no inspections on exit nozzles, expanders, or downstream of any of the 3 control valves. Only 1 of the 3 lines has been inspected, giving the run poor parallel train coverage. This run cannot be considered calibrated until more inspections have been completed.

B 2.24 HD – FWH 22 TO FWH 21

This run contains lines that need to be modeled. There are no inspections, and the run is not considered calibrated. This run should be considered Pass 1.

B 2.25 HTR DRN PMP DISCH

This run consists of 44 components, of which there are 13 inspection locations and 8 outliers. The LCF for the run is 0.461, which is slightly below the EPRI recommended range. The run has a moderate correlation, with most of the inspections falling inside the 50% error lines. The geometry coverage is good, with inspections on every component type except nozzles and the one 45º elbow. All of the 3 lines have been inspected, so parallel train coverage can be considered good. The downstream components of each of the 2 control valves have been inspected. This run can be considered calibrated.

B 2.26 HTR DRN TANK DRN

This run consists of 15 components, of which there are 4 inspection locations and no outliers. The LCF for the run is 0.554, which is within the EPRI recommended range. The run has a good correlation, with most of the inspections falling inside the 50% error lines and adhering well to the 45º line. The geometry coverage is good, with inspections on every component type except nozzles. Both of the lines have been inspected, so

parallel train coverage can be considered good. This run can be considered calibrated.

B 2.27 MS – HP TURB TO MOPS

This run contains lines that need to be modeled. There are no inspections and is not considered calibrated; therefore, this run should be considered Pass 1.

B 2.28 MSDT DRNS TO HDT

This run consists of 191 components, of which there are 37 inspection locations and 9 outliers. The LCF for the run is 0.976, which is within the EPRI recommended range. The run has a moderate correlation, with most of the inspections falling inside the 50% error lines. Most components in this run are stainless steel or stainless steel clad. Only the nozzles and valves are carbon steel. Five of the six lines in this run have been inspected. It is recommended to inspect a nozzle from the uninspected line, but because the run has good geometry coverage and moderate correlation, the run can be considered calibrated.

B 2.29 MSR SHELL DRAINS

This run consists of 112 components, of which there are 14 inspection locations and 4 outliers. The LCF for the run is 2.699, which is slightly above the EPRI recommended range. The run has a moderate correlation, with most of the inspections falling inside the 50% error lines. The geometry coverage is moderate with a lack of inspections on any of the 24 nozzles in the run. Only 7 lines have been inspected, but several lines only contain one or two components, so parallel line coverage can be considered moderate. This run cannot be considered calibrated until more inspections are completed on nozzles and some of the remaining lines.

B 2.30 PD – MPS TO SEP TNK

This run contains lines that need to be modeled. There are no inspections and is not considered calibrated; therefore, this run should be considered Pass 1.

B 2.31 RHTR DRN TK 21A USCV

This run consists of 60 components, of which there are 46 inspection locations and 13 outliers. The LCF for the run is 1.033, which is within the EPRI recommended range. The run has a moderate correlation, with most of the inspections falling inside the 50% error lines. The geometry coverage is good, with inspections on every component type except the one nozzle, one expander, two reducers, and one tee. There is only one line in the run, and it has been inspected, so parallel train coverage can be considered good. The downstream component of the orifice has been inspected. This run can be considered calibrated.

B 2.32 RHTR DRN TK 21B USCV

This run consists of 55 components, of which there are 14 inspection locations and 2 outliers. The LCF for the run is 0.840, which is within the EPRI recommended range. The run has a good correlation, with most of the inspections falling inside the 50% error lines and adhering well to the 45º line. The geometry coverage is moderate, with a lack of inspections on every component type except the one nozzle, one expander, two reducers, and one tee. There is only one line in the run, and it has been inspected, so parallel train coverage can be considered good. The downstream component of the orifice has been inspected. This run can be considered calibrated.

B 2.33 RHTR DRN TK 22A USCV

This run consists of 46 components, of which there are 32 inspection locations and 11 outliers. The LCF for the run is 1.531, which is within the EPRI recommended range. The run has a poor correlation, with a high percentage of inspections falling outside the 50% error lines. The geometry coverage is good, with inspections on every component type. There is only one line in the run, and it has been inspected, so parallel train coverage can be considered good. The downstream component of the orifice has been inspected. Despite the poor correlation, this run can be considered calibrated.

B 2.34 RHTR DRN TK 22B USCV

This run consists of 42 components, of which there are 17 inspection locations and 11 outliers. The LCF for the run is 1.135, which is within the EPRI recommended range. The run has a moderate correlation, with most of the inspections falling inside the 50% error lines. The geometry coverage is good, with inspections on every component type. There is only one line in the run, and it has been inspected, so parallel train coverage can be considered good. The downstream component of the orifice has been inspected. This run can be considered calibrated.

B 2.35 RHTR DRN TK 23A USCV

This run consists of 34 components, of which there are 13 inspection locations and 1 outlier. The LCF for the run is 1.033, which is within the EPRI recommended range. The run has a good correlation, with most of the inspections falling inside the 50% error lines and adhering well to the 45º line. The geometry coverage is good, with inspections on every component type except the one expander, one tee, and one exit nozzle. There is only one line in the run, and it has been inspected, so parallel train coverage can be considered good. The downstream component of the orifice has been inspected. This run can be considered calibrated.

B 2.36 RHTR DRN TK 23B USCV

This run consists of 76 components, of which there are 24 inspection locations and 12 outliers. The LCF for the run is 1.025, which is within the EPRI recommended range. The run has a good correlation, with most of the inspections falling inside the 50% error lines and adhering well to the 45º line. The geometry coverage is moderate, with a lack of inspections on the two 45º elbows, the reducer, the nozzle, and the tee. There is only one line in the run, and it has been inspected, so parallel train coverage can be considered good. The downstream component of the orifice has been inspected. This run can be considered calibrated.

B 2.37 RHTR DTK A DRN DSCV

This run consists of 124 components, of which there are 73 inspection locations and 22 outliers. The LCF for the run is 1.102, which is within the EPRI recommended range. The run has a good correlation, with most of the inspections falling inside the 50% error lines and adhering well to the 45º line. The geometry coverage is good, with most of the uninspected component types having been replaced with stainless steel. 9 of the 10 lines in the run have been inspected, but the remaining line only has 2 components, so parallel train coverage can be considered good. The components downstream of the 3 control valves have not been inspected, but have been replaced with stainless steel. This run can be considered calibrated.

B 2.38 RHTR DTK B DRN DSCV

This run consists of 86 components, of which there are 49 inspection locations and 20 outliers. The LCF for the run is 1.179, which is within the EPRI recommended range. The run has a moderate correlation, with most of the inspections falling inside the 50% error lines. The geometry coverage is good, with all geometry types having inspections except the two inlet nozzles. All of the 8 lines in the run have been inspected, so parallel train coverage can be considered good. The components downstream of the 3 control valves have not been inspected, but have been replaced with stainless steel. This run can be considered calibrated.

B 2.39 RHTR TO RHTR DRN TK

This run consists of 18 components, of which there are 9 inspection locations and 2 outliers. The LCF for the run is 0.806, which is within the EPRI recommended range. The run has a moderate correlation, with most of the inspections falling inside the 50% error lines. The geometry coverage is good, with all geometry types having inspections. 5 of the 6 lines in the run have been inspected, but the exception only has 3 components, so parallel train coverage can be considered good. This run can be considered calibrated.

Appendix C

CHECWORKS SFA Global Data

Table C.1 Original Power Level Input Data

CHECWORKS Field	Power Level 100.00%	Reference
Steam Rate (Mlb/hr)	13.205620	7.3.1
Pressure (psia)	754.0	7.3.1
Temp (F)	511.4	7.3.1
Blowdown Rate (Mlb/hr)	0.0542	7.3.1
Carryover (%)	0.01	7.3.1
Feedwater Vent Rate (%)	x	7.4
Reheater Vent Rate (%)	x	7.4
Moisture Separator Carryunder (%)	x	7.4
Notes: Original Power Level 3090.2 MWt		

x - Field should be left blank for a PWR.

Table C.2 Appendix K Power Level Input Data

CHECWORKS Field	Power Level 101.19%	Reference
Steam Rate (Mlb/hr)	13.383160	7.3.2
Pressure (psia)	765.0	7.3.2
Temp (F)	513.1	7.3.2
Blowdown Rate (Mlb/hr)	0.0542	7.3.2
Carryover (%)	0.02	7.3.2
Feedwater Vent Rate (%)	x	7.4
Reheater Vent Rate (%)	x	7.4
Moisture Separator Carryunder (%)	x	7.4
Notes: Stretch Power Uprate. 3127.0MWt		

x - Field should be left blank for a PWR.

Table C.3 SPU Power Level Input Data

CHECWORKS Field	Power Level 104.48%	Reference
Steam Rate (Mlb/hr)	13.903750	7.3.3
Pressure (psia)	765.0	7.3.3
Temp (F)	513.1	7.3.3
Blowdown Rate (Mlb/hr)	0.0542	7.3.3
Carryover (%)	0.02	7.3.3
Feedwater Vent Rate (%)	x	7.4
Reheater Vent Rate (%)	x	7.4
Moisture Separator Carryunder (%)	x	7.4
Notes: Stretch Power Uprate. 3228.5 MWt		

x - Field should be left blank for a PWR.

Table C.4 Original Steam Cycle Input Data

HBD Item[1]	Location	Flow Rate (Mlb/hr)	Enthalpy (Btu/lbm)	Pressure (psia)	Temp (F)	Reference
FWHTR 1	Tube side outlet	x	x	x	424.4	7.3.1
	Shell side outlet	x	x	X	385.2	7.2.1
FWHTR 2	Tube side outlet	x	x	X	379.5	7.3.1
	Shell side outlet	x	x	X	383.0	7.2.1
FWHTR 3	Tube side outlet	X	x	x	298.3	7.3.1
	Shell side outlet	x	x	X	261.0	7.2.1
FWHTR 4	Tube side outlet	x	x	X	253.7	7.3.1
	Shell side outlet	X	x	x	209.9	7.2.1
FWHTR 5	Tube side outlet	X	x	x	202.6	7.3.1
	Shell side outlet	x	x	X	166.68	7.2.1
FWHTR 6	Tube side outlet	x	x	X	155.4	7.3.1
	Shell side outlet	x	x	x	92.4	7.2.1
SPUMP 1	Driven steam and drain enthalpy and pressure	0.138423	967.3	1.0	x	7.3.1
MSEP 1	Moist Sep & Moist PreSep Drains[2]	0.740767	354.5	200.6	x	7.3.1
TANK 1	Heater Drain Tank exiting steam	0	330.6	220.7	x	Note 4
TANK 2	Blowdown tank exiting steam	0	501.6	754.0	x	Note 4
RHTR 1	Reheater Drain	1.032256	503.3	619.9	x	Note 6
HPEXTLINE 1	Conditions in line to FWH 6	0.693459	1147.5	372.9	x	7.3.1
HPEXTLINE 2	Conditions in line (Presep Outlet to FWH 5)[3]	1.021481	1138.9	206.5	x	7.3.1
LPEXTLINE 1	Conditions in line to FWH 4	0.446424	1192.3	72.58	x	7.3.1
LPEXTLINE 2	Conditions in line to FWH 3	0.509995	1087.1	34.86	x	Note 5
LPEXTLINE 3	Conditions in line to FWH 2	0.507215	931.9	14.04	x	Note 5
LPEXTLINE 4	Conditions in line to FWH 1	0.729863	899.9	5.52	x	Note 5

x = No value entered (not required by CHECWORKS).

(1) The HBD Item name is automatically generated by CHECWORKS. Feedwater heaters are numbered sequentially in reverse flow order. Feedwater Heater 1 is the feedwater heater closest to the steam generator (equivalent to heater 26 at Indian Point 2). Extraction lines are numbered sequentially in order of decreasing pressure.

(2) MSEP 1 represents the conditions in both the moisture separator and moisture pre-separator drain lines as recommended by EPRI Guidelines [7.4].

(3) HPEXTLINE 2 is a fictitious high-pressure extraction line representing the steam lines between the pre-separator and main separator as recommended by EPRI Guidelines [7.4].

(4) Flow rate is for exiting steam flow was entered as zero as recommended by EPRI Guidelines [7.4]. Pressure and enthalpy were obtained from the Appendix K PEPSE model [7.3.2].

(5) Enthalpy calculated as the weighted average of the steam and liquid phases. Steam phase enthalpy was obtained directly from the PEPSE diagram as the enthalpy after moisture removal in the LP Turbine. Liquid phase enthalpy was calculated as the enthalpy of saturated liquid at the pressure given on the PEPSE diagram.

(6) Reheater drain flow was entered as the sum of the flow through the reheater drain tanks and the vent chamber drains [7.3.2]. Pressure and enthalpy were entered as the conditions through the reheater drain tank [7.3.2].

Table C.5 Appendix K Steam Cycle Input Data

HBD Item[1]	Location	Flow Rate (Mlb/hr)	Enthalpy (Btu/lbm)	Pressure (psia)	Temp (F)	Reference
FWHTR 1	Tube side outlet	x	x	x	425.2	7.3.2
	Shell side outlet	x	x	X	386.5	7.2.1
FWHTR 2	Tube side outlet	x	x	x	380.5	7.3.2
	Shell side outlet	x	x	X	348.1	7.2.1
FWHTR 3	Tube side outlet	x	x	x	299.0	7.3.2
	Shell side outlet	x	x	X	261.8	7.2.1
FWHTR 4	Tube side outlet	x	x	x	251.4	7.3.2
	Shell side outlet	x	x	X	210.8	7.2.1
FWHTR 5	Tube side outlet	x	x	x	203.3	7.3.2
	Shell side outlet	x	x	X	168.05	7.2.1
FWHTR 6	Tube side outlet	x	x	x	156.8	7.3.2
	Shell side outlet	x	x	X	96.67	7.2.1
SPUMP 1	Driven steam and drain enthalpy and pressure	0.142106	966.9	1.0	x	7.3.2
MSEP 1	Moist Sep & Moist PreSep Drains[2]	0.754560	355.7	203.4	x	7.3.2
TANK 1	Heater Drain Tank exiting steam	0	332.6	222.8	x	Note 4
TANK 2	Blowdown tank exiting steam	0	503.6	765.0	x	Note 4
RHTR 1	Reheater Drain	1.048264	506.8	656.0	x	Note 6
HPEXTLINE 1	Conditions in line to FWH 6	0.688561	1147.0	378.3	x	7.3.2
HPEXTLINE 2	Conditions in line (Presep Outlet to FWH 5)[3]	1.041833	1138.9	209.4	x	7.3.2
LPEXTLINE 1	Conditions in line to FWH 4	0.453736	1191.5	73.47	x	7.3.2
LPEXTLINE 2	Conditions in line to FWH 3	0.518228	1085.2	35.32	x	Note 5
LPEXTLINE 3	Conditions in line to FWH 2	0.508950	929.5	14.23	x	Note 5
LPEXTLINE 4	Conditions in line to FWH 1	0.710848	887.5	5.62	x	Note 5

x = No value entered (not required by CHECWORKS).

(1) The HBD Item name is automatically generated by CHECWORKS. Feedwater heaters are numbered sequentially in reverse flow order. Feedwater Heater 1 is the feedwater heater closest to the steam generator (equivalent to heater 26 at Indian Point 2). Extraction lines are numbered sequentially in order of decreasing pressure.

(2) MSEP 1 represents the conditions in both the moisture separator and moisture pre-separator drain lines as recommended by EPRI Guidelines [7.4].

(3) HPEXTLINE 2 is a fictitious high-pressure extraction line representing the steam lines between the pre-separator and main separator as recommended by EPRI Guidelines [7.4].

(4) Flow rate is for exiting steam flow was entered as zero as recommended by EPRI Guidelines [7.4]. Pressure and enthalpy were obtained from the Appendix K PEPSE model [7.3.2].

(5) Enthalpy calculated as the weighted average of the steam and liquid phases. Steam phase enthalpy was obtained directly from the PEPSE diagram as the enthalpy after moisture removal in the LP Turbine. Liquid phase enthalpy was calculated as the enthalpy of saturated liquid at the pressure given on the PEPSE diagram.

(6) Reheater drain flow was entered as the sum of the flow through the reheater drain tanks and the vent chamber drains [7.3.2]. Pressure and enthalpy were entered as the conditions through the reheater drain tank [7.3.2].

Table C.6 SPU Steam Cycle Input Data

HBD Item[1]	Location	Flow Rate (Mlb/hr)	Enthalpy (Btu/lbm)	Pressure (psia)	Temp (F)	Reference
FWHTR 1	Tube side outlet	x	x	x	429.6	7.3.3
	Shell side outlet	x	x	X	389.3	7.2.1
FWHTR 2	Tube side outlet	x	x	x	382.4	7.3.3
	Shell side outlet	x	x	X	386.3	7.2.1
FWHTR 3	Tube side outlet	x	x	x	300.5	7.3.3
	Shell side outlet	x	x	X	263.27	7.2.1
FWHTR 4	Tube side outlet	x	x	x	255.5	7.3.3
	Shell side outlet	x	x	X	212.0	7.2.1
FWHTR 5	Tube side outlet	x	x	x	204.3	7.3.3
	Shell side outlet	x	x	X	169.35	7.2.1
FWHTR 6	Tube side outlet	x	x	x	158.0	7.3.3
	Shell side outlet	x	x	X	100.03	7.2.1
SPUMP 1	Driven steam and drain enthalpy and pressure	0.153175	969.1	1.0	X	7.3.3
MSEP 1	Moist Sep & Moist PreSep Drains[2]	1.060624	359.2	210.7	X	7.3.3
TANK 1	Heater Drain Tank exiting steam	0	337.5	225.7	X	Note 4
TANK 2	Blowdown tank exiting steam	0	501.6	754.0	X	Note 4
RHTR 1	Reheater Drain	0.917845	506.8	656.0	X	7.3.3
HPEXTLINE 1	Conditions in line to FWH 6	0.799284	1142.0	400.7	X	7.3.3
HPEXTLINE 2	Conditions in line (Presep Outlet to FWH 5)[3]	1.079704	1134.2	214.9	X	7.3.3
LPEXTLINE 1	Conditions in line to FWH 4	0.464923	1196.2	75.4	X	7.3.3
LPEXTLINE 2	Conditions in line to FWH 3	0.525277	1095.2	36.1	X	Note 5
LPEXTLINE 3	Conditions in line to FWH 2	0.513168	937.0	14.56	X	Note 5
LPEXTLINE 4	Conditions in line to FWH 1	0.702033	887.3	5.77	X	Note 5

x = No value entered (not required by CHECWORKS).

(1) The HBD Item name is automatically generated by CHECWORKS. Feedwater heaters are numbered sequentially in reverse flow order. Feedwater Heater 1 is the feedwater heater closest to the steam generator (equivalent to heater 26 at Indian Point 2). Extraction lines are numbered sequentially in order of decreasing pressure.

(2) MSEP 1 represents the conditions in both the moisture separator and moisture pre-separator drain lines as recommended by EPRI Guidelines [7.4].

(3) HPEXTLINE 2 is a fictitious high-pressure extraction line representing the steam lines between the pre-separator and main separator as recommended by EPRI Guidelines [7.4].

(4) Flow rate is for exiting steam flow was entered as zero as recommended by EPRI Guidelines [7.4]. Pressure and enthalpy were obtained from the SPU PEPSE model [7.3.3].

(5) Enthalpy calculated as the weighted average of the steam and liquid phases. Steam phase enthalpy was obtained directly from the PEPSE diagram as the enthalpy after moisture removal in the LP Turbine. Liquid phase enthalpy was calculated as the enthalpy of saturated liquid at the pressure given on the PEPSE diagram.

Table C.7 CHEM_1 Water Treatment Input Data

Species	Sample Location	Concentration	Units	Reference
Dissolved Oxygen	Condensate	5.00	ppb	7.5
Ammonia	Condensate	0.55	ppm	7.5
Hydrazine	Condensate	20.0	ppb	7.5
Hydrazine	SG Outlet	6.312	ppb	7.5
Hydrazine	MSR Drain	12.624	ppb	7.5

Note: This water treatment was used for Cycles 1-13.
See Assumption 4.2.3 concerning this water treatment.

Table C.8 Cycle 14 Water Treatment Input Data

Species	Sample Location	Concentration	Units	Reference
Dissolved Oxygen	Condensate	5.00	ppb	7.5
ETA	Final Feedwater	2.25	ppm	7.5
Ammonia	Condensate	1.00	ppm	7.5
Hydrazine	Condensate	30.0	ppb	7.5
Hydrazine	SG Outlet	15.0	ppb	7.5
Hydrazine	MSR Drain	36.0	ppb	7.5

See Assumption 4.2.3 concerning this water treatment.

Table C.9 Cycle 15 Water Treatment Input Data

Species	Sample Location	Concentration	Units	Reference
Dissolved Oxygen	Condensate	5.00	ppb	7.5
ETA	Final Feedwater	2.25	ppm	7.5
Ammonia	Condensate	3.00	ppm	7.5
Hydrazine	Condensate	100.0	ppb	7.5
Hydrazine	SG Outlet	60.0	ppb	7.5
Hydrazine	MSR Drain	120.0	ppb	7.5

See Assumption 4.2.3 concerning this water treatment.

Table C.10 Cycle 16 Water Treatment Input Data

Species	Sample Location	Concentration	Units	Reference
Dissolved Oxygen	Condensate	3.73	ppb	7.7.2
ETA	Final Feedwater	2.68	ppm	7.7.1
Ammonia	Final Feedwater	2.81	ppm	7.7.1
Hydrazine	Final Feedwater	131.0	ppb	7.7.1
Hydrazine	SG Outlet	78.6	ppb	7.4
Hydrazine	MSR Drain	157.2	ppb	7.4

Table C.11 Cycle 17 Water Treatment Input Data

Species	Sample Location	Concentration	Units	Reference
Dissolved Oxygen	Condensate	6.06	ppb	7.7.3
ETA	Final Feedwater	3.63	ppm	7.7.3
Ammonia	Final Feedwater	2.64	ppm	7.7.3
Hydrazine	Final Feedwater	95.0	ppb	7.7.3
Hydrazine	SG Outlet	57.0	ppb	7.4
Hydrazine	MSR Drain	114.0	ppb	7.4

Table C.12 Cycle 18 Water Treatment Input Data

Species	Sample Location	Concentration	Units	Reference
Dissolved Oxygen	Condensate	6.72	ppb	7.7.4
ETA	Final Feedwater	5.07	ppm	7.7.4
Ammonia	Final Feedwater	2.54	ppm	7.7.4
Hydrazine	Final Feedwater	90.0	ppb	7.7.4
Hydrazine	SG Outlet	54.0	ppb	7.4
Hydrazine	MSR Drain	108.0	ppb	7.4

Table C.13 Cycle 19 Water Treatment Input Data

Species	Sample Location	Concentration	Units	Reference
Dissolved Oxygen	Condensate	4.85	ppb	7.7.5
ETA	Final Feedwater	5.17	ppm	7.7.5
Ammonia	Final Feedwater	3.15	ppm	7.7.5
Hydrazine	Final Feedwater	98.0	ppb	7.7.5
Hydrazine	SG Outlet	58.8	ppb	7.4
Hydrazine	MSR Drain	117.6	ppb	7.4

Table C.14 Plant Period Input Data

Period	Start Date	End Date	Type	Water Treatment	Power Level	Operating Hours	Notes	Ref
CYCLE 1A	5/21/1973	5/22/1973	Op.	CHEM_1	100	0	CYCLE GENERATED AS WORKAROUND TO CHECWORKS PROBLEM. (REF. CHECWORKS FAC VERSION 1.0E OPEN ISSUES MEMO)	7.5
CYCLE 1	5/22/1973	3/30/1976	Op.	CHEM_1	100	12432		7.5
REFUEL 1	3/31/1976	9/20/1976	Maint.	----	----	----		7.5
CYCLE 2	9/21/1976	2/13/1978	Op.	CHEM_1	100	8040		7.5
REFUEL 2	2/14/1978	5/22/1978	Maint.	----	----	----		7.5
CYCLE 3	5/23/1978	6/16/1979	Op.	CHEM_1	100	8136		7.5
REFUEL 3	6/17/1979	9/10/1979	Maint.	----	----	----		7.5
CYCLE 4	9/11/1979	10/17/1980	Op.	CHEM_1	100	7416		7.5
REFUEL 4	10/18/1980	5/20/1981	Maint.	----	----	----		7.5
CYCLE 5	5/21/1981	9/18/1982	Op.	CHEM_1	100	9288		7.5
REFUEL 5	9/19/1982	12/28/1982	Maint.	----	----	----		7.5
CYCLE 6	12/29/1982	6/2/1984	Op.	CHEM_1	100	10080		7.5
REFUEL 6	6/3/1984	10/16/1984	Maint.	----	----	----		7.5
CYCLE 7	10/17/1984	1/13/1986	Op.	CHEM_1	100	9552		7.5
REFUEL 7	1/14/1986	3/11/1986	Maint.	----	----	----		7.5
CYCLE 8	3/12/1986	10/5/1987	Op.	CHEM_1	100	10584		7.5
REFUEL 8	10/6/1987	1/18/1988	Maint.	----	----	----		7.5
CYCLE 9	1/19/1988	3/18/1989	Op.	CHEM_1	100	8808		7.5
REFUEL 9	3/19/1989	6/30/1989	Maint.	----	----	----		7.5
CYCLE 10	7/1/1989	2/1/1991	Op.	CHEM_1	100	9216		7.5
REFUEL 10	2/2/1991	7/11/1991	Maint.	----	----	----		7.5
CYCLE 11	7/12/1991	1/30/1993	Op.	CHEM_1	100	12576		7.5
REFUEL 11	1/31/1993	4/19/1993	Maint.	----	----	----		7.5
CYCLE 12	4/20/1993	2/4/1995	Op.	CHEM_1	100	12960		7.5
REFUEL 12	2/5/1995	6/5/1995	Maint.	----	----	----		7.5
CYCLE 13A	6/6/1995	2/9/1996	Op.	CHEM_1	100	6371		7.5
CYCLE 13B	1/20/1996	4/28/1997	Op.	CHEM_1	100	11149		7.5
INTERIM 13	2/10/1996	2/19/1996	Maint.	----	----	----		7.5
REFUEL 13	4/28/1997	7/10/1997	Maint.	----	----	----		7.5
CYCLE 14	7/11/1997	2/15/2000	Op.	Cycle 14	100	12964.7	Steam Generator tube rupture occurred 2/15/00. Plant rolled into the refueling outage as a result.	7.5
REFUEL 14	2/16/2000	1/2/2001	Maint.	----	----	----		7.5
CYCLE 15A	1/3/2001	10/27/2001	Op.	Cycle 15	100	7148.9	Mid cycle outage 10/27/01 due to pzr leak	7.5
INTERIM 15	10/28/2001	11/5/2001	Maint.	----	----	----	MID CYCLE OUTAGE.	7.5
CYCLE 15B	11/5/2001	10/26/2002	Op.	Cycle 15	100	8390.8	Total Cycle 15 turbine on line hours provided by e-mail from Hazel Pearsall to Scot Blodgett dated 10/28/02. The length of Cycle 15B was determined by subtracting the hours at Cycle 15A from the total operating hours for the cycle (15539.70).	7.5

Period	Start Date	End Date	Type	Water Treatment	Power Level	Operating Hours	Notes	Ref
REFUEL 15	10/26/2002	11/27/2002	Maint.	----	----	----	32 DAY OUTAGE	7.5
CYCLE 16A	11/27/2002	5/22/2003	Op.	Cycle 16	100	4132		7.5
CYCLE 16B	5/23/2003	10/22/2004	Op.	Cycle 16	101.19	12232	Appendix K Uprate implementation	7.5
REFUEL 16	10/23/2004	11/18/2004	Maint.	----	----	----		7.5
CYCLE 17	11/19/2004	4/19/2006	Op.	Cycle 17	104.48	12292	Stretch Power Uprate (SPU) implementation.	7.7
REFUEL 17	4/20/2006	5/18/2006	Maint.	----	----	----		7.7
CYCLE 18	5/19/2006	3/23/2008	Op.	Cycle 18	104.48	16036.56	Period end date and Op hours provided by plant personnel.	7.7
REFUEL 18	3/24/2008	4/21/2008	Maint.	----	----	----	2R18 Outage	7.7
CYCLE 19	4/22/2008	3/9/2010	Op.	Cycle 19	104.48	16395	Period end date and Op hours provided by plant personnel.	7.7
REFUEL 19	3/10/2010	4/8/2010	Maint.	----	----	----	2R19 Outage	7.7
CYCLE 20	4/9/2010	*4/9/2012**	Op.	*Cycle 19**	*104.48**	*17520**	End date and Op hours assume 24 month cycle with same Water Chem as previous cycle.	7.7
REFUEL 20	*4/10/2012**	*5/10/2010**	Maint.	----	----	----	2R20 Outage. Refuel dates are estimated.	N/A

**Italicized values are estimated*

Appendix D

CHECWORKS Modeled Lines

CHECWORKS Line Name	Line Description	Wear Rate Analysis Run Name	Flow Diagram No.	Op Cond Source	Flow Factor	Duty Factor
CD80-1-FWH 23A to FWH 24A	Feedwater Heater 23A to Feedwater Heater 24A	CND FWH 23 TO FWH 24	A235307-29	HBD	0.333	1
CD80-2-FWH 23B to FWH 24B	Feedwater Heater 23B to Feedwater Heater 24B	CND FWH 23 TO FWH 24	A235307-29	HBD	0.333	1
CD80-3-FWH 23C to FWH 24C	Feedwater Heater 23C to Feedwater Heater 24C	CND FWH 23 TO FWH 24	A235307-29	HBD	0.333	1
CD80A-1-FWH 22A to HEADER	Feedwater Heater 22A to Header	CND FWH 22 TO FWH 23	A235307-29	HBD	0.333	1
CD80A-2-FWH 22B to HEADER	Feedwater Heater 22B to Header	CND FWH 22 TO FWH 23	A235307-29	HBD	0.333	1
CD80A-3-FWH 22C to HEADER	Feedwater Heater 22C to Header	CND FWH 22 TO FWH 23	A235307-29	HBD	0.333	1
CD80A-4-FWH 22 OUTLET HEADER	Feedwater Heater 22 Outlet Header Between 22BT and 22CT	CND FWH 22 TO FWH 23	A235307-29	HBD	0.667	1
CD80A-5-FWH 22 to FWH 23 HEAD	Feedwater Heater 22 Outlet Header to Feedwater Heater 23 Inlet Header	CND FWH 22 TO FWH 23	A235307-29	HBD	1	1
CD80A-6-FWH 23 INLET HEADER	Feedwater Heater 22 Inlet Header Between 23CT and 23BT	CND FWH 22 TO FWH 23	A235307-29	HBD	0.667	1
CD80A-7-HEADER to FWH 23A	Feedwater Heater 23 Inlet Header to Feedwater Heater 23A	CND FWH 22 TO FWH 23	A235307-29	HBD	0.333	1
CD80A-8-HEADER to FWH 23B	Feedwater Heater 23 Inlet Header to Feedwater Heater 23B	CND FWH 22 TO FWH 23	A235307-29	HBD	0.333	1
CD80A-9-HEADER to FWH 23C	Feedwater Heater 23 Inlet Header to Feedwater Heater 23C	CND FWH 22 TO FWH 23	A235307-29	HBD	0.333	1
CD81-1-FWH 24A to FWH 25A	Feedwater Heater 24A to Feedwater Heater 25A	CND FWH 24 TO FWH 25	A235307-29	HBD	0.333	1
CD81-2-FWH 24B to FWH 25B	Feedwater Heater 24B to Feedwater Heater 25B	CND FWH 24 TO FWH 25	A235307-29	HBD	0.333	1
CD81-3-FWH 24C to FWH 25C	Feedwater Heater 24C to Feedwater Heater 25C	CND FWH 24 TO FWH 25	A235307-29	HBD	0.333	1
CD82-1-FWH 25A to HDR	Feedwater Heater 25A to Header	CND FWH 25 TO HEADER	A235307-29	HBD	0.333	1
CD82-2-FWH 25B to HDR	Feedwater Heater 25B to Header	CND FWH 25 TO HEADER	A235307-29	HBD	0.333	1
CD82-3-FWH 25C to HDR	Feedwater Heater 25C to Header	CND FWH 25 TO HEADER	A235307-29	HBD	0.333	1
CD82-4-HDR 25BT to 25CT	Feedwater Heater 25 Outlet Header Between 25B Tee and 25C Tee	CND FWH 25 TO HEADER	A235307-29	HBD	0.667	1
CD82-5-HDR 25CT to HDP OUT	Feedwater Heater 25 Outlet Header Between 25C Tee and Heater Drain Pump Outlet Connection	CND FWH 25 TO HEADER	A235307-29	HBD	1	1
CD83-1-HDR HDP to BFP21T	Feedwater Heater 25 Outlet Header Between Connection from HDP Discharge and Boiler Feed Pump 21 Tee	CND DWNSTRM HDPD	A235307-29	Z-type	1	1

CHECWORKS Line Name	Line Description	Wear Rate Analysis Run Name	Flow Diagram No.	Op Cond Source	Flow Factor	Duty Factor
CD83-2-HDR to BFP21	Feedwater Heater Header to Boiler FeedPump21	CND DWNSTRM HDPD	A235307-29	Z-type	0.5	1
CD83-3-HDR to BFP22	Feedwater Heater Header to Boiler FeedPump22	CND DWNSTRM HDPD	A235307-29	Z-type	0.5	1
ES?-1-1STPT ES TO FWH 21A	Extraction Steam to Feedwater Heater 21A	1ST POINT EXTRAC STM	9321-F-2020-41	HBD	0.083	1
ES?-1-1STPT ES TO FWH 21B	Extraction Steam to Feedwater Heater 21B	1ST POINT EXTRAC STM	9321-F-2020-41	HBD	0.083	1
ES?-1-1STPT ES TO FWH 21C	Extraction Steam to Feedwater Heater 21C	1ST POINT EXTRAC STM	9321-F-2020-41	HBD	0.083	1
ES?-1-2NDPT ES TO FWH 22A	Extraction Steam to Feedwater Heater 22A	2ND POINT EXTRAC STM	9321-F-2020-41	HBD	0.167	1
ES?-1-2NDPT ES TO FWH 22B	Extraction Steam to Feedwater Heater 22B	2ND POINT EXTRAC STM	9321-F-2020-41	HBD	0.167	1
ES?-1-2NDPT ES TO FWH 22C	Extraction Steam to Feedwater Heater 22C	2ND POINT EXTRAC STM	9321-F-2020-41	HBD	0.167	1
ES?-2-1STPT ES TO FWH 21A	Extraction Steam to Feedwater Heater 21A	1ST POINT EXTRAC STM	9321-F-2020-41	HBD	0.083	1
ES?-2-1STPT ES TO FWH 21B	Extraction Steam to Feedwater Heater 21B	1ST POINT EXTRAC STM	9321-F-2020-41	HBD	0.083	1
ES?-2-1STPT ES TO FWH 21C	Extraction Steam to Feedwater Heater 21C	1ST POINT EXTRAC STM	9321-F-2020-41	HBD	0.083	1
ES?-2-2NDPT ES TO FWH 22A	Extraction Steam to Feedwater Heater 22A	2ND POINT EXTRAC STM	9321-F-2020-41	HBD	0.167	1
ES?-2-2NDPT ES TO FWH 22B	Extraction Steam to Feedwater Heater 22B	2ND POINT EXTRAC STM	9321-F-2020-41	HBD	0.167	1
ES?-2-2NDPT ES TO FWH 22C	Extraction Steam to Feedwater Heater 22C	2ND POINT EXTRAC STM	9321-F-2020-41	HBD	0.167	1
ES?-3-1STPT ES TO FWH 21A	Extraction Steam to Feedwater Heater 21A	1ST POINT EXTRAC STM	9321-F-2020-41	HBD	0.083	1
ES?-3-1STPT ES TO FWH 21B	Extraction Steam to Feedwater Heater 21B	1ST POINT EXTRAC STM	9321-F-2020-41	HBD	0.083	1
ES?-3-1STPT ES TO FWH 21C	Extraction Steam to Feedwater Heater 21C	1ST POINT EXTRAC STM	9321-F-2020-41	HBD	0.083	1
ES?-4-1STPT ES TO FWH 21A	Extraction Steam to Feedwater Heater 21A	1ST POINT EXTRAC STM	9321-F-2020-41	HBD	0.083	1
ES?-4-1STPT ES TO FWH 21B	Extraction Steam to Feedwater Heater 21B	1ST POINT EXTRAC STM	9321-F-2020-41	HBD	0.083	1
ES?-4-1STPT ES TO FWH 21C	Extraction Steam to Feedwater Heater 21C	1ST POINT EXTRAC STM	9321-F-2020-41	HBD	0.083	1

CHECWORKS Line Name	Line Description	Wear Rate Analysis Run Name	Flow Diagram No.	Op Cond Source	Flow Factor	Duty Factor
ES1-1-3RDPT ES to FWH 23A	3rd Point Extraction Steam from 21 LP Turbine to Extration header to Feedwater Heater 23A (Line 1 or 2)	3RD POINT EXTRAC STM	9321-F-2020-41	HBD	0.167	1
ES1-2-3RDPT ES to FWH 23A	3rd Point Extraction Steam from 21 LP Turbine to Extration header to Feedwater Heater 23A (Line 2 or 2)	3RD POINT EXTRAC STM	9321-F-2020-41	HBD	0.167	1
ES1-3-3RDPT ES to FWH 23A	Condenser Outlet 3rd Point Extraction Steam to Tee Upstream of Feedwater Heater 23A	3RD POINT EXTRAC STM	9321-F-2020-41	HBD	0.333	1
ES1-4-3RDPT ES to FWH 23A	3rd Point Extraction Steam Tee to Feedwater Heater 23A (Line 1 of 2)	3RD POINT EXTRAC STM	9321-F-2020-41	HBD	0.167	1
ES1-5-3RDPT ES to FWH 23A	3rd Point Extraction Steam Tee to Feedwater Heater 23A (Line 2 of 2)	3RD POINT EXTRAC STM	9321-F-2020-41	HBD	0.167	1
ES2-1-3RDPT ES to FWH 23B	3rd Point Extraction Steam from 22 LP Turbine to Extration header to Feedwater Heater 23B (Line 1 of 2)	3RD POINT EXTRAC STM	9321-F-2020-41	HBD	0.167	1
ES2-2-3RDPT ES to FWH 23B	3rd Point Extraction Steam from 22 LP Turbine to Extration header to Feedwater Heater 23B (Line 2 of 2)	3RD POINT EXTRAC STM	9321-F-2020-41	HBD	0.167	1
ES2-3-3RDPT ES to FWH 23B	Condenser Outlet 3rd Point Extraction Steam to Tee Upstream of Feedwater Heater 23B	3RD POINT EXTRAC STM	9321-F-2020-41	HBD	0.333	1
ES2-4-3RDPT ES to FWH 23B	3rd Point Extraction Steam Tee to Feedwater Heater 23B (Line 1 of 2)	3RD POINT EXTRAC STM	9321-F-2020-41	HBD	0.167	1
ES2-5-3RDPT ES to FWH 23B	3rd Point Extraction Steam Tee to Feedwater Heater 23B (Line 2 of 2)	3RD POINT EXTRAC STM	9321-F-2020-41	HBD	0.167	1
ES3-1-3RDPT ES to FWH 23C	3rd Point Extraction Steam from 23 LP Turbine to Extraction header to Feedwater Heater 23C (Line 1 of 2)	3RD POINT EXTRAC STM	9321-F-2020-41	HBD	0.167	1
ES3-2-3RDPT ES to FWH 23C	3rd Point Extraction Steam from 23 LP Turbine to Extraction header to Feedwater Heater 23C (Line 2 of 2)	3RD POINT EXTRAC STM	9321-F-2020-41	HBD	0.167	1
ES3-3-3RDPT ES to FWH 23C	Condenser Outlet 3rd Point Extraction Steam to Tee Upstream of Feedwater Heater 23C	3RD POINT EXTRAC STM	9321-F-2020-41	HBD	0.333	1
ES3-4-3RDPT ES to FWH 23C	3rd Point Extraction Steam Tee to Feedwater Heater 23C (Line 1 of 2)	3RD POINT EXTRAC STM	9321-F-2020-41	HBD	0.167	1
ES3-5-3RDPT ES to FWH 23C	3rd Point Extraction Steam Tee to Feedwater Heater 23C (Line 2 of 2)	3RD POINT EXTRAC STM	9321-F-2020-41	HBD	0.167	1

CHECWORKS Line Name	Line Description	Wear Rate Analysis Run Name	Flow Diagram No.	Op Cond Source	Flow Factor	Duty Factor
ES4-1-4THPT ES to FWH 24A	Condenser Outlet 4th Point Extraction Steam to Feedwater Heater 24A	4TH POINT EXTRAC STM	9321-F-2020-41	HBD	0.333	1
ES5-1-4THPT ES to FWH 24B	Condenser Outlet 4th Point Extraction Steam to Feedwater Heater 24B	4TH POINT EXTRAC STM	9321-F-2020-41	HBD	0.333	1
ES6-1-4THPT ES to FWH 24C	Condenser Outlet 4th Point Extraction Steam to Feedwater Heater 24C	4TH POINT EXTRAC STM	9321-F-2020-41	HBD	0.333	1
ES7-1-5THPT ES to FWH 25ABC	5th Point Extraction Steam Header to Feedwater Heater 25A,B,C	5TH POINT EXTRAC STM	9321-F-2020-41	HBD	1	1
ES7-2-5THPT ESHDR to FWH 25C	5th Point Extraction Steam Header to Feedwater Heater 25C	5TH POINT EXTRAC STM	9321-F-2020-41	HBD	0.333	1
ES7-3-5THPT ESHDR 25CT to BT	5th Point Extraction Steam Header Between Tee to Feedwater Heater 25C and Feedwater Heater 25B	5TH POINT EXTRAC STM	9321-F-2020-41	HBD	0.667	1
ES7-4-5THPT ESHDR to FWH 25B	5th Point Extraction Steam Header to Feedwater Heater 25B	5TH POINT EXTRAC STM	9321-F-2020-41	HBD	0.333	1
ES7-5-5THPT ESHDR to FWH 25A	5th Point Extraction Steam Header to Feedwater Heater 25A	5TH POINT EXTRAC STM	9321-F-2020-41	HBD	0.333	1
ES7A-1-SEP TKA VNT to FWH25	Moisture Preseparator Separating Tank A Vent to Header Upstream of Feedwater Heaters 25A,B,C	5TH POINT EXTRAC STM	A228272-15	HBD	0.5	1
ES7A-2-SEP TKB VNT to FWH25	Moisture Preseparator Separating Tank B Vent to Header Upstream of Feedwater Heaters 25A,B,C	5TH POINT EXTRAC STM	A228272-15	HBD	0.5	1
ES8-1-6THPT ES to HDR	HP Turbine 6th Point Extraction Steam to Header	6TH POINT EXTRAC STM	9321-F-2020-41	HBD	0.5	1
ES8-2-6THPT ES to HDR	HP Turbine 6th Point Extraction Steam to Header	6TH POINT EXTRAC STM	9321-F-2020-41	HBD	0.5	1
ES8-3-6THPT ESHDR to FWH 26	HP Turbine 6th Point Extraction Steam Header to Feedwater Heater 26A,B,C	6TH POINT EXTRAC STM	9321-F-2020-41	HBD	1	1
ES8-4-6THPT ESHDR to FWH 26C	HP Turbine 6th Point Extraction Steam Header to Feedwater Heater 26C	6TH POINT EXTRAC STM	9321-F-2020-41	HBD	0.333	1
ES8-5-6THPT ESHDR 26CT to BT	HP Turbine 6th Point Extraction Steam to Header Between Tee to Feedwater Heater 26C and Feedwater Heater 26B	6TH POINT EXTRAC STM	9321-F-2020-41	HBD	0.667	1

CHECWORKS Line Name	Line Description	Wear Rate Analysis Run Name	Flow Diagram No.	Op Cond Source	Flow Factor	Duty Factor
ES8-6-6THPT ESHDR to FWH 26B	HP Turbine 6th Point Extraction Steam Header to Feedwater Heater 26B	6TH POINT EXTRAC STM	9321-F-2020-41	HBD	0.333	1
ES8-7-6THPT ESHDR to FWH 26A	HP Turbine 6th Point Extraction Steam Header to Feedwater Heater 26A	6TH POINT EXTRAC STM	9321-F-2020-41	HBD	0.333	1
ES-BFPT Drain to Condenser 21	**THIS LINE IS NOT FULLY MODELED**. Boiler Feed Pump Turbine Drain to Condenser #21	ES - BFPT DRN TO COND	9321-F-2019	HBD	0.5	1
ES-BFPT Drain to Condenser 22	**THIS LINE IS NOT FULLY MODELED**. Boiler Feed Pump Turbine Drain to Condenser #22	ES - BFPT DRN TO COND	9321-F-2019	HBD	0.5	1
FW71-1-BFP21 DISCH to HDR	Boiler Feedpump 21 Discharge to Header	FW BFP TO FWH 26	9321-F-2019-110	Z-type	0.5	1
FW72-1-BFP22 DISCH to HDR	Boiler Feedpump 22 Discharge to Header	FW BFP TO FWH 26	9321-F-2019-110	Z-type	0.5	1
FW73-1-BFPHDR to FWH26ABC	Boiler Feedpump Header to Feedwater Heater 26A,B,C Between BFP Discharge Tee and High Pressure Feedwater Heater Bypass Tee	FW BFP TO FWH 26	9321-F-2019-110	Z-type	1	1
FW73-2-BFPHDR to FWH26ABC	Boiler Feedpump Header to Feedwater Heater 26A,B,C Between High Pressure Feedwater Heater Bypass Tee and Feedwater Heater 26C Tee	FW BFP TO FWH 26	9321-F-2019-110	Z-type	1	1
FW73-3-BFPHDR to FWH26C	Boiler Feedpump Header to Feedwater Heater 26C	FW BFP TO FWH 26	9321-F-2019-110	Z-type	0.333	1
FW73-4-BFPHDR to FWH26ABC	Boiler Feedpump Header to Feedwater Heater 26A,B,C Between Feedwater Heater 26C Tee and Feedwater Heater 26B Tee	FW BFP TO FWH 26	9321-F-2019-110	Z-type	0.667	1
FW73-5-BFPHDR to FWH26B	Boiler Feedpump Header to Feedwater Heater 26B	FW BFP TO FWH 26	9321-F-2019-110	Z-type	0.333	1
FW73-6-BFPHDR to FWH26A	Boiler Feedpump Header to Feedwater Heater 26A	FW BFP TO FWH 26	9321-F-2019-110	Z-type	0.333	1
FW74-1-FWH26A to DISHDR	Feedwater Heater 26A to Heater Discharge Header	FW FWH 26 TO STM GEN	9321-F-2019-110	HBD	0.333	1
FW74-2-FWH26B to DISHDR	Feedwater Heater 26B to Heater Discharge Header	FW FWH 26 TO STM GEN	9321-F-2019-110	HBD	0.333	1

CHECWORKS Line Name	Line Description	Wear Rate Analysis Run Name	Flow Diagram No.	Op Cond Source	Flow Factor	Duty Factor
FW74-3-FWH26 to DISHDR	Feedwater Heater 26 Discharge Header Between 26B Tee and 26C Tee	FW FWH 26 TO STM GEN	9321-F-2019-110	HBD	0.667	1
FW74-4-FWH26C to DISHDR	Feedwater Heater 26C to Heater Discharge Header	FW FWH 26 TO STM GEN	9321-F-2019-110	HBD	0.333	1
FW74-5-FWH26 to DISHDR	Feedwater Heater 26 Discharge Header Between 26C Tee and Steam Generator Takeoff	FW FWH 26 TO STM GEN	9321-F-2019-110	HBD	1	1
FW75-1-DISHDR to SG21	Feedwater Heater 26 Discharge Header to Steam Generator 21	FW FWH 26 TO STM GEN	9321-F-2019-110	HBD	0.25	1
FW76-1-DISHDR to SG22	Feedwater Heater 26 Discharge Header to Steam Generator 22	FW FWH 26 TO STM GEN	9321-F-2019-110	HBD	0.25	1
FW76-2-DISHDR to SG22	Feedwater Heater 26 Discharge Header to Steam Generator 22	FW FWH 26 TO STM GEN	9321-F-2019-110	HBD	0.75	1
FW77-1-DISHDR to SG24	Feedwater Heater 26 Discharge Header to Steam Generator 24	FW FWH 26 TO STM GEN	9321-F-2019-110	HBD	0.25	1
FW77-2-DISHDR to SG24	Feedwater Heater 26 Discharge Header to Steam Generator 24	FW FWH 26 TO STM GEN	9321-F-2019-110	HBD	0.5	1
FW78-1-DISHDR to SG23	Feedwater Heater 26 Discharge Header to Steam Generator 23	FW FWH 26 TO STM GEN	9321-F-2019-110	HBD	0.25	1
HD12-1-FWH26A to CV	Feedwater Heater 26A to CV Upstream of Heater Drain Tank	FWH 26 DRNS USCV	9321-F-2022-52	Z-type	0.333	1
HD12-2-FWH26B to CV	Feedwater Heater 26B to CV Upstream of Heater Drain Tank	FWH 26 DRNS USCV	9321-F-2022-52	Z-type	0.333	1
HD12-3-FWH26C to CV	Feedwater Heater 26C to CV Upstream of Heater Drain Tank	FWH 26 DRNS USCV	9321-F-2022-52	Z-type	0.333	1
HD12-4-FWH26A CV to HTR DR TK	Feedwater Heater 26A CV to Heater Drain Tank	FWH 26 DRNS DSCV	9321-F-2022-52	Z-type	0.333	1
HD12-5-FWH26B CV to HTR DR TK	Feedwater Heater 26B CV to Heater Drain Tank	FWH 26 DRNS DSCV	9321-F-2022-52	Z-type	0.333	1
HD12-6-FWH26C CV to HTR DR TK	Feedwater Heater 26C CV to Heater Drain Tank	FWH 26 DRNS DSCV	9321-F-2022-52	Z-type	0.333	1
HD19-1-HDT to HDP 21 SUCT	Heater Drain Tank to Heater Drain Pump 21	HTR DRN TANK DRN	9321-F-2022-52	HBD	0.5	1
HD19-2-HDT to HDP 22 SUCT	Heater Drain Tank to Heater Drain Pump 22	HTR DRN TANK DRN	9321-F-2022-52	HBD	0.5	1
HD20-1-HDP21 to BFP SUCTION	Heater Drain Pump 21 to Boiler Feed Pump Suction	HTR DRN PMP DISCH	9321-F-2022-52	HBD	0.5	1
HD20-2-HDP22 to BFP SUCTION	Heater Drain Pump 22 to Boiler Feed Pump Suction	HTR DRN PMP DISCH	9321-F-2022-52	HBD	0.5	1

CHECWORKS Line Name	Line Description	Wear Rate Analysis Run Name	Flow Diagram No.	Op Cond Source	Flow Factor	Duty Factor
HD20-3-HDP DIS T to BFP SUC	Heater Drain Pump Discharge Tee to Boiler Feed Pump Suction	HTR DRN PMP DISCH	9321-F-2022-52	HBD	1	1
HD21A-1-FWH24A to CV	Feedwater Heater 24A to CV Upstream of Feedwater Heater 23A	FWH 24 DRNS USCV	A235304-23	Z-type	0.333	1
HD21A-2-FWH24A CV to FWH23A	Feedwater Heater 24A CV to Feedwater Heater 23A	FWH 24 DRNS DSCV	A235304-23	Z-type	0.333	1
HD22A-1-FWH24B to CV	Feedwater Heater 24B to CV Upstream of Feedwater Heater 23B	FWH 24 DRNS USCV	A235304-23	Z-type	0.333	1
HD22A-2-FWH24B CV to FWH23B	Feedwater Heater 24B CV to Feedwater Heater 23B	FWH 24 DRNS DSCV	A235304-23	Z-type	0.333	1
HD23A-1-FWH24C to CV	Feedwater Heater 24C to CV Upstream of Feedwater Heater 23C	FWH 24 DRNS USCV	A235304-23	Z-type	0.333	1
HD23A-2-FWH24C CV to FWH23C	Feedwater Heater 24C CV to Feedwater Heater 23C	FWH 24 DRNS DSCV	A235304-23	Z-type	0.333	1
HD242A-1-FWH23A CV to FWH22A	Feedwater Heater 23A CV to Feedwater Heater 22A	FWH 23 DRNS DSCV	A235304-23	Z-type	0.333	1
HD243A-1-FWH23B CV to FWH22B	Feedwater Heater 23B CV to Feedwater Heater 22B	FWH 23 DRNS DSCV	A235304-23	Z-type	0.333	1
HD244A-1-FWH23C CV to FWH22C	Feedwater Heater 23C CV to Feedwater Heater 22C	FWH 23 DRNS DSCV	A235304-23	Z-type	0.333	1
HD24A-1-FWH23A to CV	Feedwater Heater 23A to CV Upstream of Feedwater Heater 22A	FWH 23 DRNS USCV	A235304-23	Z-type	0.333	1
HD25A-1-FWH23B to CV	Feedwater Heater 23B to CV Upstream of Feedwater Heater 22B	FWH 23 DRNS USCV	A235304-23	Z-type	0.333	1
HD26A-1-FWH23C to CV	Feedwater Heater 23C to CV Upstream of Feedwater Heater 22C	FWH 23 DRNS USCV	A235304-23	Z-type	0.333	1
HD9-1-FWH25A to HTR DRN TK	Feedwater Heater 25A Drain to Heater Drain Tank	FWH 25 DRNS TO HDT	9321-F-2022-52	Z-type	0.333	1
HD9-2-FWH25B to HTR DRN TK	Feedwater Heater 25B Drain to Heater Drain Tank	FWH 25 DRNS TO HDT	9321-F-2022-52	Z-type	0.333	1
HD9-3-FWH25C to HTR DRN TK	Feedwater Heater 25C Drain to Heater Drain Tank	FWH 25 DRNS TO HDT	9321-F-2022-52	Z-type	0.333	1
HD-FWH 21A Drain to Cond 23	Feedwater Heater 21A Drain line to Condenser 23 through valve LCV 1124	HD - FWH 21 TO COND	A235304	HBD	0.333	1
HD-FWH 21B Drain to Cond 22	Feedwater Heater 21B Drain line to Condenser 22 through valve LCV 1125	HD - FWH 21 TO COND	A235304	HBD	0.333	1
HD-FWH 21C Drain to Cond 21	Feedwater Heater 21C Drain line to Condenser 21 through valve LCV 1126	HD - FWH 21 TO COND	A235304	HBD	0.333	1

CHECWORKS Line Name	Line Description	Wear Rate Analysis Run Name	Flow Diagram No.	Op Cond Source	Flow Factor	Duty Factor
HD-FWH 22A Drain to FWH 21A	**THIS LINE IS NOT FULLY MODELED**. Feedwater Heater 22A Drain to Feedwater Heater 21A	HD - FWH 22 TO FWH 21	A235304	HBD	0.333	1
HD-FWH 22B Drain to FWH 21B	Feedwater Heater 22B Drain to Feedwater Heater 21B	HD - FWH 22 TO FWH 21	A235304	HBD	0.333	1
HD-FWH 22C Drain to FWH 21C	**THIS LINE IS NOT FULLY MODELED.** Feedwater Heater 22C Drain to Feedwater Heater 21C	HD - FWH 22 TO FWH 21	A235304	HBD	0.333	1
MS56-1-PRESEP to MSR-A	Pre-Separator to Moisture Separator Reheater - A (Line 1 of 2)	CROSSUNDER	A235308	Z-type	0.25	1
MS56-2-PRESEP to MSR-A	Pre-Separator to Moisture Separator Reheater - A (Line 2 of 2)	CROSSUNDER	A235308	Z-type	0.25	1
MS56-3-PRESEP to MSR-A	Pre-Separator to Moisture Separator Reheater - A	CROSSUNDER	A235308	Z-type	0.5	1
MS56-4-PRESEP to MSR23A	Pre-Separator to Moisture Separator Reheater - 23A	CROSSUNDER	A235308	Z-type	0.167	1
MS56-5-PRESEP to MSR-A	Pre-Separator to Moisture Separator Reheater - A	CROSSUNDER	A235308	Z-type	0.333	1
MS56-6-PRESEP to MSR22A	Pre-Separator to Moisture Separator Reheater - 22A	CROSSUNDER	A235308	Z-type	0.167	1
MS56-7-PRESEP to MSR21A	Pre-Separator to Moisture Separator Reheater - 21A	CROSSUNDER	A235308	Z-type	0.167	1
MS57-1-PRESEP to MSR-B	Pre-Separator to Moisture Separator Reheater - B (Line 1 of 2)	CROSSUNDER	A235308	Z-type	0.25	1
MS57-2-PRESEP to MSR-B	Pre-Separator to Moisture Separator Reheater - B (Line 2 of 2)	CROSSUNDER	A235308	Z-type	0.25	1
MS57-3-PRESEP to MSR-B	Pre-Separator to Moisture Separator Reheater - B	CROSSUNDER	A235308	Z-type	0.5	1
MS57-4-PRESEP to MSR23B	Pre-Separator to Moisture Separator Reheater - 23B	CROSSUNDER	A235308	Z-type	0.167	1
MS57-5-PRESEP to MSR-B	Pre-Separator to Moisture Separator Reheater - B	CROSSUNDER	A235308	Z-type	0.333	1
MS57-6-PRESEP to MSR22B	Pre-Separator to Moisture Separator Reheater - 22B	CROSSUNDER	A235308	Z-type	0.167	1
MS57-7-PRESEP to MSR21B	Pre-Separator to Moisture Separator Reheater - 21B	CROSSUNDER	A235308	Z-type	0.167	1
MSD27-1-MS21A to MSDT 21A	Moisture Separator 21A to Header Upstream of Moisture Separator Drain Tank 21A (Line 1 of 3)	MSR SHELL DRAINS	9321-F-2023-31	Z-type	0.056	1
MSD27-2-MS21A to MSDT 21A	Moisture Separator 21A to Header Upstream of Moisture Separator Drain Tank 21A (Line 2 of 3)	MSR SHELL DRAINS	9321-F-2023-31	Z-type	0.056	1

CHECWORKS Line Name	Line Description	Wear Rate Analysis Run Name	Flow Diagram No.	Op Cond Source	Flow Factor	Duty Factor
MSD27-3-MS21A to MSDT 21A	Moisture Separator 21A to Header Upstream of Moisture Separator Drain Tank 21A (Line 3 of 3)	MSR SHELL DRAINS	9321-F-2023-31	Z-type	0.056	1
MSD27-4-MS21A to MSDT 21A	Moisture Separator 21A Header Upstream of Moisture Separator Drain Tank 21A	MSR SHELL DRAINS	9321-F-2023-31	Z-type	0.112	1
MSD27-5-MS21A to MSDT 21A	Moisture Separator 21A Header to Moisture Separator Drain Tank 21A	MSR SHELL DRAINS	9321-F-2023-31	Z-type	0.167	1
MSD28-1-MS22A to MSDT 22A	Moisture Separator 22A to Header Upstream of Moisture Separator Drain Tank 22A (Line 1 of 3)	MSR SHELL DRAINS	9321-F-2023-31	Z-type	0.056	1
MSD28-2-MS22A to MSDT 22A	Moisture Separator 22A to Header Upstream of Moisture Separator Drain Tank 22A (Line 2 of 3)	MSR SHELL DRAINS	9321-F-2023-31	Z-type	0.056	1
MSD28-3-MS22A to MSDT 22A	Moisture Separator 22A to Header Upstream of Moisture Separator Drain Tank 22A (Line 3 of 3)	MSR SHELL DRAINS	9321-F-2023-31	Z-type	0.056	1
MSD28-4-MS22A to MSDT 22A	Moisture Separator 22A Header Upstream of Moisture Separator Drain Tank 22A	MSR SHELL DRAINS	9321-F-2023-31	Z-type	0.112	1
MSD28-5-MS22A to MSDT 22A	Moisture Separator 22A Header to Moisture Separator Drain Tank 22A	MSR SHELL DRAINS	9321-F-2023-31	Z-type	0.167	1
MSD29-1-MS23A to MSDT 23A	Moisture Separator 23A to Header Upstream of Moisture Separator Drain Tank 23A (Line 1 of 3)	MSR SHELL DRAINS	9321-F-2023-31	Z-type	0.056	1
MSD29-2-MS23A to MSDT 23A	Moisture Separator 23A to Header Upstream of Moisture Separator Drain Tank 23A (Line 2 of 3)	MSR SHELL DRAINS	9321-F-2023-31	Z-type	0.056	1
MSD29-3-MS23A to MSDT 23A	Moisture Separator 23A to Header Upstream of Moisture Separator Drain Tank 23A (Line 3 of 3)	MSR SHELL DRAINS	9321-F-2023-31	Z-type	0.056	1
MSD29-4-MS23A to MSDT 23A	Moisture Separator 23A Header Upstream of Moisture Separator Drain Tank 23A	MSR SHELL DRAINS	9321-F-2023-31	Z-type	0.112	1
MSD29-5-MS23A to MSDT 23A	Moisture Separator 23A Header to Moisture Separator Drain Tank 23A	MSR SHELL DRAINS	9321-F-2023-31	Z-type	0.167	1
MSD30-1-MS21B to MSDT 21B	Moisture Separator 21B to Header Upstream of Moisture Separator Drain Tank 21B (Line 1 of 3)	MSR SHELL DRAINS	9321-F-2023-31	Z-type	0.056	1
MSD30-2-MS21B to MSDT 21B	Moisture Separator 21B to Header Upstream of Moisture Separator Drain Tank 21B (Line 2 of 3)	MSR SHELL DRAINS	9321-F-2023-31	Z-type	0.056	1

CHECWORKS Line Name	Line Description	Wear Rate Analysis Run Name	Flow Diagram No.	Op Cond Source	Flow Factor	Duty Factor
MSD30-3-MS21B to MSDT 21B	Moisture Separator 21B to Header Upstream of Moisture Separator Drain Tank 21B (Line 3 of 3)	MSR SHELL DRAINS	9321-F-2023-31	Z-type	0.056	1
MSD30-4-MS21B to MSDT 21B	Moisture Separator 21B Header Upstream of Moisture Separator Drain Tank 21B	MSR SHELL DRAINS	9321-F-2023-31	Z-type	0.112	1
MSD30-5-MS21B to MSDT 21B	Moisture Separator 21B Header to Moisture Separator Drain Tank 21B	MSR SHELL DRAINS	9321-F-2023-31	Z-type	0.167	1
MSD31-1-MS22B to MSDT 22B	Moisture Separator 22B to Header Upstream of Moisture Separator Drain Tank 22B (Line 1 of 3)	MSR SHELL DRAINS	9321-F-2023-31	Z-type	0.056	1
MSD31-2-MS22B to MSDT 22B	Moisture Separator 22B to Header Upstream of Moisture Separator Drain Tank 22B (Line 2 of 3)	MSR SHELL DRAINS	9321-F-2023-31	Z-type	0.056	1
MSD31-3-MS22B to MSDT 22B	Moisture Separator 22B to Header Upstream of Moisture Separator Drain Tank 22B (Line 3 of 3)	MSR SHELL DRAINS	9321-F-2023-31	Z-type	0.056	1
MSD31-4-MS22B to MSDT 22B	Moisture Separator 22B Header Upstream of Moisture Separator Drain Tank 22B	MSR SHELL DRAINS	9321-F-2023-31	Z-type	0.112	1
MSD31-5-MS22B to MSDT 22B	Moisture Separator 22B Header to Moisture Separator Drain Tank 22B	MSR SHELL DRAINS	9321-F-2023-31	Z-type	0.167	1
MSD32-1-MS23B to MSDT 23B	Moisture Separator 23B to Header Upstream of Moisture Separator Drain Tank 23B (Line 1 of 3)	MSR SHELL DRAINS	9321-F-2023-31	Z-type	0.056	1
MSD32-2-MS23B to MSDT 23B	Moisture Separator 23B to Header Upstream of Moisture Separator Drain Tank 23B (Line 2 of 3)	MSR SHELL DRAINS	9321-F-2023-31	Z-type	0.056	1
MSD32-3-MS23B to MSDT 23B	Moisture Separator 23B to Header Upstream of Moisture Separator Drain Tank 23B (Line 3 of 3)	MSR SHELL DRAINS	9321-F-2023-31	Z-type	0.056	1
MSD32-4-MS23B to MSDT 23B	Moisture Separator 23B Header Upstream of Moisture Separator Drain Tank 23B	MSR SHELL DRAINS	9321-F-2023-31	Z-type	0.112	1
MSD32-5-MS23B to MSDT 23B	Moisture Separator 23B Header to Moisture Separator Drain Tank 23B	MSR SHELL DRAINS	9321-F-2023-31	Z-type	0.167	1
MSD33A-1-MSDT 21A to HDT	Moisture Separator Drain Tank 21A to Heater Drain Tank	MSDT DRNS TO HDT	9321-F-2023-31	Z-type	0.167	1
MSD34A-1-MSDT 22A to HDT	Moisture Separator Drain Tank 22A to Heater Drain Tank	MSDT DRNS TO HDT	9321-F-2023-31	Z-type	0.167	1
MSD35A-1-MSDT 23A to HDT	Moisture Separator Drain Tank 23A to Heater Drain Tank	MSDT DRNS TO HDT	9321-F-2023-31	Z-type	0.167	1

CHECWORKS Line Name	Line Description	Wear Rate Analysis Run Name	Flow Diagram No.	Op Cond Source	Flow Factor	Duty Factor
MSD36A-1-MSDT 21B to HDT	Moisture Separator Drain Tank 21B to Heater Drain Tank	MSDT DRNS TO HDT	9321-F-2023-31	Z-type	0.167	1
MSD37A-1-MSDT 22B to HDT	Moisture Separator Drain Tank 22B to Heater Drain Tank	MSDT DRNS TO HDT	9321-F-2023-31	Z-type	0.167	1
MSD38A-1-MSDT 23B to HDT	Moisture Separator Drain Tank 23B to Heater Drain Tank	MSDT DRNS TO HDT	9321-F-2023-31	Z-type	0.167	1
MSD39-1-RHTR 21A to RHDT 21A	Moisture Separator Reheater 21A to Moisture Separator Reheater Drain Tank 21A	RHTR TO RHTR DRN TK	9321-F-2023-31	HBD	0.167	1
MSD40-1-RHTR 22A to RHDT 22A	Moisture Separator Reheater 22A to Moisture Separator Reheater Drain Tank 22A	RHTR TO RHTR DRN TK	9321-F-2023-31	HBD	0.167	1
MSD41-1-RHTR 23A to RHDT 23A	Moisture Separator Reheater 23A to Moisture Separator Reheater Drain Tank 23A	RHTR TO RHTR DRN TK	9321-F-2023-31	HBD	0.167	1
MSD42-1-RHTR 21B to RHDT 21B	Moisture Separator Reheater 21B to Moisture Separator Reheater Drain Tank 21B	RHTR TO RHTR DRN TK	9321-F-2023-31	HBD	0.167	1
MSD43-1-RHTR 22B to RHDT 22B	Moisture Separator Reheater 22B to Moisture Separator Reheater Drain Tank 22B	RHTR TO RHTR DRN TK	9321-F-2023-31	HBD	0.167	1
MSD44-1-RHTR 23B to RHDT 23B	Moisture Separator Reheater 23B to Moisture Separator Reheater Drain Tank 23B	RHTR TO RHTR DRN TK	9321-F-2023-31	HBD	0.167	1
MSD45A-1-RHDT21A to CV	Reheater Drain Tank 21A to CV Upstream of Feedwater Heater 26 Header	RHTR DRN TK 21A USCV	9321-F-2023-31	HBD	0.167	1
MSD45B-1-RHDT21A CV to FWH26	Reheater Drain Tank 21A CV to Feedwater Heater 26 Header	RHTR DTK A DRN DSCV	9321-F-2023-31	HBD	0.167	1
MSD45C-1-RHDT A HDR to FWH26	Reheater Drain Tank A Header to Feedwater Heater 26 Between RHDT 22A and RHDT 23A Connections	RHTR DTK A DRN DSCV	9321-F-2023-31	HBD	0.167	1
MSD45C-2-RHDT A HDR to FWH26	Reheater Drain Tank A Header to Feedwater Heater 26 Between RHDT 23A and RHDT 21A Connections	RHTR DTK A DRN DSCV	9321-F-2023-31	HBD	0.333	1
MSD45C-3-RHDT A HDR to FWH26	Reheater Drain Tank A Header to Feedwater Heater 26 Between RHDT 21A Connection and Feedwater Heater 26C Tee	RHTR DTK A DRN DSCV	9321-F-2023-31	HBD	0.5	1
MSD45C-4-RHDT A HDR to FWH26C	Reheater Drain Tank A Header to Feedwater Heater 26C	RHTR DTK A DRN DSCV	9321-F-2023-31	HBD	0.167	1

CHECWORKS Line Name	Line Description	Wear Rate Analysis Run Name	Flow Diagram No.	Op Cond Source	Flow Factor	Duty Factor
MSD45C-5-RHDT A HDR to FWH26	Reheater Drain Tank A Header Between Feedwater Heater 26C Tee and Feedwater Heater 26B Tee	RHTR DTK A DRN DSCV	9321-F-2023-31	HBD	0.333	1
MSD45D-1-RHDT A HDR to FWH26B	Reheater Drain Tank A Header to Feedwater Heater 26B	RHTR DTK A DRN DSCV	9321-F-2023-31	HBD	0.167	1
MSD45D-2-RHDT A HDR to FWH26A	Reheater Drain Tank A Header to Feedwater Heater 26A	RHTR DTK A DRN DSCV	9321-F-2023-31	HBD	0.167	1
MSD46A-1-RHDT22A to CV	Reheater Drain Tank 22A to CV Upstream of Feedwater Heater 26 Header	RHTR DRN TK 22A USCV	9321-F-2023-31	HBD	0.167	1
MSD46A-2-RHDT22A CV to FWH26	Reheater Drain Tank 22A CV to Feedwater Heater 26 Header	RHTR DTK A DRN DSCV	9321-F-2023-31	HBD	0.167	1
MSD47-1-RHDT23A to CV	Reheater Drain Tank 23A to CV Upstream of Feedwater Heater 26 Header	RHTR DRN TK 23A USCV	9321-F-2023-31	HBD	0.167	1
MSD47-2-RHDT23A CV to FWH26	Reheater Drain Tank 23A CV to Feedwater Heater 26 Header	RHTR DTK A DRN DSCV	9321-F-2023-31	HBD	0.167	1
MSD48A-1-RHDT21B to CV	Reheater Drain Tank 21B to CV Upstream of Feedwater Heater 26 Header	RHTR DRN TK 21B USCV	9321-F-2023-31	HBD	0.167	1
MSD48B-1-RHDT21B CV to FWH26	Reheater Drain Tank 21B CV to Feedwater Heater 26 Header	RHTR DTK B DRN DSCV	9321-F-2023-31	HBD	0.167	1
MSD48B-2-RHDT B HDR to FWH26	Reheater Drain Tank B Header to Feedwater Heater 26 Between RHDT 23B and RHDT 22B Connections	RHTR DTK B DRN DSCV	9321-F-2023-31	HBD	0.333	1
MSD49A-1-RHDT22B to CV[1]	Reheater Drain Tank 22B to CV Upstream of Feedwater Heater 26 Header	RHTR DRN TK 22B USCV	9321-F-2023-31	HBD	0.167	1
MSD49B-1-RHDT22B CV to FWH26[2]	Reheater Drain Tank 22B CV to Feedwater Heater 26 Header	N/A[2]	9321-F-2023-31	HBD	N/A[2]	N/A[2]
MSD49C-1-RHDT B HDR to FWH26	Reheater Drain Tank B Header to Feedwater Heater 26 Between RHDT Connections and Feedwater Heater 26 Connections	RHTR DTK B DRN DSCV	9321-F-2023-31	HBD	0.5	1
MSD49C-2-RHDT B HDR to FWH26C	Reheater Drain Tank B Header to Feedwater Heater 26C	RHTR DTK B DRN DSCV	9321-F-2023-31	HBD	0.167	1
MSD49C-3-RHDT B HDR	Reheater Drain Tank B Header Between Feedwater Heater 26C Tee and Feedwater Heater 26B Tee	RHTR DTK B DRN DSCV	9321-F-2023-31	HBD	0.333	1

CHECWORKS Line Name	Line Description	Wear Rate Analysis Run Name	Flow Diagram No.	Op Cond Source	Flow Factor	Duty Factor
MSD49C-4-RHDT B HDR to FWH26B	Reheater Drain Tank B Header to Feedwater Heater 26B	RHTR DTK B DRN DSCV	9321-F-2023-31	HBD	0.167	1
MSD49C-5-RHDT B HDR to FWH26A	Reheater Drain Tank B Header to Feedwater Heater 26A	RHTR DTK B DRN DSCV	9321-F-2023-31	HBD	0.167	1
MSD50A-1-RHDT23B to CV	Reheater Drain Tank 23B to CV Upstream of Feedwater Heater 26 Header	RHTR DRN TK 23B USCV	9321-F-2023-31	HBD	0.167	1
MSD50C-1-RHDT23B CV to FWH26	Reheater Drain Tank 23B CV to Feedwater Heater 26 Header	RHTR DTK B DRN DSCV	9321-F-2023-31	HBD	0.167	1
MS-HP Turbine to MPS A	**THIS LINE IS NOT FULLY MODELED**. HP Turbine Crossunder to Moisture Preseparator A	MS - HP TURB TO MOPS	A228272	HBD	0.25	1
MS-HP Turbine to MPS B	**THIS LINE IS NOT FULLY MODELED**. HP Turbine Crossunder to Moisture Preseparator B	MS - HP TURB TO MOPS	A228272	HBD	0.25	1
MS-HP Turbine to MPS C	**THIS LINE IS NOT FULLY MODELED**. HP Turbine Crossunder to Moisture Preseparator C	MS - HP TURB TO MOPS	A228272	HBD	0.25	1
MS-HP Turbine to MPS D	**THIS LINE IS NOT FULLY MODELED**. HP Turbine Crossunder to Moisture Preseparator D	MS - HP TURB TO MOPS	A228272	HBD	0.25	1
PD-MPS A to Separating Tk A	**THIS LINE IS NOT FULLY MODELED**. Moisture Preseparator A to Separating Tank A	PD - MPS TO SEP TNK A	A228272	HBD	0.25	1
PD-MPS B to Separating Tk A	**THIS LINE IS NOT FULLY MODELED**. Moisture Preseparator B to Separating Tank A	PD - MPS TO SEP TNK A	A228272	HBD	0.25	1
PD-MPS C to Separating Tk B	**THIS LINE IS NOT FULLY MODELED**. Moisture Preseparator C to Separating Tank B	PD - MPS TO SEP TNK A	A228272	HBD	0.25	1
PD-MPS D to Separating Tk B	**THIS LINE IS NOT FULLY MODELED**. Moisture Preseparator D to Separating Tank B	PD - MPS TO SEP TNK A	A228272	HBD	0.25	1
PD-Sep Tk A Drn thru LCV-5198[3]	Preseparator Separating Tank A Drain through LCV-5198	N/A[3]	A228272	N/A[3]	N/A[3]	N/A[3]
PD-Sep Tk A Drn thru LCV-5199[3]	Preseparator Separating Tank A Drain through LCV-5199	N/A[3]	A228272	N/A[3]	N/A[3]	N/A[3]
PD-Sep Tk A Drn to Ctrl Valves[3]	Preseparator Separating Tank A Drain to Control Valves upstream of Heater Drain Tank	N/A[3]	A228272	N/A[3]	N/A[3]	N/A[3]

CHECWORKS Line Name	Line Description	Wear Rate Analysis Run Name	Flow Diagram No.	Op Cond Source	Flow Factor	Duty Factor
PD-Sep Tk A Valves to HD Tk[3]	Preseparator Separating Tank A Drain Control Valves to Heater Drain Tank	N/A[3]	A228272	N/A[3]	N/A[3]	N/A[3]
PD-Sep Tk B Drn thru LCV-5205[3]	Preseparator Separating Tank B Drain through LCV-5205	N/A[3]	A228272	N/A[3]	N/A[3]	N/A[3]
PD-Sep Tk B Drn thru LCV-5206[3]	Preseparator Separating Tank B Drain through LCV-5206	N/A[3]	A228272	N/A[3]	N/A[3]	N/A[3]
PD-Sep Tk B Drn to Ctrl Valves[3]	Preseparator Separating Tank B Drain to Control Valves upstream of Heater Drain Tank	N/A[3]	A228272	N/A[3]	N/A[3]	N/A[3]
PD-Sep Tk B Valves to HD Tk[3]	Preseparator Separating Tank B Drain Control Valves to Heater Drain Tank	N/A[3]	A228272	N/A[3]	N/A[3]	N/A[3]
SG51-1-CONT PEN to SGBFTK	Steam Generator Blowdown from SG 21 to SG Blowdown Flash Tank	BLOWDOWN	9321-F-2729-66	Z-type	0.25	1
SG52-1-CONT PEN to SGBFTK	Steam Generator Blowdown from SG 22 to SG Blowdown Flash Tank	BLOWDOWN	9321-F-2729-66	Z-type	0.25	1
SG53-1-CONT PEN to SGBFTK	Steam Generator Blowdown from SG 23 to SG Blowdown Flash Tank	BLOWDOWN	9321-F-2729-66	Z-type	0.25	1
SG54-1-CONT PEN to SGBFTK	Steam Generator Blowdown from SG 24 to SG Blowdown Flash Tank	BLOWDOWN	9321-F-2729-66	Z-type	0.25	1

(1) During 2R19 the configuration of this line was found to be incorrect. Components downstream of "MS-2B22" were archived into line "xMSD49A-1-RHDT22B to CV". When a new isometric drawing is provided, this line will be remodeled and added back into the WRA Run appropriately.

(2) During 2R19 the configuration of this line was found to be incorrect. All components were archived into line "xMSD49B-1-RHDT22B CV to FWH26". When a new isometric drawing is provided, this line will be remodeled and added back into the WRA Run appropriately.

(3) Lines from the Preseparator Drain Tank to the Heater Drain Tank were not assigned to the CHECWORKS HBD or given WRA Runs. These lines could not be accurately assigned to the HBD, and given operating conditions for previous power levels were not sufficient for modeling. When this information is obtained, these WRA Runs should be created, run, and evaluated.

Appendix E

Component Summary Report

Table of Contents

Company : ENTERGY NUCLEAR NORTHEAST
Plant : INDIAN POINT
Unit : 2
DB Name: IPEC2(v4)

Report Date : 04-Jun-2010
Report Time : 09:19:31

CHECWORKS SFA Version: 3.0 (build 105)

Component Summary Report
(By Flow Order)

SELECTION CRITERIA:

Line Name: *
Drawing Name: *
Comp. Service Status: *

Component Name	Geom Code	Pipe Size OD (in)	Sch.	Tnom (in)	Tinit (in)	Tcrit (in)	Br/Small End OD (in)	Br/Small Tnom (in)	R / D Ratio	Orient Angle (Deg.)	Pipe Length (in)	Spec/Type/ Class	Material Cr. (%)	Cu. (%)	Mo. (%)	Design Press. (psig)	Design Temp. (Deg. F)	Op. Press. (psig)	Op. Temp. (Deg. F)	Op. Enth. (Btu/lbm)	Op. Qual.	Flow Rate U/S Mn. (Mlbm/hr)	D/S Mn.	Br.
Line Name : CD80-1-FWH 23A to FWH 24A																								
CD-11N	31	14.000	40	0.438	0.000	0.000	0.000	0.000	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	665	400	460	249	0.000	0.000	3.32518	0.00000	0.00000
CD-11	4	14.000	40	0.438	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	665	400	460	249	0.000	0.000	3.32518	0.00000	0.00000
CD-12	4	14.000	40	0.438	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	665	400	460	249	0.000	0.000	3.32518	0.00000	0.00000
CD-12P	54	14.000	40	0.438	0.000	0.000	0.000	0.000	0.00	180	0.00	A106/B/	0.00	0.00	0.00	665	400	460	249	0.000	0.000	3.32518	0.00000	0.00000
CD-1	1	14.000	40	0.438	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	665	400	460	249	0.000	0.000	3.32518	0.00000	0.00000
CD-1P	51	14.000	40	0.438	0.000	0.000	0.000	0.000	0.00	135	0.00	A106/B/	0.00	0.00	0.00	665	400	460	249	0.000	0.000	3.32518	0.00000	0.00000
CD-2	2	14.000	40	0.438	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	665	400	460	249	0.000	0.000	3.32518	0.00000	0.00000
CD-2P	52	14.000	40	0.438	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	665	400	460	249	0.000	0.000	3.32518	0.00000	0.00000
CD-17	1	14.000	40	0.438	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	665	400	460	249	0.000	0.000	3.32518	0.00000	0.00000
CD-17P	51	14.000	40	0.438	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	665	400	460	249	0.000	0.000	3.32518	0.00000	0.00000
CD-5	2	14.000	40	0.438	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	665	400	460	249	0.000	0.000	3.32518	0.00000	0.00000
CD-5P	52	14.000	40	0.438	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	665	400	460	249	0.000	0.000	3.32518	0.00000	0.00000
CD-41	1	14.000	40	0.438	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	665	400	460	249	0.000	0.000	3.32518	0.00000	0.00000
CD-41N	30	14.000	40	0.438	0.000	0.000	0.000	0.000	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	665	400	460	249	0.000	0.000	3.32518	0.00000	0.00000
Line Name : CD80-2-FWH 23B to FWH 24B																								
CD-14N	31	14.000	40	0.438	0.000	0.000	0.000	0.000	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	665	400	460	249	0.000	0.000	3.32518	0.00000	0.00000
CD-14	4	14.000	40	0.438	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	665	400	460	249	0.000	0.000	3.32518	0.00000	0.00000
CD-13	4	14.000	40	0.438	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	665	400	460	249	0.000	0.000	3.32518	0.00000	0.00000
CD-13P US	54	14.000	40	0.438	0.000	0.000	0.000	0.000	0.00	180	0.00	A106/B/	0.00	0.00	0.00	665	400	460	249	0.000	0.000	3.32518	0.00000	0.00000
CD-3	2	14.000	40	0.438	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	665	400	460	249	0.000	0.000	3.32518	0.00000	0.00000
CD-4	4	14.000	40	0.438	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	665	400	460	249	0.000	0.000	3.32518	0.00000	0.00000
CD-4P	54	14.000	40	0.438	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	665	400	460	249	0.000	0.000	3.32518	0.00000	0.00000
CD-19	2	14.000	40	0.438	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	665	400	460	249	0.000	0.000	3.32518	0.00000	0.00000
CD-19P	52	14.000	40	0.438	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	665	400	460	249	0.000	0.000	3.32518	0.00000	0.00000
CD-42	1	14.000	40	0.438	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	665	400	460	249	0.000	0.000	3.32518	0.00000	0.00000
CD-42N	30	14.000	40	0.438	0.000	0.000	0.000	0.000	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	665	400	460	249	0.000	0.000	3.32518	0.00000	0.00000
Line Name : CD80-3-FWH 23C to FWH 24C																								
CD-16N	31	14.000	40	0.438	0.000	0.000	0.000	0.000	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	665	400	460	249	0.000	0.000	3.32518	0.00000	0.00000
CD-16	4	14.000	40	0.438	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	665	400	460	249	0.000	0.000	3.32518	0.00000	0.00000
CD-15	4	14.000	40	0.438	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	665	400	460	249	0.000	0.000	3.32518	0.00000	0.00000
CD-15P US	54	14.000	40	0.438	0.000	0.000	0.000	0.000	0.00	180	0.00	A106/B/	0.00	0.00	0.00	665	400	460	249	0.000	0.000	3.32518	0.00000	0.00000
CD-39	2	14.000	40	0.438	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	665	400	460	249	0.000	0.000	3.32518	0.00000	0.00000
CD-40	4	14.000	40	0.438	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	665	400	460	249	0.000	0.000	3.32518	0.00000	0.00000
CD-40P	54	14.000	40	0.438	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	665	400	460	249	0.000	0.000	3.32518	0.00000	0.00000
CD-22	2	14.000	40	0.438	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	665	400	460	249	0.000	0.000	3.32518	0.00000	0.00000
CD-22P	52	14.000	40	0.438	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	665	400	460	249	0.000	0.000	3.32518	0.00000	0.00000

Component Name	Geom Code	Pipe Size OD (in)	Sch.	Tnom (in)	Tinit (in)	Tcrit (in)	Br/Small End OD (in)	Br/Small Tnom (in)	R / D Ratio	Orient Angle (Deg.)	Pipe Length (in)	Spec/Type/ Class	Material Cr. (%)	Cu. (%)	Mo. (%)	Design Press. (psig)	Design Temp. (Deg. F)	Op. Press. (psig)	Op. Temp. (Deg. F)	Op. Enth. (Btu/lbm)	Op. Qual.	Flow Rate U/S Mn. (Mlbm/hr)	D/S Mn. (Mlbm/hr)	Br.
CD-43	1	14.000	40	0.438	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	665	400	460	249	0.000	0.000	3.32518	0.00000	0.00000
CD-43N	30	14.000	40	0.438	0.000	0.000	0.000	0.000	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	665	400	460	249	0.000	0.000	3.32518	0.00000	0.00000
Line Name :	**CD80A-1-FWH 22A to HEADER**																							
CD-101N	31	14.000	40	0.438	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	665	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
CD-101P	61	14.000	40	0.438	0.000	0.000	0.000	0.000	0.00	30	0.00	A106/B/	0.00	0.00	0.00	665	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
CD-102	2	14.000	40	0.438	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	665	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
CD-102P	52	14.000	40	0.438	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	665	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
CD-VALVE-CD-8	22	14.000	40	0.438	0.000	0.000	0.000	0.000	0.00	90	0.00	A216/WCB/	0.00	0.00	0.00	665	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
CD-103	4	14.000	40	0.438	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	665	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
CD-104	4	14.000	40	0.438	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	665	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
CD-104P	54	14.000	40	0.438	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	665	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
CD-105	2	14.000	40	0.438	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	665	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
CD-105P	52	14.000	40	0.438	0.000	0.000	0.000	0.000	0.00	16	0.00	A106/B/	0.00	0.00	0.00	665	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
CD-106	4	14.000	40	0.438	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	665	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
CD-106P	54	14.000	40	0.438	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	665	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
CD-107P	9	14.000	40	0.438	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	665	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
CD-107	18	20.000	40	0.594	0.000	0.000	14.000	0.438	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	665	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
Line Name :	**CD80A-4-FWH 22 OUTLET HEADER**																							
CD-118T	12	20.000	40	0.594	0.000	0.000	14.000	0.438	0.00	90	0.00	A106/B/	0.00	0.00	0.00	665	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
Line Name :	**CD80A-2-FWH 22B to HEADER**																							
CD-108N	31	14.000	40	0.438	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	665	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
CD-108P	61	14.000	40	0.438	0.000	0.000	0.000	0.000	0.00	30	0.00	A106/B/	0.00	0.00	0.00	665	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
CD-109	2	14.000	40	0.438	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	665	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
CD-109P	52	14.000	40	0.438	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	665	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
CD-110	2	14.000	40	0.438	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	665	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
CD-111	4	14.000	40	0.438	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	665	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
CD-VALVE-CD-8-1	22	14.000	40	0.438	0.000	0.000	0.000	0.000	0.00	90	0.00	A216/WCB/	0.00	0.00	0.00	665	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
CD-111P	58	14.000	40	0.438	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	665	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
CD-112	2	14.000	40	0.438	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	665	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
CD-112P	52	14.000	40	0.438	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	665	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
Line Name :	**CD80A-3-FWH 22C to HEADER**																							
CD-113N	31	14.000	40	0.438	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	665	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
CD-113P	61	14.000	40	0.438	0.000	0.000	0.000	0.000	0.00	30	0.00	A106/B/	0.00	0.00	0.00	665	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
CD-114	2	14.000	40	0.438	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	665	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
CD-114P	52	14.000	40	0.438	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	665	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
CD-115	2	14.000	40	0.438	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	665	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
CD-116	4	14.000	40	0.438	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	665	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
CD-116P	54	14.000	40	0.438	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	665	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
CD-VALVE-CD-8-2	22	14.000	40	0.438	0.000	0.000	0.000	0.000	0.00	90	0.00	A216/WCB/	0.00	0.00	0.00	665	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
CD-116P-1	58	14.000	40	0.438	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	665	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
CD-117	2	14.000	40	0.438	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	665	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
CD-117P	52	14.000	40	0.438	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	665	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
Line Name :	**CD80A-4-FWH 22 OUTLET HEADER**																							
CD-118P	62	20.000	40	0.594	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	665	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
CD-119P	9	20.000	40	0.594	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	665	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
CD-120	18	24.000	40	0.688	0.000	0.000	20.000	0.594	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	665	400	0	0	0.000	0.000	0.00000	0.00000	0.00000

Component Name	Geom Code	Pipe Size OD (in)	Sch.	Tnom (in)	Tinit (in)	Tcrit (in)	Br/Small End OD (in)	Br/Small Tnom (in)	R / D Ratio	Orient Angle (Deg.)	Pipe Length (in)	Spec/Type/ Class	Material Cr. (%)	Cu. (%)	Mo. (%)	Design Press. (psig)	Design Temp. (Deg. F)	Op. Press. (psig)	Op. Temp. (Deg. F)	Op. Enth. (Btu/lbm)	Op. Qual.	Flow Rate U/S Mn. (Mlbm/hr)	D/S Mn. (Mlbm/hr)	Br.
Line Name : CD80A-5-FWH 22 to FWH 23 HEAD																								
CD-121	12	24.000	40	0.688	0.000	0.000	14.000	0.438	0.00	90	0.00	A106/B/	0.00	0.00	0.00	665	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
CD-121P	62	24.000	40	0.688	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	665	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
CD-122	15	24.000	40	0.688	0.000	0.000	12.000	0.406	0.00	90	0.00	A106/B/	0.00	0.00	0.00	665	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
CD-122P	65	24.000	40	0.688	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	665	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
CD-123	2	24.000	40	0.688	0.000	0.000	0.000	0.000	1.00	90	0.00	A234/WPB/	0.00	0.00	0.00	665	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
CD-124	3	24.000	40	0.688	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	665	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
CD-124P	53	24.000	40	0.688	0.000	0.000	0.000	0.000	0.00	180	0.00	A106/B/	0.00	0.00	0.00	665	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
CD-125	2	24.000	40	0.688	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	665	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
CD-125P	52	24.000	40	0.688	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	665	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
CD-126	1	24.000	40	0.688	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	665	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
CD-126P	51	24.000	40	0.688	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	665	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
CD-127P	9	24.000	40	0.688	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	665	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
CD-128	2	24.000	40	0.688	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	665	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
CD-128P	52	24.000	40	0.688	0.000	0.000	0.000	0.000	0.00	180	0.00	A106/B/	0.00	0.00	0.00	665	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
CD-129	4	24.000	40	0.688	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	665	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
CD-129P	54	24.000	40	0.688	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	665	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
CD-130	14	24.000	40	0.688	0.000	0.000	18.000	0.500	0.00	90	0.00	A106/B/	0.00	0.00	0.00	665	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
CD-130P	62	24.000	40	0.688	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	665	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
CD-131	7	24.000	40	0.688	0.000	0.000	20.000	0.594	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	665	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
CD-VALVE-CD-1110	23	20.000	40	0.594	0.000	0.000	0.000	0.000	0.00	90	0.00	A216/WCB/	0.00	0.00	0.00	665	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
CD-131P-1	58	20.000	40	0.594	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	665	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
CD-132	19	24.000	40	0.688	0.000	0.000	20.000	0.594	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	665	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
CD-132P	69	24.000	40	0.688	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	665	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
CD-133	2	24.000	40	0.688	0.000	0.000	0.000	0.000	1.00	90	0.00	A234/WPB/	0.00	0.00	0.00	665	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
CD-134	12	24.000	40	0.688	0.000	0.000	18.000	0.562	0.00	90	0.00	A106/B/	0.00	0.00	0.00	665	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
CD-135	14	24.000	40	0.688	0.000	0.000	14.000	0.438	0.00	90	0.00	A106/B/	0.00	0.00	0.00	665	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
Line Name : CD80A-6-FWH 23 INLET HEADER																								
CD-136	15	24.000	40	0.688	0.000	0.000	12.000	0.406	0.00	90	0.00	A106/B/	0.00	0.00	0.00	665	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
CD-136P	65	24.000	40	0.688	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	665	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
CD-137	14	24.000	40	0.688	0.000	0.000	14.000	0.438	0.00	90	0.00	A106/B/	0.00	0.00	0.00	665	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
Line Name : CD80A-7-HEADER to FWH 23A																								
CD-137P	64	24.000	40	0.688	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	665	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
CD-138	14	24.000	40	0.688	0.000	0.000	14.000	0.438	0.00	90	0.00	A106/B/	0.00	0.00	0.00	665	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
CD-138P	64	14.000	40	0.438	0.000	0.305	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	665	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
CD-139	2	14.000	40	0.438	0.000	0.305	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	665	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
CD-139P	52	14.000	40	0.438	0.000	0.305	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	665	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
CD-VALVE-CD-16	22	14.000	40	0.438	0.000	0.305	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	665	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
CD-140	2	14.000	40	0.438	0.000	0.305	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	665	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
CD-140P	52	14.000	40	0.438	0.000	0.305	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	665	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
CD-141	1	14.000	40	0.438	0.000	0.305	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	665	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
CD-141N	30	14.000	40	0.438	0.000	0.305	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	665	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
Line Name : CD80A-8-HEADER to FWH 23B																								
CD-141P	64	14.000	40	0.438	0.000	0.305	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	665	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
CD-142	2	14.000	40	0.438	0.000	0.305	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	665	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
CD-142P	52	14.000	40	0.438	0.000	0.305	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	665	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
CD-VALVE-CD-16-1	22	14.000	40	0.438	0.000	0.305	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	665	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
CD-143	2	14.000	40	0.438	0.000	0.305	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	665	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
CD-143P	52	14.000	40	0.438	0.000	0.305	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	665	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
CD-144	1	14.000	40	0.438	0.000	0.305	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	665	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
CD-144N	30	14.000	40	0.438	0.000	0.305	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	665	400	0	0	0.000	0.000	0.00000	0.00000	0.00000

Component Name	Geom Code	Pipe Size OD (in)	Sch.	Tnom (in)	Tinit (in)	Tcrit (in)	Br/Small End OD (in)	Br/Small Tnom (in)	R / D Ratio	Orient Angle (Deg.)	Pipe Length (in)	Spec/Type/ Class	Material Cr. (%)	Cu. (%)	Mo. (%)	Design Press. (psig)	Design Temp. (Deg. F)	Op. Press. (psig)	Op. Temp. (Deg. F)	Op. Enth. (Btu/lbm)	Op. Qual.	Flow Rate U/S Mn. (Mlbm/hr)	D/S Mn. (Mlbm/hr)	Br.
Line Name : CD80A-9-HEADER to FWH 23C																								
CD-144P	64	14.000	40	0.438	0.000	0.305	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	665	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
CD-145	2	14.000	40	0.438	0.000	0.305	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	665	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
CD-145P	52	14.000	40	0.438	0.000	0.305	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	665	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
CD-VALVE-CD-16-2	22	14.000	40	0.438	0.000	0.305	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	665	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
CD-146	2	14.000	40	0.438	0.000	0.305	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	665	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
CD-146P	52	14.000	40	0.438	0.000	0.305	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	665	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
CD-147	1	14.000	40	0.438	0.000	0.305	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	665	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
CD-147N	30	14.000	40	0.438	0.000	0.305	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	665	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
Line Name : CD81-1-FWH 24A to FWH 25A																								
CD-37N	31	14.000	40	0.438	0.000	0.000	0.000	0.000	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	665	400	460	298	0.000	0.000	3.32518	0.00000	0.00000
CD-37	4	14.000	40	0.438	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	665	400	460	298	0.000	0.000	3.32518	0.00000	0.00000
CD-18	4	14.000	40	0.438	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	665	400	460	298	0.000	0.000	3.32518	0.00000	0.00000
CD-18P	54	14.000	40	0.438	0.000	0.000	0.000	0.000	0.00	180	0.00	A106/B/	0.00	0.00	0.00	665	400	460	298	0.000	0.000	3.32518	0.00000	0.00000
CD-46	2	14.000	40	0.438	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	665	400	460	298	0.000	0.000	3.32518	0.00000	0.00000
CD-46P	52	14.000	40	0.438	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	665	400	460	298	0.000	0.000	3.32518	0.00000	0.00000
CD-47	2	14.000	40	0.438	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	665	400	460	298	0.000	0.000	3.32518	0.00000	0.00000
CD-47P	52	14.000	40	0.438	0.000	0.000	0.000	0.000	0.00	180	0.00	A106/B/	0.00	0.00	0.00	665	400	460	298	0.000	0.000	3.32518	0.00000	0.00000
CD-48	4	14.000	40	0.438	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	665	400	460	298	0.000	0.000	3.32518	0.00000	0.00000
CD-48P	54	14.000	40	0.438	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	665	400	460	298	0.000	0.000	3.32518	0.00000	0.00000
CD-28	2	14.000	40	0.438	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	665	400	460	298	0.000	0.000	3.32518	0.00000	0.00000
CD-28P	52	14.000	40	0.438	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	665	400	460	298	0.000	0.000	3.32518	0.00000	0.00000
CD-56	1	14.000	40	0.438	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	665	400	460	298	0.000	0.000	3.32518	0.00000	0.00000
CD-56N	30	14.000	40	0.438	0.000	0.000	0.000	0.000	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	665	400	460	298	0.000	0.000	3.32518	0.00000	0.00000
Line Name : CD81-2-FWH 24B to FWH 25B																								
CD-21N	31	14.000	40	0.438	0.000	0.000	0.000	0.000	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	665	400	460	298	0.000	0.000	3.32518	0.00000	0.00000
CD-21	4	14.000	40	0.438	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	665	400	460	298	0.000	0.000	3.32518	0.00000	0.00000
CD-20	4	14.000	40	0.438	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	665	400	460	298	0.000	0.000	3.32518	0.00000	0.00000
CD-20P	54	14.000	40	0.438	0.000	0.000	0.000	0.000	0.00	180	0.00	A106/B/	0.00	0.00	0.00	665	400	460	298	0.000	0.000	3.32518	0.00000	0.00000
CD-49	2	14.000	40	0.438	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	665	400	460	298	0.000	0.000	3.32518	0.00000	0.00000
CD-50	3	14.000	40	0.438	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	665	400	460	298	0.000	0.000	3.32518	0.00000	0.00000
CD-50P	53	14.000	40	0.438	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	665	400	460	298	0.000	0.000	3.32518	0.00000	0.00000
CD-51	2	14.000	40	0.438	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	665	400	460	298	0.000	0.000	3.32518	0.00000	0.00000
CD-51P	52	14.000	40	0.438	0.000	0.000	0.000	0.000	0.00	180	0.00	A106/B/	0.00	0.00	0.00	665	400	460	298	0.000	0.000	3.32518	0.00000	0.00000
CD-52	4	14.000	40	0.438	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	665	400	460	298	0.000	0.000	3.32518	0.00000	0.00000
CD-52P	54	14.000	40	0.438	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	665	400	460	298	0.000	0.000	3.32518	0.00000	0.00000
CD-57	1	14.000	40	0.438	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	665	400	460	298	0.000	0.000	3.32518	0.00000	0.00000
CD-29	4	14.000	40	0.438	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	665	400	460	298	0.000	0.000	3.32518	0.00000	0.00000
CD-29P	54	14.000	40	0.438	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	665	400	460	298	0.000	0.000	3.32518	0.00000	0.00000
CD-44	1	14.000	40	0.438	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	665	400	460	298	0.000	0.000	3.32518	0.00000	0.00000
CD-44N	30	14.000	40	0.438	0.000	0.000	0.000	0.000	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	665	400	460	298	0.000	0.000	3.32518	0.00000	0.00000
Line Name : CD81-3-FWH 24C to FWH 25C																								
CD-24N	31	14.000	40	0.438	0.000	0.000	0.000	0.000	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	665	400	460	298	0.000	0.000	3.32518	0.00000	0.00000
CD-24	4	14.000	40	0.438	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	665	400	460	298	0.000	0.000	3.32518	0.00000	0.00000
CD-23	4	14.000	40	0.438	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	665	400	460	298	0.000	0.000	3.32518	0.00000	0.00000
CD-23P	54	14.000	40	0.438	0.000	0.000	0.000	0.000	0.00	180	0.00	A106/B/	0.00	0.00	0.00	665	400	460	298	0.000	0.000	3.32518	0.00000	0.00000
CD-53	2	14.000	40	0.438	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	665	400	460	298	0.000	0.000	3.32518	0.00000	0.00000
CD-53P	52	14.000	40	0.438	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	665	400	460	298	0.000	0.000	3.32518	0.00000	0.00000
CD-54	2	14.000	40	0.438	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	665	400	460	298	0.000	0.000	3.32518	0.00000	0.00000
CD-54P	52	14.000	40	0.438	0.000	0.000	0.000	0.000	0.00	180	0.00	A106/B/	0.00	0.00	0.00	665	400	460	298	0.000	0.000	3.32518	0.00000	0.00000
CD-55	2	14.000	40	0.438	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	665	400	460	298	0.000	0.000	3.32518	0.00000	0.00000
CD-55P	52	14.000	40	0.438	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	665	400	460	298	0.000	0.000	3.32518	0.00000	0.00000

Component Name	Geom Code	Pipe Size OD (in)	Sch.	Tnom (in)	Tinit (in)	Tcrit (in)	Br/Small End OD (in)	Br/Small Tnom (in)	R / D Ratio	Orient Angle (Deg.)	Pipe Length (in)	Spec/Type/ Class	Material Cr. (%)	Cu. (%)	Mo. (%)	Design Press. (psig)	Design Temp. (Deg. F)	Op. Press. (psig)	Op. Temp. (Deg. F)	Op. Enth. (Btu/lbm)	Op. Qual.	Flow Rate U/S Mn. (Mlbm/hr)	D/S Mn.	Br.
CD-30	2	14.000	40	0.438	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	665	400	460	298	0.000	0.000	3.32518	0.00000	0.00000
CD-30P	52	14.000	40	0.438	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	665	400	460	298	0.000	0.000	3.32518	0.00000	0.00000
CD-45	1	14.000	40	0.438	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	665	400	460	298	0.000	0.000	3.32518	0.00000	0.00000
CD-45N	30	14.000	40	0.438	0.000	0.000	0.000	0.000	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	665	400	460	298	0.000	0.000	3.32518	0.00000	0.00000
Line Name : CD82-1-FWH 25A to HDR																								
CD-32N	31	14.000	40	0.438	0.000	0.000	0.000	0.000	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	665	400	460	384	0.000	0.000	3.32518	0.00000	0.00000
CD-32	4	14.000	40	0.438	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	665	400	460	384	0.000	0.000	3.32518	0.00000	0.00000
CD-31	4	14.000	40	0.438	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	665	400	460	384	0.000	0.000	3.32518	0.00000	0.00000
CD-31P	54	14.000	40	0.438	0.000	0.000	0.000	0.000	0.00	180	0.00	A106/B/	0.00	0.00	0.00	665	400	460	384	0.000	0.000	3.32518	0.00000	0.00000
CD-VALVE-CD-18	22	14.000	40	0.438	0.000	0.000	0.000	0.000	0.00	180	0.00	A216/WCB/	0.00	0.00	0.00	665	400	460	384	0.000	0.000	3.32518	0.00000	0.00000
CD-31P-1 US	58	14.000	40	0.438	0.000	0.000	0.000	0.000	0.00	180	0.00	A106/B/	0.00	0.00	0.00	665	400	460	384	0.000	0.000	3.32518	0.00000	0.00000
CD-31P-1 DS	58	14.000	40	0.438	0.000	0.000	0.000	0.000	0.00	180	0.00	A106/B/	0.00	0.00	0.00	665	400	460	384	0.000	0.000	3.32518	0.00000	0.00000
CD-60	2	14.000	40	0.438	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	665	400	460	384	0.000	0.000	3.32518	0.00000	0.00000
CD-60P	52	14.000	40	0.438	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	665	400	460	384	0.000	0.000	3.32518	0.00000	0.00000
CD-61	4	14.000	40	0.438	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	665	400	460	384	0.000	0.000	3.32518	0.00000	0.00000
CD-61P	54	14.000	40	0.438	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	665	400	460	384	0.000	0.000	3.32518	0.00000	0.00000
CD-61R	18	24.000	40	0.688	0.000	0.000	14.000	0.438	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	665	400	460	384	0.000	0.000	3.32518	3.32518	0.00000
Line Name : CD82-4-HDR 25BT to 25CT																								
CD-62T	12	24.000	40	0.688	0.000	0.000	14.000	0.438	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	665	400	460	384	0.000	0.000	3.32518	6.65036	3.32518
Line Name : CD82-2-FWH 25B to HDR																								
CD-34N	31	14.000	40	0.438	0.000	0.000	0.000	0.000	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	665	400	460	384	0.000	0.000	3.32518	0.00000	0.00000
CD-34	4	14.000	40	0.438	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	665	400	460	384	0.000	0.000	3.32518	0.00000	0.00000
CD-33	4	14.000	40	0.438	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	665	400	460	384	0.000	0.000	3.32518	0.00000	0.00000
CD-33P	54	14.000	40	0.438	0.000	0.000	0.000	0.000	0.00	180	0.00	A106/B/	0.00	0.00	0.00	665	400	460	384	0.000	0.000	3.32518	0.00000	0.00000
CD-VALVE-CD-18-1	22	14.000	40	0.438	0.000	0.000	0.000	0.000	0.00	180	0.00	A216/WCB/	0.00	0.00	0.00	665	400	460	384	0.000	0.000	3.32518	0.00000	0.00000
CD-33P-1 US	58	14.000	40	0.438	0.000	0.000	0.000	0.000	0.00	180	0.00	A106/B/	0.00	0.00	0.00	665	400	460	384	0.000	0.000	3.32518	0.00000	0.00000
CD-33P-1 DS	58	14.000	40	0.438	0.000	0.000	0.000	0.000	0.00	180	0.00	A106/B/	0.00	0.00	0.00	665	400	460	384	0.000	0.000	3.32518	0.00000	0.00000
CD-62	2	14.000	40	0.438	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	665	400	460	384	0.000	0.000	3.32518	0.00000	0.00000
CD-62P	52	14.000	40	0.438	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	665	400	460	384	0.000	0.000	3.32518	0.00000	0.00000
Line Name : CD82-3-FWH 25C to HDR																								
CD-36N	31	14.000	40	0.438	0.000	0.000	0.000	0.000	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	665	400	460	384	0.000	0.000	3.32518	0.00000	0.00000
CD-36	4	14.000	40	0.438	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	665	400	460	384	0.000	0.000	3.32518	0.00000	0.00000
CD-35	4	14.000	40	0.438	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	665	400	460	384	0.000	0.000	3.32518	0.00000	0.00000
CD-35P	54	14.000	40	0.438	0.000	0.000	0.000	0.000	0.00	180	0.00	A106/B/	0.00	0.00	0.00	665	400	460	384	0.000	0.000	3.32518	0.00000	0.00000
CD-VALVE-CD-18-2	22	14.000	40	0.438	0.000	0.000	0.000	0.000	0.00	180	0.00	A216/WCB/	0.00	0.00	0.00	665	400	460	384	0.000	0.000	3.32518	0.00000	0.00000
CD-35P-1	58	14.000	40	0.438	0.000	0.000	0.000	0.000	0.00	180	0.00	A106/B/	0.00	0.00	0.00	665	400	460	384	0.000	0.000	3.32518	0.00000	0.00000
CD-63	2	14.000	40	0.438	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	665	400	460	384	0.000	0.000	3.32518	0.00000	0.00000
CD-58	4	14.000	40	0.438	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	665	400	460	384	0.000	0.000	3.32518	0.00000	0.00000
CD-58P	54	14.000	40	0.438	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	665	400	460	384	0.000	0.000	3.32518	0.00000	0.00000
Line Name : CD82-4-HDR 25BT to 25CT																								
CD-62P-1	62	24.000	40	0.688	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	665	400	460	384	0.000	0.000	6.65036	0.00000	0.00000
Line Name : CD82-5-HDR 25CT to HDP OUT																								
CD-59T	12	24.000	40	0.688	0.000	0.000	14.000	0.438	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	665	400	460	384	0.000	0.000	6.65036	9.97554	3.32518
CD-59	4	24.000	40	0.688	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	665	400	460	384	0.000	0.000	9.97554	0.00000	0.00000
CD-59P	54	24.000	40	0.688	0.000	0.000	0.000	0.000	0.00	180	0.00	A106/B/	0.00	0.00	0.00	665	400	460	384	0.000	0.000	9.97554	0.00000	0.00000

Component Name	Geom Code	Pipe Size OD (in)	Sch.	Tnom (in)	Tinit (in)	Tcrit (in)	Br/Small End OD (in)	Br/Small Tnom (in)	R / D Ratio	Orient Angle (Deg.)	Pipe Length (in)	Spec/Type/ Class	Material Cr. (%)	Cu. (%)	Mo. (%)	Design Press. (psig)	Design Temp. (Deg. F)	Op. Press. (psig)	Op. Temp. (Deg. F)	Op. Enth. (Btu/lbm)	Op. Qual.	Flow Rate U/S Mn. (Mlbm/hr)	D/S Mn.	Br.
CD-80T	12	30.000	SPE	0.626	0.000	0.000	24.000	0.687	0.00	90	0.00	A155/KCF701/	0.00	0.00	0.00	665	400	460	384	0.000	0.000	9.97554	0.00000	9.97554
Line Name :	**CD83-1-HDR HDP to BFP21T**																							
CD-81T	12	30.000	SPE	0.626	0.000	0.000	16.000	0.656	0.00	90	0.00	A155/KCF701/	0.00	0.00	0.00	665	400	460	386	0.000	0.000	9.97554	13.26297	3.28743
CD-82T	14	30.000	SPE	0.626	0.000	0.000	24.000	0.687	0.00	0	0.00	A155/KCF701/	0.00	0.00	0.00	665	400	325	386	0.000	0.000	13.26297	6.63148	6.63149
Line Name :	**CD83-2-HDR to BFP21**																							
CD-9P	64	24.000	40	0.688	0.000	0.000	0.000	0.000	1.50	90	0.00	A106/B/	0.00	0.00	0.00	665	400	325	386	0.000	0.000	6.63149	0.00000	0.00000
CD-9	2	24.000	40	0.688	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	665	400	325	386	0.000	0.000	6.63149	0.00000	0.00000
CD-66P	52	24.000	40	0.688	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	665	400	325	386	0.000	0.000	6.63149	0.00000	0.00000
CD-66	2	24.000	40	0.688	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	665	400	325	386	0.000	0.000	6.63149	0.00000	0.00000
CD-67P	52	24.000	40	0.688	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	665	400	325	386	0.000	0.000	6.63149	0.00000	0.00000
CD-67	2	24.000	40	0.688	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	665	400	325	386	0.000	0.000	6.63149	0.00000	0.00000
CD-VALVE-CD-21	22	24.000	40	0.688	0.000	0.000	0.000	0.000	0.00	90	0.00	A216/WCB/	0.00	0.00	0.00	665	400	325	386	0.000	0.000	6.63149	0.00000	0.00000
CD-68P	58	24.000	40	0.688	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	665	400	325	386	0.000	0.000	6.63149	0.00000	0.00000
CD-68	2	24.000	40	0.688	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	665	400	325	386	0.000	0.000	6.63149	0.00000	0.00000
CD-69P	52	24.000	40	0.688	0.000	0.000	0.000	0.000	0.00	180	0.00	A106/B/	0.00	0.00	0.00	665	400	325	386	0.000	0.000	6.63149	0.00000	0.00000
CD-69	2	24.000	40	0.688	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	665	400	325	386	0.000	0.000	6.63149	0.00000	0.00000
CD-70P	52	24.000	40	0.688	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	665	400	325	386	0.000	0.000	6.63149	0.00000	0.00000
CD-70	2	24.000	40	0.688	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	665	400	325	386	0.000	0.000	6.63149	0.00000	0.00000
CD-71P	52	24.000	40	0.688	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	665	400	325	386	0.000	0.000	6.63149	0.00000	0.00000
CD-71	2	24.000	40	0.688	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	665	400	325	386	0.000	0.000	6.63149	0.00000	0.00000
CD-38P	52	24.000	40	0.688	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	665	400	325	386	0.000	0.000	6.63149	0.00000	0.00000
CD-38	2	24.000	40	0.688	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	665	400	325	386	0.000	0.000	6.63149	0.00000	0.00000
CD-8P	52	24.000	40	0.688	0.000	0.000	0.000	0.000	0.00	180	0.00	A106/B/	0.00	0.00	0.00	665	400	325	386	0.000	0.000	6.63149	0.00000	0.00000
CD-8	4	24.000	40	0.688	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	665	400	325	386	0.000	0.000	6.63149	0.00000	0.00000
CD-72	4	24.000	40	0.688	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	665	400	325	386	0.000	0.000	6.63149	0.00000	0.00000
CD-72P US	54	24.000	40	0.688	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	665	400	325	386	0.000	0.000	6.63149	0.00000	0.00000
CD-72P DS	54	24.000	40	0.688	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	665	400	325	386	0.000	0.000	6.63149	0.00000	0.00000
CD-72FE	6	24.000	40	0.688	0.000	0.000	0.000	0.000	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	665	400	325	386	0.000	0.000	6.63149	0.00000	0.00000
CD-72P-1 US	56	24.000	40	0.688	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	665	400	325	386	0.000	0.000	6.63149	0.00000	0.00000
CD-72P-1 DS	56	24.000	40	0.688	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	665	400	325	386	0.000	0.000	6.63149	0.00000	0.00000
CD-73	2	24.000	40	0.688	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	665	400	325	386	0.000	0.000	6.63149	0.00000	0.00000
CD-73P	52	24.000	40	0.688	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	665	400	325	386	0.000	0.000	6.63149	0.00000	0.00000
CD-7	4	24.000	40	0.688	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	665	400	325	386	0.000	0.000	6.63149	0.00000	0.00000
CD-7P	54	24.000	40	0.688	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	665	400	325	386	0.000	0.000	6.63149	0.00000	0.00000
CD-74	1	24.000	40	0.688	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	665	400	325	386	0.000	0.000	6.63149	0.00000	0.00000
CD-64	3	24.000	40	0.688	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	665	400	325	386	0.000	0.000	6.63149	0.00000	0.00000
CD-64P	53	24.000	40	0.688	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	665	400	325	386	0.000	0.000	6.63149	0.00000	0.00000
CD-65	2	24.000	40	0.688	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	665	400	325	386	0.000	0.000	6.63149	0.00000	0.00000
CD-65P	52	24.000	40	0.688	0.000	0.000	0.000	0.000	0.00	180	0.00	A106/B/	0.00	0.00	0.00	665	400	325	386	0.000	0.000	6.63149	0.00000	0.00000
CD-65R	17	24.000	40	0.688	0.000	0.000	18.000	0.562	0.00	180	0.00	A234/WPB/	0.00	0.00	0.00	665	400	325	386	0.000	0.000	6.63149	6.63149	0.00000
CD-65N	30	18.000	40	0.562	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	665	400	325	386	0.000	0.000	6.63149	0.00000	0.00000
Line Name :	**CD83-3-HDR to BFP22**																							
CD-82R	7	30.000	SPE	0.626	0.000	0.000	24.000	0.687	0.00	90	0.00	A234/WPC/	0.00	0.00	0.00	665	400	460	386	0.000	0.000	6.63149	6.63149	0.00000
CD-82P US	57	24.000	40	0.688	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	665	400	460	386	0.000	0.000	6.63149	0.00000	0.00000
CD-83T	15	24.000	40	0.688	0.000	0.000	12.750	0.406	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	665	400	460	386	0.000	0.000	6.63149	6.63149	0.00000
CD-84T	12	24.000	40	0.688	0.000	0.000	24.000	0.688	0.00	90	0.00	A106/B/	0.00	0.00	0.00	665	400	460	386	0.000	0.000	6.63149	0.00000	6.63149
CD-84 C	62	24.000	40	0.688	0.000	0.000	0.000	0.000	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	665	400	460	386	0.000	0.000	0.00000	0.00000	0.00000
CD-VALVE-CD-21-1	22	24.000	40	0.688	0.000	0.000	0.000	0.000	0.00	90	0.00	A216/WCB/	0.00	0.00	0.00	665	400	325	386	0.000	0.000	6.63149	0.00000	0.00000
CD-6	4	24.000	40	0.688	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	665	400	325	386	0.000	0.000	6.63149	0.00000	0.00000
CD-76P US	54	24.000	40	0.688	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	665	400	325	386	0.000	0.000	6.63149	0.00000	0.00000
CD-76FE	6	24.000	40	0.688	0.000	0.000	0.000	0.000	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	665	400	325	386	0.000	0.000	6.63149	0.00000	0.00000
CD-76P DS	56	24.000	40	0.688	0.000	0.000	0.000	0.000	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	665	400	325	386	0.000	0.000	6.63149	0.00000	0.00000
CD-76	2	24.000	40	0.688	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	665	400	325	386	0.000	0.000	6.63149	0.00000	0.00000
CD-10P DS	52	24.000	40	0.688	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	665	400	325	386	0.000	0.000	6.63149	0.00000	0.00000
CD-10	2	24.000	40	0.688	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	665	400	325	386	0.000	0.000	6.63149	0.00000	0.00000

Component Name	Geom Code	Pipe Size OD (in)	Sch.	Tnom (in)	Tinit (in)	Tcrit (in)	Br/Small End OD (in)	Br/Small Tnom (in)	R / D Ratio	Orient Angle (Deg.)	Pipe Length (in)	Spec/Type/ Class	Material Cr. (%)	Cu. (%)	Mo. (%)	Design Press. (psig)	Design Temp. (Deg. F)	Op. Press. (psig)	Op. Temp. (Deg. F)	Op. Enth. (Btu/lbm)	Op. Qual.	Flow Rate U/S Mn. (Mlbm/hr)	D/S Mn.	Br.
CD-75P US	52	24.000	40	0.688	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	665	400	325	386	0.000	0.000	6.63149	0.00000	0.00000
CD-75	2	24.000	40	0.688	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	665	400	325	386	0.000	0.000	6.63149	0.00000	0.00000
CD-75P	52	24.000	40	0.688	0.000	0.000	0.000	0.000	0.00	180	0.00	A106/B/	0.00	0.00	0.00	665	400	325	386	0.000	0.000	6.63149	0.00000	0.00000
CD-75R	17	24.000	40	0.688	0.000	0.000	18.000	0.562	0.00	180	0.00	A234/WPB/	0.00	0.00	0.00	665	400	325	386	0.000	0.000	6.63149	6.63149	0.00000
CD-75N	30	18.000	40	0.562	0.000	0.000	0.000	0.000	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	665	400	325	386	0.000	0.000	6.63149	0.00000	0.00000
Line Name :	**ES-BFPT Drain to Condenser 21**																							
TEMP05	31	48.000		0.625	0.000	0.000	0.000	0.000	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
Line Name :	**ES-BFPT Drain to Condenser 22**																							
TEMP06	31	48.000		0.625	0.000	0.000	0.000	0.000	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
Line Name :	**ES?-1-1STPT ES TO FWH 21A**																							
LPFW21A-1P1	31	26.000	STD	0.375	0.000	0.000	0.000	0.000	0.00	90	0.00	A53/BS/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
LPFW21A-1P2	1	26.000	STD	0.375	0.000	0.000	0.000	0.000	1.50	90	0.00	A53/BS/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
LPFW21A-1P3	51	26.000	STD	0.375	0.000	0.000	0.000	0.000	0.00	90	0.00	A53/BS/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
LPFW21A-1P4	1	26.000	STD	0.375	0.000	0.000	0.000	0.000	1.50	90	0.00	A53/BS/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
LPFW21A-1N	30	26.000	STD	0.375	0.000	0.000	0.000	0.000	0.00	90	0.00	A53/BS/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
Line Name :	**ES?-1-1STPT ES TO FWH 21B**																							
LPFW21B-1P1	31	26.000	STD	0.375	0.000	0.000	0.000	0.000	0.00	90	0.00	A53/BS/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
LPFW21B-1P2	1	26.000	STD	0.375	0.000	0.000	0.000	0.000	1.50	90	0.00	A53/BS/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
LPFW21B-1P3	51	26.000	STD	0.375	0.000	0.000	0.000	0.000	0.00	90	0.00	A53/BS/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
LPFW21B-1P4	1	26.000	STD	0.375	0.000	0.000	0.000	0.000	1.50	90	0.00	A53/BS/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
LPFW21B-1N	30	26.000	STD	0.375	0.000	0.000	0.000	0.000	0.00	90	0.00	A53/BS/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
Line Name :	**ES?-1-1STPT ES TO FWH 21C**																							
LPFW21C-1P1	31	26.000	STD	0.375	0.000	0.000	0.000	0.000	0.00	90	0.00	A53/BS/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
LPFW21C-1P2	1	26.000	STD	0.375	0.000	0.000	0.000	0.000	1.50	90	0.00	A53/BS/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
LPFW21C-1P3	51	26.000	STD	0.375	0.000	0.000	0.000	0.000	0.00	90	0.00	A53/BS/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
LPFW21C-1P4	1	26.000	STD	0.375	0.000	0.000	0.000	0.000	1.50	90	0.00	A53/BS/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
LPFW21C-1N	30	26.000	STD	0.375	0.000	0.000	0.000	0.000	0.00	90	0.00	A53/BS/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
Line Name :	**ES?-1-2NDPT ES TO FWH 22A**																							
LPFW22A-1P1	31	22.000	STD	0.375	0.000	0.000	0.000	0.000	0.00	90	0.00	A234/WP22/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
LPFW22A-1P2	3	22.000	STD	0.375	0.000	0.000	0.000	0.000	1.50	90	0.00	A691/2.25C22/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
LPFW22A-1P3	53	22.000	STD	0.375	0.000	0.000	0.000	0.000	0.00	90	0.00	A691/2.25C22/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
LPFW22A-1P4	53	22.000	STD	0.375	0.000	0.000	0.000	0.000	0.00	90	0.00	A691/2.25C22/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
LPFW22A-1P5	1	22.000	STD	0.375	0.000	0.000	0.000	0.000	1.50	90	0.00	A691/2.25C22/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
LPFW22A-1N	30	22.000	STD	0.375	0.000	0.000	0.000	0.000	0.00	90	0.00	A691/2.25C22/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
Line Name :	**ES?-1-2NDPT ES TO FWH 22B**																							
LPFW22B-1P1	31	22.000	STD	0.375	0.000	0.000	0.000	0.000	0.00	90	0.00	A691/2.25C22/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
LPFW22B-1P2	3	22.000	STD	0.375	0.000	0.000	0.000	0.000	1.50	90	0.00	A691/2.25C22/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
LPFW22B-1P3	53	22.000	STD	0.375	0.000	0.000	0.000	0.000	0.00	90	0.00	A691/2.25C22/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
LPFW22B-1P4	53	22.000	STD	0.375	0.000	0.000	0.000	0.000	0.00	90	0.00	A691/2.25C22/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
LPFW22B-1P5	1	22.000	STD	0.375	0.000	0.000	0.000	0.000	1.50	90	0.00	A691/2.25C22/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
LPFW22B-1N	30	22.000	STD	0.375	0.000	0.000	0.000	0.000	0.00	90	0.00	A691/2.25C22/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000

Component Name	Geom Code	Pipe Size OD (in)	Sch.	Tnom (in)	Tinit (in)	Tcrit (in)	Br/Small End OD (in)	Br/Small Tnom (in)	R / D Ratio	Orient Angle (Deg.)	Pipe Length (in)	Spec/Type/ Class	Material Cr. (%)	Cu. (%)	Mo. (%)	Design Press. (psig)	Design Temp. (Deg. F)	Op. Press. (psig)	Op. Temp. (Deg. F)	Op. Enth. (Btu/lbm)	Op. Qual.	Flow Rate U/S Mn. (Mlbm/hr)	D/S Mn. (Mlbm/hr)	Br.
Line Name : ES?-1-2NDPT ES TO FWH 22C																								
LPFW22C-1P1	31	22.000	STD	0.375	0.000	0.000	0.000	0.000	0.00	90	0.00	A691/2.25C22/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
LPFW22C-1E	2	22.000	STD	0.375	0.000	0.000	0.000	0.000	1.50	90	0.00	A691/2.25C22/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
LPFW22C-1P2	52	22.000	STD	0.375	0.000	0.000	0.000	0.000	0.00	90	0.00	A691/2.25C22/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
LPFW22C-1P3	52	22.000	STD	0.375	0.000	0.000	0.000	0.000	0.00	90	0.00	A691/2.25C22/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
LPFW22C-1P4	3	22.000	STD	0.375	0.000	0.000	0.000	0.000	1.50	90	0.00	A691/2.25C22/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
LPFW22C-1N	30	22.000	STD	0.375	0.000	0.000	0.000	0.000	0.00	90	0.00	A691/2.25C22/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
Line Name : ES?-2-1STPT ES TO FWH 21A																								
LPFW21A-2P1	31	26.000	STD	0.375	0.000	0.000	0.000	0.000	0.00	90	0.00	A53/BS/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
LPFW21A-2P2	61	26.000	STD	0.375	0.000	0.000	0.000	0.000	0.00	180	0.00	A53/BS/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
LPFW21A-2P3	2	26.000	STD	0.375	0.000	0.000	0.000	0.000	1.50	90	0.00	A53/BE/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
LPFW21A-2P4	52	26.000	STD	0.375	0.000	0.000	0.000	0.000	0.00	90	0.00	A53/BS/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
LPFW21A-2P5	2	26.000	STD	0.375	0.000	0.000	0.000	0.000	1.50	90	0.00	A53/BS/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
LPFW21A-2N	30	26.000	STD	0.375	0.000	0.000	0.000	0.000	0.00	90	0.00	A53/BS/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
Line Name : ES?-2-1STPT ES TO FWH 21B																								
LPFW21B-2P1	31	26.000	STD	0.375	0.000	0.000	0.000	0.000	0.00	90	0.00	A53/BS/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
LPFW21B-2P2	61	26.000	STD	0.375	0.000	0.000	0.000	0.000	0.00	180	0.00	A53/BS/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
LPFW21B-2P3	2	26.000	STD	0.375	0.000	0.000	0.000	0.000	1.50	90	0.00	A53/BE/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
LPFW21B-2P4	52	26.000	STD	0.375	0.000	0.000	0.000	0.000	0.00	90	0.00	A53/BS/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
LPFW21B-2P5	2	26.000	STD	0.375	0.000	0.000	0.000	0.000	1.50	90	0.00	A53/BS/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
LPFW21B-2N	30	26.000	STD	0.375	0.000	0.000	0.000	0.000	0.00	90	0.00	A53/BS/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
Line Name : ES?-2-1STPT ES TO FWH 21C																								
LPFW21C-2P1	31	26.000	STD	0.375	0.000	0.000	0.000	0.000	0.00	90	0.00	A53/BS/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
LPFW21C-2P2	61	26.000	STD	0.375	0.000	0.000	0.000	0.000	0.00	180	0.00	A53/BS/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
LPFW21C-2P3	2	26.000	STD	0.375	0.000	0.000	0.000	0.000	1.50	90	0.00	A53/BE/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
LPFW21C-2P4	52	26.000	STD	0.375	0.000	0.000	0.000	0.000	0.00	90	0.00	A53/BS/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
LPFW21C-2P5	2	26.000	STD	0.375	0.000	0.000	0.000	0.000	1.50	90	0.00	A53/BS/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
LPFW21C-2N	30	26.000	STD	0.375	0.000	0.000	0.000	0.000	0.00	90	0.00	A53/BS/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
Line Name : ES?-2-2NDPT ES TO FWH 22A																								
LPFW22A-2P1	31	22.000	STD	0.375	0.000	0.000	0.000	0.000	0.00	90	0.00	A691/2.25C22/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
LPFW22A-2P2	3	22.000	STD	0.375	0.000	0.000	0.000	0.000	1.50	90	0.00	A691/2.25C22/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
LPFW22A-2N	30	22.000	STD	0.375	0.000	0.000	0.000	0.000	0.00	90	0.00	A691/2.25C22/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
Line Name : ES?-2-2NDPT ES TO FWH 22B																								
LPFW22B-2P1	31	22.000	STD	0.375	0.000	0.000	0.000	0.000	0.00	90	0.00	A691/2.25C22/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
LPFW22B-2P2	3	22.000	STD	0.375	0.000	0.000	0.000	0.000	1.50	90	0.00	A691/2.25C22/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
LPFW22B-2P3	53	22.000	STD	0.375	0.000	0.000	0.000	0.000	0.00	180	0.00	A691/2.25C22/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
LPFW22B-2N	30	22.000	STD	0.375	0.000	0.000	0.000	0.000	0.00	90	0.00	A691/2.25C22/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
Line Name : ES?-2-2NDPT ES TO FWH 22C																								
LPFW22C-2P1	31	22.000	STD	0.375	0.000	0.000	0.000	0.000	0.00	90	0.00	A691/2.25C22/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
LPFW22C-2P2	3	22.000	STD	0.375	0.000	0.000	0.000	0.000	1.50	90	0.00	A691/2.25C22/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
LPFW22C-2N	30	22.000	STD	0.375	0.000	0.000	0.000	0.000	0.00	90	0.00	A691/2.25C22/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000

Component Name	Geom Code	Pipe Size OD (in)	Sch.	Tnom (in)	Tinit (in)	Tcrit (in)	Br/Small End OD (in)	Br/Small Tnom (in)	R / D Ratio	Orient Angle (Deg.)	Pipe Length (in)	Spec/Type/ Class	Material Cr. (%)	Cu. (%)	Mo. (%)	Design Press. (psig)	Design Temp. (Deg. F)	Op. Press. (psig)	Op. Temp. (Deg. F)	Op. Enth. (Btu/lbm)	Op. Qual.	Flow Rate U/S Mn. (Mlbm/hr)	D/S Mn. (Mlbm/hr)	Br.
Line Name : ES?-3-1STPT ES TO FWH 21A																								
LPFW21A-3P1	31	26.000	STD	0.375	0.000	0.000	0.000	0.000	0.00	90	0.00	A53/BS/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
LPFW21A-3P2	61	26.000	STD	0.375	0.000	0.000	0.000	0.000	0.00	180	0.00	A53/BS/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
LPFW21A-3P3	2	26.000	STD	0.375	0.000	0.000	0.000	0.000	1.50	90	0.00	A53/BE/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
LPFW21A-3P4	52	26.000	STD	0.375	0.000	0.000	0.000	0.000	0.00	90	0.00	A53/BS/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
LPFW21A-3P5	2	26.000	STD	0.375	0.000	0.000	0.000	0.000	1.50	90	0.00	A53/BS/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
LPFW21A-3N	30	26.000	STD	0.375	0.000	0.000	0.000	0.000	0.00	90	0.00	A53/BS/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
Line Name : ES?-3-1STPT ES TO FWH 21B																								
LPFW21B-3P1	31	26.000	STD	0.375	0.000	0.000	0.000	0.000	0.00	90	0.00	A53/BS/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
LPFW21B-3P2	61	26.000	STD	0.375	0.000	0.000	0.000	0.000	0.00	180	0.00	A53/BS/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
LPFW21B-3P3	2	26.000	STD	0.375	0.000	0.000	0.000	0.000	1.50	90	0.00	A53/BE/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
LPFW21B-3P4	52	26.000	STD	0.375	0.000	0.000	0.000	0.000	0.00	90	0.00	A53/BS/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
LPFW21B-3P5	2	26.000	STD	0.375	0.000	0.000	0.000	0.000	1.50	90	0.00	A53/BS/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
LPFW21B-3N	30	26.000	STD	0.375	0.000	0.000	0.000	0.000	0.00	90	0.00	A53/BS/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
Line Name : ES?-3-1STPT ES TO FWH 21C																								
LPFW21C-3P1	31	26.000	STD	0.375	0.000	0.000	0.000	0.000	0.00	90	0.00	A53/BS/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
LPFW21C-3P2	61	26.000	STD	0.375	0.000	0.000	0.000	0.000	0.00	180	0.00	A53/BS/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
LPFW21C-3P3	2	26.000	STD	0.375	0.000	0.000	0.000	0.000	1.50	90	0.00	A53/BE/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
LPFW21C-3P4	52	26.000	STD	0.375	0.000	0.000	0.000	0.000	0.00	90	0.00	A53/BS/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
LPFW21C-3P5	2	26.000	STD	0.375	0.000	0.000	0.000	0.000	1.50	90	0.00	A53/BS/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
LPFW21C-3N	30	26.000	STD	0.375	0.000	0.000	0.000	0.000	0.00	90	0.00	A53/BS/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
Line Name : ES?-4-1STPT ES TO FWH 21A																								
LPFW21A-4P1	31	26.000	STD	0.375	0.000	0.000	0.000	0.000	0.00	90	0.00	A53/BS/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
LPFW21A-4P2	1	26.000	STD	0.375	0.000	0.000	0.000	0.000	1.50	90	0.00	A53/BS/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
LPFW21A-4P3	51	26.000	STD	0.375	0.000	0.000	0.000	0.000	0.00	90	0.00	A53/BS/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
LPFW21A-4P4	51	26.000	STD	0.375	0.000	0.000	0.000	0.000	0.00	90	0.00	A53/BS/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
LPFW21A-4P5	1	26.000	STD	0.375	0.000	0.000	0.000	0.000	1.50	90	0.00	A53/BS/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
LPFW21A-4N	30	26.000	STD	0.375	0.000	0.000	0.000	0.000	0.00	90	0.00	A53/BS/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
Line Name : ES?-4-1STPT ES TO FWH 21B																								
LPFW21B-4P1	31	26.000	STD	0.375	0.000	0.000	0.000	0.000	0.00	90	0.00	A53/BS/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
LPFW21B-4P2	1	26.000	STD	0.375	0.000	0.000	0.000	0.000	1.50	90	0.00	A53/BS/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
LPFW21B-4P3	51	26.000	STD	0.375	0.000	0.000	0.000	0.000	0.00	90	0.00	A53/BS/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
LPFW21B-4P4	51	26.000	STD	0.375	0.000	0.000	0.000	0.000	0.00	90	0.00	A53/BS/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
LPFW21B-4P5	1	26.000	STD	0.375	0.000	0.000	0.000	0.000	1.50	90	0.00	A53/BS/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
LPFW21B-4N	30	26.000	STD	0.375	0.000	0.000	0.000	0.000	0.00	90	0.00	A53/BS/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
Line Name : ES?-4-1STPT ES TO FWH 21C																								
LPFW21C-4P1	31	26.000	STD	0.375	0.000	0.000	0.000	0.000	0.00	90	0.00	A53/BS/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
LPFW21C-4P2	1	26.000	STD	0.375	0.000	0.000	0.000	0.000	1.50	90	0.00	A53/BS/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
LPFW21C-4P3	51	26.000	STD	0.375	0.000	0.000	0.000	0.000	0.00	90	0.00	A53/BS/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
LPFW21C-4P4	51	26.000	STD	0.375	0.000	0.000	0.000	0.000	0.00	90	0.00	A53/BS/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
LPFW21C-4P5	1	26.000	STD	0.375	0.000	0.000	0.000	0.000	1.50	90	0.00	A53/BS/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
LPFW21C-4N	30	26.000	STD	0.375	0.000	0.000	0.000	0.000	0.00	90	0.00	A53/BS/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
Line Name : ES1-1-3RDPT ES to FWH 23A																								
3EXA-18N	31	20.000	10	0.250	0.000	0.000	0.000	0.000	0.00	90	0.00	A516/60/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
3EXA-18X	6	20.000	10	0.250	0.000	0.000	0.000	0.000	0.00	180	0.00	A234/WPB/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000

Component Name	Geom Code	Pipe Size OD (in)	Sch.	Tnom (in)	Tinit (in)	Tcrit (in)	Br/Small End OD (in)	Br/Small Tnom (in)	R / D Ratio	Orient Angle (Deg.)	Pipe Length (in)	Spec/Type/ Class	Material Cr. (%)	Cu. (%)	Mo. (%)	Design Press. (psig)	Design Temp. (Deg. F)	Op. Press. (psig)	Op. Temp. (Deg. F)	Op. Enth. (Btu/lbm)	Op. Qual.	Flow Rate U/S Mn. (Mlbm/hr)	D/S Mn.	Br.
3EXA-18	3	20.000	10	0.250	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
3EXA-17	3	20.000	10	0.250	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
3EXA-17P	53	20.000	10	0.250	0.000	0.000	0.000	0.000	0.00	90	0.00	A53/BS/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
3EXA-16	2	20.000	10	0.250	0.000	0.000	0.000	0.000	1.00	90	0.00	A234/WPB/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
3EXA-16P	52	20.000	10	0.250	0.000	0.000	0.000	0.000	0.00	180	0.00	A53/BS/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
3EXA-15P	60	28.000	SPE	0.313	0.000	0.000	0.000	0.000	0.00	90	0.00	A672/A5511/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000

Line Name : ES1-3-3RDPT ES to FWH 23A

3EXA-14	12	28.000	SPE	0.313	0.000	0.000	20.000	0.250	0.00	90	0.00	A672/A5511/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000

Line Name : ES1-2-3RDPT ES to FWH 23A

3EXA-22N	31	20.000	10	0.250	0.000	0.000	0.000	0.000	0.00	90	0.00	A516/60/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
3EXA-22X	6	20.000	10	0.250	0.000	0.000	0.000	0.000	0.00	180	0.00	A234/WPB/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
3EXA-22	3	20.000	10	0.250	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
3EXA-21	3	20.000	10	0.250	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
3EXA-21P	53	20.000	10	0.250	0.000	0.000	0.000	0.000	0.00	90	0.00	A53/BS/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
3EXA-20	3	20.000	10	0.250	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
3EXA-20P	53	20.000	10	0.250	0.000	0.000	0.000	0.000	0.00	90	0.00	A53/BS/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
3EXA-19	2	20.000	10	0.250	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
3EXA-19P	52	20.000	10	0.250	0.000	0.000	0.000	0.000	0.00	180	0.00	A53/BS/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000

Line Name : ES1-3-3RDPT ES to FWH 23A

3EXA-14P US	62	28.000	SPE	0.313	0.000	0.000	0.000	0.000	0.00	90	0.00	A672/A5511/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
3EXA-14P DS1	62	28.000	SPE	0.313	0.381	0.000	0.000	0.000	0.00	90	0.00	A672/A5511/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.17686	0.00000	0.00000
3EXA-14P DS	62	28.000	SPE	0.313	0.000	0.000	0.000	0.000	0.00	90	0.00	A672/A5511/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
3EXA-VALVE 3EX-1	22	28.000	SPE	0.313	0.000	0.000	0.000	0.000	0.00	90	0.00	A216/WCB/	0.00	0.00	0.00	50	300	19	0	1125.600	0.000	0.17686	0.00000	0.00000
3EXA-13P	58	28.000	SPE	0.313	0.342	0.000	0.000	0.000	0.00	90	0.00	A672/A5511/	0.00	0.00	0.00	50	300	19	0	1125.600	0.000	0.17686	0.00000	0.00000
3EXA-VALVE 3EX-2	25	28.000	SPE	0.313	0.000	0.000	0.000	0.000	0.00	90	0.00	A216/WCB/	0.00	0.00	0.00	50	300	19	0	1125.600	0.000	0.17686	0.00000	0.00000
3EXA-12P	58	28.000	SPE	0.313	0.338	0.000	0.000	0.000	0.00	90	0.00	A672/A5511/	0.00	0.00	0.00	50	300	19	0	1125.600	0.000	0.17686	0.00000	0.00000
3EXA-10	2	28.000	SPE	0.313	0.413	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	50	300	19	0	1125.600	0.000	0.17686	0.00000	0.00000
3EXA-9P	52	28.000	SPE	0.313	0.345	0.000	0.000	0.000	0.00	180	0.00	A672/A5511/	0.00	0.00	0.00	50	300	19	0	1125.600	0.000	0.17686	0.00000	0.00000
3EXA-9	4	28.000	SPE	0.313	0.417	0.000	0.000	0.000	1.00	90	0.00	A234/WPB/	0.00	0.00	0.00	50	300	19	0	1125.600	0.000	0.17686	0.00000	0.00000
3EXA-8P	54	28.000	SPE	0.313	0.000	0.000	0.000	0.000	0.00	90	0.00	A672/A5511/	0.00	0.00	0.00	50	300	19	0	1125.600	0.000	0.17686	0.00000	0.00000
3EXA-8	4	28.000	SPE	0.313	0.434	0.000	0.000	0.000	1.00	90	0.00	A234/WPB/	0.00	0.00	0.00	50	300	19	0	1125.600	0.000	0.17686	0.00000	0.00000
3EXA-7P	54	28.000	SPE	0.313	0.000	0.000	0.000	0.000	0.00	90	0.00	A672/A5511/	0.00	0.00	0.00	50	300	19	0	1125.600	0.000	0.17686	0.00000	0.00000
3EXA-7	2	28.000	SPE	0.313	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WP22/	0.00	0.00	0.00	50	300	19	0	1125.600	0.000	0.17686	0.00000	0.00000
3EXA-6P DS	52	28.000	SPE	0.313	0.000	0.000	0.000	0.000	0.00	90	0.00	A691/2.25C22/	0.00	0.00	0.00	50	300	19	0	1125.600	0.000	0.17686	0.00000	0.00000
3EXA-6	2	28.000	SPE	0.313	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WP22/	0.00	0.00	0.00	50	300	19	0	1125.600	0.000	0.17686	0.00000	0.00000
3EXA-5P	52	28.000	SPE	0.313	0.000	0.000	0.000	0.000	0.00	180	0.00	A691/2.25C22/	0.00	0.00	0.00	50	300	19	0	1125.600	0.000	0.17686	0.00000	0.00000
3EXA-5	4	28.000	SPE	0.313	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WP22/	0.00	0.00	0.00	50	300	19	0	1125.600	0.000	0.17686	0.00000	0.00000
3EXA-4P US	54	28.000	SPE	0.313	0.000	0.000	0.000	0.000	0.00	90	0.00	A691/2.25C22/	0.00	0.00	0.00	50	300	19	0	1125.600	0.000	0.17686	0.00000	0.00000
3EXA-4	14	28.000	SPE	0.313	0.000	0.000	20.000	0.250	0.00	90	0.00	A234/WP22/	0.00	0.00	0.00	50	300	19	0	1125.600	0.000	0.17686	0.08843	0.08843

Line Name : ES1-4-3RDPT ES to FWH 23A

3EXA-1P	64	20.000	10	0.250	0.000	0.000	0.000	0.000	0.00	0	0.00	A335/P22/	0.00	0.00	0.00	50	300	19	0	1125.600	0.000	0.08843	0.00000	0.00000
3EXA-1A	64	20.000	10	0.250	0.000	0.000	0.000	0.000	0.00	0	0.00	A335/P22/	0.00	0.00	0.00	50	300	19	0	1125.600	0.000	0.08843	0.00000	0.00000
3EXA-1	2	20.000	10	0.250	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WP22/	0.00	0.00	0.00	50	300	19	0	1125.600	0.000	0.08843	0.00000	0.00000
3EXA-1N	30	20.000	10	0.250	0.000	0.000	0.000	0.000	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	50	300	19	0	1125.600	0.000	0.08843	0.00000	0.00000

Line Name : ES1-5-3RDPT ES to FWH 23A

3EXA-11R	7	28.000	SPE	0.313	0.000	0.000	20.000	0.250	0.00	90	0.00	A234/WP22/	0.00	0.00	0.00	50	300	19	0	1125.600	0.000	0.08843	0.08843	0.00000
3EXA-11RP	67	20.000	10	0.250	0.000	0.000	0.000	0.000	0.00	90	0.00	A53/BE/	0.00	0.00	0.00	50	300	19	0	1125.600	0.000	0.08843	0.00000	0.00000
3EXA-3	4	20.000	10	0.250	0.388	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	50	300	19	0	1125.600	0.000	0.08843	0.00000	0.00000
3EXA-2P	54	20.000	10	0.250	0.000	0.000	0.000	0.000	0.00	0	0.00	A53/BE/	0.00	0.00	0.00	50	300	19	0	1125.600	0.000	0.08843	0.00000	0.00000
3EXA-2A	54	20.000	10	0.250	0.411	0.000	0.000	0.000	0.00	0	0.00	A53/BE/	0.00	0.00	0.00	50	300	19	0	1125.600	0.000	0.08843	0.00000	0.00000

Component Name	Geom Code	Pipe Size OD (in)	Sch.	Tnom (in)	Tinit (in)	Tcrit (in)	Br/Small End OD (in)	Br/Small Tnom (in)	R / D Ratio	Orient Angle (Deg.)	Pipe Length (in)	Spec/Type/ Class	Material Cr. (%)	Cu. (%)	Mo. (%)	Design Press. (psig)	Design Temp. (Deg. F)	Op. Press. (psig)	Op. Temp. (Deg. F)	Op. Enth. (Btu/lbm)	Op. Qual.	Flow Rate U/S Mn. (Mlbm/hr)	D/S Mn. (Mlbm/hr)	Br.
3EXA-2	2	20.000	10	0.250	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	50	300	19	0	1125.600	0.000	0.08843	0.00000	0.00000
3EXA-2N	30	20.000	10	0.250	0.000	0.000	0.000	0.000	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	50	300	19	0	1125.600	0.000	0.08843	0.00000	0.00000
Line Name : ES2-1-3RDPT ES to FWH 23B																								
3EXB-14N	31	20.000	10	0.250	0.000	0.000	0.000	0.000	0.00	90	0.00	A516/60/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
3EXB-14X	6	20.000	10	0.250	0.000	0.000	0.000	0.000	0.00	180	0.00	A234/WPB/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
3EXB-14	3	20.000	10	0.250	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
3EXB-13	3	20.000	10	0.250	0.000	0.000	0.000	0.000	1.50	180	0.00	A234/WPB/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
3EXB-13P	53	20.000	10	0.250	0.000	0.000	0.000	0.000	0.00	90	0.00	A53/BS/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
3EXB-12	2	20.000	10	0.250	0.000	0.000	0.000	0.000	1.00	90	0.00	A234/WPB/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
3EXB-12P	52	20.000	10	0.250	0.000	0.000	0.000	0.000	0.00	180	0.00	A53/BS/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
3EXB-11P	60	28.000	SPE	0.313	0.000	0.000	0.000	0.000	0.00	90	0.00	A672/A5511/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
Line Name : ES2-3-3RDPT ES to FWH 23B																								
3EXB-10	12	28.000	SPE	0.313	0.000	0.000	20.000	0.250	0.00	90	0.00	A672/A5511/	0.00	0.00	0.00	50	300	19	0	1125.600	0.000	0.17686	0.00000	0.00000
Line Name : ES2-2-3RDPT ES to FWH 23B																								
3EXB-18N	31	20.000	10	0.250	0.000	0.000	0.000	0.000	0.00	90	0.00	A516/60/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
3EXB-18X	6	20.000	10	0.250	0.000	0.000	0.000	0.000	0.00	180	0.00	A234/WPB/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
3EXB-18	3	20.000	10	0.250	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
3EXB-17	3	20.000	10	0.250	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
3EXB-17P	53	20.000	10	0.250	0.000	0.000	0.000	0.000	0.00	90	0.00	A53/BS/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
3EXB-16	3	20.000	10	0.250	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
3EXB-16P	53	20.000	10	0.250	0.000	0.000	0.000	0.000	0.00	90	0.00	A53/BS/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
3EXB-15	2	20.000	10	0.250	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
3EXB-15P	52	20.000	10	0.250	0.000	0.000	0.000	0.000	0.00	180	0.00	A53/BS/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
Line Name : ES2-3-3RDPT ES to FWH 23B																								
3EXB-10P US	62	28.000	SPE	0.313	0.000	0.000	0.000	0.000	0.00	90	0.00	A672/A5511/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
3EXB-10P DS1	62	28.000	SPE	0.313	0.000	0.000	0.000	0.000	0.00	90	0.00	A672/A5511/	0.00	0.00	0.00	50	300	19	0	1125.600	0.000	0.17686	0.00000	0.00000
3EXB-10P DS	62	28.000	SPE	0.313	0.000	0.000	0.000	0.000	0.00	90	0.00	A672/A5511/	0.00	0.00	0.00	50	300	19	0	1125.600	0.000	0.17686	0.00000	0.00000
3EXB-VALVE 3EX-3	22	28.000	SPE	0.313	0.000	0.000	0.000	0.000	0.00	90	0.00	A216/WCB/	0.00	0.00	0.00	50	300	19	0	1125.600	0.000	0.17686	0.00000	0.00000
3EXB-9P	58	28.000	SPE	0.313	0.333	0.000	0.000	0.000	0.00	90	0.00	A672/A5511/	0.00	0.00	0.00	50	300	19	0	1125.600	0.000	0.17686	0.00000	0.00000
3EXB-VALVE 3EX-4	25	28.000	SPE	0.313	0.000	0.000	0.000	0.000	0.00	90	0.00	A216/WCB/	0.00	0.00	0.00	50	300	19	0	1125.600	0.000	0.17686	0.00000	0.00000
3EXB-9A	58	28.000	SPE	0.313	0.000	0.000	0.000	0.000	0.00	90	0.00	A672/A5511/	0.00	0.00	0.00	50	300	19	0	1125.600	0.000	0.17686	0.00000	0.00000
3EXB-9	2	28.000	SPE	0.313	0.420	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	50	300	19	0	1125.600	0.000	0.17686	0.00000	0.00000
3EXB-8	3	28.000	SPE	0.313	0.403	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	50	300	19	0	1125.600	0.000	0.17686	0.00000	0.00000
3EXB-7P	53	28.000	SPE	0.313	0.322	0.000	0.000	0.000	0.00	135	0.00	A672/A5511/	0.00	0.00	0.00	50	300	19	0	1125.600	0.000	0.17686	0.00000	0.00000
3EXB-7	1	28.000	SPE	0.313	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	50	300	19	0	1125.600	0.000	0.17686	0.00000	0.00000
3EXB-6P US	51	28.000	SPE	0.313	0.349	0.000	0.000	0.000	0.00	90	0.00	A672/A5511/	0.00	0.00	0.00	50	300	19	0	1125.600	0.000	0.17686	0.00000	0.00000
3EXB-6P DS	51	28.000	SPE	0.313	0.338	0.000	0.000	0.000	0.00	90	0.00	A672/A5511/	0.00	0.00	0.00	50	300	19	0	1125.600	0.000	0.17686	0.00000	0.00000
3EXB-6	2	28.000	SPE	0.313	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	50	300	19	0	1125.600	0.000	0.17686	0.00000	0.00000
3EXB-5P	52	28.000	SPE	0.313	0.355	0.000	0.000	0.000	0.00	180	0.00	A672/A5511/	0.00	0.00	0.00	50	300	19	0	1125.600	0.000	0.17686	0.00000	0.00000
3EXB-5	4	28.000	SPE	0.313	0.414	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	50	300	19	0	1125.600	0.000	0.17686	0.00000	0.00000
3EXB-4A US	54	28.000	SPE	0.313	0.328	0.000	0.000	0.000	0.00	90	0.00	A672/A5511/	0.00	0.00	0.00	50	300	19	0	1125.600	0.000	0.17686	0.00000	0.00000
3EXB-4A DS	54	28.000	SPE	0.313	0.000	0.000	0.000	0.000	0.00	90	0.00	A672/A5511/	0.00	0.00	0.00	50	300	19	0	1125.600	0.000	0.17686	0.00000	0.00000
3EXB-4	14	28.000	SPE	0.313	0.000	0.000	20.000	0.250	0.00	90	0.00	A53/BE/	0.00	0.00	0.00	50	300	19	0	1125.600	0.000	0.17686	0.08843	0.08843
Line Name : ES2-4-3RDPT ES to FWH 23B																								
3EXB-4P US	64	20.000	10	0.250	0.262	0.000	0.000	0.000	0.00	0	0.00	A53/BE/	0.00	0.00	0.00	50	300	19	0	1125.600	0.000	0.08843	0.00000	0.00000
3EXB-1A	64	20.000	10	0.250	0.272	0.000	0.000	0.000	0.00	0	0.00	A53/BE/	0.00	0.00	0.00	50	300	19	0	1125.600	0.000	0.08843	0.00000	0.00000
3EXB-1	2	20.000	10	0.250	0.367	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	50	300	19	0	1125.600	0.000	0.08843	0.00000	0.00000
3EXB-1N	30	20.000	10	0.250	0.000	0.000	0.000	0.000	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	50	300	19	0	1125.600	0.000	0.08843	0.00000	0.00000

Component Name	Geom Code	Pipe Size OD (in)	Sch.	Tnom (in)	Tinit (in)	Tcrit (in)	Br/Small End OD (in)	Br/Small Tnom (in)	R / D Ratio	Orient Angle (Deg.)	Pipe Length (in)	Spec/Type/ Class	Material Cr. (%)	Cu. (%)	Mo. (%)	Design Press. (psig)	Design Temp. (Deg. F)	Op. Press. (psig)	Op. Temp. (Deg. F)	Op. Enth. (Btu/lbm)	Op. Qual.	Flow Rate U/S Mn. (Mlbm/hr)	D/S Mn. (Mlbm/hr)	Br.
Line Name : ES2-5-3RDPT ES to FWH 23B																								
3EXB-10R	7	28.000	SPE	0.313	0.000	0.000	20.000	0.250	0.00	90	0.00	A335/P22/	0.00	0.00	0.00	50	300	19	0	1125.600	0.000	0.08843	0.08843	0.00000
3EXB-3P US	57	20.000	10	0.250	0.000	0.000	0.000	0.000	0.00	90	0.00	A53/BE/	0.00	0.00	0.00	50	300	19	0	1125.600	0.000	0.08843	0.00000	0.00000
3EXB-3P DS	57	20.000	10	0.250	0.000	0.000	0.000	0.000	0.00	90	0.00	A53/BE/	0.00	0.00	0.00	50	300	19	0	1125.600	0.000	0.08843	0.00000	0.00000
3EXB-3	2	20.000	10	0.250	0.454	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	50	300	19	0	1125.600	0.000	0.08843	0.00000	0.00000
3EXB-2P US	52	20.000	10	0.250	0.402	0.000	0.000	0.000	0.00	0	0.00	A53/BE/	0.00	0.00	0.00	50	300	19	0	1125.600	0.000	0.08843	0.00000	0.00000
3EXB-2P DS	52	20.000	10	0.250	0.000	0.000	0.000	0.000	0.00	0	0.00	A53/BE/	0.00	0.00	0.00	50	300	19	0	1125.600	0.000	0.08843	0.00000	0.00000
3EXB-2A	52	20.000	10	0.250	0.378	0.000	0.000	0.000	0.00	0	0.00	A53/BS/	0.00	0.00	0.00	50	300	19	0	1125.600	0.000	0.08843	0.00000	0.00000
3EXB-2	2	20.000	10	0.250	0.477	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	50	300	19	0	1125.600	0.000	0.08843	0.00000	0.00000
3EXB-2N	30	20.000	10	0.250	0.000	0.000	0.000	0.000	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	50	300	19	0	1125.600	0.000	0.08843	0.00000	0.00000
Line Name : ES3-1-3RDPT ES to FWH 23C																								
3EXC-18N	31	20.000	10	0.250	0.000	0.000	0.000	0.000	0.00	90	0.00	A516/60/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
3EXC-18X	6	20.000	10	0.250	0.000	0.000	0.000	0.000	0.00	180	0.00	A234/WPB/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
3EXC-18	3	20.000	10	0.250	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
3EXC-17	3	20.000	10	0.250	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
3EXC-17P	53	20.000	10	0.250	0.000	0.000	0.000	0.000	0.00	90	0.00	A53/BS/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
3EXC-16	2	20.000	10	0.250	0.000	0.000	0.000	0.000	1.00	90	0.00	A234/WPB/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
3EXC-16P	52	20.000	10	0.250	0.000	0.000	0.000	0.000	0.00	180	0.00	A53/BS/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
3EXC-15P	60	28.000	SPE	0.313	0.000	0.000	0.000	0.000	0.00	90	0.00	A672/A5511/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
Line Name : ES3-3-3RDPT ES to FWH 23C																								
3EXC-14	12	28.000	SPE	0.313	0.000	0.000	20.000	0.250	0.00	90	0.00	A672/A5511/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
Line Name : ES3-2-3RDPT ES to FWH 23C																								
3EXC-22N	31	20.000	10	0.250	0.000	0.000	0.000	0.000	0.00	90	0.00	A516/60/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
3EXC-22X	6	20.000	10	0.250	0.000	0.000	0.000	0.000	0.00	180	0.00	A234/WPB/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
3EXC-22	3	20.000	10	0.250	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
3EXC-21	3	20.000	10	0.250	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
3EXC-21P	53	20.000	10	0.250	0.000	0.000	0.000	0.000	0.00	90	0.00	A53/BS/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
3EXC-20	3	20.000	10	0.250	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
3EXC-20P	53	20.000	10	0.250	0.000	0.000	0.000	0.000	0.00	90	0.00	A53/BS/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
3EXC-19	2	20.000	10	0.250	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
3EXC-19P	52	20.000	10	0.250	0.000	0.000	0.000	0.000	0.00	180	0.00	A53/BS/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
Line Name : ES3-3-3RDPT ES to FWH 23C																								
3EXC-14P US	62	28.000	SPE	0.313	0.000	0.000	0.000	0.000	0.00	90	0.00	A672/A5511/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.17686	0.00000	0.00000
3EXC-14P DS1	62	28.000	SPE	0.313	0.440	0.000	0.000	0.000	0.00	90	0.00	A672/A5511/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.17686	0.00000	0.00000
3EXC-14P DS	62	28.000	SPE	0.313	0.000	0.000	0.000	0.000	0.00	90	0.00	A672/A5511/	0.00	0.00	0.00	50	300	19	0	1125.600	0.000	0.17686	0.00000	0.00000
3EXC-VALVE 3EX-5	22	28.000	SPE	0.313	0.000	0.000	0.000	0.000	0.00	90	0.00	A216/WCB/	0.00	0.00	0.00	50	300	19	0	1125.600	0.000	0.17686	0.00000	0.00000
3EXC-13P	58	28.000	SPE	0.313	0.000	0.000	0.000	0.000	0.00	90	0.00	A672/A5511/	0.00	0.00	0.00	50	300	19	0	1125.600	0.000	0.17686	0.00000	0.00000
3EXC-VALVE 3EX-6	25	28.000	SPE	0.313	0.000	0.000	0.000	0.000	0.00	90	0.00	A216/WCB/	0.00	0.00	0.00	50	300	19	0	1125.600	0.000	0.17686	0.00000	0.00000
3EXC-13R	7	28.000	SPE	0.313	0.000	0.000	24.000	0.250	0.00	90	0.00	A-403/WP304/	0.00	0.00	0.00	50	300	19	0	1125.600	0.000	0.17686	0.17686	0.00000
3EXC-VALVE PCV-1161	23	24.000	10	0.250	0.000	0.000	0.000	0.000	0.00	90	0.00	A216/WCB/	0.00	0.00	0.00	50	300	19	0	1125.600	0.000	0.17686	0.00000	0.00000
3EXC-12R	18	28.000	SPE	0.313	0.000	0.000	24.000	0.250	0.00	90	0.00	A-403/WP304/	0.00	0.00	0.00	50	300	19	0	1125.600	0.000	0.17686	0.17686	0.00000
3EXC-12P	68	28.000	SPE	0.313	0.000	0.000	0.000	0.000	0.00	90	0.00	A-312/TP304/	0.00	0.00	0.00	50	300	19	0	1125.600	0.000	0.17686	0.00000	0.00000
3EXC-10	2	28.000	SPE	0.313	0.415	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	50	300	19	0	1125.600	0.000	0.17686	0.00000	0.00000
3EXC-9P	52	28.000	SPE	0.313	0.364	0.000	0.000	0.000	0.00	180	0.00	A672/A5511/	0.00	0.00	0.00	50	300	19	0	1125.600	0.000	0.17686	0.00000	0.00000
3EXC-9	4	28.000	SPE	0.313	0.418	0.000	0.000	0.000	1.00	90	0.00	A234/WPB/	0.00	0.00	0.00	50	300	19	0	1125.600	0.000	0.17686	0.00000	0.00000
3EXC-8P	54	28.000	SPE	0.313	0.000	0.000	0.000	0.000	0.00	90	0.00	A672/A5511/	0.00	0.00	0.00	50	300	19	0	1125.600	0.000	0.17686	0.00000	0.00000
3EXC-8	4	28.000	SPE	0.313	0.000	0.000	0.000	0.000	1.00	90	0.00	A234/WPB/	0.00	0.00	0.00	50	300	19	0	1125.600	0.000	0.17686	0.00000	0.00000
3EXC-7P	54	28.000	SPE	0.313	0.314	0.000	0.000	0.000	0.00	90	0.00	A672/A5511/	0.00	0.00	0.00	50	300	19	0	1125.600	0.000	0.17686	0.00000	0.00000
3EXC-7	2	28.000	SPE	0.313	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	50	300	19	0	1125.600	0.000	0.17686	0.00000	0.00000
3EXC-6P	52	28.000	SPE	0.313	0.349	0.000	0.000	0.000	0.00	90	0.00	A672/A5511/	0.00	0.00	0.00	50	300	19	0	1125.600	0.000	0.17686	0.00000	0.00000
3EXC-6	2	28.000	SPE	0.313	0.443	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	50	300	19	0	1125.600	0.000	0.17686	0.00000	0.00000

Component Name	Geom Code	Pipe Size OD (in)	Sch.	Tnom (in)	Tinit (in)	Tcrit (in)	Br/Small End OD (in)	Br/Small Tnom (in)	R / D Ratio	Orient Angle (Deg.)	Pipe Length (in)	Spec/Type/ Class	Material Cr. (%)	Cu. (%)	Mo. (%)	Design Press. (psig)	Design Temp. (Deg. F)	Op. Press. (psig)	Op. Temp. (Deg. F)	Op. Enth. (Btu/lbm)	Op. Qual.	Flow Rate U/S Mn. (Mlbm/hr)	D/S Mn.	Br.
3EXC-5P	52	28.000	SPE	0.313	0.000	0.000	0.000	0.000	0.00	180	0.00	A672/A5511/	0.00	0.00	0.00	50	300	19	0	1125.600	0.000	0.17686	0.00000	0.00000
3EXC-5	2	28.000	SPE	0.313	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	50	300	19	0	1125.600	0.000	0.17686	0.00000	0.00000
3EXC-4P	52	28.000	SPE	0.313	0.000	0.000	0.000	0.000	0.00	90	0.00	A53/BE/	0.00	0.00	0.00	50	300	19	0	1125.600	0.000	0.17686	0.00000	0.00000
3EXC-4	14	28.000	SPE	0.313	0.000	0.000	20.000	0.250	0.00	90	0.00	A53/BE/	0.00	0.00	0.00	50	300	19	0	1125.600	0.000	0.17686	0.08843	0.08843

Line Name : ES3-4-3RDPT ES to FWH 23C

3EXC-4P-1 US	64	20.000	10	0.250	0.267	0.000	0.000	0.000	0.00	0	0.00	A53/BE/	0.00	0.00	0.00	50	300	19	0	1125.600	0.000	0.08843	0.00000	0.00000
3EXC-1A	64	20.000	10	0.250	0.000	0.000	0.000	0.000	0.00	0	0.00	A53/BE/	0.00	0.00	0.00	50	300	19	0	1125.600	0.000	0.08843	0.00000	0.00000
3EXC-1	2	20.000	10	0.250	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	50	300	19	0	1125.600	0.000	0.08843	0.00000	0.00000
3EXC-1N	30	20.000	10	0.250	0.000	0.000	0.000	0.000	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	50	300	19	0	1125.600	0.000	0.08843	0.00000	0.00000

Line Name : ES3-5-3RDPT ES to FWH 23C

3EXC-11R	7	28.000	SPE	0.313	0.319	0.000	20.000	0.250	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	50	300	19	0	1125.600	0.000	0.08843	0.08843	0.00000
3EXC-3P	57	20.000	10	0.250	0.000	0.000	0.000	0.000	0.00	90	0.00	A53/BE/	0.00	0.00	0.00	50	300	19	0	1125.600	0.000	0.08843	0.00000	0.00000
3EXC-3	4	20.000	10	0.250	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	50	300	19	0	1125.600	0.000	0.08843	0.00000	0.00000
3EXC-2P	54	20.000	10	0.250	0.000	0.000	0.000	0.000	0.00	0	0.00	A53/BE/	0.00	0.00	0.00	50	300	19	0	1125.600	0.000	0.08843	0.00000	0.00000
3EXC-2A	54	20.000	20	0.375	0.000	0.000	0.000	0.000	0.00	0	0.00	A53/BE/	0.00	0.00	0.00	50	300	19	0	1125.600	0.000	0.08843	0.00000	0.00000
3EXC-2	2	20.000	10	0.250	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	50	300	19	0	1125.600	0.000	0.08843	0.00000	0.00000
3EXC-2N	30	20.000	10	0.250	0.000	0.000	0.000	0.000	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	50	300	19	0	1125.600	0.000	0.08843	0.00000	0.00000

Line Name : ES7-1-5THPT ES to FWH 25ABC

5EX-VALVE-5EX-1	22	28.000	STD	0.375	0.000	0.000	0.000	0.000	0.00	90	0.00	A216/WCB/	0.00	0.00	0.00	250	400	223	0	1137.900	0.000	1.16379	0.00000	0.00000
5EX-17P	58	28.000	STD	0.375	0.000	0.000	0.000	0.000	0.00	90	0.00	A-312/TP304/	0.00	0.00	0.00	250	400	223	0	1137.900	0.000	1.16379	0.00000	0.00000
5EX-VALVE-5EX-3	25	28.000	STD	0.375	0.000	0.000	0.000	0.000	0.00	90	0.00	A216/WCB/	0.00	0.00	0.00	250	400	223	0	1137.900	0.000	1.16379	0.00000	0.00000
5EX-17P-1	58	28.000	STD	0.375	0.000	0.000	0.000	0.000	0.00	90	0.00	A-312/TP304/	0.00	0.00	0.00	250	400	223	0	1137.900	0.000	1.16379	0.00000	0.00000
5EX-VALVE-5EX-4	25	28.000	STD	0.375	0.000	0.000	0.000	0.000	0.00	90	0.00	A216/WCB/	0.00	0.00	0.00	250	400	223	0	1137.900	0.000	1.16379	0.00000	0.00000
5EX-17	3	28.000	STD	0.375	0.570	0.000	0.000	0.000	1.50	90	0.00	A-403/WP304/	0.00	0.00	0.00	250	400	223	0	1137.900	0.000	1.16379	0.00000	0.00000
5EX-16P US	53	28.000	STD	0.375	0.000	0.000	0.000	0.000	0.00	90	0.00	A-312/TP304/	0.00	0.00	0.00	250	400	223	0	1137.900	0.000	1.16379	0.00000	0.00000
5EX-16P DS	53	28.000	STD	0.375	0.539	0.000	0.000	0.000	0.00	90	0.00	A-312/TP304/	0.00	0.00	0.00	250	400	223	0	1137.900	0.000	1.16379	0.00000	0.00000
5EX-16	4	28.000	STD	0.375	0.000	0.000	0.000	0.000	1.50	90	0.00	A-403/WP304/	0.00	0.00	0.00	250	400	223	0	1137.900	0.000	1.16379	0.00000	0.00000
5EX-15P US	54	28.000	STD	0.375	0.000	0.000	0.000	0.000	0.00	180	0.00	A-312/TP304/	0.00	0.00	0.00	250	400	223	0	1137.900	0.000	1.16379	0.00000	0.00000
5EX-15P DS	54	28.000	STD	0.375	0.000	0.000	0.000	0.000	0.00	180	0.00	A-312/TP304/	0.00	0.00	0.00	250	400	223	0	1137.900	0.000	1.16379	0.00000	0.00000
5EX-15	2	28.000	STD	0.375	0.000	0.000	0.000	0.000	1.00	90	0.00	A-403/WP304/	0.00	0.00	0.00	250	400	223	0	1137.900	0.000	1.16379	0.00000	0.00000
5EX-14P	52	28.000	STD	0.375	0.000	0.000	0.000	0.000	0.00	90	0.00	A-312/TP304/	0.00	0.00	0.00	250	400	223	0	1137.900	0.000	1.16379	0.00000	0.00000
5EX-14	4	28.000	STD	0.375	0.000	0.000	0.000	0.000	1.00	90	0.00	A-403/WP304/	0.00	0.00	0.00	250	400	223	0	1137.900	0.000	1.16379	0.00000	0.00000
5EX-13P US	54	28.000	STD	0.375	0.000	0.000	0.000	0.000	0.00	90	0.00	A-312/TP304/	0.00	0.00	0.00	250	400	223	0	1137.900	0.000	1.16379	0.00000	0.00000
5EX-13P	54	28.000	STD	0.375	0.000	0.000	0.000	0.000	0.00	90	0.00	A-312/TP304/	0.00	0.00	0.00	250	400	223	0	1137.900	0.000	1.16379	0.00000	0.00000
5EX-13P DS	54	28.000	STD	0.375	0.000	0.000	0.000	0.000	0.00	90	0.00	A-312/TP304/	0.00	0.00	0.00	250	400	223	0	1137.900	0.000	1.16379	0.00000	0.00000
5EX-13	2	28.000	STD	0.375	0.000	0.000	0.000	0.000	1.00	90	0.00	A-403/WP304/	0.00	0.00	0.00	250	400	223	0	1137.900	0.000	1.16379	0.00000	0.00000
5EX-12	4	28.000	STD	0.375	0.000	0.000	0.000	0.000	1.00	90	0.00	A-403/WP304/	0.00	0.00	0.00	250	400	223	0	1137.900	0.000	1.16379	0.00000	0.00000
5EX-11P	54	28.000	STD	0.375	0.000	0.000	0.000	0.000	0.00	0	0.00	A-312/TP304/	0.00	0.00	0.00	250	400	223	0	1137.900	0.000	1.16379	0.00000	0.00000
5EX-11	4	28.000	STD	0.375	0.000	0.000	0.000	0.000	1.50	90	0.00	A-403/WP304/	0.00	0.00	0.00	250	400	223	0	1137.900	0.000	1.16379	0.00000	0.00000
5EX-8P US	54	28.000	STD	0.375	0.000	0.000	0.000	0.000	0.00	90	0.00	A-312/TP304/	0.00	0.00	0.00	250	400	223	0	1137.900	0.000	1.16379	0.00000	0.00000
5EX-8P DS	54	28.000	STD	0.375	0.000	0.000	0.000	0.000	0.00	90	0.00	A-312/TP304/	0.00	0.00	0.00	250	400	223	0	1137.900	0.000	1.16379	0.00000	0.00000
5EX-8	14	28.000	STD	0.375	0.000	0.000	18.000	0.312	0.00	90	0.00	A-403/WP304/	0.00	0.00	0.00	250	400	223	0	1137.900	0.000	1.16379	0.77586	0.38793

Line Name : ES7-2-5THPT ESHDR to FWH 25C

5EX-VALVE 5EX-5-2	22	18.000	20	0.312	0.000	0.000	0.000	0.000	0.00	0	0.00	A216/WCB/	0.00	0.00	0.00	250	400	223	0	1137.900	0.000	0.38793	0.00000	0.00000
5EX-9	2	18.000	20	0.312	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	18.00	0.00	0.00	250	400	223	0	1137.900	0.000	0.38793	0.00000	0.00000
5EX-9-10	52	18.000	STD	0.375	0.000	0.000	0.000	0.000	0.00	90	0.00	A-312/TP304/	0.00	0.00	0.00	250	400	223	0	1137.900	0.000	0.38793	0.00000	0.00000
5EX-10	2	18.000	20	0.312	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	18.00	0.00	0.00	250	400	223	0	1137.900	0.000	0.38793	0.00000	0.00000
5EX-10N	30	18.000	20	0.312	0.000	0.000	0.000	0.000	0.00	90	0.00	A234/WPB/	18.00	0.00	0.00	250	400	223	0	1137.900	0.000	0.38793	0.00000	0.00000

Line Name : ES7-3-5THPT ESHDR 25CT to BT

5EX-5P US	64	28.000	STD	0.375	0.000	0.000	0.000	0.000	0.00	90	0.00	A-312/TP304/	0.00	0.00	0.00	250	400	223	0	1137.900	0.000	0.77386	0.00000	0.00000

Component Name	Geom Code	Pipe Size OD (in)	Sch.	Tnom (in)	Tinit (in)	Tcrit (in)	Br/Small End OD (in)	Br/Small Tnom (in)	R / D Ratio	Orient Angle (Deg.)	Pipe Length (in)	Spec/Type/ Class	Material Cr. (%)	Cu. (%)	Mo. (%)	Design Press. (psig)	Design Temp. (Deg. F)	Op. Press. (psig)	Op. Temp. (Deg. F)	Op. Enth. (Btu/lbm)	Op. Qual.	Flow Rate U/S Mn. (Mlbm/hr)	D/S Mn.	Br.
5EX-5P DS	64	28.000	STD	0.375	0.000	0.000	0.000	0.000	0.00	90	0.00	A-312/TP304/	0.00	0.00	0.00	250	400	223	0	1137.900	0.000	0.77386	0.00000	0.00000
5EX-5	14	28.000	STD	0.375	0.000	0.000	18.000	0.312	0.00	90	0.00	A-403/WP304/	0.00	0.00	0.00	250	400	223	0	1137.900	0.000	0.77586	0.38793	0.38793
Line Name :	**ES7-4-5THPT ESHDR to FWH 25B**																							
5EX-6P1	64	18.000	STD	0.375	0.000	0.000	0.000	0.000	0.00	0	0.00	A-312/TP304/	0.00	0.00	0.00	250	400	223	0	1137.900	0.000	0.38793	0.00000	0.00000
5EX-VALVE 5EX-5-1	22	18.000	20	0.312	0.000	0.000	0.000	0.000	0.00	0	0.00	A216/WCB/	0.00	0.00	0.00	250	400	223	0	1137.900	0.000	0.38793	0.00000	0.00000
5EX-6	2	18.000	20	0.312	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	18.00	0.00	0.00	250	400	223	0	1137.900	0.000	0.38793	0.00000	0.00000
5EX-6-7	52	18.000	STD	0.375	0.000	0.000	0.000	0.000	0.00	90	0.00	A-312/TP304/	0.00	0.00	0.00	250	400	223	0	1137.900	0.000	0.38793	0.00000	0.00000
5EX-7	2	18.000	20	0.312	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	18.00	0.00	0.00	250	400	223	0	1137.900	0.000	0.38793	0.00000	0.00000
5EX-7N	30	18.000	20	0.312	0.000	0.000	0.000	0.000	0.00	90	0.00	A234/WPB/	18.00	0.00	0.00	250	400	223	0	1137.900	0.000	0.38793	0.00000	0.00000
Line Name :	**ES7-5-5THPT ESHDR to FWH 25A**																							
5EX-4	7	28.000	STD	0.375	0.000	0.000	18.000	0.312	0.00	90	0.00	A-403/WP304/	0.00	0.00	0.00	250	400	223	0	1137.900	0.000	0.38793	0.00000	0.00000
5EX-3P US	57	18.000	20	0.312	0.507	0.000	0.000	0.000	0.00	90	0.00	A-312/TP304/	0.00	0.00	0.00	250	400	223	0	1137.900	0.000	0.38793	0.00000	0.00000
5EX-3	2	18.000	20	0.312	0.498	0.000	0.000	0.000	1.50	90	0.00	A-403/WP304/	0.00	0.00	0.00	250	400	223	0	1137.900	0.000	0.38793	0.00000	0.00000
5EX-2P	52	18.000	20	0.312	0.513	0.000	0.000	0.000	0.00	0	0.00	A-312/TP304/	0.00	0.00	0.00	250	400	223	0	1137.900	0.000	0.38793	0.00000	0.00000
5EX-VALVE 5EX-5	22	18.000	20	0.312	0.000	0.000	0.000	0.000	0.00	0	0.00	A216/WCB/	0.00	0.00	0.00	250	400	223	0	1137.900	0.000	0.38793	0.00000	0.00000
5EX-2	4	18.000	20	0.312	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	18.00	0.00	0.00	250	400	223	0	1137.900	0.000	0.38793	0.00000	0.00000
5EX-1-2	54	18.000	STD	0.375	0.000	0.000	0.000	0.000	0.00	90	0.00	A-312/TP304/	0.00	0.00	0.00	250	400	223	0	1137.900	0.000	0.38793	0.00000	0.00000
5EX-1	2	18.000	20	0.312	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	18.00	0.00	0.00	250	400	223	0	1137.900	0.000	0.38793	0.00000	0.00000
5EX-1N	30	18.000	20	0.312	0.000	0.000	0.000	0.000	0.00	90	0.00	A234/WPB/	18.00	0.00	0.00	250	400	223	0	1137.900	0.000	0.38793	0.00000	0.00000
Line Name :	**ES7A-1-SEP TKA VNT to FWH25**																							
MOPS1	31	20.000	20	0.375	0.000	0.000	0.000	0.000	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	250	400	223	0	1137.900	0.000	0.58189	0.00000	0.00000
MOPS2	3	20.000	20	0.375	0.000	0.000	0.000	0.000	1.50	90	0.00	A-403/WP304/	0.00	0.00	0.00	250	400	223	0	1137.900	0.000	0.58189	0.00000	0.00000
MOPS3	3	20.000	20	0.375	0.000	0.000	0.000	0.000	1.50	90	0.00	A-403/WP304/	0.00	0.00	0.00	250	400	223	0	1137.900	0.000	0.58189	0.00000	0.00000
MOPS4	53	20.000	20	0.375	0.000	0.000	0.000	0.000	0.00	0	0.00	A-312/TP304/	0.00	0.00	0.00	250	400	223	0	1137.900	0.000	0.58189	0.00000	0.00000
MOPS5	2	20.000	20	0.375	0.000	0.000	0.000	0.000	1.00	90	0.00	A-403/WP304/	0.00	0.00	0.00	250	400	223	0	1137.900	0.000	0.58189	0.00000	0.00000
MOPS6	4	20.000	20	0.375	0.000	0.000	0.000	0.000	1.50	90	0.00	A-403/WP304/	0.00	0.00	0.00	250	400	223	0	1137.900	0.000	0.58189	0.00000	0.00000
MOPS7	4	20.000	20	0.375	0.000	0.000	0.000	0.000	1.00	90	0.00	A-403/WP304/	0.00	0.00	0.00	250	400	223	0	1137.900	0.000	0.58189	0.00000	0.00000
MOPS8	54	20.000	20	0.375	0.000	0.000	0.000	0.000	0.00	90	0.00	A-312/TP304/	0.00	0.00	0.00	250	400	223	0	1137.900	0.000	0.58189	0.00000	0.00000
Line Name :	**ES7A-2-SEP TKB VNT to FWH25**																							
MOPS9	31	20.000	20	0.375	0.633	0.000	0.000	0.000	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	250	400	223	0	1137.900	0.000	0.58189	0.00000	0.00000
MOPS10	61	20.000	20	0.375	0.000	0.000	0.000	0.000	0.00	0	0.00	A-312/TP304/	0.00	0.00	0.00	250	400	223	0	1137.900	0.000	0.58189	0.00000	0.00000
MOPS11	4	20.000	20	0.375	0.000	0.000	0.000	0.000	1.50	90	0.00	A-403/WP304/	0.00	0.00	0.00	250	400	223	0	1137.900	0.000	0.58189	0.00000	0.00000
MOPS12	54	20.000	20	0.375	0.000	0.000	0.000	0.000	0.00	90	0.00	A-312/TP304/	0.00	0.00	0.00	250	400	223	0	1137.900	0.000	0.58189	0.00000	0.00000
MOPS13	2	20.000	20	0.375	0.000	0.000	0.000	0.000	1.50	90	0.00	A-403/WP304/	0.00	0.00	0.00	250	400	223	0	1137.900	0.000	0.58189	0.00000	0.00000
MOPS14	52	20.000	20	0.375	0.000	0.000	0.000	0.000	0.00	0	0.00	A-312/TP304/	0.00	0.00	0.00	250	400	223	0	1137.900	0.000	0.58189	0.00000	0.00000
MOPS15	4	20.000	20	0.375	0.000	0.000	0.000	0.000	1.50	90	0.00	A-403/WP304/	0.00	0.00	0.00	250	400	223	0	1137.900	0.000	0.58189	0.00000	0.00000
MOPS16	54	20.000	20	0.375	0.000	0.000	0.000	0.000	0.00	90	0.00	A-312/TP304/	0.00	0.00	0.00	250	400	223	0	1137.900	0.000	0.58189	0.00000	0.00000
MOPS17	1	20.000	20	0.375	0.000	0.000	0.000	0.000	1.50	90	0.00	A-403/WP304/	0.00	0.00	0.00	250	400	223	0	1137.900	0.000	0.58189	0.00000	0.00000
MOPS18	51	20.000	20	0.375	0.000	0.000	0.000	0.000	0.00	120	0.00	A-312/TP304/	0.00	0.00	0.00	250	400	223	0	1137.900	0.000	0.58189	0.00000	0.00000
Line Name :	**ES8-1-6THPT ES to HDR**																							
6EX-28N	31	12.750	STD	0.375	0.000	0.000	0.000	0.000	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	450	450	362	0	1172.600	0.000	0.31625	0.00000	0.00000
6EX-28	4	12.750	40	0.406	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	18.00	0.00	0.00	450	450	362	0	1172.600	0.000	0.31625	0.00000	0.00000
6EX-27P	54	12.750	40	0.406	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	18.00	0.00	0.00	450	450	362	0	1172.600	0.000	0.31625	0.00000	0.00000
6EX-27	4	12.750	STD	0.375	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	18.00	0.00	0.00	450	450	362	0	1172.600	0.000	0.31625	0.00000	0.00000
6EX-23P	54	12.750	STD	0.375	0.000	0.000	0.000	0.000	0.00	180	0.00	A106/B/	18.00	0.00	0.00	450	450	362	0	1172.600	0.000	0.31625	0.00000	0.00000
6EX-23	2	12.750	STD	0.375	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	18.00	0.00	0.00	450	450	362	0	1172.600	0.000	0.31625	0.00000	0.00000
6EX-22P	52	12.750	STD	0.375	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	18.00	0.00	0.00	450	450	362	0	1172.600	0.000	0.31625	0.00000	0.00000
6EX-22R	18	18.000	30	0.438	0.000	0.000	12.750	0.330	0.00	90	0.00	A234/WPB/	18.00	0.00	0.00	450	450	362	0	1172.600	0.000	0.31625	0.31625	0.00000

Component Name	Geom Code	Pipe Size OD (in)	Sch.	Tnom (in)	Tinit (in)	Tcrit (in)	Br/Small End OD (in)	Br/Small Tnom (in)	R / D Ratio	Orient Angle (Deg.)	Pipe Length (in)	Spec/Type/ Class	Material Cr. (%)	Cu. (%)	Mo. (%)	Design Press. (psig)	Design Temp. (Deg. F)	Op. Press. (psig)	Op. Temp. (Deg. F)	Op. Enth. (Btu/lbm)	Op. Qual.	Flow Rate U/S Mn. (Mlbm/hr)	D/S Mn.	Br.
6EX-22A	68	18.000	30	0.438	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	18.00	0.00	0.00	450	450	362	0	1172.600	0.000	0.31625	0.00000	0.00000

Line Name : ES8-3-6THPT ESHDR to FWH 26

6EX-22	12	18.000	30	0.438	0.000	0.000	12.750	0.330	0.00	90	0.00	A234/WPB/	18.00	0.00	0.00	450	450	362	0	1172.600	0.000	0.31625	0.63250	0.31625

Line Name : ES8-2-6THPT ES to HDR

6EX-26-1N	31	12.750	40	0.406	0.000	0.000	0.000	0.000	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	450	450	362	0	1172.600	0.000	0.31625	0.00000	0.00000
6EX-26-1	4	12.750	40	0.406	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	18.00	0.00	0.00	450	450	362	0	1172.600	0.000	0.31625	0.00000	0.00000
6EX-26P	54	12.750	STD	0.375	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	18.00	0.00	0.00	450	450	362	0	1172.600	0.000	0.31625	0.00000	0.00000
6EX-26-2	1	12.750	STD	0.375	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	18.00	0.00	0.00	450	450	362	0	1172.600	0.000	0.31625	0.00000	0.00000
6EX-25P	51	12.750	STD	0.375	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	18.00	0.00	0.00	450	450	362	0	1172.600	0.000	0.31625	0.00000	0.00000
6EX-25	2	12.750	STD	0.375	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	18.00	0.00	0.00	450	450	362	0	1172.600	0.000	0.31625	0.00000	0.00000
6EX-24P	52	12.750	STD	0.375	0.000	0.000	0.000	0.000	0.00	180	0.00	A106/B/	18.00	0.00	0.00	450	450	362	0	1172.600	0.000	0.31625	0.00000	0.00000
6EX-24	1	12.750	STD	0.375	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	18.00	0.00	0.00	450	450	362	0	1172.600	0.000	0.31625	0.00000	0.00000

Line Name : ES8-3-6THPT ESHDR to FWH 26

6EX-21P	62	18.000	30	0.438	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	18.00	0.00	0.00	450	450	362	0	1172.600	0.000	0.63250	0.00000	0.00000
6EX-21	4	18.000	30	0.438	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	18.00	0.00	0.00	450	450	362	0	1172.600	0.000	0.63250	0.00000	0.00000
6EX-21C	54	18.000	30	0.438	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	18.00	0.00	0.00	450	450	362	0	1172.600	0.000	0.63250	0.00000	0.00000
6EX-VALVE-6EX-1	22	18.000	30	0.438	0.000	0.000	0.000	0.000	0.00	90	0.00	A216/WCB/	0.00	0.00	0.00	450	450	362	0	1172.600	0.000	0.63250	0.00000	0.00000
6EX-20B	58	18.000	30	0.438	0.000	0.000	0.000	0.000	0.00	90	0.00	A-312/TP304/	0.00	0.00	0.00	450	450	362	0	1172.600	0.000	0.63250	0.00000	0.00000
6EX-VALVE-6EX-3	25	18.000	30	0.438	0.000	0.000	0.000	0.000	0.00	90	0.00	A216/WCB/	0.00	0.00	0.00	450	450	362	0	1172.600	0.000	0.63250	0.00000	0.00000
6EX-20A	58	18.000	30	0.438	0.000	0.000	0.000	0.000	0.00	90	0.00	A-312/TP304/	0.00	0.00	0.00	450	450	362	0	1172.600	0.000	0.63250	0.00000	0.00000
6EX-VALVE-6EX-4	25	18.000	30	0.438	0.000	0.000	0.000	0.000	0.00	90	0.00	A216/WCB/	0.00	0.00	0.00	450	450	362	0	1172.600	0.000	0.63250	0.00000	0.00000
6EX-20	4	18.000	30	0.438	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	18.00	0.00	0.00	450	450	362	0	1172.600	0.000	0.63250	0.00000	0.00000
6EX-19P	54	18.000	30	0.438	0.000	0.000	0.000	0.000	0.00	180	0.00	A106/B/	18.00	0.00	0.00	450	450	362	0	1172.600	0.000	0.63250	0.00000	0.00000
6EX-19	2	18.000	30	0.438	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	18.00	0.00	0.00	450	450	362	0	1172.600	0.000	0.63250	0.00000	0.00000
6EX-18P	52	18.000	30	0.438	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	18.00	0.00	0.00	450	450	362	0	1172.600	0.000	0.63250	0.00000	0.00000
6EX-18	2	18.000	30	0.438	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	18.00	0.00	0.00	450	450	362	0	1172.600	0.000	0.63250	0.00000	0.00000
6EX-17P	52	18.000	30	0.438	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	18.00	0.00	0.00	450	450	362	0	1172.600	0.000	0.63250	0.00000	0.00000
6EX-17	2	18.000	30	0.438	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	18.00	0.00	0.00	450	450	362	0	1172.600	0.000	0.63250	0.00000	0.00000
6EX-16P	52	18.000	30	0.438	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	18.00	0.00	0.00	450	450	362	0	1172.600	0.000	0.63250	0.00000	0.00000
6EX-16	2	18.000	30	0.438	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	18.00	0.00	0.00	450	450	362	0	1172.600	0.000	0.63250	0.00000	0.00000
6EX-46P	52	18.000	30	0.438	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	18.00	0.00	0.00	450	450	362	0	1172.600	0.000	0.63250	0.00000	0.00000
6EX-14	14	18.000	30	0.438	0.000	0.000	12.750	0.330	0.00	90	0.00	A234/WPB/	18.00	0.00	0.00	450	450	362	0	1172.600	0.000	0.63250	0.42167	0.21083

Line Name : ES8-4-6THPT ESHDR to FWH 26C

6EX-14R	17	18.000	30	0.438	0.000	0.000	12.750	0.330	0.00	180	0.00	A234/WPB/	18.00	0.00	0.00	450	450	362	0	1172.600	0.000	0.21083	0.21083	0.00000
6EX-14P	64	12.750	STD	0.375	0.000	0.000	0.000	0.000	0.00	180	0.00	A106/B/	18.00	0.00	0.00	450	450	362	0	1172.600	0.000	0.21083	0.00000	0.00000
6EX-15	2	12.750	STD	0.375	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	18.00	0.00	0.00	450	450	362	0	1172.600	0.000	0.21083	0.00000	0.00000
6EX-15P	52	12.750	STD	0.375	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	18.00	0.00	0.00	450	450	362	0	1172.600	0.000	0.21083	0.00000	0.00000
6EX-13C	1	12.750	STD	0.375	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	18.00	0.00	0.00	450	450	362	0	1172.600	0.000	0.21083	0.00000	0.00000
6EX-13	4	12.750	STD	0.375	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	18.00	0.00	0.00	450	450	362	0	1172.600	0.000	0.21083	0.00000	0.00000
6EX-13P	54	12.750	STD	0.375	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	18.00	0.00	0.00	450	450	362	0	1172.600	0.000	0.21083	0.00000	0.00000
6EX-VALVE-6EX-5-2	22	12.750	STD	0.375	0.000	0.000	0.000	0.000	0.00	0	0.00	A216/WCB/	0.00	0.00	0.00	450	450	362	0	1172.600	0.000	0.21083	0.00000	0.00000
6EX-12P	58	12.750	STD	0.375	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	18.00	0.00	0.00	450	450	362	0	1172.600	0.000	0.21083	0.00000	0.00000
6EX-12	2	12.750	STD	0.375	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	18.00	0.00	0.00	450	450	362	0	1172.600	0.000	0.21083	0.00000	0.00000
6EX-11	4	12.750	STD	0.375	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	18.00	0.00	0.00	450	450	362	0	1172.600	0.000	0.21083	0.00000	0.00000
6EX-11N	30	12.750	30	0.330	0.000	0.000	0.000	0.000	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	450	450	362	0	1172.600	0.000	0.21083	0.00000	0.00000

Line Name : ES8-5-6THPT ESHDR 26CT to BT

6EX-10P	64	18.000	30	0.438	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	18.00	0.00	0.00	450	450	362	0	1172.600	0.000	0.42167	0.00000	0.00000
6EX-10	14	18.000	30	0.438	0.000	0.000	12.750	0.330	0.00	90	0.00	A234/WPB/	18.00	0.00	0.00	450	450	362	0	1172.600	0.000	0.42167	0.21083	0.21083

Component Name	Geom Code	Pipe Size OD (in)	Sch.	Tnom (in)	Tinit (in)	Tcrit (in)	Br/Small End OD (in)	Br/Small Tnom (in)	R / D Ratio	Orient Angle (Deg.)	Pipe Length (in)	Spec/Type/ Class	Material Cr. (%)	Cu. (%)	Mo. (%)	Design Press. (psig)	Design Temp. (Deg. F)	Op. Press. (psig)	Op. Temp. (Deg. F)	Op. Enth. (Btu/lbm)	Op. Qual.	Flow Rate U/S Mn. (Mlbm/hr)	D/S Mn. (Mlbm/hr)	Br.
Line Name : ES8-6-6THPT ESHDR to FWH 26B																								
6EX-10R	17	18.000	30	0.438	0.000	0.000	12.750	0.330	0.00	180	0.00	A234/WPB/	18.00	0.00	0.00	450	450	362	0	1172.600	0.000	0.21083	0.21083	0.00000
6EX-9P	64	12.750	STD	0.375	0.000	0.000	0.000	0.000	0.00	180	0.00	A106/B/	18.00	0.00	0.00	450	450	362	0	1172.600	0.000	0.21083	0.00000	0.00000
6EX-9	2	12.750	STD	0.375	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	18.00	0.00	0.00	450	450	362	0	1172.600	0.000	0.21083	0.00000	0.00000
6EX-8BP	52	12.750	STD	0.375	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	18.00	0.00	0.00	450	450	362	0	1172.600	0.000	0.21083	0.00000	0.00000
6EX-8B	1	12.750	STD	0.375	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	18.00	0.00	0.00	450	450	362	0	1172.600	0.000	0.21083	0.00000	0.00000
6EX-8	4	12.750	STD	0.375	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	18.00	0.00	0.00	450	450	362	0	1172.600	0.000	0.21083	0.00000	0.00000
6EX-6P	54	12.750	STD	0.375	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	18.00	0.00	0.00	450	450	362	0	1172.600	0.000	0.21083	0.00000	0.00000
6EX-VALVE-6EX-5-1	22	12.750	STD	0.375	0.000	0.000	0.000	0.000	0.00	0	0.00	A216/WCB/	0.00	0.00	0.00	450	450	362	0	1172.600	0.000	0.21083	0.00000	0.00000
6EX-7P	58	12.750	STD	0.375	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	18.00	0.00	0.00	450	450	362	0	1172.600	0.000	0.21083	0.00000	0.00000
6EX-7	2	12.750	STD	0.375	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	18.00	0.00	0.00	450	450	362	0	1172.600	0.000	0.21083	0.00000	0.00000
6EX-6	4	12.750	XS	0.500	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	18.00	0.00	0.00	450	450	362	0	1172.600	0.000	0.21083	0.00000	0.00000
6EX-6N	30	12.750	XS	0.500	0.531	0.000	0.000	0.000	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	450	450	362	0	1172.600	0.000	0.21083	0.00000	0.00000
Line Name : ES8-7-6THPT ESHDR to FWH 26A																								
6EX-51	64	18.000	30	0.438	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	18.00	0.00	0.00	450	450	362	0	1172.600	0.000	0.21083	0.00000	0.00000
6EX-5A	17	18.000	30	0.438	0.000	0.000	12.750	0.330	0.00	90	0.00	A234/WPB/	18.00	0.00	0.00	450	450	362	0	1172.600	0.000	0.21083	0.21083	0.00000
6EX-5P	67	12.750	STD	0.375	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	18.00	0.00	0.00	450	450	362	0	1172.600	0.000	0.21083	0.00000	0.00000
6EX-5	4	12.750	STD	0.375	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	18.00	0.00	0.00	450	450	362	0	1172.600	0.000	0.21083	0.00000	0.00000
6EX-4P	54	12.750	STD	0.375	0.000	0.000	0.000	0.000	0.00	180	0.00	A106/B/	18.00	0.00	0.00	450	450	362	0	1172.600	0.000	0.21083	0.00000	0.00000
6EX-4	4	12.750	STD	0.375	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	18.00	0.00	0.00	450	450	362	0	1172.600	0.000	0.21083	0.00000	0.00000
6EX-3P	54	12.750	STD	0.375	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	18.00	0.00	0.00	450	450	362	0	1172.600	0.000	0.21083	0.00000	0.00000
6EX-3	2	12.750	STD	0.375	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	18.00	0.00	0.00	450	450	362	0	1172.600	0.000	0.21083	0.00000	0.00000
6EX-1P	52	12.750	STD	0.375	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	18.00	0.00	0.00	450	450	362	0	1172.600	0.000	0.21083	0.00000	0.00000
6EX-VALVE-6EX-5	22	12.750	STD	0.375	0.000	0.000	0.000	0.000	0.00	0	0.00	A216/WCB/	0.00	0.00	0.00	450	450	362	0	1172.600	0.000	0.21083	0.00000	0.00000
6EX-2P	58	12.750	STD	0.375	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	18.00	0.00	0.00	450	450	362	0	1172.600	0.000	0.21083	0.00000	0.00000
6EX-2	2	12.750	STD	0.375	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	18.00	0.00	0.00	450	450	362	0	1172.600	0.000	0.21083	0.00000	0.00000
6EX-1	4	12.750	XS	0.500	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	18.00	0.00	0.00	450	450	362	0	1172.600	0.000	0.21083	0.00000	0.00000
6EX-1N	30	12.750	XS	0.500	0.661	0.000	0.000	0.000	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	450	450	362	0	1172.600	0.000	0.21083	0.00000	0.00000
Line Name : FW71-1-BFP21 DISCH to HDR																								
BFD-14N	31	16.000	100	1.031	0.000	0.000	0.000	0.000	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	1440	450	1127	388	0.000	0.000	6.63141	0.00000	0.00000
BFD-14P	61	16.000	100	1.031	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	1440	450	1127	388	0.000	0.000	6.63141	0.00000	0.00000
BFD-14R	18	20.000	80	1.031	0.000	0.000	16.000	1.031	0.00	0	0.00	A234/WPB/	0.00	0.00	0.00	1440	450	1127	388	0.000	0.000	6.63141	6.63141	0.00000
BFD-14	4	20.000	80	1.031	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	1440	450	1127	388	0.000	0.000	6.63141	0.00000	0.00000
BFD-14P-1	54	20.000	80	1.031	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/C/	0.00	0.00	0.00	1440	450	1127	388	0.000	0.000	6.63141	0.00000	0.00000
BFD VALVE-BFD-1	25	20.000	80	1.031	0.000	0.000	0.000	0.000	0.00	90	0.00	A216/WCB/	0.00	0.00	0.00	1440	450	1127	388	0.000	0.000	6.63141	0.00000	0.00000
BFD-14P-2	58	20.000	80	1.031	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/C/	0.00	0.00	0.00	1440	450	1127	388	0.000	0.000	6.63141	0.00000	0.00000
BFD VALVE-BFD-2-21	22	20.000	80	1.031	0.000	0.000	0.000	0.000	0.00	90	0.00	A216/WCB/	0.00	0.00	0.00	1440	450	1127	388	0.000	0.000	6.63141	0.00000	0.00000
BFD-2	4	20.000	80	1.031	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	1440	450	1127	388	0.000	0.000	6.63141	0.00000	0.00000
BFD-2P US	54	20.000	80	1.031	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/C/	0.00	0.00	0.00	1440	450	1127	388	0.000	0.000	6.63141	0.00000	0.00000
BFD-2P DS	54	20.000	80	1.031	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/C/	0.00	0.00	0.00	1440	450	1127	388	0.000	0.000	6.63141	0.00000	0.00000
BFD-4	2	20.000	80	1.031	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	1440	450	1127	388	0.000	0.000	6.63141	0.00000	0.00000
BFD-4P US	52	20.000	80	1.031	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/C/	0.00	0.00	0.00	1440	450	1127	388	0.000	0.000	6.63141	0.00000	0.00000
BFD-5	2	20.000	80	1.031	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	1440	450	1127	388	0.000	0.000	6.63141	0.00000	0.00000
BFD-5P	52	20.000	80	1.031	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/C/	0.00	0.00	0.00	1440	450	1127	388	0.000	0.000	6.63141	0.00000	0.00000
BFD-6	2	20.000	80	1.031	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	1440	450	1127	388	0.000	0.000	6.63141	0.00000	0.00000
BFD-6P	52	20.000	80	1.031	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/C/	0.00	0.00	0.00	1440	450	1127	388	0.000	0.000	6.63141	0.00000	0.00000
BFD-7	2	20.000	80	1.031	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	1440	450	1127	388	0.000	0.000	6.63141	0.00000	0.00000
BFD-7P US	52	20.000	80	1.031	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/C/	0.00	0.00	0.00	1440	450	1127	388	0.000	0.000	6.63141	0.00000	0.00000
BFD-7P DS	52	20.000	80	1.031	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/C/	0.00	0.00	0.00	1440	450	1127	388	0.000	0.000	6.63141	0.00000	0.00000
BFD-8	2	20.000	80	1.031	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	1440	450	1127	388	0.000	0.000	6.63141	0.00000	0.00000
BFD-8P	52	20.000	80	1.031	0.000	0.000	0.000	0.000	0.00	180	0.00	A106/C/	0.00	0.00	0.00	1440	450	1127	388	0.000	0.000	6.63141	0.00000	0.00000
BFD-9	2	20.000	80	1.031	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	1440	450	1127	388	0.000	0.000	6.63141	0.00000	0.00000
BFD-9P US	52	20.000	80	1.031	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/C/	0.00	0.00	0.00	1440	450	1127	388	0.000	0.000	6.63141	0.00000	0.00000
BFD-9P DS	52	20.000	80	1.031	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/C/	0.00	0.00	0.00	1440	450	1127	388	0.000	0.000	6.63141	0.00000	0.00000
BFD-10	2	20.000	80	1.031	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	1440	450	1127	388	0.000	0.000	6.63141	0.00000	0.00000
BFD-10P US	52	20.000	80	1.031	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/C/	0.00	0.00	0.00	1440	450	1127	388	0.000	0.000	6.63141	0.00000	0.00000

Component Name	Geom Code	Pipe Size OD (in)	Sch.	Tnom (in)	Tinit (in)	Tcrit (in)	Br/Small End OD (in)	Br/Small Tnom (in)	R / D Ratio	Orient Angle (Deg.)	Pipe Length (in)	Spec/Type/ Class	Material Cr. (%)	Cu. (%)	Mo. (%)	Design Press. (psig)	Design Temp. (Deg. F)	Op. Press. (psig)	Op. Temp. (Deg. F)	Op. Enth. (Btu/lbm)	Op. Qual.	Flow Rate U/S Mn. (Mlbm/hr)	D/S Mn.	Br.
BFD-10P DS	52	20.000	80	1.031	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	1440	450	1127	388	0.000	0.000	6.63141	0.00000	0.00000

Line Name : FW72-1-BFP22 DISCH to HDR

BFD-15N	31	16.000	100	1.031	0.000	0.000	0.000	0.000	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	1440	450	1127	388	0.000	0.000	6.63141	0.00000	0.00000
BFD-15R	18	20.000	80	1.031	0.000	0.000	16.000	1.031	0.00	0	0.00	A234/WPB/	0.00	0.00	0.00	1440	450	1127	388	0.000	0.000	6.63141	6.63141	0.00000
BFD-15P-1	68	20.000	80	1.031	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/C/	0.00	0.00	0.00	1440	450	1127	388	0.000	0.000	6.63141	0.00000	0.00000
BFD-15	2	20.000	80	1.031	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	1440	450	1127	388	0.000	0.000	6.63141	0.00000	0.00000
BFD-15P US	52	20.000	80	1.031	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/C/	0.00	0.00	0.00	1440	450	1127	388	0.000	0.000	6.63141	0.00000	0.00000
BFD-15P DS	52	20.000	80	1.031	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/C/	0.00	0.00	0.00	1440	450	1127	388	0.000	0.000	6.63141	0.00000	0.00000
BFD-12	1	20.000	80	1.031	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	1440	450	1127	388	0.000	0.000	6.63141	0.00000	0.00000
BFD-12P	51	20.000	80	1.031	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/C/	0.00	0.00	0.00	1440	450	1127	388	0.000	0.000	6.63141	0.00000	0.00000
BFD-VALVE-BFD-1-1	25	20.000	80	1.031	0.000	0.000	0.000	0.000	0.00	90	0.00	A216/WCB/	0.00	0.00	0.00	1440	450	1127	388	0.000	0.000	6.63141	0.00000	0.00000
BFD-12P-1	58	20.000	80	1.031	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/C/	0.00	0.00	0.00	1440	450	1127	388	0.000	0.000	6.63141	0.00000	0.00000
BFD-VALVE-BFD-2-22	22	20.000	80	1.031	0.000	0.000	0.000	0.000	0.00	90	0.00	A216/WCB/	0.00	0.00	0.00	1440	450	1127	388	0.000	0.000	6.63141	0.00000	0.00000
BFD-12P-2	58	20.000	80	1.031	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/C/	0.00	0.00	0.00	1440	450	1127	388	0.000	0.000	6.63141	0.00000	0.00000
BFD-16	2	20.000	80	1.031	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	1440	450	1127	388	0.000	0.000	6.63141	0.00000	0.00000
BFD-16P	52	20.000	80	1.031	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/C/	0.00	0.00	0.00	1440	450	1127	388	0.000	0.000	6.63141	0.00000	0.00000
BFD-13	2	20.000	80	1.031	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	1440	450	1127	388	0.000	0.000	6.63141	0.00000	0.00000
BFD-13P	52	20.000	80	1.031	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/C/	0.00	0.00	0.00	1440	450	1127	388	0.000	0.000	6.63141	0.00000	0.00000
BFD-17	2	20.000	80	1.031	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	1440	450	1127	388	0.000	0.000	6.63141	0.00000	0.00000
BFD-17P	52	20.000	80	1.031	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/C/	0.00	0.00	0.00	1440	450	1127	388	0.000	0.000	6.63141	0.00000	0.00000
BFD-18	2	20.000	80	1.031	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	1440	450	1127	388	0.000	0.000	6.63141	0.00000	0.00000
BFD-18P	52	20.000	80	1.031	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/C/	0.00	0.00	0.00	1440	450	1127	388	0.000	0.000	6.63141	0.00000	0.00000
BFD-19	2	20.000	80	1.031	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	1440	450	1127	388	0.000	0.000	6.63141	0.00000	0.00000
BFD-19P	52	20.000	80	1.031	0.000	0.000	0.000	0.000	0.00	180	0.00	A106/C/	0.00	0.00	0.00	1440	450	1127	388	0.000	0.000	6.63141	0.00000	0.00000
BFD-20	2	20.000	80	1.031	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	1440	450	1127	388	0.000	0.000	6.63141	0.00000	0.00000
BFD-20P	52	20.000	80	1.031	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/C/	0.00	0.00	0.00	1440	450	1127	388	0.000	0.000	6.63141	0.00000	0.00000
BFD-21	2	20.000	80	1.031	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	1440	450	1127	388	0.000	0.000	6.63141	0.00000	0.00000
BFD-21P US	52	20.000	80	1.031	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/C/	0.00	0.00	0.00	1440	450	1127	388	0.000	0.000	6.63141	0.00000	0.00000
BFD-21P DS	52	20.000	80	1.031	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/C/	0.00	0.00	0.00	1440	450	1127	388	0.000	0.000	6.63141	0.00000	0.00000
BFD-22	2	20.000	80	1.031	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	1440	450	1127	388	0.000	0.000	6.63141	0.00000	0.00000
BFD-22P	52	20.000	80	1.031	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/C/	0.00	0.00	0.00	1440	450	1127	388	0.000	0.000	6.63141	0.00000	0.00000
BFD-23R	18	30.000	SPE	1.260	0.000	0.000	20.000	1.031	0.00	90	0.00	A234/WPC/	0.00	0.00	0.00	1440	450	1127	388	0.000	0.000	6.63141	6.63141	0.00000

Line Name : FW73-1-BFPHDR to FWH26ABC

BFD-11	12	30.000	SPE	1.260	0.000	0.000	20.000	1.031	0.00	90	0.00	A672/B7021/	0.00	0.00	0.00	1440	450	1127	388	0.000	0.000	6.63141	13.26283	6.63141
BFD-23	2	30.000	SPE	1.260	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPC/	0.00	0.00	0.00	1440	450	1127	388	0.000	0.000	13.26283	0.00000	0.00000
BFD-24	4	30.000	SPE	1.260	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPC/	0.00	0.00	0.00	1440	450	1127	388	0.000	0.000	13.26283	0.00000	0.00000
BFD-24P DS	54	30.000	SPE	1.260	0.000	0.000	0.000	0.000	0.00	90	0.00	A672/B7021/	0.00	0.00	0.00	1440	450	1127	388	0.000	0.000	13.26283	0.00000	0.00000
BFD-25	2	30.000	SPE	1.260	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPC/	0.00	0.00	0.00	1440	450	1127	388	0.000	0.000	13.26283	0.00000	0.00000
BFD-25P	52	30.000	SPE	1.260	0.000	0.000	0.000	0.000	1.50	90	0.00	A672/B7021/	0.00	0.00	0.00	1440	450	1127	388	0.000	0.000	13.26283	0.00000	0.00000
BFD-26	4	30.000	SPE	1.260	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPC/	0.00	0.00	0.00	1440	450	1127	388	0.000	0.000	13.26283	0.00000	0.00000
BFD-26P US	54	30.000	SPE	1.260	0.000	0.000	0.000	0.000	0.00	90	0.00	A672/B7021/	0.00	0.00	0.00	1440	450	1127	388	0.000	0.000	13.26283	0.00000	0.00000
BFD-27	2	30.000	SPE	1.260	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPC/	0.00	0.00	0.00	1440	450	1127	388	0.000	0.000	13.26283	0.00000	0.00000
BFD-27P	52	30.000	SPE	1.260	0.000	0.000	0.000	0.000	0.00	90	0.00	A672/B7021/	0.00	0.00	0.00	1440	450	1127	388	0.000	0.000	13.26283	0.00000	0.00000
BFD-28	2	30.000	SPE	1.260	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPC/	0.00	0.00	0.00	1440	450	1127	388	0.000	0.000	13.26283	0.00000	0.00000
BFD-28P	52	30.000	SPE	1.260	0.000	0.000	0.000	0.000	0.00	90	0.00	A672/B7021/	0.00	0.00	0.00	1440	450	1127	388	0.000	0.000	13.26283	0.00000	0.00000
BFD-29	2	30.000	SPE	1.260	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPC/	0.00	0.00	0.00	1440	450	1127	388	0.000	0.000	13.26283	0.00000	0.00000
BFD-29P	52	30.000	SPE	1.260	0.000	0.000	0.000	0.000	0.00	180	0.00	A672/B7021/	0.00	0.00	0.00	1440	450	1127	388	0.000	0.000	13.26283	0.00000	0.00000
BFD-32	2	30.000	SPE	1.260	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPC/	0.00	0.00	0.00	1440	450	1127	388	0.000	0.000	13.26283	0.00000	0.00000
BFD-32P	52	30.000	SPE	1.260	0.000	0.000	0.000	0.000	0.00	90	0.00	A672/B7021/	0.00	0.00	0.00	1440	450	1127	388	0.000	0.000	13.26283	0.00000	0.00000
BFD-32T	15	30.000	SPE	1.260	0.000	0.000	18.000	0.937	0.00	90	0.00	A672/B7021/	0.00	0.00	0.00	1440	450	1127	388	0.000	0.000	13.26283	13.26283	0.00000

Line Name : FW73-2-BFPHDR to FWH26ABC

BFD-32P-1	65	30.000	SPE	1.260	0.000	0.000	0.000	0.000	0.00	90	0.00	A672/B7021/	0.00	0.00	0.00	1440	450	1127	388	0.000	0.000	13.26283	0.00000	0.00000
BFD-32T-C	14	30.000	SPE	1.260	0.000	0.000	18.000	0.937	0.00	90	0.00	A672/B7021/	0.00	0.00	0.00	1440	450	1127	388	0.000	0.000	13.26283	8.84188	4.42094

Component Name	Geom Code	Pipe Size OD (in)	Sch.	Tnom (in)	Tinit (in)	Tcrit (in)	Br/Small End OD (in)	Br/Small Tnom (in)	R / D Ratio	Orient Angle (Deg.)	Pipe Length (in)	Spec/Type/ Class	Material Cr. (%)	Cu. (%)	Mo. (%)	Design Press. (psig)	Design Temp. (Deg. F)	Op. Press. (psig)	Op. Temp. (Deg. F)	Op. Enth. (Btu/lbm)	Op. Qual.	Flow Rate U/S Mn. (Mlbm/hr)	D/S Mn. (Mlbm/hr)	Br.
Line Name : FW73-3-BFPHDR to FWH26C																								
BFD-40P US	64	18.000	80	0.938	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/C/	0.00	0.00	0.00	1440	450	1127	388	0.000	0.000	4.42094	0.00000	0.00000
BFD-40	2	18.000	80	0.938	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	1440	450	1127	388	0.000	0.000	4.42094	0.00000	0.00000
BFD-41P	52	18.000	80	0.938	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/C/	0.00	0.00	0.00	1440	450	1127	388	0.000	0.000	4.42094	0.00000	0.00000
BFD-VALVE-BFD-3-2	22	18.000	80	0.938	0.000	0.000	0.000	0.000	0.00	90	0.00	A216/WCB/	0.00	0.00	0.00	1440	450	1127	388	0.000	0.000	4.42094	0.00000	0.00000
BFD-41P-1	58	18.000	80	0.938	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/C/	0.00	0.00	0.00	1440	450	1127	388	0.000	0.000	4.42094	0.00000	0.00000
BFD-41	2	18.000	80	0.938	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	1440	450	1127	388	0.000	0.000	4.42094	0.00000	0.00000
BFD-42P	52	18.000	80	0.938	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/C/	0.00	0.00	0.00	1440	450	1127	388	0.000	0.000	4.42094	0.00000	0.00000
BFD-42	1	18.000	80	0.938	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	1440	450	1127	388	0.000	0.000	4.42094	0.00000	0.00000
BFD-42N	30	18.000	80	0.938	0.000	0.000	0.000	0.000	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	1440	450	1127	388	0.000	0.000	4.42094	0.00000	0.00000
Line Name : FW73-4-BFPHDR to FWH26ABC																								
BFD-32P-2	64	30.000	SPE	1.260	0.000	0.000	0.000	0.000	0.00	90	0.00	A672/B7021/	0.00	0.00	0.00	1440	450	1127	388	0.000	0.000	8.84188	0.00000	0.00000
BFD-32T-B	14	30.000	SPE	1.260	0.000	0.000	18.000	0.937	0.00	90	0.00	A234/WPC/	0.00	0.00	0.00	1440	450	1127	388	0.000	0.000	8.84188	4.42094	4.42094
Line Name : FW73-5-BFPHDR to FWH26B																								
BFD-37P	64	18.000	80	0.938	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/C/	0.00	0.00	0.00	1440	450	1127	388	0.000	0.000	4.42094	0.00000	0.00000
BFD-37	2	18.000	80	0.938	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	1440	450	1127	388	0.000	0.000	4.42094	0.00000	0.00000
BFD-38P	52	18.000	80	0.938	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/C/	0.00	0.00	0.00	1440	450	1127	388	0.000	0.000	4.42094	0.00000	0.00000
BFD-VALVE-BFD-3-1	22	18.000	80	0.938	0.000	0.000	0.000	0.000	0.00	90	0.00	A216/WCB/	0.00	0.00	0.00	1440	450	1127	388	0.000	0.000	4.42094	0.00000	0.00000
BFD-38P-1	58	18.000	80	0.938	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/C/	0.00	0.00	0.00	1440	450	1127	388	0.000	0.000	4.42094	0.00000	0.00000
BFD-38	2	18.000	80	0.938	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	1440	450	1127	388	0.000	0.000	4.42094	0.00000	0.00000
BFD-39P	52	18.000	80	0.938	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/C/	0.00	0.00	0.00	1440	450	1127	388	0.000	0.000	4.42094	0.00000	0.00000
BFD-39	1	18.000	80	0.938	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	1440	450	1127	388	0.000	0.000	4.42094	0.00000	0.00000
BFD-39N	30	18.000	80	0.938	0.000	0.000	0.000	0.000	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	1440	450	1127	388	0.000	0.000	4.42094	0.00000	0.00000
Line Name : FW73-6-BFPHDR to FWH26A																								
BFD-33R	7	30.000	SPE	1.260	0.000	0.000	18.000	0.937	0.00	90	0.00	A234/WPC/	0.00	0.00	0.00	1440	450	1127	388	0.000	0.000	4.42094	4.42094	0.00000
BFD-33P-1 DS	57	18.000	80	0.938	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/C/	0.00	0.00	0.00	1440	450	1127	388	0.000	0.000	4.42094	0.00000	0.00000
BFD-33	2	18.000	80	0.938	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	1440	450	1127	388	0.000	0.000	4.42094	0.00000	0.00000
BFD-33P US	52	18.000	80	0.938	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/C/	0.00	0.00	0.00	1440	450	1127	388	0.000	0.000	4.42094	0.00000	0.00000
BFD-33P DS	52	18.000	80	0.938	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/C/	0.00	0.00	0.00	1440	450	1127	388	0.000	0.000	4.42094	0.00000	0.00000
BFD-34	2	18.000	80	0.938	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	1440	450	1127	388	0.000	0.000	4.42094	0.00000	0.00000
BFD-34P US	52	18.000	80	0.938	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/C/	0.00	0.00	0.00	1440	450	1127	388	0.000	0.000	4.42094	0.00000	0.00000
BFD-34P DS	52	18.000	80	0.938	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/C/	0.00	0.00	0.00	1440	450	1127	388	0.000	0.000	4.42094	0.00000	0.00000
BFD-VALVE-BFD-3	22	18.000	80	0.938	0.000	0.000	0.000	0.000	0.00	90	0.00	A216/WCB/	0.00	0.00	0.00	1440	450	1127	388	0.000	0.000	4.42094	0.00000	0.00000
BFD-34P-1	58	18.000	80	0.938	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/C/	0.00	0.00	0.00	1440	450	1127	388	0.000	0.000	4.42094	0.00000	0.00000
BFD-35	2	18.000	80	0.938	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	1440	450	1127	388	0.000	0.000	4.42094	0.00000	0.00000
BFD-35P	52	18.000	80	0.938	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/C/	0.00	0.00	0.00	1440	450	1127	388	0.000	0.000	4.42094	0.00000	0.00000
BFD-36	1	18.000	80	0.938	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	1440	450	1127	388	0.000	0.000	4.42094	0.00000	0.00000
BFD-36N	30	18.000	80	0.938	0.000	0.000	0.000	0.000	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	1440	450	1127	388	0.000	0.000	4.42094	0.00000	0.00000
Line Name : FW74-1-FWH26A to DISHDR																								
BFD-55N	31	18.000	80	0.938	0.000	0.000	0.000	0.000	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	1440	450	1127	429	0.000	0.000	4.42094	0.00000	0.00000
BFD-55	4	18.000	80	0.938	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	1440	450	1127	429	0.000	0.000	4.42094	0.00000	0.00000
BFD-55P	54	18.000	80	0.938	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/C/	0.00	0.00	0.00	1440	450	1127	429	0.000	0.000	4.42094	0.00000	0.00000
BFD-56	2	18.000	80	0.938	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	1440	450	1127	429	0.000	0.000	4.42094	0.00000	0.00000
BFD-VALVE-BFD-4	22	18.000	80	0.938	0.000	0.000	0.000	0.000	0.00	180	0.00	A216/WCB/	0.00	0.00	0.00	1440	450	1127	429	0.000	0.000	4.42094	0.00000	0.00000
BFD-56P-1	58	18.000	80	0.938	0.000	0.000	0.000	0.000	0.00	180	0.00	A106/C/	0.00	0.00	0.00	1440	450	1127	429	0.000	0.000	4.42094	0.00000	0.00000
BFD-57	2	18.000	80	0.938	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	1440	450	1127	429	0.000	0.000	4.42094	0.00000	0.00000
BFD-57P	52	18.000	80	0.938	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/C/	0.00	0.00	0.00	1440	450	1127	429	0.000	0.000	4.42094	0.00000	0.00000
BFD-58	2	18.000	80	0.938	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	1440	450	1127	429	0.000	0.000	4.42094	0.00000	0.00000

Component Name	Geom Code	Pipe Size OD (in)	Sch.	Tnom (in)	Tinit (in)	Tcrit (in)	Br/Small End OD (in)	Br/Small Tnom (in)	R / D Ratio	Orient Angle (Deg.)	Pipe Length (in)	Spec/Type/ Class	Material Cr. (%)	Cu. (%)	Mo. (%)	Design Press. (psig)	Design Temp. (Deg. F)	Op. Press. (psig)	Op. Temp. (Deg. F)	Op. Enth. (Btu/lbm)	Op. Qual.	Flow Rate U/S Mn. (Mlbm/hr)	D/S Mn.	Br.
BFD-58P	52	18.000	80	0.938	0.000	0.000	0.000	0.000	0.00	180	0.00	A106/C/	0.00	0.00	0.00	1440	450	1127	429	0.000	0.000	4.42094	0.00000	0.00000
BFD-59	2	18.000	80	0.938	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	1440	450	1127	429	0.000	0.000	4.42094	0.00000	0.00000
BFD-59P	52	18.000	80	0.938	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/C/	0.00	0.00	0.00	1440	450	1127	429	0.000	0.000	4.42094	0.00000	0.00000
BFD-59R	18	30.000	SPE	1.260	0.000	0.000	18.000	0.937	0.00	90	0.00	A234/WPC/	0.00	0.00	0.00	1440	450	1127	429	0.000	0.000	4.42094	4.42094	0.00000

Line Name : FW74-3-FWH26 to DISHDR

BFD-54T	12	30.000	SPE	1.260	0.000	0.000	18.000	0.937	0.00	90	0.00	A234/WPC/	0.00	0.00	0.00	1440	450	1127	429	0.000	0.000	4.42094	8.84188	4.42094

Line Name : FW74-2-FWH26B to DISHDR

BFD-51N	31	18.000	80	0.938	0.000	0.000	0.000	0.000	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	1440	450	1127	429	0.000	0.000	4.42094	0.00000	0.00000
BFD-51	4	18.000	80	0.938	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	1440	450	1127	429	0.000	0.000	4.42094	0.00000	0.00000
BFD-51P	54	18.000	80	0.938	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/C/	0.00	0.00	0.00	1440	450	1127	429	0.000	0.000	4.42094	0.00000	0.00000
BFD-52	2	18.000	80	0.938	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	1440	450	1127	429	0.000	0.000	4.42094	0.00000	0.00000
BFD-52P	52	18.000	80	0.938	0.000	0.000	0.000	0.000	0.00	180	0.00	A106/C/	0.00	0.00	0.00	1440	450	1127	429	0.000	0.000	4.42094	0.00000	0.00000
BFD-VALVE-BFD-4-1	22	18.000	80	0.938	0.000	0.000	0.000	0.000	0.00	180	0.00	A216/WCB/	0.00	0.00	0.00	1440	450	1127	429	0.000	0.000	4.42094	0.00000	0.00000
BFD-52P-1	58	18.000	80	0.938	0.000	0.000	0.000	0.000	0.00	180	0.00	A106/C/	0.00	0.00	0.00	1440	450	1127	429	0.000	0.000	4.42094	0.00000	0.00000
BFD-53	2	18.000	80	0.938	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	1440	450	1127	429	0.000	0.000	4.42094	0.00000	0.00000
BFD-53P	52	18.000	80	0.938	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/C/	0.00	0.00	0.00	1440	450	1127	429	0.000	0.000	4.42094	0.00000	0.00000
BFD-54	2	18.000	80	0.938	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	1440	450	1127	429	0.000	0.000	4.42094	0.00000	0.00000
BFD-54P	52	18.000	80	0.938	0.000	0.000	0.000	0.000	0.00	180	0.00	A106/C/	0.00	0.00	0.00	1440	450	1127	429	0.000	0.000	4.42094	0.00000	0.00000

Line Name : FW74-3-FWH26 to DISHDR

BFD-54P-1	62	30.000	SPE	1.260	0.000	0.000	0.000	0.000	0.00	90	0.00	A672/B7021/	0.00	0.00	0.00	1440	450	1127	429	0.000	0.000	8.84188	0.00000	0.00000

Line Name : FW74-5-FWH26 to DISHDR

BFD-50T	12	30.000	SPE	1.260	0.000	0.000	18.000	0.937	0.00	90	0.00	A672/B7021/	0.00	0.00	0.00	1440	450	1127	429	0.000	0.000	8.84188	13.26283	4.42094

Line Name : FW74-4-FWH26C to DISHDR

BFD-47N	31	18.000	80	0.938	0.000	0.000	0.000	0.000	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	1440	450	1127	429	0.000	0.000	4.42094	0.00000	0.00000
BFD-47	2	18.000	80	0.938	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	1440	450	1127	429	0.000	0.000	4.42094	0.00000	0.00000
BFD-47P	52	18.000	80	0.938	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/C/	0.00	0.00	0.00	1440	450	1127	429	0.000	0.000	4.42094	0.00000	0.00000
BFD-48	2	18.000	80	0.938	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	1440	450	1127	429	0.000	0.000	4.42094	0.00000	0.00000
BFD-48P	52	18.000	80	0.938	0.000	0.000	0.000	0.000	0.00	180	0.00	A106/C/	0.00	0.00	0.00	1440	450	1127	429	0.000	0.000	4.42094	0.00000	0.00000
BFD-VALVE-BFD-4-2	22	18.000	80	0.938	0.000	0.000	0.000	0.000	0.00	180	0.00	A216/WCB/	0.00	0.00	0.00	1440	450	1127	429	0.000	0.000	4.42094	0.00000	0.00000
BFD-48P-1	58	18.000	80	0.938	0.000	0.000	0.000	0.000	0.00	180	0.00	A106/C/	0.00	0.00	0.00	1440	450	1127	429	0.000	0.000	4.42094	0.00000	0.00000
BFD-49	2	18.000	80	0.938	0.000	0.000	0.000	0.000	1.50	180	0.00	A234/WPB/	0.00	0.00	0.00	1440	450	1127	429	0.000	0.000	4.42094	0.00000	0.00000
BFD-49P	52	18.000	80	0.938	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/C/	0.00	0.00	0.00	1440	450	1127	429	0.000	0.000	4.42094	0.00000	0.00000
BFD-50	2	18.000	80	0.938	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	1440	450	1127	429	0.000	0.000	4.42094	0.00000	0.00000
BFD-50P US	52	18.000	80	0.938	0.000	0.000	0.000	0.000	0.00	180	0.00	A106/C/	0.00	0.00	0.00	1440	450	1127	429	0.000	0.000	4.42094	0.00000	0.00000
BFD-50P DS	52	18.000	80	0.938	0.000	0.000	0.000	0.000	0.00	180	0.00	A106/C/	0.00	0.00	0.00	1440	450	1127	429	0.000	0.000	4.42094	0.00000	0.00000

Line Name : FW74-5-FWH26 to DISHDR

BFD-50P-1	62	30.000	SPE	1.260	0.000	0.000	0.000	0.000	0.00	90	0.00	A672/B7021/	0.00	0.00	0.00	1440	450	1127	429	0.000	0.000	13.26283	0.00000	0.00000
BFD-46T	15	30.000	SPE	1.260	0.000	0.000	18.000	0.937	0.00	90	0.00	A672/B7021/	0.00	0.00	0.00	1440	450	1127	429	0.000	0.000	13.26283	13.26283	0.00000
BFD-46P	65	30.000	SPE	1.260	0.000	0.000	0.000	0.000	0.00	90	0.00	A672/B7021/	0.00	0.00	0.00	1440	450	1127	429	0.000	0.000	13.26283	0.00000	0.00000
BFD-60	2	30.000	SPE	1.260	0.000	0.000	0.000	0.000	1.00	90	0.00	A234/WPC/	0.00	0.00	0.00	1440	450	1127	429	0.000	0.000	13.26283	0.00000	0.00000
BFD-30	4	30.000	SPE	1.260	0.000	0.000	0.000	0.000	1.00	90	0.00	A234/WPC/	0.00	0.00	0.00	1440	450	1127	429	0.000	0.000	13.26283	0.00000	0.00000
BFD-30P US	54	30.000	SPE	1.260	0.000	0.000	0.000	0.000	0.00	90	0.00	A672/B7021/	0.00	0.00	0.00	1440	450	1127	429	0.000	0.000	13.26283	0.00000	0.00000
BFD-30P DS	54	30.000	SPE	1.260	0.000	0.000	0.000	0.000	0.00	90	0.00	A672/B7021/	0.00	0.00	0.00	1440	450	1127	429	0.000	0.000	13.26283	0.00000	0.00000
BFD-31	2	30.000	SPE	1.260	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPC/	0.00	0.00	0.00	1440	450	1127	429	0.000	0.000	13.26283	0.00000	0.00000
BFD-31P US	52	30.000	SPE	1.260	0.000	0.000	0.000	0.000	0.00	90	0.00	A672/B7021/	0.00	0.00	0.00	1440	450	1127	429	0.000	0.000	13.26283	0.00000	0.00000
BFD-61	2	30.000	SPE	1.260	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPC/	0.00	0.00	0.00	1440	450	1127	429	0.000	0.000	13.26283	0.00000	0.00000
BFD-61P	52	30.000	SPE	1.260	0.000	0.000	0.000	0.000	0.00	90	0.00	A672/B7021/	0.00	0.00	0.00	1440	450	1127	429	0.000	0.000	13.26283	0.00000	0.00000

Component Name	Geom Code	Pipe Size OD (in)	Sch.	Tnom (in)	Tinit (in)	Tcrit (in)	Br/Small End OD (in)	Br/Small Tnom (in)	R / D Ratio	Orient Angle (Deg.)	Pipe Length (in)	Spec/Type/ Class	Material Cr. (%)	Cu. (%)	Mo. (%)	Design Press. (psig)	Design Temp. (Deg. F)	Op. Press. (psig)	Op. Temp. (Deg. F)	Op. Enth. (Btu/lbm)	Op. Qual.	Flow Rate U/S Mn. (Mlbm/hr)	D/S Mn.	Br.
BFD-62	2	30.000	SPE	1.260	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPC/	0.00	0.00	0.00	1440	450	1127	429	0.000	0.000	13.26283	0.00000	0.00000
BFD-62P US	52	30.000	SPE	1.260	0.000	0.000	0.000	0.000	0.00	90	0.00	A672/B7021/	0.00	0.00	0.00	1440	450	1127	429	0.000	0.000	13.26283	0.00000	0.00000
BFD-62P DS	52	30.000	SPE	1.260	0.000	0.000	0.000	0.000	0.00	90	0.00	A672/B7021/	0.00	0.00	0.00	1440	450	1127	429	0.000	0.000	13.26283	0.00000	0.00000
BFD-63	2	30.000	SPE	1.260	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPC/	0.00	0.00	0.00	1440	450	1127	429	0.000	0.000	13.26283	0.00000	0.00000
BFD-63P US	52	30.000	SPE	1.260	0.000	0.000	0.000	0.000	0.00	0	0.00	A672/B7021/	0.00	0.00	0.00	1440	450	1127	429	0.000	0.000	13.26283	0.00000	0.00000
BFD-63P DS	52	30.000	SPE	1.260	0.000	0.000	0.000	0.000	0.00	0	0.00	A672/B7021/	0.00	0.00	0.00	1440	450	1127	429	0.000	0.000	13.26283	0.00000	0.00000
BFD-64	2	30.000	SPE	1.260	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPC/	0.00	0.00	0.00	1440	450	1127	429	0.000	0.000	13.26283	0.00000	0.00000
BFD-64P	52	30.000	SPE	1.260	0.000	0.000	0.000	0.000	0.00	90	0.00	A672/B7021/	0.00	0.00	0.00	1440	450	1127	429	0.000	0.000	13.26283	0.00000	0.00000
BFD-65	2	30.000	SPE	1.260	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPC/	0.00	0.00	0.00	1440	450	1127	429	0.000	0.000	13.26283	0.00000	0.00000
BFD-65P	52	30.000	SPE	1.260	0.000	0.000	0.000	0.000	0.00	90	0.00	A672/B7021/	0.00	0.00	0.00	1440	450	1127	429	0.000	0.000	13.26283	0.00000	0.00000
BFD-65P-1	52	30.000	SPE	1.260	0.000	0.000	0.000	0.000	0.00	90	0.00	A672/B7021/	0.00	0.00	0.00	1440	450	1127	429	0.000	0.000	13.26283	0.00000	0.00000
BFD-72T	13	30.000	SPE	1.260	0.000	0.000	18.000	0.938	0.00	90	0.00	A672/B7021/	0.00	0.00	0.00	1440	450	1127	429	0.000	0.000	0.00000	0.00000	0.00000

Line Name : FW76-2-DISHDR to SG22

BFD-78T	13	30.000	SPE	1.260	0.000	0.000	18.000	0.938	0.00	90	0.00	A672/B7021/	0.00	0.00	0.00	1440	450	0	0	0.000	0.000	0.00000	0.00000	0.00000

Line Name : FW77-2-DISHDR to SG24

BFD-84T	13	30.000	SPE	1.260	0.000	0.000	18.000	0.938	0.00	90	0.00	A672/B7021/	0.00	0.00	0.00	1440	450	0	0	0.000	0.000	0.00000	0.00000	0.00000

Line Name : FW78-1-DISHDR to SG23

BFD-89T	12	30.000	SPE	1.260	0.000	0.000	18.000	0.938	0.00	90	0.00	A672/B7021/	0.00	0.00	0.00	1440	450	0	0	0.000	0.000	0.00000	0.00000	0.00000

Line Name : FW75-1-DISHDR to SG21

BFD-72P US	64	18.000	80	0.938	0.000	0.000	0.000	0.000	0.00	180	0.00	A106/C/	0.00	0.00	0.00	1440	450	1127	429	0.000	0.000	3.31571	0.00000	0.00000
BFD-72P DS	64	18.000	80	0.938	0.000	0.000	0.000	0.000	0.00	180	0.00	A106/C/	0.00	0.00	0.00	1440	450	1127	429	0.000	0.000	3.31571	0.00000	0.00000
BFD-72	2	18.000	80	0.938	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	1440	450	1127	429	0.000	0.000	3.31571	0.00000	0.00000
BFD-72P-1 US	52	18.000	80	0.938	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/C/	0.00	0.00	0.00	1440	450	1127	429	0.000	0.000	3.31571	0.00000	0.00000
BFD-72P-1 DS	52	18.000	80	0.938	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/C/	0.00	0.00	0.00	1440	450	1127	429	0.000	0.000	3.31571	0.00000	0.00000
BFD-VALVE-BFD-5	22	18.000	80	0.938	0.000	0.000	0.000	0.000	0.00	90	0.00	A216/WCB/	0.00	0.00	0.00	1440	450	1127	429	0.000	0.000	3.31571	0.00000	0.00000
BFD-72R	7	18.000	80	0.938	0.000	0.000	12.750	0.844	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	1440	450	1127	429	0.000	0.000	3.31571	3.31571	0.00000
BFD-VALVE-FCV-417	24	18.000	80	0.938	0.000	0.000	0.000	0.000	0.00	90	0.00	A216/WCB/	0.00	0.00	0.00	1440	450	1127	429	0.000	0.000	3.31571	0.00000	0.00000
BFD-71R	18	18.000	80	0.938	0.000	0.000	12.750	0.843	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	1440	450	1127	429	0.000	0.000	3.31571	3.31571	0.00000
BFD-71	4	18.000	80	0.938	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	1440	450	1127	429	0.000	0.000	3.31571	0.00000	0.00000
BFD-70P US	52	18.000	80	0.938	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/C/	0.00	0.00	0.00	1440	450	1127	429	0.000	0.000	3.31571	0.00000	0.00000
BFD-70P DS	52	18.000	80	0.938	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/C/	0.00	0.00	0.00	1440	450	1127	429	0.000	0.000	3.31571	0.00000	0.00000
BFD-70	2	18.000	80	0.938	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	1440	450	1127	429	0.000	0.000	3.31571	0.00000	0.00000
BFD-69P US	52	18.000	80	0.938	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/C/	0.00	0.00	0.00	1440	450	1127	429	0.000	0.000	3.31571	0.00000	0.00000
BFD-69P DS	52	18.000	80	0.938	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/C/	0.00	0.00	0.00	1440	450	1127	429	0.000	0.000	3.31571	0.00000	0.00000
BFD-69	1	18.000	80	0.938	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	1440	450	1127	429	0.000	0.000	3.31571	0.00000	0.00000
BFD-68P US	51	18.000	80	0.938	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/C/	0.00	0.00	0.00	1440	450	1127	429	0.000	0.000	3.31571	0.00000	0.00000
BFD-68P DS	51	18.000	80	0.938	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/C/	0.00	0.00	0.00	1440	450	1127	429	0.000	0.000	3.31571	0.00000	0.00000
BFD-68	2	18.000	80	0.938	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	1440	450	1127	429	0.000	0.000	3.31571	0.00000	0.00000
BFD-67P US	52	18.000	80	0.938	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/C/	0.00	0.00	0.00	1440	450	1127	429	0.000	0.000	3.31571	0.00000	0.00000
BFD-67P DS	52	18.000	80	0.938	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/C/	0.00	0.00	0.00	1440	450	1127	429	0.000	0.000	3.31571	0.00000	0.00000
BFD-VALVE-BFD-6	25	18.000	80	0.938	0.000	0.000	0.000	0.000	0.00	0	0.00	A216/WCB/	0.00	0.00	0.00	1440	450	1127	429	0.000	0.000	3.31571	0.00000	0.00000
BFD-VALVE-BFD-7	22	18.000	80	0.938	0.000	0.000	0.000	0.000	0.00	0	0.00	A216/WCB/	0.00	0.00	0.00	1440	450	1127	429	0.000	0.000	3.31571	0.00000	0.00000
BFD-67	4	18.000	60	0.750	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	450	1000	429	0.000	0.000	3.31571	0.00000	0.00000
BFD-66	4	18.000	60	0.750	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	450	1000	429	0.000	0.000	3.31571	0.00000	0.00000
BFD-66P	54	18.000	60	0.750	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/C/	0.00	0.00	0.00	1085	450	1000	429	0.000	0.000	3.31571	0.00000	0.00000
BFD-96	2	18.000	60	0.750	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	450	1000	429	0.000	0.000	3.31571	0.00000	0.00000
BFD-96P	52	18.000	60	0.750	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/C/	0.00	0.00	0.00	1085	450	1000	429	0.000	0.000	3.31571	0.00000	0.00000
BFD-97	2	18.000	60	0.750	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	450	1000	429	0.000	0.000	3.31571	0.00000	0.00000
BFD-97P	52	18.000	60	0.750	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/C/	0.00	0.00	0.00	1085	450	1000	429	0.000	0.000	3.31571	0.00000	0.00000
BFD-98	2	18.000	60	0.750	0.000	0.000	0.000	0.000	1.50	90	0.00	A106/C/	0.00	0.00	0.00	1085	450	1000	429	0.000	0.000	3.31571	0.00000	0.00000
BFD-98P	52	18.000	60	0.750	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/C/	0.00	0.00	0.00	1085	450	1000	429	0.000	0.000	3.31571	0.00000	0.00000
BFD-98P-1	9	18.000	60	0.750	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/C/	0.00	0.00	0.00	1085	450	1000	429	0.000	0.000	3.31571	0.00000	0.00000

Component Name	Geom Code	Pipe Size OD (in)	Sch.	Tnom (in)	Tinit (in)	Tcrit (in)	Br/Small End OD (in)	Br/Small Tnom (in)	R / D Ratio	Orient Angle (Deg.)	Pipe Length (in)	Spec/Type/ Class	Material Cr. (%)	Cu. (%)	Mo. (%)	Design Press. (psig)	Design Temp. (Deg. F)	Op. Press. (psig)	Op. Temp. (Deg. F)	Op. Enth. (Btu/lbm)	Op. Qual.	Flow Rate U/S Mn. (Mlbm/hr)	D/S Mn.	Br.
BFD-99	2	18.000	60	0.750	0.000	0.000	0.000	0.000	1.50	90	0.00	A106/C/	0.00	0.00	0.00	1085	450	1000	429	0.000	0.000	3.31571	0.00000	0.00000
BFD-99N	30	18.000	60	0.750	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/C/	0.00	0.00	0.00	1085	450	1000	429	0.000	0.000	3.31571	0.00000	0.00000

Line Name : FW76-1-DISHDR to SG22

BFD-78P	64	18.000	80	0.938	0.000	0.000	0.000	0.000	0.00	180	0.00	A106/C/	0.00	0.00	0.00	1440	450	1127	429	0.000	0.000	3.31571	0.00000	0.00000
BFD-78	2	18.000	80	0.938	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	1440	450	1127	429	0.000	0.000	3.31571	0.00000	0.00000
BFD-78P-1 US	52	18.000	80	0.938	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/C/	0.00	0.00	0.00	1440	450	1127	429	0.000	0.000	3.31571	0.00000	0.00000
BFD-VALVE-BFD-5-1	22	18.000	80	0.938	0.000	0.000	0.000	0.000	0.00	90	0.00	A216/WCB/	0.00	0.00	0.00	1440	450	1127	429	0.000	0.000	3.31571	0.00000	0.00000
BFD-78P-2	58	18.000	80	0.938	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/C/	0.00	0.00	0.00	1440	450	1127	429	0.000	0.000	3.31571	0.00000	0.00000
BFD-VALVE-FCV-427	24	18.000	80	0.938	0.000	0.000	0.000	0.000	0.00	90	0.00	A216/WCB/	0.00	0.00	0.00	1440	450	1127	429	0.000	0.000	3.31571	0.00000	0.00000
BFD-77R	18	18.000	80	0.938	0.000	0.000	12.750	0.843	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	1440	450	1127	429	0.000	0.000	3.31571	3.31571	0.00000
BFD-77P	58	18.000	80	0.938	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/C/	0.00	0.00	0.00	1440	450	1127	429	0.000	0.000	3.31571	0.00000	0.00000
BFD-77	2	18.000	80	0.938	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	1440	450	1127	429	0.000	0.000	3.31571	0.00000	0.00000
BFD-76P US	52	18.000	80	0.938	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/C/	0.00	0.00	0.00	1440	450	1127	429	0.000	0.000	3.31571	0.00000	0.00000
BFD-76	2	18.000	80	0.938	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	1440	450	1127	429	0.000	0.000	3.31571	0.00000	0.00000
BFD-75P	52	18.000	80	0.938	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/C/	0.00	0.00	0.00	1440	450	1127	429	0.000	0.000	3.31571	0.00000	0.00000
BFD-75	1	18.000	80	0.938	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	1440	450	1127	429	0.000	0.000	3.31571	0.00000	0.00000
BFD-74P	51	18.000	80	0.938	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/C/	0.00	0.00	0.00	1440	450	1127	429	0.000	0.000	3.31571	0.00000	0.00000
BFD-74	2	18.000	80	0.938	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	1440	450	1127	429	0.000	0.000	3.31571	0.00000	0.00000
BFD-73P	52	18.000	80	0.938	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/C/	0.00	0.00	0.00	1440	450	1127	429	0.000	0.000	3.31571	0.00000	0.00000
BFD-VALVE-BFD-6-1	25	18.000	80	0.938	0.000	0.000	0.000	0.000	0.00	0	0.00	A216/WCB/	0.00	0.00	0.00	1440	450	1127	429	0.000	0.000	3.31571	0.00000	0.00000
BFD-VALVE-BFD-7-1	22	18.000	80	0.938	0.000	0.000	0.000	0.000	0.00	0	0.00	A216/WCB/	0.00	0.00	0.00	1440	450	1127	429	0.000	0.000	3.31571	0.00000	0.00000
BFD-73	4	18.000	60	0.750	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	450	1000	429	0.000	0.000	3.31571	0.00000	0.00000
BFD-73P	54	18.000	60	0.750	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/C/	0.00	0.00	0.00	1085	450	1000	429	0.000	0.000	3.31571	0.00000	0.00000
BFD-91	2	18.000	60	0.750	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	450	1000	429	0.000	0.000	3.31571	0.00000	0.00000
BFD-91P	52	18.000	60	0.750	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/C/	0.00	0.00	0.00	1085	450	1000	429	0.000	0.000	3.31571	0.00000	0.00000
BFD-92	2	18.000	60	0.750	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	450	1000	429	0.000	0.000	3.31571	0.00000	0.00000
BFD-92P	52	18.000	60	0.750	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/C/	0.00	0.00	0.00	1085	450	1000	429	0.000	0.000	3.31571	0.00000	0.00000
BFD-92-1	1	18.000	60	0.750	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	450	1000	429	0.000	0.000	3.31571	0.00000	0.00000
BFD-92P-1	51	18.000	60	0.750	0.000	0.000	0.000	0.000	0.00	45	0.00	A106/C/	0.00	0.00	0.00	1085	450	1000	429	0.000	0.000	3.31571	0.00000	0.00000
BFD-92-2	2	18.000	60	0.750	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	450	1000	429	0.000	0.000	3.31571	0.00000	0.00000
BFD-92P-2	52	18.000	60	0.750	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/C/	0.00	0.00	0.00	1085	450	1000	429	0.000	0.000	3.31571	0.00000	0.00000
BFD-92P-3	9	18.000	60	0.750	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/C/	0.00	0.00	0.00	1085	450	1000	429	0.000	0.000	3.31571	0.00000	0.00000
BFD-93	2	18.000	60	0.750	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	450	1000	429	0.000	0.000	3.31571	0.00000	0.00000
BFD-93P US	52	18.000	60	0.750	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/C/	0.00	0.00	0.00	1085	450	1000	429	0.000	0.000	3.31571	0.00000	0.00000
BFD-93P DS	52	18.000	60	0.750	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/C/	0.00	0.00	0.00	1085	450	1000	429	0.000	0.000	3.31571	0.00000	0.00000
BFD-94	1	18.000	60	0.750	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	450	1000	429	0.000	0.000	3.31571	0.00000	0.00000
BFD-95	3	18.000	60	0.750	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	450	1000	429	0.000	0.000	3.31571	0.00000	0.00000
BFD-95P	53	18.000	60	0.750	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/C/	0.00	0.00	0.00	1085	450	1000	429	0.000	0.000	3.31571	0.00000	0.00000
BFD-95R	18	20.000	60	0.812	0.000	0.000	18.000	0.750	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	450	1000	429	0.000	0.000	3.31571	3.31571	0.00000
BFD-95N	30	20.000	60	0.812	0.000	0.000	0.000	0.000	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	450	1000	429	0.000	0.000	3.31571	0.00000	0.00000

Line Name : FW77-1-DISHDR to SG24

BFD-84P	64	18.000	80	0.938	0.000	0.000	0.000	0.000	0.00	180	0.00	A106/C/	0.00	0.00	0.00	1440	450	1127	429	0.000	0.000	3.31571	0.00000	0.00000
BFD-84	2	18.000	80	0.938	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	1440	450	1127	429	0.000	0.000	3.31571	0.00000	0.00000
BFD-84P-1	52	18.000	80	0.938	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/C/	0.00	0.00	0.00	1440	450	1127	429	0.000	0.000	3.31571	0.00000	0.00000
BFD-VALVE-BFD-5-3	22	18.000	80	0.938	0.000	0.000	0.000	0.000	0.00	90	0.00	A216/WCB/	0.00	0.00	0.00	1440	450	1127	429	0.000	0.000	3.31571	0.00000	0.00000
BFD-84P-2	58	18.000	80	0.938	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/C/	0.00	0.00	0.00	1440	450	1127	429	0.000	0.000	3.31571	0.00000	0.00000
BFD-VALVE-FCV-447	24	18.000	80	0.938	0.000	0.000	0.000	0.000	0.00	90	0.00	A216/WCB/	0.00	0.00	0.00	1440	450	1127	429	0.000	0.000	3.31571	0.00000	0.00000
BFD-83R	18	18.000	80	0.938	0.000	0.000	12.750	0.843	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	1440	450	1127	429	0.000	0.000	3.31571	3.31571	0.00000
BFD-83	4	18.000	80	0.938	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	1440	450	1127	429	0.000	0.000	3.31571	0.00000	0.00000
BFD-82P US	54	18.000	80	0.938	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/C/	0.00	0.00	0.00	1440	450	1127	429	0.000	0.000	3.31571	0.00000	0.00000
BFD-82P DS	54	18.000	80	0.938	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/C/	0.00	0.00	0.00	1440	450	1127	429	0.000	0.000	3.31571	0.00000	0.00000
BFD-82	2	18.000	80	0.938	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	1440	450	1127	429	0.000	0.000	3.31571	0.00000	0.00000
BFD-81P	52	18.000	80	0.938	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/C/	0.00	0.00	0.00	1440	450	1127	429	0.000	0.000	3.31571	0.00000	0.00000
BFD-81	1	18.000	80	0.938	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	1440	450	1127	429	0.000	0.000	3.31571	0.00000	0.00000
BFD-80	4	18.000	80	0.938	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	1440	450	1127	429	0.000	0.000	3.31571	0.00000	0.00000
BFD-80P	54	18.000	80	0.938	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/C/	0.00	0.00	0.00	1440	450	1127	429	0.000	0.000	3.31571	0.00000	0.00000
BFD-VALVE-BFD-6-3	25	18.000	80	0.938	0.000	0.000	0.000	0.000	0.00	0	0.00	A216/WCB/	0.00	0.00	0.00	1440	450	1127	429	0.000	0.000	3.31571	0.00000	0.00000
BFD-VALVE-BFD-7-3	22	18.000	80	0.938	0.000	0.000	0.000	0.000	0.00	0	0.00	A216/WCB/	0.00	0.00	0.00	1440	450	1127	429	0.000	0.000	3.31571	0.00000	0.00000

Component Name	Geom Code	Pipe Size OD (in)	Sch.	Tnom (in)	Tinit (in)	Tcrit (in)	Br/Small End OD (in)	Br/Small Tnom (in)	R / D Ratio	Orient Angle (Deg.)	Pipe Length (in)	Spec/Type/ Class	Material Cr. (%)	Cu. (%)	Mo. (%)	Design Press. (psig)	Design Temp. (Deg. F)	Op. Press. (psig)	Op. Temp. (Deg. F)	Op. Enth. (Btu/lbm)	Op. Qual.	Flow Rate U/S Mn. (Mlbm/hr)	D/S Mn.	Br.
BFD-79	4	18.000	60	0.750	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	450	1000	429	0.000	0.000	3.31571	0.00000	0.00000
BFD-104P	54	18.000	60	0.750	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/C/	0.00	0.00	0.00	1085	450	1000	429	0.000	0.000	3.31571	0.00000	0.00000
BFD-104	2	18.000	60	0.750	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	450	1000	429	0.000	0.000	3.31571	0.00000	0.00000
BFD-105P	52	18.000	60	0.750	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/C/	0.00	0.00	0.00	1085	450	1000	429	0.000	0.000	3.31571	0.00000	0.00000
BFD-105	2	18.000	60	0.750	0.000	0.000	0.000	0.000	5.00	90	0.00	A106/C/	0.00	0.00	0.00	1085	450	1000	429	0.000	0.000	3.31571	0.00000	0.00000
BFD-105-1	4	18.000	60	0.750	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	450	1000	429	0.000	0.000	3.31571	0.00000	0.00000
BFD-105P-1	54	18.000	60	0.750	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/C/	0.00	0.00	0.00	1085	450	1000	429	0.000	0.000	3.31571	0.00000	0.00000
BFD-105P-2	9	18.000	60	0.750	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/C/	0.00	0.00	0.00	1085	450	1000	429	0.000	0.000	3.31571	0.00000	0.00000
BFD-106	4	18.000	60	0.750	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	450	1000	429	0.000	0.000	3.31571	0.00000	0.00000
BFD-106P	54	18.000	60	0.750	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/C/	0.00	0.00	0.00	1085	450	1000	429	0.000	0.000	3.31571	0.00000	0.00000
BFD-106N	30	18.000	60	0.750	0.000	0.000	0.000	0.000	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	450	1000	429	0.000	0.000	3.31571	0.00000	0.00000

Line Name : FW78-1-DISHDR to SG23

BFD-89P	64	18.000	80	0.938	0.000	0.000	0.000	0.000	0.00	180	0.00	A106/C/	0.00	0.00	0.00	1440	450	1127	429	0.000	0.000	3.31571	0.00000	0.00000
BFD-89	2	18.000	80	0.938	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	1440	450	1127	429	0.000	0.000	3.31571	0.00000	0.00000
BFD-89P-1	52	18.000	80	0.938	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/C/	0.00	0.00	0.00	1440	450	1127	429	0.000	0.000	3.31571	0.00000	0.00000
BFD-VALVE-BFD-5-2	22	18.000	80	0.938	0.000	0.000	0.000	0.000	0.00	90	0.00	A216/WCB/	0.00	0.00	0.00	1440	450	1127	429	0.000	0.000	3.31571	0.00000	0.00000
BFD-89P-2	58	18.000	80	0.938	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/C/	0.00	0.00	0.00	1440	450	1127	429	0.000	0.000	3.31571	0.00000	0.00000
BFD-VALVE-FCV-437	24	18.000	80	0.938	0.000	0.000	0.000	0.000	0.00	90	0.00	A216/WCB/	0.00	0.00	0.00	1440	450	1127	429	0.000	0.000	3.31571	0.00000	0.00000
BFD-3R	18	18.000	80	0.938	0.000	0.000	12.750	0.843	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	1440	450	1127	429	0.000	0.000	3.31571	3.31571	0.00000
BFD-3P	58	18.000	80	0.938	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/C/	0.00	0.00	0.00	1440	450	1127	429	0.000	0.000	3.31571	0.00000	0.00000
BFD-3	2	18.000	80	0.938	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	1440	450	1127	429	0.000	0.000	3.31571	0.00000	0.00000
BFD-88P	52	18.000	80	0.938	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/C/	0.00	0.00	0.00	1440	450	1127	429	0.000	0.000	3.31571	0.00000	0.00000
BFD-88	2	18.000	80	0.938	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	1440	450	1127	429	0.000	0.000	3.31571	0.00000	0.00000
BFD-87P US	52	18.000	80	0.938	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/C/	0.00	0.00	0.00	1440	450	1127	429	0.000	0.000	3.31571	0.00000	0.00000
BFD-87P DS	52	18.000	80	0.938	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/C/	0.00	0.00	0.00	1440	450	1127	429	0.000	0.000	3.31571	0.00000	0.00000
BFD-87	2	18.000	80	0.938	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	1440	450	1127	429	0.000	0.000	3.31571	0.00000	0.00000
BFD-86P US	52	18.000	80	0.938	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/C/	0.00	0.00	0.00	1440	450	1127	429	0.000	0.000	3.31571	0.00000	0.00000
BFD-86P DS	52	18.000	80	0.938	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/C/	0.00	0.00	0.00	1440	450	1127	429	0.000	0.000	3.31571	0.00000	0.00000
BFD-VALVE-BFD-6-2	25	18.000	80	0.938	0.000	0.000	0.000	0.000	0.00	0	0.00	A216/WCB/	0.00	0.00	0.00	1440	450	1127	429	0.000	0.000	3.31571	0.00000	0.00000
BFD-VALVE-BFD-7-2	22	18.000	80	0.938	0.000	0.000	0.000	0.000	0.00	0	0.00	A216/WCB/	0.00	0.00	0.00	1440	450	1127	429	0.000	0.000	3.31571	0.00000	0.00000
BFD-86	4	18.000	60	0.750	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	450	1000	429	0.000	0.000	3.31571	0.00000	0.00000
BFD-85	4	18.000	60	0.750	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	450	1000	429	0.000	0.000	3.31571	0.00000	0.00000
BFD-100P	54	18.000	60	0.750	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/C/	0.00	0.00	0.00	1085	450	1000	429	0.000	0.000	3.31571	0.00000	0.00000
BFD-100	2	18.000	60	0.750	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	450	1000	429	0.000	0.000	3.31571	0.00000	0.00000
BFD-101P	52	18.000	60	0.750	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/C/	0.00	0.00	0.00	1085	450	1000	429	0.000	0.000	3.31571	0.00000	0.00000
BFD-101	2	18.000	60	0.750	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	450	1000	429	0.000	0.000	3.31571	0.00000	0.00000
BFD-102P	52	18.000	60	0.750	0.000	0.000	0.000	0.000	0.00	45	0.00	A106/C/	0.00	0.00	0.00	1085	450	1000	429	0.000	0.000	3.31571	0.00000	0.00000
BFD-102	2	18.000	60	0.750	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	450	1000	429	0.000	0.000	3.31571	0.00000	0.00000
BFD-102P-1	52	18.000	60	0.750	0.000	0.000	0.000	0.000	5.00	0	0.00	A106/C/	0.00	0.00	0.00	1085	450	1000	429	0.000	0.000	3.31571	0.00000	0.00000
BFD-102P-2	9	18.000	60	0.750	0.000	0.000	0.000	0.000	5.00	0	0.00	A106/C/	0.00	0.00	0.00	1085	450	1000	429	0.000	0.000	3.31571	0.00000	0.00000
BFD-103	2	18.000	60	0.750	0.000	0.000	0.000	0.000	5.00	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	450	1000	429	0.000	0.000	3.31571	0.00000	0.00000
BFD-103P	52	18.000	60	0.750	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/C/	0.00	0.00	0.00	1085	450	1000	429	0.000	0.000	3.31571	0.00000	0.00000
BFD-103N	30	18.000	60	0.750	0.000	0.000	0.000	0.000	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	450	1000	429	0.000	0.000	3.31571	0.00000	0.00000

Line Name : HD-FWH 21A Drain to Cond 23

1HD-208-1N	31	8.625	20	0.250	0.000	0.000	0.000	0.000	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
1HD-208-Valve-LCV1124	24	8.625	20	0.250	0.000	0.000	0.000	0.000	0.00	90	0.00	A216/WCB/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
1HD-208-1R	18	12.750	20	0.250	0.000	0.000	8.625	0.250	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
1HD-208-Valve-1EX-1-5	22	12.750	20	0.250	0.000	0.000	0.000	0.000	0.00	90	0.00	A216/WCB/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
1HD-208-1P	58	12.750	20	0.250	0.000	0.000	0.000	0.000	0.00	90	0.00	A53/BS/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
1HD-208-2N	30	12.750	20	0.250	0.000	0.000	0.000	0.000	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000

Line Name : HD-FWH 21B Drain to Cond 22

1HD-208-4N	31	8.625	20	0.250	0.000	0.000	0.000	0.000	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
1HD-208-Valve-LCV1125	24	8.625	20	0.250	0.000	0.000	0.000	0.000	0.00	90	0.00	A216/WCB/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
1HD-208-4R	18	12.750	20	0.250	0.000	0.000	8.625	0.250	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
1HD-208-Valve-1EX-1-3	22	12.750	20	0.250	0.000	0.000	0.000	0.000	0.00	90	0.00	A216/WCB/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000

Component Name	Geom Code	Pipe Size OD (in)	Sch.	Tnom (in)	Tinit (in)	Tcrit (in)	Br/Small End OD (in)	Br/Small Tnom (in)	R / D Ratio	Orient Angle (Deg.)	Pipe Length (in)	Spec/Type/ Class	Material Cr. (%)	Cu. (%)	Mo. (%)	Design Press. (psig)	Design Temp. (Deg. F)	Op. Press. (psig)	Op. Temp. (Deg. F)	Op. Enth. (Btu/lbm)	Op. Qual.	Flow Rate U/S Mn. (Mlbm/hr)	D/S Mn.	Br.
1HD-208-4P	58	12.750	20	0.250	0.000	0.000	0.000	0.000	0.00	90	0.00	A53/BS/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
1HD-208-5N	30	12.750	20	0.250	0.000	0.000	0.000	0.000	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000

Line Name : HD-FWH 21C Drain to Cond 21

1HD-208-6N	31	8.625	20	0.250	0.000	0.000	0.000	0.000	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
1HD-208-Valve-LCV1126	24	8.625	20	0.250	0.000	0.000	0.000	0.000	0.00	90	0.00	A216/WCB/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
1HD-208-6R	18	12.750	20	0.250	0.000	0.000	8.625	0.250	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
1HD-208-Valve-1EX-1-1	22	12.750	20	0.250	0.000	0.000	0.000	0.000	0.00	90	0.00	A216/WCB/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
1HD-208-6P	58	12.750	20	0.250	0.000	0.000	0.000	0.000	0.00	90	0.00	A53/BS/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
1HD-208-7N	30	12.750	20	0.250	0.000	0.000	0.000	0.000	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000

Line Name : HD-FWH 22A Drain to FWH 21A

2EX-A-1N	31	12.750	20	0.250	0.000	0.000	0.000	0.000	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000

Line Name : HD-FWH 22B Drain to FWH 21B

2EX-234-1N	31	8.625	20	0.250	0.000	0.000	0.000	0.000	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
2EX-234-31E	2	8.625	20	0.250	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
2EX-234-Valve-2EX-1-1	22	8.625	20	0.250	0.000	0.000	0.000	0.000	0.00	90	0.00	A216/WCB/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
2EX-234-33P	58	8.625	20	0.250	0.000	0.000	0.000	0.000	0.00	90	0.00	A53/BS/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
2EX-234-Valve-LCV1122	25	8.625	20	0.250	0.000	0.000	0.000	0.000	0.00	90	0.00	A216/WCB/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
2EX-234-36R	18	12.750	20	0.250	0.000	0.000	8.625	0.250	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
2EX-234-Valve-2EX-7-1	22	12.750	20	0.250	0.000	0.000	0.000	0.000	0.00	90	0.00	A216/WCB/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
2EX-234-3P	58	12.750	20	0.250	0.000	0.000	0.000	0.000	0.00	90	0.00	A53/BS/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
2EX-234-3E	3	12.750	20	0.250	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
2EX-234-4P	53	12.750	20	0.250	0.000	0.000	0.000	0.000	0.00	0	0.00	A53/BS/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
2EX-234-5T	13	12.750	20	0.250	0.000	0.000	0.000	0.000	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
2EX-234-6P	63	12.750	20	0.250	0.000	0.000	0.000	0.000	0.00	90	0.00	A53/BS/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
2EX-234-6N	30	12.750	20	0.250	0.000	0.000	0.000	0.000	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
2EX-234-7P	63	12.750	20	0.250	0.000	0.000	0.000	0.000	0.00	0	0.00	A53/BS/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
2EX-234-8E	2	12.750	20	0.250	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
2EX-234-9P	52	12.750	20	0.250	0.000	0.000	0.000	0.000	0.00	90	0.00	A53/BS/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
2EX-234-9N	30	12.750	20	0.250	0.000	0.000	0.000	0.000	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000

Line Name : HD-FWH 22C Drain to FWH 21C

2EX-C-45N	31	12.750	20	0.250	0.000	0.000	0.000	0.000	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000

Line Name : HD12-1-FWH26A to CV

6EXD-9N	31	10.750	30	0.307	1.614	0.000	0.000	0.000	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	450	450	343	0	373.400	0.000	0.44354	0.00000	0.00000
6EXD-9P US	61	10.750	30	0.307	0.000	0.000	0.000	0.000	0.00	180	0.00	A106/B/	0.00	0.00	0.00	450	450	343	0	373.400	0.000	0.44354	0.00000	0.00000
6EXD-8	2	10.750	30	0.307	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	450	450	343	0	373.400	0.000	0.44354	0.00000	0.00000
6EXD-8P	52	10.750	30	0.307	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	450	450	343	0	373.400	0.000	0.44354	0.00000	0.00000
6EXD-7	2	10.750	30	0.307	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	450	450	343	0	373.400	0.000	0.44354	0.00000	0.00000
6EXD-7P	52	10.750	30	0.307	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	450	450	343	0	373.400	0.000	0.44354	0.00000	0.00000
6EXD-6	2	10.750	30	0.307	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	450	450	343	0	373.400	0.000	0.44354	0.00000	0.00000
6EXD-6P	52	10.750	30	0.307	0.000	0.000	0.000	0.000	0.00	180	0.00	A106/B/	0.00	0.00	0.00	450	450	343	0	373.400	0.000	0.44354	0.00000	0.00000
6EXD-1	2	10.750	30	0.307	0.395	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	450	450	343	0	373.400	0.000	0.44354	0.00000	0.00000
6EXD-1P	52	10.750	30	0.307	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	450	450	343	0	373.400	0.000	0.44354	0.00000	0.00000
6EXD-1-1R	17	10.750	30	0.307	0.410	0.000	6.625	0.280	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	450	450	343	0	373.400	0.000	0.44354	0.44354	0.00000

Line Name : HD12-2-FWH26B to CV

6EXD-13N	31	10.750	30	0.307	0.000	0.000	0.000	0.000	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	450	450	343	0	373.400	0.000	0.44354	0.00000	0.00000
6EXD-13P	61	10.750	30	0.307	0.000	0.000	0.000	0.000	0.00	180	0.00	A106/B/	0.00	0.00	0.00	450	450	343	0	373.400	0.000	0.44354	0.00000	0.00000
6EXD-12	2	10.750	30	0.307	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	450	450	343	0	373.400	0.000	0.44354	0.00000	0.00000

Component Name	Geom Code	Pipe Size OD (in)	Sch.	Tnom (in)	Tinit (in)	Tcrit (in)	Br/Small End OD (in)	Br/Small Tnom (in)	R / D Ratio	Orient Angle (Deg.)	Pipe Length (in)	Spec/Type/ Class	Material Cr. (%)	Cu. (%)	Mo. (%)	Design Press. (psig)	Design Temp. (Deg. F)	Op. Press. (psig)	Op. Temp. (Deg. F)	Op. Enth. (Btu/lbm)	Op. Qual.	Flow Rate U/S Mn. (Mlbm/hr)	D/S Mn.	Br.
6EXD-12P	52	10.750	30	0.307	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	450	450	343	0	373.400	0.000	0.44354	0.00000	0.00000
6EXD-11	2	10.750	30	0.307	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	450	450	343	0	373.400	0.000	0.44354	0.00000	0.00000
6EXD-11P	52	10.750	30	0.307	0.000	0.000	0.000	0.000	0.00	180	0.00	A106/B/	0.00	0.00	0.00	450	450	343	0	373.400	0.000	0.44354	0.00000	0.00000
6EXD-2	2	10.750	30	0.307	0.407	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	450	450	343	0	373.400	0.000	0.44354	0.00000	0.00000
6EXD-2P	52	10.750	30	0.307	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	450	450	343	0	373.400	0.000	0.44354	0.00000	0.00000
6EXD-2-1R	17	10.750	30	0.307	0.405	0.000	6.625	0.280	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	450	450	343	0	373.400	0.000	0.44354	0.44354	0.00000

Line Name : HD12-3-FWH26C to CV

6EXD-18N	31	10.750	30	0.307	0.000	0.000	0.000	0.000	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	450	450	343	0	373.400	0.000	0.44354	0.00000	0.00000
6EXD-18P	61	10.750	30	0.307	0.000	0.000	0.000	0.000	0.00	180	0.00	A106/B/	0.00	0.00	0.00	450	450	343	0	373.400	0.000	0.44354	0.00000	0.00000
6EXD-18	2	10.750	30	0.307	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	450	450	343	0	373.400	0.000	0.44354	0.00000	0.00000
6EXD-17P	52	10.750	30	0.307	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	450	450	343	0	373.400	0.000	0.44354	0.00000	0.00000
6EXD-17	2	10.750	30	0.307	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	450	450	343	0	373.400	0.000	0.44354	0.00000	0.00000
6EXD-16P	52	10.750	30	0.307	0.000	0.000	0.000	0.000	0.00	180	0.00	A106/B/	0.00	0.00	0.00	450	450	343	0	373.400	0.000	0.44354	0.00000	0.00000
6EXD-16	2	10.750	30	0.307	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	450	450	343	0	373.400	0.000	0.44354	0.00000	0.00000
6EXD-15P-1	52	10.750	30	0.307	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	450	450	343	0	373.400	0.000	0.44354	0.00000	0.00000
6EXD-15	2	10.750	30	0.307	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	450	450	343	0	373.400	0.000	0.44354	0.00000	0.00000
6EXD-15P	52	10.750	30	0.307	0.000	0.000	0.000	0.000	0.00	180	0.00	A106/B/	0.00	0.00	0.00	450	450	343	0	373.400	0.000	0.44354	0.00000	0.00000
6EXD-3	2	10.750	30	0.307	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	450	450	343	0	373.400	0.000	0.44354	0.00000	0.00000
6EXD-3P	52	10.750	30	0.307	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	450	450	343	0	373.400	0.000	0.44354	0.00000	0.00000
6EXD-3-1R	17	10.750	30	0.307	0.000	0.000	6.625	0.280	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	450	450	343	0	373.400	0.000	0.44354	0.44354	0.00000

Line Name : HD12-4-FWH26A CV to HTR DR TK

6EX1D-VALVE-LCV-1101	24	6.625	40	0.280	0.000	0.000	0.000	0.000	0.00	90	0.00	A217/WC6/	0.00	0.00	0.00	450	450	204	0	373.400	0.000	0.44354	0.00000	0.00000
6EX1D-R2	18	10.750	40	0.365	0.000	0.000	6.625	0.280	0.00	90	0.00	A234/WP5/	0.00	0.00	0.00	450	450	204	0	373.400	0.000	0.44354	0.00000	0.00000
6EX1D-P2	68	10.750	40	0.365	0.000	0.000	0.000	0.000	0.00	90	0.00	A335/P5/	0.00	0.00	0.00	450	450	204	0	373.400	0.000	0.44354	0.00000	0.00000
6EX1D-N2	30	10.750	40	0.365	0.000	0.000	0.000	0.000	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	450	450	204	0	373.400	0.000	0.44354	0.00000	0.00000

Line Name : HD12-5-FWH26B CV to HTR DR TK

6EX2D-VALVE-LCV-1102	24	6.625	40	0.280	0.000	0.000	0.000	0.000	0.00	90	0.00	A217/WC6/	0.00	0.00	0.00	450	450	204	0	373.400	0.000	0.44354	0.00000	0.00000
6EX2D-R2	18	10.750	40	0.365	0.000	0.000	6.625	0.280	0.00	90	0.00	A234/WP5/	0.00	0.00	0.00	450	450	204	0	373.400	0.000	0.44354	0.00000	0.00000
6EX2D-P2	68	10.750	40	0.365	0.000	0.000	0.000	0.000	0.00	90	0.00	A335/P5/	0.00	0.00	0.00	450	450	204	0	373.400	0.000	0.44354	0.00000	0.00000
6EX2D-N2	30	10.750	40	0.365	0.000	0.000	0.000	0.000	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	450	450	204	0	373.400	0.000	0.44354	0.00000	0.00000

Line Name : HD12-6-FWH26C CV to HTR DR TK

6EX3D-VALVE-LCV-1103	24	6.625	40	0.280	0.000	0.000	0.000	0.000	0.00	90	0.00	A217/WC6/	0.00	0.00	0.00	450	450	204	0	373.400	0.000	0.44354	0.00000	0.00000
6EX3D-R2	18	10.750	40	0.365	0.000	0.000	6.625	0.280	0.00	90	0.00	A234/WP5/	0.00	0.00	0.00	450	450	204	0	373.400	0.000	0.44354	0.00000	0.00000
6EX3D-P2	68	10.750	40	0.365	0.000	0.000	0.000	0.000	0.00	90	0.00	A335/P5/	0.00	0.00	0.00	450	450	204	0	373.400	0.000	0.44354	0.00000	0.00000
6EX3D-N2	30	10.750	40	0.365	0.000	0.000	0.000	0.000	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	450	450	204	0	373.400	0.000	0.44354	0.00000	0.00000

Line Name : HD19-1-HDT to HDP 21 SUCT

5EX-21N	31	24.000	20	0.375	0.000	0.000	0.000	0.000	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	202	389	190	388	0.000	0.000	1.64383	0.00000	0.00000
5EX-21P	61	24.000	20	0.375	0.000	0.000	0.000	0.000	0.00	180	0.00	A53/BE/	0.00	0.00	0.00	202	389	190	388	0.000	0.000	1.64383	0.00000	0.00000
5EX-21	16	24.000	20	0.375	0.436	0.000	18.000	0.312	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	202	389	190	388	0.000	0.000	1.64383	1.64383	0.00000
5EX-22	3	18.000	20	0.312	0.417	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	202	389	190	388	0.000	0.000	1.64383	0.00000	0.00000
5EX-22P	53	18.000	20	0.312	0.408	0.000	0.000	0.000	0.00	90	0.00	A53/BE/	0.00	0.00	0.00	202	389	190	388	0.000	0.000	1.64383	0.00000	0.00000
5EX-VALVE-5EX-16	22	18.000	20	0.312	0.000	0.000	0.000	0.000	0.00	90	0.00	A216/WCB/	0.00	0.00	0.00	202	389	190	388	0.000	0.000	1.64383	0.00000	0.00000
5EX-23P-1	58	18.000	20	0.312	0.000	0.000	0.000	0.000	0.00	90	0.00	A53/BE/	0.00	0.00	0.00	202	389	190	388	0.000	0.000	1.64383	0.00000	0.00000
5EX-23N	30	18.000	20	0.312	0.000	0.000	0.000	0.000	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	202	389	190	388	0.000	0.000	1.64383	0.00000	0.00000

Line Name : HD19-2-HDT to HDP 22 SUCT

5EX-26N	31	24.000	20	0.375	0.000	0.000	0.000	0.000	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	202	389	190	388	0.000	0.000	1.64383	0.00000	0.00000
5EX-26P	61	24.000	20	0.375	0.000	0.000	0.000	0.000	0.00	180	0.00	A53/BE/	0.00	0.00	0.00	202	389	190	388	0.000	0.000	1.64383	0.00000	0.00000

Component Name	Geom Code	Pipe Size OD (in)	Sch.	Tnom (in)	Tinit (in)	Tcrit (in)	Br/Small End OD (in)	Br/Small Tnom (in)	R / D Ratio	Orient Angle (Deg.)	Pipe Length (in)	Spec/Type/ Class	Material Cr. (%)	Cu. (%)	Mo. (%)	Design Press. (psig)	Design Temp. (Deg. F)	Op. Press. (psig)	Op. Temp. (Deg. F)	Op. Enth. (Btu/lbm)	Op. Qual.	Flow Rate U/S Mn. (Mlbm/hr)	D/S Mn.	Br.
5EX-26	16	24.000	20	0.375	0.423	0.000	18.000	0.312	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	202	389	190	388	0.000	0.000	1.64383	1.64383	0.00000
5EX-27P	66	18.000	20	0.312	0.399	0.000	0.000	0.000	0.00	90	0.00	A53/BE/	0.00	0.00	0.00	202	389	190	388	0.000	0.000	1.64383	0.00000	0.00000
5EX-VALVE-5EX-16-1	22	18.000	20	0.312	0.000	0.000	0.000	0.000	0.00	90	0.00	A216/WCB/	0.00	0.00	0.00	202	389	190	388	0.000	0.000	1.64383	0.00000	0.00000
5EX-28P-1	58	18.000	20	0.312	0.000	0.000	0.000	0.000	0.00	90	0.00	A53/BE/	0.00	0.00	0.00	202	389	190	388	0.000	0.000	1.64383	0.00000	0.00000
5EX-28N	30	18.000	20	0.312	0.000	0.000	0.000	0.000	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	202	389	190	388	0.000	0.000	1.64383	0.00000	0.00000

Line Name : HD20-1-HDP21 to BFP SUCTION

HD-8N	31	12.750	XS	0.500	0.000	0.000	0.000	0.000	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	730	400	550	388	0.000	0.000	1.64383	0.00000	0.00000
HD-VALVE-HD-1	25	12.750	XS	0.500	0.000	0.000	0.000	0.000	0.00	90	0.00	A216/WCB/	0.00	0.00	0.00	730	400	550	388	0.000	0.000	1.64383	0.00000	0.00000
HD-8P	58	8.625	40	0.322	0.410	0.000	0.000	0.000	0.00	90	0.00	A105//	0.00	0.00	0.00	730	400	550	388	0.000	0.000	1.64383	0.00000	0.00000
HD-VALVE-LCV-1127	24	8.625	40	0.322	0.000	0.000	0.000	0.000	0.00	90	0.00	A216/WCB/	0.00	0.00	0.00	730	400	550	388	0.000	0.000	1.64383	0.00000	0.00000
HD-7	18	12.750	XS	0.500	0.000	0.000	8.625	0.322	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	730	400	550	388	0.000	0.000	1.64383	0.00000	0.00000
HD-VALVE-HD-2	22	12.750	XS	0.500	0.000	0.000	0.000	0.000	0.00	90	0.00	A216/WCB/	0.00	0.00	0.00	730	400	550	388	0.000	0.000	1.64383	0.00000	0.00000
HD-3P	52	12.750	XS	0.500	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	730	400	550	388	0.000	0.000	1.64383	0.00000	0.00000
HD-3	2	12.750	XS	0.500	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	730	400	550	388	0.000	0.000	1.64383	0.00000	0.00000
HD-3P-1	52	12.750	XS	0.500	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	730	400	550	388	0.000	0.000	1.64383	0.00000	0.00000
HD-5P US	9	12.750	XS	0.500	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	730	400	550	388	0.000	0.000	1.64383	0.00000	0.00000
HD-5P DS	9	12.750	XS	0.500	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	730	400	550	388	0.000	0.000	1.64383	0.00000	0.00000

Line Name : HD20-2-HDP22 to BFP SUCTION

HD-10N	31	12.750	XS	0.500	0.000	0.000	0.000	0.000	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	730	400	550	388	0.000	0.000	1.64383	0.00000	0.00000
HD-VALVE-HD-1-1	25	12.750	XS	0.500	0.000	0.000	0.000	0.000	0.00	90	0.00	A216/WCB/	0.00	0.00	0.00	730	400	550	388	0.000	0.000	1.64383	0.00000	0.00000
HD-10P	58	8.625	40	0.322	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	730	400	550	388	0.000	0.000	1.64383	0.00000	0.00000
HD-VALVE-LCV-1127A	24	8.625	40	0.322	0.000	0.000	0.000	0.000	0.00	90	0.00	A216/WCB/	0.00	0.00	0.00	730	400	550	388	0.000	0.000	1.64383	0.00000	0.00000
HD-9	18	12.750	XS	0.500	0.000	0.000	8.625	0.322	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	730	400	550	388	0.000	0.000	1.64383	1.64383	0.00000
HD-VALVE-HD-2-1	22	12.750	XS	0.500	0.000	0.000	0.000	0.000	0.00	90	0.00	A216/WCB/	0.00	0.00	0.00	730	400	550	388	0.000	0.000	1.64383	0.00000	0.00000
HD-4P	58	12.750	XS	0.500	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	730	400	550	388	0.000	0.000	1.64383	0.00000	0.00000
HD-4	2	12.750	XS	0.500	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	730	400	550	388	0.000	0.000	1.64383	0.00000	0.00000
HD-4A	52	12.750	XS	0.500	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	730	400	550	388	0.000	0.000	1.64383	0.00000	0.00000
HD-6P DS	9	12.750	XS	0.500	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	730	400	550	388	0.000	0.000	1.64383	0.00000	0.00000
HD-6	12	16.000	60	0.656	0.000	0.000	12.750	0.500	0.00	90	0.00	A106/B/	0.00	0.00	0.00	730	400	550	388	0.000	0.000	1.64383	0.00000	1.64383
HD-5AP US	62	16.000	60	0.656	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	730	400	550	388	0.000	0.000	1.64383	0.00000	0.00000
HD-5AP DS	62	16.000	60	0.656	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	730	400	550	388	0.000	0.000	1.64383	0.00000	0.00000

Line Name : HD20-3-HDP DIS T to BFP SUC

HD-5	12	16.000	60	0.656	0.000	0.000	12.750	0.500	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	730	400	550	388	0.000	0.000	1.64383	3.28767	1.64383
HD-11P DS	62	16.000	60	0.656	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	730	400	550	388	0.000	0.000	3.28767	0.00000	0.00000
HD-11	2	16.000	60	0.656	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	730	400	550	388	0.000	0.000	3.28767	0.00000	0.00000
HD-2P US	52	16.000	60	0.656	0.000	0.000	0.000	0.000	0.00	180	0.00	A106/B/	0.00	0.00	0.00	730	400	550	388	0.000	0.000	3.28767	0.00000	0.00000
HD-2	2	16.000	60	0.656	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	730	400	550	388	0.000	0.000	3.28767	0.00000	0.00000
HD-12P	52	16.000	60	0.656	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	730	400	550	388	0.000	0.000	3.28767	0.00000	0.00000
HD-12	1	16.000	60	0.656	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	730	400	550	388	0.000	0.000	3.28767	0.00000	0.00000
HD-13P	51	16.000	60	0.656	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	730	400	550	388	0.000	0.000	3.28767	0.00000	0.00000
HD-13	2	16.000	60	0.656	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	730	400	550	388	0.000	0.000	3.28767	0.00000	0.00000
HD-14P	52	16.000	60	0.656	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	730	400	550	388	0.000	0.000	3.28767	0.00000	0.00000
HD-14	2	16.000	60	0.656	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	730	400	550	388	0.000	0.000	3.28767	0.00000	0.00000
HD-15P	52	16.000	60	0.656	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	730	400	550	388	0.000	0.000	3.28767	0.00000	0.00000
HD-15	2	16.000	60	0.656	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	730	400	550	388	0.000	0.000	3.28767	0.00000	0.00000
HD-15P-1 DS	52	16.000	60	0.656	0.000	0.000	0.000	0.000	0.00	180	0.00	A106/B/	0.00	0.00	0.00	730	400	550	388	0.000	0.000	3.28767	0.00000	0.00000
HD-16	2	16.000	60	0.656	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	730	400	550	388	0.000	0.000	3.28767	0.00000	0.00000
HD-16P US	52	16.000	60	0.656	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	730	400	550	388	0.000	0.000	3.28767	0.00000	0.00000
HD-17	15	16.000	60	0.656	0.000	0.000	14.000	0.593	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	730	400	550	388	0.000	0.000	3.28767	0.00000	0.00000
HD-17P	65	16.000	60	0.656	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	730	400	550	388	0.000	0.000	3.28767	0.00000	0.00000
HD-1	2	16.000	60	0.656	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	730	400	550	388	0.000	0.000	3.28767	0.00000	0.00000
HD-1P	52	16.000	60	0.656	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	730	400	550	388	0.000	0.000	3.28767	0.00000	0.00000

Component Name	Geom Code	Pipe Size OD (in)	Sch.	Tnom (in)	Tinit (in)	Tcrit (in)	Br/Small End OD (in)	Br/Small Tnom (in)	R / D Ratio	Orient Angle (Deg.)	Pipe Length (in)	Spec/Type/ Class	Material Cr. (%)	Cu. (%)	Mo. (%)	Design Press. (psig)	Design Temp. (Deg. F)	Op. Press. (psig)	Op. Temp. (Deg. F)	Op. Enth. (Btu/lbm)	Op. Qual.	Flow Rate U/S Mn. (Mlbm/hr)	D/S Mn.	Br.
Line Name : HD21A-1-FWH24A to CV																								
4EXD-13N	31	6.625	40	0.280	0.000	0.000	0.000	0.000	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	100	400	56	0	228.100	0.000	0.17557	0.00000	0.00000
4EXD-13P	61	6.625	40	0.280	0.000	0.000	0.000	0.000	0.00	180	0.00	A53/BE/	0.00	0.00	0.00	100	400	56	0	228.100	0.000	0.17557	0.00000	0.00000
4EXD-13T	15	6.625	40	0.280	0.000	0.000	0.000	0.000	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	100	400	56	0	228.100	0.000	0.17557	0.17557	0.00000
4EXD-13P-1	65	6.625	40	0.280	0.000	0.000	0.000	0.000	0.00	90	0.00	A53/BE/	0.00	0.00	0.00	100	400	56	0	228.100	0.000	0.17557	0.00000	0.00000
4EXD-13	2	6.625	40	0.280	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	100	400	56	0	228.100	0.000	0.17557	0.00000	0.00000
4EXD-12	3	6.625	40	0.280	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	100	400	56	0	228.100	0.000	0.17557	0.00000	0.00000
4EXD-11P	53	6.625	40	0.280	0.000	0.000	0.000	0.000	0.00	90	0.00	A53/BE/	0.00	0.00	0.00	100	400	56	0	228.100	0.000	0.17557	0.00000	0.00000
4EXD-11	2	6.625	40	0.280	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	100	400	56	0	228.100	0.000	0.17557	0.00000	0.00000
4EXD-10P	52	6.625	40	0.280	0.000	0.000	0.000	0.000	0.00	90	0.00	A53/BE/	0.00	0.00	0.00	100	400	56	0	228.100	0.000	0.17557	0.00000	0.00000
4EXD-10	2	6.625	40	0.280	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	100	400	56	0	228.100	0.000	0.17557	0.00000	0.00000
4EXD-9P	52	6.625	40	0.280	0.000	0.000	0.000	0.000	0.00	0	0.00	A53/BE/	0.00	0.00	0.00	100	400	56	0	228.100	0.000	0.17557	0.00000	0.00000
4EXD-9	2	6.625	40	0.280	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	100	400	56	0	228.100	0.000	0.17557	0.00000	0.00000
4EXD-8P	52	6.625	40	0.280	0.000	0.000	0.000	0.000	0.00	90	0.00	A53/BE/	0.00	0.00	0.00	100	400	56	0	228.100	0.000	0.17557	0.00000	0.00000
4EXD-8	2	6.625	40	0.280	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	100	400	56	0	228.100	0.000	0.17557	0.00000	0.00000
4EXD-7P	52	6.625	40	0.280	0.000	0.000	0.000	0.000	0.00	0	0.00	A53/BE/	0.00	0.00	0.00	100	400	56	0	228.100	0.000	0.17557	0.00000	0.00000
4EXD-7	16	6.625	40	0.280	0.000	0.000	4.500	0.237	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	100	400	56	0	228.100	0.000	0.17557	0.17557	0.00000
4EXD-VALVE-4EX-8	22	4.500	40	0.237	0.000	0.000	0.000	0.000	0.00	90	0.00	A216/WCB/	0.00	0.00	0.00	100	400	56	0	228.100	0.000	0.17557	0.00000	0.00000
4EXD-6	7	4.500	40	0.237	0.000	0.000	3.500	0.216	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	100	400	56	0	228.100	0.000	0.17557	0.17557	0.00000
4EXD-6P	57	3.500	40	0.216	0.000	0.000	0.000	0.000	0.00	90	0.00	A-181/60/	0.00	0.00	0.00	100	400	56	0	228.100	0.000	0.17557	0.00000	0.00000
Line Name : HD21A-2-FWH24A CV to FWH23A																								
4EXD-VALVE- LCV-1115	24	3.500	40	0.216	0.000	0.000	0.000	0.000	0.00	90	0.00	A216/WCB/	0.00	0.00	0.00	100	400	17	0	228.100	0.000	0.17557	0.00000	0.00000
4EXD-5	18	6.625	40	0.280	0.000	0.000	3.500	0.216	0.00	90	0.00	A-403/WP304/	0.00	0.00	0.00	100	400	17	0	228.100	0.000	0.17557	0.17557	0.00000
4EXD-4	12	6.625	40	0.280	0.444	0.000	6.625	0.280	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	100	400	17	0	228.100	0.000	0.17557	0.00000	0.17557
4EXD-4P	62	6.625	40	0.280	0.000	0.000	0.000	0.000	0.00	0	0.00	A53/BE/	0.00	0.00	0.00	100	400	17	0	228.100	0.000	0.17557	0.00000	0.00000
4EXD-1-1	1	6.625	40	0.280	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	100	400	17	0	228.100	0.000	0.17557	0.00000	0.00000
4EXD-1	4	6.625	40	0.280	0.312	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	100	400	17	0	228.100	0.000	0.17557	0.00000	0.00000
4EXD-1P	54	6.625	40	0.280	0.000	0.000	0.000	0.000	0.00	90	0.00	A53/BE/	0.00	0.00	0.00	100	400	17	0	228.100	0.000	0.17557	0.00000	0.00000
4EXD-1N	30	6.625	40	0.280	0.000	0.000	0.000	0.000	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	100	400	17	0	228.100	0.000	0.17557	0.00000	0.00000
Line Name : HD22A-1-FWH24B to CV																								
4EXD-48N	31	6.625	40	0.280	0.000	0.000	0.000	0.000	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	100	400	56	0	228.100	0.000	0.17557	0.00000	0.00000
4EXD-48P	61	6.625	40	0.280	0.000	0.000	0.000	0.000	0.00	180	0.00	A53/BE/	0.00	0.00	0.00	100	400	56	0	228.100	0.000	0.17557	0.00000	0.00000
4EXD-48	1	6.625	40	0.280	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	100	400	56	0	228.100	0.000	0.17557	0.00000	0.00000
4EXD-47P	51	6.625	40	0.280	0.000	0.000	0.000	0.000	0.00	135	0.00	A53/BE/	0.00	0.00	0.00	100	400	56	0	228.100	0.000	0.17557	0.00000	0.00000
4EXD-47	12	6.625	40	0.280	0.000	0.000	6.625	0.280	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	100	400	56	0	228.100	0.000	0.17557	0.00000	0.17557
4EXD-46P	62	6.625	40	0.280	0.000	0.000	0.000	0.000	0.00	90	0.00	A53/BE/	0.00	0.00	0.00	100	400	56	0	228.100	0.000	0.17557	0.00000	0.00000
4EXD-46	2	6.625	40	0.280	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	100	400	56	0	228.100	0.000	0.17557	0.00000	0.00000
4EXD-45P	52	6.625	40	0.280	0.000	0.000	0.000	0.000	0.00	180	0.00	A53/BE/	0.00	0.00	0.00	100	400	56	0	228.100	0.000	0.17557	0.00000	0.00000
4EXD-45	2	6.625	40	0.280	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	100	400	56	0	228.100	0.000	0.17557	0.00000	0.00000
4EXD-44	3	6.625	40	0.280	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	100	400	56	0	228.100	0.000	0.17557	0.00000	0.00000
4EXD-44P	53	6.625	40	0.280	0.000	0.000	0.000	0.000	0.00	90	0.00	A53/BE/	0.00	0.00	0.00	100	400	56	0	228.100	0.000	0.17557	0.00000	0.00000
4EXD-43	2	6.625	40	0.280	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	100	400	56	0	228.100	0.000	0.17557	0.00000	0.00000
4EXD-42P	52	6.625	40	0.280	0.000	0.000	0.000	0.000	0.00	0	0.00	A53/BE/	0.00	0.00	0.00	100	400	56	0	228.100	0.000	0.17557	0.00000	0.00000
4EXD-42	2	6.625	40	0.280	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	100	400	56	0	228.100	0.000	0.17557	0.00000	0.00000
4EXD-41P	52	6.625	40	0.280	0.000	0.000	0.000	0.000	0.00	90	0.00	A53/BE/	0.00	0.00	0.00	100	400	56	0	228.100	0.000	0.17557	0.00000	0.00000
4EXD-41	2	6.625	40	0.280	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	100	400	56	0	228.100	0.000	0.17557	0.00000	0.00000
4EXD-40P US	52	6.625	40	0.280	0.000	0.000	0.000	0.000	0.00	0	0.00	A53/BE/	0.00	0.00	0.00	100	400	56	0	228.100	0.000	0.17557	0.00000	0.00000
4EXD-40P DS	52	6.625	40	0.280	0.000	0.000	0.000	0.000	0.00	0	0.00	A53/BE/	0.00	0.00	0.00	100	400	56	0	228.100	0.000	0.17557	0.00000	0.00000
4EXD-40	16	6.625	40	0.280	0.000	0.000	4.500	0.237	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	100	400	56	0	228.100	0.000	0.17557	0.17557	0.00000
4EXD-VALVE-4EX-8-1	22	4.500	40	0.237	0.000	0.000	0.000	0.000	0.00	90	0.00	A216/WCB/	0.00	0.00	0.00	100	400	56	0	228.100	0.000	0.17557	0.00000	0.00000
4EXD-39	7	4.500	40	0.237	0.000	0.000	3.500	0.216	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	100	400	56	0	228.100	0.000	0.17557	0.17557	0.00000
4EXD-39P	57	3.500	40	0.216	0.000	0.000	0.000	0.000	0.00	90	0.00	A53/BE/	0.00	0.00	0.00	100	400	56	0	228.100	0.000	0.17557	0.00000	0.00000
Line Name : HD22A-2-FWH24B CV to FWH23B																								
4EXD-VALVE-LCV-1116	24	3.500	40	0.216	0.000	0.000	0.000	0.000	0.00	90	0.00	A216/WCB/	0.00	0.00	0.00	100	400	17	0	228.100	0.000	0.17557	0.00000	0.00000

Component Name	Geom Code	Pipe Size OD (in)	Sch.	Tnom (in)	Tinit (in)	Tcrit (in)	Br/Small End OD (in)	Br/Small Tnom (in)	R / D Ratio	Orient Angle (Deg.)	Pipe Length (in)	Spec/Type/ Class	Material Cr. (%)	Cu. (%)	Mo. (%)	Design Press. (psig)	Design Temp. (Deg. F)	Op. Press. (psig)	Op. Temp. (Deg. F)	Op. Enth. (Btu/lbm)	Op. Qual.	Flow Rate U/S Mn. (Mlbm/hr)	D/S Mn.	Br.
4EXD-38	18	6.625	40	0.280	0.000	0.000	3.500	0.216	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	100	400	17	0	228.100	0.000	0.17557	0.17557	0.00000
4EXD-37	12	6.625	40	0.280	0.444	0.000	6.625	0.280	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	100	400	17	0	228.100	0.000	0.17557	0.00000	0.17557
4EXD-2-1	1	6.625	40	0.280	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	100	400	17	0	228.100	0.000	0.17557	0.00000	0.00000
4EXD-37P US	62	6.625	40	0.280	0.000	0.000	0.000	0.000	0.00	0	0.00	A53/BE/	0.00	0.00	0.00	100	400	17	0	228.100	0.000	0.17557	0.00000	0.00000
4EXD-2	4	6.625	40	0.280	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	100	400	17	0	228.100	0.000	0.17557	0.00000	0.00000
4EXD-2P	54	6.625	40	0.280	0.000	0.000	0.000	0.000	0.00	90	0.00	A53/BE/	0.00	0.00	0.00	100	400	17	0	228.100	0.000	0.17557	0.00000	0.00000
4EXD-2N	30	6.625	40	0.280	0.000	0.000	0.000	0.000	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	100	400	17	0	228.100	0.000	0.17557	0.00000	0.00000
Line Name : HD23A-1-FWH24C to CV																								
4EXD-71N	31	6.625	40	0.280	0.000	0.000	0.000	0.000	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	100	400	56	0	228.100	0.000	0.17557	0.00000	0.00000
4EXD-71P	61	6.625	40	0.280	0.000	0.000	0.000	0.000	0.00	180	0.00	A53/BE/	0.00	0.00	0.00	100	400	56	0	228.100	0.000	0.17557	0.00000	0.00000
4EXD-71	2	6.625	40	0.280	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	100	400	56	0	228.100	0.000	0.17557	0.00000	0.00000
4EXD-70P	52	6.625	40	0.280	0.000	0.000	0.000	0.000	0.00	90	0.00	A53/BE/	0.00	0.00	0.00	100	400	56	0	228.100	0.000	0.17557	0.00000	0.00000
4EXD-70	2	6.625	40	0.280	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	100	400	56	0	228.100	0.000	0.17557	0.00000	0.00000
4EXD-69	12	6.625	40	0.280	0.000	0.000	6.625	0.280	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	100	400	56	0	228.100	0.000	0.17557	0.00000	0.17557
4EXD-69P	62	6.625	40	0.280	0.000	0.000	0.000	0.000	0.00	90	0.00	A53/BE/	0.00	0.00	0.00	100	400	56	0	228.100	0.000	0.17557	0.00000	0.00000
4EXD-68	2	6.625	40	0.280	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	100	400	56	0	228.100	0.000	0.17557	0.00000	0.00000
4EXD-67P	52	6.625	40	0.280	0.000	0.000	0.000	0.000	0.00	180	0.00	A53/BE/	0.00	0.00	0.00	100	400	56	0	228.100	0.000	0.17557	0.00000	0.00000
4EXD-67	2	6.625	40	0.280	0.308	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	100	400	56	0	228.100	0.000	0.17557	0.00000	0.00000
4EXD-66P	52	6.625	40	0.280	0.000	0.000	0.000	0.000	0.00	90	0.00	A53/BE/	0.00	0.00	0.00	100	400	56	0	228.100	0.000	0.17557	0.00000	0.00000
4EXD-66	2	6.625	40	0.280	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	100	400	56	0	228.100	0.000	0.17557	0.00000	0.00000
4EXD-65P	52	6.625	40	0.280	0.000	0.000	0.000	0.000	0.00	90	0.00	A53/BE/	0.00	0.00	0.00	100	400	56	0	228.100	0.000	0.17557	0.00000	0.00000
4EXD-65	2	6.625	40	0.280	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	100	400	56	0	228.100	0.000	0.17557	0.00000	0.00000
4EXD-64P	52	6.625	40	0.280	0.000	0.000	0.000	0.000	0.00	90	0.00	A53/BE/	0.00	0.00	0.00	100	400	56	0	228.100	0.000	0.17557	0.00000	0.00000
4EXD-64	2	6.625	40	0.280	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	100	400	56	0	228.100	0.000	0.17557	0.00000	0.00000
4EXD-63P	52	6.625	40	0.280	0.000	0.000	0.000	0.000	0.00	0	0.00	A53/BE/	0.00	0.00	0.00	100	400	56	0	228.100	0.000	0.17557	0.00000	0.00000
4EXD-63	2	6.625	40	0.280	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	100	400	56	0	228.100	0.000	0.17557	0.00000	0.00000
4EXD-62P	52	6.625	40	0.280	0.000	0.000	0.000	0.000	0.00	90	0.00	A53/BE/	0.00	0.00	0.00	100	400	56	0	228.100	0.000	0.17557	0.00000	0.00000
4EXD-62	2	6.625	40	0.280	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	100	400	56	0	228.100	0.000	0.17557	0.00000	0.00000
4EXD-61P	52	6.625	40	0.280	0.000	0.000	0.000	0.000	0.00	0	0.00	A53/BE/	0.00	0.00	0.00	100	400	56	0	228.100	0.000	0.17557	0.00000	0.00000
4EXD-61	16	6.625	40	0.280	0.000	0.000	4.500	0.237	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	100	400	56	0	228.100	0.000	0.17557	0.17557	0.00000
4EXD-VALVE-4EX-8-2	22	4.500	40	0.237	0.000	0.000	0.000	0.000	0.00	90	0.00	A216/WCB/	0.00	0.00	0.00	100	400	56	0	228.100	0.000	0.17557	0.00000	0.00000
4EXD-60	7	4.500	40	0.237	0.000	0.000	3.500	0.216	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	100	400	56	0	228.100	0.000	0.17557	0.17557	0.00000
4EXD-60P	57	3.500	40	0.216	0.000	0.000	0.000	0.000	0.00	90	0.00	A53/BE/	0.00	0.00	0.00	100	400	56	0	228.100	0.000	0.17557	0.00000	0.00000
Line Name : HD23A-2-FWH24C CV to FWH23C																								
4EXD-VALVE-LCV-1117	24	3.500	40	0.216	0.000	0.000	0.000	0.000	0.00	90	0.00	A216/WCB/	0.00	0.00	0.00	100	400	17	0	228.100	0.000	0.17557	0.00000	0.00000
4EXD-59	18	6.625	40	0.280	0.000	0.000	3.500	0.216	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	100	400	17	0	228.100	0.000	0.17557	0.17557	0.00000
4EXD-58	12	6.625	40	0.280	0.448	0.000	6.625	0.280	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	100	400	17	0	228.100	0.000	0.17557	0.00000	0.17557
4EXD-58P	62	6.625	40	0.280	0.000	0.000	0.000	0.000	0.00	0	0.00	A53/BE/	0.00	0.00	0.00	100	400	17	0	228.100	0.000	0.17557	0.00000	0.00000
4EXD-3-1	1	6.625	40	0.280	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	100	400	17	0	228.100	0.000	0.17557	0.00000	0.00000
4EXD-3	4	6.625	40	0.280	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	100	400	17	0	228.100	0.000	0.17557	0.00000	0.00000
4EXD-3P	54	6.625	40	0.280	0.000	0.000	0.000	0.000	0.00	90	0.00	A53/BE/	0.00	0.00	0.00	100	400	17	0	228.100	0.000	0.17557	0.00000	0.00000
4EXD-3N	30	6.625	40	0.280	0.000	0.000	0.000	0.000	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	100	400	17	0	228.100	0.000	0.17557	0.00000	0.00000
Line Name : HD242A-1-FWH23A CV to FWH22A																								
242-VALVE-LCV-1118	24	6.625	40	0.280	0.000	0.000	0.000	0.000	0.00	90	0.00	A216/WCB/	0.00	0.00	0.00	50	300	-3	206	0.000	0.000	0.37135	0.00000	0.00000
242-8R	18	8.625	20	0.250	0.344	0.000	6.625	0.280	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	50	300	-3	206	0.000	0.000	0.37135	0.37135	0.00000
242-VALVE-3EX-9	22	8.625	20	0.250	0.000	0.000	0.000	0.000	0.00	90	0.00	A216/WCB/	0.00	0.00	0.00	50	300	-3	206	0.000	0.000	0.37135	0.00000	0.00000
242-9P	58	8.625	20	0.250	0.000	0.000	0.000	0.000	0.00	90	0.00	A53/BE/	0.00	0.00	0.00	50	300	-3	206	0.000	0.000	0.37135	0.00000	0.00000
242-10T	12	8.625	20	0.250	0.000	0.000	8.625	0.250	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	50	300	-3	206	0.000	0.000	0.37135	0.00000	0.37135
242-11P	62	8.625	20	0.250	0.000	0.000	0.000	0.000	0.00	90	0.00	A53/BE/	0.00	0.00	0.00	50	300	-3	206	0.000	0.000	0.37135	0.00000	0.00000
242-12N	18	10.750	20	0.250	0.000	0.000	8.625	0.250	0.00	90	0.00	A53/BE/	0.00	0.00	0.00	50	300	-3	206	0.000	0.000	0.37135	0.37135	0.00000
Line Name : HD243A-1-FWH23B CV to FWH22B																								
243-VALVE-LCV-1119	24	6.625	40	0.280	0.000	0.000	0.000	0.000	0.00	90	0.00	A216/WCB/	0.00	0.00	0.00	50	300	-3	206	0.000	0.000	0.37135	0.00000	0.00000

Component Name	Geom Code	Pipe Size OD (in)	Sch.	Tnom (in)	Tinit (in)	Tcrit (in)	Br/Small End OD (in)	Br/Small Tnom (in)	R / D Ratio	Orient Angle (Deg.)	Pipe Length (in)	Spec/Type/ Class	Material Cr. (%)	Cu. (%)	Mo. (%)	Design Press. (psig)	Design Temp. (Deg. F)	Op. Press. (psig)	Op. Temp. (Deg. F)	Op. Enth. (Btu/lbm)	Op. Qual.	Flow Rate U/S Mn. (Mlbm/hr)	D/S Mn.	Br.
243-9R	18	8.625	20	0.250	0.409	0.000	6.625	0.280	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	50	300	-3	206	0.000	0.000	0.37135	0.37135	0.00000
243-VALVE-3EX-9-1	22	8.625	20	0.250	0.000	0.000	0.000	0.000	0.00	90	0.00	A216/WCB/	0.00	0.00	0.00	50	300	-3	206	0.000	0.000	0.37135	0.00000	0.00000
243-10P	58	8.625	20	0.250	0.000	0.000	0.000	0.000	0.00	90	0.00	A53/BE/	0.00	0.00	0.00	50	300	-3	206	0.000	0.000	0.37135	0.00000	0.00000
243-11T	12	8.625	20	0.250	0.000	0.000	8.625	0.250	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	50	300	-3	206	0.000	0.000	0.37135	0.00000	0.37135
243-12P	62	8.625	20	0.250	0.000	0.000	0.000	0.000	0.00	90	0.00	A53/BE/	0.00	0.00	0.00	50	300	-3	206	0.000	0.000	0.37135	0.00000	0.00000
243-13N	18	10.750	20	0.250	0.000	0.000	8.625	0.250	0.00	90	0.00	A53/BE/	0.00	0.00	0.00	50	300	-3	206	0.000	0.000	0.37135	0.37135	0.00000

Line Name : HD244A-1-FWH23C CV to FWH22C

244-VALVE-LCV-1119	24	6.625	40	0.280	0.000	0.000	0.000	0.000	0.00	90	0.00	A216/WCB/	0.00	0.00	0.00	50	300	-3	206	0.000	0.000	0.37135	0.00000	0.00000
244-9R	18	8.625	20	0.250	0.319	0.000	6.625	0.280	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	50	300	-3	206	0.000	0.000	0.37135	0.37135	0.00000
244-VALVE-3EX-9-2	22	8.625	20	0.250	0.000	0.000	0.000	0.000	0.00	90	0.00	A216/WCB/	0.00	0.00	0.00	50	300	-3	206	0.000	0.000	0.37135	0.00000	0.00000
244-10P	58	8.625	20	0.250	0.000	0.000	0.000	0.000	0.00	90	0.00	A53/BE/	0.00	0.00	0.00	50	300	-3	206	0.000	0.000	0.37135	0.00000	0.00000
244-11T	12	8.625	20	0.250	0.000	0.000	8.625	0.250	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	50	300	-3	206	0.000	0.000	0.37135	0.00000	0.37135
244-12P	62	8.625	20	0.250	0.000	0.000	0.000	0.000	0.00	90	0.00	A53/BE/	0.00	0.00	0.00	50	300	-3	206	0.000	0.000	0.37135	0.00000	0.00000
244-13N	30	8.625	20	0.250	0.000	0.000	0.000	0.000	0.00	90	0.00	A53/BE/	0.00	0.00	0.00	50	300	-3	206	0.000	0.000	0.37135	0.37135	0.00000

Line Name : HD24A-1-FWH23A to CV

3EXD-1N	31	8.625	20	0.250	0.000	0.000	0.000	0.000	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	50	300	17	206	0.000	0.000	0.37135	0.00000	0.00000
3EXD-1P	61	8.625	20	0.250	0.000	0.000	0.000	0.000	0.00	180	0.00	A53/BE/	0.00	0.00	0.00	50	300	17	206	0.000	0.000	0.37135	0.00000	0.00000
3EXD-1	2	8.625	20	0.250	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	50	300	17	206	0.000	0.000	0.37135	0.00000	0.00000
3EXD-2P	52	8.625	20	0.250	0.000	0.000	0.000	0.000	0.00	90	0.00	A53/BE/	0.00	0.00	0.00	50	300	17	206	0.000	0.000	0.37135	0.00000	0.00000
3EXD-2	2	8.625	20	0.250	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	50	300	17	206	0.000	0.000	0.37135	0.00000	0.00000
3EXD-2P-1 US	52	8.625	20	0.250	0.000	0.000	0.000	0.000	0.00	90	0.00	A53/BE/	0.00	0.00	0.00	50	300	17	206	0.000	0.000	0.37135	0.00000	0.00000
3EXD-2P-1 DS	52	8.625	20	0.250	0.000	0.000	0.000	0.000	0.00	90	0.00	A53/BE/	0.00	0.00	0.00	50	300	17	206	0.000	0.000	0.37135	0.00000	0.00000
3EXD-3	2	8.625	20	0.250	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	50	300	17	206	0.000	0.000	0.37135	0.00000	0.00000
3EXD-3P	52	8.625	20	0.250	0.000	0.000	0.000	0.000	0.00	180	0.00	A53/BE/	0.00	0.00	0.00	50	300	17	206	0.000	0.000	0.37135	0.00000	0.00000
3EXD-4	2	8.625	20	0.250	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	50	300	17	206	0.000	0.000	0.37135	0.00000	0.00000
3EXD-4P	52	8.625	20	0.250	0.000	0.000	0.000	0.000	0.00	90	0.00	A53/BE/	0.00	0.00	0.00	50	300	17	206	0.000	0.000	0.37135	0.00000	0.00000
3EXD-5	2	8.625	20	0.250	0.285	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	50	300	17	206	0.000	0.000	0.37135	0.00000	0.00000
3EXD-5P	52	8.625	20	0.250	0.000	0.000	0.000	0.000	0.00	90	0.00	A53/BE/	0.00	0.00	0.00	50	300	17	206	0.000	0.000	0.37135	0.00000	0.00000
3EXD-6	2	8.625	20	0.250	0.000	0.000	0.000	0.000	1.00	90	0.00	A234/WPB/	0.00	0.00	0.00	50	300	17	206	0.000	0.000	0.37135	0.00000	0.00000
3EXD-6P US	52	8.625	20	0.250	0.000	0.000	0.000	0.000	0.00	90	0.00	A53/BE/	0.00	0.00	0.00	50	300	17	206	0.000	0.000	0.37135	0.00000	0.00000
3EXD-6P DS	52	8.625	20	0.250	0.000	0.000	0.000	0.000	0.00	90	0.00	A53/BE/	0.00	0.00	0.00	50	300	17	206	0.000	0.000	0.37135	0.00000	0.00000
3EXD-7	2	8.625	20	0.250	0.000	0.000	0.000	0.000	1.00	90	0.00	A234/WPB/	0.00	0.00	0.00	50	300	17	206	0.000	0.000	0.37135	0.00000	0.00000
3EXD-7P	52	8.625	20	0.250	0.000	0.000	0.000	0.000	0.00	180	0.00	A53/BE/	0.00	0.00	0.00	50	300	17	206	0.000	0.000	0.37135	0.00000	0.00000
3EXD-8	2	8.625	20	0.250	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	50	300	17	206	0.000	0.000	0.37135	0.00000	0.00000
3EXD-8P	52	8.625	20	0.250	0.000	0.000	0.000	0.000	0.00	90	0.00	A53/BE/	0.00	0.00	0.00	50	300	17	206	0.000	0.000	0.37135	0.00000	0.00000
3EXD-9	2	8.625	20	0.250	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	50	300	17	206	0.000	0.000	0.37135	0.00000	0.00000
3EXD-9P	52	8.625	20	0.250	0.000	0.000	0.000	0.000	0.00	180	0.00	A53/BE/	0.00	0.00	0.00	50	300	17	206	0.000	0.000	0.37135	0.00000	0.00000
3EXD-10	2	8.625	20	0.250	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	50	300	17	206	0.000	0.000	0.37135	0.00000	0.00000
3EXD-10P	52	8.625	20	0.250	0.000	0.000	0.000	0.000	0.00	90	0.00	A53/BE/	0.00	0.00	0.00	50	300	17	206	0.000	0.000	0.37135	0.00000	0.00000
3EXD-11	2	8.625	20	0.250	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	50	300	17	206	0.000	0.000	0.37135	0.00000	0.00000
3EXD-11P	52	8.625	20	0.250	0.000	0.000	0.000	0.000	0.00	90	0.00	A53/BE/	0.00	0.00	0.00	50	300	17	206	0.000	0.000	0.37135	0.00000	0.00000
3EXD-12	2	8.625	20	0.250	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	50	300	17	206	0.000	0.000	0.37135	0.00000	0.00000
3EXD-12P	52	8.625	20	0.250	0.000	0.000	0.000	0.000	0.00	90	0.00	A53/BE/	0.00	0.00	0.00	50	300	17	206	0.000	0.000	0.37135	0.00000	0.00000
3EXD-13	2	8.625	20	0.250	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	50	300	17	206	0.000	0.000	0.37135	0.00000	0.00000
3EXD-13P	52	8.625	20	0.250	0.000	0.000	0.000	0.000	0.00	90	0.00	A53/BE/	0.00	0.00	0.00	50	300	17	206	0.000	0.000	0.37135	0.00000	0.00000
3EXD-14	15	8.625	20	0.250	0.000	0.000	0.000	0.000	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	50	300	17	206	0.000	0.000	0.37135	0.37135	0.00000
3EXD-20P	65	8.625	20	0.250	0.000	0.000	0.000	0.000	0.00	90	0.00	A53/BE/	0.00	0.00	0.00	50	300	17	206	0.000	0.000	0.37135	0.00000	0.00000
3EXD-20	2	8.625	20	0.250	0.299	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	50	300	17	206	0.000	0.000	0.37135	0.00000	0.00000
3EXD-20P-1 US	52	8.625	20	0.250	0.000	0.000	0.000	0.000	0.00	0	0.00	A53/BE/	0.00	0.00	0.00	50	300	17	206	0.000	0.000	0.37135	0.00000	0.00000
3EXD-20P-1 DS	52	8.625	20	0.250	0.000	0.000	0.000	0.000	0.00	0	0.00	A53/BE/	0.00	0.00	0.00	50	300	17	206	0.000	0.000	0.37135	0.00000	0.00000
3EXD-21	2	8.625	20	0.250	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	50	300	17	206	0.000	0.000	0.37135	0.00000	0.00000
3EXD-21P	52	8.625	20	0.250	0.000	0.000	0.000	0.000	0.00	90	0.00	A53/BE/	0.00	0.00	0.00	50	300	17	206	0.000	0.000	0.37135	0.00000	0.00000
3EXD-22	2	8.625	20	0.250	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	50	300	17	206	0.000	0.000	0.37135	0.00000	0.00000
3EXD-22P	52	8.625	20	0.250	0.000	0.000	0.000	0.000	0.00	90	0.00	A53/BE/	0.00	0.00	0.00	50	300	17	206	0.000	0.000	0.37135	0.00000	0.00000
242-1P	52	8.625	20	0.250	0.000	0.000	0.000	0.000	0.00	90	0.00	A53/BE/	0.00	0.00	0.00	50	300	17	206	0.000	0.000	0.37135	0.00000	0.00000
242-2E	1	8.625	20	0.250	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	50	300	17	206	0.000	0.000	0.37135	0.00000	0.00000
242-3P	51	8.625	20	0.250	0.000	0.000	0.000	0.000	0.00	45	0.00	A53/BE/	0.00	0.00	0.00	50	300	17	206	0.000	0.000	0.37135	0.00000	0.00000
242-4E	1	8.625	20	0.250	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	50	300	17	206	0.000	0.000	0.37135	0.00000	0.00000

Component Name	Geom Code	Pipe Size OD (in)	Sch.	Tnom (in)	Tinit (in)	Tcrit (in)	Br/Small End OD (in)	Br/Small Tnom (in)	R / D Ratio	Orient Angle (Deg.)	Pipe Length (in)	Spec/Type/ Class	Material Cr. (%)	Cu. (%)	Mo. (%)	Design Press. (psig)	Design Temp. (Deg. F)	Op. Press. (psig)	Op. Temp. (Deg. F)	Op. Enth. (Btu/lbm)	Op. Qual.	Flow Rate U/S Mn. (Mlbm/hr)	D/S Mn.	Br.
242-5E	4	8.625	20	0.250	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	50	300	17	206	0.000	0.000	0.37135	0.00000	0.00000
242-6P	54	8.625	20	0.250	0.000	0.000	0.000	0.000	0.00	0	0.00	A53/BE/	0.00	0.00	0.00	50	300	17	206	0.000	0.000	0.37135	0.00000	0.00000
242-7E	2	8.625	20	0.250	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	50	300	17	206	0.000	0.000	0.37135	0.00000	0.00000
242-7R	7	8.625	20	0.250	0.000	0.000	6.625	0.280	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	50	300	17	206	0.000	0.000	0.37135	0.37135	0.00000

Line Name : HD25A-1-FWH23B to CV

3EXD-23N	31	8.625	20	0.250	0.000	0.000	0.000	0.000	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	50	300	17	206	0.000	0.000	0.37135	0.00000	0.00000
3EXD-23P	61	8.625	20	0.250	0.000	0.000	0.000	0.000	0.00	180	0.00	A53/BE/	0.00	0.00	0.00	50	300	17	206	0.000	0.000	0.37135	0.00000	0.00000
3EXD-23	2	8.625	20	0.250	0.278	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	50	300	17	206	0.000	0.000	0.37135	0.00000	0.00000
3EXD-24	4	8.625	20	0.250	0.309	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	50	300	17	206	0.000	0.000	0.37135	0.00000	0.00000
3EXD-24P	54	8.625	20	0.250	0.000	0.000	0.000	0.000	0.00	90	0.00	A53/BE/	0.00	0.00	0.00	50	300	17	206	0.000	0.000	0.37135	0.00000	0.00000
3EXD-25	2	8.625	20	0.250	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	50	300	17	206	0.000	0.000	0.37135	0.00000	0.00000
3EXD-25P	52	8.625	20	0.250	0.000	0.000	0.000	0.000	0.00	180	0.00	A53/BE/	0.00	0.00	0.00	50	300	17	206	0.000	0.000	0.37135	0.00000	0.00000
3EXD-26	4	8.625	20	0.250	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	50	300	17	206	0.000	0.000	0.37135	0.00000	0.00000
3EXD-26P	54	8.625	20	0.250	0.000	0.000	0.000	0.000	0.00	90	0.00	A53/BE/	0.00	0.00	0.00	50	300	17	206	0.000	0.000	0.37135	0.00000	0.00000
3EXD-27	3	8.625	20	0.250	0.000	0.000	0.000	0.000	1.00	90	0.00	A234/WPB/	0.00	0.00	0.00	50	300	17	206	0.000	0.000	0.37135	0.00000	0.00000
3EXD-27P	53	8.625	20	0.250	0.000	0.000	0.000	0.000	0.00	90	0.00	A53/BE/	0.00	0.00	0.00	50	300	17	206	0.000	0.000	0.37135	0.00000	0.00000
3EXD-28	2	8.625	20	0.250	0.000	0.000	0.000	0.000	1.00	90	0.00	A234/WPB/	0.00	0.00	0.00	50	300	17	206	0.000	0.000	0.37135	0.00000	0.00000
3EXD-28P	52	8.625	20	0.250	0.000	0.000	0.000	0.000	0.00	90	0.00	A53/BE/	0.00	0.00	0.00	50	300	17	206	0.000	0.000	0.37135	0.00000	0.00000
3EXD-29	2	8.625	20	0.250	0.000	0.000	0.000	0.000	1.00	90	0.00	A234/WPB/	0.00	0.00	0.00	50	300	17	206	0.000	0.000	0.37135	0.00000	0.00000
3EXD-29P	52	8.625	20	0.250	0.000	0.000	0.000	0.000	0.00	180	0.00	A53/BE/	0.00	0.00	0.00	50	300	17	206	0.000	0.000	0.37135	0.00000	0.00000
3EXD-30	2	8.625	20	0.250	0.287	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	50	300	17	206	0.000	0.000	0.37135	0.00000	0.00000
3EXD-30P	52	8.625	20	0.250	0.000	0.000	0.000	0.000	0.00	90	0.00	A53/BE/	0.00	0.00	0.00	50	300	17	206	0.000	0.000	0.37135	0.00000	0.00000
3EXD-31	2	8.625	20	0.250	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	50	300	17	206	0.000	0.000	0.37135	0.00000	0.00000
3EXD-31P	52	8.625	20	0.250	0.000	0.000	0.000	0.000	0.00	90	0.00	A53/BE/	0.00	0.00	0.00	50	300	17	206	0.000	0.000	0.37135	0.00000	0.00000
3EXD-32	2	8.625	20	0.250	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	50	300	17	206	0.000	0.000	0.37135	0.00000	0.00000
3EXD-32P	52	8.625	20	0.250	0.000	0.000	0.000	0.000	0.00	180	0.00	A53/BE/	0.00	0.00	0.00	50	300	17	206	0.000	0.000	0.37135	0.00000	0.00000
3EXD-33	2	8.625	20	0.250	0.292	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	50	300	17	206	0.000	0.000	0.37135	0.00000	0.00000
3EXD-33P US	52	8.625	20	0.250	0.000	0.000	0.000	0.000	0.00	90	0.00	A53/BE/	0.00	0.00	0.00	50	300	17	206	0.000	0.000	0.37135	0.00000	0.00000
3EXD-33P DS	52	8.625	20	0.250	0.000	0.000	0.000	0.000	0.00	90	0.00	A53/BE/	0.00	0.00	0.00	50	300	17	206	0.000	0.000	0.37135	0.00000	0.00000
3EXD-34	15	8.625	20	0.250	0.000	0.000	0.000	0.000	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	50	300	17	206	0.000	0.000	0.37135	0.37135	0.00000
3EXD-40P	65	8.625	20	0.250	0.000	0.000	0.000	0.000	0.00	90	0.00	A53/BE/	0.00	0.00	0.00	50	300	17	206	0.000	0.000	0.37135	0.00000	0.00000
3EXD-40	2	8.625	20	0.250	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	50	300	17	206	0.000	0.000	0.37135	0.00000	0.00000
3EXD-40P-1	52	8.625	20	0.250	0.000	0.000	0.000	0.000	0.00	0	0.00	A53/BE/	0.00	0.00	0.00	50	300	17	206	0.000	0.000	0.37135	0.00000	0.00000
3EXD-41	2	8.625	20	0.250	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	50	300	17	206	0.000	0.000	0.37135	0.00000	0.00000
3EXD-41P	52	8.625	20	0.250	0.000	0.000	0.000	0.000	0.00	90	0.00	A53/BE/	0.00	0.00	0.00	50	300	17	206	0.000	0.000	0.37135	0.00000	0.00000
3EXD-42	2	8.625	20	0.250	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	50	300	17	206	0.000	0.000	0.37135	0.00000	0.00000
3EXD-42P	52	8.625	20	0.250	0.000	0.000	0.000	0.000	0.00	90	0.00	A53/BE/	0.00	0.00	0.00	50	300	17	206	0.000	0.000	0.37135	0.00000	0.00000
243-1P	52	8.625	20	0.250	0.000	0.000	0.000	0.000	0.00	90	0.00	A53/BE/	0.00	0.00	0.00	50	300	17	206	0.000	0.000	0.37135	0.00000	0.00000
243-2E	1	8.625	20	0.250	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	50	300	17	206	0.000	0.000	0.37135	0.00000	0.00000
243-3P	51	8.625	20	0.250	0.000	0.000	0.000	0.000	0.00	45	0.00	A53/BE/	0.00	0.00	0.00	50	300	17	206	0.000	0.000	0.37135	0.00000	0.00000
243-4E	1	8.625	20	0.250	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	50	300	17	206	0.000	0.000	0.37135	0.00000	0.00000
243-5P	51	8.625	20	0.250	0.000	0.000	0.000	0.000	0.00	90	0.00	A53/BE/	0.00	0.00	0.00	50	300	17	206	0.000	0.000	0.37135	0.00000	0.00000
243-6E	4	8.625	20	0.250	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	50	300	17	206	0.000	0.000	0.37135	0.00000	0.00000
243-7P	54	8.625	20	0.250	0.000	0.000	0.000	0.000	0.00	0	0.00	A53/BE/	0.00	0.00	0.00	50	300	17	206	0.000	0.000	0.37135	0.00000	0.00000
243-8E	2	8.625	20	0.250	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	50	300	17	206	0.000	0.000	0.37135	0.00000	0.00000
243-8R	7	8.625	20	0.250	0.000	0.000	6.625	0.280	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	50	300	17	206	0.000	0.000	0.37135	0.37135	0.00000

Line Name : HD26A-1-FWH23C to CV

3EXD-43N	31	8.625	20	0.250	0.000	0.000	0.000	0.000	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	50	300	17	206	0.000	0.000	0.37135	0.00000	0.00000
3EXD-43P	61	8.625	20	0.250	0.000	0.000	0.000	0.000	0.00	180	0.00	A53/BE/	0.00	0.00	0.00	50	300	17	206	0.000	0.000	0.37135	0.00000	0.00000
3EXD-43	2	8.625	20	0.250	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	50	300	17	206	0.000	0.000	0.37135	0.00000	0.00000
3EXD-43P	52	8.625	20	0.250	0.000	0.000	0.000	0.000	0.00	90	0.00	A53/BE/	0.00	0.00	0.00	50	300	17	206	0.000	0.000	0.37135	0.00000	0.00000
3EXD-44	2	8.625	20	0.250	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	50	300	17	206	0.000	0.000	0.37135	0.00000	0.00000
3EXD-44P	52	8.625	20	0.250	0.000	0.000	0.000	0.000	0.00	180	0.00	A53/BE/	0.00	0.00	0.00	50	300	17	206	0.000	0.000	0.37135	0.00000	0.00000
3EXD-45	4	8.625	20	0.250	0.325	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	50	300	17	206	0.000	0.000	0.37135	0.00000	0.00000
3EXD-45P	54	8.625	20	0.250	0.000	0.000	0.000	0.000	0.00	90	0.00	A53/BE/	0.00	0.00	0.00	50	300	17	206	0.000	0.000	0.37135	0.00000	0.00000
3EXD-46	2	8.625	20	0.250	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	50	300	17	206	0.000	0.000	0.37135	0.00000	0.00000
3EXD-46P	52	8.625	20	0.250	0.000	0.000	0.000	0.000	0.00	90	0.00	A53/BE/	0.00	0.00	0.00	50	300	17	206	0.000	0.000	0.37135	0.00000	0.00000
3EXD-47	2	8.625	20	0.250	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	50	300	17	206	0.000	0.000	0.37135	0.00000	0.00000

Component Name	Geom Code	Pipe Size OD (in)	Sch.	Tnom (in)	Tinit (in)	Tcrit (in)	Br/Small End OD (in)	Br/Small Tnom (in)	R / D Ratio	Orient Angle (Deg.)	Pipe Length (in)	Spec/Type/ Class	Material Cr. (%)	Cu. (%)	Mo. (%)	Design Press. (psig)	Design Temp. (Deg. F)	Op. Press. (psig)	Op. Temp. (Deg. F)	Op. Enth. (Btu/lbm)	Op. Qual.	Flow Rate U/S Mn. (Mlbm/hr)	D/S Mn.	Br.
3EXD-47P	52	8.625	20	0.250	0.000	0.000	0.000	0.000	0.00	180	0.00	A53/BE/	0.00	0.00	0.00	50	300	17	206	0.000	0.000	0.37135	0.00000	0.00000
3EXD-48	2	8.625	20	0.250	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	50	300	17	206	0.000	0.000	0.37135	0.00000	0.00000
3EXD-48P	52	8.625	20	0.250	0.000	0.000	0.000	0.000	0.00	90	0.00	A53/BE/	0.00	0.00	0.00	50	300	17	206	0.000	0.000	0.37135	0.00000	0.00000
3EXD-49	2	8.625	20	0.250	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	50	300	17	206	0.000	0.000	0.37135	0.00000	0.00000
3EXD-49P	52	8.625	20	0.250	0.000	0.000	0.000	0.000	0.00	90	0.00	A53/BE/	0.00	0.00	0.00	50	300	17	206	0.000	0.000	0.37135	0.00000	0.00000
3EXD-50	2	8.625	20	0.250	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	50	300	17	206	0.000	0.000	0.37135	0.00000	0.00000
3EXD-50P US	52	8.625	20	0.250	0.000	0.000	0.000	0.000	0.00	90	0.00	A53/BE/	0.00	0.00	0.00	50	300	17	206	0.000	0.000	0.37135	0.00000	0.00000
3EXD-50P DS	52	8.625	20	0.250	0.000	0.000	0.000	0.000	0.00	90	0.00	A53/BE/	0.00	0.00	0.00	50	300	17	206	0.000	0.000	0.37135	0.00000	0.00000
3EXD-51	15	8.625	20	0.250	0.000	0.000	8.625	0.250	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	50	300	17	206	0.000	0.000	0.37135	0.37135	0.00000
3EXD-58P US	65	8.625	20	0.250	0.000	0.000	0.000	0.000	0.00	90	0.00	A53/BE/	0.00	0.00	0.00	50	300	17	206	0.000	0.000	0.37135	0.00000	0.00000
3EXD-58P DS	65	8.625	20	0.250	0.000	0.000	0.000	0.000	0.00	90	0.00	A53/BE/	0.00	0.00	0.00	50	300	17	206	0.000	0.000	0.37135	0.00000	0.00000
3EXD-58	2	8.625	20	0.250	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	50	300	17	206	0.000	0.000	0.37135	0.00000	0.00000
3EXD-58P-1	52	8.625	20	0.250	0.000	0.000	0.000	0.000	0.00	0	0.00	A53/BE/	0.00	0.00	0.00	50	300	17	206	0.000	0.000	0.37135	0.00000	0.00000
3EXD-59	2	8.625	20	0.250	0.299	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	50	300	17	206	0.000	0.000	0.37135	0.00000	0.00000
3EXD-59P US	52	8.625	20	0.250	0.000	0.000	0.000	0.000	0.00	90	0.00	A53/BE/	0.00	0.00	0.00	50	300	17	206	0.000	0.000	0.37135	0.00000	0.00000
3EXD-59P DS	52	8.625	20	0.250	0.000	0.000	0.000	0.000	0.00	90	0.00	A53/BE/	0.00	0.00	0.00	50	300	17	206	0.000	0.000	0.37135	0.00000	0.00000
3EXD-60	2	8.625	20	0.250	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	50	300	17	206	0.000	0.000	0.37135	0.00000	0.00000
3EXD-60P	52	8.625	20	0.250	0.000	0.000	0.000	0.000	0.00	90	0.00	A53/BE/	0.00	0.00	0.00	50	300	17	206	0.000	0.000	0.37135	0.00000	0.00000
244-1P	52	8.625	20	0.250	0.000	0.000	0.000	0.000	0.00	90	0.00	A53/BE/	0.00	0.00	0.00	50	300	17	206	0.000	0.000	0.37135	0.00000	0.00000
244-2E	1	8.625	20	0.250	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	50	300	17	206	0.000	0.000	0.37135	0.00000	0.00000
244-3P	51	8.625	20	0.250	0.000	0.000	0.000	0.000	0.00	45	0.00	A53/BE/	0.00	0.00	0.00	50	300	17	206	0.000	0.000	0.37135	0.00000	0.00000
244-4E	1	8.625	20	0.250	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	50	300	17	206	0.000	0.000	0.37135	0.00000	0.00000
244-5P	51	8.625	20	0.250	0.000	0.000	0.000	0.000	0.00	90	0.00	A53/BE/	0.00	0.00	0.00	50	300	17	206	0.000	0.000	0.37135	0.00000	0.00000
244-6E	4	8.625	20	0.250	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	50	300	17	206	0.000	0.000	0.37135	0.00000	0.00000
244-7P	54	8.625	20	0.250	0.000	0.000	0.000	0.000	0.00	0	0.00	A53/BE/	0.00	0.00	0.00	50	300	17	206	0.000	0.000	0.37135	0.00000	0.00000
244-8E	2	8.625	20	0.250	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	50	300	17	206	0.000	0.000	0.37135	0.00000	0.00000
244-8R	7	8.625	20	0.250	0.000	0.000	6.625	0.280	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	50	300	17	206	0.000	0.000	0.37135	0.37135	0.00000

Line Name : HD9-1-FWH25A to HTR DRN TK

5EXD-21N	31	10.750	20	0.250	0.000	0.000	0.000	0.000	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	250	400	204	389	0.000	0.000	0.38793	0.00000	0.00000
5EXD-21P	61	10.750	20	0.250	0.000	0.000	0.000	0.000	0.00	180	0.00	A53/BE/	0.00	0.00	0.00	250	400	204	389	0.000	0.000	0.38793	0.00000	0.00000
5EXD-21	2	10.750	20	0.250	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	250	400	204	389	0.000	0.000	0.38793	0.00000	0.00000
5EXD-15P	52	10.750	20	0.250	0.000	0.000	0.000	0.000	0.00	90	0.00	A53/BE/	0.00	0.00	0.00	250	400	204	389	0.000	0.000	0.38793	0.00000	0.00000
5EXD-15	4	10.750	20	0.250	0.310	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	250	400	204	389	0.000	0.000	0.38793	0.00000	0.00000
5EXD-16P	54	10.750	20	0.250	0.000	0.000	0.000	0.000	0.00	180	0.00	A53/BE/	0.00	0.00	0.00	250	400	204	389	0.000	0.000	0.38793	0.00000	0.00000
5EXD-16	2	10.750	20	0.250	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	250	400	204	389	0.000	0.000	0.38793	0.00000	0.00000
5EXD-17P US	52	10.750	20	0.250	0.000	0.000	0.000	0.000	0.00	90	0.00	A53/BE/	0.00	0.00	0.00	250	400	204	389	0.000	0.000	0.38793	0.00000	0.00000
5EXD-17P DS	52	10.750	20	0.250	0.000	0.000	0.000	0.000	0.00	90	0.00	A53/BE/	0.00	0.00	0.00	250	400	204	389	0.000	0.000	0.38793	0.00000	0.00000
5EXD-17	2	10.750	20	0.250	0.295	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	250	400	204	389	0.000	0.000	0.38793	0.00000	0.00000
5EXD-18P	52	10.750	20	0.250	0.000	0.000	0.000	0.000	0.00	180	0.00	A53/BE/	0.00	0.00	0.00	250	400	204	389	0.000	0.000	0.38793	0.00000	0.00000
5EXD-18	2	10.750	20	0.250	0.000	0.000	0.000	0.000	1.00	90	0.00	A234/WPB/	0.00	0.00	0.00	250	400	204	389	0.000	0.000	0.38793	0.00000	0.00000
5EXD-19P	52	10.750	20	0.250	0.000	0.000	0.000	0.000	0.00	90	0.00	A53/BE/	0.00	0.00	0.00	250	400	204	389	0.000	0.000	0.38793	0.00000	0.00000
5EXD-19	2	10.750	20	0.250	0.000	0.000	0.000	0.000	1.00	90	0.00	A234/WPB/	0.00	0.00	0.00	250	400	204	389	0.000	0.000	0.38793	0.00000	0.00000
5EXD-20P	52	10.750	20	0.250	0.000	0.000	0.000	0.000	0.00	0	0.00	A53/BE/	0.00	0.00	0.00	250	400	204	389	0.000	0.000	0.38793	0.00000	0.00000
5EXD-20P DS	52	10.750	20	0.250	0.000	0.000	0.000	0.000	0.00	0	0.00	A53/BE/	0.00	0.00	0.00	250	400	204	389	0.000	0.000	0.38793	0.00000	0.00000
5EXD-20	2	10.750	20	0.250	0.304	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	250	400	204	389	0.000	0.000	0.38793	0.00000	0.00000
5EXD-VALVE-5EX-8	22	10.750	20	0.250	0.000	0.000	0.000	0.000	0.00	90	0.00	A216/WCB/	0.00	0.00	0.00	250	400	204	389	0.000	0.000	0.38793	0.00000	0.00000
5EXD-20N	30	10.750	20	0.250	0.000	0.000	0.000	0.000	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	250	400	204	389	0.000	0.000	0.38793	0.00000	0.00000

Line Name : HD9-2-FWH25B to HTR DRN TK

5EXD-9N	31	10.750	20	0.250	0.000	0.000	0.000	0.000	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	250	400	204	389	0.000	0.000	0.38793	0.00000	0.00000
5EXD-9P	61	10.750	20	0.250	0.000	0.000	0.000	0.000	0.00	180	0.00	A53/BE/	0.00	0.00	0.00	250	400	204	389	0.000	0.000	0.38793	0.00000	0.00000
5EXD-9	2	10.750	20	0.250	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	250	400	204	389	0.000	0.000	0.38793	0.00000	0.00000
5EXD-10P DS	52	10.750	20	0.250	0.000	0.000	0.000	0.000	0.00	90	0.00	A53/BE/	0.00	0.00	0.00	250	400	204	389	0.000	0.000	0.38793	0.00000	0.00000
5EXD-10	2	10.750	20	0.250	0.309	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	250	400	204	389	0.000	0.000	0.38793	0.00000	0.00000
5EXD-11P US	52	10.750	20	0.250	0.000	0.000	0.000	0.000	0.00	90	0.00	A53/BE/	0.00	0.00	0.00	250	400	204	389	0.000	0.000	0.38793	0.00000	0.00000
5EXD-11	2	10.750	20	0.250	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	250	400	204	389	0.000	0.000	0.38793	0.00000	0.00000
5EXD-12P	52	10.750	20	0.250	0.000	0.000	0.000	0.000	0.00	180	0.00	A53/BE/	0.00	0.00	0.00	250	400	204	389	0.000	0.000	0.38793	0.00000	0.00000

Component Name	Geom Code	Pipe Size OD (in)	Sch.	Tnom (in)	Tinit (in)	Tcrit (in)	Br/Small End OD (in)	Br/Small Tnom (in)	R / D Ratio	Orient Angle (Deg.)	Pipe Length (in)	Spec/Type/ Class	Material Cr. (%)	Cu. (%)	Mo. (%)	Design Press. (psig)	Design Temp. (Deg. F)	Op. Press. (psig)	Op. Temp. (Deg. F)	Op. Enth. (Btu/lbm)	Op. Qual.	Flow Rate U/S Mn. (Mlbm/hr)	D/S Mn.	Br.
5EXD-12	2	10.750	20	0.250	0.000	0.000	0.000	0.000	1.00	90	0.00	A234/WPB/	0.00	0.00	0.00	250	400	204	389	0.000	0.000	0.38793	0.00000	0.00000
5EXD-13P	52	10.750	20	0.250	0.000	0.000	0.000	0.000	0.00	90	0.00	A53/BE/	0.00	0.00	0.00	250	400	204	389	0.000	0.000	0.38793	0.00000	0.00000
5EXD-13	2	10.750	20	0.250	0.000	0.000	0.000	0.000	1.00	90	0.00	A234/WPB/	0.00	0.00	0.00	250	400	204	389	0.000	0.000	0.38793	0.00000	0.00000
5EXD-14P	52	10.750	20	0.250	0.000	0.000	0.000	0.000	0.00	0	0.00	A53/BE/	0.00	0.00	0.00	250	400	204	389	0.000	0.000	0.38793	0.00000	0.00000
5EXD-14P DS	52	10.750	20	0.250	0.000	0.000	0.000	0.000	0.00	0	0.00	A53/BE/	0.00	0.00	0.00	250	400	204	389	0.000	0.000	0.38793	0.00000	0.00000
5EXD-14	2	10.750	20	0.250	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	250	400	204	389	0.000	0.000	0.38793	0.00000	0.00000
5EXD-VALVE-5EX-8-1	22	10.750	20	0.250	0.000	0.000	0.000	0.000	0.00	90	0.00	A216/WCB/	0.00	0.00	0.00	250	400	204	389	0.000	0.000	0.38793	0.00000	0.00000
5EXD-14N	30	10.750	20	0.250	0.000	0.000	0.000	0.000	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	250	400	204	389	0.000	0.000	0.38793	0.00000	0.00000

Line Name : HD9-3-FWH25C to HTR DRN TK

5EXD-1N	31	10.750	20	0.250	0.000	0.000	0.000	0.000	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	250	400	204	389	0.000	0.000	0.38793	0.00000	0.00000
5EXD-1P	61	10.750	20	0.250	0.000	0.000	0.000	0.000	0.00	180	0.00	A53/BE/	0.00	0.00	0.00	250	400	204	389	0.000	0.000	0.38793	0.00000	0.00000
5EXD-3	2	10.750	20	0.250	0.296	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	250	400	204	389	0.000	0.000	0.38793	0.00000	0.00000
5EXD-2P	52	10.750	20	0.250	0.000	0.000	0.000	0.000	0.00	90	0.00	A53/BE/	0.00	0.00	0.00	250	400	204	389	0.000	0.000	0.38793	0.00000	0.00000
5EXD-4	2	10.750	20	0.250	0.285	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	250	400	204	389	0.000	0.000	0.38793	0.00000	0.00000
5EXD-3P US	52	10.750	20	0.250	0.000	0.000	0.000	0.000	0.00	180	0.00	A53/BE/	0.00	0.00	0.00	250	400	204	389	0.000	0.000	0.38793	0.00000	0.00000
5EXD-3P DS	52	10.750	20	0.250	0.000	0.000	0.000	0.000	0.00	180	0.00	A53/BE/	0.00	0.00	0.00	250	400	204	389	0.000	0.000	0.38793	0.00000	0.00000
5EXD-5	2	10.750	20	0.250	0.295	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	250	400	204	389	0.000	0.000	0.38793	0.00000	0.00000
5EXD-4P	52	10.750	20	0.250	0.000	0.000	0.000	0.000	0.00	90	0.00	A53/BE/	0.00	0.00	0.00	250	400	204	389	0.000	0.000	0.38793	0.00000	0.00000
5EXD-1	2	10.750	20	0.250	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	250	400	204	389	0.000	0.000	0.38793	0.00000	0.00000
5EXD-5P	52	10.750	20	0.250	0.000	0.000	0.000	0.000	0.00	90	0.00	A53/BE/	0.00	0.00	0.00	250	400	204	389	0.000	0.000	0.38793	0.00000	0.00000
5EXD-2	2	10.750	20	0.250	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	250	400	204	389	0.000	0.000	0.38793	0.00000	0.00000
5EXD-6P	52	10.750	20	0.250	0.000	0.000	0.000	0.000	0.00	180	0.00	A53/BE/	0.00	0.00	0.00	250	400	204	389	0.000	0.000	0.38793	0.00000	0.00000
5EXD-6	2	10.750	20	0.250	0.285	0.000	0.000	0.000	1.00	90	0.00	A234/WPB/	0.00	0.00	0.00	250	400	204	389	0.000	0.000	0.38793	0.00000	0.00000
5EXD-7	4	10.750	20	0.250	0.280	0.000	0.000	0.000	1.00	90	0.00	A234/WPB/	0.00	0.00	0.00	250	400	204	389	0.000	0.000	0.38793	0.00000	0.00000
5EXD-8P	54	10.750	20	0.250	0.000	0.000	0.000	0.000	0.00	0	0.00	A53/BE/	0.00	0.00	0.00	250	400	204	389	0.000	0.000	0.38793	0.00000	0.00000
5EXD-8	2	10.750	20	0.250	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	250	400	204	389	0.000	0.000	0.38793	0.00000	0.00000
5EXD-VALVE-5EX-8-2	22	10.750	20	0.250	0.000	0.000	0.000	0.000	0.00	90	0.00	A216/WCB/	0.00	0.00	0.00	250	400	204	389	0.000	0.000	0.38793	0.00000	0.00000
5EXD-8N	30	10.750	20	0.250	0.000	0.000	0.000	0.000	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	250	400	204	389	0.000	0.000	0.38793	0.00000	0.00000

Line Name : MS-HP Turbine to MPS A

TEMP01	31	32.000	STD	0.375	0.000	0.000	0.000	0.000	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	250	400	0	0	0.000	0.000	0.00000	0.00000	0.00000

Line Name : MS-HP Turbine to MPS B

TEMP02	31	32.000	STD	0.375	0.000	0.000	0.000	0.000	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	250	400	0	0	0.000	0.000	0.00000	0.00000	0.00000

Line Name : MS-HP Turbine to MPS C

TEMP03	31	32.000	STD	0.375	0.000	0.000	0.000	0.000	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	250	400	0	0	0.000	0.000	0.00000	0.00000	0.00000

Line Name : MS-HP Turbine to MPS D

TEMP04	31	32.000	STD	0.375	0.000	0.000	0.000	0.000	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	250	400	0	0	0.000	0.000	0.00000	0.00000	0.00000

Line Name : MS56-1-PRESEP to MSR-A

5EX-49N	31	33.000	SPE	0.500	0.000	0.000	0.000	0.000	0.00	90	0.00	A155/KC702/	18.00	0.00	0.00	221	400	211	0	1137.900	0.000	2.68699	0.00000	0.00000
5EX-49P1	61	33.000	SPE	0.500	0.000	0.000	0.000	0.000	0.00	180	0.00	A155/KC702/	18.00	0.00	0.00	221	400	211	0	1137.900	0.000	2.68699	0.00000	0.00000
5EX-49	2	33.250	SPE	0.625	0.000	0.000	0.000	0.000	1.50	90	0.00	A155/KC702/	18.00	0.00	0.00	221	400	211	0	1137.900	0.000	2.68699	0.00000	0.00000
5EX-49EJ1	6	33.000	SPE	0.500	0.000	0.000	0.000	0.000	0.00	90	0.00	A155/KC702/	18.00	0.00	0.00	221	400	211	0	1137.900	0.000	2.68699	0.00000	0.00000
5EX-49P2	52	33.000	SPE	0.500	0.000	0.000	0.000	0.000	0.00	90	0.00	A155/KC702/	18.00	0.00	0.00	221	400	211	0	1137.900	0.000	2.68699	0.00000	0.00000
5EX-49EJ2	6	33.000	SPE	0.500	0.000	0.000	0.000	0.000	0.00	90	0.00	A155/KC702/	18.00	0.00	0.00	221	400	211	0	1137.900	0.000	2.68699	0.00000	0.00000
5EX-52	2	33.250	SPE	0.625	0.000	0.000	0.000	0.000	1.50	90	0.00	A155/KC702/	18.00	0.00	0.00	221	400	211	0	1137.900	0.000	2.68699	0.00000	0.00000
5EX-52P	51	33.000	SPE	0.500	0.000	0.000	0.000	0.000	0.00	61	0.00	A155/KC702/	18.00	0.00	0.00	221	400	211	0	1137.900	0.000	2.68699	0.00000	0.00000
5EX-53	4	33.250	SPE	0.625	0.000	0.000	0.000	0.000	1.50	90	0.00	A155/KC702/	18.00	0.00	0.00	221	400	211	0	1137.900	0.000	2.68699	0.00000	0.00000
5EX-53R	18	48.500	SPE	1.000	0.000	0.000	33.000	0.500	0.00	90	0.00	A155/KC702/	18.00	0.00	0.00	221	400	211	0	1137.900	0.000	2.68699	2.68699	0.00000

Component Name	Geom Code	Pipe Size OD (in)	Sch.	Tnom (in)	Tinit (in)	Tcrit (in)	Br/Small End OD (in)	Br/Small Tnom (in)	R / D Ratio	Orient Angle (Deg.)	Pipe Length (in)	Spec/Type/ Class	Material Cr. (%)	Cu. (%)	Mo. (%)	Design Press. (psig)	Design Temp. (Deg. F)	Op. Press. (psig)	Op. Temp. (Deg. F)	Op. Enth. (Btu/lbm)	Op. Qual.	Flow Rate U/S Mn. (Mlbm/hr)	D/S Mn.	Br.
5EX-53P	68	48.500	SPE	1.000	0.000	0.000	0.000	0.000	0.00	90	0.00	A155/KC702/	18.00	0.00	0.00	221	400	211	0	1137.900	0.000	2.68699	0.00000	0.00000
Line Name : MS56-3-PRESEP to MSR-A																								
5EX-54	12	48.500	SPE	1.000	0.000	0.000	33.000	0.500	0.00	90	0.00	A155/KC702/	18.00	0.00	0.00	221	400	211	0	1137.900	0.000	2.68699	5.37398	2.68699
Line Name : MS56-2-PRESEP to MSR-A																								
5EX-50N	31	33.000	SPE	0.500	0.000	0.000	0.000	0.000	0.00	90	0.00	A155/KC702/	18.00	0.00	0.00	221	400	211	0	1137.900	0.000	2.68699	0.00000	0.00000
5EX-50P1	61	33.000	SPE	0.500	0.000	0.000	0.000	0.000	0.00	180	0.00	A155/KC702/	18.00	0.00	0.00	221	400	211	0	1137.900	0.000	2.68699	0.00000	0.00000
5EX-50	2	33.250	SPE	0.625	0.000	0.000	0.000	0.000	1.50	90	0.00	A155/KC702/	18.00	0.00	0.00	221	400	211	0	1137.900	0.000	2.68699	0.00000	0.00000
5EX-50P2	52	33.000	SPE	0.500	0.000	0.000	0.000	0.000	0.00	90	0.00	A155/KC702/	18.00	0.00	0.00	221	400	211	0	1137.900	0.000	2.68699	0.00000	0.00000
5EX-62	1	33.250	SPE	0.625	0.000	0.000	0.000	0.000	1.50	90	0.00	A155/KC702/	18.00	0.00	0.00	221	400	211	0	1137.900	0.000	2.68699	0.00000	0.00000
5EX-50EJ1	6	33.000	SPE	0.500	0.000	0.000	0.000	0.000	0.00	90	0.00	A155/KC702/	18.00	0.00	0.00	221	400	211	0	1137.900	0.000	2.68699	0.00000	0.00000
5EX-50P3	51	33.000	SPE	0.500	0.000	0.000	0.000	0.000	0.00	90	0.00	A155/KC702/	18.00	0.00	0.00	221	400	211	0	1137.900	0.000	2.68699	0.00000	0.00000
5EX-50EJ2	6	33.000	SPE	0.500	0.000	0.000	0.000	0.000	0.00	90	0.00	A155/KC702/	18.00	0.00	0.00	221	400	211	0	1137.900	0.000	2.68699	0.00000	0.00000
5EX-51	2	33.250	SPE	0.625	0.000	0.000	0.000	0.000	1.50	90	0.00	A155/KC702/	18.00	0.00	0.00	221	400	211	0	1137.900	0.000	2.68699	0.00000	0.00000
5EX-51P	51	33.000	SPE	0.500	0.000	0.000	0.000	0.000	0.00	61	0.00	A155/KC702/	18.00	0.00	0.00	221	400	211	0	1137.900	0.000	2.68699	0.00000	0.00000
Line Name : MS56-3-PRESEP to MSR-A																								
5EX-54P	62	48.500	SPE	1.000	0.000	0.000	0.000	0.000	0.00	90	0.00	A155/KC702/	18.00	0.00	0.00	221	400	211	0	1137.900	0.000	5.37398	0.00000	0.00000
5EX-55	14	48.500	SPE	1.000	0.000	0.000	27.500	0.500	0.00	90	0.00	A155/KC702/	18.00	0.00	0.00	221	400	211	0	1137.900	0.000	5.37397	3.58265	1.79132
Line Name : MS56-4-PRESEP to MSR23A																								
5EX-55EJ1	6	27.500	SPE	0.500	0.000	0.000	0.000	0.000	0.00	71	0.00	A155/KC702/	18.00	0.00	0.00	221	400	211	0	1137.900	0.000	1.79132	0.00000	0.00000
5EX-55EJ2	6	27.500	SPE	0.500	0.000	0.000	0.000	0.000	0.00	71	0.00	A155/KC702/	18.00	0.00	0.00	221	400	211	0	1137.900	0.000	1.79132	0.00000	0.00000
5EX-56	2	27.750	SPE	0.625	0.000	0.000	0.000	0.000	1.50	90	0.00	A155/KC702/	18.00	0.00	0.00	221	400	211	0	1137.900	0.000	1.79132	0.00000	0.00000
5EX-56P	52	27.500	SPE	0.500	0.000	0.000	0.000	0.000	0.00	90	0.00	A155/KC702/	18.00	0.00	0.00	221	400	211	0	1137.900	0.000	1.79132	0.00000	0.00000
5EX-56N	30	27.500	SPE	0.500	0.000	0.000	0.000	0.000	0.00	90	0.00	A155/KC702/	18.00	0.00	0.00	221	400	211	0	1137.900	0.000	1.79132	0.00000	0.00000
Line Name : MS56-5-PRESEP to MSR-A																								
5EX-55R	7	48.500	SPE	1.000	0.000	0.000	38.000	0.500	0.00	90	0.00	A155/KC702/	18.00	0.00	0.00	221	400	211	0	1137.900	0.000	3.58265	3.58265	0.00000
5EX-55P-1	68	38.000	SPE	0.500	0.000	0.000	0.000	0.000	0.00	90	0.00	A155/KC702/	18.00	0.00	0.00	221	400	211	0	1137.900	0.000	3.58265	0.00000	0.00000
5EX-57	14	38.000	SPE	0.500	0.000	0.000	27.500	0.500	0.00	90	0.00	A155/KC702/	18.00	0.00	0.00	221	400	211	0	1137.900	0.000	3.58265	1.79132	1.79132
Line Name : MS56-6-PRESEP to MSR22A																								
5EX-57EJ1	6	27.500	SPE	0.500	0.000	0.000	0.000	0.000	0.00	71	0.00	A155/KC702/	18.00	0.00	0.00	221	400	211	0	1137.900	0.000	1.79132	0.00000	0.00000
5EX-57EJ2	6	27.500	SPE	0.500	0.000	0.000	0.000	0.000	0.00	71	0.00	A155/KC702/	18.00	0.00	0.00	221	400	211	0	1137.900	0.000	1.79132	0.00000	0.00000
5EX-58	2	27.750	SPE	0.625	0.000	0.000	0.000	0.000	1.50	90	0.00	A155/KC702/	18.00	0.00	0.00	221	400	211	0	1137.900	0.000	1.79132	0.00000	0.00000
5EX-58P	52	27.500	SPE	0.500	0.000	0.000	0.000	0.000	0.00	90	0.00	A155/KC702/	18.00	0.00	0.00	221	400	211	0	1137.900	0.000	1.79132	0.00000	0.00000
5EX-58N	30	27.500	SPE	0.500	0.000	0.000	0.000	0.000	0.00	90	0.00	A155/KC702/	18.00	0.00	0.00	221	400	211	0	1137.900	0.000	1.79132	0.00000	0.00000
Line Name : MS56-7-PRESEP to MSR21A																								
5EX-57R	7	38.250	SPE	0.625	0.000	0.000	27.750	0.625	0.00	90	0.00	A155/KC702/	18.00	0.00	0.00	221	400	211	0	1137.900	0.000	1.79132	1.79132	0.00000
5EX-57P2	57	27.750	SPE	0.625	0.000	0.000	0.000	0.000	0.00	90	0.00	A155/KC702/	18.00	0.00	0.00	221	400	211	0	1137.900	0.000	1.79132	0.00000	0.00000
5EX-59	2	27.750	SPE	0.625	0.000	0.000	0.000	0.000	1.50	90	0.00	A155/KC702/	18.00	0.00	0.00	221	400	211	0	1137.900	0.000	1.79132	0.00000	0.00000
5EX-59EJ1	6	27.500	SPE	0.500	0.000	0.000	0.000	0.000	0.00	71	0.00	A285/C/	18.00	0.00	0.00	221	400	211	0	1137.900	0.000	1.79132	0.00000	0.00000
5EX-59P	56	27.750	SPE	0.625	0.000	0.000	0.000	0.000	0.00	71	0.00	A155/KC702/	18.00	0.00	0.00	221	400	211	0	1137.900	0.000	1.79132	0.00000	0.00000
5EX-59EJ2	6	27.500	SPE	0.500	0.000	0.000	0.000	0.000	0.00	71	0.00	A285/C/	18.00	0.00	0.00	221	400	211	0	1137.900	0.000	1.79132	0.00000	0.00000
5EX-60	2	27.750	SPE	0.625	0.000	0.000	0.000	0.000	1.50	90	0.00	A155/KC702/	18.00	0.00	0.00	221	400	211	0	1137.900	0.000	1.79132	0.00000	0.00000
5EX-60P	52	27.500	SPE	0.500	0.000	0.000	0.000	0.000	0.00	90	0.00	A155/KC702/	18.00	0.00	0.00	221	400	211	0	1137.900	0.000	1.79132	0.00000	0.00000
5EX-60N	30	27.500	SPE	0.500	0.000	0.000	0.000	0.000	0.00	90	0.00	A155/KC702/	18.00	0.00	0.00	221	400	211	0	1137.900	0.000	1.79132	0.00000	0.00000

Component Name	Geom Code	Pipe Size OD (in)	Sch.	Tnom (in)	Tinit (in)	Tcrit (in)	Br/Small End OD (in)	Br/Small Tnom (in)	R / D Ratio	Orient Angle (Deg.)	Pipe Length (in)	Spec/Type/ Class	Material Cr. (%)	Cu. (%)	Mo. (%)	Design Press. (psig)	Design Temp. (Deg. F)	Op. Press. (psig)	Op. Temp. (Deg. F)	Op. Enth. (Btu/lbm)	Op. Qual.	Flow Rate U/S Mn. (Mlbm/hr)	D/S Mn. (Mlbm/hr)	Br.
Line Name : MS57-1-PRESEP to MSR-B																								
5EX-37N	31	33.000	SPE	0.500	0.000	0.000	0.000	0.000	0.00	90	0.00	A155/KC702/	18.00	0.00	0.00	221	400	211	0	1137.900	0.000	2.68699	0.00000	0.00000
5EX-37P1	61	33.000	SPE	0.500	0.000	0.000	0.000	0.000	0.00	180	0.00	A155/KC702/	18.00	0.00	0.00	221	400	211	0	1137.900	0.000	2.68699	0.00000	0.00000
5EX-37	2	33.250	SPE	0.625	0.000	0.000	0.000	0.000	1.50	90	0.00	SA-31/TP304/	18.00	0.00	0.00	221	400	211	0	1137.900	0.000	2.68699	0.00000	0.00000
5EX-37EJ1	6	33.000	SPE	0.500	0.000	0.000	0.000	0.000	0.00	90	0.00	A155/KC702/	18.00	0.00	0.00	221	400	211	0	1137.900	0.000	2.68699	0.00000	0.00000
5EX-37P2	52	33.000	SPE	0.500	0.000	0.000	0.000	0.000	0.00	90	0.00	A155/KC702/	18.00	0.00	0.00	221	400	211	0	1137.900	0.000	2.68699	0.00000	0.00000
5EX-37EJ2	6	33.000	SPE	0.500	0.000	0.000	0.000	0.000	0.00	90	0.00	A155/KC702/	18.00	0.00	0.00	221	400	211	0	1137.900	0.000	2.68699	0.00000	0.00000
5EX-40	2	33.250	SPE	0.625	0.000	0.000	0.000	0.000	1.50	90	0.00	SA-31/TP304/	18.00	0.00	0.00	221	400	211	0	1137.900	0.000	2.68699	0.00000	0.00000
5EX-40P	51	33.000	SPE	0.500	0.000	0.000	0.000	0.000	0.00	61	0.00	A155/KC702/	18.00	0.00	0.00	221	400	211	0	1137.900	0.000	2.68699	0.00000	0.00000
5EX-41	2	33.250	SPE	0.625	0.000	0.000	0.000	0.000	1.50	90	0.00	SA-31/TP304/	18.00	0.00	0.00	221	400	211	0	1137.900	0.000	2.68699	0.00000	0.00000
5EX-41R	18	48.500	SPE	1.000	0.000	0.000	33.000	0.500	0.00	90	0.00	A155/KC702/	18.00	0.00	0.00	221	400	211	0	1137.900	0.000	2.68699	2.68699	0.00000
Line Name : MS57-3-PRESEP to MSR-B																								
5EX-42	12	48.500	SPE	1.000	0.000	0.000	33.000	0.500	0.00	90	0.00	A155/KC702/	18.00	0.00	0.00	221	400	211	0	1137.900	0.000	2.68699	5.37397	2.68699
Line Name : MS57-2-PRESEP to MSR-B																								
5EX-38N	31	33.000	SPE	0.500	0.000	0.000	0.000	0.000	0.00	90	0.00	A155/KC702/	18.00	0.00	0.00	221	400	211	0	1137.900	0.000	2.68699	0.00000	0.00000
5EX-38P	61	33.000	SPE	0.500	0.000	0.000	0.000	0.000	0.00	180	0.00	A155/KC702/	18.00	0.00	0.00	221	400	211	0	1137.900	0.000	2.68699	0.00000	0.00000
5EX-38	2	33.250	SPE	0.625	0.000	0.000	0.000	0.000	1.50	90	0.00	SA-31/TP304/	18.00	0.00	0.00	221	400	211	0	1137.900	0.000	2.68699	0.00000	0.00000
5EX-61P1	52	33.000	SPE	0.500	0.000	0.000	0.000	0.000	0.00	90	0.00	A155/KC702/	18.00	0.00	0.00	221	400	211	0	1137.900	0.000	2.68699	0.00000	0.00000
5EX-61	1	33.250	SPE	0.625	0.000	0.000	0.000	0.000	1.50	90	0.00	SA-31/TP304/	18.00	0.00	0.00	221	400	211	0	1137.900	0.000	2.68699	0.00000	0.00000
5EX-61EJ1	6	33.000	SPE	0.500	0.000	0.000	0.000	0.000	0.00	90	0.00	A155/KC702/	18.00	0.00	0.00	221	400	211	0	1137.900	0.000	2.68699	0.00000	0.00000
5EX-61P2	51	33.000	SPE	0.500	0.000	0.000	0.000	0.000	0.00	90	0.00	A155/KC702/	18.00	0.00	0.00	221	400	211	0	1137.900	0.000	2.68699	0.00000	0.00000
5EX-61EJ2	6	33.000	SPE	0.500	0.000	0.000	0.000	0.000	0.00	90	0.00	A155/KC702/	18.00	0.00	0.00	221	400	211	0	1137.900	0.000	2.68699	0.00000	0.00000
5EX-39	2	33.250	SPE	0.625	0.000	0.000	0.000	0.000	1.50	90	0.00	SA-31/TP304/	18.00	0.00	0.00	221	400	211	0	1137.900	0.000	2.68699	0.00000	0.00000
5EX-39P	51	33.000	SPE	0.500	0.000	0.000	0.000	0.000	0.00	61	0.00	A155/KC702/	18.00	0.00	0.00	221	400	211	0	1137.900	0.000	2.68699	0.00000	0.00000
Line Name : MS57-3-PRESEP to MSR-B																								
5EX-41P	62	48.500	SPE	1.000	0.000	0.000	0.000	0.000	0.00	90	0.00	A155/KC702/	18.00	0.00	0.00	221	400	211	0	1137.900	0.000	5.37397	0.00000	0.00000
5EX-43	14	48.500	SPE	1.000	0.000	0.000	27.500	0.500	0.00	90	0.00	A155/KC702/	18.00	0.00	0.00	221	400	211	0	1137.900	0.000	5.37397	3.58265	1.79132
Line Name : MS57-4-PRESEP to MSR23B																								
5EX-43EJ1	6	27.500	SPE	0.500	0.000	0.000	0.000	0.000	0.00	71	0.00	A155/KC702/	18.00	0.00	0.00	221	400	211	0	1137.900	0.000	1.79132	0.00000	0.00000
5EX-43EJ2	6	27.500	SPE	0.500	0.000	0.000	0.000	0.000	0.00	71	0.00	A155/KC702/	18.00	0.00	0.00	221	400	211	0	1137.900	0.000	1.79132	0.00000	0.00000
5EX-44	2	27.750	SPE	0.625	0.000	0.000	0.000	0.000	1.50	90	0.00	SA-31/TP304/	18.00	0.00	0.00	221	400	211	0	1137.900	0.000	1.79132	0.00000	0.00000
5EX-44N	30	27.500	SPE	0.500	0.000	0.000	0.000	0.000	0.00	90	0.00	A285/C/	18.00	0.00	0.00	221	400	211	0	1137.900	0.000	1.79132	0.00000	0.00000
Line Name : MS57-5-PRESEP to MSR-B																								
5EX-43R	7	48.500	SPE	1.000	0.000	0.000	38.000	0.500	0.00	90	0.00	A155/KC702/	18.00	0.00	0.00	221	400	211	0	1137.900	0.000	3.58265	3.58265	0.00000
5EX-43P1	57	38.000	SPE	0.500	0.000	0.000	0.000	0.000	0.00	90	0.00	A155/KC702/	18.00	0.00	0.00	221	400	211	0	1137.900	0.000	3.58265	0.00000	0.00000
5EX-45	14	38.000	SPE	0.500	0.000	0.000	27.500	0.500	0.00	90	0.00	A155/KC702/	18.00	0.00	0.00	221	400	211	0	1137.900	0.000	3.58265	1.79132	1.79132
Line Name : MS57-6-PRESEP to MSR22B																								
5EX-45EJ1	6	27.500	SPE	0.500	0.000	0.000	0.000	0.000	0.00	71	0.00	A155/KC702/	18.00	0.00	0.00	221	400	211	0	1137.900	0.000	1.79132	0.00000	0.00000
5EX-45EJ2	6	27.500	SPE	0.500	0.000	0.000	0.000	0.000	0.00	71	0.00	A155/KC702/	18.00	0.00	0.00	221	400	211	0	1137.900	0.000	1.79132	0.00000	0.00000
5EX-46	2	27.750	SPE	0.625	0.000	0.000	0.000	0.000	1.50	90	0.00	SA-31/TP304/	18.00	0.00	0.00	221	400	211	0	1137.900	0.000	1.79132	0.00000	0.00000
5EX-46N	30	27.500	SPE	0.500	0.000	0.000	0.000	0.000	0.00	90	0.00	A285/C/	18.00	0.00	0.00	221	400	211	0	1137.900	0.000	1.79132	0.00000	0.00000
Line Name : MS57-7-PRESEP to MSR21B																								
5EX-45R	7	38.250	SPE	0.625	0.000	0.000	27.750	0.625	0.00	90	0.00	A155/KC702/	18.00	0.00	0.00	221	400	211	0	1137.900	0.000	1.79132	1.79132	0.00000

Component Name	Geom Code	Pipe Size OD (in)	Sch.	Tnom (in)	Tinit (in)	Tcrit (in)	Br/Small End OD (in)	Br/Small Tnom (in)	R / D Ratio	Orient Angle (Deg.)	Pipe Length (in)	Spec/Type/ Class	Material Cr. (%)	Cu. (%)	Mo. (%)	Design Press. (psig)	Design Temp. (Deg. F)	Op. Press. (psig)	Op. Temp. (Deg. F)	Op. Enth. (Btu/lbm)	Op. Qual.	Flow Rate U/S Mn. (Mlbm/hr)	D/S Mn.	Br.
5EX-47P2	57	27.750	SPE	0.625	0.000	0.000	0.000	0.000	0.00	90	0.00	A155/KC702/	18.00	0.00	0.00	221	400	211	0	1137.900	0.000	1.79132	0.00000	0.00000
5EX-47	2	27.750	SPE	0.625	0.000	0.000	0.000	0.000	1.50	90	0.00	SA-31/TP304/	18.00	0.00	0.00	221	400	211	0	1137.900	0.000	1.79132	0.00000	0.00000
5EX-47EJ1	6	27.500	SPE	0.500	0.000	0.000	0.000	0.000	0.00	71	0.00	A285/C/	18.00	0.00	0.00	221	400	211	0	1137.900	0.000	1.79132	0.00000	0.00000
5EX-47EJ2	6	27.500	SPE	0.500	0.000	0.000	0.000	0.000	0.00	71	0.00	A285/C/	18.00	0.00	0.00	221	400	211	0	1137.900	0.000	1.79132	0.00000	0.00000
5EX-48	2	27.750	SPE	0.625	0.000	0.000	0.000	0.000	1.50	90	0.00	SA-31/TP304/	18.00	0.00	0.00	221	400	211	0	1137.900	0.000	1.79132	0.00000	0.00000
5EX-48N	30	27.500	SPE	0.500	0.000	0.000	0.000	0.000	0.00	90	0.00	A285/C/	18.00	0.00	0.00	221	400	211	0	1137.900	0.000	1.79132	0.00000	0.00000
Line Name :	**MSD27-1-MS21A to MSDT 21A**																							
1A-16N	31	12.750	20	0.250	0.000	0.000	0.000	0.000	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	202	389	200	0	365.000	0.000	0.04406	0.00000	0.00000
1A-16P-1	61	12.750	20	0.250	0.410	0.000	0.000	0.000	0.00	180	0.00	A53/BE/	0.00	0.00	0.00	202	389	200	0	365.000	0.000	0.04406	0.00000	0.00000
1A-16P	62	12.750	20	0.250	0.000	0.000	0.000	0.000	0.00	90	0.00	A53/BE/	0.00	0.00	0.00	202	389	200	0	365.000	0.000	0.04406	0.00000	0.00000
Line Name :	**MSD27-4-MS21A to MSDT 21A**																							
1A-17	12	12.750	20	0.250	0.405	0.000	12.750	0.250	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	202	389	200	0	365.000	0.000	0.04406	0.08811	0.04406
Line Name :	**MSD27-2-MS21A to MSDT 21A**																							
1A-17N	31	12.750	20	0.250	0.000	0.000	0.000	0.000	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	202	389	200	0	365.000	0.000	0.04406	0.00000	0.00000
1A-17P-1	61	12.750	20	0.250	0.000	0.000	0.000	0.000	0.00	180	0.00	A53/BE/	0.00	0.00	0.00	202	389	200	0	365.000	0.000	0.04406	0.00000	0.00000
Line Name :	**MSD27-3-MS21A to MSDT 21A**																							
1A-19N	31	12.750	20	0.250	0.000	0.000	0.000	0.000	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	202	389	200	0	365.000	0.000	0.04406	0.00000	0.00000
1A-19P-1	61	12.750	20	0.250	0.408	0.000	0.000	0.000	0.00	180	0.00	A53/BE/	0.00	0.00	0.00	202	389	200	0	365.000	0.000	0.04406	0.00000	0.00000
1A-19P	62	12.750	20	0.250	0.000	0.000	0.000	0.000	0.00	90	0.00	A53/BE/	0.00	0.00	0.00	202	389	200	0	365.000	0.000	0.04406	0.00000	0.00000
Line Name :	**MSD27-5-MS21A to MSDT 21A**																							
1A-18	11	12.750	20	0.250	0.410	0.000	12.750	0.250	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	202	389	200	0	365.000	0.000	0.08811	0.04406	0.13217
1A-18P US	62	12.750	20	0.250	0.000	0.000	0.000	0.000	0.00	90	0.00	A53/BE/	0.00	0.00	0.00	202	389	200	0	365.000	0.000	0.13217	0.00000	0.00000
1A-18P DS	62	12.750	20	0.250	0.263	0.000	0.000	0.000	0.00	90	0.00	A53/BE/	0.00	0.00	0.00	202	389	200	0	365.000	0.000	0.13217	0.00000	0.00000
1A-20	2	12.750	20	0.250	0.430	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	202	389	200	0	365.000	0.000	0.13217	0.00000	0.00000
1A-VALVE-5EX-19L	25	12.750	20	0.250	0.000	0.000	0.000	0.000	0.00	90	0.00	A216/WCB/	0.00	0.00	0.00	202	389	200	0	365.000	0.000	0.13217	0.00000	0.00000
1A-20P	58	12.750	20	0.250	0.000	0.000	0.000	0.000	0.00	90	0.00	A53/BE/	0.00	0.00	0.00	202	389	200	0	365.000	0.000	0.13217	0.00000	0.00000
1A-VALVE-5EX-19M	25	12.750	20	0.250	0.000	0.000	0.000	0.000	0.00	90	0.00	A216/WCB/	0.00	0.00	0.00	202	389	200	0	365.000	0.000	0.13217	0.00000	0.00000
1A-20P-1	58	12.750	20	0.250	0.000	0.000	0.000	0.000	0.00	90	0.00	A53/BE/	0.00	0.00	0.00	202	389	200	0	365.000	0.000	0.13217	0.00000	0.00000
1A-20N	30	12.750	20	0.250	0.000	0.000	0.000	0.000	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	202	389	200	0	365.000	0.000	0.13217	0.00000	0.00000
Line Name :	**MSD28-1-MS22A to MSDT 22A**																							
2A-16N	31	12.750	20	0.250	0.000	0.000	0.000	0.000	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	202	389	200	0	365.000	0.000	0.04406	0.00000	0.00000
2A-16P-1	61	12.750	20	0.250	0.404	0.000	0.000	0.000	0.00	180	0.00	A53/BE/	0.00	0.00	0.00	202	389	200	0	365.000	0.000	0.04406	0.00000	0.00000
2A-16P	62	12.750	20	0.250	0.399	0.000	0.000	0.000	0.00	90	0.00	A53/BE/	0.00	0.00	0.00	202	389	200	0	365.000	0.000	0.04406	0.00000	0.00000
Line Name :	**MSD28-4-MS22A to MSDT 22A**																							
2A-17	12	12.750	20	0.250	0.000	0.000	12.750	0.250	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	202	389	200	0	365.000	0.000	0.04406	0.08811	0.04406
Line Name :	**MSD28-2-MS22A to MSDT 22A**																							
2A-17N	31	12.750	20	0.250	0.000	0.000	0.000	0.000	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	202	389	200	0	365.000	0.000	0.04406	0.00000	0.00000
2A-17P1	62	12.750	20	0.250	0.000	0.000	0.000	0.000	0.00	90	0.00	A53/BE/	0.00	0.00	0.00	202	389	200	0	365.000	0.000	0.08811	0.00000	0.00000

Component Name	Geom Code	Pipe Size OD (in)	Sch.	Tnom (in)	Tinit (in)	Tcrit (in)	Br/Small End OD (in)	Br/Small Tnom (in)	R / D Ratio	Orient Angle (Deg.)	Pipe Length (in)	Spec/Type/ Class	Material Cr. (%)	Cu. (%)	Mo. (%)	Design Press. (psig)	Design Temp. (Deg. F)	Op. Press. (psig)	Op. Temp. (Deg. F)	Op. Enth. (Btu/lbm)	Op. Qual.	Flow Rate U/S Mn. (Mlbm/hr)	D/S Mn. (Mlbm/hr)	Br.
Line Name : MSD28-3-MS22A to MSDT 22A																								
2A-19N	31	12.750	20	0.250	0.000	0.000	0.000	0.000	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	202	389	200	0	365.000	0.000	0.04406	0.00000	0.00000
2A-19P-1	61	12.750	20	0.250	0.000	0.000	0.000	0.000	0.00	180	0.00	A53/BE/	0.00	0.00	0.00	202	389	200	0	365.000	0.000	0.04406	0.00000	0.00000
2A-19P	62	12.750	20	0.250	0.000	0.000	0.000	0.000	0.00	90	0.00	A53/BE/	0.00	0.00	0.00	202	389	200	0	365.000	0.000	0.04406	0.00000	0.00000
Line Name : MSD28-4-MS22A to MSDT 22A																								
2A-17P	62	12.750	20	0.250	0.000	0.000	0.000	0.000	0.00	180	0.00	A53/BE/	0.00	0.00	0.00	202	389	200	0	365.000	0.000	0.04406	0.00000	0.00000
Line Name : MSD28-5-MS22A to MSDT 22A																								
2A-18	11	12.750	20	0.250	0.000	0.000	12.750	0.250	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	202	389	200	0	365.000	0.000	0.08811	0.04406	0.13217
2A-18P	62	12.750	20	0.250	0.000	0.000	0.000	0.000	0.00	90	0.00	A53/BE/	0.00	0.00	0.00	202	389	200	0	365.000	0.000	0.13217	0.00000	0.00000
2A-20	2	12.750	20	0.250	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	202	389	200	0	365.000	0.000	0.13217	0.00000	0.00000
2A-VALVE-5EX-19J	25	12.750	20	0.250	0.000	0.000	0.000	0.000	0.00	90	0.00	A216/WCB/	0.00	0.00	0.00	202	389	200	0	365.000	0.000	0.13217	0.00000	0.00000
2A-20P	58	12.750	20	0.250	0.000	0.000	0.000	0.000	0.00	90	0.00	A53/BE/	0.00	0.00	0.00	202	389	200	0	365.000	0.000	0.13217	0.00000	0.00000
2A-VALVE-5EX-19K	25	12.750	20	0.250	0.000	0.000	0.000	0.000	0.00	90	0.00	A216/WCB/	0.00	0.00	0.00	202	389	200	0	365.000	0.000	0.13217	0.00000	0.00000
2A-20P-1	58	12.750	20	0.250	0.000	0.000	0.000	0.000	0.00	90	0.00	A53/BE/	0.00	0.00	0.00	202	389	200	0	365.000	0.000	0.13217	0.00000	0.00000
2A-20N	30	12.750	20	0.250	0.000	0.000	0.000	0.000	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	202	389	200	0	365.000	0.000	0.13217	0.00000	0.00000
Line Name : MSD29-1-MS23A to MSDT 23A																								
3A-16N	31	12.750	20	0.250	0.000	0.000	0.000	0.000	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	202	389	200	0	365.000	0.000	0.04406	0.00000	0.00000
3A-16P-1	61	12.750	20	0.250	0.000	0.000	0.000	0.000	0.00	180	0.00	A53/BE/	0.00	0.00	0.00	202	389	200	0	365.000	0.000	0.04406	0.00000	0.00000
3A-16P	62	12.750	20	0.250	0.000	0.000	0.000	0.000	0.00	90	0.00	A53/BE/	0.00	0.00	0.00	202	389	200	0	365.000	0.000	0.04406	0.00000	0.00000
Line Name : MSD29-4-MS23A to MSDT 23A																								
3A-17	12	12.750	20	0.250	0.402	0.000	12.750	0.250	0.00	90	0.00	A53/BE/	0.00	0.00	0.00	202	389	200	0	365.000	0.000	0.04406	0.08811	0.04406
Line Name : MSD29-2-MS23A to MSDT 23A																								
3A-17N	31	12.750	20	0.250	0.000	0.000	0.000	0.000	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	202	389	200	0	365.000	0.000	0.04406	0.00000	0.00000
3A-17P1	62	12.750	20	0.250	0.000	0.000	0.000	0.000	0.00	90	0.00	A53/BE/	0.00	0.00	0.00	202	389	200	0	365.000	0.000	0.08811	0.00000	0.00000
Line Name : MSD29-3-MS23A to MSDT 23A																								
3A-19N	31	12.750	20	0.250	0.000	0.000	0.000	0.000	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	202	389	200	0	365.000	0.000	0.04406	0.00000	0.00000
3A-19P-1	61	12.750	20	0.250	0.000	0.000	0.000	0.000	0.00	180	0.00	A53/BE/	0.00	0.00	0.00	202	389	200	0	365.000	0.000	0.04406	0.00000	0.00000
3A-19P	62	12.750	20	0.250	0.000	0.000	0.000	0.000	0.00	90	0.00	A53/BE/	0.00	0.00	0.00	202	389	200	0	365.000	0.000	0.04406	0.00000	0.00000
Line Name : MSD29-4-MS23A to MSDT 23A																								
3A-17P	61	12.750	20	0.250	0.000	0.000	0.000	0.000	0.00	180	0.00	A53/BE/	0.00	0.00	0.00	202	389	200	0	365.000	0.000	0.04406	0.00000	0.00000
Line Name : MSD29-5-MS23A to MSDT 23A																								
3A-18	11	12.750	20	0.250	0.393	0.000	12.750	0.250	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	202	389	200	0	365.000	0.000	0.08811	0.04406	0.13217
3A-18P	62	12.750	20	0.250	0.000	0.000	0.000	0.000	0.00	90	0.00	A53/BE/	0.00	0.00	0.00	202	389	200	0	365.000	0.000	0.13217	0.00000	0.00000
3A-20	2	12.750	20	0.250	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	202	389	200	0	365.000	0.000	0.13217	0.00000	0.00000
3A-VALVE-5EX-19G	25	12.750	20	0.250	0.000	0.000	0.000	0.000	0.00	90	0.00	A216/WCB/	0.00	0.00	0.00	202	389	200	0	365.000	0.000	0.13217	0.00000	0.00000
3A-20P	58	12.750	20	0.250	0.000	0.000	0.000	0.000	0.00	90	0.00	A53/BE/	0.00	0.00	0.00	202	389	200	0	365.000	0.000	0.13217	0.00000	0.00000
3A-VALVE-5EX-19H	25	12.750	20	0.250	0.000	0.000	0.000	0.000	0.00	90	0.00	A216/WCB/	0.00	0.00	0.00	202	389	200	0	365.000	0.000	0.13217	0.00000	0.00000
3A-20P-1 US	58	12.750	20	0.250	0.000	0.000	0.000	0.000	0.00	90	0.00	A53/BE/	0.00	0.00	0.00	202	389	200	0	365.000	0.000	0.13217	0.00000	0.00000
3A-20P-1 DS	58	12.750	20	0.250	0.278	0.000	0.000	0.000	0.00	90	0.00	A53/BE/	0.00	0.00	0.00	202	389	200	0	365.000	0.000	0.13217	0.00000	0.00000
3A-21	2	12.750	20	0.250	0.305	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	202	389	200	0	365.000	0.000	0.13217	0.00000	0.00000

Component Name	Geom Code	Pipe Size OD (in)	Sch.	Tnom (in)	Tinit (in)	Tcrit (in)	Br/Small End OD (in)	Br/Small Tnom (in)	R / D Ratio	Orient Angle (Deg.)	Pipe Length (in)	Spec/Type/ Class	Material Cr. (%)	Cu. (%)	Mo. (%)	Design Press. (psig)	Design Temp. (Deg. F)	Op. Press. (psig)	Op. Temp. (Deg. F)	Op. Enth. (Btu/lbm)	Op. Qual.	Flow Rate U/S Mn. (Mlbm/hr)	D/S Mn.	Br.
3A-21P	52	12.750	20	0.250	0.292	0.000	0.000	0.000	0.00	90	0.00	A53/BE/	0.00	0.00	0.00	202	389	200	0	365.000	0.000	0.13217	0.00000	0.00000
3A-21N	30	12.750	20	0.250	0.000	0.000	0.000	0.000	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	202	389	200	0	365.000	0.000	0.13217	0.00000	0.00000
Line Name : MSD30-1-MS21B to MSDT 21B																								
1B-16N	31	12.750	20	0.250	0.000	0.000	0.000	0.000	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	202	389	200	0	365.000	0.000	0.04406	0.00000	0.00000
1B-16P-1	61	12.750	20	0.250	0.435	0.000	0.000	0.000	0.00	180	0.00	A53/BE/	0.00	0.00	0.00	202	389	200	0	365.000	0.000	0.04406	0.00000	0.00000
1B-16P	62	12.750	20	0.250	0.000	0.000	0.000	0.000	0.00	90	0.00	A53/BE/	0.00	0.00	0.00	202	389	200	0	365.000	0.000	0.04406	0.00000	0.00000
Line Name : MSD30-5-MS21B to MSDT 21B																								
1B-17	11	12.750	20	0.250	0.415	0.000	12.750	0.250	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	202	389	200	0	365.000	0.000	0.08811	0.04406	0.13217
Line Name : MSD30-2-MS21B to MSDT 21B																								
1B-18N	31	12.750	20	0.250	0.000	0.000	0.000	0.000	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	202	389	200	0	365.000	0.000	0.04406	0.00000	0.00000
1B-18P	61	12.750	20	0.250	0.000	0.000	0.000	0.000	0.00	180	0.00	A53/BE/	0.00	0.00	0.00	202	389	200	0	365.000	0.000	0.04406	0.00000	0.00000
Line Name : MSD30-3-MS21B to MSDT 21B																								
1B-19N	31	12.750	20	0.250	0.000	0.000	0.000	0.000	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	202	389	200	0	365.000	0.000	0.04406	0.00000	0.00000
1B-19P-1	61	12.750	20	0.250	0.407	0.000	0.000	0.000	0.00	180	0.00	A53/BE/	0.00	0.00	0.00	202	389	200	0	365.000	0.000	0.04406	0.00000	0.00000
1B-19P	62	12.750	20	0.250	0.398	0.000	0.000	0.000	0.00	90	0.00	A53/BE/	0.00	0.00	0.00	202	389	200	0	365.000	0.000	0.04406	0.00000	0.00000
Line Name : MSD30-4-MS21B to MSDT 21B																								
1B-18	12	12.750	20	0.250	0.396	0.000	12.750	0.250	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	202	389	200	0	365.000	0.000	0.04406	0.08811	0.04406
Line Name : MSD30-5-MS21B to MSDT 21B																								
1B-17P	62	12.750	20	0.250	0.000	0.000	0.000	0.000	0.00	90	0.00	A53/BE/	0.00	0.00	0.00	202	389	200	0	365.000	0.000	0.13217	0.00000	0.00000
1B-20	2	12.750	20	0.250	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	202	389	200	0	365.000	0.000	0.13217	0.00000	0.00000
1B-VALVE-5EX-19	25	12.750	20	0.250	0.000	0.000	0.000	0.000	0.00	90	0.00	A216/WCB/	0.00	0.00	0.00	202	389	200	0	365.000	0.000	0.13217	0.00000	0.00000
1B-20P	58	12.750	20	0.250	0.000	0.000	0.000	0.000	0.00	90	0.00	A53/BE/	0.00	0.00	0.00	202	389	200	0	365.000	0.000	0.13217	0.00000	0.00000
1B-VALVE-5EX-19F	25	12.750	20	0.250	0.000	0.000	0.000	0.000	0.00	90	0.00	A216/WCB/	0.00	0.00	0.00	202	389	200	0	365.000	0.000	0.13217	0.00000	0.00000
1B-20P-1	58	12.750	20	0.250	0.000	0.000	0.000	0.000	0.00	90	0.00	A53/BE/	0.00	0.00	0.00	202	389	200	0	365.000	0.000	0.13217	0.00000	0.00000
1B-20N	30	12.750	20	0.250	0.000	0.000	0.000	0.000	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	202	389	200	0	365.000	0.000	0.13217	0.00000	0.00000
Line Name : MSD31-1-MS22B to MSDT 22B																								
2B-16N	31	12.750	20	0.250	0.000	0.000	0.000	0.000	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	202	389	200	0	365.000	0.000	0.04406	0.00000	0.00000
2B-16P-1	61	12.750	20	0.250	0.413	0.000	0.000	0.000	0.00	180	0.00	A53/BE/	0.00	0.00	0.00	202	389	200	0	365.000	0.000	0.04406	0.00000	0.00000
2B-16P	62	12.750	20	0.250	0.000	0.000	0.000	0.000	0.00	90	0.00	A53/BE/	0.00	0.00	0.00	202	389	200	0	365.000	0.000	0.04406	0.00000	0.00000
Line Name : MSD31-5-MS22B to MSDT 22B																								
2B-17	11	12.750	20	0.250	0.411	0.000	12.750	0.250	0.00	90	0.00	A53/BE/	0.00	0.00	0.00	202	389	200	0	365.000	0.000	0.08811	0.04406	0.13217
Line Name : MSD31-2-MS22B to MSDT 22B																								
2B-18N	31	12.750	20	0.250	0.000	0.000	0.000	0.000	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	202	389	200	0	365.000	0.000	0.04406	0.00000	0.00000
2B-18P1	62	12.750	20	0.250	0.000	0.000	0.000	0.000	0.00	90	0.00	A53/BE/	0.00	0.00	0.00	202	389	200	0	365.000	0.000	0.08811	0.00000	0.00000
Line Name : MSD31-3-MS22B to MSDT 22B																								
2B-19N	31	12.750	20	0.250	0.000	0.000	0.000	0.000	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	202	389	200	0	365.000	0.000	0.04406	0.00000	0.00000

Component Name	Geom Code	Pipe Size OD (in)	Sch.	Tnom (in)	Tinit (in)	Tcrit (in)	Br/Small End OD (in)	Br/Small Tnom (in)	R / D Ratio	Orient Angle (Deg.)	Pipe Length (in)	Spec/Type/ Class	Material Cr. (%)	Cu. (%)	Mo. (%)	Design Press. (psig)	Design Temp. (Deg. F)	Op. Press. (psig)	Op. Temp. (Deg. F)	Op. Enth. (Btu/lbm)	Op. Qual.	Flow Rate U/S Mn. (Mlbm/hr)	D/S Mn.	Br.
2B-19P-1	61	12.750	20	0.250	0.419	0.000	0.000	0.000	0.00	180	0.00	A53/BE/	0.00	0.00	0.00	202	389	200	0	365.000	0.000	0.04406	0.00000	0.00000
2B-19P	62	12.750	20	0.250	0.000	0.000	0.000	0.000	0.00	90	0.00	A53/BE/	0.00	0.00	0.00	202	389	200	0	365.000	0.000	0.04406	0.00000	0.00000
Line Name : MSD31-4-MS22B to MSDT 22B																								
2B-18	12	12.750	20	0.250	0.367	0.000	12.750	0.250	0.00	90	0.00	A53/BE/	0.00	0.00	0.00	202	389	200	0	365.000	0.000	0.04406	0.08811	0.04406
2B-18P	61	12.750	20	0.250	0.000	0.000	0.000	0.000	0.00	180	0.00	A53/BE/	0.00	0.00	0.00	202	389	200	0	365.000	0.000	0.04406	0.00000	0.00000
Line Name : MSD31-5-MS22B to MSDT 22B																								
2B-17P	62	12.750	20	0.250	0.000	0.000	0.000	0.000	0.00	90	0.00	A53/BE/	0.00	0.00	0.00	202	389	200	0	365.000	0.000	0.13217	0.00000	0.00000
2B-20	2	12.750	20	0.250	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	202	389	200	0	365.000	0.000	0.13217	0.00000	0.00000
2B-VALVE-5EX-19D	25	12.750	20	0.250	0.000	0.000	0.000	0.000	0.00	90	0.00	A216/WCB/	0.00	0.00	0.00	202	389	200	0	365.000	0.000	0.13217	0.00000	0.00000
2B-20P	58	12.750	20	0.250	0.000	0.000	0.000	0.000	0.00	90	0.00	A53/BE/	0.00	0.00	0.00	202	389	200	0	365.000	0.000	0.13217	0.00000	0.00000
2B-VALVE-5EX-19E	25	12.750	20	0.250	0.000	0.000	0.000	0.000	0.00	90	0.00	A216/WCB/	0.00	0.00	0.00	202	389	200	0	365.000	0.000	0.13217	0.00000	0.00000
2B-20P-1	58	12.750	20	0.250	0.000	0.000	0.000	0.000	0.00	90	0.00	A53/BE/	0.00	0.00	0.00	202	389	200	0	365.000	0.000	0.13217	0.00000	0.00000
2B-20N	30	12.750	20	0.250	0.000	0.000	0.000	0.000	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	202	389	200	0	365.000	0.000	0.13217	0.00000	0.00000
Line Name : MSD32-1-MS23B to MSDT 23B																								
3B-16N	31	12.750	20	0.250	0.000	0.000	0.000	0.000	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	202	389	200	0	365.000	0.000	0.04406	0.00000	0.00000
3B-16P-1	61	12.750	20	0.250	0.000	0.000	0.000	0.000	0.00	180	0.00	A53/BE/	0.00	0.00	0.00	202	389	200	0	365.000	0.000	0.04406	0.00000	0.00000
3B-16P	62	12.750	20	0.250	0.000	0.000	0.000	0.000	0.00	90	0.00	A53/BE/	0.00	0.00	0.00	202	389	200	0	365.000	0.000	0.04406	0.00000	0.00000
Line Name : MSD32-5-MS23B to MSDT 23B																								
3B-17	11	12.750	20	0.250	0.437	0.000	12.750	0.250	0.00	90	0.00	A53/BE/	0.00	0.00	0.00	202	389	200	0	365.000	0.000	0.08811	0.04406	0.13217
Line Name : MSD32-2-MS23B to MSDT 23B																								
3B-18N	31	12.750	20	0.250	0.000	0.000	0.000	0.000	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	202	389	200	0	365.000	0.000	0.04406	0.00000	0.00000
3B-18P1	62	12.750	20	0.250	0.000	0.000	0.000	0.000	0.00	90	0.00	A53/BE/	0.00	0.00	0.00	202	389	200	0	365.000	0.000	0.08811	0.00000	0.00000
Line Name : MSD32-3-MS23B to MSDT 23B																								
3B-19N	31	12.750	20	0.250	0.000	0.000	0.000	0.000	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	202	389	200	0	365.000	0.000	0.04406	0.00000	0.00000
3B-19P-1	61	12.750	20	0.250	0.000	0.000	0.000	0.000	0.00	180	0.00	A53/BE/	0.00	0.00	0.00	202	389	200	0	365.000	0.000	0.04406	0.00000	0.00000
3B-19P	62	12.750	20	0.250	0.000	0.000	0.000	0.000	0.00	90	0.00	A53/BE/	0.00	0.00	0.00	202	389	200	0	365.000	0.000	0.04406	0.00000	0.00000
Line Name : MSD32-4-MS23B to MSDT 23B																								
3B-18	12	12.750	20	0.250	0.417	0.000	12.750	0.250	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	202	389	200	0	365.000	0.000	0.04406	0.08811	0.04406
3B-18P	61	12.750	20	0.250	0.000	0.000	0.000	0.000	0.00	180	0.00	A53/BE/	0.00	0.00	0.00	202	389	200	0	365.000	0.000	0.04406	0.00000	0.00000
Line Name : MSD32-5-MS23B to MSDT 23B																								
3B-17P	62	12.750	20	0.250	0.000	0.000	0.000	0.000	0.00	90	0.00	A53/BE/	0.00	0.00	0.00	202	389	200	0	365.000	0.000	0.13217	0.00000	0.00000
3B-20	2	12.750	20	0.250	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	202	389	200	0	365.000	0.000	0.13217	0.00000	0.00000
3B-VALVE-5EX-19B	25	12.750	20	0.250	0.000	0.000	0.000	0.000	0.00	90	0.00	A216/WCB/	0.00	0.00	0.00	202	389	200	0	365.000	0.000	0.13217	0.00000	0.00000
3B-20P	58	12.750	20	0.250	0.000	0.000	0.000	0.000	0.00	90	0.00	A53/BE/	0.00	0.00	0.00	202	389	200	0	365.000	0.000	0.13217	0.00000	0.00000
3B-VALVE-5EX-19C	25	12.750	20	0.250	0.000	0.000	0.000	0.000	0.00	90	0.00	A216/WCB/	0.00	0.00	0.00	202	389	200	0	365.000	0.000	0.13217	0.00000	0.00000
3B-20P-1	58	12.750	20	0.250	0.000	0.000	0.000	0.000	0.00	90	0.00	A53/BE/	0.00	0.00	0.00	202	389	200	0	365.000	0.000	0.13217	0.00000	0.00000
3B-21	2	12.750	20	0.250	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	202	389	200	0	365.000	0.000	0.13217	0.00000	0.00000
3B-21P	52	12.750	20	0.250	0.000	0.000	0.000	0.000	0.00	90	0.00	A53/BE/	0.00	0.00	0.00	202	389	200	0	365.000	0.000	0.13217	0.00000	0.00000
3B-21N	30	12.750	20	0.250	0.000	0.000	0.000	0.000	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	202	389	200	0	365.000	0.000	0.13217	0.00000	0.00000

Component Name	Geom Code	Pipe Size OD (in)	Sch.	Tnom (in)	Tinit (in)	Tcrit (in)	Br/Small End OD (in)	Br/Small Tnom (in)	R / D Ratio	Orient Angle (Deg.)	Pipe Length (in)	Spec/Type/ Class	Material Cr. (%)	Cu. (%)	Mo. (%)	Design Press. (psig)	Design Temp. (Deg. F)	Op. Press. (psig)	Op. Temp. (Deg. F)	Op. Enth. (Btu/lbm)	Op. Qual.	Flow Rate U/S Mn. (Mlbm/hr)	D/S Mn. (Mlbm/hr)	Br.
Line Name : MSD33A-1-MSDT 21A to HDT																								
1A-12N	31	8.625	40	0.322	0.000	0.000	0.000	0.000	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	202	389	200	0	365.000	0.000	0.13217	0.00000	0.00000
1A-12P	61	8.625	40	0.322	0.000	0.000	0.000	0.000	0.00	180	0.00	A53/BE/	18.00	0.00	0.00	202	389	200	0	365.000	0.000	0.13217	0.00000	0.00000
1A-12	15	8.625	40	0.322	0.000	0.000	6.625	0.280	0.00	90	0.00	A234/WPB/	18.00	0.00	0.00	202	389	200	0	365.000	0.000	0.13217	0.13217	0.00000
1A-12P-1	64	8.625	40	0.322	0.000	0.000	0.000	0.000	0.00	180	0.00	A53/BE/	18.00	0.00	0.00	202	389	200	0	365.000	0.000	0.13217	0.00000	0.00000
1A-11	16	8.625	40	0.322	0.000	0.000	6.625	0.280	0.00	90	0.00	A234/WPB/	18.00	0.00	0.00	202	389	200	0	365.000	0.000	0.13217	0.13217	0.00000
1A-11P	66	6.625	40	0.280	0.000	0.000	0.000	0.000	0.00	90	0.00	A53/BE/	18.00	0.00	0.00	202	389	200	0	365.000	0.000	0.13217	0.00000	0.00000
1A-10	2	6.625	40	0.280	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	18.00	0.00	0.00	202	389	200	0	365.000	0.000	0.13217	0.00000	0.00000
1A-10P	52	6.625	40	0.280	0.000	0.000	0.000	0.000	0.00	180	0.00	A53/BE/	18.00	0.00	0.00	202	389	200	0	365.000	0.000	0.13217	0.00000	0.00000
1A-1	2	6.625	40	0.280	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	18.00	0.00	0.00	202	389	200	0	365.000	0.000	0.13217	0.00000	0.00000
1A-VALVE-5EX-29-1	25	6.625	40	0.280	0.000	0.000	0.000	0.000	0.00	90	0.00	A216/WCB/	0.00	0.00	0.00	202	389	200	0	365.000	0.000	0.13217	0.00000	0.00000
1A-2	4	6.625	40	0.280	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	18.00	0.00	0.00	202	389	200	0	365.000	0.000	0.13217	0.00000	0.00000
1A-2P	54	6.625	40	0.280	0.000	0.000	0.000	0.000	0.00	180	0.00	A53/BE/	18.00	0.00	0.00	202	389	200	0	365.000	0.000	0.13217	0.00000	0.00000
1A-3	2	6.625	40	0.280	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	18.00	0.00	0.00	202	389	200	0	365.000	0.000	0.13217	0.00000	0.00000
1A-3P	52	6.625	40	0.280	0.000	0.000	0.000	0.000	0.00	90	0.00	A53/BE/	18.00	0.00	0.00	202	389	200	0	365.000	0.000	0.13217	0.00000	0.00000
1A-4	2	6.625	40	0.280	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	18.00	0.00	0.00	202	389	200	0	365.000	0.000	0.13217	0.00000	0.00000
1A-4P	52	6.625	40	0.280	0.000	0.000	0.000	0.000	0.00	180	0.00	A53/BE/	18.00	0.00	0.00	202	389	200	0	365.000	0.000	0.13217	0.00000	0.00000
1A-5	2	6.625	40	0.280	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	18.00	0.00	0.00	202	389	200	0	365.000	0.000	0.13217	0.00000	0.00000
1A-5P	52	6.625	40	0.280	0.000	0.000	0.000	0.000	0.00	90	0.00	A53/BE/	18.00	0.00	0.00	202	389	200	0	365.000	0.000	0.13217	0.00000	0.00000
1A-6	2	6.625	40	0.280	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	18.00	0.00	0.00	202	389	200	0	365.000	0.000	0.13217	0.00000	0.00000
1A-6P	52	6.625	40	0.280	0.000	0.000	0.000	0.000	0.00	90	0.00	A53/BE/	18.00	0.00	0.00	202	389	200	0	365.000	0.000	0.13217	0.00000	0.00000
1A-7	2	6.625	40	0.280	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	18.00	0.00	0.00	202	389	200	0	365.000	0.000	0.13217	0.00000	0.00000
1A-7P	52	6.625	40	0.280	0.000	0.000	0.000	0.000	0.00	180	0.00	A53/BE/	18.00	0.00	0.00	202	389	200	0	365.000	0.000	0.13217	0.00000	0.00000
1A-8	2	6.625	40	0.280	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	18.00	0.00	0.00	202	389	200	0	365.000	0.000	0.13217	0.00000	0.00000
1A-8P	52	6.625	40	0.280	0.000	0.000	0.000	0.000	0.00	90	0.00	A53/BE/	18.00	0.00	0.00	202	389	200	0	365.000	0.000	0.13217	0.00000	0.00000
1A-9	2	6.625	40	0.280	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	18.00	0.00	0.00	202	389	200	0	365.000	0.000	0.13217	0.00000	0.00000
1A-9P	52	6.625	40	0.280	0.000	0.000	0.000	0.000	0.00	90	0.00	A53/BE/	18.00	0.00	0.00	202	389	200	0	365.000	0.000	0.13217	0.00000	0.00000
1A-13	2	6.625	40	0.280	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	18.00	0.00	0.00	202	389	200	0	365.000	0.000	0.13217	0.00000	0.00000
1A-13P	52	6.625	40	0.280	0.000	0.000	0.000	0.000	0.00	180	0.00	A53/BE/	18.00	0.00	0.00	202	389	200	0	365.000	0.000	0.13217	0.00000	0.00000
1A-15	2	6.625	40	0.280	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	18.00	0.00	0.00	202	389	200	0	365.000	0.000	0.13217	0.00000	0.00000
1A-15N	30	6.625	40	0.280	0.438	0.000	0.000	0.000	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	202	389	200	0	365.000	0.000	0.13217	0.00000	0.00000
Line Name : MSD34A-1-MSDT 22A to HDT																								
2A-3N	31	8.625	40	0.322	0.000	0.000	0.000	0.000	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	202	389	200	0	365.000	0.000	0.13217	0.00000	0.00000
2A-3P-1	61	8.625	40	0.322	0.000	0.000	0.000	0.000	0.00	180	0.00	A106/B/	18.00	0.00	0.00	202	389	200	0	365.000	0.000	0.13217	0.00000	0.00000
2A-3	15	8.625	40	0.322	0.000	0.000	6.625	0.280	0.00	90	0.00	A234/WPB/	18.00	0.00	0.00	202	389	200	0	365.000	0.000	0.13217	0.13217	0.00000
2A-3P	64	8.625	40	0.322	0.000	0.000	0.000	0.000	0.00	180	0.00	A106/B/	18.00	0.00	0.00	202	389	200	0	365.000	0.000	0.13217	0.00000	0.00000
2A-4	16	8.625	40	0.322	0.000	0.000	6.625	0.280	0.00	90	0.00	A234/WPB/	18.00	0.00	0.00	202	389	200	0	365.000	0.000	0.13217	0.13217	0.00000
2A-4P	66	6.625	40	0.280	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	18.00	0.00	0.00	202	389	200	0	365.000	0.000	0.13217	0.00000	0.00000
2A-5	2	6.625	40	0.280	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	18.00	0.00	0.00	202	389	200	0	365.000	0.000	0.13217	0.00000	0.00000
2A-5P	52	6.625	40	0.280	0.000	0.000	0.000	0.000	0.00	180	0.00	A106/B/	18.00	0.00	0.00	202	389	200	0	365.000	0.000	0.13217	0.00000	0.00000
2A-1	2	6.625	40	0.280	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	18.00	0.00	0.00	202	389	200	0	365.000	0.000	0.13217	0.00000	0.00000
2A-VALVE-5EX-29-2	25	6.625	40	0.280	0.000	0.000	0.000	0.000	0.00	90	0.00	A216/WCB/	0.00	0.00	0.00	202	389	200	0	365.000	0.000	0.13217	0.00000	0.00000
2A-2P	58	6.625	40	0.280	0.000	0.000	0.000	0.000	90.00	180	0.00	A106/B/	18.00	0.00	0.00	202	389	200	0	365.000	0.000	0.13217	0.00000	0.00000
2A-2	2	6.625	40	0.280	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	18.00	0.00	0.00	202	389	200	0	365.000	0.000	0.13217	0.00000	0.00000
2A-2P-1	52	6.625	40	0.280	0.000	0.000	0.000	0.000	0.00	180	0.00	A106/B/	18.00	0.00	0.00	202	389	200	0	365.000	0.000	0.13217	0.00000	0.00000
2A-6	1	6.625	40	0.280	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	18.00	0.00	0.00	202	389	200	0	365.000	0.000	0.13217	0.00000	0.00000
2A-6P	51	6.625	40	0.280	0.000	0.000	0.000	0.000	0.00	135	0.00	A106/B/	18.00	0.00	0.00	202	389	200	0	365.000	0.000	0.13217	0.00000	0.00000
2A-7	2	6.625	40	0.280	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	18.00	0.00	0.00	202	389	200	0	365.000	0.000	0.13217	0.00000	0.00000
2A-7P	52	6.625	40	0.280	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	18.00	0.00	0.00	202	389	200	0	365.000	0.000	0.13217	0.00000	0.00000
2A-8	2	6.625	40	0.280	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	18.00	0.00	0.00	202	389	200	0	365.000	0.000	0.13217	0.00000	0.00000
2A-8P	52	6.625	40	0.280	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	18.00	0.00	0.00	202	389	200	0	365.000	0.000	0.13217	0.00000	0.00000
2A-9	2	6.625	40	0.280	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	18.00	0.00	0.00	202	389	200	0	365.000	0.000	0.13217	0.00000	0.00000
2A-9P	52	6.625	40	0.280	0.000	0.000	0.000	0.000	0.00	180	0.00	A106/B/	18.00	0.00	0.00	202	389	200	0	365.000	0.000	0.13217	0.00000	0.00000
2A-10	2	6.625	40	0.280	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	18.00	0.00	0.00	202	389	200	0	365.000	0.000	0.13217	0.00000	0.00000
2A-10P	52	6.625	40	0.280	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	18.00	0.00	0.00	202	389	200	0	365.000	0.000	0.13217	0.00000	0.00000
2A-12	2	6.625	40	0.280	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	18.00	0.00	0.00	202	389	200	0	365.000	0.000	0.13217	0.00000	0.00000
2A-12P	52	6.625	40	0.280	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	18.00	0.00	0.00	202	389	200	0	365.000	0.000	0.13217	0.00000	0.00000
2A-13	2	6.625	40	0.280	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	18.00	0.00	0.00	202	389	200	0	365.000	0.000	0.13217	0.00000	0.00000
2A-13P	52	6.625	40	0.280	0.000	0.000	0.000	0.000	0.00	180	0.00	A106/B/	18.00	0.00	0.00	202	389	200	0	365.000	0.000	0.13217	0.00000	0.00000

Component Name	Geom Code	Pipe Size OD (in)	Sch.	Tnom (in)	Tinit (in)	Tcrit (in)	Br/Small End OD (in)	Br/Small Tnom (in)	R / D Ratio	Orient Angle (Deg.)	Pipe Length (in)	Spec/Type/ Class	Material Cr. (%)	Cu. (%)	Mo. (%)	Design Press. (psig)	Design Temp. (Deg. F)	Op. Press. (psig)	Op. Temp. (Deg. F)	Op. Enth. (Btu/lbm)	Op. Qual.	Flow Rate U/S Mn. (Mlbm/hr)	D/S Mn. (Mlbm/hr)	Br.
2A-15	2	6.625	40	0.280	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	18.00	0.00	0.00	202	389	200	0	365.000	0.000	0.13217	0.00000	0.00000
2A-15N	30	6.625	40	0.280	0.000	0.000	0.000	0.000	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	202	389	200	0	365.000	0.000	0.13217	0.00000	0.00000

Line Name : MSD35A-1-MSDT 23A to HDT

3A-16N	31	8.625	40	0.322	0.000	0.000	0.000	0.000	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	202	389	200	0	365.000	0.000	0.13217	0.00000	0.00000
3A-16P US	61	8.625	40	0.322	0.000	0.000	0.000	0.000	0.00	180	0.00	A106/B/	18.00	0.00	0.00	202	389	200	0	365.000	0.000	0.13217	0.00000	0.00000
3A-16	15	8.625	40	0.322	0.000	0.000	6.625	0.280	0.00	90	0.00	A234/WPB/	18.00	0.00	0.00	202	389	200	0	365.000	0.000	0.13217	0.13217	0.00000
3A-1P	64	8.625	40	0.322	0.000	0.000	0.000	0.000	0.00	180	0.00	A53/BE/	18.00	0.00	0.00	202	389	200	0	365.000	0.000	0.13217	0.00000	0.00000
3A-1	16	8.625	40	0.322	0.000	0.000	6.625	0.280	1.50	90	0.00	A234/WPB/	18.00	0.00	0.00	202	389	200	0	365.000	0.000	0.13217	0.13217	0.00000
3A-VALVE-5EX-29-3	25	6.625	40	0.280	0.000	0.000	0.000	0.000	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	202	389	200	0	365.000	0.000	0.13217	0.00000	0.00000
3A-2P	58	6.625	40	0.280	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	18.00	0.00	0.00	202	389	200	0	365.000	0.000	0.13217	0.00000	0.00000
3A-2	2	6.625	40	0.280	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	18.00	0.00	0.00	202	389	200	0	365.000	0.000	0.13217	0.00000	0.00000
3A-3	4	6.625	40	0.280	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	18.00	0.00	0.00	202	389	200	0	365.000	0.000	0.13217	0.00000	0.00000
3A-3P	54	6.625	40	0.280	0.000	0.000	0.000	0.000	0.00	180	0.00	A106/B/	18.00	0.00	0.00	202	389	200	0	365.000	0.000	0.13217	0.00000	0.00000
3A-17	2	6.625	40	0.280	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	18.00	0.00	0.00	202	389	200	0	365.000	0.000	0.13217	0.00000	0.00000
3A-17P	52	6.625	40	0.280	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	18.00	0.00	0.00	202	389	200	0	365.000	0.000	0.13217	0.00000	0.00000
3A-18	2	6.625	40	0.280	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	18.00	0.00	0.00	202	389	200	0	365.000	0.000	0.13217	0.00000	0.00000
3A-18P	52	6.625	40	0.280	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	18.00	0.00	0.00	202	389	200	0	365.000	0.000	0.13217	0.00000	0.00000
3A-19	2	6.625	40	0.280	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	18.00	0.00	0.00	202	389	200	0	365.000	0.000	0.13217	0.00000	0.00000
3A-19P	52	6.625	40	0.280	0.000	0.000	0.000	0.000	0.00	180	0.00	A106/B/	18.00	0.00	0.00	202	389	200	0	365.000	0.000	0.13217	0.00000	0.00000
3A-20	2	6.625	40	0.280	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	18.00	0.00	0.00	202	389	200	0	365.000	0.000	0.13217	0.00000	0.00000
3A-20P	52	6.625	40	0.280	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	18.00	0.00	0.00	202	389	200	0	365.000	0.000	0.13217	0.00000	0.00000
3A-21	2	6.625	40	0.280	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	18.00	0.00	0.00	202	389	200	0	365.000	0.000	0.13217	0.00000	0.00000
3A-21P	52	6.625	40	0.280	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	18.00	0.00	0.00	202	389	200	0	365.000	0.000	0.13217	0.00000	0.00000
3A-13	2	6.625	40	0.280	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	18.00	0.00	0.00	202	389	200	0	365.000	0.000	0.13217	0.00000	0.00000
3A-13P	52	6.625	40	0.280	0.000	0.000	0.000	0.000	0.00	180	0.00	A106/B/	18.00	0.00	0.00	202	389	200	0	365.000	0.000	0.13217	0.00000	0.00000
3A-15	2	6.625	40	0.280	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	18.00	0.00	0.00	202	389	200	0	365.000	0.000	0.13217	0.00000	0.00000
3A-15N	30	6.625	40	0.280	0.000	0.000	0.000	0.000	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	202	389	200	0	365.000	0.000	0.13217	0.00000	0.00000

Line Name : MSD36A-1-MSDT 21B to HDT

1B-3N	31	8.625	40	0.322	0.000	0.000	0.000	0.000	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	202	389	200	0	365.000	0.000	0.13217	0.00000	0.00000
1B-3P	61	8.625	40	0.322	0.000	0.000	0.000	0.000	0.00	180	0.00	A-312/TP304/	0.00	0.00	0.00	202	389	200	0	365.000	0.000	0.13217	0.00000	0.00000
1B-3	2	8.625	40	0.322	0.000	0.000	0.000	0.000	1.50	90	0.00	A-403/WP304/	0.00	0.00	0.00	202	389	200	0	365.000	0.000	0.13217	0.00000	0.00000
1B-4P	52	8.625	40	0.322	0.000	0.000	0.000	0.000	0.00	90	0.00	A-312/TP304/	0.00	0.00	0.00	202	389	200	0	365.000	0.000	0.13217	0.00000	0.00000
1B-4	2	8.625	40	0.322	0.000	0.000	0.000	0.000	1.50	90	0.00	A-403/WP304/	0.00	0.00	0.00	202	389	200	0	365.000	0.000	0.13217	0.00000	0.00000
1B-5	15	8.625	40	0.322	0.000	0.000	6.625	0.280	0.00	90	0.00	A-403/WP304/	0.00	0.00	0.00	202	389	200	0	365.000	0.000	0.13217	0.13217	0.00000
1B-5R	7	8.625	40	0.322	0.000	0.000	6.625	0.280	0.00	180	0.00	A-403/WP304/	0.00	0.00	0.00	202	389	200	0	365.000	0.000	0.13217	0.13217	0.00000
1B-5P	57	6.625	40	0.280	0.000	0.000	0.000	0.000	0.00	180	0.00	A-312/TP304/	0.00	0.00	0.00	202	389	200	0	365.000	0.000	0.13217	0.00000	0.00000
1B-1	2	6.625	40	0.280	0.000	0.000	0.000	0.000	1.50	90	0.00	A-403/WP304/	0.00	0.00	0.00	202	389	200	0	365.000	0.000	0.13217	0.00000	0.00000
1B-VALVE-5EX-29-4	25	6.625	40	0.280	0.000	0.000	0.000	0.000	0.00	90	0.00	A216/WCB/	0.00	0.00	0.00	202	389	200	0	365.000	0.000	0.13217	0.00000	0.00000
1B-2P	58	6.625	40	0.280	0.000	0.000	0.000	0.000	0.00	90	0.00	A-312/TP304/	0.00	0.00	0.00	202	389	200	0	365.000	0.000	0.13217	0.00000	0.00000
1B-2	2	6.625	40	0.280	0.000	0.000	0.000	0.000	1.50	90	0.00	A-403/WP304/	0.00	0.00	0.00	202	389	200	0	365.000	0.000	0.13217	0.00000	0.00000
1B-6P	52	6.625	40	0.280	0.000	0.000	0.000	0.000	0.00	180	0.00	A-312/TP304/	0.00	0.00	0.00	202	389	200	0	365.000	0.000	0.13217	0.00000	0.00000
1B-6	2	6.625	40	0.280	0.000	0.000	0.000	0.000	1.00	90	0.00	A-403/WP304/	0.00	0.00	0.00	202	389	200	0	365.000	0.000	0.13217	0.00000	0.00000
1B-7P	52	6.625	40	0.280	0.000	0.000	0.000	0.000	0.00	90	0.00	A-312/TP304/	0.00	0.00	0.00	202	389	200	0	365.000	0.000	0.13217	0.00000	0.00000
1B-7	2	6.625	40	0.280	0.000	0.000	0.000	0.000	1.00	90	0.00	A-403/WP304/	0.00	0.00	0.00	202	389	200	0	365.000	0.000	0.13217	0.00000	0.00000
1B-7P-1	52	6.625	40	0.280	0.000	0.000	0.000	0.000	0.00	90	0.00	A-312/TP304/	0.00	0.00	0.00	202	389	200	0	365.000	0.000	0.13217	0.00000	0.00000
1B-8	2	6.625	40	0.280	0.000	0.000	0.000	0.000	1.50	90	0.00	A-403/WP304/	0.00	0.00	0.00	202	389	200	0	365.000	0.000	0.13217	0.00000	0.00000
1B-8P	52	6.625	40	0.280	0.000	0.000	0.000	0.000	0.00	180	0.00	A-312/TP304/	0.00	0.00	0.00	202	389	200	0	365.000	0.000	0.13217	0.00000	0.00000
1B-9	2	6.625	40	0.280	0.000	0.000	0.000	0.000	1.50	90	0.00	A-403/WP304/	0.00	0.00	0.00	202	389	200	0	365.000	0.000	0.13217	0.00000	0.00000
1B-9P	52	6.625	40	0.280	0.000	0.000	0.000	0.000	0.00	90	0.00	A-312/TP304/	0.00	0.00	0.00	202	389	200	0	365.000	0.000	0.13217	0.00000	0.00000
1B-10	1	6.625	40	0.280	0.000	0.000	0.000	0.000	1.50	90	0.00	A-403/WP304/	0.00	0.00	0.00	202	389	200	0	365.000	0.000	0.13217	0.00000	0.00000
1B-10P US	51	6.625	40	0.280	0.000	0.000	0.000	0.000	0.00	90	0.00	A-312/TP304/	0.00	0.00	0.00	202	389	200	0	365.000	0.000	0.13217	0.00000	0.00000
1B-10P DS	51	6.625	40	0.280	0.000	0.000	0.000	0.000	0.00	90	0.00	A-312/TP304/	0.00	0.00	0.00	202	389	200	0	365.000	0.000	0.13217	0.00000	0.00000
1B-11	1	6.625	40	0.280	0.000	0.000	0.000	0.000	1.50	90	0.00	A-403/WP304/	0.00	0.00	0.00	202	389	200	0	365.000	0.000	0.13217	0.00000	0.00000
1B-11P US	51	6.625	40	0.280	0.000	0.000	0.000	0.000	0.00	90	0.00	A-312/TP304/	0.00	0.00	0.00	202	389	200	0	365.000	0.000	0.13217	0.00000	0.00000
1B-11P DS	51	6.625	40	0.280	0.000	0.000	0.000	0.000	0.00	90	0.00	A-312/TP304/	0.00	0.00	0.00	202	389	200	0	365.000	0.000	0.13217	0.00000	0.00000
1B-12	1	6.625	40	0.280	0.000	0.000	0.000	0.000	1.50	90	0.00	A-403/WP304/	0.00	0.00	0.00	202	389	200	0	365.000	0.000	0.13217	0.00000	0.00000

Component Name	Geom Code	Pipe Size OD (in)	Sch.	Tnom (in)	Tinit (in)	Tcrit (in)	Br/Small End OD (in)	Br/Small Tnom (in)	R / D Ratio	Orient Angle (Deg.)	Pipe Length (in)	Spec/Type/ Class	Material Cr. (%)	Cu. (%)	Mo. (%)	Design Press. (psig)	Design Temp. (Deg. F)	Op. Press. (psig)	Op. Temp. (Deg. F)	Op. Enth. (Btu/lbm)	Op. Qual.	Flow Rate U/S Mn. (Mlbm/hr)	D/S Mn.	Br.
1B-12P US	51	6.625	40	0.280	0.000	0.000	0.000	0.000	0.00	90	0.00	A-312/TP304/	0.00	0.00	0.00	202	389	200	0	365.000	0.000	0.13217	0.00000	0.00000
1B-12P DS	51	6.625	40	0.280	0.000	0.000	0.000	0.000	0.00	90	0.00	A-312/TP304/	0.00	0.00	0.00	202	389	200	0	365.000	0.000	0.13217	0.00000	0.00000
1B-14	1	6.625	40	0.280	0.000	0.000	0.000	0.000	1.50	90	0.00	A-403/WP304/	0.00	0.00	0.00	202	389	200	0	365.000	0.000	0.13217	0.00000	0.00000
1B-14P	51	6.625	40	0.280	0.000	0.000	0.000	0.000	0.00	90	0.00	A-312/TP304/	0.00	0.00	0.00	202	389	200	0	365.000	0.000	0.13217	0.00000	0.00000
1B-13	2	6.625	40	0.280	0.000	0.000	0.000	0.000	1.50	90	0.00	A-403/WP304/	0.00	0.00	0.00	202	389	200	0	365.000	0.000	0.13217	0.00000	0.00000
1B-13P	52	6.625	40	0.280	0.000	0.000	0.000	0.000	0.00	180	0.00	A-312/TP304/	0.00	0.00	0.00	202	389	200	0	365.000	0.000	0.13217	0.00000	0.00000
1B-15	2	6.625	40	0.280	0.000	0.000	0.000	0.000	1.50	90	0.00	A-403/WP304/	0.00	0.00	0.00	202	389	200	0	365.000	0.000	0.13217	0.00000	0.00000
1B-15P	52	6.625	40	0.280	0.000	0.000	0.000	0.000	0.00	90	0.00	A-312/TP304/	0.00	0.00	0.00	202	389	200	0	365.000	0.000	0.13217	0.00000	0.00000
1B-15N	30	6.625	40	0.280	0.000	0.000	0.000	0.000	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	202	389	200	0	365.000	0.000	0.13217	0.00000	0.00000

Line Name : MSD37A-1-MSDT 22B to HDT

2B-1N	31	8.625	40	0.322	0.000	0.000	0.000	0.000	0.00	180	0.00	A234/WPB/	0.00	0.00	0.00	202	389	200	0	365.000	0.000	0.13217	0.00000	0.00000
2B-1P	61	8.625	40	0.322	0.000	0.000	0.000	0.000	0.00	180	0.00	A-312/TP304/	0.00	0.00	0.00	202	389	200	0	365.000	0.000	0.13217	0.00000	0.00000
2B-1	15	8.625	40	0.322	0.000	0.000	6.625	0.280	0.00	90	0.00	A-403/WP304/	0.00	0.00	0.00	202	389	200	0	365.000	0.000	0.13217	0.13217	0.00000
2B-2P	64	8.625	40	0.322	0.000	0.000	0.000	0.000	0.00	180	0.00	A-312/TP304/	0.00	0.00	0.00	202	389	200	0	365.000	0.000	0.13217	0.00000	0.00000
2B-2	16	8.625	40	0.322	0.000	0.000	6.625	0.280	1.50	90	0.00	A-403/WP304/	0.00	0.00	0.00	202	389	200	0	365.000	0.000	0.13217	0.13217	0.00000
2B-3	4	6.625	40	0.280	0.000	0.000	0.000	0.000	1.50	90	0.00	A-403/WP304/	0.00	0.00	0.00	202	389	200	0	365.000	0.000	0.13217	0.00000	0.00000
2B-3P	54	6.625	40	0.280	0.000	0.000	0.000	0.000	0.00	180	0.00	A-312/TP304/	0.00	0.00	0.00	202	389	200	0	365.000	0.000	0.13217	0.00000	0.00000
2B-4	2	6.625	40	0.280	0.000	0.000	0.000	0.000	1.50	90	0.00	A-403/WP304/	0.00	0.00	0.00	202	389	200	0	365.000	0.000	0.13217	0.00000	0.00000
2B-VALVE-5EX-29-5	25	6.625	40	0.280	0.000	0.000	0.000	0.000	0.00	90	0.00	A216/WCB/	0.00	0.00	0.00	202	389	200	0	365.000	0.000	0.13217	0.00000	0.00000
2B-4P	58	6.625	40	0.280	0.000	0.000	0.000	0.000	0.00	90	0.00	A-312/TP304/	0.00	0.00	0.00	202	389	200	0	365.000	0.000	0.13217	0.00000	0.00000
2B-5	2	6.625	40	0.280	0.000	0.000	0.000	0.000	1.50	90	0.00	A-403/WP304/	0.00	0.00	0.00	202	389	200	0	365.000	0.000	0.13217	0.00000	0.00000
2B-5P	52	6.625	40	0.280	0.000	0.000	0.000	0.000	0.00	180	0.00	A-312/TP304/	0.00	0.00	0.00	202	389	200	0	365.000	0.000	0.13217	0.00000	0.00000
2B-6	2	6.625	40	0.280	0.000	0.000	0.000	0.000	1.50	90	0.00	A-403/WP304/	0.00	0.00	0.00	202	389	200	0	365.000	0.000	0.13217	0.00000	0.00000
2B-6P	52	6.625	40	0.280	0.000	0.000	0.000	0.000	0.00	90	0.00	A-312/TP304/	0.00	0.00	0.00	202	389	200	0	365.000	0.000	0.13217	0.00000	0.00000
2B-7	2	6.625	40	0.280	0.000	0.000	0.000	0.000	1.50	90	0.00	A-403/WP304/	0.00	0.00	0.00	202	389	200	0	365.000	0.000	0.13217	0.00000	0.00000
2B-7P US	52	6.625	40	0.280	0.000	0.000	0.000	0.000	0.00	180	0.00	A-312/TP304/	0.00	0.00	0.00	202	389	200	0	365.000	0.000	0.13217	0.00000	0.00000
2B-7P DS	52	6.625	40	0.280	0.000	0.000	0.000	0.000	0.00	180	0.00	A-312/TP304/	0.00	0.00	0.00	202	389	200	0	365.000	0.000	0.13217	0.00000	0.00000
2B-8	2	6.625	40	0.280	0.000	0.000	0.000	0.000	1.50	90	0.00	A-403/WP304/	0.00	0.00	0.00	202	389	200	0	365.000	0.000	0.13217	0.00000	0.00000
2B-8P US	52	6.625	40	0.280	0.000	0.000	0.000	0.000	0.00	90	0.00	A-312/TP304/	0.00	0.00	0.00	202	389	200	0	365.000	0.000	0.13217	0.00000	0.00000
2B-8P DS	52	6.625	40	0.280	0.000	0.000	0.000	0.000	0.00	90	0.00	A-312/TP304/	0.00	0.00	0.00	202	389	200	0	365.000	0.000	0.13217	0.00000	0.00000
2B-9	1	6.625	40	0.280	0.000	0.000	0.000	0.000	1.50	90	0.00	A-403/WP304/	0.00	0.00	0.00	202	389	200	0	365.000	0.000	0.13217	0.00000	0.00000
2B-9P US	51	6.625	40	0.280	0.000	0.000	0.000	0.000	0.00	90	0.00	A-312/TP304/	0.00	0.00	0.00	202	389	200	0	365.000	0.000	0.13217	0.00000	0.00000
2B-9P DS	51	6.625	40	0.280	0.000	0.000	0.000	0.000	0.00	90	0.00	A-312/TP304/	0.00	0.00	0.00	202	389	200	0	365.000	0.000	0.13217	0.00000	0.00000
2B-10	1	6.625	40	0.280	0.000	0.000	0.000	0.000	1.50	90	0.00	A-403/WP304/	0.00	0.00	0.00	202	389	200	0	365.000	0.000	0.13217	0.00000	0.00000
2B-10P US	51	6.625	40	0.280	0.000	0.000	0.000	0.000	0.00	90	0.00	A-312/TP304/	0.00	0.00	0.00	202	389	200	0	365.000	0.000	0.13217	0.00000	0.00000
2B-10P DS	51	6.625	40	0.280	0.000	0.000	0.000	0.000	0.00	90	0.00	A-312/TP304/	0.00	0.00	0.00	202	389	200	0	365.000	0.000	0.13217	0.00000	0.00000
2B-11	1	6.625	40	0.280	0.000	0.000	0.000	0.000	1.50	90	0.00	A-403/WP304/	0.00	0.00	0.00	202	389	200	0	365.000	0.000	0.13217	0.00000	0.00000
2B-11P	51	6.625	40	0.280	0.000	0.000	0.000	0.000	0.00	90	0.00	A-312/TP304/	0.00	0.00	0.00	202	389	200	0	365.000	0.000	0.13217	0.00000	0.00000
2B-12	1	6.625	40	0.280	0.000	0.000	0.000	0.000	1.50	90	0.00	A-403/WP304/	0.00	0.00	0.00	202	389	200	0	365.000	0.000	0.13217	0.00000	0.00000
2B-12P US	51	6.625	40	0.280	0.000	0.000	0.000	0.000	0.00	90	0.00	A-312/TP304/	0.00	0.00	0.00	202	389	200	0	365.000	0.000	0.13217	0.00000	0.00000
2B-12P DS	51	6.625	40	0.280	0.000	0.000	0.000	0.000	0.00	90	0.00	A-312/TP304/	0.00	0.00	0.00	202	389	200	0	365.000	0.000	0.13217	0.00000	0.00000
2B-13	2	6.625	40	0.280	0.000	0.000	0.000	0.000	1.50	90	0.00	A-403/WP304/	0.00	0.00	0.00	202	389	200	0	365.000	0.000	0.13217	0.00000	0.00000
2B-13P	52	6.625	40	0.280	0.000	0.000	0.000	0.000	0.00	180	0.00	A-312/TP304/	0.00	0.00	0.00	202	389	200	0	365.000	0.000	0.13217	0.00000	0.00000
2B-15	2	6.625	40	0.280	0.000	0.000	0.000	0.000	1.50	90	0.00	A-403/WP304/	0.00	0.00	0.00	202	389	200	0	365.000	0.000	0.13217	0.00000	0.00000
2B-15P	52	6.625	40	0.280	0.000	0.000	0.000	0.000	0.00	90	0.00	A-312/TP304/	0.00	0.00	0.00	202	389	200	0	365.000	0.000	0.13217	0.00000	0.00000
2B-15N	30	6.625	40	0.280	0.000	0.000	0.000	0.000	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	202	389	200	0	365.000	0.000	0.13217	0.00000	0.00000

Line Name : MSD38A-1-MSDT 23B to HDT

3B-3N	31	8.625	40	0.322	0.000	0.000	0.000	0.000	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	202	389	200	0	365.000	0.000	0.13217	0.00000	0.00000
3B-3P	61	8.625	40	0.322	0.000	0.000	0.000	0.000	0.00	180	0.00	A53/BE/	18.00	0.00	0.00	202	389	200	0	365.000	0.000	0.13217	0.00000	0.00000
3B-3	15	8.625	40	0.322	0.000	0.000	6.625	0.280	0.00	90	0.00	A234/WPB/	18.00	0.00	0.00	202	389	200	0	365.000	0.000	0.13217	0.13217	0.00000
3B-4P	64	8.625	40	0.322	0.000	0.000	0.000	0.000	0.00	180	0.00	A53/BE/	18.00	0.00	0.00	202	389	200	0	365.000	0.000	0.13217	0.00000	0.00000
3B-4	16	8.625	40	0.322	0.000	0.000	6.625	0.280	1.50	90	0.00	A234/WPB/	18.00	0.00	0.00	202	389	200	0	365.000	0.000	0.13217	0.13217	0.00000
3B-5	4	6.625	40	0.280	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	18.00	0.00	0.00	202	389	200	0	365.000	0.000	0.13217	0.00000	0.00000
3B-5P	54	6.625	40	0.280	0.000	0.000	0.000	0.000	0.00	180	0.00	A53/BE/	18.00	0.00	0.00	202	389	200	0	365.000	0.000	0.13217	0.00000	0.00000
3B-1	2	6.625	40	0.280	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	18.00	0.00	0.00	202	389	200	0	365.000	0.000	0.13217	0.00000	0.00000
3B-VALVE-5EX-29-6	25	6.625	40	0.280	0.000	0.000	0.000	0.000	0.00	90	0.00	A216/WCB/	0.00	0.00	0.00	202	389	200	0	365.000	0.000	0.13217	0.00000	0.00000

Component Name	Geom Code	Pipe Size OD (in)	Sch.	Tnom (in)	Tinit (in)	Tcrit (in)	Br/Small End OD (in)	Br/Small Tnom (in)	R / D Ratio	Orient Angle (Deg.)	Pipe Length (in)	Spec/Type/ Class	Material Cr. (%)	Cu. (%)	Mo. (%)	Design Press. (psig)	Design Temp. (Deg. F)	Op. Press. (psig)	Op. Temp. (Deg. F)	Op. Enth. (Btu/lbm)	Op. Qual.	Flow Rate U/S Mn. (Mlbm/hr)	D/S Mn.	Br.
3B-2P	58	6.625	40	0.280	0.000	0.000	0.000	0.000	0.00	90	0.00	A53/BE/	18.00	0.00	0.00	202	389	200	0	365.000	0.000	0.13217	0.00000	0.00000
3B-2	2	6.625	40	0.280	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	18.00	0.00	0.00	202	389	200	0	365.000	0.000	0.13217	0.00000	0.00000
3B-2P-1	52	6.625	40	0.280	0.000	0.000	0.000	0.000	0.00	180	0.00	A53/BE/	18.00	0.00	0.00	202	389	200	0	365.000	0.000	0.13217	0.00000	0.00000
3B-6	2	6.625	40	0.280	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	18.00	0.00	0.00	202	389	200	0	365.000	0.000	0.13217	0.00000	0.00000
3B-6P	52	6.625	40	0.280	0.000	0.000	0.000	0.000	0.00	90	0.00	A53/BE/	18.00	0.00	0.00	202	389	200	0	365.000	0.000	0.13217	0.00000	0.00000
3B-7	1	6.625	40	0.280	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	18.00	0.00	0.00	202	389	200	0	365.000	0.000	0.13217	0.00000	0.00000
3B-7P	51	6.625	40	0.280	0.000	0.000	0.000	0.000	0.00	90	0.00	A53/BE/	18.00	0.00	0.00	202	389	200	0	365.000	0.000	0.13217	0.00000	0.00000
3B-8	2	6.625	40	0.280	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	18.00	0.00	0.00	202	389	200	0	365.000	0.000	0.13217	0.00000	0.00000
3B-8P	52	6.625	40	0.280	0.000	0.000	0.000	0.000	0.00	180	0.00	A53/BE/	18.00	0.00	0.00	202	389	200	0	365.000	0.000	0.13217	0.00000	0.00000
3B-9	2	6.625	40	0.280	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	18.00	0.00	0.00	202	389	200	0	365.000	0.000	0.13217	0.00000	0.00000
3B-9P DS	52	6.625	40	0.280	0.000	0.000	0.000	0.000	0.00	90	0.00	A53/BE/	18.00	0.00	0.00	202	389	200	0	365.000	0.000	0.13217	0.00000	0.00000
3B-10	1	6.625	40	0.280	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	18.00	0.00	0.00	202	389	200	0	365.000	0.000	0.13217	0.00000	0.00000
3B-10P US	51	6.625	40	0.280	0.000	0.000	0.000	0.000	0.00	90	0.00	A53/BE/	18.00	0.00	0.00	202	389	200	0	365.000	0.000	0.13217	0.00000	0.00000
3B-10P DS	51	6.625	40	0.280	0.000	0.000	0.000	0.000	0.00	90	0.00	A53/BE/	18.00	0.00	0.00	202	389	200	0	365.000	0.000	0.13217	0.00000	0.00000
3B-11	1	6.625	40	0.280	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	18.00	0.00	0.00	202	389	200	0	365.000	0.000	0.13217	0.00000	0.00000
3B-11P US	51	6.625	40	0.280	0.000	0.000	0.000	0.000	0.00	90	0.00	A53/BE/	18.00	0.00	0.00	202	389	200	0	365.000	0.000	0.13217	0.00000	0.00000
3B-11P DS	51	6.625	40	0.280	0.000	0.000	0.000	0.000	0.00	90	0.00	A53/BE/	18.00	0.00	0.00	202	389	200	0	365.000	0.000	0.13217	0.00000	0.00000
3B-12	1	6.625	40	0.280	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	18.00	0.00	0.00	202	389	200	0	365.000	0.000	0.13217	0.00000	0.00000
3B-12P US	51	6.625	40	0.280	0.000	0.000	0.000	0.000	0.00	90	0.00	A53/BE/	18.00	0.00	0.00	202	389	200	0	365.000	0.000	0.13217	0.00000	0.00000
3B-14	1	6.625	40	0.280	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	18.00	0.00	0.00	202	389	200	0	365.000	0.000	0.13217	0.00000	0.00000
3B-14P	51	6.625	40	0.280	0.000	0.000	0.000	0.000	0.00	90	0.00	A53/BE/	18.00	0.00	0.00	202	389	200	0	365.000	0.000	0.13217	0.00000	0.00000
3B-13	2	6.625	40	0.280	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	18.00	0.00	0.00	202	389	200	0	365.000	0.000	0.13217	0.00000	0.00000
3B-13P	52	6.625	40	0.280	0.000	0.000	0.000	0.000	0.00	180	0.00	A53/BE/	18.00	0.00	0.00	202	389	200	0	365.000	0.000	0.13217	0.00000	0.00000
3B-15	2	6.625	40	0.280	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	18.00	0.00	0.00	202	389	200	0	365.000	0.000	0.13217	0.00000	0.00000
3B-15P	52	6.625	40	0.280	0.000	0.000	0.000	0.000	0.00	90	0.00	A53/BE/	18.00	0.00	0.00	202	389	200	0	365.000	0.000	0.13217	0.00000	0.00000
3B-15N	30	6.625	40	0.280	0.000	0.000	0.000	0.000	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	202	389	200	0	365.000	0.000	0.13217	0.00000	0.00000

Line Name : MSD39-1-RHTR 21A to RHDT 21A

MS-1AN	31	6.625	80	0.432	0.000	0.000	0.000	0.000	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.00000	0.00000
MS-1A0P	61	6.625	80	0.432	0.000	0.000	0.000	0.000	0.00	165	0.00	A106/B/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.00000	0.00000
MS-1AN-1	30	6.625	80	0.432	0.000	0.000	0.000	0.000	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.00000	0.00000

Line Name : MSD40-1-RHTR 22A to RHDT 22A

MS-2AN	31	6.625	80	0.432	0.000	0.000	0.000	0.000	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.00000	0.00000
MS-2A0P	61	6.625	80	0.432	0.000	0.000	0.000	0.000	0.00	165	0.00	A106/B/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.00000	0.00000
MS-2AN-1	30	6.625	80	0.432	0.000	0.000	0.000	0.000	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.00000	0.00000

Line Name : MSD41-1-RHTR 23A to RHDT 23A

MS-3AN	31	6.625	80	0.432	0.000	0.000	0.000	0.000	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.00000	0.00000
MS-3A0P	61	6.625	80	0.432	0.000	0.000	0.000	0.000	0.00	165	0.00	A106/B/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.00000	0.00000
MS-3AN-1	30	6.625	80	0.432	0.000	0.000	0.000	0.000	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.00000	0.00000

Line Name : MSD42-1-RHTR 21B to RHDT 21B

MS-1BN	31	6.625	80	0.432	0.000	0.000	0.000	0.000	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.00000	0.00000
MS-1B0P	61	6.625	80	0.432	0.000	0.000	0.000	0.000	0.00	165	0.00	A106/B/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.00000	0.00000
MS-1BN-1	30	6.625	80	0.432	0.000	0.000	0.000	0.000	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.00000	0.00000

Line Name : MSD43-1-RHTR 22B to RHDT 22B

MS-2BN	31	6.625	80	0.432	0.000	0.000	0.000	0.000	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.00000	0.00000
MS-2B0P	61	6.625	80	0.432	0.000	0.000	0.000	0.000	0.00	165	0.00	A106/B/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.00000	0.00000
MS-2BN-1	30	6.625	80	0.432	0.000	0.000	0.000	0.000	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.00000	0.00000

Component Name	Geom Code	Pipe Size OD (in)	Sch.	Tnom (in)	Tinit (in)	Tcrit (in)	Br/Small End OD (in)	Br/Small Tnom (in)	R / D Ratio	Orient Angle (Deg.)	Pipe Length (in)	Spec/Type/ Class	Material Cr. (%)	Cu. (%)	Mo. (%)	Design Press. (psig)	Design Temp. (Deg. F)	Op. Press. (psig)	Op. Temp. (Deg. F)	Op. Enth. (Btu/lbm)	Op. Qual.	Flow Rate U/S Mn. (Mlbm/hr)	D/S Mn.	Br.
Line Name : MSD44-1-RHTR 23B to RHDT 23B																								
MS-3BN	31	6.625	80	0.432	0.000	0.000	0.000	0.000	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.00000	0.00000
MS-3B0P	61	6.625	80	0.432	0.000	0.000	0.000	0.000	0.00	165	0.00	A106/B/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.00000	0.00000
MS-3BN-1	30	6.625	80	0.432	0.000	0.000	0.000	0.000	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.00000	0.00000
Line Name : MSD45A-1-RHDT21A to CV																								
MS-1A11N	31	6.625	80	0.432	0.000	0.000	0.000	0.000	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.00000	0.00000
MS-1A11P-1	61	6.625	80	0.432	0.000	0.000	0.000	0.000	0.00	180	0.00	A106/B/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.00000	0.00000
MS-1A11	2	6.625	80	0.432	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.00000	0.00000
MS-1A11P US	52	6.625	80	0.432	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.00000	0.00000
MS-1A11P DS	52	6.625	80	0.432	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.00000	0.00000
MS-1A12	2	6.625	80	0.432	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.00000	0.00000
MS-1A12P US	52	6.625	80	0.432	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.00000	0.00000
MS-1A12P DS	52	6.625	80	0.432	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.00000	0.00000
MS-1A13	2	6.625	80	0.432	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.00000	0.00000
MS-1A13P US	52	6.625	80	0.432	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.00000	0.00000
MS-1A13P DS	52	6.625	80	0.432	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.00000	0.00000
MS-1A14	2	6.625	80	0.432	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.00000	0.00000
MS-1A14P US	52	6.625	80	0.432	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.00000	0.00000
MS-1A14AP	52	6.625	80	0.432	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.00000	0.00000
MS-1A14P DS	52	6.625	80	0.432	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.00000	0.00000
MS-1A14A	1	6.625	80	0.432	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.00000	0.00000
MS-1A15	2	6.625	80	0.432	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.00000	0.00000
MS-1A15P US	52	6.625	80	0.432	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.00000	0.00000
MS-1A15P DS	52	6.625	80	0.432	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.00000	0.00000
MS-1A16	2	6.625	80	0.432	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.00000	0.00000
MS-1A16P	52	6.625	80	0.432	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.00000	0.00000
MS-1A17	4	6.625	80	0.432	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.00000	0.00000
MS-1A17P US	54	6.625	80	0.432	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.00000	0.00000
MS-1A17P DS	54	6.625	80	0.432	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.00000	0.00000
MS-1A18	1	6.625	80	0.432	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.00000	0.00000
MS-1A18P	51	6.625	80	0.432	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.00000	0.00000
MS-1A19	1	6.625	80	0.432	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.00000	0.00000
MS-1A20	3	6.625	80	0.432	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.00000	0.00000
MS-1A20P	53	6.625	80	0.432	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.00000	0.00000
MS-1A21	1	6.625	80	0.432	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.00000	0.00000
MS-1A21P US	51	6.625	80	0.432	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.00000	0.00000
MS-1A21P DS	51	6.625	80	0.432	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.00000	0.00000
MS-1A21R	18	8.625	80	0.500	0.000	0.000	6.625	0.432	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.11183	0.00000
MS-1A21P-1	68	8.625	80	0.500	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.00000	0.00000
MS-1A22	2	8.625	80	0.500	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.00000	0.00000
MS-1A22P US	52	8.625	80	0.500	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.00000	0.00000
MS-1A22P DS	52	8.625	80	0.500	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.00000	0.00000
MS-1A22P-1	52	8.625	80	0.500	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.00000	0.00000
MS-1A23	2	8.625	80	0.500	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.00000	0.00000
MS-1A24	4	8.625	80	0.500	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.00000	0.00000
MS-1A24P DS	54	8.625	80	0.500	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.00000	0.00000
MS-1A24R	17	8.625	80	0.500	0.000	0.000	6.625	0.432	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.11183	0.00000
MS-1A24P-1	67	6.625	80	0.432	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.00000	0.00000
MS-1A24FE	6	6.625	80	0.432	0.000	0.000	0.000	0.000	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.00000	0.00000
MS-1A25P-1	56	6.625	80	0.432	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.00000	0.00000
MS-1A25	15	6.625	80	0.432	0.000	0.000	6.625	0.432	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.11183	0.00000
MS-1A25P	65	6.625	80	0.432	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.00000	0.00000
MS-1A26	1	6.625	80	0.432	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.00000	0.00000
MS-1A26P	51	6.625	80	0.432	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.00000	0.00000
MS-1A27	1	6.625	80	0.432	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.00000	0.00000
MS-1A27P	51	6.625	80	0.432	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.00000	0.00000
MS-1A28	2	6.625	80	0.432	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.00000	0.00000
MS-1A28P US	52	6.625	80	0.432	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.00000	0.00000
MS-1A28P DS	52	6.625	80	0.432	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.00000	0.00000

Component Name	Geom Code	Pipe Size OD (in)	Sch.	Tnom (in)	Tinit (in)	Tcrit (in)	Br/Small End OD (in)	Br/Small Tnom (in)	R / D Ratio	Orient Angle (Deg.)	Pipe Length (in)	Spec/Type/ Class	Material Cr. (%)	Cu. (%)	Mo. (%)	Design Press. (psig)	Design Temp. (Deg. F)	Op. Press. (psig)	Op. Temp. (Deg. F)	Op. Enth. (Btu/lbm)	Op. Qual.	Flow Rate U/S Mn. (Mlbm/hr)	D/S Mn.	Br.
MS-1A29	2	6.625	80	0.432	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.00000	0.00000
MS-1A29P US	52	6.625	80	0.432	0.000	0.000	0.000	0.000	0.00	180	0.00	A106/B/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.00000	0.00000
MS-1A29P DS	52	6.625	80	0.432	0.000	0.000	0.000	0.000	0.00	180	0.00	A106/B/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.00000	0.00000
MS-1A30	2	6.625	80	0.432	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.00000	0.00000
MS-1A30P-1	52	6.625	80	0.432	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.00000	0.00000
MS-1A30R-1	17	6.625	80	0.432	0.000	0.000	4.500	0.337	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.11183	0.00000
Line Name : MSD45B-1-RHDT21A CV to FWH26																								
MS-1A-VALVE-LCV-1104	24	4.500	80	0.337	0.000	0.000	0.000	0.000	0.00	90	0.00	A216/WCB/	0.00	0.00	0.00	1085	600	343	0	462.300	0.000	0.11183	0.00000	0.00000
MS-1A30R2	18	6.625	80	0.432	0.000	0.000	4.500	0.337	0.00	90	0.00	A-403/WP316/	0.00	0.00	0.00	1085	600	343	0	462.300	0.000	0.11183	0.11183	0.00000
MS-1A30P2	68	6.625	80	0.432	0.000	0.000	0.000	0.000	0.00	90	0.00	A-312/TP316/	0.00	0.00	0.00	1085	600	343	0	462.300	0.000	0.11183	0.00000	0.00000
MS-1A31	2	6.625	80	0.432	0.000	0.000	0.000	0.000	1.50	90	0.00	A-403/WP316/	0.00	0.00	0.00	1085	600	343	0	462.300	0.000	0.11183	0.00000	0.00000
MS-1A31P	52	6.625	80	0.432	0.000	0.000	0.000	0.000	0.00	180	0.00	A-312/TP316/	0.00	0.00	0.00	1085	600	343	0	462.300	0.000	0.11183	0.00000	0.00000
MS-1A32	1	6.625	80	0.432	0.000	0.000	0.000	0.000	1.50	90	0.00	A-403/WP316/	0.00	0.00	0.00	1085	600	343	0	462.300	0.000	0.11183	0.00000	0.00000
MS-1A32P	51	6.625	80	0.432	0.000	0.000	0.000	0.000	0.00	135	0.00	A-312/TP316/	0.00	0.00	0.00	1085	600	343	0	462.300	0.000	0.11183	0.00000	0.00000
Line Name : MSD45C-1-RHDT A HDR to FWH26																								
MS-1A34P1	62	10.750	80	0.594	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	1085	600	343	0	462.300	0.000	0.11183	0.00000	0.00000
Line Name : MSD45C-2-RHDT A HDR to FWH26																								
MS-1A34T2	12	10.750	80	0.594	0.000	0.000	6.625	0.432	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	600	343	0	462.300	0.000	0.11183	0.22367	0.11183
MS-1A34P2	62	10.750	80	0.594	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	1085	600	343	0	462.300	0.000	0.22367	0.00000	0.00000
MS-1A35	1	10.750	80	0.594	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	600	343	0	462.300	0.000	0.22367	0.00000	0.00000
Line Name : MSD45C-3-RHDT A HDR to FWH26																								
MS-1A35T	12	10.750	80	0.594	0.000	0.000	6.625	0.432	0.00	90	0.00	A106/B/	0.00	0.00	0.00	1085	600	343	0	462.300	0.000	0.22367	0.33550	0.11183
MS-1A36	3	10.750	80	0.594	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	600	343	0	462.300	0.000	0.33550	0.00000	0.00000
MS-1A36P US	51	10.750	80	0.594	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	1085	600	343	0	462.300	0.000	0.33550	0.00000	0.00000
MS-1A36P DS	51	10.750	80	0.594	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	1085	600	343	0	462.300	0.000	0.33550	0.00000	0.00000
MS-1A37	1	10.750	80	0.594	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	600	343	0	462.300	0.000	0.33550	0.00000	0.00000
MS-1A37P US	51	10.750	80	0.594	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	1085	600	343	0	462.300	0.000	0.33550	0.00000	0.00000
MS-1A37P DS	51	10.750	80	0.594	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	1085	600	343	0	462.300	0.000	0.33550	0.00000	0.00000
MS-1A38	1	10.750	80	0.594	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	600	343	0	462.300	0.000	0.33550	0.00000	0.00000
MS-1A38P	51	10.750	80	0.594	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	1085	600	343	0	462.300	0.000	0.33550	0.00000	0.00000
MS-1A39	1	10.750	80	0.594	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	600	343	0	462.300	0.000	0.33550	0.00000	0.00000
MS-1A39P	51	10.750	80	0.594	0.000	0.000	0.000	0.000	0.00	45	0.00	A106/B/	0.00	0.00	0.00	1085	600	343	0	462.300	0.000	0.33550	0.00000	0.00000
MS-1A40	1	10.750	80	0.594	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	600	343	0	462.300	0.000	0.33550	0.00000	0.00000
MS-1A40P	51	10.750	80	0.594	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	1085	600	343	0	462.300	0.000	0.33550	0.00000	0.00000
MS-1A41	14	10.750	80	0.594	0.000	0.000	6.625	0.432	0.00	90	0.00	A-403/WP316/	0.00	0.00	0.00	1085	600	343	0	462.300	0.000	0.33550	0.22367	0.11183
Line Name : MSD45C-4-RHDT A HDR to FWH26C																								
MS-1A63P US	64	6.625	80	0.432	0.000	0.000	0.000	0.000	0.00	90	0.00	A-312/TP316/	0.00	0.00	0.00	1085	600	343	0	462.300	0.000	0.11183	0.00000	0.00000
MS-1A63P DS	64	6.625	80	0.432	0.000	0.000	0.000	0.000	0.00	90	0.00	A-312/TP316/	0.00	0.00	0.00	1085	600	343	0	462.300	0.000	0.11183	0.00000	0.00000
MS-1A63	2	6.625	80	0.432	0.000	0.000	0.000	0.000	1.50	90	0.00	A-403/WP316/	0.00	0.00	0.00	1085	600	343	0	462.300	0.000	0.11183	0.00000	0.00000
MS-1A64P US	52	6.625	80	0.432	0.000	0.000	0.000	0.000	0.00	90	0.00	A-312/TP316/	0.00	0.00	0.00	1085	600	343	0	462.300	0.000	0.11183	0.00000	0.00000
MS-1A64P DS	52	6.625	80	0.432	0.000	0.000	0.000	0.000	0.00	90	0.00	A-312/TP316/	0.00	0.00	0.00	1085	600	343	0	462.300	0.000	0.11183	0.00000	0.00000
MS-1A64	2	6.625	80	0.432	0.000	0.000	0.000	0.000	1.50	90	0.00	A-403/WP316/	0.00	0.00	0.00	1085	600	343	0	462.300	0.000	0.11183	0.00000	0.00000
MS-1A65P US	52	6.625	80	0.432	0.000	0.000	0.000	0.000	0.00	0	0.00	A-312/TP316/	0.00	0.00	0.00	1085	600	343	0	462.300	0.000	0.11183	0.00000	0.00000
MS-1A65P DS	52	6.625	80	0.432	0.000	0.000	0.000	0.000	0.00	0	0.00	A-312/TP316/	0.00	0.00	0.00	1085	600	343	0	462.300	0.000	0.11183	0.00000	0.00000
MS-1A65	2	6.625	80	0.432	0.000	0.000	0.000	0.000	1.50	90	0.00	A-403/WP316/	0.00	0.00	0.00	1085	600	343	0	462.300	0.000	0.11183	0.00000	0.00000
MS-1A-VALVE-MS-14-2	22	6.625	80	0.432	0.000	0.000	0.000	0.000	0.00	90	0.00	A216/WCB/	0.00	0.00	0.00	1085	600	343	0	462.300	0.000	0.11183	0.00000	0.00000
MS-1A66P US	58	6.625	80	0.432	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	1085	600	343	0	462.300	0.000	0.11183	0.00000	0.00000
MS-1A66P DS	58	6.625	80	0.432	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	1085	600	343	0	462.300	0.000	0.11183	0.00000	0.00000
MS-1A66	12	6.625	80	0.432	0.000	0.000	6.625	0.432	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	600	343	0	462.300	0.000	0.11183	0.00000	0.11183
MS-1A67P US	62	6.625	80	0.432	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	1085	600	343	0	462.300	0.000	0.11183	0.00000	0.00000

Component Name	Geom Code	Pipe Size OD (in)	Sch.	Tnom (in)	Tinit (in)	Tcrit (in)	Br/Small End OD (in)	Br/Small Tnom (in)	R / D Ratio	Orient Angle (Deg.)	Pipe Length (in)	Spec/Type/ Class	Material Cr. (%)	Cu. (%)	Mo. (%)	Design Press. (psig)	Design Temp. (Deg. F)	Op. Press. (psig)	Op. Temp. (Deg. F)	Op. Enth. (Btu/lbm)	Op. Qual.	Flow Rate U/S Mn. (Mlbm/hr)	D/S Mn.	Br.
MS-1A67P DS	62	6.625	80	0.432	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	1085	600	343	0	462.300	0.000	0.11183	0.00000	0.00000
MS-1A67	12	6.625	80	0.432	0.000	0.000	6.625	0.432	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	600	343	0	462.300	0.000	0.11183	0.00000	0.11183
MS-1A67P-1	62	6.625	80	0.432	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	1085	600	343	0	462.300	0.000	0.11183	0.00000	0.00000
MS-1A67R	18	8.625	80	0.500	0.000	0.000	6.625	0.432	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	600	343	0	462.300	0.000	0.11183	0.11183	0.00000
MS-1A67N	30	8.625	80	0.500	0.000	0.000	0.000	0.000	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	600	343	0	462.300	0.000	0.11183	0.00000	0.00000

Line Name : MSD45C-5-RHDT A HDR to FWH26

MS-1A41R	7	10.750	80	0.594	0.000	0.000	8.625	0.500	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	600	343	0	462.300	0.000	0.22367	0.22367	0.00000
MS-1A41P-1 US	57	8.625	80	0.500	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	1085	600	343	0	462.300	0.000	0.22367	0.00000	0.00000
MS-1A41P-1 DS	57	8.625	80	0.500	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	1085	600	343	0	462.300	0.000	0.22367	0.00000	0.00000
MS-1A42	1	8.625	80	0.500	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	600	343	0	462.300	0.000	0.22367	0.00000	0.00000
MS-1A42P US	51	8.625	80	0.500	0.000	0.000	0.000	0.000	0.00	135	0.00	A106/B/	0.00	0.00	0.00	1085	600	343	0	462.300	0.000	0.22367	0.00000	0.00000
MS-1A42P DS	51	8.625	80	0.500	0.000	0.000	0.000	0.000	0.00	135	0.00	A106/B/	0.00	0.00	0.00	1085	600	343	0	462.300	0.000	0.22367	0.00000	0.00000
MS-1A43	1	8.625	80	0.500	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	600	343	0	462.300	0.000	0.22367	0.00000	0.00000
MS-1A43P US	51	8.625	80	0.500	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	1085	600	343	0	462.300	0.000	0.22367	0.00000	0.00000
MS-1A43P DS	51	8.625	80	0.500	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	1085	600	343	0	462.300	0.000	0.22367	0.00000	0.00000
MS-1A44	1	8.625	80	0.500	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	600	343	0	462.300	0.000	0.22367	0.00000	0.00000
MS-1A44P US	51	8.625	80	0.500	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	1085	600	343	0	462.300	0.000	0.22367	0.00000	0.00000
MS-1A44P DS	51	8.625	80	0.500	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	1085	600	343	0	462.300	0.000	0.22367	0.00000	0.00000
MS-1A45	1	8.625	80	0.500	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	600	343	0	462.300	0.000	0.22367	0.00000	0.00000
MS-1A45P US	51	8.625	80	0.500	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	1085	600	343	0	462.300	0.000	0.22367	0.00000	0.00000
MS-1A68	14	8.625	80	0.500	0.000	0.000	6.625	0.432	0.00	90	0.00	A106/B/	0.00	0.00	0.00	1085	600	343	0	462.300	0.000	0.22367	0.11183	0.11183

Line Name : MSD45D-1-RHDT A HDR to FWH26B

MS-1A68P	64	6.625	80	0.432	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	1085	600	343	0	462.300	0.000	0.11183	0.00000	0.00000
MS-1A55	4	6.625	80	0.432	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	600	343	0	462.300	0.000	0.11183	0.00000	0.00000
MS-1A55P	54	6.625	80	0.432	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	1085	600	343	0	462.300	0.000	0.11183	0.00000	0.00000
MS-1A56	2	6.625	80	0.432	0.000	0.000	0.000	0.000	1.00	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	600	343	0	462.300	0.000	0.11183	0.00000	0.00000
MS-1A57	4	6.625	80	0.432	0.000	0.000	0.000	0.000	1.00	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	600	343	0	462.300	0.000	0.11183	0.00000	0.00000
MS-1A57P	54	6.625	80	0.432	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	1085	600	343	0	462.300	0.000	0.11183	0.00000	0.00000
MS-1A57P DS	54	6.625	80	0.432	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	1085	600	343	0	462.300	0.000	0.11183	0.00000	0.00000
MS-1A58	2	6.625	80	0.432	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	600	343	0	462.300	0.000	0.11183	0.00000	0.00000
MS-1A58P	52	6.625	80	0.432	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	1085	600	343	0	462.300	0.000	0.11183	0.00000	0.00000
MS-1A59	2	6.625	80	0.432	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	600	343	0	462.300	0.000	0.11183	0.00000	0.00000
MS-1A59P US	52	6.625	80	0.432	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	1085	600	343	0	462.300	0.000	0.11183	0.00000	0.00000
MS-1A59P DS	52	6.625	80	0.432	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	1085	600	343	0	462.300	0.000	0.11183	0.00000	0.00000
MS-1A60	2	6.625	80	0.432	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	600	343	0	462.300	0.000	0.11183	0.00000	0.00000
MS-1A-VALVE-MS-14-1	22	6.625	80	0.432	0.000	0.000	0.000	0.000	0.00	90	0.00	A216/WCB/	0.00	0.00	0.00	1085	600	343	0	462.300	0.000	0.11183	0.00000	0.00000
MS-1A60P US	58	6.625	80	0.432	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	1085	600	343	0	462.300	0.000	0.11183	0.00000	0.00000
MS-1A60P DS	58	6.625	80	0.432	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	1085	600	343	0	462.300	0.000	0.11183	0.00000	0.00000
MS-1A61	12	6.625	80	0.432	0.000	0.000	6.625	0.432	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	600	343	0	462.300	0.000	0.11183	0.00000	0.11183
MS-1A61P US	62	6.625	80	0.432	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	1085	600	343	0	462.300	0.000	0.11183	0.00000	0.00000
MS-1A61P DS	62	6.625	80	0.432	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	1085	600	343	0	462.300	0.000	0.11183	0.00000	0.00000
MS-1A62	12	6.625	80	0.432	0.000	0.000	6.625	0.432	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	600	343	0	462.300	0.000	0.11183	0.00000	0.11183
MS-1A61P-1	62	6.625	80	0.432	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	1085	600	343	0	462.300	0.000	0.11183	0.00000	0.00000
MS-1A62R	18	8.625	80	0.500	0.000	0.000	6.625	0.432	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	600	343	0	462.300	0.000	0.11183	0.11183	0.00000
MS-1A62N	30	8.625	80	0.500	0.000	0.000	0.000	0.000	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	600	343	0	462.300	0.000	0.11183	0.00000	0.00000

Line Name : MSD45D-2-RHDT A HDR to FWH26A

MS-1A45R	7	8.625	80	0.500	0.000	0.000	6.625	0.432	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	600	343	0	462.300	0.000	0.11183	0.11183	0.00000
MS-1A45P-1 US	67	6.625	80	0.432	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	1085	600	343	0	462.300	0.000	0.11183	0.00000	0.00000
MS-1A45P-1 DS	67	6.625	80	0.432	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	1085	600	343	0	462.300	0.000	0.11183	0.00000	0.00000
MS-1A46	2	6.625	80	0.432	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	600	343	0	462.300	0.000	0.11183	0.00000	0.00000
MS-1A46P	52	6.625	80	0.432	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	1085	600	343	0	462.300	0.000	0.11183	0.00000	0.00000
MS-1A47	4	6.625	80	0.432	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	600	343	0	462.300	0.000	0.11183	0.00000	0.00000
MS-1A47P US	54	6.625	80	0.432	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	1085	600	343	0	462.300	0.000	0.11183	0.00000	0.00000
MS-1A47P DS	54	6.625	80	0.432	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	1085	600	343	0	462.300	0.000	0.11183	0.00000	0.00000
MS-1A48	2	6.625	80	0.432	0.000	0.000	0.000	0.000	1.00	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	600	343	0	462.300	0.000	0.11183	0.00000	0.00000

Component Name	Geom Code	Pipe Size OD (in)	Sch.	Tnom (in)	Tinit (in)	Tcrit (in)	Br/Small End OD (in)	Br/Small Tnom (in)	R / D Ratio	Orient Angle (Deg.)	Pipe Length (in)	Spec/Type/ Class	Material Cr. (%)	Cu. (%)	Mo. (%)	Design Press. (psig)	Design Temp. (Deg. F)	Op. Press. (psig)	Op. Temp. (Deg. F)	Op. Enth. (Btu/lbm)	Op. Qual.	Flow Rate U/S Mn. (Mlbm/hr)	D/S Mn.	Br.
MS-1A49	4	6.625	80	0.432	0.000	0.000	0.000	0.000	1.00	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	600	343	0	462.300	0.000	0.11183	0.00000	0.00000
MS-1A49P US	54	6.625	80	0.432	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	1085	600	343	0	462.300	0.000	0.11183	0.00000	0.00000
MS-1A49P DS	54	6.625	80	0.432	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	1085	600	343	0	462.300	0.000	0.11183	0.00000	0.00000
MS-1A50	2	6.625	80	0.432	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	600	343	0	462.300	0.000	0.11183	0.00000	0.00000
MS-1A50P	52	6.625	80	0.432	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	1085	600	343	0	462.300	0.000	0.11183	0.00000	0.00000
MS-1A51	2	6.625	80	0.432	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	600	343	0	462.300	0.000	0.11183	0.00000	0.00000
MS-1A51P US	52	6.625	80	0.432	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	1085	600	343	0	462.300	0.000	0.11183	0.00000	0.00000
MS-1A51P DS	52	6.625	80	0.432	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	1085	600	343	0	462.300	0.000	0.11183	0.00000	0.00000
MS-1A52	2	6.625	80	0.432	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	600	343	0	462.300	0.000	0.11183	0.00000	0.00000
MS-1A-VALVE-MS-14	22	6.625	80	0.432	0.000	0.000	0.000	0.000	0.00	90	0.00	A216/WCB/	0.00	0.00	0.00	1085	600	343	0	462.300	0.000	0.11183	0.00000	0.00000
MS-1A52P US	58	6.625	80	0.432	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	1085	600	343	0	462.300	0.000	0.11183	0.00000	0.00000
MS-1A52P DS	58	6.625	80	0.432	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	1085	600	343	0	462.300	0.000	0.11183	0.00000	0.00000
MS-1A53	12	6.625	80	0.432	0.000	0.000	6.625	0.432	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	600	343	0	462.300	0.000	0.11183	0.00000	0.11183
MS-1A53P US	62	6.625	80	0.432	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	1085	600	343	0	462.300	0.000	0.11183	0.00000	0.00000
MS-1A53P DS	62	6.625	80	0.432	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	1085	600	343	0	462.300	0.000	0.11183	0.00000	0.00000
MS-1A54	12	6.625	80	0.432	0.000	0.000	6.625	0.432	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	600	343	0	462.300	0.000	0.11183	0.00000	0.11183
MS-1A53P-1	62	6.625	80	0.432	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	1085	600	343	0	462.300	0.000	0.11183	0.00000	0.00000
MS-1A54R	18	8.625	80	0.500	0.000	0.000	6.625	0.432	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	600	343	0	462.300	0.000	0.11183	0.11183	0.00000
MS-1A54N	30	8.625	80	0.500	0.000	0.000	0.000	0.000	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	600	343	0	462.300	0.000	0.11183	0.00000	0.00000

Line Name : MSD46A-2-RHDT22A CV to FWH26

MS-2A-VALVE-LCV-1104A	24	3.500	160	0.438	0.000	0.000	0.000	0.000	0.00	90	0.00	A216/WCB/	0.00	0.00	0.00	1085	600	343	0	462.300	0.000	0.11183	0.00000	0.00000
MS-2A24R	18	6.625	80	0.432	0.000	0.000	4.500	0.337	0.00	90	0.00	A-403/WP316/	0.00	0.00	0.00	1085	600	343	0	462.300	0.000	0.11183	0.11183	0.00000
MS-2A23P	68	6.625	80	0.432	0.000	0.000	0.000	0.000	0.00	90	0.00	A-312/TP316/	0.00	0.00	0.00	1085	600	343	0	462.300	0.000	0.11183	0.00000	0.00000
MS-2A24	2	6.625	80	0.432	0.000	0.000	0.000	0.000	1.50	90	0.00	A-403/WP316/	0.00	0.00	0.00	1085	600	343	0	462.300	0.000	0.11183	0.00000	0.00000
MS-2A24P	52	6.625	80	0.432	0.000	0.000	0.000	0.000	0.00	180	0.00	A-312/TP316/	0.00	0.00	0.00	1085	600	343	0	462.300	0.000	0.11183	0.00000	0.00000
MS-2A25	1	6.625	80	0.432	0.000	0.000	0.000	0.000	1.50	90	0.00	A-403/WP316/	0.00	0.00	0.00	1085	600	343	0	462.300	0.000	0.11183	0.00000	0.00000
MS-2A25P	51	6.625	80	0.432	0.000	0.000	0.000	0.000	0.00	135	0.00	A-312/TP316/	0.00	0.00	0.00	1085	600	343	0	462.300	0.000	0.11183	0.00000	0.00000

Line Name : MSD46A-1-RHDT22A to CV

MS-2A11N	31	6.625	80	0.432	0.000	0.000	0.000	0.000	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.00000	0.00000
MS-2A11P-1	61	6.625	80	0.432	0.000	0.000	0.000	0.000	0.00	180	0.00	A106/B/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.00000	0.00000
MS-2A11	2	6.625	80	0.432	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.00000	0.00000
MS-2A11P US	52	6.625	80	0.432	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.00000	0.00000
MS-2A11P DS	52	6.625	80	0.432	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.00000	0.00000
MS-2A12	2	6.625	80	0.432	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.00000	0.00000
MS-2A12P US	52	6.625	80	0.432	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.00000	0.00000
MS-2A12P DS	52	6.625	80	0.432	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.00000	0.00000
MS-2A13	2	6.625	80	0.432	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.00000	0.00000
MS-2A13P	52	6.625	80	0.432	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.00000	0.00000
MS-2A14	2	6.625	80	0.432	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.00000	0.00000
MS-2A14P	52	6.625	80	0.432	0.000	0.000	0.000	0.000	0.00	180	0.00	A106/B/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.00000	0.00000
MS-2A15	2	6.625	80	0.432	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.00000	0.00000
MS-2A15R-1	18	8.625	80	0.500	0.000	0.000	6.625	0.432	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.11183	0.00000
MS-2A15P-1	68	8.625	80	0.500	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.00000	0.00000
MS-2A15R-2	17	8.625	80	0.500	0.000	0.000	6.625	0.432	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.11183	0.00000
MS-2A15P-2	67	6.625	80	0.432	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.00000	0.00000
MS-2A15FE	6	6.625	80	0.432	0.000	0.000	0.000	0.000	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.00000	0.00000
MS-2A15P-3	56	6.625	80	0.432	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.00000	0.00000
MS-2A15R-3	18	8.625	80	0.500	0.000	0.000	6.625	0.432	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.11183	0.00000
MS-2A15P-4	68	8.625	80	0.500	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.00000	0.00000
MS-2A15P-5	15	8.625	80	0.500	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.11183	0.00000
MS-2A15P-6	65	8.625	80	0.500	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.00000	0.00000
MS-2A16	2	8.625	80	0.500	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.00000	0.00000
MS-2A16P	52	8.625	80	0.500	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.00000	0.00000
MS-2A17	2	8.625	80	0.500	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.00000	0.00000
MS-2A17P US	52	8.625	80	0.500	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.00000	0.00000
MS-2A17P DS	52	8.625	80	0.500	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.00000	0.00000
MS-2A18	2	8.625	80	0.500	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.00000	0.00000
MS-2A18P US	52	8.625	80	0.500	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.00000	0.00000

Component Name	Geom Code	Pipe Size OD (in)	Sch.	Tnom (in)	Tinit (in)	Tcrit (in)	Br/Small End OD (in)	Br/Small Tnom (in)	R / D Ratio	Orient Angle (Deg.)	Pipe Length (in)	Spec/Type/ Class	Material Cr. (%)	Cu. (%)	Mo. (%)	Design Press. (psig)	Design Temp. (Deg. F)	Op. Press. (psig)	Op. Temp. (Deg. F)	Op. Enth. (Btu/lbm)	Op. Qual.	Flow Rate U/S Mn. (Mlbm/hr)	D/S Mn.	Br.
MS-2A18P DS	52	8.625	80	0.500	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.00000	0.00000
MS-2A19	2	8.625	80	0.500	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.00000	0.00000
MS-2A19P US	52	8.625	80	0.500	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.00000	0.00000
MS-2A19P DS	52	8.625	80	0.500	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.00000	0.00000
MS-2A20	2	8.625	80	0.500	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.00000	0.00000
MS-2A20P	52	8.625	80	0.500	0.000	0.000	0.000	0.000	0.00	180	0.00	A106/B/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.00000	0.00000
MS-2A21	2	8.625	80	0.500	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.00000	0.00000
MS-2A21P US	52	8.625	80	0.500	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.00000	0.00000
MS-2A21P DS	52	8.625	80	0.500	0.560	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.00000	0.00000
MS-2A21R	17	8.625	80	0.500	0.000	0.000	6.625	0.432	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.11183	0.00000
MS-2A22	4	6.625	80	0.432	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.00000	0.00000
MS-2A22P US	54	6.625	80	0.432	0.000	0.000	0.000	0.000	0.00	180	0.00	A106/B/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.00000	0.00000
MS-2A22P DS	54	6.625	80	0.432	0.000	0.000	0.000	0.000	0.00	180	0.00	A106/B/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.00000	0.00000
MS-2A23	2	6.625	80	0.432	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.00000	0.00000
MS-2A23P-1	52	6.625	80	0.432	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.00000	0.00000
MS-2A23R	17	6.625	80	0.432	0.000	0.000	4.500	0.337	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.11183	0.00000

Line Name : MSD47-1-RHDT23A to CV

MS-3A11N	31	6.625	80	0.432	0.000	0.000	0.000	0.000	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.00000	0.00000
MS-3A11P	61	6.625	80	0.432	0.000	0.000	0.000	0.000	0.00	180	0.00	A106/B/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.00000	0.00000
MS-3A11	1	6.625	80	0.432	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.00000	0.00000
MS-3A12P	51	6.625	80	0.432	0.000	0.000	0.000	0.000	0.00	112	0.00	A106/B/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.00000	0.00000
MS-3A12	1	6.625	80	0.432	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.00000	0.00000
MS-3A13P	51	6.625	80	0.432	0.000	0.000	0.000	0.000	0.00	180	0.00	A106/B/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.00000	0.00000
MS-3A13	2	6.625	80	0.432	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.00000	0.00000
MS-3A14P	52	6.625	80	0.432	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.00000	0.00000
MS-3A14	1	6.625	80	0.432	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.00000	0.00000
MS-3A15P-1 US	51	6.625	80	0.432	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.00000	0.00000
MS-3A15P-1 DS	51	6.625	80	0.432	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.00000	0.00000
MS-3A15	2	6.625	80	0.432	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.00000	0.00000
MS-3A15P	52	6.625	80	0.432	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.00000	0.00000
MS-3A16	2	6.625	80	0.432	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.00000	0.00000
MS-3A16P	52	6.625	80	0.432	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.00000	0.00000
MS-3A16FE	6	6.625	80	0.432	0.000	0.000	0.000	0.000	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.00000	0.00000
MS-3A17P-1	56	6.625	80	0.432	0.000	0.000	0.000	0.000	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.00000	0.00000
MS-3A17R	18	8.625	80	0.500	0.000	0.000	6.625	0.432	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.00000	0.00000
MS-3A17	4	8.625	80	0.500	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.00000	0.00000
MS-3A17P	54	8.625	80	0.500	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.00000	0.00000
MS-3A18	2	8.625	80	0.500	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.00000	0.00000
MS-3A18P	52	8.625	80	0.500	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.00000	0.00000
MS-3A19	15	8.625	80	0.500	0.000	0.000	0.000	0.000	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.11183	0.00000
MS-3A19R	7	8.625	80	0.500	0.000	0.000	6.625	0.432	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.00000	0.00000
MS-3A19P US	57	6.625	80	0.432	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.00000	0.00000
MS-3A19P DS	57	6.625	80	0.432	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.00000	0.00000
MS-3A20	2	6.625	80	0.432	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.00000	0.00000
MS-3A21	4	6.625	80	0.432	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.00000	0.00000
MS-3A21P US	52	6.625	80	0.432	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.00000	0.00000
MS-3A21P DS	52	6.625	80	0.432	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.00000	0.00000
MS-3A22	2	6.625	80	0.432	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.00000	0.00000
MS-3A22P	52	6.625	80	0.432	0.000	0.000	0.000	0.000	0.00	180	0.00	A106/B/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.00000	0.00000
MS-3A23	2	6.625	80	0.432	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.00000	0.00000
MS-3A23R	7	6.625	80	0.432	0.000	0.000	4.500	0.337	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.00000	0.00000

Line Name : MSD47-2-RHDT23A CV to FWH26

MS-3A-VALVE-LCV-1104B	24	4.500	80	0.337	0.000	0.000	0.000	0.000	0.00	90	0.00	A216/WCB/	0.00	0.00	0.00	1085	600	343	0	462.300	0.000	0.11183	0.00000	0.00000
MS-3A24R	18	6.625	80	0.432	0.000	0.000	4.500	0.337	0.00	90	0.00	A-403/WP316/	0.00	0.00	0.00	1085	600	343	0	462.300	0.000	0.11183	0.11183	0.00000
MS-3A23P	68	6.625	80	0.432	0.000	0.000	0.000	0.000	0.00	90	0.00	A-312/TP316/	0.00	0.00	0.00	1085	600	343	0	462.300	0.000	0.11183	0.00000	0.00000
MS-3A24	2	6.625	80	0.432	0.000	0.000	0.000	0.000	1.50	90	0.00	A-403/WP316/	0.00	0.00	0.00	1085	600	343	0	462.300	0.000	0.11183	0.00000	0.00000
MS-3A24P	52	6.625	80	0.432	0.000	0.000	0.000	0.000	0.00	180	0.00	A-312/TP316/	0.00	0.00	0.00	1085	600	343	0	462.300	0.000	0.11183	0.00000	0.00000

Component Name	Geom Code	Pipe Size OD (in)	Sch.	Tnom (in)	Tinit (in)	Tcrit (in)	Br/Small End OD (in)	Br/Small Tnom (in)	R / D Ratio	Orient Angle (Deg.)	Pipe Length (in)	Spec/Type/ Class	Material Cr. (%)	Cu. (%)	Mo. (%)	Design Press. (psig)	Design Temp. (Deg. F)	Op. Press. (psig)	Op. Temp. (Deg. F)	Op. Enth. (Btu/lbm)	Op. Qual.	Flow Rate U/S Mn. (Mlbm/hr)	D/S Mn.	Br.
MS-3A25	1	6.625	80	0.432	0.000	0.000	0.000	0.000	1.50	90	0.00	A-403/WP316/	0.00	0.00	0.00	1085	600	343	0	462.300	0.000	0.11183	0.00000	0.00000
MS-3A25P	51	6.625	80	0.432	0.000	0.000	0.000	0.000	0.00	135	0.00	A-312/TP316/	0.00	0.00	0.00	1085	600	343	0	462.300	0.000	0.11183	0.00000	0.00000

Line Name : MSD48A-1-RHDT21B to CV

MS-1B11N	31	6.625	80	0.432	0.000	0.000	0.000	0.000	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.00000	0.00000
MS-1B11P-1	61	6.625	80	0.432	0.000	0.000	0.000	0.000	0.00	180	0.00	A106/B/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.00000	0.00000
MS-1B11	2	6.625	80	0.432	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.00000	0.00000
MS-1B11P	52	6.625	80	0.432	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.00000	0.00000
MS-1B12	2	6.625	80	0.432	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.00000	0.00000
MS-1B12P	52	6.625	80	0.432	0.000	0.000	0.000	0.000	0.00	135	0.00	A106/B/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.00000	0.00000
MS-1B13	1	6.625	80	0.432	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.00000	0.00000
MS-1B13P	51	6.625	80	0.432	0.000	0.000	0.000	0.000	0.00	180	0.00	A106/B/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.00000	0.00000
MS-1B14	2	6.625	80	0.432	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.00000	0.00000
MS-1B14P	52	6.625	80	0.432	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.00000	0.00000
MS-1B14FE	6	6.625	80	0.432	0.000	0.000	0.000	0.000	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.00000	0.00000
MS-1B14P-1 US	56	6.625	80	0.432	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.00000	0.00000
MS-1B15	2	6.625	80	0.432	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.00000	0.00000
MS-1B15P	52	6.625	80	0.432	0.000	0.000	0.000	0.000	0.00	180	0.00	A106/B/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.00000	0.00000
MS-1B16	2	6.625	80	0.432	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.00000	0.00000
MS-1B16P	52	6.625	80	0.432	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.00000	0.00000
MS-1B17	1	6.625	80	0.432	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.00000	0.00000
MS-1B17P	51	6.625	80	0.432	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.00000	0.00000
MS-1B18	2	6.625	80	0.432	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.00000	0.00000
MS-1B18P DS	52	6.625	80	0.432	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.00000	0.00000
MS-1B19	2	6.625	80	0.432	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.00000	0.00000
MS-1B19P US	52	6.625	80	0.432	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.00000	0.00000
MS-1B20	2	6.625	80	0.432	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.00000	0.00000
MS-1B20P-1	52	8.625	80	0.500	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.00000	0.00000
MS-1B20R	18	8.625	80	0.500	0.000	0.000	6.625	0.432	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.00000	0.00000
MS-1B20P	68	8.625	80	0.500	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.00000	0.00000
MS-1B21	2	8.625	80	0.500	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.00000	0.00000
MS-1B22	4	8.625	80	0.500	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.00000	0.00000
MS-1B22P	54	8.625	80	0.500	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.00000	0.00000
MS-1B23	2	8.625	80	0.500	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.00000	0.00000
MS-1B23P	52	8.625	80	0.500	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.00000	0.00000
MS-1B23R	17	8.625	80	0.500	0.000	0.000	6.625	0.432	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.11183	0.00000
MS-1B24	15	6.625	80	0.432	0.000	0.000	6.625	0.432	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.11183	0.00000
MS-1B24P US	65	6.625	80	0.432	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
MS-1B25	4	6.625	80	0.432	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.00000	0.00000
MS-1B25P	54	6.625	80	0.432	0.000	0.000	0.000	0.000	0.00	45	0.00	A106/B/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.00000	0.00000
MS-1B26	2	6.625	80	0.432	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.00000	0.00000
MS-1B27P-1	52	6.625	80	0.432	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.00000	0.00000
MS-1B27	2	6.625	80	0.432	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.00000	0.00000
MS-1B27P	52	6.625	80	0.432	0.000	0.000	0.000	0.000	0.00	180	0.00	A106/B/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.00000	0.00000
MS-1B28	2	6.625	80	0.432	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.00000	0.00000
MS-1B28P	52	6.625	80	0.432	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.00000	0.00000
MS-1B29	2	6.625	80	0.432	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.00000	0.00000
MS-1B29P	52	6.625	80	0.432	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.00000	0.00000
MS-1B30	2	6.625	80	0.432	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.00000	0.00000
MS-1B30P	52	6.625	80	0.432	0.000	0.000	0.000	0.000	0.00	135	0.00	A106/B/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.00000	0.00000
MS-1B31	1	6.625	80	0.432	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.00000	0.00000
MS-1B31P US	51	6.625	80	0.432	0.000	0.000	0.000	0.000	0.00	180	0.00	A106/B/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.00000	0.00000
MS-1B31P DS	51	6.625	80	0.432	0.000	0.000	0.000	0.000	0.00	180	0.00	A106/B/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.00000	0.00000
MS-1B32	2	6.625	80	0.432	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.00000	0.00000
MS-1B32P US	52	6.625	80	0.432	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.00000	0.00000
MS-1B32P DS	52	6.625	80	0.432	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.00000	0.00000
MS-1B33	2	6.625	80	0.432	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.00000	0.00000
MS-1B33P	52	6.625	80	0.432	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.00000	0.00000
MS-1B33R	17	6.625	80	0.432	0.000	0.000	4.500	0.337	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.11183	0.00000

Component Name	Geom Code	Pipe Size OD (in)	Sch.	Tnom (in)	Tinit (in)	Tcrit (in)	Br/Small End OD (in)	Br/Small Tnom (in)	R / D Ratio	Orient Angle (Deg.)	Pipe Length (in)	Spec/Type/ Class	Material Cr. (%)	Cu. (%)	Mo. (%)	Design Press. (psig)	Design Temp. (Deg. F)	Op. Press. (psig)	Op. Temp. (Deg. F)	Op. Enth. (Btu/lbm)	Op. Qual.	Flow Rate U/S Mn. (Mlbm/hr)	D/S Mn.	Br.
Line Name : MSD48B-1-RHDT21B CV to FWH26																								
MS-1B-VALVE-LCV-1105	24	4.500	80	0.337	0.000	0.000	0.000	0.000	0.00	90	0.00	A216/WCB/	0.00	0.00	0.00	1085	600	343	0	462.300	0.000	0.11183	0.00000	0.00000
MS-1B34R	18	6.625	80	0.432	0.000	0.000	4.500	0.337	0.00	90	0.00	A-403/WP316/	0.00	0.00	0.00	1085	600	343	0	462.300	0.000	0.11183	0.11183	0.00000
MS-1B33P-1	68	6.625	80	0.432	0.000	0.000	0.000	0.000	0.00	90	0.00	A-312/TP316/	0.00	0.00	0.00	1085	600	343	0	462.300	0.000	0.11183	0.00000	0.00000
MS-1B34	2	6.625	80	0.432	0.000	0.000	0.000	0.000	1.50	90	0.00	A-403/WP316/	0.00	0.00	0.00	1085	600	343	0	462.300	0.000	0.11183	0.00000	0.00000
MS-1B34P US	52	6.625	80	0.432	0.000	0.000	0.000	0.000	0.00	180	0.00	A106/B/	0.00	0.00	0.00	1085	600	343	0	462.300	0.000	0.11183	0.00000	0.00000
MS-1B34P DS	52	6.625	80	0.432	0.000	0.000	0.000	0.000	0.00	180	0.00	A106/B/	0.00	0.00	0.00	1085	600	343	0	462.300	0.000	0.11183	0.00000	0.00000
MS-1B35	1	6.625	80	0.432	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	600	343	0	462.300	0.000	0.11183	0.00000	0.00000
MS-1B35P	51	6.625	80	0.432	0.000	0.000	0.000	0.000	0.00	135	0.00	A106/B/	0.00	0.00	0.00	1085	600	343	0	462.300	0.000	0.11183	0.00000	0.00000
Line Name : MSD48B-2-RHDT B HDR to FWH26																								
MS-1B36P US	62	8.625	80	0.500	0.000	0.000	0.000	0.000	0.00	180	0.00	A106/B/	0.00	0.00	0.00	1085	600	343	0	462.300	0.000	0.22367	0.00000	0.00000
MS-1B36P DS	62	8.625	80	0.500	0.000	0.000	0.000	0.000	0.00	180	0.00	A106/B/	0.00	0.00	0.00	1085	600	343	0	462.300	0.000	0.22367	0.00000	0.00000
MS-1B37	2	8.625	80	0.500	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	600	343	0	462.300	0.000	0.22367	0.00000	0.00000
MS-1B37P	52	8.625	80	0.500	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	1085	600	343	0	462.300	0.000	0.22367	0.00000	0.00000
MS-1B38	1	8.625	80	0.500	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	600	343	0	462.300	0.000	0.22367	0.00000	0.00000
MS-1B38P	51	8.625	80	0.500	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	1085	600	343	0	462.300	0.000	0.22367	0.00000	0.00000
MS-1B39	1	8.625	80	0.500	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	600	343	0	462.300	0.000	0.22367	0.00000	0.00000
MS-1B39P	51	8.625	80	0.500	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	1085	600	343	0	462.300	0.000	0.22367	0.00000	0.00000
Line Name : MSD49A-1-RHDT22B to CV																								
MS-2B11N	31	6.625	80	0.432	0.000	0.000	0.000	0.000	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.00000	0.00000
MS-2B11P-1	61	6.625	80	0.432	0.000	0.000	0.000	0.000	0.00	180	0.00	A106/B/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.00000	0.00000
MS-2B11	2	6.625	80	0.432	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.00000	0.00000
MS-2B11P	52	6.625	80	0.432	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.00000	0.00000
MS-2B12	2	6.625	80	0.432	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.00000	0.00000
MS-2B12P	52	6.625	80	0.432	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.00000	0.00000
MS-2B13	2	6.625	80	0.432	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.00000	0.00000
MS-2B13P	52	6.625	80	0.432	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.00000	0.00000
MS-2B14	2	6.625	80	0.432	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.00000	0.00000
MS-2B14P	52	6.625	80	0.432	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.00000	0.00000
MS-2B15	2	6.625	80	0.432	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.00000	0.00000
MS-2B15P	52	6.625	80	0.432	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.00000	0.00000
MS-2B16	1	6.625	80	0.432	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.00000	0.00000
MS-2B16P	51	6.625	80	0.432	0.000	0.000	0.000	0.000	0.00	135	0.00	A106/B/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.00000	0.00000
MS-2B17	1	6.625	80	0.432	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.00000	0.00000
MS-2B17P-3	51	6.625	80	0.432	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.00000	0.00000
MS-2B17R-1	18	10.750	80	0.594	0.000	0.000	6.625	0.432	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.00000	0.00000
MS-2B17P DS	68	10.750	80	0.594	0.636	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.00000	0.00000
MS-2B17R-2	17	10.750	80	0.594	0.000	0.000	6.625	0.432	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.11183	0.00000
MS-2B17P-1 US	67	6.625	80	0.432	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.00000	0.00000
MS-2B17FE	6	6.625	80	0.432	0.000	0.000	0.000	0.000	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.00000	0.00000
MS-2B17P-2 DS	56	6.625	80	0.432	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.00000	0.00000
MS-2B18R	18	10.750	80	0.594	0.000	0.000	6.625	0.432	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.11183	0.00000
MS-2B18P-1 US	68	10.750	80	0.594	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.00000	0.00000
MS-2B18	2	10.750	80	0.594	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.00000	0.00000
MS-2B18P	52	10.750	80	0.594	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.00000	0.00000
MS-2B19	1	10.750	80	0.594	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.00000	0.00000
MS-2B19P	51	10.750	80	0.594	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.00000	0.00000
MS-2B20	2	10.750	80	0.594	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.00000	0.00000
MS-2B20P	52	10.750	80	0.594	0.000	0.000	0.000	0.000	0.00	180	0.00	A106/B/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.00000	0.00000
MS-2B21	2	10.750	80	0.594	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.00000	0.00000
MS-2B21P US	52	10.750	80	0.594	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.00000	0.00000
MS-2B21P DS	52	10.750	80	0.594	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.00000	0.00000
MS-2B22	2	10.750	80	0.594	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.00000	0.00000
MS-TEMP-01P	52	10.750	80	0.594	0.000	0.000	0.000	0.000	0.00	180	0.00	A106/B/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.00000	0.00000
MS-TEMP-02E	2	10.750	80	0.594	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.00000	0.00000
MS-TEMP-03P	52	10.750	80	0.594	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.00000	0.00000

Component Name	Geom Code	Pipe Size OD (in)	Sch.	Tnom (in)	Tinit (in)	Tcrit (in)	Br/Small End OD (in)	Br/Small Tnom (in)	R / D Ratio	Orient Angle (Deg.)	Pipe Length (in)	Spec/Type/ Class	Material Cr. (%)	Cu. (%)	Mo. (%)	Design Press. (psig)	Design Temp. (Deg. F)	Op. Press. (psig)	Op. Temp. (Deg. F)	Op. Enth. (Btu/lbm)	Op. Qual.	Flow Rate U/S Mn. (Mlbm/hr)	D/S Mn.	Br.
MS-TEMP-04P	52	10.750	80	0.594	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.00000	0.00000
MS-TEMP-05E	2	10.750	80	0.594	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.00000	0.00000
MS-TEMP-06P	52	10.750	80	0.594	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.00000	0.00000
MS-TEMP-07E	2	10.750	80	0.594	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.00000	0.00000
MS-TEMP-08P	52	10.750	80	0.594	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.00000	0.00000

Line Name : MSD49C-1-RHDT B HDR to FWH26

MS-2B33P	62	10.750	80	0.594	0.000	0.000	0.000	0.000	0.00	90	0.00	A335/P22/	0.00	0.00	0.00	1085	600	343	0	462.300	0.000	0.33550	0.00000	0.00000
MS-2B35	2	10.750	80	0.594	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WP22/	0.00	0.00	0.00	1085	600	343	0	462.300	0.000	0.33550	0.00000	0.00000
MS-2B35P	52	10.750	80	0.594	0.000	0.000	0.000	0.000	0.00	0	0.00	A335/P22/	0.00	0.00	0.00	1085	600	343	0	462.300	0.000	0.33550	0.00000	0.00000
MS-2B36	4	10.750	80	0.594	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WP22/	0.00	0.00	0.00	1085	600	343	0	462.300	0.000	0.33550	0.00000	0.00000
MS-2B36P US	54	10.750	80	0.594	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	1085	600	343	0	462.300	0.000	0.33550	0.00000	0.00000
MS-2B36P DS	54	10.750	80	0.594	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	1085	600	343	0	462.300	0.000	0.33550	0.00000	0.00000
MS-2B63	14	10.750	80	0.594	0.000	0.000	6.625	0.432	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	600	343	0	462.300	0.000	0.33550	0.22367	0.11183

Line Name : MSD49C-2-RHDT B HDR to FWH26C

MS-2B63P	64	6.625	80	0.432	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	1085	600	343	0	462.300	0.000	0.11183	0.00000	0.00000
MS-2B50	4	6.625	80	0.432	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	600	343	0	462.300	0.000	0.11183	0.00000	0.00000
MS-2B50P US	54	6.625	80	0.432	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	1085	600	343	0	462.300	0.000	0.11183	0.00000	0.00000
MS-2B51	2	6.625	80	0.432	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	600	343	0	462.300	0.000	0.11183	0.00000	0.00000
MS-2B52	4	6.625	80	0.432	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	600	343	0	462.300	0.000	0.11183	0.00000	0.00000
MS-2B52P US	54	6.625	80	0.432	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	1085	600	343	0	462.300	0.000	0.11183	0.00000	0.00000
MS-2B52P DS	54	6.625	80	0.432	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	1085	600	343	0	462.300	0.000	0.11183	0.00000	0.00000
MS-2B53	2	6.625	80	0.432	0.000	0.000	0.000	0.000	1.50	90	0.00	A-403/WP316/	0.00	0.00	0.00	1085	600	343	0	462.300	0.000	0.11183	0.00000	0.00000
MS-2B-VALVE-MS-15-2	22	6.625	80	0.432	0.000	0.000	0.000	0.000	0.00	90	0.00	A216/WCB/	0.00	0.00	0.00	1085	600	343	0	462.300	0.000	0.11183	0.00000	0.00000
MS-2B53P US	58	6.625	80	0.432	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	1085	600	343	0	462.300	0.000	0.11183	0.00000	0.00000
MS-2B53P DS	58	6.625	80	0.432	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	1085	600	343	0	462.300	0.000	0.11183	0.00000	0.00000
MS-2B54	12	6.625	80	0.432	0.000	0.000	6.625	0.432	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	600	343	0	462.300	0.000	0.11183	0.00000	0.11183
MS-2B54P	62	6.625	80	0.432	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	1085	600	343	0	462.300	0.000	0.11183	0.00000	0.00000
MS-2B55	12	6.625	80	0.432	0.000	0.000	6.625	0.432	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	600	343	0	462.300	0.000	0.11183	0.00000	0.11183
MS-2B55P	62	6.625	80	0.432	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	1085	600	343	0	462.300	0.000	0.11183	0.00000	0.00000
MS-2B55R	18	8.625	80	0.500	0.000	0.000	6.625	0.432	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	600	343	0	462.300	0.000	0.11183	0.11183	0.00000

Line Name : MSD49C-3-RHDT B HDR

MS-2B63P-1 US	64	10.750	80	0.594	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	1085	600	343	0	462.300	0.000	0.22367	0.00000	0.00000
MS-2B64	14	10.750	80	0.594	0.000	0.000	6.625	0.432	0.00	90	0.00	A106/B/	0.00	0.00	0.00	1085	600	343	0	462.300	0.000	0.22367	0.11183	0.11183

Line Name : MSD49C-4-RHDT B HDR to FWH26B

MS-2B64P	64	6.625	80	0.432	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	1085	600	343	0	462.300	0.000	0.11183	0.00000	0.00000
MS-2B44	4	6.625	80	0.432	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	600	343	0	462.300	0.000	0.11183	0.00000	0.00000
MS-2B44P US	54	6.625	80	0.432	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	1085	600	343	0	462.300	0.000	0.11183	0.00000	0.00000
MS-2B45	2	6.625	80	0.432	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	600	343	0	462.300	0.000	0.11183	0.00000	0.00000
MS-2B45P US	52	6.625	80	0.432	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	1085	600	343	0	462.300	0.000	0.11183	0.00000	0.00000
MS-2B45P DS	52	6.625	80	0.432	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	1085	600	343	0	462.300	0.000	0.11183	0.00000	0.00000
MS-2B46	2	6.625	80	0.432	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	600	343	0	462.300	0.000	0.11183	0.00000	0.00000
MS-2B46P US	52	6.625	80	0.432	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	1085	600	343	0	462.300	0.000	0.11183	0.00000	0.00000
MS-2B46P DS	52	6.625	80	0.432	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	1085	600	343	0	462.300	0.000	0.11183	0.00000	0.00000
MS-2B47	2	6.625	80	0.432	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	600	343	0	462.300	0.000	0.11183	0.00000	0.00000
MS-2B-VALVE-MS-15-1	22	6.625	80	0.432	0.000	0.000	0.000	0.000	0.00	90	0.00	A216/WCB/	0.00	0.00	0.00	1085	600	343	0	462.300	0.000	0.11183	0.00000	0.00000
MS-2B47P US	58	6.625	80	0.432	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	1085	600	343	0	462.300	0.000	0.11183	0.00000	0.00000
MS-2B47P DS	58	6.625	80	0.432	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	1085	600	343	0	462.300	0.000	0.11183	0.00000	0.00000
MS-2B48	12	6.625	80	0.432	0.000	0.000	0.000	0.000	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	600	343	0	462.300	0.000	0.11183	0.00000	0.11183
MS-2B48P US	62	6.625	80	0.432	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	1085	600	343	0	462.300	0.000	0.11183	0.00000	0.00000
MS-2B48P DS	62	6.625	80	0.432	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	1085	600	343	0	462.300	0.000	0.11183	0.00000	0.00000
MS-2B49	12	6.625	80	0.432	0.000	0.000	6.625	0.432	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	600	343	0	462.300	0.000	0.11183	0.00000	0.11183
MS-2B49P	62	6.625	80	0.432	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	1085	600	343	0	462.300	0.000	0.11183	0.00000	0.00000

Component Name	Geom Code	Pipe Size OD (in)	Sch.	Tnom (in)	Tinit (in)	Tcrit (in)	Br/Small End OD (in)	Br/Small Tnom (in)	R / D Ratio	Orient Angle (Deg.)	Pipe Length (in)	Spec/Type/ Class	Material Cr. (%)	Cu. (%)	Mo. (%)	Design Press. (psig)	Design Temp. (Deg. F)	Op. Press. (psig)	Op. Temp. (Deg. F)	Op. Enth. (Btu/lbm)	Op. Qual.	Flow Rate U/S Mn. (Mlbm/hr)	D/S Mn.	Br.
MS-2B49R	18	8.625	80	0.500	0.000	0.000	6.625	0.432	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	600	343	0	462.300	0.000	0.11183	0.11183	0.00000
MS-2B49N	30	8.625	80	0.500	0.000	0.000	0.000	0.000	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	600	343	0	462.300	0.000	0.11183	0.00000	0.00000

Line Name : MSD49C-5-RHDT B HDR to FWH26A

MS-2B64R	7	10.750	80	0.594	0.000	0.000	6.625	0.432	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	600	343	0	462.300	0.000	0.11183	0.11183	0.00000
MS-2B64P-1 US	57	6.625	80	0.432	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	1085	600	343	0	462.300	0.000	0.11183	0.00000	0.00000
MS-2B37	2	6.625	80	0.432	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	600	343	0	462.300	0.000	0.11183	0.00000	0.00000
MS-2B37P	52	6.625	80	0.432	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	1085	600	343	0	462.300	0.000	0.11183	0.00000	0.00000
MS-2B38	4	6.625	80	0.432	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	600	343	0	462.300	0.000	0.11183	0.00000	0.00000
MS-2B38P	54	6.625	80	0.432	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	1085	600	343	0	462.300	0.000	0.11183	0.00000	0.00000
MS-2B39	2	6.625	80	0.432	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	600	343	0	462.300	0.000	0.11183	0.00000	0.00000
MS-2B39P	52	6.625	80	0.432	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	1085	600	343	0	462.300	0.000	0.11183	0.00000	0.00000
MS-2B40	2	6.625	80	0.432	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	600	343	0	462.300	0.000	0.11183	0.00000	0.00000
MS-2B40P US	52	6.625	80	0.432	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	1085	600	343	0	462.300	0.000	0.11183	0.00000	0.00000
MS-2B40P DS	52	6.625	80	0.432	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	1085	600	343	0	462.300	0.000	0.11183	0.00000	0.00000
MS-2B41	2	6.625	80	0.432	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	600	343	0	462.300	0.000	0.11183	0.00000	0.00000
MS-2B-VALVE-MS-15	22	6.625	80	0.432	0.000	0.000	0.000	0.000	0.00	90	0.00	A216/WCB/	0.00	0.00	0.00	1085	600	343	0	462.300	0.000	0.11183	0.00000	0.00000
MS-2B41P	58	6.625	80	0.432	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	1085	600	343	0	462.300	0.000	0.11183	0.00000	0.00000
MS-2B42	12	6.625	80	0.432	0.000	0.000	6.625	0.432	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	600	343	0	462.300	0.000	0.11183	0.00000	0.11183
MS-2B42P US	62	6.625	80	0.432	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	1085	600	343	0	462.300	0.000	0.11183	0.00000	0.00000
MS-2B42P DS	62	6.625	80	0.432	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	1085	600	343	0	462.300	0.000	0.11183	0.00000	0.00000
MS-2B43	12	6.625	80	0.432	0.000	0.000	6.625	0.432	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	600	343	0	462.300	0.000	0.11183	0.00000	0.11183
MS-2B43P	62	6.625	80	0.432	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	1085	600	343	0	462.300	0.000	0.11183	0.00000	0.00000
MS-2B43R	18	8.625	80	0.500	0.000	0.000	6.625	0.432	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	600	343	0	462.300	0.000	0.11183	0.11183	0.00000
MS-2B43N	30	6.625	80	0.432	0.000	0.000	0.000	0.000	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	600	343	0	462.300	0.000	0.11183	0.00000	0.00000

Line Name : MSD50A-1-RHDT23B to CV

MS-3B11N	31	6.625	80	0.432	0.000	0.000	0.000	0.000	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.00000	0.00000
MS-3B11P-1	61	6.625	80	0.432	0.000	0.000	0.000	0.000	0.00	180	0.00	A106/B/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.00000	0.00000
MS-3B11	1	6.625	80	0.432	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.00000	0.00000
MS-3B11P	51	6.625	80	0.432	0.000	0.000	0.000	0.000	0.00	135	0.00	A106/B/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.00000	0.00000
MS-3B12	2	6.625	80	0.432	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.00000	0.00000
MS-3B12P	52	6.625	80	0.432	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.00000	0.00000
MS-3B13	2	6.625	80	0.432	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.00000	0.00000
MS-3B13P	52	6.625	80	0.432	0.000	0.000	0.000	0.000	0.00	180	0.00	A106/B/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.00000	0.00000
MS-3B14	4	6.625	80	0.432	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.00000	0.00000
MS-3B14P	54	6.625	80	0.432	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.00000	0.00000
MS-3B15	2	6.625	80	0.432	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.00000	0.00000
MS-3B16	4	6.625	80	0.432	0.000	0.000	0.000	0.000	1.00	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.00000	0.00000
MS-3B16P	54	6.625	80	0.432	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.00000	0.00000
MS-3B17	2	6.625	80	0.432	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.00000	0.00000
MS-3B17P	52	6.625	80	0.432	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.00000	0.00000
MS-3B18	2	6.625	80	0.432	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.00000	0.00000
MS-3B18P DS	52	6.625	80	0.432	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.00000	0.00000
MS-3B19	2	6.625	80	0.432	0.457	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.00000	0.00000
MS-3B20	4	6.625	80	0.432	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.00000	0.00000
MS-3B20P US	54	6.625	80	0.432	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.00000	0.00000
MS-3B21	2	6.625	80	0.432	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.00000	0.00000
MS-3B21P	52	6.625	80	0.432	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.00000	0.00000
MS-3B21FE	6	6.625	80	0.432	0.000	0.000	0.000	0.000	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.00000	0.00000
MS-3B21P-1	56	6.625	80	0.432	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.00000	0.00000
MS-3B22	2	6.625	80	0.432	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.00000	0.00000
MS-3B22P US	52	6.625	80	0.432	0.000	0.000	0.000	0.000	0.00	180	0.00	A106/B/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.00000	0.00000
MS-3B22P DS	52	6.625	80	0.432	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.00000	0.00000
MS-3B23	2	6.625	80	0.432	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.00000	0.00000
MS-3B23P US	52	6.625	80	0.432	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.00000	0.00000
MS-3B24	1	6.625	80	0.432	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.00000	0.00000
MS-3B24P US	51	6.625	80	0.432	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.00000	0.00000
MS-3B24P DS	51	6.625	80	0.432	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.00000	0.00000
MS-3B25	2	6.625	80	0.432	0.441	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.00000	0.00000

Component Name	Geom Code	Pipe Size OD (in)	Sch.	Tnom (in)	Tinit (in)	Tcrit (in)	Br/Small End OD (in)	Br/Small Tnom (in)	R / D Ratio	Orient Angle (Deg.)	Pipe Length (in)	Spec/Type/ Class	Material Cr. (%)	Cu. (%)	Mo. (%)	Design Press. (psig)	Design Temp. (Deg. F)	Op. Press. (psig)	Op. Temp. (Deg. F)	Op. Enth. (Btu/lbm)	Op. Qual.	Flow Rate U/S Mn. (Mlbm/hr)	D/S Mn.	Br.
MS-3B25P	51	6.625	80	0.432	0.437	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.00000	0.00000
MS-3B26	2	6.625	80	0.432	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.00000	0.00000
MS-3B26P US	52	6.625	80	0.432	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.00000	0.00000
MS-3B27	2	6.625	80	0.432	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.00000	0.00000
MS-3B27P	52	6.625	80	0.432	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.00000	0.00000
MS-3B28	2	6.625	80	0.432	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.00000	0.00000
MS-3B28P	52	6.625	80	0.432	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.00000	0.00000
MS-3B29	2	6.625	80	0.432	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.00000	0.00000
MS-3B29P	52	6.625	80	0.432	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.00000	0.00000
MS-3B30	2	6.625	80	0.432	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.00000	0.00000
MS-3B30P	52	6.625	80	0.432	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.00000	0.00000
MS-3B31	2	6.625	80	0.432	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.00000	0.00000
MS-3B31P	52	6.625	80	0.432	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.00000	0.00000
MS-3B30	2	6.625	80	0.432	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.00000	0.00000
MS-3B30P	52	6.625	80	0.432	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.00000	0.00000
MS-3B31	2	6.625	80	0.432	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.00000	0.00000
MS-3B31P	52	6.625	80	0.432	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.00000	0.00000
MS-3B32	2	6.625	80	0.432	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.00000	0.00000
MS-3B32P	52	6.625	80	0.432	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.00000	0.00000
MS-3B33	2	6.625	80	0.432	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.00000	0.00000
MS-3B33P	52	6.625	80	0.432	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.00000	0.00000
MS-3B34	12	6.625	80	0.432	0.000	0.000	6.625	0.432	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.00000	0.11183
MS-3B34P	62	6.625	80	0.432	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.00000	0.00000
MS-3B35	2	6.625	80	0.432	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.00000	0.00000
MS-3B35P	52	6.625	80	0.432	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.00000	0.00000
MS-3B36	2	6.625	80	0.432	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.00000	0.00000
MS-3B36P	52	6.625	80	0.432	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.00000	0.00000
MS-3B37	2	6.625	80	0.432	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.00000	0.00000
MS-3B37P	52	6.625	80	0.432	0.000	0.000	0.000	0.000	0.00	180	0.00	A106/B/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.00000	0.00000
MS-3B38	2	6.625	80	0.432	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.00000	0.00000
MS-3B38P US	52	6.625	80	0.432	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.00000	0.00000
MS-3B38P DS	52	6.625	80	0.432	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.00000	0.00000
MS-3B39	2	6.625	80	0.432	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.00000	0.00000
MS-3B40	4	6.625	80	0.432	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.00000	0.00000
MS-3B40R	18	8.625	80	0.500	0.000	0.000	6.625	0.432	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.11183	0.00000
MS-3B40P	68	8.625	80	0.500	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.00000	0.00000
MS-3B41	2	8.625	80	0.500	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.00000	0.00000
MS-3B41P US	52	8.625	80	0.500	0.000	0.000	0.000	0.000	0.00	180	0.00	A106/B/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.00000	0.00000
MS-3B41P DS	52	8.625	80	0.500	0.000	0.000	0.000	0.000	0.00	180	0.00	A106/B/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.00000	0.00000
MS-3B42	2	8.625	80	0.500	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.00000	0.00000
MS-3B42P US	52	8.625	80	0.500	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.00000	0.00000
MS-3B42P DS	52	8.625	80	0.500	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.00000	0.00000
MS-3B42R	17	8.625	80	0.500	0.000	0.000	4.500	0.337	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.11183	0.11183	0.00000

Line Name : MSD50C-1-RHDT23B CV to FWH26

MS-3B-VALVE-LCV-1105B	24	4.500	80	0.337	0.000	0.000	0.000	0.000	0.00	90	0.00	A216/WCB/	0.00	0.00	0.00	1085	600	343	0	462.300	0.000	0.11183	0.00000	0.00000
MS-3B43R	18	8.625	80	0.500	0.000	0.000	4.500	0.337	0.00	90	0.00	A-403/WP316/	0.00	0.00	0.00	1085	600	343	0	462.300	0.000	0.11183	0.11183	0.00000
MS-3B43	4	8.625	80	0.500	0.000	0.000	0.000	0.000	1.50	90	0.00	A-403/WP316/	0.00	0.00	0.00	1085	600	343	0	462.300	0.000	0.11183	0.00000	0.00000
MS-3B43P US	54	8.625	80	0.500	0.000	0.000	0.000	0.000	0.00	180	0.00	A106/B/	0.00	0.00	0.00	1085	600	343	0	462.300	0.000	0.11183	0.00000	0.00000

Line Name : MSD48B-2-RHDT B HDR to FWH26

MS-1B36	12	8.625	80	0.500	0.000	0.000	6.625	0.432	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	600	343	0	462.300	0.000	0.11183	0.22367	0.11183

Line Name : PD-MPS A to Separating Tk A

TEMP07	31	20.000	STD	0.375	0.000	0.000	0.000	0.000	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	250	400	0	0	0.000	0.000	0.00000	0.00000	0.00000

Component Name	Geom Code	Pipe Size OD (in)	Sch.	Tnom (in)	Tinit (in)	Tcrit (in)	Br/Small End OD (in)	Br/Small Tnom (in)	R / D Ratio	Orient Angle (Deg.)	Pipe Length (in)	Spec/Type/ Class	Material Cr. (%)	Cu. (%)	Mo. (%)	Design Press. (psig)	Design Temp. (Deg. F)	Op. Press. (psig)	Op. Temp. (Deg. F)	Op. Enth. (Btu/lbm)	Op. Qual.	Flow Rate U/S Mn. (Mlbm/hr)	D/S Mn. (Mlbm/hr)	Br.
Line Name : PD-MPS B to Separating Tk A																								
TEMP08	31	20.000	STD	0.375	0.000	0.000	0.000	0.000	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	250	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
Line Name : PD-MPS C to Separating Tk B																								
TEMP09	31	20.000	STD	0.375	0.000	0.000	0.000	0.000	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	250	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
Line Name : PD-MPS D to Separating Tk B																								
TEMP10	31	20.000	STD	0.375	0.000	0.000	0.000	0.000	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	250	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
Line Name : PD-Sep Tk A Drn thru LCV-5198																								
STD-271-Valve-MPS-749	22	10.750	40	0.365	0.000	0.000	0.000	0.000	0.00	90	0.00	A216/WCB/	0.00	0.00	0.00	250	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
STD-271-22P	58	10.750	40	0.365	0.000	0.000	0.000	0.000	0.00	90	0.00	A53/BS/	0.00	0.00	0.00	250	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
STD-271-23R	17	10.750	40	0.365	0.000	0.000	6.625	0.280	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	250	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
STD-271-Valve-LCV5198	24	6.625	40	0.280	0.000	0.000	0.000	0.000	0.00	90	0.00	A216/WCB/	0.00	0.00	0.00	250	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
STD-271-24R	18	10.750	40	0.365	0.000	0.000	6.625	0.280	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	250	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
STD-271-25P	68	10.750	40	0.365	0.000	0.000	0.000	0.000	0.00	90	0.00	A53/BS/	0.00	0.00	0.00	250	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
STD-271-Valve-MPS-750	22	10.750	40	0.365	0.000	0.000	0.000	0.000	0.00	90	0.00	A216/WCB/	0.00	0.00	0.00	250	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
STD-271-26P	58	10.750	40	0.365	0.000	0.000	0.000	0.000	0.00	90	0.00	A53/BS/	0.00	0.00	0.00	250	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
STD-271-26T	12	10.750	40	0.365	0.000	0.000	0.000	0.000	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	250	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
Line Name : PD-Sep Tk A Drn thru LCV-5199																								
STD-271-16E	4	10.750	40	0.365	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	250	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
STD-271-Valve-MPS-747	22	10.750	40	0.365	0.000	0.000	0.000	0.000	0.00	90	0.00	A216/WCB/	0.00	0.00	0.00	250	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
STD-271-17P	58	10.750	40	0.365	0.000	0.000	0.000	0.000	0.00	90	0.00	A53/BS/	0.00	0.00	0.00	250	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
STD-271-18R	17	10.750	40	0.365	0.000	0.000	6.625	0.280	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	250	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
STD-271-Valve-LCV5199	24	10.750	40	0.365	0.000	0.000	0.000	0.000	0.00	90	0.00	A216/WCB/	0.00	0.00	0.00	250	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
STD-271-19R	18	10.750	40	0.365	0.000	0.000	6.625	0.280	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	250	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
STD-271-20P	68	10.750	40	0.365	0.000	0.000	0.000	0.000	0.00	90	0.00	A53/BS/	0.00	0.00	0.00	250	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
STD-271-Valve-MPS-748	22	10.750	40	0.365	0.000	0.000	0.000	0.000	0.00	90	0.00	A216/WCB/	0.00	0.00	0.00	250	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
STD-271-21E	4	10.750	40	0.365	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	250	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
STD-271-21P	54	10.750	40	0.365	0.000	0.000	0.000	0.000	0.00	90	0.00	A53/BS/	0.00	0.00	0.00	250	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
Line Name : PD-Sep Tk A Drn to Ctrl Valves																								
STD-271-1N	31	10.750	40	0.365	0.000	0.000	0.000	0.000	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	250	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
STD-271-2E	4	10.750	40	0.365	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	250	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
STD-271-3P	54	10.750	40	0.365	0.000	0.000	0.000	0.000	0.00	90	0.00	A53/BS/	0.00	0.00	0.00	250	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
STD-271-4E	2	10.750	40	0.365	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	250	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
STD-271-5P	52	10.750	40	0.365	0.000	0.000	0.000	0.000	0.00	90	0.00	A53/BS/	0.00	0.00	0.00	250	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
STD-271-6E	2	10.750	40	0.365	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	250	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
STD-249-FE-5344	6	10.750	40	0.365	0.000	0.000	0.000	0.000	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	250	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
STD-271-7P	56	10.750	40	0.365	0.000	0.000	0.000	0.000	0.00	90	0.00	A53/BS/	0.00	0.00	0.00	250	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
STD-271-8E	2	10.750	40	0.365	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	250	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
STD-271-9P	52	10.750	40	0.365	0.000	0.000	0.000	0.000	0.00	90	0.00	A53/BS/	0.00	0.00	0.00	250	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
STD-271-10E	1	10.750	40	0.365	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	250	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
STD-271-11P	51	10.750	40	0.365	0.000	0.000	0.000	0.000	0.00	90	0.00	A53/BS/	0.00	0.00	0.00	250	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
STD-271-12E	1	10.750	40	0.365	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	250	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
STD-271-13P	51	10.750	40	0.365	0.000	0.000	0.000	0.000	0.00	90	0.00	A53/BS/	0.00	0.00	0.00	250	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
STD-271-14E	2	10.750	40	0.365	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	250	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
Line Name : PD-Sep Tk A Drn thru LCV-5198																								
STD-271-15T	13	10.750	40	0.365	0.000	0.000	0.000	0.000	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	250	400	0	0	0.000	0.000	0.00000	0.00000	0.00000

Component Name	Geom Code	Pipe Size OD (in)	Sch.	Tnom (in)	Tinit (in)	Tcrit (in)	Br/Small End OD (in)	Br/Small Tnom (in)	R / D Ratio	Orient Angle (Deg.)	Pipe Length (in)	Spec/Type/ Class	Material Cr. (%)	Cu. (%)	Mo. (%)	Design Press. (psig)	Design Temp. (Deg. F)	Op. Press. (psig)	Op. Temp. (Deg. F)	Op. Enth. (Btu/lbm)	Op. Qual.	Flow Rate U/S Mn. (Mlbm/hr)	D/S Mn. (Mlbm/hr)	Br.
Line Name : PD-Sep Tk A Valves to HD Tk																								
STD-271-27P	62	10.750	40	0.365	0.000	0.000	0.000	0.000	0.00	90	0.00	A53/BS/	0.00	0.00	0.00	250	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
STD-271-28N	30	10.750	40	0.365	0.000	0.000	0.000	0.000	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	250	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
Line Name : PD-Sep Tk B Drn thru LCV-5205																								
STD-249-Valve-MPS-778	22	10.750	40	0.365	0.000	0.000	0.000	0.000	0.00	90	0.00	A216/WCB/	0.00	0.00	0.00	250	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
STD-249-17P	58	10.750	40	0.365	0.000	0.000	0.000	0.000	0.00	90	0.00	A53/BS/	0.00	0.00	0.00	250	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
STD-249-18R	17	10.750	40	0.365	0.000	0.000	6.625	0.280	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	250	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
STD-249-Valve-LCV5205	24	6.625	40	0.280	0.000	0.000	0.000	0.000	0.00	90	0.00	A216/WCB/	0.00	0.00	0.00	250	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
STD-249-19R	18	10.750	40	0.365	0.000	0.000	6.625	0.280	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	250	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
STD-249-20P	68	10.750	40	0.365	0.000	0.000	0.000	0.000	0.00	90	0.00	A53/BS/	0.00	0.00	0.00	250	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
STD-249-Valve-MPS-779	22	10.750	40	0.365	0.000	0.000	0.000	0.000	0.00	90	0.00	A216/WCB/	0.00	0.00	0.00	250	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
STD-249-21P	58	10.750	40	0.365	0.000	0.000	0.000	0.000	0.00	90	0.00	A53/BS/	0.00	0.00	0.00	250	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
STD-249-29T	12	10.750	40	0.365	0.000	0.000	0.000	0.000	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	250	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
Line Name : PD-Sep Tk B Drn thru LCV-5206																								
STD-249-22E	4	10.750	40	0.365	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	250	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
STD-249-Valve-MPS-776	22	10.750	40	0.365	0.000	0.000	0.000	0.000	0.00	90	0.00	A216/WCB/	0.00	0.00	0.00	250	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
STD-249-23P	58	10.750	40	0.365	0.000	0.000	0.000	0.000	0.00	90	0.00	A53/BS/	0.00	0.00	0.00	250	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
STD-249-24R	17	10.750	40	0.365	0.000	0.000	6.625	0.280	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	250	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
STD-249-Valve-LCV5206	24	6.625	40	0.280	0.000	0.000	0.000	0.000	0.00	90	0.00	A216/WCB/	0.00	0.00	0.00	250	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
STD-94-25R	18	10.750	40	0.365	0.000	0.000	6.625	0.280	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	250	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
STD-94-26P	68	10.750	40	0.365	0.000	0.000	0.000	0.000	0.00	90	0.00	A53/BS/	0.00	0.00	0.00	250	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
STD-249-Valve-MPS-777	22	10.750	40	0.365	0.000	0.000	0.000	0.000	0.00	90	0.00	A216/WCB/	0.00	0.00	0.00	250	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
STD-249-27P	58	10.750	40	0.365	0.000	0.000	0.000	0.000	0.00	90	0.00	A53/BS/	0.00	0.00	0.00	250	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
STD-249-28E	2	10.750	40	0.365	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	250	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
STD-249-28P	52	10.750	40	0.365	0.000	0.000	0.000	0.000	0.00	90	0.00	A53/BS/	0.00	0.00	0.00	250	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
Line Name : PD-Sep Tk B Drn to Ctrl Valves																								
STD-249-1N	31	10.750	40	0.365	0.000	0.000	0.000	0.000	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	250	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
STD-249-1P	61	10.750	40	0.365	0.000	0.000	0.000	0.000	0.00	180	0.00	A53/BS/	0.00	0.00	0.00	250	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
STD-249-2E	2	10.750	40	0.365	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	250	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
STD-249-3P	52	10.750	40	0.365	0.000	0.000	0.000	0.000	0.00	90	0.00	A53/BS/	0.00	0.00	0.00	250	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
STD-249-4E	2	10.750	40	0.365	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	250	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
STD-249-5P	52	10.750	40	0.365	0.000	0.000	0.000	0.000	0.00	90	0.00	A53/BS/	0.00	0.00	0.00	250	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
STD-249-6E	2	10.750	40	0.365	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	250	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
STD-249-FE-5345	6	10.750	40	0.365	0.000	0.000	0.000	0.000	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	250	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
STD-249-7P	56	10.750	40	0.365	0.000	0.000	0.000	0.000	0.00	90	0.00	A53/BS/	0.00	0.00	0.00	250	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
STD-249-8E	2	10.750	40	0.365	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	250	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
STD-249-9P	52	10.750	40	0.365	0.000	0.000	0.000	0.000	0.00	90	0.00	A53/BS/	0.00	0.00	0.00	250	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
STD-249-10E	1	10.750	40	0.365	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	250	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
STD-249-11P	51	10.750	40	0.365	0.000	0.000	0.000	0.000	0.00	90	0.00	A53/BS/	0.00	0.00	0.00	250	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
STD-249-12E	1	10.750	40	0.365	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	250	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
STD-249-13P	51	10.750	40	0.365	0.000	0.000	0.000	0.000	0.00	90	0.00	A53/BS/	0.00	0.00	0.00	250	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
STD-249-14E	2	10.750	40	0.365	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	250	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
STD-249-15P	52	10.750	40	0.365	0.000	0.000	0.000	0.000	0.00	90	0.00	A53/BS/	0.00	0.00	0.00	250	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
Line Name : PD-Sep Tk B Drn thru LCV-5205																								
STD-249-16T	13	10.750	40	0.365	0.000	0.000	0.000	0.000	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	250	400	0	0	0.000	0.000	0.00000	0.00000	0.00000

Component Name	Geom Code	Pipe Size OD (in)	Sch.	Tnom (in)	Tinit (in)	Tcrit (in)	Br/Small End OD (in)	Br/Small Tnom (in)	R / D Ratio	Orient Angle (Deg.)	Pipe Length (in)	Spec/Type/ Class	Material Cr. (%)	Cu. (%)	Mo. (%)	Design Press. (psig)	Design Temp. (Deg. F)	Op. Press. (psig)	Op. Temp. (Deg. F)	Op. Enth. (Btu/lbm)	Op. Qual.	Flow Rate U/S Mn. (Mlbm/hr)	D/S Mn.	Br.
Line Name : PD-Sep Tk B Valves to HD Tk																								
STD-249-30P	62	10.750	40	0.365	0.000	0.000	0.000	0.000	0.00	90	0.00	A53/BS/	0.00	0.00	0.00	250	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
STD-249-31N	30	10.750	40	0.365	0.000	0.000	0.000	0.000	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	250	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
Line Name : SG51-1-CONT PEN to SGBFTK																								
MS46-1P-1	52	2.375	80	0.218	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	1085	556	665	0	430.000	0.000	0.00384	0.00000	0.00000
MS46-1	2	2.375	80	0.218	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	556	665	0	430.000	0.000	0.00384	0.00000	0.00000
MS46-1P US	52	2.375	80	0.218	0.248	0.000	0.000	0.000	0.00	180	0.00	A106/B/	0.00	0.00	0.00	1085	556	665	0	430.000	0.000	0.00384	0.00000	0.00000
MS46-1P DS	52	2.375	80	0.218	0.244	0.000	0.000	0.000	0.00	180	0.00	A106/B/	0.00	0.00	0.00	1085	556	665	0	430.000	0.000	0.00384	0.00000	0.00000
MS46-2	2	2.375	80	0.218	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	556	665	0	430.000	0.000	0.00384	0.00000	0.00000
MS46-2P-3	52	2.375	80	0.218	0.256	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	1085	556	665	0	430.000	0.000	0.00384	0.00000	0.00000
MS46-VALVE-PCV-1214	22	2.375	80	0.218	0.000	0.000	0.000	0.000	0.00	90	0.00	A105//	0.00	0.00	0.00	1085	556	665	0	430.000	0.000	0.00384	0.00000	0.00000
MS46-2P	58	2.375	80	0.218	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	1085	556	665	0	430.000	0.000	0.00384	0.00000	0.00000
MS46-VALVE-PCV-1214A	22	2.375	80	0.218	0.000	0.000	0.000	0.000	0.00	90	0.00	A105//	0.00	0.00	0.00	1085	556	665	0	430.000	0.000	0.00384	0.00000	0.00000
MS46-2P-1	58	2.375	80	0.218	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	1085	556	665	0	430.000	0.000	0.00384	0.00000	0.00000
MS46-2R	18	3.500	80	0.300	0.000	0.000	2.375	0.218	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	556	665	0	430.000	0.000	0.00384	0.00384	0.00000
MS46-2P-2	68	3.500	80	0.300	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	1085	556	665	0	430.000	0.000	0.00384	0.00000	0.00000
MS46-3	3	3.500	80	0.300	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	556	665	0	430.000	0.000	0.00384	0.00000	0.00000
MS46-3P	53	3.500	80	0.300	0.000	0.000	0.000	0.000	0.00	180	0.00	A106/B/	0.00	0.00	0.00	1085	556	665	0	430.000	0.000	0.00384	0.00000	0.00000
MS46-3FE	6	3.500	80	0.300	0.000	0.000	0.000	0.000	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	556	665	0	430.000	0.000	0.00384	0.00000	0.00000
MS46-4P-1 US	56	3.500	80	0.300	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	1085	556	665	0	430.000	0.000	0.00384	0.00000	0.00000
MS46-4P-1 DS	56	3.500	80	0.300	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	1085	556	665	0	430.000	0.000	0.00384	0.00000	0.00000
MS46-4	16	3.500	80	0.300	0.317	0.000	2.375	0.218	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	556	665	0	430.000	0.000	0.00384	0.00384	0.00000
MS46-4P US	66	2.375	80	0.218	0.000	0.000	0.000	0.000	0.00	180	0.00	A106/B/	0.00	0.00	0.00	1085	556	665	0	430.000	0.000	0.00384	0.00000	0.00000
MS46-4P DS	66	2.375	80	0.218	0.000	0.000	0.000	0.000	0.00	180	0.00	A106/B/	0.00	0.00	0.00	1085	556	665	0	430.000	0.000	0.00384	0.00000	0.00000
MS46-5	2	2.375	80	0.218	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	556	665	0	430.000	0.000	0.00384	0.00000	0.00000
MS46-5P	52	2.375	80	0.218	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	1085	556	665	0	430.000	0.000	0.00384	0.00000	0.00000
MS46-VALVE-MS-131-A	22	2.375	80	0.218	0.000	0.000	0.000	0.000	0.00	90	0.00	A216/WCB/	0.00	0.00	0.00	1085	556	665	0	430.000	0.000	0.00384	0.00000	0.00000
MS46-6P1	52	2.375	80	0.218	0.000	0.000	0.000	0.000	0.00	180	0.00	A106/B/	0.00	0.00	0.00	1085	556	665	0	430.000	0.000	0.00384	0.00000	0.00000
MS46-6	1	2.375	80	0.218	0.000	0.000	0.000	0.000	1.50	90	0.00	A105//	0.00	0.00	0.00	1085	556	665	0	430.000	0.000	0.00384	0.00000	0.00000
MS46-6P US	52	2.375	80	0.218	0.000	0.000	0.000	0.000	0.00	180	0.00	A106/B/	0.00	0.00	0.00	1085	556	665	0	430.000	0.000	0.00384	0.00000	0.00000
MS46-6-1	1	2.375	80	0.218	0.000	0.000	0.000	0.000	1.50	90	0.00	A105//	0.00	0.00	0.00	1085	556	665	0	430.000	0.000	0.00384	0.00000	0.00000
MS46-6-1P	58	2.375	80	0.218	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	1085	556	665	0	430.000	0.000	0.00384	0.00384	0.00000
MS46-7	15	2.375	80	0.218	0.000	0.000	0.000	0.000	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	556	665	0	430.000	0.000	0.00384	0.00384	0.00000
MS46-VALVE-HCV-5046	24	2.375	80	0.218	0.000	0.000	0.000	0.000	0.00	90	0.00	A216/WCB/	0.00	0.00	0.00	1085	556	665	0	430.000	0.000	0.00384	0.00000	0.00000
MS46-7R	7	2.375	80	0.218	0.000	0.000	1.315	0.179	0.00	90	0.00	A-182/F316L/	0.00	0.00	0.00	1085	556	665	0	430.000	0.000	0.00384	0.00384	0.00000
MS46-7P2	67	1.315	80	0.179	0.000	0.000	0.000	0.000	0.00	90	0.00	A-312/TP316/	0.00	0.00	0.00	1085	556	665	0	430.000	0.000	0.00384	0.00000	0.00000
MS46-Valve-MS-71-A	20	1.315	80	0.179	0.000	0.000	0.000	0.000	0.00	90	0.00	A105//	0.00	0.00	0.00	1085	556	665	0	430.000	0.000	0.00384	0.00000	0.00000
Line Name : SG52-1-CONT PEN to SGBFTK																								
MS45-1P-1	52	2.375	80	0.218	0.252	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	1085	556	665	0	430.000	0.000	0.00384	0.00000	0.00000
MS45-1	2	2.375	80	0.218	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	556	665	0	430.000	0.000	0.00384	0.00000	0.00000
MS45-1P	52	2.375	80	0.218	0.000	0.000	0.000	0.000	0.00	180	0.00	A106/B/	0.00	0.00	0.00	1085	556	665	0	430.000	0.000	0.00384	0.00000	0.00000
MS45-2	2	2.375	80	0.218	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	556	665	0	430.000	0.000	0.00384	0.00000	0.00000
MS45-VALVE-PCV-1215	22	2.375	80	0.218	0.000	0.000	0.000	0.000	0.00	90	0.00	A105//	0.00	0.00	0.00	1085	556	665	0	430.000	0.000	0.00384	0.00000	0.00000
MS45-2P	58	2.375	80	0.218	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	1085	556	665	0	430.000	0.000	0.00384	0.00000	0.00000
MS45-VALVE-PCV-1215A	22	2.375	80	0.218	0.000	0.000	0.000	0.000	0.00	90	0.00	A105//	0.00	0.00	0.00	1085	556	665	0	430.000	0.000	0.00384	0.00000	0.00000
MS45-2P-1	58	2.375	80	0.218	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	1085	556	665	0	430.000	0.000	0.00384	0.00000	0.00000
MS45-2R	18	3.500	80	0.300	0.000	0.000	2.375	0.218	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	556	665	0	430.000	0.000	0.00384	0.00384	0.00000
MS45-2P-3	68	3.500	80	0.300	0.000	0.000	0.000	0.000	0.00	180	0.00	A106/B/	0.00	0.00	0.00	1085	556	665	0	430.000	0.000	0.00384	0.00000	0.00000
MS45-3	3	3.500	80	0.300	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	556	665	0	430.000	0.000	0.00384	0.00000	0.00000
MS45-3P	53	3.500	80	0.300	0.000	0.000	0.000	0.000	0.00	180	0.00	A106/B/	0.00	0.00	0.00	1085	556	665	0	430.000	0.000	0.00384	0.00000	0.00000
MS45-3FE	6	3.500	80	0.300	0.000	0.000	0.000	0.000	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	556	665	0	430.000	0.000	0.00384	0.00000	0.00000
MS45-3P-1	56	3.500	80	0.300	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	1085	556	665	0	430.000	0.000	0.00384	0.00000	0.00000
MS45-4	1	3.500	80	0.300	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	556	665	0	430.000	0.000	0.00384	0.00000	0.00000
MS45-4P	51	3.500	80	0.300	0.000	0.000	0.000	0.000	0.00	180	0.00	A106/B/	0.00	0.00	0.00	1085	556	665	0	430.000	0.000	0.00384	0.00000	0.00000

Component Name	Geom Code	Pipe Size OD (in)	Sch.	Tnom (in)	Tinit (in)	Tcrit (in)	Br/Small End OD (in)	Br/Small Tnom (in)	R / D Ratio	Orient Angle (Deg.)	Pipe Length (in)	Spec/Type/ Class	Material Cr. (%)	Cu. (%)	Mo. (%)	Design Press. (psig)	Design Temp. (Deg. F)	Op. Press. (psig)	Op. Temp. (Deg. F)	Op. Enth. (Btu/lbm)	Op. Qual.	Flow Rate U/S Mn. (Mlbm/hr)	D/S Mn.	Br.
MS45-5	16	3.500	80	0.300	0.000	0.000	2.375	0.218	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	556	665	0	430.000	0.000	0.00384	0.00000	0.00000
MS45-VALVE-MS-131-B	22	2.375	80	0.218	0.000	0.000	0.000	0.000	0.00	90	0.00	A216/WCB/	0.00	0.00	0.00	1085	556	665	0	430.000	0.000	0.00384	0.00000	0.00000
MS45-5P	66	2.375	80	0.218	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	1085	556	665	0	430.000	0.000	0.00384	0.00000	0.00000
MS45-6	2	2.375	80	0.218	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	556	665	0	430.000	0.000	0.00384	0.00000	0.00000
MS45-6P	58	2.375	80	0.218	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	1085	556	665	0	430.000	0.000	0.00384	0.00000	0.00000
MS45-7	15	2.375	80	0.218	0.000	0.000	0.000	0.000	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	556	665	0	430.000	0.000	0.00384	0.00384	0.00000
MS45-VALVE-HCV-5047	22	2.375	80	0.218	0.000	0.000	0.000	0.000	0.00	90	0.00	A216/WCB/	0.00	0.00	0.00	1085	556	665	0	430.000	0.000	0.00384	0.00000	0.00000
MS45-7R	7	2.375	80	0.218	0.000	0.000	1.315	0.179	0.00	90	0.00	A-182/F316L/	0.00	0.00	0.00	1085	556	665	0	430.000	0.000	0.00384	0.00384	0.00000
MS45-7P2	57	1.315	80	0.179	0.000	0.000	0.000	0.000	0.00	90	0.00	A-312/TP316/	0.00	0.00	0.00	1085	556	665	0	430.000	0.000	0.00384	0.00000	0.00000
MS45-VALVE-MS-71-B	20	1.315	80	0.179	0.000	0.000	0.000	0.000	0.00	90	0.00	A105//	0.00	0.00	0.00	1085	556	665	0	430.000	0.000	0.00384	0.00000	0.00000

Line Name : SG53-1-CONT PEN to SGBFTK

MS47-1P-1	52	2.375	80	0.218	0.240	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	1085	556	665	0	430.000	0.000	0.00384	0.00000	0.00000
MS47-1	2	2.375	80	0.218	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	556	665	0	430.000	0.000	0.00384	0.00000	0.00000
MS47-1P	52	2.375	80	0.218	0.000	0.000	0.000	0.000	0.00	180	0.00	A106/B/	0.00	0.00	0.00	1085	556	665	0	430.000	0.000	0.00384	0.00000	0.00000
MS47-2	2	2.375	80	0.218	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	556	665	0	430.000	0.000	0.00384	0.00000	0.00000
MS47-VALVE-PCV-1216	22	2.375	80	0.218	0.000	0.000	0.000	0.000	0.00	90	0.00	A105//	0.00	0.00	0.00	1085	556	665	0	430.000	0.000	0.00384	0.00000	0.00000
MS47-2P	58	2.375	80	0.218	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	1085	556	665	0	430.000	0.000	0.00384	0.00000	0.00000
MS47-VALVE-PCV-1216A	22	2.375	80	0.218	0.000	0.000	0.000	0.000	0.00	90	0.00	A105//	0.00	0.00	0.00	1085	556	665	0	430.000	0.000	0.00384	0.00000	0.00000
MS47-2P-1	58	2.375	80	0.218	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	1085	556	665	0	430.000	0.000	0.00384	0.00000	0.00000
MS47-2R	18	3.500	80	0.300	0.000	0.000	2.375	0.218	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	556	665	0	430.000	0.000	0.00384	0.00384	0.00000
MS47-2P-2	68	3.500	80	0.300	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	1085	556	665	0	430.000	0.000	0.00384	0.00000	0.00000
MS47-3	3	3.500	80	0.300	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	556	665	0	430.000	0.000	0.00384	0.00000	0.00000
MS47-3P	53	3.500	80	0.300	0.000	0.000	0.000	0.000	0.00	180	0.00	A106/B/	0.00	0.00	0.00	1085	556	665	0	430.000	0.000	0.00384	0.00000	0.00000
MS47-3FE	6	3.500	80	0.300	0.000	0.000	0.000	0.000	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	556	665	0	430.000	0.000	0.00384	0.00000	0.00000
MS47-4P-1	56	3.500	80	0.300	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	1085	556	665	0	430.000	0.000	0.00384	0.00000	0.00000
MS47-4	16	3.500	80	0.300	0.000	0.000	2.375	0.218	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	556	665	0	430.000	0.000	0.00384	0.00000	0.00000
MS47-4P DS	66	2.375	80	0.218	0.000	0.000	0.000	0.000	0.00	180	0.00	A106/B/	0.00	0.00	0.00	1085	556	665	0	430.000	0.000	0.00384	0.00000	0.00000
MS47-5	2	2.375	80	0.218	0.299	0.000	0.000	0.000	1.50	90	0.00	A105//	0.00	0.00	0.00	1085	556	665	0	430.000	0.000	0.00384	0.00000	0.00000
MS47-5P US	52	2.375	80	0.218	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	1085	556	665	0	430.000	0.000	0.00384	0.00000	0.00000
MS47-6	1	2.375	80	0.218	0.000	0.000	0.000	0.000	1.50	90	0.00	A105//	0.00	0.00	0.00	1085	556	665	0	430.000	0.000	0.00384	0.00000	0.00000
MS47-6P	51	2.375	80	0.218	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	1085	556	665	0	430.000	0.000	0.00384	0.00000	0.00000
MS47-VALVE-MS-131C	22	2.375	80	0.218	0.000	0.000	0.000	0.000	0.00	90	0.00	A216/WCB/	0.00	0.00	0.00	1085	556	665	0	430.000	0.000	0.00384	0.00000	0.00000
MS47-7	2	2.375	80	0.218	0.000	0.000	0.000	0.000	1.50	90	0.00	A105//	0.00	0.00	0.00	1085	556	665	0	430.000	0.000	0.00384	0.00000	0.00000
MS47-7P1	52	2.375	80	0.218	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	1085	556	665	0	430.000	0.000	0.00384	0.00000	0.00000
MS47-8	2	2.375	80	0.218	0.000	0.000	0.000	0.000	1.50	90	0.00	A105//	0.00	0.00	0.00	1085	556	665	0	430.000	0.000	0.00384	0.00000	0.00000
MS47-8VP	52	2.375	80	0.218	0.236	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	1085	556	665	0	430.000	0.000	0.00384	0.00000	0.00000
MS47-9	15	2.375	80	0.218	0.000	0.000	0.000	0.000	0.00	90	0.00	A105//	0.00	0.00	0.00	1085	556	665	0	430.000	0.000	0.00384	0.00384	0.00000
MS47-9P	62	2.375	80	0.218	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	1085	556	665	0	430.000	0.000	0.00384	0.00000	0.00000
MS47-10	2	2.375	80	0.218	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	556	665	0	430.000	0.000	0.00384	0.00000	0.00000
MS47-VALVE-HCV-5048	22	2.375	80	0.218	0.000	0.000	0.000	0.000	0.00	90	0.00	A216/WCB/	0.00	0.00	0.00	1085	556	665	0	430.000	0.000	0.00384	0.00000	0.00000
MS47-10P1	52	2.375	80	0.218	0.000	0.000	0.000	0.000	0.00	90	0.00	SA-31/TP304/	0.00	0.00	0.00	1085	556	665	0	430.000	0.000	0.00384	0.00000	0.00000
MS47-10R	17	2.375	80	0.218	0.000	0.000	1.315	0.179	0.00	90	0.00	SA-18/F304L/	0.00	0.00	0.00	1085	556	665	0	430.000	0.000	0.00384	0.00384	0.00000
MS47-10P2	67	1.315	80	0.179	0.000	0.000	0.000	0.000	0.00	90	0.00	SA-31/TP316/	0.00	0.00	0.00	1085	556	665	0	430.000	0.000	0.00384	0.00000	0.00000
MS47-VALVE-MS-71C	20	1.315	80	0.179	0.000	0.000	0.000	0.000	0.00	90	0.00	A105//	0.00	0.00	0.00	1085	556	665	0	430.000	0.000	0.00384	0.00000	0.00000

Line Name : SG54-1-CONT PEN to SGBFTK

MS48-1P-1	52	2.375	80	0.218	0.000	0.000	0.000	0.000	0.00	90	63.00	A106/B/	0.00	0.00	0.00	1085	556	665	0	430.000	0.000	0.00783	0.00000	0.00000
MS48-1	2	2.375	80	0.218	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	556	665	0	430.000	0.000	0.00384	0.00000	0.00000
MS48-1P	52	2.375	80	0.218	0.000	0.000	0.000	0.000	0.00	180	0.00	A106/B/	0.00	0.00	0.00	1085	556	665	0	430.000	0.000	0.00384	0.00000	0.00000
MS48-2	2	2.375	80	0.218	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	556	665	0	430.000	0.000	0.00384	0.00000	0.00000
MS48-1P-2	52	2.375	80	0.218	0.000	0.000	0.000	0.000	0.00	90	63.00	A106/B/	0.00	0.00	0.00	1085	556	665	0	430.000	0.000	0.00783	0.00000	0.00000
MS48-VALVE-PCV-1217	22	2.375	80	0.218	0.000	0.000	0.000	0.000	0.00	90	0.00	A105//	0.00	0.00	0.00	1085	556	665	0	430.000	0.000	0.00384	0.00000	0.00000
MS48-2P	58	2.375	80	0.218	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	1085	556	665	0	430.000	0.000	0.00384	0.00000	0.00000
MS48-VALVE-PCV-1217A	22	2.375	80	0.218	0.000	0.000	0.000	0.000	0.00	90	0.00	A105//	0.00	0.00	0.00	1085	556	665	0	430.000	0.000	0.00384	0.00000	0.00000
MS48-2P-1	58	2.375	80	0.218	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	1085	556	665	0	430.000	0.000	0.00384	0.00000	0.00000
MS48-2R	18	3.500	80	0.300	0.000	0.000	2.375	0.218	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	556	665	0	430.000	0.000	0.00384	0.00384	0.00000
MS48-2P-2	68	3.500	80	0.300	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	1085	556	665	0	430.000	0.000	0.00384	0.00000	0.00000

Component Name	Geom Code	Pipe Size OD (in)	Sch.	Tnom (in)	Tinit (in)	Tcrit (in)	Br/Small End OD (in)	Br/Small Tnom (in)	R / D Ratio	Orient Angle (Deg.)	Pipe Length (in)	Spec/Type/ Class	Material Cr. (%)	Cu. (%)	Mo. (%)	Design Press. (psig)	Design Temp. (Deg. F)	Op. Press. (psig)	Op. Temp. (Deg. F)	Op. Enth. (Btu/lbm)	Op. Qual.	Flow Rate U/S Mn. (Mlbm/hr)	D/S Mn.	Br.
MS48-3	2	3.500	80	0.300	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	556	665	0	430.000	0.000	0.00384	0.00000	0.00000
MS48-3P	52	3.500	80	0.300	0.000	0.000	0.000	0.000	0.00	180	0.00	A106/B/	0.00	0.00	0.00	1085	556	665	0	430.000	0.000	0.00384	0.00000	0.00000
MS48-3FE	6	3.500	80	0.300	0.000	0.000	0.000	0.000	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	556	665	0	430.000	0.000	0.00384	0.00000	0.00000
MS48-4P-1	56	3.500	80	0.300	0.000	0.000	0.000	0.000	0.00	180	0.00	A106/B/	0.00	0.00	0.00	1085	556	665	0	430.000	0.000	0.00384	0.00000	0.00000
MS48-4	16	3.500	80	0.300	0.000	0.000	2.375	0.218	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	556	665	0	430.000	0.000	0.00384	0.00000	0.00000
MS48-4P	66	2.375	80	0.218	0.000	0.000	0.000	0.000	0.00	180	0.00	A106/B/	0.00	0.00	0.00	1085	556	665	0	430.000	0.000	0.00384	0.00000	0.00000
MS48-5	2	2.375	80	0.218	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	556	665	0	430.000	0.000	0.00384	0.00000	0.00000
MS48-5P	52	2.375	80	0.218	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	1085	556	665	0	430.000	0.000	0.00384	0.00000	0.00000
MS48-6	1	2.375	80	0.218	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	556	665	0	430.000	0.000	0.00384	0.00000	0.00000
MS48-6P	51	2.375	80	0.218	0.000	0.000	0.000	0.000	0.00	180	0.00	A106/B/	0.00	0.00	0.00	1085	556	665	0	430.000	0.000	0.00384	0.00000	0.00000
MS48-VALVE-MS-131D	22	2.375	80	0.218	0.000	0.000	0.000	0.000	0.00	90	0.00	A216/WCB/	0.00	0.00	0.00	1085	556	665	0	430.000	0.000	0.00384	0.00000	0.00000
MS48-7	2	2.375	80	0.218	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	556	665	0	430.000	0.000	0.00384	0.00000	0.00000
MS48-7P1	52	2.375	80	0.218	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	1085	556	665	0	430.000	0.000	0.00384	0.00000	0.00000
MS48-8	2	2.375	80	0.218	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	556	665	0	430.000	0.000	0.00384	0.00000	0.00000
MS48-8VP	52	2.375	80	0.218	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	1085	556	665	0	430.000	0.000	0.00384	0.00000	0.00000
MS48-9	15	2.375	80	0.218	0.000	0.000	0.000	0.000	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	556	665	0	430.000	0.000	0.00384	0.00384	0.00000
MS48-9P	65	2.375	80	0.218	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	1085	556	665	0	430.000	0.000	0.00384	0.00000	0.00000
MS48-10	2	2.375	80	0.218	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	556	665	0	430.000	0.000	0.00384	0.00000	0.00000
MS48-10P1	52	2.375	80	0.218	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	1085	556	665	0	430.000	0.000	0.00384	0.00000	0.00000
MS48-VALVE-HCV-5049	22	2.375	80	0.218	0.000	0.000	0.000	0.000	0.00	90	0.00	A216/WCB/	0.00	0.00	0.00	1085	556	665	0	430.000	0.000	0.00384	0.00000	0.00000
MS48-10R	17	2.375	80	0.218	0.000	0.000	1.315	0.179	0.00	90	0.00	SA-18/F304L/	0.00	0.00	0.00	1085	556	665	0	430.000	0.000	0.00384	0.00384	0.00000
MS48-10P2	67	1.315	80	0.179	0.000	0.000	0.000	0.000	0.00	90	0.00	SA-31/TP316/	0.00	0.00	0.00	1085	556	665	0	430.000	0.000	0.00384	0.00000	0.00000
MS48-VALVE-MS-71D	20	1.315	80	0.179	0.000	0.000	0.000	0.000	0.00	90	0.00	A105//	0.00	0.00	0.00	1085	556	665	0	430.000	0.000	0.00384	0.00000	0.00000

Line Name : xES4-1-4THPT ES to FWH 24A

4EXA-15N	31	20.000	10	0.250	0.000	0.000	0.000	0.000	0.00	90	0.00	A516/60/	0.00	0.00	0.00	100	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
4EXA-15P	61	20.000	10	0.250	0.000	0.000	0.000	0.000	0.00	180	0.00	A53/BE/	0.00	0.00	0.00	100	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
4EXA-15	2	20.000	10	0.250	0.000	0.000	0.000	0.000	1.00	90	0.00	A234/WPB/	0.00	0.00	0.00	100	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
4EXA-14X	6	20.000	10	0.250	0.000	0.000	0.000	0.000	0.00	90	0.00	A53/BS/	0.00	0.00	0.00	100	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
4EXA-14P US	56	20.000	10	0.250	0.000	0.000	0.000	0.000	0.00	90	0.00	A53/BE/	0.00	0.00	0.00	100	400	0	0	0.000	0.000	0.17556	0.00000	0.00000
4EXA-14P US1	56	20.000	10	0.250	0.386	0.000	0.000	0.000	0.00	90	0.00	A53/BE/	0.00	0.00	0.00	100	400	0	0	0.000	0.000	0.17556	0.00000	0.00000
4EXA-14P DS	56	20.000	10	0.250	0.291	0.000	0.000	0.000	0.00	0	0.00	A53/BE/	0.00	0.00	0.00	100	400	59	0	1172.900	0.000	0.00000	0.00000	0.00000
4EXA-14	3	20.000	10	0.250	0.294	0.000	0.000	0.000	1.50	90	0.00	A234/WP22/	0.00	0.00	0.00	100	400	59	0	1172.900	0.000	0.17556	0.00000	0.00000
4EXA-13	3	20.000	10	0.250	0.320	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	100	400	59	0	1172.900	0.000	0.17556	0.00000	0.00000
4EXA-VALVE-4EX-1	22	20.000	10	0.250	0.000	0.000	0.000	0.000	0.00	90	0.00	A216/WCB/	0.00	0.00	0.00	100	400	59	0	1172.900	0.000	0.17556	0.00000	0.00000
4EXA-12P	58	20.000	10	0.250	0.000	0.000	0.000	0.000	0.00	90	0.00	A335/P22/	0.00	0.00	0.00	100	400	59	0	1172.900	0.000	0.17556	0.00000	0.00000
4EXA-VALVE-4EX-2	25	20.000	10	0.250	0.000	0.000	0.000	0.000	0.00	90	0.00	A216/WCB/	0.00	0.00	0.00	100	400	59	0	1172.900	0.000	0.17556	0.00000	0.00000
4EXA-12A	58	20.000	10	0.250	0.000	0.000	0.000	0.000	0.00	90	0.00	A53/BE/	0.00	0.00	0.00	100	400	59	0	1172.900	0.000	0.17556	0.00000	0.00000
4EXA-12	1	20.000	10	0.250	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	100	400	59	0	1172.900	0.000	0.17556	0.00000	0.00000
4EXA-11P	51	20.000	10	0.250	0.000	0.000	0.000	0.000	0.00	90	0.00	A53/BE/	0.00	0.00	0.00	100	400	59	0	1172.900	0.000	0.17556	0.00000	0.00000
4EXA-11	1	20.000	10	0.250	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	100	400	59	0	1172.900	0.000	0.17556	0.00000	0.00000
4EXA-10P	51	20.000	10	0.250	0.000	0.000	0.000	0.000	0.00	180	0.00	A53/BE/	0.00	0.00	0.00	100	400	59	0	1172.900	0.000	0.17556	0.00000	0.00000
4EXA-10	1	20.000	10	0.250	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	100	400	59	0	1172.900	0.000	0.17556	0.00000	0.00000
4EXA-9P	51	20.000	10	0.250	0.000	0.000	0.000	0.000	0.00	135	0.00	A53/BE/	0.00	0.00	0.00	100	400	59	0	1172.900	0.000	0.17556	0.00000	0.00000
4EXA-9	1	20.000	10	0.250	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	100	400	59	0	1172.900	0.000	0.17556	0.00000	0.00000
4EXA-8P	51	20.000	10	0.250	0.000	0.000	0.000	0.000	0.00	90	0.00	A53/BE/	0.00	0.00	0.00	100	400	59	0	1172.900	0.000	0.17556	0.00000	0.00000
4EXA-8	4	20.000	10	0.250	0.389	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	100	400	59	0	1172.900	0.000	0.17556	0.00000	0.00000
4EXA-8A	54	20.000	10	0.250	0.316	0.000	0.000	0.000	0.00	90	0.00	A53/BE/	0.00	0.00	0.00	100	400	59	0	1172.900	0.000	0.17556	0.00000	0.00000
4EXA-7	2	20.000	10	0.250	0.000	0.000	0.000	0.000	1.00	90	0.00	A234/WPB/	0.00	0.00	0.00	100	400	59	0	1172.900	0.000	0.17556	0.00000	0.00000
4EXA-7P	52	20.000	10	0.250	0.000	0.000	0.000	0.000	0.00	0	0.00	A53/BE/	0.00	0.00	0.00	100	400	59	0	1172.900	0.000	0.17556	0.00000	0.00000
4EXA-6	4	20.000	10	0.250	0.000	0.000	0.000	0.000	1.00	90	0.00	A234/WPB/	0.00	0.00	0.00	100	400	59	0	1172.900	0.000	0.17556	0.00000	0.00000
4EXA-6P DS	54	20.000	10	0.250	0.262	0.000	0.000	0.000	0.00	90	0.00	A53/BE/	0.00	0.00	0.00	100	400	59	0	1172.900	0.000	0.17556	0.00000	0.00000
4EXA-5	2	20.000	10	0.250	0.358	0.000	0.000	0.000	1.00	90	0.00	A234/WPB/	0.00	0.00	0.00	100	400	59	0	1172.900	0.000	0.17556	0.00000	0.00000
4EXA-4P	52	20.000	10	0.250	0.000	0.000	0.000	0.000	0.00	180	0.00	A53/BE/	0.00	0.00	0.00	100	400	59	0	1172.900	0.000	0.17556	0.00000	0.00000
4EXA-4	4	20.000	10	0.250	0.483	0.000	0.000	0.000	1.00	90	0.00	A234/WPB/	0.00	0.00	0.00	100	400	59	0	1172.900	0.000	0.17556	0.00000	0.00000
4EXA-3P US	54	20.000	10	0.250	0.000	0.000	0.000	0.000	0.00	90	0.00	A53/BE/	0.00	0.00	0.00	100	400	59	0	1172.900	0.000	0.17556	0.00000	0.00000
4EXA-3	2	20.000	10	0.250	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	100	400	59	0	1172.900	0.000	0.17556	0.00000	0.00000
4EXA-2P	52	20.000	10	0.250	0.000	0.000	0.000	0.000	0.00	0	0.00	A53/BE/	0.00	0.00	0.00	100	400	59	0	1172.900	0.000	0.17556	0.00000	0.00000
4EXA-2	2	20.000	10	0.250	0.368	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	100	400	59	0	1172.900	0.000	0.17556	0.00000	0.00000
4EXA-1-2	52	20.000	10	0.250	0.000	0.000	0.000	0.000	0.00	90	0.00	A53/BE/	0.00	0.00	0.00	100	400	59	0	1172.900	0.000	0.17556	0.00000	0.00000
4EXA-1	2	20.000	10	0.250	0.475	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	100	400	59	0	1172.900	0.000	0.17556	0.00000	0.00000
4EXA-1N	30	20.000	10	0.250	0.000	0.000	0.000	0.000	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	100	400	59	0	1172.900	0.000	0.17556	0.00000	0.00000

Component Name	Geom Code	Pipe Size OD (in)	Sch.	Tnom (in)	Tinit (in)	Tcrit (in)	Br/Small End OD (in)	Br/Small Tnom (in)	R / D Ratio	Orient Angle (Deg.)	Pipe Length (in)	Spec/Type/ Class	Material Cr. (%)	Cu. (%)	Mo. (%)	Design Press. (psig)	Design Temp. (Deg. F)	Op. Press. (psig)	Op. Temp. (Deg. F)	Op. Enth. (Btu/lbm)	Op. Qual.	Flow Rate U/S Mn. (Mlbm/hr)	D/S Mn. (Mlbm/hr)	Br.
Line Name : xES5-1-4THPT ES to FWH 24B																								
4EXB-13N	31	20.000	10	0.250	0.000	0.000	0.000	0.000	0.00	90	0.00	A516/60/	0.00	0.00	0.00	100	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
4EXB-13P	61	20.000	10	0.250	0.000	0.000	0.000	0.000	0.00	180	0.00	A53/BE/	0.00	0.00	0.00	100	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
4EXB-13	2	20.000	10	0.250	0.000	0.000	0.000	0.000	1.00	90	0.00	A234/WPB/	0.00	0.00	0.00	100	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
4EXB-12X	6	20.000	10	0.250	0.000	0.000	0.000	0.000	0.00	90	0.00	A53/BE/	0.00	0.00	0.00	100	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
4EXB-12P US	56	20.000	10	0.250	0.000	0.000	0.000	0.000	0.00	90	0.00	A53/BE/	0.00	0.00	0.00	100	400	59	0	1172.900	0.000	0.17556	0.00000	0.00000
4EXB-12P DS1	56	20.000	10	0.250	0.308	0.000	0.000	0.000	0.00	90	0.00	A53/BE/	0.00	0.00	0.00	100	400	59	0	1172.900	0.000	0.17556	0.00000	0.00000
4EXB-12P DS	56	20.000	10	0.250	0.269	0.000	0.000	0.000	0.00	90	0.00	A53/BE/	0.00	0.00	0.00	100	400	59	0	1172.900	0.000	0.17556	0.00000	0.00000
4EXB-12	3	20.000	10	0.250	0.304	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	100	400	59	0	1172.900	0.000	0.17556	0.00000	0.00000
4EXB-11	3	20.000	10	0.250	0.314	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	100	400	59	0	1172.900	0.000	0.17556	0.00000	0.00000
4EXB-VALVE-4EX-3	22	20.000	10	0.250	0.000	0.000	0.000	0.000	0.00	90	0.00	A216/WCB/	0.00	0.00	0.00	100	400	59	0	1172.900	0.000	0.17556	0.00000	0.00000
4EXB-13P	58	20.000	10	0.250	0.000	0.000	0.000	0.000	0.00	90	0.00	A335/P22/	0.00	0.00	0.00	100	400	59	0	1172.900	0.000	0.17556	0.00000	0.00000
4EXB-VALVE-4EX-4	25	20.000	10	0.250	0.000	0.000	0.000	0.000	0.00	90	0.00	A216/WCB/	0.00	0.00	0.00	100	400	59	0	1172.900	0.000	0.17556	0.00000	0.00000
4EXB-14P	58	20.000	10	0.250	0.000	0.000	0.000	0.000	0.00	90	0.00	A53/BE/	0.00	0.00	0.00	100	400	59	0	1172.900	0.000	0.17556	0.00000	0.00000
4EXB-10	2	20.000	10	0.250	0.499	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	100	400	59	0	1172.900	0.000	0.17556	0.00000	0.00000
4EXB-9P US	52	20.000	10	0.250	0.000	0.000	0.000	0.000	0.00	180	0.00	A335/P22/	0.00	0.00	0.00	100	400	59	0	1172.900	0.000	0.17556	0.00000	0.00000
4EXB-9P DS	52	20.000	10	0.250	0.000	0.000	0.000	0.000	0.00	180	0.00	A335/P22/	0.00	0.00	0.00	100	400	59	0	1172.900	0.000	0.17556	0.00000	0.00000
4EXB-9	2	20.000	10	0.250	0.494	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	100	400	59	0	1172.900	0.000	0.17556	0.00000	0.00000
4EXB-8P	52	20.000	10	0.250	0.268	0.000	0.000	0.000	0.00	90	0.00	A53/BE/	0.00	0.00	0.00	100	400	59	0	1172.900	0.000	0.17556	0.00000	0.00000
4EXB-8	4	20.000	10	0.250	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	100	400	59	0	1172.900	0.000	0.17556	0.00000	0.00000
4EXB-7P	54	20.000	10	0.250	0.000	0.000	0.000	0.000	0.00	90	0.00	A53/BE/	0.00	0.00	0.00	100	400	59	0	1172.900	0.000	0.17556	0.00000	0.00000
4EXB-7	2	20.000	10	0.250	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	100	400	59	0	1172.900	0.000	0.17556	0.00000	0.00000
4EXB-6P	52	20.000	10	0.250	0.000	0.000	0.000	0.000	0.00	0	0.00	A53/BE/	0.00	0.00	0.00	100	400	59	0	1172.900	0.000	0.17556	0.00000	0.00000
4EXB-6	2	20.000	10	0.250	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	100	400	59	0	1172.900	0.000	0.17556	0.00000	0.00000
4EXB-5P	52	20.000	10	0.250	0.000	0.000	0.000	0.000	0.00	90	0.00	A53/BE/	0.00	0.00	0.00	100	400	59	0	1172.900	0.000	0.17556	0.00000	0.00000
4EXB-5	2	20.000	10	0.250	0.000	0.000	0.000	0.000	1.00	90	0.00	A234/WPB/	0.00	0.00	0.00	100	400	59	0	1172.900	0.000	0.17556	0.00000	0.00000
4EXB-4P US	52	20.000	10	0.250	0.000	0.000	0.000	0.000	0.00	180	0.00	A53/BE/	0.00	0.00	0.00	100	400	59	0	1172.900	0.000	0.17556	0.00000	0.00000
4EXB-4P DS	52	20.000	10	0.250	0.282	0.000	0.000	0.000	0.00	180	0.00	A53/BE/	0.00	0.00	0.00	100	400	59	0	1172.900	0.000	0.17556	0.00000	0.00000
4EXB-4	4	20.000	10	0.250	0.512	0.000	0.000	0.000	1.00	90	0.00	A234/WPB/	0.00	0.00	0.00	100	400	59	0	1172.900	0.000	0.17556	0.00000	0.00000
4EXB-3P US	54	20.000	10	0.250	0.297	0.000	0.000	0.000	0.00	90	0.00	A53/BE/	0.00	0.00	0.00	100	400	59	0	1172.900	0.000	0.17556	0.00000	0.00000
4EXB-3P DS	54	20.000	10	0.250	0.000	0.000	0.000	0.000	0.00	90	0.00	A53/BE/	0.00	0.00	0.00	100	400	59	0	1172.900	0.000	0.17556	0.00000	0.00000
4EXB-3	2	20.000	10	0.250	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	100	400	59	0	1172.900	0.000	0.17556	0.00000	0.00000
4EXB-2P	52	20.000	10	0.250	0.000	0.000	0.000	0.000	0.00	0	0.00	A53/BE/	0.00	0.00	0.00	100	400	59	0	1172.900	0.000	0.17556	0.00000	0.00000
4EXB-2	2	20.000	10	0.250	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	100	400	59	0	1172.900	0.000	0.17556	0.00000	0.00000
4EXB-1P	52	20.000	10	0.250	0.000	0.000	0.000	0.000	0.00	90	0.00	A53/BE/	0.00	0.00	0.00	100	400	59	0	1172.900	0.000	0.17556	0.00000	0.00000
4EXB-1	2	20.000	10	0.250	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	100	400	59	0	1172.900	0.000	0.17556	0.00000	0.00000
4EXB-1N	30	20.000	10	0.250	0.000	0.000	0.000	0.000	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	100	400	59	0	1172.900	0.000	0.17556	0.00000	0.00000
Line Name : xES6-1-4THPT ES to FWH 24C																								
4EXC-16N	31	20.000	10	0.250	0.000	0.000	0.000	0.000	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	100	400	59	0	1172.900	0.000	0.17556	0.00000	0.00000
4EXC-16P	61	20.000	10	0.250	0.000	0.000	0.000	0.000	0.00	180	0.00	A53/BE/	0.00	0.00	0.00	100	400	59	0	1172.900	0.000	0.17556	0.00000	0.00000
4EXC-16	2	20.000	10	0.250	0.000	0.000	0.000	0.000	1.00	90	0.00	A234/WPB/	0.00	0.00	0.00	100	400	59	0	1172.900	0.000	0.17556	0.00000	0.00000
4EXC-15X	6	20.000	10	0.250	0.000	0.000	0.000	0.000	0.00	90	0.00	A53/BE/	0.00	0.00	0.00	100	400	59	0	1172.900	0.000	0.17556	0.00000	0.00000
4EXC-15P US	56	20.000	10	0.250	0.000	0.000	0.000	0.000	0.00	90	0.00	A53/BE/	0.00	0.00	0.00	100	400	59	0	1172.900	0.000	0.17556	0.00000	0.00000
4EXC-15P DS1	56	20.000	10	0.250	0.385	0.000	0.000	0.000	0.00	90	0.00	A53/BE/	0.00	0.00	0.00	100	400	59	0	1172.900	0.000	0.17556	0.00000	0.00000
4EXC-15P DS	56	20.000	10	0.250	0.253	0.000	0.000	0.000	0.00	90	0.00	A53/BE/	0.00	0.00	0.00	100	400	59	0	1172.900	0.000	0.17556	0.00000	0.00000
4EXC-15	3	20.000	10	0.250	0.301	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	100	400	59	0	1172.900	0.000	0.17556	0.00000	0.00000
4EXC-14	3	20.000	10	0.250	0.300	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	100	400	59	0	1172.900	0.000	0.17556	0.00000	0.00000
4EXC-14P-1	53	20.000	10	0.250	0.272	0.000	0.000	0.000	0.00	90	0.00	A53/BE/	0.00	0.00	0.00	100	400	59	0	1172.900	0.000	0.17556	0.00000	0.00000
4EXC-VALVE-4EX-5	22	20.000	10	0.250	0.000	0.000	0.000	0.000	0.00	90	0.00	A216/WCB/	0.00	0.00	0.00	100	400	59	0	1172.900	0.000	0.17556	0.00000	0.00000
4EXC-14P	58	20.000	10	0.250	0.000	0.000	0.000	0.000	0.00	90	0.00	A53/BE/	0.00	0.00	0.00	100	400	59	0	1172.900	0.000	0.17556	0.00000	0.00000
4EXC-VALVE-4EX-6	25	20.000	10	0.250	0.000	0.000	0.000	0.000	0.00	90	0.00	A216/WCB/	0.00	0.00	0.00	100	400	59	0	1172.900	0.000	0.17556	0.00000	0.00000
4EXC-13P DS	58	20.000	10	0.250	0.345	0.000	0.000	0.000	0.00	90	0.00	A53/BE/	0.00	0.00	0.00	100	400	59	0	1172.900	0.000	0.17556	0.00000	0.00000
4EXC-13	1	20.000	10	0.250	0.314	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	100	400	59	0	1172.900	0.000	0.17556	0.00000	0.00000
4EXC-12P US	51	20.000	10	0.250	0.000	0.000	0.000	0.000	0.00	90	0.00	A53/BE/	0.00	0.00	0.00	100	400	59	0	1172.900	0.000	0.17556	0.00000	0.00000
4EXC-12P DS	51	20.000	10	0.250	0.000	0.000	0.000	0.000	0.00	90	0.00	A53/BE/	0.00	0.00	0.00	100	400	59	0	1172.900	0.000	0.17556	0.00000	0.00000
4EXC-12	2	20.000	10	0.250	0.537	0.000	0.000	0.000	1.00	90	0.00	A234/WPB/	0.00	0.00	0.00	100	400	59	0	1172.900	0.000	0.17556	0.00000	0.00000

Component Name	Geom Code	Pipe Size OD (in)	Sch.	Tnom (in)	Tinit (in)	Tcrit (in)	Br/Small End OD (in)	Br/Small Tnom (in)	R / D Ratio	Orient Angle (Deg.)	Pipe Length (in)	Spec/Type/ Class	Material Cr. (%)	Cu. (%)	Mo. (%)	Design Press. (psig)	Design Temp. (Deg. F)	Op. Press. (psig)	Op. Temp. (Deg. F)	Op. Enth. (Btu/lbm)	Op. Qual.	Flow Rate U/S Mn. (Mlbm/hr)	D/S Mn.	Br.
4EXC-11P	52	20.000	10	0.250	0.290	0.000	0.000	0.000	0.00	180	0.00	A53/BE/	0.00	0.00	0.00	100	400	59	0	1172.900	0.000	0.17556	0.00000	0.00000
4EXC-11	3	20.000	10	0.250	0.312	0.000	0.000	0.000	1.00	90	0.00	A234/WPB/	0.00	0.00	0.00	100	400	59	0	1172.900	0.000	0.17556	0.00000	0.00000
4EXC-10P	53	20.000	10	0.250	0.000	0.000	0.000	0.000	0.00	135	0.00	A53/BE/	0.00	0.00	0.00	100	400	59	0	1172.900	0.000	0.17556	0.00000	0.00000
4EXC-10	1	20.000	10	0.250	0.295	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	100	400	59	0	1172.900	0.000	0.17556	0.00000	0.00000
4EXC-9P	51	20.000	10	0.250	0.000	0.000	0.000	0.000	0.00	90	0.00	A53/BE/	0.00	0.00	0.00	100	400	59	0	1172.900	0.000	0.17556	0.00000	0.00000
4EXC-9	2	20.000	10	0.250	0.000	0.000	0.000	0.000	1.00	90	0.00	A234/WPB/	0.00	0.00	0.00	100	400	59	0	1172.900	0.000	0.17556	0.00000	0.00000
4EXC-8P	52	20.000	10	0.250	0.000	0.000	0.000	0.000	0.00	180	0.00	A53/BE/	0.00	0.00	0.00	100	400	59	0	1172.900	0.000	0.17556	0.00000	0.00000
4EXC-8	4	20.000	10	0.250	0.473	0.000	0.000	0.000	1.00	90	0.00	A234/WPB/	0.00	0.00	0.00	100	400	59	0	1172.900	0.000	0.17556	0.00000	0.00000
4EXC-7P	54	20.000	10	0.250	0.000	0.000	0.000	0.000	0.00	90	0.00	A53/BE/	0.00	0.00	0.00	100	400	59	0	1172.900	0.000	0.17556	0.00000	0.00000
4EXC-7	2	20.000	10	0.250	0.000	0.000	0.000	0.000	1.00	90	0.00	A234/WPB/	0.00	0.00	0.00	100	400	59	0	1172.900	0.000	0.17556	0.00000	0.00000
4EXC-6P	52	20.000	10	0.250	0.000	0.000	0.000	0.000	0.00	0	0.00	A53/BE/	0.00	0.00	0.00	100	400	59	0	1172.900	0.000	0.17556	0.00000	0.00000
4EXC-6	4	20.000	10	0.250	0.442	0.000	0.000	0.000	1.00	90	0.00	A234/WPB/	0.00	0.00	0.00	100	400	59	0	1172.900	0.000	0.17556	0.00000	0.00000
4EXC-5P US	54	20.000	10	0.250	0.000	0.000	0.000	0.000	0.00	90	0.00	A53/BE/	0.00	0.00	0.00	100	400	59	0	1172.900	0.000	0.17556	0.00000	0.00000
4EXC-5P DS	54	20.000	10	0.250	0.496	0.000	0.000	0.000	0.00	90	0.00	A53/BE/	0.00	0.00	0.00	100	400	59	0	1172.900	0.000	0.17556	0.00000	0.00000
4EXC-5	2	20.000	10	0.250	0.343	0.000	0.000	0.000	1.00	90	0.00	A234/WPB/	0.00	0.00	0.00	100	400	59	0	1172.900	0.000	0.17556	0.00000	0.00000
4EXC-4P US	52	20.000	10	0.250	0.000	0.000	0.000	0.000	0.00	180	0.00	A53/BE/	0.00	0.00	0.00	100	400	59	0	1172.900	0.000	0.17556	0.00000	0.00000
4EXC-4	4	20.000	10	0.250	0.498	0.000	0.000	0.000	1.00	90	0.00	A234/WPB/	0.00	0.00	0.00	100	400	59	0	1172.900	0.000	0.17556	0.00000	0.00000
4EXC-3P US	54	20.000	10	0.250	0.000	0.000	0.000	0.000	0.00	90	0.00	A53/BE/	0.00	0.00	0.00	100	400	59	0	1172.900	0.000	0.17556	0.00000	0.00000
4EXC-3P DS	54	20.000	10	0.250	0.321	0.000	0.000	0.000	0.00	90	0.00	A53/BE/	0.00	0.00	0.00	100	400	59	0	1172.900	0.000	0.17556	0.00000	0.00000
4EXC-3	2	20.000	10	0.250	0.488	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	100	400	59	0	1172.900	0.000	0.17556	0.00000	0.00000
4EXC-2P	52	20.000	10	0.250	0.270	0.000	0.000	0.000	0.00	0	0.00	A53/BE/	0.00	0.00	0.00	100	400	59	0	1172.900	0.000	0.17556	0.00000	0.00000
4EXC-2	2	20.000	10	0.250	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	100	400	59	0	1172.900	0.000	0.17556	0.00000	0.00000
4EXC-1P US	52	20.000	10	0.250	0.000	0.000	0.000	0.000	0.00	90	0.00	A53/BE/	0.00	0.00	0.00	100	400	59	0	1172.900	0.000	0.17556	0.00000	0.00000
4EXC-1P DS	52	20.000	10	0.250	0.276	0.000	0.000	0.000	0.00	90	0.00	A53/BE/	0.00	0.00	0.00	100	400	59	0	1172.900	0.000	0.17556	0.00000	0.00000
4EXC-1	2	20.000	10	0.250	0.520	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	100	400	59	0	1172.900	0.000	0.17556	0.00000	0.00000
4EXC-1N	30	20.000	10	0.250	0.000	0.000	0.000	0.000	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	100	400	59	0	1172.900	0.000	0.17556	0.00000	0.00000

Line Name : xNCW_15 HDT VENT TO 25A

5EXV-13N	31	10.750	20	0.250	0.000	0.000	0.000	0.000	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	250	400	203	389	1137.900	0.000	0.00000	0.00000	0.00000
5EXV-13P US	61	10.750	20	0.250	0.000	0.000	0.000	0.000	0.00	0	0.00	A53/BE/	0.00	0.00	0.00	250	400	203	389	1137.900	0.000	0.00000	0.00000	0.00000
5EXV-13P DS	61	10.750	20	0.250	0.000	0.000	0.000	0.000	0.00	0	0.00	A53/BE/	0.00	0.00	0.00	250	400	203	389	1137.900	0.000	0.00000	0.00000	0.00000
5EXV-13	2	10.750	20	0.250	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	250	400	203	389	1137.900	0.000	0.00000	0.00000	0.00000
5EXV-12P	52	10.750	20	0.250	0.000	0.000	0.000	0.000	0.00	90	0.00	A53/BE/	0.00	0.00	0.00	250	400	203	389	1137.900	0.000	0.00000	0.00000	0.00000
5EXV-11	2	10.750	20	0.250	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	250	400	203	389	1137.900	0.000	0.00000	0.00000	0.00000
5EXV-3	2	10.750	20	0.250	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	250	400	203	389	1137.900	0.000	0.00000	0.00000	0.00000
5EXV-3N	30	10.750	20	0.250	0.000	0.000	0.000	0.000	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	250	400	203	389	1137.900	0.000	0.00000	0.00000	0.00000

Line Name : xNCW_15 HDT VENT TO 25B

5EXV-10N	31	10.750	20	0.250	0.000	0.000	0.000	0.000	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	250	400	203	389	1137.900	0.000	0.00000	0.00000	0.00000
5EXV-10P	61	10.750	20	0.250	0.000	0.000	0.000	0.000	0.00	0	0.00	A53/BE/	0.00	0.00	0.00	250	400	203	389	1137.900	0.000	0.00000	0.00000	0.00000
5EXV-10	2	10.750	20	0.250	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	250	400	203	389	1137.900	0.000	0.00000	0.00000	0.00000
5EXV-9P	52	10.750	20	0.250	0.000	0.000	0.000	0.000	0.00	90	0.00	A53/BE/	0.00	0.00	0.00	250	400	203	389	1137.900	0.000	0.00000	0.00000	0.00000
5EXV-9	1	10.750	20	0.250	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	250	400	203	389	1137.900	0.000	0.00000	0.00000	0.00000
5EXV-8	2	10.750	20	0.250	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	250	400	203	389	1137.900	0.000	0.00000	0.00000	0.00000
5EXV-2	2	10.750	20	0.250	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	250	400	203	389	1137.900	0.000	0.00000	0.00000	0.00000
5EXV-2N	30	10.750	20	0.250	0.000	0.000	0.000	0.000	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	250	400	203	389	1137.900	0.000	0.00000	0.00000	0.00000

Line Name : xNCW_15 HDT VENT TO 25C

5EXV-7N	31	10.750	20	0.250	0.000	0.000	0.000	0.000	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	250	400	203	389	1137.900	0.000	0.00000	0.00000	0.00000
5EXV-7P	61	10.750	20	0.250	0.000	0.000	0.000	0.000	0.00	0	0.00	A53/BE/	0.00	0.00	0.00	250	400	203	389	1137.900	0.000	0.00000	0.00000	0.00000
5EXV-7	2	10.750	20	0.250	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	250	400	203	389	1137.900	0.000	0.00000	0.00000	0.00000
5EXV-6P	52	10.750	20	0.250	0.000	0.000	0.000	0.000	0.00	90	0.00	A53/BE/	0.00	0.00	0.00	250	400	203	389	1137.900	0.000	0.00000	0.00000	0.00000
5EXV-6	1	10.750	20	0.250	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	250	400	203	389	1137.900	0.000	0.00000	0.00000	0.00000
5EXV-5	2	10.750	20	0.250	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	250	400	203	389	1137.900	0.000	0.00000	0.00000	0.00000
5EXV-5P	52	10.750	20	0.250	0.000	0.000	0.000	0.000	0.00	90	0.00	A53/BE/	0.00	0.00	0.00	250	400	203	389	1137.900	0.000	0.00000	0.00000	0.00000
5EXV-4	2	10.750	20	0.250	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	250	400	203	389	1137.900	0.000	0.00000	0.00000	0.00000

Component Name	Geom Code	Pipe Size OD (in)	Sch.	Tnom (in)	Tinit (in)	Tcrit (in)	Br/Small End OD (in)	Br/Small Tnom (in)	R / D Ratio	Orient Angle (Deg.)	Pipe Length (in)	Spec/Type/ Class	Material Cr. (%)	Cu. (%)	Mo. (%)	Design Press. (psig)	Design Temp. (Deg. F)	Op. Press. (psig)	Op. Temp. (Deg. F)	Op. Enth. (Btu/lbm)	Op. Qual.	Flow Rate U/S Mn. (Mlbm/hr)	D/S Mn.	Br.
5EXV-1	2	10.750	20	0.250	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	250	400	203	389	1137.900	0.000	0.00000	0.00000	0.00000
5EXV-1N	30	10.750	20	0.250	0.000	0.000	0.000	0.000	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	250	400	203	389	1137.900	0.000	0.00000	0.00000	0.00000

Line Name : xNCW_151 Main Steam

MS21-1 DS	52	28.000	SPE	0.912	0.000	0.000	0.000	0.000	0.00	0	0.00	A672/B7021/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
MS21-1	2	28.000	SPE	0.912	0.000	0.000	0.000	0.000	1.50	0	0.00	A234/WPC/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000

Line Name : xNCW_153 Main Steam

MS23-1	2	28.000	SPE	0.912	0.000	0.000	0.000	0.000	1.20	0	0.00	A234/WPC/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
MS23-1 DS	52	28.000	SPE	0.912	0.000	0.000	0.000	0.000	0.00	0	0.00	A672/B7021/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000

Line Name : xNCW_18

5EXC-1P DS	61	24.000	20	0.375	0.000	0.000	0.000	0.000	0.00	180	0.00	A53/BE/	0.00	0.00	0.00	250	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
5EXC-1	4	24.000	20	0.375	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	250	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
5EXC-2P US	54	24.000	20	0.375	0.000	0.000	0.000	0.000	0.00	90	0.00	A53/BE/	0.00	0.00	0.00	250	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
5EXC-2P DS	52	24.000	20	0.375	0.000	0.000	0.000	0.000	0.00	90	0.00	A53/BE/	0.00	0.00	0.00	250	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
5EXC-3	17	24.000	20	0.375	0.000	0.000	14.000	0.312	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	250	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
5EXC-7P	52	10.750	20	0.250	0.000	0.000	0.000	0.000	0.00	0	0.00	A-312/TP304/	0.00	0.00	0.00	250	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
5EXC-8	12	10.750	20	0.250	0.000	0.000	10.750	0.250	0.00	90	0.00	A-403/WP304/	0.00	0.00	0.00	250	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
5EXC-30	18	14.000	20	0.312	0.000	0.000	10.750	0.250	0.00	0	0.00	A-403/WP304/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
5EXC-11P DS	62	14.000	20	0.312	0.000	0.000	0.000	0.000	0.00	0	0.00	A53/BE/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
5EXC-11	2	14.000	20	0.312	0.000	0.000	0.000	0.000	0.00	0	0.00	SA-31/TP304/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
5EXC-11N	30	14.000	20	0.312	0.000	0.000	0.000	0.000	0.00	0	0.00	A53/BE/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
5EXC-2	10	24.000	20	0.375	0.000	0.000	24.000	0.375	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	250	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
5EXC-2A	60	24.000	20	0.375	0.000	0.000	0.000	0.000	0.00	90	0.00	A53/BE/	0.00	0.00	0.00	250	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
5EXC-13P	52	14.000	20	0.312	0.000	0.000	0.000	0.000	0.00	0	0.00	A53/BE/	0.00	0.00	0.00	250	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
5EXC-14	2	14.000	20	0.312	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	250	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
5EXC-15P	52	10.750	20	0.250	0.000	0.000	0.000	0.000	0.00	90	0.00	A-312/TP304/	0.00	0.00	0.00	250	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
5EXC-16	12	10.750	20	0.250	0.000	0.000	10.750	0.250	0.00	90	0.00	A-403/WP304/	0.00	0.00	0.00	250	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
5EXC-31	18	14.000	20	0.312	0.000	0.000	10.750	0.250	0.00	0	0.00	A-403/WP304/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
5EXC-17	12	14.000	20	0.312	0.000	0.000	0.000	0.000	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
5EXC-17P US	62	14.000	20	0.312	0.000	0.000	0.000	0.000	0.00	0	0.00	A53/BE/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
5EXC-19P DS	62	14.000	20	0.312	0.000	0.000	0.000	0.000	0.00	90	0.00	A53/BE/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
5EXC-19	2	14.000	20	0.312	0.000	0.000	0.000	0.000	0.00	90	0.00	A-403/WP304/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
5EXC-19P-1	52	14.000	20	0.312	0.000	0.000	0.000	0.000	0.00	90	0.00	A53/BE/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
5EXC-19N	30	14.000	20	0.312	0.000	0.000	0.000	0.000	0.00	90	0.00	A53/BE/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
5EXC-21P-1 US	57	14.000	20	0.312	0.000	0.000	0.000	0.000	0.00	90	0.00	A53/BE/	0.00	0.00	0.00	250	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
5EXC-21P-1 DS	57	14.000	10	0.250	0.000	0.000	0.000	0.000	0.00	90	0.00	A53/BE/	0.00	0.00	0.00	250	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
5EXC-21P	52	14.000	20	0.312	0.000	0.000	0.000	0.000	0.00	90	0.00	A53/BE/	0.00	0.00	0.00	250	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
5EXC-24	2	14.000	20	0.312	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	250	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
5EXC-25	7	14.000	20	0.312	0.000	0.000	10.750	0.250	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	250	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
5EXC-25P	58	10.750	20	0.250	0.000	0.000	0.000	0.000	0.00	180	0.00	A-312/TP304/	0.00	0.00	0.00	250	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
5EXC-27	12	14.000	20	0.312	0.000	0.000	14.000	0.312	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
5EXC-27P	62	14.000	20	0.312	0.000	0.000	0.000	0.000	0.00	0	60.00	A-312/TP304/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
5EXC-29	2	14.000	20	0.312	0.000	0.000	0.000	0.000	1.50	90	0.00	A-403/WP304/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
5EXC-29P DS	62	14.000	20	0.312	0.000	0.000	0.000	0.000	0.00	90	0.00	A53/BE/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
5EXC-30P	52	14.000	20	0.312	0.000	0.000	0.000	0.000	0.00	90	0.00	A53/BE/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000

Line Name : xNCW_19 HTR DRN PMP VENT

5EX-24P DS	52	2.375	40	0.154	0.000	0.000	0.000	0.000	1.50	90	0.00	A106/B/	0.00	0.00	0.00	202	389	0	0	0.000	0.000	0.00000	0.00000	0.00000
5EX-25	2	2.375	40	0.154	0.000	0.000	0.000	0.000	1.50	90	0.00	A105//	0.00	0.00	0.00	202	389	0	0	0.000	0.000	0.00000	0.00000	0.00000
5EX-25P	52	2.375	40	0.154	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	202	389	0	0	0.000	0.000	0.00000	0.00000	0.00000
5EX-29P DS	52	2.375	40	0.154	0.000	0.000	0.000	0.000	1.50	90	0.00	A106/B/	0.00	0.00	0.00	202	389	0	0	0.000	0.000	0.00000	0.00000	0.00000

Component Name	Geom Code	Pipe Size OD (in)	Sch.	Tnom (in)	Tinit (in)	Tcrit (in)	Br/Small End OD (in)	Br/Small Tnom (in)	R / D Ratio	Orient Angle (Deg.)	Pipe Length (in)	Spec/Type/ Class	Material Cr. (%)	Cu. (%)	Mo. (%)	Design Press. (psig)	Design Temp. (Deg. F)	Op. Press. (psig)	Op. Temp. (Deg. F)	Op. Enth. (Btu/lbm)	Op. Qual.	Flow Rate U/S Mn. (Mlbm/hr)	D/S Mn.	Br.
5EX-30	2	2.375	40	0.154	0.000	0.000	0.000	0.000	1.50	90	0.00	A105//	0.00	0.00	0.00	202	389	0	0	0.000	0.000	0.00000	0.00000	0.00000
5EX-30P	52	2.375	40	0.154	0.000	0.000	0.000	0.000	1.50	90	0.00	A106/B/	0.00	0.00	0.00	202	389	0	0	0.000	0.000	0.00000	0.00000	0.00000
Line Name : xNCW_200																								
200-6E	19	10.750	80	0.594	0.000	0.000	8.625	0.500	0.00	0	0.00	A234/WPB/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
200-6P	69	10.750	80	0.594	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
200-13E	19	10.750	80	0.594	0.000	0.000	8.625	0.500	0.00	0	0.00	A234/WPB/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
200-13P	69	10.750	80	0.594	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
Line Name : xNCW_201																								
201-6E	19	10.750	80	0.594	0.000	0.000	8.625	0.500	0.00	0	0.00	A234/WPB/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
201-6P	69	10.750	80	0.594	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
201-13E	19	10.750	80	0.594	0.000	0.000	8.625	0.500	0.00	0	0.00	A234/WPB/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
201-13P	69	10.750	80	0.594	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
Line Name : xNCW_202																								
202-6E	19	10.750	80	0.594	0.000	0.000	8.625	0.500	0.00	0	0.00	A234/WPB/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
202-6P	69	10.750	80	0.594	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
202-13E	19	10.750	80	0.594	0.000	0.000	8.625	0.500	0.00	0	0.00	A234/WPB/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
202-13P	69	10.750	80	0.594	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
Line Name : xNCW_203																								
203-6E	19	10.750	80	0.594	0.000	0.000	8.625	0.500	0.00	0	0.00	A234/WPB/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
203-6P	69	10.750	80	0.594	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
203-13E	19	10.750	80	0.594	0.000	0.000	8.625	0.500	0.00	0	0.00	A234/WPB/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
203-13P	69	10.750	80	0.594	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
Line Name : xNCW_204																								
204-6E	19	10.750	80	0.594	0.000	0.000	8.625	0.500	0.00	0	0.00	A234/WPB/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
204-6P	69	10.750	80	0.594	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
204-13E	19	10.750	80	0.594	0.000	0.000	8.625	0.500	0.00	0	0.00	A234/WPB/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
204-13P	69	10.750	80	0.594	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
Line Name : xNCW_205																								
205-5R	18	8.625	40	0.322	0.000	0.000	4.500	0.237	0.00	0	0.00	A234/WPB/	0.00	0.00	0.00	250	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
205-5P US	68	8.625	40	0.322	0.000	0.000	0.000	0.000	0.00	0	0.00	A53/BE/	0.00	0.00	0.00	250	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
205-13R	18	8.625	40	0.322	0.000	0.000	4.500	0.237	0.00	0	0.00	A234/WPB/	0.00	0.00	0.00	250	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
205-13P US	68	8.625	40	0.322	0.000	0.000	0.000	0.000	0.00	0	0.00	A53/BE/	0.00	0.00	0.00	250	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
205-14P DS	62	8.625	40	0.322	0.000	0.000	0.000	0.000	0.00	0	0.00	A53/BE/	0.00	0.00	0.00	250	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
205-15T	12	8.625	40	0.322	0.000	0.000	8.625	0.322	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	250	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
205-15P US	62	8.625	40	0.322	0.000	0.000	0.000	0.000	0.00	0	0.00	A53/BE/	0.00	0.00	0.00	250	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
205-22R	18	8.625	40	0.322	0.000	0.000	4.500	0.237	0.00	0	0.00	A234/WPB/	0.00	0.00	0.00	250	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
205-22P US	68	8.625	40	0.322	0.000	0.000	0.000	0.000	0.00	0	0.00	A53/BE/	0.00	0.00	0.00	250	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
205-22P-1	58	8.625	40	0.322	0.000	0.000	0.000	0.000	0.00	0	0.00	A53/BE/	0.00	0.00	0.00	250	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
205-5P-1 DS	58	8.625	40	0.322	0.000	0.000	0.000	0.000	0.00	0	0.00	A53/BE/	0.00	0.00	0.00	250	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
205-23T	12	8.625	40	0.322	0.000	0.000	8.625	0.322	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	250	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
205-23P US	62	8.625	40	0.322	0.000	0.000	0.000	0.000	0.00	0	0.00	A53/BE/	0.00	0.00	0.00	250	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
205-23P DS	62	8.625	40	0.322	0.000	0.000	0.000	0.000	0.00	0	0.00	A53/BE/	0.00	0.00	0.00	250	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
205-24T	12	8.625	40	0.322	0.000	0.000	8.625	0.322	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	250	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
205-24P US	62	8.625	40	0.322	0.000	0.000	0.000	0.000	0.00	0	0.00	A53/BE/	0.00	0.00	0.00	250	400	0	0	0.000	0.000	0.00000	0.00000	0.00000

Component Name	Geom Code	Pipe Size OD (in)	Sch.	Tnom (in)	Tinit (in)	Tcrit (in)	Br/Small End OD (in)	Br/Small Tnom (in)	R / D Ratio	Orient Angle (Deg.)	Pipe Length (in)	Spec/Type/ Class	Material Cr. (%)	Cu. (%)	Mo. (%)	Design Press. (psig)	Design Temp. (Deg. F)	Op. Press. (psig)	Op. Temp. (Deg. F)	Op. Enth. (Btu/lbm)	Op. Qual.	Flow Rate U/S Mn. (Mlbm/hr)	D/S Mn. (Mlbm/hr)	Br.
Line Name : xNCW_206																								
206-6P	58	8.625	80	0.500	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/C/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
206-7E	2	8.625	80	0.500	0.000	0.000	0.000	0.000	0.00	0	0.00	A234/WPB/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
206-8E	19	10.750	80	0.594	0.000	0.000	8.625	0.500	0.00	0	0.00	A234/WPB/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
206-8P	69	10.750	80	0.594	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
206-16E	19	10.750	80	0.594	0.000	0.000	8.625	0.500	0.00	0	0.00	A234/WPB/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
206-16P	69	10.750	80	0.594	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
Line Name : xNCW_207																								
207-1R	18	3.500	40	0.216	0.000	0.000	2.375	0.154	0.00	0	0.00	A234/WPB/	0.00	0.00	0.00	665	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
207-9R	18	3.500	40	0.216	0.000	0.000	2.375	0.154	0.00	0	0.00	A234/WPB/	0.00	0.00	0.00	665	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
Line Name : xNCW_208																								
208-1R	18	12.750	20	0.250	0.000	0.000	8.625	0.250	0.00	0	0.00	A234/WPB/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
208-1P	58	12.750	20	0.250	0.000	0.000	0.000	0.000	0.00	0	0.00	A53/BE/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
208-3R	18	12.750	20	0.250	0.000	0.000	8.625	0.250	0.00	0	0.00	A234/WPB/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
208-3P	58	12.750	20	0.250	0.000	0.000	0.000	0.000	0.00	0	0.00	A53/BE/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
208-5R	18	12.750	20	0.250	0.000	0.000	8.625	0.250	0.00	0	0.00	A234/WPB/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
208-5P	58	12.750	20	0.250	0.000	0.000	0.000	0.000	0.00	0	0.00	A53/BE/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
208-6R	18	12.750	20	0.250	0.000	0.000	8.625	0.250	0.00	0	0.00	A234/WPB/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
208-6P	58	12.750	20	0.250	0.000	0.000	0.000	0.000	0.00	0	0.00	A53/BE/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
Line Name : xNCW_209																								
209-5P US	58	6.625	40	0.280	0.000	0.000	0.000	0.000	0.00	0	0.00	A53/BE/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
209-5E	2	6.625	40	0.280	0.000	0.000	0.000	0.000	0.00	0	0.00	A234/WPB/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
209-1E	2	6.625	40	0.280	0.000	0.000	0.000	0.000	0.00	0	0.00	A234/WPB/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
209-1P US	58	6.625	40	0.280	0.000	0.000	0.000	0.000	0.00	0	0.00	A53/BE/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
209-3E	2	6.625	40	0.280	0.000	0.000	0.000	0.000	0.00	0	0.00	A234/WPB/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
209-3P US	58	6.625	40	0.280	0.000	0.000	0.000	0.000	0.00	0	0.00	A53/BE/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
Line Name : xNCW_210																								
210-3P-1	58	4.500	80	0.337	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
210-3P-2	58	4.500	80	0.337	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
210-3P-3 DS	58	4.500	80	0.337	0.000	0.000	0.000	0.000	0.00	0	0.00	A-312/TP316/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
210-4E	2	4.500	80	0.337	0.000	0.000	0.000	0.000	0.00	0	0.00	A-403/WP316/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
210-4P US	52	4.500	80	0.337	0.000	0.000	0.000	0.000	0.00	0	0.00	A-312/TP316/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
210-4P DS	52	4.500	80	0.337	0.000	0.000	0.000	0.000	0.00	0	0.00	A-312/TP316/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
210-5E	2	4.500	80	0.337	0.000	0.000	0.000	0.000	0.00	0	0.00	A-403/WP316/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
210-5P	52	4.500	80	0.337	0.000	0.000	0.000	0.000	0.00	0	0.00	A-312/TP316/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
Line Name : xNCW_211																								
211-15P DS	52	2.375	80	0.218	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
211-16E	2	2.375	80	0.218	0.000	0.000	0.000	0.000	0.00	0	0.00	A105//	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
211-16P US	58	2.375	40	0.154	0.000	0.000	0.000	0.000	0.00	0	0.00	A-312/TP316/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
Line Name : xNCW_212																								
212-1E	4	6.625	40	0.280	0.000	0.000	0.000	0.000	0.00	0	0.00	A234/WPB/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
212-1P US	58	6.625	40	0.280	0.000	0.000	0.000	0.000	0.00	0	0.00	A53/BE/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
212-2P US	58	6.625	40	0.280	0.000	0.000	0.000	0.000	0.00	0	0.00	A53/BE/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
212-3P US	58	6.625	40	0.280	0.000	0.000	0.000	0.000	0.00	0	0.00	A53/BE/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000

Component Name	Geom Code	Pipe Size OD (in)	Sch.	Tnom (in)	Tinit (in)	Tcrit (in)	Br/Small End OD (in)	Br/Small Tnom (in)	R / D Ratio	Orient Angle (Deg.)	Pipe Length (in)	Spec/Type/ Class	Material Cr. (%)	Cu. (%)	Mo. (%)	Design Press. (psig)	Design Temp. (Deg. F)	Op. Press. (psig)	Op. Temp. (Deg. F)	Op. Enth. (Btu/lbm)	Op. Qual.	Flow Rate U/S Mn. (Mlbm/hr)	D/S Mn. (Mlbm/hr)	Br.
Line Name : xNCW_213																								
213-1P	58	6.625	XXS	0.864	0.000	0.000	0.000	0.000	0.00	0	0.00	A335/P22/	0.00	0.00	0.00	1440	450	0	0	0.000	0.000	0.00000	0.00000	0.00000
213-3R	18	8.625	XXS	0.875	0.000	0.000	6.625	0.864	0.00	0	0.00	A182/F22/	0.00	0.00	0.00	1440	450	0	0	0.000	0.000	0.00000	0.00000	0.00000
213-3P	68	8.625	XXS	0.875	0.000	0.000	0.000	0.000	0.00	0	0.00	A335/P22/	0.00	0.00	0.00	1440	450	0	0	0.000	0.000	0.00000	0.00000	0.00000
213-4P	58	6.625	XXS	0.864	0.000	0.000	0.000	0.000	0.00	0	0.00	A335/P22/	0.00	0.00	0.00	1440	450	0	0	0.000	0.000	0.00000	0.00000	0.00000
213-6R	18	8.625	XXS	0.875	0.000	0.000	6.625	0.864	0.00	0	0.00	A182/F22/	0.00	0.00	0.00	1440	450	0	0	0.000	0.000	0.00000	0.00000	0.00000
213-6P	68	8.625	XXS	0.875	0.000	0.000	0.000	0.000	0.00	0	0.00	A335/P22/	0.00	0.00	0.00	1440	450	0	0	0.000	0.000	0.00000	0.00000	0.00000
Line Name : xNCW_214																								
214-23P US	58	1.315	40	0.133	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
214-12P	58	1.315	80	0.179	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
214-25P	58	2.375	80	0.218	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
214-26E	2	2.375	80	0.218	0.000	0.000	0.000	0.000	0.00	0	0.00	A234/WPB/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
214-27P US	52	2.375	80	0.218	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
Line Name : xNCW_215																								
21BFPT	9	38.250	SPE	0.625	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
22BFPT	9	38.250	SPE	0.625	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
215-1P	52	2.375	40	0.154	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
215-7P DS	52	2.375	40	0.154	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
215-8E	2	2.375	40	0.154	0.000	0.000	0.000	0.000	1.50	90	0.00	A105//	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
215-8P US	52	2.375	40	0.154	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
215-6P	52	2.375	40	0.154	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
215-9P DS	52	2.375	40	0.154	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
215-10E	2	2.375	40	0.154	0.000	0.000	0.000	0.000	1.50	90	0.00	A105//	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
215-10P US	52	2.375	80	0.218	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
215-14R	18	3.500	40	0.216	0.000	0.000	2.375	0.154	0.00	0	0.00	A234/WPB/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
215-15T	12	3.500	40	0.216	0.000	0.000	2.375	0.154	0.00	0	0.00	A234/WPB/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
215-15P US	52	3.500	40	0.216	0.000	0.000	0.000	0.000	0.00	0	0.00	A53/BE/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
215-18P DS	52	1.315	40	0.133	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
215-19E	2	1.315	40	0.133	0.000	0.000	0.000	0.000	0.00	0	0.00	A105//	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
215-19P	52	1.315	40	0.133	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
215-20E	2	1.315	40	0.133	0.000	0.000	0.000	0.000	0.00	0	0.00	A105//	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
215-20P US	52	1.315	40	0.133	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
215-1P DS	52	2.375	40	0.154	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
215-2E	2	2.375	40	0.154	0.000	0.000	0.000	0.000	1.50	90	0.00	A105//	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
215-2P US	52	2.375	40	0.154	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
Line Name : xNCW_216																								
216-1E	2	2.375	80	0.218	0.000	0.000	0.000	0.000	1.50	90	0.00	A-403/WP316/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
216-4P DS	52	2.375	80	0.218	0.000	0.000	0.000	0.000	0.00	0	0.00	A-312/TP316/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
216-5E	2	2.375	80	0.218	0.000	0.000	0.000	0.000	0.00	0	0.00	A-403/WP316/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
216-5P	52	2.375	80	0.218	0.000	0.000	0.000	0.000	0.00	0	0.00	A-312/TP316/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
216-6N	30	2.375	80	0.218	0.000	0.000	0.000	0.000	0.00	0	0.00	A-403/WP316/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
216-4E	2	2.375	80	0.218	0.000	0.000	0.000	0.000	0.00	0	0.00	A-403/WP316/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
216-4P US	52	2.375	80	0.218	0.000	0.000	0.000	0.000	0.00	0	0.00	A-312/TP316/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
216-3P DS	52	2.375	80	0.218	0.000	0.000	0.000	0.000	0.00	0	0.00	A-312/TP316/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
216-2E	1	2.375	80	0.218	0.000	0.000	0.000	0.000	1.50	90	0.00	A-403/WP316/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
216-1P	62	2.375	80	0.218	0.000	0.000	0.000	0.000	0.00	90	0.00	A-312/TP316/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
216-1P-1	52	2.375	80	0.218	0.000	0.000	0.000	0.000	0.00	90	0.00	A-312/TP316/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
216-2P US	51	2.375	80	0.218	0.000	0.000	0.000	0.000	0.00	90	0.00	A-312/TP316/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000

Component Name	Geom Code	Pipe Size OD (in)	Sch.	Tnom (in)	Tinit (in)	Tcrit (in)	Br/Small End OD (in)	Br/Small Tnom (in)	R / D Ratio	Orient Angle (Deg.)	Pipe Length (in)	Spec/Type/ Class	Material Cr. (%)	Cu. (%)	Mo. (%)	Design Press. (psig)	Design Temp. (Deg. F)	Op. Press. (psig)	Op. Temp. (Deg. F)	Op. Enth. (Btu/lbm)	Op. Qual.	Flow Rate U/S Mn. (Mlbm/hr)	D/S Mn.	Br.
Line Name : xNCW_217																								
217-10P	58	10.750	40	0.365	0.000	0.000	0.000	0.000	0.00	0	0.00	A53/BE/	0.00	0.00	0.00	221	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
217-11R	18	12.750	STD	0.375	0.000	0.000	10.750	0.365	0.00	0	0.00	A234/WPB/	0.00	0.00	0.00	221	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
217-11P	57	12.750	STD	0.375	0.000	0.000	0.000	0.000	0.00	0	0.00	A53/BE/	0.00	0.00	0.00	221	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
217-12E	3	12.750	STD	0.375	0.000	0.000	0.000	0.000	0.00	0	0.00	A234/WPB/	0.00	0.00	0.00	221	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
217-12P	53	12.750	STD	0.375	0.000	0.000	0.000	0.000	0.00	0	0.00	A53/BE/	0.00	0.00	0.00	221	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
Line Name : xNCW_218																								
218-7P	58	10.750	40	0.365	0.000	0.000	0.000	0.000	0.00	0	0.00	A53/BE/	0.00	0.00	0.00	221	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
218-8E	4	10.750	40	0.365	0.000	0.000	0.000	0.000	1.50	0	0.00	A234/WPB/	0.00	0.00	0.00	221	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
218-8P	54	10.750	40	0.365	0.000	0.000	0.000	0.000	0.00	0	0.00	A53/BE/	0.00	0.00	0.00	221	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
218-9R	18	12.750	STD	0.375	0.000	0.000	10.750	0.365	0.00	0	0.00	A234/WPB/	0.00	0.00	0.00	221	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
Line Name : xNCW_219																								
219-6E	4	10.750	40	0.365	0.000	0.000	0.000	0.000	1.50	0	0.00	A234/WPB/	0.00	0.00	0.00	221	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
219-6P	54	10.750	40	0.365	0.000	0.000	0.000	0.000	0.00	0	0.00	A53/BE/	0.00	0.00	0.00	221	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
219-7R	18	12.750	STD	0.375	0.000	0.000	10.750	0.365	0.00	0	0.00	A234/WPB/	0.00	0.00	0.00	221	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
219-7P US	54	12.750	STD	0.375	0.000	0.000	0.000	0.000	0.00	0	0.00	A53/BE/	0.00	0.00	0.00	221	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
219-7P DS	54	12.750	STD	0.375	0.000	0.000	0.000	0.000	0.00	0	0.00	A53/BE/	0.00	0.00	0.00	221	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
219-8E	2	12.750	STD	0.375	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	221	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
219-8P US	54	12.750	STD	0.375	0.000	0.000	0.000	0.000	0.00	0	0.00	A53/BE/	0.00	0.00	0.00	221	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
219-13P	51	12.750	STD	0.375	0.000	0.000	0.000	0.000	1.50	90	0.00	A53/BE/	0.00	0.00	0.00	221	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
219-14E	3	12.750	STD	0.375	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	221	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
219-14P	51	12.750	STD	0.375	0.000	0.000	0.000	0.000	1.50	90	0.00	A53/BE/	0.00	0.00	0.00	221	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
219-15N	30	12.750	STD	0.375	0.000	0.000	0.000	0.000	1.50	90	0.00	A53/BE/	0.00	0.00	0.00	221	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
219-10P DS	52	12.750	STD	0.375	0.000	0.000	0.000	0.000	0.00	0	0.00	A53/BE/	0.00	0.00	0.00	221	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
219-11E	2	12.750	STD	0.375	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	221	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
219-11P US	52	12.750	STD	0.375	0.000	0.000	0.000	0.000	0.00	0	0.00	A53/BE/	0.00	0.00	0.00	221	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
Line Name : xNCW_21B																								
4EXD-34	2	6.625	40	0.280	0.000	0.000	0.000	0.000	0.00	0	0.00	A234/WPB/	0.00	0.00	0.00	100	400	56	259	0.000	0.000	0.00000	0.00000	0.00000
4EXD-34P DS	52	6.625	40	0.280	0.000	0.000	0.000	0.000	0.00	0	0.00	A53/BE/	0.00	0.00	0.00	100	400	56	259	0.000	0.000	0.00000	0.00000	0.00000
4EXD-35	16	6.625	40	0.280	0.000	0.000	3.500	0.216	0.00	0	0.00	A234/WPB/	0.00	0.00	0.00	100	400	56	259	0.000	0.000	0.00000	0.00000	0.00000
4EXD-36	18	6.625	40	0.280	0.000	0.000	3.500	0.216	0.00	0	0.00	A234/WPB/	0.00	0.00	0.00	100	400	56	259	0.000	0.000	0.00000	0.00000	0.00000
Line Name : xNCW_220																								
220-1P DS	65	10.750	40	0.365	0.000	0.000	0.000	0.000	0.00	0	0.00	A53/BE/	0.00	0.00	0.00	221	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
220-2E	2	10.750	40	0.365	0.000	0.000	0.000	0.000	1.50	0	0.00	A234/WPB/	0.00	0.00	0.00	221	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
220-2P US	52	10.750	40	0.365	0.000	0.000	0.000	0.000	0.00	0	0.00	A53/BE/	0.00	0.00	0.00	221	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
220-7P	58	10.750	40	0.365	0.000	0.000	0.000	0.000	0.00	0	0.00	A53/BE/	0.00	0.00	0.00	221	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
220-8E	4	10.750	40	0.365	0.000	0.000	0.000	0.000	1.50	0	0.00	A234/WPB/	0.00	0.00	0.00	221	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
220-8P	54	10.750	40	0.365	0.000	0.000	0.000	0.000	0.00	0	0.00	A53/BE/	0.00	0.00	0.00	221	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
220-9R	18	12.750	STD	0.375	0.000	0.000	10.750	0.365	0.00	0	0.00	A234/WPB/	0.00	0.00	0.00	221	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
220-9P US	54	12.750	STD	0.375	0.000	0.000	0.000	0.000	0.00	0	0.00	A53/BE/	0.00	0.00	0.00	221	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
220-9P DS	54	12.750	STD	0.375	0.000	0.000	0.000	0.000	0.00	0	0.00	A53/BE/	0.00	0.00	0.00	221	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
220-10E	2	12.750	STD	0.375	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	221	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
220-10P US	54	12.750	STD	0.375	0.000	0.000	0.000	0.000	0.00	0	0.00	A53/BE/	0.00	0.00	0.00	221	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
220-14E	2	12.750	STD	0.375	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	221	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
220-13P DS	54	12.750	STD	0.375	0.000	0.000	0.000	0.000	0.00	0	0.00	A53/BE/	0.00	0.00	0.00	221	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
220-14P US	54	12.750	STD	0.375	0.000	0.000	0.000	0.000	0.00	0	0.00	A53/BE/	0.00	0.00	0.00	221	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
Line Name : xNCW_221																								
221-10P DS	52	5.563	40	0.258	0.000	0.000	0.000	0.000	0.00	0	0.00	A53/BE/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000

Component Name	Geom Code	Pipe Size OD (in)	Sch.	Tnom (in)	Tinit (in)	Tcrit (in)	Br/Small End OD (in)	Br/Small Tnom (in)	R / D Ratio	Orient Angle (Deg.)	Pipe Length (in)	Spec/Type/ Class	Material Cr. (%)	Cu. (%)	Mo. (%)	Design Press. (psig)	Design Temp. (Deg. F)	Op. Press. (psig)	Op. Temp. (Deg. F)	Op. Enth. (Btu/lbm)	Op. Qual.	Flow Rate U/S Mn. (Mlbm/hr)	D/S Mn.	Br.
221-11E	2	5.563	40	0.258	0.000	0.000	0.000	0.000	0.00	0	0.00	A234/WPB/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
221-12E	4	5.563	40	0.258	0.000	0.000	0.000	0.000	0.00	0	0.00	A234/WPB/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
221-13P US	54	5.563	40	0.258	0.000	0.000	0.000	0.000	0.00	0	0.00	A53/BE/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
Line Name :	**xNCW_222**																							
222-1P DS	9	2.875	40	0.203	0.000	0.000	0.000	0.000	0.00	0	0.00	A-312/TP304/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
222-2E	2	2.875	40	0.203	0.000	0.000	0.000	0.000	0.00	0	0.00	A-403/WP304/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
222-3P	52	2.875	40	0.203	0.000	0.000	0.000	0.000	0.00	0	0.00	A-312/TP304/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
222-4E	1	2.875	40	0.203	0.000	0.000	0.000	0.000	0.00	0	0.00	A-403/WP304/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
222-6E	4	2.875	40	0.203	0.000	0.000	0.000	0.000	0.00	0	0.00	A-403/WP304/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
222-6P US	54	2.875	40	0.203	0.000	0.000	0.000	0.000	0.00	0	0.00	A-312/TP304/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
222-7E	2	2.875	40	0.203	0.000	0.000	0.000	0.000	1.50	90	0.00	A-403/WP304/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
222-9P DS	52	2.875	40	0.203	0.000	0.000	0.000	0.000	0.00	0	0.00	A-312/TP304/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
222-10E	2	2.875	40	0.203	0.000	0.000	0.000	0.000	0.00	0	0.00	A-403/WP304/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
222-10P US	52	2.875	40	0.203	0.000	0.000	0.000	0.000	0.00	0	0.00	A-312/TP304/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
222-10P DS	52	2.875	40	0.203	0.000	0.000	0.000	0.000	0.00	0	0.00	A-312/TP304/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
222-11E	2	2.875	40	0.203	0.000	0.000	0.000	0.000	0.00	0	0.00	A-403/WP304/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
222-11P US	52	2.875	40	0.203	0.000	0.000	0.000	0.000	0.00	0	0.00	A-312/TP304/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
Line Name :	**xNCW_223**																							
223-9R	18	4.500	40	0.237	0.000	0.000	3.500	0.216	0.00	0	0.00	A234/WP22/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
223-10P1 DS	52	3.500	40	0.216	0.000	0.000	0.000	0.000	0.00	0	0.00	A53/BE/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
223-10T	12	4.500	40	0.237	0.000	0.000	3.500	0.216	0.00	0	0.00	A234/WP22/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
223-10P US	62	4.500	40	0.237	0.000	0.000	0.000	0.000	0.00	0	0.00	A335/P22/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
223-10P DS	62	4.500	40	0.237	0.000	0.000	0.000	0.000	0.00	0	0.00	A335/P22/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
223-11P1 DS	52	3.500	40	0.216	0.000	0.000	0.000	0.000	0.00	0	0.00	A53/BE/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
223-11T	12	4.500	40	0.237	0.000	0.000	3.500	0.216	0.00	0	0.00	A234/WP22/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
223-11P US	62	4.500	40	0.237	0.000	0.000	0.000	0.000	0.00	0	0.00	A335/P22/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
223-13P DS	52	4.500	40	0.237	0.000	0.000	0.000	0.000	0.00	0	0.00	A335/P22/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
223-14E	2	4.500	40	0.237	0.000	0.000	0.000	0.000	1.50	0	0.00	A234/WP22/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
223-14P US	52	4.500	40	0.237	0.000	0.000	0.000	0.000	0.00	0	0.00	A335/P22/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
223-14P DS	52	4.500	40	0.237	0.000	0.000	0.000	0.000	0.00	0	0.00	A335/P22/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
223-15E	2	4.500	40	0.237	0.000	0.000	0.000	0.000	1.50	0	0.00	A234/WP22/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
223-15P US	52	4.500	40	0.237	0.000	0.000	0.000	0.000	0.00	0	0.00	A335/P22/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
223-15P DS	52	4.500	40	0.237	0.000	0.000	0.000	0.000	0.00	0	0.00	A335/P22/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
223-16E	2	4.500	40	0.237	0.000	0.000	0.000	0.000	1.50	0	0.00	A234/WP22/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
223-16P US	52	4.500	40	0.237	0.000	0.000	0.000	0.000	0.00	0	0.00	A335/P22/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
223-16P DS	52	4.500	40	0.237	0.000	0.000	0.000	0.000	0.00	0	0.00	A335/P22/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
223-17E	2	4.500	40	0.237	0.000	0.000	0.000	0.000	0.00	0	0.00	A234/WP22/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
223-17P US	52	4.500	40	0.237	0.000	0.000	0.000	0.000	0.00	0	0.00	A335/P22/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
223-17P DS	52	4.500	40	0.237	0.000	0.000	0.000	0.000	0.00	0	0.00	A335/P22/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
223-18E	2	4.500	40	0.237	0.000	0.000	0.000	0.000	0.00	0	0.00	A234/WP22/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
223-18P	52	4.500	40	0.237	0.000	0.000	0.000	0.000	0.00	0	0.00	A335/P22/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
223-19E	4	4.500	40	0.237	0.000	0.000	0.000	0.000	0.00	0	0.00	A234/WP22/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
223-19P US	54	4.500	40	0.237	0.000	0.000	0.000	0.000	0.00	0	0.00	A335/P22/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
Line Name :	**xNCW_224**																							
224-5N	52	8.625	20	0.250	0.000	0.000	0.000	0.000	0.00	0	0.00	A53/BE/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
224-4P	52	8.625	20	0.250	0.000	0.000	0.000	0.000	0.00	0	0.00	A53/BE/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
224-2P US	58	8.625	20	0.250	0.000	0.000	0.000	0.000	0.00	0	0.00	A53/BE/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
224-7P US	58	8.625	20	0.250	0.000	0.000	0.000	0.000	0.00	0	0.00	A53/BE/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
224-2P DS	58	8.625	20	0.250	0.000	0.000	0.000	0.000	0.00	0	0.00	A53/BE/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
224-3E	2	8.625	20	0.250	0.000	0.000	0.000	0.000	1.50	0	0.00	A-403/WP304/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
224-12P US	58	8.625	20	0.250	0.000	0.000	0.000	0.000	0.00	0	0.00	A53/BE/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
224-7P DS	58	8.625	20	0.250	0.000	0.000	0.000	0.000	0.00	0	0.00	A53/BE/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
224-8E	2	8.625	20	0.250	0.000	0.000	0.000	0.000	1.50	0	0.00	A-403/WP304/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
224-9P	52	8.625	20	0.250	0.000	0.000	0.000	0.000	0.00	0	0.00	A53/BE/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
224-10N	52	8.625	20	0.250	0.000	0.000	0.000	0.000	0.00	0	0.00	A53/BE/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000

Component Name	Geom Code	Pipe Size OD (in)	Sch.	Tnom (in)	Tinit (in)	Tcrit (in)	Br/Small End OD (in)	Br/Small Tnom (in)	R / D Ratio	Orient Angle (Deg.)	Pipe Length (in)	Spec/Type/ Class	Material Cr. (%)	Cu. (%)	Mo. (%)	Design Press. (psig)	Design Temp. (Deg. F)	Op. Press. (psig)	Op. Temp. (Deg. F)	Op. Enth. (Btu/lbm)	Op. Qual.	Flow Rate U/S Mn. (Mlbm/hr)	D/S Mn.	Br.
224-12P DS	58	8.625	20	0.250	0.000	0.000	0.000	0.000	0.00	0	0.00	A53/BE/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
224-13E	2	8.625	20	0.250	0.000	0.000	0.000	0.000	1.50	0	0.00	A-403/WP304/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
224-14P	52	8.625	20	0.250	0.000	0.000	0.000	0.000	0.00	0	0.00	A53/BE/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
224-15N	52	8.625	20	0.250	0.000	0.000	0.000	0.000	0.00	0	0.00	A53/BE/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000

Line Name : xNCW_225

225-13P	58	10.750	40	0.365	0.000	0.000	0.000	0.000	0.00	0	0.00	A53/BE/	0.00	0.00	0.00	221	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
225-14R	18	12.750	STD	0.375	0.000	0.000	10.750	0.365	0.00	0	0.00	A234/WPB/	0.00	0.00	0.00	221	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
225-15P US	68	12.750	STD	0.375	0.000	0.000	0.000	0.000	0.00	0	0.00	A53/BE/	0.00	0.00	0.00	221	400	0	0	0.000	0.000	0.00000	0.00000	0.00000

Line Name : xNCW_226

226-6P	58	10.750	40	0.365	0.000	0.000	0.000	0.000	0.00	0	0.00	A53/BE/	0.00	0.00	0.00	221	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
226-7R	18	12.750	STD	0.375	0.000	0.000	10.750	0.365	0.00	0	0.00	A234/WPB/	0.00	0.00	0.00	221	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
226-7P US	57	12.750	STD	0.375	0.000	0.000	0.000	0.000	0.00	0	0.00	A53/BE/	0.00	0.00	0.00	221	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
226-9E	1	12.750	STD	0.375	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	221	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
226-8P DS	51	12.750	STD	0.375	0.000	0.000	0.000	0.000	0.00	90	0.00	A53/BE/	0.00	0.00	0.00	221	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
226-9N	30	12.750	STD	0.375	0.000	0.000	0.000	0.000	0.00	90	0.00	A53/BE/	0.00	0.00	0.00	221	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
226-7P DS	57	12.750	STD	0.375	0.000	0.000	0.000	0.000	0.00	0	0.00	A53/BE/	0.00	0.00	0.00	221	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
226-8E	1	12.750	STD	0.375	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	221	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
226-8P US	51	12.750	STD	0.375	0.000	0.000	0.000	0.000	0.00	90	0.00	A53/BE/	0.00	0.00	0.00	221	400	0	0	0.000	0.000	0.00000	0.00000	0.00000

Line Name : xNCW_227

227-1P	9	10.750	40	0.365	0.000	0.000	0.000	0.000	0.00	0	0.00	A53/BE/	0.00	0.00	0.00	221	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
227-2C	9	10.750	40	0.365	0.000	0.000	0.000	0.000	0.00	0	0.00	A234/WPB/	0.00	0.00	0.00	221	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
227-3P	9	3.500	40	0.216	0.000	0.000	0.000	0.000	0.00	0	0.00	A53/BE/	0.00	0.00	0.00	221	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
227-4E	16	3.500	40	0.216	0.000	0.000	2.375	0.154	1.50	0	0.00	A234/WPB/	0.00	0.00	0.00	221	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
227-5P	66	2.375	40	0.154	0.000	0.000	0.000	0.000	0.00	0	0.00	A53/BE/	0.00	0.00	0.00	221	400	0	0	0.000	0.000	0.00000	0.00000	0.00000

Line Name : xNCW_228

228-5P US	58	1.315	80	0.179	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
228-8P	58	1.315	80	0.179	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
228-11P US	58	2.375	80	0.218	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
228-11P DS	58	2.375	80	0.218	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
228-12E	2	2.375	80	0.218	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
228-12P	52	2.375	80	0.218	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
228-16E	2	2.375	80	0.218	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
228-16P1 DS	52	2.375	80	0.218	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
228-17E	2	2.375	80	0.218	0.000	0.000	0.000	0.000	0.00	0	0.00	A234/WPB/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
228-17P US	52	2.375	40	0.154	0.000	0.000	0.000	0.000	0.00	0	0.00	A-312/TP316/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
228-15P DS	52	2.375	80	0.218	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
228-16P US	52	2.375	80	0.218	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000

Line Name : xNCW_229

229-2P DS	9	2.875	40	0.203	0.000	0.000	0.000	0.000	0.00	0	0.00	A-312/TP304/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
229-3E	2	2.875	40	0.203	0.000	0.000	0.000	0.000	0.00	0	0.00	A-403/WP304/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
229-3P	52	2.875	40	0.203	0.000	0.000	0.000	0.000	0.00	0	0.00	A-312/TP304/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
229-4E	1	2.875	40	0.203	0.000	0.000	0.000	0.000	0.00	0	0.00	A-403/WP304/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
229-5E	2	2.875	40	0.203	0.000	0.000	0.000	0.000	1.50	0	0.00	A-403/WP304/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
229-6E	4	2.875	40	0.203	0.000	0.000	0.000	0.000	0.00	0	0.00	A-403/WP304/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
229-9P DS	52	2.875	40	0.203	0.000	0.000	0.000	0.000	0.00	0	0.00	A-312/TP304/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
229-6P US	54	2.875	40	0.203	0.000	0.000	0.000	0.000	0.00	0	0.00	A-312/TP304/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
229-10E	2	2.875	40	0.203	0.000	0.000	0.000	0.000	0.00	0	0.00	A-403/WP304/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000

Component Name	Geom Code	Pipe Size OD (in)	Sch.	Tnom (in)	Tinit (in)	Tcrit (in)	Br/Small End OD (in)	Br/Small Tnom (in)	R / D Ratio	Orient Angle (Deg.)	Pipe Length (in)	Spec/Type/ Class	Material Cr. (%)	Cu. (%)	Mo. (%)	Design Press. (psig)	Design Temp. (Deg. F)	Op. Press. (psig)	Op. Temp. (Deg. F)	Op. Enth. (Btu/lbm)	Op. Qual.	Flow Rate U/S Mn. (Mlbm/hr)	D/S Mn.	Br.
229-10P US	52	2.875	40	0.203	0.000	0.000	0.000	0.000	0.00	0	0.00	A-312/TP304/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
229-10P DS	52	2.875	80	0.276	0.000	0.000	0.000	0.000	0.00	0	0.00	A-312/TP304/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
229-11E	2	2.875	80	0.276	0.000	0.000	0.000	0.000	1.50	0	0.00	A-403/WP304/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
229-11P US	52	2.875	80	0.276	0.000	0.000	0.000	0.000	0.00	0	0.00	A-312/TP304/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000

Line Name : xNCW_22B

4EXD-53P	51	6.625	40	0.280	0.000	0.000	0.000	0.000	0.00	0	0.00	A53/BS/	0.00	0.00	0.00	100	400	56	259	0.000	0.000	0.00000	0.00000	0.00000
4EXD-54	1	6.625	40	0.280	0.000	0.000	0.000	0.000	0.00	0	0.00	A234/WPB/	0.00	0.00	0.00	100	400	56	259	0.000	0.000	0.00000	0.00000	0.00000
4EXD-54P	51	6.625	40	0.280	0.000	0.000	0.000	0.000	0.00	0	0.00	A53/BS/	0.00	0.00	0.00	100	400	56	259	0.000	0.000	0.00000	0.00000	0.00000
4EXD-57	18	6.625	40	0.280	0.000	0.000	3.500	0.000	0.00	0	0.00	A234/WPB/	0.00	0.00	0.00	100	400	56	259	0.000	0.000	0.00000	0.00000	0.00000
4EXD-57P	68	6.625	40	0.280	0.000	0.000	0.000	0.000	0.00	0	0.00	A53/BE/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
4EXD-58	30	6.625	40	0.280	0.000	0.000	0.000	0.000	0.00	0	0.00	A53/BE/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000

Line Name : xNCW_230

230-17P	58	3.500	40	0.216	0.000	0.000	0.000	0.000	0.00	0	0.00	A53/BE/	0.00	0.00	0.00	100	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
230-18P	58	3.500	40	0.216	0.000	0.000	0.000	0.000	0.00	0	0.00	A53/BE/	0.00	0.00	0.00	100	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
230-19E	2	3.500	40	0.216	0.000	0.000	0.000	0.000	0.00	0	0.00	A234/WPB/	0.00	0.00	0.00	100	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
230-19P	58	3.500	40	0.216	0.000	0.000	0.000	0.000	0.00	0	0.00	A53/BE/	0.00	0.00	0.00	100	400	0	0	0.000	0.000	0.00000	0.00000	0.00000

Line Name : xNCW_231

231-2P DS	52	1.315	40	0.133	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	202	389	0	0	0.000	0.000	0.00000	0.00000	0.00000
231-3E	1	1.315	40	0.133	0.000	0.000	0.000	0.000	0.00	0	0.00	A105//	0.00	0.00	0.00	202	389	0	0	0.000	0.000	0.00000	0.00000	0.00000
231-3P	51	1.315	40	0.133	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	202	389	0	0	0.000	0.000	0.00000	0.00000	0.00000
231-4E	2	1.315	40	0.133	0.000	0.000	0.000	0.000	0.00	0	0.00	A105//	0.00	0.00	0.00	202	389	0	0	0.000	0.000	0.00000	0.00000	0.00000
231-4P US	52	1.315	40	0.133	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	202	389	0	0	0.000	0.000	0.00000	0.00000	0.00000

Line Name : xNCW_232

232-1P	9	10.750	40	0.365	0.000	0.000	0.000	0.000	0.00	0	0.00	A53/BE/	0.00	0.00	0.00	221	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
232-2C	9	10.750	40	0.365	0.000	0.000	0.000	0.000	0.00	0	0.00	A234/WPB/	0.00	0.00	0.00	221	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
232-3R	9	5.563	40	0.258	0.000	0.000	0.000	0.000	0.00	0	0.00	A234/WPB/	0.00	0.00	0.00	221	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
232-4R	17	3.500	40	0.216	0.000	0.000	2.375	0.154	1.50	0	0.00	A234/WPB/	0.00	0.00	0.00	221	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
232-5P US	67	2.375	40	0.154	0.000	0.000	0.000	0.000	0.00	0	0.00	SA-31/TP304/	0.00	0.00	0.00	221	400	0	0	0.000	0.000	0.00000	0.00000	0.00000

Line Name : xNCW_233

233-7P	58	20.000	20	0.375	0.000	0.000	0.000	0.000	0.00	0	0.00	A53/BE/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
233-9P	58	20.000	20	0.375	0.000	0.000	0.000	0.000	0.00	0	0.00	A53/BE/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
233-10E	1	20.000	20	0.375	0.000	0.000	0.000	0.000	0.00	0	0.00	A234/WPB/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000

Line Name : xNCW_234

234-2R	7	12.750	20	0.250	0.000	0.000	8.625	0.250	0.00	0	0.00	A234/WPB/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000

Line Name : xNCW_235

235-1P	9	3.500	40	0.216	0.000	0.000	0.000	0.000	0.00	0	0.00	A234/WPB/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
235-2E	2	3.500	40	0.216	0.000	0.000	0.000	0.000	0.00	0	0.00	A234/WPB/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
235-3P US	52	3.500	40	0.216	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
235-3P DS	52	3.500	40	0.216	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
235-4E	2	3.500	40	0.216	0.000	0.000	0.000	0.000	0.00	0	0.00	A234/WPB/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
235-5P US	52	3.500	40	0.216	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
235-5P DS	52	3.500	40	0.216	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
235-6E	2	3.500	40	0.216	0.000	0.000	0.000	0.000	0.00	0	0.00	A234/WPB/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
235-7P	52	3.500	40	0.216	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000

Component Name	Geom Code	Pipe Size OD (in)	Sch.	Tnom (in)	Tinit (in)	Tcrit (in)	Br/Small End OD (in)	Br/Small Tnom (in)	R / D Ratio	Orient Angle (Deg.)	Pipe Length (in)	Spec/Type/ Class	Material Cr. (%)	Cu. (%)	Mo. (%)	Design Press. (psig)	Design Temp. (Deg. F)	Op. Press. (psig)	Op. Temp. (Deg. F)	Op. Enth. (Btu/lbm)	Op. Qual.	Flow Rate U/S Mn. (Mlbm/hr)	D/S Mn. (Mlbm/hr)	Br.
Line Name : xNCW_235308(GLAND STM)																								
GS1	58	6.625	40	0.280	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
GS1R	18	3.500	40	0.216	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	0	0	0	0	0.000	0.000	0.00000	0.00000	0.00000
Line Name : xNCW_236																								
236-2P US	58	1.900	80	0.200	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
236-2P DS	58	1.900	80	0.200	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
236-6P US	58	1.900	80	0.200	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
236-8P US	58	1.900	80	0.200	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
236-11P US	58	1.900	80	0.200	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
236-11P-1 DS	58	1.900	80	0.200	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
Line Name : xNCW_237																								
237-2P US	58	1.900	80	0.200	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
237-3P DS	58	1.900	80	0.200	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
237-5P US	58	1.900	80	0.200	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
237-6P DS	58	1.900	80	0.200	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
237-8P US	58	1.900	80	0.200	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
237-12P US	58	1.900	80	0.200	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
237-15P US	58	1.900	80	0.200	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
Line Name : xNCW_238																								
238-10P US	56	2.375	40	0.154	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
238-35P US	56	2.375	40	0.154	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
Line Name : xNCW_239																								
239-10P US	56	2.375	40	0.154	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
239-35P US	56	2.375	40	0.154	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
239-2P	61	2.375	40	0.154	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
239-3E	2	2.375	40	0.154	0.000	0.000	0.000	0.000	0.00	0	0.00	A105//	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
239-4P	52	2.375	40	0.154	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
Line Name : xNCW_23B																								
4EXD-74	2	6.625	40	0.280	0.000	0.000	0.000	0.000	0.00	0	0.00	A234/WPB/	0.00	0.00	0.00	100	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
4EXD-78	18	6.625	40	0.280	0.000	0.000	3.500	0.216	0.00	0	0.00	A234/WPB/	0.00	0.00	0.00	100	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
4EXD-78P	58	6.625	40	0.280	0.000	0.000	0.000	0.000	0.00	0	0.00	A53/BE/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
4EXD-78N	30	6.625	40	0.280	0.000	0.000	0.000	0.000	0.00	0	0.00	A53/BE/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
Line Name : xNCW_240																								
240-10P US	56	2.375	40	0.154	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
240-35P US	56	2.375	40	0.154	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
Line Name : xNCW_241																								
241-7N	9	10.750	40	0.365	0.000	0.000	0.000	0.000	0.00	0	0.00	A53/BE/	0.00	0.00	0.00	221	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
241-8C	9	10.750	40	0.365	0.000	0.000	0.000	0.000	0.00	0	0.00	A234/WPB/	0.00	0.00	0.00	221	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
241-9R	9	5.563	40	0.258	0.000	0.000	0.000	0.000	0.00	0	0.00	A234/WPB/	0.00	0.00	0.00	221	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
241-10P	9	3.500	40	0.216	0.000	0.000	0.000	0.000	0.00	0	0.00	A-312/TP316/	0.00	0.00	0.00	221	400	0	0	0.000	0.000	0.00000	0.00000	0.00000

Component Name	Geom Code	Pipe Size OD (in)	Sch.	Tnom (in)	Tinit (in)	Tcrit (in)	Br/Small End OD (in)	Br/Small Tnom (in)	R / D Ratio	Orient Angle (Deg.)	Pipe Length (in)	Spec/Type/ Class	Material Cr. (%)	Cu. (%)	Mo. (%)	Design Press. (psig)	Design Temp. (Deg. F)	Op. Press. (psig)	Op. Temp. (Deg. F)	Op. Enth. (Btu/lbm)	Op. Qual.	Flow Rate U/S Mn. (Mlbm/hr)	D/S Mn.	Br.
241-11E	16	3.500	40	0.216	0.000	0.000	2.375	0.154	1.50	0	0.00	A-403/WP316/	0.00	0.00	0.00	221	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
241-12P US	66	2.375	40	0.154	0.000	0.000	0.000	0.000	0.00	0	0.00	SA-31/TP304/	0.00	0.00	0.00	221	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
241-1N	9	10.750	40	0.365	0.000	0.000	0.000	0.000	0.00	0	0.00	A53/BE/	0.00	0.00	0.00	221	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
241-2C	9	10.750	40	0.365	0.000	0.000	0.000	0.000	0.00	0	0.00	A234/WPB/	0.00	0.00	0.00	221	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
241-3R	9	5.563	40	0.258	0.000	0.000	0.000	0.000	0.00	0	0.00	A234/WPB/	0.00	0.00	0.00	221	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
241-4P US	9	3.500	40	0.216	0.000	0.000	0.000	0.000	0.00	0	0.00	A53/BE/	0.00	0.00	0.00	221	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
241-4P DS	9	3.500	40	0.216	0.000	0.000	0.000	0.000	0.00	0	0.00	A53/BE/	0.00	0.00	0.00	221	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
241-5E	16	3.500	40	0.216	0.000	0.000	2.375	0.154	1.50	0	0.00	A234/WPB/	0.00	0.00	0.00	221	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
241-6P US	66	2.375	40	0.154	0.000	0.000	0.000	0.000	0.00	0	0.00	SA-31/TP304/	0.00	0.00	0.00	221	400	0	0	0.000	0.000	0.00000	0.00000	0.00000

Line Name : xNCW_245

245-3P	56	1.315	80	0.179	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	1440	450	0	0	0.000	0.000	0.00000	0.00000	0.00000
245-7P	56	1.315	80	0.179	0.000	0.000	0.000	0.000	0.00	90	0.00	SA-31/TP304/	0.00	0.00	0.00	1440	450	0	0	0.000	0.000	0.00000	0.00000	0.00000
245-11P	56	1.315	80	0.179	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	1440	450	0	0	0.000	0.000	0.00000	0.00000	0.00000
245-15P	56	1.315	80	0.179	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	1440	450	0	0	0.000	0.000	0.00000	0.00000	0.00000

Line Name : xNCW_246

246-1N	31	2.875	40	0.203	0.000	0.000	0.000	0.000	0.00	0	0.00	A234/WPB/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
246-2P	61	2.875	40	0.203	0.000	0.000	0.000	0.000	0.00	0	0.00	A-312/TP304/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
246-3E	2	2.875	40	0.203	0.000	0.000	0.000	0.000	0.00	0	0.00	A-403/WP304/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
246-4P DS	52	2.875	40	0.203	0.000	0.000	0.000	0.000	0.00	0	0.00	A-312/TP304/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
246-5E	1	2.875	40	0.203	0.000	0.000	0.000	0.000	0.00	0	0.00	A-403/WP304/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
246-6P US	51	2.875	40	0.203	0.000	0.000	0.000	0.000	0.00	0	0.00	A-312/TP304/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
246-6P DS	51	2.875	40	0.203	0.000	0.000	0.000	0.000	0.00	0	0.00	A-312/TP304/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
246-7E	2	2.875	40	0.203	0.000	0.000	0.000	0.000	0.00	0	0.00	A-403/WP304/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
246-8E	4	2.875	40	0.203	0.000	0.000	0.000	0.000	1.50	90	0.00	A-403/WP304/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
246-17P DS	52	2.875	40	0.203	0.000	0.000	0.000	0.000	0.00	0	0.00	A-312/TP304/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
246-18E	2	2.875	40	0.203	0.000	0.000	0.000	0.000	0.00	0	0.00	A-403/WP304/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
246-19P US	52	2.875	40	0.203	0.000	0.000	0.000	0.000	0.00	0	0.00	A-312/TP304/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
246-21P DS	9	2.875	40	0.203	0.000	0.000	0.000	0.000	0.00	0	0.00	A-312/TP304/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
246-22E	2	2.875	40	0.203	0.000	0.000	0.000	0.000	0.00	0	0.00	A-403/WP304/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
246-23P US	52	2.875	40	0.203	0.000	0.000	0.000	0.000	0.00	0	0.00	A-312/TP304/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000

Line Name : xNCW_247

247-1N	31	5.563	40	0.258	0.000	0.000	0.000	0.000	0.00	0	0.00	A53/BE/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
247-2P US	61	5.563	40	0.258	0.000	0.000	0.000	0.000	0.00	0	0.00	A53/BE/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000

Line Name : xNCW_248

248-12P DS	52	4.500	80	0.337	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
248-13T	14	4.500	80	0.337	0.000	0.000	3.500	0.216	0.00	0	0.00	A234/WPB/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
248-14P	52	4.500	80	0.337	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
248-15C	9	4.500	80	0.337	0.000	0.000	0.000	0.000	0.00	0	0.00	A234/WPB/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
248-16P US	54	3.500	40	0.216	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000

Line Name : xNCW_249

249-25R	18	10.750	40	0.365	0.000	0.000	6.625	0.280	0.00	0	0.00	A234/WPB/	0.00	0.00	0.00	250	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
249-26P	68	10.750	40	0.365	0.000	0.000	0.000	0.000	0.00	0	0.00	A53/BS/	0.00	0.00	0.00	250	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
249-19R	18	10.750	40	0.365	0.000	0.000	6.625	0.280	0.00	0	0.00	A234/WPB/	0.00	0.00	0.00	250	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
249-20P	68	10.750	40	0.365	0.000	0.000	0.000	0.000	0.00	0	0.00	A53/BS/	0.00	0.00	0.00	250	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
249-21P DS	58	10.750	40	0.365	0.000	0.000	0.000	0.000	0.00	0	0.00	A53/BS/	0.00	0.00	0.00	250	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
249-28P	52	10.750	40	0.365	0.000	0.000	0.000	0.000	0.00	0	0.00	A53/BS/	0.00	0.00	0.00	250	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
249-29T	12	10.750	40	0.365	0.000	0.000	10.750	0.365	0.00	0	0.00	A234/WPB/	0.00	0.00	0.00	250	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
249-30P US	62	10.750	40	0.365	0.000	0.000	0.000	0.000	0.00	0	0.00	A53/BS/	0.00	0.00	0.00	250	400	0	0	0.000	0.000	0.00000	0.00000	0.00000

Component Name	Geom Code	Pipe Size OD (in)	Sch.	Tnom (in)	Tinit (in)	Tcrit (in)	Br/Small End OD (in)	Br/Small Tnom (in)	R / D Ratio	Orient Angle (Deg.)	Pipe Length (in)	Spec/Type/ Class	Material Cr. (%)	Cu. (%)	Mo. (%)	Design Press. (psig)	Design Temp. (Deg. F)	Op. Press. (psig)	Op. Temp. (Deg. F)	Op. Enth. (Btu/lbm)	Op. Qual.	Flow Rate U/S Mn. (Mlbm/hr)	D/S Mn. (Mlbm/hr)	Br.
Line Name : xNCW_24B																								
3EXD-15	2	8.625	20	0.250	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	50	300	55	259	0.000	0.000	0.00000	0.00000	0.00000
3EXD-16	7	8.625	20	0.250	0.000	0.000	6.625	0.280	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	50	300	55	259	0.000	0.000	0.00000	0.00000	0.00000
3EXD-16P	57	6.625	40	0.280	0.000	0.000	0.000	0.000	0.00	90	0.00	A53/BS/	0.00	0.00	0.00	50	300	55	259	0.000	0.000	0.00000	0.00000	0.00000
3EXD-17	18	8.625	20	0.250	0.000	0.000	6.625	0.280	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
3EXD-18	12	8.625	20	0.250	0.000	0.000	0.000	0.000	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
3EXD-18P US	62	8.625	20	0.250	0.000	0.000	0.000	0.000	0.00	0	0.00	A53/BE/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
Line Name : xNCW_250																								
250-17P	58	1.900	80	0.200	0.000	0.000	0.000	0.000	0.00	0	0.00	A-312/TP316/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
250-1P	58	1.900	80	0.200	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
250-18P DS	58	1.900	80	0.200	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
250-18E	2	1.900	80	0.200	0.000	0.000	0.000	0.000	0.00	0	0.00	A105//	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
250-21P US	52	1.900	80	0.200	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
Line Name : xNCW_251																								
251-12E	4	8.625	80	0.500	0.000	0.000	0.000	0.000	0.00	0	0.00	A234/WPB/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
251-13P US	54	8.625	80	0.500	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
251-21P	58	8.625	80	0.500	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
251-22E	4	8.625	80	0.500	0.000	0.000	0.000	0.000	0.00	0	0.00	A234/WPB/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
251-23P US	54	8.625	80	0.500	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
Line Name : xNCW_252																								
252-3T	15	3.500	40	0.216	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
252-4P US	65	3.500	40	0.216	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
252-9P DS	52	3.500	40	0.216	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
252-9T	10	3.500	40	0.216	0.000	0.000	0.000	0.000	0.00	0	0.00	A234/WPB/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
252-18P US	60	3.500	40	0.216	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
252-10P US	60	3.500	40	0.216	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
252-10T	14	3.500	40	0.216	0.000	0.000	2.375	0.218	0.00	0	0.00	A106/B/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
252-11P	64	2.375	80	0.218	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
252-30E	5	0.840	40	0.109	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
Line Name : xNCW_253																								
253-1N	31	6.625	40	0.280	0.000	0.000	0.000	0.000	0.00	0	0.00	A53/BE/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
253-2E	4	6.625	40	0.280	0.000	0.000	0.000	0.000	0.00	0	0.00	A234/WPB/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
253-3PUS	54	6.625	40	0.280	0.000	0.000	0.000	0.000	0.00	0	0.00	A234/WPB/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
253-4P DS	58	6.625	40	0.280	0.000	0.000	0.000	0.000	0.00	0	0.00	A53/BE/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
253-5T	12	6.625	40	0.280	0.000	0.000	3.500	0.216	0.00	0	0.00	A53/BE/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
Line Name : xNCW_254																								
254-15E	4	4.500	80	0.337	0.000	0.000	0.000	0.000	0.00	0	0.00	A234/WPB/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
254-16P US	54	4.500	80	0.337	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
254-3E	4	4.500	80	0.337	0.000	0.000	0.000	0.000	0.00	0	0.00	A234/WPB/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
254-4P US	54	4.500	80	0.337	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
254-20P DS	54	4.500	80	0.337	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
254-21E	4	4.500	80	0.337	0.000	0.000	0.000	0.000	0.00	0	0.00	A234/WPB/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
254-22P US	54	4.500	80	0.337	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
254-7E	0	4.500	80	0.337	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000

Component Name	Geom Code	Pipe Size OD (in)	Sch.	Tnom (in)	Tinit (in)	Tcrit (in)	Br/Small End OD (in)	Br/Small Tnom (in)	R / D Ratio	Orient Angle (Deg.)	Pipe Length (in)	Spec/Type/ Class	Material Cr. (%)	Cu. (%)	Mo. (%)	Design Press. (psig)	Design Temp. (Deg. F)	Op. Press. (psig)	Op. Temp. (Deg. F)	Op. Enth. (Btu/lbm)	Op. Qual.	Flow Rate U/S Mn. (Mlbm/hr)	D/S Mn. (Mlbm/hr)	Br.
Line Name : xNCW_255																								
255-14P	58	1.900	80	0.200	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
255-14E	2	1.900	80	0.200	0.000	0.000	0.000	0.000	1.50	0	0.00	A105//	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
255-15P US	52	1.900	80	0.200	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
255-15P DS	52	1.900	80	0.200	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
255-16E	2	1.900	80	0.200	0.000	0.000	0.000	0.000	1.50	0	0.00	A105//	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
255-17P US	52	1.900	80	0.200	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
255-20T	15	1.900	80	0.200	0.000	0.000	0.000	0.000	0.00	0	0.00	A105//	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
255-24P DS	52	1.900	80	0.200	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
255-19P DS	52	1.900	80	0.200	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
255-25P US	62	1.900	80	0.200	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
255-13P	58	1.900	80	0.200	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
Line Name : xNCW_256																								
256-38E	1	2.375	80	0.218	0.000	0.000	0.000	0.000	0.00	0	0.00	A105//	0.00	0.00	0.00	1085	450	0	0	0.000	0.000	0.00000	0.00000	0.00000
256-37P DS	51	2.375	80	0.218	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	1085	450	0	0	0.000	0.000	0.00000	0.00000	0.00000
256-39P US	51	2.375	80	0.218	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	1085	450	0	0	0.000	0.000	0.00000	0.00000	0.00000
256-28P	51	2.375	80	0.218	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	1085	450	0	0	0.000	0.000	0.00000	0.00000	0.00000
256-39P DS	51	2.375	80	0.218	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	1085	450	0	0	0.000	0.000	0.00000	0.00000	0.00000
256-41P US	61	2.375	80	0.218	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	1085	450	0	0	0.000	0.000	0.00000	0.00000	0.00000
256-40T	11	2.375	80	0.218	0.000	0.000	0.000	0.000	0.00	0	0.00	A105//	0.00	0.00	0.00	1085	450	0	0	0.000	0.000	0.00000	0.00000	0.00000
Line Name : xNCW_257																								
257-7R	18	4.500	80	0.337	0.000	0.000	2.875	0.276	0.00	0	0.00	A234/WPB/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
257-8P	68	4.500	80	0.337	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
Line Name : xNCW_258																								
258-6E	2	2.375	40	0.154	0.000	0.000	0.000	0.000	0.00	0	0.00	A105//	0.00	0.00	0.00	100	350	0	0	0.000	0.000	0.00000	0.00000	0.00000
258-5P US	52	2.375	40	0.154	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	100	350	0	0	0.000	0.000	0.00000	0.00000	0.00000
Line Name : xNCW_259																								
259-15E	4	4.500	80	0.337	0.000	0.000	0.000	0.000	0.00	0	0.00	A234/WPB/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
259-16P US	54	4.500	80	0.337	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
259-3E	4	4.500	80	0.337	0.000	0.000	0.000	0.000	0.00	0	0.00	A234/WPB/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
259-4P US	54	4.500	80	0.337	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
259-9E	2	4.500	80	0.337	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
259-8P DS	52	4.500	80	0.337	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
259-10P US	52	4.500	80	0.337	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
Line Name : xNCW_25B																								
3EXD-37	18	8.625	20	0.250	0.000	0.000	6.625	0.280	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
3EXD-38	12	8.625	20	0.250	0.000	0.000	8.625	0.250	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
3EXD-38P US	62	8.625	20	0.250	0.000	0.000	0.000	0.000	0.00	0	0.00	A53/BE/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
3EXD-34P	62	8.625	20	0.250	0.000	0.000	0.000	0.000	0.00	0	0.00	A53/BE/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
Line Name : xNCW_260																								
260-1R	18	8.625	40	0.322	0.000	0.000	6.625	0.280	0.00	0	0.00	A234/WPB/	0.00	0.00	0.00	100	350	0	0	0.000	0.000	0.00000	0.00000	0.00000
260-2P US	68	8.625	40	0.322	0.000	0.000	0.000	0.000	0.00	0	0.00	A53/BE/	0.00	0.00	0.00	100	350	0	0	0.000	0.000	0.00000	0.00000	0.00000

Component Name	Geom Code	Pipe Size OD (in)	Sch.	Tnom (in)	Tinit (in)	Tcrit (in)	Br/Small End OD (in)	Br/Small Tnom (in)	R / D Ratio	Orient Angle (Deg.)	Pipe Length (in)	Spec/Type/ Class	Material Cr. (%)	Cu. (%)	Mo. (%)	Design Press. (psig)	Design Temp. (Deg. F)	Op. Press. (psig)	Op. Temp. (Deg. F)	Op. Enth. (Btu/lbm)	Op. Qual.	Flow Rate U/S Mn. (Mlbm/hr)	D/S Mn.	Br.
Line Name : xNCW_261																								
261-21P DS	52	4.500	40	0.237	0.000	0.000	0.000	0.000	0.00	0	0.00	A53/BE/	0.00	0.00	0.00	150	225	0	0	0.000	0.000	0.00000	0.00000	0.00000
261-14P	58	12.750	20	0.250	0.000	0.000	0.000	0.000	0.00	0	0.00	A53/BE/	0.00	0.00	0.00	150	225	0	0	0.000	0.000	0.00000	0.00000	0.00000
Line Name : xNCW_262																								
262-17P DS	52	6.625	40	0.280	0.000	0.000	0.000	0.000	0.00	0	0.00	A53/BE/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
262-18T	13	6.625	40	0.280	0.000	0.000	0.000	0.000	0.00	0	0.00	A234/WPB/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
262-20E	4	4.500	40	0.237	0.000	0.000	0.000	0.000	0.00	0	0.00	A234/WPB/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
262-33P US	62	6.625	40	0.280	0.000	0.000	0.000	0.000	0.00	0	0.00	A53/BE/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
262-19R	17	6.625	40	0.280	0.000	0.000	4.500	0.237	0.00	0	0.00	A234/WPB/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
Line Name : xNCW_263																								
263-21P DS	62	12.750	30	0.330	0.000	0.000	0.000	0.000	0.00	0	0.00	A53/BE/	0.00	0.00	0.00	100	350	0	0	0.000	0.000	0.00000	0.00000	0.00000
263-23P US	60	12.750	30	0.330	0.000	0.000	0.000	0.000	0.00	0	0.00	A53/BE/	0.00	0.00	0.00	100	350	0	0	0.000	0.000	0.00000	0.00000	0.00000
263-25P US	57	10.750	30	0.307	0.000	0.000	0.000	0.000	0.00	0	0.00	A53/BE/	0.00	0.00	0.00	100	350	0	0	0.000	0.000	0.00000	0.00000	0.00000
263-22T	10	12.750	30	0.330	0.000	0.000	12.750	0.330	0.00	0	0.00	A234/WPB/	0.00	0.00	0.00	100	350	0	0	0.000	0.000	0.00000	0.00000	0.00000
263-24R	7	12.750	30	0.330	0.000	0.000	10.750	0.307	0.00	0	0.00	A234/WPB/	0.00	0.00	0.00	100	350	0	0	0.000	0.000	0.00000	0.00000	0.00000
263-14P DS	58	3.500	40	0.216	0.000	0.000	0.000	0.000	0.00	0	0.00	A53/BE/	0.00	0.00	0.00	100	350	0	0	0.000	0.000	0.00000	0.00000	0.00000
263-13R	18	6.625	40	0.280	0.000	0.000	3.500	0.216	0.00	0	0.00	A234/WPB/	0.00	0.00	0.00	100	350	0	0	0.000	0.000	0.00000	0.00000	0.00000
263-12P US	68	6.625	40	0.280	0.000	0.000	0.000	0.000	0.00	0	0.00	A53/BE/	0.00	0.00	0.00	100	350	0	0	0.000	0.000	0.00000	0.00000	0.00000
263-19R	18	6.625	40	0.280	0.000	0.000	3.500	0.216	0.00	0	0.00	A234/WPB/	0.00	0.00	0.00	100	350	0	0	0.000	0.000	0.00000	0.00000	0.00000
263-18P	68	6.625	40	0.280	0.000	0.000	0.000	0.000	0.00	0	0.00	A53/BE/	0.00	0.00	0.00	100	350	0	0	0.000	0.000	0.00000	0.00000	0.00000
263-17E	2	6.625	40	0.280	0.000	0.000	0.000	0.000	0.00	0	0.00	A234/WPB/	0.00	0.00	0.00	100	350	0	0	0.000	0.000	0.00000	0.00000	0.00000
263-6R	18	6.625	40	0.280	0.000	0.000	3.500	0.216	0.00	0	0.00	A234/WPB/	0.00	0.00	0.00	100	350	0	0	0.000	0.000	0.00000	0.00000	0.00000
263-5P US	68	6.625	40	0.280	0.000	0.000	0.000	0.000	0.00	0	0.00	A53/BE/	0.00	0.00	0.00	100	350	0	0	0.000	0.000	0.00000	0.00000	0.00000
Line Name : xNCW_264																								
264-1P	9	1.315	80	0.179	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
264-2E	2	1.315	80	0.179	0.000	0.000	0.000	0.000	0.00	0	0.00	A105//	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
264-3P US	52	1.315	80	0.179	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
264-9P DS	9	1.315	80	0.179	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
264-10T	10	1.315	80	0.179	0.000	0.000	0.000	0.000	0.00	0	0.00	A105//	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
264-11P US	60	1.315	80	0.179	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
264-14P US	60	1.315	80	0.179	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
Line Name : xNCW_265																								
265-9P DS	9	1.315	80	0.179	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
265-10T	10	1.315	80	0.179	0.000	0.000	0.000	0.000	0.00	0	0.00	A105//	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
265-11P US	60	1.315	80	0.179	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
265-14P US	60	1.315	80	0.179	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
Line Name : xNCW_266																								
266-9P DS	52	1.315	80	0.179	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
266-11P US	60	1.315	80	0.179	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
266-14P US	60	1.315	80	0.179	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
266-10T	10	1.315	80	0.179	0.000	0.000	0.000	0.000	0.00	0	0.00	A105//	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
266-1P	52	1.315	80	0.179	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
266-2E	2	1.315	80	0.179	0.000	0.000	0.000	0.000	1.50	0	0.00	A105//	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
266-3P US	52	1.315	80	0.179	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000

Component Name	Geom Code	Pipe Size OD (in)	Sch.	Tnom (in)	Tinit (in)	Tcrit (in)	Br/Small End OD (in)	Br/Small Tnom (in)	R / D Ratio	Orient Angle (Deg.)	Pipe Length (in)	Spec/Type/ Class	Material Cr. (%)	Cu. (%)	Mo. (%)	Design Press. (psig)	Design Temp. (Deg. F)	Op. Press. (psig)	Op. Temp. (Deg. F)	Op. Enth. (Btu/lbm)	Op. Qual.	Flow Rate U/S Mn. (Mlbm/hr)	D/S Mn. (Mlbm/hr)	Br.
Line Name : xNCW_267																								
267-6P DS	52	3.500	40	0.216	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
267-6E1	1	3.500	40	0.216	0.000	0.000	0.000	0.000	1.50	0	0.00	A234/WPB/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
267-6T	12	4.500	40	0.237	0.000	0.000	3.500	0.216	0.00	0	0.00	A106/B/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
267-29E	2	3.500	40	0.216	0.000	0.000	0.000	0.000	0.00	0	0.00	A234/WPB/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
267-30P	52	3.500	40	0.216	0.000	0.000	0.000	0.000	0.00	0	0.00	A234/WPB/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
267-31R	18	6.625	40	0.280	0.000	0.000	3.500	0.216	0.00	0	0.00	A234/WPB/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
267-32E	2	6.625	40	0.280	0.000	0.000	0.000	0.000	0.00	0	0.00	A234/WPB/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
267-33P	52	6.625	40	0.280	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
Line Name : xNCW_268																								
268-10P DS	9	1.315	80	0.179	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
268-16P US	9	1.315	80	0.179	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
268-12P US	9	1.315	80	0.179	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
268-11T	10	1.315	80	0.179	0.000	0.000	0.000	0.000	0.00	0	0.00	A105//	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
268-3E	2	1.315	80	0.179	0.000	0.000	0.000	0.000	0.00	0	0.00	A105//	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
268-2P	9	1.315	80	0.179	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
268-4P US	52	1.315	80	0.179	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
Line Name : xNCW_269																								
269-2P	9	1.315	80	0.179	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
269-4P US	52	1.315	80	0.179	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
269-3E	2	1.315	80	0.179	0.000	0.000	0.000	0.000	1.50	0	0.00	A105//	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
269-10P DS	9	1.315	80	0.179	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
269-12P US	9	1.315	80	0.179	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
269-16P US	9	1.315	80	0.179	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
269-11T	10	1.315	80	0.179	0.000	0.000	1.315	0.000	0.00	0	0.00	A105//	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
Line Name : xNCW_26B																								
3EXD-52	4	8.625	20	0.250	0.000	0.000	0.000	0.000	0.00	0	0.00	A234/WPB/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
3EXD-52P US	54	8.625	20	0.250	0.000	0.000	0.000	0.000	0.00	0	0.00	A53/BE/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
3EXD-53	2	8.625	20	0.250	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	50	300	55	259	0.000	0.000	0.00000	0.00000	0.00000
3EXD-54	7	8.625	20	0.250	0.000	0.000	6.625	0.280	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	50	300	55	259	0.000	0.000	0.00000	0.00000	0.00000
3EXD-55	18	8.625	20	0.250	0.000	0.000	6.625	0.280	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	50	300	55	259	0.000	0.000	0.00000	0.00000	0.00000
3EXD-56	12	8.625	20	0.250	0.000	0.000	8.625	0.250	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	50	300	55	259	0.000	0.000	0.00000	0.00000	0.00000
3EXD-56P US	62	8.625	20	0.250	0.000	0.000	0.000	0.000	0.00	31	0.00	A53/BS/	0.00	0.00	0.00	50	300	55	259	0.000	0.000	0.00000	0.00000	0.00000
Line Name : xNCW_270																								
270-2P	9	1.315	80	0.179	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
270-4P US	52	1.315	80	0.179	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
270-3E	2	1.315	80	0.179	0.000	0.000	0.000	0.000	0.00	0	0.00	A105//	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
270-10P DS	9	1.315	80	0.179	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
270-12P US	60	1.315	80	0.179	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
270-17P US	60	1.315	80	0.179	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
270-11T	10	1.315	80	0.179	0.000	0.000	0.000	0.000	0.00	0	0.00	A105//	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
Line Name : xNCW_271																								
271-17P DS	58	10.750	40	0.365	0.000	0.000	0.000	0.000	0.00	0	0.00	A53/BS/	0.00	0.00	0.00	250	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
271-18R	7	10.750	40	0.365	0.000	0.000	6.625	0.280	0.00	0	0.00	A234/WPB/	0.00	0.00	0.00	250	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
271-19R	18	10.750	40	0.365	0.000	0.000	6.625	0.280	0.00	0	0.00	A234/WPB/	0.00	0.00	0.00	250	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
271-20P US	68	10.750	40	0.365	0.000	0.000	0.000	0.000	0.00	0	0.00	A53/BS/	0.00	0.00	0.00	250	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
271-24R	18	10.750	40	0.365	0.000	0.000	6.625	0.280	0.00	0	0.00	A234/WPB/	0.00	0.00	0.00	250	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
271-25P US	68	10.750	40	0.365	0.000	0.000	0.000	0.000	0.00	0	0.00	A53/BS/	0.00	0.00	0.00	250	400	0	0	0.000	0.000	0.00000	0.00000	0.00000

Component Name	Geom Code	Pipe Size OD (in)	Sch.	Tnom (in)	Tinit (in)	Tcrit (in)	Br/Small End OD (in)	Br/Small Tnom (in)	R / D Ratio	Orient Angle (Deg.)	Pipe Length (in)	Spec/Type/ Class	Material Cr. (%)	Cu. (%)	Mo. (%)	Design Press. (psig)	Design Temp. (Deg. F)	Op. Press. (psig)	Op. Temp. (Deg. F)	Op. Enth. (Btu/lbm)	Op. Qual.	Flow Rate U/S Mn. (Mlbm/hr)	D/S Mn.	Br.
271-27P US	62	10.750	40	0.365	0.000	0.000	0.000	0.000	0.00	0	0.00	A53/BS/	0.00	0.00	0.00	250	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
271-26T	12	10.750	40	0.365	0.000	0.000	10.750	0.365	0.00	0	0.00	A234/WPB/	0.00	0.00	0.00	250	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
271-26P DS	58	10.750	40	0.365	0.000	0.000	0.000	0.000	0.00	0	0.00	A53/BS/	0.00	0.00	0.00	250	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
271-21P	52	10.750	40	0.365	0.000	0.000	0.000	0.000	0.00	0	0.00	A53/BS/	0.00	0.00	0.00	250	400	0	0	0.000	0.000	0.00000	0.00000	0.00000

Line Name : xNCW_272

272-3P	63	1.900	40	0.145	0.000	0.000	0.000	0.000	0.00	0	0.00	SA-31/TP304/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000

Line Name : xNCW_273

273-9P DS	52	3.500	40	0.216	0.000	0.000	0.000	0.000	0.00	0	0.00	A335/P22/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
273-10E	2	3.500	40	0.216	0.000	0.000	0.000	0.000	0.00	0	0.00	A234/WP22/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
273-1P US	54	3.500	40	0.216	0.000	0.000	0.000	0.000	0.00	0	0.00	A335/P22/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
273-7P DS	52	3.500	40	0.216	0.000	0.000	0.000	0.000	0.00	0	0.00	A335/P22/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
273-8E	2	3.500	40	0.216	0.000	0.000	0.000	0.000	0.00	0	0.00	A234/WP22/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
273-9P US	52	3.500	40	0.216	0.000	0.000	0.000	0.000	0.00	0	0.00	A335/P22/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000

Line Name : xNCW_274

274-25P DS	52	3.500	40	0.216	0.000	0.000	0.000	0.000	0.00	0	0.00	A53/BE/	0.00	0.00	0.00	100	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
274-25N	52	3.500	40	0.216	0.000	0.000	0.000	0.000	0.00	0	0.00	A53/BE/	0.00	0.00	0.00	100	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
274-1N	31	2.375	40	0.154	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	100	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
274-1C	9	2.375	40	0.154	0.000	0.000	0.000	0.000	0.00	0	0.00	A105//	0.00	0.00	0.00	100	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
274-1P	9	2.375	40	0.154	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	100	400	0	0	0.000	0.000	0.00000	0.00000	0.00000

Line Name : xNCW_275

275-12P DS	52	3.500	40	0.216	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
275-13E	3	3.500	40	0.216	0.000	0.000	0.000	0.000	0.00	0	0.00	A234/WPB/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
275-14N	30	3.500	40	0.216	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
275-10P DS	51	3.500	40	0.216	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
275-11E	2	3.500	40	0.216	0.000	0.000	0.000	0.000	0.00	0	0.00	A234/WPB/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
275-12P US	52	3.500	40	0.216	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
275-8P DS	52	3.500	40	0.216	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
275-9E	3	3.500	40	0.216	0.000	0.000	0.000	0.000	0.00	0	0.00	A234/WPB/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
275-10P US	53	3.500	40	0.216	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000

Line Name : xNCW_276

276-1N	31	1.900	40	0.145	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	250	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
276-1P	61	1.900	40	0.145	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	250	400	0	0	0.000	0.000	0.00000	0.00000	0.00000

Line Name : xNCW_277

277-22P DS	52	2.875	40	0.203	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	250	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
277-23N	31	2.875	40	0.203	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	250	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
277-20P DS	52	2.875	40	0.203	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	250	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
277-21E	2	2.875	40	0.203	0.000	0.000	0.000	0.000	0.00	0	0.00	A234/WPB/	0.00	0.00	0.00	250	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
277-22P US	52	2.875	40	0.203	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	250	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
277-18P DS	52	2.875	40	0.203	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	250	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
277-19E	2	2.875	40	0.203	0.000	0.000	0.000	0.000	0.00	0	0.00	A234/WPB/	0.00	0.00	0.00	250	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
277-20P US	52	2.875	40	0.203	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	250	400	0	0	0.000	0.000	0.00000	0.00000	0.00000

Line Name : xNCW_278

278-1N	31	1.315	40	0.133	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	450	450	0	0	0.000	0.000	0.00000	0.00000	0.00000
278-1C	9	1.315	40	0.133	0.000	0.000	0.000	0.000	0.00	0	0.00	A105//	0.00	0.00	0.00	450	450	0	0	0.000	0.000	0.00000	0.00000	0.00000

Component Name	Geom Code	Pipe Size OD (in)	Sch.	Tnom (in)	Tinit (in)	Tcrit (in)	Br/Small End OD (in)	Br/Small Tnom (in)	R / D Ratio	Orient Angle (Deg.)	Pipe Length (in)	Spec/Type/ Class	Material Cr. (%)	Cu. (%)	Mo. (%)	Design Press. (psig)	Design Temp. (Deg. F)	Op. Press. (psig)	Op. Temp. (Deg. F)	Op. Enth. (Btu/lbm)	Op. Qual.	Flow Rate U/S Mn. (Mlbm/hr)	D/S Mn.	Br.
278-1P	9	1.315	40	0.133	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	450	450	0	0	0.000	0.000	0.00000	0.00000	0.00000
278-1E	2	1.315	40	0.133	0.000	0.000	0.000	0.000	0.00	0	0.00	A105//	0.00	0.00	0.00	450	450	0	0	0.000	0.000	0.00000	0.00000	0.00000
278-2P	52	1.315	40	0.133	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	450	450	0	0	0.000	0.000	0.00000	0.00000	0.00000
Line Name :	**xNCW_279**																							
279-6R	18	2.875	40	0.203	0.000	0.000	2.375	0.154	0.00	0	0.00	A234/WPB/	0.00	0.00	0.00	450	220	0	0	0.000	0.000	0.00000	0.00000	0.00000
279-6P	68	2.875	40	0.203	0.000	0.000	0.000	0.000	0.00	0	0.00	A53/BS/	0.00	0.00	0.00	450	220	0	0	0.000	0.000	0.00000	0.00000	0.00000
Line Name :	**xNCW_280**																							
280-8P US	56	8.625	40	0.322	0.000	0.000	0.000	0.000	0.00	0	0.00	A53/BS/	0.00	0.00	0.00	300	420	0	0	0.000	0.000	0.00000	0.00000	0.00000
Line Name :	**xNCW_281**																							
281-13P DS	52	6.625	40	0.280	0.000	0.000	0.000	0.000	0.00	0	0.00	A53/BS/	0.00	0.00	0.00	35	260	0	0	0.000	0.000	0.00000	0.00000	0.00000
281-12E	2	6.625	40	0.280	0.000	0.000	0.000	0.000	0.00	0	0.00	A234/WPB/	0.00	0.00	0.00	35	260	0	0	0.000	0.000	0.00000	0.00000	0.00000
281-11P US	52	6.625	40	0.280	0.000	0.000	0.000	0.000	0.00	0	0.00	A53/BS/	0.00	0.00	0.00	35	260	0	0	0.000	0.000	0.00000	0.00000	0.00000
281-4P	68	6.625	40	0.280	0.000	0.000	0.000	0.000	0.00	0	0.00	A53/BS/	0.00	0.00	0.00	35	260	0	0	0.000	0.000	0.00000	0.00000	0.00000
281-3E	4	6.625	40	0.280	0.000	0.000	0.000	0.000	0.00	0	0.00	A234/WPB/	0.00	0.00	0.00	35	260	0	0	0.000	0.000	0.00000	0.00000	0.00000
281-2P US	54	6.625	40	0.280	0.000	0.000	0.000	0.000	0.00	0	0.00	A53/BS/	0.00	0.00	0.00	35	260	0	0	0.000	0.000	0.00000	0.00000	0.00000
Line Name :	**xNCW_282**																							
282-24R	7	10.750	40	0.365	0.000	0.000	4.500	0.237	0.00	0	0.00	A234/WPB/	0.00	0.00	0.00	35	260	0	0	0.000	0.000	0.00000	0.00000	0.00000
282-22P DS	62	10.750	40	0.365	0.000	0.000	0.000	0.000	0.00	0	0.00	A53/BS/	0.00	0.00	0.00	35	260	0	0	0.000	0.000	0.00000	0.00000	0.00000
282-31P	62	8.625	40	0.322	0.000	0.000	0.000	0.000	0.00	0	0.00	A53/BS/	0.00	0.00	0.00	35	260	0	0	0.000	0.000	0.00000	0.00000	0.00000
Line Name :	**xNCW_283**																							
283-6P DS	51	6.625	40	0.280	0.000	0.000	0.000	0.000	0.00	0	0.00	A53/BS/	0.00	0.00	0.00	35	260	0	0	0.000	0.000	0.00000	0.00000	0.00000
283-8R	7	6.625	40	0.280	0.000	0.000	4.500	0.237	0.00	0	0.00	A234/WPB/	0.00	0.00	0.00	35	260	0	0	0.000	0.000	0.00000	0.00000	0.00000
283-20R	7	6.625	40	0.280	0.000	0.000	4.500	0.237	0.00	0	0.00	A234/WPB/	0.00	0.00	0.00	35	260	0	0	0.000	0.000	0.00000	0.00000	0.00000
283-21P US	57	4.500	40	0.237	0.000	0.000	0.000	0.000	0.00	0	0.00	A53/BS/	0.00	0.00	0.00	35	260	0	0	0.000	0.000	0.00000	0.00000	0.00000
283-9P US	57	4.500	40	0.237	0.000	0.000	0.000	0.000	0.00	0	0.00	A53/BS/	0.00	0.00	0.00	35	260	0	0	0.000	0.000	0.00000	0.00000	0.00000
Line Name :	**xNCW_284**																							
284-7R	18	8.625	40	0.322	0.000	0.000	4.500	0.237	0.00	0	0.00	A234/WPB/	0.00	0.00	0.00	300	420	0	0	0.000	0.000	0.00000	0.00000	0.00000
Line Name :	**xNCW_285**																							
285-13P DS	51	3.500	40	0.216	0.000	0.000	0.000	0.000	0.00	0	0.00	A335/P22/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
285-1B-VCD-XE	2	3.500	40	0.216	0.000	0.000	0.000	0.000	0.00	0	0.00	A234/WP22/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
285-15P US	52	3.500	40	0.216	0.000	0.000	0.000	0.000	0.00	0	0.00	A335/P22/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
Line Name :	**xNCW_286**																							
286-3P DS	51	5.563	40	0.258	0.000	0.000	0.000	0.000	0.00	0	0.00	A53/BE/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
286-HV21C-1E	2	5.563	40	0.258	0.000	0.000	0.000	0.000	0.00	0	0.00	A234/WPB/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
286-5P US	52	5.563	40	0.258	0.000	0.000	0.000	0.000	0.00	0	0.00	A53/BE/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
Line Name :	**xNCW_287**																							
287-17P	52	2.375	80	0.218	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
287-16E	2	2.375	80	0.218	0.000	0.000	0.000	0.000	0.00	0	0.00	A105//	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000

Component Name	Geom Code	Pipe Size OD (in)	Sch.	Tnom (in)	Tinit (in)	Tcrit (in)	Br/Small End OD (in)	Br/Small Tnom (in)	R / D Ratio	Orient Angle (Deg.)	Pipe Length (in)	Spec/Type/ Class	Material Cr. (%)	Cu. (%)	Mo. (%)	Design Press. (psig)	Design Temp. (Deg. F)	Op. Press. (psig)	Op. Temp. (Deg. F)	Op. Enth. (Btu/lbm)	Op. Qual.	Flow Rate U/S Mn. (Mlbm/hr)	D/S Mn. (Mlbm/hr)	Br.
Line Name : xNCW_288																								
288-2P DS	61	1.315	80	0.179	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	202	389	0	0	0.000	0.000	0.00000	0.00000	0.00000
288-5EXV-DS-MS21A	2	1.315	80	0.179	0.000	0.000	0.000	0.000	0.00	0	0.00	A105//	0.00	0.00	0.00	202	389	0	0	0.000	0.000	0.00000	0.00000	0.00000
288-4P US	52	1.315	80	0.179	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	202	389	0	0	0.000	0.000	0.00000	0.00000	0.00000
Line Name : xNCW_2R16 Misc Inspections																								
EST-18	9	1.050	80	0.154	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	0	0	0	0	0.000	0.000	0.00000	0.00000	0.00000
FE-419	6	28.000	FE419	1.187	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	0	0	0	0	0.000	0.000	0.00000	0.00000	0.00000
MST-49	9	1.315	80	0.179	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	0	0	0	0	0.000	0.000	0.00000	0.00000	0.00000
Line Name : xNCW_2R17 Misc Inspections																								
FE-449	6	28.000	SPE	0.912	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	0	0	0	0	0.000	0.000	0.00000	0.00000	0.00000
EST-18	9	1.050	80	0.154	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	0	0	0	0	0.000	0.000	0.00000	0.00000	0.00000
MST-49	9	1.315	80	0.179	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	0	0	0	0	0.000	0.000	0.00000	0.00000	0.00000
DS-MS-46A	1	10.750	30	0.307	0.000	0.000	0.000	0.000	0.00	0	0.00	A234/WPB/	0.00	0.00	0.00	0	0	0	0	0.000	0.000	0.00000	0.00000	0.00000
SGBD-SG22T	10	2.375	80	0.218	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	0	0	0	0	0.000	0.000	0.00000	0.00000	0.00000
Line Name : xNCW_33B																								
1A-16	2	6.625	40	0.280	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	202	389	207	380	0.000	0.000	0.00000	0.00000	0.00000
1A-16P	58	6.625	40	0.280	0.000	0.000	0.000	0.000	0.00	90	0.00	A53/BE/	0.00	0.00	0.00	202	389	207	380	0.000	0.000	0.00000	0.00000	0.00000
1A-17	2	6.625	40	0.280	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	202	389	207	380	0.000	0.000	0.00000	0.00000	0.00000
1A-17P US	52	6.625	40	0.280	0.000	0.000	0.000	0.000	0.00	180	0.00	A53/BE/	0.00	0.00	0.00	202	389	207	380	0.000	0.000	0.00000	0.00000	0.00000
1A-17P DS	52	6.625	40	0.280	0.000	0.000	0.000	0.000	0.00	180	0.00	A53/BE/	0.00	0.00	0.00	202	389	207	380	0.000	0.000	0.00000	0.00000	0.00000
1A-18P-1	52	6.625	40	0.280	0.000	0.000	0.000	0.000	0.00	90	0.00	A53/BE/	0.00	0.00	0.00	202	389	207	380	0.000	0.000	0.00000	0.00000	0.00000
1A-21P DS	52	6.625	40	0.280	0.000	0.000	0.000	0.000	0.00	90	0.00	A53/BE/	0.00	0.00	0.00	202	389	0	0	0.000	0.000	0.00000	0.00000	0.00000
1A-22	2	6.625	40	0.280	0.000	0.000	0.000	0.000	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	202	389	0	0	0.000	0.000	0.00000	0.00000	0.00000
1A-22R	7	6.625	40	0.280	0.000	0.000	4.500	0.237	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	202	389	207	380	0.000	0.000	0.00000	0.00000	0.00000
1A-22P	67	4.500	40	0.237	0.000	0.000	0.000	0.000	0.00	90	0.00	A53/BE/	0.00	0.00	0.00	202	389	207	380	0.000	0.000	0.00000	0.00000	0.00000
Line Name : xNCW_34B																								
2A-16P	63	6.625	40	0.280	0.000	0.000	0.000	0.000	0.00	90	0.00	A53/BE/	0.00	0.00	0.00	202	389	207	380	0.000	0.000	0.00000	0.00000	0.00000
2A-16	2	6.625	40	0.280	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	202	389	207	380	0.000	0.000	0.00000	0.00000	0.00000
2A-17P	52	6.625	40	0.280	0.000	0.000	0.000	0.000	0.00	90	0.00	A53/BE/	0.00	0.00	0.00	202	389	207	380	0.000	0.000	0.00000	0.00000	0.00000
2A-17	3	6.625	40	0.280	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	202	389	207	380	0.000	0.000	0.00000	0.00000	0.00000
2A-18P	53	6.625	40	0.280	0.000	0.000	0.000	0.000	0.00	90	0.00	A53/BE/	0.00	0.00	0.00	202	389	207	380	0.000	0.000	0.00000	0.00000	0.00000
2A-21P DS	52	6.625	40	0.280	0.000	0.000	0.000	0.000	0.00	180	0.00	A53/BE/	0.00	0.00	0.00	202	389	0	0	0.000	0.000	0.00000	0.00000	0.00000
2A-22	2	6.625	40	0.280	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	202	389	0	0	0.000	0.000	0.00000	0.00000	0.00000
2A-22P US	52	6.625	40	0.280	0.000	0.000	0.000	0.000	0.00	90	0.00	A53/BE/	0.00	0.00	0.00	202	389	0	0	0.000	0.000	0.00000	0.00000	0.00000
2A-27R	7	6.625	40	0.280	0.000	0.000	4.500	0.237	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	202	389	207	380	0.000	0.000	0.00000	0.00000	0.00000
2A-27R1	18	6.625	40	0.280	0.000	0.000	4.500	0.237	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	202	389	207	380	0.000	0.000	0.00000	0.00000	0.00000
2A-28P	57	6.625	40	0.280	0.000	0.000	0.000	0.000	0.00	90	0.00	A53/BE/	0.00	0.00	0.00	202	389	207	380	0.000	0.000	0.00000	0.00000	0.00000
Line Name : xNCW_35B																								
3A-14P	51	6.625	40	0.280	0.000	0.000	0.000	0.000	0.00	90	0.00	A53/BE/	0.00	0.00	0.00	202	389	207	380	0.000	0.000	0.00000	0.00000	0.00000
3A-3P1	65	6.625	40	0.280	0.000	0.000	0.000	0.000	0.00	90	0.00	A53/BE/	0.00	0.00	0.00	202	389	207	380	0.000	0.000	0.00000	0.00000	0.00000
3A-3	3	6.625	40	0.280	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	202	389	207	380	0.000	0.000	0.00000	0.00000	0.00000
3A-3P US	53	6.625	40	0.280	0.000	0.000	0.000	0.000	0.00	90	0.00	A53/BE/	0.00	0.00	0.00	202	389	207	380	0.000	0.000	0.00000	0.00000	0.00000
3A-4	2	6.625	40	0.280	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	202	389	207	380	0.000	0.000	0.00000	0.00000	0.00000
3A-4P	52	6.625	40	0.280	0.000	0.000	0.000	0.000	0.00	90	0.00	A53/BE/	0.00	0.00	0.00	202	389	207	380	0.000	0.000	0.00000	0.00000	0.00000
3A-5	2	6.625	40	0.280	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	202	389	207	380	0.000	0.000	0.00000	0.00000	0.00000
3A-5P US	52	6.625	40	0.280	0.000	0.000	0.000	0.000	0.00	90	0.00	A53/BE/	0.00	0.00	0.00	202	389	207	380	0.000	0.000	0.00000	0.00000	0.00000

Component Name	Geom Code	Pipe Size OD (in)	Sch.	Tnom (in)	Tinit (in)	Tcrit (in)	Br/Small End OD (in)	Br/Small Tnom (in)	R / D Ratio	Orient Angle (Deg.)	Pipe Length (in)	Spec/Type/ Class	Material Cr. (%)	Cu. (%)	Mo. (%)	Design Press. (psig)	Design Temp. (Deg. F)	Op. Press. (psig)	Op. Temp. (Deg. F)	Op. Enth. (Btu/lbm)	Op. Qual.	Flow Rate U/S Mn. (Mlbm/hr)	D/S Mn.	Br.
3A-5P DS	52	6.625	40	0.280	0.000	0.000	0.000	0.000	0.00	90	0.00	A53/BE/	0.00	0.00	0.00	202	389	207	380	0.000	0.000	0.00000	0.00000	0.00000
3A-6	2	6.625	40	0.280	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	202	389	207	380	0.000	0.000	0.00000	0.00000	0.00000
3A-6P	52	6.625	40	0.280	0.000	0.000	0.000	0.000	0.00	180	0.00	A53/BE/	0.00	0.00	0.00	202	389	207	380	0.000	0.000	0.00000	0.00000	0.00000
3A-8P DS	52	6.625	40	0.280	0.000	0.000	0.000	0.000	0.00	90	0.00	A53/BE/	0.00	0.00	0.00	202	389	207	380	0.000	0.000	0.00000	0.00000	0.00000
3A-9	2	6.625	40	0.280	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	202	389	207	380	0.000	0.000	0.00000	0.00000	0.00000
3A-9P US	52	6.625	40	0.280	0.000	0.000	0.000	0.000	0.00	90	0.00	A53/BE/	0.00	0.00	0.00	202	389	207	380	0.000	0.000	0.00000	0.00000	0.00000
3A-12R	7	6.625	40	0.280	0.000	0.000	4.500	0.237	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	202	389	207	380	0.000	0.000	0.00000	0.00000	0.00000
3A-12P-1	57	4.500	40	0.237	0.000	0.000	0.000	0.000	0.00	90	0.00	A53/BE/	0.00	0.00	0.00	202	389	207	380	0.000	0.000	0.00000	0.00000	0.00000
Line Name :	**xNCW_36B**																							
1B-16P US	58	6.625	40	0.280	0.000	0.000	0.000	0.000	0.00	180	0.00	A53/BE/	0.00	0.00	0.00	202	389	0	0	0.000	0.000	0.00000	0.00000	0.00000
1B-16P DS	58	6.625	40	0.280	0.000	0.000	0.000	0.000	0.00	180	0.00	A53/BE/	0.00	0.00	0.00	202	389	0	0	0.000	0.000	0.00000	0.00000	0.00000
1B-16	2	6.625	40	0.280	0.000	0.000	0.000	0.000	0.00	180	0.00	A234/WPB/	0.00	0.00	0.00	202	389	0	0	0.000	0.000	0.00000	0.00000	0.00000
1B-16P1 US	52	6.625	40	0.280	0.000	0.000	0.000	0.000	0.00	90	0.00	A53/BE/	0.00	0.00	0.00	202	389	0	0	0.000	0.000	0.00000	0.00000	0.00000
1B-20P DS	52	6.625	40	0.280	0.000	0.000	0.000	0.000	0.00	90	0.00	A53/BE/	0.00	0.00	0.00	202	389	0	0	0.000	0.000	0.00000	0.00000	0.00000
1B-21	2	6.625	40	0.280	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	202	389	0	0	0.000	0.000	0.00000	0.00000	0.00000
1B-21P US	52	6.625	40	0.280	0.000	0.000	0.000	0.000	0.00	180	0.00	A53/BE/	0.00	0.00	0.00	202	389	0	0	0.000	0.000	0.00000	0.00000	0.00000
1B-22	2	6.625	40	0.280	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	202	389	0	0	0.000	0.000	0.00000	0.00000	0.00000
1B-22P	52	6.625	40	0.280	0.000	0.000	0.000	0.000	0.00	90	0.00	A53/BE/	0.00	0.00	0.00	202	389	0	0	0.000	0.000	0.00000	0.00000	0.00000
1B-23	2	6.625	40	0.280	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	202	389	0	0	0.000	0.000	0.00000	0.00000	0.00000
Line Name :	**xNCW_37B**																							
2B-13P DS	58	6.625	40	0.280	0.000	0.000	0.000	0.000	0.00	0	0.00	A53/BE/	0.00	0.00	0.00	202	389	0	0	0.000	0.000	0.00000	0.00000	0.00000
2B-14	2	6.625	40	0.280	0.000	0.000	0.000	0.000	0.00	0	0.00	A234/WPB/	0.00	0.00	0.00	202	389	0	0	0.000	0.000	0.00000	0.00000	0.00000
2B-15P US	52	6.625	40	0.280	0.000	0.000	0.000	0.000	0.00	0	0.00	A53/BE/	0.00	0.00	0.00	202	389	0	0	0.000	0.000	0.00000	0.00000	0.00000
2B-19P-1 DS	52	6.625	40	0.280	0.000	0.000	0.000	0.000	0.00	0	0.00	A53/BE/	0.00	0.00	0.00	202	389	0	0	0.000	0.000	0.00000	0.00000	0.00000
2B-19	2	6.625	40	0.280	0.000	0.000	0.000	0.000	1.50	0	0.00	A234/WPB/	0.00	0.00	0.00	202	389	0	0	0.000	0.000	0.00000	0.00000	0.00000
2B-20P-1 US	52	6.625	40	0.280	0.000	0.000	0.000	0.000	0.00	0	0.00	A53/BE/	0.00	0.00	0.00	202	389	0	0	0.000	0.000	0.00000	0.00000	0.00000
2B-20P-1 DS	52	6.625	40	0.280	0.000	0.000	0.000	0.000	0.00	180	0.00	A53/BE/	0.00	0.00	0.00	202	389	207	380	0.000	0.000	0.00000	0.00000	0.00000
2B-20	2	6.625	40	0.280	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	202	389	207	380	0.000	0.000	0.00000	0.00000	0.00000
2B-20P US	52	6.625	40	0.280	0.000	0.000	0.000	0.000	0.00	90	0.00	A53/BE/	0.00	0.00	0.00	202	389	207	380	0.000	0.000	0.00000	0.00000	0.00000
Line Name :	**xNCW_38B**																							
3B-17P DS	52	6.625	40	0.280	0.000	0.000	0.000	0.000	1.50	90	0.00	A53/BE/	0.00	0.00	0.00	202	389	0	0	0.000	0.000	0.00000	0.00000	0.00000
3B-18	2	6.625	40	0.280	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	202	389	0	0	0.000	0.000	0.00000	0.00000	0.00000
3B-19	4	6.625	40	0.280	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	202	389	0	0	0.000	0.000	0.00000	0.00000	0.00000
3B-19P US	54	6.625	40	0.280	0.000	0.000	0.000	0.000	1.50	90	0.00	A53/BE/	0.00	0.00	0.00	202	389	0	0	0.000	0.000	0.00000	0.00000	0.00000
3B-21P DS	52	6.625	40	0.280	0.000	0.000	0.000	0.000	0.00	90	0.00	A53/BE/	0.00	0.00	0.00	202	389	0	0	365.000	0.000	0.00000	0.00000	0.00000
3B-22	4	6.625	40	0.280	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	202	389	0	0	365.000	0.000	0.00000	0.00000	0.00000
3B-22P US	54	6.625	40	0.280	0.000	0.000	0.000	0.000	0.00	180	0.00	A53/BE/	0.00	0.00	0.00	202	389	0	0	365.000	0.000	0.00000	0.00000	0.00000
3B-22P DS	52	6.625	40	0.280	0.000	0.000	0.000	0.000	0.00	90	0.00	A53/BE/	0.00	0.00	0.00	202	389	0	0	365.000	0.000	0.00000	0.00000	0.00000
3B-23	2	6.625	40	0.280	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	202	389	0	0	365.000	0.000	0.00000	0.00000	0.00000
3B-23P US	2	6.625	40	0.280	0.000	0.000	0.000	0.000	0.00	90	0.00	A53/BE/	0.00	0.00	0.00	202	389	0	0	0.000	0.000	0.00000	0.00000	0.00000
3B-24P	58	6.625	40	0.280	0.000	0.000	0.000	0.000	0.00	90	0.00	A53/BE/	0.00	0.00	0.00	202	389	0	0	0.000	0.000	0.00000	0.00000	0.00000
3B-24N	30	6.625	40	0.280	0.000	0.000	0.000	0.000	0.00	90	0.00	A53/BE/	0.00	0.00	0.00	202	389	0	0	0.000	0.000	0.00000	0.00000	0.00000
Line Name :	**xNCW_39**																							
MS-1AN-1	31	2.875	80	0.276	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
MS-1A1P	52	2.875	80	0.276	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
MS-1A1	2	2.875	80	0.276	0.000	0.000	0.000	0.000	0.00	0	0.00	A234/WPB/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
MS-1A2P	52	2.875	80	0.276	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
MS-1A2	2	2.875	80	0.276	0.000	0.000	0.000	0.000	0.00	0	0.00	A234/WPB/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
MS-1A3P US	52	2.875	80	0.276	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000

Component Name	Geom Code	Pipe Size OD (in)	Sch.	Tnom (in)	Tinit (in)	Tcrit (in)	Br/Small End OD (in)	Br/Small Tnom (in)	R / D Ratio	Orient Angle (Deg.)	Pipe Length (in)	Spec/Type/ Class	Material Cr. (%)	Cu. (%)	Mo. (%)	Design Press. (psig)	Design Temp. (Deg. F)	Op. Press. (psig)	Op. Temp. (Deg. F)	Op. Enth. (Btu/lbm)	Op. Qual.	Flow Rate U/S Mn. (Mlbm/hr)	D/S Mn. (Mlbm/hr)	Br.
Line Name : xNCW_42																								
MS-1B2P DS	52	2.875	80	0.276	0.000	0.000	0.000	0.000	1.50	90	0.00	A106/B/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
MS-1B2	2	2.875	80	0.276	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
MS-1B3P US	52	2.875	80	0.276	0.000	0.000	0.000	0.000	1.50	90	0.00	A106/B/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
Line Name : xNCW_43																								
MS-2B1N	9	2.875	80	0.276	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	0	0	0	0	0.000	0.000	0.00000	0.00000	0.00000
MS-2B1	1	2.875	80	0.276	0.000	0.000	0.000	0.000	0.00	0	0.00	A234/WPB/	0.00	0.00	0.00	0	0	0	0	0.000	0.000	0.00000	0.00000	0.00000
MS-2B2P	9	2.875	80	0.276	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	0	0	0	0	0.000	0.000	0.00000	0.00000	0.00000
MS-2B2	1	2.875	80	0.276	0.000	0.000	0.000	0.000	0.00	0	0.00	A234/WPB/	0.00	0.00	0.00	0	0	0	0	0.000	0.000	0.00000	0.00000	0.00000
MS-2B3	1	2.875	80	0.276	0.000	0.000	0.000	0.000	0.00	0	0.00	A234/WPB/	0.00	0.00	0.00	0	0	0	0	0.000	0.000	0.00000	0.00000	0.00000
MS-2B4	1	2.875	80	0.276	0.000	0.000	0.000	0.000	0.00	0	0.00	A234/WPB/	0.00	0.00	0.00	0	0	0	0	0.000	0.000	0.00000	0.00000	0.00000
MS-2B4R	7	2.875	80	0.276	0.000	0.000	2.375	0.218	0.00	0	0.00	A234/WPB/	0.00	0.00	0.00	0	0	0	0	0.000	0.000	0.00000	0.00000	0.00000
MS-2B4N	30	2.375	80	0.218	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	0	0	0	0	0.000	0.000	0.00000	0.00000	0.00000
Line Name : xNCW_44																								
MS-3B4P	52	2.875	80	0.276	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
MS-3B4	2	2.875	80	0.276	0.000	0.000	0.000	0.000	0.00	0	0.00	A234/WPB/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
Line Name : xNCW_45B																								
MS-1A25R	18	8.625	80	0.500	0.000	0.000	6.625	0.432	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	600	542	0	1198.680	0.000	0.00000	0.00000	0.00000
MS-1A33	2	8.625	80	0.500	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	600	542	0	1198.680	0.000	0.00000	0.00000	0.00000
MS-1A33P US	52	8.625	80	0.500	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	1085	600	542	0	1198.680	0.000	0.00000	0.00000	0.00000
MS-1A33P DS	52	8.625	80	0.500	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	1085	600	542	0	1198.680	0.000	0.00000	0.00000	0.00000
MS-1A34	2	8.625	80	0.500	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	600	542	0	1198.680	0.000	0.00000	0.00000	0.00000
MS-1A34P-2	52	8.625	80	0.500	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	1085	600	542	0	1198.680	0.000	0.00000	0.00000	0.00000
MS-1A34R-1	17	8.625	80	0.500	0.000	0.000	6.625	0.432	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	600	542	0	1198.680	0.000	0.00000	0.00000	0.00000
MS-1A34R-2	18	8.625	80	0.500	0.000	0.000	6.625	0.432	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	600	-14	0	1198.680	0.000	0.00000	0.00000	0.00000
MS-1A34P-1	58	8.625	20	0.250	0.000	0.000	0.000	0.000	0.00	90	0.00	A53/BE/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
Line Name : xNCW_46B																								
MS-2A26P	63	8.625	80	0.500	0.000	0.000	0.000	0.000	0.00	180	0.00	A106/B/	0.00	0.00	0.00	1085	600	542	478	0.000	0.000	0.00000	0.00000	0.00000
MS-2A26	2	8.625	80	0.500	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	600	542	478	0.000	0.000	0.00000	0.00000	0.00000
MS-2A26P-1 US	52	8.625	80	0.500	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	1085	600	542	478	0.000	0.000	0.00000	0.00000	0.00000
MS-2A26P-1 DS	52	8.625	80	0.500	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	1085	600	542	478	0.000	0.000	0.00000	0.00000	0.00000
MS-2A27	5	8.625	80	0.500	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	600	542	478	0.000	0.000	0.00000	0.00000	0.00000
MS-2A27P US	55	8.625	80	0.500	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	1085	600	542	478	0.000	0.000	0.00000	0.00000	0.00000
MS-2A27P DS	55	8.625	80	0.500	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	1085	600	542	478	0.000	0.000	0.00000	0.00000	0.00000
MS-2A28	5	8.625	80	0.500	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	600	542	478	0.000	0.000	0.00000	0.00000	0.00000
MS-2A28P	55	8.625	80	0.500	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	1085	600	542	478	0.000	0.000	0.00000	0.00000	0.00000
MS-2A29	2	8.625	80	0.500	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	600	542	478	0.000	0.000	0.00000	0.00000	0.00000
MS-2A29P	52	8.625	80	0.500	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	1085	600	542	478	0.000	0.000	0.00000	0.00000	0.00000
MS-2A30	2	8.625	80	0.500	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	600	542	478	0.000	0.000	0.00000	0.00000	0.00000
MS-2A30P US	52	8.625	80	0.500	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	1085	600	542	478	0.000	0.000	0.00000	0.00000	0.00000
MS-2A30P DS	52	8.625	80	0.500	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	1085	600	542	478	0.000	0.000	0.00000	0.00000	0.00000
MS-2A31	2	8.625	80	0.500	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	600	542	478	0.000	0.000	0.00000	0.00000	0.00000
MS-2A31P	52	8.625	80	0.500	0.000	0.000	0.000	0.000	0.00	180	0.00	A106/B/	0.00	0.00	0.00	1085	600	542	478	0.000	0.000	0.00000	0.00000	0.00000
MS-2A32	2	8.625	80	0.500	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	600	542	478	0.000	0.000	0.00000	0.00000	0.00000
MS-2A32P	52	8.625	80	0.500	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	1085	600	542	478	0.000	0.000	0.00000	0.00000	0.00000
MS-2A32R	7	8.625	80	0.500	0.000	0.000	6.625	0.432	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	600	542	478	0.000	0.000	0.00000	0.00000	0.00000
MS-2A33R	18	8.625	80	0.500	0.000	0.000	6.625	0.432	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	600	-14	478	0.000	0.000	0.00000	0.00000	0.00000
MS-2A33	12	8.625	80	0.500	0.000	0.000	0.000	0.000	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	600	-14	478	0.000	0.000	0.00000	0.00000	0.00000
MS-2A33P	62	8.625	80	0.500	0.000	0.000	0.000	0.000	0.00	180	0.00	A106/B/	0.00	0.00	0.00	1085	600	-14	478	0.000	0.000	0.00000	0.00000	0.00000
MS-2A34	12	8.625	80	0.500	0.000	0.000	0.000	0.000	0.00	180	0.00	A234/WPB/	0.00	0.00	0.00	1085	600	-14	478	0.000	0.000	0.00000	0.00000	0.00000

Component Name	Geom Code	Pipe Size OD (in)	Sch.	Tnom (in)	Tinit (in)	Tcrit (in)	Br/Small End OD (in)	Br/Small Tnom (in)	R / D Ratio	Orient Angle (Deg.)	Pipe Length (in)	Spec/Type/ Class	Material Cr. (%)	Cu. (%)	Mo. (%)	Design Press. (psig)	Design Temp. (Deg. F)	Op. Press. (psig)	Op. Temp. (Deg. F)	Op. Enth. (Btu/lbm)	Op. Qual.	Flow Rate U/S Mn. (Mlbm/hr)	D/S Mn.	Br.
MS-2A34P	62	8.625	80	0.500	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	1085	600	-14	478	0.000	0.000	0.00000	0.00000	0.00000
MS-2A34N	30	8.625	80	0.500	0.000	0.000	0.000	0.000	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	600	-14	478	0.000	0.000	0.00000	0.00000	0.00000
Line Name :	**xNCW_47**																							
MS-3A28R	18	8.625	80	0.500	0.000	0.000	6.625	0.432	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.00000	0.00000	0.00000
MS-3A28	15	8.625	80	0.500	0.000	0.000	0.000	0.000	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	50	300	542	0	462.300	0.000	0.00000	0.00000	0.00000
MS-3A29	15	8.625	80	0.500	0.000	0.000	0.000	0.000	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	50	300	542	0	462.300	0.000	0.00000	0.00000	0.00000
MS-3A29P	62	8.625	80	0.500	0.000	0.000	0.000	0.000	0.00	90	0.00	A53/BE/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
MS-3A30N	62	8.625	40	0.322	0.000	0.000	0.000	0.000	0.00	90	0.00	A53/BE/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
Line Name :	**xNCW_48A**																							
MS-1B41P	52	6.625	80	0.432	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.00000	0.00000	0.00000
MS-1B41R	18	8.625	80	0.500	0.000	0.000	6.625	0.432	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	600	542	0	462.300	0.000	0.00000	0.00000	0.00000
MS-1B42P	52	8.625	20	0.250	0.000	0.000	0.000	0.000	0.00	90	0.00	A53/BE/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
Line Name :	**xNCW_49B**																							
MS-2B27P	63	8.625	80	0.500	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	1085	600	542	478	0.000	0.000	0.00000	0.00000	0.00000
MS-2B56	2	8.625	80	0.500	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	600	542	478	0.000	0.000	0.00000	0.00000	0.00000
MS-2B56P	52	8.625	80	0.500	0.000	0.000	0.000	0.000	0.00	180	0.00	A106/B/	0.00	0.00	0.00	1085	600	542	478	0.000	0.000	0.00000	0.00000	0.00000
MS-2B61	2	8.625	80	0.500	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
MS-2B62R	18	8.625	80	0.500	0.000	0.000	6.625	0.432	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	600	542	478	0.000	0.000	0.00000	0.00000	0.00000
MS-2B62P	58	8.625	20	0.250	0.000	0.000	0.000	0.000	0.00	90	0.00	A53/BE/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
Line Name :	**xNCW_50B**																							
MS-3B44P1	58	6.625	80	0.432	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
MS-3B44R	18	8.625	80	0.500	0.000	0.000	6.625	0.432	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
MS-3B44P	58	8.625	20	0.250	0.000	0.000	0.000	0.000	0.00	90	0.00	A53/BE/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
Line Name :	**xNCW_55A**																							
BD3-13P	68	2.375	80	0.218	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	1085	600	665	499	0.000	0.000	0.00000	0.00000	0.00000
BD3-20	2	3.500	80	0.300	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	600	665	499	0.000	0.000	0.00000	0.00000	0.00000
BD3-20P	58	3.500	80	0.300	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	1085	600	665	499	0.000	0.000	0.00000	0.00000	0.00000
BD3-21	2	3.500	80	0.300	0.000	0.000	0.000	0.000	1.50	0	0.00	A234/WPB/	0.00	0.00	0.00	1085	600	665	499	0.000	0.000	0.00000	0.00000	0.00000
Line Name :	**xNCW_55B**																							
BD3-21P	52	3.500	80	0.300	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	1085	600	665	499	0.000	0.000	0.00000	0.00000	0.00000
BD3-22	2	3.500	80	0.300	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	600	665	499	0.000	0.000	0.00000	0.00000	0.00000
BD3-22P	52	3.500	80	0.300	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	1085	600	665	499	0.000	0.000	0.00000	0.00000	0.00000
BD3-23	2	3.500	80	0.300	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	600	665	499	0.000	0.000	0.00000	0.00000	0.00000
BD3-23P	52	3.500	80	0.300	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	1085	600	665	499	0.000	0.000	0.00000	0.00000	0.00000
BD3-24	2	3.500	80	0.300	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	600	665	499	0.000	0.000	0.00000	0.00000	0.00000
BD3-24P	52	3.500	80	0.300	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	1085	600	665	499	0.000	0.000	0.00000	0.00000	0.00000
Line Name :	**xNCW_55C**																							
BD3-47	13	3.500	80	0.300	0.000	0.000	0.000	0.000	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	600	665	499	0.000	0.000	0.00000	0.00000	0.00000
BD3-49P-1	65	3.500	80	0.300	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
BD3-50	15	3.500	80	0.300	0.000	0.000	0.000	0.000	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
BD3-50P US	65	3.500	80	0.300	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
BD3-50P-1 DS	65	3.500	80	0.300	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000

Component Name	Geom Code	Pipe Size OD (in)	Sch.	Tnom (in)	Tinit (in)	Tcrit (in)	Br/Small End OD (in)	Br/Small Tnom (in)	R / D Ratio	Orient Angle (Deg.)	Pipe Length (in)	Spec/Type/ Class	Material Cr. (%)	Cu. (%)	Mo. (%)	Design Press. (psig)	Design Temp. (Deg. F)	Op. Press. (psig)	Op. Temp. (Deg. F)	Op. Enth. (Btu/lbm)	Op. Qual.	Flow Rate U/S Mn. (Mlbm/hr)	D/S Mn.	Br.
BD3-51R	7	3.500	80	0.300	0.000	0.000	1.900	0.200	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	600	665	499	0.000	0.000	0.00000	0.00000	0.00000
BD3-52	2	1.900	80	0.200	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	600	665	499	0.000	0.000	0.00000	0.00000	0.00000
BD3-52P	52	1.900	80	0.200	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	1085	600	665	499	0.000	0.000	0.00000	0.00000	0.00000
BD3-53P	58	1.900	80	0.200	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
BD3-53R	18	3.500	80	0.300	0.000	0.000	1.900	0.200	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000

Line Name : xNCW_56_CROSSUNDER (A)

5EX-49N	31	33.000	SPE	0.500	0.000	0.000	0.000	0.000	0.00	90	0.00	A155/KC702/	18.00	0.00	0.00	221	400	211	0	1137.900	0.000	2.68699	0.00000	0.00000
5EX-49P1	61	33.000	SPE	0.500	0.000	0.000	0.000	0.000	0.00	180	0.00	A155/KC702/	18.00	0.00	0.00	221	400	211	0	1137.900	0.000	2.68699	0.00000	0.00000
5EX-49	2	33.000	SPE	0.500	0.000	0.000	0.000	0.000	1.50	90	0.00	A155/KC702/	18.00	0.00	0.00	221	400	211	0	1137.900	0.000	2.68699	0.00000	0.00000
5EX-49P2	52	33.000	SPE	0.500	0.000	0.000	0.000	0.000	0.00	90	0.00	A155/KC702/	18.00	0.00	0.00	221	400	211	0	1137.900	0.000	2.68699	0.00000	0.00000
5EX-52	1	33.000	SPE	0.500	0.000	0.000	0.000	0.000	1.50	90	0.00	A155/KC702/	18.00	0.00	0.00	221	400	211	0	1137.900	0.000	2.68699	0.00000	0.00000
5EX-52P	51	33.000	SPE	0.500	0.000	0.000	0.000	0.000	0.00	61	0.00	A155/KC702/	18.00	0.00	0.00	221	400	211	0	1137.900	0.000	2.68699	0.00000	0.00000
5EX-53	4	33.000	SPE	0.500	0.000	0.000	0.000	0.000	1.50	90	0.00	A155/KC702/	18.00	0.00	0.00	221	400	211	0	1137.900	0.000	2.68699	0.00000	0.00000
5EX-53R	18	48.500	SPE	1.000	0.000	0.000	33.000	0.500	0.00	90	0.00	A155/KC702/	18.00	0.00	0.00	221	400	211	0	1137.900	0.000	2.68699	2.68699	0.00000
5EX-53P	68	48.500	SPE	1.000	0.000	0.000	0.000	0.000	0.00	90	0.00	A155/KC702/	18.00	0.00	0.00	221	400	211	0	1137.900	0.000	2.68699	0.00000	0.00000
5EX-50N	31	33.000	SPE	0.500	0.000	0.000	0.000	0.000	0.00	90	0.00	A155/KC702/	18.00	0.00	0.00	221	400	211	0	1137.900	0.000	2.68699	0.00000	0.00000
5EX-50P1	61	33.000	SPE	0.500	0.000	0.000	0.000	0.000	0.00	180	0.00	A155/KC702/	18.00	0.00	0.00	221	400	211	0	1137.900	0.000	2.68699	0.00000	0.00000
5EX-50	2	33.000	SPE	0.500	0.000	0.000	0.000	0.000	1.50	90	0.00	A155/KC702/	18.00	0.00	0.00	221	400	211	0	1137.900	0.000	2.68699	0.00000	0.00000
5EX-50P2	52	33.000	SPE	0.500	0.000	0.000	0.000	0.000	0.00	90	0.00	A155/KC702/	18.00	0.00	0.00	221	400	211	0	1137.900	0.000	2.68699	0.00000	0.00000
5EX-62	1	33.000	SPE	0.500	0.000	0.000	0.000	0.000	1.50	90	0.00	A155/KC702/	18.00	0.00	0.00	221	400	211	0	1137.900	0.000	2.68699	0.00000	0.00000
5EX-50P3	51	33.000	SPE	0.500	0.000	0.000	0.000	0.000	0.00	90	0.00	A155/KC702/	18.00	0.00	0.00	221	400	211	0	1137.900	0.000	2.68699	0.00000	0.00000
5EX-51	1	33.000	SPE	0.500	0.000	0.000	0.000	0.000	1.50	90	0.00	A155/KC702/	18.00	0.00	0.00	221	400	211	0	1137.900	0.000	2.68699	0.00000	0.00000
5EX-51P	51	33.000	SPE	0.500	0.000	0.000	0.000	0.000	0.00	61	0.00	A155/KC702/	18.00	0.00	0.00	221	400	211	0	1137.900	0.000	2.68699	0.00000	0.00000
5EX-54	12	48.500	SPE	1.000	0.000	0.000	33.000	0.500	0.00	90	0.00	A155/KC702/	18.00	0.00	0.00	221	400	211	0	1137.900	0.000	2.68699	5.37398	2.68699
5EX-54P	62	48.500	SPE	1.000	0.000	0.000	0.000	0.000	0.00	90	0.00	A155/KC702/	18.00	0.00	0.00	221	400	211	0	1137.900	0.000	5.37398	0.00000	0.00000
5EX-55	14	48.500	SPE	1.000	0.000	0.000	27.500	0.500	0.00	90	0.00	A155/KC702/	18.00	0.00	0.00	221	400	211	0	1137.900	0.000	5.37397	3.58265	1.79132
5EX-55P	64	27.500	SPE	0.500	0.000	0.000	0.000	0.000	0.00	71	0.00	A285/C/	0.00	0.00	0.00	221	400	211	0	1137.900	0.000	1.79132	0.00000	0.00000
5EX-56	2	27.500	SPE	0.500	0.000	0.000	0.000	0.000	1.50	90	0.00	A155/KC702/	18.00	0.00	0.00	221	400	211	0	1137.900	0.000	1.79132	0.00000	0.00000
5EX-56P	52	27.500	SPE	0.500	0.000	0.000	0.000	0.000	0.00	90	0.00	A155/KC702/	18.00	0.00	0.00	221	400	211	0	1137.900	0.000	1.79132	0.00000	0.00000
5EX-56N	30	27.500	SPE	0.500	0.000	0.000	0.000	0.000	0.00	90	0.00	A155/KC702/	18.00	0.00	0.00	221	400	211	0	1137.900	0.000	1.79132	0.00000	0.00000
5EX-55R	7	48.500	SPE	1.000	0.000	0.000	38.000	0.500	0.00	90	0.00	A155/KC702/	18.00	0.00	0.00	221	400	211	0	1137.900	0.000	3.58265	3.58265	0.00000
5EX-55P-1	68	38.000	SPE	0.500	0.000	0.000	0.000	0.000	0.00	90	0.00	A155/KC702/	18.00	0.00	0.00	221	400	211	0	1137.900	0.000	3.58265	0.00000	0.00000
5EX-57	14	38.000	SPE	0.500	0.000	0.000	27.500	0.500	0.00	90	0.00	A155/KC702/	18.00	0.00	0.00	221	400	211	0	1137.900	0.000	3.58265	1.79132	1.79132
5EX-57P1	64	27.500	SPE	0.500	0.000	0.000	0.000	0.000	0.00	71	0.00	A285/C/	0.00	0.00	0.00	221	400	211	0	1137.900	0.000	1.79132	0.00000	0.00000
5EX-58	2	27.500	SPE	0.500	0.000	0.000	0.000	0.000	1.50	90	0.00	A155/KC702/	18.00	0.00	0.00	221	400	211	0	1137.900	0.000	1.79132	0.00000	0.00000
5EX-58P	52	27.500	SPE	0.500	0.000	0.000	0.000	0.000	0.00	90	0.00	A155/KC702/	18.00	0.00	0.00	221	400	211	0	1137.900	0.000	1.79132	0.00000	0.00000
5EX-58N	30	27.500	SPE	0.500	0.000	0.000	0.000	0.000	0.00	90	0.00	A155/KC702/	18.00	0.00	0.00	221	400	211	0	1137.900	0.000	1.79132	0.00000	0.00000
5EX-57R	7	38.000	SPE	0.500	0.000	0.000	27.500	0.500	0.00	90	0.00	A155/KC702/	18.00	0.00	0.00	221	400	211	0	1137.900	0.000	1.79132	1.79132	0.00000
5EX-57P2	57	27.500	SPE	0.500	0.000	0.000	0.000	0.000	0.00	90	0.00	A155/KC702/	18.00	0.00	0.00	221	400	211	0	1137.900	0.000	1.79132	0.00000	0.00000
5EX-59	2	27.500	SPE	0.500	0.000	0.000	0.000	0.000	1.50	90	0.00	A155/KC702/	18.00	0.00	0.00	221	400	211	0	1137.900	0.000	1.79132	0.00000	0.00000
5EX-59P1	52	27.500	SPE	0.500	0.000	0.000	0.000	0.000	0.00	71	0.00	A285/C/	0.00	0.00	0.00	221	400	211	0	1137.900	0.000	1.79132	0.00000	0.00000
5EX-59P	52	27.500	SPE	0.500	0.000	0.000	0.000	0.000	0.00	71	0.00	A285/C/	0.00	0.00	0.00	221	400	211	0	1137.900	0.000	1.79132	0.00000	0.00000
5EX-59P2	52	27.500	SPE	0.500	0.000	0.000	0.000	0.000	0.00	71	0.00	A285/C/	0.00	0.00	0.00	221	400	211	0	1137.900	0.000	1.79132	0.00000	0.00000
5EX-60	2	27.500	SPE	0.500	0.000	0.000	0.000	0.000	1.50	90	0.00	A155/KC702/	18.00	0.00	0.00	221	400	211	0	1137.900	0.000	1.79132	0.00000	0.00000
5EX-60P	52	27.500	SPE	0.500	0.000	0.000	0.000	0.000	0.00	90	0.00	A155/KC702/	18.00	0.00	0.00	221	400	211	0	1137.900	0.000	1.79132	0.00000	0.00000
5EX-60N	30	27.500	SPE	0.500	0.000	0.000	0.000	0.000	0.00	90	0.00	A155/KC702/	18.00	0.00	0.00	221	400	211	0	1137.900	0.000	1.79132	0.00000	0.00000

Line Name : xNCW_57_CROSSUNDER (B)

5EX-37N	31	33.000	SPE	0.500	0.000	0.000	0.000	0.000	0.00	90	0.00	A155/KC702/	18.00	0.00	0.00	221	400	211	0	1137.900	0.000	2.68699	0.00000	0.00000
5EX-37P1	61	33.000	SPE	0.500	0.000	0.000	0.000	0.000	0.00	180	0.00	A155/KC702/	18.00	0.00	0.00	221	400	211	0	1137.900	0.000	2.68699	0.00000	0.00000
5EX-37	2	33.000	SPE	0.500	0.000	0.000	0.000	0.000	1.50	90	0.00	A155/KC702/	18.00	0.00	0.00	221	400	211	0	1137.900	0.000	2.68699	0.00000	0.00000
5EX-37P2	52	33.000	SPE	0.500	0.000	0.000	0.000	0.000	0.00	90	0.00	A155/KC702/	18.00	0.00	0.00	221	400	211	0	1137.900	0.000	2.68699	0.00000	0.00000
5EX-40	1	33.000	SPE	0.500	0.000	0.000	0.000	0.000	1.50	90	0.00	A155/KC702/	18.00	0.00	0.00	221	400	211	0	1137.900	0.000	2.68699	0.00000	0.00000
5EX-40P	51	33.000	SPE	0.500	0.000	0.000	0.000	0.000	0.00	61	0.00	A155/KC702/	18.00	0.00	0.00	221	400	211	0	1137.900	0.000	2.68699	0.00000	0.00000
5EX-41	2	33.000	SPE	0.500	0.000	0.000	0.000	0.000	1.50	90	0.00	A155/KC702/	18.00	0.00	0.00	221	400	211	0	1137.900	0.000	2.68699	0.00000	0.00000
5EX-41R	18	48.500	SPE	1.000	0.000	0.000	33.000	0.500	0.00	90	0.00	A155/KC702/	18.00	0.00	0.00	221	400	211	0	1137.900	0.000	2.68699	2.68699	0.00000
5EX-38N	31	33.000	SPE	0.500	0.000	0.000	0.000	0.000	0.00	90	0.00	A155/KC702/	18.00	0.00	0.00	221	400	211	0	1137.900	0.000	2.68699	0.00000	0.00000
5EX-38P	61	33.000	SPE	0.500	0.000	0.000	0.000	0.000	0.00	180	0.00	A155/KC702/	18.00	0.00	0.00	221	400	211	0	1137.900	0.000	2.68699	0.00000	0.00000
5EX-38	2	33.000	SPE	0.500	0.000	0.000	0.000	0.000	1.50	90	0.00	A155/KC702/	18.00	0.00	0.00	221	400	211	0	1137.900	0.000	2.68699	0.00000	0.00000

Component Name	Geom Code	Pipe Size OD (in)	Sch.	Tnom (in)	Tinit (in)	Tcrit (in)	Br/Small End OD (in)	Br/Small Tnom (in)	R / D Ratio	Orient Angle (Deg.)	Pipe Length (in)	Spec/Type/ Class	Material Cr. (%)	Cu. (%)	Mo. (%)	Design Press. (psig)	Design Temp. (Deg. F)	Op. Press. (psig)	Op. Temp. (Deg. F)	Op. Enth. (Btu/lbm)	Op. Qual.	Flow Rate U/S Mn. (Mlbm/hr)	D/S Mn.	Br.
5EX-61P1	52	33.000	SPE	0.500	0.000	0.000	0.000	0.000	0.00	90	0.00	A155/KC702/	18.00	0.00	0.00	221	400	211	0	1137.900	0.000	2.68699	0.00000	0.00000
5EX-61	1	33.000	SPE	0.500	0.000	0.000	0.000	0.000	1.50	90	0.00	A155/KC702/	18.00	0.00	0.00	221	400	211	0	1137.900	0.000	2.68699	0.00000	0.00000
5EX-61P2	51	33.000	SPE	0.500	0.000	0.000	0.000	0.000	0.00	90	0.00	A155/KC702/	18.00	0.00	0.00	221	400	211	0	1137.900	0.000	2.68699	0.00000	0.00000
5EX-39	1	33.000	SPE	0.500	0.000	0.000	0.000	0.000	1.50	90	0.00	A155/KC702/	18.00	0.00	0.00	221	400	211	0	1137.900	0.000	2.68699	0.00000	0.00000
5EX-39P	51	33.000	SPE	0.500	0.000	0.000	0.000	0.000	0.00	61	0.00	A155/KC702/	18.00	0.00	0.00	221	400	211	0	1137.900	0.000	2.68699	0.00000	0.00000
5EX-42	12	48.500	SPE	1.000	0.000	0.000	33.000	0.500	0.00	90	0.00	A155/KC702/	18.00	0.00	0.00	221	400	211	0	1137.900	0.000	2.68699	5.37397	2.68699
5EX-41P	62	48.500	SPE	1.000	0.000	0.000	0.000	0.000	0.00	90	0.00	A155/KC702/	18.00	0.00	0.00	221	400	211	0	1137.900	0.000	5.37397	0.00000	0.00000
5EX-43	14	48.500	SPE	1.000	0.000	0.000	27.500	0.500	0.00	90	0.00	A155/KC702/	18.00	0.00	0.00	221	400	211	0	1137.900	0.000	5.37397	3.58265	1.79132
5EX-43P	64	27.500	SPE	0.500	0.000	0.000	0.000	0.000	0.00	71	0.00	A285/C/	0.00	0.00	0.00	221	400	211	0	1137.900	0.000	1.79132	0.00000	0.00000
5EX-44	2	27.500	SPE	0.500	0.000	0.000	0.000	0.000	1.50	90	0.00	A155/KC702/	18.00	0.00	0.00	221	400	211	0	1137.900	0.000	1.79132	0.00000	0.00000
5EX-44P	52	27.500	SPE	0.500	0.000	0.000	0.000	0.000	0.00	90	0.00	A155/KC702/	18.00	0.00	0.00	221	400	211	0	1137.900	0.000	1.79132	0.00000	0.00000
5EX-44N	30	27.500	SPE	0.500	0.000	0.000	0.000	0.000	0.00	90	0.00	A155/KC702/	18.00	0.00	0.00	221	400	211	0	1137.900	0.000	1.79132	0.00000	0.00000
5EX-43R	7	48.500	SPE	1.000	0.000	0.000	38.000	0.500	0.00	90	0.00	A155/KC702/	18.00	0.00	0.00	221	400	211	0	1137.900	0.000	3.58265	3.58265	0.00000
5EX-43P1	57	38.000	SPE	0.500	0.000	0.000	0.000	0.000	0.00	90	0.00	A155/KC702/	18.00	0.00	0.00	221	400	211	0	1137.900	0.000	3.58265	0.00000	0.00000
5EX-45	14	27.500	SPE	0.500	0.000	0.000	27.500	0.500	0.00	90	0.00	A155/KC702/	18.00	0.00	0.00	221	400	211	0	1137.900	0.000	3.58265	1.79132	1.79132
5EX-45P	64	27.500	SPE	0.500	0.000	0.000	0.000	0.000	0.00	71	0.00	A285/C/	0.00	0.00	0.00	221	400	211	0	1137.900	0.000	1.79132	0.00000	0.00000
5EX-46	2	27.500	SPE	0.500	0.000	0.000	0.000	0.000	1.50	90	0.00	A155/KC702/	18.00	0.00	0.00	221	400	211	0	1137.900	0.000	1.79132	0.00000	0.00000
5EX-46P	52	27.500	SPE	0.500	0.000	0.000	0.000	0.000	0.00	90	0.00	A155/KC702/	18.00	0.00	0.00	221	400	211	0	1137.900	0.000	1.79132	0.00000	0.00000
5EX-46N	30	27.500	SPE	0.500	0.000	0.000	0.000	0.000	0.00	90	0.00	A155/KC702/	18.00	0.00	0.00	221	400	211	0	1137.900	0.000	1.79132	0.00000	0.00000
5EX-45R	7	38.000	SPE	0.500	0.000	0.000	27.500	0.500	0.00	90	0.00	A155/KC702/	18.00	0.00	0.00	221	400	211	0	1137.900	0.000	1.79132	1.79132	0.00000
5EX-47P2	57	27.500	SPE	0.500	0.000	0.000	0.000	0.000	0.00	90	0.00	A155/KC702/	18.00	0.00	0.00	221	400	211	0	1137.900	0.000	1.79132	0.00000	0.00000
5EX-47	2	27.500	SPE	0.500	0.000	0.000	0.000	0.000	1.50	90	0.00	A155/KC702/	18.00	0.00	0.00	221	400	211	0	1137.900	0.000	1.79132	0.00000	0.00000
5EX-47P1	52	27.500	SPE	0.500	0.000	0.000	0.000	0.000	0.00	71	0.00	A285/C/	0.00	0.00	0.00	221	400	211	0	1137.900	0.000	1.79132	0.00000	0.00000
5EX-47P	52	27.500	SPE	0.500	0.000	0.000	0.000	0.000	0.00	71	0.00	A285/C/	0.00	0.00	0.00	221	400	211	0	1137.900	0.000	1.79132	0.00000	0.00000
5EX-48	2	27.500	SPE	0.500	0.000	0.000	0.000	0.000	1.50	90	0.00	A155/KC702/	18.00	0.00	0.00	221	400	211	0	1137.900	0.000	1.79132	0.00000	0.00000
5EX-48P	52	27.500	SPE	0.500	0.000	0.000	0.000	0.000	0.00	90	0.00	A155/KC702/	18.00	0.00	0.00	221	400	211	0	1137.900	0.000	1.79132	0.00000	0.00000
5EX-48N	30	27.500	SPE	0.500	0.000	0.000	0.000	0.000	0.00	90	0.00	A155/KC702/	18.00	0.00	0.00	221	400	211	0	1137.900	0.000	1.79132	0.00000	0.00000
Line Name :	**xNCW_65A**																							
1A-VCD34	18	3.500	80	0.300	0.000	0.000	2.375	0.218	0.00	90	0.00	A-403/WP316/	0.00	0.00	0.00	1085	600	542	478	1128.000	0.000	0.00000	0.00000	0.00000
1A-VCD1	2	3.500	40	0.216	0.000	0.000	0.000	0.000	1.50	90	0.00	A-403/WP316/	0.00	0.00	0.00	1085	600	542	478	1128.000	0.000	0.00000	0.00000	0.00000
1A-VCD1P	53	3.500	40	0.216	0.000	0.000	0.000	0.000	0.00	90	0.00	A-312/TP316/	0.00	0.00	0.00	1085	600	542	478	1128.000	0.000	0.00000	0.00000	0.00000
1A-VCD2	2	3.500	40	0.216	0.000	0.000	0.000	0.000	1.50	90	0.00	A-403/WP316/	0.00	0.00	0.00	1085	600	542	478	1128.000	0.000	0.00000	0.00000	0.00000
1A-VCD4P	51	3.500	40	0.216	0.000	0.000	0.000	0.000	0.00	90	0.00	A-312/TP316/	0.00	0.00	0.00	1085	600	542	478	1128.000	0.000	0.00000	0.00000	0.00000
1A-VCD15	4	3.500	40	0.216	0.000	0.000	0.000	0.000	0.00	90	0.00	A234/WP22/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
1A-VCD15P	54	3.500	40	0.216	0.000	0.000	0.000	0.000	0.00	90	0.00	A335/P22/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
1A-VCD13	2	3.500	40	0.216	0.000	0.000	0.000	0.000	1.50	90	0.00	A-403/WP316/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
Line Name :	**xNCW_65B**																							
1A-VCD23	2	3.500	40	0.216	0.000	0.000	0.000	0.000	1.50	90	0.00	A-403/WP316/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
1A-VCD27P DS	51	3.500	40	0.216	0.000	0.000	0.000	0.000	0.00	0	0.00	A-312/TP316/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
1A-VCD28	2	3.500	40	0.216	0.000	0.000	0.000	0.000	0.00	0	0.00	A-403/WP316/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
1A-VCD28P US	51	3.500	40	0.216	0.000	0.000	0.000	0.000	0.00	0	0.00	A-312/TP316/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
1A-VCD32P DS	52	3.500	40	0.216	0.000	0.000	0.000	0.000	0.00	0	0.00	A-312/TP316/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
1A-VCD33	2	3.500	40	0.216	0.000	0.000	0.000	0.000	0.00	0	0.00	A-403/WP316/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
1A-VCD33P US	52	3.500	40	0.216	0.000	0.000	0.000	0.000	0.00	0	0.00	A-312/TP316/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
Line Name :	**xNCW_66A**																							
2A-VCD35	18	3.500	80	0.300	0.000	0.000	2.375	0.218	0.00	90	0.00	A-403/WP316/	0.00	0.00	0.00	1085	600	542	478	1128.000	0.000	0.00000	0.00000	0.00000
2A-VCD1	4	3.500	40	0.216	0.000	0.000	0.000	0.000	1.50	90	0.00	A-403/WP316/	0.00	0.00	0.00	1085	600	542	478	1128.000	0.000	0.00000	0.00000	0.00000
2A-VCD1P	54	3.500	40	0.216	0.000	0.000	0.000	0.000	0.00	90	0.00	A-312/TP316/	0.00	0.00	0.00	1085	600	542	478	1128.000	0.000	0.00000	0.00000	0.00000
2A-VCD2	1	3.500	40	0.216	0.000	0.000	0.000	0.000	1.50	90	0.00	A-403/WP316/	0.00	0.00	0.00	1085	600	542	478	1128.000	0.000	0.00000	0.00000	0.00000
2A-VCD3P	51	3.500	40	0.216	0.000	0.000	0.000	0.000	0.00	180	0.00	A-312/TP316/	0.00	0.00	0.00	1085	600	542	478	1128.000	0.000	0.00000	0.00000	0.00000
2A-VCD2P	51	3.500	40	0.216	0.000	0.000	0.000	0.000	0.00	180	0.00	A-312/TP316/	0.00	0.00	0.00	1085	600	542	478	1128.000	0.000	0.00000	0.00000	0.00000
2A-VCD4	4	3.500	40	0.216	0.000	0.000	0.000	0.000	1.50	90	0.00	A-403/WP316/	0.00	0.00	0.00	1085	600	542	478	1128.000	0.000	0.00000	0.00000	0.00000
2A-VCD4P	51	3.500	40	0.216	0.000	0.000	0.000	0.000	0.00	180	0.00	A-312/TP316/	0.00	0.00	0.00	1085	600	542	478	1128.000	0.000	0.00000	0.00000	0.00000
2A-VCD7	2	3.500	40	0.216	0.000	0.000	0.000	0.000	1.50	90	0.00	A-403/WP316/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
2A-VCD8	4	3.500	40	0.216	0.000	0.000	0.000	0.000	1.50	90	0.00	A-403/WP316/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000

Component Name	Geom Code	Pipe Size OD (in)	Sch.	Tnom (in)	Tinit (in)	Tcrit (in)	Br/Small End OD (in)	Br/Small Tnom (in)	R / D Ratio	Orient Angle (Deg.)	Pipe Length (in)	Spec/Type/ Class	Material Cr. (%)	Cu. (%)	Mo. (%)	Design Press. (psig)	Design Temp. (Deg. F)	Op. Press. (psig)	Op. Temp. (Deg. F)	Op. Enth. (Btu/lbm)	Op. Qual.	Flow Rate U/S Mn. (Mlbm/hr)	D/S Mn.	Br.
2A-VCD20	2	3.500	40	0.216	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WP22/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
2A-VCD36P	58	3.500	40	0.216	0.000	0.000	0.000	0.000	0.00	90	0.00	A335/P22/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
2A-VCD36	2	3.500	40	0.216	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WP22/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
2A-VCD36P-1 US	52	3.500	40	0.216	0.000	0.000	0.000	0.000	0.00	180	0.00	A335/P22/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
2A-VCD41P DS	52	3.500	40	0.216	0.000	0.000	0.000	0.000	0.00	180	0.00	A335/P22/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
2A-VCD42	2	3.500	40	0.216	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WP22/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
2A-VCD10	4	3.500	40	0.216	0.000	0.000	0.000	0.000	1.50	90	0.00	A-403/WP316/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
2A-VCD14	2	3.500	40	0.216	0.000	0.000	0.000	0.000	1.50	90	0.00	A-403/WP316/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000

Line Name : xNCW_66B

2A-VCD23	2	3.500	40	0.216	0.000	0.000	0.000	0.000	1.50	90	0.00	A-403/WP316/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
2A-VCD26P DS	51	3.500	40	0.216	0.000	0.000	0.000	0.000	0.00	0	0.00	A-312/TP316/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
2A-VCD27	2	3.500	40	0.216	0.000	0.000	0.000	0.000	0.00	0	0.00	A-403/WP316/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
2A-VCD27P US	52	3.500	40	0.216	0.000	0.000	0.000	0.000	0.00	0	0.00	A-312/TP316/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
2A-VCD33P DS	52	3.500	40	0.216	0.000	0.000	0.000	0.000	0.00	0	0.00	A-312/TP316/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
2A-VCD34P US	52	3.500	40	0.216	0.000	0.000	0.000	0.000	0.00	0	0.00	A-312/TP316/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
2A-VCD34	2	3.500	40	0.216	0.000	0.000	0.000	0.000	0.00	0	0.00	A-403/WP316/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000

Line Name : xNCW_67A

3A-VCD30	18	3.500	80	0.300	0.000	0.000	2.375	0.218	0.00	90	0.00	A-403/WP316/	0.00	0.00	0.00	1085	600	542	478	1128.000	0.000	0.00000	0.00000	0.00000
3A-VCD1P	68	3.500	40	0.216	0.000	0.000	0.000	0.000	0.00	90	0.00	A-312/TP316/	0.00	0.00	0.00	1085	600	542	478	1128.000	0.000	0.00000	0.00000	0.00000
3A-VCD1	2	3.500	40	0.216	0.000	0.000	0.000	0.000	1.50	90	0.00	A-403/WP316/	0.00	0.00	0.00	1085	600	542	478	1128.000	0.000	0.00000	0.00000	0.00000
3A-VCD1P-1 US	52	3.500	40	0.216	0.000	0.000	0.000	0.000	0.00	180	0.00	A-312/TP316/	0.00	0.00	0.00	1085	600	542	478	1128.000	0.000	0.00000	0.00000	0.00000
3A-VCD2	2	3.500	40	0.216	0.000	0.000	0.000	0.000	1.50	90	0.00	A-403/WP316/	0.00	0.00	0.00	1085	600	542	478	1128.000	0.000	0.00000	0.00000	0.00000
3A-VCD2P	52	3.500	40	0.216	0.000	0.000	0.000	0.000	0.00	90	0.00	A-312/TP316/	0.00	0.00	0.00	1085	600	542	478	1128.000	0.000	0.00000	0.00000	0.00000
3A-VCD16	4	3.500	40	0.216	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WP22/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
3A-VCD7	4	3.500	40	0.216	0.000	0.000	0.000	0.000	0.00	0	0.00	A-403/WP316/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
3A-VCD7P	54	3.500	40	0.216	0.000	0.000	0.000	0.000	0.00	0	0.00	A-312/TP316/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
3A-VCD9	2	3.500	40	0.216	0.000	0.000	0.000	0.000	1.50	90	0.00	A-403/WP316/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000

Line Name : xNCW_67B

3A-VCD16	2	3.500	40	0.216	0.000	0.000	0.000	0.000	1.50	90	0.00	A-403/WP316/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
3A-VCD18P	51	3.500	40	0.216	0.000	0.000	0.000	0.000	0.00	90	0.00	A-312/TP316/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
3A-VCD21P	51	3.500	40	0.216	0.000	0.000	0.000	0.000	0.00	90	0.00	A-312/TP316/	0.00	0.00	0.00	1085	600	542	478	1128.000	0.000	0.00000	0.00000	0.00000
3A-VCD22	2	3.500	40	0.216	0.000	0.000	0.000	0.000	1.50	90	0.00	A-403/WP316/	0.00	0.00	0.00	1085	600	542	478	1128.000	0.000	0.00000	0.00000	0.00000
3A-VCD22P	52	3.500	40	0.216	0.000	0.000	0.000	0.000	0.00	0	0.00	A-312/TP316/	0.00	0.00	0.00	1085	600	542	478	1128.000	0.000	0.00000	0.00000	0.00000
3A-VCD28	2	3.500	40	0.216	0.000	0.000	0.000	0.000	1.50	0	0.00	A-403/WP316/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
3A-VCD28P DS	52	3.500	40	0.216	0.000	0.000	0.000	0.000	0.00	0	0.00	A-312/TP316/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
3A-VCD29	2	3.500	40	0.216	0.000	0.000	0.000	0.000	1.50	0	0.00	A-403/WP316/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
3A-VCD29P US	52	3.500	40	0.216	0.000	0.000	0.000	0.000	0.00	0	0.00	A-312/TP316/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000

Line Name : xNCW_68A

1B-VCD33	18	3.500	80	0.300	0.000	0.000	2.375	0.218	0.00	90	0.00	A-403/WP316/	0.00	0.00	0.00	1085	600	542	478	1128.000	0.000	0.00000	0.00000	0.00000
1B-VCD1	3	3.500	40	0.216	0.000	0.000	0.000	0.000	1.50	90	0.00	A-403/WP316/	0.00	0.00	0.00	1085	600	542	478	1128.000	0.000	0.00000	0.00000	0.00000
1B-VCD1P	53	3.500	40	0.216	0.000	0.000	0.000	0.000	0.00	90	0.00	A-312/TP316/	0.00	0.00	0.00	1085	600	542	478	1128.000	0.000	0.00000	0.00000	0.00000
1B-VCD2	2	3.500	40	0.216	0.000	0.000	0.000	0.000	1.50	90	0.00	A-403/WP316/	0.00	0.00	0.00	1085	600	542	478	1128.000	0.000	0.00000	0.00000	0.00000
1B-VCD2P	52	3.500	40	0.216	0.000	0.000	0.000	0.000	0.00	180	0.00	A-312/TP316/	0.00	0.00	0.00	1085	600	542	478	1128.000	0.000	0.00000	0.00000	0.00000
1B-VCD3P DS	58	3.500	40	0.216	0.000	0.000	0.000	0.000	0.00	90	0.00	A-312/TP316/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
1B-VCD4	12	3.500	40	0.216	0.000	0.000	0.000	0.000	0.00	90	0.00	A-403/WP316/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
1B-VCD18P	58	3.500	40	0.216	0.000	0.000	0.000	0.000	0.00	90	0.00	A335/P22/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
1B-VCD19E	2	3.500	40	0.216	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WP22/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
1B-VCD19P US	52	3.500	40	0.216	0.000	0.000	0.000	0.000	0.00	90	0.00	A335/P22/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
1B-VCD4P US	62	3.500	40	0.216	0.000	0.000	0.000	0.000	0.00	90	0.00	A-312/TP316/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000

Component Name	Geom Code	Pipe Size OD (in)	Sch.	Tnom (in)	Tinit (in)	Tcrit (in)	Br/Small End OD (in)	Br/Small Tnom (in)	R / D Ratio	Orient Angle (Deg.)	Pipe Length (in)	Spec/Type/ Class	Material Cr. (%)	Cu. (%)	Mo. (%)	Design Press. (psig)	Design Temp. (Deg. F)	Op. Press. (psig)	Op. Temp. (Deg. F)	Op. Enth. (Btu/lbm)	Op. Qual.	Flow Rate U/S Mn. (Mlbm/hr)	D/S Mn.	Br.
Line Name : xNCW_68B																								
1B-VCD18P DS	52	3.500	40	0.216	0.000	0.000	0.000	0.000	0.00	0	0.00	A-312/TP316/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
1B-VCD19	2	3.500	40	0.216	0.000	0.000	0.000	0.000	0.00	0	0.00	A-403/WP316/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
1B-VCD19P US	52	3.500	40	0.216	0.000	0.000	0.000	0.000	0.00	0	0.00	A-312/TP316/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
1B-VCD19P DS	52	3.500	40	0.216	0.000	0.000	0.000	0.000	0.00	0	0.00	A-312/TP316/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
1B-VCD20	2	3.500	40	0.216	0.000	0.000	0.000	0.000	0.00	0	0.00	A-403/WP316/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
1B-VCD20P US	52	3.500	40	0.216	0.000	0.000	0.000	0.000	0.00	0	0.00	A-312/TP316/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
1B-VCD21	2	3.500	40	0.216	0.000	0.000	0.000	0.000	1.50	90	0.00	A-403/WP316/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
1B-VCD-22P DS	52	3.500	40	0.216	0.000	0.000	0.000	0.000	0.00	0	0.00	A-312/TP316/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
1B-VCD-23	2	3.500	40	0.216	0.000	0.000	0.000	0.000	0.00	0	0.00	A-403/WP316/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
1B-VCD-23P US	52	3.500	40	0.216	0.000	0.000	0.000	0.000	0.00	0	0.00	A-312/TP316/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
1B-VCD32	2	3.500	40	0.216	0.000	0.000	0.000	0.000	1.50	90	0.00	A-403/WP316/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
Line Name : xNCW_69A																								
2B-VCD38	18	3.500	80	0.300	0.000	0.000	2.375	0.218	0.00	90	0.00	A-403/WP316/	0.00	0.00	0.00	1085	600	542	478	0.000	0.000	0.00000	0.00000	0.00000
2B-VCD1	4	3.500	40	0.216	0.000	0.000	0.000	0.000	1.50	90	0.00	A-403/WP316/	0.00	0.00	0.00	1085	600	542	478	0.000	0.000	0.00000	0.00000	0.00000
2B-VCD1P	54	3.500	40	0.216	0.000	0.000	0.000	0.000	0.00	135	0.00	A-312/TP316/	0.00	0.00	0.00	1085	600	542	478	0.000	0.000	0.00000	0.00000	0.00000
2B-VCD2	2	3.500	40	0.216	0.000	0.000	0.000	0.000	1.50	90	0.00	A-403/WP316/	0.00	0.00	0.00	1085	600	542	478	0.000	0.000	0.00000	0.00000	0.00000
2B-VCD2P	52	3.500	40	0.216	0.000	0.000	0.000	0.000	0.00	90	0.00	A-312/TP316/	0.00	0.00	0.00	1085	600	542	478	0.000	0.000	0.00000	0.00000	0.00000
2B-VCD7P DS	52	3.500	40	0.216	0.000	0.000	0.000	0.000	0.00	0	0.00	A-312/TP316/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
2B-VCD8	10	3.500	40	0.216	0.000	0.000	0.000	0.000	0.00	0	0.00	A-403/WP316/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
2B-VCD9	2	3.500	40	0.216	0.000	0.000	0.000	0.000	1.50	90	0.00	A-403/WP316/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
2B-VCD39P	58	3.500	40	0.216	0.000	0.000	0.000	0.000	0.00	0	0.00	A335/P22/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
2B-VCD39	4	3.500	40	0.216	0.000	0.000	0.000	0.000	1.50	0	0.00	A234/WP22/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
2B-VCD8E	2	3.500	40	0.216	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WP22/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
2B-VCD8P	58	3.500	40	0.216	0.000	0.000	0.000	0.000	0.00	90	0.00	A-312/TP316/	0.00	0.00	0.00	1085	600	542	478	0.000	0.000	0.00000	0.00000	0.00000
2B-VCD8P-2 US	60	3.500	40	0.216	0.000	0.000	0.000	0.000	0.00	0	0.00	A-312/TP316/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
Line Name : xNCW_69B																								
2B-VCD21P DS	52	3.500	40	0.216	0.000	0.000	0.000	0.000	0.00	0	0.00	A-312/TP316/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
2B-VCD22	2	3.500	40	0.216	0.000	0.000	0.000	0.000	0.00	0	0.00	A-403/WP316/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
2B-VCD22P US	52	3.500	40	0.216	0.000	0.000	0.000	0.000	0.00	0	0.00	A-312/TP316/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
2B-VCD22P DS	52	3.500	40	0.216	0.000	0.000	0.000	0.000	0.00	0	0.00	A-312/TP316/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
2B-VCD23	2	3.500	40	0.216	0.000	0.000	0.000	0.000	0.00	0	0.00	A-403/WP316/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
2B-VCD23P US	52	3.500	40	0.216	0.000	0.000	0.000	0.000	0.00	0	0.00	A-312/TP316/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
2B-VCD25P DS	52	3.500	40	0.216	0.000	0.000	0.000	0.000	0.00	0	0.00	A-312/TP316/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
2B-VCD26	2	3.500	40	0.216	0.000	0.000	0.000	0.000	0.00	0	0.00	A-403/WP316/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
2B-VCD26P US	52	3.500	40	0.216	0.000	0.000	0.000	0.000	0.00	0	0.00	A-312/TP316/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
2B-VCD31	2	3.500	40	0.216	0.000	0.000	0.000	0.000	1.50	90	0.00	A-403/WP316/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
Line Name : xNCW_70A																								
3B-VCD35	18	3.500	80	0.300	0.000	0.000	2.375	0.218	0.00	90	0.00	A-403/WP316/	0.00	0.00	0.00	1085	600	542	478	1128.000	0.000	0.00000	0.00000	0.00000
3B-VCD1P	68	3.500	40	0.216	0.000	0.000	0.000	0.000	0.00	90	0.00	A-312/TP316/	0.00	0.00	0.00	1085	600	542	478	1128.000	0.000	0.00000	0.00000	0.00000
3B-VCD2	2	3.500	40	0.216	0.000	0.000	0.000	0.000	1.50	90	0.00	A-403/WP316/	0.00	0.00	0.00	1085	600	542	478	1128.000	0.000	0.00000	0.00000	0.00000
3B-VCD2P	52	3.500	40	0.216	0.000	0.000	0.000	0.000	0.00	180	0.00	A-312/TP316/	0.00	0.00	0.00	1085	600	542	478	1128.000	0.000	0.00000	0.00000	0.00000
3B-VCD6P1 DS	62	3.500	40	0.216	0.000	0.000	0.000	0.000	0.00	90	0.00	A-312/TP316/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
3B-VCD7P1	58	3.500	40	0.216	0.000	0.000	0.000	0.000	0.00	90	0.00	A-312/TP316/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
3B-VCD11	2	3.500	40	0.216	0.000	0.000	0.000	0.000	1.50	90	0.00	A-403/WP316/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
3B-VCD16P DS	52	3.500	40	0.216	0.000	0.000	0.000	0.000	0.00	90	0.00	A-312/TP316/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
3B-VCD17E	2	3.500	40	0.216	0.000	0.000	0.000	0.000	1.50	90	0.00	A-403/WP316/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
Line Name : xNCW_70B																								
3B-VCD17P	52	3.500	40	0.216	0.000	0.000	0.000	0.000	0.00	0	0.00	A-312/TP316/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000

Component Name	Geom Code	Pipe Size OD (in)	Sch.	Tnom (in)	Tinit (in)	Tcrit (in)	Br/Small End OD (in)	Br/Small Tnom (in)	R / D Ratio	Orient Angle (Deg.)	Pipe Length (in)	Spec/Type/ Class	Material Cr. (%)	Cu. (%)	Mo. (%)	Design Press. (psig)	Design Temp. (Deg. F)	Op. Press. (psig)	Op. Temp. (Deg. F)	Op. Enth. (Btu/lbm)	Op. Qual.	Flow Rate U/S Mn. (Mlbm/hr)	D/S Mn.	Br.
3B-VCD18	2	3.500	40	0.216	0.000	0.000	0.000	0.000	0.00	0	0.00	A-403/WP316/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
3B-VCD18P US	52	3.500	40	0.216	0.000	0.000	0.000	0.000	0.00	0	0.00	A-312/TP316/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
3B-VCD19P DS	52	3.500	40	0.216	0.000	0.000	0.000	0.000	0.00	0	0.00	A-312/TP316/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
3B-VCD20	2	3.500	40	0.216	0.000	0.000	0.000	0.000	1.50	0	0.00	A-403/WP316/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
3B-VCD20P US	52	3.500	40	0.216	0.000	0.000	0.000	0.000	0.00	0	0.00	A-312/TP316/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
3B-VCD26	2	3.500	40	0.216	0.000	0.000	0.000	0.000	1.50	90	0.00	A-403/WP316/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
3B-VCD28P DS	52	3.500	40	0.216	0.000	0.000	0.000	0.000	0.00	0	0.00	A-312/TP316/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
3B-VCD29	2	3.500	40	0.216	0.000	0.000	0.000	0.000	1.50	0	0.00	A-403/WP316/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
3B-VCD29P US	52	3.500	40	0.216	0.000	0.000	0.000	0.000	0.00	0	0.00	A-312/TP316/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
3B-VCD29P DS	52	3.500	40	0.216	0.000	0.000	0.000	0.000	0.00	0	0.00	A-312/TP316/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
3B-VCD30	2	3.500	40	0.216	0.000	0.000	0.000	0.000	1.50	0	0.00	A-403/WP316/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
3B-VCD-30P US	52	3.500	40	0.216	0.000	0.000	0.000	0.000	0.00	0	0.00	A-312/TP316/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
3B-VCD33P DS	52	3.500	40	0.216	0.000	0.000	0.000	0.000	0.00	0	0.00	A-312/TP316/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
3B-VCD34	2	3.500	40	0.216	0.000	0.000	0.000	0.000	1.50	0	0.00	A-403/WP316/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
3B-VCD34P US	52	3.500	40	0.216	0.000	0.000	0.000	0.000	0.00	0	0.00	A-312/TP316/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
Line Name :	**xNCW_74**																							
BFD-46	2	18.000	80	0.938	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	1440	450	1127	388	0.000	0.000	0.00000	0.00000	0.00000
BFD-65A	2	6.625	80	0.432	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	1440	450	1127	388	0.000	0.000	0.00000	0.00000	0.00000
BFD-65Q	2	6.625	80	0.432	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	1440	450	1127	388	0.000	0.000	0.00000	0.00000	0.00000
BFD-65Q1	52	6.625	80	0.432	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	1440	450	1127	388	0.000	0.000	0.00000	0.00000	0.00000
EXNOZ_C	12	18.000	80	0.938	0.000	0.000	6.625	0.432	0.00	90	0.00	A106/B/	18.00	0.00	0.00	1440	450	1127	388	0.000	0.000	0.00000	0.00000	0.00000
Line Name :	**xNCW_79A**																							
3EX-TELO1P	61	3.500	40	0.216	0.000	0.000	0.000	0.000	0.00	90	0.00	A53/BS/	0.00	0.00	0.00	50	300	16	251	0.000	0.000	0.00000	0.00000	0.00000
3EX-TELO1	2	3.500	40	0.216	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	50	300	16	251	0.000	0.000	0.00000	0.00000	0.00000
3EX-TELO1R	18	4.500	40	0.237	0.000	0.000	3.500	0.216	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	50	300	16	251	0.000	0.000	0.00000	0.00000	0.00000
3EX-TELO2	4	4.500	40	0.237	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	50	300	16	251	0.000	0.000	0.00000	0.00000	0.00000
3EX-TELO2P	54	4.500	40	0.237	0.000	0.000	0.000	0.000	0.00	0	0.00	A53/BS/	0.00	0.00	0.00	50	300	16	251	0.000	0.000	0.00000	0.00000	0.00000
3EX-TELO9P	61	3.500	40	0.216	0.000	0.000	0.000	0.000	0.00	90	0.00	A53/BS/	0.00	0.00	0.00	50	300	16	251	0.000	0.000	0.00000	0.00000	0.00000
3EX-TELO9	2	3.500	40	0.216	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	50	300	16	251	0.000	0.000	0.00000	0.00000	0.00000
Line Name :	**xNCW_79B**																							
3EX-TELO-23P DS	52	6.625	40	0.280	0.000	0.000	0.000	0.000	0.00	90	0.00	A53/BE/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
3EX-TELO-24	2	6.625	40	0.280	0.000	0.000	0.000	0.000	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
3EX-TELO-25P US	52	6.625	40	0.280	0.000	0.000	0.000	0.000	0.00	90	0.00	A53/BE/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
Line Name :	**xNCW_83**																							
CD-85P	9	2.375	80	0.218	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	665	400	460	386	0.000	0.000	6.63149	0.00000	6.63149
CD-86P	9	2.375	80	0.218	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	665	400	460	386	0.000	0.000	6.63149	0.00000	6.63149
CD-87E	2	2.375	80	0.218	0.000	0.000	0.000	0.000	0.00	0	0.00	A105//	0.00	0.00	0.00	665	400	460	386	0.000	0.000	6.63149	0.00000	6.63149
CD-88P US	52	2.375	80	0.218	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	665	400	460	386	0.000	0.000	6.63149	0.00000	6.63149
Line Name :	**xNCW_85**																							
GCD-1P	58	8.625	40	0.322	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	665	400	-14	210	0.000	0.000	0.00000	0.00000	0.00000
GCD-2	12	8.625	40	0.322	0.000	0.000	0.000	0.322	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	665	400	-14	210	0.000	0.000	0.00000	0.00000	0.00000
GCD-2P US	62	8.625	40	0.322	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	665	400	-14	210	0.000	0.000	0.00000	0.00000	0.00000
GCD-2P DS	62	8.625	40	0.322	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	665	400	-14	210	0.000	0.000	0.00000	0.00000	0.00000
GCD-3	1	8.625	40	0.322	0.000	0.000	0.000	0.000	1.50	0	0.00	A234/WPB/	0.00	0.00	0.00	665	400	-14	210	0.000	0.000	0.00000	0.00000	0.00000
GCD-3P	52	8.625	40	0.322	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	665	400	-14	210	0.000	0.000	0.00000	0.00000	0.00000
GCD-4	2	8.625	40	0.322	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	665	400	-14	210	0.000	0.000	0.00000	0.00000	0.00000
GCD-4P	51	8.625	40	0.322	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	665	400	-14	210	0.000	0.000	0.00000	0.00000	0.00000
GCD-5	11	8.625	40	0.322	0.000	0.000	0.000	0.000	0.00	90	0.00	A234/WPB/	0.00	0.00	0.00	665	400	-14	210	0.000	0.000	0.00000	0.00000	0.00000

Component Name	Geom Code	Pipe Size OD (in)	Sch.	Tnom (in)	Tinit (in)	Tcrit (in)	Br/Small End OD (in)	Br/Small Tnom (in)	R / D Ratio	Orient Angle (Deg.)	Pipe Length (in)	Spec/Type/ Class	Material Cr. (%)	Cu. (%)	Mo. (%)	Design Press. (psig)	Design Temp. (Deg. F)	Op. Press. (psig)	Op. Temp. (Deg. F)	Op. Enth. (Btu/lbm)	Op. Qual.	Flow Rate U/S Mn. (Mlbm/hr)	D/S Mn.	Br.
GCD-5P	61	8.625	40	0.322	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	665	400	-14	210	0.000	0.000	0.00000	0.00000	0.00000
GCD-12P	61	8.625	40	0.322	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	665	400	-14	210	0.000	0.000	0.00000	0.00000	0.00000
GCD-14	2	8.625	40	0.322	0.000	0.000	0.000	0.000	1.50	0	0.00	A234/WPB/	0.00	0.00	0.00	665	400	-14	210	0.000	0.000	0.00000	0.00000	0.00000
GCD-14P	52	8.625	40	0.322	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	665	400	-14	210	0.000	0.000	0.00000	0.00000	0.00000
GCD-16	1	8.625	40	0.322	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	665	400	-14	210	0.000	0.000	0.00000	0.00000	0.00000
GCD-15P	52	8.625	40	0.322	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	665	400	-14	210	0.000	0.000	0.00000	0.00000	0.00000
GCD-16P	51	8.625	40	0.322	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	665	400	-14	210	0.000	0.000	0.00000	0.00000	0.00000
Line Name : xNCW_86																								
UH-3P	63	2.375	40	0.154	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	35	260	5	226	0.000	0.000	0.00000	0.00000	0.00000
UH-4	2	2.375	40	0.154	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	35	260	5	226	0.000	0.000	0.00000	0.00000	0.00000
UH-4P	52	2.375	40	0.154	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	35	260	5	226	0.000	0.000	0.00000	0.00000	0.00000
UH-4P-1	58	2.375	40	0.154	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	35	260	5	226	0.000	0.000	0.00000	0.00000	0.00000
UH-5	2	2.375	40	0.154	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	35	260	5	226	0.000	0.000	0.00000	0.00000	0.00000
UH-5P	52	2.375	40	0.154	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	35	260	5	226	0.000	0.000	0.00000	0.00000	0.00000
UH-6	2	2.375	40	0.154	0.000	0.000	0.000	0.000	1.50	90	0.00	A234/WPB/	0.00	0.00	0.00	35	260	5	226	0.000	0.000	0.00000	0.00000	0.00000
UH-6P	52	2.375	40	0.154	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	35	260	5	226	0.000	0.000	0.00000	0.00000	0.00000
Line Name : xNCW_86A																								
UH-10B	4	3.500	40	0.216	0.000	0.000	0.000	0.000	0.00	0	0.00	A234/WPB/	0.00	0.00	0.00	35	260	0	0	0.000	0.000	0.00000	0.00000	0.00000
Line Name : xNCW_87																								
MST-10P	51	4.500	80	0.337	0.000	0.000	0.000	0.000	0.00	90	0.00	A-312/TP316/	0.00	0.00	0.00	1085	600	10	210	0.000	0.000	0.00000	0.00000	0.00000
MST-11	1	4.500	80	0.337	0.000	0.000	0.000	0.000	1.50	90	0.00	A-403/WP316/	0.00	0.00	0.00	1085	600	10	210	0.000	0.000	0.00000	0.00000	0.00000
MST-10	1	4.500	80	0.337	0.000	0.000	0.000	0.000	1.50	90	0.00	A-403/WP316/	0.00	0.00	0.00	1085	600	10	210	0.000	0.000	0.00000	0.00000	0.00000
MST-9P	52	4.500	80	0.337	0.000	0.000	0.000	0.000	0.00	135	0.00	A-312/TP316/	0.00	0.00	0.00	1085	600	10	210	0.000	0.000	0.00000	0.00000	0.00000
MST-9	19	6.625	80	0.432	0.000	0.000	4.500	0.337	1.50	135	0.00	A-403/WP316/	0.00	0.00	0.00	1085	600	10	210	0.000	0.000	0.00000	0.00000	0.00000
MST-8P	69	6.625	80	0.432	0.000	0.000	0.000	0.000	0.00	135	0.00	A-312/TP316/	0.00	0.00	0.00	1085	600	10	210	0.000	0.000	0.00000	0.00000	0.00000
MST-8	1	6.625	80	0.432	0.000	0.000	0.000	0.000	1.50	90	0.00	A-403/WP316/	0.00	0.00	0.00	1085	600	10	210	0.000	0.000	0.00000	0.00000	0.00000
MST-7P US	51	6.625	80	0.432	0.000	0.000	0.000	0.000	0.00	90	0.00	A-312/TP316/	0.00	0.00	0.00	1085	600	10	210	0.000	0.000	0.00000	0.00000	0.00000
MST-7P DS	51	6.625	80	0.432	0.000	0.000	0.000	0.000	0.00	90	0.00	A-312/TP316/	0.00	0.00	0.00	1085	600	10	210	0.000	0.000	0.00000	0.00000	0.00000
MST-7	2	6.625	80	0.432	0.000	0.000	0.000	0.000	1.50	90	0.00	A-403/WP316/	0.00	0.00	0.00	1085	600	10	210	0.000	0.000	0.00000	0.00000	0.00000
MST-6P US	52	6.625	80	0.432	0.000	0.000	0.000	0.000	0.00	90	0.00	A-312/TP316/	0.00	0.00	0.00	1085	600	10	210	0.000	0.000	0.00000	0.00000	0.00000
MST-6P DS	52	6.625	80	0.432	0.000	0.000	0.000	0.000	0.00	90	0.00	A-312/TP316/	0.00	0.00	0.00	1085	600	10	210	0.000	0.000	0.00000	0.00000	0.00000
MST-6	2	6.625	80	0.432	0.000	0.000	0.000	0.000	1.50	90	0.00	A-403/WP316/	0.00	0.00	0.00	1085	600	10	210	0.000	0.000	0.00000	0.00000	0.00000
MST-5P US	52	6.625	80	0.432	0.000	0.000	0.000	0.000	0.00	90	0.00	A-312/TP316/	0.00	0.00	0.00	1085	600	10	210	0.000	0.000	0.00000	0.00000	0.00000
MST-5P DS	52	6.625	80	0.432	0.000	0.000	0.000	0.000	0.00	90	0.00	A-312/TP316/	0.00	0.00	0.00	1085	600	10	210	0.000	0.000	0.00000	0.00000	0.00000
MST-5	2	6.625	80	0.432	0.000	0.000	0.000	0.000	1.50	180	0.00	A-403/WP316/	0.00	0.00	0.00	1085	600	10	210	0.000	0.000	0.00000	0.00000	0.00000
MST-4P	52	6.625	80	0.432	0.000	0.000	0.000	0.000	0.00	180	0.00	A-312/TP316/	0.00	0.00	0.00	1085	600	10	210	0.000	0.000	0.00000	0.00000	0.00000
MST-4	19	8.625	80	0.500	0.000	0.000	6.625	0.432	0.00	90	0.00	A-403/WP316/	0.00	0.00	0.00	1085	600	10	210	0.000	0.000	0.00000	0.00000	0.00000
MST-3P	69	8.625	80	0.500	0.000	0.000	0.000	0.000	0.00	90	0.00	A-312/TP316/	0.00	0.00	0.00	1085	600	10	210	0.000	0.000	0.00000	0.00000	0.00000
MST-3	2	8.625	80	0.500	0.000	0.000	0.000	0.000	0.00	90	0.00	A-403/WP316/	0.00	0.00	0.00	1085	600	10	210	0.000	0.000	0.00000	0.00000	0.00000
MST-2P	69	8.625	80	0.500	0.000	0.000	0.000	0.000	0.00	90	0.00	A-312/TP316/	0.00	0.00	0.00	1085	600	10	210	0.000	0.000	0.00000	0.00000	0.00000
MST-2	16	8.625	80	0.500	0.000	0.000	0.000	0.000	0.00	90	0.00	A-403/WP316/	0.00	0.00	0.00	1085	600	10	210	0.000	0.000	0.00000	0.00000	0.00000
MST-1P	69	8.625	80	0.500	0.000	0.000	0.000	0.000	0.00	90	0.00	A-312/TP316/	0.00	0.00	0.00	1085	600	10	210	0.000	0.000	0.00000	0.00000	0.00000
MST-1	10	8.625	80	0.500	0.000	0.000	6.625	0.432	0.00	90	0.00	A-403/WP316/	0.00	0.00	0.00	1085	600	10	210	0.000	0.000	0.00000	0.00000	0.00000
MST-1P-1 DS	52	8.625	80	0.500	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	1085	600	10	210	0.000	0.000	0.00000	0.00000	0.00000
MST-1N	30	8.625	80	0.500	0.000	0.000	0.000	0.000	0.00	90	0.00	A106/B/	0.00	0.00	0.00	1085	600	10	210	0.000	0.000	0.00000	0.00000	0.00000
Line Name : xNCW_88																								
MST-16P	52	4.500	80	0.337	0.000	0.000	0.000	0.000	0.00	180	0.00	A-312/TP316/	0.00	0.00	0.00	1085	600	10	210	0.000	0.000	0.00000	0.00000	0.00000
MST-16	2	4.500	80	0.337	0.000	0.000	0.000	0.000	1.50	90	0.00	A-403/WP316/	0.00	0.00	0.00	1085	600	10	210	0.000	0.000	0.00000	0.00000	0.00000
MST-15P	52	4.500	80	0.337	0.000	0.000	0.000	0.000	0.00	180	0.00	A-312/TP316/	0.00	0.00	0.00	1085	600	10	210	0.000	0.000	0.00000	0.00000	0.00000

Component Name	Geom Code	Pipe Size OD (in)	Sch.	Tnom (in)	Tinit (in)	Tcrit (in)	Br/Small End OD (in)	Br/Small Tnom (in)	R / D Ratio	Orient Angle (Deg.)	Pipe Length (in)	Spec/Type/ Class	Material Cr. (%)	Cu. (%)	Mo. (%)	Design Press. (psig)	Design Temp. (Deg. F)	Op. Press. (psig)	Op. Temp. (Deg. F)	Op. Enth. (Btu/lbm)	Op. Qual.	Flow Rate U/S Mn. (Mlbm/hr)	D/S Mn.	Br.
MST-15	2	4.500	80	0.337	0.000	0.000	0.000	0.000	1.50	90	0.00	A-403/WP316/	0.00	0.00	0.00	1085	600	10	210	0.000	0.000	0.00000	0.00000	0.00000
MST-14P	52	4.500	80	0.337	0.000	0.000	0.000	0.000	0.00	180	0.00	A-312/TP316/	0.00	0.00	0.00	1085	600	10	210	0.000	0.000	0.00000	0.00000	0.00000
MST-14	2	4.500	80	0.337	0.000	0.000	0.000	0.000	1.50	180	0.00	A-403/WP316/	0.00	0.00	0.00	1085	600	10	210	0.000	0.000	0.00000	0.00000	0.00000
MST-13P	52	4.500	80	0.337	0.000	0.000	0.000	0.000	0.00	90	0.00	A-312/TP316/	0.00	0.00	0.00	1085	600	10	210	0.000	0.000	0.00000	0.00000	0.00000
MST-13	1	4.500	80	0.337	0.000	0.000	0.000	0.000	1.50	90	0.00	A-403/WP316/	0.00	0.00	0.00	1085	600	10	210	0.000	0.000	0.00000	0.00000	0.00000
MST-12P	51	4.500	80	0.337	0.000	0.000	0.000	0.000	0.00	90	0.00	A-312/TP316/	0.00	0.00	0.00	1085	600	10	210	0.000	0.000	0.00000	0.00000	0.00000
MST-12	1	4.500	80	0.337	0.000	0.000	0.000	0.000	1.50	90	0.00	A-403/WP316/	0.00	0.00	0.00	1085	600	10	210	0.000	0.000	0.00000	0.00000	0.00000
MST-11P	51	4.500	80	0.337	0.000	0.000	0.000	0.000	0.00	90	0.00	A-312/TP316/	0.00	0.00	0.00	1085	600	10	210	0.000	0.000	0.00000	0.00000	0.00000

Line Name : xNCW_89

MST-39P	52	3.500	80	0.300	0.000	0.000	0.000	0.000	0.00	90	0.00	A-312/TP316/	0.00	0.00	0.00	1085	600	10	210	0.000	0.000	0.00000	0.00000	0.00000
MST-39	2	3.500	80	0.300	0.000	0.000	0.000	0.000	1.50	90	0.00	A-403/WP316/	0.00	0.00	0.00	1085	600	10	210	0.000	0.000	0.00000	0.00000	0.00000
MST-38P	52	3.500	80	0.300	0.000	0.000	0.000	0.000	0.00	90	0.00	A-312/TP316/	0.00	0.00	0.00	1085	600	10	210	0.000	0.000	0.00000	0.00000	0.00000
MST-38	2	3.500	80	0.300	0.000	0.000	0.000	0.000	1.50	90	0.00	A-403/WP316/	0.00	0.00	0.00	1085	600	10	210	0.000	0.000	0.00000	0.00000	0.00000
MST-37P	52	3.500	80	0.300	0.000	0.000	0.000	0.000	0.00	90	0.00	A-312/TP316/	0.00	0.00	0.00	1085	600	10	210	0.000	0.000	0.00000	0.00000	0.00000
MST-37	2	3.500	80	0.300	0.000	0.000	0.000	0.000	1.50	90	0.00	A-403/WP316/	0.00	0.00	0.00	1085	600	10	210	0.000	0.000	0.00000	0.00000	0.00000
MST-36P	52	3.500	80	0.300	0.000	0.000	0.000	0.000	0.00	180	0.00	A-312/TP316/	0.00	0.00	0.00	1085	600	10	210	0.000	0.000	0.00000	0.00000	0.00000
MST-36	2	3.500	80	0.300	0.000	0.000	0.000	0.000	1.50	90	0.00	A-403/WP316/	0.00	0.00	0.00	1085	600	10	210	0.000	0.000	0.00000	0.00000	0.00000
MST-31	2	3.500	80	0.300	0.000	0.000	0.000	0.000	1.50	90	0.00	A-403/WP316/	0.00	0.00	0.00	1085	600	10	210	0.000	0.000	0.00000	0.00000	0.00000
MST-28P	52	3.500	80	0.300	0.000	0.000	0.000	0.000	0.00	180	0.00	A-312/TP316/	0.00	0.00	0.00	1085	600	10	210	0.000	0.000	0.00000	0.00000	0.00000
MST-28	2	3.500	80	0.300	0.000	0.000	0.000	0.000	1.50	90	0.00	A-403/WP316/	0.00	0.00	0.00	1085	600	10	210	0.000	0.000	0.00000	0.00000	0.00000
MST-27P	52	3.500	80	0.300	0.000	0.000	0.000	0.000	0.00	180	0.00	A-312/TP316/	0.00	0.00	0.00	1085	600	10	210	0.000	0.000	0.00000	0.00000	0.00000
MST-27	2	3.500	80	0.300	0.000	0.000	0.000	0.000	1.50	90	0.00	A-403/WP316/	0.00	0.00	0.00	1085	600	10	210	0.000	0.000	0.00000	0.00000	0.00000

Line Name : xNCW_90

EST-1T	12	6.625	40	0.280	0.000	0.000	4.500	0.237	0.00	0	0.00	A-403/WP304/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000
EST-1P-1	62	6.625	40	0.280	0.000	0.000	0.000	0.000	0.00	0	0.00	A53/BE/	18.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000

Line Name : xNCW_91

EST-33R	18	4.500	40	0.237	0.000	0.000	1.050	0.154	0.00	0	0.00	A-403/WP304/	0.00	0.00	0.00	450	450	10	210	0.000	0.000	0.00000	0.00000	0.00000
EST-33	19	4.500	40	0.237	0.000	0.000	2.375	0.218	1.50	0	0.00	A-403/WP304/	0.00	0.00	0.00	450	450	10	210	0.000	0.000	0.00000	0.00000	0.00000
EST-32	4	4.500	40	0.237	0.000	0.000	0.000	0.000	1.50	90	0.00	A-403/WP304/	0.00	0.00	0.00	450	450	10	210	0.000	0.000	0.00000	0.00000	0.00000
EST-31P-1	54	4.500	40	0.237	0.000	0.000	0.000	0.000	0.00	90	0.00	A-312/TP304/	0.00	0.00	0.00	450	450	10	210	0.000	0.000	0.00000	0.00000	0.00000
EST-31P US	54	4.500	40	0.237	0.000	0.000	0.000	0.000	0.00	90	0.00	A-312/TP304/	0.00	0.00	0.00	450	450	10	210	0.000	0.000	0.00000	0.00000	0.00000
EST-31P DS	54	4.500	40	0.237	0.000	0.000	0.000	0.000	0.00	90	0.00	A-312/TP304/	0.00	0.00	0.00	450	450	10	210	0.000	0.000	0.00000	0.00000	0.00000
EST-31T	11	4.500	40	0.237	0.000	0.000	0.000	0.000	1.50	90	0.00	A-403/WP304/	0.00	0.00	0.00	450	450	10	210	0.000	0.000	0.00000	0.00000	0.00000
EST-31	2	4.500	40	0.237	0.000	0.000	0.000	0.000	1.50	90	0.00	A-403/WP304/	0.00	0.00	0.00	450	450	10	210	0.000	0.000	0.00000	0.00000	0.00000
EST-30P US	52	4.500	40	0.237	0.000	0.000	0.000	0.000	0.00	90	0.00	A-312/TP304/	0.00	0.00	0.00	450	450	10	210	0.000	0.000	0.00000	0.00000	0.00000
EST-30P DS	52	4.500	40	0.237	0.000	0.000	0.000	0.000	0.00	90	0.00	A-312/TP304/	0.00	0.00	0.00	450	450	10	210	0.000	0.000	0.00000	0.00000	0.00000
EST-30B	1	4.500	40	0.237	0.000	0.000	0.000	0.000	1.50	90	0.00	A-403/WP304/	0.00	0.00	0.00	450	450	10	210	0.000	0.000	0.00000	0.00000	0.00000
EST-30AP	52	4.500	40	0.237	0.000	0.000	0.000	0.000	1.50	90	0.00	A-312/TP304/	0.00	0.00	0.00	450	450	10	210	0.000	0.000	0.00000	0.00000	0.00000
EST-30A	1	4.500	40	0.237	0.000	0.000	0.000	0.000	1.50	90	0.00	A-403/WP304/	0.00	0.00	0.00	450	450	10	210	0.000	0.000	0.00000	0.00000	0.00000
EST-29P	52	4.500	40	0.237	0.000	0.000	0.000	0.000	0.00	90	0.00	A-312/TP304/	0.00	0.00	0.00	450	450	10	210	0.000	0.000	0.00000	0.00000	0.00000
EST-25	2	4.500	40	0.237	0.000	0.000	0.000	0.000	1.50	90	0.00	A-403/WP304/	0.00	0.00	0.00	450	450	10	210	0.000	0.000	0.00000	0.00000	0.00000
EST-24P	52	4.500	40	0.237	0.000	0.000	0.000	0.000	0.00	90	0.00	A-312/TP304/	0.00	0.00	0.00	450	450	10	210	0.000	0.000	0.00000	0.00000	0.00000
EST-24	2	4.500	40	0.237	0.000	0.000	0.000	0.000	1.50	90	0.00	A-403/WP304/	0.00	0.00	0.00	450	450	10	210	0.000	0.000	0.00000	0.00000	0.00000
EST-23P	52	4.500	40	0.237	0.000	0.000	0.000	0.000	0.00	90	0.00	A-312/TP304/	0.00	0.00	0.00	450	450	10	210	0.000	0.000	0.00000	0.00000	0.00000
EST-22P	52	4.500	40	0.237	0.000	0.000	0.000	0.000	0.00	180	0.00	A-312/TP304/	0.00	0.00	0.00	450	450	10	210	0.000	0.000	0.00000	0.00000	0.00000
EST-22	2	4.500	40	0.237	0.000	0.000	0.000	0.000	1.50	180	0.00	A-403/WP304/	0.00	0.00	0.00	450	450	10	210	0.000	0.000	0.00000	0.00000	0.00000
EST-21P US	52	4.500	40	0.237	0.000	0.000	0.000	0.000	0.00	90	0.00	A-312/TP304/	0.00	0.00	0.00	450	450	10	210	0.000	0.000	0.00000	0.00000	0.00000
EST-21P DS	52	4.500	40	0.237	0.000	0.000	0.000	0.000	0.00	90	0.00	A-312/TP304/	0.00	0.00	0.00	450	450	10	210	0.000	0.000	0.00000	0.00000	0.00000
EST-21	2	4.500	40	0.237	0.000	0.000	0.000	0.000	1.50	180	0.00	A-403/WP304/	0.00	0.00	0.00	450	450	10	210	0.000	0.000	0.00000	0.00000	0.00000
EST-20P US	52	4.500	40	0.237	0.000	0.000	0.000	0.000	0.00	90	0.00	A-312/TP304/	0.00	0.00	0.00	450	450	10	210	0.000	0.000	0.00000	0.00000	0.00000
EST-15	2	4.500	40	0.237	0.000	0.000	0.000	0.000	1.50	180	0.00	A-403/WP304/	0.00	0.00	0.00	50	300	10	210	0.000	0.000	0.00000	0.00000	0.00000
EST-14P	52	4.500	40	0.237	0.000	0.000	0.000	0.000	1.50	0	0.00	A-312/TP304/	0.00	0.00	0.00	50	300	10	210	0.000	0.000	0.00000	0.00000	0.00000
EST-14	1	4.500	40	0.237	0.000	0.000	0.000	0.000	1.50	0	0.00	A-403/WP304/	0.00	0.00	0.00	50	300	0	0	0.000	0.000	0.00000	0.00000	0.00000

Component Name	Geom Code	Pipe Size OD (in)	Sch.	Tnom (in)	Tinit (in)	Tcrit (in)	Br/Small End OD (in)	Br/Small Tnom (in)	R / D Ratio	Orient Angle (Deg.)	Pipe Length (in)	Spec/Type/ Class	Material Cr. (%)	Cu. (%)	Mo. (%)	Design Press. (psig)	Design Temp. (Deg. F)	Op. Press. (psig)	Op. Temp. (Deg. F)	Op. Enth. (Btu/lbm)	Op. Qual.	Flow Rate U/S Mn. (Mlbm/hr)	D/S Mn.	Br.
Line Name : xNCW_9321-F-2027 Aux Steam																								
CONDR24-US Pipe	52	4.500	40	0.237	0.000	0.000	0.000	0.000	0.00	0	0.00	A53/BS/	0.00	0.00	0.00	35	260	0	0	0.000	0.000	0.00000	0.00000	0.00000
CONDR24-Elbow	2	4.500	40	0.237	0.000	0.000	0.000	0.000	0.00	0	0.00	A234/WPB/	0.00	0.00	0.00	35	260	0	0	0.000	0.000	0.00000	0.00000	0.00000
Line Name : xNCW_9321-F-2586 Aux Steam																								
AS-DS-PCV-1250	18	4.500	40	0.237	0.000	0.000	3.500	0.216	0.00	0	0.00	A234/WPB/	0.00	0.00	0.00	35	260	0	0	0.000	0.000	0.00000	0.00000	0.00000
AS-DS Valve UH-64	58	8.625	40	0.322	0.000	0.000	0.000	0.000	0.00	0	0.00	A53/BE/	0.00	0.00	0.00	35	260	0	0	0.000	0.000	0.00000	0.00000	0.00000
AS-US PCV-1251	7	8.625	40	0.322	0.000	0.000	6.625	0.280	0.00	0	0.00	A234/WPB/	0.00	0.00	0.00	35	260	0	0	0.000	0.000	0.00000	0.00000	0.00000
Line Name : xNCW_Extraction Steam Traps																								
EST2-Pipe 2 DS	52	1.050	40	0.113	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	450	450	0	0	0.000	0.000	0.00000	0.00000	0.00000
EST2-Elbow 1	2	1.050	40	0.113	0.000	0.000	0.000	0.000	0.00	0	0.00	A105//	0.00	0.00	0.00	450	450	0	0	0.000	0.000	0.00000	0.00000	0.00000
EST2-Pipe 1	9	1.050	40	0.113	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	450	450	0	0	0.000	0.000	0.00000	0.00000	0.00000
EST2-Pipe 2 US	52	1.050	40	0.113	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	450	450	0	0	0.000	0.000	0.00000	0.00000	0.00000
EST2-Tee 1	12	1.050	40	0.113	0.000	0.000	1.050	0.113	0.00	0	0.00	A105//	0.00	0.00	0.00	450	450	0	0	0.000	0.000	0.00000	0.00000	0.00000
EST2-Pipe 3	60	0.840	40	0.109	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	450	450	0	0	0.000	0.000	0.00000	0.00000	0.00000
EST2-Pipe 4	62	1.050	40	0.113	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	450	450	0	0	0.000	0.000	0.00000	0.00000	0.00000
EST2-Pipe 5	62	1.050	40	0.113	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	450	450	0	0	0.000	0.000	0.00000	0.00000	0.00000
EST2-Elbow2	2	1.050	40	0.113	0.000	0.000	0.000	0.000	0.00	0	0.00	A105//	0.00	0.00	0.00	450	450	0	0	0.000	0.000	0.00000	0.00000	0.00000
EST2-Pipe 6	52	1.050	40	0.113	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	450	450	0	0	0.000	0.000	0.00000	0.00000	0.00000
EST4-Pipe 1	9	1.050	40	0.113	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	250	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
EST4-Elbow 1	2	1.050	40	0.113	0.000	0.000	0.000	0.000	0.00	0	0.00	A105//	0.00	0.00	0.00	250	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
EST4-Pipe 2 US	52	1.050	40	0.113	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	250	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
EST4-Pipe 2 DS	52	1.050	40	0.113	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	250	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
EST4-Tee 1	12	1.050	40	0.113	0.000	0.000	1.050	0.113	0.00	0	0.00	A105//	0.00	0.00	0.00	250	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
EST4-Pipe 3	62	1.050	40	0.113	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	250	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
EST4-Pipe 4	62	1.050	40	0.113	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	250	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
EST4-Elbow 2	2	1.050	40	0.113	0.000	0.000	0.000	0.000	0.00	0	0.00	A105//	0.00	0.00	0.00	250	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
EST4-Pipe 5	52	1.050	40	0.113	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	250	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
EST5-Pipe 1	9	1.050	40	0.113	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	100	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
EST5-Elbow 1	2	1.050	40	0.113	0.000	0.000	0.000	0.000	0.00	0	0.00	A105//	0.00	0.00	0.00	100	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
EST5-Pipe 2 US	52	1.050	40	0.113	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	100	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
EST5-Pipe 2 DS	52	1.050	40	0.113	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	100	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
EST5-Tee 1	12	1.050	40	0.113	0.000	0.000	1.050	0.113	0.00	0	0.00	A105//	0.00	0.00	0.00	100	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
EST5-Pipe 3	62	1.050	40	0.113	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	100	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
EST5-Pipe 4	62	1.050	40	0.113	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	100	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
EST5-Elbow 2	2	1.050	40	0.113	0.000	0.000	0.000	0.000	0.00	0	0.00	A105//	0.00	0.00	0.00	100	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
EST5-Pipe 5	52	1.050	40	0.113	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	100	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
Line Name : xNCW_FEEDWATER HEATER SHELLS																								
FWH-22C	9	54.750	FWH22	0.375	0.000	0.000	0.000	0.000	0.00	0	0.00	A516/70/	0.00	0.00	0.00	32	206	0	0	0.000	0.000	0.00000	0.00000	0.00000
FWH-23B-1	9	53.875	FWH23	0.438	0.000	0.000	0.000	0.000	0.00	0	0.00	A516/70/	0.00	0.00	0.00	32	206	0	0	0.000	0.000	0.00000	0.00000	0.00000
FWH-23B-2	9	53.875	FWH23	0.438	0.000	0.000	0.000	0.000	0.00	0	0.00	A516/70/	0.00	0.00	0.00	0	0	0	0	0.000	0.000	0.00000	0.00000	0.00000
FWH-23C 1N	9	53.875	FWH23	0.438	0.000	0.000	0.000	0.000	0.00	0	0.00	A516/70/	0.00	0.00	0.00	32	206	0	0	0.000	0.000	0.00000	0.00000	0.00000
FWH-23C 2N	9	53.875	FWH23	0.438	0.000	0.000	0.000	0.000	0.00	0	0.00	A516/70/	0.00	0.00	0.00	32	206	0	0	0.000	0.000	0.00000	0.00000	0.00000
FWH-24A	9	51.875	FWH24	0.438	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/C/	0.00	0.00	0.00	100	325	0	0	0.000	0.000	0.00000	0.00000	0.00000
FWH-24B	9	51.875	FWH24	0.438	0.000	0.000	0.000	0.000	0.00	0	0.00	A516/70/	0.00	0.00	0.00	100	325	0	0	0.000	0.000	0.00000	0.00000	0.00000
FWH-24C	9	51.875	FWH24	0.438	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/C/	0.00	0.00	0.00	0	0	0	0	0.000	0.000	0.00000	0.00000	0.00000
FWH-25A	9	54.125	FWH25	0.563	0.000	0.000	0.000	0.000	0.00	0	0.00	A516/70/	0.00	0.00	0.00	0	0	0	0	0.000	0.000	0.00000	0.00000	0.00000
FWH-25B	9	54.125	FWH25	0.563	0.000	0.000	0.000	0.000	0.00	0	0.00	A516/70/	0.00	0.00	0.00	0	0	0	0	0.000	0.000	0.00000	0.00000	0.00000
FWH-25C	9	54.125	FWH25	0.563	0.000	0.000	0.000	0.000	0.00	0	0.00	A516/70/	0.00	0.00	0.00	0	0	0	0	0.000	0.000	0.00000	0.00000	0.00000
FWH-26A	9	62.000	FWH26	1.000	0.000	0.000	0.000	0.000	0.00	0	0.00	A516/70/	0.00	0.00	0.00	0	0	0	0	0.000	0.000	0.00000	0.00000	0.00000
FWH-26B DR N2	9	8.625	160	0.906	0.000	0.000	0.000	0.000	0.00	0	0.00	A516/70/	0.00	0.00	0.00	0	0	0	0	0.000	0.000	0.00000	0.00000	0.00000
FWH-26B DR MICRO	9	62.000	FWH26	1.000	0.000	0.000	0.000	0.000	0.00	0	0.00	A516/70/	0.00	0.00	0.00	0	0	0	0	0.000	0.000	0.00000	0.00000	0.00000
FWH-26B DR N1	9	8.625	160	0.906	0.000	0.000	0.000	0.000	0.00	0	0.00	A516/70/	0.00	0.00	0.00	0	0	0	0	0.000	0.000	0.00000	0.00000	0.00000

Component Name	Geom Code	Pipe Size OD (in)	Sch.	Tnom (in)	Tinit (in)	Tcrit (in)	Br/Small End OD (in)	Br/Small Tnom (in)	R / D Ratio	Orient Angle (Deg.)	Pipe Length (in)	Spec/Type/ Class	Material Cr. (%)	Cu. (%)	Mo. (%)	Design Press. (psig)	Design Temp. (Deg. F)	Op. Press. (psig)	Op. Temp. (Deg. F)	Op. Enth. (Btu/lbm)	Op. Qual.	Flow Rate U/S Mn. (Mlbm/hr)	D/S Mn.	Br.
FWH-26B DR	9	62.000	FWH26	1.000	0.000	0.000	0.000	0.000	0.00	0	0.00	A516/70/	0.00	0.00	0.00	0	0	0	0	0.000	0.000	0.00000	0.00000	0.00000
FWH-26B EX	9	62.000	FWH26	1.000	0.000	0.000	0.000	0.000	0.00	0	0.00	A516/70/	0.00	0.00	0.00	0	0	0	0	0.000	0.000	0.00000	0.00000	0.00000
FWH-26C	9	62.000	FWH26	1.000	0.000	0.000	0.000	0.000	0.00	0	0.00	A516/70/	0.00	0.00	0.00	0	0	0	0	0.000	0.000	0.00000	0.00000	0.00000

Line Name : xNCW_FWH 21&22 Nozzles

LPFW21A-1N	30	26.000	STD	0.375	0.000	0.000	0.000	0.000	0.00	0	0.00	A53/BE/	0.00	0.00	0.00	0	0	0	0	0.000	0.000	0.00000	0.00000	0.00000
LPFW21A-2N	30	26.000	STD	0.375	0.000	0.000	0.000	0.000	0.00	0	0.00	A53/BE/	0.00	0.00	0.00	0	0	0	0	0.000	0.000	0.00000	0.00000	0.00000
LPFW21A-3N	30	26.000	STD	0.375	0.000	0.000	0.000	0.000	0.00	0	0.00	A53/BE/	0.00	0.00	0.00	0	0	0	0	0.000	0.000	0.00000	0.00000	0.00000
LPFW21A-4N	30	26.000	STD	0.375	0.000	0.000	0.000	0.000	0.00	0	0.00	A53/BE/	0.00	0.00	0.00	0	0	0	0	0.000	0.000	0.00000	0.00000	0.00000
LPFW21A-5N	30	14.000	40	0.438	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	0	0	0	0	0.000	0.000	0.00000	0.00000	0.00000
LPFW21A-6N	31	14.000	40	0.438	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	0	0	0	0	0.000	0.000	0.00000	0.00000	0.00000
LPFW21A-7N	31	12.750	20	0.250	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	0	0	0	0	0.000	0.000	0.00000	0.00000	0.00000
LPFW21B-1N	30	26.000	STD	0.375	0.000	0.000	0.000	0.000	0.00	0	0.00	A53/BE/	0.00	0.00	0.00	0	0	0	0	0.000	0.000	0.00000	0.00000	0.00000
LPFW21B-2N	30	26.000	STD	0.375	0.000	0.000	0.000	0.000	0.00	0	0.00	A53/BE/	0.00	0.00	0.00	0	0	0	0	0.000	0.000	0.00000	0.00000	0.00000
LPFW21B-3N	30	26.000	STD	0.375	0.000	0.000	0.000	0.000	0.00	0	0.00	A53/BE/	0.00	0.00	0.00	0	0	0	0	0.000	0.000	0.00000	0.00000	0.00000
LPFW21B-4N	30	26.000	STD	0.375	0.000	0.000	0.000	0.000	0.00	0	0.00	A53/BE/	0.00	0.00	0.00	0	0	0	0	0.000	0.000	0.00000	0.00000	0.00000
LPFW21B-5N	30	14.000	40	0.438	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	0	0	0	0	0.000	0.000	0.00000	0.00000	0.00000
LPFW21B-6N	31	14.000	40	0.438	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	0	0	0	0	0.000	0.000	0.00000	0.00000	0.00000
LPFW21B-7N	31	12.750	20	0.250	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	0	0	0	0	0.000	0.000	0.00000	0.00000	0.00000
LPFW21C-1N	30	26.000	STD	0.375	0.000	0.000	0.000	0.000	0.00	0	0.00	A53/BE/	0.00	0.00	0.00	0	0	0	0	0.000	0.000	0.00000	0.00000	0.00000
LPFW21C-2N	30	26.000	STD	0.375	0.000	0.000	0.000	0.000	0.00	0	0.00	A53/BE/	0.00	0.00	0.00	0	0	0	0	0.000	0.000	0.00000	0.00000	0.00000
LPFW21C-3N	30	26.000	STD	0.375	0.000	0.000	0.000	0.000	0.00	0	0.00	A53/BE/	0.00	0.00	0.00	0	0	0	0	0.000	0.000	0.00000	0.00000	0.00000
LPFW21C-4N	30	26.000	STD	0.375	0.000	0.000	0.000	0.000	0.00	0	0.00	A53/BE/	0.00	0.00	0.00	0	0	0	0	0.000	0.000	0.00000	0.00000	0.00000
LPFW21C-5N	30	14.000	40	0.438	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	0	0	0	0	0.000	0.000	0.00000	0.00000	0.00000
LPFW21C-6N	31	14.000	40	0.438	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	0	0	0	0	0.000	0.000	0.00000	0.00000	0.00000
LPFW21C-7N	31	12.750	20	0.250	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	0	0	0	0	0.000	0.000	0.00000	0.00000	0.00000
LPFW22A-1N	30	22.000	STD	0.375	0.000	0.000	0.000	0.000	0.00	0	0.00	A53/BE/	0.00	0.00	0.00	0	0	0	0	0.000	0.000	0.00000	0.00000	0.00000
LPFW22A-2N	30	22.000	STD	0.375	0.000	0.000	0.000	0.000	0.00	0	0.00	A53/BE/	0.00	0.00	0.00	0	0	0	0	0.000	0.000	0.00000	0.00000	0.00000
LPFW22A-3N	30	14.000	40	0.438	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	0	0	0	0	0.000	0.000	0.00000	0.00000	0.00000
LPFW22B-1N	30	22.000	STD	0.375	0.000	0.000	0.000	0.000	0.00	0	0.00	A53/BE/	0.00	0.00	0.00	0	0	0	0	0.000	0.000	0.00000	0.00000	0.00000
LPFW22B-2N	30	22.000	STD	0.375	0.000	0.000	0.000	0.000	0.00	0	0.00	A53/BE/	0.00	0.00	0.00	0	0	0	0	0.000	0.000	0.00000	0.00000	0.00000
LPFW22B-3N	30	14.000	40	0.438	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	0	0	0	0	0.000	0.000	0.00000	0.00000	0.00000
LPFW22C-1N	30	22.000	STD	0.375	0.000	0.000	0.000	0.000	0.00	0	0.00	A53/BE/	0.00	0.00	0.00	0	0	0	0	0.000	0.000	0.00000	0.00000	0.00000
LPFW22C-2N	30	22.000	STD	0.375	0.000	0.000	0.000	0.000	0.00	0	0.00	A53/BE/	0.00	0.00	0.00	0	0	0	0	0.000	0.000	0.00000	0.00000	0.00000
LPFW22C-3N	30	14.000	40	0.438	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	0	0	0	0	0.000	0.000	0.00000	0.00000	0.00000

Line Name : xNCW_Main Steam Traps

MST24-Pipe 1	9	1.315	80	0.179	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
MST24-Elbow 1	2	1.315	80	0.179	0.000	0.000	0.000	0.000	0.00	0	0.00	A105//	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
MST24-Pipe 2 US	52	1.315	80	0.179	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
MST24-Pipe 2 DS	52	1.315	80	0.179	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
MST24-Elbow 2	2	1.315	80	0.179	0.000	0.000	0.000	0.000	0.00	0	0.00	A105//	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
MST24-Pipe 3 US	52	1.315	80	0.179	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
MST24-Pipe 3 DS	52	1.315	80	0.179	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
MST24-Tee 1	12	1.315	80	0.179	0.000	0.000	1.315	0.179	0.00	0	0.00	A105//	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
MST24-Pipe 4	52	1.315	80	0.179	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
DS Valve MS-100-2	58	1.315	80	0.179	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
MST27-Pipe 1	9	1.315	80	0.179	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
MST27-Elbow 1	2	1.315	80	0.179	0.000	0.000	0.000	0.000	0.00	0	0.00	A105//	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
MST27-Pipe 2 US	52	1.315	80	0.179	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
MST27-Pipe 2 DS	52	1.315	80	0.179	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
MST27-Elbow 2	2	1.315	80	0.179	0.000	0.000	0.000	0.000	0.00	0	0.00	A105//	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
MST27-Pipe 3 US	52	1.315	80	0.179	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
MST27-Pipe 3 DS	52	1.315	80	0.179	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
MST27-Tee 1	12	1.315	80	0.179	0.000	0.000	1.315	0.179	0.00	0	0.00	A105//	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
MST27-Pipe 4	52	0.840	80	0.147	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
MST43-Pipe 1	9	1.315	80	0.179	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
MST43-Elbow 1	2	1.315	80	0.179	0.000	0.000	0.000	0.000	0.00	0	0.00	A105//	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000

Component Name	Geom Code	Pipe Size OD (in)	Sch.	Tnom (in)	Tinit (in)	Tcrit (in)	Br/Small End OD (in)	Br/Small Tnom (in)	R / D Ratio	Orient Angle (Deg.)	Pipe Length (in)	Spec/Type/ Class	Material Cr. (%)	Cu. (%)	Mo. (%)	Design Press. (psig)	Design Temp. (Deg. F)	Op. Press. (psig)	Op. Temp. (Deg. F)	Op. Enth. (Btu/lbm)	Op. Qual.	Flow Rate U/S Mn. (Mlbm/hr)	D/S Mn.	Br.
MST43-Pipe 2 US	52	1.315	80	0.179	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
MST43-Pipe 2 DS	52	1.315	80	0.179	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
MST43-Elbow 2	2	1.315	80	0.179	0.000	0.000	0.000	0.000	0.00	0	0.00	A105//	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
MST43-Pipe 3 US	52	1.315	80	0.179	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
MST43-Pipe 3 DS	52	1.315	80	0.179	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
MST43-Tee 1	12	1.315	80	0.179	0.000	0.000	1.315	0.179	0.00	0	0.00	A105//	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
MST43-Pipe 4	52	0.840	80	0.147	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
MST44-Pipe 1	9	1.315	80	0.179	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
MST44-Elbow 1	2	1.315	80	0.179	0.000	0.000	0.000	0.000	0.00	0	0.00	A105//	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
MST44-Pipe 2 US	52	1.315	80	0.179	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
MST44-Pipe 2 DS	52	1.315	80	0.179	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
MST44-Elbow 2	2	1.315	80	0.179	0.000	0.000	0.000	0.000	0.00	0	0.00	A105//	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
MST44-Pipe 3 US	52	1.315	80	0.179	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
MST44-Pipe 3 DS	52	1.315	80	0.179	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
MST44-Tee 1	12	1.315	80	0.179	0.000	0.000	1.315	0.179	0.00	0	0.00	A105//	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
MST44-Pipe 4	52	0.840	80	0.147	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
MST45-Pipe 1 US	9	1.315	80	0.179	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
MST45-Pipe 1 DS	9	1.660	80	0.191	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
MST45-Elbow 1	2	1.660	80	0.191	0.000	0.000	0.000	0.000	0.00	0	0.00	A105//	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
MST45-Pipe 2 US	52	1.660	80	0.191	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
MST45-Pipe 2 DS	52	1.660	80	0.191	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
MST45-Elbow 2	2	1.660	80	0.191	0.000	0.000	0.000	0.000	0.00	0	0.00	A105//	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
MST45-Pipe 3 US	52	1.660	80	0.191	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
MST45-Pipe 3 DS	52	1.660	80	0.191	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
MST45-Tee 1	12	1.660	80	0.191	0.000	0.000	1.315	0.179	0.00	0	0.00	A105//	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
MST45-Pipe 4	52	0.840	80	0.147	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
MST46-Pipe 1	9	1.315	80	0.179	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
MST46-Elbow 1	2	1.315	80	0.179	0.000	0.000	0.000	0.000	0.00	0	0.00	A105//	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
MST46-Pipe 2 US	52	1.315	80	0.179	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
MST46-Pipe 2 DS	52	1.315	80	0.179	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
MST46-Elbow 2	2	1.315	80	0.179	0.000	0.000	0.000	0.000	0.00	0	0.00	A105//	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
MST46-Pipe 3 US	52	1.315	80	0.179	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
MST46-Pipe 3 DS	52	1.315	80	0.179	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
MST46-Tee 1	12	1.315	80	0.179	0.000	0.000	1.315	0.179	0.00	0	0.00	A105//	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
MST46-Pipe 4	52	0.840	80	0.147	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
MST50-Pipe 1	9	1.315	80	0.179	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
MST50-Elbow 1	2	1.315	80	0.179	0.000	0.000	0.000	0.000	0.00	0	0.00	A105//	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
MST50-Pipe 2 US	52	1.315	80	0.179	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
MST50-Pipe 2 DS	52	1.315	80	0.179	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
MST50-Tee 1	12	1.315	80	0.179	0.000	0.000	1.315	0.179	0.00	0	0.00	A105//	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
MST50-Pipe 3	52	1.315	80	0.179	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
MST50-Pipe 4	52	0.840	80	0.147	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
MST51-Pipe 1	9	1.315	80	0.179	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
MST51-Elbow 1	2	1.315	80	0.179	0.000	0.000	0.000	0.000	0.00	0	0.00	A105//	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
MST51-Pipe 2 US	52	1.315	80	0.179	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
MST51-Pipe 2 DS	52	1.315	80	0.179	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
MST51-Tee 1	12	1.315	80	0.179	0.000	0.000	1.315	0.179	0.00	0	0.00	A105//	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
MST51-Pipe 3	52	1.315	80	0.179	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
MST51-Pipe 4	52	1.315	80	0.179	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000

Line Name : xNCW_MICRO GRIDS

MS23-1 DS	52	28.000	SPE	0.912	0.000	0.000	0.000	0.000	0.00	0	0.00	//	0.00	0.00	0.00	0	0	0	0	0.000	0.000	0.00000	0.00000	0.00000
3EXC-12R MICRO	9	24.000	10	0.250	0.000	0.000	0.000	0.000	0.00	0	0.00	//	0.00	0.00	0.00	0	0	0	0	0.000	0.000	0.00000	0.00000	0.00000
3EXA-13R MICRO	9	28.000	SPE	0.313	0.000	0.000	0.000	0.000	0.00	0	0.00	//	0.00	0.00	0.00	0	0	0	0	0.000	0.000	0.00000	0.00000	0.00000
3EXA-13R MICRO1	9	28.000	SPE	0.313	0.000	0.000	0.000	0.000	0.00	0	0.00	//	0.00	0.00	0.00	0	0	0	0	0.000	0.000	0.00000	0.00000	0.00000
3EXA-13R MICRO2	9	28.000	SPE	0.313	0.000	0.000	0.000	0.000	0.00	0	0.00	//	0.00	0.00	0.00	0	0	0	0	0.000	0.000	0.00000	0.00000	0.00000
3EXA-13R MICRO3	9	28.000	SPE	0.313	0.000	0.000	0.000	0.000	0.00	0	0.00	//	0.00	0.00	0.00	0	0	0	0	0.000	0.000	0.00000	0.00000	0.00000
3EXA-13R MICRO4	9	28.000	SPE	0.313	0.000	0.000	0.000	0.000	0.00	0	0.00	//	0.00	0.00	0.00	0	0	0	0	0.000	0.000	0.00000	0.00000	0.00000
3EXA-13R MICRO5	9	28.000	SPE	0.313	0.000	0.000	0.000	0.000	0.00	0	0.00	//	0.00	0.00	0.00	0	0	0	0	0.000	0.000	0.00000	0.00000	0.00000
3EXA-13R MICRO6	9	28.000	SPE	0.313	0.000	0.000	0.000	0.000	0.00	0	0.00	A234/WPB/	0.00	0.00	0.00	0	0	0	0	0.000	0.000	0.00000	0.00000	0.00000

Component Name	Geom Code	Pipe Size OD (in)	Sch.	Tnom (in)	Tinit (in)	Tcrit (in)	Br/Small End OD (in)	Br/Small Tnom (in)	R / D Ratio	Orient Angle (Deg.)	Pipe Length (in)	Spec/Type/ Class	Material Cr. (%)	Cu. (%)	Mo. (%)	Design Press. (psig)	Design Temp. (Deg. F)	Op. Press. (psig)	Op. Temp. (Deg. F)	Op. Enth. (Btu/lbm)	Op. Qual.	Flow Rate U/S Mn. (Mlbm/hr)	D/S Mn.	Br.
8-6EX-20A MICRO1	58	18.000	30	0.438	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	0	0	0	0	0.000	0.000	0.00000	0.00000	0.00000
7-5EX-4 MICRO1	9	28.000	STD	0.375	0.000	0.000	0.000	0.000	0.00	0	0.00	//	0.00	0.00	0.00	0	0	0	0	0.000	0.000	0.00000	0.00000	0.00000
7-5EX-15 MICRO1	2	28.000	STD	0.375	0.000	0.000	0.000	0.000	0.00	0	0.00	//	0.00	0.00	0.00	0	0	0	0	0.000	0.000	0.00000	0.00000	0.00000
7-5EX-15 MICRO2	2	28.000	STD	0.375	0.000	0.000	0.000	0.000	0.00	0	0.00	//	0.00	0.00	0.00	0	0	0	0	0.000	0.000	0.00000	0.00000	0.00000
1-3EXA-11R MICRO A	67	28.000	SPE	0.313	0.000	0.000	0.000	0.000	0.00	0	0.00	//	0.00	0.00	0.00	0	0	0	0	0.000	0.000	0.00000	0.00000	0.00000
1-3EXA-11R MICRO B	67	20.000	10	0.250	0.000	0.000	0.000	0.000	0.00	0	0.00	//	0.00	0.00	0.00	0	0	0	0	0.000	0.000	0.00000	0.00000	0.00000
1-3EXA-11R MICRO C	67	28.000	SPE	0.313	0.000	0.000	0.000	0.000	0.00	0	0.00	//	0.00	0.00	0.00	0	0	0	0	0.000	0.000	0.00000	0.00000	0.00000
1-3EXA-11R MICRO D	67	28.000	SPE	0.313	0.000	0.000	0.000	0.000	0.00	0	0.00	//	0.00	0.00	0.00	0	0	0	0	0.000	0.000	0.00000	0.00000	0.00000
1-3EXA-11RP MICRO1	67	20.000	10	0.250	0.000	0.000	0.000	0.000	0.00	0	0.00	//	0.00	0.00	0.00	0	0	0	0	0.000	0.000	0.00000	0.00000	0.00000
1-3EXA-11RP MICRO2	67	20.000	10	0.250	0.000	0.000	0.000	0.000	0.00	0	0.00	//	0.00	0.00	0.00	0	0	0	0	0.000	0.000	0.00000	0.00000	0.00000
1-3EXA-11RP MICRO3	67	20.000	10	0.250	0.000	0.000	0.000	0.000	0.00	0	0.00	//	0.00	0.00	0.00	0	0	0	0	0.000	0.000	0.00000	0.00000	0.00000
1-3EXA-11RP MICRO4	67	20.000	10	0.250	0.000	0.000	0.000	0.000	0.00	0	0.00	//	0.00	0.00	0.00	0	0	0	0	0.000	0.000	0.00000	0.00000	0.00000
1-3EXA-11RP MICRO5	67	20.000	10	0.250	0.000	0.000	0.000	0.000	0.00	0	0.00	//	0.00	0.00	0.00	0	0	0	0	0.000	0.000	0.00000	0.00000	0.00000
1-3EXA-11RP MICRO6	67	20.000	10	0.250	0.000	0.000	0.000	0.000	0.00	0	0.00	//	0.00	0.00	0.00	0	0	0	0	0.000	0.000	0.00000	0.00000	0.00000
8-6EX-20A (100% SCAN)	58	18.000	30	0.438	0.000	0.000	0.000	0.000	0.00	0	0.00	//	0.00	0.00	0.00	0	0	0	0	0.000	0.000	0.00000	0.00000	0.00000
3-3EXC-3P MICRO1	9	20.000	10	0.250	0.000	0.000	0.000	0.000	0.00	0	0.00	//	0.00	0.00	0.00	0	0	0	0	0.000	0.000	0.00000	0.00000	0.00000
3-3EXC-3P MICRO2	9	20.000	10	0.250	0.000	0.000	0.000	0.000	0.00	0	0.00	//	0.00	0.00	0.00	0	0	0	0	0.000	0.000	0.00000	0.00000	0.00000
6-4EXC-15 MICRO1	3	20.000	10	0.250	0.000	0.000	0.000	0.000	0.00	0	0.00	//	0.00	0.00	0.00	0	0	0	0	0.000	0.000	0.00000	0.00000	0.00000
6-4EXC-15 MICRO2	3	20.000	10	0.250	0.000	0.000	0.000	0.000	0.00	0	0.00	//	0.00	0.00	0.00	0	0	0	0	0.000	0.000	0.00000	0.00000	0.00000
6-4EXC-15 MICRO3	3	20.000	10	0.250	0.000	0.000	0.000	0.000	0.00	0	0.00	//	0.00	0.00	0.00	0	0	0	0	0.000	0.000	0.00000	0.00000	0.00000
4-EXB-14P M1	58	20.000	10	0.250	0.000	0.000	0.000	0.000	0.00	0	0.00	//	0.00	0.00	0.00	0	0	0	0	0.000	0.000	0.00000	0.00000	0.00000
4-EXB-14P M2	58	20.000	10	0.250	0.000	0.000	0.000	0.000	0.00	0	0.00	//	0.00	0.00	0.00	0	0	0	0	0.000	0.000	0.00000	0.00000	0.00000
4-EXB-14P M9	58	20.000	10	0.250	0.000	0.000	0.000	0.000	0.00	0	0.00	//	0.00	0.00	0.00	0	0	0	0	0.000	0.000	0.00000	0.00000	0.00000
4-EXB-9P MA	58	20.000	10	0.250	0.000	0.000	0.000	0.000	0.00	0	0.00	//	0.00	0.00	0.00	0	0	0	0	0.000	0.000	0.00000	0.00000	0.00000
MS21-1 DS	52	28.000	SPE	0.912	0.000	0.000	0.000	0.000	0.00	0	0.00	//	0.00	0.00	0.00	0	0	0	0	0.000	0.000	0.00000	0.00000	0.00000
Line Name : xNCW_MOPS DRAIN_A																								
MPSD2	18	10.750	40	0.365	0.000	0.000	6.625	0.280	0.00	0	0.00	A234/WPB/	0.00	0.00	0.00	250	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
MPSD8	68	10.750	40	0.365	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	250	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
MPSD9	58	10.750	40	0.365	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	250	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
MPSD10	12	10.750	40	0.365	0.000	0.000	6.625	0.280	0.00	0	0.00	A234/WPB/	0.00	0.00	0.00	250	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
MPSD11	62	10.750	40	0.365	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	250	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
MPSD12	52	10.750	40	0.365	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	250	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
Line Name : xNCW_MOPS DRAIN_B																								
MPSD1	18	10.750	40	0.365	0.000	0.000	6.625	0.280	0.00	0	0.00	A234/WPB/	0.00	0.00	0.00	250	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
MPSD3	68	10.750	40	0.365	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	250	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
MPSD4	58	10.750	40	0.365	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	250	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
MPSD5	12	10.750	40	0.365	0.000	0.000	6.625	0.280	0.00	0	0.00	A234/WPB/	0.00	0.00	0.00	250	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
MPSD6	62	10.750	40	0.365	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	250	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
MPSD7	52	10.750	40	0.365	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	250	400	0	0	0.000	0.000	0.00000	0.00000	0.00000
Line Name : xNCW_P&ID_227780																								
COMP1	62	2.375	80	0.218	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
COMP2	2	2.375	80	0.218	0.000	0.000	0.000	0.000	0.00	0	0.00	A234/WPB/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
COMP3	52	2.375	80	0.218	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
COMP4	2	2.375	80	0.218	0.000	0.000	0.000	0.000	0.00	0	0.00	A234/WPB/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
COMP5	52	2.375	80	0.218	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
COMP7	58	2.375	80	0.218	0.000	0.000	0.000	0.000	0.00	0	0.00	A106/B/	0.00	0.00	0.00	1085	600	0	0	0.000	0.000	0.00000	0.00000	0.00000
Line Name : xNCW_P&ID_9321-F-2120																								
DS of Valve AF138	18	2.875	40	0.203	0.000	0.000	2.375	0.154	0.00	0	0.00	A234/WPB/	0.00	0.00	0.00	450	220	0	0	0.000	0.000	0.00000	0.00000	0.00000

Line Name : xNCW_P&ID_9321-F-2729

Component Name	Geom Code	Pipe Size OD (in)	Sch.	Tnom (in)	Tinit (in)	Tcrit (in)	Br/Small End OD (in)	Br/Small Tnom (in)	R / D Ratio	Orient Angle (Deg.)	Pipe Length (in)	Spec/Type/ Class	Material Cr. (%)	Cu. (%)	Mo. (%)	Design Press. (psig)	Design Temp. (Deg. F)	Op. Press. (psig)	Op. Temp. (Deg. F)	Op. Enth. (Btu/lbm)	Op. Qual.	Flow Rate U/S Mn. (Mlbm/hr)	D/S Mn. (Mlbm/hr)	Br.
SGBTV-2E	3	18.000	STD	0.375	0.000	0.000	0.000	0.000	0.00	0	0.00	A234/WPB/	0.00	0.00	0.00	100	350	0	0	0.000	0.000	0.00000	0.00000	0.00000
SGBTV-2E US Pipe	53	18.000	STD	0.375	0.000	0.000	0.000	0.000	0.00	0	0.00	A53/BE/	0.00	0.00	0.00	100	350	0	0	0.000	0.000	0.00000	0.00000	0.00000

Note: This report is based on the assumption that at least the component U/S Main is included in a flow segment.

Company : ENTERGY NUCLEAR NORTHEAST
Plant : INDIAN POINT
Unit : 2
DB Name: IPEC2(v4)

Report Date : 04-Jun-2010
Report Time : 09:44:17

CHECWORKS SFA Version: 3.0 (build 105)

Component History Summary Report

SELECTION CRITERIA:

Line Name: *
Drawing Name: *
Comp. Service Status: *

Component Name	Current Component Name	Period Replaced	Replacement Date	Replacement (old) Material
Line Name : CD83-2-HDR to BFP21		**Sorted : No**		
CD-65N	CD-65N	REFUEL 15	11/06/2002	A234/WPB/
Line Name : ES?-1-2NDPT ES TO FWH 22A		**Sorted : No**		
LPFW22A-1P2	LPFW22A-1P2	REFUEL 18	03/25/2008	A53/B/S
LPFW22A-1P3	LPFW22A-1P3	REFUEL 18	03/25/2008	A53/B/S
LPFW22A-1P4	LPFW22A-1P4	REFUEL 18	03/25/2008	A53/B/S
LPFW22A-1P5	LPFW22A-1P5	REFUEL 18	03/25/2008	A53/B/S
LPFW22A-1N	LPFW22A-1N	REFUEL 18	03/25/2008	A53/B/S
LPFW22A-1P1	LPFW22A-1P1	REFUEL 18	03/25/2008	A53/B/S
Line Name : ES?-1-2NDPT ES TO FWH 22B		**Sorted : No**		
LPFW22B-1P1	LPFW22B-1P1	REFUEL 18	03/25/2008	A53/B/S
LPFW22B-1P2	LPFW22B-1P2	REFUEL 18	03/25/2008	A53/B/S
LPFW22B-1P3	LPFW22B-1P3	REFUEL 18	03/25/2008	A53/B/S
LPFW22B-1P4	LPFW22B-1P4	REFUEL 18	03/25/2008	A53/B/S
LPFW22B-1P5	LPFW22B-1P5	REFUEL 18	03/25/2008	A53/B/S
LPFW22B-1N	LPFW22B-1N	REFUEL 18	03/25/2008	A53/B/S
Line Name : ES?-1-2NDPT ES TO FWH 22C		**Sorted : No**		
LPFW22C-1P4	LPFW22C-1P4	REFUEL 17	04/20/2006	A691/2.25Cr/22
LPFW22C-1P3	LPFW22C-1P3	REFUEL 17	04/20/2006	A691/2.25Cr/22
LPFW22C-1P2	LPFW22C-1P2	REFUEL 17	04/20/2006	A691/2.25Cr/22
LPFW22C-1N	LPFW22C-1N	REFUEL 17	04/20/2006	A53/B/S
LPFW22C-1P1	LPFW22C-1P1	REFUEL 17	04/20/2006	A691/2.25Cr/22
LPFW22C-1E	LPFW22C-1E	REFUEL 17	04/20/2006	A234/WP22/
Line Name : ES?-2-2NDPT ES TO FWH 22A		**Sorted : No**		
LPFW22A-2P1	LPFW22A-2P1	REFUEL 18	03/25/2008	A53/B/S
LPFW22A-2P2	LPFW22A-2P2	REFUEL 18	03/25/2008	A53/B/S
LPFW22A-2N	LPFW22A-2N	REFUEL 18	03/25/2008	A53/B/S
Line Name : ES?-2-2NDPT ES TO FWH 22B		**Sorted : No**		
LPFW22B-2P2	LPFW22B-2P2	REFUEL 18	03/25/2008	A53/B/S
LPFW22B-2P3	LPFW22B-2P3	REFUEL 18	03/25/2008	A53/B/S
LPFW22B-2N	LPFW22B-2N	REFUEL 18	03/25/2008	A53/B/S
LPFW22B-2P1	LPFW22B-2P1	REFUEL 18	03/25/2008	A53/B/S

Component Name	Current Component Name	Period Replaced	Replacement Date	Replacement (old) Material
Line Name : ES?-2-2NDPT ES TO FWH 22C		**Sorted : No**		
LPFW22C-2P1	LPFW22C-2P1	REFUEL 17	04/20/2006	A691/2.25Cr/22
LPFW22C-2N	LPFW22C-2N	REFUEL 17	04/20/2006	A53/B/S
LPFW22C-2P2	LPFW22C-2P2	REFUEL 17	04/20/2006	A691/2.25Cr/22
Line Name : ES1-3-3RDPT ES to FWH 23A		**Sorted : No**		
3EXA-4	3EXA-4	REFUEL 15	11/14/2002	A234/WPB/
3EXA-4P US	3EXA-4P US	REFUEL 15	11/14/2002	A672/A55/11
3EXA-5	3EXA-5	REFUEL 15	11/14/2002	A234/WPB/
3EXA-5P	3EXA-5P	REFUEL 15	11/14/2002	A672/A55/11
3EXA-6	3EXA-6	REFUEL 15	11/14/2002	A234/WPB/
3EXA-6P DS	3EXA-6P DS	REFUEL 15	11/14/2002	A672/A55/11
3EXA-7	3EXA-7	REFUEL 15	11/14/2002	A234/WPB/
Line Name : ES1-4-3RDPT ES to FWH 23A		**Sorted : No**		
3EXA-1	3EXA-1	REFUEL 15	11/14/2002	A234/WPB/
3EXA-1A	3EXA-1A	REFUEL 15	11/14/2002	A53/B/E
3EXA-1P	3EXA-1P	REFUEL 15	11/14/2002	A53/B/E
Line Name : ES1-5-3RDPT ES to FWH 23A		**Sorted : No**		
3EXA-2P	3EXA-2P	REFUEL 10	02/03/1991	A53/B/E
3EXA-3	3EXA-3	REFUEL 10	02/03/1991	A234/WPB/
3EXA-11RP	3EXA-11RP	REFUEL 13	06/30/1997	A53/B/E
3EXA-11R	3EXA-11R	REFUEL 15	11/14/2002	A234/WPB/
Line Name : ES2-5-3RDPT ES to FWH 23B		**Sorted : No**		
3EXB-3	3EXB-3	REFUEL 10	02/03/1991	A234/WPB/
3EXB-2P	3EXB-2P US	REFUEL 10	02/03/1991	A53/B/E
3EXB-2P DS	3EXB-2P DS	REFUEL 10	02/03/1991	A53/B/E
3EXB-3P	3EXB-3P US	REFUEL 13	06/30/1997	A53/B/E
3EXB-3P DS	3EXB-3P DS	REFUEL 13	06/30/1997	A53/B/E
3EXB-10R	3EXB-10R	REFUEL 18	03/24/2008	A234/WPB/
Line Name : ES3-3-3RDPT ES to FWH 23C		**Sorted : No**		
3EXC-12P	3EXC-12P	REFUEL 14	05/25/2000	A672/A55/11
3EXC-12R	3EXC-12R	REFUEL 14	05/25/2000	A234/WPB/
3EXC-13R	3EXC-13R	REFUEL 14	05/25/2000	A234/WPB/
Line Name : ES3-5-3RDPT ES to FWH 23C		**Sorted : No**		
3EXC-3	3EXC-3	REFUEL 10	02/03/1991	A234/WPB/
3EXC-2P	3EXC-2P	REFUEL 10	02/03/1991	A53/B/E
3EXC-3P	3EXC-3P	REFUEL 13	06/30/1997	A53/B/E
Line Name : ES7-1-5THPT ES to FWH 25ABC		**Sorted : No**		
5EX-15P	5EX-15P DS	REFUEL 8	01/01/1988	A672/A55/11
5EX-15	5EX-15	REFUEL 8	01/01/1988	A234/WPB/
5EX-14P	5EX-14P	REFUEL 8	01/01/1988	A672/A55/11
5EX-11	5EX-11	REFUEL 8	01/01/1988	A234/WPB/
5EX-14	5EX-14	REFUEL 8	01/01/1988	A234/WPB/
5EX-16P US	5EX-16P US	REFUEL 8	01/01/1988	A672/A55/11
5EX-17	5EX-17	REFUEL 8	01/01/1988	A234/WPB/
5EX-16	5EX-16	REFUEL 8	01/01/1988	A234/WPB/
5EX-13	5EX-13	REFUEL 8	01/01/1988	A234/WPB/
5EX-12	5EX-12	REFUEL 8	01/01/1988	A234/WPB/

Component Name	Current Component Name	Period Replaced	Replacement Date	Replacement (old) Material
5EX-16P DS	5EX-16P DS	REFUEL 8	01/01/1988	A672/A55/11
5EX-8P	5EX-8P DS	REFUEL 8	01/01/1988	A672/A55/11
5EX-8	5EX-8	REFUEL 8	01/01/1988	A234/WPB/
5EX-11P	5EX-11P	REFUEL 8	01/01/1988	A672/A55/11
5EX-18	5EX-18	REFUEL 13	06/30/1997	A234/WPB/
5EX-18C	5EX-18C	REFUEL 13	06/30/1997	A234/WPB/
5EX-17P-1	5EX-17P-1	REFUEL 14	05/25/2000	A672/A55/11
5EX-16P DS	5EX-16P DS	REFUEL 14	05/25/2000	A672/A55/11
5EX-16P US	5EX-16P US	REFUEL 14	05/25/2000	A672/A55/11
5EX-11P	5EX-11P	REFUEL 14	05/25/2000	A672/A55/11
5EX-15P DS	5EX-15P DS	REFUEL 14	05/25/2000	A672/A55/11
5EX-15P US	5EX-15P US	REFUEL 14	05/25/2000	A672/A55/11
5EX-12	5EX-12	REFUEL 14	05/25/2000	A234/WPB/
5EX-8	5EX-8	REFUEL 14	05/25/2000	A234/WPB/
5EX-8P DS	5EX-8P DS	REFUEL 14	05/25/2000	A672/A55/11
5EX-8P US	5EX-8P US	REFUEL 14	05/25/2000	A672/A55/11
5EX-11	5EX-11	REFUEL 14	05/25/2000	A234/WPB/
5EX-13	5EX-13	REFUEL 14	05/25/2000	A234/WPB/
5EX-13P DS	5EX-13P DS	REFUEL 14	05/25/2000	A672/A55/11
5EX-16	5EX-16	REFUEL 14	05/25/2000	A234/WPB/
5EX-17P	5EX-17P	REFUEL 14	05/25/2000	A672/A55/11
5EX-13P	5EX-13P	REFUEL 14	05/25/2000	A672/A55/11
5EX-13P US	5EX-13P US	REFUEL 14	05/25/2000	A672/A55/11
5EX-14	5EX-14	REFUEL 14	05/25/2000	A234/WPB/
5EX-14P	5EX-14P	REFUEL 14	05/25/2000	A672/A55/11
5EX-15	5EX-15	REFUEL 14	05/25/2000	A234/WPB/
5EX-17	5EX-17	REFUEL 14	05/25/2000	A234/WPB/

Line Name : ES7-2-5THPT ESHDR to FWH 25C **Sorted : No**

5EX-9-10	5EX-9-10	REFUEL 8	01/01/1988	A53/B/E
5EX-9	5EX-9	REFUEL 8	01/01/1988	A234/WPB/
5EX-10	5EX-10	REFUEL 8	01/01/1988	A234/WPB/
5EX-9-10	5EX-9-10	REFUEL 13	06/30/1997	A53/B/E
5EX-9	5EX-9	REFUEL 13	06/30/1997	A234/WPB/
5EX-10	5EX-10	REFUEL 13	06/30/1997	A234/WPB/

Line Name : ES7-3-5THPT ESHDR 25CT to BT **Sorted : No**

5EX-5	5EX-5	REFUEL 8	01/01/1988	A234/WPB/
5EX-5P	5EX-5P DS	REFUEL 8	01/01/1988	A672/A55/11
5EX-5P DS	5EX-5P DS	REFUEL 14	05/25/2000	A672/A55/11
5EX-5P US	5EX-5P US	REFUEL 14	05/25/2000	A672/A55/11
5EX-5	5EX-5	REFUEL 14	05/25/2000	A234/WPB/

Line Name : ES7-4-5THPT ESHDR to FWH 25B **Sorted : No**

5EX-6-7	5EX-6-7	REFUEL 8	01/01/1988	A53/B/E
5EX-6	5EX-6	REFUEL 8	01/01/1988	A234/WPB/
5EX-7	5EX-7	REFUEL 8	01/01/1988	A234/WPB/
5EX-6-7	5EX-6-7	REFUEL 13	06/30/1997	A53/B/E
5EX-6	5EX-6	REFUEL 13	06/30/1997	A234/WPB/
5EX-7	5EX-7	REFUEL 13	06/30/1997	A234/WPB/
5EX-6P1	5EX-6P1	REFUEL 14	05/25/2000	A-312/TP304H/

Line Name : ES7-5-5THPT ESHDR to FWH 25A **Sorted : No**

5EX-2P	5EX-2P	REFUEL 8	01/01/1988	A53/B/E
5EX-3	5EX-3	REFUEL 8	01/01/1988	A234/WPB/
5EX-3P	5EX-3P US	REFUEL 8	01/01/1988	A53/B/E
5EX-4	5EX-4	REFUEL 8	01/01/1988	A234/WPB/
5EX-1	5EX-1	REFUEL 8	01/01/1988	A234/WPB/
5EX-2	5EX-2	REFUEL 8	01/01/1988	A234/WPB/
5EX-1-2	5EX-1-2	REFUEL 8	01/01/1988	A53/B/E

Component Name	Current Component Name	Period Replaced	Replacement Date	Replacement (old) Material
5EX-1	5EX-1	REFUEL 13	06/30/1997	A234/WPB/
5EX-2	5EX-2	REFUEL 13	06/30/1997	A234/WPB/
5EX-1-2	5EX-1-2	REFUEL 13	06/30/1997	A53/B/E
5EX-2P	5EX-2P	REFUEL 14	05/25/2000	A53/B/E
5EX-3	5EX-3	REFUEL 14	05/25/2000	A234/WPB/
5EX-3P US	5EX-3P US	REFUEL 14	05/25/2000	A53/B/E
5EX-4	5EX-4	REFUEL 14	05/25/2000	A234/WPB/

Line Name : ES7A-1-SEP TKA VNT to FWH25 **Sorted : No**

MOPS5	MOPS5	REFUEL 13	06/30/1997	A234/WPB/
MOPS8	MOPS8	REFUEL 13	06/30/1997	A106/B/
MOPS6	MOPS6	REFUEL 13	06/30/1997	A234/WPB/
MOPS2	MOPS2	REFUEL 13	06/30/1997	A234/WPB/
MOPS3	MOPS3	REFUEL 13	06/30/1997	A234/WPB/
MOPS7	MOPS7	REFUEL 13	06/30/1997	A234/WPB/
MOPS4	MOPS4	REFUEL 13	06/30/1997	A106/B/

Line Name : ES7A-2-SEP TKB VNT to FWH25 **Sorted : No**

MOPS10	MOPS10	REFUEL 13	06/30/1997	A106/B/
MOPS14	MOPS14	REFUEL 13	06/30/1997	A106/B/
MOPS15	MOPS15	REFUEL 13	06/30/1997	A234/WPB/
MOPS16	MOPS16	REFUEL 13	06/30/1997	A106/B/
MOPS11	MOPS11	REFUEL 13	06/30/1997	A234/WPB/
MOPS17	MOPS17	REFUEL 13	06/30/1997	A234/WPB/
MOPS18	MOPS18	REFUEL 13	06/30/1997	A106/B/
MOPS13	MOPS13	REFUEL 13	06/30/1997	A234/WPB/
MOPS12	MOPS12	REFUEL 13	06/30/1997	A106/B/

Line Name : ES8-1-6THPT ES to HDR **Sorted : No**

6EX-27	6EX-27	REFUEL 10	02/03/1991	A234/WPB/
6EX-27P	6EX-27P	REFUEL 10	02/03/1991	A106/B/
6EX-22A	6EX-22A	REFUEL 10	02/03/1991	A106/B/
6EX-28	6EX-28	REFUEL 10	02/03/1991	A234/WPB/
6EX-22P	6EX-22P	REFUEL 10	02/03/1991	A106/B/
6EX-23P	6EX-23P	REFUEL 10	02/03/1991	A106/B/
6EX-22R	6EX-22R	REFUEL 11	04/01/1993	A234/WPB/
6EX-23	6EX-23	REFUEL 11	04/01/1993	A234/WPB/

Line Name : ES8-2-6THPT ES to HDR **Sorted : No**

6EX-26-1	6EX-26-1	REFUEL 10	02/03/1991	A234/WPB/
6EX-24	6EX-24	REFUEL 10	02/03/1991	A234/WPB/
6EX-24P	6EX-24P	REFUEL 10	02/03/1991	A106/B/
6EX-25	6EX-25	REFUEL 10	02/03/1991	A234/WPB/
6EX-25P	6EX-25P	REFUEL 10	02/03/1991	A106/B/
6EX-26-2	6EX-26-2	REFUEL 10	02/03/1991	A234/WPB/
6EX-26P	6EX-26P	REFUEL 10	02/03/1991	A106/B/

Line Name : ES8-3-6THPT ESHDR to FWH 26 **Sorted : No**

6EX-21C	6EX-21C	REFUEL 11	04/01/1993	A106/B/
6EX-21	6EX-21	REFUEL 11	04/01/1993	A234/WPB/
6EX-19	6EX-19	REFUEL 11	04/01/1993	A234/WPB/
6EX-22	6EX-22	REFUEL 11	04/01/1993	A234/WPB/
6EX-21P	6EX-21P	REFUEL 11	04/01/1993	A106/B/
6EX-18P	6EX-18P	REFUEL 11	04/01/1993	A106/B/
6EX-18	6EX-18	REFUEL 11	04/01/1993	A234/WPB/
6EX-17P	6EX-17P	REFUEL 11	04/01/1993	A106/B/
6EX-17	6EX-17	REFUEL 11	04/01/1993	A234/WPB/
6EX-16P	6EX-16P	REFUEL 11	04/01/1993	A106/B/
6EX-16	6EX-16	REFUEL 11	04/01/1993	A234/WPB/

Component Name	Current Component Name	Period Replaced	Replacement Date	Replacement (old) Material
6EX-46P	6EX-46P	REFUEL 11	04/01/1993	A106/B/
6EX-14	6EX-14	REFUEL 11	04/01/1993	A234/WPB/
6EX-20	6EX-20	REFUEL 11	04/01/1993	A234/WPB/
6EX-19P	6EX-19P	REFUEL 11	04/01/1993	A106/B/
6EX-20B	6EX-20B	REFUEL 13	06/30/1997	A106/B/
6EX-20A	6EX-20A	REFUEL 13	06/30/1997	A106/B/

Line Name : ES8-4-6THPT ESHDR to FWH 26C **Sorted : No**

6EX-14R	6EX-14R	REFUEL 11	04/01/1993	A234/WPB/
6EX-11	6EX-11	REFUEL 11	04/01/1993	A234/WPB/
6EX-12	6EX-12	REFUEL 11	04/01/1993	A234/WPB/
6EX-12P	6EX-12P	REFUEL 11	04/01/1993	A106/B/
6EX-14P	6EX-14P	REFUEL 11	04/01/1993	A106/B/
6EX-13	6EX-13	REFUEL 11	04/01/1993	A234/WPB/
6EX-13C	6EX-13C	REFUEL 11	04/01/1993	A234/WPB/
6EX-13P	6EX-13P	REFUEL 11	04/01/1993	A106/B/
6EX-15	6EX-15	REFUEL 11	04/01/1993	A234/WPB/
6EX-15P	6EX-15P	REFUEL 11	04/01/1993	A106/B/

Line Name : ES8-5-6THPT ESHDR 26CT to BT **Sorted : No**

6EX-10P	6EX-10P	REFUEL 11	04/01/1993	A106/B/
6EX-10	6EX-10	REFUEL 11	04/01/1993	A234/WPB/

Line Name : ES8-6-6THPT ESHDR to FWH 26B **Sorted : No**

6EX-8B	6EX-8B	REFUEL 11	04/01/1993	A234/WPB/
6EX-8	6EX-8	REFUEL 11	04/01/1993	A234/WPB/
6EX-6P	6EX-6P	REFUEL 11	04/01/1993	A106/B/
6EX-7P	6EX-7P	REFUEL 11	04/01/1993	A106/B/
6EX-7	6EX-7	REFUEL 11	04/01/1993	A234/WPB/
6EX-6	6EX-6	REFUEL 11	04/01/1993	A234/WPB/
6EX-10R	6EX-10R	REFUEL 11	04/01/1993	A234/WPB/
6EX-9P	6EX-9P	REFUEL 11	04/01/1993	A106/B/
6EX-9	6EX-9	REFUEL 11	04/01/1993	A234/WPB/
6EX-8BP	6EX-8BP	REFUEL 11	04/01/1993	A106/B/
6EX-6N	6EX-6N	INTERIM 13	02/10/1996	A234/WPB/

Line Name : ES8-7-6THPT ESHDR to FWH 26A **Sorted : No**

6EX-5	6EX-5	REFUEL 11	04/01/1993	A234/WPB/
6EX-4P	6EX-4P	REFUEL 11	04/01/1993	A106/B/
6EX-4	6EX-4	REFUEL 11	04/01/1993	A234/WPB/
6EX-3P	6EX-3P	REFUEL 11	04/01/1993	A106/B/
6EX-5A	6EX-5A	REFUEL 11	04/01/1993	A234/WPB/
6EX-51	6EX-51	REFUEL 11	04/01/1993	A106/B/
6EX-3	6EX-3	REFUEL 11	04/01/1993	A234/WPB/
6EX-1P	6EX-1P	REFUEL 11	04/01/1993	A106/B/
6EX-2P	6EX-2P	REFUEL 11	04/01/1993	A106/B/
6EX-2	6EX-2	REFUEL 11	04/01/1993	A234/WPB/
6EX-1	6EX-1	REFUEL 11	04/01/1993	A234/WPB/
6EX-5P	6EX-5P	REFUEL 11	04/01/1993	A106/B/
6EX-1N	6EX-1N	INTERIM 13	02/10/1996	A234/WPB/

Line Name : FW71-1-BFP21 DISCH to HDR **Sorted : No**

BFD-14P	BFD-14P	REFUEL 15	11/06/2002	A106/B/
BFD-14N	BFD-14N	REFUEL 15	11/06/2002	A234/WPB/

Line Name : HD21A-2-FWH24A CV to FWH23A **Sorted : No**

4EXD-5	4EXD-5	REFUEL 13	06/30/1997	A234/WPB/

Component Name	Current Component Name	Period Replaced	Replacement Date	Replacement (old) Material
Line Name : HD22A-2-FWH24B CV to FWH23B		**Sorted : No**		
4EXD-38	4EXD-38	REFUEL 14	04/01/2000	A234/WPB/
Line Name : MSD33A-1-MSDT 21A to HDT		**Sorted : No**		
1A-8P	1A-8P	REFUEL 12	05/01/1995	A53/B/E
1A-2P	1A-2P	REFUEL 12	05/01/1995	A53/B/E
1A-8	1A-8	REFUEL 12	05/01/1995	A234/WPB/
1A-15	1A-15	REFUEL 12	05/01/1995	A234/WPB/
1A-13P	1A-13P	REFUEL 12	05/01/1995	A53/B/E
1A-13	1A-13	REFUEL 12	05/01/1995	A234/WPB/
1A-9P	1A-9P	REFUEL 12	05/01/1995	A53/B/E
1A-9	1A-9	REFUEL 12	05/01/1995	A234/WPB/
1A-7	1A-7	REFUEL 12	05/01/1995	A234/WPB/
1A-6	1A-6	REFUEL 12	05/01/1995	A234/WPB/
1A-5P	1A-5P	REFUEL 12	05/01/1995	A53/B/E
1A-5	1A-5	REFUEL 12	05/01/1995	A234/WPB/
1A-4P	1A-4P	REFUEL 12	05/01/1995	A53/B/E
1A-6P	1A-6P	REFUEL 12	05/01/1995	A53/B/E
1A-3	1A-3	REFUEL 12	05/01/1995	A234/WPB/
1A-12P	1A-12P	REFUEL 12	05/01/1995	A53/B/E
1A-3P	1A-3P	REFUEL 12	05/01/1995	A53/B/E
1A-12P-1	1A-12P-1	REFUEL 12	05/01/1995	A53/B/E
1A-11	1A-11	REFUEL 12	05/01/1995	A234/WPB/
1A-11P	1A-11P	REFUEL 12	05/01/1995	A53/B/E
1A-12	1A-12	REFUEL 12	05/01/1995	A234/WPB/
1A-10P	1A-10P	REFUEL 12	05/01/1995	A53/B/E
1A-1	1A-1	REFUEL 12	05/01/1995	A234/WPB/
1A-2	1A-2	REFUEL 12	05/01/1995	A234/WPB/
1A-4	1A-4	REFUEL 12	05/01/1995	A234/WPB/
1A-10	1A-10	REFUEL 12	05/01/1995	A234/WPB/
1A-7P	1A-7P	REFUEL 12	05/01/1995	A53/B/E
Line Name : MSD34A-1-MSDT 22A to HDT		**Sorted : No**		
2A-2P	2A-2P	REFUEL 12	05/01/1995	A53/B/E
2A-3P-1	2A-3P-1	REFUEL 12	05/01/1995	A53/B/E
2A-3	2A-3	REFUEL 12	05/01/1995	A234/WPB/
2A-3P	2A-3P	REFUEL 12	05/01/1995	A53/B/E
2A-4	2A-4	REFUEL 12	05/01/1995	A234/WPB/
2A-4P	2A-4P	REFUEL 12	05/01/1995	A53/B/E
2A-5	2A-5	REFUEL 12	05/01/1995	A234/WPB/
2A-5P	2A-5P	REFUEL 12	05/01/1995	A53/B/E
2A-1	2A-1	REFUEL 12	05/01/1995	A234/WPB/
2A-10	2A-10	REFUEL 12	05/01/1995	A234/WPB/
2A-6	2A-6	REFUEL 12	05/01/1995	A234/WPB/
2A-6P	2A-6P	REFUEL 12	05/01/1995	A53/B/E
2A-7	2A-7	REFUEL 12	05/01/1995	A234/WPB/
2A-7P	2A-7P	REFUEL 12	05/01/1995	A53/B/E
2A-8	2A-8	REFUEL 12	05/01/1995	A234/WPB/
2A-8P	2A-8P	REFUEL 12	05/01/1995	A53/B/E
2A-9	2A-9	REFUEL 12	05/01/1995	A234/WPB/
2A-9P	2A-9P	REFUEL 12	05/01/1995	A53/B/E
2A-10P	2A-10P	REFUEL 12	05/01/1995	A53/B/E
2A-12	2A-12	REFUEL 12	05/01/1995	A234/WPB/
2A-12P	2A-12P	REFUEL 12	05/01/1995	A53/B/E
2A-13	2A-13	REFUEL 12	05/01/1995	A234/WPB/
2A-13P	2A-13P	REFUEL 12	05/01/1995	A53/B/E
2A-15	2A-15	REFUEL 12	05/01/1995	A234/WPB/
2A-2	2A-2	REFUEL 12	05/01/1995	A234/WPB/
2A-2P-1	2A-2P-1	REFUEL 12	05/01/1995	A53/B/E

Component Name	Current Component Name	Period Replaced	Replacement Date	Replacement (old) Material
Line Name : MSD35A-1-MSDT 23A to HDT		**Sorted : No**		
3A-16	3A-16	REFUEL 12	05/01/1995	A234/WPB/
3A-13P	3A-13P	REFUEL 12	05/01/1995	A53/B/E
3A-2	3A-2	REFUEL 12	05/01/1995	A234/WPB/
3A-3	3A-3	REFUEL 12	05/01/1995	A234/WPB/
3A-2P	3A-2P	REFUEL 12	05/01/1995	A53/B/E
3A-3P	3A-3P	REFUEL 12	05/01/1995	A53/B/E
3A-17	3A-17	REFUEL 12	05/01/1995	A234/WPB/
3A-17P	3A-17P	REFUEL 12	05/01/1995	A53/B/E
3A-18	3A-18	REFUEL 12	05/01/1995	A234/WPB/
3A-18P	3A-18P	REFUEL 12	05/01/1995	A53/B/E
3A-19	3A-19	REFUEL 12	05/01/1995	A234/WPB/
3A-19P	3A-19P	REFUEL 12	05/01/1995	A53/B/E
3A-20	3A-20	REFUEL 12	05/01/1995	A234/WPB/
3A-20P	3A-20P	REFUEL 12	05/01/1995	A53/B/E
3A-21	3A-21	REFUEL 12	05/01/1995	A234/WPB/
3A-21P	3A-21P	REFUEL 12	05/01/1995	A53/B/E
3A-13	3A-13	REFUEL 12	05/01/1995	A234/WPB/
3A-15	3A-15	REFUEL 12	05/01/1995	A234/WPB/
3A-16P	3A-16P US	REFUEL 12	05/01/1995	A53/B/E
3A-1P	3A-1P	REFUEL 12	05/01/1995	A53/B/E
3A-1	3A-1	REFUEL 12	05/01/1995	A234/WPB/
Line Name : MSD36A-1-MSDT 21B to HDT		**Sorted : No**		
1B-2	1B-2	REFUEL 9	03/20/1989	A234/WPB/
1B-4	1B-4	REFUEL 10	02/03/1991	A234/WPB/
1B-15P	1B-15P	REFUEL 13	06/30/1997	A53/B/E
1B-15	1B-15	REFUEL 13	06/30/1997	A234/WPB/
1B-13P	1B-13P	REFUEL 13	06/30/1997	A53/B/E
1B-13	1B-13	REFUEL 13	06/30/1997	A234/WPB/
1B-14P	1B-14P	REFUEL 13	06/30/1997	A53/B/E
1B-14	1B-14	REFUEL 13	06/30/1997	A234/WPB/
1B-12P DS	1B-12P DS	REFUEL 13	06/30/1997	A53/B/E
1B-12P US	1B-12P US	REFUEL 13	06/30/1997	A53/B/E
1B-12	1B-12	REFUEL 13	06/30/1997	A234/WPB/
1B-11P DS	1B-11P DS	REFUEL 13	06/30/1997	A53/B/E
1B-11P US	1B-11P US	REFUEL 13	06/30/1997	A53/B/E
1B-11	1B-11	REFUEL 13	06/30/1997	A234/WPB/
1B-10P DS	1B-10P DS	REFUEL 13	06/30/1997	A53/B/E
1B-10P US	1B-10P US	REFUEL 13	06/30/1997	A53/B/E
1B-10	1B-10	REFUEL 13	06/30/1997	A234/WPB/
1B-9P	1B-9P	REFUEL 13	06/30/1997	A53/B/E
1B-4P	1B-4P	REFUEL 13	06/30/1997	A53/B/E
1B-3P	1B-3P	REFUEL 13	06/30/1997	A53/B/E
1B-3	1B-3	REFUEL 13	06/30/1997	A234/WPB/
1B-1	1B-1	REFUEL 13	06/30/1997	A234/WPB/
1B-4	1B-4	REFUEL 13	06/30/1997	A234/WPB/
1B-5	1B-5	REFUEL 13	06/30/1997	A234/WPB/
1B-5R	1B-5R	REFUEL 13	06/30/1997	A234/WPB/
1B-5P	1B-5P	REFUEL 13	06/30/1997	A53/B/E
1B-2P	1B-2P	REFUEL 13	06/30/1997	A53/B/E
1B-9	1B-9	REFUEL 13	06/30/1997	A234/WPB/
1B-2	1B-2	REFUEL 13	06/30/1997	A234/WPB/
1B-6P	1B-6P	REFUEL 13	06/30/1997	A53/B/E
1B-6	1B-6	REFUEL 13	06/30/1997	A234/WPB/
1B-7P	1B-7P	REFUEL 13	06/30/1997	A53/B/E
1B-7	1B-7	REFUEL 13	06/30/1997	A234/WPB/
1B-7P-1	1B-7P-1	REFUEL 13	06/30/1997	A53/B/E
1B-8P	1B-8P	REFUEL 13	06/30/1997	A53/B/E
1B-8	1B-8	REFUEL 13	06/30/1997	A234/WPB/
Line Name : MSD37A-1-MSDT 22B to HDT		**Sorted : No**		
2B-4	2B-4	REFUEL 9	03/20/1989	A234/WPB/

Component Name	Current Component Name	Period Replaced	Replacement Date	Replacement (old) Material
2B-5	2B-5	REFUEL 9	03/20/1989	A234/WPB/
2B-7	2B-7	REFUEL 9	04/01/1989	A234/WPB/
2B-1 REPL-1	2B-1	REFUEL 12	04/01/1995	A234/WPB/
2B-10	2B-10	REFUEL 12	05/01/1995	A234/WPB/
2B-11	2B-11	REFUEL 12	05/01/1995	A234/WPB/
2B-9	2B-9	REFUEL 12	05/01/1995	A234/WPB/
2B-10P DS	2B-10P DS	REFUEL 13	06/30/1997	A53/B/E
2B-8P US	2B-8P US	REFUEL 13	06/30/1997	A53/B/E
2B-3-REPL-1	2B-3	REFUEL 13	06/30/1997	A234/WPB/
2B-8	2B-8	REFUEL 13	06/30/1997	A234/WPB/
2B-7P DS	2B-7P DS	REFUEL 13	06/30/1997	A53/B/E
2B-9	2B-9	REFUEL 13	06/30/1997	A234/WPB/
2B-9P US	2B-9P US	REFUEL 13	06/30/1997	A53/B/E
2B-9P DS	2B-9P DS	REFUEL 13	06/30/1997	A53/B/E
2B-7P US	2B-7P US	REFUEL 13	06/30/1997	A53/B/E
2B-10	2B-10	REFUEL 13	06/30/1997	A234/WPB/
2B-1-REPL-2	2B-1	REFUEL 13	06/30/1997	A234/WPB/
2B-12	2B-12	REFUEL 13	06/30/1997	A234/WPB/
2B-10P US	2B-10P US	REFUEL 13	06/30/1997	A53/B/E
2B-11P	2B-11P	REFUEL 13	06/30/1997	A53/B/E
2B-11	2B-11	REFUEL 13	06/30/1997	A234/WPB/
2B-2	2B-2	REFUEL 13	06/30/1997	A234/WPB/
2B-7	2B-7	REFUEL 13	06/30/1997	A234/WPB/
2B-12P DS	2B-12P DS	REFUEL 13	06/30/1997	A53/B/E
2B-13	2B-13	REFUEL 13	06/30/1997	A234/WPB/
2B-13P	2B-13P	REFUEL 13	06/30/1997	A53/B/E
2B-15	2B-15	REFUEL 13	06/30/1997	A234/WPB/
2B-15P	2B-15P	REFUEL 13	06/30/1997	A53/B/E
2B-2P	2B-2P	REFUEL 13	06/30/1997	A53/B/E
2B-6P	2B-6P	REFUEL 13	06/30/1997	A53/B/E
2B-6	2B-6	REFUEL 13	06/30/1997	A234/WPB/
2B-5P	2B-5P	REFUEL 13	06/30/1997	A53/B/E
2B-1P	2B-1P	REFUEL 13	06/30/1997	A53/B/E
2B-5	2B-5	REFUEL 13	06/30/1997	A234/WPB/
2B-8P DS	2B-8P DS	REFUEL 13	06/30/1997	A53/B/E
2B-4P	2B-4P	REFUEL 13	06/30/1997	A53/B/E
2B-4	2B-4	REFUEL 13	06/30/1997	A234/WPB/
2B-3P	2B-3P	REFUEL 13	06/30/1997	A53/B/E
2B-12P US	2B-12P US	REFUEL 13	06/30/1997	A53/B/E

Line Name : MSD38A-1-MSDT 23B to HDT **Sorted : No**

3B-6	3B-6	REFUEL 12	02/05/1995	A234/WPB/
3B-7	3B-7	REFUEL 12	02/05/1995	A234/WPB/
3B-6P	3B-6P	REFUEL 12	02/05/1995	A53/B/E
3B-2P-1	3B-2P-1	REFUEL 12	02/05/1995	A53/B/E
3B-14	3B-14	REFUEL 12	02/05/1995	A234/WPB/
3B-2P	3B-2P	REFUEL 12	02/05/1995	A53/B/E
3B-3P	3B-3P	REFUEL 12	02/05/1995	A53/B/E
3B-7P	3B-7P	REFUEL 12	02/05/1995	A53/B/E
3B-12	3B-12	REFUEL 12	02/05/1995	A234/WPB/
3B-10P DS	3B-10P DS	REFUEL 12	02/05/1995	A53/B/E
3B-2	3B-2	REFUEL 12	02/05/1995	A234/WPB/
3B-8P	3B-8P	REFUEL 12	02/05/1995	A53/B/E
3B-11	3B-11	REFUEL 12	02/05/1995	A234/WPB/
3B-15	3B-15	REFUEL 12	02/05/1995	A234/WPB/
3B-9P	3B-9P DS	REFUEL 12	02/05/1995	A53/B/E
3B-10P US	3B-10P US	REFUEL 12	02/05/1995	A53/B/E
3B-10	3B-10	REFUEL 12	02/05/1995	A234/WPB/
3B-11P US	3B-11P US	REFUEL 12	02/05/1995	A53/B/E
3B-11P DS	3B-11P DS	REFUEL 12	02/05/1995	A53/B/E
3B-3	3B-3	REFUEL 12	02/05/1995	A234/WPB/
3B-14P	3B-14P	REFUEL 12	02/05/1995	A53/B/E
3B-4	3B-4	REFUEL 12	02/05/1995	A234/WPB/
3B-4P	3B-4P	REFUEL 12	02/05/1995	A53/B/E
3B-15P	3B-15P	REFUEL 12	02/05/1995	A53/B/E
3B-13	3B-13	REFUEL 12	02/05/1995	A234/WPB/
3B-12P US	3B-12P US	REFUEL 12	02/05/1995	A53/B/E

Component Name	Current Component Name	Period Replaced	Replacement Date	Replacement (old) Material
3B-13P	3B-13P	REFUEL 12	02/05/1995	A53/B/E
3B-9	3B-9	REFUEL 12	02/05/1995	A234/WPB/
3B-8	3B-8	CYCLE 13B	02/05/1997	A234/WPB/
3B-5P	3B-5P	CYCLE 13B	02/05/1997	A53/B/E
3B-1	3B-1	CYCLE 13B	02/05/1997	A234/WPB/
3B-5	3B-5	CYCLE 13B	02/05/1997	A234/WPB/

Line Name : MSD45B-1-RHDT21A CV to FWH26 **Sorted : No**

MS-1A30R2	MS-1A30R2	REFUEL 13	06/30/1997	A234/WPB/
MS-1A30P2	MS-1A30P2	REFUEL 13	06/30/1997	A106/B/
MS-1A31	MS-1A31	REFUEL 13	06/30/1997	A234/WPB/
MS-1A31P	MS-1A31P	REFUEL 13	06/30/1997	A106/B/
MS-1A32	MS-1A32	REFUEL 13	06/30/1997	A234/WPB/
MS-1A32P	MS-1A32P	REFUEL 13	06/30/1997	A106/B/

Line Name : MSD45C-3-RHDT A HDR to FWH26 **Sorted : No**

MS-1A41	MS-1A41	REFUEL 13	06/13/1997	A234/WPB/

Line Name : MSD45C-4-RHDT A HDR to FWH26C **Sorted : No**

MS-1A63	MS-1A63	REFUEL 12	04/16/1995	A234/WPB/
MS-1A67	MS-1A67	INTERIM 13	02/15/1996	A234/WPB/
MS-1A63P US	MS-1A63P US	REFUEL 13	06/13/1997	A106/B/
MS-1A63P DS	MS-1A63P DS	REFUEL 13	06/13/1997	A106/B/
MS-1A63	MS-1A63	REFUEL 13	06/30/1997	A234/WPB/
MS-1A65	MS-1A65	REFUEL 13	06/30/1997	A234/WPB/
MS-1A64	MS-1A64	REFUEL 13	06/30/1997	A234/WPB/
MS-1A64P US	MS-1A64P US	REFUEL 13	06/30/1997	A106/B/
MS-1A64P DS	MS-1A64P DS	REFUEL 13	06/30/1997	A106/B/
MS-1A65P US	MS-1A65P US	REFUEL 13	06/30/1997	A106/B/
MS-1A65P DS	MS-1A65P DS	REFUEL 13	06/30/1997	A106/B/

Line Name : MSD46A-2-RHDT22A CV to FWH26 **Sorted : No**

MS-2A25	MS-2A25	REFUEL 13	06/30/1997	A234/WPB/
MS-2A24R	MS-2A24R	REFUEL 13	06/30/1997	A234/WPB/
MS-2A23P	MS-2A23P	REFUEL 13	06/30/1997	A106/B/
MS-2A24	MS-2A24	REFUEL 13	06/30/1997	A234/WPB/
MS-2A24P	MS-2A24P	REFUEL 13	06/30/1997	A106/B/
MS-2A25P	MS-2A25P	REFUEL 13	06/30/1997	A106/B/

Line Name : MSD47-2-RHDT23A CV to FWH26 **Sorted : No**

MS-3A25	MS-3A25	REFUEL 13	06/30/1997	A234/WPB/
MS-3A24P	MS-3A24P	REFUEL 13	06/30/1997	A106/B/
MS-3A24R	MS-3A24R	REFUEL 13	06/30/1997	A234/WPB/
MS-3A25P	MS-3A25P	REFUEL 13	06/30/1997	A106/B/
MS-3A23P	MS-3A23P	REFUEL 13	06/30/1997	A106/B/
MS-3A24	MS-3A24	REFUEL 13	06/30/1997	A234/WPB/

Line Name : MSD48B-1-RHDT21B CV to FWH26 **Sorted : No**

MS-1B34R	MS-1B34R	REFUEL 13	06/30/1997	A234/WPB/
MS-1B33P-1	MS-1B33P-1	REFUEL 13	06/30/1997	A106/B/
MS-1B34	MS-1B34	REFUEL 13	06/30/1997	A234/WPB/

Line Name : MSD49A-1-RHDT22B to CV **Sorted : No**

MS-2B22	MS-2B22	REFUEL 19	04/05/2010	A234/WPB/
MS-TEMP-08P	MS-TEMP-08P	REFUEL 19	04/05/2010	A106/B/

Component Name	Current Component Name	Period Replaced	Replacement Date	Replacement (old) Material
MS-TEMP-06P	MS-TEMP-06P	REFUEL 19	04/05/2010	A106/B/
MS-TEMP-07E	MS-TEMP-07E	REFUEL 19	04/05/2010	A234/WPB/
MS-TEMP-05E	MS-TEMP-05E	REFUEL 19	04/05/2010	A234/WPB/
MS-TEMP-04P	MS-TEMP-04P	REFUEL 19	04/05/2010	A106/B/
MS-TEMP-03P	MS-TEMP-03P	REFUEL 19	04/05/2010	A106/B/
MS-TEMP-02E	MS-TEMP-02E	REFUEL 19	04/05/2010	A234/WPB/
MS-TEMP-01P	MS-TEMP-01P	REFUEL 19	04/05/2010	A106/B/
MS-2B21P DS	MS-2B21P DS	REFUEL 19	04/05/2010	A106/B/

Line Name : MSD49C-1-RHDT B HDR to FWH26 **Sorted : No**

MS-2B36	MS-2B36	INTERIM 13	02/12/1996	A234/WPB/
MS-2B63	MS-2B63	REFUEL 13	06/30/1997	A106/B/
MS-2B33P	MS-2B33P	REFUEL 16	10/23/2004	A106/B/
MS-2B35	MS-2B35	REFUEL 16	10/23/2004	A234/WPB/
MS-2B35P	MS-2B35P	REFUEL 16	10/23/2004	A106/B/
MS-2B36	MS-2B36	REFUEL 16	10/23/2004	A234/WPB/

Line Name : MSD49C-2-RHDT B HDR to FWH26C **Sorted : No**

MS-2B53	MS-2B53	REFUEL 13	06/30/1997	A234/WPB/
MS-2B50	MS-2B50	REFUEL 13	06/30/1997	A234/WPB/
MS-2B63P	MS-2B63P	REFUEL 13	06/30/1997	A106/B/

Line Name : MSD49C-5-RHDT B HDR to FWH26A **Sorted : No**

MS-2B43R	MS-2B43R	REFUEL 13	06/30/1997	A234/WPB/

Line Name : MSD50A-1-RHDT23B to CV **Sorted : No**

MS-3B26-REPL1	MS-3B26	REFUEL 11	04/01/1993	A234/WPB/
MS-3B29P	MS-3B29P	REFUEL 13	06/30/1997	A106/B/
MS-3B29	MS-3B29	REFUEL 13	06/30/1997	A234/WPB/
MS-3B30P	MS-3B30P	REFUEL 13	06/30/1997	A106/B/
MS-3B28	MS-3B28	REFUEL 13	06/30/1997	A234/WPB/
MS-3B27P	MS-3B27P	REFUEL 13	06/30/1997	A106/B/
MS-3B25	MS-3B25	REFUEL 13	06/30/1997	A234/WPB/
MS-3B26P US	MS-3B26P US	REFUEL 13	06/30/1997	A106/B/
MS-3B26-REPL-2	MS-3B26	REFUEL 13	06/30/1997	A234/WPB/
MS-3B25P	MS-3B25P	REFUEL 13	06/30/1997	A106/B/
MS-3B30	MS-3B30	REFUEL 13	06/30/1997	A234/WPB/
MS-3B27	MS-3B27	REFUEL 13	06/30/1997	A234/WPB/
MS-3B28P	MS-3B28P	REFUEL 13	06/30/1997	A106/B/

Line Name : MSD50C-1-RHDT23B CV to FWH26 **Sorted : No**

MS-3B43R	MS-3B43R	REFUEL 13	06/30/1997	A234/WPB/
MS-3B43	MS-3B43	REFUEL 13	06/30/1997	A234/WPB/

Line Name : xES4-1-4THPT ES to FWH 24A **Sorted : No**

4EXA-14	4EXA-14	REFUEL 15	11/14/2002	A234/WPB/
4EXA-12P	4EXA-12P	REFUEL 15	11/14/2002	A53/B/E

Line Name : xES5-1-4THPT ES to FWH 24B **Sorted : No**

4EXB-14P	4EXB-14P	REFUEL 15	10/26/2002	A53/B/E
4EXB-13P	4EXB-13P	REFUEL 15	11/14/2002	A53/B/E
4EXB-9P US	4EXB-9P US	REFUEL 15	11/14/2002	A53/B/E
4EXB-9P DS	4EXB-9P DS	REFUEL 15	11/14/2002	A53/B/E

Component Name	Current Component Name	Period Replaced	Replacement Date	Replacement (old) Material
Line Name : xMSD49B-1-RHDT22B CV to FWH26		**Sorted : No**		
MS-2B30R2-REPL-1	xMS-2B30R2	REFUEL 13	06/30/1997	A234/WPB/
MS-2B31P	xMS-2B31P	REFUEL 13	06/30/1997	A106/B/
MS-2B31	xMS-2B31	REFUEL 13	06/30/1997	A234/WPB/
Line Name : xNCW_18		**Sorted : No**		
5EXC-25P	5EXC-25P	REFUEL 13	06/30/1997	A53/B/E
5EXC-30	5EXC-30	REFUEL 14	05/25/2000	A234/WPB/
5EXC-27P	5EXC-27P	REFUEL 14	05/25/2000	A53/B/E
5EXC-16	5EXC-16	REFUEL 14	05/25/2000	A234/WPB/
5EXC-15P	5EXC-15P	REFUEL 14	05/25/2000	A53/B/E
5EXC-8	5EXC-8	REFUEL 14	05/25/2000	A234/WPB/
5EXC-7P	5EXC-7P	REFUEL 14	05/25/2000	A53/B/E
5EXC-31	5EXC-31	REFUEL 14	05/25/2000	A234/WPB/
5EXC-25P	5EXC-25P	REFUEL 15	11/14/2002	A53/B/E
Line Name : xNCW_210		**Sorted : No**		
210-5P	210-5P	REFUEL 15	11/14/2002	A106/B/
210-5E	210-5E	REFUEL 15	11/14/2002	A234/WPB/
210-4P DS	210-4P DS	REFUEL 15	11/14/2002	A106/B/
210-4P US	210-4P US	REFUEL 15	11/14/2002	A106/B/
210-3P-3 DS	210-3P-3 DS	REFUEL 15	11/14/2002	A106/B/
210-4E	210-4E	REFUEL 15	11/14/2002	A234/WPB/
Line Name : xNCW_216		**Sorted : No**		
216-6N	216-6N	REFUEL 13	06/30/1997	A105//
216-4E	216-4E	REFUEL 13	06/30/1997	A105//
216-4P DS	216-4P DS	REFUEL 13	06/30/1997	A106/B/
216-3P DS	216-3P DS	REFUEL 13	06/30/1997	A106/B/
216-5P	216-5P	REFUEL 13	06/30/1997	A106/B/
216-5E	216-5E	REFUEL 13	06/30/1997	A105//
216-2P US	216-2P US	REFUEL 14	05/25/2000	A106/B/
216-3P DS	216-3P DS	REFUEL 14	05/25/2000	A-312/TP316H/
216-2E	216-2E	REFUEL 14	05/25/2000	A105//
216-4P US	216-4P US	REFUEL 14	05/25/2000	A106/B/
216-4E	216-4E	REFUEL 14	05/25/2000	A-182/F304H/
216-6N	216-6N	REFUEL 14	05/25/2000	A-182/F304H/
216-1P-1	216-1P-1	REFUEL 14	05/25/2000	A106/B/
216-1E	216-1E	REFUEL 14	05/25/2000	A105//
216-1P	216-1P	REFUEL 14	05/25/2000	A106/B/
216-4P DS	216-4P DS	REFUEL 14	05/25/2000	A-312/TP316H/
216-5P	216-5P	REFUEL 14	05/25/2000	A-312/TP316H/
216-5E	216-5E	REFUEL 14	05/25/2000	A-182/F304H/
Line Name : xNCW_222		**Sorted : No**		
222-4E	222-4E	REFUEL 14	05/25/2000	A234/WPB/
222-11E	222-11E	REFUEL 14	05/25/2000	A234/WPB/
222-10P DS	222-10P DS	REFUEL 14	05/25/2000	A106/B/
222-10P US	222-10P US	REFUEL 14	05/25/2000	A106/B/
222-10E	222-10E	REFUEL 14	05/25/2000	A234/WPB/
222-1P DS	222-1P DS	REFUEL 14	05/25/2000	A106/B/
222-9P DS	222-9P DS	REFUEL 14	05/25/2000	A106/B/
222-3P	222-3P	REFUEL 14	05/25/2000	A106/B/
222-6E	222-6E	REFUEL 14	05/25/2000	A234/WPB/
222-11P US	222-11P US	REFUEL 14	05/25/2000	A106/B/
222-2E	222-2E	REFUEL 14	05/25/2000	A234/WPB/
222-7E	222-7E	REFUEL 14	05/25/2000	A234/WPB/
222-6P US	222-6P US	REFUEL 14	05/25/2000	A106/B/

Component Name	Current Component Name	Period Replaced	Replacement Date	Replacement (old) Material
Line Name : xNCW_223		**Sorted : No**		
223-15P US	223-15P US	REFUEL 15	11/14/2002	A53/B/E
223-11T	223-11T	REFUEL 15	11/14/2002	A234/WPB/
223-11P US	223-11P US	REFUEL 15	11/14/2002	A53/B/E
223-13P DS	223-13P DS	REFUEL 15	11/14/2002	A53/B/E
223-14E	223-14E	REFUEL 15	11/14/2002	A234/WPB/
223-15E	223-15E	REFUEL 15	11/14/2002	A234/WPB/
223-14P US	223-14P US	REFUEL 15	11/14/2002	A53/B/E
223-10P DS	223-10P DS	REFUEL 15	11/14/2002	A53/B/E
223-10P US	223-10P US	REFUEL 15	11/14/2002	A53/B/E
223-14P DS	223-14P DS	REFUEL 15	11/14/2002	A53/B/E
223-16E	223-16E	REFUEL 15	11/14/2002	A234/WPB/
223-16P US	223-16P US	REFUEL 15	11/14/2002	A53/B/E
223-10T	223-10T	REFUEL 15	11/14/2002	A234/WPB/
223-9R	223-9R	REFUEL 15	11/14/2002	A234/WPB/
223-16P DS	223-16P DS	REFUEL 15	11/14/2002	A53/B/E
223-17E	223-17E	REFUEL 15	11/14/2002	A234/WPB/
223-17P US	223-17P US	REFUEL 15	11/14/2002	A53/B/E
223-17P DS	223-17P DS	REFUEL 15	11/14/2002	A53/B/E
223-18E	223-18E	REFUEL 15	11/14/2002	A234/WPB/
223-18P	223-18P	REFUEL 15	11/14/2002	A53/B/E
223-19E	223-19E	REFUEL 15	11/14/2002	A234/WPB/
223-19P US	223-19P US	REFUEL 15	11/14/2002	A53/B/E
223-15P DS	223-15P DS	REFUEL 15	11/14/2002	A53/B/E
Line Name : xNCW_229		**Sorted : No**		
229-2P DS	229-2P DS	REFUEL 14	05/25/2000	A106/B/
229-3E	229-3E	REFUEL 14	05/25/2000	A234/WPB/
229-10P DS	229-10P DS	REFUEL 14	05/25/2000	A106/B/
229-4E	229-4E	REFUEL 14	05/25/2000	A234/WPB/
229-6E	229-6E	REFUEL 14	05/25/2000	A234/WPB/
229-9P DS	229-9P DS	REFUEL 14	05/25/2000	A106/B/
229-6P US	229-6P US	REFUEL 14	05/25/2000	A106/B/
229-10E	229-10E	REFUEL 14	05/25/2000	A234/WPB/
229-10P US	229-10P US	REFUEL 14	05/25/2000	A106/B/
229-11E	229-11E	REFUEL 14	05/25/2000	A234/WPB/
229-11P US	229-11P US	REFUEL 14	05/25/2000	A106/B/
229-3P	229-3P	REFUEL 14	05/25/2000	A106/B/
229-5E	229-5E	REFUEL 14	05/25/2000	A234/WPB/
Line Name : xNCW_241		**Sorted : No**		
241-11E	241-11E	REFUEL 13	06/30/1997	A234/WPB/
241-10P	241-10P	REFUEL 13	06/30/1997	A53/B/E
Line Name : xNCW_245		**Sorted : No**		
245-7P	245-7P	REFUEL 12	02/24/1995	A106/B/
Line Name : xNCW_246		**Sorted : No**		
246-18E	246-18E	REFUEL 14	05/25/2000	A234/WPB/
246-2P	246-2P	REFUEL 14	05/25/2000	A106/B/
246-3E	246-3E	REFUEL 14	05/25/2000	A234/WPB/
246-4P DS	246-4P DS	REFUEL 14	05/25/2000	A106/B/
246-5E	246-5E	REFUEL 14	05/25/2000	A234/WPB/
246-6P US	246-6P US	REFUEL 14	05/25/2000	A106/B/
246-6P DS	246-6P DS	REFUEL 14	05/25/2000	A106/B/
246-7E	246-7E	REFUEL 14	05/25/2000	A234/WPB/
246-17P DS	246-17P DS	REFUEL 14	05/25/2000	A106/B/
246-22E	246-22E	REFUEL 14	05/25/2000	A234/WPB/
246-21P DS	246-21P DS	REFUEL 14	05/25/2000	A106/B/

Component Name	Current Component Name	Period Replaced	Replacement Date	Replacement (old) Material
246-19P US	246-19P US	REFUEL 14	05/25/2000	A106/B/
246-23P US	246-23P US	REFUEL 14	05/25/2000	A106/B/
246-8E	246-8E	REFUEL 14	05/25/2000	A234/WPB/

Line Name : xNCW_250 **Sorted : No**

250-17P	250-17P	REFUEL 13	06/30/1997	A106/B/

Line Name : xNCW_273 **Sorted : No**

273-9P US	273-9P US	REFUEL 16	10/23/2004	A106/B/
273-8E	273-8E	REFUEL 16	10/23/2004	A234/WPB/
273-7P DS	273-7P DS	REFUEL 16	10/23/2004	A106/B/
273-9P DS	273-9P DS	REFUEL 16	10/23/2004	A106/B/
273-10E	273-10E	REFUEL 16	10/23/2004	A234/WPB/
273-1P US	273-1P US	REFUEL 16	10/23/2004	A106/B/

Line Name : xNCW_285 **Sorted : No**

285-1B-VCD-XE	285-1B-VCD-XE	REFUEL 16	10/23/2004	A234/WPB/
285-13P DS	285-13P DS	REFUEL 16	10/23/2004	A106/B/
285-15P US	285-15P US	REFUEL 16	10/23/2004	A106/B/

Line Name : xNCW_65A **Sorted : No**

1A-VCD1P	1A-VCD1P	REFUEL 14	05/25/2000	A106/B/
1A-VCD2	1A-VCD2	REFUEL 14	05/25/2000	A234/WPB/
1A-VCD4P	1A-VCD4P	REFUEL 14	05/25/2000	A106/B/
1A-VCD13	1A-VCD13	REFUEL 14	05/25/2000	A234/WPB/
1A-VCD34	1A-VCD34	REFUEL 14	05/25/2000	A234/WPB/
1A-VCD1	1A-VCD1	REFUEL 14	05/25/2000	A234/WPB/
1A-VCD15	1A-VCD15	REFUEL 16	10/23/2004	A234/WPB/
1A-VCD15P	1A-VCD15P	REFUEL 16	10/23/2004	A106/B/

Line Name : xNCW_65B **Sorted : No**

1A-VCD33	1A-VCD33	REFUEL 13	05/23/1997	A234/WPB/
1A-VCD28P US	1A-VCD28P US	REFUEL 14	05/25/2000	A106/B/
1A-VCD27P DS	1A-VCD27P DS	REFUEL 14	05/25/2000	A106/B/
1A-VCD28	1A-VCD28	REFUEL 14	05/25/2000	A234/WPB/
1A-VCD33P US	1A-VCD33P US	REFUEL 14	05/25/2000	A106/B/
1A-VCD33	1A-VCD33	REFUEL 14	05/25/2000	A234/WP11/
1A-VCD32P DS	1A-VCD32P DS	REFUEL 14	05/25/2000	A106/B/
1A-VCD23	1A-VCD23	REFUEL 14	05/25/2000	A234/WPB/

Line Name : xNCW_66A **Sorted : No**

2A-VCD35	2A-VCD35	REFUEL 14	05/25/2000	A234/WPB/
2A-VCD1	2A-VCD1	REFUEL 14	05/25/2000	A234/WPB/
2A-VCD2	2A-VCD2	REFUEL 14	05/25/2000	A234/WPB/
2A-VCD3P	2A-VCD3P	REFUEL 14	05/25/2000	A106/B/
2A-VCD2P	2A-VCD2P	REFUEL 14	05/25/2000	A106/B/
2A-VCD4	2A-VCD4	REFUEL 14	05/25/2000	A234/WPB/
2A-VCD4P	2A-VCD4P	REFUEL 14	05/25/2000	A106/B/
2A-VCD7	2A-VCD7	REFUEL 14	05/25/2000	A234/WPB/
2A-VCD8	2A-VCD8	REFUEL 14	05/25/2000	A234/WPB/
2A-VCD14	2A-VCD14	REFUEL 14	05/25/2000	A234/WPB/
2A-VCD10	2A-VCD10	REFUEL 14	05/25/2000	A234/WPB/
2A-VCD1P	2A-VCD1P	REFUEL 14	05/25/2000	A106/B/
2A-VCD20	2A-VCD20	REFUEL 16	10/23/2004	A234/WPB/
2A-VCD42	2A-VCD42	REFUEL 16	10/23/2004	A234/WPB/
2A-VCD36P-1 US	2A-VCD36P-1 US	REFUEL 16	10/23/2004	A106/B/
2A-VCD41P DS	2A-VCD41P DS	REFUEL 16	10/23/2004	A106/B/

Component Name	Current Component Name	Period Replaced	Replacement Date	Replacement (old) Material
2A-VCD36P	2A-VCD36P	CYCLE 17	10/23/2005	A106/B/
2A-VCD36	2A-VCD36	CYCLE 17	10/23/2005	A234/WPB/

Line Name : xNCW_66B **Sorted : No**

2A-VCD26P DS	2A-VCD26P DS	REFUEL 14	05/25/2000	A106/B/
2A-VCD27P US	2A-VCD27P US	REFUEL 14	05/25/2000	A106/B/
2A-VCD34	2A-VCD34	REFUEL 14	05/25/2000	A234/WPB/
2A-VCD34P US	2A-VCD34P US	REFUEL 14	05/25/2000	A106/B/
2A-VCD27	2A-VCD27	REFUEL 14	05/25/2000	A234/WPB/
2A-VCD23	2A-VCD23	REFUEL 14	05/25/2000	A234/WPB/
2A-VCD33P DS	2A-VCD33P DS	REFUEL 14	05/25/2000	A106/B/

Line Name : xNCW_67A **Sorted : No**

3A-VCD1P	3A-VCD1P	REFUEL 14	05/25/2000	A106/B/
3A-VCD7	3A-VCD7	REFUEL 14	05/25/2000	A234/WPB/
3A-VCD1	3A-VCD1	REFUEL 14	05/25/2000	A234/WPB/
3A-VCD7P	3A-VCD7P	REFUEL 14	05/25/2000	A106/B/
3A-VCD9	3A-VCD9	REFUEL 14	05/25/2000	A234/WPB/
3A-VCD30	3A-VCD30	REFUEL 14	05/25/2000	A234/WPB/
3A-VCD1P-1 US	3A-VCD1P-1 US	REFUEL 14	05/25/2000	A106/B/
3A-VCD2	3A-VCD2	REFUEL 14	05/25/2000	A234/WPB/
3A-VCD2P	3A-VCD2P	REFUEL 14	05/25/2000	A106/B/
3A-VCD16	3A-VCD16	REFUEL 16	10/23/2004	A234/WPB/

Line Name : xNCW_67B **Sorted : No**

3A-VCD16	3A-VCD16	REFUEL 14	05/25/2000	A234/WPB/
3A-VCD21P	3A-VCD21P	REFUEL 14	05/25/2000	A106/B/
3A-VCD29P US	3A-VCD29P US	REFUEL 14	05/25/2000	A106/B/
3A-VCD22	3A-VCD22	REFUEL 14	05/25/2000	A234/WPB/
3A-VCD22P	3A-VCD22P	REFUEL 14	05/25/2000	A106/B/
3A-VCD28	3A-VCD28	REFUEL 14	05/25/2000	A234/WPB/
3A-VCD28P DS	3A-VCD28P DS	REFUEL 14	05/25/2000	A106/B/
3A-VCD29	3A-VCD29	REFUEL 14	05/25/2000	A234/WPB/
3A-VCD18P	3A-VCD18P	REFUEL 14	05/25/2000	A106/B/

Line Name : xNCW_68A **Sorted : No**

1B-VCD1	1B-VCD1	REFUEL 12	04/16/1995	A234/WPB/
1B-VCD1P	1B-VCD1P	REFUEL 12	04/16/1995	A106/B/
1B-VCD1P	1B-VCD1P	REFUEL 14	05/25/2000	A106/B/
1B-VCD33	1B-VCD33	REFUEL 14	05/25/2000	A234/WPB/
1B-VCD11	1B-VCD11	REFUEL 14	05/25/2000	A234/WPB/
1B-VCD5	1B-VCD5	REFUEL 14	05/25/2000	A234/WPB/
1B-VCD4	1B-VCD4	REFUEL 14	05/25/2000	A234/WPB/
1B-VCD2P	1B-VCD2P	REFUEL 14	05/25/2000	A106/B/
1B-VCD2	1B-VCD2	REFUEL 14	05/25/2000	A234/WPB/
1B-VCD4P US	1B-VCD4P US	REFUEL 14	05/25/2000	A106/B/
1B-VCD1	1B-VCD1	REFUEL 14	05/25/2000	A234/WPB/
1B-VCD3P DS	1B-VCD3P DS	REFUEL 14	05/25/2000	A106/B/
1B-VCD19E	1B-VCD19E	REFUEL 16	10/23/2004	A234/WPB/
1B-VCD16P	1B-VCD16P	REFUEL 16	10/23/2004	A106/B/
1B-VCD18P	1B-VCD18P	REFUEL 16	10/23/2004	A106/B/
1B-VCD17P	1B-VCD17P	REFUEL 16	10/23/2004	A106/B/
1B-VCD19P US	1B-VCD19P US	REFUEL 16	10/23/2004	A106/B/
1B-VCD17	1B-VCD17	REFUEL 16	10/23/2004	A234/WPB/

Line Name : xNCW_68B **Sorted : No**

1B-VCD-23	1B-VCD-23	REFUEL 13	06/30/1997	A234/WPB/

Component Name	Current Component Name	Period Replaced	Replacement Date	Replacement (old) Material
1B-VCD20	1B-VCD20	REFUEL 13	06/30/1997	A234/WPB/
1B-VCD20P US	1B-VCD20P US	REFUEL 14	05/25/2000	A106/B/
1B-VCD21	1B-VCD21	REFUEL 14	05/25/2000	A234/WPB/
1B-VCD-23	1B-VCD-23	REFUEL 14	05/25/2000	A234/WP11/
1B-VCD-22P DS	1B-VCD-22P DS	REFUEL 14	05/25/2000	A106/B/
1B-VCD19P DS	1B-VCD19P DS	REFUEL 14	05/25/2000	A106/B/
1B-VCD20	1B-VCD20	REFUEL 14	05/25/2000	A234/WP11/
1B-VCD-23P US	1B-VCD-23P US	REFUEL 14	05/25/2000	A106/B/
1B-VCD19	1B-VCD19	REFUEL 14	05/25/2000	A234/WPB/
1B-VCD19P US	1B-VCD19P US	REFUEL 14	05/25/2000	A106/B/
1B-VCD18P DS	1B-VCD18P DS	REFUEL 14	05/25/2000	A106/B/
1B-VCD32	1B-VCD32	REFUEL 14	05/25/2000	A234/WPB/

Line Name : xNCW_69A **Sorted : No**

2B-VCD38	2B-VCD38	REFUEL 14	05/25/2000	A234/WPB/
2B-VCD8P	2B-VCD8P	REFUEL 14	05/25/2000	A106/B/
2B-VCD2P	2B-VCD2P	REFUEL 14	05/25/2000	A106/B/
2B-VCD2	2B-VCD2	REFUEL 14	05/25/2000	A234/WPB/
2B-VCD8	2B-VCD8	REFUEL 14	05/25/2000	A234/WPB/
2B-VCD8P-2 US	2B-VCD8P-2 US	REFUEL 14	05/25/2000	A106/B/
2B-VCD9	2B-VCD9	REFUEL 14	05/25/2000	A234/WPB/
2B-VCD1P	2B-VCD1P	REFUEL 14	05/25/2000	A106/B/
2B-VCD1	2B-VCD1	REFUEL 14	05/25/2000	A234/WPB/
2B-VCD7P DS	2B-VCD7P DS	REFUEL 14	05/25/2000	A106/B/
2B-VCD39P	2B-VCD39P	REFUEL 16	10/23/2004	A106/B/
2B-VCD39	2B-VCD39	REFUEL 16	10/23/2004	A234/WPB/
2B-VCD8E	2B-VCD8E	REFUEL 16	10/23/2004	A234/WPB/

Line Name : xNCW_69B **Sorted : No**

2B-VCD23	2B-VCD23	REFUEL 13	06/30/1997	A234/WPB/
2B-VCD22	2B-VCD22	REFUEL 14	05/25/2000	A234/WPB/
2B-VCD21P DS	2B-VCD21P DS	REFUEL 14	05/25/2000	A106/B/
2B-VCD31	2B-VCD31	REFUEL 14	05/25/2000	A234/WPB/
2B-VCD22P US	2B-VCD22P US	REFUEL 14	05/25/2000	A106/B/
2B-VCD26P US	2B-VCD26P US	REFUEL 14	05/25/2000	A106/B/
2B-VCD23P US	2B-VCD23P US	REFUEL 14	05/25/2000	A106/B/
2B-VCD25P DS	2B-VCD25P DS	REFUEL 14	05/25/2000	A106/B/
2B-VCD22P DS	2B-VCD22P DS	REFUEL 14	05/25/2000	A106/B/
2B-VCD23	2B-VCD23	REFUEL 14	05/25/2000	A234/WP11/
2B-VCD26	2B-VCD26	REFUEL 14	05/25/2000	A234/WPB/

Line Name : xNCW_70A **Sorted : No**

3B-VCD2	3B-VCD2	REFUEL 12	04/20/1995	A234/WPB/
3B-VCD17E	3B-VCD17E	REFUEL 14	05/25/2000	A234/WPB/
3B-VCD16P DS	3B-VCD16P DS	REFUEL 14	05/25/2000	A106/B/
3B-VCD11	3B-VCD11	REFUEL 14	05/25/2000	A234/WPB/
3B-VCD6P1 DS	3B-VCD6P1 DS	REFUEL 14	05/25/2000	A106/B/
3B-VCD7	3B-VCD7	REFUEL 14	05/25/2000	A234/WPB/
3B-VCD7P2	3B-VCD7P2	REFUEL 14	05/25/2000	A106/B/
3B-VCD7P1	3B-VCD7P1	REFUEL 14	05/25/2000	A106/B/
3B-VCD2	3B-VCD2	REFUEL 14	05/25/2000	A234/WPB/
3B-VCD1P	3B-VCD1P	REFUEL 14	05/25/2000	A106/B/
3B-VCD35	3B-VCD35	REFUEL 14	05/25/2000	A234/WPB/
3B-VCD2P	3B-VCD2P	REFUEL 14	05/25/2000	A106/B/
3B-VCD7P	3B-VCD7P	REFUEL 16	10/23/2004	A106/B/

Line Name : xNCW_70B **Sorted : No**

3B-VCD34	3B-VCD34	REFUEL 13	06/30/1997	A234/WPB/
3B-VCD20	3B-VCD20	REFUEL 13	06/30/1997	A234/WPB/
3B-VCD17P	3B-VCD17P	REFUEL 14	05/25/2000	A106/B/
3B-VCD29	3B-VCD29	REFUEL 14	05/25/2000	A234/WPB/

Component Name	Current Component Name	Period Replaced	Replacement Date	Replacement (old) Material
3B-VCD-30P US	3B-VCD-30P US	REFUEL 14	05/25/2000	A106/B/
3B-VCD30	3B-VCD30	REFUEL 14	05/25/2000	A234/WPB/
3B-VCD29P DS	3B-VCD29P DS	REFUEL 14	05/25/2000	A106/B/
3B-VCD18	3B-VCD18	REFUEL 14	05/25/2000	A234/WPB/
3B-VCD29P US	3B-VCD29P US	REFUEL 14	05/25/2000	A106/B/
3B-VCD28P DS	3B-VCD28P DS	REFUEL 14	05/25/2000	A106/B/
3B-VCD18P US	3B-VCD18P US	REFUEL 14	05/25/2000	A106/B/
3B-VCD20P US	3B-VCD20P US	REFUEL 14	05/25/2000	A106/B/
3B-VCD20	3B-VCD20	REFUEL 14	05/25/2000	A234/WP11/
3B-VCD19P DS	3B-VCD19P DS	REFUEL 14	05/25/2000	A106/B/
3B-VCD34P US	3B-VCD34P US	REFUEL 14	05/25/2000	A106/B/
3B-VCD34	3B-VCD34	REFUEL 14	05/25/2000	A234/WP11/
3B-VCD33P DS	3B-VCD33P DS	REFUEL 14	05/25/2000	A106/B/
3B-VCD26	3B-VCD26	REFUEL 14	05/25/2000	A234/WPB/

Line Name : xNCW_74 **Sorted : No**

BFD-65A	BFD-65A	REFUEL 10	02/03/1991	A234/WPB/

Line Name : xNCW_87 **Sorted : No**

MST-9	MST-9	REFUEL 10	02/03/1991	A234/WPB/
MST-5	MST-5	REFUEL 13	06/30/1997	A234/WPB/
MST-5P DS	MST-5P DS	REFUEL 13	06/30/1997	A106/B/
MST-5P US	MST-5P US	REFUEL 13	06/30/1997	A106/B/
MST-6	MST-6	REFUEL 13	06/30/1997	A234/WPB/
MST-6P DS	MST-6P DS	REFUEL 13	06/30/1997	A106/B/
MST-6P US	MST-6P US	REFUEL 13	06/30/1997	A106/B/
MST-9	MST-9	REFUEL 13	06/30/1997	A234/WPB/
MST-7P DS	MST-7P DS	REFUEL 13	06/30/1997	A106/B/
MST-7P US	MST-7P US	REFUEL 13	06/30/1997	A106/B/
MST-8	MST-8	REFUEL 13	06/30/1997	A234/WPB/
MST-8P	MST-8P	REFUEL 13	06/30/1997	A106/B/
MST-4P	MST-4P	REFUEL 13	06/30/1997	A106/B/
MST-9P	MST-9P	REFUEL 13	06/30/1997	A106/B/
MST-7	MST-7	REFUEL 13	06/30/1997	A234/WPB/
MST-4	MST-4	REFUEL 13	06/30/1997	A234/WPB/
MST-2P	MST-2P	REFUEL 13	06/30/1997	A106/B/
MST-3P	MST-3P	REFUEL 13	06/30/1997	A106/B/
MST-2	MST-2	REFUEL 13	06/30/1997	A234/WPB/
MST-1P	MST-1P	REFUEL 13	06/30/1997	A106/B/
MST-1	MST-1	REFUEL 13	06/30/1997	A234/WPB/
MST-10	MST-10	REFUEL 13	06/30/1997	A234/WPB/
MST-11	MST-11	REFUEL 13	06/30/1997	A234/WPB/
MST-10P	MST-10P	REFUEL 13	06/30/1997	A106/B/
MST-3	MST-3	REFUEL 13	06/30/1997	A234/WPB/

Line Name : xNCW_88 **Sorted : No**

MST-12P	MST-12P	REFUEL 10	02/03/1991	A106/B/
MST-13	MST-13	REFUEL 10	02/03/1991	A234/WPB/
MST-12	MST-12	REFUEL 10	02/03/1991	A234/WPB/
MST-14	MST-14	REFUEL 10	02/03/1991	A234/WPB/
MST-14	MST-14	REFUEL 13	06/30/1997	A234/WPB/
MST-14P	MST-14P	REFUEL 13	06/30/1997	A106/B/
MST-15	MST-15	REFUEL 13	06/30/1997	A234/WPB/
MST-13	MST-13	REFUEL 13	06/30/1997	A234/WPB/
MST-15P	MST-15P	REFUEL 13	06/30/1997	A106/B/
MST-16	MST-16	REFUEL 13	06/30/1997	A234/WPB/
MST-16P	MST-16P	REFUEL 13	06/30/1997	A106/B/
MST-13P	MST-13P	REFUEL 13	06/30/1997	A106/B/

Line Name : xNCW_89 **Sorted : No**

MST-36	MST-36	REFUEL 9	03/20/1989	A234/WPB/

Component Name	Current Component Name	Period Replaced	Replacement Date	Replacement (old) Material
MST-39	MST-39	REFUEL 9	03/20/1989	A234/WPB/
MST-38P	MST-38P	REFUEL 9	03/20/1989	A106/B/
MST-38	MST-38	REFUEL 9	03/20/1989	A234/WPB/
MST-37P	MST-37P	REFUEL 9	03/20/1989	A106/B/
MST-28P	MST-28P	REFUEL 13	06/30/1997	A106/B/
MST-39P	MST-39P	REFUEL 13	06/30/1997	A106/B/
MST-39	MST-39	REFUEL 13	06/30/1997	A234/WPB/
MST-38P	MST-38P	REFUEL 13	06/30/1997	A106/B/
MST-28	MST-28	REFUEL 13	06/30/1997	A234/WPB/
MST-38	MST-38	REFUEL 13	06/30/1997	A234/WPB/
MST-37P	MST-37P	REFUEL 13	06/30/1997	A106/B/
MST-37	MST-37	REFUEL 13	06/30/1997	A234/WPB/
MST-27P	MST-27P	REFUEL 13	06/30/1997	A106/B/
MST-36P	MST-36P	REFUEL 13	06/30/1997	A106/B/
MST-36	MST-36	REFUEL 13	06/30/1997	A234/WPB/
MST-27	MST-27	REFUEL 13	06/30/1997	A234/WPB/
MST-31	MST-31	REFUEL 13	06/30/1997	A234/WPB/
MST-36P	MST-36P	CYCLE 14	12/31/1999	A106/B/
MST-37	MST-37	CYCLE 14	12/31/1999	A234/WPB/

Line Name : xNCW_90 **Sorted : No**

EST-1T	EST-1T	REFUEL 13	06/30/1997	A53/B/E

Line Name : xNCW_91 **Sorted : No**

EST-20P US	EST-20P US	REFUEL 13	06/30/1997	A106/B/
EST-14	EST-14	REFUEL 13	06/30/1997	A234/WPB/
EST-33R	EST-33R	REFUEL 13	06/30/1997	A234/WPB/
EST-33	EST-33	REFUEL 13	06/30/1997	A234/WPB/
EST-32	EST-32	REFUEL 13	06/30/1997	A234/WPB/
EST-31P-1	EST-31P-1	REFUEL 13	06/30/1997	A106/B/
EST-31P US	EST-31P US	REFUEL 13	06/30/1997	A106/B/
EST-31P DS	EST-31P DS	REFUEL 13	06/30/1997	A106/B/
EST-31T	EST-31T	REFUEL 13	06/30/1997	A234/WPB/
EST-31	EST-31	REFUEL 13	06/30/1997	A234/WPB/
EST-30P US	EST-30P US	REFUEL 13	06/30/1997	A106/B/
EST-15	EST-15	REFUEL 13	06/30/1997	A234/WPB/
EST-30P DS	EST-30P DS	REFUEL 13	06/30/1997	A106/B/
EST-30AP	EST-30AP	REFUEL 13	06/30/1997	A106/B/
EST-30A	EST-30A	REFUEL 13	06/30/1997	A234/WPB/
EST-29P	EST-29P	REFUEL 13	06/30/1997	A106/B/
EST-25	EST-25	REFUEL 13	06/30/1997	A234/WPB/
EST-24P	EST-24P	REFUEL 13	06/30/1997	A106/B/
EST-14P	EST-14P	REFUEL 13	06/30/1997	A53/B/E
EST-23P	EST-23P	REFUEL 13	06/30/1997	A106/B/
EST-22P	EST-22P	REFUEL 13	06/30/1997	A106/B/
EST-22	EST-22	REFUEL 13	06/30/1997	A234/WPB/
EST-21P US	EST-21P US	REFUEL 13	06/30/1997	A106/B/
EST-21P DS	EST-21P DS	REFUEL 13	06/30/1997	A106/B/
EST-21	EST-21	REFUEL 13	06/30/1997	A234/WPB/
EST-30B	EST-30B	REFUEL 13	06/30/1997	A234/WPB/
EST-24	EST-24	REFUEL 13	06/30/1997	A234/WPB/

Line Name : xNCW_Extraction Steam Traps **Sorted : No**

EST4-Pipe 1	EST4-Pipe 1	REFUEL 15	11/14/2002	A106/B/

Line Name : xNCW_Main Steam Traps **Sorted : No**

MST24-Pipe 3 US	MST24-Pipe 3 US	REFUEL 15	11/14/2002	A106/B/
MST24-Pipe 3 DS	MST24-Pipe 3 DS	REFUEL 15	11/14/2002	A106/B/

Appendix F

UT Inspection Data

CHECWORKS Component Name	Inspection Period	Report Number	Component Section	Method	T_{init} or T_{nom} (in.)	Tmeas (in.)	Wear (in.)	Used in LCF (Yes/No)
CD-19	Refuel 16	04UT156	MAIN	Blanket	0.438	0.471	0.066	Y
CD-19P	Refuel 16	04UT090	Imported as U/S EXT of CD-42	Band	0.438	0.422	0.044	N(1)
CD-19P	Refuel 16	04UT156	Imported as D/S EXT of CD-19	Band	0.438	0.409	0.068	Y
CD-19P	Refuel 17	06UT065	MAIN	Band	0.438	0.409	0.039	Y
CD-42	Refuel 16	04UT090	MAIN	Blanket	0.438	0.393	0.128	Y
CD-42N	Refuel 16	04UT088	MAIN	Band	0.438	0.429	0.073	N(10)
CD-4P	Refuel 16	04UT156	Imported as U/S EXT of CD-19	Band	0.438	N/A	0.028	N(1)
CD-22	Refuel 16	04UT152	MAIN	Blanket	0.438	0.432	0.124	Y
CD-15P US	Cycle 17	06UT036	Imported as U/S EXT of CD-39.	Band	0.438	0.424	0.043	N(1)
CD-39	Cycle 17	06UT036	MAIN	Blanket	0.438	0.456	0.104	Y
CD-40	Cycle 17	06UT035	MAIN	Blanket	0.438	0.439	0.112	Y
CD-40P	Refuel 16	04UT152	Imported as U/S EXT of CD-22	Band	0.438	0.44	0.143	N(1)
CD-40P	Cycle 17	06UT035	MAIN	Band	0.438	0.429	0.062	Y
CD-101N	Cycle 17	06UT026	MAIN	Band	0.438	0.425	0.043	N(10)
CD-101P	Cycle 17	06UT026	MAIN	Band	0.438	0.366	0.075	Y
CD-103	Cycle 17	06UT033	MAIN	Blanket	0.438	0.492	0.108	Y
CD-104	Cycle 17	06UT034	MAIN	Blanket	0.438	0.51	0.114	Y
CD-104P	Cycle 17	06UT034	MAIN	Band	0.438	0.388	0.107	Y

CHECWORKS Component Name	Inspection Period	Report Number	Component Section	Method	T_{init} or T_{nom} (in.)	Tmeas (in.)	Wear (in.)	Used in LCF (Yes/No)
CD-108N	Refuel 19	2R19-FAC-074	MAIN	Band	0.438	0.454	0.093	N(7)
CD-115	Refuel 18	FAC-08-051	MAIN	Blanket	0.438	0.459	0.125	Y
CD-115 USX	Refuel 18	FAC-08-051	Imported as U/S EXT of CD-115	Band	0.438	0.411	0.053	N(1)
CD-116	Refuel 18	FAC-08-051	MAIN	Blanket	0.438	0.461	0.125	Y
CD-116 DSX	Refuel 18	FAC-08-051	Imported as D/S EXT of CD-115	Band	0.438	0.461	0.031	Y
CD-118T	Refuel 17	06UT131	MAIN	Band	0.594	0.558	0.074	Y
CD-118T	Refuel 17	06UT131	D/S MAIN	Band	0.594	0.559	0.068	Y
CD-118T	Refuel 17	06UT131	BRANCH	Band	0.438	0.429	0.039	Y
CD-146	Cycle 17	06UT040	MAIN	Blanket	0.438	0.469	0.093	Y
CD-146P	Cycle 17	06UT040	MAIN	Band	0.438	0.417	0.078	Y
CD-147	Cycle 17	06UT040	MAIN	Blanket	0.438	0.503	0.066	Y
CD-147N	Cycle 17	06UT040	MAIN	Band	0.438	0.585	0.067	Y
CD-37	Refuel 19	2R19-FAC-044	MAIN	Max Point-to-Point	0.438	0.42	0.032	Y
CD-37N	Refuel 19	2R19-FAC-046	MAIN	Band	0.438	0.422	0.036	N(7)
CD-20	Refuel 16	04UT143	MAIN	Blanket	0.438	0.475	0.067	Y
CD-21N	Refuel 19	2R19-FAC-072	MAIN	Max Point-to-Point	0.438	0.456	0.042	Y

CHECWORKS Component Name	Inspection Period	Report Number	Component Section	Method	T_{init} or T_{nom} (in.)	Tmeas (in.)	Wear (in.)	Used in LCF (Yes/No)
CD-30	Refuel 18	FAC-08-088	MAIN	Blanket	0.438	0.48	0.047	Y
CD-30P	Refuel 18	FAC-08-088	Imported as D/S EXT of CD-30	Band	0.438	0.427	0.019	N(2)
CD-55P	Refuel 18	FAC-08-088	Imported as U/S EXT of CD-30	Band	0.438	0.432	0.027	N(1)
CD-23	Refuel 16	04UT107	MAIN	Blanket	0.438	0.483	0.054	Y
CD-23P	Refuel 16	04UT109	MAIN	Band	0.438	0.417	0.037	Y
CD-23P	Refuel 16	04UT153	Imported as U/S EXT of CD-53	Band	0.438	0.387	0.092	N(1)
CD-53	Refuel 16	04UT109	Imported as D/S EXT of CD-23P.	Band	0.438	0.409	0.043	N(4)
CD-24	Refuel 16	04UT106	MAIN	Blanket	0.438	0.422	0.141	Y
CD-53	Refuel 16	04UT153	MAIN	Blanket	0.438	0.419	0.112	Y
CD-31	Refuel 19	2R19-FAC-067	MAIN	Blanket	0.438	0.434	0.0805	Y
CD-31P	Refuel 19	2R19-FAC-067	MAIN	Band	0.438	0.429	0.028	N(2)
CD-61P	Refuel 18	FAC-08-082	Imported as U/S EXT of CD-61R	Band	0.438	0.402	0.051	N(1)
CD-61R	Refuel 18	FAC-08-082	D/S MAIN	Band	0.688	0.646	0.045	Y
CD-61R	Refuel 18	FAC-08-082	MAIN	Band	0.438	0.53	0.075	Y

CHECWORKS Component Name	Inspection Period	Report Number	Component Section	Method	T_{init} or T_{nom} (in.)	Tmeas (in.)	Wear (in.)	Used in LCF (Yes/No)
CD-33	Refuel 18	FAC-08-071	MAIN	Blanket	0.438	0.442	0.092	Y
CD-33P	Refuel 18	FAC-08-071	Imported as D/S EXT of CD-33	Band	0.438	0.415	0.04	Y
CD-34	Refuel 18	FAC-08-072	MAIN	Blanket	0.438	0.445	0.101	Y
CD-34N	Refuel 19	2R19-FAC-048	MAIN	Band	0.438	0.478	0.038	N(7)
CD-58P	Refuel 19	2R19-FAC-071	MAIN	Max Point-to-Point	0.438	0.409	0.041	Y
CD-62T	Refuel 18	FAC-08-080	D/S MAIN	Band	0.688	0.674	0.026	N(2)
CD-62T	Refuel 18	FAC-08-080	MAIN	Band	0.688	0.675	0.018	N(2)
CD-62T	Refuel 18	FAC-08-080	BRANCH	Band	0.438	0.414	0.03	Y
CD-59P	Refuel 18	FAC-08-112	MAIN	Band	0.668	0.642	0.077	Y
CD-59T	Refuel 17	06UT108	MAIN	Band	0.688	0.671	0.046	Y
CD-59T	Refuel 17	06UT108	D/S MAIN	Band	0.688	0.667	0.035	Y
CD-59T	Refuel 17	06UT108	BRANCH	Band	0.438	0.406	0.053	Y
CD-80T	Refuel 16	04UT093	MAIN	Band	0.626	0.642	0.012	N(2)
CD-80T	Refuel 16	04UT093	D/S MAIN	Band	0.626	0.617	0.033	Y
CD-80T	Refuel 16	04UT093	BRANCH	Band	0.688	0.654	0.078	Y
CD-81T	Refuel 17	06UT064	MAIN	Band	0.626	0.639	0.011	N(2)
CD-81T	Refuel 17	06UT064	D/S MAIN	Band	0.626	0.641	0.013	N(2)
CD-81T	Refuel 17	06UT064	BRANCH	Band	0.656	0.641	0.038	Y

CHECWORKS Component Name	Inspection Period	Report Number	Component Section	Method	T_{init} or T_{nom} (in.)	Tmeas (in.)	Wear (in.)	Used in LCF (Yes/No)
CD-82T	Refuel 16	04UT094	MAIN	Band	0.626	0.642	0.023	N(2)
CD-82T	Refuel 16	04UT094	D/S MAIN	Band	0.626	0.638	0.03	N(7)
CD-82T	Refuel 16	04UT094	BRANCH	Band	0.688	0.657	0.07	N(7)
CD-66P	Refuel 19	2R19-FAC-075	Imported as D/S EXT of CD-9	Band	0.688	0.645	0.05	N(4)
CD-69P	Refuel 16	04UT148	MAIN	Band	0.688	0.627	0.095	Y
CD-72FE	Refuel 19	2R19-FAC-053	MAIN	Band	0.688	0.629	0.09	N(3)
CD-72P DS	Refuel 16	04UT136	Imported as U/S EXT of CD-72FE	Band	0.688	0.683	0.055	Y
CD-72P-1 US	Refuel 16	04UT136	Imported as D/S EXT of CD-72FE	Band	0.688	0.661	0.088	Y
CD-9	Refuel 19	2R19-FAC-075	MAIN	Blanket	0.688	0.659	0.114	Y
CD-75	Refuel 18	FAC-08-095	MAIN	Blanket	0.688	0.696	0.071	Y
CD-75N	Refuel 19	2R19-FAC-045	MAIN	Band	0.562	0.987	0.029	N(2)
CD-75P US	Refuel 18	FAC-08-095	Imported as U/S EXT of CD-75	Band	0.688	0.661	0.074	N(1)
CD-76P DS	Refuel 16	04UT154	Imported as D/S EXT of CD-76FE	Band	0.688	0.63	0.112	Y
CD-76P US	Refuel 16	04UT154	Imported as U/S EXT of CD-76FE	Band	0.688	0.673	0.103	Y

CHECWORKS Component Name	Inspection Period	Report Number	Component Section	Method	T_{init} or T_{nom} (in.)	Tmeas (in.)	Wear (in.)	Used in LCF (Yes/No)
CD-82R	Refuel 17	06UT076	MAIN	Max Ptp + Past	0.626	0.6	0.041	Y
CD-82R	Refuel 17	06UT076	D/S MAIN	Max Ptp + Past	0.688	0.66	0.05	Y
3EXB-6	Refuel 18	FAC-08-053	MAIN	Blanket	0.313	0.293	0.252	Y
3EXC-14	Refuel 18	FAC-08-109	D/S MAIN	Band	0.313	0.337	0.064	Y
3EXC-14	Refuel 18	FAC-08-109	MAIN	Band	0.313	0.337	0.077	Y
3EXC-14	Refuel 18	FAC-08-109	BRANCH	Band	0.25	0.293	0.114	N(10)
3EXC-19	Refuel 18	FAC-08-110	MAIN	Blanket	0.25	0.319	0.148	Y
3EXC-20P	Refuel 18	FAC-08-110	Imported as U/S EXT of 3EXC-19	Band	0.25	0.312	0.079	N(1)
3EXC-22N	Refuel 18	FAC-08-119	MAIN	Band	0.25	0.201	0.174	Y
3EXC-4P	Refuel 18	FAC-08-071	Imported as D/S EXT of 3EXC-5	Band	0.313	0.315	0.016	Y
3EXC-5	Refuel 18	FAC-08-071	MAIN	Blanket	0.313	0.279	0.121	Y
3EXC-5P	Refuel 18	FAC-08-071	Imported as U/S EXT of 3EXC-5	Band	0.313	0.299	0.03	N(1)
3EXC-7P	Refuel 18	FAC-08-076	MAIN	Max Point-to-Point	0.313	0.291	0.022	Y
3EXC-2P	Refuel 18	FAC-08-061	MAIN	Band	0.375	0.341	0.057	Y

CHECWORKS Component Name	Inspection Period	Report Number	Component Section	Method	T_{init} or T_{nom} (in.)	Tmeas (in.)	Wear (in.)	Used in LCF (Yes/No)
4EXA-3P US	Refuel 18	FAC-08-107	MAIN	Max Point-to-Point	0.25	0.194	0.031	Y
4EXB-12	Refuel 18	FAC-08-114	MAIN	Max Point-to-Point	0.25	0.203	0.096	Y
LPFW21A-1N	Refuel 17	06UT119	MAIN	Band	0.375	0.248	0.159	Y
LPFW21A-1P1	Refuel 17	06UT119	MAIN	Band	0.375	0.323	0.077	N(4)
LPFW21A-1P2	Refuel 17	06UT119	MAIN	Band	0.375	0.355	0.047	Y
LPFW21A-1P3	Refuel 17	06UT119	MAIN	Band	0.375	0.27	0.119	Y
LPFW21A-1P4	Refuel 17	06UT119	MAIN	Band	0.375	0.289	0.112	Y
LPFW22A-1N	Refuel 17	06UT121	MAIN	Band	0.375	0.195	0.239	Y
LPFW22A-1P1	Refuel 17	06UT121	MAIN	Band	0.375	0.226	0.161	Y
LPFW22A-1P2	Refuel 17	06UT121	MAIN	Band	0.375	0.134	0.263	Y
LPFW22A-1P3	Refuel 17	06UT121	MAIN	Band	0.375	0.132	0.271	Y
LPFW22A-1P4	Refuel 17	06UT121	MAIN	Band	0.375	0.133	0.283	Y
LPFW22A-1P5	Refuel 17	06UT121	MAIN	Band	0.375	0.186	0.223	Y
LPFW22B-1N	Refuel 17	06UT104	MAIN	Band	0.375	0.228	0.176	Y
LPFW22B-1P1	Refuel 17	06UT104	MAIN	Band	0.375	0.23	0.177	Y
LPFW22B-1P2	Refuel 17	06UT104	MAIN	Band	0.375	0.196	0.211	Y
LPFW22B-1P3	Refuel 17	06UT104	MAIN	Band	0.375	0.236	0.166	Y
LPFW22B-1P4	Refuel 17	06UT104	MAIN	Band	0.375	0.129	0.266	Y
LPFW22B-1P5	Refuel 17	06UT104	MAIN	Band	0.375	0.184	0.221	Y
LPFW22C-1N	Refuel 17	06UT095	MAIN	Band	0.375	0.208	0.201	Y
LPFW21A-2N	Refuel 17	06UT117	MAIN	Band	0.375	0.27	0.135	Y
LPFW21A-2P1	Refuel 17	06UT117	MAIN	Band	0.375	0.343	0.06	Y
LPFW21A-2P2	Refuel 17	06UT117	MAIN	Band	0.375	0.347	0.036	Y
LPFW21A-2P3	Refuel 17	06UT117	MAIN	Band	0.375	0.367	0.031	Y

CHECWORKS Component Name	Inspection Period	Report Number	Component Section	Method	T_{init} or T_{nom} (in.)	Tmeas (in.)	Wear (in.)	Used in LCF (Yes/No)
LPFW21A-2P4	Refuel 17	06UT117	MAIN	Band	0.375	0.267	0.127	Y
LPFW21A-2P5	Refuel 17	06UT117	MAIN	Band	0.375	0.264	0.121	Y
LPFW22A-2N	Refuel 17	06UT113	MAIN	Band	0.375	0.259	0.185	Y
LPFW22A-2P1	Refuel 17	06UT113	MAIN	Band	0.375	0.204	0.217	Y
LPFW22A-2P2	Refuel 17	06UT113	MAIN	Band	0.375	0.18	0.248	Y
LPFW22B-2N	Refuel 17	06UT103	MAIN	Band	0.375	0.234	0.185	Y
LPFW22B-2P1	Refuel 17	06UT103	MAIN	Band	0.375	0.273	0.102	Y
LPFW22B-2P2	Refuel 17	06UT103	MAIN	Band	0.375	0.199	0.214	Y
LPFW22B-2P3	Refuel 17	06UT103	MAIN	Band	0.375	0.331	0.093	Y
LPFW22C-2N	Refuel 17	06UT101	MAIN	Band	0.375	0.291	0.125	Y
LPFW21A-3N	Refuel 17	06UT118	MAIN	Band	0.375	0.232	0.175	Y
LPFW21A-3P1	Refuel 17	06UT118	MAIN	Band	0.375	0.301	0.101	N(4)
LPFW21A-3P2	Refuel 17	06UT118	MAIN	Band	0.375	0.361	0.04	Y
LPFW21A-3P3	Refuel 17	06UT118	MAIN	Band	0.375	0.265	0.14	Y
LPFW21A-3P4	Refuel 17	06UT118	MAIN	Band	0.375	0.27	0.14	Y
LPFW21A-3P5	Refuel 17	06UT118	MAIN	Band	0.375	0.245	0.168	Y
LPFW21A-4N	Refuel 17	06UT120	MAIN	Band	0.375	0.241	0.205	Y
LPFW21A-4P1	Refuel 17	06UT120	MAIN	Band	0.375	0.283	0.106	N(4)
LPFW21A-4P2	Refuel 17	06UT120	MAIN	Band	0.375	0.335	0.072	Y
LPFW21A-4P3	Refuel 17	06UT120	MAIN	Band	0.375	0.247	0.163	Y
LPFW21A-4P4	Refuel 17	06UT120	MAIN	Band	0.375	0.339	0.071	Y
LPFW21A-4P5	Refuel 17	06UT120	MAIN	Band	0.375	0.258	0.155	Y
3EXA-10	Cycle 16B	04UT060	MAIN	Blanket	0.413	0.187	0.142	Y
3EXA-12P	Cycle 16B	04UT060	Imported as U/S EXT of 3EXA-10	Band	0.312	0.273	0.063	N(1)

CHECWORKS Component Name	Inspection Period	Report Number	Component Section	Method	T_{init} or T_{nom} (in.)	Tmeas (in.)	Wear (in.)	Used in LCF (Yes/No)
3EXA-8P	Cycle 16B	04UT067	Imported as D/S EXT of 3EXA-9	Band	0.417	0.319	0.047	N(6)
3EXA-9	Cycle 16B	04UT067	MAIN	Blanket	0.417	0.25	0.097	Y
3EXA-9P	Cycle 16B	04UT060	Imported as D/S EXT of 3EXA-10	Band	0.312	0.307	0.037	Y
3EXA-14P DS	Refuel 17	06UT058	MAIN	Band	0.313	0.321	0.028	N(2)
3EXA-7P	Refuel 17	06UT098	MAIN	Band	0.313	0.304	0.025	Y
3EXB-14N	Refuel 19	2R19-FAC-095	MAIN	Band	0.375	0.154	0.227	Y
3EXB-4	Cycle 16B	04UT059	MAIN	Band	0.313	0.285	0.043	N(7)
3EXB-4	Cycle 16B	04UT059	D/S MAIN	Band	0.313	0.287	0.056	N(7)
3EXB-4	Cycle 16B	04UT059	BRANCH	Band	0.25	0.203	0.093	N(7)
3EXB-10P DS	Cycle 17	06UT037	MAIN	Band	0.313	0.29	0.059	Y
3EXB-10P DS1	Cycle 17	06UT037	MAIN	Band	0.313	0.205	0.074	Y
3EXB-10R	Cycle 16B	04UT058	MAIN	Blanket	0.327	0.207	0.118	Y
3EXB-10R	Cycle 16B	04UT058	D/S MAIN	Blanket	0.25	0.15	0.254	Y
3EXB-2	Cycle 16B	04UT057	MAIN	Blanket	0.477	0.247	0.173	Y
3EXB-9	Refuel 19	2R19-FAC-015	MAIN	Blanket	0.313	0.288	0.132	Y
3EXB-9A	Refuel 19	2R19-FAC-015	Imported as U/S EXT of 3EXB-9	Band	0.313	0.0348	0.041	N(1)
3EXB-1	Refuel 19	2R19-FAC-012	MAIN	Blanket	0.25	0.28	0.234	Y
3EXB-1A	Refuel 19	2R19-FAC-012	Imported as U/S EXT of 3EXB-1	Band	0.25	0.232	0.073	N(1)

CHECWORKS Component Name	Inspection Period	Report Number	Component Section	Method	T_{init} or T_{nom} (in.)	Tmeas (in.)	Wear (in.)	Used in LCF (Yes/No)
3EXB-1A	Refuel 19	2R19-FAC-013	MAIN	Band	0.272	0.235	0.037	Y
3EXC-21	Refuel 18	FAC-08-118	Imported as D/S EXT of 3EXC-22	Band	0.25	0.254	0.135	Y
3EXC-22	Refuel 18	FAC-08-118	MAIN	Band	0.25	0.253	0.125	N(3)
3EXC-22X	Refuel 18	FAC-08-118	Imported as U/S EXT of 3EXC-22	Band	0.25	0.281	0.113	N(1)
3EXC-10	Refuel 19	2R19-FAC-007	MAIN	Blanket	0.446	0.349	0.0965	Y
3EXC-2	Refuel 16	04UT089	MAIN	Blanket	0.25	0.307	0.172	Y
3EXC-2N	Refuel 16	04UT089	MAIN	Max Ptp + Past	0.25	0.301	0.061	N(7)
3EXC-7P	Refuel 19	2R19-FAC-021	Imported as D/S EXT of 3EXC-8	Band	0.313	0.322	0.023	N(2)
3EXC-8	Refuel 19	2R19-FAC-021	MAIN	Blanket	0.313	0.256	0.178	Y
3EXC-9P	Refuel 19	2R19-FAC-007	Imported as D/S EXT of 3EXC-10	Band	0.354	0.318	0.036	N(4)
3EXC-1	Cycle 17	06UT021	MAIN	Blanket	0.25	0.32	0.072	Y
3EXC-1N	Cycle 17	06UT021	MAIN	Band	0.25	0.319	0.027	N(2)
3EXC-11R	Cycle 17	06UT010	MAIN	Max Ptp + Past	0.312	0.245	0.126	Y
3EXC-11R	Cycle 17	06UT010	D/S MAIN	Max Ptp + Past	0.25	0.288	0.137	Y
3EXC-3P	Cycle 17	06UT018	MAIN	Band	0.25	0.374	0.048	Y

CHECWORKS Component Name	Inspection Period	Report Number	Component Section	Method	T_{init} or T_{nom} (in.)	Tmeas (in.)	Wear (in.)	Used in LCF (Yes/No)
4EXA-11P	Cycle 16B	04UT025	Imported as D/S EXT of 4EXA-12	Band	0.25	0.176	0.078	Y
4EXA-12	Cycle 16B	04UT025	MAIN	Blanket	0.25	0.222	0.087	Y
4EXA-12A	Cycle 16B	04UT025	Imported as U/S EXT of 4EXA-12	Band	0.25	0.219	0.043	N(1)
4EXB-14P	Cycle 16B	04UT030	MAIN	Area	0.25	0.27	0.011	N(6)
4EXB-3P US	Cycle 16B	04UT034	MAIN	Band	0.297	0.198	0.099	Y
4EXB-6P	Refuel 17	06UT139	Imported as U/S EXT of 4EXB-6.	Band	0.25	0.231	0.041	N(1)
4EXB-6	Refuel 17	06UT139	MAIN	Blanket	0.25	0.365	0.112	Y
4EXB-5P	Refuel 17	06UT139	Imported as D/S EXT of 4EXB-6.	Band	0.25	0.223	0.044	Y
4EXB-7P	Refuel 17	06UT140	Imported as U/S EXT of 4EXB-7.	Band	0.25	0.22	0.042	N(1)
4EXB-7	Refuel 17	06UT140	MAIN	Blanket	0.25	0.385	0.08	Y
4EXB-6P	Refuel 17	06UT140	Imported as D/S EXT of 4EXB-7.	Band	0.25	0.224	0.043	Y
4EXB-8P	Refuel 18	FAC-08-050	MAIN	Max Point-to-Point	0.25	0.179	0.045	Y
4EXC-13P DS	Cycle 16B	04UT033	MAIN	Band	0.345	0.239	0.106	Y
4EXC-14P	Refuel 18	FAC-08-139	MAIN	Max Point-to-Point	0.25	0.203	0.041	Y

CHECWORKS Component Name	Inspection Period	Report Number	Component Section	Method	T_{init} or T_{nom} (in.)	Tmeas (in.)	Wear (in.)	Used in LCF (Yes/No)
4EXC-4P US	Refuel 16	04UT079	Imported as D/S EXT of 4EXC-5	Band	0.25	0.247	0.035	Y
4EXC-5	Refuel 16	04UT079	MAIN	Blanket	0.343	0.401	0.111	Y
4EXC-5P DS	Refuel 16	04UT079	Imported as U/S EXT of 4EXC-5	Band	0.25	0.244	0.055	N(1)
MOPS1	Refuel 17	06UT069	MAIN	Band	0.375	0.602	0.02	N(2)
BFD-14	Refuel 19	2R19-FAC-073	MAIN	Blanket	1.031	1.151	0.319	N(7)
BFD-14P-1	Refuel 19	2R19-FAC-073	Imported as D/S EXT of BFD-14	Band	1.031	0.956	0.093	Y
BFD-14P	Cycle 17	06UT096	Imported as U/S EXT of BFD-14R.	Band	1.031	1.004	0.315	N(1)
BFD-14R	Cycle 17	06UT096	MAIN	Band	1.031	1.123	0.282	N(5)
BFD-14R	Cycle 17	06UT096	D/S MAIN	Band	1.031	1.449	0.135	Y
BFD-4P US	Refuel 19	2R19-FAC-078	Imported as U/S EXT of BFD-5	Band	1.031	0.995	0.083	N(1)
BFD-5	Refuel 19	2R19-FAC-078	MAIN	Blanket	1.031	1.082	0.096	Y
BFD-5P	Refuel 19	2R19-FAC-078	Imported as D/S EXT of BFD-5	Band	1.031	0.994	0.07	N(4)
BFD-6P	Refuel 19	2R19-FAC-079	Imported as U/S EXT of BFD-7	Band	1.031	1.022	0.054	N(1)

CHECWORKS Component Name	Inspection Period	Report Number	Component Section	Method	T_{init} or T_{nom} (in.)	Tmeas (in.)	Wear (in.)	Used in LCF (Yes/No)
BFD-7	Refuel 19	2R19-FAC-079	MAIN	Blanket	1.031	1.057	0.1845	Y
BFD-7P US	Refuel 19	2R19-FAC-079	Imported as D/S EXT of BFD-7	Band	1.031	1.02	0.131	Y
BFD-8P	Refuel 16	04UT137	Imported as U/S EXT of BFD-9	Band	1.031	0.977	0.072	N(1)
BFD-9	Refuel 16	04UT137	MAIN	Blanket	1.031	1.119	0.12	Y
BFD-9P US	Refuel 16	04UT138	MAIN	Band	1.031	0.973	0.06	Y
BFD-79	Refuel 18	FAC-08-054	MAIN	Max Point-to-Point	0.75	0.68	0.025	Y
BFD-80	Refuel 18	FAC-08-045	MAIN	Blanket	0.938	0.959	0.082	Y
BFD-80P	Refuel 18	FAC-08-045	Imported as D/S EXT of BFD-80	Band	0.938	0.859	0.059	Y
BFD-81	Refuel 18	FAC-08-046	MAIN	Blanket	0.938	0.96	0.105	Y
BFD-81P	Refuel 18	FAC-08-046	Imported as U/S EXT of BFD-81	Band	0.938	0.873	0.057	N(1)
BFD-16P	Refuel 17	06UT109	Imported as U/S EXT of BFD-13.	Band	1.031	1.026	0.062	N(1)
BFD-13	Refuel 17	06UT109	MAIN	Blanket	1.031	1.119	0.113	Y
BFD-13P	Refuel 17	06UT109	Imported as D/S EXT of BFD-13.	Band	1.031	1.035	0.072	Y

CHECWORKS Component Name	Inspection Period	Report Number	Component Section	Method	T_{init} or T_{nom} (in.)	Tmeas (in.)	Wear (in.)	Used in LCF (Yes/No)
BFD-13P	Refuel 19	2R19-FAC-077	Imported as U/S EXT of BFD-17	Band	1.031	1.053	0.035	N(1)
BFD-16	Refuel 17	06UT062	MAIN	Blanket	1.031	1.059	0.163	Y
BFD-16P	Refuel 17	06UT062	Imported as D/S EXT of BFD-16.	Band	1.031	0.999	0.078	Y
BFD-17	Refuel 19	2R19-FAC-077	MAIN	Blanket	1.031	1.062	0.183	Y
BFD-17P	Refuel 19	2R19-FAC-077	Imported as D/S EXT of BFD-17	Band	1.031	1.055	0.055	Y
BFD-20P	Refuel 19	2R19-FAC-080	Imported as U/S EXT of BFD-21	Band	1.031	0.996	0.082	N(1)
BFD-21	Refuel 19	2R19-FAC-080	MAIN	Blanket	1.031	1.073	0.155	Y
BFD-21P US	Refuel 19	2R19-FAC-080	Imported as D/S EXT of BFD-21	Band	1.031	0.986	0.075	N(4)
BFD-21P US	Refuel 19	2R19-FAC-081	Imported as U/S EXT of BFD-22	Band	1.031	0.996	0.056	N(1)
BFD-22	Refuel 19	2R19-FAC-081	MAIN	Blanket	1.031	1.084	0.2135	Y
BFD-23R	Refuel 16	04UT092	MAIN	Band	1.031	1.339	0.068	Y
BFD-23R	Refuel 16	04UT092	D/S MAIN	Band	1.26	1.281	0.134	Y
BFD-28P	Refuel 18	FAC-08-036	Imported as U/S EXT of BFD-29	Band	1.26	1.315	0.054	N(1)

CHECWORKS Component Name	Inspection Period	Report Number	Component Section	Method	T_{init} or T_{nom} (in.)	Tmeas (in.)	Wear (in.)	Used in LCF (Yes/No)
BFD-29	Refuel 18	FAC-08-036	MAIN	Blanket	1.26	1.447	0.124	Y
BFD-11	Refuel 16	04UT091	MAIN	Band	1.26	1.316	0.055	N(7)
BFD-11	Refuel 16	04UT091	D/S MAIN	Band	1.26	1.325	0.043	N(7)
BFD-11	Refuel 16	04UT091	BRANCH	Band	1.031	1.016	0.045	N(7)
BFD-11	Refuel 16	04UT091	BR EXT	Band	1.031	0.976	0.062	N(1)
BFD-23	Refuel 16	04UT097	MAIN	Blanket	1.26	1.367	0.156	Y
BFD-27P	Refuel 19	2R19-FAC-082	Imported as U/S EXT of BFD-28	Band	1.26	1.359	0.035	N(1)
BFD-28	Refuel 19	2R19-FAC-082	MAIN	Blanket	1.26	1.433	0.127	Y
BFD-28P	Refuel 19	2R19-FAC-083	MAIN	Band	1.26	1.351	0.048	N(2)
BFD-32	Refuel 17	06UT074	MAIN	Blanket	1.26	1.385	0.132	Y
BFD-42	Refuel 18	FAC-08-048	MAIN	Blanket	0.938	0.978	0.115	Y
BFD-42N	Refuel 18	FAC-08-049	MAIN	Band	0.938	0.893	0.045	
BFD-42P	Refuel 18	FAC-08-048	Imported as U/S EXT of BFD-42	Band	0.938	0.897	0.043	N(1)
BFD-40P US	Refuel 17	06UT070	Imported as U/S EXT of BFD-40.	Band	0.938	0.912	0.029	N(1)

CHECWORKS Component Name	Inspection Period	Report Number	Component Section	Method	T_{init} or T_{nom} (in.)	Tmeas (in.)	Wear (in.)	Used in LCF (Yes/No)
BFD-40	Refuel 17	06UT070	MAIN	Blanket	0.938	1.03	0.14	Y
BFD-41P	Refuel 17	06UT071	Imported as D/S EXT of BFD-40.	Band	0.938	0.915	0.055	Y
BFD-32T-B	Refuel 17	06UT060	MAIN	Band	1.26	1.345	0.08	Y
BFD-32T-B	Refuel 17	06UT060	D/S MAIN	Band	1.26	1.358	0.076	Y
BFD-32T-B	Refuel 17	06UT060	BRANCH	Band	0.937	0.886	0.068	Y
BFD-32T-B	Refuel 17	06UT060	BR EXT	Band	0.937	0.882	0.087	Y
BFD-39N	Refuel 16	04UT075	MAIN	Band	0.938	0.89	0.05	Y
BFD-33	Refuel 19	2R19-FAC-056	MAIN	Blanket	0.938	0.956	0.152	Y
BFD-33P US	Refuel 19	2R19-FAC-056	Imported as D/S EXT of BFD-33	Band	0.938	0.913	0.041	N(2)
BFD-33P-1 DS	Refuel 19	2R19-FAC-056	Imported as U/S EXT of BFD-33	Band	0.938	0.883	0.109	N(1)
BFD-35	Refuel 19	2R19-FAC-058	MAIN	Blanket	0.938	1.065	0.3175	N(7)
BFD-35P	Refuel 19	2R19-FAC-064	MAIN	Band	0.938	0.882	0.056	Y
BFD-36	Refuel 19	2R19-FAC-061	MAIN	Blanket	0.938	0.983	0.08	Y
BFD-36N	Refuel 19	2R19-FAC-061	MAIN	Band	0.938	N/A	0.096	Y

CHECWORKS Component Name	Inspection Period	Report Number	Component Section	Method	T_{init} or T_{nom} (in.)	Tmeas (in.)	Wear (in.)	Used in LCF (Yes/No)
BFD-55	Refuel 19	2R19-FAC-076	MAIN	Blanket	0.938	1.343	0.3005	N(7)
BFD-55P	Refuel 16	04UT119	MAIN	Band	0.938	0.887	0.051	Y
BFD-56	Refuel 16	04UT120	MAIN	Blanket	0.938	0.984	0.284	N(5)
BFD-56P-1	Refuel 16	04UT146	MAIN	Band	0.938	0.891	0.061	Y
BFD-57	Refuel 16	04UT147	MAIN	Blanket	0.938	0.999	0.175	Y
BFD-57P	Refuel 16	04UT147	Imported as D/S EXT of BFD-57	Band	0.938	0.885	0.074	Y
BFD-58	Refuel 19	2R19-FAC-062	MAIN	Blanket	0.938	0.975	0.1315	Y
BFD-58P	Refuel 19	2R19-FAC-062	Imported as D/S EXT of BFD-58	Band	0.938	0.888	0.209	N(4)
BFD-58P	Refuel 19	2R19-FAC-059	MAIN	Band	0.938	0.89	0.054	Y
BFD-58P	Refuel 19	2R19-FAC-060	Imported as U/S EXT of BFD-59	Band	0.938	0.894	0.044	N(1)
BFD-59	Refuel 19	2R19-FAC-060	MAIN	Blanket	0.938	0.993	0.1065	Y
BFD-59P	Refuel 19	2R19-FAC-060	Imported as D/S EXT of BFD-59	Band	0.938	1.038	0.108	Y
BFD-51	Refuel 17	06UT086	MAIN	Blanket	0.938	1.259	0.462	N(5)
BFD-51P	Refuel 17	06UT087	Imported as U/S EXT of BFD-52.	Band	0.938	0.886	0.058	N(1)
BFD-52	Refuel 17	06UT087	MAIN	Blanket	0.938	1.036	0.262	Y

CHECWORKS Component Name	Inspection Period	Report Number	Component Section	Method	T_{init} or T_{nom} (in.)	Tmeas (in.)	Wear (in.)	Used in LCF (Yes/No)
BFD-53	Refuel 19	2R19-FAC-063	MAIN	Blanket	0.938	0.963	0.122	Y
BFD-53P	Refuel 19	2R19-FAC-055	MAIN	Band	0.938	0.898	0.061	Y
BFD-54T	Refuel 17	06UT077	MAIN	Band	1.26	1.341	0.086	Y
BFD-54T	Refuel 17	06UT077	D/S MAIN	Band	1.26	1.343	0.086	Y
BFD-54T	Refuel 17	06UT077	BRANCH	Band	0.937	0.871	0.142	Y
BFD-47	Refuel 18	FAC-08-031	MAIN	Max Point-to-Point	0.938	1.111	0.32	N(7)
BFD-47P	Refuel 18	FAC-08-030	MAIN	Band	0.938	0.887	0.051	Y
BFD-48	Refuel 18	FAC-08-039	MAIN	Blanket	0.938	1.014	0.277	Y
BFD-31P US	Refuel 18	FAC-08-037	Imported as U/S EXT of BFD-61	Band	1.26	1.342	0.039	N(1)
BFD-61	Refuel 18	FAC-08-037	MAIN	Blanket	1.26	1.426	0.115	Y
BFD-61P	Refuel 18	FAC-08-037	Imported as D/S EXT of BFD-61	Band	1.26	1.314	0.059	Y
BFD-72T	Refuel 18	FAC-08-073	D/S MAIN	Band	1.315	1.472	0.029	Y
BFD-72T	Refuel 18	FAC-08-073	BRANCH	Band	0.938	0.864	0.074	Y
BFD-72T	Refuel 18	FAC-08-073	MAIN	Band	1.315	1.471	0.033	Y
BFD-63P DS	Refuel 19	2R19-FAC-084	MAIN	Band	1.26	1.318	0.062	N(2)

CHECWORKS Component Name	Inspection Period	Report Number	Component Section	Method	T_{init} or T_{nom} (in.)	Tmeas (in.)	Wear (in.)	Used in LCF (Yes/No)
BFD-63P DS	Refuel 17	06UT089	Imported as U/S EXT of BFD-64.	Band	1.26	1.344	0.041	N(1)
BFD-64	Refuel 17	06UT089	MAIN	Blanket	1.26	1.423	0.11	Y
BFD-64P	Refuel 17	06UT089	Imported as D/S EXT of BFD-64.	Band	1.26	1.325	0.033	N(1)
BFD-64P	Refuel 19	2R19-FAC-090	Imported as U/S EXT of BFD-65	Band	1.26	1.511	0.062	N(1)
BFD-65	Refuel 19	2R19-FAC-090	MAIN	Blanket	1.26	1.471	0.167	Y
BFD-65P	Refuel 19	2R19-FAC-090	Imported as D/S EXT of BFD-65	Band	1.26	1.386	0.155	Y
BFD-65P	Refuel 19	2R19-FAC-091	Imported as U/S EXT of BFD-65P-1	Band	0.625	1.488	0.059	N(1)
BFD-65P-1	Refuel 19	2R19-FAC-091	MAIN	Band	0.625	1.466	0.03	N(2)
BFD-69	Refuel 17	06UT122	MAIN	Band	0.938	0.922	0.054	Y
BFD-69P DS	Refuel 18	FAC-08-068	MAIN	Band	0.938	0.905	0.033	Y
BFD-70P US	Refuel 16	04UT078	Imported as D/S EXT of BFD-71	Band	0.938	0.887	0.087	Y
BFD-71	Refuel 16	04UT078	MAIN	Blanket	0.938	0.91	0.144	Y
BFD-71R	Refuel 16	04UT076	MAIN	Band	0.844	0.803	0.109	Y
BFD-71R	Refuel 16	04UT076	D/S MAIN	Band	0.938	0.878	0.085	Y

CHECWORKS Component Name	Inspection Period	Report Number	Component Section	Method	T_{init} or T_{nom} (in.)	Tmeas (in.)	Wear (in.)	Used in LCF (Yes/No)
BFD-98P-1	Refuel 18	FAC-08-102	Imported as U/S EXT of BFD-99	Band	0.75	0.711	0.076	N(1)
BFD-99	Refuel 18	FAC-08-102	MAIN	Blanket	0.75	0.606	0.139	Y
BFD-99N	Refuel 18	FAC-08-102	Imported as D/S EXT of BFD-99	Band	0.75	0.664	0.07	Y
BFD-76P US	Refuel 17	06UT071	Imported as U/S EXT of BFD-76.	Band	0.938	0.904	0.04	N(1)
BFD-76	Refuel 17	06UT071	MAIN	Blanket	0.938	0.974	0.055	Y
BFD-75P	Refuel 17	06UT071	Imported as D/S EXT of BFD-76.	Band	0.938	0.924	0.057	Y
BFD-77P	Refuel 18	FAC-08-086	Imported as D/S EXT of BFD-77R	Band	0.844	0.895	0.058	Y
BFD-77R	Refuel 18	FAC-08-086	D/S MAIN	Band	0.844	0.871	0.072	Y
BFD-77R	Refuel 18	FAC-08-086	MAIN	Band	0.938	0.71	0.133	Y
BFD-95N	Refuel 18	FAC-08-042	Imported as U/S EXT of BFD-78T.	Band	1.135	1.424	0.063	N(1)
BFD-78T	Refuel 18	FAC-08-042	D/S MAIN	Band	1.135	1.294	0.203	Y
BFD-78T	Refuel 18	FAC-08-069	BR EXT	Band	0.938	0.893	0.061	N(1)
BFD-78T	Refuel 18	FAC-08-069	BRANCH	Band	0.938	0.887	0.061	Y

CHECWORKS Component Name	Inspection Period	Report Number	Component Section	Method	T_{init} or T_{nom} (in.)	Tmeas (in.)	Wear (in.)	Used in LCF (Yes/No)
BFD-78T	Refuel 18	FAC-08-042	MAIN	Band	1.135	1.326	0.186	Y
BFD-105P-2	Refuel 18	FAC-08-121	Imported as U/S EXT of BFD-106	Band	0.75	0.682	0.107	N(1)
BFD-106	Refuel 18	FAC-08-121	MAIN	Blanket	0.75	0.58	0.17	Y
BFD-106P	Refuel 18	FAC-08-121	Imported as D/S EXT of BFD-106	Band	0.75	0.68	0.07	Y
BFD-83R	Refuel 19	2R19-FAC-086	MAIN	Max Point-to-Point	0.844	0.683	0.106	Y
BFD-83R	Refuel 19	2R19-FAC-086	D/S MAIN	Max Point-to-Point	0.938	0.895	0.033	N(2)
BFD-84T	Refuel 18	FAC-08-067	D/S MAIN	Band	1.315	1.352	0.098	Y
BFD-84T	Refuel 18	FAC-08-067	BR EXT	Band	0.938	0.903	0.075	N(1)
BFD-84T	Refuel 18	FAC-08-067	BRANCH	Band	0.938	0.894	0.076	Y
BFD-84T	Refuel 18	FAC-08-067	MAIN	Band	1.315	1.356	0.132	Y
BFD-101	Refuel 18	FAC-08-117	MAIN	Blanket	0.75	0.679	0.068	Y
BFD-3P	Refuel 18	FAC-08-057	Imported as D/S EXT of BFD-3R	Band	0.938	0.888	0.064	Y
BFD-3R	Refuel 18	FAC-08-057	D/S MAIN	Band	0.938	0.888	0.064	Y
BFD-3R	Refuel 18	FAC-08-057	MAIN	Max Point-to-Point	0.843	0.7	0.107	Y

CHECWORKS Component Name	Inspection Period	Report Number	Component Section	Method	T_{init} or T_{nom} (in.)	Tmeas (in.)	Wear (in.)	Used in LCF (Yes/No)
BFD-88	Refuel 19	2R19-FAC-085	MAIN	Blanket	0.938	1.01	0.056	Y
BFD-89	Refuel 16	04UT111	MAIN	Blanket	0.938	0.999	0.085	Y
BFD-89P	Refuel 16	04UT112	MAIN	Band	0.938	0.891	0.047	Y
BFD-89P-1	Refuel 16	04UT113	MAIN	Band	0.938	0.872	0.094	Y
6EXD-1	Refuel 17	06UT088	MAIN	Max Ptp + Past	0.307	0.296	0.138	Y
6EXD-6	Refuel 16	04UT117	MAIN	Blanket	0.307	0.378	0.063	Y
6EXD-6P	Refuel 16	04UT118	MAIN	Band	0.307	0.282	0.057	Y
6EXD-7P	Refuel 16	04UT117	Imported as U/S EXT of 6EXD-6	Band	0.307	0.288	0.048	N(1)
HD-10P	Refuel 19	2R19-FAC-027	MAIN	Max Point-to-Point	0.322	0.307	0.008	N(2)
HD-9	Refuel 16	04UT077	MAIN	Band	0.322	0.279	0.113	Y
HD-9	Refuel 16	04UT077	D/S MAIN	Band	0.5	0.516	0.121	Y
HD-5	Refuel 19	2R19-FAC-032	MAIN	Band	0.656	0.527	0.153	Y
HD-5	Refuel 19	2R19-FAC-032	BRANCH	Band	0.5	0.477	0.033	Y
HD-5	Refuel 19	2R19-FAC-032	D/S MAIN	Band	0.656	0.636	0.05	Y
HD-5P DS	Refuel 19	2R19-FAC-032	Imported as BRANCH EXT of HD-5	Band	0.5	0.477	0.089	N(1)
4EXD-1P	Refuel 18	FAC-08-035	MAIN	Band	0.28	0.224	0.06	Y

CHECWORKS Component Name	Inspection Period	Report Number	Component Section	Method	T_{init} or T_{nom} (in.)	Tmeas (in.)	Wear (in.)	Used in LCF (Yes/No)
4EXD-6	Refuel 18	FAC-08-023	D/S MAIN	Band	0.216	0.276	0.026	N(2)
4EXD-6	Refuel 18	FAC-08-023	MAIN	Band	0.237	0.219	0.029	N(2)
4EXD-6	Refuel 19	2R19-FAC-004	MAIN	Max Point-to-Point	0.237	0.228	0.053	Y
4EXD-6	Refuel 19	2R19-FAC-004	D/S MAIN	Max Point-to-Point	0.216	0.253	0.031	Y
4EXD-1	Refuel 19	2R19-FAC-010	MAIN	Max Point-to-Point	0.28	0.24	0.056	Y
4EXD-1-1	Refuel 19	2R19-FAC-011	MAIN	Blanket	0.28	0.254	0.0645	Y
4EXD-1P	Refuel 19	2R19-FAC-006	MAIN	Band	0.354	0.219	0.135	Y
4EXD-4	Refuel 19	2R19-FAC-005	MAIN	Band	0.28	0.292	0.229	Y
4EXD-4	Refuel 19	2R19-FAC-005	BRANCH	Band	0.237	0.209	0.242	Y
4EXD-4	Refuel 19	2R19-FAC-005	D/S MAIN	Band	0.28	0.255	0.188	Y
4EXD-4P	Refuel 19	2R19-FAC-011	Imported as U/S EXT of 4EXD-1-1	Band	0.28	0.279	0.066	N(1)
4EXD-5	Refuel 19	2R19-FAC-003	D/S MAIN	Band	0.28	0.315	0.035	N(5)
4EXD-5	Refuel 19	2R19-FAC-003	MAIN	Band	0.216	0.303	0.048	N(5)
4EXD-40	Refuel 18	FAC-08-106	D/S MAIN	Blanket	0.237	0.259	0.118	Y

CHECWORKS Component Name	Inspection Period	Report Number	Component Section	Method	T_{init} or T_{nom} (in.)	Tmeas (in.)	Wear (in.)	Used in LCF (Yes/No)
4EXD-40	Refuel 18	FAC-08-106	MAIN	Blanket	0.28	0.274	0.108	Y
4EXD-40P DS	Refuel 18	FAC-08-106	Imported as U/S EXT of 4EXD-40	Band	0.28	0.27	0.03	N(1)
4EXD-39P	Cycle 16B	04UT027	MAIN	Band	0.216	0.25	0.038	N(8)
4EXD-40	Refuel 19	2R19-FAC-001	D/S MAIN	Blanket	0.237	0.25	0.0615	Y
4EXD-40	Refuel 19	2R19-FAC-001	D/S MAIN	Blanket	0.237	0.25	0.0615	Y
4EXD-40	Refuel 19	2R19-FAC-001	MAIN	Blanket	0.28	0.279	0.062	Y
4EXD-40P DS	Refuel 19	2R19-FAC-001	Imported as U/S EXT of 4EXD-40	Band	0.28	0.27	0.025	N(1)
4EXD-38	Cycle 16B	04UT026	MAIN	Band	0.216	0.299	0.05	Y
4EXD-38	Cycle 16B	04UT026	D/S MAIN	Band	0.28	0.257	0.062	Y
4EXD-60	Refuel 18	FAC-08-062	D/S MAIN	Band	0.216	0.27	0.026	N(2)
4EXD-60	Refuel 18	FAC-08-062	MAIN	Band	0.237	0.27	0.029	N(2)
4EXD-61P	Refuel 18	FAC-08-064	Imported as U/S EXT of 4EXD-61.	Band	0.28	0.252	0.033	N(1)
4EXD-61	Refuel 18	FAC-08-064	D/S MAIN	Blanket	0.237	0.255	0.109	Y
4EXD-61	Refuel 18	FAC-08-064	MAIN	Blanket	0.28	0.286	0.1	Y

CHECWORKS Component Name	Inspection Period	Report Number	Component Section	Method	T_{init} or T_{nom} (in.)	Tmeas (in.)	Wear (in.)	Used in LCF (Yes/No)
4EXD-70P	Refuel 18	FAC-08-138	MAIN	Max Point-to-Point	0.28	0.256	0.084	Y
4EXD-70P	Refuel 19	2R19-FAC-009	MAIN	Band	0.28	0.256	0.057	Y
4EXD-71	Refuel 19	2R19-FAC-008	MAIN	Blanket	0.332	0.257	0.075	Y
4EXD-71P	Refuel 19	2R19-FAC-008	Imported as U/S EXT of 4EXD-71	Band	0.317	0.263	0.054	N(1)
244-11T	Refuel 17	06UT061	MAIN	Band	0.25	0.55	0.105	Y
244-11T	Refuel 17	06UT061	D/S MAIN	Band	0.25	0.436	0.081	Y
244-11T	Refuel 17	06UT061	BRANCH	Band	0.25	0.343	0.117	Y
3EXD-2P-1 DS	Refuel 19	2R19-FAC-018	Imported as U/S EXT of 3EXD-3	Band	0.25	0.274	0.084	N(1)
3EXD-3	Refuel 19	2R19-FAC-018	MAIN	Blanket	0.25	0.241	0.104	Y
3EXD-3	Refuel 19	2R19-FAC-018	MAIN	Blanket	0.25	0.241	0.104	Y
3EXD-3P	Refuel 19	2R19-FAC-018	Imported as D/S EXT of 3EXD-3	Band	0.25	0.241	0.029	N(2)
3EXD-5P	Cycle 16B	04UT041	Imported as U/S EXT of 3EXD-6	Band	0.25	0.24	0.032	N(1)
3EXD-6	Cycle 16B	04UT041	MAIN	Blanket	0.25	0.261	0.068	Y
3EXD-6P DS	Cycle 16B	04UT039	MAIN	Band	0.25	0.236	0.03	Y

CHECWORKS Component Name	Inspection Period	Report Number	Component Section	Method	T_{init} or T_{nom} (in.)	Tmeas (in.)	Wear (in.)	Used in LCF (Yes/No)
3EXD-7	Cycle 16B	04UT039	MAIN	Blanket	0.25	0.241	0.066	Y
3EXD-7P	Cycle 16B	04UT039	MAIN	Band	0.25	0.239	0.038	Y
3EXD-8	Cycle 16B	04UT040	MAIN	Blanket	0.25	0.257	0.045	Y
3EXD-8P	Cycle 16B	04UT040	Imported as D/S EXT of 3EXD-8	Band	0.25	0.248	0.025	N(2)
3EXD-28P	Refuel 19	2R19-FAC-016	MAIN	Max Point-to-Point	0.25	0.241	0.046	Y
3EXD-29	Refuel 19	2R19-FAC-016	MAIN	Blanket	0.25	0.285	0.135	Y
3EXD-29P	Refuel 19	2R19-FAC-016	Imported as D/S EXT of 3EXD-29	Band	0.25	0.241	0.065	N(4)
3EXD-33P DS	Refuel 18	FAC-08-089	Imported as U/S EXT of 3EXD-34	Band	0.25	0.244	0.025	N(1)
3EXD-34	Refuel 18	FAC-08-089	D/S MAIN	Blanket	0.25	0.51	0.097	Y
3EXD-34	Refuel 18	FAC-08-089	BR EXT	Band	0.25	0.25	0.025	N(1)
3EXD-34	Refuel 18	FAC-08-089	BRANCH	Max Point-to-Point	0.25	0.304	0.115	Y
3EXD-34	Refuel 18	FAC-08-089	MAIN	Blanket	0.25	0.498	0.114	Y
3EXD-40P	Refuel 18	FAC-08-089	Imported as D/S EXT of 3EXD-34	Band	0.25	0.244	0.022	Y
3EXD-50P DS	Refuel 19	2R19-FAC-019	Imported as U/S EXT of 3EXD-51	Band	0.25	0.25	0.02	N(1)

CHECWORKS Component Name	Inspection Period	Report Number	Component Section	Method	T_{init} or T_{nom} (in.)	Tmeas (in.)	Wear (in.)	Used in LCF (Yes/No)
3EXD-51	Refuel 19	2R19-FAC-019	MAIN	Band	0.25	0.448	0.196	N(7)
3EXD-51	Refuel 19	2R19-FAC-019	BRANCH	Band	0.25	0.288	0.066	N(8)
3EXD-51	Refuel 19	2R19-FAC-019	D/S MAIN	Band	0.25	0.514	0.128	N(7)
3EXD-58P US	Refuel 19	2R19-FAC-019	Imported as D/S EXT of 3EXD-51	Band	0.25	0.241	0.038	N(4)
5EXD-14P	Refuel 17	06UT057	MAIN	Max Ptp + Past	0.25	0.166	0.138	Y
5EXD-3P US	Refuel 16	04UT074	MAIN	Band	0.25	0.249	0.041	Y
1HD-208-6P	Refuel 19	2R19-FAC-047	MAIN	Band	0.25	0.235	0.036	Y
1HD-208-7N	Refuel 19	2R19-FAC-047	MAIN	Band	0.25	0.242	0.045	Y
1A-18	Refuel 19	2R19-FAC-036	MAIN	Band	0.25	0.365	0.05	Y
1A-18	Refuel 19	2R19-FAC-036	BRANCH	Band	0.25	0.227	0.05	N(7)
1A-18	Refuel 19	2R19-FAC-036	D/S MAIN	Band	0.25	0.369	0.047	Y
1A-18P DS	Refuel 18	FAC-08-022	Imported as U/S EXT of 1A-20	Band	0.28	0.256	0.04	N(1)
1A-20	Refuel 18	FAC-08-022	MAIN	Blanket	0.28	0.273	0.041	Y
1A-20N	Refuel 19	2R19-FAC-038	MAIN	Band	0.25	0.267	0.054	N(7)

CHECWORKS Component Name	Inspection Period	Report Number	Component Section	Method	T_{init} or T_{nom} (in.)	Tmeas (in.)	Wear (in.)	Used in LCF (Yes/No)
1A-20P	Refuel 19	2R19-FAC-039	MAIN	Max Point-to-Point	0.25	0.223	0.036	Y
1A-20P-1	Refuel 19	2R19-FAC-037	MAIN	Band	0.25	0.235	0.049	Y
1A-VALVE-5EX-19L	Refuel 18	FAC-08-022	Imported as D/S EXT of 1A-20	Band	0.28	0.269	0.035	Y
2A-20N	Refuel 19	2R19-FAC-057	MAIN	Band	0.25	0.254	0.058	N(7)
2A-20P	Refuel 19	2R19-FAC-051	MAIN	Band	0.25	0.216	0.084	Y
2A-20P-1	Refuel 19	2R19-FAC-050	MAIN	Band	0.25	0.237	0.053	Y
3B-17P	Refuel 17	06UT093	Imported as U/S EXT of 3B-20.	Band	0.25	0.236	0.056	N(1)
3B-20	Refuel 17	06UT093	MAIN	Blanket	0.25	0.352	0.097	Y
2B-1	Refuel 19	2R19-FAC-041	MAIN	Band	0.322	0.409	0.09	N(5)
2B-1	Refuel 19	2R19-FAC-041	BRANCH	Band	0.28	0.336	0.126	N(5)
2B-1	Refuel 19	2R19-FAC-041	D/S MAIN	Band	0.322	0.438	0.07	N(5)
2B-1P	Refuel 19	2R19-FAC-041	Imported as U/S EXT of 2B-1	Band	0.322	0.308	0.024	N(1)
2B-2P	Refuel 19	2R19-FAC-041	Imported as D/S EXT of 2B-1	Band	0.322	0.311	0.02	N(5)

CHECWORKS Component Name	Inspection Period	Report Number	Component Section	Method	T_{init} or T_{nom} (in.)	Tmeas (in.)	Wear (in.)	Used in LCF (Yes/No)
2B-3	Refuel 19	2R19-FAC-042	MAIN	Blanket	0.28	0.242	0.0565	N(5)
2B-3P	Refuel 19	2R19-FAC-042	Imported as D/S EXT of 2B-3	Band	0.28	0.265	0.04	N(5)
MS-2A0P	Refuel 17	06UT102	MAIN	Band	0.432	0.391	0.059	Y
MS-2AN	Refuel 17	06UT102	MAIN	Band	0.432	0.783	0.102	Y
MS-2AN-1	Refuel 17	06UT102	MAIN	Band	0.432	0.355	0.125	Y
MS-1A25	Refuel 18	FAC-08-012	D/S MAIN	Max Point-to-Point	0.432	0.477	0.092	Y
MS-1A25	Refuel 18	FAC-08-012	BRANCH	Band	0.432	0.446	0.18	N(1)
MS-1A25	Refuel 18	FAC-08-012	MAIN	Max Point-to-Point	0.432	0.473	0.1	Y
MS-1A25P	Refuel 18	FAC-08-012	Imported as D/S EXT of MS-1A25	Band	0.432	0.402	0.056	Y
MS-1A25P-1	Refuel 18	FAC-08-012	Imported as U/S EXT of MS-1A25	Band	0.432	0.409	0.033	N(1)
MS-1A34T2	Refuel 17	06UT054	MAIN	Band	0.594	0.585	0.092	Y
MS-1A34T2	Refuel 17	06UT054	D/S MAIN	Band	0.594	0.597	0.072	Y
MS-1A34T2	Refuel 17	06UT054	BRANCH	Band	0.432	1.625	0.024	N(2)

CHECWORKS Component Name	Inspection Period	Report Number	Component Section	Method	T_{init} or T_{nom} (in.)	Tmeas (in.)	Wear (in.)	Used in LCF (Yes/No)
MS-1A37P DS	Refuel 18	FAC-08-007	Imported as U/S EXT of MS-1A38	Band	0.594	0.6	0.075	N(1)
MS-1A38	Refuel 18	FAC-08-007	MAIN	Blanket	0.594	0.503	0.126	Y
MS-1A67P US	Refuel 18	FAC-08-025	MAIN	Max Point-to-Point	0.432	0.373	0.2	Y
MS-1A67P US	Refuel 19	2R19-FAC-025	MAIN	Max Point-to-Point	0.432	0.371	0.083	Y
MS-1A68	Refuel 17	06UT092	MAIN	Band	0.5	0.45	0.085	Y
MS-1A68	Refuel 17	06UT092	D/S MAIN	Band	0.5	0.485	0.051	Y
MS-1A68	Refuel 17	06UT092	BRANCH	Band	0.432	0.4	0.054	Y
MS-1A58P	Refuel 18	FAC-08-007	Imported as U/S EXT of MS-1A59	Band	0.432	0.394	0.04	N(1)
MS-1A59	Refuel 18	FAC-08-007	MAIN	Blanket	0.432	0.391	0.102	
MS-1A59P US	Refuel 18	FAC-08-005	MAIN	Band	0.432	0.385	0.053	Y
MS-2A11N	Refuel 17	06UT130	MAIN	Band	0.432	0.41	0.063	N(10)
MS-2A11P-1	Refuel 17	06UT130	Imported as D/S EXT of MS-2A11N.	Band	0.432	0.407	0.057	Y
MS-2A13	Refuel 19	2R19-FAC-030	MAIN	Max Point-to-Point	0.432	0.361	0.025	N(2)
MS-2A14	Refuel 19	2R19-FAC-024	MAIN	Max Point-to-Point	0.432	0.404	0.031	Y

CHECWORKS Component Name	Inspection Period	Report Number	Component Section	Method	T_{init} or T_{nom} (in.)	Tmeas (in.)	Wear (in.)	Used in LCF (Yes/No)
MS-2A14P	Refuel 19	2R19-FAC-024	MAIN	Max Point-to-Point	0.432	0.41	0.02	N(2)
MS-3A17P-1	Refuel 17	06UT068	MAIN	Band	0.432	0.412	0.072	Y
MS-1B25P	Refuel 16	04UT083	MAIN	Band	0.432	0.404	0.062	Y
MS-1B25P	Refuel 16	04UT080	Imported as U/S EXT of MS-1B26	Band	0.432	0.418	0.046	N(1)
MS-1B25P	Refuel 18	FAC-08-021	Imported as U/S EXT of MS-1B26	Band	0.432	0.418	0.042	N(1)
MS-1B26	Refuel 16	04UT080	MAIN	Blanket	0.432	0.283	0.159	Y
MS-1B26	Refuel 18	FAC-08-021	MAIN	Blanket	0.432	0.395	0.063	Y
MS-1B27P-1	Refuel 16	04UT080	Imported as D/S EXT of MS-1B26	Band	0.432	0.404	0.061	Y
MS-1B27P-1	Refuel 18	FAC-08-021	Imported as D/S EXT of MS-1B26	Band	0.432	0.404	0.051	N(15)
MS-1B34P DS	Refuel 19	2R19-FAC-033	Imported as U/S EXT of MS-1B35	Band	0.432	0.401	0.042	N(1)
MS-1B35	Refuel 19	2R19-FAC-033	MAIN	Blanket	0.432	0.312	0.1195	Y
MS-1B35P	Refuel 19	2R19-FAC-033	Imported as D/S EXT of MS-1B35	Band	0.432	0.411	0.048	N(4)
MS-1B39	Refuel 16	04UT087	MAIN	Blanket	0.5	0.378	0.121	Y

CHECWORKS Component Name	Inspection Period	Report Number	Component Section	Method	T_{init} or T_{nom} (in.)	Tmeas (in.)	Wear (in.)	Used in LCF (Yes/No)
MS-1B39P	Refuel 16	04UT084	MAIN	Band	0.5	0.476	0.05	Y
MS-2B11	Refuel 18	FAC-08-010	MAIN	Blanket	0.432	0.394	0.085	Y
MS-2B11N	Refuel 18	FAC-08-010	MAIN	Band	0.432	0.397	0.06	Y
MS-2B11P	Refuel 18	FAC-08-014	Imported as U/S EXT of MS-2B12	Band	0.432	0.391	0.039	N(1)
MS-2B11P-1	Refuel 18	FAC-08-011	MAIN	Band	0.432	0.382	0.05	Y
MS-2B11P-1	Refuel 18	FAC-08-010	Imported as U/S EXT of MS-2B11	Band	0.432	0.41	0.048	N(1)
MS-2B11P-1	Refuel 18	FAC-08-010	Imported as D/S EXT of MS-2B11N	Band	0.432	0.417	0.022	Y
MS-2B12	Refuel 18	FAC-08-014	MAIN	Blanket	0.432	0.407	0.055	Y
MS-2B12P	Refuel 18	FAC-08-015	MAIN	Band	0.432	0.371	0.102	Y
MS-2B15P	Refuel 18	FAC-08-013	Imported as U/S EXT of MS-2B16	Band	0.432	0.381	0.092	N(1)
MS-2B16	Refuel 18	FAC-08-013	MAIN	Blanket	0.432	0.375	0.086	Y
MS-2B16P	Refuel 18	FAC-08-008	Imported as U/S EXT of MS-2B17	Band	0.432	0.418	0.022	N(1)

CHECWORKS Component Name	Inspection Period	Report Number	Component Section	Method	T_{init} or T_{nom} (in.)	Tmeas (in.)	Wear (in.)	Used in LCF (Yes/No)
MS-2B16P	Refuel 18	FAC-08-013	Imported as D/S EXT of MS-2B16	Band	0.432	0.381	0.059	Y
MS-2B17	Refuel 18	FAC-08-008	MAIN	Blanket	0.432	0.347	0.099	Y
MS-2B17P-3	Refuel 18	FAC-08-008	Imported as D/S EXT of MS-2B17	Band	0.432	0.392	0.043	Y
MS-2B21P DS	Refuel 18	FAC-08-028	Imported as U/S EXT of MS-2B22	Band	0.594	0.493	0.029	N(1)
MS-2B22	Refuel 18	FAC-08-028	MAIN	Max Point-to-Point	0.594	0.338	0.165	Y
MS-2B11	Refuel 19	2R19-FAC-031	MAIN	Band	0.432	0.397	0.11	Y
MS-2B11P	Refuel 16	04UT135	MAIN	Band	0.432	0.387	0.045	Y
MS-2B11P	Refuel 16	04UT135	D/S pipe portion Imported as D/S EXT of MS-2B11P	Band	0.432	0.394	0.068	N(4)
MS-2B11P-1	Refuel 19	2R19-FAC-031	Imported as U/S EXT of MS-2B11	Band	0.432	0.411	0.044	N(1)
MS-2B12P	Refuel 17	06UT143	Imported as U/S EXT of MS-2B13.	Band	0.432	0.37	0.119	N(1)
MS-2B13	Refuel 17	06UT143	MAIN	Blanket	0.432	0.412	0.068	Y
MS-2B13P	Refuel 17	06UT143	Imported as D/S EXT of MS-2B13.	Band	0.432	0.378	0.1	Y

CHECWORKS Component Name	Inspection Period	Report Number	Component Section	Method	T_{init} or T_{nom} (in.)	Tmeas (in.)	Wear (in.)	Used in LCF (Yes/No)
MS-2B13P	Refuel 19	2R19-FAC-028	MAIN	Band	0.432	0.383	0.091	Y
MS-2B14P	Refuel 16	04UT098	MAIN	Band	0.432	0.371	0.092	Y
MS-2B15	Refuel 16	04UT099	MAIN	Blanket	0.432	0.383	0.104	Y
MS-2B15P	Refuel 16	04UT100	MAIN	Band	0.432	0.373	0.119	Y
MS-2B16P	Refuel 19	2R19-FAC-029	Imported as U/S EXT of MS-2B17	Band	0.432	0.418	0.024	N(1)
MS-2B17	Refuel 19	2R19-FAC-029	MAIN	Blanket	0.432	0.344	0.087	Y
MS-2B17P-3	Refuel 19	2R19-FAC-029	Imported as D/S EXT of MS-2B17	Band	0.432	0.391	0.043	Y
MS-2B18	Refuel 17	06UT056	MAIN	Blanket	0.594	0.589	0.108	Y
MS-2B17P-2 DS	Refuel 17	06UT056	Imported as U/S EXT of MS-2B18R.	Band	0.432	0.423	0.047	N(1)
MS-2B18R	Refuel 17	06UT056	MAIN	Band	0.432	0.837	0.186	N(5)
MS-2B18R	Refuel 17	06UT056	D/S MAIN	Band	0.594	0.583	0.225	N(5)
MS-2B18P-1 US	Refuel 17	06UT056	Imported as D/S EXT of MS-2B18R.	Band	0.594	0.571	0.09	Y
MS-2B21P DS	Refuel 19	2R19-FAC-065	Imported as U/S EXT of MS-2B22	Band	0.594	0.493	0.139	N(1)
MS-2B41P	Refuel 18	FAC-08-027	Imported as U/S EXT of MS-2B42	Band	0.432	0.41	0.034	N(1)
MS-2B42	Refuel 18	FAC-08-027	D/S MAIN	Band	0.432	0.501	0.124	Y

CHECWORKS Component Name	Inspection Period	Report Number	Component Section	Method	T_{init} or T_{nom} (in.)	Tmeas (in.)	Wear (in.)	Used in LCF (Yes/No)
MS-2B42	Refuel 18	FAC-08-027	BR EXT	Band	0.432	0.41	0.031	Y
MS-2B42	Refuel 18	FAC-08-027	BRANCH	Band	0.432	0.41	0.108	N(1)
MS-2B42	Refuel 18	FAC-08-027	MAIN	Band	0.432	0.616	0.122	Y
MS-2B50	Refuel 18	FAC-08-019	MAIN	Max Point-to-Point	0.432	0.406	0.11	Y
MS-2B50P US	Refuel 18	FAC-08-019	Imported as D/S EXT of MS-2B50	Band	0.432	0.403	0.04	Y
MS-2B52	Refuel 18	FAC-08-034	MAIN	Max Point-to-Point	0.432	0.335	0.043	Y
MS-2B52P US	Refuel 18	FAC-08-034	Imported as D/S EXT of MS-2B52	Band	0.432	0.376	0.101	Y
MS-2B63P	Refuel 18	FAC-08-019	Imported as U/S EXT of MS-2B50	Band	0.432	0.421	0.068	N(1)
MS-2B52	Refuel 19	2R19-FAC-040	MAIN	Max Point-to-Point	0.432	0.331	0.074	Y
MS-2B52P US	Refuel 19	2R19-FAC-040	MAIN	Max Point-to-Point	0.432	0.371	0.018	N(2)
MS-2B55	Refuel 16	04UT103	MAIN	Band	0.432	0.615	0.081	Y
MS-2B55	Refuel 16	04UT103	D/S MAIN	Band	0.432	0.619	0.079	Y
MS-2B55	Refuel 16	04UT103	BRANCH	Band	0.432	0.369	0.228	N(5)
MS-2B55P	Refuel 16	04UT105	MAIN	Band	0.432	0.334	0.1	Y

CHECWORKS Component Name	Inspection Period	Report Number	Component Section	Method	T_{init} or T_{nom} (in.)	Tmeas (in.)	Wear (in.)	Used in LCF (Yes/No)
MS-2B55R	Refuel 16	04UT104	MAIN	Band	0.432	0.339	0.163	Y
MS-2B55R	Refuel 16	04UT104	D/S MAIN	Band	0.5	0.488	0.082	Y
MS-2B64	Refuel 17	06UT100	MAIN	Band	0.594	0.586	0.039	Y
MS-2B64	Refuel 17	06UT100	D/S MAIN	Band	0.594	0.576	0.056	Y
MS-2B64	Refuel 17	06UT100	BRANCH	Band	0.432	0.368	0.064	Y
MS-2B41P	Refuel 19	2R19-FAC-034	Imported as U/S EXT of MS-2B42	Band	0.432	0.415	0.038	N(1)
MS-2B42	Refuel 19	2R19-FAC-034	MAIN	Blanket	0.432	0.537	0.181	Y
MS-2B42	Refuel 19	2R19-FAC-034	BRANCH	Blanket	0.432	0.477	0.141	Y
MS-2B42	Refuel 19	2R19-FAC-034	D/S MAIN	Blanket	0.432	0.525	0.206	N(8)
MS-3B13P	Refuel 18	FAC-08-020	Imported as U/S EXT of MS-3B14	Band	0.432	0.385	0.083	N(1)
MS-3B13P	Refuel 19	2R19-FAC-023	MAIN	Max Point-to-Point	0.432	0.38	0.043	Y
MS-3B14	Refuel 18	FAC-08-020	MAIN	Max Point-to-Point	0.432	0.396	0.066	Y
MS-3B14P	Refuel 18	FAC-08-020	Imported as D/S EXT of MS-3B14	Band	0.432	0.395	0.041	Y
MS-3B22P US	Refuel 18	FAC-08-016	MAIN	Band	0.432	0.405	0.029	N(2)

CHECWORKS Component Name	Inspection Period	Report Number	Component Section	Method	T_{init} or T_{nom} (in.)	Tmeas (in.)	Wear (in.)	Used in LCF (Yes/No)
MS-3B24P DS	Refuel 16	04UT126	Imported as U/S EXT of MS-3B25	Band	0.432	0.404	0.105	N(1)
MS-3B24P DS	Refuel 18	FAC-08-029	Imported as U/S EXT of MS-3B25	Band	0.432	0.407	0.053	N(1)
MS-3B25	Refuel 16	04UT126	MAIN	Blanket	0.441	0.377	0.118	Y
MS-3B25	Refuel 18	FAC-08-029	MAIN	Blanket	0.432	0.382	0.118	Y
MS-3B25P	Refuel 16	04UT125	MAIN	Band	0.437	0.399	0.038	Y
MS-3B25P	Refuel 18	FAC-08-029	Imported as D/S EXT of MS-3B25	Band	0.432	0.402	0.042	Y
MS-3B25P	Refuel 19	2R19-FAC-035	Imported as U/S EXT of MS-3B26	Band	0.432	0.399	0.045	N(1)
MS-3B26	Refuel 16	04UT127	MAIN	Blanket	0.432	0.447	0.101	Y
MS-3B26	Refuel 19	2R19-FAC-035	MAIN	Blanket	0.432	0.418	0.098	Y
MS-3B26P US	Refuel 16	04UT127	Imported as D/S EXT of MS-3B26	Band	0.432	0.401	0.113	Y
MS-3B26P US	Refuel 19	2R19-FAC-035	MAIN	Band	0.432	0.395	0.042	Y
MS-3B43P US	Refuel 16	04UT144	MAIN	Band	0.5	0.382	0.128	Y
MS46-4P-1 US	Refuel 17	06UT137	MAIN	Band	0.3	0.286	0.026	N(2)
MS46-5	Refuel 16	04UT124	MAIN	Area	0.218	0.321	0.114	Y
MS46-5P	Refuel 16	04UT121	MAIN	Band	0.218	0.217	0.016	N(2)

CHECWORKS Component Name	Inspection Period	Report Number	Component Section	Method	T_{init} or T_{nom} (in.)	Tmeas (in.)	Wear (in.)	Used in LCF (Yes/No)
MS46-6	Refuel 16	04UT123	MAIN	Area	0.218	0.355	0.017	N(2)
MS46-6P US	Refuel 16	04UT122	MAIN	Band	0.218	0.204	0.023	N(2)
MS45-2P-1	Refuel 17	06UT138	Imported as U/S EXT of MS45-2R.	Band	0.218	0.216	0.032	N(1)
MS45-2R	Refuel 17	06UT138	MAIN	Band	0.218	0.216	0.02	N(2)
MS45-2R	Refuel 17	06UT138	D/S MAIN	Band	0.3	0.306	0.053	Y
MS45-2P-3	Refuel 17	06UT138	Imported as D/S EXT of MS45-2R.	Band	0.3	0.284	0.05	Y
MS45-2P-3	Refuel 17	06UT124	Imported as U/S EXT of MS45-3.	Band	0.3	0.288	0.036	N(1)
MS45-3	Refuel 17	06UT124	MAIN	Blanket	0.3	0.291	0.042	Y
MS45-3P	Refuel 17	06UT124	Imported as D/S EXT of MS45-3.	Band	0.3	0.323	0.035	Y
MS47-4P-1	Refuel 17	06UT135	MAIN	Band	0.3	0.291	0.032	Y
MS48-4P-1	Refuel 17	06UT136	MAIN	Band	0.3	0.256	0.053	Y
MS-2B30R1	Refuel 19	2R19-FAC-022	D/S MAIN	Max Point-to-Point	0.337	0.495	0.068	Y
MS-2B30R1	Refuel 19	2R19-FAC-022	MAIN	Max Point-to-Point	0.594	0.562	0.032	Y
MS-2B30R2	Refuel 19	2R19-FAC-026	MAIN	Band	0.355	0.455	0.087	N(5)
MS-2B30R2	Refuel 19	2R19-FAC-026	D/S MAIN	Band	0.5	0.547	0.053	N(5)
MS21-1 DS	Refuel 17	06UT099	MAIN	Band	0.912	0.908	0.077	Y

CHECWORKS Component Name	Inspection Period	Report Number	Component Section	Method	T_{init} or T_{nom} (in.)	Tmeas (in.)	Wear (in.)	Used in LCF (Yes/No)
5EXC-14	Refuel 18	FAC-08-138	MAIN	Max Point-to-Point	0.312	0.281	0.038	N(15)
5EXC-21	Refuel 18	FAC-08-059	MAIN	Blanket	0.312	0.295	0.105	N(15)
5EXC-21P-1 US	Refuel 18	FAC-08-060	MAIN	Band	0.312	0.223	0.089	N(15)
5EXC-24	Cycle 17	06UT007	MAIN	Blanket	0.312	0.297	0.096	Y
203-6E	Refuel 17	06UT094	MAIN	Max Ptp + Past	0.5	0.404	0.187	Y
203-6E	Refuel 17	06UT094	D/S MAIN	Max Ptp + Past	0.594	0.559	0.141	Y
203-6P	Refuel 17	06UT094	Imported as D/S EXT of 203-6E.	Band	0.594	0.554	0.097	Y
205-24P US	Refuel 18	FAC-08-105	MAIN	Max Point-to-Point	0.322	0.252	0.175	N(15)
206-16E	Refuel 18	FAC-08-101	D/S MAIN	Max Point-to-Point	0.594	0.524	0.14	N(15)
206-16E	Refuel 18	FAC-08-101	MAIN	Max Point-to-Point	0.5	0.517	0.148	N(15)
206-16P	Refuel 18	FAC-08-100	MAIN	Max Point-to-Point	0.594	0.544	0.175	N(15)
206-6P	Refuel 16	04UT114	MAIN	Band	0.5	0.479	0.04	N(3)
206-7E	Refuel 16	04UT116	MAIN	Blanket	0.5	0.492	0.079	N(3)
206-8E	Refuel 16	04UT116	Imported as D/S EXT of 206-7E.	Band	0.5	0.487	0.054	N(3)
210-3P-2	Refuel 18	FAC-08-047	MAIN	Max Point-to-Point	0.352	0.224	0.145	N(15)
213-4P	Cycle 16B	04UT036	MAIN	Band	0.864	0.625	0.136	N(3)

CHECWORKS Component Name	Inspection Period	Report Number	Component Section	Method	T_{init} or T_{nom} (in.)	Tmeas (in.)	Wear (in.)	Used in LCF (Yes/No)
214-25P	Cycle 16B	04UT029	MAIN	Band	0.218	0.133	0.086	N(3)
214-26E	Refuel 18	FAC-08-078	MAIN	Max Point-to-Point	0.216	0.122	0.108	N(15)
21BFPT	Refuel 17	06UT075	MAIN	Band	0.625	0.55	0.078	Y
22BFPT	Refuel 16	04UT140	MAIN	Area	0.625	0.305	0.373	N(3)
219-11P US	Cycle 16B	04UT045	MAIN	Band	0.375	0.311	0.112	N(3)
220-7P	Refuel 18	FAC-08-113	MAIN	Band	0.365	0.246	0.119	N(15)
227-2C	Refuel 16	04UT130	MAIN	Band	0.365	0.242	0.243	N(3)
228-17E	Cycle 16B	04UT047	MAIN	Blanket	0.218	0.181	0.07	N(3)
235-1P	Refuel 17	06UT079	Imported as U/S EXT of 235-2E.	Band	0.216	0.208	0.027	N(1)
235-2E	Refuel 17	06UT079	MAIN	Blanket	0.216	0.21	0.036	Y
235-3P US	Refuel 17	06UT079	Imported as D/S EXT of 235-2E.	Band	0.216	0.215	0.017	N(2)
4EXD-74	Cycle 16B	04UT048	MAIN	Blanket	0.28	0.278	0.056	N(3)
248-12P DS	Refuel 16	04UT139	Imported as U/S EXT of 248-13T.	Band	0.337	0.325	0.041	N(3)
248-13T	Refuel 16	04UT139	MAIN	Band	0.337	0.356	0.172	N(3)
248-13T	Refuel 16	04UT139	D/S MAIN	Band	0.337	0.408	0.142	N(3)
248-13T	Refuel 16	04UT139	BRANCH	Band	0.216	0.336	0.201	N(3)
248-13T	Refuel 16	04UT139	BR EXT	Band	0.216	0.177	0.06	N(3)
249-19R	Refuel 18	FAC-08-108	D/S MAIN	Band	0.365	0.323	0.167	N(15)

CHECWORKS Component Name	Inspection Period	Report Number	Component Section	Method	T_{init} or T_{nom} (in.)	Tmeas (in.)	Wear (in.)	Used in LCF (Yes/No)
249-19R	Refuel 18	FAC-08-108	MAIN	Band	0.28	0.483	0.386	N(15)
249-20P	Refuel 18	FAC-08-108	Imported as D/S EXT of 249-19R	Band	0.365	N/A	0.031	N(15)
254-3E	Refuel 18	FAC-08-070	MAIN	Blanket	0.337	0.291	0.076	N(15)
254-4P US	Refuel 18	FAC-08-070	Imported as D/S EXT of 254-3E	Band	0.337	0.308	0.049	N(15)
259-15E	Refuel 18	FAC-08-058	MAIN	Max Point-to-Point	0.337	0.3	0.061	N(15)
259-16P US	Refuel 18	FAC-08-058	Imported as D/S EXT of 259-15E	Band	0.337	0.316	0.051	N(15)
259-3E	Refuel 16	04UT145	MAIN	Blanket	0.337	0.268	0.063	N(3)
263-12P US	Refuel 18	FAC-08-055	Imported as D/S EXT of 263-13R	Band	0.28	0.246	0.051	N(15)
263-13R	Refuel 18	FAC-08-055	D/S MAIN	Max Point-to-Point	0.28	0.308	0.154	N(15)
263-13R	Refuel 18	FAC-08-055	MAIN	Max Point-to-Point	0.216	0.257	0.25	N(15)
263-14P DS	Refuel 18	FAC-08-055	Imported as U/S EXT of 263-13R	Band	0.216	0.197	0.054	N(15)
267-6T	Refuel 16	04UT134	Imported as U/S EXT of 267-29E.	Band	0.216	0.225	0.046	N(3)
267-29E	Refuel 16	04UT134	MAIN	Blanket	0.216	0.224	0.042	N(3)

CHECWORKS Component Name	Inspection Period	Report Number	Component Section	Method	T_{init} or T_{nom} (in.)	Tmeas (in.)	Wear (in.)	Used in LCF (Yes/No)
267-30P	Refuel 16	04UT132	MAIN	Band	0.216	0.222	0.033	N(3)
267-31R	Refuel 16	04UT131	MAIN	Band	0.216	0.249	0.06	N(3)
267-31R	Refuel 16	04UT131	D/S MAIN	Band	0.28	0.271	0.054	N(3)
267-32E	Refuel 16	04UT133	MAIN	Blanket	0.28	0.259	0.062	N(3)
267-33P	Refuel 18	FAC-08-099	MAIN	Band	0.28	0.26	0.177	N(15)
DS-FE-419	Refuel 16	04UT096	MAIN	Band	1.187	0.969	0.218	N(3)
EST-18	Cycle 16B	04UT052	MAIN	Band	0.154	0.137	0.061	N(3)
FE-419	Cycle 16B	04UT052	Imported as D/S EXT of EST-18.	Band	0.147	0.132	0.015	N(3)
MST-49	Cycle 16B	04UT050	MAIN	Band	0.179	0.118	0.109	N(3)
FE-449	Cycle 16B	04UT050	Imported as D/S EXT of MST-49.	Band	0.147	0.128	0.02	N(3)
DS-MS-46A	Refuel 17	06UT123	MAIN	Blanket	0.307	0.66	0.101	Y
FE-449	Refuel 17	06UT112	MAIN	Band	0.912	1.248	0.041	Y
MS-1A1	Refuel 17	06UT084	MAIN	Blanket	0.276	0.272	0.038	Y
MS-1A1N	Refuel 17	06UT084	MAIN	Band	0.276	0.272	0.026	N(2)
MS-1A1P	Refuel 17	06UT084	MAIN	Band	0.276	0.26	0.04	Y
MS-1A2	Refuel 17	06UT084	MAIN	Blanket	0.276	0.269	0.043	Y
MS-1A2P	Refuel 17	06UT084	MAIN	Band	0.276	0.252	0.057	Y
MS-1A3P US	Refuel 17	06UT084	MAIN	Band	0.276	0.258	0.044	Y
MS-2B1	Refuel 17	06UT085	MAIN	Blanket	0.276	0.238	0.043	Y
MS-2B1N	Refuel 17	06UT085	MAIN	Band	0.276	0.264	0.042	Y
MS-2B2	Refuel 17	06UT085	MAIN	Blanket	0.276	0.261	0.046	Y
MS-2B2P	Refuel 17	06UT085	MAIN	Band	0.276	0.274	0.02	N(2)

CHECWORKS Component Name	Inspection Period	Report Number	Component Section	Method	T_{init} or T_{nom} (in.)	Tmeas (in.)	Wear (in.)	Used in LCF (Yes/No)
MS-2B3	Refuel 17	06UT085	MAIN	Blanket	0.276	0.276	0.016	N(2)
MS-2B4	Refuel 17	06UT085	MAIN	Blanket	0.276	0.273	0.022	N(2)
MS-2B4N	Refuel 17	06UT085	MAIN	Band	0.276	0.191	0.04	Y
MS-2B4R	Refuel 17	06UT085	MAIN	Band	0.276	0.258	0.018	N(2)
MS-2B4R	Refuel 17	06UT085	D/S MAIN	Band	0.276	0.283	0.019	N(2)
MS-2A33	Refuel 18	FAC-08-009	D/S MAIN	Max Point-to-Point	0.5	0.55	0.231	N(15)
MS-2A33	Refuel 18	FAC-08-009	BR EXT	Band	0.5	0.474	0.095	N(15)
MS-2A33	Refuel 18	FAC-08-009	BRANCH	Band	0.5	0.501	0.211	N(15)
MS-2A33	Refuel 18	FAC-08-009	MAIN	Max Point-to-Point	0.5	0.55	0.111	N(15)
MS-2A34	Refuel 18	FAC-08-018	D/S MAIN	Band	0.5	0.509	0.3	N(15)
MS-2A34	Refuel 18	FAC-08-018	BR EXT	Band	0.5	0.47	0.067	Y
MS-2A34	Refuel 18	FAC-08-018	BRANCH	Band	0.5	0.512	0.13	N(1)
MS-2A34	Refuel 18	FAC-08-018	MAIN	Band	0.5	0.528	0.215	N(15)
MS-1B41P	Cycle 16B	04UT032	MAIN	Band	0.432	0.406	0.079	N(3)
GCD-1P	Cycle 16B	04UT049	Imported as U/S EXT of GCD-2	Band	0.322	0.318	0.028	N(3)
GCD-2	Cycle 16B	04UT049	MAIN	Band	0.322	0.482	0.174	N(3)
GCD-2	Cycle 16B	04UT049	D/S MAIN	Band	0.322	0.458	0.165	N(3)
GCD-2	Cycle 16B	04UT049	BRANCH	Band	0.322	0.404	0.049	N(3)

CHECWORKS Component Name	Inspection Period	Report Number	Component Section	Method	T_{init} or T_{nom} (in.)	Tmeas (in.)	Wear (in.)	Used in LCF (Yes/No)
GCD-2	Cycle 16B	04UT049	BR EXT	Band	0.322	0.341	0.026	N(3)
EST-21	Refuel 18	FAC-08-096	MULTIPLE	Band		0.071		N(15)
FWH 24A	Refuel 16	04UT081	MAIN	Area	0.438	0.343	0.104	N(3)
FWH 24B	Refuel 16	04UT085	MAIN	Area	0.438	0.341	0.136	N(3)
FWH 24C	Refuel 16	04UT086	MAIN	Area	0.438	0.324	0.165	N(3)
FWH-22C	Refuel 17	06UT114	MAIN	Band	0.375	0.496	0.032	Y
FWH-23C 1N	Refuel 17	06UT110	MAIN	Band	0.438	0.453	0.06	Y
FWH-23C 2N	Refuel 17	06UT110	MAIN	Band	0.438	0.477	0.059	Y
FWH-26B DR	Refuel 17	06UT134	MAIN	Band	0.944	1.015	0.047	Y
FWH-26B DR N1	Refuel 17	06UT134	MAIN	Band	0.906	2.107	0.032	Y
FWH-26B DR N2	Refuel 17	06UT134	MAIN	Band	0.906	2.069	0.058	Y
FWH-26B EX	Refuel 17	06UT141	MAIN	Band	0.944	1.002	0.053	Y
LPFW22C-1N	Refuel 16	04UT128	MAIN	Band	0.375	0.125	0.292	N(3)
LPFW22C-2N	Refuel 16	04UT129	MAIN	Band	0.375	0.133	0.267	N(3)
MST24-Pipe 1	Refuel 16	04UT101	MAIN	Band	0.179	0.105	0.074	N(3)
MST24-Pipe 2 DS	Refuel 16	04UT101	MAIN	Band	0.179	0.15	0.029	N(3)
MST24-Pipe 2 US	Refuel 16	04UT101	MAIN	Band	0.179	0.092	0.087	N(3)
MST24-Pipe 3 DS	Refuel 16	04UT101	MAIN	Band	0.179	0.177	0.022	N(3)

CHECWORKS Component Name	Inspection Period	Report Number	Component Section	Method	T_{init} or T_{nom} (in.)	Tmeas (in.)	Wear (in.)	Used in LCF (Yes/No)
MST24-Pipe 3 US	Refuel 16	04UT101	MAIN	Band	0.179	0.174	0.028	N(3)
FE-449	Refuel 18	FAC-08-103	MAIN	Band	0.912	0.958	0.027	N(15)
205-22P US	Refuel 18	FAC-08-104	MAIN	Band	0.322	0.234	0.187	N(15)
FWH-24A	Refuel 18	FAC-08-091	SHELL	Blanket	0.438	0.313	0.125	N(15)
FWH-24B	Refuel 18	FAC-08-098	SHELL	Blanket	0.438	0.334	0.104	N(15)
FWH-24C	Refuel 18	FAC-08-084	SHELL	Blanket	0.438	0.313	0.125	N(15)
FWH-25B	Refuel 18	FAC-08-097	SHELL	Blanket	0.563	0.553	0.025	N(15)

* Note: Inspections prior to Cycle 16B do not appear in this table.

In LCF Calc "No"	Description
1	CHECWORKS does not use the U/S Ext. or Br. Ext. in the calculation of the LCF.
2	EPRI recommends not to use any calculated lifetime wear less than or equal to 0.030” or 5% of Tnom.
3	This component is an unusual geometry (valve or orifice) and should not be used in calibration of the model.
4	This component was only partially inspected due to an incomplete grid.
5	Non-susceptible material.
6	This is a small bore component or other component not part of the official CHECWORKS model.
7	This wear is not indicative of FAC wear because wear readings are most likely due to manufacturing variances.
8	This portion of the component does not experience any flow.
9	Due to a bug in CHECWORKS, inspections of tees with no data on the U/S Main are not used in the LCF.
10	Inspection on tee or nozzle does not correlate well with inspections on other geometry types.
11	Baseline inspection.
12	Suspicious Tnom inflating measured wear to excessive level.
13	Downstream extension is not a pipe, CHECWORKS will not use this data in determining the LCF.
14	Unable to exclude counterbore
15	Not part of "official" model.

Appendix G

Water Chemistry Analysis Reports

Table of Contents

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4)

Report Date/Time: 04-Jun-2010 1:52 pm
Analysis Date/Time: 03-Jun-2010 10:44 am
CHECWORKS SFA Version 3.0 (build 105)

Chemistry Analysis Report

Water Treatment : CHEM_1
Power Level : 100.00%
Plant Type : PWR

Chemistry Condition :

Condensate Dissolved Oxygen (ppb) :		5.000		
Concentration of 1st Constituent (ppm) :	Ammonia	0.550	, Sampling at	Condensate
Concentration of 2nd Constituent (ppm) :	None	0.000	, Sampling at	Not Used
Concentration of Ammonia (ppm) :		0.000	, Sampling at	Not Used
Concentration of Hydrazine (ppb) :		20.000	, Sampling at	Condensate
Hydrazine at SG (ppb) :		6.312	, Sampling at	Steam outlet
Hydrazine at MSR drain (ppb) :		12.624		
Concentration of Boron (ppm) :		0.000	, Sampling at	Not Used
Boron Injection Rate (lbm/hr) :		0.000		

Chemistry Analysis Results :

HBD Item Description	(Note 1) Cold pH	Hot pH	1st Constituent Ammonia (ppm)	2nd Constituent None (ppm)	Ammonia (ppm)	Hydrazine (ppb)	Dis. Oxy (ppb)	Vent Rate (%)	Flow Rate (Mlb/hr)	Pres (psia)	Temp (F)	Quality	Enthalpy (Btu/lb)
Blowdown Line	8.80	5.73	0.14	0.00	0.00	28.71	0.000	n/a	0.0542	754.0	511.4	0.0000	-----
Main Steam Line 1	9.20	5.73	0.14	0.00	0.00	28.71	0.000	n/a	13.20562	-----	511.4	0.9999	-----
Main Steam Line 2	9.20	5.97	0.13	0.00	0.00	36.47	0.000	n/a	10.45842	206.5	384.5	0.9288	1138.9
Main Steam Line 3	9.22	5.97	0.13	0.00	0.00	11.66	0.000	n/a	9.717657	-----	382.0	0.9900	-----
Main Steam Line 4	9.22	7.50	0.14	0.00	0.00	5.53	0.000	n/a	7.385737	5.5	166.5	0.7668	899.9
HP Extraction Steam Line 1	9.20	5.82	0.14	0.00	0.00	29.61	0.000	n/a	0.693459	372.9	437.8	0.9280	1147.5
HP Extraction Steam Line 2	9.20	5.97	0.13	0.00	0.00	36.47	0.000	n/a	1.021481	206.5	384.5	0.9288	1138.9
Moisture Separator Drain Line 1	8.77	5.97	0.13	0.00	0.00	12.62	0.000	n/a	0.740767	200.6	382.0	0.0000	354.5
Reheater Steam & Drain Line 1	9.20	5.90	0.47	0.00	0.00	6.51	0.000	n/a	1.032256	619.9	489.7	0.0379	503.3
LP Extraction Steam Line 1	Note 2	Note 2	Note 2	Note 2	Note 2	Note 2	0.000	n/a	0.446424	72.6	305.4	1.0000	1192.3
LP Extraction Steam Line 2	9.22	6.65	0.14	0.00	0.00	11.06	0.000	n/a	0.509995	34.9	259.0	0.9149	1087.1
LP Extraction Steam Line 3	9.22	7.07	0.15	0.00	0.00	5.57	0.000	n/a	0.507215	14.0	209.7	0.7760	931.9
LP Extraction Steam Line 4	9.22	7.50	0.14	0.00	0.00	5.53	0.000	n/a	0.729863	5.5	166.5	0.7668	899.9
FWH Tube Side Line 1	9.20	6.10	0.52	0.00	0.00	12.40	0.000	0.00	13.25982	-----	424.4	0.0000	-----
FWH Tube Side Line 2	9.22	6.29	0.55	0.00	0.00	15.65	0.000	0.00	9.771857	-----	379.5	0.0000	-----
FWH Tube Side Line 2 (MIXED)	9.20	6.27	0.52	0.00	0.00	12.40	0.000	0.00	13.25982	-----	382.3	0.0000	-----
FWH Tube Side Line 3	9.22	6.75	0.55	0.00	0.00	17.85	0.000	0.00	9.771857	-----	298.3	0.0000	-----
FWH Tube Side Line 4	9.22	7.08	0.55	0.00	0.00	18.72	0.000	0.00	9.771857	-----	253.7	0.0000	-----
FWH Tube Side Line 5	9.22	7.54	0.55	0.00	0.00	19.39	0.000	0.00	9.771857	-----	202.6	0.0000	-----

HBD Item Description	(Note 1) Cold pH	Hot pH	1st Constituent Ammonia (ppm)	2nd Constituent None (ppm)	Ammonia (ppm)	Hydrazine (ppb)	Dis. Oxy (ppb)	Vent Rate (%)	Flow Rate (Mlb/hr)	Pres (psia)	Temp (F)	Quality	Enthalpy (Btu/lb)
FWH Tube Side Line 6	9.22	8.06	0.55	0.00	0.00	19.76	0.000	0.00	9.771857	-----	155.4	0.0000	-----
FWH Shell Side Line 1	9.20	6.26	0.53	0.00	0.00	6.31	0.000	n/a	1.725715	-----	385.2	0.0000	-----
FWH Shell Side Line 2	9.20	6.27	0.53	0.00	0.00	6.31	0.000	n/a	1.021481	-----	383.0	0.0000	-----
FWH Shell Side Line 3	9.22	7.02	0.56	0.00	0.00	1.36	0.000	n/a	0.446424	-----	261.0	0.0000	-----
FWH Shell Side Line 4	9.22	7.47	0.56	0.00	0.00	1.36	0.000	n/a	0.956419	-----	209.9	0.0000	-----
FWH Shell Side Line 5	9.22	7.93	0.56	0.00	0.00	1.36	0.000	n/a	1.463634	-----	166.7	0.0000	-----
FWH Shell Side Line 6	9.22	8.96	0.56	0.00	0.00	1.36	0.000	n/a	2.193497	-----	92.4	0.0000	-----
Feed Pump Steam & Drain Line 1	9.22	8.29	0.11	0.00	0.00	9.67	0.000	n/a	0.138423	1.0	101.7	0.8662	967.3
Drain Tank Drain Line 1	9.15	6.20	0.44	0.00	0.00	7.65	0.000	0.00	3.487963	220.7	390.1	0.0000	330.6

Notes:
1: For two-phase lines, the cold pH reported is for the mixture of steam and water, and the amine concentrations and hot pH are for the water phase only.
2: For Superheated steam, cold pH, hot pH and amine concentration are not reported since there is no water phase.

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4)

Report Date/Time: 04-Jun-2010 1:52 pm
Analysis Date/Time: 03-Jun-2010 10:44 am
CHECWORKS SFA Version 3.0 (build 105)

Chemistry Analysis Report

Water Treatment : Cycle 14
Power Level : 100.00%
Plant Type : PWR

Chemistry Condition :

Condensate Dissolved Oxygen (ppb) :		5.000		
Concentration of 1st Constituent (ppm) :	ethanolamine	2.250	, Sampling at	Final Feed Water
Concentration of 2nd Constituent (ppm) :	None	0.000	, Sampling at	Not Used
Concentration of Ammonia (ppm) :		1.000	, Sampling at	Condensate
Concentration of Hydrazine (ppb) :		30.000	, Sampling at	Condensate
Hydrazine at SG (ppb) :		15.000	, Sampling at	Steam outlet
Hydrazine at MSR drain (ppb) :		36.000		
Concentration of Boron (ppm) :		7.500	, Sampling at	Steam Generator Blowdown
Boron Injection Rate (lbm/hr) :		0.000		

Chemistry Analysis Results :

HBD Item Description	(Note 1) Cold pH	Hot pH	1st Constituent ethanolamine (ppm)	2nd Constituent None (ppm)	Ammonia (ppm)	Hydrazine (ppb)	Dis. Oxy (ppb)	Vent Rate (%)	Flow Rate (Mlb/hr)	Pres (psia)	Temp (F)	Quality	Enthalpy (Btu/lb)
Blowdown Line	8.44	6.26	5.98	0.00	0.23	68.22	0.000	n/a	0.0542	754.0	511.4	0.0000	-----
Main Steam Line 1	9.36	6.26	5.98	0.00	0.23	68.22	0.000	n/a	13.20562	-----	511.4	0.9999	-----
Main Steam Line 2	9.36	6.77	9.34	0.00	0.16	86.67	0.000	n/a	10.45842	206.5	384.5	0.9288	1138.9
Main Steam Line 3	9.47	6.78	9.07	0.00	0.16	33.25	0.000	n/a	9.717657	-----	382.0	0.9900	-----
Main Steam Line 4	9.47	8.35	6.92	0.00	0.10	15.77	0.000	n/a	7.385737	5.5	166.5	0.7668	899.9
HP Extraction Steam Line 1	9.36	6.50	7.18	0.00	0.19	70.36	0.000	n/a	0.693459	372.9	437.8	0.9280	1147.5
HP Extraction Steam Line 2	9.36	6.77	9.34	0.00	0.16	86.67	0.000	n/a	1.021481	206.5	384.5	0.9288	1138.9
Moisture Separator Drain Line 1	8.85	6.79	9.48	0.00	0.16	36.00	0.000	n/a	0.740767	200.6	382.0	0.0000	354.5
Reheater Steam & Drain Line 1	9.36	6.20	2.29	0.00	0.84	15.47	0.000	n/a	1.032256	619.9	489.7	0.0379	503.3
LP Extraction Steam Line 1	Note 2	Note 2	Note 2	Note 2	Note 2	Note 2	0.000	n/a	0.446424	72.6	305.4	1.0000	1192.3
LP Extraction Steam Line 2	9.47	7.62	12.47	0.00	0.11	31.53	0.000	n/a	0.509995	34.9	259.0	0.9149	1087.1
LP Extraction Steam Line 3	9.47	7.91	6.90	0.00	0.12	15.89	0.000	n/a	0.507215	14.0	209.7	0.7760	931.9
LP Extraction Steam Line 4	9.47	8.35	6.92	0.00	0.10	15.77	0.000	n/a	0.729863	5.5	166.5	0.7668	899.9
FWH Tube Side Line 1	9.35	6.41	2.25	0.00	0.94	21.85	0.000	0.00	13.25982	-----	424.4	0.0000	-----
FWH Tube Side Line 2	9.45	6.58	1.71	0.00	1.00	24.69	0.000	0.00	9.771857	-----	379.5	0.0000	-----
FWH Tube Side Line 2 (MIXED)	9.35	6.59	2.25	0.00	0.94	21.85	0.000	0.00	13.25982	-----	382.3	0.0000	-----
FWH Tube Side Line 3	9.45	7.04	1.71	0.00	1.00	27.36	0.000	0.00	9.771857	-----	298.3	0.0000	-----
FWH Tube Side Line 4	9.45	7.38	1.71	0.00	1.00	28.41	0.000	0.00	9.771857	-----	253.7	0.0000	-----
FWH Tube Side Line 5	9.45	7.84	1.71	0.00	1.00	29.24	0.000	0.00	9.771857	-----	202.6	0.0000	-----

HBD Item Description	(Note 1) Cold pH	Hot pH	1st Constituent ethanolamine (ppm)	2nd Constituent None (ppm)	Ammonia (ppm)	Hydrazine (ppb)	Dis. Oxy (ppb)	Vent Rate (%)	Flow Rate (Mlb/hr)	Pres (psia)	Temp (F)	Quality	Enthalpy (Btu/lb)
FWH Tube Side Line 6	9.45	8.35	1.71	0.00	1.00	29.69	0.000	0.00	9.771857	-----	155.4	0.0000	-----
FWH Shell Side Line 1	9.36	6.58	2.23	0.00	0.95	15.00	0.000	n/a	1.725715	-----	385.2	0.0000	-----
FWH Shell Side Line 2	9.36	6.59	2.23	0.00	0.95	15.00	0.000	n/a	1.021481	-----	383.0	0.0000	-----
FWH Shell Side Line 3	9.47	7.32	1.68	0.00	1.01	3.88	0.000	n/a	0.446424	-----	261.0	0.0000	-----
FWH Shell Side Line 4	9.47	7.77	1.68	0.00	1.01	3.88	0.000	n/a	0.956419	-----	209.9	0.0000	-----
FWH Shell Side Line 5	9.47	8.22	1.68	0.00	1.01	3.88	0.000	n/a	1.463634	-----	166.7	0.0000	-----
FWH Shell Side Line 6	9.47	9.22	1.68	0.00	1.01	3.88	0.000	n/a	2.193497	-----	92.4	0.0000	-----
Feed Pump Steam & Drain Line 1	9.47	9.25	12.24	0.00	0.06	27.58	0.000	n/a	0.138423	1.0	101.7	0.8662	967.3
Drain Tank Drain Line 1	9.14	6.61	3.77	0.00	0.78	19.46	0.000	0.00	3.487963	220.7	390.1	0.0000	330.6

Notes:
1: For two-phase lines, the cold pH reported is for the mixture of steam and water, and the amine concentrations and hot pH are for the water phase only.
2: For Superheated steam, cold pH, hot pH and amine concentration are not reported since there is no water phase.

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4)

Report Date/Time: 04-Jun-2010 1:54 pm
Analysis Date/Time: 04-Jun-2010 1:53 pm
CHECWORKS SFA Version 3.0 (build 105)

Chemistry Analysis Report

Water Treatment : Cycle 15
Power Level : 100.00%
Plant Type : PWR

Chemistry Condition :

Condensate Dissolved Oxygen (ppb) :		5.000		
Concentration of 1st Constituent (ppm) :	ethanolamine	2.250	, Sampling at	Final Feed Water
Concentration of 2nd Constituent (ppm) :	None	0.000	, Sampling at	Not Used
Concentration of Ammonia (ppm) :		3.000	, Sampling at	Condensate
Concentration of Hydrazine (ppb) :		100.000	, Sampling at	Condensate
Hydrazine at SG (ppb) :		60.000	, Sampling at	Steam outlet
Hydrazine at MSR drain (ppb) :		120.000		
Concentration of Boron (ppm) :		0.000	, Sampling at	Not Used
Boron Injection Rate (lbm/hr) :		0.000		

Chemistry Analysis Results :

HBD Item Description	(Note 1) Cold pH	Hot pH	1st Constituent ethanolamine (ppm)	2nd Constituent None (ppm)	Ammonia (ppm)	Hydrazine (ppb)	Dis. Oxy (ppb)	Vent Rate (%)	Flow Rate (Mlb/hr)	Pres (psia)	Temp (F)	Quality	Enthalpy (Btu/lb)
Blowdown Line	9.68	6.30	5.93	0.00	0.69	272.88	0.000	n/a	0.0542	754.0	511.4	0.0000	-----
Main Steam Line 1	9.73	6.30	5.92	0.00	0.69	272.88	0.000	n/a	13.20562	-----	511.4	0.9999	-----
Main Steam Line 2	9.73	6.81	9.25	0.00	0.47	346.69	0.000	n/a	10.45842	206.5	384.5	0.9288	1138.9
Main Steam Line 3	9.73	6.81	9.01	0.00	0.47	110.83	0.000	n/a	9.717657	-----	382.0	0.9900	-----
Main Steam Line 4	9.73	8.40	6.93	0.00	0.29	52.58	0.000	n/a	7.385737	5.5	166.5	0.7668	899.9
HP Extraction Steam Line 1	9.73	6.54	7.12	0.00	0.56	281.44	0.000	n/a	0.693459	372.9	437.8	0.9280	1147.5
HP Extraction Steam Line 2	9.73	6.81	9.25	0.00	0.47	346.69	0.000	n/a	1.021481	206.5	384.5	0.9288	1138.9
Moisture Separator Drain Line 1	9.77	6.82	9.39	0.00	0.47	120.00	0.000	n/a	0.740767	200.6	382.0	0.0000	354.5
Reheater Steam & Drain Line 1	9.73	6.32	2.29	0.00	2.52	61.88	0.000	n/a	1.032256	619.9	489.7	0.0379	503.3
LP Extraction Steam Line 1	Note 2	Note 2	Note 2	Note 2	Note 2	Note 2	0.000	n/a	0.446424	72.6	305.4	1.0000	1192.3
LP Extraction Steam Line 2	9.73	7.65	12.44	0.00	0.34	105.11	0.000	n/a	0.509995	34.9	259.0	0.9149	1087.1
LP Extraction Steam Line 3	9.73	7.95	6.91	0.00	0.35	52.97	0.000	n/a	0.507215	14.0	209.7	0.7760	931.9
LP Extraction Steam Line 4	9.73	8.40	6.93	0.00	0.29	52.58	0.000	n/a	0.729863	5.5	166.5	0.7668	899.9
FWH Tube Side Line 1	9.73	6.56	2.25	0.00	2.83	81.39	0.000	0.00	13.25982	-----	424.4	0.0000	-----
FWH Tube Side Line 2	9.73	6.75	1.71	0.00	3.00	89.72	0.000	0.00	9.771857	-----	379.5	0.0000	-----
FWH Tube Side Line 2 (MIXED)	9.73	6.74	2.25	0.00	2.83	81.39	0.000	0.00	13.25982	-----	382.3	0.0000	-----
FWH Tube Side Line 3	9.73	7.23	1.71	0.00	3.00	95.03	0.000	0.00	9.771857	-----	298.3	0.0000	-----
FWH Tube Side Line 4	9.73	7.57	1.71	0.00	3.00	96.96	0.000	0.00	9.771857	-----	253.7	0.0000	-----
FWH Tube Side Line 5	9.73	8.04	1.71	0.00	3.00	98.50	0.000	0.00	9.771857	-----	202.6	0.0000	-----

HBD Item Description	(Note 1) Cold pH	Hot pH	1st Constituent ethanolamine (ppm)	2nd Constituent None (ppm)	Ammonia (ppm)	Hydrazine (ppb)	Dis. Oxy (ppb)	Vent Rate (%)	Flow Rate (Mlb/hr)	Pres (psia)	Temp (F)	Quality	Enthalpy (Btu/lb)
FWH Tube Side Line 6	9.73	8.57	1.71	0.00	3.00	99.39	0.000	0.00	9.771857	-----	155.4	0.0000	-----
FWH Shell Side Line 1	9.73	6.73	2.23	0.00	2.85	60.00	0.000	n/a	1.725715	-----	385.2	0.0000	-----
FWH Shell Side Line 2	9.73	6.74	2.23	0.00	2.85	60.00	0.000	n/a	1.021481	-----	383.0	0.0000	-----
FWH Shell Side Line 3	9.73	7.51	1.69	0.00	3.03	12.95	0.000	n/a	0.446424	-----	261.0	0.0000	-----
FWH Shell Side Line 4	9.73	7.97	1.69	0.00	3.03	12.95	0.000	n/a	0.956419	-----	209.9	0.0000	-----
FWH Shell Side Line 5	9.73	8.43	1.69	0.00	3.03	12.95	0.000	n/a	1.463634	-----	166.7	0.0000	-----
FWH Shell Side Line 6	9.73	9.47	1.69	0.00	3.03	12.95	0.000	n/a	2.193497	-----	92.4	0.0000	-----
Feed Pump Steam & Drain Line 1	9.73	9.41	12.24	0.00	0.17	91.94	0.000	n/a	0.138423	1.0	101.7	0.8662	967.3
Drain Tank Drain Line 1	9.74	6.72	3.75	0.00	2.35	72.74	0.000	0.00	3.487963	220.7	390.1	0.0000	330.6

Notes:
1: For two-phase lines, the cold pH reported is for the mixture of steam and water, and the amine concentrations and hot pH are for the water phase only.
2: For Superheated steam, cold pH, hot pH and amine concentration are not reported since there is no water phase.

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4)

Report Date/Time: 04-Jun-2010 1:54 pm
Analysis Date/Time: 03-Jun-2010 10:44 am
CHECWORKS SFA Version 3.0 (build 105)

Chemistry Analysis Report

Water Treatment : Cycle 16
Power Level : 100.00%
Plant Type : PWR

Chemistry Condition :

Condensate Dissolved Oxygen (ppb) :		3.730		
Concentration of 1st Constituent (ppm) :	ethanolamine	2.680	, Sampling at	Final Feed Water
Concentration of 2nd Constituent (ppm) :	None	0.000	, Sampling at	Not Used
Concentration of Ammonia (ppm) :		2.810	, Sampling at	Final Feed Water
Concentration of Hydrazine (ppb) :		131.000	, Sampling at	Final Feed Water
Hydrazine at SG (ppb) :		78.600	, Sampling at	Steam outlet
Hydrazine at MSR drain (ppb) :		157.200		
Concentration of Boron (ppm) :		0.000	, Sampling at	Not Used
Boron Injection Rate (lbm/hr) :		0.000		

Chemistry Analysis Results :

HBD Item Description	(Note 1) Cold pH	Hot pH	1st Constituent ethanolamine (ppm)	2nd Constituent None (ppm)	Ammonia (ppm)	Hydrazine (ppb)	Dis. Oxy (ppb)	Vent Rate (%)	Flow Rate (Mlb/hr)	Pres (psia)	Temp (F)	Quality	Enthalpy (Btu/lb)
Blowdown Line	9.72	6.33	7.02	0.00	0.69	357.47	0.000	n/a	0.0542	754.0	511.4	0.0000	-----
Main Steam Line 1	9.74	6.33	7.01	0.00	0.69	357.47	0.000	n/a	13.20562	-----	511.4	0.9999	-----
Main Steam Line 2	9.74	6.84	10.91	0.00	0.47	454.17	0.000	n/a	10.45842	206.5	384.5	0.9288	1138.9
Main Steam Line 3	9.74	6.84	10.63	0.00	0.47	145.19	0.000	n/a	9.717657	-----	382.0	0.9900	-----
Main Steam Line 4	9.74	8.45	8.28	0.00	0.29	68.88	0.000	n/a	7.385737	5.5	166.5	0.7668	899.9
HP Extraction Steam Line 1	9.74	6.57	8.40	0.00	0.56	368.68	0.000	n/a	0.693459	372.9	437.8	0.9280	1147.5
HP Extraction Steam Line 2	9.74	6.84	10.91	0.00	0.47	454.17	0.000	n/a	1.021481	206.5	384.5	0.9288	1138.9
Moisture Separator Drain Line 1	9.81	6.85	11.07	0.00	0.47	157.20	0.000	n/a	0.740767	200.6	382.0	0.0000	354.5
Reheater Steam & Drain Line 1	9.74	6.34	2.73	0.00	2.52	81.06	0.000	n/a	1.032256	619.9	489.7	0.0379	503.3
LP Extraction Steam Line 1	Note 2	Note 2	Note 2	Note 2	Note 2	Note 2	0.000	n/a	0.446424	72.6	305.4	1.0000	1192.3
LP Extraction Steam Line 2	9.74	7.69	14.75	0.00	0.33	137.69	0.000	n/a	0.509995	34.9	259.0	0.9149	1087.1
LP Extraction Steam Line 3	9.74	7.99	8.25	0.00	0.34	69.40	0.000	n/a	0.507215	14.0	209.7	0.7760	931.9
LP Extraction Steam Line 4	9.74	8.45	8.28	0.00	0.29	68.88	0.000	n/a	0.729863	5.5	166.5	0.7668	899.9
FWH Tube Side Line 1	9.74	6.57	2.68	0.00	2.81	131.01	0.000	0.00	13.25982	-----	424.4	0.0000	-----
FWH Tube Side Line 2	9.73	6.76	2.05	0.00	2.97	154.24	0.000	0.00	9.771857	-----	379.5	0.0000	-----
FWH Tube Side Line 2 (MIXED)	9.74	6.75	2.68	0.00	2.81	131.01	0.000	0.00	13.25982	-----	382.3	0.0000	-----
FWH Tube Side Line 3	9.73	7.24	2.05	0.00	2.97	163.21	0.000	0.00	9.771857	-----	298.3	0.0000	-----
FWH Tube Side Line 4	9.73	7.58	2.05	0.00	2.97	165.83	0.000	0.00	9.771857	-----	253.7	0.0000	-----
FWH Tube Side Line 5	9.73	8.05	2.05	0.00	2.97	167.80	0.000	0.00	9.771857	-----	202.6	0.0000	-----

HBD Item Description	(Note 1) Cold pH	Hot pH	1st Constituent ethanolamine (ppm)	2nd Constituent None (ppm)	Ammonia (ppm)	Hydrazine (ppb)	Dis. Oxy (ppb)	Vent Rate (%)	Flow Rate (Mlb/hr)	Pres (psia)	Temp (F)	Quality	Enthalpy (Btu/lb)
FWH Tube Side Line 6	9.73	8.58	2.05	0.00	2.97	168.92	0.000	0.00	9.771857	-----	155.4	0.0000	-----
FWH Shell Side Line 1	9.74	6.74	2.66	0.00	2.85	78.60	0.000	n/a	1.725715	-----	385.2	0.0000	-----
FWH Shell Side Line 2	9.74	6.75	2.66	0.00	2.85	78.60	0.000	n/a	1.021481	-----	383.0	0.0000	-----
FWH Shell Side Line 3	9.74	7.52	2.02	0.00	3.03	16.96	0.000	n/a	0.446424	-----	261.0	0.0000	-----
FWH Shell Side Line 4	9.74	7.98	2.02	0.00	3.03	16.96	0.000	n/a	0.956419	-----	209.9	0.0000	-----
FWH Shell Side Line 5	9.74	8.44	2.02	0.00	3.03	16.96	0.000	n/a	1.463634	-----	166.7	0.0000	-----
FWH Shell Side Line 6	9.74	9.47	2.02	0.00	3.03	16.96	0.000	n/a	2.193497	-----	92.4	0.0000	-----
Feed Pump Steam & Drain Line 1	9.74	9.45	14.63	0.00	0.17	120.44	0.000	n/a	0.138423	1.0	101.7	0.8662	967.3
Drain Tank Drain Line 1	9.76	6.74	4.45	0.00	2.34	95.29	0.000	0.00	3.487963	220.7	390.1	0.0000	330.6

Notes:
1: For two-phase lines, the cold pH reported is for the mixture of steam and water, and the amine concentrations and hot pH are for the water phase only.
2: For Superheated steam, cold pH, hot pH and amine concentration are not reported since there is no water phase.

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4)

Report Date/Time: 04-Jun-2010 1:54 pm
Analysis Date/Time: 03-Jun-2010 10:44 am
CHECWORKS SFA Version 3.0 (build 105)

Chemistry Analysis Report

Water Treatment : Cycle 16
Power Level : 101.19%
Plant Type : PWR

Chemistry Condition :

Condensate Dissolved Oxygen (ppb) :		3.730		
Concentration of 1st Constituent (ppm) :	ethanolamine	2.680	, Sampling at	Final Feed Water
Concentration of 2nd Constituent (ppm) :	None	0.000	, Sampling at	Not Used
Concentration of Ammonia (ppm) :		2.810	, Sampling at	Final Feed Water
Concentration of Hydrazine (ppb) :		131.000	, Sampling at	Final Feed Water
Hydrazine at SG (ppb) :		78.600	, Sampling at	Steam outlet
Hydrazine at MSR drain (ppb) :		157.200		
Concentration of Boron (ppm) :		0.000	, Sampling at	Not Used
Boron Injection Rate (lbm/hr) :		0.000		

Chemistry Analysis Results :

HBD Item Description	(Note 1) Cold pH	Hot pH	1st Constituent ethanolamine (ppm)	2nd Constituent None (ppm)	Ammonia (ppm)	Hydrazine (ppb)	Dis. Oxy (ppb)	Vent Rate (%)	Flow Rate (Mlb/hr)	Pres (psia)	Temp (F)	Quality	Enthalpy (Btu/lb)
Blowdown Line	9.72	6.33	6.97	0.00	0.69	354.75	0.000	n/a	0.0542	765.0	513.1	0.0000	-----
Main Steam Line 1	9.74	6.33	6.96	0.00	0.69	354.75	0.000	n/a	13.38316	-----	513.1	0.9998	-----
Main Steam Line 2	9.74	6.83	10.83	0.00	0.47	451.37	0.000	n/a	10.6045	209.4	385.7	0.9285	1138.9
Main Steam Line 3	9.74	6.84	10.56	0.00	0.47	145.29	0.000	n/a	9.849942	-----	383.2	0.9900	-----
Main Steam Line 4	9.74	8.43	7.88	0.00	0.29	66.01	0.000	n/a	7.516074	5.6	167.2	0.7539	887.5
HP Extraction Steam Line 1	9.74	6.56	8.33	0.00	0.56	365.55	0.000	n/a	0.688561	378.3	439.2	0.9272	1147.0
HP Extraction Steam Line 2	9.74	6.83	10.83	0.00	0.47	451.37	0.000	n/a	1.041833	209.4	385.7	0.9285	1138.9
Moisture Separator Drain Line 1	9.81	6.85	10.99	0.00	0.47	157.20	0.000	n/a	0.75456	203.4	383.2	0.0000	355.7
Reheater Steam & Drain Line 1	9.74	6.33	2.67	0.00	2.79	78.99	0.000	n/a	1.048264	673.7	498.8	0.0062	490.9
LP Extraction Steam Line 1	Note 2	Note 2	Note 2	Note 2	Note 2	Note 2	0.000	n/a	0.453736	73.5	306.2	1.0000	1191.5
LP Extraction Steam Line 2	9.74	7.68	14.50	0.00	0.33	135.99	0.000	n/a	0.518228	35.3	259.8	0.9126	1085.2
LP Extraction Steam Line 3	9.74	7.98	8.16	0.00	0.34	69.12	0.000	n/a	0.50895	14.2	210.4	0.7732	929.5
LP Extraction Steam Line 4	9.74	8.43	7.88	0.00	0.29	66.01	0.000	n/a	0.710848	5.6	167.2	0.7539	887.5
FWH Tube Side Line 1	9.74	6.57	2.68	0.00	2.81	131.01	0.000	0.00	13.43736	-----	425.2	0.0000	-----
FWH Tube Side Line 2	9.73	6.75	2.05	0.00	2.97	154.35	0.000	0.00	9.904142	-----	380.5	0.0000	-----
FWH Tube Side Line 2 (MIXED)	9.74	6.75	2.68	0.00	2.81	131.01	0.000	0.00	13.43736	-----	383.2	0.0000	-----
FWH Tube Side Line 3	9.73	7.23	2.05	0.00	2.97	163.51	0.000	0.00	9.904142	-----	299.0	0.0000	-----
FWH Tube Side Line 4	9.73	7.60	2.05	0.00	2.97	166.22	0.000	0.00	9.904142	-----	251.4	0.0000	-----
FWH Tube Side Line 5	9.73	8.04	2.05	0.00	2.97	168.07	0.000	0.00	9.904142	-----	203.3	0.0000	-----

HBD Item Description	(Note 1) Cold pH	Hot pH	1st Constituent ethanolamine (ppm)	2nd Constituent None (ppm)	Ammonia (ppm)	Hydrazine (ppb)	Dis. Oxy (ppb)	Vent Rate (%)	Flow Rate (Mlb/hr)	Pres (psia)	Temp (F)	Quality	Enthalpy (Btu/lb)
FWH Tube Side Line 6	9.73	8.56	2.05	0.00	2.97	169.21	0.000	0.00	9.904142	-----	156.8	0.0000	-----
FWH Shell Side Line 1	9.74	6.73	2.66	0.00	2.85	78.60	0.000	n/a	1.736825	-----	386.5	0.0000	-----
FWH Shell Side Line 2	9.74	6.75	2.66	0.00	2.85	78.60	0.000	n/a	1.041833	-----	384.1	0.0000	-----
FWH Shell Side Line 3	9.74	7.51	2.02	0.00	3.03	17.09	0.000	n/a	0.453736	-----	261.8	0.0000	-----
FWH Shell Side Line 4	9.74	7.97	2.02	0.00	3.03	17.09	0.000	n/a	0.971964	-----	210.8	0.0000	-----
FWH Shell Side Line 5	9.74	8.43	2.02	0.00	3.03	17.09	0.000	n/a	1.480914	-----	168.1	0.0000	-----
FWH Shell Side Line 6	9.74	9.41	2.02	0.00	3.03	17.09	0.000	n/a	2.191762	-----	96.7	0.0000	-----
Feed Pump Steam & Drain Line 1	9.74	9.45	14.61	0.00	0.17	121.05	0.000	n/a	0.142106	1.0	101.7	0.8658	966.9
Drain Tank Drain Line 1	9.76	6.74	4.44	0.00	2.34	95.39	0.000	0.00	3.533218	222.8	390.9	0.0000	332.6

Notes:
1: For two-phase lines, the cold pH reported is for the mixture of steam and water, and the amine concentrations and hot pH are for the water phase only.
2: For Superheated steam, cold pH, hot pH and amine concentration are not reported since there is no water phase.

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4)

Report Date/Time: 04-Jun-2010 1:55 pm
Analysis Date/Time: 03-Jun-2010 10:44 am
CHECWORKS SFA Version 3.0 (build 105)

Chemistry Analysis Report

Water Treatment : Cycle 17
Power Level : 104.48%
Plant Type : PWR

Chemistry Condition :

Condensate Dissolved Oxygen (ppb) :		6.060		
Concentration of 1st Constituent (ppm) :	ethanolamine	3.630	, Sampling at	Final Feed Water
Concentration of 2nd Constituent (ppm) :	None	0.000	, Sampling at	Not Used
Concentration of Ammonia (ppm) :		2.640	, Sampling at	Final Feed Water
Concentration of Hydrazine (ppb) :		95.000	, Sampling at	Final Feed Water
Hydrazine at SG (ppb) :		57.000	, Sampling at	Steam outlet
Hydrazine at MSR drain (ppb) :		114.000		
Concentration of Boron (ppm) :		0.000	, Sampling at	Not Used
Boron Injection Rate (lbm/hr) :		0.000		

Chemistry Analysis Results :

HBD Item Description	(Note 1) Cold pH	Hot pH	1st Constituent ethanolamine (ppm)	2nd Constituent None (ppm)	Ammonia (ppm)	Hydrazine (ppb)	Dis. Oxy (ppb)	Vent Rate (%)	Flow Rate (Mlb/hr)	Pres (psia)	Temp (F)	Quality	Enthalpy (Btu/lb)
Blowdown Line	9.78	6.38	9.35	0.00	0.65	257.26	0.000	n/a	0.0542	765.0	513.1	0.0000	-----
Main Steam Line 1	9.76	6.38	9.34	0.00	0.65	257.26	0.000	n/a	13.90375	-----	513.1	0.9998	-----
Main Steam Line 2	9.76	6.88	14.03	0.00	0.44	314.70	0.000	n/a	11.10692	214.9	387.9	0.9223	1134.2
Main Steam Line 3	9.74	6.87	12.92	0.00	0.45	105.54	0.000	n/a	10.04629	-----	386.2	0.9900	-----
Main Steam Line 4	9.74	8.47	9.95	0.00	0.28	48.64	0.000	n/a	7.687717	5.8	168.4	0.7531	887.3
HP Extraction Steam Line 1	9.76	6.59	10.71	0.00	0.54	252.64	0.000	n/a	0.799284	400.7	444.8	0.9200	1142.0
HP Extraction Steam Line 2	9.76	6.88	14.03	0.00	0.44	314.70	0.000	n/a	1.079704	214.9	387.9	0.9223	1134.2
Moisture Separator Drain Line 1	9.85	6.87	13.43	0.00	0.45	114.00	0.000	n/a	1.060624	210.7	386.2	0.0000	359.2
Reheater Steam & Drain Line 1	9.76	6.35	3.69	0.00	2.40	58.54	0.000	n/a	0.917845	656.0	495.9	0.0331	506.8
LP Extraction Steam Line 1	Note 2	Note 2	Note 2	Note 2	Note 2	Note 2	0.000	n/a	0.464923	75.4	308.0	1.0000	1196.2
LP Extraction Steam Line 2	9.74	7.74	19.36	0.00	0.31	108.58	0.000	n/a	0.525277	36.1	261.1	0.9227	1095.2
LP Extraction Steam Line 3	9.74	8.03	10.60	0.00	0.32	52.54	0.000	n/a	0.513168	14.6	211.5	0.7803	937.0
LP Extraction Steam Line 4	9.74	8.47	9.95	0.00	0.28	48.64	0.000	n/a	0.702033	5.8	168.4	0.7531	887.3
FWH Tube Side Line 1	9.75	6.57	3.63	0.00	2.64	95.04	0.000	0.00	13.95795	-----	429.6	0.0000	-----
FWH Tube Side Line 2	9.74	6.75	2.61	0.00	2.86	112.33	0.000	0.00	10.10049	-----	382.4	0.0000	-----
FWH Tube Side Line 2 (MIXED)	9.75	6.76	3.63	0.00	2.64	95.04	0.000	0.00	13.95795	-----	385.1	0.0000	-----
FWH Tube Side Line 3	9.74	7.23	2.61	0.00	2.85	120.17	0.000	0.00	10.10049	-----	300.5	0.0000	-----
FWH Tube Side Line 4	9.74	7.57	2.61	0.00	2.85	122.87	0.000	0.00	10.10049	-----	255.5	0.0000	-----
FWH Tube Side Line 5	9.74	8.04	2.61	0.00	2.85	125.11	0.000	0.00	10.10049	-----	204.3	0.0000	-----

HBD Item Description	(Note 1) Cold pH	Hot pH	1st Constituent ethanolamine (ppm)	2nd Constituent None (ppm)	Ammonia (ppm)	Hydrazine (ppb)	Dis. Oxy (ppb)	Vent Rate (%)	Flow Rate (Mlb/hr)	Pres (psia)	Temp (F)	Quality	Enthalpy (Btu/lb)
FWH Tube Side Line 6	9.74	8.55	2.61	0.00	2.85	126.45	0.000	0.00	10.10049	-----	158.0	0.0000	-----
FWH Shell Side Line 1	9.76	6.74	3.61	0.00	2.67	57.00	0.000	n/a	1.717129	-----	389.3	0.0000	-----
FWH Shell Side Line 2	9.76	6.75	3.61	0.00	2.67	57.00	0.000	n/a	1.079704	-----	386.3	0.0000	-----
FWH Shell Side Line 3	9.74	7.51	2.57	0.00	2.90	12.64	0.000	n/a	0.464923	-----	263.3	0.0000	-----
FWH Shell Side Line 4	9.74	7.96	2.57	0.00	2.90	12.64	0.000	n/a	0.9902	-----	212.0	0.0000	-----
FWH Shell Side Line 5	9.74	8.42	2.57	0.00	2.90	12.64	0.000	n/a	1.503368	-----	169.4	0.0000	-----
FWH Shell Side Line 6	9.74	9.36	2.57	0.00	2.90	12.64	0.000	n/a	2.205401	-----	100.0	0.0000	-----
Feed Pump Steam & Drain Line 1	9.74	9.52	18.82	0.00	0.16	90.88	0.000	n/a	0.153175	1.0	101.7	0.8679	969.1
Drain Tank Drain Line 1	9.79	6.77	6.31	0.00	2.06	72.67	0.000	0.00	3.857457	225.7	392.1	0.0000	337.5

Notes:
1: For two-phase lines, the cold pH reported is for the mixture of steam and water, and the amine concentrations and hot pH are for the water phase only.
2: For Superheated steam, cold pH, hot pH and amine concentration are not reported since there is no water phase.

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4)

Report Date/Time: 04-Jun-2010 1:55 pm
Analysis Date/Time: 03-Jun-2010 10:44 am
CHECWORKS SFA Version 3.0 (build 105)

Chemistry Analysis Report

Water Treatment : Cycle 18
Power Level : 104.48%
Plant Type : PWR

Chemistry Condition :

Condensate Dissolved Oxygen (ppb) :		6.720		
Concentration of 1st Constituent (ppm) :	ethanolamine	5.070	, Sampling at	Final Feed Water
Concentration of 2nd Constituent (ppm) :	None	0.000	, Sampling at	Not Used
Concentration of Ammonia (ppm) :		2.540	, Sampling at	Final Feed Water
Concentration of Hydrazine (ppb) :		90.000	, Sampling at	Final Feed Water
Hydrazine at SG (ppb) :		54.000	, Sampling at	Steam outlet
Hydrazine at MSR drain (ppb) :		108.000		
Concentration of Boron (ppm) :		0.000	, Sampling at	Not Used
Boron Injection Rate (lbm/hr) :		0.000		

Chemistry Analysis Results :

HBD Item Description	(Note 1) Cold pH	Hot pH	1st Constituent ethanolamine (ppm)	2nd Constituent None (ppm)	Ammonia (ppm)	Hydrazine (ppb)	Dis. Oxy (ppb)	Vent Rate (%)	Flow Rate (Mlb/hr)	Pres (psia)	Temp (F)	Quality	Enthalpy (Btu/lb)
Blowdown Line	9.85	6.44	12.91	0.00	0.62	243.72	0.000	n/a	0.0542	765.0	513.1	0.0000	-----
Main Steam Line 1	9.78	6.44	12.90	0.00	0.62	243.72	0.000	n/a	13.90375	-----	513.1	0.9998	-----
Main Steam Line 2	9.78	6.95	19.29	0.00	0.42	298.14	0.000	n/a	11.10692	214.9	387.9	0.9223	1134.2
Main Steam Line 3	9.76	6.94	17.79	0.00	0.43	99.98	0.000	n/a	10.04629	-----	386.2	0.9900	-----
Main Steam Line 4	9.76	8.55	13.98	0.00	0.26	46.08	0.000	n/a	7.687717	5.8	168.4	0.7531	887.3
HP Extraction Steam Line 1	9.78	6.66	14.76	0.00	0.51	239.35	0.000	n/a	0.799284	400.7	444.8	0.9200	1142.0
HP Extraction Steam Line 2	9.78	6.95	19.29	0.00	0.42	298.14	0.000	n/a	1.079704	214.9	387.9	0.9223	1134.2
Moisture Separator Drain Line 1	9.93	6.94	18.48	0.00	0.43	108.00	0.000	n/a	1.060624	210.7	386.2	0.0000	359.2
Reheater Steam & Drain Line 1	9.78	6.38	5.15	0.00	2.31	55.46	0.000	n/a	0.917845	656.0	495.9	0.0331	506.8
LP Extraction Steam Line 1	Note 2	Note 2	Note 2	Note 2	Note 2	Note 2	0.000	n/a	0.464923	75.4	308.0	1.0000	1196.2
LP Extraction Steam Line 2	9.76	7.81	26.85	0.00	0.29	102.86	0.000	n/a	0.525277	36.1	261.1	0.9227	1095.2
LP Extraction Steam Line 3	9.76	8.11	14.85	0.00	0.30	49.78	0.000	n/a	0.513168	14.6	211.5	0.7803	937.0
LP Extraction Steam Line 4	9.76	8.55	13.98	0.00	0.26	46.08	0.000	n/a	0.702033	5.8	168.4	0.7531	887.3
FWH Tube Side Line 1	9.78	6.60	5.07	0.00	2.54	90.06	0.000	0.00	13.95795	-----	429.6	0.0000	-----
FWH Tube Side Line 2	9.76	6.78	3.67	0.00	2.75	106.49	0.000	0.00	10.10049	-----	382.4	0.0000	-----
FWH Tube Side Line 2 (MIXED)	9.78	6.79	5.07	0.00	2.54	90.06	0.000	0.00	13.95795	-----	385.1	0.0000	-----
FWH Tube Side Line 3	9.76	7.25	3.67	0.00	2.75	114.18	0.000	0.00	10.10049	-----	300.5	0.0000	-----
FWH Tube Side Line 4	9.76	7.59	3.67	0.00	2.75	116.96	0.000	0.00	10.10049	-----	255.5	0.0000	-----
FWH Tube Side Line 5	9.76	8.06	3.67	0.00	2.75	119.30	0.000	0.00	10.10049	-----	204.3	0.0000	-----

HBD Item Description	(Note 1) Cold pH	Hot pH	1st Constituent ethanolamine (ppm)	2nd Constituent None (ppm)	Ammonia (ppm)	Hydrazine (ppb)	Dis. Oxy (ppb)	Vent Rate (%)	Flow Rate (Mlb/hr)	Pres (psia)	Temp (F)	Quality	Enthalpy (Btu/lb)
FWH Tube Side Line 6	9.76	8.57	3.67	0.00	2.75	120.70	0.000	0.00	10.10049	-----	158.0	0.0000	-----
FWH Shell Side Line 1	9.78	6.77	5.04	0.00	2.57	54.00	0.000	n/a	1.717129	-----	389.3	0.0000	-----
FWH Shell Side Line 2	9.78	6.78	5.04	0.00	2.57	54.00	0.000	n/a	1.079704	-----	386.3	0.0000	-----
FWH Shell Side Line 3	9.76	7.53	3.62	0.00	2.79	11.98	0.000	n/a	0.464923	-----	263.3	0.0000	-----
FWH Shell Side Line 4	9.76	7.98	3.62	0.00	2.79	11.98	0.000	n/a	0.9902	-----	212.0	0.0000	-----
FWH Shell Side Line 5	9.76	8.44	3.62	0.00	2.79	11.98	0.000	n/a	1.503368	-----	169.4	0.0000	-----
FWH Shell Side Line 6	9.76	9.38	3.62	0.00	2.79	11.98	0.000	n/a	2.205401	-----	100.0	0.0000	-----
Feed Pump Steam & Drain Line 1	9.76	9.60	26.46	0.00	0.15	86.10	0.000	n/a	0.153175	1.0	101.7	0.8679	969.1
Drain Tank Drain Line 1	9.83	6.81	8.73	0.00	1.98	68.85	0.000	0.00	3.857457	225.7	392.1	0.0000	337.5

Notes:
1: For two-phase lines, the cold pH reported is for the mixture of steam and water, and the amine concentrations and hot pH are for the water phase only.
2: For Superheated steam, cold pH, hot pH and amine concentration are not reported since there is no water phase.

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4)

Report Date/Time: 04-Jun-2010 1:56 pm
Analysis Date/Time: 03-Jun-2010 10:44 am
CHECWORKS SFA Version 3.0 (build 105)

Chemistry Analysis Report

Water Treatment : Cycle 19
Power Level : 104.48%
Plant Type : PWR

Chemistry Condition :

Condensate Dissolved Oxygen (ppb) :		4.850		
Concentration of 1st Constituent (ppm) :	ethanolamine	5.170	, Sampling at	Final Feed Water
Concentration of 2nd Constituent (ppm) :	None	0.000	, Sampling at	Not Used
Concentration of Ammonia (ppm) :		3.150	, Sampling at	Final Feed Water
Concentration of Hydrazine (ppb) :		98.000	, Sampling at	Final Feed Water
Hydrazine at SG (ppb) :		58.800	, Sampling at	Steam outlet
Hydrazine at MSR drain (ppb) :		117.600		
Concentration of Boron (ppm) :		0.000	, Sampling at	Not Used
Boron Injection Rate (lbm/hr) :		0.000		

Chemistry Analysis Results :

HBD Item Description	(Note 1) Cold pH	Hot pH	1st Constituent ethanolamine (ppm)	2nd Constituent None (ppm)	Ammonia (ppm)	Hydrazine (ppb)	Dis. Oxy (ppb)	Vent Rate (%)	Flow Rate (Mlb/hr)	Pres (psia)	Temp (F)	Quality	Enthalpy (Btu/lb)
Blowdown Line	9.86	6.45	13.15	0.00	0.77	265.39	0.000	n/a	0.0542	765.0	513.1	0.0000	-----
Main Steam Line 1	9.82	6.45	13.14	0.00	0.77	265.39	0.000	n/a	13.90375	-----	513.1	0.9998	-----
Main Steam Line 2	9.82	6.95	19.64	0.00	0.52	324.64	0.000	n/a	11.10692	214.9	387.9	0.9223	1134.2
Main Steam Line 3	9.80	6.94	18.12	0.00	0.53	108.87	0.000	n/a	10.04629	-----	386.2	0.9900	-----
Main Steam Line 4	9.80	8.56	14.26	0.00	0.32	50.17	0.000	n/a	7.687717	5.8	168.4	0.7531	887.3
HP Extraction Steam Line 1	9.82	6.67	15.04	0.00	0.64	260.62	0.000	n/a	0.799284	400.7	444.8	0.9200	1142.0
HP Extraction Steam Line 2	9.82	6.95	19.64	0.00	0.52	324.64	0.000	n/a	1.079704	214.9	387.9	0.9223	1134.2
Moisture Separator Drain Line 1	9.93	6.95	18.82	0.00	0.53	117.60	0.000	n/a	1.060624	210.7	386.2	0.0000	359.2
Reheater Steam & Drain Line 1	9.82	6.40	5.25	0.00	2.86	60.39	0.000	n/a	0.917845	656.0	495.9	0.0331	506.8
LP Extraction Steam Line 1	Note 2	Note 2	Note 2	Note 2	Note 2	Note 2	0.000	n/a	0.464923	75.4	308.0	1.0000	1196.2
LP Extraction Steam Line 2	9.80	7.82	27.37	0.00	0.36	112.01	0.000	n/a	0.525277	36.1	261.1	0.9227	1095.2
LP Extraction Steam Line 3	9.80	8.12	15.15	0.00	0.37	54.20	0.000	n/a	0.513168	14.6	211.5	0.7803	937.0
LP Extraction Steam Line 4	9.80	8.56	14.26	0.00	0.32	50.17	0.000	n/a	0.702033	5.8	168.4	0.7531	887.3
FWH Tube Side Line 1	9.82	6.62	5.17	0.00	3.15	98.03	0.000	0.00	13.95795	-----	429.6	0.0000	-----
FWH Tube Side Line 2	9.80	6.81	3.75	0.00	3.41	115.80	0.000	0.00	10.10049	-----	382.4	0.0000	-----
FWH Tube Side Line 2 (MIXED)	9.82	6.82	5.17	0.00	3.15	98.03	0.000	0.00	13.95795	-----	385.1	0.0000	-----
FWH Tube Side Line 3	9.80	7.29	3.75	0.00	3.41	123.54	0.000	0.00	10.10049	-----	300.5	0.0000	-----
FWH Tube Side Line 4	9.80	7.63	3.75	0.00	3.41	126.02	0.000	0.00	10.10049	-----	255.5	0.0000	-----
FWH Tube Side Line 5	9.80	8.10	3.75	0.00	3.41	128.01	0.000	0.00	10.10049	-----	204.3	0.0000	-----

HBD Item Description	(Note 1) Cold pH	Hot pH	1st Constituent ethanolamine (ppm)	2nd Constituent None (ppm)	Ammonia (ppm)	Hydrazine (ppb)	Dis. Oxy (ppb)	Vent Rate (%)	Flow Rate (Mlb/hr)	Pres (psia)	Temp (F)	Quality	Enthalpy (Btu/lb)
FWH Tube Side Line 6	9.80	8.61	3.75	0.00	3.41	129.16	0.000	0.00	10.10049	-----	158.0	0.0000	-----
FWH Shell Side Line 1	9.82	6.80	5.14	0.00	3.18	58.80	0.000	n/a	1.717129	-----	389.3	0.0000	-----
FWH Shell Side Line 2	9.82	6.81	5.14	0.00	3.18	58.80	0.000	n/a	1.079704	-----	386.3	0.0000	-----
FWH Shell Side Line 3	9.80	7.57	3.69	0.00	3.46	13.04	0.000	n/a	0.464923	-----	263.3	0.0000	-----
FWH Shell Side Line 4	9.80	8.02	3.69	0.00	3.46	13.04	0.000	n/a	0.9902	-----	212.0	0.0000	-----
FWH Shell Side Line 5	9.80	8.48	3.69	0.00	3.46	13.04	0.000	n/a	1.503368	-----	169.4	0.0000	-----
FWH Shell Side Line 6	9.80	9.42	3.69	0.00	3.46	13.04	0.000	n/a	2.205401	-----	100.0	0.0000	-----
Feed Pump Steam & Drain Line 1	9.80	9.61	27.00	0.00	0.18	93.75	0.000	n/a	0.153175	1.0	101.7	0.8679	969.1
Drain Tank Drain Line 1	9.85	6.83	8.90	0.00	2.45	74.97	0.000	0.00	3.857457	225.7	392.1	0.0000	337.5

Notes:
1: For two-phase lines, the cold pH reported is for the mixture of steam and water, and the amine concentrations and hot pH are for the water phase only.
2: For Superheated steam, cold pH, hot pH and amine concentration are not reported since there is no water phase.

Appendix H

Pass 1 Wear Rate Analysis Reports

Wear Rate Analysis Run **Page**

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).db

Wear Rate Report

Pass 1 Analysis Exclude Measured Wear

Report Date/Time: 7/6/2010 3:37:44PM
AnalysisDate/Time: 7/6/2010 3:15:42PM

CHECWORKS SFA Version: 3.0 SP-1 (build 109)

Duty Factor (Global) : 1.000

Run Name: 1ST POINT EXTRAC STM
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 1.000

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***ES?-1-1STPT ES TO FWH 21A***								***Sorted By: Average Wear Rate***		
LPFW21A-1P1	31	10.030	8.296	168.4	227.620	75.3	26.000	7.137	0.000	50.17	HBD
LPFW21A-1N	30	6.695	5.531	168.4	227.620	75.3	26.000	7.137	0.000	50.17	HBD
LPFW21A-1P2	1	5.280	4.360	168.4	227.620	75.3	26.000	7.137	0.000	50.17	HBD
LPFW21A-1P4	1	5.280	4.360	168.4	227.620	75.3	26.000	7.137	0.000	50.17	HBD
LPFW21A-1P3	51	3.682	3.042	168.4	227.620	75.3	26.000	7.137	0.000	50.17	HBD
===>Grouped by Line:	***ES?-1-1STPT ES TO FWH 21B***								***Sorted By: Average Wear Rate***		
LPFW21B-1P1	31	10.030	8.296	168.4	227.620	75.3	26.000	7.137	0.000	50.17	HBD
LPFW21B-1N	30	6.695	5.531	168.4	227.620	75.3	26.000	7.137	0.000	50.17	HBD
LPFW21B-1P2	1	5.280	4.360	168.4	227.620	75.3	26.000	7.137	0.000	50.17	HBD
LPFW21B-1P4	1	5.280	4.360	168.4	227.620	75.3	26.000	7.137	0.000	50.17	HBD
LPFW21B-1P3	51	3.682	3.042	168.4	227.620	75.3	26.000	7.137	0.000	50.17	HBD
===>Grouped by Line:	***ES?-1-1STPT ES TO FWH 21C***								***Sorted By: Average Wear Rate***		
LPFW21C-1P1	31	10.030	8.296	168.4	227.620	75.3	26.000	7.137	0.000	50.17	HBD
LPFW21C-1N	30	6.695	5.531	168.4	227.620	75.3	26.000	7.137	0.000	50.17	HBD
LPFW21C-1P2	1	5.280	4.360	168.4	227.620	75.3	26.000	7.137	0.000	50.17	HBD
LPFW21C-1P4	1	5.280	4.360	168.4	227.620	75.3	26.000	7.137	0.000	50.17	HBD
LPFW21C-1P3	51	3.682	3.042	168.4	227.620	75.3	26.000	7.137	0.000	50.17	HBD
===>Grouped by Line:	***ES?-2-1STPT ES TO FWH 21A***								***Sorted By: Average Wear Rate***		
LPFW21A-2P1	31	10.030	8.296	168.4	227.620	75.3	26.000	7.137	0.000	50.17	HBD
LPFW21A-2N	30	6.695	5.531	168.4	227.620	75.3	26.000	7.137	0.000	50.17	HBD
LPFW21A-2P3	2	6.164	5.092	168.4	227.620	75.3	26.000	7.137	0.000	50.17	HBD
LPFW21A-2P5	2	6.164	5.092	168.4	227.620	75.3	26.000	7.137	0.000	50.17	HBD
LPFW21A-2P4	52	4.184	3.457	168.4	227.620	75.3	26.000	7.137	0.000	50.17	HBD
LPFW21A-2P2	61	3.406	5.972	168.4	227.620	75.3	26.000	7.137	0.000	50.17	HBD
===>Grouped by Line:	***ES?-2-1STPT ES TO FWH 21B***								***Sorted By: Average Wear Rate***		

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***ES?-2-1STPT ES TO FWH 21B***								***Sorted By: Average Wear Rate***		
LPFW21B-2P1	31	10.030	8.296	168.4	227.620	75.3	26.000	7.137	0.000	50.17	HBD
LPFW21B-2N	30	6.695	5.531	168.4	227.620	75.3	26.000	7.137	0.000	50.17	HBD
LPFW21B-2P3	2	6.164	5.092	168.4	227.620	75.3	26.000	7.137	0.000	50.17	HBD
LPFW21B-2P5	2	6.164	5.092	168.4	227.620	75.3	26.000	7.137	0.000	50.17	HBD
LPFW21B-2P4	52	4.184	3.457	168.4	227.620	75.3	26.000	7.137	0.000	50.17	HBD
LPFW21B-2P2	61	3.406	5.972	168.4	227.620	75.3	26.000	7.137	0.000	50.17	HBD
===>Grouped by Line:	***ES?-2-1STPT ES TO FWH 21C***								***Sorted By: Average Wear Rate***		
LPFW21C-2P1	31	10.030	8.296	168.4	227.620	75.3	26.000	7.137	0.000	50.17	HBD
LPFW21C-2N	30	6.695	5.531	168.4	227.620	75.3	26.000	7.137	0.000	50.17	HBD
LPFW21C-2P3	2	6.164	5.092	168.4	227.620	75.3	26.000	7.137	0.000	50.17	HBD
LPFW21C-2P5	2	6.164	5.092	168.4	227.620	75.3	26.000	7.137	0.000	50.17	HBD
LPFW21C-2P4	52	4.184	3.457	168.4	227.620	75.3	26.000	7.137	0.000	50.17	HBD
LPFW21C-2P2	61	3.406	5.972	168.4	227.620	75.3	26.000	7.137	0.000	50.17	HBD
===>Grouped by Line:	***ES?-3-1STPT ES TO FWH 21A***								***Sorted By: Average Wear Rate***		
LPFW21A-3P1	31	10.030	8.296	168.4	227.620	75.3	26.000	7.137	0.000	50.17	HBD
LPFW21A-3N	30	6.695	5.531	168.4	227.620	75.3	26.000	7.137	0.000	50.17	HBD
LPFW21A-3P3	2	6.164	5.092	168.4	227.620	75.3	26.000	7.137	0.000	50.17	HBD
LPFW21A-3P5	2	6.164	5.092	168.4	227.620	75.3	26.000	7.137	0.000	50.17	HBD
LPFW21A-3P4	52	4.184	3.457	168.4	227.620	75.3	26.000	7.137	0.000	50.17	HBD
LPFW21A-3P2	61	3.406	5.972	168.4	227.620	75.3	26.000	7.137	0.000	50.17	HBD
===>Grouped by Line:	***ES?-3-1STPT ES TO FWH 21B***								***Sorted By: Average Wear Rate***		
LPFW21B-3P1	31	10.030	8.296	168.4	227.620	75.3	26.000	7.137	0.000	50.17	HBD
LPFW21B-3N	30	6.695	5.531	168.4	227.620	75.3	26.000	7.137	0.000	50.17	HBD
LPFW21B-3P3	2	6.164	5.092	168.4	227.620	75.3	26.000	7.137	0.000	50.17	HBD
LPFW21B-3P5	2	6.164	5.092	168.4	227.620	75.3	26.000	7.137	0.000	50.17	HBD
LPFW21B-3P4	52	4.184	3.457	168.4	227.620	75.3	26.000	7.137	0.000	50.17	HBD
LPFW21B-3P2	61	3.406	5.972	168.4	227.620	75.3	26.000	7.137	0.000	50.17	HBD
===>Grouped by Line:	***ES?-3-1STPT ES TO FWH 21C***								***Sorted By: Average Wear Rate***		
LPFW21C-3P1	31	10.030	8.296	168.4	227.620	75.3	26.000	7.137	0.000	50.17	HBD
LPFW21C-3N	30	6.695	5.531	168.4	227.620	75.3	26.000	7.137	0.000	50.17	HBD
LPFW21C-3P3	2	6.164	5.092	168.4	227.620	75.3	26.000	7.137	0.000	50.17	HBD
LPFW21C-3P5	2	6.164	5.092	168.4	227.620	75.3	26.000	7.137	0.000	50.17	HBD
LPFW21C-3P4	52	4.184	3.457	168.4	227.620	75.3	26.000	7.137	0.000	50.17	HBD
LPFW21C-3P2	61	3.406	5.972	168.4	227.620	75.3	26.000	7.137	0.000	50.17	HBD

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***ES?-4-1STPT ES TO FWH 21A***								***Sorted By: Average Wear Rate***		
LPFW21A-4P1	31	10.030	8.296	168.4	227.620	75.3	26.000	7.137	0.000	50.17	HBD
LPFW21A-4N	30	6.695	5.531	168.4	227.620	75.3	26.000	7.137	0.000	50.17	HBD
LPFW21A-4P2	1	5.280	4.360	168.4	227.620	75.3	26.000	7.137	0.000	50.17	HBD
LPFW21A-4P5	1	5.280	4.360	168.4	227.620	75.3	26.000	7.137	0.000	50.17	HBD
LPFW21A-4P3	51	3.682	3.042	168.4	227.620	75.3	26.000	7.137	0.000	50.17	HBD
LPFW21A-4P4	51	3.682	3.042	168.4	227.620	75.3	26.000	7.137	0.000	50.17	HBD
===>Grouped by Line:	***ES?-4-1STPT ES TO FWH 21B***								***Sorted By: Average Wear Rate***		
LPFW21B-4P1	31	10.030	8.296	168.4	227.620	75.3	26.000	7.137	0.000	50.17	HBD
LPFW21B-4N	30	6.695	5.531	168.4	227.620	75.3	26.000	7.137	0.000	50.17	HBD
LPFW21B-4P2	1	5.280	4.360	168.4	227.620	75.3	26.000	7.137	0.000	50.17	HBD
LPFW21B-4P5	1	5.280	4.360	168.4	227.620	75.3	26.000	7.137	0.000	50.17	HBD
LPFW21B-4P3	51	3.682	3.042	168.4	227.620	75.3	26.000	7.137	0.000	50.17	HBD
LPFW21B-4P4	51	3.682	3.042	168.4	227.620	75.3	26.000	7.137	0.000	50.17	HBD
===>Grouped by Line:	***ES?-4-1STPT ES TO FWH 21C***								***Sorted By: Average Wear Rate***		
LPFW21C-4P1	31	10.030	8.296	168.4	227.620	75.3	26.000	7.137	0.000	50.17	HBD
LPFW21C-4N	30	6.695	5.531	168.4	227.620	75.3	26.000	7.137	0.000	50.17	HBD
LPFW21C-4P2	1	5.280	4.360	168.4	227.620	75.3	26.000	7.137	0.000	50.17	HBD
LPFW21C-4P5	1	5.280	4.360	168.4	227.620	75.3	26.000	7.137	0.000	50.17	HBD
LPFW21C-4P3	51	3.682	3.042	168.4	227.620	75.3	26.000	7.137	0.000	50.17	HBD
LPFW21C-4P4	51	3.682	3.042	168.4	227.620	75.3	26.000	7.137	0.000	50.17	HBD

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).db

Wear Rate Report

Pass 1 Analysis Exclude Measured Wear

Report Date/Time: 7/6/2010 3:37:44PM
AnalysisDate/Time: 7/6/2010 3:15:42PM

CHECWORKS SFA Version: 3.0 SP-1 (build 109)
Duty Factor (Global) : 1.000

Run Name: 1ST POINT EXTRAC STM
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 1.000

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***ES?-1-1STPT ES TO FWH 21A***									***Sorted By: Flow Order***	
LPFW21A-1P1	31	10.030	8.296	168.4	227.620	75.3	26.000	7.137	0.000	50.17	HBD
LPFW21A-1P2	1	5.280	4.360	168.4	227.620	75.3	26.000	7.137	0.000	50.17	HBD
LPFW21A-1P3	51	3.682	3.042	168.4	227.620	75.3	26.000	7.137	0.000	50.17	HBD
LPFW21A-1P4	1	5.280	4.360	168.4	227.620	75.3	26.000	7.137	0.000	50.17	HBD
LPFW21A-1N	30	6.695	5.531	168.4	227.620	75.3	26.000	7.137	0.000	50.17	HBD
===>Grouped by Line:	***ES?-1-1STPT ES TO FWH 21B***									***Sorted By: Flow Order***	
LPFW21B-1P1	31	10.030	8.296	168.4	227.620	75.3	26.000	7.137	0.000	50.17	HBD
LPFW21B-1P2	1	5.280	4.360	168.4	227.620	75.3	26.000	7.137	0.000	50.17	HBD
LPFW21B-1P3	51	3.682	3.042	168.4	227.620	75.3	26.000	7.137	0.000	50.17	HBD
LPFW21B-1P4	1	5.280	4.360	168.4	227.620	75.3	26.000	7.137	0.000	50.17	HBD
LPFW21B-1N	30	6.695	5.531	168.4	227.620	75.3	26.000	7.137	0.000	50.17	HBD
===>Grouped by Line:	***ES?-1-1STPT ES TO FWH 21C***									***Sorted By: Flow Order***	
LPFW21C-1P1	31	10.030	8.296	168.4	227.620	75.3	26.000	7.137	0.000	50.17	HBD
LPFW21C-1P2	1	5.280	4.360	168.4	227.620	75.3	26.000	7.137	0.000	50.17	HBD
LPFW21C-1P3	51	3.682	3.042	168.4	227.620	75.3	26.000	7.137	0.000	50.17	HBD
LPFW21C-1P4	1	5.280	4.360	168.4	227.620	75.3	26.000	7.137	0.000	50.17	HBD
LPFW21C-1N	30	6.695	5.531	168.4	227.620	75.3	26.000	7.137	0.000	50.17	HBD
===>Grouped by Line:	***ES?-2-1STPT ES TO FWH 21A***									***Sorted By: Flow Order***	
LPFW21A-2P1	31	10.030	8.296	168.4	227.620	75.3	26.000	7.137	0.000	50.17	HBD
LPFW21A-2P2	61	3.406	5.972	168.4	227.620	75.3	26.000	7.137	0.000	50.17	HBD
LPFW21A-2P3	2	6.164	5.092	168.4	227.620	75.3	26.000	7.137	0.000	50.17	HBD
LPFW21A-2P4	52	4.184	3.457	168.4	227.620	75.3	26.000	7.137	0.000	50.17	HBD
LPFW21A-2P5	2	6.164	5.092	168.4	227.620	75.3	26.000	7.137	0.000	50.17	HBD
LPFW21A-2N	30	6.695	5.531	168.4	227.620	75.3	26.000	7.137	0.000	50.17	HBD
===>Grouped by Line:	***ES?-2-1STPT ES TO FWH 21B***									***Sorted By: Flow Order***	

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***ES?-2-1STPT ES TO FWH 21B***									***Sorted By: Flow Order***	
LPFW21B-2P1	31	10.030	8.296	168.4	227.620	75.3	26.000	7.137	0.000	50.17	HBD
LPFW21B-2P2	61	3.406	5.972	168.4	227.620	75.3	26.000	7.137	0.000	50.17	HBD
LPFW21B-2P3	2	6.164	5.092	168.4	227.620	75.3	26.000	7.137	0.000	50.17	HBD
LPFW21B-2P4	52	4.184	3.457	168.4	227.620	75.3	26.000	7.137	0.000	50.17	HBD
LPFW21B-2P5	2	6.164	5.092	168.4	227.620	75.3	26.000	7.137	0.000	50.17	HBD
LPFW21B-2N	30	6.695	5.531	168.4	227.620	75.3	26.000	7.137	0.000	50.17	HBD
===>Grouped by Line:	***ES?-2-1STPT ES TO FWH 21C***									***Sorted By: Flow Order***	
LPFW21C-2P1	31	10.030	8.296	168.4	227.620	75.3	26.000	7.137	0.000	50.17	HBD
LPFW21C-2P2	61	3.406	5.972	168.4	227.620	75.3	26.000	7.137	0.000	50.17	HBD
LPFW21C-2P3	2	6.164	5.092	168.4	227.620	75.3	26.000	7.137	0.000	50.17	HBD
LPFW21C-2P4	52	4.184	3.457	168.4	227.620	75.3	26.000	7.137	0.000	50.17	HBD
LPFW21C-2P5	2	6.164	5.092	168.4	227.620	75.3	26.000	7.137	0.000	50.17	HBD
LPFW21C-2N	30	6.695	5.531	168.4	227.620	75.3	26.000	7.137	0.000	50.17	HBD
===>Grouped by Line:	***ES?-3-1STPT ES TO FWH 21A***									***Sorted By: Flow Order***	
LPFW21A-3P1	31	10.030	8.296	168.4	227.620	75.3	26.000	7.137	0.000	50.17	HBD
LPFW21A-3P2	61	3.406	5.972	168.4	227.620	75.3	26.000	7.137	0.000	50.17	HBD
LPFW21A-3P3	2	6.164	5.092	168.4	227.620	75.3	26.000	7.137	0.000	50.17	HBD
LPFW21A-3P4	52	4.184	3.457	168.4	227.620	75.3	26.000	7.137	0.000	50.17	HBD
LPFW21A-3P5	2	6.164	5.092	168.4	227.620	75.3	26.000	7.137	0.000	50.17	HBD
LPFW21A-3N	30	6.695	5.531	168.4	227.620	75.3	26.000	7.137	0.000	50.17	HBD
===>Grouped by Line:	***ES?-3-1STPT ES TO FWH 21B***									***Sorted By: Flow Order***	
LPFW21B-3P1	31	10.030	8.296	168.4	227.620	75.3	26.000	7.137	0.000	50.17	HBD
LPFW21B-3P2	61	3.406	5.972	168.4	227.620	75.3	26.000	7.137	0.000	50.17	HBD
LPFW21B-3P3	2	6.164	5.092	168.4	227.620	75.3	26.000	7.137	0.000	50.17	HBD
LPFW21B-3P4	52	4.184	3.457	168.4	227.620	75.3	26.000	7.137	0.000	50.17	HBD
LPFW21B-3P5	2	6.164	5.092	168.4	227.620	75.3	26.000	7.137	0.000	50.17	HBD
LPFW21B-3N	30	6.695	5.531	168.4	227.620	75.3	26.000	7.137	0.000	50.17	HBD
===>Grouped by Line:	***ES?-3-1STPT ES TO FWH 21C***									***Sorted By: Flow Order***	
LPFW21C-3P1	31	10.030	8.296	168.4	227.620	75.3	26.000	7.137	0.000	50.17	HBD
LPFW21C-3P2	61	3.406	5.972	168.4	227.620	75.3	26.000	7.137	0.000	50.17	HBD
LPFW21C-3P3	2	6.164	5.092	168.4	227.620	75.3	26.000	7.137	0.000	50.17	HBD
LPFW21C-3P4	52	4.184	3.457	168.4	227.620	75.3	26.000	7.137	0.000	50.17	HBD
LPFW21C-3P5	2	6.164	5.092	168.4	227.620	75.3	26.000	7.137	0.000	50.17	HBD
LPFW21C-3N	30	6.695	5.531	168.4	227.620	75.3	26.000	7.137	0.000	50.17	HBD

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***ES?-4-1STPT ES TO FWH 21A***									***Sorted By: Flow Order***	
LPFW21A-4P1	31	10.030	8.296	168.4	227.620	75.3	26.000	7.137	0.000	50.17	HBD
LPFW21A-4P2	1	5.280	4.360	168.4	227.620	75.3	26.000	7.137	0.000	50.17	HBD
LPFW21A-4P3	51	3.682	3.042	168.4	227.620	75.3	26.000	7.137	0.000	50.17	HBD
LPFW21A-4P4	51	3.682	3.042	168.4	227.620	75.3	26.000	7.137	0.000	50.17	HBD
LPFW21A-4P5	1	5.280	4.360	168.4	227.620	75.3	26.000	7.137	0.000	50.17	HBD
LPFW21A-4N	30	6.695	5.531	168.4	227.620	75.3	26.000	7.137	0.000	50.17	HBD
===>Grouped by Line:	***ES?-4-1STPT ES TO FWH 21B***									***Sorted By: Flow Order***	
LPFW21B-4P1	31	10.030	8.296	168.4	227.620	75.3	26.000	7.137	0.000	50.17	HBD
LPFW21B-4P2	1	5.280	4.360	168.4	227.620	75.3	26.000	7.137	0.000	50.17	HBD
LPFW21B-4P3	51	3.682	3.042	168.4	227.620	75.3	26.000	7.137	0.000	50.17	HBD
LPFW21B-4P4	51	3.682	3.042	168.4	227.620	75.3	26.000	7.137	0.000	50.17	HBD
LPFW21B-4P5	1	5.280	4.360	168.4	227.620	75.3	26.000	7.137	0.000	50.17	HBD
LPFW21B-4N	30	6.695	5.531	168.4	227.620	75.3	26.000	7.137	0.000	50.17	HBD
===>Grouped by Line:	***ES?-4-1STPT ES TO FWH 21C***									***Sorted By: Flow Order***	
LPFW21C-4P1	31	10.030	8.296	168.4	227.620	75.3	26.000	7.137	0.000	50.17	HBD
LPFW21C-4P2	1	5.280	4.360	168.4	227.620	75.3	26.000	7.137	0.000	50.17	HBD
LPFW21C-4P3	51	3.682	3.042	168.4	227.620	75.3	26.000	7.137	0.000	50.17	HBD
LPFW21C-4P4	51	3.682	3.042	168.4	227.620	75.3	26.000	7.137	0.000	50.17	HBD
LPFW21C-4P5	1	5.280	4.360	168.4	227.620	75.3	26.000	7.137	0.000	50.17	HBD
LPFW21C-4N	30	6.695	5.531	168.4	227.620	75.3	26.000	7.137	0.000	50.17	HBD

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).db

Service Life Report

Pass 1 Analysis Exclude Measured Wear

Report Date/Time: 7/6/2010 3:37:44PM
AnalysisDate/Time: 7/6/2010 3:15:42PM

Run Name: 1ST POINT EXTRAC STM
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 1.000

CHECWORKS SFA Version: 3.0 SP-1 (build 109)
Duty Factor (Global) :1.000

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **ES?-1-1STPT ES TO FWH 21A**					***Sorted By:Remaining Life***		
LPFW21A-1P1	0.000	0.276	0.043	0.043	245,304	No	243,721
LPFW21A-1N	0.000	0.216	0.043	0.043	274,176	Yes	243,721
LPFW21A-1P4	0.000	0.264	0.043	0.043	443,575	Yes	243,721
LPFW21A-1P2	0.000	0.330	0.043	0.043	576,168	Yes	243,721
LPFW21A-1P3	0.000	0.253	0.043	0.043	602,829	Yes	243,721
===>Grouped by Line: **ES?-1-1STPT ES TO FWH 21B**					***Sorted By:Remaining Life***		
LPFW21B-1P1	0.000	0.096	0.043	0.043	55,622	No	243,721
LPFW21B-1N	0.000	0.189	0.043	0.043	230,392	No	243,721
LPFW21B-1P2	0.000	0.228	0.043	0.043	371,319	No	243,721
LPFW21B-1P4	0.000	0.228	0.043	0.043	371,319	No	243,721
LPFW21B-1P3	0.000	0.273	0.043	0.043	660,268	No	243,721
===>Grouped by Line: **ES?-1-1STPT ES TO FWH 21C**					***Sorted By:Remaining Life***		
LPFW21C-1P1	0.000	0.096	0.043	0.043	55,622	No	243,721
LPFW21C-1N	0.000	0.189	0.043	0.043	230,392	No	243,721
LPFW21C-1P2	0.000	0.228	0.043	0.043	371,319	No	243,721
LPFW21C-1P4	0.000	0.228	0.043	0.043	371,319	No	243,721
LPFW21C-1P3	0.000	0.273	0.043	0.043	660,268	No	243,721
===>Grouped by Line: **ES?-2-1STPT ES TO FWH 21A**					***Sorted By:Remaining Life***		
LPFW21A-2P1	0.000	0.296	0.043	0.043	266,423	Yes	243,721
LPFW21A-2N	0.000	0.238	0.043	0.043	309,021	Yes	243,721
LPFW21A-2P5	0.000	0.235	0.043	0.043	329,649	Yes	243,721
LPFW21A-2P2	0.000	0.313	0.043	0.043	395,411	Yes	243,721
LPFW21A-2P3	0.000	0.338	0.051	0.051	494,071	Yes	243,721
LPFW21A-2P4	0.000	0.247	0.043	0.043	516,877	Yes	243,721

Component Name	--------- Thickness (in) -------- Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line:	**ES?-2-1STPT ES TO FWH 21B**				***Sorted By:Remaining Life***		
LPFW21B-2P1	0.000	0.096	0.043	0.043	55,622	No	243,721
LPFW21B-2N	0.000	0.189	0.043	0.043	230,392	No	243,721
LPFW21B-2P3	0.000	0.204	0.051	0.051	262,891	No	243,721
LPFW21B-2P5	0.000	0.204	0.043	0.043	275,668	No	243,721
LPFW21B-2P2	0.000	0.280	0.043	0.043	347,564	No	243,721
LPFW21B-2P4	0.000	0.259	0.043	0.043	545,635	No	243,721
===>Grouped by Line:	**ES?-2-1STPT ES TO FWH 21C**				***Sorted By:Remaining Life***		
LPFW21C-2P1	0.000	0.096	0.043	0.043	55,622	No	243,721
LPFW21C-2N	0.000	0.189	0.043	0.043	230,392	No	243,721
LPFW21C-2P3	0.000	0.204	0.051	0.051	262,891	No	243,721
LPFW21C-2P5	0.000	0.204	0.043	0.043	275,668	No	243,721
LPFW21C-2P2	0.000	0.280	0.043	0.043	347,564	No	243,721
LPFW21C-2P4	0.000	0.259	0.043	0.043	545,635	No	243,721
===>Grouped by Line:	**ES?-3-1STPT ES TO FWH 21A**				***Sorted By:Remaining Life***		
LPFW21A-3P1	0.000	0.254	0.043	0.043	222,072	No	243,721
LPFW21A-3N	0.000	0.200	0.043	0.043	248,834	Yes	243,721
LPFW21A-3P5	0.000	0.216	0.043	0.043	296,962	Yes	243,721
LPFW21A-3P3	0.000	0.236	0.051	0.051	318,593	Yes	243,721
LPFW21A-3P2	0.000	0.327	0.043	0.043	415,945	Yes	243,721
LPFW21A-3P4	0.000	0.250	0.043	0.043	524,480	Yes	243,721
===>Grouped by Line:	**ES?-3-1STPT ES TO FWH 21B**				***Sorted By:Remaining Life***		
LPFW21B-3P1	0.000	0.096	0.043	0.043	55,622	No	243,721
LPFW21B-3N	0.000	0.189	0.043	0.043	230,392	No	243,721
LPFW21B-3P3	0.000	0.204	0.051	0.051	262,891	No	243,721
LPFW21B-3P5	0.000	0.204	0.043	0.043	275,668	No	243,721
LPFW21B-3P2	0.000	0.280	0.043	0.043	347,564	No	243,721
LPFW21B-3P4	0.000	0.259	0.043	0.043	545,635	No	243,721
===>Grouped by Line:	**ES?-3-1STPT ES TO FWH 21C**				***Sorted By:Remaining Life***		
LPFW21C-3P1	0.000	0.096	0.043	0.043	55,622	No	243,721
LPFW21C-3N	0.000	0.189	0.043	0.043	230,392	No	243,721
LPFW21C-3P3	0.000	0.204	0.051	0.051	262,891	No	243,721
LPFW21C-3P5	0.000	0.204	0.043	0.043	275,668	No	243,721
LPFW21C-3P2	0.000	0.280	0.043	0.043	347,564	No	243,721

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line:	**ES?-3-1STPT ES TO FWH 21C**				***Sorted By:Remaining Life***		
LPFW21C-3P4	0.000	0.259	0.043	0.043	545,635	No	243,721
===>Grouped by Line:	**ES?-4-1STPT ES TO FWH 21A**				***Sorted By:Remaining Life***		
LPFW21A-4P1	0.000	0.236	0.043	0.043	203,065	No	243,721
LPFW21A-4N	0.000	0.209	0.043	0.043	263,089	Yes	243,721
LPFW21A-4P5	0.000	0.233	0.043	0.043	381,297	Yes	243,721
LPFW21A-4P2	0.000	0.310	0.043	0.043	535,988	Yes	243,721
LPFW21A-4P3	0.000	0.230	0.043	0.043	536,595	Yes	243,721
LPFW21A-4P4	0.000	0.322	0.043	0.043	801,531	Yes	243,721
===>Grouped by Line:	**ES?-4-1STPT ES TO FWH 21B**				***Sorted By:Remaining Life***		
LPFW21B-4P1	0.000	0.096	0.043	0.043	55,622	No	243,721
LPFW21B-4N	0.000	0.189	0.043	0.043	230,392	No	243,721
LPFW21B-4P2	0.000	0.228	0.043	0.043	371,319	No	243,721
LPFW21B-4P5	0.000	0.228	0.043	0.043	371,319	No	243,721
LPFW21B-4P3	0.000	0.273	0.043	0.043	660,268	No	243,721
LPFW21B-4P4	0.000	0.273	0.043	0.043	660,268	No	243,721
===>Grouped by Line:	**ES?-4-1STPT ES TO FWH 21C**				***Sorted By:Remaining Life***		
LPFW21C-4P1	0.000	0.096	0.043	0.043	55,622	No	243,721
LPFW21C-4N	0.000	0.189	0.043	0.043	230,392	No	243,721
LPFW21C-4P2	0.000	0.228	0.043	0.043	371,319	No	243,721
LPFW21C-4P5	0.000	0.228	0.043	0.043	371,319	No	243,721
LPFW21C-4P3	0.000	0.273	0.043	0.043	660,268	No	243,721
LPFW21C-4P4	0.000	0.273	0.043	0.043	660,268	No	243,721

Note:
[1] Predictions are based on last Tmeas to analysis ending period.

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).db

Service Life Report

Pass 1 Analysis Exclude Measured Wear

Report Date/Time: 7/6/2010 3:37:44PM
AnalysisDate/Time: 7/6/2010 3:15:42PM

Run Name: 1ST POINT EXTRAC STM
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 1.000

CHECWORKS SFA Version: 3.0 SP-1 (build 109)
Duty Factor (Global) : 1.000

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **ES?-1-1STPT ES TO FWH 21A**					***Sorted By:Flow Order***		
LPFW21A-1P1	0.000	0.276	0.043	0.043	245,304	No	243,721
LPFW21A-1P2	0.000	0.330	0.043	0.043	576,168	Yes	243,721
LPFW21A-1P3	0.000	0.253	0.043	0.043	602,829	Yes	243,721
LPFW21A-1P4	0.000	0.264	0.043	0.043	443,575	Yes	243,721
LPFW21A-1N	0.000	0.216	0.043	0.043	274,176	Yes	243,721
===>Grouped by Line: **ES?-1-1STPT ES TO FWH 21B**					***Sorted By:Flow Order***		
LPFW21B-1P1	0.000	0.096	0.043	0.043	55,622	No	243,721
LPFW21B-1P2	0.000	0.228	0.043	0.043	371,319	No	243,721
LPFW21B-1P3	0.000	0.273	0.043	0.043	660,268	No	243,721
LPFW21B-1P4	0.000	0.228	0.043	0.043	371,319	No	243,721
LPFW21B-1N	0.000	0.189	0.043	0.043	230,392	No	243,721
===>Grouped by Line: **ES?-1-1STPT ES TO FWH 21C**					***Sorted By:Flow Order***		
LPFW21C-1P1	0.000	0.096	0.043	0.043	55,622	No	243,721
LPFW21C-1P2	0.000	0.228	0.043	0.043	371,319	No	243,721
LPFW21C-1P3	0.000	0.273	0.043	0.043	660,268	No	243,721
LPFW21C-1P4	0.000	0.228	0.043	0.043	371,319	No	243,721
LPFW21C-1N	0.000	0.189	0.043	0.043	230,392	No	243,721
===>Grouped by Line: **ES?-2-1STPT ES TO FWH 21A**					***Sorted By:Flow Order***		
LPFW21A-2P1	0.000	0.296	0.043	0.043	266,423	Yes	243,721
LPFW21A-2P2	0.000	0.313	0.043	0.043	395,411	Yes	243,721
LPFW21A-2P3	0.000	0.338	0.051	0.051	494,071	Yes	243,721
LPFW21A-2P4	0.000	0.247	0.043	0.043	516,877	Yes	243,721
LPFW21A-2P5	0.000	0.235	0.043	0.043	329,649	Yes	243,721
LPFW21A-2N	0.000	0.238	0.043	0.043	309,021	Yes	243,721

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line:	**ES?-2-1STPT ES TO FWH 21B**				***Sorted By:Flow Order***		
LPFW21B-2P1	0.000	0.096	0.043	0.043	55,622	No	243,721
LPFW21B-2P2	0.000	0.280	0.043	0.043	347,564	No	243,721
LPFW21B-2P3	0.000	0.204	0.051	0.051	262,891	No	243,721
LPFW21B-2P4	0.000	0.259	0.043	0.043	545,635	No	243,721
LPFW21B-2P5	0.000	0.204	0.043	0.043	275,668	No	243,721
LPFW21B-2N	0.000	0.189	0.043	0.043	230,392	No	243,721
===>Grouped by Line:	**ES?-2-1STPT ES TO FWH 21C**				***Sorted By:Flow Order***		
LPFW21C-2P1	0.000	0.096	0.043	0.043	55,622	No	243,721
LPFW21C-2P2	0.000	0.280	0.043	0.043	347,564	No	243,721
LPFW21C-2P3	0.000	0.204	0.051	0.051	262,891	No	243,721
LPFW21C-2P4	0.000	0.259	0.043	0.043	545,635	No	243,721
LPFW21C-2P5	0.000	0.204	0.043	0.043	275,668	No	243,721
LPFW21C-2N	0.000	0.189	0.043	0.043	230,392	No	243,721
===>Grouped by Line:	**ES?-3-1STPT ES TO FWH 21A**				***Sorted By:Flow Order***		
LPFW21A-3P1	0.000	0.254	0.043	0.043	222,072	No	243,721
LPFW21A-3P2	0.000	0.327	0.043	0.043	415,945	Yes	243,721
LPFW21A-3P3	0.000	0.236	0.051	0.051	318,593	Yes	243,721
LPFW21A-3P4	0.000	0.250	0.043	0.043	524,480	Yes	243,721
LPFW21A-3P5	0.000	0.216	0.043	0.043	296,962	Yes	243,721
LPFW21A-3N	0.000	0.200	0.043	0.043	248,834	Yes	243,721
===>Grouped by Line:	**ES?-3-1STPT ES TO FWH 21B**				***Sorted By:Flow Order***		
LPFW21B-3P1	0.000	0.096	0.043	0.043	55,622	No	243,721
LPFW21B-3P2	0.000	0.280	0.043	0.043	347,564	No	243,721
LPFW21B-3P3	0.000	0.204	0.051	0.051	262,891	No	243,721
LPFW21B-3P4	0.000	0.259	0.043	0.043	545,635	No	243,721
LPFW21B-3P5	0.000	0.204	0.043	0.043	275,668	No	243,721
LPFW21B-3N	0.000	0.189	0.043	0.043	230,392	No	243,721
===>Grouped by Line:	**ES?-3-1STPT ES TO FWH 21C**				***Sorted By:Flow Order***		
LPFW21C-3P1	0.000	0.096	0.043	0.043	55,622	No	243,721
LPFW21C-3P2	0.000	0.280	0.043	0.043	347,564	No	243,721
LPFW21C-3P3	0.000	0.204	0.051	0.051	262,891	No	243,721
LPFW21C-3P4	0.000	0.259	0.043	0.043	545,635	No	243,721
LPFW21C-3P5	0.000	0.204	0.043	0.043	275,668	No	243,721

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line:	**ES?-3-1STPT ES TO FWH 21C**				***Sorted By:Flow Order***		
LPFW21C-3N	0.000	0.189	0.043	0.043	230,392	No	243,721
===>Grouped by Line:	**ES?-4-1STPT ES TO FWH 21A**				***Sorted By:Flow Order***		
LPFW21A-4P1	0.000	0.236	0.043	0.043	203,065	No	243,721
LPFW21A-4P2	0.000	0.310	0.043	0.043	535,988	Yes	243,721
LPFW21A-4P3	0.000	0.230	0.043	0.043	536,595	Yes	243,721
LPFW21A-4P4	0.000	0.322	0.043	0.043	801,531	Yes	243,721
LPFW21A-4P5	0.000	0.233	0.043	0.043	381,297	Yes	243,721
LPFW21A-4N	0.000	0.209	0.043	0.043	263,089	Yes	243,721
===>Grouped by Line:	**ES?-4-1STPT ES TO FWH 21B**				***Sorted By:Flow Order***		
LPFW21B-4P1	0.000	0.096	0.043	0.043	55,622	No	243,721
LPFW21B-4P2	0.000	0.228	0.043	0.043	371,319	No	243,721
LPFW21B-4P3	0.000	0.273	0.043	0.043	660,268	No	243,721
LPFW21B-4P4	0.000	0.273	0.043	0.043	660,268	No	243,721
LPFW21B-4P5	0.000	0.228	0.043	0.043	371,319	No	243,721
LPFW21B-4N	0.000	0.189	0.043	0.043	230,392	No	243,721
===>Grouped by Line:	**ES?-4-1STPT ES TO FWH 21C**				***Sorted By:Flow Order***		
LPFW21C-4P1	0.000	0.096	0.043	0.043	55,622	No	243,721
LPFW21C-4P2	0.000	0.228	0.043	0.043	371,319	No	243,721
LPFW21C-4P3	0.000	0.273	0.043	0.043	660,268	No	243,721
LPFW21C-4P4	0.000	0.273	0.043	0.043	660,268	No	243,721
LPFW21C-4P5	0.000	0.228	0.043	0.043	371,319	No	243,721
LPFW21C-4N	0.000	0.189	0.043	0.043	230,392	No	243,721

Note:
[1] Predictions are based on last Tmeas to analysis ending period.

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).db

Wear Rate Report

Pass 1 Analysis Exclude Measured Wear

Report Date/Time: 7/6/2010 3:38:15PM
AnalysisDate/Time: 7/6/2010 3:15:53PM

CHECWORKS SFA Version: 3.0 SP-1 (build 109)

Duty Factor (Global) : 1.000

Run Name: 2ND POINT EXTRAC STM
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 1.000

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***ES?-1-2NDPT ES TO FWH 22A***								***Sorted By: Average Wear Rate***		
LPFW22A-1P1	31	0.050	0.050	211.5	183.157	78.0	22.000	7.153	0.000	54.21	HBD
LPFW22A-1N	30	0.028	0.028	211.5	183.157	78.0	22.000	7.153	0.000	54.21	HBD
LPFW22A-1P2	3	0.023	0.023	211.5	183.157	78.0	22.000	7.153	0.000	54.21	HBD
LPFW22A-1P5	1	0.022	0.022	211.5	183.157	78.0	22.000	7.153	0.000	54.21	HBD
LPFW22A-1P3	53	0.021	0.021	211.5	183.157	78.0	22.000	7.153	0.000	54.21	HBD
LPFW22A-1P4	53	0.021	0.021	211.5	183.157	78.0	22.000	7.153	0.000	54.21	HBD
===>Grouped by Line:	***ES?-1-2NDPT ES TO FWH 22B***								***Sorted By: Average Wear Rate***		
LPFW22B-1P1	31	0.042	0.042	211.5	183.157	78.0	22.000	7.153	0.000	54.21	HBD
LPFW22B-1N	30	0.028	0.028	211.5	183.157	78.0	22.000	7.153	0.000	54.21	HBD
LPFW22B-1P2	3	0.023	0.023	211.5	183.157	78.0	22.000	7.153	0.000	54.21	HBD
LPFW22B-1P5	1	0.022	0.022	211.5	183.157	78.0	22.000	7.153	0.000	54.21	HBD
LPFW22B-1P3	53	0.021	0.021	211.5	183.157	78.0	22.000	7.153	0.000	54.21	HBD
LPFW22B-1P4	53	0.021	0.021	211.5	183.157	78.0	22.000	7.153	0.000	54.21	HBD
===>Grouped by Line:	***ES?-1-2NDPT ES TO FWH 22C***								***Sorted By: Average Wear Rate***		
LPFW22C-1P1	31	0.042	0.042	211.5	183.157	78.0	22.000	7.153	0.000	54.21	HBD
LPFW22C-1N	30	0.028	0.028	211.5	183.157	78.0	22.000	7.153	0.000	54.21	HBD
LPFW22C-1E	2	0.026	0.026	211.5	183.157	78.0	22.000	7.153	0.000	54.21	HBD
LPFW22C-1P4	3	0.023	0.023	211.5	183.157	78.0	22.000	7.153	0.000	54.21	HBD
LPFW22C-1P2	52	0.017	0.017	211.5	183.157	78.0	22.000	7.153	0.000	54.21	HBD
LPFW22C-1P3	52	0.017	0.017	211.5	183.157	78.0	22.000	7.153	0.000	54.21	HBD
===>Grouped by Line:	***ES?-2-2NDPT ES TO FWH 22A***								***Sorted By: Average Wear Rate***		
LPFW22A-2P1	31	0.042	0.042	211.5	183.157	78.0	22.000	7.153	0.000	54.21	HBD
LPFW22A-2N	30	0.028	0.028	211.5	183.157	78.0	22.000	7.153	0.000	54.21	HBD
LPFW22A-2P2	3	0.023	0.023	211.5	183.157	78.0	22.000	7.153	0.000	54.21	HBD
===>Grouped by Line:	***ES?-2-2NDPT ES TO FWH 22B***								***Sorted By: Average Wear Rate***		

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***ES?-2-2NDPT ES TO FWH 22B***								***Sorted By: Average Wear Rate***		
LPFW22B-2P1	31	0.042	0.042	211.5	183.157	78.0	22.000	7.153	0.000	54.21	HBD
LPFW22B-2N	30	0.028	0.028	211.5	183.157	78.0	22.000	7.153	0.000	54.21	HBD
LPFW22B-2P2	3	0.023	0.023	211.5	183.157	78.0	22.000	7.153	0.000	54.21	HBD
LPFW22B-2P3	53	0.019	0.019	211.5	212.492	78.0	22.000	7.153	0.000	54.21	HBD
===>Grouped by Line:	***ES?-2-2NDPT ES TO FWH 22C***								***Sorted By: Average Wear Rate***		
LPFW22C-2P1	31	0.042	0.042	211.5	183.157	78.0	22.000	7.153	0.000	54.21	HBD
LPFW22C-2N	30	0.028	0.028	211.5	183.157	78.0	22.000	7.153	0.000	54.21	HBD
LPFW22C-2P2	3	0.023	0.023	211.5	183.157	78.0	22.000	7.153	0.000	54.21	HBD

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).db

Wear Rate Report

Pass 1 Analysis Exclude Measured Wear

Report Date/Time: 7/6/2010 3:37:44PM
AnalysisDate/Time: 7/6/2010 3:15:53PM

CHECWORKS SFA Version: 3.0 SP-1 (build 109)
Duty Factor (Global) : 1.000

Run Name: 2ND POINT EXTRAC STM
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 1.000

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***ES?-1-2NDPT ES TO FWH 22A***									***Sorted By: Flow Order***	
LPFW22A-1P1	31	0.050	0.050	211.5	183.157	78.0	22.000	7.153	0.000	54.21	HBD
LPFW22A-1P2	3	0.023	0.023	211.5	183.157	78.0	22.000	7.153	0.000	54.21	HBD
LPFW22A-1P3	53	0.021	0.021	211.5	183.157	78.0	22.000	7.153	0.000	54.21	HBD
LPFW22A-1P4	53	0.021	0.021	211.5	183.157	78.0	22.000	7.153	0.000	54.21	HBD
LPFW22A-1P5	1	0.022	0.022	211.5	183.157	78.0	22.000	7.153	0.000	54.21	HBD
LPFW22A-1N	30	0.028	0.028	211.5	183.157	78.0	22.000	7.153	0.000	54.21	HBD
===>Grouped by Line:	***ES?-1-2NDPT ES TO FWH 22B***									***Sorted By: Flow Order***	
LPFW22B-1P1	31	0.042	0.042	211.5	183.157	78.0	22.000	7.153	0.000	54.21	HBD
LPFW22B-1P2	3	0.023	0.023	211.5	183.157	78.0	22.000	7.153	0.000	54.21	HBD
LPFW22B-1P3	53	0.021	0.021	211.5	183.157	78.0	22.000	7.153	0.000	54.21	HBD
LPFW22B-1P4	53	0.021	0.021	211.5	183.157	78.0	22.000	7.153	0.000	54.21	HBD
LPFW22B-1P5	1	0.022	0.022	211.5	183.157	78.0	22.000	7.153	0.000	54.21	HBD
LPFW22B-1N	30	0.028	0.028	211.5	183.157	78.0	22.000	7.153	0.000	54.21	HBD
===>Grouped by Line:	***ES?-1-2NDPT ES TO FWH 22C***									***Sorted By: Flow Order***	
LPFW22C-1P1	31	0.042	0.042	211.5	183.157	78.0	22.000	7.153	0.000	54.21	HBD
LPFW22C-1E	2	0.026	0.026	211.5	183.157	78.0	22.000	7.153	0.000	54.21	HBD
LPFW22C-1P2	52	0.017	0.017	211.5	183.157	78.0	22.000	7.153	0.000	54.21	HBD
LPFW22C-1P3	52	0.017	0.017	211.5	183.157	78.0	22.000	7.153	0.000	54.21	HBD
LPFW22C-1P4	3	0.023	0.023	211.5	183.157	78.0	22.000	7.153	0.000	54.21	HBD
LPFW22C-1N	30	0.028	0.028	211.5	183.157	78.0	22.000	7.153	0.000	54.21	HBD
===>Grouped by Line:	***ES?-2-2NDPT ES TO FWH 22A***									***Sorted By: Flow Order***	
LPFW22A-2P1	31	0.042	0.042	211.5	183.157	78.0	22.000	7.153	0.000	54.21	HBD
LPFW22A-2P2	3	0.023	0.023	211.5	183.157	78.0	22.000	7.153	0.000	54.21	HBD
LPFW22A-2N	30	0.028	0.028	211.5	183.157	78.0	22.000	7.153	0.000	54.21	HBD
===>Grouped by Line:	***ES?-2-2NDPT ES TO FWH 22B***									***Sorted By: Flow Order***	

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***ES?-2-2NDPT ES TO FWH 22B***									***Sorted By: Flow Order***	
LPFW22B-2P1	31	0.042	0.042	211.5	183.157	78.0	22.000	7.153	0.000	54.21	HBD
LPFW22B-2P2	3	0.023	0.023	211.5	183.157	78.0	22.000	7.153	0.000	54.21	HBD
LPFW22B-2P3	53	0.019	0.019	211.5	212.492	78.0	22.000	7.153	0.000	54.21	HBD
LPFW22B-2N	30	0.028	0.028	211.5	183.157	78.0	22.000	7.153	0.000	54.21	HBD
===>Grouped by Line:	***ES?-2-2NDPT ES TO FWH 22C***									***Sorted By: Flow Order***	
LPFW22C-2P1	31	0.042	0.042	211.5	183.157	78.0	22.000	7.153	0.000	54.21	HBD
LPFW22C-2P2	3	0.023	0.023	211.5	183.157	78.0	22.000	7.153	0.000	54.21	HBD
LPFW22C-2N	30	0.028	0.028	211.5	183.157	78.0	22.000	7.153	0.000	54.21	HBD

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).db

Service Life Report

Pass 1 Analysis Exclude Measured Wear

Report Date/Time: 7/6/2010 3:37:44PM
AnalysisDate/Time: 7/6/2010 3:15:53PM

Run Name: 2ND POINT EXTRAC STM
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 1.000

CHECWORKS SFA Version: 3.0 SP-1 (build 109)
Duty Factor (Global) :1.000

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **ES?-1-2NDPT ES TO FWH 22A**					***Sorted By:Remaining Life***		
LPFW22A-1P1	0.000	0.375	0.037	0.037	59,438,048	No	33,915
LPFW22A-1N	0.000	0.375	0.037	0.037	106,761,360	No	33,915
LPFW22A-1P2	0.000	0.375	0.037	0.037	127,684,920	No	33,915
LPFW22A-1P5	0.000	0.375	0.037	0.037	135,425,456	No	33,915
LPFW22A-1P4	0.000	0.375	0.037	0.037	142,370,800	No	33,915
LPFW22A-1P3	0.000	0.375	0.037	0.037	142,370,800	No	33,915
===>Grouped by Line: **ES?-1-2NDPT ES TO FWH 22B**					***Sorted By:Remaining Life***		
LPFW22B-1P1	0.000	0.375	0.037	0.037	71,168,448	No	33,915
LPFW22B-1N	0.000	0.375	0.037	0.037	106,761,360	No	33,915
LPFW22B-1P2	0.000	0.375	0.037	0.037	127,684,920	No	33,915
LPFW22B-1P5	0.000	0.375	0.037	0.037	135,425,456	No	33,915
LPFW22B-1P3	0.000	0.375	0.037	0.037	142,370,800	No	33,915
LPFW22B-1P4	0.000	0.375	0.037	0.037	142,370,800	No	33,915
===>Grouped by Line: **ES?-1-2NDPT ES TO FWH 22C**					***Sorted By:Remaining Life***		
LPFW22C-1P1	0.000	0.375	0.037	0.037	71,152,280	No	49,952
LPFW22C-1N	0.000	0.375	0.037	0.037	106,745,192	No	49,952
LPFW22C-1E	0.000	0.375	0.037	0.037	115,949,904	No	49,952
LPFW22C-1P4	0.000	0.375	0.037	0.037	127,668,752	No	49,952
LPFW22C-1P2	0.000	0.375	0.037	0.037	170,822,368	No	49,952
LPFW22C-1P3	0.000	0.375	0.037	0.037	170,822,368	No	49,952
===>Grouped by Line: **ES?-2-2NDPT ES TO FWH 22A**					***Sorted By:Remaining Life***		
LPFW22A-2P1	0.000	0.375	0.037	0.037	71,168,448	No	33,915
LPFW22A-2N	0.000	0.375	0.037	0.037	106,761,360	No	33,915
LPFW22A-2P2	0.000	0.375	0.037	0.037	127,684,920	No	33,915

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **ES?-2-2NDPT ES TO FWH 22B**					***Sorted By:Remaining Life***		
LPFW22B-2P1	0.000	0.375	0.037	0.037	71,168,448	No	33,915
LPFW22B-2N	0.000	0.375	0.037	0.037	106,761,360	No	33,915
LPFW22B-2P2	0.000	0.375	0.037	0.037	127,684,920	No	33,915
LPFW22B-2P3	0.000	0.375	0.037	0.037	158,563,616	No	33,915
===>Grouped by Line: **ES?-2-2NDPT ES TO FWH 22C**					***Sorted By:Remaining Life***		
LPFW22C-2P1	0.000	0.375	0.037	0.037	71,152,280	No	49,952
LPFW22C-2N	0.000	0.375	0.037	0.037	106,745,192	No	49,952
LPFW22C-2P2	0.000	0.375	0.037	0.037	127,668,752	No	49,952

Note:
[1] Predictions are based on last Tmeas to analysis ending period.

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).db

Service Life Report

Pass 1 Analysis Exclude Measured Wear

Report Date/Time: 7/6/2010 3:37:44PM
AnalysisDate/Time: 7/6/2010 3:15:53PM

Run Name: 2ND POINT EXTRAC STM
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 1.000

CHECWORKS SFA Version: 3.0 SP-1 (build 109)
Duty Factor (Global) : 1.000

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **ES?-1-2NDPT ES TO FWH 22A**					***Sorted By:Flow Order***		
LPFW22A-1P1	0.000	0.375	0.037	0.037	59,438,048	No	33,915
LPFW22A-1P2	0.000	0.375	0.037	0.037	127,684,920	No	33,915
LPFW22A-1P3	0.000	0.375	0.037	0.037	142,370,800	No	33,915
LPFW22A-1P4	0.000	0.375	0.037	0.037	142,370,800	No	33,915
LPFW22A-1P5	0.000	0.375	0.037	0.037	135,425,456	No	33,915
LPFW22A-1N	0.000	0.375	0.037	0.037	106,761,360	No	33,915
===>Grouped by Line: **ES?-1-2NDPT ES TO FWH 22B**					***Sorted By:Flow Order***		
LPFW22B-1P1	0.000	0.375	0.037	0.037	71,168,448	No	33,915
LPFW22B-1P2	0.000	0.375	0.037	0.037	127,684,920	No	33,915
LPFW22B-1P3	0.000	0.375	0.037	0.037	142,370,800	No	33,915
LPFW22B-1P4	0.000	0.375	0.037	0.037	142,370,800	No	33,915
LPFW22B-1P5	0.000	0.375	0.037	0.037	135,425,456	No	33,915
LPFW22B-1N	0.000	0.375	0.037	0.037	106,761,360	No	33,915
===>Grouped by Line: **ES?-1-2NDPT ES TO FWH 22C**					***Sorted By:Flow Order***		
LPFW22C-1P1	0.000	0.375	0.037	0.037	71,152,280	No	49,952
LPFW22C-1E	0.000	0.375	0.037	0.037	115,949,904	No	49,952
LPFW22C-1P2	0.000	0.375	0.037	0.037	170,822,368	No	49,952
LPFW22C-1P3	0.000	0.375	0.037	0.037	170,822,368	No	49,952
LPFW22C-1P4	0.000	0.375	0.037	0.037	127,668,752	No	49,952
LPFW22C-1N	0.000	0.375	0.037	0.037	106,745,192	No	49,952
===>Grouped by Line: **ES?-2-2NDPT ES TO FWH 22A**					***Sorted By:Flow Order***		
LPFW22A-2P1	0.000	0.375	0.037	0.037	71,168,448	No	33,915
LPFW22A-2P2	0.000	0.375	0.037	0.037	127,684,920	No	33,915
LPFW22A-2N	0.000	0.375	0.037	0.037	106,761,360	No	33,915

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **ES?-2-2NDPT ES TO FWH 22B**					***Sorted By:Flow Order***		
LPFW22B-2P1	0.000	0.375	0.037	0.037	71,168,448	No	33,915
LPFW22B-2P2	0.000	0.375	0.037	0.037	127,684,920	No	33,915
LPFW22B-2P3	0.000	0.375	0.037	0.037	158,563,616	No	33,915
LPFW22B-2N	0.000	0.375	0.037	0.037	106,761,360	No	33,915
===>Grouped by Line: **ES?-2-2NDPT ES TO FWH 22C**					***Sorted By:Flow Order***		
LPFW22C-2P1	0.000	0.375	0.037	0.037	71,152,280	No	49,952
LPFW22C-2P2	0.000	0.375	0.037	0.037	127,668,752	No	49,952
LPFW22C-2N	0.000	0.375	0.037	0.037	106,745,192	No	49,952

Note:
[1] Predictions are based on last Tmeas to analysis ending period.

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).db

Wear Rate Report

Pass 1 Analysis Exclude Measured Wear

Report Date/Time: 7/6/2010 3:38:15PM
AnalysisDate/Time: 7/6/2010 3:16:32PM

CHECWORKS SFA Version: 3.0 SP-1 (build 109)

Duty Factor (Global) : 1.000

Run Name: 3RD POINT EXTRAC STM
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 1.000

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***ES1-1-3RDPT ES to FWH 23A***								***Sorted By: Average Wear Rate***		
3EXA-18N	31	11.617	5.405	261.1	8.129	92.3	20.000	7.288	0.000	112.00	HBD
3EXA-15 (BR/SE)	10	7.745	3.604	261.1	8.129	92.3	20.000	7.288	0.000	112.00	HBD
3EXA-15 (D/S)	10	7.673	3.808	261.1	0.357	92.3	28.000	7.288	0.000	112.00	HBD
3EXA-16	2	7.672	3.569	261.1	8.129	92.3	20.000	7.288	0.000	112.00	HBD
3EXA-18	3	6.477	3.013	261.1	8.129	92.3	20.000	7.288	0.000	112.00	HBD
3EXA-17	3	6.477	3.013	261.1	8.129	92.3	20.000	7.288	0.000	112.00	HBD
3EXA-17P	53	5.808	2.702	261.1	8.129	92.3	20.000	7.288	0.000	112.00	HBD
3EXA-18X	6	3.887	1.919	261.1	19.167	92.3	20.000	7.288	0.000	112.00	HBD
3EXA-16P	52	2.836	1.400	261.1	15.526	92.3	20.000	7.288	0.000	112.00	HBD
3EXA-15P	60	2.780	1.379	261.1	0.357	92.3	28.000	7.288	0.000	112.00	HBD
===>Grouped by Line:	***ES1-2-3RDPT ES to FWH 23A***								***Sorted By: Average Wear Rate***		
3EXA-22N	31	11.617	5.405	261.1	8.129	92.3	20.000	7.288	0.000	112.00	HBD
3EXA-19	2	7.131	3.318	261.1	8.129	92.3	20.000	7.288	0.000	112.00	HBD
3EXA-22	3	6.477	3.013	261.1	8.129	92.3	20.000	7.288	0.000	112.00	HBD
3EXA-21	3	6.477	3.013	261.1	8.129	92.3	20.000	7.288	0.000	112.00	HBD
3EXA-20	3	6.477	3.013	261.1	8.129	92.3	20.000	7.288	0.000	112.00	HBD
3EXA-21P	53	5.808	2.702	261.1	8.129	92.3	20.000	7.288	0.000	112.00	HBD
3EXA-20P	53	5.808	2.702	261.1	8.129	92.3	20.000	7.288	0.000	112.00	HBD
3EXA-22X	6	3.887	1.919	261.1	19.167	92.3	20.000	7.288	0.000	112.00	HBD
3EXA-19P	52	2.836	1.400	261.1	15.526	92.3	20.000	7.288	0.000	112.00	HBD
===>Grouped by Line:	***ES1-3-3RDPT ES to FWH 23A***								***Sorted By: Average Wear Rate***		
3EXA-14 (D/S)	12	14.037	6.576	261.1	6.461	92.3	28.000	7.288	0.000	112.00	HBD
3EXA-VALVE 3EX-2	25	10.276	4.814	261.1	6.461	92.3	28.000	7.288	0.000	112.00	HBD
3EXA-14	12	10.031	4.979	261.1	0.357	92.3	28.000	7.288	0.000	112.00	HBD
3EXA-9	4	8.445	3.958	261.1	6.822	92.3	28.000	7.288	0.000	112.00	HBD

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***ES1-3-3RDPT ES to FWH 23A***								***Sorted By: Average Wear Rate***		
3EXA-8	4	8.441	3.955	261.1	6.884	92.3	28.000	7.288	0.000	112.00	HBD
3EXA-14 (BR/SE)	12	8.426	3.920	261.1	8.129	92.3	20.000	7.288	0.000	112.00	HBD
3EXA-8P	54	8.219	3.850	261.1	6.461	92.3	28.000	7.288	0.000	112.00	HBD
3EXA-7P	54	8.219	3.850	261.1	6.461	92.3	28.000	7.288	0.000	112.00	HBD
3EXA-10	2	7.853	3.680	261.1	6.808	92.3	28.000	7.288	0.000	112.00	HBD
3EXA-VALVE 3EX-1	22	7.784	3.645	261.1	14.172	92.3	28.000	7.288	0.000	112.00	HBD
3EXA-12P	58	3.764	1.764	261.1	6.548	92.3	28.000	7.288	0.000	112.00	HBD
3EXA-13P	58	3.763	1.763	261.1	6.563	92.3	28.000	7.288	0.000	112.00	HBD
3EXA-9P	52	2.731	1.348	261.1	15.783	92.3	28.000	7.288	0.000	112.00	HBD
3EXA-14P US	62	2.571	1.204	261.1	6.461	92.3	28.000	7.288	0.000	112.00	HBD
3EXA-14P DS	62	2.571	1.204	261.1	6.461	92.3	28.000	7.288	0.000	112.00	HBD
3EXA-14P DS1	62	2.563	1.201	261.1	6.696	92.3	28.000	7.288	0.000	112.00	HBD
3EXA-4	14	0.033	0.030	261.1	6.461	92.3	28.000	7.288	0.000	112.00	HBD
3EXA-4 (D/S)	14	0.025	0.023	261.1	0.357	92.3	28.000	7.288	0.000	112.00	HBD
3EXA-7	2	0.016	0.015	261.1	6.461	92.3	28.000	7.288	0.000	112.00	HBD
3EXA-6	2	0.016	0.015	261.1	6.461	92.3	28.000	7.288	0.000	112.00	HBD
3EXA-5	4	0.016	0.015	261.1	6.461	92.3	28.000	7.288	0.000	112.00	HBD
3EXA-4P US	54	0.014	0.013	261.1	6.461	92.3	28.000	7.288	0.000	112.00	HBD
3EXA-4 (BR/SE)	14	0.011	0.010	261.1	8.129	92.3	20.000	7.288	0.000	112.00	HBD
3EXA-6P DS	52	0.009	0.008	261.1	6.461	92.3	28.000	7.288	0.000	112.00	HBD
3EXA-5P	52	0.005	0.004	261.1	15.708	92.3	28.000	7.288	0.000	112.00	HBD
===>Grouped by Line:	***ES1-4-3RDPT ES to FWH 23A***								***Sorted By: Average Wear Rate***		
3EXA-1N	30	7.745	3.604	261.1	8.129	92.3	20.000	7.288	0.000	112.00	HBD
3EXA-1	2	0.014	0.013	261.1	8.129	92.3	20.000	7.288	0.000	112.00	HBD
3EXA-1P	64	0.006	0.006	261.1	8.294	92.3	20.000	7.288	0.000	112.00	HBD
3EXA-1A	64	0.006	0.006	261.1	8.294	92.3	20.000	7.288	0.000	112.00	HBD
===>Grouped by Line:	***ES1-5-3RDPT ES to FWH 23A***								***Sorted By: Average Wear Rate***		
3EXA-2N	30	7.745	3.604	261.1	8.129	92.3	20.000	7.288	0.000	112.00	HBD
3EXA-2	2	7.131	3.318	261.1	8.129	92.3	20.000	7.288	0.000	112.00	HBD
3EXA-2A	54	7.118	3.320	261.1	9.132	92.3	20.000	7.288	0.000	112.00	HBD
3EXA-2P	54	5.688	3.407	261.1	8.294	92.3	20.000	7.288	0.000	112.00	HBD
3EXA-3	4	5.411	3.239	261.1	8.847	92.3	20.000	7.288	0.000	112.00	HBD
3EXA-11RP	67	2.954	2.522	261.1	8.129	92.3	20.000	7.288	0.000	112.00	HBD
3EXA-11R (D/S)	7	0.013	0.012	261.1	8.129	92.3	20.000	7.288	0.000	112.00	HBD

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***ES1-5-3RDPT ES to FWH 23A***								***Sorted By: Average Wear Rate***		
3EXA-11R	7	0.010	0.009	261.1	0.357	92.3	28.000	7.288	0.000	112.00	HBD
===>Grouped by Line:	***ES2-1-3RDPT ES to FWH 23B***								***Sorted By: Average Wear Rate***		
3EXB-14N	31	11.617	5.405	261.1	8.129	92.3	20.000	7.288	0.000	112.00	HBD
3EXB-11 (BR/SE)	10	7.745	3.604	261.1	8.129	92.3	20.000	7.288	0.000	112.00	HBD
3EXB-11 (D/S)	10	7.673	3.808	261.1	0.357	92.3	28.000	7.288	0.000	112.00	HBD
3EXB-12	2	7.672	3.569	261.1	8.129	92.3	20.000	7.288	0.000	112.00	HBD
3EXB-14	3	6.477	3.013	261.1	8.129	92.3	20.000	7.288	0.000	112.00	HBD
3EXB-13	3	6.477	3.013	261.1	8.129	92.3	20.000	7.288	0.000	112.00	HBD
3EXB-13P	53	5.808	2.702	261.1	8.129	92.3	20.000	7.288	0.000	112.00	HBD
3EXB-14X	6	3.887	1.919	261.1	19.167	92.3	20.000	7.288	0.000	112.00	HBD
3EXB-12P	52	2.836	1.400	261.1	15.526	92.3	20.000	7.288	0.000	112.00	HBD
3EXB-11P	60	2.780	1.379	261.1	0.357	92.3	28.000	7.288	0.000	112.00	HBD
===>Grouped by Line:	***ES2-2-3RDPT ES to FWH 23B***								***Sorted By: Average Wear Rate***		
3EXB-18N	31	11.617	5.405	261.1	8.129	92.3	20.000	7.288	0.000	112.00	HBD
3EXB-15	2	7.131	3.318	261.1	8.129	92.3	20.000	7.288	0.000	112.00	HBD
3EXB-18	3	6.477	3.013	261.1	8.129	92.3	20.000	7.288	0.000	112.00	HBD
3EXB-17	3	6.477	3.013	261.1	8.129	92.3	20.000	7.288	0.000	112.00	HBD
3EXB-16	3	6.477	3.013	261.1	8.129	92.3	20.000	7.288	0.000	112.00	HBD
3EXB-17P	53	5.808	2.702	261.1	8.129	92.3	20.000	7.288	0.000	112.00	HBD
3EXB-16P	53	5.808	2.702	261.1	8.129	92.3	20.000	7.288	0.000	112.00	HBD
3EXB-18X	6	3.887	1.919	261.1	19.167	92.3	20.000	7.288	0.000	112.00	HBD
3EXB-15P	52	2.836	1.400	261.1	15.526	92.3	20.000	7.288	0.000	112.00	HBD
===>Grouped by Line:	***ES2-3-3RDPT ES to FWH 23B***								***Sorted By: Average Wear Rate***		
3EXB-4	14	16.478	7.720	261.1	6.461	92.3	28.000	7.288	0.000	112.00	HBD
3EXB-10 (D/S)	12	14.037	6.576	261.1	6.461	92.3	28.000	7.288	0.000	112.00	HBD
3EXB-4 (D/S)	14	11.784	5.849	261.1	0.357	92.3	28.000	7.288	0.000	112.00	HBD
3EXB-VALVE 3EX-4	25	10.276	4.814	261.1	6.461	92.3	28.000	7.288	0.000	112.00	HBD
3EXB-10	12	10.031	4.979	261.1	0.357	92.3	28.000	7.288	0.000	112.00	HBD
3EXB-10 (BR/SE)	12	8.426	3.920	261.1	8.129	92.3	20.000	7.288	0.000	112.00	HBD
3EXB-4A DS	54	8.219	3.850	261.1	6.461	92.3	28.000	7.288	0.000	112.00	HBD
3EXB-4A US	54	8.213	3.848	261.1	6.515	92.3	28.000	7.288	0.000	112.00	HBD
3EXB-6	2	7.883	3.693	261.1	6.461	92.3	28.000	7.288	0.000	112.00	HBD
3EXB-5	4	7.851	3.680	261.1	6.812	92.3	28.000	7.288	0.000	112.00	HBD
3EXB-9	2	7.850	3.679	261.1	6.832	92.3	28.000	7.288	0.000	112.00	HBD

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***ES2-3-3RDPT ES to FWH 23B***								***Sorted By: Average Wear Rate***		
3EXB-VALVE 3EX-3	22	7.784	3.645	261.1	14.172	92.3	28.000	7.288	0.000	112.00	HBD
3EXB-8	3	7.135	3.343	261.1	6.776	92.3	28.000	7.288	0.000	112.00	HBD
3EXB-7	1	6.751	3.163	261.1	6.461	92.3	28.000	7.288	0.000	112.00	HBD
3EXB-4 (BR/SE)	14	5.423	2.523	261.1	8.129	92.3	20.000	7.288	0.000	112.00	HBD
3EXB-6P DS	51	4.704	2.204	261.1	6.548	92.3	28.000	7.288	0.000	112.00	HBD
3EXB-6P US	51	4.702	2.203	261.1	6.588	92.3	28.000	7.288	0.000	112.00	HBD
3EXB-9A	58	3.769	1.765	261.1	6.461	92.3	28.000	7.288	0.000	112.00	HBD
3EXB-9P	58	3.765	1.764	261.1	6.532	92.3	28.000	7.288	0.000	112.00	HBD
3EXB-7P	53	3.269	1.614	261.1	15.730	92.3	28.000	7.288	0.000	112.00	HBD
3EXB-5P	52	2.733	1.349	261.1	15.806	92.3	28.000	7.288	0.000	112.00	HBD
3EXB-10P US	62	2.571	1.204	261.1	6.461	92.3	28.000	7.288	0.000	112.00	HBD
3EXB-10P DS1	62	2.571	1.204	261.1	6.461	92.3	28.000	7.288	0.000	112.00	HBD
3EXB-10P DS	62	2.571	1.204	261.1	6.461	92.3	28.000	7.288	0.000	112.00	HBD
===>Grouped by Line:	***ES2-4-3RDPT ES to FWH 23B***								***Sorted By: Average Wear Rate***		
3EXB-1N	30	7.745	3.604	261.1	8.129	92.3	20.000	7.288	0.000	112.00	HBD
3EXB-1	2	6.980	3.251	261.1	8.733	92.3	20.000	7.288	0.000	112.00	HBD
3EXB-4P US	64	3.042	1.417	261.1	8.355	92.3	20.000	7.288	0.000	112.00	HBD
3EXB-1A	64	3.036	1.415	261.1	8.407	92.3	20.000	7.288	0.000	112.00	HBD
===>Grouped by Line:	***ES2-5-3RDPT ES to FWH 23B***								***Sorted By: Average Wear Rate***		
3EXB-2N	30	7.745	3.604	261.1	8.129	92.3	20.000	7.288	0.000	112.00	HBD
3EXB-2	2	6.853	3.194	261.1	9.328	92.3	20.000	7.288	0.000	112.00	HBD
3EXB-3	2	5.352	3.205	261.1	9.204	92.3	20.000	7.288	0.000	112.00	HBD
3EXB-2A	52	4.659	2.172	261.1	8.958	92.3	20.000	7.288	0.000	112.00	HBD
3EXB-2P DS	52	3.704	2.219	261.1	8.294	92.3	20.000	7.288	0.000	112.00	HBD
3EXB-2P US	52	3.611	2.164	261.1	9.088	92.3	20.000	7.288	0.000	112.00	HBD
3EXB-3P US	57	3.165	2.702	261.1	8.129	92.3	20.000	7.288	0.000	112.00	HBD
3EXB-3P DS	57	3.165	2.702	261.1	8.129	92.3	20.000	7.288	0.000	112.00	HBD
3EXB-10R (D/S)	7	0.012	0.012	261.1	8.129	92.3	20.000	7.288	0.000	112.00	HBD
3EXB-10R	7	0.009	0.009	261.1	0.357	92.3	28.000	7.288	0.000	112.00	HBD
===>Grouped by Line:	***ES3-1-3RDPT ES to FWH 23C***								***Sorted By: Average Wear Rate***		
3EXC-18N	31	11.617	5.405	261.1	8.129	92.3	20.000	7.288	0.000	112.00	HBD
3EXC-15 (BR/SE)	10	7.745	3.604	261.1	8.129	92.3	20.000	7.288	0.000	112.00	HBD
3EXC-15 (D/S)	10	7.673	3.808	261.1	0.357	92.3	28.000	7.288	0.000	112.00	HBD
3EXC-16	2	7.672	3.569	261.1	8.129	92.3	20.000	7.288	0.000	112.00	HBD

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***ES3-1-3RDPT ES to FWH 23C***								***Sorted By: Average Wear Rate***		
3EXC-18	3	6.477	3.013	261.1	8.129	92.3	20.000	7.288	0.000	112.00	HBD
3EXC-17	3	6.477	3.013	261.1	8.129	92.3	20.000	7.288	0.000	112.00	HBD
3EXC-17P	53	5.808	2.702	261.1	8.129	92.3	20.000	7.288	0.000	112.00	HBD
3EXC-18X	6	3.887	1.919	261.1	19.167	92.3	20.000	7.288	0.000	112.00	HBD
3EXC-16P	52	2.836	1.400	261.1	15.526	92.3	20.000	7.288	0.000	112.00	HBD
3EXC-15P	60	2.780	1.379	261.1	0.357	92.3	28.000	7.288	0.000	112.00	HBD
===>Grouped by Line:	***ES3-2-3RDPT ES to FWH 23C***								***Sorted By: Average Wear Rate***		
3EXC-22N	31	11.617	5.405	261.1	8.129	92.3	20.000	7.288	0.000	112.00	HBD
3EXC-19	2	7.131	3.318	261.1	8.129	92.3	20.000	7.288	0.000	112.00	HBD
3EXC-22	3	6.477	3.013	261.1	8.129	92.3	20.000	7.288	0.000	112.00	HBD
3EXC-21	3	6.477	3.013	261.1	8.129	92.3	20.000	7.288	0.000	112.00	HBD
3EXC-20	3	6.477	3.013	261.1	8.129	92.3	20.000	7.288	0.000	112.00	HBD
3EXC-21P	53	5.808	2.702	261.1	8.129	92.3	20.000	7.288	0.000	112.00	HBD
3EXC-20P	53	5.808	2.702	261.1	8.129	92.3	20.000	7.288	0.000	112.00	HBD
3EXC-22X	6	3.887	1.919	261.1	19.167	92.3	20.000	7.288	0.000	112.00	HBD
3EXC-19P	52	2.836	1.400	261.1	15.526	92.3	20.000	7.288	0.000	112.00	HBD
===>Grouped by Line:	***ES3-3-3RDPT ES to FWH 23C***								***Sorted By: Average Wear Rate***		
3EXC-4	14	16.478	7.720	261.1	6.461	92.3	28.000	7.288	0.000	112.00	HBD
3EXC-14 (D/S)	12	14.037	6.576	261.1	6.461	92.3	28.000	7.288	0.000	112.00	HBD
3EXC-4 (D/S)	14	11.784	5.849	261.1	0.357	92.3	28.000	7.288	0.000	112.00	HBD
3EXC-VALVE 3EX-6	25	10.276	4.814	261.1	6.461	92.3	28.000	7.288	0.000	112.00	HBD
3EXC-14	12	10.031	4.979	261.1	0.357	92.3	28.000	7.288	0.000	112.00	HBD
3EXC-8	4	8.481	3.973	261.1	6.461	92.3	28.000	7.288	0.000	112.00	HBD
3EXC-9	4	8.445	3.958	261.1	6.826	92.3	28.000	7.288	0.000	112.00	HBD
3EXC-14 (BR/SE)	12	8.426	3.920	261.1	8.129	92.3	20.000	7.288	0.000	112.00	HBD
3EXC-8P	54	8.219	3.850	261.1	6.461	92.3	28.000	7.288	0.000	112.00	HBD
3EXC-7P	54	8.219	3.850	261.1	6.466	92.3	28.000	7.288	0.000	112.00	HBD
3EXC-7	2	7.883	3.693	261.1	6.461	92.3	28.000	7.288	0.000	112.00	HBD
3EXC-5	2	7.883	3.693	261.1	6.461	92.3	28.000	7.288	0.000	112.00	HBD
3EXC-10	2	7.851	3.679	261.1	6.816	92.3	28.000	7.288	0.000	112.00	HBD
3EXC-6	2	7.843	3.676	261.1	6.913	92.3	28.000	7.288	0.000	112.00	HBD
3EXC-VALVE 3EX-5	22	7.784	3.645	261.1	14.172	92.3	28.000	7.288	0.000	112.00	HBD
3EXC-4 (BR/SE)	14	5.423	2.523	261.1	8.129	92.3	20.000	7.288	0.000	112.00	HBD
3EXC-4P	52	5.352	2.507	261.1	6.461	92.3	28.000	7.288	0.000	112.00	HBD

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***ES3-3-3RDPT ES to FWH 23C***								***Sorted By: Average Wear Rate***		
3EXC-6P	52	5.343	2.503	261.1	6.588	92.3	28.000	7.288	0.000	112.00	HBD
3EXC-VALVE PCV-1161	23	5.212	2.444	261.1	15.684	92.3	24.000	7.288	0.000	112.00	HBD
3EXC-13P	58	3.769	1.765	261.1	6.461	92.3	28.000	7.288	0.000	112.00	HBD
3EXC-9P	52	2.735	1.350	261.1	15.827	92.3	28.000	7.288	0.000	112.00	HBD
3EXC-5P	52	2.722	1.344	261.1	15.708	92.3	28.000	7.288	0.000	112.00	HBD
3EXC-14P US	62	2.571	1.204	261.1	6.461	92.3	28.000	7.288	0.000	112.00	HBD
3EXC-14P DS	62	2.571	1.204	261.1	6.461	92.3	28.000	7.288	0.000	112.00	HBD
3EXC-14P DS1	62	2.558	1.199	261.1	6.905	92.3	28.000	7.288	0.000	112.00	HBD
3EXC-13R	7	0.003	0.003	261.1	6.461	92.3	28.000	7.288	0.000	112.00	HBD
3EXC-13R (D/S)	7	0.003	0.003	261.1	15.684	92.3	24.000	7.288	0.000	112.00	HBD
3EXC-12R (D/S)	18	0.003	0.003	261.1	6.461	92.3	28.000	7.288	0.000	112.00	HBD
3EXC-12R	18	0.002	0.002	261.1	15.684	92.3	24.000	7.288	0.000	112.00	HBD
3EXC-12P	68	0.002	0.002	261.1	6.461	92.3	28.000	7.288	0.000	112.00	HBD
===>Grouped by Line:	***ES3-4-3RDPT ES to FWH 23C***								***Sorted By: Average Wear Rate***		
3EXC-1N	30	7.745	3.604	261.1	8.129	92.3	20.000	7.288	0.000	112.00	HBD
3EXC-1	2	7.131	3.318	261.1	8.129	92.3	20.000	7.288	0.000	112.00	HBD
3EXC-1A	64	3.048	1.420	261.1	8.294	92.3	20.000	7.288	0.000	112.00	HBD
3EXC-4P-1 US	64	3.038	1.416	261.1	8.380	92.3	20.000	7.288	0.000	112.00	HBD
===>Grouped by Line:	***ES3-5-3RDPT ES to FWH 23C***								***Sorted By: Average Wear Rate***		
3EXC-2N	30	7.745	3.604	261.1	8.129	92.3	20.000	7.288	0.000	112.00	HBD
3EXC-2	2	7.131	3.318	261.1	8.129	92.3	20.000	7.288	0.000	112.00	HBD
3EXC-11R (D/S)	7	6.444	2.998	261.1	8.129	92.3	20.000	7.288	0.000	112.00	HBD
3EXC-2P	54	5.688	3.407	261.1	8.294	92.3	20.000	7.288	0.000	112.00	HBD
3EXC-2A	54	5.570	3.338	261.1	8.940	92.3	20.000	7.288	0.000	112.00	HBD
3EXC-3	4	5.546	3.318	261.1	8.129	92.3	20.000	7.288	0.000	112.00	HBD
3EXC-11R	7	4.746	2.355	261.1	0.359	92.3	28.000	7.288	0.000	112.00	HBD
3EXC-3P	57	3.165	2.702	261.1	8.129	92.3	20.000	7.288	0.000	112.00	HBD

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).db

Wear Rate Report

Pass 1 Analysis Exclude Measured Wear

Report Date/Time: 7/6/2010 3:37:44PM
AnalysisDate/Time: 7/6/2010 3:16:32PM

CHECWORKS SFA Version: 3.0 SP-1 (build 109)
Duty Factor (Global) : 1.000

Run Name: 3RD POINT EXTRAC STM
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 1.000

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***ES1-1-3RDPT ES to FWH 23A***									***Sorted By: Flow Order***	
3EXA-18N	31	11.617	5.405	261.1	8.129	92.3	20.000	7.288	0.000	112.00	HBD
3EXA-18X	6	3.887	1.919	261.1	19.167	92.3	20.000	7.288	0.000	112.00	HBD
3EXA-18	3	6.477	3.013	261.1	8.129	92.3	20.000	7.288	0.000	112.00	HBD
3EXA-17	3	6.477	3.013	261.1	8.129	92.3	20.000	7.288	0.000	112.00	HBD
3EXA-17P	53	5.808	2.702	261.1	8.129	92.3	20.000	7.288	0.000	112.00	HBD
3EXA-16	2	7.672	3.569	261.1	8.129	92.3	20.000	7.288	0.000	112.00	HBD
3EXA-16P	52	2.836	1.400	261.1	15.526	92.3	20.000	7.288	0.000	112.00	HBD
3EXA-15 (BR/SE)	10	7.745	3.604	261.1	8.129	92.3	20.000	7.288	0.000	112.00	HBD
3EXA-15 (D/S)	10	7.673	3.808	261.1	0.357	92.3	28.000	7.288	0.000	112.00	HBD
3EXA-15P	60	2.780	1.379	261.1	0.357	92.3	28.000	7.288	0.000	112.00	HBD
===>Grouped by Line:	***ES1-2-3RDPT ES to FWH 23A***									***Sorted By: Flow Order***	
3EXA-22N	31	11.617	5.405	261.1	8.129	92.3	20.000	7.288	0.000	112.00	HBD
3EXA-22X	6	3.887	1.919	261.1	19.167	92.3	20.000	7.288	0.000	112.00	HBD
3EXA-22	3	6.477	3.013	261.1	8.129	92.3	20.000	7.288	0.000	112.00	HBD
3EXA-21	3	6.477	3.013	261.1	8.129	92.3	20.000	7.288	0.000	112.00	HBD
3EXA-21P	53	5.808	2.702	261.1	8.129	92.3	20.000	7.288	0.000	112.00	HBD
3EXA-20	3	6.477	3.013	261.1	8.129	92.3	20.000	7.288	0.000	112.00	HBD
3EXA-20P	53	5.808	2.702	261.1	8.129	92.3	20.000	7.288	0.000	112.00	HBD
3EXA-19	2	7.131	3.318	261.1	8.129	92.3	20.000	7.288	0.000	112.00	HBD
3EXA-19P	52	2.836	1.400	261.1	15.526	92.3	20.000	7.288	0.000	112.00	HBD
===>Grouped by Line:	***ES1-3-3RDPT ES to FWH 23A***									***Sorted By: Flow Order***	
3EXA-14	12	10.031	4.979	261.1	0.357	92.3	28.000	7.288	0.000	112.00	HBD
3EXA-14 (BR/SE)	12	8.426	3.920	261.1	8.129	92.3	20.000	7.288	0.000	112.00	HBD
3EXA-14 (D/S)	12	14.037	6.576	261.1	6.461	92.3	28.000	7.288	0.000	112.00	HBD
3EXA-14P US	62	2.571	1.204	261.1	6.461	92.3	28.000	7.288	0.000	112.00	HBD

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***ES1-3-3RDPT ES to FWH 23A***								***Sorted By: Flow Order***		
3EXA-14P DS1	62	2.563	1.201	261.1	6.696	92.3	28.000	7.288	0.000	112.00	HBD
3EXA-14P DS	62	2.571	1.204	261.1	6.461	92.3	28.000	7.288	0.000	112.00	HBD
3EXA-VALVE 3EX-1	22	7.784	3.645	261.1	14.172	92.3	28.000	7.288	0.000	112.00	HBD
3EXA-13P	58	3.763	1.763	261.1	6.563	92.3	28.000	7.288	0.000	112.00	HBD
3EXA-VALVE 3EX-2	25	10.276	4.814	261.1	6.461	92.3	28.000	7.288	0.000	112.00	HBD
3EXA-12P	58	3.764	1.764	261.1	6.548	92.3	28.000	7.288	0.000	112.00	HBD
3EXA-10	2	7.853	3.680	261.1	6.808	92.3	28.000	7.288	0.000	112.00	HBD
3EXA-9P	52	2.731	1.348	261.1	15.783	92.3	28.000	7.288	0.000	112.00	HBD
3EXA-9	4	8.445	3.958	261.1	6.822	92.3	28.000	7.288	0.000	112.00	HBD
3EXA-8P	54	8.219	3.850	261.1	6.461	92.3	28.000	7.288	0.000	112.00	HBD
3EXA-8	4	8.441	3.955	261.1	6.884	92.3	28.000	7.288	0.000	112.00	HBD
3EXA-7P	54	8.219	3.850	261.1	6.461	92.3	28.000	7.288	0.000	112.00	HBD
3EXA-7	2	0.016	0.015	261.1	6.461	92.3	28.000	7.288	0.000	112.00	HBD
3EXA-6P DS	52	0.009	0.008	261.1	6.461	92.3	28.000	7.288	0.000	112.00	HBD
3EXA-6	2	0.016	0.015	261.1	6.461	92.3	28.000	7.288	0.000	112.00	HBD
3EXA-5P	52	0.005	0.004	261.1	15.708	92.3	28.000	7.288	0.000	112.00	HBD
3EXA-5	4	0.016	0.015	261.1	6.461	92.3	28.000	7.288	0.000	112.00	HBD
3EXA-4P US	54	0.014	0.013	261.1	6.461	92.3	28.000	7.288	0.000	112.00	HBD
3EXA-4	14	0.033	0.030	261.1	6.461	92.3	28.000	7.288	0.000	112.00	HBD
3EXA-4 (BR/SE)	14	0.011	0.010	261.1	8.129	92.3	20.000	7.288	0.000	112.00	HBD
3EXA-4 (D/S)	14	0.025	0.023	261.1	0.357	92.3	28.000	7.288	0.000	112.00	HBD
===>Grouped by Line:	***ES1-4-3RDPT ES to FWH 23A***								***Sorted By: Flow Order***		
3EXA-1P	64	0.006	0.006	261.1	8.294	92.3	20.000	7.288	0.000	112.00	HBD
3EXA-1A	64	0.006	0.006	261.1	8.294	92.3	20.000	7.288	0.000	112.00	HBD
3EXA-1	2	0.014	0.013	261.1	8.129	92.3	20.000	7.288	0.000	112.00	HBD
3EXA-1N	30	7.745	3.604	261.1	8.129	92.3	20.000	7.288	0.000	112.00	HBD
===>Grouped by Line:	***ES1-5-3RDPT ES to FWH 23A***								***Sorted By: Flow Order***		
3EXA-11R	7	0.010	0.009	261.1	0.357	92.3	28.000	7.288	0.000	112.00	HBD
3EXA-11R (D/S)	7	0.013	0.012	261.1	8.129	92.3	20.000	7.288	0.000	112.00	HBD
3EXA-11RP	67	2.954	2.522	261.1	8.129	92.3	20.000	7.288	0.000	112.00	HBD
3EXA-3	4	5.411	3.239	261.1	8.847	92.3	20.000	7.288	0.000	112.00	HBD
3EXA-2P	54	5.688	3.407	261.1	8.294	92.3	20.000	7.288	0.000	112.00	HBD
3EXA-2A	54	7.118	3.320	261.1	9.132	92.3	20.000	7.288	0.000	112.00	HBD
3EXA-2	2	7.131	3.318	261.1	8.129	92.3	20.000	7.288	0.000	112.00	HBD

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***ES1-5-3RDPT ES to FWH 23A***									***Sorted By: Flow Order***	
3EXA-2N	30	7.745	3.604	261.1	8.129	92.3	20.000	7.288	0.000	112.00	HBD
===>Grouped by Line:	***ES2-1-3RDPT ES to FWH 23B***									***Sorted By: Flow Order***	
3EXB-14N	31	11.617	5.405	261.1	8.129	92.3	20.000	7.288	0.000	112.00	HBD
3EXB-14X	6	3.887	1.919	261.1	19.167	92.3	20.000	7.288	0.000	112.00	HBD
3EXB-14	3	6.477	3.013	261.1	8.129	92.3	20.000	7.288	0.000	112.00	HBD
3EXB-13	3	6.477	3.013	261.1	8.129	92.3	20.000	7.288	0.000	112.00	HBD
3EXB-13P	53	5.808	2.702	261.1	8.129	92.3	20.000	7.288	0.000	112.00	HBD
3EXB-12	2	7.672	3.569	261.1	8.129	92.3	20.000	7.288	0.000	112.00	HBD
3EXB-12P	52	2.836	1.400	261.1	15.526	92.3	20.000	7.288	0.000	112.00	HBD
3EXB-11 (BR/SE)	10	7.745	3.604	261.1	8.129	92.3	20.000	7.288	0.000	112.00	HBD
3EXB-11 (D/S)	10	7.673	3.808	261.1	0.357	92.3	28.000	7.288	0.000	112.00	HBD
3EXB-11P	60	2.780	1.379	261.1	0.357	92.3	28.000	7.288	0.000	112.00	HBD
===>Grouped by Line:	***ES2-2-3RDPT ES to FWH 23B***									***Sorted By: Flow Order***	
3EXB-18N	31	11.617	5.405	261.1	8.129	92.3	20.000	7.288	0.000	112.00	HBD
3EXB-18X	6	3.887	1.919	261.1	19.167	92.3	20.000	7.288	0.000	112.00	HBD
3EXB-18	3	6.477	3.013	261.1	8.129	92.3	20.000	7.288	0.000	112.00	HBD
3EXB-17	3	6.477	3.013	261.1	8.129	92.3	20.000	7.288	0.000	112.00	HBD
3EXB-17P	53	5.808	2.702	261.1	8.129	92.3	20.000	7.288	0.000	112.00	HBD
3EXB-16	3	6.477	3.013	261.1	8.129	92.3	20.000	7.288	0.000	112.00	HBD
3EXB-16P	53	5.808	2.702	261.1	8.129	92.3	20.000	7.288	0.000	112.00	HBD
3EXB-15	2	7.131	3.318	261.1	8.129	92.3	20.000	7.288	0.000	112.00	HBD
3EXB-15P	52	2.836	1.400	261.1	15.526	92.3	20.000	7.288	0.000	112.00	HBD
===>Grouped by Line:	***ES2-3-3RDPT ES to FWH 23B***									***Sorted By: Flow Order***	
3EXB-10	12	10.031	4.979	261.1	0.357	92.3	28.000	7.288	0.000	112.00	HBD
3EXB-10 (BR/SE)	12	8.426	3.920	261.1	8.129	92.3	20.000	7.288	0.000	112.00	HBD
3EXB-10 (D/S)	12	14.037	6.576	261.1	6.461	92.3	28.000	7.288	0.000	112.00	HBD
3EXB-10P US	62	2.571	1.204	261.1	6.461	92.3	28.000	7.288	0.000	112.00	HBD
3EXB-10P DS1	62	2.571	1.204	261.1	6.461	92.3	28.000	7.288	0.000	112.00	HBD
3EXB-10P DS	62	2.571	1.204	261.1	6.461	92.3	28.000	7.288	0.000	112.00	HBD
3EXB-VALVE 3EX-3	22	7.784	3.645	261.1	14.172	92.3	28.000	7.288	0.000	112.00	HBD
3EXB-9P	58	3.765	1.764	261.1	6.532	92.3	28.000	7.288	0.000	112.00	HBD
3EXB-VALVE 3EX-4	25	10.276	4.814	261.1	6.461	92.3	28.000	7.288	0.000	112.00	HBD
3EXB-9A	58	3.769	1.765	261.1	6.461	92.3	28.000	7.288	0.000	112.00	HBD
3EXB-9	2	7.850	3.679	261.1	6.832	92.3	28.000	7.288	0.000	112.00	HBD

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***ES2-3-3RDPT ES to FWH 23B***									***Sorted By: Flow Order***	
3EXB-8	3	7.135	3.343	261.1	6.776	92.3	28.000	7.288	0.000	112.00	HBD
3EXB-7P	53	3.269	1.614	261.1	15.730	92.3	28.000	7.288	0.000	112.00	HBD
3EXB-7	1	6.751	3.163	261.1	6.461	92.3	28.000	7.288	0.000	112.00	HBD
3EXB-6P US	51	4.702	2.203	261.1	6.588	92.3	28.000	7.288	0.000	112.00	HBD
3EXB-6P DS	51	4.704	2.204	261.1	6.548	92.3	28.000	7.288	0.000	112.00	HBD
3EXB-6	2	7.883	3.693	261.1	6.461	92.3	28.000	7.288	0.000	112.00	HBD
3EXB-5P	52	2.733	1.349	261.1	15.806	92.3	28.000	7.288	0.000	112.00	HBD
3EXB-5	4	7.851	3.680	261.1	6.812	92.3	28.000	7.288	0.000	112.00	HBD
3EXB-4A US	54	8.213	3.848	261.1	6.515	92.3	28.000	7.288	0.000	112.00	HBD
3EXB-4A DS	54	8.219	3.850	261.1	6.461	92.3	28.000	7.288	0.000	112.00	HBD
3EXB-4	14	16.478	7.720	261.1	6.461	92.3	28.000	7.288	0.000	112.00	HBD
3EXB-4 (BR/SE)	14	5.423	2.523	261.1	8.129	92.3	20.000	7.288	0.000	112.00	HBD
3EXB-4 (D/S)	14	11.784	5.849	261.1	0.357	92.3	28.000	7.288	0.000	112.00	HBD
===>Grouped by Line:	***ES2-4-3RDPT ES to FWH 23B***									***Sorted By: Flow Order***	
3EXB-4P US	64	3.042	1.417	261.1	8.355	92.3	20.000	7.288	0.000	112.00	HBD
3EXB-1A	64	3.036	1.415	261.1	8.407	92.3	20.000	7.288	0.000	112.00	HBD
3EXB-1	2	6.980	3.251	261.1	8.733	92.3	20.000	7.288	0.000	112.00	HBD
3EXB-1N	30	7.745	3.604	261.1	8.129	92.3	20.000	7.288	0.000	112.00	HBD
===>Grouped by Line:	***ES2-5-3RDPT ES to FWH 23B***									***Sorted By: Flow Order***	
3EXB-10R	7	0.009	0.009	261.1	0.357	92.3	28.000	7.288	0.000	112.00	HBD
3EXB-10R (D/S)	7	0.012	0.012	261.1	8.129	92.3	20.000	7.288	0.000	112.00	HBD
3EXB-3P US	57	3.165	2.702	261.1	8.129	92.3	20.000	7.288	0.000	112.00	HBD
3EXB-3P DS	57	3.165	2.702	261.1	8.129	92.3	20.000	7.288	0.000	112.00	HBD
3EXB-3	2	5.352	3.205	261.1	9.204	92.3	20.000	7.288	0.000	112.00	HBD
3EXB-2P US	52	3.611	2.164	261.1	9.088	92.3	20.000	7.288	0.000	112.00	HBD
3EXB-2P DS	52	3.704	2.219	261.1	8.294	92.3	20.000	7.288	0.000	112.00	HBD
3EXB-2A	52	4.659	2.172	261.1	8.958	92.3	20.000	7.288	0.000	112.00	HBD
3EXB-2	2	6.853	3.194	261.1	9.328	92.3	20.000	7.288	0.000	112.00	HBD
3EXB-2N	30	7.745	3.604	261.1	8.129	92.3	20.000	7.288	0.000	112.00	HBD
===>Grouped by Line:	***ES3-1-3RDPT ES to FWH 23C***									***Sorted By: Flow Order***	
3EXC-18N	31	11.617	5.405	261.1	8.129	92.3	20.000	7.288	0.000	112.00	HBD
3EXC-18X	6	3.887	1.919	261.1	19.167	92.3	20.000	7.288	0.000	112.00	HBD
3EXC-18	3	6.477	3.013	261.1	8.129	92.3	20.000	7.288	0.000	112.00	HBD
3EXC-17	3	6.477	3.013	261.1	8.129	92.3	20.000	7.288	0.000	112.00	HBD

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***ES3-1-3RDPT ES to FWH 23C***									***Sorted By: Flow Order***	
3EXC-17P	53	5.808	2.702	261.1	8.129	92.3	20.000	7.288	0.000	112.00	HBD
3EXC-16	2	7.672	3.569	261.1	8.129	92.3	20.000	7.288	0.000	112.00	HBD
3EXC-16P	52	2.836	1.400	261.1	15.526	92.3	20.000	7.288	0.000	112.00	HBD
3EXC-15 (BR/SE)	10	7.745	3.604	261.1	8.129	92.3	20.000	7.288	0.000	112.00	HBD
3EXC-15 (D/S)	10	7.673	3.808	261.1	0.357	92.3	28.000	7.288	0.000	112.00	HBD
3EXC-15P	60	2.780	1.379	261.1	0.357	92.3	28.000	7.288	0.000	112.00	HBD
===>Grouped by Line:	***ES3-2-3RDPT ES to FWH 23C***									***Sorted By: Flow Order***	
3EXC-22N	31	11.617	5.405	261.1	8.129	92.3	20.000	7.288	0.000	112.00	HBD
3EXC-22X	6	3.887	1.919	261.1	19.167	92.3	20.000	7.288	0.000	112.00	HBD
3EXC-22	3	6.477	3.013	261.1	8.129	92.3	20.000	7.288	0.000	112.00	HBD
3EXC-21	3	6.477	3.013	261.1	8.129	92.3	20.000	7.288	0.000	112.00	HBD
3EXC-21P	53	5.808	2.702	261.1	8.129	92.3	20.000	7.288	0.000	112.00	HBD
3EXC-20	3	6.477	3.013	261.1	8.129	92.3	20.000	7.288	0.000	112.00	HBD
3EXC-20P	53	5.808	2.702	261.1	8.129	92.3	20.000	7.288	0.000	112.00	HBD
3EXC-19	2	7.131	3.318	261.1	8.129	92.3	20.000	7.288	0.000	112.00	HBD
3EXC-19P	52	2.836	1.400	261.1	15.526	92.3	20.000	7.288	0.000	112.00	HBD
===>Grouped by Line:	***ES3-3-3RDPT ES to FWH 23C***									***Sorted By: Flow Order***	
3EXC-14	12	10.031	4.979	261.1	0.357	92.3	28.000	7.288	0.000	112.00	HBD
3EXC-14 (BR/SE)	12	8.426	3.920	261.1	8.129	92.3	20.000	7.288	0.000	112.00	HBD
3EXC-14 (D/S)	12	14.037	6.576	261.1	6.461	92.3	28.000	7.288	0.000	112.00	HBD
3EXC-14P US	62	2.571	1.204	261.1	6.461	92.3	28.000	7.288	0.000	112.00	HBD
3EXC-14P DS1	62	2.558	1.199	261.1	6.905	92.3	28.000	7.288	0.000	112.00	HBD
3EXC-14P DS	62	2.571	1.204	261.1	6.461	92.3	28.000	7.288	0.000	112.00	HBD
3EXC-VALVE 3EX-5	22	7.784	3.645	261.1	14.172	92.3	28.000	7.288	0.000	112.00	HBD
3EXC-13P	58	3.769	1.765	261.1	6.461	92.3	28.000	7.288	0.000	112.00	HBD
3EXC-VALVE 3EX-6	25	10.276	4.814	261.1	6.461	92.3	28.000	7.288	0.000	112.00	HBD
3EXC-13R	7	0.003	0.003	261.1	6.461	92.3	28.000	7.288	0.000	112.00	HBD
3EXC-13R (D/S)	7	0.003	0.003	261.1	15.684	92.3	24.000	7.288	0.000	112.00	HBD
3EXC-VALVE PCV-1161	23	5.212	2.444	261.1	15.684	92.3	24.000	7.288	0.000	112.00	HBD
3EXC-12R	18	0.002	0.002	261.1	15.684	92.3	24.000	7.288	0.000	112.00	HBD
3EXC-12R (D/S)	18	0.003	0.003	261.1	6.461	92.3	28.000	7.288	0.000	112.00	HBD
3EXC-12P	68	0.002	0.002	261.1	6.461	92.3	28.000	7.288	0.000	112.00	HBD
3EXC-10	2	7.851	3.679	261.1	6.816	92.3	28.000	7.288	0.000	112.00	HBD
3EXC-9P	52	2.735	1.350	261.1	15.827	92.3	28.000	7.288	0.000	112.00	HBD

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***ES3-3-3RDPT ES to FWH 23C***									***Sorted By: Flow Order***	
3EXC-9	4	8.445	3.958	261.1	6.826	92.3	28.000	7.288	0.000	112.00	HBD
3EXC-8P	54	8.219	3.850	261.1	6.461	92.3	28.000	7.288	0.000	112.00	HBD
3EXC-8	4	8.481	3.973	261.1	6.461	92.3	28.000	7.288	0.000	112.00	HBD
3EXC-7P	54	8.219	3.850	261.1	6.466	92.3	28.000	7.288	0.000	112.00	HBD
3EXC-7	2	7.883	3.693	261.1	6.461	92.3	28.000	7.288	0.000	112.00	HBD
3EXC-6P	52	5.343	2.503	261.1	6.588	92.3	28.000	7.288	0.000	112.00	HBD
3EXC-6	2	7.843	3.676	261.1	6.913	92.3	28.000	7.288	0.000	112.00	HBD
3EXC-5P	52	2.722	1.344	261.1	15.708	92.3	28.000	7.288	0.000	112.00	HBD
3EXC-5	2	7.883	3.693	261.1	6.461	92.3	28.000	7.288	0.000	112.00	HBD
3EXC-4P	52	5.352	2.507	261.1	6.461	92.3	28.000	7.288	0.000	112.00	HBD
3EXC-4	14	16.478	7.720	261.1	6.461	92.3	28.000	7.288	0.000	112.00	HBD
3EXC-4 (BR/SE)	14	5.423	2.523	261.1	8.129	92.3	20.000	7.288	0.000	112.00	HBD
3EXC-4 (D/S)	14	11.784	5.849	261.1	0.357	92.3	28.000	7.288	0.000	112.00	HBD
===>Grouped by Line:	***ES3-4-3RDPT ES to FWH 23C***									***Sorted By: Flow Order***	
3EXC-4P-1 US	64	3.038	1.416	261.1	8.380	92.3	20.000	7.288	0.000	112.00	HBD
3EXC-1A	64	3.048	1.420	261.1	8.294	92.3	20.000	7.288	0.000	112.00	HBD
3EXC-1	2	7.131	3.318	261.1	8.129	92.3	20.000	7.288	0.000	112.00	HBD
3EXC-1N	30	7.745	3.604	261.1	8.129	92.3	20.000	7.288	0.000	112.00	HBD
===>Grouped by Line:	***ES3-5-3RDPT ES to FWH 23C***									***Sorted By: Flow Order***	
3EXC-11R	7	4.746	2.355	261.1	0.359	92.3	28.000	7.288	0.000	112.00	HBD
3EXC-11R (D/S)	7	6.444	2.998	261.1	8.129	92.3	20.000	7.288	0.000	112.00	HBD
3EXC-3P	57	3.165	2.702	261.1	8.129	92.3	20.000	7.288	0.000	112.00	HBD
3EXC-3	4	5.546	3.318	261.1	8.129	92.3	20.000	7.288	0.000	112.00	HBD
3EXC-2P	54	5.688	3.407	261.1	8.294	92.3	20.000	7.288	0.000	112.00	HBD
3EXC-2A	54	5.570	3.338	261.1	8.940	92.3	20.000	7.288	0.000	112.00	HBD
3EXC-2	2	7.131	3.318	261.1	8.129	92.3	20.000	7.288	0.000	112.00	HBD
3EXC-2N	30	7.745	3.604	261.1	8.129	92.3	20.000	7.288	0.000	112.00	HBD

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).db

Service Life Report

Pass 1 Analysis Exclude Measured Wear

Report Date/Time: 7/6/2010 3:37:44PM
AnalysisDate/Time: 7/6/2010 3:16:32PM

Run Name: 3RD POINT EXTRAC STM
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 1.000

CHECWORKS SFA Version: 3.0 SP-1 (build 109)
Duty Factor (Global) :1.000

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **ES1-1-3RDPT ES to FWH 23A**					***Sorted By:Remaining Life***		
3EXA-18N	0.000	-0.073	0.033	0.033	-123,277	No	243,721
3EXA-15 (BR/SE)	0.000	0.035	0.036	0.036	-4,069	No	243,721
3EXA-16	0.000	0.037	0.033	0.033	8,034	No	243,721
3EXA-18	0.000	0.070	0.033	0.033	106,155	No	243,721
3EXA-17	0.000	0.070	0.033	0.033	106,155	No	243,721
3EXA-15 (D/S)	0.000	0.099	0.051	0.051	111,265	No	243,721
3EXA-17P	0.000	0.088	0.033	0.033	178,646	No	243,721
3EXA-18X	0.000	0.142	0.033	0.033	495,685	No	243,721
3EXA-16P	0.000	0.171	0.033	0.033	862,190	No	243,721
3EXA-15P	0.000	0.235	0.051	0.051	1,172,118	No	243,721
===>Grouped by Line: **ES1-2-3RDPT ES to FWH 23A**					***Sorted By:Remaining Life***		
3EXA-22N	0.000	-0.073	0.033	0.033	-123,277	No	243,721
3EXA-19	0.000	0.052	0.033	0.033	48,360	No	243,721
3EXA-20	0.000	0.070	0.033	0.033	106,155	No	243,721
3EXA-22	0.000	0.070	0.033	0.033	106,155	No	243,721
3EXA-21	0.000	0.070	0.033	0.033	106,155	No	243,721
3EXA-21P	0.000	0.088	0.033	0.033	178,646	No	243,721
3EXA-20P	0.000	0.088	0.033	0.033	178,646	No	243,721
3EXA-22X	0.000	0.142	0.033	0.033	495,685	No	243,721
3EXA-19P	0.000	0.171	0.033	0.033	862,190	No	243,721
===>Grouped by Line: **ES1-3-3RDPT ES to FWH 23A**					***Sorted By:Remaining Life***		
3EXA-14 (D/S)	0.000	-0.078	0.051	0.051	-123,151	No	243,721
3EXA-14 (BR/SE)	0.000	0.016	0.036	0.036	-45,934	No	243,721
3EXA-VALVE 3EX-2	0.000	0.027	0.050	0.050	-42,376	No	243,721
3EXA-14	0.000	0.033	0.051	0.051	-30,326	No	243,721

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line:	**ES1-3-3RDPT ES to FWH 23A**				***Sorted By:Remaining Life***		
3EXA-VALVE 3EX-1	0.000	0.096	0.050	0.050	110,588	No	243,721
3EXA-10	0.413	0.160	0.047	0.047	268,914	Yes	243,721
3EXA-9	0.417	0.221	0.047	0.047	386,414	Yes	243,721
3EXA-8	0.434	0.248	0.047	0.047	445,288	Yes	243,721
3EXA-7P	0.000	0.282	0.051	0.051	526,343	No	243,721
3EXA-8P	0.000	0.291	0.051	0.051	546,815	No	243,721
3EXA-13P	0.342	0.231	0.051	0.051	898,298	Yes	243,721
3EXA-12P	0.338	0.258	0.051	0.051	1,027,968	Yes	243,721
3EXA-14P US	0.000	0.241	0.051	0.051	1,384,571	No	243,721
3EXA-9P	0.345	0.297	0.051	0.051	1,600,697	Yes	243,721
3EXA-14P DS1	0.381	0.288	0.051	0.051	1,732,925	No	243,721
3EXA-14P DS	0.000	0.314	0.051	0.051	1,916,616	Yes	243,721
3EXA-4	0.000	0.312	0.047	0.047	76,444,424	No	78,608
3EXA-6P DS	0.000	0.312	0.047	0.047	100,000,000	No	78,608
3EXA-5P	0.000	0.312	0.047	0.047	100,000,000	No	78,608
3EXA-4 (D/S)	0.000	0.312	0.047	0.047	100,929,352	No	78,608
3EXA-7	0.000	0.312	0.047	0.047	159,887,424	No	78,608
3EXA-6	0.000	0.312	0.047	0.047	159,887,424	No	78,608
3EXA-5	0.000	0.312	0.047	0.047	159,887,424	No	78,608
3EXA-4P US	0.000	0.312	0.047	0.047	183,620,400	No	78,608
3EXA-4 (BR/SE)	0.000	0.250	0.033	0.033	190,753,056	No	78,608
===>Grouped by Line:	**ES1-4-3RDPT ES to FWH 23A**				***Sorted By:Remaining Life***		
3EXA-1N	0.000	0.035	0.033	0.033	2,958	No	243,721
3EXA-1P	0.000	0.250	0.033	0.033	100,000,000	No	78,608
3EXA-1A	0.000	0.250	0.033	0.033	100,000,000	No	78,608
3EXA-1	0.000	0.250	0.033	0.033	145,042,880	No	78,608
===>Grouped by Line:	**ES1-5-3RDPT ES to FWH 23A**				***Sorted By:Remaining Life***		
3EXA-2N	0.000	0.035	0.033	0.033	2,958	No	243,721
3EXA-2	0.000	0.052	0.033	0.033	48,360	No	243,721
3EXA-2P	0.000	0.152	0.039	0.039	291,758	No	150,169
3EXA-11RP	0.000	0.214	0.039	0.039	607,418	No	107,113
3EXA-3	0.388	0.275	0.033	0.033	653,061	Yes	150,169
3EXA-2A	0.411	0.288	0.039	0.039	657,552	Yes	243,721
3EXA-11R (D/S)	0.000	0.250	0.033	0.033	160,511,184	No	78,608
3EXA-11R	0.000	0.312	0.047	0.047	251,497,536	No	78,608

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **ES2-1-3RDPT ES to FWH 23B**					***Sorted By:Remaining Life***		
3EXB-11 (BR/SE)	0.000	0.035	0.036	0.036	-4,069	No	243,721
3EXB-12	0.000	0.037	0.033	0.033	8,034	No	243,721
3EXB-14	0.000	0.070	0.033	0.033	106,155	No	243,721
3EXB-13	0.000	0.070	0.033	0.033	106,155	No	243,721
3EXB-11 (D/S)	0.000	0.099	0.051	0.051	111,265	No	243,721
3EXB-14N	0.000	0.143	0.033	0.033	178,121	Yes	243,721
3EXB-13P	0.000	0.088	0.033	0.033	178,646	No	243,721
3EXB-14X	0.000	0.142	0.033	0.033	495,685	No	243,721
3EXB-12P	0.000	0.171	0.033	0.033	862,190	No	243,721
3EXB-11P	0.000	0.235	0.051	0.051	1,172,118	No	243,721
===>Grouped by Line: **ES2-2-3RDPT ES to FWH 23B**					***Sorted By:Remaining Life***		
3EXB-18N	0.000	-0.073	0.033	0.033	-123,277	No	243,721
3EXB-15	0.000	0.052	0.033	0.033	48,360	No	243,721
3EXB-18	0.000	0.070	0.033	0.033	106,155	No	243,721
3EXB-17	0.000	0.070	0.033	0.033	106,155	No	243,721
3EXB-16	0.000	0.070	0.033	0.033	106,155	No	243,721
3EXB-17P	0.000	0.088	0.033	0.033	178,646	No	243,721
3EXB-16P	0.000	0.088	0.033	0.033	178,646	No	243,721
3EXB-18X	0.000	0.142	0.033	0.033	495,685	No	243,721
3EXB-15P	0.000	0.171	0.033	0.033	862,190	No	243,721
===>Grouped by Line: **ES2-3-3RDPT ES to FWH 23B**					***Sorted By:Remaining Life***		
3EXB-10 (D/S)	0.000	-0.078	0.051	0.051	-123,151	No	243,721
3EXB-10 (BR/SE)	0.000	0.016	0.036	0.036	-45,934	No	243,721
3EXB-VALVE 3EX-4	0.000	0.027	0.050	0.050	-42,376	No	243,721
3EXB-10	0.000	0.033	0.051	0.051	-30,326	No	243,721
3EXB-4A DS	0.000	0.084	0.051	0.051	75,503	No	243,721
3EXB-VALVE 3EX-3	0.000	0.096	0.050	0.050	110,588	No	243,721
3EXB-4	0.000	0.227	0.055	0.055	195,932	No	243,721
3EXB-7	0.000	0.125	0.047	0.047	216,243	No	243,721
3EXB-4 (D/S)	0.000	0.243	0.055	0.055	282,652	No	243,721
3EXB-4A US	0.328	0.253	0.051	0.051	460,854	No	243,721
3EXB-5	0.414	0.241	0.047	0.047	463,295	Yes	243,721
3EXB-4 (BR/SE)	0.000	0.184	0.039	0.039	503,868	No	243,721
3EXB-8	0.403	0.244	0.047	0.047	517,196	Yes	243,721
3EXB-6	0.000	0.279	0.047	0.047	550,539	Yes	243,721

Component Name	--------- Thickness (in) -------- Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line:	**ES2-3-3RDPT ES to FWH 23B**				***Sorted By:Remaining Life***		
3EXB-9	0.420	0.281	0.047	0.047	557,248	Yes	243,721
3EXB-9A	0.000	0.208	0.051	0.051	779,026	No	243,721
3EXB-9P	0.333	0.215	0.051	0.051	814,952	Yes	243,721
3EXB-6P DS	0.338	0.259	0.051	0.051	829,815	Yes	243,721
3EXB-6P US	0.349	0.289	0.051	0.051	948,257	Yes	243,721
3EXB-10P DS1	0.000	0.198	0.051	0.051	1,072,238	Yes	243,721
3EXB-7P	0.322	0.250	0.051	0.051	1,081,001	Yes	243,721
3EXB-5P	0.355	0.226	0.051	0.051	1,140,392	Yes	243,721
3EXB-10P US	0.000	0.241	0.051	0.051	1,384,571	No	243,721
3EXB-10P DS	0.000	0.283	0.051	0.051	1,690,580	Yes	243,721
===>Grouped by Line:	**ES2-4-3RDPT ES to FWH 23B**				***Sorted By:Remaining Life***		
3EXB-1N	0.000	0.035	0.033	0.033	2,958	No	243,721
3EXB-1	0.367	0.273	0.033	0.033	647,291	Yes	243,721
3EXB-4P US	0.262	0.200	0.039	0.039	995,929	Yes	243,721
3EXB-1A	0.272	0.232	0.039	0.039	1,196,145	Yes	243,721
===>Grouped by Line:	**ES2-5-3RDPT ES to FWH 23B**				***Sorted By:Remaining Life***		
3EXB-2N	0.000	0.035	0.033	0.033	2,958	No	243,721
3EXB-2	0.477	0.223	0.033	0.033	520,704	Yes	243,721
3EXB-2P DS	0.000	0.187	0.039	0.039	582,400	No	150,169
3EXB-3	0.454	0.311	0.033	0.033	758,474	Yes	150,169
3EXB-3P DS	0.000	0.345	0.039	0.039	991,644	No	107,113
3EXB-3P US	0.000	0.349	0.039	0.039	1,003,379	No	107,113
3EXB-2A	0.378	0.297	0.033	0.033	1,064,595	Yes	243,721
3EXB-2P US	0.402	0.307	0.039	0.039	1,083,059	Yes	150,169
3EXB-10R (D/S)	0.000	0.250	0.033	0.033	160,563,024	No	33,915
3EXB-10R	0.000	0.312	0.047	0.047	251,548,112	No	33,915
===>Grouped by Line:	**ES3-1-3RDPT ES to FWH 23C**				***Sorted By:Remaining Life***		
3EXC-18N	0.000	-0.073	0.033	0.033	-123,277	No	243,721
3EXC-15 (BR/SE)	0.000	0.035	0.036	0.036	-4,069	No	243,721
3EXC-16	0.000	0.037	0.033	0.033	8,034	No	243,721
3EXC-18	0.000	0.070	0.033	0.033	106,155	No	243,721
3EXC-17	0.000	0.070	0.033	0.033	106,155	No	243,721
3EXC-15 (D/S)	0.000	0.099	0.051	0.051	111,265	No	243,721
3EXC-17P	0.000	0.088	0.033	0.033	178,646	No	243,721

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line:	**ES3-1-3RDPT ES to FWH 23C**				***Sorted By:Remaining Life***		
3EXC-18X	0.000	0.142	0.033	0.033	495,685	No	243,721
3EXC-16P	0.000	0.171	0.033	0.033	862,190	No	243,721
3EXC-15P	0.000	0.235	0.051	0.051	1,172,118	No	243,721
===>Grouped by Line:	**ES3-2-3RDPT ES to FWH 23C**				***Sorted By:Remaining Life***		
3EXC-21	0.000	0.070	0.033	0.033	106,155	No	243,721
3EXC-20	0.000	0.070	0.033	0.033	106,155	No	243,721
3EXC-21P	0.000	0.088	0.033	0.033	178,646	No	243,721
3EXC-20P	0.000	0.088	0.033	0.033	178,646	No	243,721
3EXC-22N	0.000	0.180	0.033	0.033	237,900	No	243,721
3EXC-22X	0.000	0.142	0.033	0.033	495,685	No	243,721
3EXC-22	0.000	0.241	0.033	0.033	604,785	No	243,721
3EXC-19	0.000	0.306	0.033	0.033	720,449	Yes	243,721
3EXC-19P	0.000	0.171	0.033	0.033	862,190	No	243,721
===>Grouped by Line:	**ES3-3-3RDPT ES to FWH 23C**				***Sorted By:Remaining Life***		
3EXC-VALVE 3EX-6	0.000	0.027	0.050	0.050	-42,376	No	243,721
3EXC-14	0.000	0.033	0.051	0.051	-30,326	Yes	243,721
3EXC-8P	0.000	0.084	0.051	0.051	75,503	No	243,721
3EXC-7	0.000	0.093	0.047	0.047	110,457	No	243,721
3EXC-VALVE 3EX-5	0.000	0.096	0.050	0.050	110,588	No	243,721
3EXC-4	0.000	0.217	0.055	0.055	183,723	No	243,721
3EXC-VALVE PCV-1161	0.000	0.105	0.043	0.043	222,907	No	243,721
3EXC-4 (D/S)	0.000	0.245	0.055	0.055	284,559	No	243,721
3EXC-14 (D/S)	0.000	0.312	0.051	0.051	347,522	Yes	243,721
3EXC-9	0.418	0.238	0.047	0.047	422,768	Yes	243,721
3EXC-8	0.000	0.248	0.047	0.047	444,169	Yes	243,721
3EXC-4P	0.000	0.186	0.055	0.055	458,095	Yes	243,721
3EXC-6	0.443	0.250	0.047	0.047	485,316	Yes	243,721
3EXC-7P	0.314	0.276	0.051	0.051	512,930	Yes	243,721
3EXC-5	0.000	0.265	0.047	0.047	517,331	Yes	243,721
3EXC-14 (BR/SE)	0.000	0.278	0.036	0.036	539,966	No	243,721
3EXC-4 (BR/SE)	0.000	0.206	0.039	0.039	580,848	No	243,721
3EXC-10	0.415	0.342	0.047	0.047	702,460	Yes	243,721
3EXC-6P	0.349	0.252	0.051	0.051	703,870	Yes	243,721
3EXC-13P	0.000	0.208	0.051	0.051	779,026	No	243,721
3EXC-5P	0.000	0.237	0.051	0.051	1,213,064	No	243,721

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **ES3-3-3RDPT ES to FWH 23C**					***Sorted By:Remaining Life***		
3EXC-14P US	0.000	0.241	0.051	0.051	1,384,571	No	243,721
3EXC-14P DS	0.000	0.241	0.051	0.051	1,384,571	No	243,721
3EXC-9P	0.364	0.285	0.051	0.051	1,519,763	Yes	243,721
3EXC-14P DS1	0.440	0.300	0.051	0.051	1,821,514	No	243,721
3EXC-13R	0.000	0.312	0.050	0.050	100,000,000	No	94,148
3EXC-13R (D/S)	0.000	0.250	0.043	0.043	100,000,000	No	94,148
3EXC-12R	0.000	0.250	0.043	0.043	100,000,000	No	94,148
3EXC-12R (D/S)	0.000	0.312	0.050	0.050	100,000,000	No	94,148
3EXC-12P	0.000	0.312	0.050	0.050	100,000,000	No	94,148
===>Grouped by Line: **ES3-4-3RDPT ES to FWH 23C**					***Sorted By:Remaining Life***		
3EXC-1N	0.000	0.298	0.033	0.033	642,786	No	243,721
3EXC-1	0.000	0.300	0.033	0.033	705,284	Yes	243,721
3EXC-1A	0.000	0.165	0.039	0.039	778,425	No	243,721
3EXC-4P-1 US	0.267	0.228	0.039	0.039	1,169,992	Yes	243,721
===>Grouped by Line: **ES3-5-3RDPT ES to FWH 23C**					***Sorted By:Remaining Life***		
3EXC-3	0.000	0.155	0.033	0.033	321,174	No	150,169
3EXC-2N	0.000	0.275	0.033	0.033	587,063	No	243,721
3EXC-2A	0.000	0.278	0.039	0.039	627,801	Yes	150,169
3EXC-2	0.000	0.283	0.033	0.033	658,992	Yes	243,721
3EXC-11R	0.319	0.231	0.047	0.047	685,901	Yes	243,721
3EXC-11R (D/S)	0.000	0.270	0.033	0.033	692,086	Yes	243,721
3EXC-2P	0.000	0.328	0.039	0.039	742,471	Yes	150,169
3EXC-3P	0.000	0.358	0.039	0.039	1,033,947	Yes	107,113

Note:
[1] Predictions are based on last Tmeas to analysis ending period.

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).db

Service Life Report

Pass 1 Analysis Exclude Measured Wear

Report Date/Time: 7/6/2010 3:37:44PM
AnalysisDate/Time: 7/6/2010 3:16:32PM

Run Name: 3RD POINT EXTRAC STM
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 1.000

CHECWORKS SFA Version: 3.0 SP-1 (build 109)
Duty Factor (Global) : 1.000

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **ES1-1-3RDPT ES to FWH 23A**					***Sorted By:Flow Order***		
3EXA-18N	0.000	-0.073	0.033	0.033	-123,277	No	243,721
3EXA-18X	0.000	0.142	0.033	0.033	495,685	No	243,721
3EXA-18	0.000	0.070	0.033	0.033	106,155	No	243,721
3EXA-17	0.000	0.070	0.033	0.033	106,155	No	243,721
3EXA-17P	0.000	0.088	0.033	0.033	178,646	No	243,721
3EXA-16	0.000	0.037	0.033	0.033	8,034	No	243,721
3EXA-16P	0.000	0.171	0.033	0.033	862,190	No	243,721
3EXA-15 (BR/SE)	0.000	0.035	0.036	0.036	-4,069	No	243,721
3EXA-15 (D/S)	0.000	0.099	0.051	0.051	111,265	No	243,721
3EXA-15P	0.000	0.235	0.051	0.051	1,172,118	No	243,721
===>Grouped by Line: **ES1-2-3RDPT ES to FWH 23A**					***Sorted By:Flow Order***		
3EXA-22N	0.000	-0.073	0.033	0.033	-123,277	No	243,721
3EXA-22X	0.000	0.142	0.033	0.033	495,685	No	243,721
3EXA-22	0.000	0.070	0.033	0.033	106,155	No	243,721
3EXA-21	0.000	0.070	0.033	0.033	106,155	No	243,721
3EXA-21P	0.000	0.088	0.033	0.033	178,646	No	243,721
3EXA-20	0.000	0.070	0.033	0.033	106,155	No	243,721
3EXA-20P	0.000	0.088	0.033	0.033	178,646	No	243,721
3EXA-19	0.000	0.052	0.033	0.033	48,360	No	243,721
3EXA-19P	0.000	0.171	0.033	0.033	862,190	No	243,721
===>Grouped by Line: **ES1-3-3RDPT ES to FWH 23A**					***Sorted By:Flow Order***		
3EXA-14	0.000	0.033	0.051	0.051	-30,326	No	243,721
3EXA-14 (BR/SE)	0.000	0.016	0.036	0.036	-45,934	No	243,721
3EXA-14 (D/S)	0.000	-0.078	0.051	0.051	-123,151	No	243,721
3EXA-14P US	0.000	0.241	0.051	0.051	1,384,571	No	243,721

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line:	**ES1-3-3RDPT ES to FWH 23A**				***Sorted By:Flow Order***		
3EXA-14P DS1	0.381	0.288	0.051	0.051	1,732,925	No	243,721
3EXA-14P DS	0.000	0.314	0.051	0.051	1,916,616	Yes	243,721
3EXA-VALVE 3EX-1	0.000	0.096	0.050	0.050	110,588	No	243,721
3EXA-13P	0.342	0.231	0.051	0.051	898,298	Yes	243,721
3EXA-VALVE 3EX-2	0.000	0.027	0.050	0.050	-42,376	No	243,721
3EXA-12P	0.338	0.258	0.051	0.051	1,027,968	Yes	243,721
3EXA-10	0.413	0.160	0.047	0.047	268,914	Yes	243,721
3EXA-9P	0.345	0.297	0.051	0.051	1,600,697	Yes	243,721
3EXA-9	0.417	0.221	0.047	0.047	386,414	Yes	243,721
3EXA-8P	0.000	0.291	0.051	0.051	546,815	No	243,721
3EXA-8	0.434	0.248	0.047	0.047	445,288	Yes	243,721
3EXA-7P	0.000	0.282	0.051	0.051	526,343	No	243,721
3EXA-7	0.000	0.312	0.047	0.047	159,887,424	No	78,608
3EXA-6P DS	0.000	0.312	0.047	0.047	100,000,000	No	78,608
3EXA-6	0.000	0.312	0.047	0.047	159,887,424	No	78,608
3EXA-5P	0.000	0.312	0.047	0.047	100,000,000	No	78,608
3EXA-5	0.000	0.312	0.047	0.047	159,887,424	No	78,608
3EXA-4P US	0.000	0.312	0.047	0.047	183,620,400	No	78,608
3EXA-4	0.000	0.312	0.047	0.047	76,444,424	No	78,608
3EXA-4 (BR/SE)	0.000	0.250	0.033	0.033	190,753,056	No	78,608
3EXA-4 (D/S)	0.000	0.312	0.047	0.047	100,929,352	No	78,608
===>Grouped by Line:	**ES1-4-3RDPT ES to FWH 23A**				***Sorted By:Flow Order***		
3EXA-1P	0.000	0.250	0.033	0.033	100,000,000	No	78,608
3EXA-1A	0.000	0.250	0.033	0.033	100,000,000	No	78,608
3EXA-1	0.000	0.250	0.033	0.033	145,042,880	No	78,608
3EXA-1N	0.000	0.035	0.033	0.033	2,958	No	243,721
===>Grouped by Line:	**ES1-5-3RDPT ES to FWH 23A**				***Sorted By:Flow Order***		
3EXA-11R	0.000	0.312	0.047	0.047	251,497,536	No	78,608
3EXA-11R (D/S)	0.000	0.250	0.033	0.033	160,511,184	No	78,608
3EXA-11RP	0.000	0.214	0.039	0.039	607,418	No	107,113
3EXA-3	0.388	0.275	0.033	0.033	653,061	Yes	150,169
3EXA-2P	0.000	0.152	0.039	0.039	291,758	No	150,169
3EXA-2A	0.411	0.288	0.039	0.039	657,552	Yes	243,721
3EXA-2	0.000	0.052	0.033	0.033	48,360	No	243,721
3EXA-2N	0.000	0.035	0.033	0.033	2,958	No	243,721

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line:	**ES2-1-3RDPT ES to FWH 23B**				***Sorted By:Flow Order***		
3EXB-14N	0.000	0.143	0.033	0.033	178,121	Yes	243,721
3EXB-14X	0.000	0.142	0.033	0.033	495,685	No	243,721
3EXB-14	0.000	0.070	0.033	0.033	106,155	No	243,721
3EXB-13	0.000	0.070	0.033	0.033	106,155	No	243,721
3EXB-13P	0.000	0.088	0.033	0.033	178,646	No	243,721
3EXB-12	0.000	0.037	0.033	0.033	8,034	No	243,721
3EXB-12P	0.000	0.171	0.033	0.033	862,190	No	243,721
3EXB-11 (BR/SE)	0.000	0.035	0.036	0.036	-4,069	No	243,721
3EXB-11 (D/S)	0.000	0.099	0.051	0.051	111,265	No	243,721
3EXB-11P	0.000	0.235	0.051	0.051	1,172,118	No	243,721
===>Grouped by Line:	**ES2-2-3RDPT ES to FWH 23B**				***Sorted By:Flow Order***		
3EXB-18N	0.000	-0.073	0.033	0.033	-123,277	No	243,721
3EXB-18X	0.000	0.142	0.033	0.033	495,685	No	243,721
3EXB-18	0.000	0.070	0.033	0.033	106,155	No	243,721
3EXB-17	0.000	0.070	0.033	0.033	106,155	No	243,721
3EXB-17P	0.000	0.088	0.033	0.033	178,646	No	243,721
3EXB-16	0.000	0.070	0.033	0.033	106,155	No	243,721
3EXB-16P	0.000	0.088	0.033	0.033	178,646	No	243,721
3EXB-15	0.000	0.052	0.033	0.033	48,360	No	243,721
3EXB-15P	0.000	0.171	0.033	0.033	862,190	No	243,721
===>Grouped by Line:	**ES2-3-3RDPT ES to FWH 23B**				***Sorted By:Flow Order***		
3EXB-10	0.000	0.033	0.051	0.051	-30,326	No	243,721
3EXB-10 (BR/SE)	0.000	0.016	0.036	0.036	-45,934	No	243,721
3EXB-10 (D/S)	0.000	-0.078	0.051	0.051	-123,151	No	243,721
3EXB-10P US	0.000	0.241	0.051	0.051	1,384,571	No	243,721
3EXB-10P DS1	0.000	0.198	0.051	0.051	1,072,238	Yes	243,721
3EXB-10P DS	0.000	0.283	0.051	0.051	1,690,580	Yes	243,721
3EXB-VALVE 3EX-3	0.000	0.096	0.050	0.050	110,588	No	243,721
3EXB-9P	0.333	0.215	0.051	0.051	814,952	Yes	243,721
3EXB-VALVE 3EX-4	0.000	0.027	0.050	0.050	-42,376	No	243,721
3EXB-9A	0.000	0.208	0.051	0.051	779,026	No	243,721
3EXB-9	0.420	0.281	0.047	0.047	557,248	Yes	243,721
3EXB-8	0.403	0.244	0.047	0.047	517,196	Yes	243,721
3EXB-7P	0.322	0.250	0.051	0.051	1,081,001	Yes	243,721
3EXB-7	0.000	0.125	0.047	0.047	216,243	No	243,721

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line:	**ES2-3-3RDPT ES to FWH 23B**				***Sorted By:Flow Order***		
3EXB-6P US	0.349	0.289	0.051	0.051	948,257	Yes	243,721
3EXB-6P DS	0.338	0.259	0.051	0.051	829,815	Yes	243,721
3EXB-6	0.000	0.279	0.047	0.047	550,539	Yes	243,721
3EXB-5P	0.355	0.226	0.051	0.051	1,140,392	Yes	243,721
3EXB-5	0.414	0.241	0.047	0.047	463,295	Yes	243,721
3EXB-4A US	0.328	0.253	0.051	0.051	460,854	No	243,721
3EXB-4A DS	0.000	0.084	0.051	0.051	75,503	No	243,721
3EXB-4	0.000	0.227	0.055	0.055	195,932	No	243,721
3EXB-4 (BR/SE)	0.000	0.184	0.039	0.039	503,868	No	243,721
3EXB-4 (D/S)	0.000	0.243	0.055	0.055	282,652	No	243,721
===>Grouped by Line:	**ES2-4-3RDPT ES to FWH 23B**				***Sorted By:Flow Order***		
3EXB-4P US	0.262	0.200	0.039	0.039	995,929	Yes	243,721
3EXB-1A	0.272	0.232	0.039	0.039	1,196,145	Yes	243,721
3EXB-1	0.367	0.273	0.033	0.033	647,291	Yes	243,721
3EXB-1N	0.000	0.035	0.033	0.033	2,958	No	243,721
===>Grouped by Line:	**ES2-5-3RDPT ES to FWH 23B**				***Sorted By:Flow Order***		
3EXB-10R	0.000	0.312	0.047	0.047	251,548,112	No	33,915
3EXB-10R (D/S)	0.000	0.250	0.033	0.033	160,563,024	No	33,915
3EXB-3P US	0.000	0.349	0.039	0.039	1,003,379	No	107,113
3EXB-3P DS	0.000	0.345	0.039	0.039	991,644	No	107,113
3EXB-3	0.454	0.311	0.033	0.033	758,474	Yes	150,169
3EXB-2P US	0.402	0.307	0.039	0.039	1,083,059	Yes	150,169
3EXB-2P DS	0.000	0.187	0.039	0.039	582,400	No	150,169
3EXB-2A	0.378	0.297	0.033	0.033	1,064,595	Yes	243,721
3EXB-2	0.477	0.223	0.033	0.033	520,704	Yes	243,721
3EXB-2N	0.000	0.035	0.033	0.033	2,958	No	243,721
===>Grouped by Line:	**ES3-1-3RDPT ES to FWH 23C**				***Sorted By:Flow Order***		
3EXC-18N	0.000	-0.073	0.033	0.033	-123,277	No	243,721
3EXC-18X	0.000	0.142	0.033	0.033	495,685	No	243,721
3EXC-18	0.000	0.070	0.033	0.033	106,155	No	243,721
3EXC-17	0.000	0.070	0.033	0.033	106,155	No	243,721
3EXC-17P	0.000	0.088	0.033	0.033	178,646	No	243,721
3EXC-16	0.000	0.037	0.033	0.033	8,034	No	243,721
3EXC-16P	0.000	0.171	0.033	0.033	862,190	No	243,721

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **ES3-1-3RDPT ES to FWH 23C**					***Sorted By:Flow Order***		
3EXC-15 (BR/SE)	0.000	0.035	0.036	0.036	-4,069	No	243,721
3EXC-15 (D/S)	0.000	0.099	0.051	0.051	111,265	No	243,721
3EXC-15P	0.000	0.235	0.051	0.051	1,172,118	No	243,721
===>Grouped by Line: **ES3-2-3RDPT ES to FWH 23C**					***Sorted By:Flow Order***		
3EXC-22N	0.000	0.180	0.033	0.033	237,900	No	243,721
3EXC-22X	0.000	0.142	0.033	0.033	495,685	No	243,721
3EXC-22	0.000	0.241	0.033	0.033	604,785	No	243,721
3EXC-21	0.000	0.070	0.033	0.033	106,155	No	243,721
3EXC-21P	0.000	0.088	0.033	0.033	178,646	No	243,721
3EXC-20	0.000	0.070	0.033	0.033	106,155	No	243,721
3EXC-20P	0.000	0.088	0.033	0.033	178,646	No	243,721
3EXC-19	0.000	0.306	0.033	0.033	720,449	Yes	243,721
3EXC-19P	0.000	0.171	0.033	0.033	862,190	No	243,721
===>Grouped by Line: **ES3-3-3RDPT ES to FWH 23C**					***Sorted By:Flow Order***		
3EXC-14	0.000	0.033	0.051	0.051	-30,326	Yes	243,721
3EXC-14 (BR/SE)	0.000	0.278	0.036	0.036	539,966	No	243,721
3EXC-14 (D/S)	0.000	0.312	0.051	0.051	347,522	Yes	243,721
3EXC-14P US	0.000	0.241	0.051	0.051	1,384,571	No	243,721
3EXC-14P DS1	0.440	0.300	0.051	0.051	1,821,514	No	243,721
3EXC-14P DS	0.000	0.241	0.051	0.051	1,384,571	No	243,721
3EXC-VALVE 3EX-5	0.000	0.096	0.050	0.050	110,588	No	243,721
3EXC-13P	0.000	0.208	0.051	0.051	779,026	No	243,721
3EXC-VALVE 3EX-6	0.000	0.027	0.050	0.050	-42,376	No	243,721
3EXC-13R	0.000	0.312	0.050	0.050	100,000,000	No	94,148
3EXC-13R (D/S)	0.000	0.250	0.043	0.043	100,000,000	No	94,148
3EXC-VALVE PCV-1161	0.000	0.105	0.043	0.043	222,907	No	243,721
3EXC-12R	0.000	0.250	0.043	0.043	100,000,000	No	94,148
3EXC-12R (D/S)	0.000	0.312	0.050	0.050	100,000,000	No	94,148
3EXC-12P	0.000	0.312	0.050	0.050	100,000,000	No	94,148
3EXC-10	0.415	0.342	0.047	0.047	702,460	Yes	243,721
3EXC-9P	0.364	0.285	0.051	0.051	1,519,763	Yes	243,721
3EXC-9	0.418	0.238	0.047	0.047	422,768	Yes	243,721
3EXC-8P	0.000	0.084	0.051	0.051	75,503	No	243,721
3EXC-8	0.000	0.248	0.047	0.047	444,169	Yes	243,721
3EXC-7P	0.314	0.276	0.051	0.051	512,930	Yes	243,721

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **ES3-3-3RDPT ES to FWH 23C**					***Sorted By:Flow Order***		
3EXC-7	0.000	0.093	0.047	0.047	110,457	No	243,721
3EXC-6P	0.349	0.252	0.051	0.051	703,870	Yes	243,721
3EXC-6	0.443	0.250	0.047	0.047	485,316	Yes	243,721
3EXC-5P	0.000	0.237	0.051	0.051	1,213,064	No	243,721
3EXC-5	0.000	0.265	0.047	0.047	517,331	Yes	243,721
3EXC-4P	0.000	0.186	0.055	0.055	458,095	Yes	243,721
3EXC-4	0.000	0.217	0.055	0.055	183,723	No	243,721
3EXC-4 (BR/SE)	0.000	0.206	0.039	0.039	580,848	No	243,721
3EXC-4 (D/S)	0.000	0.245	0.055	0.055	284,559	No	243,721
===>Grouped by Line: **ES3-4-3RDPT ES to FWH 23C**					***Sorted By:Flow Order***		
3EXC-4P-1 US	0.267	0.228	0.039	0.039	1,169,992	Yes	243,721
3EXC-1A	0.000	0.165	0.039	0.039	778,425	No	243,721
3EXC-1	0.000	0.300	0.033	0.033	705,284	Yes	243,721
3EXC-1N	0.000	0.298	0.033	0.033	642,786	No	243,721
===>Grouped by Line: **ES3-5-3RDPT ES to FWH 23C**					***Sorted By:Flow Order***		
3EXC-11R	0.319	0.231	0.047	0.047	685,901	Yes	243,721
3EXC-11R (D/S)	0.000	0.270	0.033	0.033	692,086	Yes	243,721
3EXC-3P	0.000	0.358	0.039	0.039	1,033,947	Yes	107,113
3EXC-3	0.000	0.155	0.033	0.033	321,174	No	150,169
3EXC-2P	0.000	0.328	0.039	0.039	742,471	Yes	150,169
3EXC-2A	0.000	0.278	0.039	0.039	627,801	Yes	150,169
3EXC-2	0.000	0.283	0.033	0.033	658,992	Yes	243,721
3EXC-2N	0.000	0.275	0.033	0.033	587,063	No	243,721

Note:
[1] Predictions are based on last Tmeas to analysis ending period.

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).db

Wear Rate Report

Pass 1 Analysis Exclude Measured Wear

Report Date/Time: 7/6/2010 3:38:15PM
AnalysisDate/Time: 7/6/2010 3:17:03PM

CHECWORKS SFA Version: 3.0 SP-1 (build 109)

Duty Factor (Global) : 1.000

Run Name: 5TH POINT EXTRAC STM
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 1.000

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***ES7-1-5THPT ES to FWH 25ABC***								***Sorted By: Average Wear Rate***		
5EX-VALVE-5EX-1	22	19.058	11.543	387.9	58.034	92.2	28.000	6.954	0.000	324.64	HBD
5EX-VALVE-5EX-3	25	17.173	10.393	387.9	40.204	92.2	28.000	6.954	0.000	324.64	HBD
5EX-VALVE-5EX-4	25	17.173	10.393	387.9	40.204	92.2	28.000	6.954	0.000	324.64	HBD
5EX-18 (D/S)	12	0.117	0.114	387.9	40.204	92.2	28.000	6.954	0.000	324.64	HBD
5EX-18 (BR/SE)	12	0.081	0.079	387.9	40.953	92.2	20.000	6.954	0.000	324.64	HBD
5EX-8	14	0.017	0.016	387.9	40.204	92.2	28.000	6.954	0.000	324.64	HBD
5EX-8 (D/S)	14	0.014	0.013	387.9	25.799	92.2	28.000	6.954	0.000	324.64	HBD
5EX-15	2	0.009	0.008	387.9	40.204	92.2	28.000	6.954	0.000	324.64	HBD
5EX-14	4	0.009	0.008	387.9	40.204	92.2	28.000	6.954	0.000	324.64	HBD
5EX-13	2	0.009	0.008	387.9	40.204	92.2	28.000	6.954	0.000	324.64	HBD
5EX-12	4	0.009	0.008	387.9	40.204	92.2	28.000	6.954	0.000	324.64	HBD
5EX-13P US	54	0.008	0.008	387.9	40.204	92.2	28.000	6.954	0.000	324.64	HBD
5EX-13P	54	0.008	0.008	387.9	40.204	92.2	28.000	6.954	0.000	324.64	HBD
5EX-13P DS	54	0.008	0.008	387.9	40.204	92.2	28.000	6.954	0.000	324.64	HBD
5EX-8P US	54	0.008	0.008	387.9	40.204	92.2	28.000	6.954	0.000	324.64	HBD
5EX-8P DS	54	0.008	0.008	387.9	40.204	92.2	28.000	6.954	0.000	324.64	HBD
5EX-11P	54	0.008	0.008	387.9	40.579	92.2	28.000	6.954	0.000	324.64	HBD
5EX-16	4	0.008	0.008	387.9	40.204	92.2	28.000	6.954	0.000	324.64	HBD
5EX-11	4	0.008	0.008	387.9	40.204	92.2	28.000	6.954	0.000	324.64	HBD
5EX-17	3	0.007	0.007	387.9	41.506	92.2	28.000	6.954	0.000	324.64	HBD
5EX-16P DS	53	0.007	0.006	387.9	41.296	92.2	28.000	6.954	0.000	324.64	HBD
5EX-16P US	53	0.006	0.006	387.9	40.204	92.2	28.000	6.954	0.000	324.64	HBD
5EX-8 (BR/SE)	14	0.006	0.006	387.9	32.872	92.2	18.000	6.954	0.000	324.64	HBD
5EX-14P	52	0.005	0.005	387.9	40.204	92.2	28.000	6.954	0.000	324.64	HBD
5EX-15P US	54	0.005	0.005	387.9	83.908	92.2	28.000	6.954	0.000	324.64	HBD
5EX-15P DS	54	0.005	0.005	387.9	83.908	92.2	28.000	6.954	0.000	324.64	HBD

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***ES7-1-5THPT ES to FWH 25ABC***								***Sorted By: Average Wear Rate***		
5EX-17P	58	0.004	0.004	387.9	40.204	92.2	28.000	6.954	0.000	324.64	HBD
5EX-17P-1	58	0.004	0.004	387.9	40.204	92.2	28.000	6.954	0.000	324.64	HBD
===>Grouped by Line:	***ES7-2-5THPT ESHDR to FWH 25C***								***Sorted By: Average Wear Rate***		
5EX-VALVE 5EX-5-2	22	15.402	9.228	387.9	34.887	92.2	18.000	6.954	0.000	324.64	HBD
5EX-10N	30	0.012	0.008	387.9	32.872	92.2	18.000	6.954	0.000	324.64	HBD
5EX-9	2	0.008	0.007	387.9	32.872	92.2	18.000	6.954	0.000	324.64	HBD
5EX-10	2	0.008	0.007	387.9	32.872	92.2	18.000	6.954	0.000	324.64	HBD
5EX-9-10	52	0.005	0.005	387.9	33.428	92.2	18.000	6.954	0.000	324.64	HBD
===>Grouped by Line:	***ES7-3-5THPT ESHDR 25CT to BT***								***Sorted By: Average Wear Rate***		
5EX-5	14	0.014	0.013	387.9	25.799	92.2	28.000	6.954	0.000	324.64	HBD
5EX-5 (D/S)	14	0.012	0.012	387.9	9.204	92.2	28.000	6.954	0.000	324.64	HBD
5EX-5 (BR/SE)	14	0.006	0.006	387.9	32.872	92.2	18.000	6.954	0.000	324.64	HBD
5EX-5P US	64	0.003	0.003	387.9	25.799	92.2	28.000	6.954	0.000	324.64	HBD
5EX-5P DS	64	0.003	0.003	387.9	25.799	92.2	28.000	6.954	0.000	324.64	HBD
===>Grouped by Line:	***ES7-4-5THPT ESHDR to FWH 25B***								***Sorted By: Average Wear Rate***		
5EX-VALVE 5EX-5-1	22	15.402	9.228	387.9	34.887	92.2	18.000	6.954	0.000	324.64	HBD
5EX-7N	30	0.013	0.008	387.9	32.872	92.2	18.000	6.954	0.000	324.64	HBD
5EX-6	2	0.008	0.007	387.9	32.872	92.2	18.000	6.954	0.000	324.64	HBD
5EX-7	2	0.008	0.007	387.9	32.872	92.2	18.000	6.954	0.000	324.64	HBD
5EX-6-7	52	0.005	0.005	387.9	33.428	92.2	18.000	6.954	0.000	324.64	HBD
5EX-6P1	64	0.003	0.003	387.9	33.738	92.2	18.000	6.954	0.000	324.64	HBD
===>Grouped by Line:	***ES7-5-5THPT ESHDR to FWH 25A***								***Sorted By: Average Wear Rate***		
5EX-VALVE 5EX-5	22	15.402	9.228	387.9	34.887	92.2	18.000	6.954	0.000	324.64	HBD
5EX-1N	30	0.012	0.008	387.9	32.872	92.2	18.000	6.954	0.000	324.64	HBD
5EX-1-2	54	0.008	0.008	387.9	33.428	92.2	18.000	6.954	0.000	324.64	HBD
5EX-3	2	0.008	0.008	387.9	34.550	92.2	18.000	6.954	0.000	324.64	HBD
5EX-2	4	0.008	0.007	387.9	32.872	92.2	18.000	6.954	0.000	324.64	HBD
5EX-1	2	0.008	0.007	387.9	32.872	92.2	18.000	6.954	0.000	324.64	HBD
5EX-4 (D/S)	7	0.007	0.007	387.9	32.872	92.2	18.000	6.954	0.000	324.64	HBD
5EX-3P US	57	0.006	0.006	387.9	34.633	92.2	18.000	6.954	0.000	324.64	HBD
5EX-2P	52	0.005	0.005	387.9	35.010	92.2	18.000	6.954	0.000	324.64	HBD
5EX-4	7	0.005	0.005	387.9	9.204	92.2	28.000	6.954	0.000	324.64	HBD
===>Grouped by Line:	***ES7A-1-SEP TKA VNT to FWH25***								***Sorted By: Average Wear Rate***		
MOPS1	31	19.863	13.479	387.9	40.953	92.2	20.000	6.954	0.000	324.64	HBD

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***ES7A-1-SEP TKA VNT to FWH25***								***Sorted By: Average Wear Rate***		
MOPS5	2	0.009	0.009	387.9	40.953	92.2	20.000	6.954	0.000	324.64	HBD
MOPS7	4	0.009	0.009	387.9	40.953	92.2	20.000	6.954	0.000	324.64	HBD
MOPS8	54	0.009	0.008	387.9	40.953	92.2	20.000	6.954	0.000	324.64	HBD
MOPS6	4	0.008	0.008	387.9	40.953	92.2	20.000	6.954	0.000	324.64	HBD
MOPS2	3	0.008	0.007	387.9	40.953	92.2	20.000	6.954	0.000	324.64	HBD
MOPS3	3	0.008	0.007	387.9	40.953	92.2	20.000	6.954	0.000	324.64	HBD
MOPS4	53	0.007	0.007	387.9	41.324	92.2	20.000	6.954	0.000	324.64	HBD
===>Grouped by Line:	***ES7A-2-SEP TKB VNT to FWH25***								***Sorted By: Average Wear Rate***		
MOPS9	31	20.485	13.901	387.9	43.429	92.2	20.000	6.954	0.000	324.64	HBD
MOPS10	61	0.010	0.009	387.9	41.324	92.2	20.000	6.954	0.000	324.64	HBD
MOPS12	54	0.009	0.008	387.9	40.953	92.2	20.000	6.954	0.000	324.64	HBD
MOPS16	54	0.009	0.008	387.9	40.953	92.2	20.000	6.954	0.000	324.64	HBD
MOPS11	4	0.008	0.008	387.9	40.953	92.2	20.000	6.954	0.000	324.64	HBD
MOPS13	2	0.008	0.008	387.9	40.953	92.2	20.000	6.954	0.000	324.64	HBD
MOPS15	4	0.008	0.008	387.9	40.953	92.2	20.000	6.954	0.000	324.64	HBD
MOPS17	1	0.007	0.007	387.9	40.953	92.2	20.000	6.954	0.000	324.64	HBD
MOPS14	52	0.006	0.005	387.9	41.324	92.2	20.000	6.954	0.000	324.64	HBD
MOPS18	51	0.003	0.003	387.9	69.242	92.2	20.000	6.954	0.000	324.64	HBD

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).db

Wear Rate Report

Pass 1 Analysis Exclude Measured Wear

Report Date/Time: 7/6/2010 3:37:44PM
AnalysisDate/Time: 7/6/2010 3:17:03PM

CHECWORKS SFA Version: 3.0 SP-1 (build 109)
Duty Factor (Global) : 1.000

Run Name: 5TH POINT EXTRAC STM
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 1.000

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***ES7-1-5THPT ES to FWH 25ABC***									***Sorted By: Flow Order***	
5EX-18 (D/S)	12	0.117	0.114	387.9	40.204	92.2	28.000	6.954	0.000	324.64	HBD
5EX-VALVE-5EX-1	22	19.058	11.543	387.9	58.034	92.2	28.000	6.954	0.000	324.64	HBD
5EX-17P	58	0.004	0.004	387.9	40.204	92.2	28.000	6.954	0.000	324.64	HBD
5EX-VALVE-5EX-3	25	17.173	10.393	387.9	40.204	92.2	28.000	6.954	0.000	324.64	HBD
5EX-17P-1	58	0.004	0.004	387.9	40.204	92.2	28.000	6.954	0.000	324.64	HBD
5EX-VALVE-5EX-4	25	17.173	10.393	387.9	40.204	92.2	28.000	6.954	0.000	324.64	HBD
5EX-17	3	0.007	0.007	387.9	41.506	92.2	28.000	6.954	0.000	324.64	HBD
5EX-16P US	53	0.006	0.006	387.9	40.204	92.2	28.000	6.954	0.000	324.64	HBD
5EX-16P DS	53	0.007	0.006	387.9	41.296	92.2	28.000	6.954	0.000	324.64	HBD
5EX-16	4	0.008	0.008	387.9	40.204	92.2	28.000	6.954	0.000	324.64	HBD
5EX-15P US	54	0.005	0.005	387.9	83.908	92.2	28.000	6.954	0.000	324.64	HBD
5EX-15P DS	54	0.005	0.005	387.9	83.908	92.2	28.000	6.954	0.000	324.64	HBD
5EX-15	2	0.009	0.008	387.9	40.204	92.2	28.000	6.954	0.000	324.64	HBD
5EX-14P	52	0.005	0.005	387.9	40.204	92.2	28.000	6.954	0.000	324.64	HBD
5EX-14	4	0.009	0.008	387.9	40.204	92.2	28.000	6.954	0.000	324.64	HBD
5EX-13P US	54	0.008	0.008	387.9	40.204	92.2	28.000	6.954	0.000	324.64	HBD
5EX-13P	54	0.008	0.008	387.9	40.204	92.2	28.000	6.954	0.000	324.64	HBD
5EX-13P DS	54	0.008	0.008	387.9	40.204	92.2	28.000	6.954	0.000	324.64	HBD
5EX-13	2	0.009	0.008	387.9	40.204	92.2	28.000	6.954	0.000	324.64	HBD
5EX-12	4	0.009	0.008	387.9	40.204	92.2	28.000	6.954	0.000	324.64	HBD
5EX-11P	54	0.008	0.008	387.9	40.579	92.2	28.000	6.954	0.000	324.64	HBD
5EX-11	4	0.008	0.008	387.9	40.204	92.2	28.000	6.954	0.000	324.64	HBD
5EX-8P US	54	0.008	0.008	387.9	40.204	92.2	28.000	6.954	0.000	324.64	HBD
5EX-8P DS	54	0.008	0.008	387.9	40.204	92.2	28.000	6.954	0.000	324.64	HBD
5EX-8	14	0.017	0.016	387.9	40.204	92.2	28.000	6.954	0.000	324.64	HBD
5EX-8 (BR/SE)	14	0.006	0.006	387.9	32.872	92.2	18.000	6.954	0.000	324.64	HBD

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***ES7-1-5THPT ES to FWH 25ABC***									***Sorted By: Flow Order***	
5EX-8 (D/S)	14	0.014	0.013	387.9	25.799	92.2	28.000	6.954	0.000	324.64	HBD
5EX-18 (BR/SE)	12	0.081	0.079	387.9	40.953	92.2	20.000	6.954	0.000	324.64	HBD
===>Grouped by Line:	***ES7-2-5THPT ESHDR to FWH 25C***									***Sorted By: Flow Order***	
5EX-VALVE 5EX-5-2	22	15.402	9.228	387.9	34.887	92.2	18.000	6.954	0.000	324.64	HBD
5EX-9	2	0.008	0.007	387.9	32.872	92.2	18.000	6.954	0.000	324.64	HBD
5EX-9-10	52	0.005	0.005	387.9	33.428	92.2	18.000	6.954	0.000	324.64	HBD
5EX-10	2	0.008	0.007	387.9	32.872	92.2	18.000	6.954	0.000	324.64	HBD
5EX-10N	30	0.012	0.008	387.9	32.872	92.2	18.000	6.954	0.000	324.64	HBD
===>Grouped by Line:	***ES7-3-5THPT ESHDR 25CT to BT***									***Sorted By: Flow Order***	
5EX-5P US	64	0.003	0.003	387.9	25.799	92.2	28.000	6.954	0.000	324.64	HBD
5EX-5P DS	64	0.003	0.003	387.9	25.799	92.2	28.000	6.954	0.000	324.64	HBD
5EX-5	14	0.014	0.013	387.9	25.799	92.2	28.000	6.954	0.000	324.64	HBD
5EX-5 (BR/SE)	14	0.006	0.006	387.9	32.872	92.2	18.000	6.954	0.000	324.64	HBD
5EX-5 (D/S)	14	0.012	0.012	387.9	9.204	92.2	28.000	6.954	0.000	324.64	HBD
===>Grouped by Line:	***ES7-4-5THPT ESHDR to FWH 25B***									***Sorted By: Flow Order***	
5EX-6P1	64	0.003	0.003	387.9	33.738	92.2	18.000	6.954	0.000	324.64	HBD
5EX-VALVE 5EX-5-1	22	15.402	9.228	387.9	34.887	92.2	18.000	6.954	0.000	324.64	HBD
5EX-6	2	0.008	0.007	387.9	32.872	92.2	18.000	6.954	0.000	324.64	HBD
5EX-6-7	52	0.005	0.005	387.9	33.428	92.2	18.000	6.954	0.000	324.64	HBD
5EX-7	2	0.008	0.007	387.9	32.872	92.2	18.000	6.954	0.000	324.64	HBD
5EX-7N	30	0.013	0.008	387.9	32.872	92.2	18.000	6.954	0.000	324.64	HBD
===>Grouped by Line:	***ES7-5-5THPT ESHDR to FWH 25A***									***Sorted By: Flow Order***	
5EX-4	7	0.005	0.005	387.9	9.204	92.2	28.000	6.954	0.000	324.64	HBD
5EX-4 (D/S)	7	0.007	0.007	387.9	32.872	92.2	18.000	6.954	0.000	324.64	HBD
5EX-3P US	57	0.006	0.006	387.9	34.633	92.2	18.000	6.954	0.000	324.64	HBD
5EX-3	2	0.008	0.008	387.9	34.550	92.2	18.000	6.954	0.000	324.64	HBD
5EX-2P	52	0.005	0.005	387.9	35.010	92.2	18.000	6.954	0.000	324.64	HBD
5EX-VALVE 5EX-5	22	15.402	9.228	387.9	34.887	92.2	18.000	6.954	0.000	324.64	HBD
5EX-2	4	0.008	0.007	387.9	32.872	92.2	18.000	6.954	0.000	324.64	HBD
5EX-1-2	54	0.008	0.008	387.9	33.428	92.2	18.000	6.954	0.000	324.64	HBD
5EX-1	2	0.008	0.007	387.9	32.872	92.2	18.000	6.954	0.000	324.64	HBD
5EX-1N	30	0.012	0.008	387.9	32.872	92.2	18.000	6.954	0.000	324.64	HBD
===>Grouped by Line:	***ES7A-1-SEP TKA VNT to FWH25***									***Sorted By: Flow Order***	
MOPS1	31	19.863	13.479	387.9	40.953	92.2	20.000	6.954	0.000	324.64	HBD

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***ES7A-1-SEP TKA VNT to FWH25***								***Sorted By: Flow Order***		
MOPS2	3	0.008	0.007	387.9	40.953	92.2	20.000	6.954	0.000	324.64	HBD
MOPS3	3	0.008	0.007	387.9	40.953	92.2	20.000	6.954	0.000	324.64	HBD
MOPS4	53	0.007	0.007	387.9	41.324	92.2	20.000	6.954	0.000	324.64	HBD
MOPS5	2	0.009	0.009	387.9	40.953	92.2	20.000	6.954	0.000	324.64	HBD
MOPS6	4	0.008	0.008	387.9	40.953	92.2	20.000	6.954	0.000	324.64	HBD
MOPS7	4	0.009	0.009	387.9	40.953	92.2	20.000	6.954	0.000	324.64	HBD
MOPS8	54	0.009	0.008	387.9	40.953	92.2	20.000	6.954	0.000	324.64	HBD
===>Grouped by Line:	***ES7A-2-SEP TKB VNT to FWH25***								***Sorted By: Flow Order***		
MOPS9	31	20.485	13.901	387.9	43.429	92.2	20.000	6.954	0.000	324.64	HBD
MOPS10	61	0.010	0.009	387.9	41.324	92.2	20.000	6.954	0.000	324.64	HBD
MOPS11	4	0.008	0.008	387.9	40.953	92.2	20.000	6.954	0.000	324.64	HBD
MOPS12	54	0.009	0.008	387.9	40.953	92.2	20.000	6.954	0.000	324.64	HBD
MOPS13	2	0.008	0.008	387.9	40.953	92.2	20.000	6.954	0.000	324.64	HBD
MOPS14	52	0.006	0.005	387.9	41.324	92.2	20.000	6.954	0.000	324.64	HBD
MOPS15	4	0.008	0.008	387.9	40.953	92.2	20.000	6.954	0.000	324.64	HBD
MOPS16	54	0.009	0.008	387.9	40.953	92.2	20.000	6.954	0.000	324.64	HBD
MOPS17	1	0.007	0.007	387.9	40.953	92.2	20.000	6.954	0.000	324.64	HBD
MOPS18	51	0.003	0.003	387.9	69.242	92.2	20.000	6.954	0.000	324.64	HBD

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).db

Service Life Report

Pass 1 Analysis Exclude Measured Wear

Report Date/Time: 7/6/2010 3:37:44PM
AnalysisDate/Time: 7/6/2010 3:17:03PM

Run Name: 5TH POINT EXTRAC STM
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 1.000

CHECWORKS SFA Version: 3.0 SP-1 (build 109)
Duty Factor (Global) :1.000

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **ES7-1-5THPT ES to FWH 25ABC**					***Sorted By:Remaining Life***		
5EX-VALVE-5EX-1	0.000	-0.155	0.248	0.248	-198,773	No	243,721
5EX-VALVE-5EX-3	0.000	-0.103	0.248	0.248	-193,848	No	243,721
5EX-VALVE-5EX-4	0.000	-0.103	0.248	0.248	-193,848	No	243,721
5EX-18 (D/S)	0.000	0.374	0.232	0.232	10,864,847	No	107,113
5EX-18 (BR/SE)	0.000	0.374	0.166	0.166	23,199,234	No	107,113
5EX-8	0.000	0.375	0.269	0.269	56,911,680	No	94,148
5EX-8 (D/S)	0.000	0.375	0.269	0.269	69,292,696	No	94,148
5EX-17P	0.000	0.375	0.267	0.267	100,000,000	No	94,148
5EX-17P-1	0.000	0.375	0.267	0.267	100,000,000	No	94,148
5EX-17	0.570	0.570	0.269	0.269	100,000,000	No	94,148
5EX-16P US	0.000	0.375	0.267	0.267	100,000,000	No	94,148
5EX-16P DS	0.539	0.539	0.267	0.267	100,000,000	No	94,148
5EX-16	0.000	0.375	0.269	0.269	100,000,000	No	94,148
5EX-15P US	0.000	0.375	0.267	0.267	100,000,000	No	94,148
5EX-15P DS	0.000	0.375	0.267	0.267	100,000,000	No	94,148
5EX-15	0.000	0.375	0.269	0.269	100,000,000	No	94,148
5EX-14P	0.000	0.375	0.267	0.267	100,000,000	No	94,148
5EX-14	0.000	0.375	0.269	0.269	100,000,000	No	94,148
5EX-13P US	0.000	0.375	0.267	0.267	100,000,000	No	94,148
5EX-13P	0.000	0.375	0.267	0.267	100,000,000	No	94,148
5EX-13P DS	0.000	0.375	0.267	0.267	100,000,000	No	94,148
5EX-13	0.000	0.375	0.269	0.269	100,000,000	No	94,148
5EX-12	0.000	0.375	0.269	0.269	100,000,000	No	94,148
5EX-11P	0.000	0.375	0.267	0.267	100,000,000	No	94,148
5EX-11	0.000	0.375	0.269	0.269	100,000,000	No	94,148
5EX-8P US	0.000	0.375	0.267	0.267	100,000,000	No	94,148
5EX-8P DS	0.000	0.375	0.267	0.267	100,000,000	No	94,148

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line:	**ES7-1-5THPT ES to FWH 25ABC**				***Sorted By:Remaining Life***		
5EX-8 (BR/SE)	0.000	0.312	0.173	0.173	100,000,000	No	94,148
===>Grouped by Line:	**ES7-2-5THPT ESHDR to FWH 25C**				***Sorted By:Remaining Life***		
5EX-VALVE 5EX-5-2	0.000	-0.117	0.160	0.160	-176,994	No	243,721
5EX-9	0.000	0.312	0.149	0.149	100,000,000	No	107,113
5EX-9-10	0.000	0.375	0.172	0.172	100,000,000	No	107,113
5EX-10	0.000	0.312	0.149	0.149	100,000,000	No	107,113
5EX-10N	0.000	0.312	0.149	0.149	100,000,000	No	168,193
===>Grouped by Line:	**ES7-3-5THPT ESHDR 25CT to BT**				***Sorted By:Remaining Life***		
5EX-5	0.000	0.375	0.269	0.269	69,292,696	No	94,148
5EX-5 (D/S)	0.000	0.375	0.269	0.269	78,463,360	No	94,148
5EX-5P US	0.000	0.375	0.267	0.267	100,000,000	No	94,148
5EX-5P DS	0.000	0.375	0.267	0.267	100,000,000	No	94,148
5EX-5 (BR/SE)	0.000	0.312	0.173	0.173	100,000,000	No	94,148
===>Grouped by Line:	**ES7-4-5THPT ESHDR to FWH 25B**				***Sorted By:Remaining Life***		
5EX-VALVE 5EX-5-1	0.000	-0.117	0.160	0.160	-176,994	No	243,721
5EX-7	0.000	0.312	0.149	0.149	100,000,000	No	107,113
5EX-7N	0.000	0.312	0.149	0.149	100,000,000	No	243,721
5EX-6P1	0.000	0.375	0.172	0.172	100,000,000	No	94,148
5EX-6	0.000	0.312	0.149	0.149	100,000,000	No	107,113
5EX-6-7	0.000	0.375	0.172	0.172	100,000,000	No	107,113
===>Grouped by Line:	**ES7-5-5THPT ESHDR to FWH 25A**				***Sorted By:Remaining Life***		
5EX-VALVE 5EX-5	0.000	-0.117	0.160	0.160	-176,994	No	243,721
5EX-4	0.000	0.375	0.269	0.269	100,000,000	No	94,148
5EX-4 (D/S)	0.000	0.312	0.173	0.173	100,000,000	No	94,148
5EX-3P US	0.507	0.507	0.172	0.172	100,000,000	No	94,148
5EX-3	0.498	0.498	0.173	0.173	100,000,000	No	94,148
5EX-2P	0.513	0.513	0.172	0.172	100,000,000	No	94,148
5EX-2	0.000	0.312	0.149	0.149	100,000,000	No	107,113
5EX-1-2	0.000	0.375	0.172	0.172	100,000,000	No	107,113
5EX-1	0.000	0.312	0.149	0.149	100,000,000	No	107,113
5EX-1N	0.000	0.231	0.149	0.149	100,000,000	No	168,193
===>Grouped by Line:	**ES7A-1-SEP TKA VNT to FWH25**				***Sorted By:Remaining Life***		

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **ES7A-1-SEP TKA VNT to FWH25**					***Sorted By:Remaining Life***		
MOPS1	0.000	0.525	0.166	0.166	233,591	No	178,777
MOPS2	0.000	0.375	0.192	0.192	100,000,000	No	107,113
MOPS3	0.000	0.375	0.192	0.192	100,000,000	No	107,113
MOPS4	0.000	0.375	0.191	0.191	100,000,000	No	107,113
MOPS5	0.000	0.375	0.192	0.192	100,000,000	No	107,113
MOPS6	0.000	0.375	0.192	0.192	100,000,000	No	107,113
MOPS7	0.000	0.375	0.192	0.192	100,000,000	No	107,113
MOPS8	0.000	0.375	0.191	0.191	100,000,000	No	107,113
===>Grouped by Line: **ES7A-2-SEP TKB VNT to FWH25**					***Sorted By:Remaining Life***		
MOPS9	0.633	0.419	0.166	0.166	159,806	No	178,777
MOPS11	0.000	0.375	0.192	0.192	100,000,000	No	107,113
MOPS12	0.000	0.375	0.191	0.191	100,000,000	No	107,113
MOPS13	0.000	0.375	0.192	0.192	100,000,000	No	107,113
MOPS14	0.000	0.375	0.191	0.191	100,000,000	No	107,113
MOPS15	0.000	0.375	0.192	0.192	100,000,000	No	107,113
MOPS16	0.000	0.375	0.191	0.191	100,000,000	No	107,113
MOPS17	0.000	0.375	0.192	0.192	100,000,000	No	107,113
MOPS18	0.000	0.375	0.191	0.191	100,000,000	No	107,113
MOPS10	0.000	0.375	0.191	0.191	171,577,776	No	107,113

Note:
[1] Predictions are based on last Tmeas to analysis ending period.

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).db

Service Life Report

Pass 1 Analysis Exclude Measured Wear

Report Date/Time: 7/6/2010 3:37:44PM
AnalysisDate/Time: 7/6/2010 3:17:03PM

Run Name: 5TH POINT EXTRAC STM
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 1.000

CHECWORKS SFA Version: 3.0 SP-1 (build 109)
Duty Factor (Global) : 1.000

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **ES7-1-5THPT ES to FWH 25ABC**					***Sorted By:Flow Order***		
5EX-18 (D/S)	0.000	0.374	0.232	0.232	10,864,847	No	107,113
5EX-VALVE-5EX-1	0.000	-0.155	0.248	0.248	-198,773	No	243,721
5EX-17P	0.000	0.375	0.267	0.267	100,000,000	No	94,148
5EX-VALVE-5EX-3	0.000	-0.103	0.248	0.248	-193,848	No	243,721
5EX-17P-1	0.000	0.375	0.267	0.267	100,000,000	No	94,148
5EX-VALVE-5EX-4	0.000	-0.103	0.248	0.248	-193,848	No	243,721
5EX-17	0.570	0.570	0.269	0.269	100,000,000	No	94,148
5EX-16P US	0.000	0.375	0.267	0.267	100,000,000	No	94,148
5EX-16P DS	0.539	0.539	0.267	0.267	100,000,000	No	94,148
5EX-16	0.000	0.375	0.269	0.269	100,000,000	No	94,148
5EX-15P US	0.000	0.375	0.267	0.267	100,000,000	No	94,148
5EX-15P DS	0.000	0.375	0.267	0.267	100,000,000	No	94,148
5EX-15	0.000	0.375	0.269	0.269	100,000,000	No	94,148
5EX-14P	0.000	0.375	0.267	0.267	100,000,000	No	94,148
5EX-14	0.000	0.375	0.269	0.269	100,000,000	No	94,148
5EX-13P US	0.000	0.375	0.267	0.267	100,000,000	No	94,148
5EX-13P	0.000	0.375	0.267	0.267	100,000,000	No	94,148
5EX-13P DS	0.000	0.375	0.267	0.267	100,000,000	No	94,148
5EX-13	0.000	0.375	0.269	0.269	100,000,000	No	94,148
5EX-12	0.000	0.375	0.269	0.269	100,000,000	No	94,148
5EX-11P	0.000	0.375	0.267	0.267	100,000,000	No	94,148
5EX-11	0.000	0.375	0.269	0.269	100,000,000	No	94,148
5EX-8P US	0.000	0.375	0.267	0.267	100,000,000	No	94,148
5EX-8P DS	0.000	0.375	0.267	0.267	100,000,000	No	94,148
5EX-8	0.000	0.375	0.269	0.269	56,911,680	No	94,148
5EX-8 (BR/SE)	0.000	0.312	0.173	0.173	100,000,000	No	94,148
5EX-8 (D/S)	0.000	0.375	0.269	0.269	69,292,696	No	94,148

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>*Grouped by Line:* **ES7-1-5THPT ES to FWH 25ABC**					***Sorted By:Flow Order***		
5EX-18 (BR/SE)	0.000	0.374	0.166	0.166	23,199,234	No	107,113
===>*Grouped by Line:* **ES7-2-5THPT ESHDR to FWH 25C**					***Sorted By:Flow Order***		
5EX-VALVE 5EX-5-2	0.000	-0.117	0.160	0.160	-176,994	No	243,721
5EX-9	0.000	0.312	0.149	0.149	100,000,000	No	107,113
5EX-9-10	0.000	0.375	0.172	0.172	100,000,000	No	107,113
5EX-10	0.000	0.312	0.149	0.149	100,000,000	No	107,113
5EX-10N	0.000	0.312	0.149	0.149	100,000,000	No	168,193
===>*Grouped by Line:* **ES7-3-5THPT ESHDR 25CT to BT**					***Sorted By:Flow Order***		
5EX-5P US	0.000	0.375	0.267	0.267	100,000,000	No	94,148
5EX-5P DS	0.000	0.375	0.267	0.267	100,000,000	No	94,148
5EX-5	0.000	0.375	0.269	0.269	69,292,696	No	94,148
5EX-5 (BR/SE)	0.000	0.312	0.173	0.173	100,000,000	No	94,148
5EX-5 (D/S)	0.000	0.375	0.269	0.269	78,463,360	No	94,148
===>*Grouped by Line:* **ES7-4-5THPT ESHDR to FWH 25B**					***Sorted By:Flow Order***		
5EX-6P1	0.000	0.375	0.172	0.172	100,000,000	No	94,148
5EX-VALVE 5EX-5-1	0.000	-0.117	0.160	0.160	-176,994	No	243,721
5EX-6	0.000	0.312	0.149	0.149	100,000,000	No	107,113
5EX-6-7	0.000	0.375	0.172	0.172	100,000,000	No	107,113
5EX-7	0.000	0.312	0.149	0.149	100,000,000	No	107,113
5EX-7N	0.000	0.312	0.149	0.149	100,000,000	No	243,721
===>*Grouped by Line:* **ES7-5-5THPT ESHDR to FWH 25A**					***Sorted By:Flow Order***		
5EX-4	0.000	0.375	0.269	0.269	100,000,000	No	94,148
5EX-4 (D/S)	0.000	0.312	0.173	0.173	100,000,000	No	94,148
5EX-3P US	0.507	0.507	0.172	0.172	100,000,000	No	94,148
5EX-3	0.498	0.498	0.173	0.173	100,000,000	No	94,148
5EX-2P	0.513	0.513	0.172	0.172	100,000,000	No	94,148
5EX-VALVE 5EX-5	0.000	-0.117	0.160	0.160	-176,994	No	243,721
5EX-2	0.000	0.312	0.149	0.149	100,000,000	No	107,113
5EX-1-2	0.000	0.375	0.172	0.172	100,000,000	No	107,113
5EX-1	0.000	0.312	0.149	0.149	100,000,000	No	107,113
5EX-1N	0.000	0.231	0.149	0.149	100,000,000	No	168,193
===>*Grouped by Line:* **ES7A-1-SEP TKA VNT to FWH25**					***Sorted By:Flow Order***		

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **ES7A-1-SEP TKA VNT to FWH25**					***Sorted By:Flow Order***		
MOPS1	0.000	0.525	0.166	0.166	233,591	No	178,777
MOPS2	0.000	0.375	0.192	0.192	100,000,000	No	107,113
MOPS3	0.000	0.375	0.192	0.192	100,000,000	No	107,113
MOPS4	0.000	0.375	0.191	0.191	100,000,000	No	107,113
MOPS5	0.000	0.375	0.192	0.192	100,000,000	No	107,113
MOPS6	0.000	0.375	0.192	0.192	100,000,000	No	107,113
MOPS7	0.000	0.375	0.192	0.192	100,000,000	No	107,113
MOPS8	0.000	0.375	0.191	0.191	100,000,000	No	107,113
===>Grouped by Line: **ES7A-2-SEP TKB VNT to FWH25**					***Sorted By:Flow Order***		
MOPS9	0.633	0.419	0.166	0.166	159,806	No	178,777
MOPS10	0.000	0.375	0.191	0.191	171,577,776	No	107,113
MOPS11	0.000	0.375	0.192	0.192	100,000,000	No	107,113
MOPS12	0.000	0.375	0.191	0.191	100,000,000	No	107,113
MOPS13	0.000	0.375	0.192	0.192	100,000,000	No	107,113
MOPS14	0.000	0.375	0.191	0.191	100,000,000	No	107,113
MOPS15	0.000	0.375	0.192	0.192	100,000,000	No	107,113
MOPS16	0.000	0.375	0.191	0.191	100,000,000	No	107,113
MOPS17	0.000	0.375	0.192	0.192	100,000,000	No	107,113
MOPS18	0.000	0.375	0.191	0.191	100,000,000	No	107,113

Note:
[1] Predictions are based on last Tmeas to analysis ending period.

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).db

Wear Rate Report

Pass 1 Analysis Exclude Measured Wear

Report Date/Time: 7/6/2010 3:38:15PM
AnalysisDate/Time: 7/6/2010 3:17:35PM

CHECWORKS SFA Version: 3.0 SP-1 (build 109)

Duty Factor (Global) : 1.000

Run Name: 6TH POINT EXTRAC STM
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 1.000

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***ES8-1-6THPT ES to HDR***								***Sorted By: Average Wear Rate***		
6EX-28N	31	24.026	13.245	444.8	50.558	92.0	12.750	6.665	0.000	260.62	HBD
6EX-27P	54	0.012	0.008	444.8	51.109	92.0	12.750	6.665	0.000	260.62	HBD
6EX-28	4	0.011	0.008	444.8	51.109	92.0	12.750	6.665	0.000	260.62	HBD
6EX-27	4	0.011	0.008	444.8	50.558	92.0	12.750	6.665	0.000	260.62	HBD
6EX-23	2	0.011	0.008	444.8	50.558	92.0	12.750	6.665	0.000	260.62	HBD
6EX-23P	54	0.009	0.006	444.8	69.447	92.0	12.750	6.665	0.000	260.62	HBD
6EX-22P	52	0.008	0.005	444.8	50.558	92.0	12.750	6.665	0.000	260.62	HBD
6EX-22R	18	0.007	0.005	444.8	49.777	92.0	12.750	6.665	0.000	260.62	HBD
6EX-22R (D/S)	18	0.005	0.004	444.8	23.633	92.0	18.000	6.665	0.000	260.62	HBD
6EX-22A	68	0.004	0.003	444.8	23.633	92.0	18.000	6.665	0.000	260.62	HBD
===>Grouped by Line:	***ES8-2-6THPT ES to HDR***								***Sorted By: Average Wear Rate***		
6EX-26-1N	31	24.173	13.327	444.8	51.109	92.0	12.750	6.665	0.000	260.62	HBD
6EX-26P	54	0.012	0.008	444.8	50.558	92.0	12.750	6.665	0.000	260.62	HBD
6EX-26-1	4	0.011	0.008	444.8	51.109	92.0	12.750	6.665	0.000	260.62	HBD
6EX-25	2	0.011	0.008	444.8	50.558	92.0	12.750	6.665	0.000	260.62	HBD
6EX-26-2	1	0.010	0.007	444.8	50.558	92.0	12.750	6.665	0.000	260.62	HBD
6EX-24	1	0.010	0.007	444.8	50.558	92.0	12.750	6.665	0.000	260.62	HBD
6EX-25P	51	0.007	0.005	444.8	50.558	92.0	12.750	6.665	0.000	260.62	HBD
6EX-24P	52	0.006	0.004	444.8	69.447	92.0	12.750	6.665	0.000	260.62	HBD
===>Grouped by Line:	***ES8-3-6THPT ESHDR to FWH 26***								***Sorted By: Average Wear Rate***		
6EX-VALVE-6EX-3	25	18.259	10.060	444.8	49.189	92.0	18.000	6.665	0.000	260.62	HBD
6EX-VALVE-6EX-4	25	18.259	10.060	444.8	49.189	92.0	18.000	6.665	0.000	260.62	HBD
6EX-VALVE-6EX-1	22	16.883	9.302	444.8	49.958	92.0	18.000	6.665	0.000	260.62	HBD
6EX-14	14	0.021	0.016	444.8	49.196	92.0	18.000	6.665	0.000	260.62	HBD
6EX-22 (D/S)	12	0.018	0.013	444.8	49.196	92.0	18.000	6.665	0.000	260.62	HBD

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***ES8-3-6THPT ESHDR to FWH 26***								***Sorted By: Average Wear Rate***		
6EX-14 (D/S)	14	0.017	0.013	444.8	32.168	92.0	18.000	6.665	0.000	260.62	HBD
6EX-22	12	0.013	0.009	444.8	23.633	92.0	18.000	6.665	0.000	260.62	HBD
6EX-22 (BR/SE)	12	0.012	0.009	444.8	49.777	92.0	12.750	6.665	0.000	260.62	HBD
6EX-21C	54	0.011	0.008	444.8	49.196	92.0	18.000	6.665	0.000	260.62	HBD
6EX-21	4	0.010	0.008	444.8	49.196	92.0	18.000	6.665	0.000	260.62	HBD
6EX-20	4	0.010	0.008	444.8	49.196	92.0	18.000	6.665	0.000	260.62	HBD
6EX-19	2	0.010	0.008	444.8	49.196	92.0	18.000	6.665	0.000	260.62	HBD
6EX-18	2	0.010	0.008	444.8	49.196	92.0	18.000	6.665	0.000	260.62	HBD
6EX-17	2	0.010	0.008	444.8	49.196	92.0	18.000	6.665	0.000	260.62	HBD
6EX-16	2	0.010	0.008	444.8	49.196	92.0	18.000	6.665	0.000	260.62	HBD
6EX-19P	54	0.007	0.005	444.8	77.952	92.0	18.000	6.665	0.000	260.62	HBD
6EX-18P	52	0.007	0.005	444.8	49.196	92.0	18.000	6.665	0.000	260.62	HBD
6EX-17P	52	0.007	0.005	444.8	49.196	92.0	18.000	6.665	0.000	260.62	HBD
6EX-46P	52	0.007	0.005	444.8	49.196	92.0	18.000	6.665	0.000	260.62	HBD
6EX-16P	52	0.007	0.005	444.8	49.827	92.0	18.000	6.665	0.000	260.62	HBD
6EX-14 (BR/SE)	14	0.007	0.005	444.8	32.641	92.0	12.750	6.665	0.000	260.62	HBD
6EX-20B	58	0.004	0.004	444.8	49.196	92.0	18.000	6.665	0.000	260.62	HBD
6EX-20A	58	0.004	0.004	444.8	49.196	92.0	18.000	6.665	0.000	260.62	HBD
6EX-21P	62	0.003	0.002	444.8	49.196	92.0	18.000	6.665	0.000	260.62	HBD
===>Grouped by Line:	***ES8-4-6THPT ESHDR to FWH 26C***								***Sorted By: Average Wear Rate***		
6EX-VALVE-6EX-5-2	22	14.186	7.758	444.8	33.594	92.0	12.750	6.665	0.000	260.62	HBD
6EX-11N	30	12.909	7.064	444.8	32.641	92.0	12.750	6.665	0.000	260.62	HBD
6EX-13P	54	0.009	0.007	444.8	33.594	92.0	12.750	6.665	0.000	260.62	HBD
6EX-15	2	0.009	0.006	444.8	33.166	92.0	12.750	6.665	0.000	260.62	HBD
6EX-13	4	0.009	0.006	444.8	33.166	92.0	12.750	6.665	0.000	260.62	HBD
6EX-12	2	0.009	0.006	444.8	33.166	92.0	12.750	6.665	0.000	260.62	HBD
6EX-11	4	0.009	0.006	444.8	33.166	92.0	12.750	6.665	0.000	260.62	HBD
6EX-13C	1	0.007	0.005	444.8	33.166	92.0	12.750	6.665	0.000	260.62	HBD
6EX-15P	52	0.006	0.004	444.8	33.166	92.0	12.750	6.665	0.000	260.62	HBD
6EX-12P	58	0.004	0.003	444.8	33.594	92.0	12.750	6.665	0.000	260.62	HBD
6EX-14P	64	0.003	0.002	444.8	49.250	92.0	12.750	6.665	0.000	260.62	HBD
6EX-14R (D/S)	17	0.003	0.002	444.8	48.775	92.0	12.750	6.665	0.000	260.62	HBD
6EX-14R	17	0.002	0.001	444.8	34.282	92.0	18.000	6.665	0.000	260.62	HBD
===>Grouped by Line:	***ES8-5-6THPT ESHDR 26CT to BT***								***Sorted By: Average Wear Rate***		

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***ES8-5-6THPT ESHDR 26CT to BT***								***Sorted By: Average Wear Rate***		
6EX-10	14	0.017	0.013	444.8	32.168	92.0	18.000	6.665	0.000	260.62	HBD
6EX-10 (D/S)	14	0.013	0.009	444.8	14.562	92.0	18.000	6.665	0.000	260.62	HBD
6EX-10 (BR/SE)	14	0.007	0.005	444.8	32.641	92.0	12.750	6.665	0.000	260.62	HBD
6EX-10P	64	0.004	0.003	444.8	32.168	92.0	18.000	6.665	0.000	260.62	HBD
===>Grouped by Line:	***ES8-6-6THPT ESHDR to FWH 26B***								***Sorted By: Average Wear Rate***		
6EX-VALVE-6EX-5-1	22	14.186	7.758	444.8	33.594	92.0	12.750	6.665	0.000	260.62	HBD
6EX-6N	30	8.582	7.346	444.8	35.070	92.0	12.750	6.665	0.000	260.62	HBD
6EX-6P	54	0.009	0.007	444.8	33.594	92.0	12.750	6.665	0.000	260.62	HBD
6EX-6	4	0.009	0.007	444.8	34.678	92.0	12.750	6.665	0.000	260.62	HBD
6EX-9	2	0.009	0.006	444.8	33.166	92.0	12.750	6.665	0.000	260.62	HBD
6EX-8	4	0.009	0.006	444.8	33.166	92.0	12.750	6.665	0.000	260.62	HBD
6EX-7	2	0.009	0.006	444.8	33.166	92.0	12.750	6.665	0.000	260.62	HBD
6EX-8B	1	0.007	0.005	444.8	33.166	92.0	12.750	6.665	0.000	260.62	HBD
6EX-8BP	52	0.006	0.004	444.8	33.166	92.0	12.750	6.665	0.000	260.62	HBD
6EX-7P	58	0.004	0.003	444.8	33.594	92.0	12.750	6.665	0.000	260.62	HBD
6EX-9P	64	0.003	0.002	444.8	49.250	92.0	12.750	6.665	0.000	260.62	HBD
6EX-10R (D/S)	17	0.003	0.002	444.8	48.775	92.0	12.750	6.665	0.000	260.62	HBD
6EX-10R	17	0.002	0.001	444.8	34.282	92.0	18.000	6.665	0.000	260.62	HBD
===>Grouped by Line:	***ES8-7-6THPT ESHDR to FWH 26A***								***Sorted By: Average Wear Rate***		
6EX-VALVE-6EX-5	22	14.186	7.758	444.8	33.594	92.0	12.750	6.665	0.000	260.62	HBD
6EX-1N	30	8.802	7.542	444.8	36.773	92.0	12.750	6.665	0.000	260.62	HBD
6EX-3P	54	0.009	0.007	444.8	33.166	92.0	12.750	6.665	0.000	260.62	HBD
6EX-1	4	0.009	0.007	444.8	34.678	92.0	12.750	6.665	0.000	260.62	HBD
6EX-5	4	0.009	0.006	444.8	33.166	92.0	12.750	6.665	0.000	260.62	HBD
6EX-4	4	0.009	0.006	444.8	33.166	92.0	12.750	6.665	0.000	260.62	HBD
6EX-3	2	0.009	0.006	444.8	33.166	92.0	12.750	6.665	0.000	260.62	HBD
6EX-2	2	0.009	0.006	444.8	33.166	92.0	12.750	6.665	0.000	260.62	HBD
6EX-5P	67	0.007	0.005	444.8	33.166	92.0	12.750	6.665	0.000	260.62	HBD
6EX-4P	54	0.007	0.005	444.8	49.250	92.0	12.750	6.665	0.000	260.62	HBD
6EX-1P	52	0.006	0.004	444.8	33.594	92.0	12.750	6.665	0.000	260.62	HBD
6EX-2P	58	0.004	0.003	444.8	33.594	92.0	12.750	6.665	0.000	260.62	HBD
6EX-5A (D/S)	17	0.004	0.003	444.8	32.641	92.0	12.750	6.665	0.000	260.62	HBD
6EX-5A	17	0.003	0.002	444.8	14.562	92.0	18.000	6.665	0.000	260.62	HBD
6EX-51	64	0.003	0.002	444.8	14.562	92.0	18.000	6.665	0.000	260.62	HBD

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).db

Wear Rate Report

Pass 1 Analysis Exclude Measured Wear

Report Date/Time: 7/6/2010 3:37:44PM
AnalysisDate/Time: 7/6/2010 3:17:35PM

CHECWORKS SFA Version: 3.0 SP-1 (build 109)
Duty Factor (Global) : 1.000

Run Name: 6TH POINT EXTRAC STM
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 1.000

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***ES8-1-6THPT ES to HDR***									***Sorted By: Flow Order***	
6EX-28N	31	24.026	13.245	444.8	50.558	92.0	12.750	6.665	0.000	260.62	HBD
6EX-28	4	0.011	0.008	444.8	51.109	92.0	12.750	6.665	0.000	260.62	HBD
6EX-27P	54	0.012	0.008	444.8	51.109	92.0	12.750	6.665	0.000	260.62	HBD
6EX-27	4	0.011	0.008	444.8	50.558	92.0	12.750	6.665	0.000	260.62	HBD
6EX-23P	54	0.009	0.006	444.8	69.447	92.0	12.750	6.665	0.000	260.62	HBD
6EX-23	2	0.011	0.008	444.8	50.558	92.0	12.750	6.665	0.000	260.62	HBD
6EX-22P	52	0.008	0.005	444.8	50.558	92.0	12.750	6.665	0.000	260.62	HBD
6EX-22R	18	0.007	0.005	444.8	49.777	92.0	12.750	6.665	0.000	260.62	HBD
6EX-22R (D/S)	18	0.005	0.004	444.8	23.633	92.0	18.000	6.665	0.000	260.62	HBD
6EX-22A	68	0.004	0.003	444.8	23.633	92.0	18.000	6.665	0.000	260.62	HBD
===>Grouped by Line:	***ES8-2-6THPT ES to HDR***									***Sorted By: Flow Order***	
6EX-26-1N	31	24.173	13.327	444.8	51.109	92.0	12.750	6.665	0.000	260.62	HBD
6EX-26-1	4	0.011	0.008	444.8	51.109	92.0	12.750	6.665	0.000	260.62	HBD
6EX-26P	54	0.012	0.008	444.8	50.558	92.0	12.750	6.665	0.000	260.62	HBD
6EX-26-2	1	0.010	0.007	444.8	50.558	92.0	12.750	6.665	0.000	260.62	HBD
6EX-25P	51	0.007	0.005	444.8	50.558	92.0	12.750	6.665	0.000	260.62	HBD
6EX-25	2	0.011	0.008	444.8	50.558	92.0	12.750	6.665	0.000	260.62	HBD
6EX-24P	52	0.006	0.004	444.8	69.447	92.0	12.750	6.665	0.000	260.62	HBD
6EX-24	1	0.010	0.007	444.8	50.558	92.0	12.750	6.665	0.000	260.62	HBD
===>Grouped by Line:	***ES8-3-6THPT ESHDR to FWH 26***									***Sorted By: Flow Order***	
6EX-22	12	0.013	0.009	444.8	23.633	92.0	18.000	6.665	0.000	260.62	HBD
6EX-22 (BR/SE)	12	0.012	0.009	444.8	49.777	92.0	12.750	6.665	0.000	260.62	HBD
6EX-22 (D/S)	12	0.018	0.013	444.8	49.196	92.0	18.000	6.665	0.000	260.62	HBD
6EX-21P	62	0.003	0.002	444.8	49.196	92.0	18.000	6.665	0.000	260.62	HBD
6EX-21	4	0.010	0.008	444.8	49.196	92.0	18.000	6.665	0.000	260.62	HBD

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***ES8-3-6THPT ESHDR to FWH 26***									***Sorted By: Flow Order***	
6EX-21C	54	0.011	0.008	444.8	49.196	92.0	18.000	6.665	0.000	260.62	HBD
6EX-VALVE-6EX-1	22	16.883	9.302	444.8	49.958	92.0	18.000	6.665	0.000	260.62	HBD
6EX-20B	58	0.004	0.004	444.8	49.196	92.0	18.000	6.665	0.000	260.62	HBD
6EX-VALVE-6EX-3	25	18.259	10.060	444.8	49.189	92.0	18.000	6.665	0.000	260.62	HBD
6EX-20A	58	0.004	0.004	444.8	49.196	92.0	18.000	6.665	0.000	260.62	HBD
6EX-VALVE-6EX-4	25	18.259	10.060	444.8	49.189	92.0	18.000	6.665	0.000	260.62	HBD
6EX-20	4	0.010	0.008	444.8	49.196	92.0	18.000	6.665	0.000	260.62	HBD
6EX-19P	54	0.007	0.005	444.8	77.952	92.0	18.000	6.665	0.000	260.62	HBD
6EX-19	2	0.010	0.008	444.8	49.196	92.0	18.000	6.665	0.000	260.62	HBD
6EX-18P	52	0.007	0.005	444.8	49.196	92.0	18.000	6.665	0.000	260.62	HBD
6EX-18	2	0.010	0.008	444.8	49.196	92.0	18.000	6.665	0.000	260.62	HBD
6EX-17P	52	0.007	0.005	444.8	49.196	92.0	18.000	6.665	0.000	260.62	HBD
6EX-17	2	0.010	0.008	444.8	49.196	92.0	18.000	6.665	0.000	260.62	HBD
6EX-16P	52	0.007	0.005	444.8	49.827	92.0	18.000	6.665	0.000	260.62	HBD
6EX-16	2	0.010	0.008	444.8	49.196	92.0	18.000	6.665	0.000	260.62	HBD
6EX-46P	52	0.007	0.005	444.8	49.196	92.0	18.000	6.665	0.000	260.62	HBD
6EX-14	14	0.021	0.016	444.8	49.196	92.0	18.000	6.665	0.000	260.62	HBD
6EX-14 (BR/SE)	14	0.007	0.005	444.8	32.641	92.0	12.750	6.665	0.000	260.62	HBD
6EX-14 (D/S)	14	0.017	0.013	444.8	32.168	92.0	18.000	6.665	0.000	260.62	HBD
===>Grouped by Line:	***ES8-4-6THPT ESHDR to FWH 26C***									***Sorted By: Flow Order***	
6EX-14R	17	0.002	0.001	444.8	34.282	92.0	18.000	6.665	0.000	260.62	HBD
6EX-14R (D/S)	17	0.003	0.002	444.8	48.775	92.0	12.750	6.665	0.000	260.62	HBD
6EX-14P	64	0.003	0.002	444.8	49.250	92.0	12.750	6.665	0.000	260.62	HBD
6EX-15	2	0.009	0.006	444.8	33.166	92.0	12.750	6.665	0.000	260.62	HBD
6EX-15P	52	0.006	0.004	444.8	33.166	92.0	12.750	6.665	0.000	260.62	HBD
6EX-13C	1	0.007	0.005	444.8	33.166	92.0	12.750	6.665	0.000	260.62	HBD
6EX-13	4	0.009	0.006	444.8	33.166	92.0	12.750	6.665	0.000	260.62	HBD
6EX-13P	54	0.009	0.007	444.8	33.594	92.0	12.750	6.665	0.000	260.62	HBD
6EX-VALVE-6EX-5-2	22	14.186	7.758	444.8	33.594	92.0	12.750	6.665	0.000	260.62	HBD
6EX-12P	58	0.004	0.003	444.8	33.594	92.0	12.750	6.665	0.000	260.62	HBD
6EX-12	2	0.009	0.006	444.8	33.166	92.0	12.750	6.665	0.000	260.62	HBD
6EX-11	4	0.009	0.006	444.8	33.166	92.0	12.750	6.665	0.000	260.62	HBD
6EX-11N	30	12.909	7.064	444.8	32.641	92.0	12.750	6.665	0.000	260.62	HBD
===>Grouped by Line:	***ES8-5-6THPT ESHDR 26CT to BT***									***Sorted By: Flow Order***	

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***ES8-5-6THPT ESHDR 26CT to BT***								***Sorted By: Flow Order***		
6EX-10P	64	0.004	0.003	444.8	32.168	92.0	18.000	6.665	0.000	260.62	HBD
6EX-10	14	0.017	0.013	444.8	32.168	92.0	18.000	6.665	0.000	260.62	HBD
6EX-10 (BR/SE)	14	0.007	0.005	444.8	32.641	92.0	12.750	6.665	0.000	260.62	HBD
6EX-10 (D/S)	14	0.013	0.009	444.8	14.562	92.0	18.000	6.665	0.000	260.62	HBD
===>Grouped by Line:	***ES8-6-6THPT ESHDR to FWH 26B***								***Sorted By: Flow Order***		
6EX-10R	17	0.002	0.001	444.8	34.282	92.0	18.000	6.665	0.000	260.62	HBD
6EX-10R (D/S)	17	0.003	0.002	444.8	48.775	92.0	12.750	6.665	0.000	260.62	HBD
6EX-9P	64	0.003	0.002	444.8	49.250	92.0	12.750	6.665	0.000	260.62	HBD
6EX-9	2	0.009	0.006	444.8	33.166	92.0	12.750	6.665	0.000	260.62	HBD
6EX-8BP	52	0.006	0.004	444.8	33.166	92.0	12.750	6.665	0.000	260.62	HBD
6EX-8B	1	0.007	0.005	444.8	33.166	92.0	12.750	6.665	0.000	260.62	HBD
6EX-8	4	0.009	0.006	444.8	33.166	92.0	12.750	6.665	0.000	260.62	HBD
6EX-6P	54	0.009	0.007	444.8	33.594	92.0	12.750	6.665	0.000	260.62	HBD
6EX-VALVE-6EX-5-1	22	14.186	7.758	444.8	33.594	92.0	12.750	6.665	0.000	260.62	HBD
6EX-7P	58	0.004	0.003	444.8	33.594	92.0	12.750	6.665	0.000	260.62	HBD
6EX-7	2	0.009	0.006	444.8	33.166	92.0	12.750	6.665	0.000	260.62	HBD
6EX-6	4	0.009	0.007	444.8	34.678	92.0	12.750	6.665	0.000	260.62	HBD
6EX-6N	30	8.582	7.346	444.8	35.070	92.0	12.750	6.665	0.000	260.62	HBD
===>Grouped by Line:	***ES8-7-6THPT ESHDR to FWH 26A***								***Sorted By: Flow Order***		
6EX-51	64	0.003	0.002	444.8	14.562	92.0	18.000	6.665	0.000	260.62	HBD
6EX-5A	17	0.003	0.002	444.8	14.562	92.0	18.000	6.665	0.000	260.62	HBD
6EX-5A (D/S)	17	0.004	0.003	444.8	32.641	92.0	12.750	6.665	0.000	260.62	HBD
6EX-5P	67	0.007	0.005	444.8	33.166	92.0	12.750	6.665	0.000	260.62	HBD
6EX-5	4	0.009	0.006	444.8	33.166	92.0	12.750	6.665	0.000	260.62	HBD
6EX-4P	54	0.007	0.005	444.8	49.250	92.0	12.750	6.665	0.000	260.62	HBD
6EX-4	4	0.009	0.006	444.8	33.166	92.0	12.750	6.665	0.000	260.62	HBD
6EX-3P	54	0.009	0.007	444.8	33.166	92.0	12.750	6.665	0.000	260.62	HBD
6EX-3	2	0.009	0.006	444.8	33.166	92.0	12.750	6.665	0.000	260.62	HBD
6EX-1P	52	0.006	0.004	444.8	33.594	92.0	12.750	6.665	0.000	260.62	HBD
6EX-VALVE-6EX-5	22	14.186	7.758	444.8	33.594	92.0	12.750	6.665	0.000	260.62	HBD
6EX-2P	58	0.004	0.003	444.8	33.594	92.0	12.750	6.665	0.000	260.62	HBD
6EX-2	2	0.009	0.006	444.8	33.166	92.0	12.750	6.665	0.000	260.62	HBD
6EX-1	4	0.009	0.007	444.8	34.678	92.0	12.750	6.665	0.000	260.62	HBD
6EX-1N	30	8.802	7.542	444.8	36.773	92.0	12.750	6.665	0.000	260.62	HBD

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).db

Service Life Report

Pass 1 Analysis Exclude Measured Wear

Report Date/Time: 7/6/2010 3:37:44PM
AnalysisDate/Time: 7/6/2010 3:17:35PM

Run Name: 6TH POINT EXTRAC STM
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 1.000

CHECWORKS SFA Version: 3.0 SP-1 (build 109)
Duty Factor (Global) :1.000

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **ES8-1-6THPT ES to HDR**					***Sorted By:Remaining Life***		
6EX-28N	0.000	0.216	0.189	0.189	17,969	No	243,721
6EX-28	0.000	0.515	0.189	0.189	100,000,000	No	150,169
6EX-22A	0.000	0.438	0.267	0.267	100,000,000	No	150,169
6EX-22R (D/S)	0.000	0.438	0.267	0.267	100,000,000	No	137,593
6EX-22R	0.000	0.330	0.189	0.189	100,000,000	No	137,593
6EX-22P	0.000	0.375	0.189	0.189	100,000,000	No	150,169
6EX-23	0.000	0.375	0.189	0.189	100,000,000	No	137,593
6EX-23P	0.000	0.375	0.189	0.189	100,000,000	No	150,169
6EX-27	0.000	0.375	0.189	0.189	100,000,000	No	150,169
6EX-27P	0.000	0.530	0.189	0.189	100,000,000	No	150,169
===>Grouped by Line: **ES8-2-6THPT ES to HDR**					***Sorted By:Remaining Life***		
6EX-26-1N	0.000	0.212	0.189	0.189	15,398	No	243,721
6EX-24P	0.000	0.375	0.189	0.189	100,000,000	No	150,169
6EX-24	0.000	0.375	0.189	0.189	100,000,000	No	150,169
6EX-25	0.000	0.375	0.189	0.189	100,000,000	No	150,169
6EX-25P	0.000	0.375	0.189	0.189	100,000,000	No	150,169
6EX-26-2	0.000	0.375	0.189	0.189	100,000,000	No	150,169
6EX-26P	0.000	0.375	0.189	0.189	100,000,000	No	150,169
6EX-26-1	0.000	0.365	0.189	0.189	100,000,000	No	150,169
===>Grouped by Line: **ES8-3-6THPT ESHDR to FWH 26**					***Sorted By:Remaining Life***		
6EX-VALVE-6EX-3	0.000	-0.070	0.286	0.286	-189,063	No	243,721
6EX-VALVE-6EX-4	0.000	-0.070	0.286	0.286	-189,063	No	243,721
6EX-VALVE-6EX-1	0.000	-0.032	0.286	0.286	-184,610	No	243,721
6EX-14	0.000	0.438	0.267	0.267	95,163,712	No	137,593
6EX-21P	0.000	0.438	0.267	0.267	100,000,000	No	137,593

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **ES8-3-6THPT ESHDR to FWH 26**					***Sorted By:Remaining Life***		
6EX-21	0.000	0.438	0.267	0.267	100,000,000	No	137,593
6EX-21C	0.000	0.438	0.267	0.267	100,000,000	No	137,593
6EX-20B	0.000	0.438	0.317	0.317	100,000,000	No	107,113
6EX-20A	0.000	0.438	0.317	0.317	100,000,000	No	107,113
6EX-20	0.000	0.438	0.267	0.267	100,000,000	No	137,593
6EX-19P	0.000	0.438	0.267	0.267	100,000,000	No	137,593
6EX-19	0.000	0.438	0.267	0.267	100,000,000	No	137,593
6EX-18P	0.000	0.438	0.267	0.267	100,000,000	No	137,593
6EX-18	0.000	0.438	0.267	0.267	100,000,000	No	137,593
6EX-17P	0.000	0.438	0.267	0.267	100,000,000	No	137,593
6EX-17	0.000	0.438	0.267	0.267	100,000,000	No	137,593
6EX-16P	0.000	0.438	0.267	0.267	100,000,000	No	137,593
6EX-16	0.000	0.438	0.267	0.267	100,000,000	No	137,593
6EX-46P	0.000	0.438	0.267	0.267	100,000,000	No	137,593
6EX-14 (BR/SE)	0.000	0.330	0.189	0.189	100,000,000	No	137,593
6EX-22 (D/S)	0.000	0.438	0.267	0.267	111,750,936	No	137,593
6EX-14 (D/S)	0.000	0.438	0.267	0.267	117,466,488	No	137,593
6EX-22 (BR/SE)	0.000	0.330	0.189	0.189	132,858,880	No	137,593
6EX-22	0.000	0.438	0.267	0.267	159,421,888	No	137,593
===>Grouped by Line: **ES8-4-6THPT ESHDR to FWH 26C**					***Sorted By:Remaining Life***		
6EX-VALVE-6EX-5-2	0.000	-0.020	0.202	0.202	-164,099	No	243,721
6EX-11N	0.000	1.911	0.189	0.189	2,135,391	Yes	243,721
6EX-14R	0.000	0.692	0.267	0.267	100,000,000	No	137,593
6EX-14R (D/S)	0.000	0.570	0.189	0.189	100,000,000	No	137,593
6EX-14P	0.000	0.375	0.189	0.189	100,000,000	No	137,593
6EX-15	0.000	0.375	0.189	0.189	100,000,000	No	137,593
6EX-15P	0.000	0.375	0.189	0.189	100,000,000	No	137,593
6EX-13C	0.000	0.375	0.189	0.189	100,000,000	No	137,593
6EX-13	0.000	0.375	0.189	0.189	100,000,000	No	137,593
6EX-13P	0.000	0.375	0.189	0.189	100,000,000	No	137,593
6EX-12P	0.000	0.375	0.189	0.189	100,000,000	No	137,593
6EX-12	0.000	0.375	0.189	0.189	100,000,000	No	137,593
6EX-11	0.000	0.375	0.189	0.189	100,000,000	No	137,593
===>Grouped by Line: **ES8-5-6THPT ESHDR 26CT to BT**					***Sorted By:Remaining Life***		
6EX-10P	0.000	0.438	0.267	0.267	100,000,000	No	137,593

Component Name	--------- Thickness (in) -------- Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **ES8-5-6THPT ESHDR 26CT to BT**					***Sorted By:Remaining Life***		
6EX-10 (BR/SE)	0.000	0.330	0.189	0.189	100,000,000	No	137,593
6EX-10	0.000	0.438	0.267	0.267	117,466,488	No	137,593
6EX-10 (D/S)	0.000	0.438	0.267	0.267	159,869,360	No	137,593
===>Grouped by Line: **ES8-6-6THPT ESHDR to FWH 26B**					***Sorted By:Remaining Life***		
6EX-VALVE-6EX-5-1	0.000	-0.020	0.202	0.202	-164,099	No	243,721
6EX-6N	0.531	0.439	0.189	0.189	298,022	Yes	118,262
6EX-10R	0.000	0.683	0.267	0.267	100,000,000	No	137,593
6EX-10R (D/S)	0.000	0.568	0.189	0.189	100,000,000	No	137,593
6EX-9P	0.000	0.375	0.189	0.189	100,000,000	No	137,593
6EX-9	0.000	0.375	0.189	0.189	100,000,000	No	137,593
6EX-8BP	0.000	0.375	0.189	0.189	100,000,000	No	137,593
6EX-8B	0.000	0.375	0.189	0.189	100,000,000	No	137,593
6EX-8	0.000	0.375	0.189	0.189	100,000,000	No	137,593
6EX-6P	0.000	0.375	0.189	0.189	100,000,000	No	137,593
6EX-7P	0.000	0.375	0.189	0.189	100,000,000	No	137,593
6EX-7	0.000	0.375	0.189	0.189	100,000,000	No	137,593
6EX-6	0.000	0.506	0.189	0.189	100,000,000	No	137,593
===>Grouped by Line: **ES8-7-6THPT ESHDR to FWH 26A**					***Sorted By:Remaining Life***		
6EX-VALVE-6EX-5	0.000	-0.020	0.202	0.202	-164,099	No	243,721
6EX-1N	0.661	0.512	0.189	0.189	375,344	Yes	118,262
6EX-51	0.000	0.438	0.267	0.267	100,000,000	No	137,593
6EX-5A	0.000	0.438	0.267	0.267	100,000,000	No	137,593
6EX-5A (D/S)	0.000	0.330	0.189	0.189	100,000,000	No	137,593
6EX-5P	0.000	0.375	0.189	0.189	100,000,000	No	137,593
6EX-5	0.000	0.375	0.189	0.189	100,000,000	No	137,593
6EX-4P	0.000	0.375	0.189	0.189	100,000,000	No	137,593
6EX-4	0.000	0.375	0.189	0.189	100,000,000	No	137,593
6EX-3P	0.000	0.375	0.189	0.189	100,000,000	No	137,593
6EX-3	0.000	0.375	0.189	0.189	100,000,000	No	137,593
6EX-1P	0.000	0.375	0.189	0.189	100,000,000	No	137,593
6EX-2P	0.000	0.375	0.189	0.189	100,000,000	No	137,593
6EX-2	0.000	0.517	0.189	0.189	100,000,000	No	137,593
6EX-1	0.000	0.479	0.189	0.189	100,000,000	No	137,593

Note:
[1] Predictions are based on last Tmeas to analysis ending period.

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).db

Service Life Report

Pass 1 Analysis Exclude Measured Wear

Report Date/Time: 7/6/2010 3:37:44PM
AnalysisDate/Time: 7/6/2010 3:17:35PM

Run Name: 6TH POINT EXTRAC STM
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 1.000

CHECWORKS SFA Version: 3.0 SP-1 (build 109)
Duty Factor (Global) : 1.000

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **ES8-1-6THPT ES to HDR**					***Sorted By:Flow Order***		
6EX-28N	0.000	0.216	0.189	0.189	17,969	No	243,721
6EX-28	0.000	0.515	0.189	0.189	100,000,000	No	150,169
6EX-27P	0.000	0.530	0.189	0.189	100,000,000	No	150,169
6EX-27	0.000	0.375	0.189	0.189	100,000,000	No	150,169
6EX-23P	0.000	0.375	0.189	0.189	100,000,000	No	150,169
6EX-23	0.000	0.375	0.189	0.189	100,000,000	No	137,593
6EX-22P	0.000	0.375	0.189	0.189	100,000,000	No	150,169
6EX-22R	0.000	0.330	0.189	0.189	100,000,000	No	137,593
6EX-22R (D/S)	0.000	0.438	0.267	0.267	100,000,000	No	137,593
6EX-22A	0.000	0.438	0.267	0.267	100,000,000	No	150,169
===>Grouped by Line: **ES8-2-6THPT ES to HDR**					***Sorted By:Flow Order***		
6EX-26-1N	0.000	0.212	0.189	0.189	15,398	No	243,721
6EX-26-1	0.000	0.365	0.189	0.189	100,000,000	No	150,169
6EX-26P	0.000	0.375	0.189	0.189	100,000,000	No	150,169
6EX-26-2	0.000	0.375	0.189	0.189	100,000,000	No	150,169
6EX-25P	0.000	0.375	0.189	0.189	100,000,000	No	150,169
6EX-25	0.000	0.375	0.189	0.189	100,000,000	No	150,169
6EX-24P	0.000	0.375	0.189	0.189	100,000,000	No	150,169
6EX-24	0.000	0.375	0.189	0.189	100,000,000	No	150,169
===>Grouped by Line: **ES8-3-6THPT ESHDR to FWH 26**					***Sorted By:Flow Order***		
6EX-22	0.000	0.438	0.267	0.267	159,421,888	No	137,593
6EX-22 (BR/SE)	0.000	0.330	0.189	0.189	132,858,880	No	137,593
6EX-22 (D/S)	0.000	0.438	0.267	0.267	111,750,936	No	137,593
6EX-21P	0.000	0.438	0.267	0.267	100,000,000	No	137,593
6EX-21	0.000	0.438	0.267	0.267	100,000,000	No	137,593

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line:	**ES8-3-6THPT ESHDR to FWH 26**				***Sorted By:Flow Order***		
6EX-21C	0.000	0.438	0.267	0.267	100,000,000	No	137,593
6EX-VALVE-6EX-1	0.000	-0.032	0.286	0.286	-184,610	No	243,721
6EX-20B	0.000	0.438	0.317	0.317	100,000,000	No	107,113
6EX-VALVE-6EX-3	0.000	-0.070	0.286	0.286	-189,063	No	243,721
6EX-20A	0.000	0.438	0.317	0.317	100,000,000	No	107,113
6EX-VALVE-6EX-4	0.000	-0.070	0.286	0.286	-189,063	No	243,721
6EX-20	0.000	0.438	0.267	0.267	100,000,000	No	137,593
6EX-19P	0.000	0.438	0.267	0.267	100,000,000	No	137,593
6EX-19	0.000	0.438	0.267	0.267	100,000,000	No	137,593
6EX-18P	0.000	0.438	0.267	0.267	100,000,000	No	137,593
6EX-18	0.000	0.438	0.267	0.267	100,000,000	No	137,593
6EX-17P	0.000	0.438	0.267	0.267	100,000,000	No	137,593
6EX-17	0.000	0.438	0.267	0.267	100,000,000	No	137,593
6EX-16P	0.000	0.438	0.267	0.267	100,000,000	No	137,593
6EX-16	0.000	0.438	0.267	0.267	100,000,000	No	137,593
6EX-46P	0.000	0.438	0.267	0.267	100,000,000	No	137,593
6EX-14	0.000	0.438	0.267	0.267	95,163,712	No	137,593
6EX-14 (BR/SE)	0.000	0.330	0.189	0.189	100,000,000	No	137,593
6EX-14 (D/S)	0.000	0.438	0.267	0.267	117,466,488	No	137,593
===>Grouped by Line:	**ES8-4-6THPT ESHDR to FWH 26C**				***Sorted By:Flow Order***		
6EX-14R	0.000	0.692	0.267	0.267	100,000,000	No	137,593
6EX-14R (D/S)	0.000	0.570	0.189	0.189	100,000,000	No	137,593
6EX-14P	0.000	0.375	0.189	0.189	100,000,000	No	137,593
6EX-15	0.000	0.375	0.189	0.189	100,000,000	No	137,593
6EX-15P	0.000	0.375	0.189	0.189	100,000,000	No	137,593
6EX-13C	0.000	0.375	0.189	0.189	100,000,000	No	137,593
6EX-13	0.000	0.375	0.189	0.189	100,000,000	No	137,593
6EX-13P	0.000	0.375	0.189	0.189	100,000,000	No	137,593
6EX-VALVE-6EX-5-2	0.000	-0.020	0.202	0.202	-164,099	No	243,721
6EX-12P	0.000	0.375	0.189	0.189	100,000,000	No	137,593
6EX-12	0.000	0.375	0.189	0.189	100,000,000	No	137,593
6EX-11	0.000	0.375	0.189	0.189	100,000,000	No	137,593
6EX-11N	0.000	1.911	0.189	0.189	2,135,391	Yes	243,721
===>Grouped by Line:	**ES8-5-6THPT ESHDR 26CT to BT**				***Sorted By:Flow Order***		
6EX-10P	0.000	0.438	0.267	0.267	100,000,000	No	137,593

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line:	**ES8-5-6THPT ESHDR 26CT to BT**				***Sorted By:Flow Order***		
6EX-10	0.000	0.438	0.267	0.267	117,466,488	No	137,593
6EX-10 (BR/SE)	0.000	0.330	0.189	0.189	100,000,000	No	137,593
6EX-10 (D/S)	0.000	0.438	0.267	0.267	159,869,360	No	137,593
===>Grouped by Line:	**ES8-6-6THPT ESHDR to FWH 26B**				***Sorted By:Flow Order***		
6EX-10R	0.000	0.683	0.267	0.267	100,000,000	No	137,593
6EX-10R (D/S)	0.000	0.568	0.189	0.189	100,000,000	No	137,593
6EX-9P	0.000	0.375	0.189	0.189	100,000,000	No	137,593
6EX-9	0.000	0.375	0.189	0.189	100,000,000	No	137,593
6EX-8BP	0.000	0.375	0.189	0.189	100,000,000	No	137,593
6EX-8B	0.000	0.375	0.189	0.189	100,000,000	No	137,593
6EX-8	0.000	0.375	0.189	0.189	100,000,000	No	137,593
6EX-6P	0.000	0.375	0.189	0.189	100,000,000	No	137,593
6EX-VALVE-6EX-5-1	0.000	-0.020	0.202	0.202	-164,099	No	243,721
6EX-7P	0.000	0.375	0.189	0.189	100,000,000	No	137,593
6EX-7	0.000	0.375	0.189	0.189	100,000,000	No	137,593
6EX-6	0.000	0.506	0.189	0.189	100,000,000	No	137,593
6EX-6N	0.531	0.439	0.189	0.189	298,022	Yes	118,262
===>Grouped by Line:	**ES8-7-6THPT ESHDR to FWH 26A**				***Sorted By:Flow Order***		
6EX-51	0.000	0.438	0.267	0.267	100,000,000	No	137,593
6EX-5A	0.000	0.438	0.267	0.267	100,000,000	No	137,593
6EX-5A (D/S)	0.000	0.330	0.189	0.189	100,000,000	No	137,593
6EX-5P	0.000	0.375	0.189	0.189	100,000,000	No	137,593
6EX-5	0.000	0.375	0.189	0.189	100,000,000	No	137,593
6EX-4P	0.000	0.375	0.189	0.189	100,000,000	No	137,593
6EX-4	0.000	0.375	0.189	0.189	100,000,000	No	137,593
6EX-3P	0.000	0.375	0.189	0.189	100,000,000	No	137,593
6EX-3	0.000	0.375	0.189	0.189	100,000,000	No	137,593
6EX-1P	0.000	0.375	0.189	0.189	100,000,000	No	137,593
6EX-VALVE-6EX-5	0.000	-0.020	0.202	0.202	-164,099	No	243,721
6EX-2P	0.000	0.375	0.189	0.189	100,000,000	No	137,593
6EX-2	0.000	0.517	0.189	0.189	100,000,000	No	137,593
6EX-1	0.000	0.479	0.189	0.189	100,000,000	No	137,593
6EX-1N	0.661	0.512	0.189	0.189	375,344	Yes	118,262

Note:
[1] Predictions are based on last Tmeas to analysis ending period.

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).db

Wear Rate Report

Pass 1 Analysis Exclude Measured Wear

Report Date/Time: 7/6/2010 3:38:15PM
AnalysisDate/Time: 7/6/2010 3:18:03PM

CHECWORKS SFA Version: 3.0 SP-1 (build 109)

Duty Factor (Global) : 1.000

Run Name: BLOWDOWN
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 1.000

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***SG51-1-CONT PEN to SGBFTK***								***Sorted By: Average Wear Rate***		
MS46-Valve-MS-71-A	20	17.727	5.371	511.5	15.718	0.0	1.315	6.336	4.850	354.75	ARD
MS46-VALVE-HCV-5046	24	5.885	1.783	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD
MS46-VALVE-PCV-1214	22	5.885	1.783	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD
MS46-VALVE-PCV-1214A	22	5.885	1.783	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD
MS46-VALVE-MS-131-A	22	5.885	1.783	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD
MS46-1	2	4.355	1.320	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD
MS46-2	2	4.355	1.320	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD
MS46-5	2	4.355	1.320	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD
MS46-6	1	3.884	1.177	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD
MS46-6-1	1	3.884	1.177	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD
MS46-4 (D/S)	16	3.649	1.106	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD
MS46-7 (D/S)	15	3.531	1.070	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD
MS46-7	15	3.531	1.070	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD
MS46-2R	18	3.296	0.999	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD
MS46-2P-3	52	3.170	0.960	511.5	4.145	0.0	2.375	6.336	4.850	354.75	ARD
MS46-1P US	52	3.120	0.945	511.5	4.083	0.0	2.375	6.336	4.850	354.75	ARD
MS46-1P DS	52	3.095	0.938	511.5	4.048	0.0	2.375	6.336	4.850	354.75	ARD
MS46-1P-1	52	2.942	0.892	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD
MS46-5P	52	2.942	0.892	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD
MS46-6P1	52	2.942	0.892	511.5	3.833	0.0	2.375	6.336	4.850	354.75	ARD
MS46-6P US	52	2.942	0.892	511.5	3.833	0.0	2.375	6.336	4.850	354.75	ARD
MS46-3FE	6	2.783	0.843	511.5	1.709	0.0	3.500	6.336	4.850	354.75	ARD
MS46-2P	58	2.589	0.785	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD
MS46-2P-1	58	2.589	0.785	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD
MS46-6-1P	58	2.589	0.785	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD
MS46-4P US	66	2.354	0.713	511.5	3.833	0.0	2.375	6.336	4.850	354.75	ARD

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***SG51-1-CONT PEN to SGBFTK***								***Sorted By: Average Wear Rate***		
MS46-4P DS	66	2.354	0.713	511.5	3.833	0.0	2.375	6.336	4.850	354.75	ARD
MS46-3	3	1.948	0.590	511.5	1.709	0.0	3.500	6.336	4.850	354.75	ARD
MS46-2R (D/S)	18	1.670	0.506	511.5	1.709	0.0	3.500	6.336	4.850	354.75	ARD
MS46-4	16	1.423	0.431	511.5	1.750	0.0	3.500	6.336	4.850	354.75	ARD
MS46-2P-2	68	1.392	0.422	511.5	1.709	0.0	3.500	6.336	4.850	354.75	ARD
MS46-3P	53	1.392	0.422	511.5	1.706	0.0	3.500	6.336	4.850	354.75	ARD
MS46-4P-1 US	56	0.557	0.169	511.5	1.709	0.0	3.500	6.336	4.850	354.75	ARD
MS46-4P-1 DS	56	0.557	0.169	511.5	1.709	0.0	3.500	6.336	4.850	354.75	ARD
MS46-7R (D/S)	7	0.006	0.002	511.5	15.718	0.0	1.315	6.336	4.850	354.75	ARD
MS46-7P2	67	0.003	0.001	511.5	15.718	0.0	1.315	6.336	4.850	354.75	ARD
MS46-7R	7	0.002	0.001	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD
===>Grouped by Line:	***SG52-1-CONT PEN to SGBFTK***								***Sorted By: Average Wear Rate***		
MS45-VALVE-MS-71-B	20	17.727	5.371	511.5	15.718	0.0	1.315	6.336	4.850	354.75	ARD
MS45-VALVE-HCV-5047	22	5.885	1.783	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD
MS45-VALVE-PCV-1215	22	5.885	1.783	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD
MS45-VALVE-PCV-1215A	22	5.885	1.783	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD
MS45-VALVE-MS-131-B	22	5.885	1.783	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD
MS45-3FE	6	4.753	1.440	511.5	3.040	0.0	3.500	6.336	4.850	354.75	ARD
MS45-1	2	4.355	1.320	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD
MS45-2	2	4.355	1.320	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD
MS45-6	2	4.355	1.320	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD
MS45-5 (D/S)	16	3.649	1.106	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD
MS45-7 (D/S)	15	3.531	1.070	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD
MS45-7	15	3.531	1.070	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD
MS45-2R	18	3.296	0.999	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD
MS45-1P-1	52	3.144	0.953	511.5	4.110	0.0	2.375	6.336	4.850	354.75	ARD
MS45-1P	52	2.942	0.892	511.5	3.833	0.0	2.375	6.336	4.850	354.75	ARD
MS45-2P	58	2.589	0.785	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD
MS45-2P-1	58	2.589	0.785	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD
MS45-6P	58	2.589	0.785	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD
MS45-5P	66	2.354	0.713	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD
MS45-3	3	1.948	0.590	511.5	1.709	0.0	3.500	6.336	4.850	354.75	ARD
MS45-4	1	1.837	0.557	511.5	1.709	0.0	3.500	6.336	4.850	354.75	ARD
MS45-2R (D/S)	18	1.670	0.506	511.5	1.709	0.0	3.500	6.336	4.850	354.75	ARD

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***SG52-1-CONT PEN to SGBFTK***								***Sorted By: Average Wear Rate***		
MS45-2P-3	68	1.392	0.422	511.5	1.706	0.0	3.500	6.336	4.850	354.75	ARD
MS45-3P	53	1.392	0.422	511.5	1.706	0.0	3.500	6.336	4.850	354.75	ARD
MS45-5	16	1.392	0.422	511.5	1.709	0.0	3.500	6.336	4.850	354.75	ARD
MS45-4P	51	1.225	0.371	511.5	1.706	0.0	3.500	6.336	4.850	354.75	ARD
MS45-3P-1	56	0.951	0.288	511.5	3.040	0.0	3.500	6.336	4.850	354.75	ARD
MS45-7R (D/S)	7	0.006	0.002	511.5	15.718	0.0	1.315	6.336	4.850	354.75	ARD
MS45-7P2	57	0.004	0.001	511.5	15.718	0.0	1.315	6.336	4.850	354.75	ARD
MS45-7R	7	0.002	0.001	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD
===>Grouped by Line:	***SG53-1-CONT PEN to SGBFTK***								***Sorted By: Average Wear Rate***		
MS47-VALVE-MS-71C	20	17.727	5.371	511.5	15.718	0.0	1.315	6.336	4.850	354.75	ARD
MS47-VALVE-HCV-5048	22	5.885	1.783	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD
MS47-VALVE-PCV-1216	22	5.885	1.783	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD
MS47-VALVE-PCV-1216A	22	5.885	1.783	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD
MS47-VALVE-MS-131C	22	5.885	1.783	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD
MS47-5	2	5.122	1.552	511.5	4.556	0.0	2.375	6.336	4.850	354.75	ARD
MS47-1	2	4.355	1.320	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD
MS47-10	2	4.355	1.320	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD
MS47-2	2	4.355	1.320	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD
MS47-7	2	4.355	1.320	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD
MS47-8	2	4.355	1.320	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD
MS47-6	1	3.884	1.177	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD
MS47-4 (D/S)	16	3.649	1.106	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD
MS47-9 (D/S)	15	3.531	1.070	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD
MS47-9	15	3.531	1.070	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD
MS47-2R	18	3.296	0.999	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD
MS47-1P-1	52	3.071	0.930	511.5	4.006	0.0	2.375	6.336	4.850	354.75	ARD
MS47-8VP	52	3.047	0.923	511.5	3.972	0.0	2.375	6.336	4.850	354.75	ARD
MS47-1P	52	2.942	0.892	511.5	3.833	0.0	2.375	6.336	4.850	354.75	ARD
MS47-5P US	52	2.942	0.892	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD
MS47-7P1	52	2.942	0.892	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD
MS47-3FE	6	2.783	0.843	511.5	1.709	0.0	3.500	6.336	4.850	354.75	ARD
MS47-2P	58	2.589	0.785	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD
MS47-2P-1	58	2.589	0.785	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD
MS47-6P	51	2.589	0.785	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***SG53-1-CONT PEN to SGBFTK***								***Sorted By: Average Wear Rate***		
MS47-9P	62	2.354	0.713	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD
MS47-4P DS	66	2.354	0.713	511.5	3.833	0.0	2.375	6.336	4.850	354.75	ARD
MS47-3	3	1.948	0.590	511.5	1.709	0.0	3.500	6.336	4.850	354.75	ARD
MS47-2R (D/S)	18	1.670	0.506	511.5	1.709	0.0	3.500	6.336	4.850	354.75	ARD
MS47-2P-2	68	1.392	0.422	511.5	1.709	0.0	3.500	6.336	4.850	354.75	ARD
MS47-3P	53	1.392	0.422	511.5	1.706	0.0	3.500	6.336	4.850	354.75	ARD
MS47-4	16	1.392	0.422	511.5	1.709	0.0	3.500	6.336	4.850	354.75	ARD
MS47-4P-1	56	0.557	0.169	511.5	1.709	0.0	3.500	6.336	4.850	354.75	ARD
MS47-10R (D/S)	17	0.006	0.002	511.5	15.718	0.0	1.315	6.336	4.850	354.75	ARD
MS47-10P2	67	0.003	0.001	511.5	15.718	0.0	1.315	6.336	4.850	354.75	ARD
MS47-10P1	52	0.003	0.001	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD
MS47-10R	17	0.003	0.001	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD
===>Grouped by Line:	***SG54-1-CONT PEN to SGBFTK***								***Sorted By: Average Wear Rate***		
MS48-VALVE-MS-71D	20	17.727	5.371	511.5	15.718	0.0	1.315	6.336	4.850	354.75	ARD
MS48-VALVE-HCV-5049	22	5.885	1.783	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD
MS48-VALVE-PCV-1217	22	5.885	1.783	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD
MS48-VALVE-PCV-1217A	22	5.885	1.783	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD
MS48-VALVE-MS-131D	22	5.885	1.783	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD
MS48-1	2	4.355	1.320	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD
MS48-10	2	4.355	1.320	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD
MS48-2	2	4.355	1.320	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD
MS48-5	2	4.355	1.320	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD
MS48-7	2	4.355	1.320	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD
MS48-8	2	4.355	1.320	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD
MS48-6	1	3.884	1.177	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD
MS48-4 (D/S)	16	3.649	1.106	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD
MS48-9 (D/S)	15	3.531	1.070	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD
MS48-9	15	3.531	1.070	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD
MS48-2R	18	3.296	0.999	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD
MS48-1P-1	52	2.942	0.892	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD
MS48-1P	52	2.942	0.892	511.5	3.833	0.0	2.375	6.336	4.850	354.75	ARD
MS48-10P1	52	2.942	0.892	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD
MS48-1P-2	52	2.942	0.892	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD
MS48-5P	52	2.942	0.892	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***SG54-1-CONT PEN to SGBFTK***								***Sorted By: Average Wear Rate***		
MS48-7P1	52	2.942	0.892	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD
MS48-8VP	52	2.942	0.892	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD
MS48-3FE	6	2.783	0.843	511.5	1.709	0.0	3.500	6.336	4.850	354.75	ARD
MS48-2P	58	2.589	0.785	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD
MS48-2P-1	58	2.589	0.785	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD
MS48-6P	51	2.589	0.785	511.5	3.833	0.0	2.375	6.336	4.850	354.75	ARD
MS48-9P	65	2.354	0.713	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD
MS48-4P	66	2.354	0.713	511.5	3.833	0.0	2.375	6.336	4.850	354.75	ARD
MS48-3	2	2.060	0.624	511.5	1.709	0.0	3.500	6.336	4.850	354.75	ARD
MS48-2R (D/S)	18	1.670	0.506	511.5	1.709	0.0	3.500	6.336	4.850	354.75	ARD
MS48-2P-2	68	1.392	0.422	511.5	1.709	0.0	3.500	6.336	4.850	354.75	ARD
MS48-3P	52	1.392	0.422	511.5	1.706	0.0	3.500	6.336	4.850	354.75	ARD
MS48-4	16	1.392	0.422	511.5	1.709	0.0	3.500	6.336	4.850	354.75	ARD
MS48-4P-1	56	0.557	0.169	511.5	1.706	0.0	3.500	6.336	4.850	354.75	ARD
MS48-10R (D/S)	17	0.006	0.002	511.5	15.718	0.0	1.315	6.336	4.850	354.75	ARD
MS48-10P2	67	0.003	0.001	511.5	15.718	0.0	1.315	6.336	4.850	354.75	ARD
MS48-10R	17	0.003	0.001	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).db

Wear Rate Report

Pass 1 Analysis Exclude Measured Wear

Report Date/Time: 7/6/2010 3:37:44PM
AnalysisDate/Time: 7/6/2010 3:18:03PM

CHECWORKS SFA Version: 3.0 SP-1 (build 109)
Duty Factor (Global) : 1.000

Run Name: BLOWDOWN
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 1.000

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***SG51-1-CONT PEN to SGBFTK***									***Sorted By: Flow Order***	
MS46-1P-1	52	2.942	0.892	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD
MS46-1	2	4.355	1.320	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD
MS46-1P US	52	3.120	0.945	511.5	4.083	0.0	2.375	6.336	4.850	354.75	ARD
MS46-1P DS	52	3.095	0.938	511.5	4.048	0.0	2.375	6.336	4.850	354.75	ARD
MS46-2	2	4.355	1.320	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD
MS46-2P-3	52	3.170	0.960	511.5	4.145	0.0	2.375	6.336	4.850	354.75	ARD
MS46-VALVE-PCV-1214	22	5.885	1.783	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD
MS46-2P	58	2.589	0.785	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD
MS46-VALVE-PCV-1214A	22	5.885	1.783	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD
MS46-2P-1	58	2.589	0.785	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD
MS46-2R	18	3.296	0.999	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD
MS46-2R (D/S)	18	1.670	0.506	511.5	1.709	0.0	3.500	6.336	4.850	354.75	ARD
MS46-2P-2	68	1.392	0.422	511.5	1.709	0.0	3.500	6.336	4.850	354.75	ARD
MS46-3	3	1.948	0.590	511.5	1.709	0.0	3.500	6.336	4.850	354.75	ARD
MS46-3P	53	1.392	0.422	511.5	1.706	0.0	3.500	6.336	4.850	354.75	ARD
MS46-3FE	6	2.783	0.843	511.5	1.709	0.0	3.500	6.336	4.850	354.75	ARD
MS46-4P-1 US	56	0.557	0.169	511.5	1.709	0.0	3.500	6.336	4.850	354.75	ARD
MS46-4P-1 DS	56	0.557	0.169	511.5	1.709	0.0	3.500	6.336	4.850	354.75	ARD
MS46-4	16	1.423	0.431	511.5	1.750	0.0	3.500	6.336	4.850	354.75	ARD
MS46-4 (D/S)	16	3.649	1.106	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD
MS46-4P US	66	2.354	0.713	511.5	3.833	0.0	2.375	6.336	4.850	354.75	ARD
MS46-4P DS	66	2.354	0.713	511.5	3.833	0.0	2.375	6.336	4.850	354.75	ARD
MS46-5	2	4.355	1.320	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD
MS46-5P	52	2.942	0.892	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD
MS46-VALVE-MS-131-A	22	5.885	1.783	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD
MS46-6P1	52	2.942	0.892	511.5	3.833	0.0	2.375	6.336	4.850	354.75	ARD

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***SG51-1-CONT PEN to SGBFTK***									***Sorted By: Flow Order***	
MS46-6	1	3.884	1.177	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD
MS46-6P US	52	2.942	0.892	511.5	3.833	0.0	2.375	6.336	4.850	354.75	ARD
MS46-6-1	1	3.884	1.177	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD
MS46-6-1P	58	2.589	0.785	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD
MS46-7	15	3.531	1.070	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD
MS46-7 (D/S)	15	3.531	1.070	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD
MS46-VALVE-HCV-5046	24	5.885	1.783	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD
MS46-7R	7	0.002	0.001	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD
MS46-7R (D/S)	7	0.006	0.002	511.5	15.718	0.0	1.315	6.336	4.850	354.75	ARD
MS46-7P2	67	0.003	0.001	511.5	15.718	0.0	1.315	6.336	4.850	354.75	ARD
MS46-Valve-MS-71-A	20	17.727	5.371	511.5	15.718	0.0	1.315	6.336	4.850	354.75	ARD
===>Grouped by Line:	***SG52-1-CONT PEN to SGBFTK***									***Sorted By: Flow Order***	
MS45-1P-1	52	3.144	0.953	511.5	4.110	0.0	2.375	6.336	4.850	354.75	ARD
MS45-1	2	4.355	1.320	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD
MS45-1P	52	2.942	0.892	511.5	3.833	0.0	2.375	6.336	4.850	354.75	ARD
MS45-2	2	4.355	1.320	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD
MS45-VALVE-PCV-1215	22	5.885	1.783	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD
MS45-2P	58	2.589	0.785	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD
MS45-VALVE-PCV-1215A	22	5.885	1.783	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD
MS45-2P-1	58	2.589	0.785	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD
MS45-2R	18	3.296	0.999	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD
MS45-2R (D/S)	18	1.670	0.506	511.5	1.709	0.0	3.500	6.336	4.850	354.75	ARD
MS45-2P-3	68	1.392	0.422	511.5	1.706	0.0	3.500	6.336	4.850	354.75	ARD
MS45-3	3	1.948	0.590	511.5	1.709	0.0	3.500	6.336	4.850	354.75	ARD
MS45-3P	53	1.392	0.422	511.5	1.706	0.0	3.500	6.336	4.850	354.75	ARD
MS45-3FE	6	4.753	1.440	511.5	3.040	0.0	3.500	6.336	4.850	354.75	ARD
MS45-3P-1	56	0.951	0.288	511.5	3.040	0.0	3.500	6.336	4.850	354.75	ARD
MS45-4	1	1.837	0.557	511.5	1.709	0.0	3.500	6.336	4.850	354.75	ARD
MS45-4P	51	1.225	0.371	511.5	1.706	0.0	3.500	6.336	4.850	354.75	ARD
MS45-5	16	1.392	0.422	511.5	1.709	0.0	3.500	6.336	4.850	354.75	ARD
MS45-5 (D/S)	16	3.649	1.106	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD
MS45-VALVE-MS-131-B	22	5.885	1.783	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD
MS45-5P	66	2.354	0.713	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD
MS45-6	2	4.355	1.320	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***SG52-1-CONT PEN to SGBFTK***									***Sorted By: Flow Order***	
MS45-6P	58	2.589	0.785	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD
MS45-7	15	3.531	1.070	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD
MS45-7 (D/S)	15	3.531	1.070	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD
MS45-VALVE-HCV-5047	22	5.885	1.783	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD
MS45-7R	7	0.002	0.001	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD
MS45-7R (D/S)	7	0.006	0.002	511.5	15.718	0.0	1.315	6.336	4.850	354.75	ARD
MS45-7P2	57	0.004	0.001	511.5	15.718	0.0	1.315	6.336	4.850	354.75	ARD
MS45-VALVE-MS-71-B	20	17.727	5.371	511.5	15.718	0.0	1.315	6.336	4.850	354.75	ARD
===>Grouped by Line:	***SG53-1-CONT PEN to SGBFTK***									***Sorted By: Flow Order***	
MS47-1P-1	52	3.071	0.930	511.5	4.006	0.0	2.375	6.336	4.850	354.75	ARD
MS47-1	2	4.355	1.320	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD
MS47-1P	52	2.942	0.892	511.5	3.833	0.0	2.375	6.336	4.850	354.75	ARD
MS47-2	2	4.355	1.320	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD
MS47-VALVE-PCV-1216	22	5.885	1.783	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD
MS47-2P	58	2.589	0.785	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD
MS47-VALVE-PCV-1216A	22	5.885	1.783	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD
MS47-2P-1	58	2.589	0.785	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD
MS47-2R	18	3.296	0.999	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD
MS47-2R (D/S)	18	1.670	0.506	511.5	1.709	0.0	3.500	6.336	4.850	354.75	ARD
MS47-2P-2	68	1.392	0.422	511.5	1.709	0.0	3.500	6.336	4.850	354.75	ARD
MS47-3	3	1.948	0.590	511.5	1.709	0.0	3.500	6.336	4.850	354.75	ARD
MS47-3P	53	1.392	0.422	511.5	1.706	0.0	3.500	6.336	4.850	354.75	ARD
MS47-3FE	6	2.783	0.843	511.5	1.709	0.0	3.500	6.336	4.850	354.75	ARD
MS47-4P-1	56	0.557	0.169	511.5	1.709	0.0	3.500	6.336	4.850	354.75	ARD
MS47-4	16	1.392	0.422	511.5	1.709	0.0	3.500	6.336	4.850	354.75	ARD
MS47-4 (D/S)	16	3.649	1.106	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD
MS47-4P DS	66	2.354	0.713	511.5	3.833	0.0	2.375	6.336	4.850	354.75	ARD
MS47-5	2	5.122	1.552	511.5	4.556	0.0	2.375	6.336	4.850	354.75	ARD
MS47-5P US	52	2.942	0.892	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD
MS47-6	1	3.884	1.177	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD
MS47-6P	51	2.589	0.785	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD
MS47-VALVE-MS-131C	22	5.885	1.783	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD
MS47-7	2	4.355	1.320	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD
MS47-7P1	52	2.942	0.892	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***SG53-1-CONT PEN to SGBFTK***									***Sorted By: Flow Order***	
MS47-8	2	4.355	1.320	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD
MS47-8VP	52	3.047	0.923	511.5	3.972	0.0	2.375	6.336	4.850	354.75	ARD
MS47-9	15	3.531	1.070	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD
MS47-9 (D/S)	15	3.531	1.070	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD
MS47-9P	62	2.354	0.713	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD
MS47-10	2	4.355	1.320	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD
MS47-VALVE-HCV-5048	22	5.885	1.783	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD
MS47-10P1	52	0.003	0.001	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD
MS47-10R	17	0.003	0.001	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD
MS47-10R (D/S)	17	0.006	0.002	511.5	15.718	0.0	1.315	6.336	4.850	354.75	ARD
MS47-10P2	67	0.003	0.001	511.5	15.718	0.0	1.315	6.336	4.850	354.75	ARD
MS47-VALVE-MS-71C	20	17.727	5.371	511.5	15.718	0.0	1.315	6.336	4.850	354.75	ARD
===>Grouped by Line:	***SG54-1-CONT PEN to SGBFTK***									***Sorted By: Flow Order***	
MS48-1P-1	52	2.942	0.892	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD
MS48-1	2	4.355	1.320	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD
MS48-1P	52	2.942	0.892	511.5	3.833	0.0	2.375	6.336	4.850	354.75	ARD
MS48-2	2	4.355	1.320	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD
MS48-1P-2	52	2.942	0.892	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD
MS48-VALVE-PCV-1217	22	5.885	1.783	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD
MS48-2P	58	2.589	0.785	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD
MS48-VALVE-PCV-1217A	22	5.885	1.783	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD
MS48-2P-1	58	2.589	0.785	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD
MS48-2R	18	3.296	0.999	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD
MS48-2R (D/S)	18	1.670	0.506	511.5	1.709	0.0	3.500	6.336	4.850	354.75	ARD
MS48-2P-2	68	1.392	0.422	511.5	1.709	0.0	3.500	6.336	4.850	354.75	ARD
MS48-3	2	2.060	0.624	511.5	1.709	0.0	3.500	6.336	4.850	354.75	ARD
MS48-3P	52	1.392	0.422	511.5	1.706	0.0	3.500	6.336	4.850	354.75	ARD
MS48-3FE	6	2.783	0.843	511.5	1.709	0.0	3.500	6.336	4.850	354.75	ARD
MS48-4P-1	56	0.557	0.169	511.5	1.706	0.0	3.500	6.336	4.850	354.75	ARD
MS48-4	16	1.392	0.422	511.5	1.709	0.0	3.500	6.336	4.850	354.75	ARD
MS48-4 (D/S)	16	3.649	1.106	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD
MS48-4P	66	2.354	0.713	511.5	3.833	0.0	2.375	6.336	4.850	354.75	ARD
MS48-5	2	4.355	1.320	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD
MS48-5P	52	2.942	0.892	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***SG54-1-CONT PEN to SGBFTK***									***Sorted By: Flow Order***	
MS48-6	1	3.884	1.177	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD
MS48-6P	51	2.589	0.785	511.5	3.833	0.0	2.375	6.336	4.850	354.75	ARD
MS48-VALVE-MS-131D	22	5.885	1.783	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD
MS48-7	2	4.355	1.320	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD
MS48-7P1	52	2.942	0.892	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD
MS48-8	2	4.355	1.320	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD
MS48-8VP	52	2.942	0.892	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD
MS48-9	15	3.531	1.070	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD
MS48-9 (D/S)	15	3.531	1.070	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD
MS48-9P	65	2.354	0.713	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD
MS48-10	2	4.355	1.320	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD
MS48-10P1	52	2.942	0.892	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD
MS48-VALVE-HCV-5049	22	5.885	1.783	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD
MS48-10R	17	0.003	0.001	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD
MS48-10R (D/S)	17	0.006	0.002	511.5	15.718	0.0	1.315	6.336	4.850	354.75	ARD
MS48-10P2	67	0.003	0.001	511.5	15.718	0.0	1.315	6.336	4.850	354.75	ARD
MS48-VALVE-MS-71D	20	17.727	5.371	511.5	15.718	0.0	1.315	6.336	4.850	354.75	ARD

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).db

Service Life Report

Pass 1 Analysis Exclude Measured Wear

Report Date/Time: 7/6/2010 3:37:44PM
AnalysisDate/Time: 7/6/2010 3:18:03PM

Run Name: BLOWDOWN
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 1.000

CHECWORKS SFA Version: 3.0 SP-1 (build 109)
Duty Factor (Global) :1.000

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **SG51-1-CONT PEN to SGBFTK**					***Sorted By:Remaining Life***		
MS46-Valve-MS-71-A	0.000	-0.314	0.040	0.040	-195,652	No	243,721
MS46-VALVE-MS-131-A	0.000	0.054	0.089	0.089	-109,830	No	243,721
MS46-VALVE-HCV-5046	0.000	0.054	0.089	0.089	-109,830	No	243,721
MS46-VALVE-PCV-1214A	0.000	0.054	0.072	0.072	-85,625	No	243,721
MS46-VALVE-PCV-1214	0.000	0.054	0.072	0.072	-85,625	No	243,721
MS46-6-1	0.000	0.110	0.072	0.072	283,560	No	243,721
MS46-7	0.000	0.120	0.083	0.083	297,068	No	243,721
MS46-7 (D/S)	0.000	0.120	0.083	0.083	297,068	No	243,721
MS46-2R	0.000	0.126	0.083	0.083	375,742	No	243,721
MS46-1P-1	0.000	0.136	0.083	0.083	517,355	No	243,721
MS46-6P1	0.000	0.136	0.083	0.083	517,355	No	243,721
MS46-6-1P	0.000	0.146	0.083	0.083	697,589	No	243,721
MS46-2P-1	0.000	0.146	0.083	0.083	697,589	No	243,721
MS46-2P	0.000	0.146	0.083	0.083	697,589	No	243,721
MS46-1P DS	0.244	0.169	0.083	0.083	794,696	Yes	243,721
MS46-1P US	0.248	0.172	0.083	0.083	823,125	Yes	243,721
MS46-4P DS	0.000	0.153	0.083	0.083	847,784	No	243,721
MS46-1	0.000	0.237	0.083	0.083	1,021,520	No	243,721
MS46-2P-3	0.256	0.196	0.083	0.083	1,024,264	No	243,721
MS46-3FE	0.000	0.223	0.123	0.123	1,033,884	No	243,721
MS46-6P US	0.000	0.198	0.083	0.083	1,121,919	No	243,721
MS46-2	0.000	0.264	0.083	0.083	1,200,769	No	243,721
MS46-5P	0.000	0.211	0.083	0.083	1,249,650	No	243,721
MS46-4 (D/S)	0.000	0.253	0.083	0.083	1,343,751	Yes	243,721
MS46-4P US	0.000	0.201	0.083	0.083	1,438,327	No	243,721
MS46-5	0.000	0.312	0.083	0.083	1,514,611	Yes	243,721
MS46-3	0.000	0.244	0.123	0.123	1,788,823	Yes	243,721

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **SG51-1-CONT PEN to SGBFTK**					***Sorted By:Remaining Life***		
MS46-6	0.000	0.347	0.072	0.072	2,045,447	No	243,721
MS46-2R (D/S)	0.000	0.254	0.123	0.123	2,259,383	No	243,721
MS46-3P	0.000	0.256	0.123	0.123	2,770,994	Yes	243,721
MS46-4	0.317	0.263	0.123	0.123	2,847,339	Yes	243,721
MS46-2P-2	0.000	0.264	0.123	0.123	2,937,186	Yes	243,721
MS46-4P-1 DS	0.000	0.274	0.123	0.123	7,866,082	Yes	243,721
MS46-4P-1 US	0.000	0.285	0.123	0.123	8,414,202	No	243,721
MS46-7R	0.000	0.803	0.090	0.090	100,000,000	No	243,721
MS46-7R (D/S)	0.000	0.341	0.050	0.050	100,000,000	No	243,721
MS46-7P2	0.000	0.257	0.050	0.050	100,000,000	No	243,721
===>Grouped by Line: **SG52-1-CONT PEN to SGBFTK**					***Sorted By:Remaining Life***		
MS45-VALVE-MS-71-B	0.000	-0.314	0.040	0.040	-195,652	No	243,721
MS45-VALVE-MS-131-B	0.000	0.054	0.089	0.089	-109,830	No	243,721
MS45-VALVE-HCV-5047	0.000	0.054	0.089	0.089	-109,830	No	243,721
MS45-VALVE-PCV-1215	0.000	0.054	0.072	0.072	-85,625	No	243,721
MS45-VALVE-PCV-1215A	0.000	0.054	0.072	0.072	-85,625	No	243,721
MS45-2	0.000	0.097	0.083	0.083	88,689	No	243,721
MS45-5 (D/S)	0.000	0.116	0.083	0.083	261,538	No	243,721
MS45-3FE	0.000	0.168	0.123	0.123	272,145	No	243,721
MS45-7	0.000	0.120	0.083	0.083	297,068	No	243,721
MS45-7 (D/S)	0.000	0.120	0.083	0.083	297,068	No	243,721
MS45-6	0.000	0.182	0.083	0.083	651,213	No	243,721
MS45-2P	0.000	0.146	0.083	0.083	697,589	No	243,721
MS45-2P-1	0.000	0.146	0.083	0.083	697,589	No	243,721
MS45-6P	0.000	0.146	0.083	0.083	697,589	No	243,721
MS45-5P	0.000	0.153	0.083	0.083	847,784	No	243,721
MS45-1P-1	0.252	0.176	0.083	0.083	851,000	Yes	243,721
MS45-1P	0.000	0.178	0.083	0.083	930,232	Yes	243,721
MS45-1	0.000	0.237	0.083	0.083	1,021,520	No	243,721
MS45-2R	0.000	0.210	0.083	0.083	1,112,610	No	243,721
MS45-4	0.000	0.249	0.123	0.123	1,980,860	No	243,721
MS45-3	0.000	0.288	0.123	0.123	2,442,571	Yes	243,721
MS45-5	0.000	0.261	0.123	0.123	2,872,132	No	243,721
MS45-2R (D/S)	0.000	0.303	0.123	0.123	3,117,666	Yes	243,721
MS45-2P-3	0.000	0.282	0.123	0.123	3,294,162	Yes	243,721
MS45-4P	0.000	0.266	0.123	0.123	3,373,473	No	243,721

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **SG52-1-CONT PEN to SGBFTK**					***Sorted By:Remaining Life***		
MS45-3P	0.000	0.321	0.123	0.123	4,104,347	Yes	243,721
MS45-3P-1	0.000	0.268	0.123	0.123	4,410,454	Yes	243,721
MS45-7R	0.000	0.807	0.090	0.090	100,000,000	No	243,721
MS45-7R (D/S)	0.000	0.342	0.050	0.050	100,000,000	No	243,721
MS45-7P2	0.000	0.241	0.050	0.050	100,000,000	No	243,721
===>Grouped by Line: **SG53-1-CONT PEN to SGBFTK**					***Sorted By:Remaining Life***		
MS47-VALVE-MS-71C	0.000	-0.314	0.040	0.040	-195,652	No	243,721
MS47-VALVE-MS-131C	0.000	0.054	0.089	0.089	-109,830	No	243,721
MS47-VALVE-HCV-5048	0.000	0.054	0.089	0.089	-109,830	No	243,721
MS47-VALVE-PCV-1216	0.000	0.054	0.072	0.072	-85,625	No	243,721
MS47-VALVE-PCV-1216A	0.000	0.054	0.072	0.072	-85,625	No	243,721
MS47-2	0.000	0.097	0.083	0.083	88,689	No	243,721
MS47-10	0.000	0.097	0.083	0.083	88,689	No	243,721
MS47-7	0.000	0.097	0.072	0.072	165,946	No	243,721
MS47-8	0.000	0.097	0.072	0.072	165,946	No	243,721
MS47-4 (D/S)	0.000	0.116	0.083	0.083	261,538	No	243,721
MS47-6	0.000	0.110	0.072	0.072	283,560	No	243,721
MS47-2R	0.000	0.126	0.083	0.083	375,742	No	243,721
MS47-9	0.000	0.120	0.072	0.072	392,352	No	243,721
MS47-9 (D/S)	0.000	0.120	0.072	0.072	392,352	No	243,721
MS47-7P1	0.000	0.136	0.083	0.083	517,355	No	243,721
MS47-2P	0.000	0.146	0.083	0.083	697,589	No	243,721
MS47-2P-1	0.000	0.146	0.083	0.083	697,589	No	243,721
MS47-6P	0.000	0.146	0.083	0.083	697,589	No	243,721
MS47-9P	0.000	0.153	0.083	0.083	847,784	No	243,721
MS47-8VP	0.236	0.175	0.083	0.083	863,800	Yes	243,721
MS47-1P	0.000	0.174	0.083	0.083	890,930	Yes	243,721
MS47-5	0.299	0.237	0.072	0.072	932,580	No	243,721
MS47-4P DS	0.000	0.164	0.083	0.083	991,603	Yes	243,721
MS47-1P-1	0.240	0.189	0.083	0.083	991,664	No	243,721
MS47-3FE	0.000	0.223	0.123	0.123	1,033,884	No	243,721
MS47-5P US	0.000	0.190	0.083	0.083	1,049,280	Yes	243,721
MS47-1	0.000	0.350	0.083	0.083	1,771,709	No	243,721
MS47-3	0.000	0.275	0.123	0.123	2,248,818	Yes	243,721
MS47-2R (D/S)	0.000	0.254	0.123	0.123	2,259,383	No	243,721
MS47-3P	0.000	0.261	0.123	0.123	2,872,132	No	243,721

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **SG53-1-CONT PEN to SGBFTK**					***Sorted By:Remaining Life***		
MS47-4	0.000	0.261	0.123	0.123	2,872,132	No	243,721
MS47-2P-2	0.000	0.264	0.123	0.123	2,937,186	No	243,721
MS47-4P-1	0.000	0.290	0.123	0.123	8,673,876	Yes	243,721
MS47-10P1	0.000	0.218	0.088	0.088	100,000,000	No	243,721
MS47-10R	0.000	0.218	0.094	0.094	100,000,000	No	243,721
MS47-10R (D/S)	0.000	0.179	0.052	0.052	100,000,000	No	243,721
MS47-10P2	0.000	0.179	0.050	0.050	100,000,000	No	243,721
===>Grouped by Line: **SG54-1-CONT PEN to SGBFTK**					***Sorted By:Remaining Life***		
MS48-VALVE-MS-71D	0.000	-0.314	0.040	0.040	-195,652	No	243,721
MS48-VALVE-MS-131D	0.000	0.054	0.089	0.089	-109,830	No	243,721
MS48-VALVE-HCV-5049	0.000	0.054	0.089	0.089	-109,830	No	243,721
MS48-VALVE-PCV-1217	0.000	0.054	0.072	0.072	-85,625	No	243,721
MS48-VALVE-PCV-1217A	0.000	0.054	0.072	0.072	-85,625	No	243,721
MS48-2	0.000	0.097	0.083	0.083	88,689	No	243,721
MS48-5	0.000	0.097	0.083	0.083	88,689	No	243,721
MS48-7	0.000	0.097	0.083	0.083	88,689	No	243,721
MS48-8	0.000	0.097	0.083	0.083	88,689	No	243,721
MS48-10	0.000	0.097	0.083	0.083	88,689	No	243,721
MS48-6	0.000	0.110	0.083	0.083	196,938	No	243,721
MS48-4 (D/S)	0.000	0.116	0.083	0.083	261,538	No	243,721
MS48-9	0.000	0.120	0.083	0.083	297,068	No	243,721
MS48-9 (D/S)	0.000	0.120	0.083	0.083	297,068	No	243,721
MS48-2R	0.000	0.126	0.083	0.083	375,742	No	243,721
MS48-1P-1	0.000	0.136	0.083	0.083	517,355	No	243,721
MS48-1P-2	0.000	0.136	0.083	0.083	517,355	No	243,721
MS48-5P	0.000	0.136	0.083	0.083	517,355	No	243,721
MS48-7P1	0.000	0.136	0.083	0.083	517,355	No	243,721
MS48-10P1	0.000	0.136	0.083	0.083	517,355	No	243,721
MS48-2P	0.000	0.146	0.083	0.083	697,589	No	243,721
MS48-2P-1	0.000	0.146	0.083	0.083	697,589	No	243,721
MS48-6P	0.000	0.146	0.083	0.083	697,589	No	243,721
MS48-4P	0.000	0.153	0.083	0.083	847,784	No	243,721
MS48-9P	0.000	0.153	0.083	0.083	847,784	No	243,721
MS48-1P	0.000	0.174	0.083	0.083	890,930	Yes	243,721
MS48-3FE	0.000	0.223	0.123	0.123	1,033,884	No	243,721
MS48-8VP	0.000	0.190	0.083	0.083	1,050,403	Yes	243,721

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **SG54-1-CONT PEN to SGBFTK**					***Sorted By:Remaining Life***		
MS48-1	0.000	0.299	0.083	0.083	1,433,128	No	243,721
MS48-3	0.000	0.234	0.123	0.123	1,563,457	Yes	243,721
MS48-2R (D/S)	0.000	0.254	0.123	0.123	2,259,383	No	243,721
MS48-2P-2	0.000	0.261	0.123	0.123	2,872,132	No	243,721
MS48-4	0.000	0.261	0.123	0.123	2,872,132	No	243,721
MS48-3P	0.000	0.276	0.123	0.123	3,186,473	Yes	243,721
MS48-4P-1	0.000	0.255	0.123	0.123	6,856,155	Yes	243,721
MS48-10R	0.000	0.218	0.094	0.094	100,000,000	No	243,721
MS48-10R (D/S)	0.000	0.179	0.052	0.052	100,000,000	No	243,721
MS48-10P2	0.000	0.179	0.050	0.050	100,000,000	No	243,721

Note:
[1] Predictions are based on last Tmeas to analysis ending period.

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).db

Service Life Report

Pass 1 Analysis Exclude Measured Wear

Report Date/Time: 7/6/2010 3:37:44PM
AnalysisDate/Time: 7/6/2010 3:18:03PM

Run Name: BLOWDOWN
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 1.000

CHECWORKS SFA Version: 3.0 SP-1 (build 109)
Duty Factor (Global) : 1.000

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **SG51-1-CONT PEN to SGBFTK**					***Sorted By:Flow Order***		
MS46-1P-1	0.000	0.136	0.083	0.083	517,355	No	243,721
MS46-1	0.000	0.237	0.083	0.083	1,021,520	No	243,721
MS46-1P US	0.248	0.172	0.083	0.083	823,125	Yes	243,721
MS46-1P DS	0.244	0.169	0.083	0.083	794,696	Yes	243,721
MS46-2	0.000	0.264	0.083	0.083	1,200,769	No	243,721
MS46-2P-3	0.256	0.196	0.083	0.083	1,024,264	No	243,721
MS46-VALVE-PCV-1214	0.000	0.054	0.072	0.072	-85,625	No	243,721
MS46-2P	0.000	0.146	0.083	0.083	697,589	No	243,721
MS46-VALVE-PCV-1214A	0.000	0.054	0.072	0.072	-85,625	No	243,721
MS46-2P-1	0.000	0.146	0.083	0.083	697,589	No	243,721
MS46-2R	0.000	0.126	0.083	0.083	375,742	No	243,721
MS46-2R (D/S)	0.000	0.254	0.123	0.123	2,259,383	No	243,721
MS46-2P-2	0.000	0.264	0.123	0.123	2,937,186	Yes	243,721
MS46-3	0.000	0.244	0.123	0.123	1,788,823	Yes	243,721
MS46-3P	0.000	0.256	0.123	0.123	2,770,994	Yes	243,721
MS46-3FE	0.000	0.223	0.123	0.123	1,033,884	No	243,721
MS46-4P-1 US	0.000	0.285	0.123	0.123	8,414,202	No	243,721
MS46-4P-1 DS	0.000	0.274	0.123	0.123	7,866,082	Yes	243,721
MS46-4	0.317	0.263	0.123	0.123	2,847,339	Yes	243,721
MS46-4 (D/S)	0.000	0.253	0.083	0.083	1,343,751	Yes	243,721
MS46-4P US	0.000	0.201	0.083	0.083	1,438,327	No	243,721
MS46-4P DS	0.000	0.153	0.083	0.083	847,784	No	243,721
MS46-5	0.000	0.312	0.083	0.083	1,514,611	Yes	243,721
MS46-5P	0.000	0.211	0.083	0.083	1,249,650	No	243,721
MS46-VALVE-MS-131-A	0.000	0.054	0.089	0.089	-109,830	No	243,721
MS46-6P1	0.000	0.136	0.083	0.083	517,355	No	243,721
MS46-6	0.000	0.347	0.072	0.072	2,045,447	No	243,721

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **SG51-1-CONT PEN to SGBFTK**					***Sorted By:Flow Order***		
MS46-6P US	0.000	0.198	0.083	0.083	1,121,919	No	243,721
MS46-6-1	0.000	0.110	0.072	0.072	283,560	No	243,721
MS46-6-1P	0.000	0.146	0.083	0.083	697,589	No	243,721
MS46-7	0.000	0.120	0.083	0.083	297,068	No	243,721
MS46-7 (D/S)	0.000	0.120	0.083	0.083	297,068	No	243,721
MS46-VALVE-HCV-5046	0.000	0.054	0.089	0.089	-109,830	No	243,721
MS46-7R	0.000	0.803	0.090	0.090	100,000,000	No	243,721
MS46-7R (D/S)	0.000	0.341	0.050	0.050	100,000,000	No	243,721
MS46-7P2	0.000	0.257	0.050	0.050	100,000,000	No	243,721
MS46-Valve-MS-71-A	0.000	-0.314	0.040	0.040	-195,652	No	243,721
===>Grouped by Line: **SG52-1-CONT PEN to SGBFTK**					***Sorted By:Flow Order***		
MS45-1P-1	0.252	0.176	0.083	0.083	851,000	Yes	243,721
MS45-1	0.000	0.237	0.083	0.083	1,021,520	No	243,721
MS45-1P	0.000	0.178	0.083	0.083	930,232	Yes	243,721
MS45-2	0.000	0.097	0.083	0.083	88,689	No	243,721
MS45-VALVE-PCV-1215	0.000	0.054	0.072	0.072	-85,625	No	243,721
MS45-2P	0.000	0.146	0.083	0.083	697,589	No	243,721
MS45-VALVE-PCV-1215A	0.000	0.054	0.072	0.072	-85,625	No	243,721
MS45-2P-1	0.000	0.146	0.083	0.083	697,589	No	243,721
MS45-2R	0.000	0.210	0.083	0.083	1,112,610	No	243,721
MS45-2R (D/S)	0.000	0.303	0.123	0.123	3,117,666	Yes	243,721
MS45-2P-3	0.000	0.282	0.123	0.123	3,294,162	Yes	243,721
MS45-3	0.000	0.288	0.123	0.123	2,442,571	Yes	243,721
MS45-3P	0.000	0.321	0.123	0.123	4,104,347	Yes	243,721
MS45-3FE	0.000	0.168	0.123	0.123	272,145	No	243,721
MS45-3P-1	0.000	0.268	0.123	0.123	4,410,454	Yes	243,721
MS45-4	0.000	0.249	0.123	0.123	1,980,860	No	243,721
MS45-4P	0.000	0.266	0.123	0.123	3,373,473	No	243,721
MS45-5	0.000	0.261	0.123	0.123	2,872,132	No	243,721
MS45-5 (D/S)	0.000	0.116	0.083	0.083	261,538	No	243,721
MS45-VALVE-MS-131-B	0.000	0.054	0.089	0.089	-109,830	No	243,721
MS45-5P	0.000	0.153	0.083	0.083	847,784	No	243,721
MS45-6	0.000	0.182	0.083	0.083	651,213	No	243,721
MS45-6P	0.000	0.146	0.083	0.083	697,589	No	243,721
MS45-7	0.000	0.120	0.083	0.083	297,068	No	243,721
MS45-7 (D/S)	0.000	0.120	0.083	0.083	297,068	No	243,721

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **SG52-1-CONT PEN to SGBFTK**					***Sorted By:Flow Order***		
MS45-VALVE-HCV-5047	0.000	0.054	0.089	0.089	-109,830	No	243,721
MS45-7R	0.000	0.807	0.090	0.090	100,000,000	No	243,721
MS45-7R (D/S)	0.000	0.342	0.050	0.050	100,000,000	No	243,721
MS45-7P2	0.000	0.241	0.050	0.050	100,000,000	No	243,721
MS45-VALVE-MS-71-B	0.000	-0.314	0.040	0.040	-195,652	No	243,721
===>Grouped by Line: **SG53-1-CONT PEN to SGBFTK**					***Sorted By:Flow Order***		
MS47-1P-1	0.240	0.189	0.083	0.083	991,664	No	243,721
MS47-1	0.000	0.350	0.083	0.083	1,771,709	No	243,721
MS47-1P	0.000	0.174	0.083	0.083	890,930	Yes	243,721
MS47-2	0.000	0.097	0.083	0.083	88,689	No	243,721
MS47-VALVE-PCV-1216	0.000	0.054	0.072	0.072	-85,625	No	243,721
MS47-2P	0.000	0.146	0.083	0.083	697,589	No	243,721
MS47-VALVE-PCV-1216A	0.000	0.054	0.072	0.072	-85,625	No	243,721
MS47-2P-1	0.000	0.146	0.083	0.083	697,589	No	243,721
MS47-2R	0.000	0.126	0.083	0.083	375,742	No	243,721
MS47-2R (D/S)	0.000	0.254	0.123	0.123	2,259,383	No	243,721
MS47-2P-2	0.000	0.264	0.123	0.123	2,937,186	No	243,721
MS47-3	0.000	0.275	0.123	0.123	2,248,818	Yes	243,721
MS47-3P	0.000	0.261	0.123	0.123	2,872,132	No	243,721
MS47-3FE	0.000	0.223	0.123	0.123	1,033,884	No	243,721
MS47-4P-1	0.000	0.290	0.123	0.123	8,673,876	Yes	243,721
MS47-4	0.000	0.261	0.123	0.123	2,872,132	No	243,721
MS47-4 (D/S)	0.000	0.116	0.083	0.083	261,538	No	243,721
MS47-4P DS	0.000	0.164	0.083	0.083	991,603	Yes	243,721
MS47-5	0.299	0.237	0.072	0.072	932,580	No	243,721
MS47-5P US	0.000	0.190	0.083	0.083	1,049,280	Yes	243,721
MS47-6	0.000	0.110	0.072	0.072	283,560	No	243,721
MS47-6P	0.000	0.146	0.083	0.083	697,589	No	243,721
MS47-VALVE-MS-131C	0.000	0.054	0.089	0.089	-109,830	No	243,721
MS47-7	0.000	0.097	0.072	0.072	165,946	No	243,721
MS47-7P1	0.000	0.136	0.083	0.083	517,355	No	243,721
MS47-8	0.000	0.097	0.072	0.072	165,946	No	243,721
MS47-8VP	0.236	0.175	0.083	0.083	863,800	Yes	243,721
MS47-9	0.000	0.120	0.072	0.072	392,352	No	243,721
MS47-9 (D/S)	0.000	0.120	0.072	0.072	392,352	No	243,721
MS47-9P	0.000	0.153	0.083	0.083	847,784	No	243,721

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **SG53-1-CONT PEN to SGBFTK**					***Sorted By:Flow Order***		
MS47-10	0.000	0.097	0.083	0.083	88,689	No	243,721
MS47-VALVE-HCV-5048	0.000	0.054	0.089	0.089	-109,830	No	243,721
MS47-10P1	0.000	0.218	0.088	0.088	100,000,000	No	243,721
MS47-10R	0.000	0.218	0.094	0.094	100,000,000	No	243,721
MS47-10R (D/S)	0.000	0.179	0.052	0.052	100,000,000	No	243,721
MS47-10P2	0.000	0.179	0.050	0.050	100,000,000	No	243,721
MS47-VALVE-MS-71C	0.000	-0.314	0.040	0.040	-195,652	No	243,721
===>Grouped by Line: **SG54-1-CONT PEN to SGBFTK**					***Sorted By:Flow Order***		
MS48-1P-1	0.000	0.136	0.083	0.083	517,355	No	243,721
MS48-1	0.000	0.299	0.083	0.083	1,433,128	No	243,721
MS48-1P	0.000	0.174	0.083	0.083	890,930	Yes	243,721
MS48-2	0.000	0.097	0.083	0.083	88,689	No	243,721
MS48-1P-2	0.000	0.136	0.083	0.083	517,355	No	243,721
MS48-VALVE-PCV-1217	0.000	0.054	0.072	0.072	-85,625	No	243,721
MS48-2P	0.000	0.146	0.083	0.083	697,589	No	243,721
MS48-VALVE-PCV-1217A	0.000	0.054	0.072	0.072	-85,625	No	243,721
MS48-2P-1	0.000	0.146	0.083	0.083	697,589	No	243,721
MS48-2R	0.000	0.126	0.083	0.083	375,742	No	243,721
MS48-2R (D/S)	0.000	0.254	0.123	0.123	2,259,383	No	243,721
MS48-2P-2	0.000	0.261	0.123	0.123	2,872,132	No	243,721
MS48-3	0.000	0.234	0.123	0.123	1,563,457	Yes	243,721
MS48-3P	0.000	0.276	0.123	0.123	3,186,473	Yes	243,721
MS48-3FE	0.000	0.223	0.123	0.123	1,033,884	No	243,721
MS48-4P-1	0.000	0.255	0.123	0.123	6,856,155	Yes	243,721
MS48-4	0.000	0.261	0.123	0.123	2,872,132	No	243,721
MS48-4 (D/S)	0.000	0.116	0.083	0.083	261,538	No	243,721
MS48-4P	0.000	0.153	0.083	0.083	847,784	No	243,721
MS48-5	0.000	0.097	0.083	0.083	88,689	No	243,721
MS48-5P	0.000	0.136	0.083	0.083	517,355	No	243,721
MS48-6	0.000	0.110	0.083	0.083	196,938	No	243,721
MS48-6P	0.000	0.146	0.083	0.083	697,589	No	243,721
MS48-VALVE-MS-131D	0.000	0.054	0.089	0.089	-109,830	No	243,721
MS48-7	0.000	0.097	0.083	0.083	88,689	No	243,721
MS48-7P1	0.000	0.136	0.083	0.083	517,355	No	243,721
MS48-8	0.000	0.097	0.083	0.083	88,689	No	243,721
MS48-8VP	0.000	0.190	0.083	0.083	1,050,403	Yes	243,721

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **SG54-1-CONT PEN to SGBFTK**					***Sorted By:Flow Order***		
MS48-9	0.000	0.120	0.083	0.083	297,068	No	243,721
MS48-9 (D/S)	0.000	0.120	0.083	0.083	297,068	No	243,721
MS48-9P	0.000	0.153	0.083	0.083	847,784	No	243,721
MS48-10	0.000	0.097	0.083	0.083	88,689	No	243,721
MS48-10P1	0.000	0.136	0.083	0.083	517,355	No	243,721
MS48-VALVE-HCV-5049	0.000	0.054	0.089	0.089	-109,830	No	243,721
MS48-10R	0.000	0.218	0.094	0.094	100,000,000	No	243,721
MS48-10R (D/S)	0.000	0.179	0.052	0.052	100,000,000	No	243,721
MS48-10P2	0.000	0.179	0.050	0.050	100,000,000	No	243,721
MS48-VALVE-MS-71D	0.000	-0.314	0.040	0.040	-195,652	No	243,721

Note:
[1] Predictions are based on last Tmeas to analysis ending period.

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).db

Wear Rate Report

Pass 1 Analysis Exclude Measured Wear

Report Date/Time: 7/6/2010 3:38:15PM
AnalysisDate/Time: 7/6/2010 3:18:17PM

CHECWORKS SFA Version: 3.0 SP-1 (build 109)

Duty Factor (Global) : 1.000

Run Name: CND DWNSTRM HDPD
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 1.000

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***CD83-1-HDR HDP to BFP21T***								***Sorted By: Average Wear Rate***		
CD-82T	14	11.959	5.003	377.7	15.770	0.0	30.000	6.855	0.000	98.03	ARD
CD-81T (D/S)	12	8.915	3.729	377.7	15.770	0.0	30.000	6.855	0.000	98.03	ARD
CD-81T	12	8.915	3.729	377.7	15.770	0.0	30.000	6.855	0.000	98.03	ARD
CD-82T (D/S)	14	8.117	3.396	377.7	7.885	0.0	30.000	6.855	0.000	98.03	ARD
CD-82T (BR/SE)	14	6.982	2.921	377.7	12.729	0.0	24.000	6.855	0.000	98.03	ARD
===>Grouped by Line:	***CD83-2-HDR to BFP21***								***Sorted By: Average Wear Rate***		
CD-72FE	6	13.207	5.525	377.7	19.891	0.0	24.000	6.855	0.000	98.03	ARD
CD-VALVE-CD-21	22	9.770	4.087	377.7	12.318	0.0	24.000	6.855	0.000	98.03	ARD
CD-9	2	7.381	3.088	377.7	12.731	0.0	24.000	6.855	0.000	98.03	ARD
CD-66	2	7.381	3.088	377.7	12.731	0.0	24.000	6.855	0.000	98.03	ARD
CD-67	2	7.381	3.088	377.7	12.731	0.0	24.000	6.855	0.000	98.03	ARD
CD-68	2	7.381	3.088	377.7	12.731	0.0	24.000	6.855	0.000	98.03	ARD
CD-69	2	7.381	3.088	377.7	12.731	0.0	24.000	6.855	0.000	98.03	ARD
CD-70	2	7.381	3.088	377.7	12.731	0.0	24.000	6.855	0.000	98.03	ARD
CD-71	2	7.381	3.088	377.7	12.731	0.0	24.000	6.855	0.000	98.03	ARD
CD-38	2	7.381	3.088	377.7	12.731	0.0	24.000	6.855	0.000	98.03	ARD
CD-8	4	7.381	3.088	377.7	12.731	0.0	24.000	6.855	0.000	98.03	ARD
CD-72	4	7.381	3.088	377.7	12.731	0.0	24.000	6.855	0.000	98.03	ARD
CD-73	2	7.381	3.088	377.7	12.731	0.0	24.000	6.855	0.000	98.03	ARD
CD-7	4	7.381	3.088	377.7	12.731	0.0	24.000	6.855	0.000	98.03	ARD
CD-65	2	7.381	3.088	377.7	12.731	0.0	24.000	6.855	0.000	98.03	ARD
CD-64	3	6.982	2.921	377.7	12.731	0.0	24.000	6.855	0.000	98.03	ARD
CD-74	1	6.583	2.754	377.7	12.731	0.0	24.000	6.855	0.000	98.03	ARD
CD-72P US	54	6.384	2.671	377.7	12.731	0.0	24.000	6.855	0.000	98.03	ARD
CD-72P DS	54	6.384	2.671	377.7	12.731	0.0	24.000	6.855	0.000	98.03	ARD

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***CD83-2-HDR to BFP21***								***Sorted By: Average Wear Rate***		
CD-7P	54	6.384	2.671	377.7	12.731	0.0	24.000	6.855	0.000	98.03	ARD
CD-65R (D/S)	17	5.192	2.172	377.7	22.881	0.0	18.000	6.855	0.000	98.03	ARD
CD-65N	30	5.130	4.827	377.7	22.881	0.0	18.000	6.855	0.000	98.03	ARD
CD-66P	52	4.987	2.086	377.7	12.731	0.0	24.000	6.855	0.000	98.03	ARD
CD-67P	52	4.987	2.086	377.7	12.731	0.0	24.000	6.855	0.000	98.03	ARD
CD-69P	52	4.987	2.086	377.7	12.731	0.0	24.000	6.855	0.000	98.03	ARD
CD-70P	52	4.987	2.086	377.7	12.731	0.0	24.000	6.855	0.000	98.03	ARD
CD-71P	52	4.987	2.086	377.7	12.731	0.0	24.000	6.855	0.000	98.03	ARD
CD-38P	52	4.987	2.086	377.7	12.731	0.0	24.000	6.855	0.000	98.03	ARD
CD-8P	52	4.987	2.086	377.7	12.731	0.0	24.000	6.855	0.000	98.03	ARD
CD-73P	52	4.987	2.086	377.7	12.731	0.0	24.000	6.855	0.000	98.03	ARD
CD-64P	53	4.987	2.086	377.7	12.731	0.0	24.000	6.855	0.000	98.03	ARD
CD-65P	52	4.987	2.086	377.7	12.731	0.0	24.000	6.855	0.000	98.03	ARD
CD-65R	17	4.987	2.086	377.7	12.731	0.0	24.000	6.855	0.000	98.03	ARD
CD-68P	58	4.389	1.836	377.7	12.731	0.0	24.000	6.855	0.000	98.03	ARD
CD-9P	64	3.990	1.669	377.7	12.731	0.0	24.000	6.855	0.000	98.03	ARD
CD-72P-1 US	56	2.641	1.105	377.7	19.891	0.0	24.000	6.855	0.000	98.03	ARD
CD-72P-1 DS	56	2.641	1.105	377.7	19.891	0.0	24.000	6.855	0.000	98.03	ARD
===>Grouped by Line:	***CD83-3-HDR to BFP22***								***Sorted By: Average Wear Rate***		
CD-76FE	6	13.207	5.525	377.7	19.891	0.0	24.000	6.855	0.000	98.03	ARD
CD-75N	30	11.538	4.827	377.7	22.881	0.0	18.000	6.855	0.000	98.03	ARD
CD-VALVE-CD-21-1	22	9.770	4.087	377.7	12.318	0.0	24.000	6.855	0.000	98.03	ARD
CD-84T	12	8.179	3.422	377.7	12.731	0.0	24.000	6.855	0.000	98.03	ARD
CD-6	4	7.381	3.088	377.7	12.731	0.0	24.000	6.855	0.000	98.03	ARD
CD-76	2	7.381	3.088	377.7	12.731	0.0	24.000	6.855	0.000	98.03	ARD
CD-10	2	7.381	3.088	377.7	12.731	0.0	24.000	6.855	0.000	98.03	ARD
CD-75	2	7.381	3.088	377.7	12.731	0.0	24.000	6.855	0.000	98.03	ARD
CD-84T (BR/SE)	12	6.783	2.837	377.7	12.731	0.0	24.000	6.855	0.000	98.03	ARD
CD-76P US	54	6.384	2.671	377.7	12.731	0.0	24.000	6.855	0.000	98.03	ARD
CD-82R (D/S)	7	6.383	2.670	377.7	12.729	0.0	24.000	6.855	0.000	98.03	ARD
CD-83T (D/S)	15	5.985	2.504	377.7	12.731	0.0	24.000	6.855	0.000	98.03	ARD
CD-83T	15	5.985	2.504	377.7	12.731	0.0	24.000	6.855	0.000	98.03	ARD
CD-75R (D/S)	17	5.192	2.172	377.7	22.881	0.0	18.000	6.855	0.000	98.03	ARD
CD-82R	7	5.166	2.161	377.7	7.885	0.0	30.000	6.855	0.000	98.03	ARD

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***CD83-3-HDR to BFP22***								***Sorted By: Average Wear Rate***		
CD-82P US	57	4.987	2.086	377.7	12.731	0.0	24.000	6.855	0.000	98.03	ARD
CD-10P DS	52	4.987	2.086	377.7	12.731	0.0	24.000	6.855	0.000	98.03	ARD
CD-75P US	52	4.987	2.086	377.7	12.731	0.0	24.000	6.855	0.000	98.03	ARD
CD-75P	52	4.987	2.086	377.7	12.731	0.0	24.000	6.855	0.000	98.03	ARD
CD-75R	17	4.987	2.086	377.7	12.731	0.0	24.000	6.855	0.000	98.03	ARD
CD-76P DS	56	2.641	1.105	377.7	19.891	0.0	24.000	6.855	0.000	98.03	ARD

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).db

Wear Rate Report

Pass 1 Analysis Exclude Measured Wear

Report Date/Time: 7/6/2010 3:37:44PM
AnalysisDate/Time: 7/6/2010 3:18:17PM

CHECWORKS SFA Version: 3.0 SP-1 (build 109)
Duty Factor (Global) : 1.000

Run Name: CND DWNSTRM HDPD
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 1.000

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***CD83-1-HDR HDP to BFP21T***									***Sorted By: Flow Order***	
CD-81T (D/S)	12	8.915	3.729	377.7	15.770	0.0	30.000	6.855	0.000	98.03	ARD
CD-82T	14	11.959	5.003	377.7	15.770	0.0	30.000	6.855	0.000	98.03	ARD
CD-82T (BR/SE)	14	6.982	2.921	377.7	12.729	0.0	24.000	6.855	0.000	98.03	ARD
CD-82T (D/S)	14	8.117	3.396	377.7	7.885	0.0	30.000	6.855	0.000	98.03	ARD
CD-81T	12	8.915	3.729	377.7	15.770	0.0	30.000	6.855	0.000	98.03	ARD
===>Grouped by Line:	***CD83-2-HDR to BFP21***									***Sorted By: Flow Order***	
CD-9P	64	3.990	1.669	377.7	12.731	0.0	24.000	6.855	0.000	98.03	ARD
CD-9	2	7.381	3.088	377.7	12.731	0.0	24.000	6.855	0.000	98.03	ARD
CD-66P	52	4.987	2.086	377.7	12.731	0.0	24.000	6.855	0.000	98.03	ARD
CD-66	2	7.381	3.088	377.7	12.731	0.0	24.000	6.855	0.000	98.03	ARD
CD-67P	52	4.987	2.086	377.7	12.731	0.0	24.000	6.855	0.000	98.03	ARD
CD-67	2	7.381	3.088	377.7	12.731	0.0	24.000	6.855	0.000	98.03	ARD
CD-VALVE-CD-21	22	9.770	4.087	377.7	12.318	0.0	24.000	6.855	0.000	98.03	ARD
CD-68P	58	4.389	1.836	377.7	12.731	0.0	24.000	6.855	0.000	98.03	ARD
CD-68	2	7.381	3.088	377.7	12.731	0.0	24.000	6.855	0.000	98.03	ARD
CD-69P	52	4.987	2.086	377.7	12.731	0.0	24.000	6.855	0.000	98.03	ARD
CD-69	2	7.381	3.088	377.7	12.731	0.0	24.000	6.855	0.000	98.03	ARD
CD-70P	52	4.987	2.086	377.7	12.731	0.0	24.000	6.855	0.000	98.03	ARD
CD-70	2	7.381	3.088	377.7	12.731	0.0	24.000	6.855	0.000	98.03	ARD
CD-71P	52	4.987	2.086	377.7	12.731	0.0	24.000	6.855	0.000	98.03	ARD
CD-71	2	7.381	3.088	377.7	12.731	0.0	24.000	6.855	0.000	98.03	ARD
CD-38P	52	4.987	2.086	377.7	12.731	0.0	24.000	6.855	0.000	98.03	ARD
CD-38	2	7.381	3.088	377.7	12.731	0.0	24.000	6.855	0.000	98.03	ARD
CD-8P	52	4.987	2.086	377.7	12.731	0.0	24.000	6.855	0.000	98.03	ARD
CD-8	4	7.381	3.088	377.7	12.731	0.0	24.000	6.855	0.000	98.03	ARD

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***CD83-2-HDR to BFP21***									***Sorted By: Flow Order***	
CD-72	4	7.381	3.088	377.7	12.731	0.0	24.000	6.855	0.000	98.03	ARD
CD-72P US	54	6.384	2.671	377.7	12.731	0.0	24.000	6.855	0.000	98.03	ARD
CD-72P DS	54	6.384	2.671	377.7	12.731	0.0	24.000	6.855	0.000	98.03	ARD
CD-72FE	6	13.207	5.525	377.7	19.891	0.0	24.000	6.855	0.000	98.03	ARD
CD-72P-1 US	56	2.641	1.105	377.7	19.891	0.0	24.000	6.855	0.000	98.03	ARD
CD-72P-1 DS	56	2.641	1.105	377.7	19.891	0.0	24.000	6.855	0.000	98.03	ARD
CD-73	2	7.381	3.088	377.7	12.731	0.0	24.000	6.855	0.000	98.03	ARD
CD-73P	52	4.987	2.086	377.7	12.731	0.0	24.000	6.855	0.000	98.03	ARD
CD-7	4	7.381	3.088	377.7	12.731	0.0	24.000	6.855	0.000	98.03	ARD
CD-7P	54	6.384	2.671	377.7	12.731	0.0	24.000	6.855	0.000	98.03	ARD
CD-74	1	6.583	2.754	377.7	12.731	0.0	24.000	6.855	0.000	98.03	ARD
CD-64	3	6.982	2.921	377.7	12.731	0.0	24.000	6.855	0.000	98.03	ARD
CD-64P	53	4.987	2.086	377.7	12.731	0.0	24.000	6.855	0.000	98.03	ARD
CD-65	2	7.381	3.088	377.7	12.731	0.0	24.000	6.855	0.000	98.03	ARD
CD-65P	52	4.987	2.086	377.7	12.731	0.0	24.000	6.855	0.000	98.03	ARD
CD-65R	17	4.987	2.086	377.7	12.731	0.0	24.000	6.855	0.000	98.03	ARD
CD-65R (D/S)	17	5.192	2.172	377.7	22.881	0.0	18.000	6.855	0.000	98.03	ARD
CD-65N	30	5.130	4.827	377.7	22.881	0.0	18.000	6.855	0.000	98.03	ARD
===>Grouped by Line:	***CD83-3-HDR to BFP22***									***Sorted By: Flow Order***	
CD-82R	7	5.166	2.161	377.7	7.885	0.0	30.000	6.855	0.000	98.03	ARD
CD-82R (D/S)	7	6.383	2.670	377.7	12.729	0.0	24.000	6.855	0.000	98.03	ARD
CD-82P US	57	4.987	2.086	377.7	12.731	0.0	24.000	6.855	0.000	98.03	ARD
CD-83T	15	5.985	2.504	377.7	12.731	0.0	24.000	6.855	0.000	98.03	ARD
CD-83T (D/S)	15	5.985	2.504	377.7	12.731	0.0	24.000	6.855	0.000	98.03	ARD
CD-84T	12	8.179	3.422	377.7	12.731	0.0	24.000	6.855	0.000	98.03	ARD
CD-84T (BR/SE)	12	6.783	2.837	377.7	12.731	0.0	24.000	6.855	0.000	98.03	ARD
CD-VALVE-CD-21-1	22	9.770	4.087	377.7	12.318	0.0	24.000	6.855	0.000	98.03	ARD
CD-6	4	7.381	3.088	377.7	12.731	0.0	24.000	6.855	0.000	98.03	ARD
CD-76P US	54	6.384	2.671	377.7	12.731	0.0	24.000	6.855	0.000	98.03	ARD
CD-76FE	6	13.207	5.525	377.7	19.891	0.0	24.000	6.855	0.000	98.03	ARD
CD-76P DS	56	2.641	1.105	377.7	19.891	0.0	24.000	6.855	0.000	98.03	ARD
CD-76	2	7.381	3.088	377.7	12.731	0.0	24.000	6.855	0.000	98.03	ARD
CD-10P DS	52	4.987	2.086	377.7	12.731	0.0	24.000	6.855	0.000	98.03	ARD
CD-10	2	7.381	3.088	377.7	12.731	0.0	24.000	6.855	0.000	98.03	ARD

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***CD83-3-HDR to BFP22***									***Sorted By: Flow Order***	
CD-75P US	52	4.987	2.086	377.7	12.731	0.0	24.000	6.855	0.000	98.03	ARD
CD-75	2	7.381	3.088	377.7	12.731	0.0	24.000	6.855	0.000	98.03	ARD
CD-75P	52	4.987	2.086	377.7	12.731	0.0	24.000	6.855	0.000	98.03	ARD
CD-75R	17	4.987	2.086	377.7	12.731	0.0	24.000	6.855	0.000	98.03	ARD
CD-75R (D/S)	17	5.192	2.172	377.7	22.881	0.0	18.000	6.855	0.000	98.03	ARD
CD-75N	30	11.538	4.827	377.7	22.881	0.0	18.000	6.855	0.000	98.03	ARD

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).db

Service Life Report

Pass 1 Analysis Exclude Measured Wear

Report Date/Time: 7/6/2010 3:37:44PM
AnalysisDate/Time: 7/6/2010 3:18:17PM

Run Name: CND DWNSTRM HDPD
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 1.000

CHECWORKS SFA Version: 3.0 SP-1 (build 109)
Duty Factor (Global) :1.000

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **CD83-1-HDR HDP to BFP21T**					***Sorted By:Remaining Life***		
CD-82T	0.000	0.605	0.561	0.561	76,328	No	243,721
CD-81T	0.000	0.617	0.561	0.561	131,273	No	243,721
CD-82T (D/S)	0.000	0.613	0.561	0.561	132,746	No	243,721
CD-81T (D/S)	0.000	0.619	0.561	0.561	135,971	No	243,721
CD-82T (BR/SE)	0.000	0.635	0.449	0.449	558,671	No	243,721
===>Grouped by Line: **CD83-2-HDR to BFP21**					***Sorted By:Remaining Life***		
CD-VALVE-CD-21	0.000	0.416	0.559	0.559	-161,850	No	243,721
CD-8	0.000	0.483	0.523	0.523	-101,584	No	243,721
CD-72	0.000	0.483	0.523	0.523	-101,584	No	243,721
CD-7	0.000	0.483	0.523	0.523	-101,584	No	243,721
CD-65	0.000	0.483	0.523	0.523	-101,584	No	243,721
CD-70	0.000	0.483	0.523	0.523	-101,584	No	243,721
CD-38	0.000	0.483	0.523	0.523	-101,584	No	243,721
CD-68	0.000	0.483	0.523	0.523	-101,584	No	243,721
CD-67	0.000	0.483	0.523	0.523	-101,584	No	243,721
CD-66	0.000	0.483	0.523	0.523	-101,584	No	243,721
CD-74	0.000	0.505	0.523	0.523	-55,333	No	243,721
CD-72P US	0.000	0.510	0.523	0.523	-40,134	No	243,721
CD-7P	0.000	0.510	0.523	0.523	-40,134	No	243,721
CD-65R (D/S)	0.000	0.418	0.392	0.392	102,828	No	243,721
CD-73P	0.000	0.549	0.523	0.523	111,312	No	243,721
CD-64P	0.000	0.549	0.523	0.523	111,312	No	243,721
CD-65R	0.000	0.549	0.523	0.523	111,312	No	243,721
CD-71P	0.000	0.549	0.523	0.523	111,312	No	243,721
CD-8P	0.000	0.549	0.523	0.523	111,312	No	243,721
CD-67P	0.000	0.549	0.523	0.523	111,312	No	243,721

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **CD83-2-HDR to BFP21**					***Sorted By:Remaining Life***		
CD-72FE	0.000	0.618	0.523	0.523	150,984	No	243,721
CD-71	0.000	0.583	0.523	0.523	170,962	Yes	243,721
CD-65P	0.000	0.569	0.523	0.523	193,230	Yes	243,721
CD-68P	0.000	0.566	0.523	0.523	205,938	No	243,721
CD-69	0.000	0.611	0.523	0.523	249,310	Yes	243,721
CD-64	0.000	0.607	0.523	0.523	252,433	Yes	243,721
CD-9P	0.000	0.577	0.523	0.523	284,793	No	243,721
CD-73	0.000	0.629	0.523	0.523	300,221	Yes	243,721
CD-72P DS	0.000	0.625	0.523	0.523	336,069	No	243,721
CD-66P	0.000	0.606	0.523	0.523	348,583	Yes	243,721
CD-9	0.000	0.653	0.523	0.523	369,075	Yes	243,721
CD-69P	0.000	0.612	0.523	0.523	373,108	Yes	243,721
CD-38P	0.000	0.635	0.523	0.523	470,346	Yes	243,721
CD-70P	0.000	0.648	0.523	0.523	527,474	Yes	243,721
CD-65N	0.000	0.828	0.392	0.392	791,158	No	78,608
CD-72P-1 US	0.000	0.653	0.523	0.523	1,031,525	Yes	243,721
CD-72P-1 DS	0.000	0.659	0.523	0.523	1,078,788	Yes	243,721
===>Grouped by Line: **CD83-3-HDR to BFP22**					***Sorted By:Remaining Life***		
CD-76FE	0.000	0.321	0.523	0.523	-165,900	No	243,721
CD-VALVE-CD-21-1	0.000	0.416	0.559	0.559	-161,850	No	243,721
CD-76	0.000	0.483	0.523	0.523	-101,584	No	243,721
CD-83T	0.000	0.521	0.523	0.523	-4,342	No	243,721
CD-83T (D/S)	0.000	0.521	0.523	0.523	-4,342	No	243,721
CD-82R	0.000	0.587	0.561	0.561	105,360	Yes	243,721
CD-75P	0.000	0.549	0.523	0.523	111,312	No	243,721
CD-76P US	0.000	0.578	0.523	0.523	180,077	Yes	243,721
CD-84T	0.000	0.620	0.523	0.523	249,328	Yes	243,721
CD-75R (D/S)	0.000	0.455	0.392	0.392	252,297	Yes	243,721
CD-75P US	0.000	0.586	0.523	0.523	264,824	Yes	243,721
CD-6	0.000	0.624	0.523	0.523	286,699	Yes	243,721
CD-10P DS	0.000	0.595	0.523	0.523	302,613	Yes	243,721
CD-10	0.000	0.640	0.523	0.523	332,090	Yes	243,721
CD-84T (BR/SE)	0.000	0.650	0.523	0.523	393,821	Yes	243,721
CD-82P US	0.000	0.628	0.523	0.523	441,171	Yes	243,721
CD-75	0.000	0.684	0.523	0.523	457,648	Yes	243,721
CD-75R	0.000	0.652	0.523	0.523	541,940	Yes	243,721

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **CD83-3-HDR to BFP22**					***Sorted By:Remaining Life***		
CD-82R (D/S)	0.000	0.644	0.449	0.449	640,792	Yes	243,721
CD-76P DS	0.000	0.615	0.523	0.523	727,665	No	243,721
CD-75N	0.000	0.977	0.392	0.392	1,062,264	No	243,721

Note:
[1] Predictions are based on last Tmeas to analysis ending period.

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).db

Service Life Report

Pass 1 Analysis Exclude Measured Wear

Report Date/Time: 7/6/2010 3:37:44PM
AnalysisDate/Time: 7/6/2010 3:18:17PM

Run Name: CND DWNSTRM HDPD
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 1.000

CHECWORKS SFA Version: 3.0 SP-1 (build 109)
Duty Factor (Global) : 1.000

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **CD83-1-HDR HDP to BFP21T**					***Sorted By:Flow Order***		
CD-81T (D/S)	0.000	0.619	0.561	0.561	135,971	No	243,721
CD-82T	0.000	0.605	0.561	0.561	76,328	No	243,721
CD-82T (BR/SE)	0.000	0.635	0.449	0.449	558,671	No	243,721
CD-82T (D/S)	0.000	0.613	0.561	0.561	132,746	No	243,721
CD-81T	0.000	0.617	0.561	0.561	131,273	No	243,721
===>Grouped by Line: **CD83-2-HDR to BFP21**					***Sorted By:Flow Order***		
CD-9P	0.000	0.577	0.523	0.523	284,793	No	243,721
CD-9	0.000	0.653	0.523	0.523	369,075	Yes	243,721
CD-66P	0.000	0.606	0.523	0.523	348,583	Yes	243,721
CD-66	0.000	0.483	0.523	0.523	-101,584	No	243,721
CD-67P	0.000	0.549	0.523	0.523	111,312	No	243,721
CD-67	0.000	0.483	0.523	0.523	-101,584	No	243,721
CD-VALVE-CD-21	0.000	0.416	0.559	0.559	-161,850	No	243,721
CD-68P	0.000	0.566	0.523	0.523	205,938	No	243,721
CD-68	0.000	0.483	0.523	0.523	-101,584	No	243,721
CD-69P	0.000	0.612	0.523	0.523	373,108	Yes	243,721
CD-69	0.000	0.611	0.523	0.523	249,310	Yes	243,721
CD-70P	0.000	0.648	0.523	0.523	527,474	Yes	243,721
CD-70	0.000	0.483	0.523	0.523	-101,584	No	243,721
CD-71P	0.000	0.549	0.523	0.523	111,312	No	243,721
CD-71	0.000	0.583	0.523	0.523	170,962	Yes	243,721
CD-38P	0.000	0.635	0.523	0.523	470,346	Yes	243,721
CD-38	0.000	0.483	0.523	0.523	-101,584	No	243,721
CD-8P	0.000	0.549	0.523	0.523	111,312	No	243,721
CD-8	0.000	0.483	0.523	0.523	-101,584	No	243,721
CD-72	0.000	0.483	0.523	0.523	-101,584	No	243,721

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **CD83-2-HDR to BFP21**					***Sorted By:Flow Order***		
CD-72P US	0.000	0.510	0.523	0.523	-40,134	No	243,721
CD-72P DS	0.000	0.625	0.523	0.523	336,069	No	243,721
CD-72FE	0.000	0.618	0.523	0.523	150,984	No	243,721
CD-72P-1 US	0.000	0.653	0.523	0.523	1,031,525	Yes	243,721
CD-72P-1 DS	0.000	0.659	0.523	0.523	1,078,788	Yes	243,721
CD-73	0.000	0.629	0.523	0.523	300,221	Yes	243,721
CD-73P	0.000	0.549	0.523	0.523	111,312	No	243,721
CD-7	0.000	0.483	0.523	0.523	-101,584	No	243,721
CD-7P	0.000	0.510	0.523	0.523	-40,134	No	243,721
CD-74	0.000	0.505	0.523	0.523	-55,333	No	243,721
CD-64	0.000	0.607	0.523	0.523	252,433	Yes	243,721
CD-64P	0.000	0.549	0.523	0.523	111,312	No	243,721
CD-65	0.000	0.483	0.523	0.523	-101,584	No	243,721
CD-65P	0.000	0.569	0.523	0.523	193,230	Yes	243,721
CD-65R	0.000	0.549	0.523	0.523	111,312	No	243,721
CD-65R (D/S)	0.000	0.418	0.392	0.392	102,828	No	243,721
CD-65N	0.000	0.828	0.392	0.392	791,158	No	78,608
===>Grouped by Line: **CD83-3-HDR to BFP22**					***Sorted By:Flow Order***		
CD-82R	0.000	0.587	0.561	0.561	105,360	Yes	243,721
CD-82R (D/S)	0.000	0.644	0.449	0.449	640,792	Yes	243,721
CD-82P US	0.000	0.628	0.523	0.523	441,171	Yes	243,721
CD-83T	0.000	0.521	0.523	0.523	-4,342	No	243,721
CD-83T (D/S)	0.000	0.521	0.523	0.523	-4,342	No	243,721
CD-84T	0.000	0.620	0.523	0.523	249,328	Yes	243,721
CD-84T (BR/SE)	0.000	0.650	0.523	0.523	393,821	Yes	243,721
CD-VALVE-CD-21-1	0.000	0.416	0.559	0.559	-161,850	No	243,721
CD-6	0.000	0.624	0.523	0.523	286,699	Yes	243,721
CD-76P US	0.000	0.578	0.523	0.523	180,077	Yes	243,721
CD-76FE	0.000	0.321	0.523	0.523	-165,900	No	243,721
CD-76P DS	0.000	0.615	0.523	0.523	727,665	No	243,721
CD-76	0.000	0.483	0.523	0.523	-101,584	No	243,721
CD-10P DS	0.000	0.595	0.523	0.523	302,613	Yes	243,721
CD-10	0.000	0.640	0.523	0.523	332,090	Yes	243,721
CD-75P US	0.000	0.586	0.523	0.523	264,824	Yes	243,721
CD-75	0.000	0.684	0.523	0.523	457,648	Yes	243,721
CD-75P	0.000	0.549	0.523	0.523	111,312	No	243,721

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **CD83-3-HDR to BFP22**					***Sorted By:Flow Order***		
CD-75R	0.000	0.652	0.523	0.523	541,940	Yes	243,721
CD-75R (D/S)	0.000	0.455	0.392	0.392	252,297	Yes	243,721
CD-75N	0.000	0.977	0.392	0.392	1,062,264	No	243,721

Note:
[1] Predictions are based on last Tmeas to analysis ending period.

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).db

Wear Rate Report

Pass 1 Analysis Exclude Measured Wear

Report Date/Time: 7/6/2010 3:38:15PM
AnalysisDate/Time: 7/6/2010 3:18:38PM

CHECWORKS SFA Version: 3.0 SP-1 (build 109)

Duty Factor (Global) : 1.000

Run Name: CND FWH 22 TO FWH 23
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 1.000

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***CD80A-1-FWH 22A to HEADER***								***Sorted By: Average Wear Rate***		
CD-101N	31	8.926	4.227	204.3	16.572	0.0	14.000	7.048	0.000	128.01	HBD
CD-VALVE-CD-8	22	8.926	4.227	204.3	16.572	0.0	14.000	7.048	0.000	128.01	HBD
CD-102	2	6.605	3.128	204.3	16.572	0.0	14.000	7.048	0.000	128.01	HBD
CD-103	4	6.605	3.128	204.3	16.572	0.0	14.000	7.048	0.000	128.01	HBD
CD-104	4	6.605	3.128	204.3	16.572	0.0	14.000	7.048	0.000	128.01	HBD
CD-105	2	6.605	3.128	204.3	16.572	0.0	14.000	7.048	0.000	128.01	HBD
CD-106	4	6.605	3.128	204.3	16.572	0.0	14.000	7.048	0.000	128.01	HBD
CD-104P	54	5.712	2.705	204.3	16.572	0.0	14.000	7.048	0.000	128.01	HBD
CD-106P	54	5.712	2.705	204.3	16.572	0.0	14.000	7.048	0.000	128.01	HBD
CD-107	18	4.998	2.367	204.3	16.572	0.0	14.000	7.048	0.000	128.01	HBD
CD-101P	61	4.820	2.283	204.3	16.572	0.0	14.000	7.048	0.000	128.01	HBD
CD-102P	52	4.463	2.114	204.3	16.572	0.0	14.000	7.048	0.000	128.01	HBD
CD-105P	52	4.463	2.114	204.3	16.572	0.0	14.000	7.048	0.000	128.01	HBD
CD-107 (D/S)	18	3.405	1.612	204.3	8.066	0.0	20.000	7.048	0.000	128.01	HBD
CD-107P	9	2.497	1.193	204.3	16.572	0.0	14.000	7.048	0.000	128.01	HBD
===>Grouped by Line:	***CD80A-2-FWH 22B to HEADER***								***Sorted By: Average Wear Rate***		
CD-108N	31	8.926	4.227	204.3	16.572	0.0	14.000	7.048	0.000	128.01	HBD
CD-VALVE-CD-8-1	22	8.926	4.227	204.3	16.572	0.0	14.000	7.048	0.000	128.01	HBD
CD-109	2	6.605	3.128	204.3	16.572	0.0	14.000	7.048	0.000	128.01	HBD
CD-110	2	6.605	3.128	204.3	16.572	0.0	14.000	7.048	0.000	128.01	HBD
CD-111	4	6.605	3.128	204.3	16.572	0.0	14.000	7.048	0.000	128.01	HBD
CD-112	2	6.605	3.128	204.3	16.572	0.0	14.000	7.048	0.000	128.01	HBD
CD-108P	61	4.820	2.283	204.3	16.572	0.0	14.000	7.048	0.000	128.01	HBD
CD-109P	52	4.463	2.114	204.3	16.572	0.0	14.000	7.048	0.000	128.01	HBD
CD-112P	52	4.463	2.114	204.3	16.572	0.0	14.000	7.048	0.000	128.01	HBD

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***CD80A-2-FWH 22B to HEADER***								***Sorted By: Average Wear Rate***		
CD-111P	58	3.927	1.860	204.3	16.572	0.0	14.000	7.048	0.000	128.01	HBD
===>Grouped by Line:	***CD80A-3-FWH 22C to HEADER***								***Sorted By: Average Wear Rate***		
CD-113N	31	8.926	4.227	204.3	16.572	0.0	14.000	7.048	0.000	128.01	HBD
CD-VALVE-CD-8-2	22	8.926	4.227	204.3	16.572	0.0	14.000	7.048	0.000	128.01	HBD
CD-114	2	6.605	3.128	204.3	16.572	0.0	14.000	7.048	0.000	128.01	HBD
CD-115	2	6.605	3.128	204.3	16.572	0.0	14.000	7.048	0.000	128.01	HBD
CD-116	4	6.605	3.128	204.3	16.572	0.0	14.000	7.048	0.000	128.01	HBD
CD-117	2	6.605	3.128	204.3	16.572	0.0	14.000	7.048	0.000	128.01	HBD
CD-116P	54	5.712	2.705	204.3	16.572	0.0	14.000	7.048	0.000	128.01	HBD
CD-113P	61	4.820	2.283	204.3	16.572	0.0	14.000	7.048	0.000	128.01	HBD
CD-114P	52	4.463	2.114	204.3	16.572	0.0	14.000	7.048	0.000	128.01	HBD
CD-117P	52	4.463	2.114	204.3	16.572	0.0	14.000	7.048	0.000	128.01	HBD
CD-116P-1	58	3.927	1.860	204.3	16.572	0.0	14.000	7.048	0.000	128.01	HBD
===>Grouped by Line:	***CD80A-4-FWH 22 OUTLET HEADER***								***Sorted By: Average Wear Rate***		
CD-118T (D/S)	12	6.861	3.249	204.3	16.155	0.0	20.000	7.048	0.000	128.01	HBD
CD-118T (BR/SE)	12	6.070	2.874	204.3	16.572	0.0	14.000	7.048	0.000	128.01	HBD
CD-120	18	4.686	2.219	204.3	16.155	0.0	20.000	7.048	0.000	128.01	HBD
CD-118T	12	4.653	2.204	204.3	8.066	0.0	20.000	7.048	0.000	128.01	HBD
CD-120 (D/S)	18	3.980	1.885	204.3	11.170	0.0	24.000	7.048	0.000	128.01	HBD
CD-118P	62	3.347	1.585	204.3	16.155	0.0	20.000	7.048	0.000	128.01	HBD
CD-119P	9	2.323	1.110	204.3	16.155	0.0	20.000	7.048	0.000	128.01	HBD
===>Grouped by Line:	***CD80A-5-FWH 22 to FWH 23 HEAD***								***Sorted By: Average Wear Rate***		
CD-VALVE-CD-1110	23	10.469	4.958	204.3	24.124	0.0	20.000	7.048	0.000	128.01	HBD
CD-135	14	9.151	4.334	204.3	16.746	0.0	24.000	7.048	0.000	128.01	HBD
CD-130	14	9.151	4.334	204.3	16.746	0.0	24.000	7.048	0.000	128.01	HBD
CD-130 (D/S)	14	9.131	4.324	204.3	16.679	0.0	24.000	7.048	0.000	128.01	HBD
CD-132	19	8.375	3.966	204.3	24.124	0.0	20.000	7.048	0.000	128.01	HBD
CD-135 (D/S)	14	7.297	3.456	204.3	11.170	0.0	24.000	7.048	0.000	128.01	HBD
CD-121 (D/S)	12	6.822	3.231	204.3	16.746	0.0	24.000	7.048	0.000	128.01	HBD
CD-134 (D/S)	12	6.822	3.231	204.3	16.746	0.0	24.000	7.048	0.000	128.01	HBD
CD-134	12	6.806	3.223	204.3	16.679	0.0	24.000	7.048	0.000	128.01	HBD
CD-131 (D/S)	7	6.700	3.173	204.3	24.124	0.0	20.000	7.048	0.000	128.01	HBD
CD-132 (D/S)	19	6.640	3.145	204.3	16.679	0.0	24.000	7.048	0.000	128.01	HBD
CD-135 (BR/SE)	14	6.248	2.959	204.3	16.572	0.0	14.000	7.048	0.000	128.01	HBD

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***CD80A-5-FWH 22 to FWH 23 HEAD***								***Sorted By: Average Wear Rate***		
CD-123	2	6.156	2.915	204.3	16.746	0.0	24.000	7.048	0.000	128.01	HBD
CD-125	2	6.156	2.915	204.3	16.746	0.0	24.000	7.048	0.000	128.01	HBD
CD-128	2	6.156	2.915	204.3	16.746	0.0	24.000	7.048	0.000	128.01	HBD
CD-129	4	6.156	2.915	204.3	16.746	0.0	24.000	7.048	0.000	128.01	HBD
CD-133	2	6.142	2.909	204.3	16.679	0.0	24.000	7.048	0.000	128.01	HBD
CD-121 (BR/SE)	12	6.070	2.874	204.3	16.572	0.0	14.000	7.048	0.000	128.01	HBD
CD-124	3	5.823	2.758	204.3	16.746	0.0	24.000	7.048	0.000	128.01	HBD
CD-131	7	5.810	2.752	204.3	16.679	0.0	24.000	7.048	0.000	128.01	HBD
CD-126	1	5.491	2.600	204.3	16.746	0.0	24.000	7.048	0.000	128.01	HBD
CD-121	12	5.440	2.576	204.3	11.170	0.0	24.000	7.048	0.000	128.01	HBD
CD-129P	54	5.324	2.521	204.3	16.746	0.0	24.000	7.048	0.000	128.01	HBD
CD-122 (D/S)	15	4.991	2.364	204.3	16.746	0.0	24.000	7.048	0.000	128.01	HBD
CD-122	15	4.991	2.364	204.3	16.746	0.0	24.000	7.048	0.000	128.01	HBD
CD-131P-1	58	4.606	2.182	204.3	24.124	0.0	20.000	7.048	0.000	128.01	HBD
CD-124P	53	4.160	1.970	204.3	16.746	0.0	24.000	7.048	0.000	128.01	HBD
CD-125P	52	4.160	1.970	204.3	16.746	0.0	24.000	7.048	0.000	128.01	HBD
CD-128P	52	4.160	1.970	204.3	16.746	0.0	24.000	7.048	0.000	128.01	HBD
CD-132P	69	4.150	1.965	204.3	16.679	0.0	24.000	7.048	0.000	128.01	HBD
CD-126P	51	3.660	1.733	204.3	16.746	0.0	24.000	7.048	0.000	128.01	HBD
CD-121P	62	3.328	1.576	204.3	16.746	0.0	24.000	7.048	0.000	128.01	HBD
CD-122P	65	3.328	1.576	204.3	16.746	0.0	24.000	7.048	0.000	128.01	HBD
CD-130P	62	3.320	1.572	204.3	16.679	0.0	24.000	7.048	0.000	128.01	HBD
CD-127P	9	2.335	1.115	204.3	16.746	0.0	24.000	7.048	0.000	128.01	HBD
===>Grouped by Line:	***CD80A-6-FWH 23 INLET HEADER***								***Sorted By: Average Wear Rate***		
CD-137	14	7.297	3.456	204.3	11.170	0.0	24.000	7.048	0.000	128.01	HBD
CD-137 (BR/SE)	14	6.248	2.959	204.3	16.572	0.0	14.000	7.048	0.000	128.01	HBD
CD-137 (D/S)	14	4.534	2.166	204.3	5.577	0.0	24.000	7.048	0.000	128.01	HBD
CD-136 (D/S)	15	3.980	1.885	204.3	11.170	0.0	24.000	7.048	0.000	128.01	HBD
CD-136	15	3.980	1.885	204.3	11.170	0.0	24.000	7.048	0.000	128.01	HBD
CD-136P	65	2.654	1.257	204.3	11.170	0.0	24.000	7.048	0.000	128.01	HBD
===>Grouped by Line:	***CD80A-7-HEADER to FWH 23A***								***Sorted By: Average Wear Rate***		
CD-VALVE-CD-16	22	8.926	4.227	204.3	16.572	0.0	14.000	7.048	0.000	128.01	HBD
CD-141N	30	7.141	3.382	204.3	16.572	0.0	14.000	7.048	0.000	128.01	HBD
CD-139	2	6.605	3.128	204.3	16.572	0.0	14.000	7.048	0.000	128.01	HBD

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***CD80A-7-HEADER to FWH 23A***								***Sorted By: Average Wear Rate***		
CD-140	2	6.605	3.128	204.3	16.572	0.0	14.000	7.048	0.000	128.01	HBD
CD-138 (BR/SE)	14	6.248	2.959	204.3	16.572	0.0	14.000	7.048	0.000	128.01	HBD
CD-141	1	5.891	2.790	204.3	16.572	0.0	14.000	7.048	0.000	128.01	HBD
CD-138	14	4.534	2.166	204.3	5.577	0.0	24.000	7.048	0.000	128.01	HBD
CD-139P	52	4.463	2.114	204.3	16.572	0.0	14.000	7.048	0.000	128.01	HBD
CD-140P	52	4.463	2.114	204.3	16.572	0.0	14.000	7.048	0.000	128.01	HBD
CD-138P	64	3.570	1.691	204.3	16.572	0.0	14.000	7.048	0.000	128.01	HBD
CD-137P	64	1.649	0.788	204.3	5.577	0.0	24.000	7.048	0.000	128.01	HBD
===>Grouped by Line:	***CD80A-8-HEADER to FWH 23B***								***Sorted By: Average Wear Rate***		
CD-VALVE-CD-16-1	22	8.926	4.227	204.3	16.572	0.0	14.000	7.048	0.000	128.01	HBD
CD-144N	30	7.141	3.382	204.3	16.572	0.0	14.000	7.048	0.000	128.01	HBD
CD-142	2	6.605	3.128	204.3	16.572	0.0	14.000	7.048	0.000	128.01	HBD
CD-143	2	6.605	3.128	204.3	16.572	0.0	14.000	7.048	0.000	128.01	HBD
CD-144	1	5.891	2.790	204.3	16.572	0.0	14.000	7.048	0.000	128.01	HBD
CD-142P	52	4.463	2.114	204.3	16.572	0.0	14.000	7.048	0.000	128.01	HBD
CD-143P	52	4.463	2.114	204.3	16.572	0.0	14.000	7.048	0.000	128.01	HBD
CD-141P	64	3.570	1.691	204.3	16.572	0.0	14.000	7.048	0.000	128.01	HBD
===>Grouped by Line:	***CD80A-9-HEADER to FWH 23C***								***Sorted By: Average Wear Rate***		
CD-VALVE-CD-16-2	22	8.926	4.227	204.3	16.572	0.0	14.000	7.048	0.000	128.01	HBD
CD-147N	30	7.141	3.382	204.3	16.572	0.0	14.000	7.048	0.000	128.01	HBD
CD-145	2	6.605	3.128	204.3	16.572	0.0	14.000	7.048	0.000	128.01	HBD
CD-146	2	6.605	3.128	204.3	16.572	0.0	14.000	7.048	0.000	128.01	HBD
CD-147	1	5.891	2.790	204.3	16.572	0.0	14.000	7.048	0.000	128.01	HBD
CD-145P	52	4.463	2.114	204.3	16.572	0.0	14.000	7.048	0.000	128.01	HBD
CD-146P	52	4.463	2.114	204.3	16.572	0.0	14.000	7.048	0.000	128.01	HBD
CD-144P	64	3.570	1.691	204.3	16.572	0.0	14.000	7.048	0.000	128.01	HBD

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).db

Wear Rate Report

Pass 1 Analysis Exclude Measured Wear

Report Date/Time: 7/6/2010 3:37:44PM
AnalysisDate/Time: 7/6/2010 3:18:38PM

CHECWORKS SFA Version: 3.0 SP-1 (build 109)
Duty Factor (Global) : 1.000

Run Name: CND FWH 22 TO FWH 23
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 1.000

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***CD80A-1-FWH 22A to HEADER***									***Sorted By: Flow Order***	
CD-101N	31	8.926	4.227	204.3	16.572	0.0	14.000	7.048	0.000	128.01	HBD
CD-101P	61	4.820	2.283	204.3	16.572	0.0	14.000	7.048	0.000	128.01	HBD
CD-102	2	6.605	3.128	204.3	16.572	0.0	14.000	7.048	0.000	128.01	HBD
CD-102P	52	4.463	2.114	204.3	16.572	0.0	14.000	7.048	0.000	128.01	HBD
CD-VALVE-CD-8	22	8.926	4.227	204.3	16.572	0.0	14.000	7.048	0.000	128.01	HBD
CD-103	4	6.605	3.128	204.3	16.572	0.0	14.000	7.048	0.000	128.01	HBD
CD-104	4	6.605	3.128	204.3	16.572	0.0	14.000	7.048	0.000	128.01	HBD
CD-104P	54	5.712	2.705	204.3	16.572	0.0	14.000	7.048	0.000	128.01	HBD
CD-105	2	6.605	3.128	204.3	16.572	0.0	14.000	7.048	0.000	128.01	HBD
CD-105P	52	4.463	2.114	204.3	16.572	0.0	14.000	7.048	0.000	128.01	HBD
CD-106	4	6.605	3.128	204.3	16.572	0.0	14.000	7.048	0.000	128.01	HBD
CD-106P	54	5.712	2.705	204.3	16.572	0.0	14.000	7.048	0.000	128.01	HBD
CD-107P	9	2.497	1.193	204.3	16.572	0.0	14.000	7.048	0.000	128.01	HBD
CD-107	18	4.998	2.367	204.3	16.572	0.0	14.000	7.048	0.000	128.01	HBD
CD-107 (D/S)	18	3.405	1.612	204.3	8.066	0.0	20.000	7.048	0.000	128.01	HBD
===>Grouped by Line:	***CD80A-2-FWH 22B to HEADER***									***Sorted By: Flow Order***	
CD-108N	31	8.926	4.227	204.3	16.572	0.0	14.000	7.048	0.000	128.01	HBD
CD-108P	61	4.820	2.283	204.3	16.572	0.0	14.000	7.048	0.000	128.01	HBD
CD-109	2	6.605	3.128	204.3	16.572	0.0	14.000	7.048	0.000	128.01	HBD
CD-109P	52	4.463	2.114	204.3	16.572	0.0	14.000	7.048	0.000	128.01	HBD
CD-110	2	6.605	3.128	204.3	16.572	0.0	14.000	7.048	0.000	128.01	HBD
CD-111	4	6.605	3.128	204.3	16.572	0.0	14.000	7.048	0.000	128.01	HBD
CD-VALVE-CD-8-1	22	8.926	4.227	204.3	16.572	0.0	14.000	7.048	0.000	128.01	HBD
CD-111P	58	3.927	1.860	204.3	16.572	0.0	14.000	7.048	0.000	128.01	HBD
CD-112	2	6.605	3.128	204.3	16.572	0.0	14.000	7.048	0.000	128.01	HBD

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***CD80A-2-FWH 22B to HEADER***								***Sorted By: Flow Order***		
CD-112P	52	4.463	2.114	204.3	16.572	0.0	14.000	7.048	0.000	128.01	HBD
===>Grouped by Line:	***CD80A-3-FWH 22C to HEADER***								***Sorted By: Flow Order***		
CD-113N	31	8.926	4.227	204.3	16.572	0.0	14.000	7.048	0.000	128.01	HBD
CD-113P	61	4.820	2.283	204.3	16.572	0.0	14.000	7.048	0.000	128.01	HBD
CD-114	2	6.605	3.128	204.3	16.572	0.0	14.000	7.048	0.000	128.01	HBD
CD-114P	52	4.463	2.114	204.3	16.572	0.0	14.000	7.048	0.000	128.01	HBD
CD-115	2	6.605	3.128	204.3	16.572	0.0	14.000	7.048	0.000	128.01	HBD
CD-116	4	6.605	3.128	204.3	16.572	0.0	14.000	7.048	0.000	128.01	HBD
CD-116P	54	5.712	2.705	204.3	16.572	0.0	14.000	7.048	0.000	128.01	HBD
CD-VALVE-CD-8-2	22	8.926	4.227	204.3	16.572	0.0	14.000	7.048	0.000	128.01	HBD
CD-116P-1	58	3.927	1.860	204.3	16.572	0.0	14.000	7.048	0.000	128.01	HBD
CD-117	2	6.605	3.128	204.3	16.572	0.0	14.000	7.048	0.000	128.01	HBD
CD-117P	52	4.463	2.114	204.3	16.572	0.0	14.000	7.048	0.000	128.01	HBD
===>Grouped by Line:	***CD80A-4-FWH 22 OUTLET HEADER***								***Sorted By: Flow Order***		
CD-118T	12	4.653	2.204	204.3	8.066	0.0	20.000	7.048	0.000	128.01	HBD
CD-118T (BR/SE)	12	6.070	2.874	204.3	16.572	0.0	14.000	7.048	0.000	128.01	HBD
CD-118T (D/S)	12	6.861	3.249	204.3	16.155	0.0	20.000	7.048	0.000	128.01	HBD
CD-118P	62	3.347	1.585	204.3	16.155	0.0	20.000	7.048	0.000	128.01	HBD
CD-119P	9	2.323	1.110	204.3	16.155	0.0	20.000	7.048	0.000	128.01	HBD
CD-120	18	4.686	2.219	204.3	16.155	0.0	20.000	7.048	0.000	128.01	HBD
CD-120 (D/S)	18	3.980	1.885	204.3	11.170	0.0	24.000	7.048	0.000	128.01	HBD
===>Grouped by Line:	***CD80A-5-FWH 22 to FWH 23 HEAD***								***Sorted By: Flow Order***		
CD-121 (BR/SE)	12	6.070	2.874	204.3	16.572	0.0	14.000	7.048	0.000	128.01	HBD
CD-121	12	5.440	2.576	204.3	11.170	0.0	24.000	7.048	0.000	128.01	HBD
CD-121 (D/S)	12	6.822	3.231	204.3	16.746	0.0	24.000	7.048	0.000	128.01	HBD
CD-121P	62	3.328	1.576	204.3	16.746	0.0	24.000	7.048	0.000	128.01	HBD
CD-122	15	4.991	2.364	204.3	16.746	0.0	24.000	7.048	0.000	128.01	HBD
CD-122 (D/S)	15	4.991	2.364	204.3	16.746	0.0	24.000	7.048	0.000	128.01	HBD
CD-122P	65	3.328	1.576	204.3	16.746	0.0	24.000	7.048	0.000	128.01	HBD
CD-123	2	6.156	2.915	204.3	16.746	0.0	24.000	7.048	0.000	128.01	HBD
CD-124	3	5.823	2.758	204.3	16.746	0.0	24.000	7.048	0.000	128.01	HBD
CD-124P	53	4.160	1.970	204.3	16.746	0.0	24.000	7.048	0.000	128.01	HBD
CD-125	2	6.156	2.915	204.3	16.746	0.0	24.000	7.048	0.000	128.01	HBD
CD-125P	52	4.160	1.970	204.3	16.746	0.0	24.000	7.048	0.000	128.01	HBD

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***CD80A-5-FWH 22 to FWH 23 HEAD***									***Sorted By: Flow Order***	
CD-126	1	5.491	2.600	204.3	16.746	0.0	24.000	7.048	0.000	128.01	HBD
CD-126P	51	3.660	1.733	204.3	16.746	0.0	24.000	7.048	0.000	128.01	HBD
CD-127P	9	2.335	1.115	204.3	16.746	0.0	24.000	7.048	0.000	128.01	HBD
CD-128	2	6.156	2.915	204.3	16.746	0.0	24.000	7.048	0.000	128.01	HBD
CD-128P	52	4.160	1.970	204.3	16.746	0.0	24.000	7.048	0.000	128.01	HBD
CD-129	4	6.156	2.915	204.3	16.746	0.0	24.000	7.048	0.000	128.01	HBD
CD-129P	54	5.324	2.521	204.3	16.746	0.0	24.000	7.048	0.000	128.01	HBD
CD-130	14	9.151	4.334	204.3	16.746	0.0	24.000	7.048	0.000	128.01	HBD
CD-130 (D/S)	14	9.131	4.324	204.3	16.679	0.0	24.000	7.048	0.000	128.01	HBD
CD-130P	62	3.320	1.572	204.3	16.679	0.0	24.000	7.048	0.000	128.01	HBD
CD-131	7	5.810	2.752	204.3	16.679	0.0	24.000	7.048	0.000	128.01	HBD
CD-131 (D/S)	7	6.700	3.173	204.3	24.124	0.0	20.000	7.048	0.000	128.01	HBD
CD-VALVE-CD-1110	23	10.469	4.958	204.3	24.124	0.0	20.000	7.048	0.000	128.01	HBD
CD-131P-1	58	4.606	2.182	204.3	24.124	0.0	20.000	7.048	0.000	128.01	HBD
CD-132	19	8.375	3.966	204.3	24.124	0.0	20.000	7.048	0.000	128.01	HBD
CD-132 (D/S)	19	6.640	3.145	204.3	16.679	0.0	24.000	7.048	0.000	128.01	HBD
CD-132P	69	4.150	1.965	204.3	16.679	0.0	24.000	7.048	0.000	128.01	HBD
CD-133	2	6.142	2.909	204.3	16.679	0.0	24.000	7.048	0.000	128.01	HBD
CD-134	12	6.806	3.223	204.3	16.679	0.0	24.000	7.048	0.000	128.01	HBD
CD-134 (D/S)	12	6.822	3.231	204.3	16.746	0.0	24.000	7.048	0.000	128.01	HBD
CD-135	14	9.151	4.334	204.3	16.746	0.0	24.000	7.048	0.000	128.01	HBD
CD-135 (BR/SE)	14	6.248	2.959	204.3	16.572	0.0	14.000	7.048	0.000	128.01	HBD
CD-135 (D/S)	14	7.297	3.456	204.3	11.170	0.0	24.000	7.048	0.000	128.01	HBD
===>Grouped by Line:	***CD80A-6-FWH 23 INLET HEADER***									***Sorted By: Flow Order***	
CD-136 (D/S)	15	3.980	1.885	204.3	11.170	0.0	24.000	7.048	0.000	128.01	HBD
CD-136P	65	2.654	1.257	204.3	11.170	0.0	24.000	7.048	0.000	128.01	HBD
CD-137	14	7.297	3.456	204.3	11.170	0.0	24.000	7.048	0.000	128.01	HBD
CD-137 (D/S)	14	4.534	2.166	204.3	5.577	0.0	24.000	7.048	0.000	128.01	HBD
CD-137 (BR/SE)	14	6.248	2.959	204.3	16.572	0.0	14.000	7.048	0.000	128.01	HBD
CD-136	15	3.980	1.885	204.3	11.170	0.0	24.000	7.048	0.000	128.01	HBD
===>Grouped by Line:	***CD80A-7-HEADER to FWH 23A***									***Sorted By: Flow Order***	
CD-137P	64	1.649	0.788	204.3	5.577	0.0	24.000	7.048	0.000	128.01	HBD
CD-138	14	4.534	2.166	204.3	5.577	0.0	24.000	7.048	0.000	128.01	HBD
CD-138 (BR/SE)	14	6.248	2.959	204.3	16.572	0.0	14.000	7.048	0.000	128.01	HBD

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***CD80A-7-HEADER to FWH 23A***									***Sorted By: Flow Order***	
CD-138P	64	3.570	1.691	204.3	16.572	0.0	14.000	7.048	0.000	128.01	HBD
CD-139	2	6.605	3.128	204.3	16.572	0.0	14.000	7.048	0.000	128.01	HBD
CD-139P	52	4.463	2.114	204.3	16.572	0.0	14.000	7.048	0.000	128.01	HBD
CD-VALVE-CD-16	22	8.926	4.227	204.3	16.572	0.0	14.000	7.048	0.000	128.01	HBD
CD-140	2	6.605	3.128	204.3	16.572	0.0	14.000	7.048	0.000	128.01	HBD
CD-140P	52	4.463	2.114	204.3	16.572	0.0	14.000	7.048	0.000	128.01	HBD
CD-141	1	5.891	2.790	204.3	16.572	0.0	14.000	7.048	0.000	128.01	HBD
CD-141N	30	7.141	3.382	204.3	16.572	0.0	14.000	7.048	0.000	128.01	HBD
===>Grouped by Line:	***CD80A-8-HEADER to FWH 23B***									***Sorted By: Flow Order***	
CD-141P	64	3.570	1.691	204.3	16.572	0.0	14.000	7.048	0.000	128.01	HBD
CD-142	2	6.605	3.128	204.3	16.572	0.0	14.000	7.048	0.000	128.01	HBD
CD-142P	52	4.463	2.114	204.3	16.572	0.0	14.000	7.048	0.000	128.01	HBD
CD-VALVE-CD-16-1	22	8.926	4.227	204.3	16.572	0.0	14.000	7.048	0.000	128.01	HBD
CD-143	2	6.605	3.128	204.3	16.572	0.0	14.000	7.048	0.000	128.01	HBD
CD-143P	52	4.463	2.114	204.3	16.572	0.0	14.000	7.048	0.000	128.01	HBD
CD-144	1	5.891	2.790	204.3	16.572	0.0	14.000	7.048	0.000	128.01	HBD
CD-144N	30	7.141	3.382	204.3	16.572	0.0	14.000	7.048	0.000	128.01	HBD
===>Grouped by Line:	***CD80A-9-HEADER to FWH 23C***									***Sorted By: Flow Order***	
CD-144P	64	3.570	1.691	204.3	16.572	0.0	14.000	7.048	0.000	128.01	HBD
CD-145	2	6.605	3.128	204.3	16.572	0.0	14.000	7.048	0.000	128.01	HBD
CD-145P	52	4.463	2.114	204.3	16.572	0.0	14.000	7.048	0.000	128.01	HBD
CD-VALVE-CD-16-2	22	8.926	4.227	204.3	16.572	0.0	14.000	7.048	0.000	128.01	HBD
CD-146	2	6.605	3.128	204.3	16.572	0.0	14.000	7.048	0.000	128.01	HBD
CD-146P	52	4.463	2.114	204.3	16.572	0.0	14.000	7.048	0.000	128.01	HBD
CD-147	1	5.891	2.790	204.3	16.572	0.0	14.000	7.048	0.000	128.01	HBD
CD-147N	30	7.141	3.382	204.3	16.572	0.0	14.000	7.048	0.000	128.01	HBD

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).db

Service Life Report

Pass 1 Analysis Exclude Measured Wear

Report Date/Time: 7/6/2010 3:37:44PM
AnalysisDate/Time: 7/6/2010 3:18:38PM

Run Name: CND FWH 22 TO FWH 23
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 1.000

CHECWORKS SFA Version: 3.0 SP-1 (build 109)
Duty Factor (Global) :1.000

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **CD80A-1-FWH 22A to HEADER**					***Sorted By:Remaining Life***		
CD-VALVE-CD-8	0.000	0.190	0.326	0.326	-163,306	No	243,721
CD-105	0.000	0.254	0.305	0.305	-114,257	No	243,721
CD-102	0.000	0.254	0.305	0.305	-114,257	No	243,721
CD-106	0.000	0.254	0.305	0.305	-114,257	No	243,721
CD-106P	0.000	0.279	0.305	0.305	-79,198	No	243,721
CD-107	0.000	0.299	0.305	0.305	-22,175	No	243,721
CD-105P	0.000	0.314	0.305	0.305	36,920	No	243,721
CD-102P	0.000	0.314	0.305	0.305	36,920	No	243,721
CD-101P	0.000	0.352	0.305	0.305	182,009	Yes	243,721
CD-101N	0.000	0.400	0.305	0.305	196,461	No	243,721
CD-104P	0.000	0.372	0.305	0.305	217,183	Yes	243,721
CD-107 (D/S)	0.000	0.499	0.436	0.436	345,880	No	243,721
CD-107P	0.000	0.369	0.305	0.305	467,074	No	243,721
CD-103	0.000	0.473	0.305	0.305	472,083	Yes	243,721
CD-104	0.000	0.491	0.305	0.305	522,492	Yes	243,721
===>Grouped by Line: **CD80A-2-FWH 22B to HEADER**					***Sorted By:Remaining Life***		
CD-VALVE-CD-8-1	0.000	0.190	0.326	0.326	-163,306	No	243,721
CD-109	0.000	0.254	0.305	0.305	-114,257	No	243,721
CD-110	0.000	0.254	0.305	0.305	-114,257	No	243,721
CD-111	0.000	0.254	0.305	0.305	-114,257	No	243,721
CD-112	0.000	0.254	0.305	0.305	-114,257	No	243,721
CD-108P	0.000	0.304	0.305	0.305	-3,936	No	243,721
CD-109P	0.000	0.314	0.305	0.305	36,920	No	243,721
CD-112P	0.000	0.314	0.305	0.305	36,920	No	243,721
CD-111P	0.000	0.329	0.305	0.305	112,132	No	243,721
CD-108N	0.000	0.446	0.305	0.305	291,416	No	243,721

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **CD80A-3-FWH 22C to HEADER**					***Sorted By:Remaining Life***		
CD-VALVE-CD-8-2	0.000	0.190	0.326	0.326	-163,306	No	243,721
CD-113N	0.000	0.190	0.305	0.305	-147,918	No	243,721
CD-117	0.000	0.254	0.305	0.305	-114,257	No	243,721
CD-114	0.000	0.254	0.305	0.305	-114,257	No	243,721
CD-116P	0.000	0.279	0.305	0.305	-79,198	No	243,721
CD-113P	0.000	0.304	0.305	0.305	-3,936	No	243,721
CD-117P	0.000	0.314	0.305	0.305	36,920	No	243,721
CD-114P	0.000	0.314	0.305	0.305	36,920	No	243,721
CD-116P-1	0.000	0.329	0.305	0.305	112,132	No	243,721
CD-115	0.000	0.447	0.305	0.305	397,568	Yes	243,721
CD-116	0.000	0.449	0.305	0.305	403,169	Yes	243,721
===>Grouped by Line: **CD80A-4-FWH 22 OUTLET HEADER**					***Sorted By:Remaining Life***		
CD-120	0.000	0.464	0.436	0.436	110,655	No	243,721
CD-120 (D/S)	0.000	0.577	0.523	0.523	253,414	No	243,721
CD-118T (D/S)	0.000	0.540	0.436	0.436	281,625	Yes	243,721
CD-118T (BR/SE)	0.000	0.412	0.305	0.305	327,086	Yes	243,721
CD-118P	0.000	0.501	0.436	0.436	360,771	No	243,721
CD-118T	0.000	0.545	0.436	0.436	435,495	Yes	243,721
CD-119P	0.000	0.529	0.436	0.436	740,200	No	243,721
===>Grouped by Line: **CD80A-5-FWH 22 to FWH 23 HEAD**					***Sorted By:Remaining Life***		
CD-VALVE-CD-1110	0.000	0.303	0.466	0.466	-165,244	No	243,721
CD-130	0.000	0.433	0.523	0.523	-127,668	No	243,721
CD-135	0.000	0.433	0.523	0.523	-127,668	No	243,721
CD-130 (D/S)	0.000	0.434	0.523	0.523	-127,408	No	243,721
CD-132	0.000	0.361	0.436	0.436	-122,198	No	243,721
CD-135 (BR/SE)	0.000	0.264	0.305	0.305	-106,659	No	243,721
CD-121 (BR/SE)	0.000	0.269	0.305	0.305	-99,447	No	243,721
CD-135 (D/S)	0.000	0.485	0.523	0.523	-89,826	No	243,721
CD-131 (D/S)	0.000	0.408	0.436	0.436	-73,463	No	243,721
CD-121 (D/S)	0.000	0.498	0.523	0.523	-63,756	No	243,721
CD-134 (D/S)	0.000	0.498	0.523	0.523	-63,756	No	243,721
CD-134	0.000	0.499	0.523	0.523	-62,858	No	243,721
CD-132 (D/S)	0.000	0.503	0.523	0.523	-52,829	No	243,721
CD-123	0.000	0.517	0.523	0.523	-18,049	No	243,721
CD-125	0.000	0.517	0.523	0.523	-18,049	No	243,721

Component Name	--------- Thickness (in) -------- Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line:	**CD80A-5-FWH 22 to FWH 23 HEAD**				***Sorted By:Remaining Life***		
CD-128	0.000	0.517	0.523	0.523	-18,049	No	243,721
CD-129	0.000	0.517	0.523	0.523	-18,049	No	243,721
CD-133	0.000	0.517	0.523	0.523	-16,935	No	243,721
CD-124	0.000	0.526	0.523	0.523	10,328	No	243,721
CD-131	0.000	0.526	0.523	0.523	11,505	No	243,721
CD-126	0.000	0.535	0.523	0.523	42,144	No	243,721
CD-121	0.000	0.537	0.523	0.523	47,352	No	243,721
CD-129P	0.000	0.540	0.523	0.523	59,543	No	243,721
CD-122	0.000	0.549	0.523	0.523	97,822	No	243,721
CD-122 (D/S)	0.000	0.549	0.523	0.523	97,822	No	243,721
CD-131P-1	0.000	0.466	0.436	0.436	121,393	No	243,721
CD-124P	0.000	0.572	0.523	0.523	220,313	No	243,721
CD-125P	0.000	0.572	0.523	0.523	220,313	No	243,721
CD-128P	0.000	0.572	0.523	0.523	220,313	No	243,721
CD-132P	0.000	0.573	0.523	0.523	221,962	No	243,721
CD-126P	0.000	0.586	0.523	0.523	320,533	No	243,721
CD-121P	0.000	0.595	0.523	0.523	404,050	No	243,721
CD-122P	0.000	0.595	0.523	0.523	404,050	No	243,721
CD-130P	0.000	0.596	0.523	0.523	406,111	No	243,721
CD-127P	0.000	0.623	0.523	0.523	787,900	No	243,721
===>Grouped by Line:	**CD80A-6-FWH 23 INLET HEADER**				***Sorted By:Remaining Life***		
CD-137 (BR/SE)	0.000	0.264	0.305	0.305	-106,659	No	243,721
CD-137	0.000	0.485	0.523	0.523	-89,826	No	243,721
CD-137 (D/S)	0.000	0.562	0.523	0.523	158,227	No	243,721
CD-136	0.000	0.577	0.523	0.523	253,414	No	243,721
CD-136 (D/S)	0.000	0.577	0.523	0.523	253,414	No	243,721
CD-136P	0.000	0.614	0.523	0.523	637,439	No	243,721
===>Grouped by Line:	**CD80A-7-HEADER to FWH 23A**				***Sorted By:Remaining Life***		
CD-VALVE-CD-16	0.000	0.190	0.305	0.305	-147,971	No	243,721
CD-141N	0.000	0.239	0.305	0.305	-124,034	No	243,721
CD-139	0.000	0.254	0.305	0.305	-114,329	No	243,721
CD-140	0.000	0.254	0.305	0.305	-114,329	No	243,721
CD-138 (BR/SE)	0.000	0.264	0.305	0.305	-106,659	No	243,721
CD-141	0.000	0.274	0.305	0.305	-91,001	No	243,721
CD-139P	0.000	0.314	0.305	0.305	36,613	No	243,721

Component Name	--------- Thickness (in) -------- Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line:	**CD80A-7-HEADER to FWH 23A**				***Sorted By:Remaining Life***		
CD-140P	0.000	0.314	0.305	0.305	36,613	No	243,721
CD-138	0.000	0.562	0.523	0.523	158,227	No	243,721
CD-138P	0.000	0.339	0.305	0.305	174,426	No	243,721
CD-137P	0.000	0.642	0.523	0.523	1,327,875	No	243,721
===>Grouped by Line:	**CD80A-8-HEADER to FWH 23B**				***Sorted By:Remaining Life***		
CD-VALVE-CD-16-1	0.000	0.190	0.305	0.305	-147,971	No	243,721
CD-144N	0.000	0.239	0.305	0.305	-124,034	No	243,721
CD-142	0.000	0.254	0.305	0.305	-114,329	No	243,721
CD-143	0.000	0.254	0.305	0.305	-114,329	No	243,721
CD-144	0.000	0.274	0.305	0.305	-91,001	No	243,721
CD-142P	0.000	0.314	0.305	0.305	36,613	No	243,721
CD-143P	0.000	0.314	0.305	0.305	36,613	No	243,721
CD-141P	0.000	0.339	0.305	0.305	174,426	No	243,721
===>Grouped by Line:	**CD80A-9-HEADER to FWH 23C**				***Sorted By:Remaining Life***		
CD-VALVE-CD-16-2	0.000	0.190	0.305	0.305	-147,971	No	243,721
CD-145	0.000	0.254	0.305	0.305	-114,329	No	243,721
CD-145P	0.000	0.314	0.305	0.305	36,613	No	243,721
CD-144P	0.000	0.339	0.305	0.305	174,426	No	243,721
CD-146	0.000	0.451	0.305	0.305	407,913	Yes	243,721
CD-146P	0.000	0.405	0.305	0.305	412,841	Yes	243,721
CD-147	0.000	0.487	0.305	0.305	570,341	Yes	243,721
CD-147N	0.000	0.565	0.305	0.305	673,959	Yes	243,721

Note:
[1] Predictions are based on last Tmeas to analysis ending period.

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).db

Service Life Report

Pass 1 Analysis Exclude Measured Wear

Report Date/Time: 7/6/2010 3:37:44PM
AnalysisDate/Time: 7/6/2010 3:18:38PM

Run Name: CND FWH 22 TO FWH 23
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 1.000

CHECWORKS SFA Version: 3.0 SP-1 (build 109)
Duty Factor (Global) : 1.000

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **CD80A-1-FWH 22A to HEADER**					***Sorted By:Flow Order***		
CD-101N	0.000	0.400	0.305	0.305	196,461	No	243,721
CD-101P	0.000	0.352	0.305	0.305	182,009	Yes	243,721
CD-102	0.000	0.254	0.305	0.305	-114,257	No	243,721
CD-102P	0.000	0.314	0.305	0.305	36,920	No	243,721
CD-VALVE-CD-8	0.000	0.190	0.326	0.326	-163,306	No	243,721
CD-103	0.000	0.473	0.305	0.305	472,083	Yes	243,721
CD-104	0.000	0.491	0.305	0.305	522,492	Yes	243,721
CD-104P	0.000	0.372	0.305	0.305	217,183	Yes	243,721
CD-105	0.000	0.254	0.305	0.305	-114,257	No	243,721
CD-105P	0.000	0.314	0.305	0.305	36,920	No	243,721
CD-106	0.000	0.254	0.305	0.305	-114,257	No	243,721
CD-106P	0.000	0.279	0.305	0.305	-79,198	No	243,721
CD-107P	0.000	0.369	0.305	0.305	467,074	No	243,721
CD-107	0.000	0.299	0.305	0.305	-22,175	No	243,721
CD-107 (D/S)	0.000	0.499	0.436	0.436	345,880	No	243,721
===>Grouped by Line: **CD80A-2-FWH 22B to HEADER**					***Sorted By:Flow Order***		
CD-108N	0.000	0.446	0.305	0.305	291,416	No	243,721
CD-108P	0.000	0.304	0.305	0.305	-3,936	No	243,721
CD-109	0.000	0.254	0.305	0.305	-114,257	No	243,721
CD-109P	0.000	0.314	0.305	0.305	36,920	No	243,721
CD-110	0.000	0.254	0.305	0.305	-114,257	No	243,721
CD-111	0.000	0.254	0.305	0.305	-114,257	No	243,721
CD-VALVE-CD-8-1	0.000	0.190	0.326	0.326	-163,306	No	243,721
CD-111P	0.000	0.329	0.305	0.305	112,132	No	243,721
CD-112	0.000	0.254	0.305	0.305	-114,257	No	243,721
CD-112P	0.000	0.314	0.305	0.305	36,920	No	243,721

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **CD80A-3-FWH 22C to HEADER**					***Sorted By:Flow Order***		
CD-113N	0.000	0.190	0.305	0.305	-147,918	No	243,721
CD-113P	0.000	0.304	0.305	0.305	-3,936	No	243,721
CD-114	0.000	0.254	0.305	0.305	-114,257	No	243,721
CD-114P	0.000	0.314	0.305	0.305	36,920	No	243,721
CD-115	0.000	0.447	0.305	0.305	397,568	Yes	243,721
CD-116	0.000	0.449	0.305	0.305	403,169	Yes	243,721
CD-116P	0.000	0.279	0.305	0.305	-79,198	No	243,721
CD-VALVE-CD-8-2	0.000	0.190	0.326	0.326	-163,306	No	243,721
CD-116P-1	0.000	0.329	0.305	0.305	112,132	No	243,721
CD-117	0.000	0.254	0.305	0.305	-114,257	No	243,721
CD-117P	0.000	0.314	0.305	0.305	36,920	No	243,721
===>Grouped by Line: **CD80A-4-FWH 22 OUTLET HEADER**					***Sorted By:Flow Order***		
CD-118T	0.000	0.545	0.436	0.436	435,495	Yes	243,721
CD-118T (BR/SE)	0.000	0.412	0.305	0.305	327,086	Yes	243,721
CD-118T (D/S)	0.000	0.540	0.436	0.436	281,625	Yes	243,721
CD-118P	0.000	0.501	0.436	0.436	360,771	No	243,721
CD-119P	0.000	0.529	0.436	0.436	740,200	No	243,721
CD-120	0.000	0.464	0.436	0.436	110,655	No	243,721
CD-120 (D/S)	0.000	0.577	0.523	0.523	253,414	No	243,721
===>Grouped by Line: **CD80A-5-FWH 22 to FWH 23 HEAD**					***Sorted By:Flow Order***		
CD-121 (BR/SE)	0.000	0.269	0.305	0.305	-99,447	No	243,721
CD-121	0.000	0.537	0.523	0.523	47,352	No	243,721
CD-121 (D/S)	0.000	0.498	0.523	0.523	-63,756	No	243,721
CD-121P	0.000	0.595	0.523	0.523	404,050	No	243,721
CD-122	0.000	0.549	0.523	0.523	97,822	No	243,721
CD-122 (D/S)	0.000	0.549	0.523	0.523	97,822	No	243,721
CD-122P	0.000	0.595	0.523	0.523	404,050	No	243,721
CD-123	0.000	0.517	0.523	0.523	-18,049	No	243,721
CD-124	0.000	0.526	0.523	0.523	10,328	No	243,721
CD-124P	0.000	0.572	0.523	0.523	220,313	No	243,721
CD-125	0.000	0.517	0.523	0.523	-18,049	No	243,721
CD-125P	0.000	0.572	0.523	0.523	220,313	No	243,721
CD-126	0.000	0.535	0.523	0.523	42,144	No	243,721
CD-126P	0.000	0.586	0.523	0.523	320,533	No	243,721
CD-127P	0.000	0.623	0.523	0.523	787,900	No	243,721

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **CD80A-5-FWH 22 to FWH 23 HEAD**					***Sorted By:Flow Order***		
CD-128	0.000	0.517	0.523	0.523	-18,049	No	243,721
CD-128P	0.000	0.572	0.523	0.523	220,313	No	243,721
CD-129	0.000	0.517	0.523	0.523	-18,049	No	243,721
CD-129P	0.000	0.540	0.523	0.523	59,543	No	243,721
CD-130	0.000	0.433	0.523	0.523	-127,668	No	243,721
CD-130 (D/S)	0.000	0.434	0.523	0.523	-127,408	No	243,721
CD-130P	0.000	0.596	0.523	0.523	406,111	No	243,721
CD-131	0.000	0.526	0.523	0.523	11,505	No	243,721
CD-131 (D/S)	0.000	0.408	0.436	0.436	-73,463	No	243,721
CD-VALVE-CD-1110	0.000	0.303	0.466	0.466	-165,244	No	243,721
CD-131P-1	0.000	0.466	0.436	0.436	121,393	No	243,721
CD-132	0.000	0.361	0.436	0.436	-122,198	No	243,721
CD-132 (D/S)	0.000	0.503	0.523	0.523	-52,829	No	243,721
CD-132P	0.000	0.573	0.523	0.523	221,962	No	243,721
CD-133	0.000	0.517	0.523	0.523	-16,935	No	243,721
CD-134	0.000	0.499	0.523	0.523	-62,858	No	243,721
CD-134 (D/S)	0.000	0.498	0.523	0.523	-63,756	No	243,721
CD-135	0.000	0.433	0.523	0.523	-127,668	No	243,721
CD-135 (BR/SE)	0.000	0.264	0.305	0.305	-106,659	No	243,721
CD-135 (D/S)	0.000	0.485	0.523	0.523	-89,826	No	243,721
===>Grouped by Line: **CD80A-6-FWH 23 INLET HEADER**					***Sorted By:Flow Order***		
CD-136 (D/S)	0.000	0.577	0.523	0.523	253,414	No	243,721
CD-136P	0.000	0.614	0.523	0.523	637,439	No	243,721
CD-137	0.000	0.485	0.523	0.523	-89,826	No	243,721
CD-137 (D/S)	0.000	0.562	0.523	0.523	158,227	No	243,721
CD-137 (BR/SE)	0.000	0.264	0.305	0.305	-106,659	No	243,721
CD-136	0.000	0.577	0.523	0.523	253,414	No	243,721
===>Grouped by Line: **CD80A-7-HEADER to FWH 23A**					***Sorted By:Flow Order***		
CD-137P	0.000	0.642	0.523	0.523	1,327,875	No	243,721
CD-138	0.000	0.562	0.523	0.523	158,227	No	243,721
CD-138 (BR/SE)	0.000	0.264	0.305	0.305	-106,659	No	243,721
CD-138P	0.000	0.339	0.305	0.305	174,426	No	243,721
CD-139	0.000	0.254	0.305	0.305	-114,329	No	243,721
CD-139P	0.000	0.314	0.305	0.305	36,613	No	243,721
CD-VALVE-CD-16	0.000	0.190	0.305	0.305	-147,971	No	243,721

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **CD80A-7-HEADER to FWH 23A**					***Sorted By:Flow Order***		
CD-140	0.000	0.254	0.305	0.305	-114,329	No	243,721
CD-140P	0.000	0.314	0.305	0.305	36,613	No	243,721
CD-141	0.000	0.274	0.305	0.305	-91,001	No	243,721
CD-141N	0.000	0.239	0.305	0.305	-124,034	No	243,721
===>Grouped by Line: **CD80A-8-HEADER to FWH 23B**					***Sorted By:Flow Order***		
CD-141P	0.000	0.339	0.305	0.305	174,426	No	243,721
CD-142	0.000	0.254	0.305	0.305	-114,329	No	243,721
CD-142P	0.000	0.314	0.305	0.305	36,613	No	243,721
CD-VALVE-CD-16-1	0.000	0.190	0.305	0.305	-147,971	No	243,721
CD-143	0.000	0.254	0.305	0.305	-114,329	No	243,721
CD-143P	0.000	0.314	0.305	0.305	36,613	No	243,721
CD-144	0.000	0.274	0.305	0.305	-91,001	No	243,721
CD-144N	0.000	0.239	0.305	0.305	-124,034	No	243,721
===>Grouped by Line: **CD80A-9-HEADER to FWH 23C**					***Sorted By:Flow Order***		
CD-144P	0.000	0.339	0.305	0.305	174,426	No	243,721
CD-145	0.000	0.254	0.305	0.305	-114,329	No	243,721
CD-145P	0.000	0.314	0.305	0.305	36,613	No	243,721
CD-VALVE-CD-16-2	0.000	0.190	0.305	0.305	-147,971	No	243,721
CD-146	0.000	0.451	0.305	0.305	407,913	Yes	243,721
CD-146P	0.000	0.405	0.305	0.305	412,841	Yes	243,721
CD-147	0.000	0.487	0.305	0.305	570,341	Yes	243,721
CD-147N	0.000	0.565	0.305	0.305	673,959	Yes	243,721

Note:
[1] Predictions are based on last Tmeas to analysis ending period.

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).db

Wear Rate Report

Pass 1 Analysis Exclude Measured Wear

Report Date/Time: 7/6/2010 3:38:15PM
AnalysisDate/Time: 7/6/2010 3:18:46PM

CHECWORKS SFA Version: 3.0 SP-1 (build 109)

Duty Factor (Global) : 1.000

Run Name: CND FWH 23 TO FWH 24
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 1.000

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***CD80-1-FWH 23A to FWH 24A***								***Sorted By: Average Wear Rate***		
CD-11N	31	13.793	6.565	255.5	16.955	0.0	14.000	7.048	0.000	126.02	HBD
CD-41N	30	11.034	5.252	255.5	16.955	0.0	14.000	7.048	0.000	126.02	HBD
CD-11	4	10.207	4.858	255.5	16.955	0.0	14.000	7.048	0.000	126.02	HBD
CD-12	4	10.207	4.858	255.5	16.955	0.0	14.000	7.048	0.000	126.02	HBD
CD-2	2	10.207	4.858	255.5	16.955	0.0	14.000	7.048	0.000	126.02	HBD
CD-5	2	10.207	4.858	255.5	16.955	0.0	14.000	7.048	0.000	126.02	HBD
CD-1	1	9.103	4.333	255.5	16.955	0.0	14.000	7.048	0.000	126.02	HBD
CD-17	1	9.103	4.333	255.5	16.955	0.0	14.000	7.048	0.000	126.02	HBD
CD-41	1	9.103	4.333	255.5	16.955	0.0	14.000	7.048	0.000	126.02	HBD
CD-12P	54	8.827	4.202	255.5	16.955	0.0	14.000	7.048	0.000	126.02	HBD
CD-2P	52	6.896	3.283	255.5	16.955	0.0	14.000	7.048	0.000	126.02	HBD
CD-5P	52	6.896	3.283	255.5	16.955	0.0	14.000	7.048	0.000	126.02	HBD
CD-1P	51	6.069	2.889	255.5	16.955	0.0	14.000	7.048	0.000	126.02	HBD
CD-17P	51	6.069	2.889	255.5	16.955	0.0	14.000	7.048	0.000	126.02	HBD
===>Grouped by Line:	***CD80-2-FWH 23B to FWH 24B***								***Sorted By: Average Wear Rate***		
CD-14N	31	13.793	6.565	255.5	16.955	0.0	14.000	7.048	0.000	126.02	HBD
CD-42N	30	11.034	5.252	255.5	16.955	0.0	14.000	7.048	0.000	126.02	HBD
CD-14	4	10.207	4.858	255.5	16.955	0.0	14.000	7.048	0.000	126.02	HBD
CD-13	4	10.207	4.858	255.5	16.955	0.0	14.000	7.048	0.000	126.02	HBD
CD-3	2	10.207	4.858	255.5	16.955	0.0	14.000	7.048	0.000	126.02	HBD
CD-4	4	10.207	4.858	255.5	16.955	0.0	14.000	7.048	0.000	126.02	HBD
CD-19	2	10.207	4.858	255.5	16.955	0.0	14.000	7.048	0.000	126.02	HBD
CD-42	1	9.103	4.333	255.5	16.955	0.0	14.000	7.048	0.000	126.02	HBD
CD-13P US	54	8.827	4.202	255.5	16.955	0.0	14.000	7.048	0.000	126.02	HBD
CD-4P	54	8.827	4.202	255.5	16.955	0.0	14.000	7.048	0.000	126.02	HBD

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***CD80-2-FWH 23B to FWH 24B***								***Sorted By: Average Wear Rate***		
CD-19P	52	6.896	3.283	255.5	16.955	0.0	14.000	7.048	0.000	126.02	HBD
===>Grouped by Line:	***CD80-3-FWH 23C to FWH 24C***								***Sorted By: Average Wear Rate***		
CD-16N	31	13.793	6.565	255.5	16.955	0.0	14.000	7.048	0.000	126.02	HBD
CD-43N	30	11.034	5.252	255.5	16.955	0.0	14.000	7.048	0.000	126.02	HBD
CD-16	4	10.207	4.858	255.5	16.955	0.0	14.000	7.048	0.000	126.02	HBD
CD-15	4	10.207	4.858	255.5	16.955	0.0	14.000	7.048	0.000	126.02	HBD
CD-39	2	10.207	4.858	255.5	16.955	0.0	14.000	7.048	0.000	126.02	HBD
CD-40	4	10.207	4.858	255.5	16.955	0.0	14.000	7.048	0.000	126.02	HBD
CD-22	2	10.207	4.858	255.5	16.955	0.0	14.000	7.048	0.000	126.02	HBD
CD-43	1	9.103	4.333	255.5	16.955	0.0	14.000	7.048	0.000	126.02	HBD
CD-15P US	54	8.827	4.202	255.5	16.955	0.0	14.000	7.048	0.000	126.02	HBD
CD-40P	54	8.827	4.202	255.5	16.955	0.0	14.000	7.048	0.000	126.02	HBD
CD-22P	52	6.896	3.283	255.5	16.955	0.0	14.000	7.048	0.000	126.02	HBD

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).db

Wear Rate Report

Pass 1 Analysis Exclude Measured Wear

Report Date/Time: 7/6/2010 3:37:44PM
AnalysisDate/Time: 7/6/2010 3:18:46PM

CHECWORKS SFA Version: 3.0 SP-1 (build 109)
Duty Factor (Global) : 1.000

Run Name: CND FWH 23 TO FWH 24
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 1.000

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***CD80-1-FWH 23A to FWH 24A***									***Sorted By: Flow Order***	
CD-11N	31	13.793	6.565	255.5	16.955	0.0	14.000	7.048	0.000	126.02	HBD
CD-11	4	10.207	4.858	255.5	16.955	0.0	14.000	7.048	0.000	126.02	HBD
CD-12	4	10.207	4.858	255.5	16.955	0.0	14.000	7.048	0.000	126.02	HBD
CD-12P	54	8.827	4.202	255.5	16.955	0.0	14.000	7.048	0.000	126.02	HBD
CD-1	1	9.103	4.333	255.5	16.955	0.0	14.000	7.048	0.000	126.02	HBD
CD-1P	51	6.069	2.889	255.5	16.955	0.0	14.000	7.048	0.000	126.02	HBD
CD-2	2	10.207	4.858	255.5	16.955	0.0	14.000	7.048	0.000	126.02	HBD
CD-2P	52	6.896	3.283	255.5	16.955	0.0	14.000	7.048	0.000	126.02	HBD
CD-17	1	9.103	4.333	255.5	16.955	0.0	14.000	7.048	0.000	126.02	HBD
CD-17P	51	6.069	2.889	255.5	16.955	0.0	14.000	7.048	0.000	126.02	HBD
CD-5	2	10.207	4.858	255.5	16.955	0.0	14.000	7.048	0.000	126.02	HBD
CD-5P	52	6.896	3.283	255.5	16.955	0.0	14.000	7.048	0.000	126.02	HBD
CD-41	1	9.103	4.333	255.5	16.955	0.0	14.000	7.048	0.000	126.02	HBD
CD-41N	30	11.034	5.252	255.5	16.955	0.0	14.000	7.048	0.000	126.02	HBD
===>Grouped by Line:	***CD80-2-FWH 23B to FWH 24B***									***Sorted By: Flow Order***	
CD-14N	31	13.793	6.565	255.5	16.955	0.0	14.000	7.048	0.000	126.02	HBD
CD-14	4	10.207	4.858	255.5	16.955	0.0	14.000	7.048	0.000	126.02	HBD
CD-13	4	10.207	4.858	255.5	16.955	0.0	14.000	7.048	0.000	126.02	HBD
CD-13P US	54	8.827	4.202	255.5	16.955	0.0	14.000	7.048	0.000	126.02	HBD
CD-3	2	10.207	4.858	255.5	16.955	0.0	14.000	7.048	0.000	126.02	HBD
CD-4	4	10.207	4.858	255.5	16.955	0.0	14.000	7.048	0.000	126.02	HBD
CD-4P	54	8.827	4.202	255.5	16.955	0.0	14.000	7.048	0.000	126.02	HBD
CD-19	2	10.207	4.858	255.5	16.955	0.0	14.000	7.048	0.000	126.02	HBD
CD-19P	52	6.896	3.283	255.5	16.955	0.0	14.000	7.048	0.000	126.02	HBD
CD-42	1	9.103	4.333	255.5	16.955	0.0	14.000	7.048	0.000	126.02	HBD

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***CD80-2-FWH 23B to FWH 24B***									***Sorted By: Flow Order***	
CD-42N	30	11.034	5.252	255.5	16.955	0.0	14.000	7.048	0.000	126.02	HBD
===>Grouped by Line:	***CD80-3-FWH 23C to FWH 24C***									***Sorted By: Flow Order***	
CD-16N	31	13.793	6.565	255.5	16.955	0.0	14.000	7.048	0.000	126.02	HBD
CD-16	4	10.207	4.858	255.5	16.955	0.0	14.000	7.048	0.000	126.02	HBD
CD-15	4	10.207	4.858	255.5	16.955	0.0	14.000	7.048	0.000	126.02	HBD
CD-15P US	54	8.827	4.202	255.5	16.955	0.0	14.000	7.048	0.000	126.02	HBD
CD-39	2	10.207	4.858	255.5	16.955	0.0	14.000	7.048	0.000	126.02	HBD
CD-40	4	10.207	4.858	255.5	16.955	0.0	14.000	7.048	0.000	126.02	HBD
CD-40P	54	8.827	4.202	255.5	16.955	0.0	14.000	7.048	0.000	126.02	HBD
CD-22	2	10.207	4.858	255.5	16.955	0.0	14.000	7.048	0.000	126.02	HBD
CD-22P	52	6.896	3.283	255.5	16.955	0.0	14.000	7.048	0.000	126.02	HBD
CD-43	1	9.103	4.333	255.5	16.955	0.0	14.000	7.048	0.000	126.02	HBD
CD-43N	30	11.034	5.252	255.5	16.955	0.0	14.000	7.048	0.000	126.02	HBD

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).db

Service Life Report

Pass 1 Analysis Exclude Measured Wear

Report Date/Time: 7/6/2010 3:37:44PM
AnalysisDate/Time: 7/6/2010 3:18:46PM

Run Name: CND FWH 23 TO FWH 24
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 1.000

CHECWORKS SFA Version: 3.0 SP-1 (build 109)
Duty Factor (Global) :1.000

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **CD80-1-FWH 23A to FWH 24A**					***Sorted By:Remaining Life***		
CD-41N	0.000	0.131	0.305	0.305	-166,236	No	243,721
CD-5	0.000	0.154	0.305	0.305	-159,954	No	243,721
CD-41	0.000	0.185	0.305	0.305	-149,800	No	243,721
CD-17	0.000	0.185	0.305	0.305	-149,800	No	243,721
CD-1	0.000	0.185	0.305	0.305	-149,800	No	243,721
CD-5P	0.000	0.246	0.305	0.305	-119,746	No	243,721
CD-17P	0.000	0.269	0.305	0.305	-99,457	No	243,721
CD-1P	0.000	0.269	0.305	0.305	-99,457	No	243,721
CD-12P	0.000	0.331	0.305	0.305	54,408	Yes	243,721
CD-12	0.000	0.338	0.305	0.305	60,022	Yes	243,721
CD-11	0.000	0.342	0.305	0.305	67,204	Yes	243,721
CD-2	0.000	0.346	0.305	0.305	73,386	Yes	243,721
CD-2P	0.000	0.334	0.305	0.305	77,705	Yes	243,721
CD-11N	0.000	0.457	0.305	0.305	203,055	No	243,721
===>Grouped by Line: **CD80-2-FWH 23B to FWH 24B**					***Sorted By:Remaining Life***		
CD-3	0.000	0.154	0.305	0.305	-159,954	No	243,721
CD-4P	0.000	0.192	0.305	0.305	-146,865	No	243,721
CD-4	0.000	0.358	0.305	0.305	95,023	Yes	243,721
CD-13P US	0.000	0.353	0.305	0.305	100,302	Yes	243,721
CD-42	0.000	0.361	0.305	0.305	113,257	Yes	243,721
CD-13	0.000	0.377	0.305	0.305	129,132	Yes	243,721
CD-42N	0.000	0.390	0.305	0.305	142,141	No	243,721
CD-14N	0.000	0.444	0.305	0.305	185,644	No	243,721
CD-14	0.000	0.409	0.305	0.305	186,832	Yes	243,721
CD-19P	0.000	0.390	0.305	0.305	226,696	Yes	243,721
CD-19	0.000	0.435	0.305	0.305	234,652	Yes	243,721

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **CD80-3-FWH 23C to FWH 24C**					***Sorted By:Remaining Life***		
CD-43	0.000	0.185	0.305	0.305	-149,800	No	243,721
CD-22P	0.000	0.246	0.305	0.305	-119,746	No	243,721
CD-15P US	0.000	0.351	0.305	0.305	96,132	Yes	243,721
CD-15	0.000	0.393	0.305	0.305	157,982	Yes	243,721
CD-43N	0.000	0.402	0.305	0.305	162,716	No	243,721
CD-22	0.000	0.396	0.305	0.305	164,330	Yes	243,721
CD-16	0.000	0.405	0.305	0.305	179,620	Yes	243,721
CD-40	0.000	0.410	0.305	0.305	190,051	Yes	243,721
CD-40P	0.000	0.404	0.305	0.305	206,976	Yes	243,721
CD-16N	0.000	0.470	0.305	0.305	220,336	No	243,721
CD-39	0.000	0.427	0.305	0.305	220,704	Yes	243,721

Note:
[1] Predictions are based on last Tmeas to analysis ending period.

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).db

Service Life Report

Pass 1 Analysis Exclude Measured Wear

Report Date/Time: 7/6/2010 3:37:44PM
AnalysisDate/Time: 7/6/2010 3:18:46PM

Run Name: CND FWH 23 TO FWH 24
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 1.000

CHECWORKS SFA Version: 3.0 SP-1 (build 109)
Duty Factor (Global) : 1.000

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **CD80-1-FWH 23A to FWH 24A**					***Sorted By:Flow Order***		
CD-11N	0.000	0.457	0.305	0.305	203,055	No	243,721
CD-11	0.000	0.342	0.305	0.305	67,204	Yes	243,721
CD-12	0.000	0.338	0.305	0.305	60,022	Yes	243,721
CD-12P	0.000	0.331	0.305	0.305	54,408	Yes	243,721
CD-1	0.000	0.185	0.305	0.305	-149,800	No	243,721
CD-1P	0.000	0.269	0.305	0.305	-99,457	No	243,721
CD-2	0.000	0.346	0.305	0.305	73,386	Yes	243,721
CD-2P	0.000	0.334	0.305	0.305	77,705	Yes	243,721
CD-17	0.000	0.185	0.305	0.305	-149,800	No	243,721
CD-17P	0.000	0.269	0.305	0.305	-99,457	No	243,721
CD-5	0.000	0.154	0.305	0.305	-159,954	No	243,721
CD-5P	0.000	0.246	0.305	0.305	-119,746	No	243,721
CD-41	0.000	0.185	0.305	0.305	-149,800	No	243,721
CD-41N	0.000	0.131	0.305	0.305	-166,236	No	243,721
===>Grouped by Line: **CD80-2-FWH 23B to FWH 24B**					***Sorted By:Flow Order***		
CD-14N	0.000	0.444	0.305	0.305	185,644	No	243,721
CD-14	0.000	0.409	0.305	0.305	186,832	Yes	243,721
CD-13	0.000	0.377	0.305	0.305	129,132	Yes	243,721
CD-13P US	0.000	0.353	0.305	0.305	100,302	Yes	243,721
CD-3	0.000	0.154	0.305	0.305	-159,954	No	243,721
CD-4	0.000	0.358	0.305	0.305	95,023	Yes	243,721
CD-4P	0.000	0.192	0.305	0.305	-146,865	No	243,721
CD-19	0.000	0.435	0.305	0.305	234,652	Yes	243,721
CD-19P	0.000	0.390	0.305	0.305	226,696	Yes	243,721
CD-42	0.000	0.361	0.305	0.305	113,257	Yes	243,721
CD-42N	0.000	0.390	0.305	0.305	142,141	No	243,721

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **CD80-3-FWH 23C to FWH 24C**					***Sorted By:Flow Order***		
CD-16N	0.000	0.470	0.305	0.305	220,336	No	243,721
CD-16	0.000	0.405	0.305	0.305	179,620	Yes	243,721
CD-15	0.000	0.393	0.305	0.305	157,982	Yes	243,721
CD-15P US	0.000	0.351	0.305	0.305	96,132	Yes	243,721
CD-39	0.000	0.427	0.305	0.305	220,704	Yes	243,721
CD-40	0.000	0.410	0.305	0.305	190,051	Yes	243,721
CD-40P	0.000	0.404	0.305	0.305	206,976	Yes	243,721
CD-22	0.000	0.396	0.305	0.305	164,330	Yes	243,721
CD-22P	0.000	0.246	0.305	0.305	-119,746	No	243,721
CD-43	0.000	0.185	0.305	0.305	-149,800	No	243,721
CD-43N	0.000	0.402	0.305	0.305	162,716	No	243,721

Note:
[1] Predictions are based on last Tmeas to analysis ending period.

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).db

Wear Rate Report

Pass 1 Analysis Exclude Measured Wear

Report Date/Time: 7/6/2010 3:38:15PM
AnalysisDate/Time: 7/6/2010 3:18:55PM

CHECWORKS SFA Version: 3.0 SP-1 (build 109)

Duty Factor (Global) : 1.000

Run Name: CND FWH 24 TO FWH 25
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 1.000

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***CD81-1-FWH 24A to FWH 25A***								***Sorted By: Average Wear Rate***		
CD-37N	31	16.449	7.743	300.5	17.360	0.0	14.000	7.048	0.000	123.54	HBD
CD-56N	30	13.159	6.195	300.5	17.360	0.0	14.000	7.048	0.000	123.54	HBD
CD-37	4	12.172	5.730	300.5	17.360	0.0	14.000	7.048	0.000	123.54	HBD
CD-18	4	12.172	5.730	300.5	17.360	0.0	14.000	7.048	0.000	123.54	HBD
CD-46	2	12.172	5.730	300.5	17.360	0.0	14.000	7.048	0.000	123.54	HBD
CD-47	2	12.172	5.730	300.5	17.360	0.0	14.000	7.048	0.000	123.54	HBD
CD-48	4	12.172	5.730	300.5	17.360	0.0	14.000	7.048	0.000	123.54	HBD
CD-28	2	12.172	5.730	300.5	17.360	0.0	14.000	7.048	0.000	123.54	HBD
CD-56	1	10.856	5.111	300.5	17.360	0.0	14.000	7.048	0.000	123.54	HBD
CD-18P	54	10.527	4.956	300.5	17.360	0.0	14.000	7.048	0.000	123.54	HBD
CD-48P	54	10.527	4.956	300.5	17.360	0.0	14.000	7.048	0.000	123.54	HBD
CD-46P	52	8.224	3.872	300.5	17.360	0.0	14.000	7.048	0.000	123.54	HBD
CD-47P	52	8.224	3.872	300.5	17.360	0.0	14.000	7.048	0.000	123.54	HBD
CD-28P	52	8.224	3.872	300.5	17.360	0.0	14.000	7.048	0.000	123.54	HBD
===>Grouped by Line:	***CD81-2-FWH 24B to FWH 25B***								***Sorted By: Average Wear Rate***		
CD-21N	31	16.449	7.743	300.5	17.360	0.0	14.000	7.048	0.000	123.54	HBD
CD-44N	30	13.159	6.195	300.5	17.360	0.0	14.000	7.048	0.000	123.54	HBD
CD-21	4	12.172	5.730	300.5	17.360	0.0	14.000	7.048	0.000	123.54	HBD
CD-20	4	12.172	5.730	300.5	17.360	0.0	14.000	7.048	0.000	123.54	HBD
CD-49	2	12.172	5.730	300.5	17.360	0.0	14.000	7.048	0.000	123.54	HBD
CD-51	2	12.172	5.730	300.5	17.360	0.0	14.000	7.048	0.000	123.54	HBD
CD-52	4	12.172	5.730	300.5	17.360	0.0	14.000	7.048	0.000	123.54	HBD
CD-29	4	12.172	5.730	300.5	17.360	0.0	14.000	7.048	0.000	123.54	HBD
CD-50	3	11.514	5.420	300.5	17.360	0.0	14.000	7.048	0.000	123.54	HBD
CD-57	1	10.856	5.111	300.5	17.360	0.0	14.000	7.048	0.000	123.54	HBD

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***CD81-2-FWH 24B to FWH 25B***								***Sorted By: Average Wear Rate***		
CD-44	1	10.856	5.111	300.5	17.360	0.0	14.000	7.048	0.000	123.54	HBD
CD-20P	54	10.527	4.956	300.5	17.360	0.0	14.000	7.048	0.000	123.54	HBD
CD-52P	54	10.527	4.956	300.5	17.360	0.0	14.000	7.048	0.000	123.54	HBD
CD-29P	54	10.527	4.956	300.5	17.360	0.0	14.000	7.048	0.000	123.54	HBD
CD-50P	53	8.224	3.872	300.5	17.360	0.0	14.000	7.048	0.000	123.54	HBD
CD-51P	52	8.224	3.872	300.5	17.360	0.0	14.000	7.048	0.000	123.54	HBD
===>Grouped by Line:	***CD81-3-FWH 24C to FWH 25C***								***Sorted By: Average Wear Rate***		
CD-24N	31	16.449	7.743	300.5	17.360	0.0	14.000	7.048	0.000	123.54	HBD
CD-45N	30	13.159	6.195	300.5	17.360	0.0	14.000	7.048	0.000	123.54	HBD
CD-24	4	12.172	5.730	300.5	17.360	0.0	14.000	7.048	0.000	123.54	HBD
CD-23	4	12.172	5.730	300.5	17.360	0.0	14.000	7.048	0.000	123.54	HBD
CD-53	2	12.172	5.730	300.5	17.360	0.0	14.000	7.048	0.000	123.54	HBD
CD-54	2	12.172	5.730	300.5	17.360	0.0	14.000	7.048	0.000	123.54	HBD
CD-55	2	12.172	5.730	300.5	17.360	0.0	14.000	7.048	0.000	123.54	HBD
CD-30	2	12.172	5.730	300.5	17.360	0.0	14.000	7.048	0.000	123.54	HBD
CD-45	1	10.856	5.111	300.5	17.360	0.0	14.000	7.048	0.000	123.54	HBD
CD-23P	54	10.527	4.956	300.5	17.360	0.0	14.000	7.048	0.000	123.54	HBD
CD-53P	52	8.224	3.872	300.5	17.360	0.0	14.000	7.048	0.000	123.54	HBD
CD-54P	52	8.224	3.872	300.5	17.360	0.0	14.000	7.048	0.000	123.54	HBD
CD-55P	52	8.224	3.872	300.5	17.360	0.0	14.000	7.048	0.000	123.54	HBD
CD-30P	52	8.224	3.872	300.5	17.360	0.0	14.000	7.048	0.000	123.54	HBD

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).db

Wear Rate Report

Pass 1 Analysis Exclude Measured Wear

Report Date/Time: 7/6/2010 3:37:44PM
AnalysisDate/Time: 7/6/2010 3:18:55PM

CHECWORKS SFA Version: 3.0 SP-1 (build 109)
Duty Factor (Global) : 1.000

Run Name: CND FWH 24 TO FWH 25
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 1.000

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***CD81-1-FWH 24A to FWH 25A***									***Sorted By: Flow Order***	
CD-37N	31	16.449	7.743	300.5	17.360	0.0	14.000	7.048	0.000	123.54	HBD
CD-37	4	12.172	5.730	300.5	17.360	0.0	14.000	7.048	0.000	123.54	HBD
CD-18	4	12.172	5.730	300.5	17.360	0.0	14.000	7.048	0.000	123.54	HBD
CD-18P	54	10.527	4.956	300.5	17.360	0.0	14.000	7.048	0.000	123.54	HBD
CD-46	2	12.172	5.730	300.5	17.360	0.0	14.000	7.048	0.000	123.54	HBD
CD-46P	52	8.224	3.872	300.5	17.360	0.0	14.000	7.048	0.000	123.54	HBD
CD-47	2	12.172	5.730	300.5	17.360	0.0	14.000	7.048	0.000	123.54	HBD
CD-47P	52	8.224	3.872	300.5	17.360	0.0	14.000	7.048	0.000	123.54	HBD
CD-48	4	12.172	5.730	300.5	17.360	0.0	14.000	7.048	0.000	123.54	HBD
CD-48P	54	10.527	4.956	300.5	17.360	0.0	14.000	7.048	0.000	123.54	HBD
CD-28	2	12.172	5.730	300.5	17.360	0.0	14.000	7.048	0.000	123.54	HBD
CD-28P	52	8.224	3.872	300.5	17.360	0.0	14.000	7.048	0.000	123.54	HBD
CD-56	1	10.856	5.111	300.5	17.360	0.0	14.000	7.048	0.000	123.54	HBD
CD-56N	30	13.159	6.195	300.5	17.360	0.0	14.000	7.048	0.000	123.54	HBD
===>Grouped by Line:	***CD81-2-FWH 24B to FWH 25B***									***Sorted By: Flow Order***	
CD-21N	31	16.449	7.743	300.5	17.360	0.0	14.000	7.048	0.000	123.54	HBD
CD-21	4	12.172	5.730	300.5	17.360	0.0	14.000	7.048	0.000	123.54	HBD
CD-20	4	12.172	5.730	300.5	17.360	0.0	14.000	7.048	0.000	123.54	HBD
CD-20P	54	10.527	4.956	300.5	17.360	0.0	14.000	7.048	0.000	123.54	HBD
CD-49	2	12.172	5.730	300.5	17.360	0.0	14.000	7.048	0.000	123.54	HBD
CD-50	3	11.514	5.420	300.5	17.360	0.0	14.000	7.048	0.000	123.54	HBD
CD-50P	53	8.224	3.872	300.5	17.360	0.0	14.000	7.048	0.000	123.54	HBD
CD-51	2	12.172	5.730	300.5	17.360	0.0	14.000	7.048	0.000	123.54	HBD
CD-51P	52	8.224	3.872	300.5	17.360	0.0	14.000	7.048	0.000	123.54	HBD
CD-52	4	12.172	5.730	300.5	17.360	0.0	14.000	7.048	0.000	123.54	HBD

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***CD81-2-FWH 24B to FWH 25B***								***Sorted By: Flow Order***		
CD-52P	54	10.527	4.956	300.5	17.360	0.0	14.000	7.048	0.000	123.54	HBD
CD-57	1	10.856	5.111	300.5	17.360	0.0	14.000	7.048	0.000	123.54	HBD
CD-29	4	12.172	5.730	300.5	17.360	0.0	14.000	7.048	0.000	123.54	HBD
CD-29P	54	10.527	4.956	300.5	17.360	0.0	14.000	7.048	0.000	123.54	HBD
CD-44	1	10.856	5.111	300.5	17.360	0.0	14.000	7.048	0.000	123.54	HBD
CD-44N	30	13.159	6.195	300.5	17.360	0.0	14.000	7.048	0.000	123.54	HBD
===>Grouped by Line:	***CD81-3-FWH 24C to FWH 25C***								***Sorted By: Flow Order***		
CD-24N	31	16.449	7.743	300.5	17.360	0.0	14.000	7.048	0.000	123.54	HBD
CD-24	4	12.172	5.730	300.5	17.360	0.0	14.000	7.048	0.000	123.54	HBD
CD-23	4	12.172	5.730	300.5	17.360	0.0	14.000	7.048	0.000	123.54	HBD
CD-23P	54	10.527	4.956	300.5	17.360	0.0	14.000	7.048	0.000	123.54	HBD
CD-53	2	12.172	5.730	300.5	17.360	0.0	14.000	7.048	0.000	123.54	HBD
CD-53P	52	8.224	3.872	300.5	17.360	0.0	14.000	7.048	0.000	123.54	HBD
CD-54	2	12.172	5.730	300.5	17.360	0.0	14.000	7.048	0.000	123.54	HBD
CD-54P	52	8.224	3.872	300.5	17.360	0.0	14.000	7.048	0.000	123.54	HBD
CD-55	2	12.172	5.730	300.5	17.360	0.0	14.000	7.048	0.000	123.54	HBD
CD-55P	52	8.224	3.872	300.5	17.360	0.0	14.000	7.048	0.000	123.54	HBD
CD-30	2	12.172	5.730	300.5	17.360	0.0	14.000	7.048	0.000	123.54	HBD
CD-30P	52	8.224	3.872	300.5	17.360	0.0	14.000	7.048	0.000	123.54	HBD
CD-45	1	10.856	5.111	300.5	17.360	0.0	14.000	7.048	0.000	123.54	HBD
CD-45N	30	13.159	6.195	300.5	17.360	0.0	14.000	7.048	0.000	123.54	HBD

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).db

Service Life Report

Pass 1 Analysis Exclude Measured Wear

Report Date/Time: 7/6/2010 3:37:44PM
AnalysisDate/Time: 7/6/2010 3:18:55PM

Run Name: CND FWH 24 TO FWH 25
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 1.000

CHECWORKS SFA Version: 3.0 SP-1 (build 109)
Duty Factor (Global) :1.000

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **CD81-1-FWH 24A to FWH 25A**					***Sorted By:Remaining Life***		
CD-47	0.000	0.099	0.305	0.305	-173,537	No	243,721
CD-48	0.000	0.099	0.305	0.305	-173,537	No	243,721
CD-28	0.000	0.099	0.305	0.305	-173,537	No	243,721
CD-48P	0.000	0.145	0.305	0.305	-162,571	No	243,721
CD-28P	0.000	0.209	0.305	0.305	-139,850	No	243,721
CD-47P	0.000	0.209	0.305	0.305	-139,850	No	243,721
CD-18P	0.000	0.304	0.305	0.305	-927	Yes	243,721
CD-18	0.000	0.313	0.305	0.305	11,699	Yes	243,721
CD-46	0.000	0.317	0.305	0.305	18,690	Yes	243,721
CD-46P	0.000	0.323	0.305	0.305	40,331	Yes	243,721
CD-37N	0.000	0.407	0.305	0.305	114,923	No	243,721
CD-56	0.000	0.381	0.305	0.305	130,764	Yes	243,721
CD-37	0.000	0.409	0.305	0.305	158,399	Yes	243,721
CD-56N	0.000	0.454	0.305	0.305	210,445	No	243,721
===>Grouped by Line: **CD81-2-FWH 24B to FWH 25B**					***Sorted By:Remaining Life***		
CD-44N	0.000	0.072	0.305	0.305	-178,801	No	243,721
CD-49	0.000	0.099	0.305	0.305	-173,537	No	243,721
CD-52	0.000	0.099	0.305	0.305	-173,537	No	243,721
CD-29	0.000	0.099	0.305	0.305	-173,537	No	243,721
CD-57	0.000	0.136	0.305	0.305	-165,030	No	243,721
CD-44	0.000	0.136	0.305	0.305	-165,030	No	243,721
CD-20P	0.000	0.145	0.305	0.305	-162,571	No	243,721
CD-52P	0.000	0.145	0.305	0.305	-162,571	No	243,721
CD-29P	0.000	0.145	0.305	0.305	-162,571	No	243,721
CD-51	0.000	0.291	0.305	0.305	-21,934	Yes	243,721
CD-50	0.000	0.318	0.305	0.305	21,140	Yes	243,721

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **CD81-2-FWH 24B to FWH 25B**					***Sorted By:Remaining Life***		
CD-51P	0.000	0.323	0.305	0.305	41,227	Yes	243,721
CD-21	0.000	0.355	0.305	0.305	77,119	Yes	243,721
CD-21N	0.000	0.441	0.305	0.305	153,386	Yes	243,721
CD-50P	0.000	0.381	0.305	0.305	172,692	No	243,721
CD-20	0.000	0.433	0.305	0.305	195,197	Yes	243,721
===>Grouped by Line: **CD81-3-FWH 24C to FWH 25C**					***Sorted By:Remaining Life***		
CD-54	0.000	0.099	0.305	0.305	-173,537	No	243,721
CD-55	0.000	0.099	0.305	0.305	-173,537	No	243,721
CD-45	0.000	0.136	0.305	0.305	-165,030	No	243,721
CD-53P	0.000	0.209	0.305	0.305	-139,850	No	243,721
CD-54P	0.000	0.209	0.305	0.305	-139,850	No	243,721
CD-30P	0.000	0.342	0.305	0.305	83,319	Yes	243,721
CD-24N	0.000	0.392	0.305	0.305	97,944	No	243,721
CD-55P	0.000	0.351	0.305	0.305	103,682	Yes	243,721
CD-53	0.000	0.377	0.305	0.305	109,587	Yes	243,721
CD-24	0.000	0.380	0.305	0.305	114,173	Yes	243,721
CD-23P	0.000	0.380	0.305	0.305	133,300	Yes	243,721
CD-23	0.000	0.441	0.305	0.305	207,427	Yes	243,721
CD-45N	0.000	0.452	0.305	0.305	208,264	No	243,721
CD-30	0.000	0.458	0.305	0.305	233,729	Yes	243,721

Note:
[1] Predictions are based on last Tmeas to analysis ending period.

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).db

Service Life Report

Pass 1 Analysis Exclude Measured Wear

Report Date/Time: 7/6/2010 3:37:44PM
AnalysisDate/Time: 7/6/2010 3:18:55PM

Run Name: CND FWH 24 TO FWH 25
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 1.000

CHECWORKS SFA Version: 3.0 SP-1 (build 109)
Duty Factor (Global) : 1.000

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **CD81-1-FWH 24A to FWH 25A**					***Sorted By:Flow Order***		
CD-37N	0.000	0.407	0.305	0.305	114,923	No	243,721
CD-37	0.000	0.409	0.305	0.305	158,399	Yes	243,721
CD-18	0.000	0.313	0.305	0.305	11,699	Yes	243,721
CD-18P	0.000	0.304	0.305	0.305	-927	Yes	243,721
CD-46	0.000	0.317	0.305	0.305	18,690	Yes	243,721
CD-46P	0.000	0.323	0.305	0.305	40,331	Yes	243,721
CD-47	0.000	0.099	0.305	0.305	-173,537	No	243,721
CD-47P	0.000	0.209	0.305	0.305	-139,850	No	243,721
CD-48	0.000	0.099	0.305	0.305	-173,537	No	243,721
CD-48P	0.000	0.145	0.305	0.305	-162,571	No	243,721
CD-28	0.000	0.099	0.305	0.305	-173,537	No	243,721
CD-28P	0.000	0.209	0.305	0.305	-139,850	No	243,721
CD-56	0.000	0.381	0.305	0.305	130,764	Yes	243,721
CD-56N	0.000	0.454	0.305	0.305	210,445	No	243,721
===>Grouped by Line: **CD81-2-FWH 24B to FWH 25B**					***Sorted By:Flow Order***		
CD-21N	0.000	0.441	0.305	0.305	153,386	Yes	243,721
CD-21	0.000	0.355	0.305	0.305	77,119	Yes	243,721
CD-20	0.000	0.433	0.305	0.305	195,197	Yes	243,721
CD-20P	0.000	0.145	0.305	0.305	-162,571	No	243,721
CD-49	0.000	0.099	0.305	0.305	-173,537	No	243,721
CD-50	0.000	0.318	0.305	0.305	21,140	Yes	243,721
CD-50P	0.000	0.381	0.305	0.305	172,692	No	243,721
CD-51	0.000	0.291	0.305	0.305	-21,934	Yes	243,721
CD-51P	0.000	0.323	0.305	0.305	41,227	Yes	243,721
CD-52	0.000	0.099	0.305	0.305	-173,537	No	243,721
CD-52P	0.000	0.145	0.305	0.305	-162,571	No	243,721

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **CD81-2-FWH 24B to FWH 25B**					***Sorted By:Flow Order***		
CD-57	0.000	0.136	0.305	0.305	-165,030	No	243,721
CD-29	0.000	0.099	0.305	0.305	-173,537	No	243,721
CD-29P	0.000	0.145	0.305	0.305	-162,571	No	243,721
CD-44	0.000	0.136	0.305	0.305	-165,030	No	243,721
CD-44N	0.000	0.072	0.305	0.305	-178,801	No	243,721
===>Grouped by Line: **CD81-3-FWH 24C to FWH 25C**					***Sorted By:Flow Order***		
CD-24N	0.000	0.392	0.305	0.305	97,944	No	243,721
CD-24	0.000	0.380	0.305	0.305	114,173	Yes	243,721
CD-23	0.000	0.441	0.305	0.305	207,427	Yes	243,721
CD-23P	0.000	0.380	0.305	0.305	133,300	Yes	243,721
CD-53	0.000	0.377	0.305	0.305	109,587	Yes	243,721
CD-53P	0.000	0.209	0.305	0.305	-139,850	No	243,721
CD-54	0.000	0.099	0.305	0.305	-173,537	No	243,721
CD-54P	0.000	0.209	0.305	0.305	-139,850	No	243,721
CD-55	0.000	0.099	0.305	0.305	-173,537	No	243,721
CD-55P	0.000	0.351	0.305	0.305	103,682	Yes	243,721
CD-30	0.000	0.458	0.305	0.305	233,729	Yes	243,721
CD-30P	0.000	0.342	0.305	0.305	83,319	Yes	243,721
CD-45	0.000	0.136	0.305	0.305	-165,030	No	243,721
CD-45N	0.000	0.452	0.305	0.305	208,264	No	243,721

Note:
[1] Predictions are based on last Tmeas to analysis ending period.

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).db

Wear Rate Report

Pass 1 Analysis Exclude Measured Wear

Report Date/Time: 7/6/2010 3:38:15PM
AnalysisDate/Time: 7/6/2010 3:19:03PM

CHECWORKS SFA Version: 3.0 SP-1 (build 109)

Duty Factor (Global) : 1.000

Run Name: CND FWH 25 TO HEADER
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 1.000

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***CD82-1-FWH 25A to HDR***								***Sorted By: Average Wear Rate***		
CD-32N	31	12.906	5.618	382.4	18.295	0.0	14.000	6.809	0.000	115.80	HBD
CD-VALVE-CD-18	22	12.752	5.551	382.4	17.949	0.0	14.000	6.809	0.000	115.80	HBD
CD-32	4	9.550	4.158	382.4	18.295	0.0	14.000	6.809	0.000	115.80	HBD
CD-31	4	9.550	4.158	382.4	18.295	0.0	14.000	6.809	0.000	115.80	HBD
CD-60	2	9.550	4.158	382.4	18.295	0.0	14.000	6.809	0.000	115.80	HBD
CD-61	4	9.550	4.158	382.4	18.295	0.0	14.000	6.809	0.000	115.80	HBD
CD-31P	54	8.260	3.596	382.4	18.295	0.0	14.000	6.809	0.000	115.80	HBD
CD-61P	54	8.260	3.596	382.4	18.295	0.0	14.000	6.809	0.000	115.80	HBD
CD-61R	18	7.227	3.146	382.4	18.295	0.0	14.000	6.809	0.000	115.80	HBD
CD-60P	52	6.453	2.809	382.4	18.295	0.0	14.000	6.809	0.000	115.80	HBD
CD-31P-1 US	58	5.679	2.472	382.4	18.295	0.0	14.000	6.809	0.000	115.80	HBD
CD-31P-1 DS	58	5.679	2.472	382.4	18.295	0.0	14.000	6.809	0.000	115.80	HBD
CD-61R (D/S)	18	3.682	1.618	382.4	6.156	0.0	24.000	6.809	0.000	115.80	HBD
===>Grouped by Line:	***CD82-2-FWH 25B to HDR***								***Sorted By: Average Wear Rate***		
CD-34N	31	12.906	5.618	382.4	18.295	0.0	14.000	6.809	0.000	115.80	HBD
CD-VALVE-CD-18-1	22	12.752	5.551	382.4	17.949	0.0	14.000	6.809	0.000	115.80	HBD
CD-34	4	9.550	4.158	382.4	18.295	0.0	14.000	6.809	0.000	115.80	HBD
CD-33	4	9.550	4.158	382.4	18.295	0.0	14.000	6.809	0.000	115.80	HBD
CD-62	2	9.550	4.158	382.4	18.295	0.0	14.000	6.809	0.000	115.80	HBD
CD-33P	54	8.260	3.596	382.4	18.295	0.0	14.000	6.809	0.000	115.80	HBD
CD-62P	52	6.453	2.809	382.4	18.295	0.0	14.000	6.809	0.000	115.80	HBD
CD-33P-1 US	58	5.679	2.472	382.4	18.295	0.0	14.000	6.809	0.000	115.80	HBD
CD-33P-1 DS	58	5.679	2.472	382.4	18.295	0.0	14.000	6.809	0.000	115.80	HBD
===>Grouped by Line:	***CD82-3-FWH 25C to HDR***								***Sorted By: Average Wear Rate***		
CD-36N	31	12.906	5.618	382.4	18.295	0.0	14.000	6.809	0.000	115.80	HBD

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***CD82-3-FWH 25C to HDR***								***Sorted By: Average Wear Rate***		
CD-VALVE-CD-18-2	22	12.752	5.551	382.4	17.949	0.0	14.000	6.809	0.000	115.80	HBD
CD-36	4	9.550	4.158	382.4	18.295	0.0	14.000	6.809	0.000	115.80	HBD
CD-35	4	9.550	4.158	382.4	18.295	0.0	14.000	6.809	0.000	115.80	HBD
CD-63	2	9.550	4.158	382.4	18.295	0.0	14.000	6.809	0.000	115.80	HBD
CD-58	4	9.550	4.158	382.4	18.295	0.0	14.000	6.809	0.000	115.80	HBD
CD-35P	54	8.260	3.596	382.4	18.295	0.0	14.000	6.809	0.000	115.80	HBD
CD-58P	54	8.260	3.596	382.4	18.295	0.0	14.000	6.809	0.000	115.80	HBD
CD-35P-1	58	5.679	2.472	382.4	18.295	0.0	14.000	6.809	0.000	115.80	HBD
===>Grouped by Line:	***CD82-4-HDR 25BT to 25CT***								***Sorted By: Average Wear Rate***		
CD-62T (BR/SE)	12	8.776	3.821	382.4	18.295	0.0	14.000	6.809	0.000	115.80	HBD
CD-62T (D/S)	12	7.865	3.424	382.4	12.331	0.0	24.000	6.809	0.000	115.80	HBD
CD-62T	12	5.032	2.211	382.4	6.156	0.0	24.000	6.809	0.000	115.80	HBD
CD-62P-1	62	3.837	1.670	382.4	12.331	0.0	24.000	6.809	0.000	115.80	HBD
===>Grouped by Line:	***CD82-5-HDR 25CT to HDP OUT***								***Sorted By: Average Wear Rate***		
CD-59T (D/S)	12	9.864	4.294	382.4	18.488	0.0	24.000	6.809	0.000	115.80	HBD
CD-59	4	8.901	3.875	382.4	18.488	0.0	24.000	6.809	0.000	115.80	HBD
CD-59T (BR/SE)	12	8.776	3.821	382.4	18.295	0.0	14.000	6.809	0.000	115.80	HBD
CD-80T (BR/SE)	12	8.179	3.561	382.4	18.485	0.0	24.000	6.809	0.000	115.80	HBD
CD-59T	12	7.865	3.424	382.4	12.331	0.0	24.000	6.809	0.000	115.80	HBD
CD-59P	54	7.698	3.351	382.4	18.488	0.0	24.000	6.809	0.000	115.80	HBD
CD-80T	12	7.297	3.177	382.4	11.450	0.0	30.000	6.809	0.000	115.80	HBD

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).db

Wear Rate Report

Pass 1 Analysis Exclude Measured Wear

Report Date/Time: 7/6/2010 3:37:44PM
AnalysisDate/Time: 7/6/2010 3:19:03PM

CHECWORKS SFA Version: 3.0 SP-1 (build 109)
Duty Factor (Global) : 1.000

Run Name: CND FWH 25 TO HEADER
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 1.000

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***CD82-1-FWH 25A to HDR***									***Sorted By: Flow Order***	
CD-32N	31	12.906	5.618	382.4	18.295	0.0	14.000	6.809	0.000	115.80	HBD
CD-32	4	9.550	4.158	382.4	18.295	0.0	14.000	6.809	0.000	115.80	HBD
CD-31	4	9.550	4.158	382.4	18.295	0.0	14.000	6.809	0.000	115.80	HBD
CD-31P	54	8.260	3.596	382.4	18.295	0.0	14.000	6.809	0.000	115.80	HBD
CD-VALVE-CD-18	22	12.752	5.551	382.4	17.949	0.0	14.000	6.809	0.000	115.80	HBD
CD-31P-1 US	58	5.679	2.472	382.4	18.295	0.0	14.000	6.809	0.000	115.80	HBD
CD-31P-1 DS	58	5.679	2.472	382.4	18.295	0.0	14.000	6.809	0.000	115.80	HBD
CD-60	2	9.550	4.158	382.4	18.295	0.0	14.000	6.809	0.000	115.80	HBD
CD-60P	52	6.453	2.809	382.4	18.295	0.0	14.000	6.809	0.000	115.80	HBD
CD-61	4	9.550	4.158	382.4	18.295	0.0	14.000	6.809	0.000	115.80	HBD
CD-61P	54	8.260	3.596	382.4	18.295	0.0	14.000	6.809	0.000	115.80	HBD
CD-61R	18	7.227	3.146	382.4	18.295	0.0	14.000	6.809	0.000	115.80	HBD
CD-61R (D/S)	18	3.682	1.618	382.4	6.156	0.0	24.000	6.809	0.000	115.80	HBD
===>Grouped by Line:	***CD82-2-FWH 25B to HDR***									***Sorted By: Flow Order***	
CD-34N	31	12.906	5.618	382.4	18.295	0.0	14.000	6.809	0.000	115.80	HBD
CD-34	4	9.550	4.158	382.4	18.295	0.0	14.000	6.809	0.000	115.80	HBD
CD-33	4	9.550	4.158	382.4	18.295	0.0	14.000	6.809	0.000	115.80	HBD
CD-33P	54	8.260	3.596	382.4	18.295	0.0	14.000	6.809	0.000	115.80	HBD
CD-VALVE-CD-18-1	22	12.752	5.551	382.4	17.949	0.0	14.000	6.809	0.000	115.80	HBD
CD-33P-1 US	58	5.679	2.472	382.4	18.295	0.0	14.000	6.809	0.000	115.80	HBD
CD-33P-1 DS	58	5.679	2.472	382.4	18.295	0.0	14.000	6.809	0.000	115.80	HBD
CD-62	2	9.550	4.158	382.4	18.295	0.0	14.000	6.809	0.000	115.80	HBD
CD-62P	52	6.453	2.809	382.4	18.295	0.0	14.000	6.809	0.000	115.80	HBD
===>Grouped by Line:	***CD82-3-FWH 25C to HDR***									***Sorted By: Flow Order***	
CD-36N	31	12.906	5.618	382.4	18.295	0.0	14.000	6.809	0.000	115.80	HBD

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***CD82-3-FWH 25C to HDR***									***Sorted By: Flow Order***	
CD-36	4	9.550	4.158	382.4	18.295	0.0	14.000	6.809	0.000	115.80	HBD
CD-35	4	9.550	4.158	382.4	18.295	0.0	14.000	6.809	0.000	115.80	HBD
CD-35P	54	8.260	3.596	382.4	18.295	0.0	14.000	6.809	0.000	115.80	HBD
CD-VALVE-CD-18-2	22	12.752	5.551	382.4	17.949	0.0	14.000	6.809	0.000	115.80	HBD
CD-35P-1	58	5.679	2.472	382.4	18.295	0.0	14.000	6.809	0.000	115.80	HBD
CD-63	2	9.550	4.158	382.4	18.295	0.0	14.000	6.809	0.000	115.80	HBD
CD-58	4	9.550	4.158	382.4	18.295	0.0	14.000	6.809	0.000	115.80	HBD
CD-58P	54	8.260	3.596	382.4	18.295	0.0	14.000	6.809	0.000	115.80	HBD
===>Grouped by Line:	***CD82-4-HDR 25BT to 25CT***									***Sorted By: Flow Order***	
CD-62T	12	5.032	2.211	382.4	6.156	0.0	24.000	6.809	0.000	115.80	HBD
CD-62T (BR/SE)	12	8.776	3.821	382.4	18.295	0.0	14.000	6.809	0.000	115.80	HBD
CD-62T (D/S)	12	7.865	3.424	382.4	12.331	0.0	24.000	6.809	0.000	115.80	HBD
CD-62P-1	62	3.837	1.670	382.4	12.331	0.0	24.000	6.809	0.000	115.80	HBD
===>Grouped by Line:	***CD82-5-HDR 25CT to HDP OUT***									***Sorted By: Flow Order***	
CD-59T (BR/SE)	12	8.776	3.821	382.4	18.295	0.0	14.000	6.809	0.000	115.80	HBD
CD-59T	12	7.865	3.424	382.4	12.331	0.0	24.000	6.809	0.000	115.80	HBD
CD-59T (D/S)	12	9.864	4.294	382.4	18.488	0.0	24.000	6.809	0.000	115.80	HBD
CD-59	4	8.901	3.875	382.4	18.488	0.0	24.000	6.809	0.000	115.80	HBD
CD-59P	54	7.698	3.351	382.4	18.488	0.0	24.000	6.809	0.000	115.80	HBD
CD-80T (BR/SE)	12	8.179	3.561	382.4	18.485	0.0	24.000	6.809	0.000	115.80	HBD
CD-80T	12	7.297	3.177	382.4	11.450	0.0	30.000	6.809	0.000	115.80	HBD

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).db

Service Life Report

Pass 1 Analysis Exclude Measured Wear

Report Date/Time: 7/6/2010 3:37:44PM
AnalysisDate/Time: 7/6/2010 3:19:03PM

Run Name: CND FWH 25 TO HEADER
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 1.000

CHECWORKS SFA Version: 3.0 SP-1 (build 109)
Duty Factor (Global) :1.000

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **CD82-1-FWH 25A to HDR**					***Sorted By:Remaining Life***		
CD-VALVE-CD-18	0.000	0.083	0.326	0.326	-188,654	No	243,721
CD-32	0.000	0.172	0.305	0.305	-156,126	No	243,721
CD-60	0.000	0.172	0.305	0.305	-156,126	No	243,721
CD-61P	0.000	0.208	0.305	0.305	-142,440	No	243,721
CD-60P	0.000	0.258	0.305	0.305	-114,081	No	243,721
CD-31P-1 US	0.000	0.280	0.305	0.305	-82,832	No	243,721
CD-61	0.000	0.328	0.305	0.305	47,607	Yes	243,721
CD-32N	0.000	0.442	0.305	0.305	212,964	No	243,721
CD-31	0.000	0.426	0.305	0.305	254,432	Yes	243,721
CD-31P	0.000	0.422	0.305	0.305	284,744	No	243,721
CD-31P-1 DS	0.000	0.400	0.305	0.305	338,551	No	243,721
CD-61R	0.000	0.518	0.305	0.305	592,732	Yes	243,721
CD-61R (D/S)	0.000	0.640	0.523	0.523	633,521	Yes	243,721
===>Grouped by Line: **CD82-2-FWH 25B to HDR**					***Sorted By:Remaining Life***		
CD-VALVE-CD-18-1	0.000	0.083	0.326	0.326	-188,654	No	243,721
CD-62	0.000	0.172	0.305	0.305	-156,126	No	243,721
CD-62P	0.000	0.258	0.305	0.305	-114,081	No	243,721
CD-33P-1 DS	0.000	0.280	0.305	0.305	-82,832	No	243,721
CD-33P	0.000	0.401	0.305	0.305	234,243	Yes	243,721
CD-33P-1 US	0.000	0.375	0.305	0.305	249,762	Yes	243,721
CD-34N	0.000	0.467	0.305	0.305	252,327	No	243,721
CD-33	0.000	0.426	0.305	0.305	254,893	Yes	243,721
CD-34	0.000	0.429	0.305	0.305	261,214	Yes	243,721
===>Grouped by Line: **CD82-3-FWH 25C to HDR**					***Sorted By:Remaining Life***		
CD-VALVE-CD-18-2	0.000	0.083	0.326	0.326	-188,654	No	243,721

Component Name	--------- Thickness (in) -------- Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **CD82-3-FWH 25C to HDR**					***Sorted By:Remaining Life***		
CD-63	0.000	0.172	0.305	0.305	-156,126	No	243,721
CD-35P-1	0.000	0.280	0.305	0.305	-82,832	No	243,721
CD-58	0.000	0.344	0.305	0.305	81,318	Yes	243,721
CD-35P	0.000	0.338	0.305	0.305	81,482	Yes	243,721
CD-36	0.000	0.396	0.305	0.305	191,612	Yes	243,721
CD-35	0.000	0.397	0.305	0.305	193,719	Yes	243,721
CD-36N	0.000	0.432	0.305	0.305	198,060	No	243,721
CD-58P	0.000	0.402	0.305	0.305	236,021	Yes	243,721
===>Grouped by Line: **CD82-4-HDR 25BT to 25CT**					***Sorted By:Remaining Life***		
CD-62T (BR/SE)	0.000	0.399	0.305	0.305	216,176	Yes	243,721
CD-62P-1	0.000	0.581	0.523	0.523	306,926	No	243,721
CD-62T (D/S)	0.000	0.661	0.523	0.523	353,080	No	243,721
CD-62T	0.000	0.666	0.523	0.523	569,344	No	243,721
===>Grouped by Line: **CD82-5-HDR 25CT to HDP OUT**					***Sorted By:Remaining Life***		
CD-80T	0.000	0.619	0.561	0.561	157,329	No	243,721
CD-59T (BR/SE)	0.000	0.384	0.305	0.305	180,744	Yes	243,721
CD-59T (D/S)	0.000	0.642	0.523	0.523	243,312	Yes	243,721
CD-59	0.000	0.632	0.523	0.523	246,159	Yes	243,721
CD-59P	0.000	0.629	0.523	0.523	277,833	Yes	243,721
CD-59T	0.000	0.651	0.523	0.523	328,315	Yes	243,721
CD-80T (BR/SE)	0.000	0.628	0.449	0.449	439,196	Yes	243,721

Note:
[1] Predictions are based on last Tmeas to analysis ending period.

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).db

Service Life Report

Pass 1 Analysis Exclude Measured Wear

Report Date/Time: 7/6/2010 3:37:44PM
AnalysisDate/Time: 7/6/2010 3:19:03PM

Run Name: CND FWH 25 TO HEADER
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 1.000

CHECWORKS SFA Version: 3.0 SP-1 (build 109)
Duty Factor (Global) : 1.000

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **CD82-1-FWH 25A to HDR**					***Sorted By:Flow Order***		
CD-32N	0.000	0.442	0.305	0.305	212,964	No	243,721
CD-32	0.000	0.172	0.305	0.305	-156,126	No	243,721
CD-31	0.000	0.426	0.305	0.305	254,432	Yes	243,721
CD-31P	0.000	0.422	0.305	0.305	284,744	No	243,721
CD-VALVE-CD-18	0.000	0.083	0.326	0.326	-188,654	No	243,721
CD-31P-1 US	0.000	0.280	0.305	0.305	-82,832	No	243,721
CD-31P-1 DS	0.000	0.400	0.305	0.305	338,551	No	243,721
CD-60	0.000	0.172	0.305	0.305	-156,126	No	243,721
CD-60P	0.000	0.258	0.305	0.305	-114,081	No	243,721
CD-61	0.000	0.328	0.305	0.305	47,607	Yes	243,721
CD-61P	0.000	0.208	0.305	0.305	-142,440	No	243,721
CD-61R	0.000	0.518	0.305	0.305	592,732	Yes	243,721
CD-61R (D/S)	0.000	0.640	0.523	0.523	633,521	Yes	243,721
===>Grouped by Line: **CD82-2-FWH 25B to HDR**					***Sorted By:Flow Order***		
CD-34N	0.000	0.467	0.305	0.305	252,327	No	243,721
CD-34	0.000	0.429	0.305	0.305	261,214	Yes	243,721
CD-33	0.000	0.426	0.305	0.305	254,893	Yes	243,721
CD-33P	0.000	0.401	0.305	0.305	234,243	Yes	243,721
CD-VALVE-CD-18-1	0.000	0.083	0.326	0.326	-188,654	No	243,721
CD-33P-1 US	0.000	0.375	0.305	0.305	249,762	Yes	243,721
CD-33P-1 DS	0.000	0.280	0.305	0.305	-82,832	No	243,721
CD-62	0.000	0.172	0.305	0.305	-156,126	No	243,721
CD-62P	0.000	0.258	0.305	0.305	-114,081	No	243,721
===>Grouped by Line: **CD82-3-FWH 25C to HDR**					***Sorted By:Flow Order***		
CD-36N	0.000	0.432	0.305	0.305	198,060	No	243,721

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **CD82-3-FWH 25C to HDR**					***Sorted By:Flow Order***		
CD-36	0.000	0.396	0.305	0.305	191,612	Yes	243,721
CD-35	0.000	0.397	0.305	0.305	193,719	Yes	243,721
CD-35P	0.000	0.338	0.305	0.305	81,482	Yes	243,721
CD-VALVE-CD-18-2	0.000	0.083	0.326	0.326	-188,654	No	243,721
CD-35P-1	0.000	0.280	0.305	0.305	-82,832	No	243,721
CD-63	0.000	0.172	0.305	0.305	-156,126	No	243,721
CD-58	0.000	0.344	0.305	0.305	81,318	Yes	243,721
CD-58P	0.000	0.402	0.305	0.305	236,021	Yes	243,721
===>Grouped by Line: **CD82-4-HDR 25BT to 25CT**					***Sorted By:Flow Order***		
CD-62T	0.000	0.666	0.523	0.523	569,344	No	243,721
CD-62T (BR/SE)	0.000	0.399	0.305	0.305	216,176	Yes	243,721
CD-62T (D/S)	0.000	0.661	0.523	0.523	353,080	No	243,721
CD-62P-1	0.000	0.581	0.523	0.523	306,926	No	243,721
===>Grouped by Line: **CD82-5-HDR 25CT to HDP OUT**					***Sorted By:Flow Order***		
CD-59T (BR/SE)	0.000	0.384	0.305	0.305	180,744	Yes	243,721
CD-59T	0.000	0.651	0.523	0.523	328,315	Yes	243,721
CD-59T (D/S)	0.000	0.642	0.523	0.523	243,312	Yes	243,721
CD-59	0.000	0.632	0.523	0.523	246,159	Yes	243,721
CD-59P	0.000	0.629	0.523	0.523	277,833	Yes	243,721
CD-80T (BR/SE)	0.000	0.628	0.449	0.449	439,196	Yes	243,721
CD-80T	0.000	0.619	0.561	0.561	157,329	No	243,721

Note:
[1] Predictions are based on last Tmeas to analysis ending period.

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).db

Wear Rate Report

Pass 1 Analysis Exclude Measured Wear

Report Date/Time: 7/6/2010 3:38:15PM
AnalysisDate/Time: 7/6/2010 3:19:24PM

CHECWORKS SFA Version: 3.0 SP-1 (build 109)

Duty Factor (Global) : 1.000

Run Name: CROSSUNDER
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 1.000

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***MS56-1-PRESEP to MSR-A***								***Sorted By: Average Wear Rate***		
5EX-49N	31	0.040	0.024	387.9	83.669	90.5	33.000	6.943	0.000	117.60	ARD
5EX-49	2	0.025	0.015	387.9	83.669	90.5	33.250	6.943	0.000	117.60	ARD
5EX-52	2	0.025	0.015	387.9	83.669	90.5	33.250	6.943	0.000	117.60	ARD
5EX-53	4	0.025	0.015	387.9	83.669	90.5	33.250	6.943	0.000	117.60	ARD
5EX-49EJ1	6	0.020	0.012	387.9	83.669	90.5	33.000	6.943	0.000	117.60	ARD
5EX-49EJ2	6	0.020	0.012	387.9	83.669	90.5	33.000	6.943	0.000	117.60	ARD
5EX-49P1	61	0.017	0.010	387.9	163.213	90.5	33.000	6.943	0.000	117.60	ARD
5EX-49P2	52	0.017	0.010	387.9	83.669	90.5	33.000	6.943	0.000	117.60	ARD
5EX-53R	18	0.016	0.010	387.9	83.669	90.5	33.000	6.943	0.000	117.60	ARD
5EX-52P	51	0.015	0.009	387.9	83.958	90.5	33.000	6.943	0.000	117.60	ARD
5EX-53R (D/S)	18	0.012	0.007	387.9	36.948	90.5	48.500	6.943	0.000	117.60	ARD
5EX-53P	68	0.009	0.005	387.9	36.948	90.5	48.500	6.943	0.000	117.60	ARD
===>Grouped by Line:	***MS56-2-PRESEP to MSR-A***								***Sorted By: Average Wear Rate***		
5EX-50N	31	0.040	0.024	387.9	83.669	90.5	33.000	6.943	0.000	117.60	ARD
5EX-50	2	0.025	0.015	387.9	83.669	90.5	33.250	6.943	0.000	117.60	ARD
5EX-51	2	0.025	0.015	387.9	83.669	90.5	33.250	6.943	0.000	117.60	ARD
5EX-62	1	0.021	0.013	387.9	83.669	90.5	33.250	6.943	0.000	117.60	ARD
5EX-50EJ1	6	0.020	0.012	387.9	83.669	90.5	33.000	6.943	0.000	117.60	ARD
5EX-50EJ2	6	0.020	0.012	387.9	83.669	90.5	33.000	6.943	0.000	117.60	ARD
5EX-50P1	61	0.017	0.010	387.9	163.213	90.5	33.000	6.943	0.000	117.60	ARD
5EX-50P2	52	0.017	0.010	387.9	83.669	90.5	33.000	6.943	0.000	117.60	ARD
5EX-50P3	51	0.015	0.009	387.9	83.669	90.5	33.000	6.943	0.000	117.60	ARD
5EX-51P	51	0.015	0.009	387.9	83.958	90.5	33.000	6.943	0.000	117.60	ARD
===>Grouped by Line:	***MS56-3-PRESEP to MSR-A***								***Sorted By: Average Wear Rate***		
5EX-55	14	0.048	0.029	387.9	78.113	90.5	48.500	6.943	0.000	117.60	ARD

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***MS56-3-PRESEP to MSR-A***								***Sorted By: Average Wear Rate***		
5EX-54 (D/S)	12	0.041	0.025	387.9	78.113	90.5	48.500	6.943	0.000	117.60	ARD
5EX-55 (D/S)	14	0.039	0.024	387.9	50.606	90.5	48.500	6.943	0.000	117.60	ARD
5EX-54 (BR/SE)	12	0.029	0.018	387.9	83.669	90.5	33.000	6.943	0.000	117.60	ARD
5EX-54	12	0.029	0.017	387.9	36.948	90.5	48.500	6.943	0.000	117.60	ARD
5EX-55 (BR/SE)	14	0.019	0.011	387.9	81.811	90.5	27.500	6.943	0.000	117.60	ARD
5EX-54P	62	0.007	0.005	387.9	78.113	90.5	48.500	6.943	0.000	117.60	ARD
===>Grouped by Line:	***MS56-4-PRESEP to MSR23A***								***Sorted By: Average Wear Rate***		
5EX-56N	30	0.027	0.016	387.9	81.811	90.5	27.500	6.943	0.000	117.60	ARD
5EX-56	2	0.025	0.015	387.9	81.811	90.5	27.750	6.943	0.000	117.60	ARD
5EX-55EJ1	6	0.020	0.012	387.9	81.998	90.5	27.500	6.943	0.000	117.60	ARD
5EX-55EJ2	6	0.020	0.012	387.9	81.998	90.5	27.500	6.943	0.000	117.60	ARD
5EX-56P	52	0.017	0.010	387.9	81.811	90.5	27.500	6.943	0.000	117.60	ARD
===>Grouped by Line:	***MS56-5-PRESEP to MSR-A***								***Sorted By: Average Wear Rate***		
5EX-57	14	0.050	0.030	387.9	83.004	90.5	38.000	6.943	0.000	117.60	ARD
5EX-57 (D/S)	14	0.035	0.021	387.9	39.808	90.5	38.000	6.943	0.000	117.60	ARD
5EX-55R (D/S)	7	0.022	0.013	387.9	83.004	90.5	38.000	6.943	0.000	117.60	ARD
5EX-57 (BR/SE)	14	0.019	0.011	387.9	81.811	90.5	27.500	6.943	0.000	117.60	ARD
5EX-55R	7	0.016	0.009	387.9	50.606	90.5	48.500	6.943	0.000	117.60	ARD
5EX-55P-1	68	0.013	0.008	387.9	83.004	90.5	38.000	6.943	0.000	117.60	ARD
===>Grouped by Line:	***MS56-6-PRESEP to MSR22A***								***Sorted By: Average Wear Rate***		
5EX-58N	30	0.027	0.016	387.9	81.811	90.5	27.500	6.943	0.000	117.60	ARD
5EX-58	2	0.025	0.015	387.9	81.811	90.5	27.750	6.943	0.000	117.60	ARD
5EX-57EJ1	6	0.020	0.012	387.9	81.998	90.5	27.500	6.943	0.000	117.60	ARD
5EX-57EJ2	6	0.020	0.012	387.9	81.998	90.5	27.500	6.943	0.000	117.60	ARD
5EX-58P	52	0.017	0.010	387.9	81.811	90.5	27.500	6.943	0.000	117.60	ARD
===>Grouped by Line:	***MS56-7-PRESEP to MSR21A***								***Sorted By: Average Wear Rate***		
5EX-60N	30	0.027	0.016	387.9	81.811	90.5	27.500	6.943	0.000	117.60	ARD
5EX-59	2	0.025	0.015	387.9	81.811	90.5	27.750	6.943	0.000	117.60	ARD
5EX-60	2	0.025	0.015	387.9	81.811	90.5	27.750	6.943	0.000	117.60	ARD
5EX-57R (D/S)	7	0.022	0.014	387.9	81.811	90.5	27.750	6.943	0.000	117.60	ARD
5EX-57P2	57	0.020	0.012	387.9	81.811	90.5	27.750	6.943	0.000	117.60	ARD
5EX-59EJ1	6	0.020	0.012	387.9	81.998	90.5	27.500	6.943	0.000	117.60	ARD
5EX-59EJ2	6	0.020	0.012	387.9	81.998	90.5	27.500	6.943	0.000	117.60	ARD
5EX-60P	52	0.017	0.010	387.9	81.811	90.5	27.500	6.943	0.000	117.60	ARD

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***MS56-7-PRESEP to MSR21A***								***Sorted By: Average Wear Rate***		
5EX-57R	7	0.014	0.009	387.9	39.808	90.5	38.250	6.943	0.000	117.60	ARD
5EX-59P	56	0.005	0.003	387.9	81.998	90.5	27.750	6.943	0.000	117.60	ARD
===>Grouped by Line:	***MS57-1-PRESEP to MSR-B***								***Sorted By: Average Wear Rate***		
5EX-37N	31	0.037	0.024	387.9	83.669	90.5	33.000	6.943	0.000	117.60	ARD
5EX-37	2	0.025	0.015	387.9	83.669	90.5	33.250	6.943	0.000	117.60	ARD
5EX-40	2	0.025	0.015	387.9	83.669	90.5	33.250	6.943	0.000	117.60	ARD
5EX-41	2	0.025	0.015	387.9	83.669	90.5	33.250	6.943	0.000	117.60	ARD
5EX-37EJ1	6	0.020	0.012	387.9	83.669	90.5	33.000	6.943	0.000	117.60	ARD
5EX-37EJ2	6	0.020	0.012	387.9	83.669	90.5	33.000	6.943	0.000	117.60	ARD
5EX-37P1	61	0.017	0.010	387.9	163.213	90.5	33.000	6.943	0.000	117.60	ARD
5EX-37P2	52	0.017	0.010	387.9	83.669	90.5	33.000	6.943	0.000	117.60	ARD
5EX-41R	18	0.016	0.010	387.9	83.669	90.5	33.000	6.943	0.000	117.60	ARD
5EX-40P	51	0.015	0.009	387.9	83.958	90.5	33.000	6.943	0.000	117.60	ARD
5EX-41R (D/S)	18	0.012	0.007	387.9	36.948	90.5	48.500	6.943	0.000	117.60	ARD
===>Grouped by Line:	***MS57-2-PRESEP to MSR-B***								***Sorted By: Average Wear Rate***		
5EX-38N	31	0.040	0.024	387.9	83.669	90.5	33.000	6.943	0.000	117.60	ARD
5EX-38	2	0.025	0.015	387.9	83.669	90.5	33.250	6.943	0.000	117.60	ARD
5EX-39	2	0.025	0.015	387.9	83.669	90.5	33.250	6.943	0.000	117.60	ARD
5EX-61	1	0.021	0.013	387.9	83.669	90.5	33.250	6.943	0.000	117.60	ARD
5EX-61EJ1	6	0.020	0.012	387.9	83.669	90.5	33.000	6.943	0.000	117.60	ARD
5EX-61EJ2	6	0.020	0.012	387.9	83.669	90.5	33.000	6.943	0.000	117.60	ARD
5EX-38P	61	0.017	0.010	387.9	163.213	90.5	33.000	6.943	0.000	117.60	ARD
5EX-61P1	52	0.017	0.010	387.9	83.669	90.5	33.000	6.943	0.000	117.60	ARD
5EX-61P2	51	0.015	0.009	387.9	83.669	90.5	33.000	6.943	0.000	117.60	ARD
5EX-39P	51	0.015	0.009	387.9	83.958	90.5	33.000	6.943	0.000	117.60	ARD
===>Grouped by Line:	***MS57-3-PRESEP to MSR-B***								***Sorted By: Average Wear Rate***		
5EX-43	14	0.048	0.029	387.9	78.113	90.5	48.500	6.943	0.000	117.60	ARD
5EX-42 (D/S)	12	0.041	0.025	387.9	78.113	90.5	48.500	6.943	0.000	117.60	ARD
5EX-43 (D/S)	14	0.039	0.024	387.9	50.606	90.5	48.500	6.943	0.000	117.60	ARD
5EX-42 (BR/SE)	12	0.029	0.018	387.9	83.669	90.5	33.000	6.943	0.000	117.60	ARD
5EX-42	12	0.029	0.017	387.9	36.948	90.5	48.500	6.943	0.000	117.60	ARD
5EX-43 (BR/SE)	14	0.019	0.011	387.9	81.811	90.5	27.500	6.943	0.000	117.60	ARD
5EX-41P	62	0.007	0.005	387.9	78.113	90.5	48.500	6.943	0.000	117.60	ARD
===>Grouped by Line:	***MS57-4-PRESEP to MSR23B***								***Sorted By: Average Wear Rate***		

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***MS57-4-PRESEP to MSR23B***								***Sorted By: Average Wear Rate***		
5EX-44N	30	0.027	0.016	387.9	81.811	90.5	27.500	6.943	0.000	117.60	ARD
5EX-44	2	0.025	0.015	387.9	81.811	90.5	27.750	6.943	0.000	117.60	ARD
5EX-43EJ1	6	0.020	0.012	387.9	81.998	90.5	27.500	6.943	0.000	117.60	ARD
5EX-43EJ2	6	0.020	0.012	387.9	81.998	90.5	27.500	6.943	0.000	117.60	ARD
===>Grouped by Line:	***MS57-5-PRESEP to MSR-B***								***Sorted By: Average Wear Rate***		
5EX-45	14	0.050	0.030	387.9	83.004	90.5	38.000	6.943	0.000	117.60	ARD
5EX-45 (D/S)	14	0.035	0.021	387.9	39.808	90.5	38.000	6.943	0.000	117.60	ARD
5EX-43R (D/S)	7	0.022	0.013	387.9	83.004	90.5	38.000	6.943	0.000	117.60	ARD
5EX-43P1	57	0.020	0.012	387.9	83.004	90.5	38.000	6.943	0.000	117.60	ARD
5EX-45 (BR/SE)	14	0.019	0.011	387.9	81.811	90.5	27.500	6.943	0.000	117.60	ARD
5EX-43R	7	0.016	0.009	387.9	50.606	90.5	48.500	6.943	0.000	117.60	ARD
===>Grouped by Line:	***MS57-6-PRESEP to MSR22B***								***Sorted By: Average Wear Rate***		
5EX-46N	30	0.027	0.016	387.9	81.811	90.5	27.500	6.943	0.000	117.60	ARD
5EX-46	2	0.025	0.015	387.9	81.811	90.5	27.750	6.943	0.000	117.60	ARD
5EX-45EJ1	6	0.020	0.012	387.9	81.998	90.5	27.500	6.943	0.000	117.60	ARD
5EX-45EJ2	6	0.020	0.012	387.9	81.998	90.5	27.500	6.943	0.000	117.60	ARD
===>Grouped by Line:	***MS57-7-PRESEP to MSR21B***								***Sorted By: Average Wear Rate***		
5EX-48N	30	0.027	0.016	387.9	81.811	90.5	27.500	6.943	0.000	117.60	ARD
5EX-47	2	0.025	0.015	387.9	81.811	90.5	27.750	6.943	0.000	117.60	ARD
5EX-48	2	0.025	0.015	387.9	81.811	90.5	27.750	6.943	0.000	117.60	ARD
5EX-45R (D/S)	7	0.022	0.014	387.9	81.811	90.5	27.750	6.943	0.000	117.60	ARD
5EX-47EJ2	6	0.022	0.013	387.9	92.605	90.5	27.500	6.943	0.000	117.60	ARD
5EX-47EJ1	6	0.020	0.013	387.9	92.605	90.5	27.500	6.943	0.000	117.60	ARD
5EX-47P2	57	0.020	0.012	387.9	81.811	90.5	27.750	6.943	0.000	117.60	ARD
5EX-45R	7	0.014	0.009	387.9	39.808	90.5	38.250	6.943	0.000	117.60	ARD

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).db

Wear Rate Report

Pass 1 Analysis Exclude Measured Wear

Report Date/Time: 7/6/2010 3:37:44PM
AnalysisDate/Time: 7/6/2010 3:19:24PM

CHECWORKS SFA Version: 3.0 SP-1 (build 109)
Duty Factor (Global) : 1.000

Run Name: CROSSUNDER
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 1.000

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***MS56-1-PRESEP to MSR-A***									***Sorted By: Flow Order***	
5EX-49N	31	0.040	0.024	387.9	83.669	90.5	33.000	6.943	0.000	117.60	ARD
5EX-49P1	61	0.017	0.010	387.9	163.213	90.5	33.000	6.943	0.000	117.60	ARD
5EX-49	2	0.025	0.015	387.9	83.669	90.5	33.250	6.943	0.000	117.60	ARD
5EX-49EJ1	6	0.020	0.012	387.9	83.669	90.5	33.000	6.943	0.000	117.60	ARD
5EX-49P2	52	0.017	0.010	387.9	83.669	90.5	33.000	6.943	0.000	117.60	ARD
5EX-49EJ2	6	0.020	0.012	387.9	83.669	90.5	33.000	6.943	0.000	117.60	ARD
5EX-52	2	0.025	0.015	387.9	83.669	90.5	33.250	6.943	0.000	117.60	ARD
5EX-52P	51	0.015	0.009	387.9	83.958	90.5	33.000	6.943	0.000	117.60	ARD
5EX-53	4	0.025	0.015	387.9	83.669	90.5	33.250	6.943	0.000	117.60	ARD
5EX-53R	18	0.016	0.010	387.9	83.669	90.5	33.000	6.943	0.000	117.60	ARD
5EX-53R (D/S)	18	0.012	0.007	387.9	36.948	90.5	48.500	6.943	0.000	117.60	ARD
5EX-53P	68	0.009	0.005	387.9	36.948	90.5	48.500	6.943	0.000	117.60	ARD
===>Grouped by Line:	***MS56-2-PRESEP to MSR-A***									***Sorted By: Flow Order***	
5EX-50N	31	0.040	0.024	387.9	83.669	90.5	33.000	6.943	0.000	117.60	ARD
5EX-50P1	61	0.017	0.010	387.9	163.213	90.5	33.000	6.943	0.000	117.60	ARD
5EX-50	2	0.025	0.015	387.9	83.669	90.5	33.250	6.943	0.000	117.60	ARD
5EX-50P2	52	0.017	0.010	387.9	83.669	90.5	33.000	6.943	0.000	117.60	ARD
5EX-62	1	0.021	0.013	387.9	83.669	90.5	33.250	6.943	0.000	117.60	ARD
5EX-50EJ1	6	0.020	0.012	387.9	83.669	90.5	33.000	6.943	0.000	117.60	ARD
5EX-50P3	51	0.015	0.009	387.9	83.669	90.5	33.000	6.943	0.000	117.60	ARD
5EX-50EJ2	6	0.020	0.012	387.9	83.669	90.5	33.000	6.943	0.000	117.60	ARD
5EX-51	2	0.025	0.015	387.9	83.669	90.5	33.250	6.943	0.000	117.60	ARD
5EX-51P	51	0.015	0.009	387.9	83.958	90.5	33.000	6.943	0.000	117.60	ARD
===>Grouped by Line:	***MS56-3-PRESEP to MSR-A***									***Sorted By: Flow Order***	
5EX-54	12	0.029	0.017	387.9	36.948	90.5	48.500	6.943	0.000	117.60	ARD

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***MS56-3-PRESEP to MSR-A***								***Sorted By: Flow Order***		
5EX-54 (BR/SE)	12	0.029	0.018	387.9	83.669	90.5	33.000	6.943	0.000	117.60	ARD
5EX-54 (D/S)	12	0.041	0.025	387.9	78.113	90.5	48.500	6.943	0.000	117.60	ARD
5EX-54P	62	0.007	0.005	387.9	78.113	90.5	48.500	6.943	0.000	117.60	ARD
5EX-55	14	0.048	0.029	387.9	78.113	90.5	48.500	6.943	0.000	117.60	ARD
5EX-55 (BR/SE)	14	0.019	0.011	387.9	81.811	90.5	27.500	6.943	0.000	117.60	ARD
5EX-55 (D/S)	14	0.039	0.024	387.9	50.606	90.5	48.500	6.943	0.000	117.60	ARD
===>Grouped by Line:	***MS56-4-PRESEP to MSR23A***								***Sorted By: Flow Order***		
5EX-55EJ1	6	0.020	0.012	387.9	81.998	90.5	27.500	6.943	0.000	117.60	ARD
5EX-55EJ2	6	0.020	0.012	387.9	81.998	90.5	27.500	6.943	0.000	117.60	ARD
5EX-56	2	0.025	0.015	387.9	81.811	90.5	27.750	6.943	0.000	117.60	ARD
5EX-56P	52	0.017	0.010	387.9	81.811	90.5	27.500	6.943	0.000	117.60	ARD
5EX-56N	30	0.027	0.016	387.9	81.811	90.5	27.500	6.943	0.000	117.60	ARD
===>Grouped by Line:	***MS56-5-PRESEP to MSR-A***								***Sorted By: Flow Order***		
5EX-55R	7	0.016	0.009	387.9	50.606	90.5	48.500	6.943	0.000	117.60	ARD
5EX-55R (D/S)	7	0.022	0.013	387.9	83.004	90.5	38.000	6.943	0.000	117.60	ARD
5EX-55P-1	68	0.013	0.008	387.9	83.004	90.5	38.000	6.943	0.000	117.60	ARD
5EX-57	14	0.050	0.030	387.9	83.004	90.5	38.000	6.943	0.000	117.60	ARD
5EX-57 (BR/SE)	14	0.019	0.011	387.9	81.811	90.5	27.500	6.943	0.000	117.60	ARD
5EX-57 (D/S)	14	0.035	0.021	387.9	39.808	90.5	38.000	6.943	0.000	117.60	ARD
===>Grouped by Line:	***MS56-6-PRESEP to MSR22A***								***Sorted By: Flow Order***		
5EX-57EJ1	6	0.020	0.012	387.9	81.998	90.5	27.500	6.943	0.000	117.60	ARD
5EX-57EJ2	6	0.020	0.012	387.9	81.998	90.5	27.500	6.943	0.000	117.60	ARD
5EX-58	2	0.025	0.015	387.9	81.811	90.5	27.750	6.943	0.000	117.60	ARD
5EX-58P	52	0.017	0.010	387.9	81.811	90.5	27.500	6.943	0.000	117.60	ARD
5EX-58N	30	0.027	0.016	387.9	81.811	90.5	27.500	6.943	0.000	117.60	ARD
===>Grouped by Line:	***MS56-7-PRESEP to MSR21A***								***Sorted By: Flow Order***		
5EX-57R	7	0.014	0.009	387.9	39.808	90.5	38.250	6.943	0.000	117.60	ARD
5EX-57R (D/S)	7	0.022	0.014	387.9	81.811	90.5	27.750	6.943	0.000	117.60	ARD
5EX-57P2	57	0.020	0.012	387.9	81.811	90.5	27.750	6.943	0.000	117.60	ARD
5EX-59	2	0.025	0.015	387.9	81.811	90.5	27.750	6.943	0.000	117.60	ARD
5EX-59EJ1	6	0.020	0.012	387.9	81.998	90.5	27.500	6.943	0.000	117.60	ARD
5EX-59P	56	0.005	0.003	387.9	81.998	90.5	27.750	6.943	0.000	117.60	ARD
5EX-59EJ2	6	0.020	0.012	387.9	81.998	90.5	27.500	6.943	0.000	117.60	ARD
5EX-60	2	0.025	0.015	387.9	81.811	90.5	27.750	6.943	0.000	117.60	ARD

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***MS56-7-PRESEP to MSR21A***									***Sorted By: Flow Order***	
5EX-60P	52	0.017	0.010	387.9	81.811	90.5	27.500	6.943	0.000	117.60	ARD
5EX-60N	30	0.027	0.016	387.9	81.811	90.5	27.500	6.943	0.000	117.60	ARD
===>Grouped by Line:	***MS57-1-PRESEP to MSR-B***									***Sorted By: Flow Order***	
5EX-37N	31	0.037	0.024	387.9	83.669	90.5	33.000	6.943	0.000	117.60	ARD
5EX-37P1	61	0.017	0.010	387.9	163.213	90.5	33.000	6.943	0.000	117.60	ARD
5EX-37	2	0.025	0.015	387.9	83.669	90.5	33.250	6.943	0.000	117.60	ARD
5EX-37EJ1	6	0.020	0.012	387.9	83.669	90.5	33.000	6.943	0.000	117.60	ARD
5EX-37P2	52	0.017	0.010	387.9	83.669	90.5	33.000	6.943	0.000	117.60	ARD
5EX-37EJ2	6	0.020	0.012	387.9	83.669	90.5	33.000	6.943	0.000	117.60	ARD
5EX-40	2	0.025	0.015	387.9	83.669	90.5	33.250	6.943	0.000	117.60	ARD
5EX-40P	51	0.015	0.009	387.9	83.958	90.5	33.000	6.943	0.000	117.60	ARD
5EX-41	2	0.025	0.015	387.9	83.669	90.5	33.250	6.943	0.000	117.60	ARD
5EX-41R	18	0.016	0.010	387.9	83.669	90.5	33.000	6.943	0.000	117.60	ARD
5EX-41R (D/S)	18	0.012	0.007	387.9	36.948	90.5	48.500	6.943	0.000	117.60	ARD
===>Grouped by Line:	***MS57-2-PRESEP to MSR-B***									***Sorted By: Flow Order***	
5EX-38N	31	0.040	0.024	387.9	83.669	90.5	33.000	6.943	0.000	117.60	ARD
5EX-38P	61	0.017	0.010	387.9	163.213	90.5	33.000	6.943	0.000	117.60	ARD
5EX-38	2	0.025	0.015	387.9	83.669	90.5	33.250	6.943	0.000	117.60	ARD
5EX-61P1	52	0.017	0.010	387.9	83.669	90.5	33.000	6.943	0.000	117.60	ARD
5EX-61	1	0.021	0.013	387.9	83.669	90.5	33.250	6.943	0.000	117.60	ARD
5EX-61EJ1	6	0.020	0.012	387.9	83.669	90.5	33.000	6.943	0.000	117.60	ARD
5EX-61P2	51	0.015	0.009	387.9	83.669	90.5	33.000	6.943	0.000	117.60	ARD
5EX-61EJ2	6	0.020	0.012	387.9	83.669	90.5	33.000	6.943	0.000	117.60	ARD
5EX-39	2	0.025	0.015	387.9	83.669	90.5	33.250	6.943	0.000	117.60	ARD
5EX-39P	51	0.015	0.009	387.9	83.958	90.5	33.000	6.943	0.000	117.60	ARD
===>Grouped by Line:	***MS57-3-PRESEP to MSR-B***									***Sorted By: Flow Order***	
5EX-42	12	0.029	0.017	387.9	36.948	90.5	48.500	6.943	0.000	117.60	ARD
5EX-42 (BR/SE)	12	0.029	0.018	387.9	83.669	90.5	33.000	6.943	0.000	117.60	ARD
5EX-42 (D/S)	12	0.041	0.025	387.9	78.113	90.5	48.500	6.943	0.000	117.60	ARD
5EX-41P	62	0.007	0.005	387.9	78.113	90.5	48.500	6.943	0.000	117.60	ARD
5EX-43	14	0.048	0.029	387.9	78.113	90.5	48.500	6.943	0.000	117.60	ARD
5EX-43 (BR/SE)	14	0.019	0.011	387.9	81.811	90.5	27.500	6.943	0.000	117.60	ARD
5EX-43 (D/S)	14	0.039	0.024	387.9	50.606	90.5	48.500	6.943	0.000	117.60	ARD
===>Grouped by Line:	***MS57-4-PRESEP to MSR23B***									***Sorted By: Flow Order***	

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***MS57-4-PRESEP to MSR23B***								***Sorted By: Flow Order***		
5EX-43EJ1	6	0.020	0.012	387.9	81.998	90.5	27.500	6.943	0.000	117.60	ARD
5EX-43EJ2	6	0.020	0.012	387.9	81.998	90.5	27.500	6.943	0.000	117.60	ARD
5EX-44	2	0.025	0.015	387.9	81.811	90.5	27.750	6.943	0.000	117.60	ARD
5EX-44N	30	0.027	0.016	387.9	81.811	90.5	27.500	6.943	0.000	117.60	ARD
===>Grouped by Line:	***MS57-5-PRESEP to MSR-B***								***Sorted By: Flow Order***		
5EX-43R	7	0.016	0.009	387.9	50.606	90.5	48.500	6.943	0.000	117.60	ARD
5EX-43R (D/S)	7	0.022	0.013	387.9	83.004	90.5	38.000	6.943	0.000	117.60	ARD
5EX-43P1	57	0.020	0.012	387.9	83.004	90.5	38.000	6.943	0.000	117.60	ARD
5EX-45	14	0.050	0.030	387.9	83.004	90.5	38.000	6.943	0.000	117.60	ARD
5EX-45 (BR/SE)	14	0.019	0.011	387.9	81.811	90.5	27.500	6.943	0.000	117.60	ARD
5EX-45 (D/S)	14	0.035	0.021	387.9	39.808	90.5	38.000	6.943	0.000	117.60	ARD
===>Grouped by Line:	***MS57-6-PRESEP to MSR22B***								***Sorted By: Flow Order***		
5EX-45EJ1	6	0.020	0.012	387.9	81.998	90.5	27.500	6.943	0.000	117.60	ARD
5EX-45EJ2	6	0.020	0.012	387.9	81.998	90.5	27.500	6.943	0.000	117.60	ARD
5EX-46	2	0.025	0.015	387.9	81.811	90.5	27.750	6.943	0.000	117.60	ARD
5EX-46N	30	0.027	0.016	387.9	81.811	90.5	27.500	6.943	0.000	117.60	ARD
===>Grouped by Line:	***MS57-7-PRESEP to MSR21B***								***Sorted By: Flow Order***		
5EX-45R	7	0.014	0.009	387.9	39.808	90.5	38.250	6.943	0.000	117.60	ARD
5EX-45R (D/S)	7	0.022	0.014	387.9	81.811	90.5	27.750	6.943	0.000	117.60	ARD
5EX-47P2	57	0.020	0.012	387.9	81.811	90.5	27.750	6.943	0.000	117.60	ARD
5EX-47	2	0.025	0.015	387.9	81.811	90.5	27.750	6.943	0.000	117.60	ARD
5EX-47EJ1	6	0.020	0.013	387.9	92.605	90.5	27.500	6.943	0.000	117.60	ARD
5EX-47EJ2	6	0.022	0.013	387.9	92.605	90.5	27.500	6.943	0.000	117.60	ARD
5EX-48	2	0.025	0.015	387.9	81.811	90.5	27.750	6.943	0.000	117.60	ARD
5EX-48N	30	0.027	0.016	387.9	81.811	90.5	27.500	6.943	0.000	117.60	ARD

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).db

Service Life Report

Pass 1 Analysis Exclude Measured Wear

Report Date/Time: 7/6/2010 3:37:44PM
AnalysisDate/Time: 7/6/2010 3:19:24PM

Run Name: CROSSUNDER
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 1.000

CHECWORKS SFA Version: 3.0 SP-1 (build 109)
Duty Factor (Global) :1.000

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **MS56-1-PRESEP to MSR-A**					***Sorted By:Remaining Life***		
5EX-49N	0.000	0.499	0.230	0.230	97,588,304	No	243,721
5EX-52P	0.000	0.500	0.230	0.230	100,000,000	No	243,721
5EX-53R (D/S)	0.000	1.000	0.337	0.337	100,000,000	No	243,721
5EX-53P	0.000	1.000	0.337	0.337	100,000,000	No	243,721
5EX-49EJ1	0.000	0.499	0.230	0.230	195,370,864	No	243,721
5EX-49EJ2	0.000	0.499	0.230	0.230	195,370,864	No	243,721
5EX-49P1	0.000	0.500	0.230	0.230	225,904,656	No	243,721
5EX-53	0.000	0.624	0.231	0.231	231,955,408	No	243,721
5EX-52	0.000	0.624	0.231	0.231	231,955,408	No	243,721
5EX-49	0.000	0.624	0.231	0.231	231,955,408	No	243,721
5EX-49P2	0.000	0.500	0.230	0.230	234,725,264	No	243,721
5EX-53R	0.000	0.500	0.230	0.230	238,119,104	No	243,721
===>Grouped by Line: **MS56-2-PRESEP to MSR-A**					***Sorted By:Remaining Life***		
5EX-50N	0.000	0.499	0.230	0.230	97,588,304	No	243,721
5EX-50P3	0.000	0.500	0.230	0.230	100,000,000	No	243,721
5EX-51P	0.000	0.500	0.230	0.230	100,000,000	No	243,721
5EX-50EJ1	0.000	0.499	0.230	0.230	195,370,864	No	243,721
5EX-50EJ2	0.000	0.499	0.230	0.230	195,370,864	No	243,721
5EX-50P1	0.000	0.500	0.230	0.230	225,904,656	No	243,721
5EX-50	0.000	0.624	0.231	0.231	231,955,408	No	243,721
5EX-51	0.000	0.624	0.231	0.231	231,955,408	No	243,721
5EX-50P2	0.000	0.500	0.230	0.230	234,725,264	No	243,721
5EX-62	0.000	0.624	0.231	0.231	270,925,056	No	243,721
===>Grouped by Line: **MS56-3-PRESEP to MSR-A**					***Sorted By:Remaining Life***		
5EX-54P	0.000	1.000	0.337	0.337	100,000,000	No	243,721

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line:	**MS56-3-PRESEP to MSR-A**				***Sorted By:Remaining Life***		
5EX-54 (BR/SE)	0.000	0.499	0.230	0.230	134,704,032	No	243,721
5EX-55	0.000	0.999	0.337	0.337	200,531,600	No	243,721
5EX-54 (D/S)	0.000	0.999	0.337	0.337	235,477,296	No	243,721
5EX-55 (BR/SE)	0.000	0.499	0.191	0.191	237,067,680	No	243,721
5EX-55 (D/S)	0.000	0.999	0.337	0.337	246,367,904	No	243,721
5EX-54	0.000	0.999	0.337	0.337	332,244,448	No	243,721
===>Grouped by Line:	**MS56-4-PRESEP to MSR23A**				***Sorted By:Remaining Life***		
5EX-56N	0.000	0.499	0.191	0.191	165,879,488	No	243,721
5EX-55EJ1	0.000	0.499	0.191	0.191	221,515,296	No	243,721
5EX-55EJ2	0.000	0.499	0.191	0.191	221,515,296	No	243,721
5EX-56	0.000	0.624	0.193	0.193	252,317,584	No	243,721
5EX-56P	0.000	0.500	0.191	0.191	265,648,544	No	243,721
===>Grouped by Line:	**MS56-5-PRESEP to MSR-A**				***Sorted By:Remaining Life***		
5EX-57	0.000	0.499	0.264	0.264	67,425,360	No	243,721
5EX-57 (D/S)	0.000	0.499	0.264	0.264	95,913,800	No	243,721
5EX-55P-1	0.000	0.500	0.264	0.264	100,000,000	No	243,721
5EX-55R (D/S)	0.000	0.499	0.264	0.264	156,481,152	No	243,721
5EX-57 (BR/SE)	0.000	0.499	0.191	0.191	237,067,680	No	243,721
5EX-55R	0.000	1.000	0.337	0.337	616,177,664	No	243,721
===>Grouped by Line:	**MS56-6-PRESEP to MSR22A**				***Sorted By:Remaining Life***		
5EX-58N	0.000	0.499	0.191	0.191	165,879,488	No	243,721
5EX-57EJ1	0.000	0.499	0.191	0.191	221,515,296	No	243,721
5EX-57EJ2	0.000	0.499	0.191	0.191	221,515,296	No	243,721
5EX-58	0.000	0.624	0.193	0.193	252,317,584	No	243,721
5EX-58P	0.000	0.500	0.191	0.191	265,648,544	No	243,721
===>Grouped by Line:	**MS56-7-PRESEP to MSR21A**				***Sorted By:Remaining Life***		
5EX-59EJ2	0.000	0.299	0.219	0.219	57,559,192	No	243,721
5EX-59EJ1	0.000	0.351	0.219	0.219	94,935,520	No	243,721
5EX-57R	0.000	0.625	0.266	0.266	100,000,000	No	243,721
5EX-59P	0.000	0.319	0.193	0.193	100,000,000	No	243,721
5EX-60N	0.000	0.499	0.191	0.191	165,879,488	No	243,721
5EX-59	0.000	0.624	0.193	0.193	252,317,584	No	243,721
5EX-60	0.000	0.624	0.193	0.193	252,317,584	No	243,721

Component Name	--------- Thickness (in) -------- Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line:	**MS56-7-PRESEP to MSR21A**				***Sorted By:Remaining Life***		
5EX-60P	0.000	0.500	0.191	0.191	265,648,544	No	243,721
5EX-57R (D/S)	0.000	0.624	0.193	0.193	279,259,424	No	243,721
5EX-57P2	0.000	0.624	0.193	0.193	309,886,336	No	243,721
===>Grouped by Line:	**MS57-1-PRESEP to MSR-B**				***Sorted By:Remaining Life***		
5EX-37N	0.000	0.499	0.230	0.230	97,679,800	No	201,090
5EX-40P	0.000	0.500	0.230	0.230	100,000,000	No	243,721
5EX-41R (D/S)	0.000	1.000	0.337	0.337	100,000,000	No	243,721
5EX-37EJ1	0.000	0.499	0.230	0.230	195,370,864	No	243,721
5EX-37EJ2	0.000	0.499	0.230	0.230	195,370,864	No	243,721
5EX-37	0.000	0.624	0.248	0.248	221,805,152	No	243,721
5EX-40	0.000	0.624	0.248	0.248	221,805,152	No	243,721
5EX-41	0.000	0.624	0.248	0.248	221,805,152	No	243,721
5EX-37P1	0.000	0.500	0.230	0.230	225,904,656	No	243,721
5EX-37P2	0.000	0.500	0.230	0.230	234,725,264	No	243,721
5EX-41R	0.000	0.500	0.230	0.230	238,119,104	No	243,721
===>Grouped by Line:	**MS57-2-PRESEP to MSR-B**				***Sorted By:Remaining Life***		
5EX-38N	0.000	0.499	0.230	0.230	97,588,304	No	243,721
5EX-61P2	0.000	0.500	0.230	0.230	100,000,000	No	243,721
5EX-39P	0.000	0.500	0.230	0.230	100,000,000	No	243,721
5EX-61EJ1	0.000	0.499	0.230	0.230	195,370,864	No	243,721
5EX-61EJ2	0.000	0.499	0.230	0.230	195,370,864	No	243,721
5EX-38	0.000	0.624	0.248	0.248	221,805,152	No	243,721
5EX-39	0.000	0.624	0.248	0.248	221,805,152	No	243,721
5EX-38P	0.000	0.500	0.230	0.230	225,904,656	No	243,721
5EX-61P1	0.000	0.500	0.230	0.230	234,725,264	No	243,721
5EX-61	0.000	0.624	0.248	0.248	259,072,448	No	243,721
===>Grouped by Line:	**MS57-3-PRESEP to MSR-B**				***Sorted By:Remaining Life***		
5EX-41P	0.000	1.000	0.337	0.337	100,000,000	No	243,721
5EX-42 (BR/SE)	0.000	0.499	0.230	0.230	134,704,032	No	243,721
5EX-43	0.000	0.999	0.337	0.337	200,531,600	No	243,721
5EX-42 (D/S)	0.000	0.999	0.337	0.337	235,477,296	No	243,721
5EX-43 (BR/SE)	0.000	0.499	0.191	0.191	237,067,680	No	243,721
5EX-43 (D/S)	0.000	0.999	0.337	0.337	246,367,904	No	243,721
5EX-42	0.000	0.999	0.337	0.337	332,244,448	No	243,721

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line:	**MS57-4-PRESEP to MSR23B**				***Sorted By:Remaining Life***		
5EX-44N	0.000	0.499	0.219	0.219	151,046,160	No	243,721
5EX-43EJ1	0.000	0.499	0.191	0.191	221,515,296	No	243,721
5EX-43EJ2	0.000	0.499	0.191	0.191	221,515,296	No	243,721
5EX-44	0.000	0.624	0.207	0.207	243,919,760	No	243,721
===>Grouped by Line:	**MS57-5-PRESEP to MSR-B**				***Sorted By:Remaining Life***		
5EX-45	0.000	0.499	0.264	0.264	67,425,360	No	243,721
5EX-45 (D/S)	0.000	0.499	0.264	0.264	95,913,800	No	243,721
5EX-43R (D/S)	0.000	0.499	0.264	0.264	156,481,152	No	243,721
5EX-43P1	0.000	0.499	0.264	0.264	173,662,352	No	243,721
5EX-45 (BR/SE)	0.000	0.499	0.191	0.191	237,067,680	No	243,721
5EX-43R	0.000	1.000	0.337	0.337	616,177,664	No	243,721
===>Grouped by Line:	**MS57-6-PRESEP to MSR22B**				***Sorted By:Remaining Life***		
5EX-46N	0.000	0.499	0.219	0.219	151,046,160	No	243,721
5EX-45EJ1	0.000	0.499	0.191	0.191	221,515,296	No	243,721
5EX-45EJ2	0.000	0.499	0.191	0.191	221,515,296	No	243,721
5EX-46	0.000	0.624	0.207	0.207	243,919,760	No	243,721
===>Grouped by Line:	**MS57-7-PRESEP to MSR21B**				***Sorted By:Remaining Life***		
5EX-47EJ1	0.000	0.232	0.219	0.219	8,766,024	No	201,090
5EX-47EJ2	0.000	0.314	0.219	0.219	63,760,160	No	243,721
5EX-45R	0.000	0.625	0.266	0.266	100,000,000	No	243,721
5EX-48N	0.000	0.499	0.219	0.219	151,046,160	No	243,721
5EX-47	0.000	0.624	0.207	0.207	243,919,760	No	243,721
5EX-48	0.000	0.624	0.207	0.207	243,919,760	No	243,721
5EX-45R (D/S)	0.000	0.624	0.193	0.193	279,259,424	No	243,721
5EX-47P2	0.000	0.624	0.193	0.193	309,886,336	No	243,721

Note:
[1] Predictions are based on last Tmeas to analysis ending period.

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).db

Service Life Report

Pass 1 Analysis Exclude Measured Wear

Report Date/Time: 7/6/2010 3:37:44PM
AnalysisDate/Time: 7/6/2010 3:19:24PM

Run Name: CROSSUNDER
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 1.000

CHECWORKS SFA Version: 3.0 SP-1 (build 109)
Duty Factor (Global) : 1.000

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **MS56-1-PRESEP to MSR-A**					***Sorted By:Flow Order***		
5EX-49N	0.000	0.499	0.230	0.230	97,588,304	No	243,721
5EX-49P1	0.000	0.500	0.230	0.230	225,904,656	No	243,721
5EX-49	0.000	0.624	0.231	0.231	231,955,408	No	243,721
5EX-49EJ1	0.000	0.499	0.230	0.230	195,370,864	No	243,721
5EX-49P2	0.000	0.500	0.230	0.230	234,725,264	No	243,721
5EX-49EJ2	0.000	0.499	0.230	0.230	195,370,864	No	243,721
5EX-52	0.000	0.624	0.231	0.231	231,955,408	No	243,721
5EX-52P	0.000	0.500	0.230	0.230	100,000,000	No	243,721
5EX-53	0.000	0.624	0.231	0.231	231,955,408	No	243,721
5EX-53R	0.000	0.500	0.230	0.230	238,119,104	No	243,721
5EX-53R (D/S)	0.000	1.000	0.337	0.337	100,000,000	No	243,721
5EX-53P	0.000	1.000	0.337	0.337	100,000,000	No	243,721
===>Grouped by Line: **MS56-2-PRESEP to MSR-A**					***Sorted By:Flow Order***		
5EX-50N	0.000	0.499	0.230	0.230	97,588,304	No	243,721
5EX-50P1	0.000	0.500	0.230	0.230	225,904,656	No	243,721
5EX-50	0.000	0.624	0.231	0.231	231,955,408	No	243,721
5EX-50P2	0.000	0.500	0.230	0.230	234,725,264	No	243,721
5EX-62	0.000	0.624	0.231	0.231	270,925,056	No	243,721
5EX-50EJ1	0.000	0.499	0.230	0.230	195,370,864	No	243,721
5EX-50P3	0.000	0.500	0.230	0.230	100,000,000	No	243,721
5EX-50EJ2	0.000	0.499	0.230	0.230	195,370,864	No	243,721
5EX-51	0.000	0.624	0.231	0.231	231,955,408	No	243,721
5EX-51P	0.000	0.500	0.230	0.230	100,000,000	No	243,721
===>Grouped by Line: **MS56-3-PRESEP to MSR-A**					***Sorted By:Flow Order***		
5EX-54	0.000	0.999	0.337	0.337	332,244,448	No	243,721

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line:	**MS56-3-PRESEP to MSR-A**				***Sorted By:Flow Order***		
5EX-54 (BR/SE)	0.000	0.499	0.230	0.230	134,704,032	No	243,721
5EX-54 (D/S)	0.000	0.999	0.337	0.337	235,477,296	No	243,721
5EX-54P	0.000	1.000	0.337	0.337	100,000,000	No	243,721
5EX-55	0.000	0.999	0.337	0.337	200,531,600	No	243,721
5EX-55 (BR/SE)	0.000	0.499	0.191	0.191	237,067,680	No	243,721
5EX-55 (D/S)	0.000	0.999	0.337	0.337	246,367,904	No	243,721
===>Grouped by Line:	**MS56-4-PRESEP to MSR23A**				***Sorted By:Flow Order***		
5EX-55EJ1	0.000	0.499	0.191	0.191	221,515,296	No	243,721
5EX-55EJ2	0.000	0.499	0.191	0.191	221,515,296	No	243,721
5EX-56	0.000	0.624	0.193	0.193	252,317,584	No	243,721
5EX-56P	0.000	0.500	0.191	0.191	265,648,544	No	243,721
5EX-56N	0.000	0.499	0.191	0.191	165,879,488	No	243,721
===>Grouped by Line:	**MS56-5-PRESEP to MSR-A**				***Sorted By:Flow Order***		
5EX-55R	0.000	1.000	0.337	0.337	616,177,664	No	243,721
5EX-55R (D/S)	0.000	0.499	0.264	0.264	156,481,152	No	243,721
5EX-55P-1	0.000	0.500	0.264	0.264	100,000,000	No	243,721
5EX-57	0.000	0.499	0.264	0.264	67,425,360	No	243,721
5EX-57 (BR/SE)	0.000	0.499	0.191	0.191	237,067,680	No	243,721
5EX-57 (D/S)	0.000	0.499	0.264	0.264	95,913,800	No	243,721
===>Grouped by Line:	**MS56-6-PRESEP to MSR22A**				***Sorted By:Flow Order***		
5EX-57EJ1	0.000	0.499	0.191	0.191	221,515,296	No	243,721
5EX-57EJ2	0.000	0.499	0.191	0.191	221,515,296	No	243,721
5EX-58	0.000	0.624	0.193	0.193	252,317,584	No	243,721
5EX-58P	0.000	0.500	0.191	0.191	265,648,544	No	243,721
5EX-58N	0.000	0.499	0.191	0.191	165,879,488	No	243,721
===>Grouped by Line:	**MS56-7-PRESEP to MSR21A**				***Sorted By:Flow Order***		
5EX-57R	0.000	0.625	0.266	0.266	100,000,000	No	243,721
5EX-57R (D/S)	0.000	0.624	0.193	0.193	279,259,424	No	243,721
5EX-57P2	0.000	0.624	0.193	0.193	309,886,336	No	243,721
5EX-59	0.000	0.624	0.193	0.193	252,317,584	No	243,721
5EX-59EJ1	0.000	0.351	0.219	0.219	94,935,520	No	243,721
5EX-59P	0.000	0.319	0.193	0.193	100,000,000	No	243,721
5EX-59EJ2	0.000	0.299	0.219	0.219	57,559,192	No	243,721

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **MS56-7-PRESEP to MSR21A**					***Sorted By:Flow Order***		
5EX-60	0.000	0.624	0.193	0.193	252,317,584	No	243,721
5EX-60P	0.000	0.500	0.191	0.191	265,648,544	No	243,721
5EX-60N	0.000	0.499	0.191	0.191	165,879,488	No	243,721
===>Grouped by Line: **MS57-1-PRESEP to MSR-B**					***Sorted By:Flow Order***		
5EX-37N	0.000	0.499	0.230	0.230	97,679,800	No	201,090
5EX-37P1	0.000	0.500	0.230	0.230	225,904,656	No	243,721
5EX-37	0.000	0.624	0.248	0.248	221,805,152	No	243,721
5EX-37EJ1	0.000	0.499	0.230	0.230	195,370,864	No	243,721
5EX-37P2	0.000	0.500	0.230	0.230	234,725,264	No	243,721
5EX-37EJ2	0.000	0.499	0.230	0.230	195,370,864	No	243,721
5EX-40	0.000	0.624	0.248	0.248	221,805,152	No	243,721
5EX-40P	0.000	0.500	0.230	0.230	100,000,000	No	243,721
5EX-41	0.000	0.624	0.248	0.248	221,805,152	No	243,721
5EX-41R	0.000	0.500	0.230	0.230	238,119,104	No	243,721
5EX-41R (D/S)	0.000	1.000	0.337	0.337	100,000,000	No	243,721
===>Grouped by Line: **MS57-2-PRESEP to MSR-B**					***Sorted By:Flow Order***		
5EX-38N	0.000	0.499	0.230	0.230	97,588,304	No	243,721
5EX-38P	0.000	0.500	0.230	0.230	225,904,656	No	243,721
5EX-38	0.000	0.624	0.248	0.248	221,805,152	No	243,721
5EX-61P1	0.000	0.500	0.230	0.230	234,725,264	No	243,721
5EX-61	0.000	0.624	0.248	0.248	259,072,448	No	243,721
5EX-61EJ1	0.000	0.499	0.230	0.230	195,370,864	No	243,721
5EX-61P2	0.000	0.500	0.230	0.230	100,000,000	No	243,721
5EX-61EJ2	0.000	0.499	0.230	0.230	195,370,864	No	243,721
5EX-39	0.000	0.624	0.248	0.248	221,805,152	No	243,721
5EX-39P	0.000	0.500	0.230	0.230	100,000,000	No	243,721
===>Grouped by Line: **MS57-3-PRESEP to MSR-B**					***Sorted By:Flow Order***		
5EX-42	0.000	0.999	0.337	0.337	332,244,448	No	243,721
5EX-42 (BR/SE)	0.000	0.499	0.230	0.230	134,704,032	No	243,721
5EX-42 (D/S)	0.000	0.999	0.337	0.337	235,477,296	No	243,721
5EX-41P	0.000	1.000	0.337	0.337	100,000,000	No	243,721
5EX-43	0.000	0.999	0.337	0.337	200,531,600	No	243,721
5EX-43 (BR/SE)	0.000	0.499	0.191	0.191	237,067,680	No	243,721
5EX-43 (D/S)	0.000	0.999	0.337	0.337	246,367,904	No	243,721

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **MS57-4-PRESEP to MSR23B**					***Sorted By:Flow Order***		
5EX-43EJ1	0.000	0.499	0.191	0.191	221,515,296	No	243,721
5EX-43EJ2	0.000	0.499	0.191	0.191	221,515,296	No	243,721
5EX-44	0.000	0.624	0.207	0.207	243,919,760	No	243,721
5EX-44N	0.000	0.499	0.219	0.219	151,046,160	No	243,721
===>Grouped by Line: **MS57-5-PRESEP to MSR-B**					***Sorted By:Flow Order***		
5EX-43R	0.000	1.000	0.337	0.337	616,177,664	No	243,721
5EX-43R (D/S)	0.000	0.499	0.264	0.264	156,481,152	No	243,721
5EX-43P1	0.000	0.499	0.264	0.264	173,662,352	No	243,721
5EX-45	0.000	0.499	0.264	0.264	67,425,360	No	243,721
5EX-45 (BR/SE)	0.000	0.499	0.191	0.191	237,067,680	No	243,721
5EX-45 (D/S)	0.000	0.499	0.264	0.264	95,913,800	No	243,721
===>Grouped by Line: **MS57-6-PRESEP to MSR22B**					***Sorted By:Flow Order***		
5EX-45EJ1	0.000	0.499	0.191	0.191	221,515,296	No	243,721
5EX-45EJ2	0.000	0.499	0.191	0.191	221,515,296	No	243,721
5EX-46	0.000	0.624	0.207	0.207	243,919,760	No	243,721
5EX-46N	0.000	0.499	0.219	0.219	151,046,160	No	243,721
===>Grouped by Line: **MS57-7-PRESEP to MSR21B**					***Sorted By:Flow Order***		
5EX-45R	0.000	0.625	0.266	0.266	100,000,000	No	243,721
5EX-45R (D/S)	0.000	0.624	0.193	0.193	279,259,424	No	243,721
5EX-47P2	0.000	0.624	0.193	0.193	309,886,336	No	243,721
5EX-47	0.000	0.624	0.207	0.207	243,919,760	No	243,721
5EX-47EJ1	0.000	0.232	0.219	0.219	8,766,024	No	201,090
5EX-47EJ2	0.000	0.314	0.219	0.219	63,760,160	No	243,721
5EX-48	0.000	0.624	0.207	0.207	243,919,760	No	243,721
5EX-48N	0.000	0.499	0.219	0.219	151,046,160	No	243,721

Note:
[1] Predictions are based on last Tmeas to analysis ending period.

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).db

Wear Rate Report

Pass 1 Analysis Exclude Measured Wear

Report Date/Time: 7/6/2010 3:38:15PM
AnalysisDate/Time: 7/6/2010 3:19:26PM

CHECWORKS SFA Version: 3.0 SP-1 (build 109)

Duty Factor (Global) : 1.000

Run Name: ES - BFPT DRN TO COND
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 1.000

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***ES-BFPT Drain to Condenser 22***								***Sorted By: Average Wear Rate***		
TEMP06	31	0.476	0.266	101.7	0.034	86.8	48.000	7.282	0.000	93.74	HBD
===>Grouped by Line:	***ES-BFPT Drain to Condenser 23***								***Sorted By: Average Wear Rate***		
TEMP05	31	0.476	0.266	101.7	0.034	86.8	48.000	7.282	0.000	93.74	HBD

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).db

Wear Rate Report

Pass 1 Analysis Exclude Measured Wear

Report Date/Time: 7/6/2010 3:37:44PM
AnalysisDate/Time: 7/6/2010 3:19:26PM

CHECWORKS SFA Version: 3.0 SP-1 (build 109)

Duty Factor (Global) : 1.000

Run Name: ES - BFPT DRN TO COND
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 1.000

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***ES-BFPT Drain to Condenser 22***								***Sorted By: Flow Order***		
TEMP06	31	0.476	0.266	101.7	0.034	86.8	48.000	7.282	0.000	93.74	HBD
===>Grouped by Line:	***ES-BFPT Drain to Condenser 23***								***Sorted By: Flow Order***		
TEMP05	31	0.476	0.266	101.7	0.034	86.8	48.000	7.282	0.000	93.74	HBD

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).db

Service Life Report

Pass 1 Analysis Exclude Measured Wear

Report Date/Time: 7/6/2010 3:37:44PM
AnalysisDate/Time: 7/6/2010 3:19:26PM

Run Name: ES - BFPT DRN TO COND
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 1.000

CHECWORKS SFA Version: 3.0 SP-1 (build 109)
Duty Factor (Global) :1.000

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **ES-BFPT Drain to Condenser 22**					***Sorted By:Remaining Life***		
TEMP06	0.000	0.612	0.080	0.080	17,519,908	No	243,721
===>Grouped by Line: **ES-BFPT Drain to Condenser 23**					***Sorted By:Remaining Life***		
TEMP05	0.000	0.612	0.080	0.080	17,519,908	No	243,721

Note:
[1] Predictions are based on last Tmeas to analysis ending period.

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).db

Service Life Report

Pass 1 Analysis Exclude Measured Wear

Report Date/Time: 7/6/2010 3:37:44PM
AnalysisDate/Time: 7/6/2010 3:19:26PM

Run Name: ES - BFPT DRN TO COND
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 1.000

CHECWORKS SFA Version: 3.0 SP-1 (build 109)
Duty Factor (Global) : 1.000

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **ES-BFPT Drain to Condenser 22**					***Sorted By:Flow Order***		
TEMP06	0.000	0.612	0.080	0.080	17,519,908	No	243,721
===>Grouped by Line: **ES-BFPT Drain to Condenser 23**					***Sorted By:Flow Order***		
TEMP05	0.000	0.612	0.080	0.080	17,519,908	No	243,721

Note:
[1] Predictions are based on last Tmeas to analysis ending period.

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).db

Wear Rate Report

Pass 1 Analysis Exclude Measured Wear

Report Date/Time: 7/6/2010 3:38:15PM
AnalysisDate/Time: 7/6/2010 3:19:48PM

CHECWORKS SFA Version: 3.0 SP-1 (build 109)

Duty Factor (Global) : 1.000

Run Name: FW BFP TO FWH 26
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 1.000

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***FW71-1-BFP21 DISCH to HDR***								***Sorted By: Average Wear Rate***		
BFD VALVE-BFD-1	25	14.709	6.114	380.7	24.354	0.0	20.000	6.845	0.000	98.03	ARD
BFD VALVE-BFD-2-21	22	14.638	6.085	380.7	24.168	0.0	20.000	6.845	0.000	98.03	ARD
BFD-14R	18	10.088	4.193	380.7	33.616	0.0	16.000	6.845	0.000	98.03	ARD
BFD-14	4	9.705	4.034	380.7	20.295	0.0	20.000	6.845	0.000	98.03	ARD
BFD-2	4	9.705	4.034	380.7	20.295	0.0	20.000	6.845	0.000	98.03	ARD
BFD-4	2	9.705	4.034	380.7	20.295	0.0	20.000	6.845	0.000	98.03	ARD
BFD-5	2	9.705	4.034	380.7	20.295	0.0	20.000	6.845	0.000	98.03	ARD
BFD-6	2	9.705	4.034	380.7	20.295	0.0	20.000	6.845	0.000	98.03	ARD
BFD-7	2	9.705	4.034	380.7	20.295	0.0	20.000	6.845	0.000	98.03	ARD
BFD-8	2	9.705	4.034	380.7	20.295	0.0	20.000	6.845	0.000	98.03	ARD
BFD-9	2	9.705	4.034	380.7	20.295	0.0	20.000	6.845	0.000	98.03	ARD
BFD-10	2	9.705	4.034	380.7	20.295	0.0	20.000	6.845	0.000	98.03	ARD
BFD-14P-1	54	8.394	3.489	380.7	20.295	0.0	20.000	6.845	0.000	98.03	ARD
BFD-2P US	54	8.394	3.489	380.7	20.295	0.0	20.000	6.845	0.000	98.03	ARD
BFD-2P DS	54	8.394	3.489	380.7	20.295	0.0	20.000	6.845	0.000	98.03	ARD
BFD-14N	31	7.964	7.488	380.7	33.616	0.0	16.000	6.845	0.000	98.03	ARD
BFD-14R (D/S)	18	7.869	3.271	380.7	20.295	0.0	20.000	6.845	0.000	98.03	ARD
BFD-4P US	52	6.558	2.726	380.7	20.295	0.0	20.000	6.845	0.000	98.03	ARD
BFD-5P	52	6.558	2.726	380.7	20.295	0.0	20.000	6.845	0.000	98.03	ARD
BFD-6P	52	6.558	2.726	380.7	20.295	0.0	20.000	6.845	0.000	98.03	ARD
BFD-7P US	52	6.558	2.726	380.7	20.295	0.0	20.000	6.845	0.000	98.03	ARD
BFD-7P DS	52	6.558	2.726	380.7	20.295	0.0	20.000	6.845	0.000	98.03	ARD
BFD-8P	52	6.558	2.726	380.7	20.295	0.0	20.000	6.845	0.000	98.03	ARD
BFD-9P US	52	6.558	2.726	380.7	20.295	0.0	20.000	6.845	0.000	98.03	ARD
BFD-9P DS	52	6.558	2.726	380.7	20.295	0.0	20.000	6.845	0.000	98.03	ARD
BFD-10P US	52	6.558	2.726	380.7	20.295	0.0	20.000	6.845	0.000	98.03	ARD

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***FW71-1-BFP21 DISCH to HDR***								***Sorted By: Average Wear Rate***		
BFD-10P DS	52	6.558	2.726	380.7	20.295	0.0	20.000	6.845	0.000	98.03	ARD
BFD-14P-2	58	5.771	2.399	380.7	20.295	0.0	20.000	6.845	0.000	98.03	ARD
BFD-14P	61	4.301	4.044	380.7	33.616	0.0	16.000	6.845	0.000	98.03	ARD
===>Grouped by Line:	***FW72-1-BFP22 DISCH to HDR***								***Sorted By: Average Wear Rate***		
BFD-15N	31	18.015	7.488	380.7	33.616	0.0	16.000	6.845	0.000	98.03	ARD
BFD-VALVE-BFD-1-1	25	14.709	6.114	380.7	24.354	0.0	20.000	6.845	0.000	98.03	ARD
BFD-VALVE-BFD-2-22	22	14.638	6.085	380.7	24.168	0.0	20.000	6.845	0.000	98.03	ARD
BFD-15R	18	10.088	4.193	380.7	33.616	0.0	16.000	6.845	0.000	98.03	ARD
BFD-15	2	9.705	4.034	380.7	20.295	0.0	20.000	6.845	0.000	98.03	ARD
BFD-16	2	9.705	4.034	380.7	20.295	0.0	20.000	6.845	0.000	98.03	ARD
BFD-13	2	9.705	4.034	380.7	20.295	0.0	20.000	6.845	0.000	98.03	ARD
BFD-17	2	9.705	4.034	380.7	20.295	0.0	20.000	6.845	0.000	98.03	ARD
BFD-18	2	9.705	4.034	380.7	20.295	0.0	20.000	6.845	0.000	98.03	ARD
BFD-19	2	9.705	4.034	380.7	20.295	0.0	20.000	6.845	0.000	98.03	ARD
BFD-20	2	9.705	4.034	380.7	20.295	0.0	20.000	6.845	0.000	98.03	ARD
BFD-21	2	9.705	4.034	380.7	20.295	0.0	20.000	6.845	0.000	98.03	ARD
BFD-22	2	9.705	4.034	380.7	20.295	0.0	20.000	6.845	0.000	98.03	ARD
BFD-12	1	8.656	3.598	380.7	20.295	0.0	20.000	6.845	0.000	98.03	ARD
BFD-15R (D/S)	18	7.869	3.271	380.7	20.295	0.0	20.000	6.845	0.000	98.03	ARD
BFD-23R	18	7.345	3.053	380.7	20.295	0.0	20.000	6.845	0.000	98.03	ARD
BFD-15P-1	68	6.558	2.726	380.7	20.295	0.0	20.000	6.845	0.000	98.03	ARD
BFD-15P US	52	6.558	2.726	380.7	20.295	0.0	20.000	6.845	0.000	98.03	ARD
BFD-15P DS	52	6.558	2.726	380.7	20.295	0.0	20.000	6.845	0.000	98.03	ARD
BFD-16P	52	6.558	2.726	380.7	20.295	0.0	20.000	6.845	0.000	98.03	ARD
BFD-13P	52	6.558	2.726	380.7	20.295	0.0	20.000	6.845	0.000	98.03	ARD
BFD-17P	52	6.558	2.726	380.7	20.295	0.0	20.000	6.845	0.000	98.03	ARD
BFD-18P	52	6.558	2.726	380.7	20.295	0.0	20.000	6.845	0.000	98.03	ARD
BFD-19P	52	6.558	2.726	380.7	20.295	0.0	20.000	6.845	0.000	98.03	ARD
BFD-20P	52	6.558	2.726	380.7	20.295	0.0	20.000	6.845	0.000	98.03	ARD
BFD-21P US	52	6.558	2.726	380.7	20.295	0.0	20.000	6.845	0.000	98.03	ARD
BFD-21P DS	52	6.558	2.726	380.7	20.295	0.0	20.000	6.845	0.000	98.03	ARD
BFD-22P	52	6.558	2.726	380.7	20.295	0.0	20.000	6.845	0.000	98.03	ARD
BFD-12P	51	5.771	2.399	380.7	20.295	0.0	20.000	6.845	0.000	98.03	ARD
BFD-12P-1	58	5.771	2.399	380.7	20.295	0.0	20.000	6.845	0.000	98.03	ARD

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***FW72-1-BFP22 DISCH to HDR***								***Sorted By: Average Wear Rate***		
BFD-12P-2	58	5.771	2.399	380.7	20.295	0.0	20.000	6.845	0.000	98.03	ARD
BFD-23R (D/S)	18	4.601	1.913	380.7	8.648	0.0	30.000	6.845	0.000	98.03	ARD
===>Grouped by Line:	***FW73-1-BFPHDR to FWH26ABC***								***Sorted By: Average Wear Rate***		
BFD-11 (D/S)	12	9.265	3.851	380.7	17.296	0.0	30.000	6.845	0.000	98.03	ARD
BFD-11 (BR/SE)	12	8.918	3.707	380.7	20.295	0.0	20.000	6.845	0.000	98.03	ARD
BFD-23	2	8.361	3.475	380.7	17.296	0.0	30.000	6.845	0.000	98.03	ARD
BFD-24	4	8.361	3.475	380.7	17.296	0.0	30.000	6.845	0.000	98.03	ARD
BFD-25	2	8.361	3.475	380.7	17.296	0.0	30.000	6.845	0.000	98.03	ARD
BFD-26	4	8.361	3.475	380.7	17.296	0.0	30.000	6.845	0.000	98.03	ARD
BFD-27	2	8.361	3.475	380.7	17.296	0.0	30.000	6.845	0.000	98.03	ARD
BFD-28	2	8.361	3.475	380.7	17.296	0.0	30.000	6.845	0.000	98.03	ARD
BFD-29	2	8.361	3.475	380.7	17.296	0.0	30.000	6.845	0.000	98.03	ARD
BFD-32	2	8.361	3.475	380.7	17.296	0.0	30.000	6.845	0.000	98.03	ARD
BFD-24P DS	54	7.231	3.006	380.7	17.296	0.0	30.000	6.845	0.000	98.03	ARD
BFD-26P US	54	7.231	3.006	380.7	17.296	0.0	30.000	6.845	0.000	98.03	ARD
BFD-32T (D/S)	15	6.779	2.818	380.7	17.296	0.0	30.000	6.845	0.000	98.03	ARD
BFD-32T	15	6.779	2.818	380.7	17.296	0.0	30.000	6.845	0.000	98.03	ARD
BFD-11	12	6.289	2.614	380.7	8.648	0.0	30.000	6.845	0.000	98.03	ARD
BFD-25P	52	5.649	2.348	380.7	17.296	0.0	30.000	6.845	0.000	98.03	ARD
BFD-27P	52	5.649	2.348	380.7	17.296	0.0	30.000	6.845	0.000	98.03	ARD
BFD-28P	52	5.649	2.348	380.7	17.296	0.0	30.000	6.845	0.000	98.03	ARD
BFD-29P	52	5.649	2.348	380.7	17.296	0.0	30.000	6.845	0.000	98.03	ARD
BFD-32P	52	5.649	2.348	380.7	17.296	0.0	30.000	6.845	0.000	98.03	ARD
===>Grouped by Line:	***FW73-2-BFPHDR to FWH26ABC***								***Sorted By: Average Wear Rate***		
BFD-32T-C	14	12.428	5.166	380.7	17.296	0.0	30.000	6.845	0.000	98.03	ARD
BFD-32T-C (D/S)	14	9.911	4.120	380.7	11.536	0.0	30.000	6.845	0.000	98.03	ARD
BFD-32T-C (BR/SE)	14	8.363	3.476	380.7	16.725	0.0	18.000	6.845	0.000	98.03	ARD
BFD-32P-1	65	4.519	1.879	380.7	17.296	0.0	30.000	6.845	0.000	98.03	ARD
===>Grouped by Line:	***FW73-3-BFPHDR to FWH26C***								***Sorted By: Average Wear Rate***		
BFD-VALVE-BFD-3-2	22	11.950	4.967	380.7	16.729	0.0	18.000	6.845	0.000	98.03	ARD
BFD-42N	30	9.560	3.974	380.7	16.729	0.0	18.000	6.845	0.000	98.03	ARD
BFD-40	2	8.843	3.676	380.7	16.729	0.0	18.000	6.845	0.000	98.03	ARD
BFD-41	2	8.843	3.676	380.7	16.729	0.0	18.000	6.845	0.000	98.03	ARD
BFD-42	1	7.887	3.278	380.7	16.729	0.0	18.000	6.845	0.000	98.03	ARD

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***FW73-3-BFPHDR to FWH26C***								***Sorted By: Average Wear Rate***		
BFD-41P	52	5.975	2.484	380.7	16.729	0.0	18.000	6.845	0.000	98.03	ARD
BFD-42P	52	5.975	2.484	380.7	16.729	0.0	18.000	6.845	0.000	98.03	ARD
BFD-41P-1	58	5.258	2.185	380.7	16.729	0.0	18.000	6.845	0.000	98.03	ARD
BFD-40P US	64	4.780	1.987	380.7	16.729	0.0	18.000	6.845	0.000	98.03	ARD
===>Grouped by Line:	***FW73-4-BFPHDR to FWH26ABC***								***Sorted By: Average Wear Rate***		
BFD-32T-B	14	9.911	4.120	380.7	11.536	0.0	30.000	6.845	0.000	98.03	ARD
BFD-32T-B (BR/SE)	14	8.363	3.476	380.7	16.725	0.0	18.000	6.845	0.000	98.03	ARD
BFD-32T-B (D/S)	14	6.183	2.607	380.7	5.759	0.0	30.000	6.845	0.000	98.03	ARD
BFD-32P-2	64	3.604	1.498	380.7	11.536	0.0	30.000	6.845	0.000	98.03	ARD
===>Grouped by Line:	***FW73-5-BFPHDR to FWH26B***								***Sorted By: Average Wear Rate***		
BFD-VALVE-BFD-3-1	22	11.950	4.967	380.7	16.729	0.0	18.000	6.845	0.000	98.03	ARD
BFD-39N	30	9.560	3.974	380.7	16.729	0.0	18.000	6.845	0.000	98.03	ARD
BFD-37	2	8.843	3.676	380.7	16.729	0.0	18.000	6.845	0.000	98.03	ARD
BFD-38	2	8.843	3.676	380.7	16.729	0.0	18.000	6.845	0.000	98.03	ARD
BFD-39	1	7.887	3.278	380.7	16.729	0.0	18.000	6.845	0.000	98.03	ARD
BFD-38P	52	5.975	2.484	380.7	16.729	0.0	18.000	6.845	0.000	98.03	ARD
BFD-39P	52	5.975	2.484	380.7	16.729	0.0	18.000	6.845	0.000	98.03	ARD
BFD-38P-1	58	5.258	2.185	380.7	16.729	0.0	18.000	6.845	0.000	98.03	ARD
BFD-37P	64	4.780	1.987	380.7	16.729	0.0	18.000	6.845	0.000	98.03	ARD
===>Grouped by Line:	***FW73-6-BFPHDR to FWH26A***								***Sorted By: Average Wear Rate***		
BFD-VALVE-BFD-3	22	11.950	4.967	380.7	16.729	0.0	18.000	6.845	0.000	98.03	ARD
BFD-36N	30	9.560	3.974	380.7	16.729	0.0	18.000	6.845	0.000	98.03	ARD
BFD-33	2	8.843	3.676	380.7	16.729	0.0	18.000	6.845	0.000	98.03	ARD
BFD-34	2	8.843	3.676	380.7	16.729	0.0	18.000	6.845	0.000	98.03	ARD
BFD-35	2	8.843	3.676	380.7	16.729	0.0	18.000	6.845	0.000	98.03	ARD
BFD-36	1	7.887	3.278	380.7	16.729	0.0	18.000	6.845	0.000	98.03	ARD
BFD-33R (D/S)	7	7.647	3.178	380.7	16.725	0.0	18.000	6.845	0.000	98.03	ARD
BFD-33P-1 DS	57	5.975	2.484	380.7	16.729	0.0	18.000	6.845	0.000	98.03	ARD
BFD-33P US	52	5.975	2.484	380.7	16.729	0.0	18.000	6.845	0.000	98.03	ARD
BFD-33P DS	52	5.975	2.484	380.7	16.729	0.0	18.000	6.845	0.000	98.03	ARD
BFD-34P US	52	5.975	2.484	380.7	16.729	0.0	18.000	6.845	0.000	98.03	ARD
BFD-34P DS	52	5.975	2.484	380.7	16.729	0.0	18.000	6.845	0.000	98.03	ARD
BFD-35P	52	5.975	2.484	380.7	16.729	0.0	18.000	6.845	0.000	98.03	ARD
BFD-34P-1	58	5.258	2.185	380.7	16.729	0.0	18.000	6.845	0.000	98.03	ARD

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***FW73-6-BFPHDR to FWH26A***								***Sorted By: Average Wear Rate***		
BFD-33R	7	3.935	1.659	380.7	5.759	0.0	30.000	6.845	0.000	98.03	ARD

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).db

Wear Rate Report

Pass 1 Analysis Exclude Measured Wear

Report Date/Time: 7/6/2010 3:37:44PM
AnalysisDate/Time: 7/6/2010 3:19:48PM

CHECWORKS SFA Version: 3.0 SP-1 (build 109)
Duty Factor (Global) : 1.000

Run Name: FW BFP TO FWH 26
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 1.000

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***FW71-1-BFP21 DISCH to HDR***									***Sorted By: Flow Order***	
BFD-14N	31	7.964	7.488	380.7	33.616	0.0	16.000	6.845	0.000	98.03	ARD
BFD-14P	61	4.301	4.044	380.7	33.616	0.0	16.000	6.845	0.000	98.03	ARD
BFD-14R	18	10.088	4.193	380.7	33.616	0.0	16.000	6.845	0.000	98.03	ARD
BFD-14R (D/S)	18	7.869	3.271	380.7	20.295	0.0	20.000	6.845	0.000	98.03	ARD
BFD-14	4	9.705	4.034	380.7	20.295	0.0	20.000	6.845	0.000	98.03	ARD
BFD-14P-1	54	8.394	3.489	380.7	20.295	0.0	20.000	6.845	0.000	98.03	ARD
BFD VALVE-BFD-1	25	14.709	6.114	380.7	24.354	0.0	20.000	6.845	0.000	98.03	ARD
BFD-14P-2	58	5.771	2.399	380.7	20.295	0.0	20.000	6.845	0.000	98.03	ARD
BFD VALVE-BFD-2-21	22	14.638	6.085	380.7	24.168	0.0	20.000	6.845	0.000	98.03	ARD
BFD-2	4	9.705	4.034	380.7	20.295	0.0	20.000	6.845	0.000	98.03	ARD
BFD-2P US	54	8.394	3.489	380.7	20.295	0.0	20.000	6.845	0.000	98.03	ARD
BFD-2P DS	54	8.394	3.489	380.7	20.295	0.0	20.000	6.845	0.000	98.03	ARD
BFD-4	2	9.705	4.034	380.7	20.295	0.0	20.000	6.845	0.000	98.03	ARD
BFD-4P US	52	6.558	2.726	380.7	20.295	0.0	20.000	6.845	0.000	98.03	ARD
BFD-5	2	9.705	4.034	380.7	20.295	0.0	20.000	6.845	0.000	98.03	ARD
BFD-5P	52	6.558	2.726	380.7	20.295	0.0	20.000	6.845	0.000	98.03	ARD
BFD-6	2	9.705	4.034	380.7	20.295	0.0	20.000	6.845	0.000	98.03	ARD
BFD-6P	52	6.558	2.726	380.7	20.295	0.0	20.000	6.845	0.000	98.03	ARD
BFD-7	2	9.705	4.034	380.7	20.295	0.0	20.000	6.845	0.000	98.03	ARD
BFD-7P US	52	6.558	2.726	380.7	20.295	0.0	20.000	6.845	0.000	98.03	ARD
BFD-7P DS	52	6.558	2.726	380.7	20.295	0.0	20.000	6.845	0.000	98.03	ARD
BFD-8	2	9.705	4.034	380.7	20.295	0.0	20.000	6.845	0.000	98.03	ARD
BFD-8P	52	6.558	2.726	380.7	20.295	0.0	20.000	6.845	0.000	98.03	ARD
BFD-9	2	9.705	4.034	380.7	20.295	0.0	20.000	6.845	0.000	98.03	ARD
BFD-9P US	52	6.558	2.726	380.7	20.295	0.0	20.000	6.845	0.000	98.03	ARD
BFD-9P DS	52	6.558	2.726	380.7	20.295	0.0	20.000	6.845	0.000	98.03	ARD

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***FW71-1-BFP21 DISCH to HDR***									***Sorted By: Flow Order***	
BFD-10	2	9.705	4.034	380.7	20.295	0.0	20.000	6.845	0.000	98.03	ARD
BFD-10P US	52	6.558	2.726	380.7	20.295	0.0	20.000	6.845	0.000	98.03	ARD
BFD-10P DS	52	6.558	2.726	380.7	20.295	0.0	20.000	6.845	0.000	98.03	ARD
===>Grouped by Line:	***FW72-1-BFP22 DISCH to HDR***									***Sorted By: Flow Order***	
BFD-15N	31	18.015	7.488	380.7	33.616	0.0	16.000	6.845	0.000	98.03	ARD
BFD-15R	18	10.088	4.193	380.7	33.616	0.0	16.000	6.845	0.000	98.03	ARD
BFD-15R (D/S)	18	7.869	3.271	380.7	20.295	0.0	20.000	6.845	0.000	98.03	ARD
BFD-15P-1	68	6.558	2.726	380.7	20.295	0.0	20.000	6.845	0.000	98.03	ARD
BFD-15	2	9.705	4.034	380.7	20.295	0.0	20.000	6.845	0.000	98.03	ARD
BFD-15P US	52	6.558	2.726	380.7	20.295	0.0	20.000	6.845	0.000	98.03	ARD
BFD-15P DS	52	6.558	2.726	380.7	20.295	0.0	20.000	6.845	0.000	98.03	ARD
BFD-12	1	8.656	3.598	380.7	20.295	0.0	20.000	6.845	0.000	98.03	ARD
BFD-12P	51	5.771	2.399	380.7	20.295	0.0	20.000	6.845	0.000	98.03	ARD
BFD-VALVE-BFD-1-1	25	14.709	6.114	380.7	24.354	0.0	20.000	6.845	0.000	98.03	ARD
BFD-12P-1	58	5.771	2.399	380.7	20.295	0.0	20.000	6.845	0.000	98.03	ARD
BFD-VALVE-BFD-2-22	22	14.638	6.085	380.7	24.168	0.0	20.000	6.845	0.000	98.03	ARD
BFD-12P-2	58	5.771	2.399	380.7	20.295	0.0	20.000	6.845	0.000	98.03	ARD
BFD-16	2	9.705	4.034	380.7	20.295	0.0	20.000	6.845	0.000	98.03	ARD
BFD-16P	52	6.558	2.726	380.7	20.295	0.0	20.000	6.845	0.000	98.03	ARD
BFD-13	2	9.705	4.034	380.7	20.295	0.0	20.000	6.845	0.000	98.03	ARD
BFD-13P	52	6.558	2.726	380.7	20.295	0.0	20.000	6.845	0.000	98.03	ARD
BFD-17	2	9.705	4.034	380.7	20.295	0.0	20.000	6.845	0.000	98.03	ARD
BFD-17P	52	6.558	2.726	380.7	20.295	0.0	20.000	6.845	0.000	98.03	ARD
BFD-18	2	9.705	4.034	380.7	20.295	0.0	20.000	6.845	0.000	98.03	ARD
BFD-18P	52	6.558	2.726	380.7	20.295	0.0	20.000	6.845	0.000	98.03	ARD
BFD-19	2	9.705	4.034	380.7	20.295	0.0	20.000	6.845	0.000	98.03	ARD
BFD-19P	52	6.558	2.726	380.7	20.295	0.0	20.000	6.845	0.000	98.03	ARD
BFD-20	2	9.705	4.034	380.7	20.295	0.0	20.000	6.845	0.000	98.03	ARD
BFD-20P	52	6.558	2.726	380.7	20.295	0.0	20.000	6.845	0.000	98.03	ARD
BFD-21	2	9.705	4.034	380.7	20.295	0.0	20.000	6.845	0.000	98.03	ARD
BFD-21P US	52	6.558	2.726	380.7	20.295	0.0	20.000	6.845	0.000	98.03	ARD
BFD-21P DS	52	6.558	2.726	380.7	20.295	0.0	20.000	6.845	0.000	98.03	ARD
BFD-22	2	9.705	4.034	380.7	20.295	0.0	20.000	6.845	0.000	98.03	ARD
BFD-22P	52	6.558	2.726	380.7	20.295	0.0	20.000	6.845	0.000	98.03	ARD

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***FW72-1-BFP22 DISCH to HDR***									***Sorted By: Flow Order***	
BFD-23R	18	7.345	3.053	380.7	20.295	0.0	20.000	6.845	0.000	98.03	ARD
BFD-23R (D/S)	18	4.601	1.913	380.7	8.648	0.0	30.000	6.845	0.000	98.03	ARD
===>Grouped by Line:	***FW73-1-BFPHDR to FWH26ABC***									***Sorted By: Flow Order***	
BFD-11 (BR/SE)	12	8.918	3.707	380.7	20.295	0.0	20.000	6.845	0.000	98.03	ARD
BFD-11	12	6.289	2.614	380.7	8.648	0.0	30.000	6.845	0.000	98.03	ARD
BFD-11 (D/S)	12	9.265	3.851	380.7	17.296	0.0	30.000	6.845	0.000	98.03	ARD
BFD-23	2	8.361	3.475	380.7	17.296	0.0	30.000	6.845	0.000	98.03	ARD
BFD-24	4	8.361	3.475	380.7	17.296	0.0	30.000	6.845	0.000	98.03	ARD
BFD-24P DS	54	7.231	3.006	380.7	17.296	0.0	30.000	6.845	0.000	98.03	ARD
BFD-25	2	8.361	3.475	380.7	17.296	0.0	30.000	6.845	0.000	98.03	ARD
BFD-25P	52	5.649	2.348	380.7	17.296	0.0	30.000	6.845	0.000	98.03	ARD
BFD-26	4	8.361	3.475	380.7	17.296	0.0	30.000	6.845	0.000	98.03	ARD
BFD-26P US	54	7.231	3.006	380.7	17.296	0.0	30.000	6.845	0.000	98.03	ARD
BFD-27	2	8.361	3.475	380.7	17.296	0.0	30.000	6.845	0.000	98.03	ARD
BFD-27P	52	5.649	2.348	380.7	17.296	0.0	30.000	6.845	0.000	98.03	ARD
BFD-28	2	8.361	3.475	380.7	17.296	0.0	30.000	6.845	0.000	98.03	ARD
BFD-28P	52	5.649	2.348	380.7	17.296	0.0	30.000	6.845	0.000	98.03	ARD
BFD-29	2	8.361	3.475	380.7	17.296	0.0	30.000	6.845	0.000	98.03	ARD
BFD-29P	52	5.649	2.348	380.7	17.296	0.0	30.000	6.845	0.000	98.03	ARD
BFD-32	2	8.361	3.475	380.7	17.296	0.0	30.000	6.845	0.000	98.03	ARD
BFD-32P	52	5.649	2.348	380.7	17.296	0.0	30.000	6.845	0.000	98.03	ARD
BFD-32T	15	6.779	2.818	380.7	17.296	0.0	30.000	6.845	0.000	98.03	ARD
BFD-32T (D/S)	15	6.779	2.818	380.7	17.296	0.0	30.000	6.845	0.000	98.03	ARD
===>Grouped by Line:	***FW73-2-BFPHDR to FWH26ABC***									***Sorted By: Flow Order***	
BFD-32P-1	65	4.519	1.879	380.7	17.296	0.0	30.000	6.845	0.000	98.03	ARD
BFD-32T-C	14	12.428	5.166	380.7	17.296	0.0	30.000	6.845	0.000	98.03	ARD
BFD-32T-C (BR/SE)	14	8.363	3.476	380.7	16.725	0.0	18.000	6.845	0.000	98.03	ARD
BFD-32T-C (D/S)	14	9.911	4.120	380.7	11.536	0.0	30.000	6.845	0.000	98.03	ARD
===>Grouped by Line:	***FW73-3-BFPHDR to FWH26C***									***Sorted By: Flow Order***	
BFD-40P US	64	4.780	1.987	380.7	16.729	0.0	18.000	6.845	0.000	98.03	ARD
BFD-40	2	8.843	3.676	380.7	16.729	0.0	18.000	6.845	0.000	98.03	ARD
BFD-41P	52	5.975	2.484	380.7	16.729	0.0	18.000	6.845	0.000	98.03	ARD
BFD-VALVE-BFD-3-2	22	11.950	4.967	380.7	16.729	0.0	18.000	6.845	0.000	98.03	ARD
BFD-41P-1	58	5.258	2.185	380.7	16.729	0.0	18.000	6.845	0.000	98.03	ARD

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***FW73-3-BFPHDR to FWH26C***									***Sorted By: Flow Order***	
BFD-41	2	8.843	3.676	380.7	16.729	0.0	18.000	6.845	0.000	98.03	ARD
BFD-42P	52	5.975	2.484	380.7	16.729	0.0	18.000	6.845	0.000	98.03	ARD
BFD-42	1	7.887	3.278	380.7	16.729	0.0	18.000	6.845	0.000	98.03	ARD
BFD-42N	30	9.560	3.974	380.7	16.729	0.0	18.000	6.845	0.000	98.03	ARD
===>Grouped by Line:	***FW73-4-BFPHDR to FWH26ABC***									***Sorted By: Flow Order***	
BFD-32P-2	64	3.604	1.498	380.7	11.536	0.0	30.000	6.845	0.000	98.03	ARD
BFD-32T-B	14	9.911	4.120	380.7	11.536	0.0	30.000	6.845	0.000	98.03	ARD
BFD-32T-B (BR/SE)	14	8.363	3.476	380.7	16.725	0.0	18.000	6.845	0.000	98.03	ARD
BFD-32T-B (D/S)	14	6.183	2.607	380.7	5.759	0.0	30.000	6.845	0.000	98.03	ARD
===>Grouped by Line:	***FW73-5-BFPHDR to FWH26B***									***Sorted By: Flow Order***	
BFD-37P	64	4.780	1.987	380.7	16.729	0.0	18.000	6.845	0.000	98.03	ARD
BFD-37	2	8.843	3.676	380.7	16.729	0.0	18.000	6.845	0.000	98.03	ARD
BFD-38P	52	5.975	2.484	380.7	16.729	0.0	18.000	6.845	0.000	98.03	ARD
BFD-VALVE-BFD-3-1	22	11.950	4.967	380.7	16.729	0.0	18.000	6.845	0.000	98.03	ARD
BFD-38P-1	58	5.258	2.185	380.7	16.729	0.0	18.000	6.845	0.000	98.03	ARD
BFD-38	2	8.843	3.676	380.7	16.729	0.0	18.000	6.845	0.000	98.03	ARD
BFD-39P	52	5.975	2.484	380.7	16.729	0.0	18.000	6.845	0.000	98.03	ARD
BFD-39	1	7.887	3.278	380.7	16.729	0.0	18.000	6.845	0.000	98.03	ARD
BFD-39N	30	9.560	3.974	380.7	16.729	0.0	18.000	6.845	0.000	98.03	ARD
===>Grouped by Line:	***FW73-6-BFPHDR to FWH26A***									***Sorted By: Flow Order***	
BFD-33R	7	3.935	1.659	380.7	5.759	0.0	30.000	6.845	0.000	98.03	ARD
BFD-33R (D/S)	7	7.647	3.178	380.7	16.725	0.0	18.000	6.845	0.000	98.03	ARD
BFD-33P-1 DS	57	5.975	2.484	380.7	16.729	0.0	18.000	6.845	0.000	98.03	ARD
BFD-33	2	8.843	3.676	380.7	16.729	0.0	18.000	6.845	0.000	98.03	ARD
BFD-33P US	52	5.975	2.484	380.7	16.729	0.0	18.000	6.845	0.000	98.03	ARD
BFD-33P DS	52	5.975	2.484	380.7	16.729	0.0	18.000	6.845	0.000	98.03	ARD
BFD-34	2	8.843	3.676	380.7	16.729	0.0	18.000	6.845	0.000	98.03	ARD
BFD-34P US	52	5.975	2.484	380.7	16.729	0.0	18.000	6.845	0.000	98.03	ARD
BFD-34P DS	52	5.975	2.484	380.7	16.729	0.0	18.000	6.845	0.000	98.03	ARD
BFD-VALVE-BFD-3	22	11.950	4.967	380.7	16.729	0.0	18.000	6.845	0.000	98.03	ARD
BFD-34P-1	58	5.258	2.185	380.7	16.729	0.0	18.000	6.845	0.000	98.03	ARD
BFD-35	2	8.843	3.676	380.7	16.729	0.0	18.000	6.845	0.000	98.03	ARD
BFD-35P	52	5.975	2.484	380.7	16.729	0.0	18.000	6.845	0.000	98.03	ARD
BFD-36	1	7.887	3.278	380.7	16.729	0.0	18.000	6.845	0.000	98.03	ARD

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***FW73-6-BFPHDR to FWH26A***									***Sorted By: Flow Order***	
BFD-36N	30	9.560	3.974	380.7	16.729	0.0	18.000	6.845	0.000	98.03	ARD

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).db

Service Life Report

Pass 1 Analysis Exclude Measured Wear

Report Date/Time: 7/6/2010 3:37:44PM
AnalysisDate/Time: 7/6/2010 3:19:48PM

Run Name: FW BFP TO FWH 26
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 1.000

CHECWORKS SFA Version: 3.0 SP-1 (build 109)
Duty Factor (Global) :1.000

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **FW71-1-BFP21 DISCH to HDR**					***Sorted By:Remaining Life***		
BFD VALVE-BFD-1	0.000	0.622	0.988	0.988	-225,532	No	243,721
BFD VALVE-BFD-2-21	0.000	0.624	0.988	0.988	-225,444	No	243,721
BFD-10P DS	0.000	0.933	0.924	0.924	26,616	Yes	243,721
BFD-8	0.000	0.989	0.924	0.924	141,139	Yes	243,721
BFD-4	0.000	0.999	0.924	0.924	162,853	Yes	243,721
BFD-6	0.000	1.019	0.924	0.924	204,786	Yes	243,721
BFD-10	0.000	1.020	0.924	0.924	208,320	Yes	243,721
BFD-14N	0.000	0.960	0.740	0.740	257,292	No	78,608
BFD-2	0.000	1.045	0.924	0.924	262,739	Yes	243,721
BFD-7	0.000	1.049	0.924	0.924	270,195	Yes	243,721
BFD-5	0.000	1.074	0.924	0.924	324,481	Yes	243,721
BFD-10P US	0.000	0.905	0.797	0.797	347,546	Yes	243,721
BFD-9	0.000	1.089	0.924	0.924	357,654	Yes	243,721
BFD-14P-1	0.000	0.949	0.797	0.797	382,596	Yes	243,721
BFD-2P US	0.000	0.958	0.797	0.797	404,385	Yes	243,721
BFD-9P DS	0.000	0.932	0.797	0.797	434,316	No	243,721
BFD-14	0.000	1.143	0.924	0.924	474,309	No	243,721
BFD-6P	0.000	0.948	0.797	0.797	485,155	Yes	243,721
BFD-5P	0.000	0.949	0.797	0.797	488,369	Yes	243,721
BFD-2P DS	0.000	0.993	0.797	0.797	492,260	No	243,721
BFD-14P	0.000	0.967	0.740	0.740	493,526	No	78,608
BFD-9P US	0.000	0.953	0.797	0.797	502,091	Yes	243,721
BFD-8P	0.000	0.955	0.797	0.797	508,886	Yes	243,721
BFD-4P US	0.000	0.984	0.797	0.797	602,083	Yes	243,721
BFD-14P-2	0.000	0.973	0.797	0.797	644,459	Yes	243,721
BFD-7P DS	0.000	1.014	0.797	0.797	698,494	Yes	243,721
BFD-7P US	0.000	1.015	0.797	0.797	700,305	Yes	243,721

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **FW71-1-BFP21 DISCH to HDR**					***Sorted By:Remaining Life***		
BFD-14R	0.000	1.099	0.740	0.740	750,084	No	243,721
BFD-14R (D/S)	0.000	1.430	0.924	0.924	1,353,808	Yes	243,721
===>Grouped by Line: **FW72-1-BFP22 DISCH to HDR**					***Sorted By:Remaining Life***		
BFD-VALVE-BFD-1-1	0.000	0.622	0.988	0.988	-225,532	No	243,721
BFD-VALVE-BFD-2-22	0.000	0.624	0.988	0.988	-225,444	No	243,721
BFD-15	0.000	0.761	0.924	0.924	-175,563	No	243,721
BFD-18	0.000	0.761	0.924	0.924	-175,563	No	243,721
BFD-19	0.000	0.761	0.924	0.924	-175,563	No	243,721
BFD-20	0.000	0.761	0.924	0.924	-175,563	No	243,721
BFD-15N	0.000	0.826	0.740	0.740	100,694	No	243,721
BFD-15P-1	0.000	0.849	0.797	0.797	166,841	No	243,721
BFD-15P US	0.000	0.849	0.797	0.797	166,841	No	243,721
BFD-18P	0.000	0.849	0.797	0.797	166,841	No	243,721
BFD-19P	0.000	0.849	0.797	0.797	166,841	No	243,721
BFD-20P	0.000	0.849	0.797	0.797	166,841	No	243,721
BFD-21P DS	0.000	0.849	0.797	0.797	166,841	No	243,721
BFD-16	0.000	1.036	0.924	0.924	241,206	Yes	243,721
BFD-12P-1	0.000	0.870	0.797	0.797	269,546	No	243,721
BFD-12P-2	0.000	0.870	0.797	0.797	269,546	No	243,721
BFD-17	0.000	1.054	0.924	0.924	281,053	Yes	243,721
BFD-12	0.000	1.041	0.924	0.924	282,808	Yes	243,721
BFD-21	0.000	1.065	0.924	0.924	304,938	Yes	243,721
BFD-22	0.000	1.076	0.924	0.924	328,824	Yes	243,721
BFD-23R (D/S)	0.000	1.267	1.195	1.195	329,394	Yes	243,721
BFD-15R	0.000	0.907	0.740	0.740	349,907	No	243,721
BFD-13	0.000	1.096	0.924	0.924	371,492	Yes	243,721
BFD-21P US	0.000	0.950	0.797	0.797	492,162	Yes	243,721
BFD-12P	0.000	0.933	0.797	0.797	498,381	Yes	243,721
BFD-22P	0.000	0.964	0.797	0.797	537,154	Yes	243,721
BFD-15P DS	0.000	0.977	0.797	0.797	579,587	Yes	243,721
BFD-16P	0.000	0.983	0.797	0.797	599,486	Yes	243,721
BFD-13P	0.000	1.019	0.797	0.797	715,179	Yes	243,721
BFD-17P	0.000	1.050	0.797	0.797	812,785	Yes	243,721
BFD-15R (D/S)	0.000	1.410	0.924	0.924	1,300,247	No	243,721
BFD-23R	0.000	1.316	0.797	0.797	1,491,558	Yes	243,721

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **FW73-1-BFPHDR to FWH26ABC**					***Sorted By:Remaining Life***		
BFD-24	0.000	1.027	1.195	1.195	-195,400	No	243,721
BFD-27	0.000	1.027	1.195	1.195	-195,400	No	243,721
BFD-32P	0.000	1.103	1.195	1.195	-172,205	No	243,721
BFD-27P	0.000	1.103	1.195	1.195	-172,205	No	243,721
BFD-29P	0.000	1.103	1.195	1.195	-172,205	No	243,721
BFD-26P US	0.000	1.269	1.195	1.195	215,384	Yes	243,721
BFD-11 (D/S)	0.000	1.297	1.195	1.195	231,123	No	243,721
BFD-25	0.000	1.303	1.195	1.195	271,169	No	243,721
BFD-26	0.000	1.305	1.195	1.195	276,211	Yes	243,721
BFD-32T (D/S)	0.000	1.284	1.195	1.195	278,344	No	243,721
BFD-32T	0.000	1.286	1.195	1.195	284,562	No	243,721
BFD-24P DS	0.000	1.295	1.195	1.195	291,588	Yes	243,721
BFD-11	0.000	1.297	1.195	1.195	340,955	No	243,721
BFD-23	0.000	1.341	1.195	1.195	368,968	Yes	243,721
BFD-32	0.000	1.365	1.195	1.195	428,177	Yes	243,721
BFD-11 (BR/SE)	0.000	0.989	0.797	0.797	453,671	No	243,721
BFD-25P	0.000	1.320	1.195	1.195	465,210	Yes	243,721
BFD-28P	0.000	1.346	1.195	1.195	564,605	No	243,721
BFD-28	0.000	1.426	1.195	1.195	582,497	Yes	243,721
BFD-29	0.000	1.434	1.195	1.195	601,391	Yes	243,721
===>Grouped by Line: **FW73-2-BFPHDR to FWH26ABC**					***Sorted By:Remaining Life***		
BFD-32P-1	0.000	1.134	1.195	1.195	-154,327	No	243,721
BFD-32T-C	0.000	1.236	1.195	1.195	68,864	No	243,721
BFD-32T-C (D/S)	0.000	1.248	1.195	1.195	113,309	No	243,721
BFD-32T-C (BR/SE)	0.000	0.853	0.717	0.717	343,419	No	243,721
===>Grouped by Line: **FW73-3-BFPHDR to FWH26C**					***Sorted By:Remaining Life***		
BFD-VALVE-BFD-3-2	0.000	0.606	0.889	0.889	-218,320	No	243,721
BFD-41	0.000	0.692	0.832	0.832	-169,300	No	243,721
BFD-42N	0.000	0.878	0.832	0.832	100,453	Yes	243,721
BFD-42P	0.000	0.772	0.717	0.717	193,285	No	243,721
BFD-41P-1	0.000	0.792	0.717	0.717	299,597	No	243,721
BFD-42	0.000	0.965	0.832	0.832	356,089	Yes	243,721
BFD-40	0.000	1.009	0.832	0.832	420,921	Yes	243,721
BFD-41P	0.000	0.901	0.717	0.717	647,641	Yes	243,721
BFD-40P US	0.000	0.865	0.717	0.717	653,293	Yes	243,721

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **FW73-4-BFPHDR to FWH26ABC**					***Sorted By:Remaining Life***		
BFD-32P-2	0.000	1.160	1.195	1.195	-131,616	No	243,721
BFD-32T-B	0.000	1.321	1.195	1.195	268,214	Yes	243,721
BFD-32T-B (BR/SE)	0.000	0.866	0.717	0.717	375,074	Yes	243,721
BFD-32T-B (D/S)	0.000	1.343	1.195	1.195	496,941	Yes	243,721
===>Grouped by Line: **FW73-5-BFPHDR to FWH26B**					***Sorted By:Remaining Life***		
BFD-VALVE-BFD-3-1	0.000	0.606	0.889	0.889	-218,320	No	243,721
BFD-37	0.000	0.692	0.832	0.832	-169,300	No	243,721
BFD-39N	0.000	0.861	0.832	0.832	63,065	Yes	243,721
BFD-38P	0.000	0.772	0.717	0.717	193,285	No	243,721
BFD-39	0.000	0.932	0.832	0.832	267,180	Yes	243,721
BFD-38	0.000	0.952	0.832	0.832	286,983	Yes	243,721
BFD-38P-1	0.000	0.792	0.717	0.717	299,597	No	243,721
BFD-37P	0.000	0.805	0.717	0.717	388,190	No	243,721
BFD-39P	0.000	0.855	0.717	0.717	487,487	Yes	243,721
===>Grouped by Line: **FW73-6-BFPHDR to FWH26A**					***Sorted By:Remaining Life***		
BFD-VALVE-BFD-3	0.000	0.606	0.889	0.889	-218,320	No	243,721
BFD-36N	0.000	0.672	0.832	0.832	-174,881	Yes	243,721
BFD-33R	0.000	1.151	1.195	1.195	-140,845	No	243,721
BFD-33R (D/S)	0.000	0.724	0.717	0.717	20,082	No	243,721
BFD-34	0.000	0.896	0.832	0.832	152,222	Yes	243,721
BFD-34P DS	0.000	0.772	0.717	0.717	193,285	No	243,721
BFD-33	0.000	0.949	0.832	0.832	277,889	Yes	243,721
BFD-34P-1	0.000	0.792	0.717	0.717	299,597	No	243,721
BFD-36	0.000	0.976	0.832	0.832	385,845	Yes	243,721
BFD-33P-1 DS	0.000	0.845	0.717	0.717	452,215	Yes	243,721
BFD-33P US	0.000	0.861	0.717	0.717	508,651	Yes	243,721
BFD-35	0.000	1.058	0.832	0.832	537,667	No	243,721
BFD-35P	0.000	0.877	0.717	0.717	564,574	Yes	243,721
BFD-33P DS	0.000	0.878	0.717	0.717	569,034	Yes	243,721
BFD-34P US	0.000	0.885	0.717	0.717	593,725	Yes	243,721

Note:
[1] Predictions are based on last Tmeas to analysis ending period.

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).db

Service Life Report

Pass 1 Analysis Exclude Measured Wear

Report Date/Time: 7/6/2010 3:37:44PM
AnalysisDate/Time: 7/6/2010 3:19:48PM

Run Name: FW BFP TO FWH 26
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 1.000

CHECWORKS SFA Version: 3.0 SP-1 (build 109)
Duty Factor (Global) : 1.000

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **FW71-1-BFP21 DISCH to HDR**					***Sorted By:Flow Order***		
BFD-14N	0.000	0.960	0.740	0.740	257,292	No	78,608
BFD-14P	0.000	0.967	0.740	0.740	493,526	No	78,608
BFD-14R	0.000	1.099	0.740	0.740	750,084	No	243,721
BFD-14R (D/S)	0.000	1.430	0.924	0.924	1,353,808	Yes	243,721
BFD-14	0.000	1.143	0.924	0.924	474,309	No	243,721
BFD-14P-1	0.000	0.949	0.797	0.797	382,596	Yes	243,721
BFD VALVE-BFD-1	0.000	0.622	0.988	0.988	-225,532	No	243,721
BFD-14P-2	0.000	0.973	0.797	0.797	644,459	Yes	243,721
BFD VALVE-BFD-2-21	0.000	0.624	0.988	0.988	-225,444	No	243,721
BFD-2	0.000	1.045	0.924	0.924	262,739	Yes	243,721
BFD-2P US	0.000	0.958	0.797	0.797	404,385	Yes	243,721
BFD-2P DS	0.000	0.993	0.797	0.797	492,260	No	243,721
BFD-4	0.000	0.999	0.924	0.924	162,853	Yes	243,721
BFD-4P US	0.000	0.984	0.797	0.797	602,083	Yes	243,721
BFD-5	0.000	1.074	0.924	0.924	324,481	Yes	243,721
BFD-5P	0.000	0.949	0.797	0.797	488,369	Yes	243,721
BFD-6	0.000	1.019	0.924	0.924	204,786	Yes	243,721
BFD-6P	0.000	0.948	0.797	0.797	485,155	Yes	243,721
BFD-7	0.000	1.049	0.924	0.924	270,195	Yes	243,721
BFD-7P US	0.000	1.015	0.797	0.797	700,305	Yes	243,721
BFD-7P DS	0.000	1.014	0.797	0.797	698,494	Yes	243,721
BFD-8	0.000	0.989	0.924	0.924	141,139	Yes	243,721
BFD-8P	0.000	0.955	0.797	0.797	508,886	Yes	243,721
BFD-9	0.000	1.089	0.924	0.924	357,654	Yes	243,721
BFD-9P US	0.000	0.953	0.797	0.797	502,091	Yes	243,721
BFD-9P DS	0.000	0.932	0.797	0.797	434,316	No	243,721
BFD-10	0.000	1.020	0.924	0.924	208,320	Yes	243,721

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **FW71-1-BFP21 DISCH to HDR**					***Sorted By:Flow Order***		
BFD-10P US	0.000	0.905	0.797	0.797	347,546	Yes	243,721
BFD-10P DS	0.000	0.933	0.924	0.924	26,616	Yes	243,721
===>Grouped by Line: **FW72-1-BFP22 DISCH to HDR**					***Sorted By:Flow Order***		
BFD-15N	0.000	0.826	0.740	0.740	100,694	No	243,721
BFD-15R	0.000	0.907	0.740	0.740	349,907	No	243,721
BFD-15R (D/S)	0.000	1.410	0.924	0.924	1,300,247	No	243,721
BFD-15P-1	0.000	0.849	0.797	0.797	166,841	No	243,721
BFD-15	0.000	0.761	0.924	0.924	-175,563	No	243,721
BFD-15P US	0.000	0.849	0.797	0.797	166,841	No	243,721
BFD-15P DS	0.000	0.977	0.797	0.797	579,587	Yes	243,721
BFD-12	0.000	1.041	0.924	0.924	282,808	Yes	243,721
BFD-12P	0.000	0.933	0.797	0.797	498,381	Yes	243,721
BFD-VALVE-BFD-1-1	0.000	0.622	0.988	0.988	-225,532	No	243,721
BFD-12P-1	0.000	0.870	0.797	0.797	269,546	No	243,721
BFD-VALVE-BFD-2-22	0.000	0.624	0.988	0.988	-225,444	No	243,721
BFD-12P-2	0.000	0.870	0.797	0.797	269,546	No	243,721
BFD-16	0.000	1.036	0.924	0.924	241,206	Yes	243,721
BFD-16P	0.000	0.983	0.797	0.797	599,486	Yes	243,721
BFD-13	0.000	1.096	0.924	0.924	371,492	Yes	243,721
BFD-13P	0.000	1.019	0.797	0.797	715,179	Yes	243,721
BFD-17	0.000	1.054	0.924	0.924	281,053	Yes	243,721
BFD-17P	0.000	1.050	0.797	0.797	812,785	Yes	243,721
BFD-18	0.000	0.761	0.924	0.924	-175,563	No	243,721
BFD-18P	0.000	0.849	0.797	0.797	166,841	No	243,721
BFD-19	0.000	0.761	0.924	0.924	-175,563	No	243,721
BFD-19P	0.000	0.849	0.797	0.797	166,841	No	243,721
BFD-20	0.000	0.761	0.924	0.924	-175,563	No	243,721
BFD-20P	0.000	0.849	0.797	0.797	166,841	No	243,721
BFD-21	0.000	1.065	0.924	0.924	304,938	Yes	243,721
BFD-21P US	0.000	0.950	0.797	0.797	492,162	Yes	243,721
BFD-21P DS	0.000	0.849	0.797	0.797	166,841	No	243,721
BFD-22	0.000	1.076	0.924	0.924	328,824	Yes	243,721
BFD-22P	0.000	0.964	0.797	0.797	537,154	Yes	243,721
BFD-23R	0.000	1.316	0.797	0.797	1,491,558	Yes	243,721
BFD-23R (D/S)	0.000	1.267	1.195	1.195	329,394	Yes	243,721

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **FW73-1-BFPHDR to FWH26ABC**					***Sorted By:Flow Order***		
BFD-11 (BR/SE)	0.000	0.989	0.797	0.797	453,671	No	243,721
BFD-11	0.000	1.297	1.195	1.195	340,955	No	243,721
BFD-11 (D/S)	0.000	1.297	1.195	1.195	231,123	No	243,721
BFD-23	0.000	1.341	1.195	1.195	368,968	Yes	243,721
BFD-24	0.000	1.027	1.195	1.195	-195,400	No	243,721
BFD-24P DS	0.000	1.295	1.195	1.195	291,588	Yes	243,721
BFD-25	0.000	1.303	1.195	1.195	271,169	No	243,721
BFD-25P	0.000	1.320	1.195	1.195	465,210	Yes	243,721
BFD-26	0.000	1.305	1.195	1.195	276,211	Yes	243,721
BFD-26P US	0.000	1.269	1.195	1.195	215,384	Yes	243,721
BFD-27	0.000	1.027	1.195	1.195	-195,400	No	243,721
BFD-27P	0.000	1.103	1.195	1.195	-172,205	No	243,721
BFD-28	0.000	1.426	1.195	1.195	582,497	Yes	243,721
BFD-28P	0.000	1.346	1.195	1.195	564,605	No	243,721
BFD-29	0.000	1.434	1.195	1.195	601,391	Yes	243,721
BFD-29P	0.000	1.103	1.195	1.195	-172,205	No	243,721
BFD-32	0.000	1.365	1.195	1.195	428,177	Yes	243,721
BFD-32P	0.000	1.103	1.195	1.195	-172,205	No	243,721
BFD-32T	0.000	1.286	1.195	1.195	284,562	No	243,721
BFD-32T (D/S)	0.000	1.284	1.195	1.195	278,344	No	243,721
===>Grouped by Line: **FW73-2-BFPHDR to FWH26ABC**					***Sorted By:Flow Order***		
BFD-32P-1	0.000	1.134	1.195	1.195	-154,327	No	243,721
BFD-32T-C	0.000	1.236	1.195	1.195	68,864	No	243,721
BFD-32T-C (BR/SE)	0.000	0.853	0.717	0.717	343,419	No	243,721
BFD-32T-C (D/S)	0.000	1.248	1.195	1.195	113,309	No	243,721
===>Grouped by Line: **FW73-3-BFPHDR to FWH26C**					***Sorted By:Flow Order***		
BFD-40P US	0.000	0.865	0.717	0.717	653,293	Yes	243,721
BFD-40	0.000	1.009	0.832	0.832	420,921	Yes	243,721
BFD-41P	0.000	0.901	0.717	0.717	647,641	Yes	243,721
BFD-VALVE-BFD-3-2	0.000	0.606	0.889	0.889	-218,320	No	243,721
BFD-41P-1	0.000	0.792	0.717	0.717	299,597	No	243,721
BFD-41	0.000	0.692	0.832	0.832	-169,300	No	243,721
BFD-42P	0.000	0.772	0.717	0.717	193,285	No	243,721
BFD-42	0.000	0.965	0.832	0.832	356,089	Yes	243,721
BFD-42N	0.000	0.878	0.832	0.832	100,453	Yes	243,721

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **FW73-4-BFPHDR to FWH26ABC**					***Sorted By:Flow Order***		
BFD-32P-2	0.000	1.160	1.195	1.195	-131,616	No	243,721
BFD-32T-B	0.000	1.321	1.195	1.195	268,214	Yes	243,721
BFD-32T-B (BR/SE)	0.000	0.866	0.717	0.717	375,074	Yes	243,721
BFD-32T-B (D/S)	0.000	1.343	1.195	1.195	496,941	Yes	243,721
===>Grouped by Line: **FW73-5-BFPHDR to FWH26B**					***Sorted By:Flow Order***		
BFD-37P	0.000	0.805	0.717	0.717	388,190	No	243,721
BFD-37	0.000	0.692	0.832	0.832	-169,300	No	243,721
BFD-38P	0.000	0.772	0.717	0.717	193,285	No	243,721
BFD-VALVE-BFD-3-1	0.000	0.606	0.889	0.889	-218,320	No	243,721
BFD-38P-1	0.000	0.792	0.717	0.717	299,597	No	243,721
BFD-38	0.000	0.952	0.832	0.832	286,983	Yes	243,721
BFD-39P	0.000	0.855	0.717	0.717	487,487	Yes	243,721
BFD-39	0.000	0.932	0.832	0.832	267,180	Yes	243,721
BFD-39N	0.000	0.861	0.832	0.832	63,065	Yes	243,721
===>Grouped by Line: **FW73-6-BFPHDR to FWH26A**					***Sorted By:Flow Order***		
BFD-33R	0.000	1.151	1.195	1.195	-140,845	No	243,721
BFD-33R (D/S)	0.000	0.724	0.717	0.717	20,082	No	243,721
BFD-33P-1 DS	0.000	0.845	0.717	0.717	452,215	Yes	243,721
BFD-33	0.000	0.949	0.832	0.832	277,889	Yes	243,721
BFD-33P US	0.000	0.861	0.717	0.717	508,651	Yes	243,721
BFD-33P DS	0.000	0.878	0.717	0.717	569,034	Yes	243,721
BFD-34	0.000	0.896	0.832	0.832	152,222	Yes	243,721
BFD-34P US	0.000	0.885	0.717	0.717	593,725	Yes	243,721
BFD-34P DS	0.000	0.772	0.717	0.717	193,285	No	243,721
BFD-VALVE-BFD-3	0.000	0.606	0.889	0.889	-218,320	No	243,721
BFD-34P-1	0.000	0.792	0.717	0.717	299,597	No	243,721
BFD-35	0.000	1.058	0.832	0.832	537,667	No	243,721
BFD-35P	0.000	0.877	0.717	0.717	564,574	Yes	243,721
BFD-36	0.000	0.976	0.832	0.832	385,845	Yes	243,721
BFD-36N	0.000	0.672	0.832	0.832	-174,881	Yes	243,721

Note:
[1] Predictions are based on last Tmeas to analysis ending period.

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).db

Wear Rate Report

Pass 1 Analysis Exclude Measured Wear

Report Date/Time: 7/6/2010 3:38:15PM
AnalysisDate/Time: 7/6/2010 3:20:28PM

CHECWORKS SFA Version: 3.0 SP-1 (build 109)

Duty Factor (Global) : 1.000

Run Name: FW FWH 26 TO STM GEN
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 1.000

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line: FW74-1-FWH26A to DISHDR									***Sorted By: Average Wear Rate***		
BFD-55N	31	5.118	1.972	429.6	17.382	0.0	18.000	6.624	0.000	98.03	HBD
BFD-VALVE-BFD-4	22	5.118	1.972	429.6	17.382	0.0	18.000	6.624	0.000	98.03	HBD
BFD-55	4	3.787	1.459	429.6	17.382	0.0	18.000	6.624	0.000	98.03	HBD
BFD-56	2	3.787	1.459	429.6	17.382	0.0	18.000	6.624	0.000	98.03	HBD
BFD-57	2	3.787	1.459	429.6	17.382	0.0	18.000	6.624	0.000	98.03	HBD
BFD-58	2	3.787	1.459	429.6	17.382	0.0	18.000	6.624	0.000	98.03	HBD
BFD-59	2	3.787	1.459	429.6	17.382	0.0	18.000	6.624	0.000	98.03	HBD
BFD-55P	54	3.275	1.262	429.6	17.382	0.0	18.000	6.624	0.000	98.03	HBD
BFD-59R	18	2.865	1.104	429.6	17.377	0.0	18.000	6.624	0.000	98.03	HBD
BFD-57P	52	2.559	0.986	429.6	17.382	0.0	18.000	6.624	0.000	98.03	HBD
BFD-58P	52	2.559	0.986	429.6	17.382	0.0	18.000	6.624	0.000	98.03	HBD
BFD-59P	52	2.559	0.986	429.6	17.382	0.0	18.000	6.624	0.000	98.03	HBD
BFD-56P-1	58	2.252	0.868	429.6	17.382	0.0	18.000	6.624	0.000	98.03	HBD
BFD-59R (D/S)	18	1.460	0.571	429.6	5.984	0.0	30.000	6.624	0.000	98.03	HBD
===>Grouped by Line: FW74-2-FWH26B to DISHDR									***Sorted By: Average Wear Rate***		
BFD-51N	31	5.118	1.972	429.6	17.382	0.0	18.000	6.624	0.000	98.03	HBD
BFD-VALVE-BFD-4-1	22	5.118	1.972	429.6	17.382	0.0	18.000	6.624	0.000	98.03	HBD
BFD-51	4	3.787	1.459	429.6	17.382	0.0	18.000	6.624	0.000	98.03	HBD
BFD-52	2	3.787	1.459	429.6	17.382	0.0	18.000	6.624	0.000	98.03	HBD
BFD-53	2	3.787	1.459	429.6	17.382	0.0	18.000	6.624	0.000	98.03	HBD
BFD-54	2	3.787	1.459	429.6	17.382	0.0	18.000	6.624	0.000	98.03	HBD
BFD-51P	54	3.275	1.262	429.6	17.382	0.0	18.000	6.624	0.000	98.03	HBD
BFD-52P	52	2.559	0.986	429.6	17.382	0.0	18.000	6.624	0.000	98.03	HBD
BFD-53P	52	2.559	0.986	429.6	17.382	0.0	18.000	6.624	0.000	98.03	HBD
BFD-54P	52	2.559	0.986	429.6	17.382	0.0	18.000	6.624	0.000	98.03	HBD

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***FW74-2-FWH26B to DISHDR***								***Sorted By: Average Wear Rate***		
BFD-52P-1	58	2.252	0.868	429.6	17.382	0.0	18.000	6.624	0.000	98.03	HBD
===>Grouped by Line:	***FW74-3-FWH26 to DISHDR***								***Sorted By: Average Wear Rate***		
BFD-54T (BR/SE)	12	3.480	1.341	429.6	17.377	0.0	18.000	6.624	0.000	98.03	HBD
BFD-54T (D/S)	12	3.164	1.219	429.6	11.986	0.0	30.000	6.624	0.000	98.03	HBD
BFD-54T	12	1.996	0.780	429.6	5.984	0.0	30.000	6.624	0.000	98.03	HBD
BFD-54P-1	62	1.543	0.595	429.6	11.986	0.0	30.000	6.624	0.000	98.03	HBD
===>Grouped by Line:	***FW74-4-FWH26C to DISHDR***								***Sorted By: Average Wear Rate***		
BFD-47N	31	5.118	1.972	429.6	17.382	0.0	18.000	6.624	0.000	98.03	HBD
BFD-VALVE-BFD-4-2	22	5.118	1.972	429.6	17.382	0.0	18.000	6.624	0.000	98.03	HBD
BFD-47	2	3.787	1.459	429.6	17.382	0.0	18.000	6.624	0.000	98.03	HBD
BFD-48	2	3.787	1.459	429.6	17.382	0.0	18.000	6.624	0.000	98.03	HBD
BFD-49	2	3.787	1.459	429.6	17.382	0.0	18.000	6.624	0.000	98.03	HBD
BFD-50	2	3.787	1.459	429.6	17.382	0.0	18.000	6.624	0.000	98.03	HBD
BFD-47P	52	2.559	0.986	429.6	17.382	0.0	18.000	6.624	0.000	98.03	HBD
BFD-48P	52	2.559	0.986	429.6	17.382	0.0	18.000	6.624	0.000	98.03	HBD
BFD-49P	52	2.559	0.986	429.6	17.382	0.0	18.000	6.624	0.000	98.03	HBD
BFD-50P US	52	2.559	0.986	429.6	17.382	0.0	18.000	6.624	0.000	98.03	HBD
BFD-50P DS	52	2.559	0.986	429.6	17.382	0.0	18.000	6.624	0.000	98.03	HBD
BFD-48P-1	58	2.252	0.868	429.6	17.382	0.0	18.000	6.624	0.000	98.03	HBD
===>Grouped by Line:	***FW74-5-FWH26 to DISHDR***								***Sorted By: Average Wear Rate***		
BFD-72T	13	4.839	1.864	429.6	17.970	0.0	30.000	6.624	0.000	98.03	HBD
BFD-72T (BR/SE)	13	4.360	1.680	429.6	13.049	0.0	18.000	6.624	0.000	98.03	HBD
BFD-72T (D/S)	13	4.120	1.587	429.6	13.478	0.0	30.000	6.624	0.000	98.03	HBD
BFD-50T (D/S)	12	3.968	1.529	429.6	17.970	0.0	30.000	6.624	0.000	98.03	HBD
BFD-60	2	3.581	1.380	429.6	17.970	0.0	30.000	6.624	0.000	98.03	HBD
BFD-30	4	3.581	1.380	429.6	17.970	0.0	30.000	6.624	0.000	98.03	HBD
BFD-31	2	3.581	1.380	429.6	17.970	0.0	30.000	6.624	0.000	98.03	HBD
BFD-61	2	3.581	1.380	429.6	17.970	0.0	30.000	6.624	0.000	98.03	HBD
BFD-62	2	3.581	1.380	429.6	17.970	0.0	30.000	6.624	0.000	98.03	HBD
BFD-63	2	3.581	1.380	429.6	17.970	0.0	30.000	6.624	0.000	98.03	HBD
BFD-64	2	3.581	1.380	429.6	17.970	0.0	30.000	6.624	0.000	98.03	HBD
BFD-65	2	3.581	1.380	429.6	17.970	0.0	30.000	6.624	0.000	98.03	HBD
BFD-50T (BR/SE)	12	3.480	1.341	429.6	17.377	0.0	18.000	6.624	0.000	98.03	HBD
BFD-50T	12	3.164	1.219	429.6	11.986	0.0	30.000	6.624	0.000	98.03	HBD

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***FW74-5-FWH26 to DISHDR***								***Sorted By: Average Wear Rate***		
BFD-30P US	54	3.097	1.193	429.6	17.970	0.0	30.000	6.624	0.000	98.03	HBD
BFD-30P DS	54	3.097	1.193	429.6	17.970	0.0	30.000	6.624	0.000	98.03	HBD
BFD-46T (D/S)	15	2.903	1.119	429.6	17.970	0.0	30.000	6.624	0.000	98.03	HBD
BFD-46T	15	2.903	1.119	429.6	17.970	0.0	30.000	6.624	0.000	98.03	HBD
BFD-31P US	52	2.419	0.932	429.6	17.970	0.0	30.000	6.624	0.000	98.03	HBD
BFD-61P	52	2.419	0.932	429.6	17.970	0.0	30.000	6.624	0.000	98.03	HBD
BFD-62P US	52	2.419	0.932	429.6	17.970	0.0	30.000	6.624	0.000	98.03	HBD
BFD-62P DS	52	2.419	0.932	429.6	17.970	0.0	30.000	6.624	0.000	98.03	HBD
BFD-63P US	52	2.419	0.932	429.6	17.970	0.0	30.000	6.624	0.000	98.03	HBD
BFD-63P DS	52	2.419	0.932	429.6	17.970	0.0	30.000	6.624	0.000	98.03	HBD
BFD-64P	52	2.419	0.932	429.6	17.970	0.0	30.000	6.624	0.000	98.03	HBD
BFD-65P	52	2.419	0.932	429.6	17.970	0.0	30.000	6.624	0.000	98.03	HBD
BFD-65P-1	52	2.419	0.932	429.6	17.970	0.0	30.000	6.624	0.000	98.03	HBD
BFD-46P	65	1.936	0.746	429.6	17.970	0.0	30.000	6.624	0.000	98.03	HBD
BFD-50P-1	62	1.936	0.746	429.6	17.970	0.0	30.000	6.624	0.000	98.03	HBD
===>Grouped by Line:	***FW75-1-DISHDR to SG21***								***Sorted By: Average Wear Rate***		
BFD-VALVE-BFD-6	25	4.929	1.899	429.6	15.861	0.0	18.000	6.624	0.000	98.03	HBD
BFD-VALVE-BFD-7	22	4.929	1.899	429.6	15.859	0.0	18.000	6.624	0.000	98.03	HBD
BFD-72R (D/S)	7	4.482	1.727	429.6	27.724	0.0	12.750	6.624	0.000	98.03	HBD
BFD-VALVE-BFD-5	22	4.360	1.680	429.6	13.049	0.0	18.000	6.624	0.000	98.03	HBD
BFD-VALVE-FCV-417	24	4.360	1.680	429.6	13.049	0.0	18.000	6.624	0.000	98.03	HBD
BFD-71R	18	3.921	1.511	429.6	27.714	0.0	12.750	6.624	0.000	98.03	HBD
BFD-99N	30	3.388	1.305	429.6	12.461	0.0	18.000	6.624	0.000	98.03	HBD
BFD-72	2	3.226	1.243	429.6	13.049	0.0	18.000	6.624	0.000	98.03	HBD
BFD-71	4	3.226	1.243	429.6	13.049	0.0	18.000	6.624	0.000	98.03	HBD
BFD-70	2	3.226	1.243	429.6	13.049	0.0	18.000	6.624	0.000	98.03	HBD
BFD-68	2	3.226	1.243	429.6	13.049	0.0	18.000	6.624	0.000	98.03	HBD
BFD-67	4	3.134	1.208	429.6	12.461	0.0	18.000	6.624	0.000	98.03	HBD
BFD-66	4	3.134	1.208	429.6	12.461	0.0	18.000	6.624	0.000	98.03	HBD
BFD-96	2	3.134	1.208	429.6	12.461	0.0	18.000	6.624	0.000	98.03	HBD
BFD-97	2	3.134	1.208	429.6	12.461	0.0	18.000	6.624	0.000	98.03	HBD
BFD-98	2	3.134	1.208	429.6	12.461	0.0	18.000	6.624	0.000	98.03	HBD
BFD-99	2	3.134	1.208	429.6	12.461	0.0	18.000	6.624	0.000	98.03	HBD
BFD-72R	7	3.052	1.176	429.6	13.049	0.0	18.000	6.624	0.000	98.03	HBD

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***FW75-1-DISHDR to SG21***								***Sorted By: Average Wear Rate***		
BFD-69	1	2.878	1.109	429.6	13.049	0.0	18.000	6.624	0.000	98.03	HBD
BFD-66P	54	2.711	1.044	429.6	12.461	0.0	18.000	6.624	0.000	98.03	HBD
BFD-71R (D/S)	18	2.616	1.008	429.6	13.049	0.0	18.000	6.624	0.000	98.03	HBD
BFD-72P-1 US	52	2.180	0.840	429.6	13.049	0.0	18.000	6.624	0.000	98.03	HBD
BFD-72P-1 DS	52	2.180	0.840	429.6	13.049	0.0	18.000	6.624	0.000	98.03	HBD
BFD-70P US	52	2.180	0.840	429.6	13.049	0.0	18.000	6.624	0.000	98.03	HBD
BFD-70P DS	52	2.180	0.840	429.6	13.049	0.0	18.000	6.624	0.000	98.03	HBD
BFD-69P US	52	2.180	0.840	429.6	13.049	0.0	18.000	6.624	0.000	98.03	HBD
BFD-69P DS	52	2.180	0.840	429.6	13.049	0.0	18.000	6.624	0.000	98.03	HBD
BFD-67P US	52	2.180	0.840	429.6	13.049	0.0	18.000	6.624	0.000	98.03	HBD
BFD-67P DS	52	2.180	0.840	429.6	13.049	0.0	18.000	6.624	0.000	98.03	HBD
BFD-96P	52	2.118	0.816	429.6	12.461	0.0	18.000	6.624	0.000	98.03	HBD
BFD-97P	52	2.118	0.816	429.6	12.461	0.0	18.000	6.624	0.000	98.03	HBD
BFD-98P	52	2.118	0.816	429.6	12.461	0.0	18.000	6.624	0.000	98.03	HBD
BFD-68P US	51	1.918	0.739	429.6	13.049	0.0	18.000	6.624	0.000	98.03	HBD
BFD-68P DS	51	1.918	0.739	429.6	13.049	0.0	18.000	6.624	0.000	98.03	HBD
BFD-72P US	64	1.744	0.672	429.6	13.049	0.0	18.000	6.624	0.000	98.03	HBD
BFD-72P DS	64	1.744	0.672	429.6	13.049	0.0	18.000	6.624	0.000	98.03	HBD
BFD-98P-1	9	1.081	0.423	429.6	12.461	0.0	18.000	6.624	0.000	98.03	HBD
===>Grouped by Line:	***FW76-1-DISHDR to SG22***								***Sorted By: Average Wear Rate***		
BFD-VALVE-BFD-6-1	25	4.929	1.899	429.6	15.861	0.0	18.000	6.624	0.000	98.03	HBD
BFD-VALVE-BFD-7-1	22	4.929	1.899	429.6	15.859	0.0	18.000	6.624	0.000	98.03	HBD
BFD-VALVE-BFD-5-1	22	4.360	1.680	429.6	13.049	0.0	18.000	6.624	0.000	98.03	HBD
BFD-VALVE-FCV-427	24	4.360	1.680	429.6	13.049	0.0	18.000	6.624	0.000	98.03	HBD
BFD-77R	18	3.921	1.511	429.6	27.714	0.0	12.750	6.624	0.000	98.03	HBD
BFD-78	2	3.226	1.243	429.6	13.049	0.0	18.000	6.624	0.000	98.03	HBD
BFD-77	2	3.226	1.243	429.6	13.049	0.0	18.000	6.624	0.000	98.03	HBD
BFD-76	2	3.226	1.243	429.6	13.049	0.0	18.000	6.624	0.000	98.03	HBD
BFD-74	2	3.226	1.243	429.6	13.049	0.0	18.000	6.624	0.000	98.03	HBD
BFD-73	4	3.134	1.208	429.6	12.461	0.0	18.000	6.624	0.000	98.03	HBD
BFD-91	2	3.134	1.208	429.6	12.461	0.0	18.000	6.624	0.000	98.03	HBD
BFD-92	2	3.134	1.208	429.6	12.461	0.0	18.000	6.624	0.000	98.03	HBD
BFD-92-2	2	3.134	1.208	429.6	12.461	0.0	18.000	6.624	0.000	98.03	HBD
BFD-93	2	3.134	1.208	429.6	12.461	0.0	18.000	6.624	0.000	98.03	HBD

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***FW76-1-DISHDR to SG22***								***Sorted By: Average Wear Rate***		
BFD-95	3	2.965	1.142	429.6	12.461	0.0	18.000	6.624	0.000	98.03	HBD
BFD-95N	30	2.959	1.140	429.6	10.047	0.0	20.000	6.624	0.000	98.03	HBD
BFD-75	1	2.878	1.109	429.6	13.049	0.0	18.000	6.624	0.000	98.03	HBD
BFD-92-1	1	2.795	1.077	429.6	12.461	0.0	18.000	6.624	0.000	98.03	HBD
BFD-94	1	2.795	1.077	429.6	12.461	0.0	18.000	6.624	0.000	98.03	HBD
BFD-73P	54	2.711	1.044	429.6	12.461	0.0	18.000	6.624	0.000	98.03	HBD
BFD-77R (D/S)	18	2.616	1.008	429.6	13.049	0.0	18.000	6.624	0.000	98.03	HBD
BFD-95R	18	2.372	0.914	429.6	12.461	0.0	18.000	6.624	0.000	98.03	HBD
BFD-95R (D/S)	18	2.219	0.855	429.6	10.047	0.0	20.000	6.624	0.000	98.03	HBD
BFD-78P-1 US	52	2.180	0.840	429.6	13.049	0.0	18.000	6.624	0.000	98.03	HBD
BFD-76P US	52	2.180	0.840	429.6	13.049	0.0	18.000	6.624	0.000	98.03	HBD
BFD-75P	52	2.180	0.840	429.6	13.049	0.0	18.000	6.624	0.000	98.03	HBD
BFD-73P	52	2.180	0.840	429.6	13.049	0.0	18.000	6.624	0.000	98.03	HBD
BFD-91P	52	2.118	0.816	429.6	12.461	0.0	18.000	6.624	0.000	98.03	HBD
BFD-92P	52	2.118	0.816	429.6	12.461	0.0	18.000	6.624	0.000	98.03	HBD
BFD-92P-2	52	2.118	0.816	429.6	12.461	0.0	18.000	6.624	0.000	98.03	HBD
BFD-93P US	52	2.118	0.816	429.6	12.461	0.0	18.000	6.624	0.000	98.03	HBD
BFD-93P DS	52	2.118	0.816	429.6	12.461	0.0	18.000	6.624	0.000	98.03	HBD
BFD-95P	53	2.118	0.816	429.6	12.461	0.0	18.000	6.624	0.000	98.03	HBD
BFD-78P-2	58	1.918	0.739	429.6	13.049	0.0	18.000	6.624	0.000	98.03	HBD
BFD-77P	58	1.918	0.739	429.6	13.049	0.0	18.000	6.624	0.000	98.03	HBD
BFD-74P	51	1.918	0.739	429.6	13.049	0.0	18.000	6.624	0.000	98.03	HBD
BFD-92P-1	51	1.864	0.718	429.6	12.461	0.0	18.000	6.624	0.000	98.03	HBD
BFD-78P	64	1.744	0.672	429.6	13.049	0.0	18.000	6.624	0.000	98.03	HBD
BFD-92P-3	9	1.081	0.423	429.6	12.461	0.0	18.000	6.624	0.000	98.03	HBD
===>Grouped by Line:	***FW76-2-DISHDR to SG22***								***Sorted By: Average Wear Rate***		
BFD-78T (BR/SE)	13	4.360	1.680	429.6	13.049	0.0	18.000	6.624	0.000	98.03	HBD
BFD-78T	13	4.120	1.587	429.6	13.478	0.0	30.000	6.624	0.000	98.03	HBD
BFD-78T (D/S)	13	3.285	1.265	429.6	8.985	0.0	30.000	6.624	0.000	98.03	HBD
===>Grouped by Line:	***FW77-1-DISHDR to SG24***								***Sorted By: Average Wear Rate***		
BFD-VALVE-BFD-6-3	25	4.929	1.899	429.6	15.861	0.0	18.000	6.624	0.000	98.03	HBD
BFD-VALVE-BFD-7-3	22	4.929	1.899	429.6	15.859	0.0	18.000	6.624	0.000	98.03	HBD
BFD-VALVE-BFD-5-3	22	4.360	1.680	429.6	13.049	0.0	18.000	6.624	0.000	98.03	HBD
BFD-VALVE-FCV-447	24	4.360	1.680	429.6	13.049	0.0	18.000	6.624	0.000	98.03	HBD

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***FW77-1-DISHDR to SG24***								***Sorted By: Average Wear Rate***		
BFD-83R	18	3.921	1.511	429.6	27.714	0.0	12.750	6.624	0.000	98.03	HBD
BFD-106N	30	3.388	1.305	429.6	12.461	0.0	18.000	6.624	0.000	98.03	HBD
BFD-84	2	3.226	1.243	429.6	13.049	0.0	18.000	6.624	0.000	98.03	HBD
BFD-83	4	3.226	1.243	429.6	13.049	0.0	18.000	6.624	0.000	98.03	HBD
BFD-82	2	3.226	1.243	429.6	13.049	0.0	18.000	6.624	0.000	98.03	HBD
BFD-80	4	3.226	1.243	429.6	13.049	0.0	18.000	6.624	0.000	98.03	HBD
BFD-79	4	3.134	1.208	429.6	12.461	0.0	18.000	6.624	0.000	98.03	HBD
BFD-104	2	3.134	1.208	429.6	12.461	0.0	18.000	6.624	0.000	98.03	HBD
BFD-105	2	3.134	1.208	429.6	12.461	0.0	18.000	6.624	0.000	98.03	HBD
BFD-105-1	4	3.134	1.208	429.6	12.461	0.0	18.000	6.624	0.000	98.03	HBD
BFD-106	4	3.134	1.208	429.6	12.461	0.0	18.000	6.624	0.000	98.03	HBD
BFD-81	1	2.878	1.109	429.6	13.049	0.0	18.000	6.624	0.000	98.03	HBD
BFD-82P US	54	2.790	1.075	429.6	13.049	0.0	18.000	6.624	0.000	98.03	HBD
BFD-82P DS	54	2.790	1.075	429.6	13.049	0.0	18.000	6.624	0.000	98.03	HBD
BFD-80P	54	2.790	1.075	429.6	13.049	0.0	18.000	6.624	0.000	98.03	HBD
BFD-104P	54	2.711	1.044	429.6	12.461	0.0	18.000	6.624	0.000	98.03	HBD
BFD-105P-1	54	2.711	1.044	429.6	12.461	0.0	18.000	6.624	0.000	98.03	HBD
BFD-106P	54	2.711	1.044	429.6	12.461	0.0	18.000	6.624	0.000	98.03	HBD
BFD-83R (D/S)	18	2.616	1.008	429.6	13.049	0.0	18.000	6.624	0.000	98.03	HBD
BFD-84P-1	52	2.180	0.840	429.6	13.049	0.0	18.000	6.624	0.000	98.03	HBD
BFD-81P	52	2.180	0.840	429.6	13.049	0.0	18.000	6.624	0.000	98.03	HBD
BFD-105P	52	2.118	0.816	429.6	12.461	0.0	18.000	6.624	0.000	98.03	HBD
BFD-84P-2	58	1.918	0.739	429.6	13.049	0.0	18.000	6.624	0.000	98.03	HBD
BFD-84P	64	1.744	0.672	429.6	13.049	0.0	18.000	6.624	0.000	98.03	HBD
BFD-105P-2	9	1.081	0.423	429.6	12.461	0.0	18.000	6.624	0.000	98.03	HBD
===>Grouped by Line:	***FW77-2-DISHDR to SG24***								***Sorted By: Average Wear Rate***		
BFD-84T (BR/SE)	13	4.360	1.680	429.6	13.049	0.0	18.000	6.624	0.000	98.03	HBD
BFD-84T	13	3.285	1.265	429.6	8.985	0.0	30.000	6.624	0.000	98.03	HBD
BFD-84T (D/S)	13	1.902	0.744	429.6	4.493	0.0	30.000	6.624	0.000	98.03	HBD
===>Grouped by Line:	***FW78-1-DISHDR to SG23***								***Sorted By: Average Wear Rate***		
BFD-VALVE-BFD-6-2	25	4.929	1.899	429.6	15.861	0.0	18.000	6.624	0.000	98.03	HBD
BFD-VALVE-BFD-7-2	22	4.929	1.899	429.6	15.859	0.0	18.000	6.624	0.000	98.03	HBD
BFD-VALVE-BFD-5-2	22	4.360	1.680	429.6	13.049	0.0	18.000	6.624	0.000	98.03	HBD
BFD-VALVE-FCV-437	24	4.360	1.680	429.6	13.049	0.0	18.000	6.624	0.000	98.03	HBD

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***FW78-1-DISHDR to SG23***								***Sorted By: Average Wear Rate***		
BFD-3R	18	3.921	1.511	429.6	27.714	0.0	12.750	6.624	0.000	98.03	HBD
BFD-103N	30	3.388	1.305	429.6	12.461	0.0	18.000	6.624	0.000	98.03	HBD
BFD-89	2	3.226	1.243	429.6	13.049	0.0	18.000	6.624	0.000	98.03	HBD
BFD-3	2	3.226	1.243	429.6	13.049	0.0	18.000	6.624	0.000	98.03	HBD
BFD-88	2	3.226	1.243	429.6	13.049	0.0	18.000	6.624	0.000	98.03	HBD
BFD-87	2	3.226	1.243	429.6	13.049	0.0	18.000	6.624	0.000	98.03	HBD
BFD-86	4	3.134	1.208	429.6	12.461	0.0	18.000	6.624	0.000	98.03	HBD
BFD-85	4	3.134	1.208	429.6	12.461	0.0	18.000	6.624	0.000	98.03	HBD
BFD-100	2	3.134	1.208	429.6	12.461	0.0	18.000	6.624	0.000	98.03	HBD
BFD-101	2	3.134	1.208	429.6	12.461	0.0	18.000	6.624	0.000	98.03	HBD
BFD-102	2	3.134	1.208	429.6	12.461	0.0	18.000	6.624	0.000	98.03	HBD
BFD-103	2	3.134	1.208	429.6	12.461	0.0	18.000	6.624	0.000	98.03	HBD
BFD-89T (BR/SE)	12	2.965	1.142	429.6	13.049	0.0	18.000	6.624	0.000	98.03	HBD
BFD-100P	54	2.711	1.044	429.6	12.461	0.0	18.000	6.624	0.000	98.03	HBD
BFD-3R (D/S)	18	2.616	1.008	429.6	13.049	0.0	18.000	6.624	0.000	98.03	HBD
BFD-89P-1	52	2.180	0.840	429.6	13.049	0.0	18.000	6.624	0.000	98.03	HBD
BFD-88P	52	2.180	0.840	429.6	13.049	0.0	18.000	6.624	0.000	98.03	HBD
BFD-87P US	52	2.180	0.840	429.6	13.049	0.0	18.000	6.624	0.000	98.03	HBD
BFD-87P DS	52	2.180	0.840	429.6	13.049	0.0	18.000	6.624	0.000	98.03	HBD
BFD-86P US	52	2.180	0.840	429.6	13.049	0.0	18.000	6.624	0.000	98.03	HBD
BFD-86P DS	52	2.180	0.840	429.6	13.049	0.0	18.000	6.624	0.000	98.03	HBD
BFD-101P	52	2.118	0.816	429.6	12.461	0.0	18.000	6.624	0.000	98.03	HBD
BFD-102P	52	2.118	0.816	429.6	12.461	0.0	18.000	6.624	0.000	98.03	HBD
BFD-102P-1	52	2.118	0.816	429.6	12.461	0.0	18.000	6.624	0.000	98.03	HBD
BFD-103P	52	2.118	0.816	429.6	12.461	0.0	18.000	6.624	0.000	98.03	HBD
BFD-89P-2	58	1.918	0.739	429.6	13.049	0.0	18.000	6.624	0.000	98.03	HBD
BFD-3P	58	1.918	0.739	429.6	13.049	0.0	18.000	6.624	0.000	98.03	HBD
BFD-89P	64	1.744	0.672	429.6	13.049	0.0	18.000	6.624	0.000	98.03	HBD
BFD-89T	12	1.560	0.610	429.6	4.493	0.0	30.000	6.624	0.000	98.03	HBD
BFD-102P-2	9	1.081	0.423	429.6	12.461	0.0	18.000	6.624	0.000	98.03	HBD

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).db

Wear Rate Report

Pass 1 Analysis Exclude Measured Wear

Report Date/Time: 7/6/2010 3:37:44PM
AnalysisDate/Time: 7/6/2010 3:20:28PM

CHECWORKS SFA Version: 3.0 SP-1 (build 109)
Duty Factor (Global) : 1.000

Run Name: FW FWH 26 TO STM GEN
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 1.000

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line: FW74-1-FWH26A to DISHDR										***Sorted By: Flow Order***	
BFD-55N	31	5.118	1.972	429.6	17.382	0.0	18.000	6.624	0.000	98.03	HBD
BFD-55	4	3.787	1.459	429.6	17.382	0.0	18.000	6.624	0.000	98.03	HBD
BFD-55P	54	3.275	1.262	429.6	17.382	0.0	18.000	6.624	0.000	98.03	HBD
BFD-56	2	3.787	1.459	429.6	17.382	0.0	18.000	6.624	0.000	98.03	HBD
BFD-VALVE-BFD-4	22	5.118	1.972	429.6	17.382	0.0	18.000	6.624	0.000	98.03	HBD
BFD-56P-1	58	2.252	0.868	429.6	17.382	0.0	18.000	6.624	0.000	98.03	HBD
BFD-57	2	3.787	1.459	429.6	17.382	0.0	18.000	6.624	0.000	98.03	HBD
BFD-57P	52	2.559	0.986	429.6	17.382	0.0	18.000	6.624	0.000	98.03	HBD
BFD-58	2	3.787	1.459	429.6	17.382	0.0	18.000	6.624	0.000	98.03	HBD
BFD-58P	52	2.559	0.986	429.6	17.382	0.0	18.000	6.624	0.000	98.03	HBD
BFD-59	2	3.787	1.459	429.6	17.382	0.0	18.000	6.624	0.000	98.03	HBD
BFD-59P	52	2.559	0.986	429.6	17.382	0.0	18.000	6.624	0.000	98.03	HBD
BFD-59R	18	2.865	1.104	429.6	17.377	0.0	18.000	6.624	0.000	98.03	HBD
BFD-59R (D/S)	18	1.460	0.571	429.6	5.984	0.0	30.000	6.624	0.000	98.03	HBD
===>Grouped by Line: FW74-2-FWH26B to DISHDR										***Sorted By: Flow Order***	
BFD-51N	31	5.118	1.972	429.6	17.382	0.0	18.000	6.624	0.000	98.03	HBD
BFD-51	4	3.787	1.459	429.6	17.382	0.0	18.000	6.624	0.000	98.03	HBD
BFD-51P	54	3.275	1.262	429.6	17.382	0.0	18.000	6.624	0.000	98.03	HBD
BFD-52	2	3.787	1.459	429.6	17.382	0.0	18.000	6.624	0.000	98.03	HBD
BFD-52P	52	2.559	0.986	429.6	17.382	0.0	18.000	6.624	0.000	98.03	HBD
BFD-VALVE-BFD-4-1	22	5.118	1.972	429.6	17.382	0.0	18.000	6.624	0.000	98.03	HBD
BFD-52P-1	58	2.252	0.868	429.6	17.382	0.0	18.000	6.624	0.000	98.03	HBD
BFD-53	2	3.787	1.459	429.6	17.382	0.0	18.000	6.624	0.000	98.03	HBD
BFD-53P	52	2.559	0.986	429.6	17.382	0.0	18.000	6.624	0.000	98.03	HBD
BFD-54	2	3.787	1.459	429.6	17.382	0.0	18.000	6.624	0.000	98.03	HBD

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***FW74-2-FWH26B to DISHDR***								***Sorted By: Flow Order***		
BFD-54P	52	2.559	0.986	429.6	17.382	0.0	18.000	6.624	0.000	98.03	HBD
===>Grouped by Line:	***FW74-3-FWH26 to DISHDR***								***Sorted By: Flow Order***		
BFD-54T	12	1.996	0.780	429.6	5.984	0.0	30.000	6.624	0.000	98.03	HBD
BFD-54T (BR/SE)	12	3.480	1.341	429.6	17.377	0.0	18.000	6.624	0.000	98.03	HBD
BFD-54T (D/S)	12	3.164	1.219	429.6	11.986	0.0	30.000	6.624	0.000	98.03	HBD
BFD-54P-1	62	1.543	0.595	429.6	11.986	0.0	30.000	6.624	0.000	98.03	HBD
===>Grouped by Line:	***FW74-4-FWH26C to DISHDR***								***Sorted By: Flow Order***		
BFD-47N	31	5.118	1.972	429.6	17.382	0.0	18.000	6.624	0.000	98.03	HBD
BFD-47	2	3.787	1.459	429.6	17.382	0.0	18.000	6.624	0.000	98.03	HBD
BFD-47P	52	2.559	0.986	429.6	17.382	0.0	18.000	6.624	0.000	98.03	HBD
BFD-48	2	3.787	1.459	429.6	17.382	0.0	18.000	6.624	0.000	98.03	HBD
BFD-48P	52	2.559	0.986	429.6	17.382	0.0	18.000	6.624	0.000	98.03	HBD
BFD-VALVE-BFD-4-2	22	5.118	1.972	429.6	17.382	0.0	18.000	6.624	0.000	98.03	HBD
BFD-48P-1	58	2.252	0.868	429.6	17.382	0.0	18.000	6.624	0.000	98.03	HBD
BFD-49	2	3.787	1.459	429.6	17.382	0.0	18.000	6.624	0.000	98.03	HBD
BFD-49P	52	2.559	0.986	429.6	17.382	0.0	18.000	6.624	0.000	98.03	HBD
BFD-50	2	3.787	1.459	429.6	17.382	0.0	18.000	6.624	0.000	98.03	HBD
BFD-50P US	52	2.559	0.986	429.6	17.382	0.0	18.000	6.624	0.000	98.03	HBD
BFD-50P DS	52	2.559	0.986	429.6	17.382	0.0	18.000	6.624	0.000	98.03	HBD
===>Grouped by Line:	***FW74-5-FWH26 to DISHDR***								***Sorted By: Flow Order***		
BFD-50T	12	3.164	1.219	429.6	11.986	0.0	30.000	6.624	0.000	98.03	HBD
BFD-50T (BR/SE)	12	3.480	1.341	429.6	17.377	0.0	18.000	6.624	0.000	98.03	HBD
BFD-50T (D/S)	12	3.968	1.529	429.6	17.970	0.0	30.000	6.624	0.000	98.03	HBD
BFD-50P-1	62	1.936	0.746	429.6	17.970	0.0	30.000	6.624	0.000	98.03	HBD
BFD-46T	15	2.903	1.119	429.6	17.970	0.0	30.000	6.624	0.000	98.03	HBD
BFD-46T (D/S)	15	2.903	1.119	429.6	17.970	0.0	30.000	6.624	0.000	98.03	HBD
BFD-46P	65	1.936	0.746	429.6	17.970	0.0	30.000	6.624	0.000	98.03	HBD
BFD-60	2	3.581	1.380	429.6	17.970	0.0	30.000	6.624	0.000	98.03	HBD
BFD-30	4	3.581	1.380	429.6	17.970	0.0	30.000	6.624	0.000	98.03	HBD
BFD-30P US	54	3.097	1.193	429.6	17.970	0.0	30.000	6.624	0.000	98.03	HBD
BFD-30P DS	54	3.097	1.193	429.6	17.970	0.0	30.000	6.624	0.000	98.03	HBD
BFD-31	2	3.581	1.380	429.6	17.970	0.0	30.000	6.624	0.000	98.03	HBD
BFD-31P US	52	2.419	0.932	429.6	17.970	0.0	30.000	6.624	0.000	98.03	HBD
BFD-61	2	3.581	1.380	429.6	17.970	0.0	30.000	6.624	0.000	98.03	HBD

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***FW74-5-FWH26 to DISHDR***									***Sorted By: Flow Order***	
BFD-61P	52	2.419	0.932	429.6	17.970	0.0	30.000	6.624	0.000	98.03	HBD
BFD-62	2	3.581	1.380	429.6	17.970	0.0	30.000	6.624	0.000	98.03	HBD
BFD-62P US	52	2.419	0.932	429.6	17.970	0.0	30.000	6.624	0.000	98.03	HBD
BFD-62P DS	52	2.419	0.932	429.6	17.970	0.0	30.000	6.624	0.000	98.03	HBD
BFD-63	2	3.581	1.380	429.6	17.970	0.0	30.000	6.624	0.000	98.03	HBD
BFD-63P US	52	2.419	0.932	429.6	17.970	0.0	30.000	6.624	0.000	98.03	HBD
BFD-63P DS	52	2.419	0.932	429.6	17.970	0.0	30.000	6.624	0.000	98.03	HBD
BFD-64	2	3.581	1.380	429.6	17.970	0.0	30.000	6.624	0.000	98.03	HBD
BFD-64P	52	2.419	0.932	429.6	17.970	0.0	30.000	6.624	0.000	98.03	HBD
BFD-65	2	3.581	1.380	429.6	17.970	0.0	30.000	6.624	0.000	98.03	HBD
BFD-65P	52	2.419	0.932	429.6	17.970	0.0	30.000	6.624	0.000	98.03	HBD
BFD-65P-1	52	2.419	0.932	429.6	17.970	0.0	30.000	6.624	0.000	98.03	HBD
BFD-72T	13	4.839	1.864	429.6	17.970	0.0	30.000	6.624	0.000	98.03	HBD
BFD-72T (BR/SE)	13	4.360	1.680	429.6	13.049	0.0	18.000	6.624	0.000	98.03	HBD
BFD-72T (D/S)	13	4.120	1.587	429.6	13.478	0.0	30.000	6.624	0.000	98.03	HBD
===>Grouped by Line:	***FW75-1-DISHDR to SG21***									***Sorted By: Flow Order***	
BFD-72P US	64	1.744	0.672	429.6	13.049	0.0	18.000	6.624	0.000	98.03	HBD
BFD-72P DS	64	1.744	0.672	429.6	13.049	0.0	18.000	6.624	0.000	98.03	HBD
BFD-72	2	3.226	1.243	429.6	13.049	0.0	18.000	6.624	0.000	98.03	HBD
BFD-72P-1 US	52	2.180	0.840	429.6	13.049	0.0	18.000	6.624	0.000	98.03	HBD
BFD-72P-1 DS	52	2.180	0.840	429.6	13.049	0.0	18.000	6.624	0.000	98.03	HBD
BFD-VALVE-BFD-5	22	4.360	1.680	429.6	13.049	0.0	18.000	6.624	0.000	98.03	HBD
BFD-72R	7	3.052	1.176	429.6	13.049	0.0	18.000	6.624	0.000	98.03	HBD
BFD-72R (D/S)	7	4.482	1.727	429.6	27.724	0.0	12.750	6.624	0.000	98.03	HBD
BFD-VALVE-FCV-417	24	4.360	1.680	429.6	13.049	0.0	18.000	6.624	0.000	98.03	HBD
BFD-71R	18	3.921	1.511	429.6	27.714	0.0	12.750	6.624	0.000	98.03	HBD
BFD-71R (D/S)	18	2.616	1.008	429.6	13.049	0.0	18.000	6.624	0.000	98.03	HBD
BFD-71	4	3.226	1.243	429.6	13.049	0.0	18.000	6.624	0.000	98.03	HBD
BFD-70P US	52	2.180	0.840	429.6	13.049	0.0	18.000	6.624	0.000	98.03	HBD
BFD-70P DS	52	2.180	0.840	429.6	13.049	0.0	18.000	6.624	0.000	98.03	HBD
BFD-70	2	3.226	1.243	429.6	13.049	0.0	18.000	6.624	0.000	98.03	HBD
BFD-69P US	52	2.180	0.840	429.6	13.049	0.0	18.000	6.624	0.000	98.03	HBD
BFD-69P DS	52	2.180	0.840	429.6	13.049	0.0	18.000	6.624	0.000	98.03	HBD
BFD-69	1	2.878	1.109	429.6	13.049	0.0	18.000	6.624	0.000	98.03	HBD

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***FW75-1-DISHDR to SG21***									***Sorted By: Flow Order***	
BFD-68P US	51	1.918	0.739	429.6	13.049	0.0	18.000	6.624	0.000	98.03	HBD
BFD-68P DS	51	1.918	0.739	429.6	13.049	0.0	18.000	6.624	0.000	98.03	HBD
BFD-68	2	3.226	1.243	429.6	13.049	0.0	18.000	6.624	0.000	98.03	HBD
BFD-67P US	52	2.180	0.840	429.6	13.049	0.0	18.000	6.624	0.000	98.03	HBD
BFD-67P DS	52	2.180	0.840	429.6	13.049	0.0	18.000	6.624	0.000	98.03	HBD
BFD-VALVE-BFD-6	25	4.929	1.899	429.6	15.861	0.0	18.000	6.624	0.000	98.03	HBD
BFD-VALVE-BFD-7	22	4.929	1.899	429.6	15.859	0.0	18.000	6.624	0.000	98.03	HBD
BFD-67	4	3.134	1.208	429.6	12.461	0.0	18.000	6.624	0.000	98.03	HBD
BFD-66	4	3.134	1.208	429.6	12.461	0.0	18.000	6.624	0.000	98.03	HBD
BFD-66P	54	2.711	1.044	429.6	12.461	0.0	18.000	6.624	0.000	98.03	HBD
BFD-96	2	3.134	1.208	429.6	12.461	0.0	18.000	6.624	0.000	98.03	HBD
BFD-96P	52	2.118	0.816	429.6	12.461	0.0	18.000	6.624	0.000	98.03	HBD
BFD-97	2	3.134	1.208	429.6	12.461	0.0	18.000	6.624	0.000	98.03	HBD
BFD-97P	52	2.118	0.816	429.6	12.461	0.0	18.000	6.624	0.000	98.03	HBD
BFD-98	2	3.134	1.208	429.6	12.461	0.0	18.000	6.624	0.000	98.03	HBD
BFD-98P	52	2.118	0.816	429.6	12.461	0.0	18.000	6.624	0.000	98.03	HBD
BFD-98P-1	9	1.081	0.423	429.6	12.461	0.0	18.000	6.624	0.000	98.03	HBD
BFD-99	2	3.134	1.208	429.6	12.461	0.0	18.000	6.624	0.000	98.03	HBD
BFD-99N	30	3.388	1.305	429.6	12.461	0.0	18.000	6.624	0.000	98.03	HBD
===>Grouped by Line:	***FW76-1-DISHDR to SG22***									***Sorted By: Flow Order***	
BFD-78P	64	1.744	0.672	429.6	13.049	0.0	18.000	6.624	0.000	98.03	HBD
BFD-78	2	3.226	1.243	429.6	13.049	0.0	18.000	6.624	0.000	98.03	HBD
BFD-78P-1 US	52	2.180	0.840	429.6	13.049	0.0	18.000	6.624	0.000	98.03	HBD
BFD-VALVE-BFD-5-1	22	4.360	1.680	429.6	13.049	0.0	18.000	6.624	0.000	98.03	HBD
BFD-78P-2	58	1.918	0.739	429.6	13.049	0.0	18.000	6.624	0.000	98.03	HBD
BFD-VALVE-FCV-427	24	4.360	1.680	429.6	13.049	0.0	18.000	6.624	0.000	98.03	HBD
BFD-77R	18	3.921	1.511	429.6	27.714	0.0	12.750	6.624	0.000	98.03	HBD
BFD-77R (D/S)	18	2.616	1.008	429.6	13.049	0.0	18.000	6.624	0.000	98.03	HBD
BFD-77P	58	1.918	0.739	429.6	13.049	0.0	18.000	6.624	0.000	98.03	HBD
BFD-77	2	3.226	1.243	429.6	13.049	0.0	18.000	6.624	0.000	98.03	HBD
BFD-76P US	52	2.180	0.840	429.6	13.049	0.0	18.000	6.624	0.000	98.03	HBD
BFD-76	2	3.226	1.243	429.6	13.049	0.0	18.000	6.624	0.000	98.03	HBD
BFD-75P	52	2.180	0.840	429.6	13.049	0.0	18.000	6.624	0.000	98.03	HBD
BFD-75	1	2.878	1.109	429.6	13.049	0.0	18.000	6.624	0.000	98.03	HBD

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***FW76-1-DISHDR to SG22***									***Sorted By: Flow Order***	
BFD-74P	51	1.918	0.739	429.6	13.049	0.0	18.000	6.624	0.000	98.03	HBD
BFD-74	2	3.226	1.243	429.6	13.049	0.0	18.000	6.624	0.000	98.03	HBD
BFD-73P	52	2.180	0.840	429.6	13.049	0.0	18.000	6.624	0.000	98.03	HBD
BFD-VALVE-BFD-6-1	25	4.929	1.899	429.6	15.861	0.0	18.000	6.624	0.000	98.03	HBD
BFD-VALVE-BFD-7-1	22	4.929	1.899	429.6	15.859	0.0	18.000	6.624	0.000	98.03	HBD
BFD-73	4	3.134	1.208	429.6	12.461	0.0	18.000	6.624	0.000	98.03	HBD
BFD-73P	54	2.711	1.044	429.6	12.461	0.0	18.000	6.624	0.000	98.03	HBD
BFD-91	2	3.134	1.208	429.6	12.461	0.0	18.000	6.624	0.000	98.03	HBD
BFD-91P	52	2.118	0.816	429.6	12.461	0.0	18.000	6.624	0.000	98.03	HBD
BFD-92	2	3.134	1.208	429.6	12.461	0.0	18.000	6.624	0.000	98.03	HBD
BFD-92P	52	2.118	0.816	429.6	12.461	0.0	18.000	6.624	0.000	98.03	HBD
BFD-92-1	1	2.795	1.077	429.6	12.461	0.0	18.000	6.624	0.000	98.03	HBD
BFD-92P-1	51	1.864	0.718	429.6	12.461	0.0	18.000	6.624	0.000	98.03	HBD
BFD-92-2	2	3.134	1.208	429.6	12.461	0.0	18.000	6.624	0.000	98.03	HBD
BFD-92P-2	52	2.118	0.816	429.6	12.461	0.0	18.000	6.624	0.000	98.03	HBD
BFD-92P-3	9	1.081	0.423	429.6	12.461	0.0	18.000	6.624	0.000	98.03	HBD
BFD-93	2	3.134	1.208	429.6	12.461	0.0	18.000	6.624	0.000	98.03	HBD
BFD-93P US	52	2.118	0.816	429.6	12.461	0.0	18.000	6.624	0.000	98.03	HBD
BFD-93P DS	52	2.118	0.816	429.6	12.461	0.0	18.000	6.624	0.000	98.03	HBD
BFD-94	1	2.795	1.077	429.6	12.461	0.0	18.000	6.624	0.000	98.03	HBD
BFD-95	3	2.965	1.142	429.6	12.461	0.0	18.000	6.624	0.000	98.03	HBD
BFD-95P	53	2.118	0.816	429.6	12.461	0.0	18.000	6.624	0.000	98.03	HBD
BFD-95R	18	2.372	0.914	429.6	12.461	0.0	18.000	6.624	0.000	98.03	HBD
BFD-95R (D/S)	18	2.219	0.855	429.6	10.047	0.0	20.000	6.624	0.000	98.03	HBD
BFD-95N	30	2.959	1.140	429.6	10.047	0.0	20.000	6.624	0.000	98.03	HBD
===>Grouped by Line:	***FW76-2-DISHDR to SG22***									***Sorted By: Flow Order***	
BFD-78T (BR/SE)	13	4.360	1.680	429.6	13.049	0.0	18.000	6.624	0.000	98.03	HBD
BFD-78T	13	4.120	1.587	429.6	13.478	0.0	30.000	6.624	0.000	98.03	HBD
BFD-78T (D/S)	13	3.285	1.265	429.6	8.985	0.0	30.000	6.624	0.000	98.03	HBD
===>Grouped by Line:	***FW77-1-DISHDR to SG24***									***Sorted By: Flow Order***	
BFD-84P	64	1.744	0.672	429.6	13.049	0.0	18.000	6.624	0.000	98.03	HBD
BFD-84	2	3.226	1.243	429.6	13.049	0.0	18.000	6.624	0.000	98.03	HBD
BFD-84P-1	52	2.180	0.840	429.6	13.049	0.0	18.000	6.624	0.000	98.03	HBD
BFD-VALVE-BFD-5-3	22	4.360	1.680	429.6	13.049	0.0	18.000	6.624	0.000	98.03	HBD

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***FW77-1-DISHDR to SG24***									***Sorted By: Flow Order***	
BFD-84P-2	58	1.918	0.739	429.6	13.049	0.0	18.000	6.624	0.000	98.03	HBD
BFD-VALVE-FCV-447	24	4.360	1.680	429.6	13.049	0.0	18.000	6.624	0.000	98.03	HBD
BFD-83R	18	3.921	1.511	429.6	27.714	0.0	12.750	6.624	0.000	98.03	HBD
BFD-83R (D/S)	18	2.616	1.008	429.6	13.049	0.0	18.000	6.624	0.000	98.03	HBD
BFD-83	4	3.226	1.243	429.6	13.049	0.0	18.000	6.624	0.000	98.03	HBD
BFD-82P US	54	2.790	1.075	429.6	13.049	0.0	18.000	6.624	0.000	98.03	HBD
BFD-82P DS	54	2.790	1.075	429.6	13.049	0.0	18.000	6.624	0.000	98.03	HBD
BFD-82	2	3.226	1.243	429.6	13.049	0.0	18.000	6.624	0.000	98.03	HBD
BFD-81P	52	2.180	0.840	429.6	13.049	0.0	18.000	6.624	0.000	98.03	HBD
BFD-81	1	2.878	1.109	429.6	13.049	0.0	18.000	6.624	0.000	98.03	HBD
BFD-80	4	3.226	1.243	429.6	13.049	0.0	18.000	6.624	0.000	98.03	HBD
BFD-80P	54	2.790	1.075	429.6	13.049	0.0	18.000	6.624	0.000	98.03	HBD
BFD-VALVE-BFD-6-3	25	4.929	1.899	429.6	15.861	0.0	18.000	6.624	0.000	98.03	HBD
BFD-VALVE-BFD-7-3	22	4.929	1.899	429.6	15.859	0.0	18.000	6.624	0.000	98.03	HBD
BFD-79	4	3.134	1.208	429.6	12.461	0.0	18.000	6.624	0.000	98.03	HBD
BFD-104P	54	2.711	1.044	429.6	12.461	0.0	18.000	6.624	0.000	98.03	HBD
BFD-104	2	3.134	1.208	429.6	12.461	0.0	18.000	6.624	0.000	98.03	HBD
BFD-105P	52	2.118	0.816	429.6	12.461	0.0	18.000	6.624	0.000	98.03	HBD
BFD-105	2	3.134	1.208	429.6	12.461	0.0	18.000	6.624	0.000	98.03	HBD
BFD-105-1	4	3.134	1.208	429.6	12.461	0.0	18.000	6.624	0.000	98.03	HBD
BFD-105P-1	54	2.711	1.044	429.6	12.461	0.0	18.000	6.624	0.000	98.03	HBD
BFD-105P-2	9	1.081	0.423	429.6	12.461	0.0	18.000	6.624	0.000	98.03	HBD
BFD-106	4	3.134	1.208	429.6	12.461	0.0	18.000	6.624	0.000	98.03	HBD
BFD-106P	54	2.711	1.044	429.6	12.461	0.0	18.000	6.624	0.000	98.03	HBD
BFD-106N	30	3.388	1.305	429.6	12.461	0.0	18.000	6.624	0.000	98.03	HBD
===>Grouped by Line:	***FW77-2-DISHDR to SG24***									***Sorted By: Flow Order***	
BFD-84T (BR/SE)	13	4.360	1.680	429.6	13.049	0.0	18.000	6.624	0.000	98.03	HBD
BFD-84T	13	3.285	1.265	429.6	8.985	0.0	30.000	6.624	0.000	98.03	HBD
BFD-84T (D/S)	13	1.902	0.744	429.6	4.493	0.0	30.000	6.624	0.000	98.03	HBD
===>Grouped by Line:	***FW78-1-DISHDR to SG23***									***Sorted By: Flow Order***	
BFD-89T (BR/SE)	12	2.965	1.142	429.6	13.049	0.0	18.000	6.624	0.000	98.03	HBD
BFD-89P	64	1.744	0.672	429.6	13.049	0.0	18.000	6.624	0.000	98.03	HBD
BFD-89	2	3.226	1.243	429.6	13.049	0.0	18.000	6.624	0.000	98.03	HBD
BFD-89P-1	52	2.180	0.840	429.6	13.049	0.0	18.000	6.624	0.000	98.03	HBD

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	FW78-1-DISHDR to SG23									Sorted By: Flow Order	
BFD-VALVE-BFD-5-2	22	4.360	1.680	429.6	13.049	0.0	18.000	6.624	0.000	98.03	HBD
BFD-89P-2	58	1.918	0.739	429.6	13.049	0.0	18.000	6.624	0.000	98.03	HBD
BFD-VALVE-FCV-437	24	4.360	1.680	429.6	13.049	0.0	18.000	6.624	0.000	98.03	HBD
BFD-3R	18	3.921	1.511	429.6	27.714	0.0	12.750	6.624	0.000	98.03	HBD
BFD-3R (D/S)	18	2.616	1.008	429.6	13.049	0.0	18.000	6.624	0.000	98.03	HBD
BFD-3P	58	1.918	0.739	429.6	13.049	0.0	18.000	6.624	0.000	98.03	HBD
BFD-3	2	3.226	1.243	429.6	13.049	0.0	18.000	6.624	0.000	98.03	HBD
BFD-88P	52	2.180	0.840	429.6	13.049	0.0	18.000	6.624	0.000	98.03	HBD
BFD-88	2	3.226	1.243	429.6	13.049	0.0	18.000	6.624	0.000	98.03	HBD
BFD-87P US	52	2.180	0.840	429.6	13.049	0.0	18.000	6.624	0.000	98.03	HBD
BFD-87P DS	52	2.180	0.840	429.6	13.049	0.0	18.000	6.624	0.000	98.03	HBD
BFD-87	2	3.226	1.243	429.6	13.049	0.0	18.000	6.624	0.000	98.03	HBD
BFD-86P US	52	2.180	0.840	429.6	13.049	0.0	18.000	6.624	0.000	98.03	HBD
BFD-86P DS	52	2.180	0.840	429.6	13.049	0.0	18.000	6.624	0.000	98.03	HBD
BFD-VALVE-BFD-6-2	25	4.929	1.899	429.6	15.861	0.0	18.000	6.624	0.000	98.03	HBD
BFD-VALVE-BFD-7-2	22	4.929	1.899	429.6	15.859	0.0	18.000	6.624	0.000	98.03	HBD
BFD-86	4	3.134	1.208	429.6	12.461	0.0	18.000	6.624	0.000	98.03	HBD
BFD-85	4	3.134	1.208	429.6	12.461	0.0	18.000	6.624	0.000	98.03	HBD
BFD-100P	54	2.711	1.044	429.6	12.461	0.0	18.000	6.624	0.000	98.03	HBD
BFD-100	2	3.134	1.208	429.6	12.461	0.0	18.000	6.624	0.000	98.03	HBD
BFD-101P	52	2.118	0.816	429.6	12.461	0.0	18.000	6.624	0.000	98.03	HBD
BFD-101	2	3.134	1.208	429.6	12.461	0.0	18.000	6.624	0.000	98.03	HBD
BFD-102P	52	2.118	0.816	429.6	12.461	0.0	18.000	6.624	0.000	98.03	HBD
BFD-102	2	3.134	1.208	429.6	12.461	0.0	18.000	6.624	0.000	98.03	HBD
BFD-102P-1	52	2.118	0.816	429.6	12.461	0.0	18.000	6.624	0.000	98.03	HBD
BFD-102P-2	9	1.081	0.423	429.6	12.461	0.0	18.000	6.624	0.000	98.03	HBD
BFD-103	2	3.134	1.208	429.6	12.461	0.0	18.000	6.624	0.000	98.03	HBD
BFD-103P	52	2.118	0.816	429.6	12.461	0.0	18.000	6.624	0.000	98.03	HBD
BFD-103N	30	3.388	1.305	429.6	12.461	0.0	18.000	6.624	0.000	98.03	HBD
BFD-89T	12	1.560	0.610	429.6	4.493	0.0	30.000	6.624	0.000	98.03	HBD

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).db

Service Life Report

Pass 1 Analysis Exclude Measured Wear

Report Date/Time: 7/6/2010 3:37:44PM
AnalysisDate/Time: 7/6/2010 3:20:28PM

Run Name: FW FWH 26 TO STM GEN
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 1.000

CHECWORKS SFA Version: 3.0 SP-1 (build 109)
Duty Factor (Global) :1.000

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **FW74-1-FWH26A to DISHDR**					***Sorted By:Remaining Life***		
BFD-VALVE-BFD-4	0.000	0.796	0.889	0.889	-185,956	No	243,721
BFD-55N	0.000	0.796	0.832	0.832	-118,479	No	243,721
BFD-59R (D/S)	0.000	1.219	1.195	1.195	374,523	No	243,721
BFD-58	0.000	0.972	0.832	0.832	840,723	Yes	243,721
BFD-56	0.000	0.973	0.832	0.832	847,652	Yes	243,721
BFD-57	0.000	0.988	0.832	0.832	937,708	Yes	243,721
BFD-59	0.000	0.990	0.832	0.832	948,790	Yes	243,721
BFD-59R	0.000	0.857	0.717	0.717	1,113,280	No	243,721
BFD-55P	0.000	0.878	0.717	0.717	1,115,680	Yes	243,721
BFD-57P	0.000	0.878	0.717	0.717	1,428,394	Yes	243,721
BFD-58P	0.000	0.888	0.717	0.717	1,519,926	Yes	243,721
BFD-56P-1	0.000	0.885	0.717	0.717	1,692,570	Yes	243,721
BFD-59P	0.000	1.036	0.717	0.717	2,834,991	Yes	243,721
BFD-55	0.000	1.340	0.832	0.832	3,050,109	No	243,721
===>Grouped by Line: **FW74-2-FWH26B to DISHDR**					***Sorted By:Remaining Life***		
BFD-VALVE-BFD-4-1	0.000	0.796	0.889	0.889	-185,956	No	243,721
BFD-51N	0.000	0.796	0.832	0.832	-118,479	No	243,721
BFD-54	0.000	0.833	0.832	0.832	3,514	No	243,721
BFD-53	0.000	0.960	0.832	0.832	768,677	Yes	243,721
BFD-51P	0.000	0.847	0.717	0.717	901,750	No	243,721
BFD-52	0.000	1.028	0.832	0.832	1,173,658	Yes	243,721
BFD-52P	0.000	0.867	0.717	0.717	1,331,365	No	243,721
BFD-54P	0.000	0.867	0.717	0.717	1,331,365	No	243,721
BFD-52P-1	0.000	0.861	0.717	0.717	1,455,916	Yes	243,721
BFD-53P	0.000	0.896	0.717	0.717	1,591,011	Yes	243,721
BFD-51	0.000	1.251	0.832	0.832	2,512,497	No	243,721

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **FW74-3-FWH26 to DISHDR**					***Sorted By:Remaining Life***		
BFD-54P-1	0.000	1.217	1.195	1.195	325,606	No	243,721
BFD-54T (BR/SE)	0.000	0.863	0.717	0.717	955,681	Yes	243,721
BFD-54T (D/S)	0.000	1.336	1.195	1.195	1,013,032	Yes	243,721
BFD-54T	0.000	1.336	1.195	1.195	1,588,342	Yes	243,721
===>Grouped by Line: **FW74-4-FWH26C to DISHDR**					***Sorted By:Remaining Life***		
BFD-VALVE-BFD-4-2	0.000	0.796	0.889	0.889	-185,956	No	243,721
BFD-47N	0.000	0.796	0.832	0.832	-118,479	No	243,721
BFD-49	0.000	0.833	0.832	0.832	3,514	No	243,721
BFD-50	0.000	0.833	0.832	0.832	3,514	No	243,721
BFD-48	0.000	1.008	0.832	0.832	1,058,475	Yes	243,721
BFD-50P DS	0.000	0.854	0.717	0.717	1,213,924	Yes	243,721
BFD-48P	0.000	0.867	0.717	0.717	1,331,365	No	243,721
BFD-49P	0.000	0.867	0.717	0.717	1,331,365	No	243,721
BFD-50P US	0.000	0.867	0.717	0.717	1,331,365	No	243,721
BFD-47P	0.000	0.883	0.717	0.717	1,476,875	Yes	243,721
BFD-48P-1	0.000	0.875	0.717	0.717	1,599,177	No	243,721
BFD-47	0.000	1.105	0.832	0.832	1,640,839	No	243,721
===>Grouped by Line: **FW74-5-FWH26 to DISHDR**					***Sorted By:Remaining Life***		
BFD-62	0.000	1.160	1.195	1.195	-133,830	No	243,721
BFD-62P US	0.000	1.193	1.195	1.195	-21,323	No	243,721
BFD-50P-1	0.000	1.206	1.195	1.195	131,494	No	243,721
BFD-46P	0.000	1.206	1.195	1.195	131,494	No	243,721
BFD-30	0.000	1.262	1.195	1.195	425,949	Yes	243,721
BFD-63	0.000	1.291	1.195	1.195	610,091	Yes	243,721
BFD-50T (D/S)	0.000	1.302	1.195	1.195	614,572	No	243,721
BFD-46T (D/S)	0.000	1.280	1.195	1.195	664,329	No	243,721
BFD-72T (BR/SE)	0.000	0.857	0.717	0.717	732,830	Yes	243,721
BFD-50T	0.000	1.305	1.195	1.195	793,787	No	243,721
BFD-62P DS	0.000	1.285	1.195	1.195	848,469	Yes	243,721
BFD-30P US	0.000	1.311	1.195	1.195	850,300	Yes	243,721
BFD-30P DS	0.000	1.328	1.195	1.195	975,111	Yes	243,721
BFD-46T	0.000	1.325	1.195	1.195	1,016,737	No	243,721
BFD-63P US	0.000	1.307	1.195	1.195	1,055,215	Yes	243,721
BFD-61P	0.000	1.310	1.195	1.195	1,084,818	Yes	243,721
BFD-63P DS	0.000	1.316	1.195	1.195	1,138,803	No	243,721

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **FW74-5-FWH26 to DISHDR**					***Sorted By:Remaining Life***		
BFD-64P	0.000	1.320	1.195	1.195	1,171,292	Yes	243,721
BFD-60	0.000	1.387	1.195	1.195	1,221,688	Yes	243,721
BFD-72T	0.000	1.464	1.195	1.195	1,263,158	Yes	243,721
BFD-31P US	0.000	1.340	1.195	1.195	1,366,083	Yes	243,721
BFD-64	0.000	1.415	1.195	1.195	1,397,202	Yes	243,721
BFD-61	0.000	1.421	1.195	1.195	1,433,151	Yes	243,721
BFD-72T (D/S)	0.000	1.466	1.195	1.195	1,494,973	Yes	243,721
BFD-31	0.000	1.448	1.195	1.195	1,608,249	Yes	243,721
BFD-50T (BR/SE)	0.000	0.966	0.717	0.717	1,625,743	No	243,721
BFD-65	0.000	1.468	1.195	1.195	1,735,281	Yes	243,721
BFD-65P	0.000	1.384	1.195	1.195	1,777,836	Yes	243,721
BFD-65P-1	0.000	1.464	1.195	1.195	2,529,638	No	243,721
===>Grouped by Line: **FW75-1-DISHDR to SG21**					***Sorted By:Remaining Life***		
BFD-VALVE-BFD-6	0.000	0.801	0.889	0.889	-183,748	No	243,721
BFD-VALVE-BFD-7	0.000	0.801	0.889	0.889	-183,743	No	243,721
BFD-VALVE-BFD-5	0.000	0.817	0.889	0.889	-175,916	No	243,721
BFD-VALVE-FCV-417	0.000	0.817	0.889	0.889	-175,916	No	243,721
BFD-67	0.000	0.663	0.633	0.633	218,423	No	243,721
BFD-66	0.000	0.663	0.633	0.633	218,423	No	243,721
BFD-96	0.000	0.663	0.633	0.633	218,423	No	243,721
BFD-97	0.000	0.663	0.633	0.633	218,423	No	243,721
BFD-71R (D/S)	0.000	0.871	0.832	0.832	334,763	Yes	243,721
BFD-72R	0.000	0.886	0.832	0.832	399,447	Yes	243,721
BFD-99	0.000	0.601	0.544	0.544	412,271	Yes	243,721
BFD-71	0.000	0.901	0.832	0.832	484,716	Yes	243,721
BFD-69	0.000	0.916	0.832	0.832	659,931	Yes	243,721
BFD-99N	0.000	0.649	0.544	0.544	699,488	Yes	243,721
BFD-68	0.000	0.949	0.832	0.832	826,438	Yes	243,721
BFD-70	0.000	0.952	0.832	0.832	847,580	Yes	243,721
BFD-98	0.000	0.663	0.544	0.544	858,264	No	243,721
BFD-72R (D/S)	0.000	0.786	0.589	0.589	999,513	Yes	243,721
BFD-66P	0.000	0.675	0.544	0.544	1,091,210	No	243,721
BFD-71R	0.000	0.792	0.589	0.589	1,174,091	Yes	243,721
BFD-72	0.000	1.007	0.832	0.832	1,235,181	Yes	243,721
BFD-70P DS	0.000	0.865	0.717	0.717	1,545,047	Yes	243,721
BFD-96P	0.000	0.691	0.544	0.544	1,573,874	No	243,721

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **FW75-1-DISHDR to SG21**					***Sorted By:Remaining Life***		
BFD-97P	0.000	0.691	0.544	0.544	1,573,874	No	243,721
BFD-98P	0.000	0.691	0.544	0.544	1,573,874	No	243,721
BFD-70P US	0.000	0.877	0.717	0.717	1,664,656	Yes	243,721
BFD-72P-1 DS	0.000	0.877	0.717	0.717	1,672,720	No	243,721
BFD-67P DS	0.000	0.877	0.717	0.717	1,672,720	No	243,721
BFD-67P US	0.000	0.884	0.717	0.717	1,743,217	Yes	243,721
BFD-72P-1 US	0.000	0.893	0.717	0.717	1,837,086	Yes	243,721
BFD-69P DS	0.000	0.902	0.717	0.717	1,927,204	Yes	243,721
BFD-69P US	0.000	0.907	0.717	0.717	1,983,106	Yes	243,721
BFD-68P US	0.000	0.885	0.717	0.717	1,987,080	No	243,721
BFD-68P DS	0.000	0.896	0.717	0.717	2,122,527	Yes	243,721
BFD-72P US	0.000	0.887	0.717	0.717	2,221,690	Yes	243,721
BFD-72P DS	0.000	0.896	0.717	0.717	2,329,974	Yes	243,721
BFD-98P-1	0.000	0.703	0.544	0.544	3,286,215	No	243,721
===>Grouped by Line: **FW76-1-DISHDR to SG22**					***Sorted By:Remaining Life***		
BFD-VALVE-BFD-6-1	0.000	0.801	0.889	0.889	-183,748	No	243,721
BFD-VALVE-BFD-7-1	0.000	0.801	0.889	0.889	-183,743	No	243,721
BFD-VALVE-BFD-5-1	0.000	0.817	0.889	0.889	-175,916	No	243,721
BFD-VALVE-FCV-427	0.000	0.817	0.889	0.889	-175,916	No	243,721
BFD-78	0.000	0.848	0.832	0.832	114,076	No	243,721
BFD-74	0.000	0.848	0.832	0.832	114,076	No	243,721
BFD-75	0.000	0.858	0.832	0.832	204,580	No	243,721
BFD-95N	0.000	0.730	0.703	0.703	205,023	No	243,721
BFD-73	0.000	0.663	0.633	0.633	218,423	No	243,721
BFD-91	0.000	0.663	0.633	0.633	218,423	No	243,721
BFD-92	0.000	0.663	0.633	0.633	218,423	No	243,721
BFD-92-2	0.000	0.663	0.633	0.633	218,423	No	243,721
BFD-93	0.000	0.663	0.633	0.633	218,423	No	243,721
BFD-77R (D/S)	0.000	0.867	0.832	0.832	304,631	Yes	243,721
BFD-92-1	0.000	0.672	0.633	0.633	321,576	No	243,721
BFD-95R (D/S)	0.000	0.750	0.703	0.703	484,227	No	243,721
BFD-95R	0.000	0.684	0.633	0.633	491,962	No	243,721
BFD-77R	0.000	0.704	0.589	0.589	665,552	No	243,721
BFD-77	0.000	0.945	0.832	0.832	796,645	Yes	243,721
BFD-76	0.000	0.967	0.832	0.832	949,552	Yes	243,721
BFD-73P	0.000	0.675	0.544	0.544	1,091,210	No	243,721

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **FW76-1-DISHDR to SG22**					***Sorted By:Remaining Life***		
BFD-95	0.000	0.823	0.633	0.633	1,455,855	Yes	243,721
BFD-91P	0.000	0.691	0.544	0.544	1,573,874	No	243,721
BFD-92P	0.000	0.691	0.544	0.544	1,573,874	No	243,721
BFD-92P-2	0.000	0.691	0.544	0.544	1,573,874	No	243,721
BFD-93P US	0.000	0.691	0.544	0.544	1,573,874	No	243,721
BFD-95P	0.000	0.691	0.544	0.544	1,573,874	No	243,721
BFD-93P DS	0.000	0.697	0.544	0.544	1,639,908	No	243,721
BFD-78P-1 US	0.000	0.877	0.717	0.717	1,672,720	No	243,721
BFD-73P	0.000	0.877	0.717	0.717	1,672,720	No	243,721
BFD-76P US	0.000	0.880	0.717	0.717	1,695,945	Yes	243,721
BFD-94	0.000	0.862	0.633	0.633	1,867,345	No	243,721
BFD-92P-1	0.000	0.698	0.544	0.544	1,874,755	No	243,721
BFD-78P-2	0.000	0.885	0.717	0.717	1,987,080	No	243,721
BFD-74P	0.000	0.885	0.717	0.717	1,987,080	No	243,721
BFD-77P	0.000	0.886	0.717	0.717	2,002,721	Yes	243,721
BFD-75P	0.000	0.919	0.717	0.717	2,108,475	Yes	243,721
BFD-78P	0.000	0.889	0.717	0.717	2,249,047	No	243,721
BFD-92P-3	0.000	0.720	0.544	0.544	3,636,367	No	243,721
===>Grouped by Line: **FW76-2-DISHDR to SG22**					***Sorted By:Remaining Life***		
BFD-78T (D/S)	0.000	1.289	1.195	1.195	651,722	No	243,721
BFD-78T	0.000	1.320	1.195	1.195	689,265	No	243,721
BFD-78T (BR/SE)	0.000	0.880	0.717	0.717	852,775	No	243,721
===>Grouped by Line: **FW77-1-DISHDR to SG24**					***Sorted By:Remaining Life***		
BFD-106	0.000	0.575	0.633	0.633	-186,144	Yes	243,721
BFD-VALVE-BFD-6-3	0.000	0.801	0.889	0.889	-183,748	No	243,721
BFD-VALVE-BFD-7-3	0.000	0.801	0.889	0.889	-183,743	No	243,721
BFD-VALVE-BFD-5-3	0.000	0.817	0.889	0.889	-175,916	No	243,721
BFD-VALVE-FCV-447	0.000	0.817	0.889	0.889	-175,916	No	243,721
BFD-84	0.000	0.848	0.832	0.832	114,076	No	243,721
BFD-82	0.000	0.848	0.832	0.832	114,076	No	243,721
BFD-106N	0.000	0.656	0.633	0.633	154,597	No	243,721
BFD-104	0.000	0.663	0.633	0.633	218,423	No	243,721
BFD-105-1	0.000	0.663	0.633	0.633	218,423	No	243,721
BFD-79	0.000	0.675	0.633	0.633	309,272	Yes	243,721
BFD-83R	0.000	0.680	0.589	0.589	525,392	Yes	243,721

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **FW77-1-DISHDR to SG24**					***Sorted By:Remaining Life***		
BFD-83R (D/S)	0.000	0.893	0.832	0.832	529,625	No	243,721
BFD-83	0.000	0.953	0.832	0.832	853,023	Yes	243,721
BFD-80	0.000	0.954	0.832	0.832	860,742	Yes	243,721
BFD-105	0.000	0.670	0.544	0.544	907,970	Yes	243,721
BFD-81	0.000	0.956	0.832	0.832	977,087	Yes	243,721
BFD-104P	0.000	0.675	0.544	0.544	1,091,210	No	243,721
BFD-105P-1	0.000	0.675	0.544	0.544	1,091,210	No	243,721
BFD-106P	0.000	0.675	0.544	0.544	1,091,210	No	243,721
BFD-80P	0.000	0.855	0.717	0.717	1,123,383	Yes	243,721
BFD-82P DS	0.000	0.860	0.717	0.717	1,168,434	No	243,721
BFD-82P US	0.000	0.882	0.717	0.717	1,347,783	Yes	243,721
BFD-105P	0.000	0.691	0.544	0.544	1,573,874	No	243,721
BFD-84P-1	0.000	0.877	0.717	0.717	1,672,720	No	243,721
BFD-81P	0.000	0.877	0.717	0.717	1,672,720	No	243,721
BFD-84P-2	0.000	0.885	0.717	0.717	1,987,080	No	243,721
BFD-84P	0.000	0.889	0.717	0.717	2,249,047	No	243,721
BFD-105P-2	0.000	0.720	0.544	0.544	3,636,367	No	243,721
===>Grouped by Line: **FW77-2-DISHDR to SG24**					***Sorted By:Remaining Life***		
BFD-84T (BR/SE)	0.000	0.887	0.717	0.717	889,280	Yes	243,721
BFD-84T	0.000	1.351	1.195	1.195	1,080,913	Yes	243,721
BFD-84T (D/S)	0.000	1.349	1.195	1.195	1,815,547	Yes	243,721
===>Grouped by Line: **FW78-1-DISHDR to SG23**					***Sorted By:Remaining Life***		
BFD-VALVE-BFD-6-2	0.000	0.801	0.889	0.889	-183,748	No	243,721
BFD-VALVE-BFD-7-2	0.000	0.801	0.889	0.889	-183,743	No	243,721
BFD-VALVE-BFD-5-2	0.000	0.817	0.889	0.889	-175,916	No	243,721
BFD-VALVE-FCV-437	0.000	0.817	0.889	0.889	-175,916	No	243,721
BFD-86	0.000	0.648	0.633	0.633	114,658	Yes	243,721
BFD-103N	0.000	0.656	0.633	0.633	154,597	No	243,721
BFD-85	0.000	0.660	0.633	0.633	201,713	Yes	243,721
BFD-100	0.000	0.663	0.633	0.633	218,423	No	243,721
BFD-102	0.000	0.663	0.633	0.633	218,423	No	243,721
BFD-103	0.000	0.663	0.633	0.633	218,423	No	243,721
BFD-101	0.000	0.674	0.633	0.633	302,018	Yes	243,721
BFD-89T	0.000	1.217	1.195	1.195	310,959	No	243,721
BFD-3R (D/S)	0.000	0.884	0.832	0.832	452,389	Yes	243,721

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **FW78-1-DISHDR to SG23**					***Sorted By:Remaining Life***		
BFD-3R	0.000	0.694	0.589	0.589	607,569	No	243,721
BFD-87	0.000	0.935	0.832	0.832	726,172	Yes	243,721
BFD-89T (BR/SE)	0.000	0.856	0.717	0.717	1,062,491	No	243,721
BFD-3	0.000	0.985	0.832	0.832	1,078,536	Yes	243,721
BFD-100P	0.000	0.675	0.544	0.544	1,091,210	No	243,721
BFD-89	0.000	0.990	0.832	0.832	1,111,924	Yes	243,721
BFD-88	0.000	1.008	0.832	0.832	1,236,548	Yes	243,721
BFD-87P DS	0.000	0.865	0.717	0.717	1,539,496	Yes	243,721
BFD-89P-1	0.000	0.866	0.717	0.717	1,552,305	Yes	243,721
BFD-101P	0.000	0.691	0.544	0.544	1,573,874	No	243,721
BFD-102P	0.000	0.691	0.544	0.544	1,573,874	No	243,721
BFD-102P-1	0.000	0.691	0.544	0.544	1,573,874	No	243,721
BFD-103P	0.000	0.691	0.544	0.544	1,573,874	No	243,721
BFD-88P	0.000	0.877	0.717	0.717	1,672,720	No	243,721
BFD-86P DS	0.000	0.877	0.717	0.717	1,672,720	No	243,721
BFD-87P US	0.000	0.892	0.717	0.717	1,821,105	Yes	243,721
BFD-86P US	0.000	0.902	0.717	0.717	1,925,405	Yes	243,721
BFD-89P-2	0.000	0.885	0.717	0.717	1,987,080	No	243,721
BFD-3P	0.000	0.886	0.717	0.717	2,002,721	Yes	243,721
BFD-89P	0.000	0.886	0.717	0.717	2,204,250	Yes	243,721
BFD-102P-2	0.000	0.720	0.544	0.544	3,636,367	No	243,721

Note:
[1] Predictions are based on last Tmeas to analysis ending period.

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).db

Service Life Report

Pass 1 Analysis Exclude Measured Wear

Report Date/Time: 7/6/2010 3:37:44PM
AnalysisDate/Time: 7/6/2010 3:20:28PM

Run Name: FW FWH 26 TO STM GEN
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 1.000

CHECWORKS SFA Version: 3.0 SP-1 (build 109)
Duty Factor (Global) : 1.000

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **FW74-1-FWH26A to DISHDR**					***Sorted By:Flow Order***		
BFD-55N	0.000	0.796	0.832	0.832	-118,479	No	243,721
BFD-55	0.000	1.340	0.832	0.832	3,050,109	No	243,721
BFD-55P	0.000	0.878	0.717	0.717	1,115,680	Yes	243,721
BFD-56	0.000	0.973	0.832	0.832	847,652	Yes	243,721
BFD-VALVE-BFD-4	0.000	0.796	0.889	0.889	-185,956	No	243,721
BFD-56P-1	0.000	0.885	0.717	0.717	1,692,570	Yes	243,721
BFD-57	0.000	0.988	0.832	0.832	937,708	Yes	243,721
BFD-57P	0.000	0.878	0.717	0.717	1,428,394	Yes	243,721
BFD-58	0.000	0.972	0.832	0.832	840,723	Yes	243,721
BFD-58P	0.000	0.888	0.717	0.717	1,519,926	Yes	243,721
BFD-59	0.000	0.990	0.832	0.832	948,790	Yes	243,721
BFD-59P	0.000	1.036	0.717	0.717	2,834,991	Yes	243,721
BFD-59R	0.000	0.857	0.717	0.717	1,113,280	No	243,721
BFD-59R (D/S)	0.000	1.219	1.195	1.195	374,523	No	243,721
===>Grouped by Line: **FW74-2-FWH26B to DISHDR**					***Sorted By:Flow Order***		
BFD-51N	0.000	0.796	0.832	0.832	-118,479	No	243,721
BFD-51	0.000	1.251	0.832	0.832	2,512,497	No	243,721
BFD-51P	0.000	0.847	0.717	0.717	901,750	No	243,721
BFD-52	0.000	1.028	0.832	0.832	1,173,658	Yes	243,721
BFD-52P	0.000	0.867	0.717	0.717	1,331,365	No	243,721
BFD-VALVE-BFD-4-1	0.000	0.796	0.889	0.889	-185,956	No	243,721
BFD-52P-1	0.000	0.861	0.717	0.717	1,455,916	Yes	243,721
BFD-53	0.000	0.960	0.832	0.832	768,677	Yes	243,721
BFD-53P	0.000	0.896	0.717	0.717	1,591,011	Yes	243,721
BFD-54	0.000	0.833	0.832	0.832	3,514	No	243,721
BFD-54P	0.000	0.867	0.717	0.717	1,331,365	No	243,721

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **FW74-3-FWH26 to DISHDR**					***Sorted By:Flow Order***		
BFD-54T	0.000	1.336	1.195	1.195	1,588,342	Yes	243,721
BFD-54T (BR/SE)	0.000	0.863	0.717	0.717	955,681	Yes	243,721
BFD-54T (D/S)	0.000	1.336	1.195	1.195	1,013,032	Yes	243,721
BFD-54P-1	0.000	1.217	1.195	1.195	325,606	No	243,721
===>Grouped by Line: **FW74-4-FWH26C to DISHDR**					***Sorted By:Flow Order***		
BFD-47N	0.000	0.796	0.832	0.832	-118,479	No	243,721
BFD-47	0.000	1.105	0.832	0.832	1,640,839	No	243,721
BFD-47P	0.000	0.883	0.717	0.717	1,476,875	Yes	243,721
BFD-48	0.000	1.008	0.832	0.832	1,058,475	Yes	243,721
BFD-48P	0.000	0.867	0.717	0.717	1,331,365	No	243,721
BFD-VALVE-BFD-4-2	0.000	0.796	0.889	0.889	-185,956	No	243,721
BFD-48P-1	0.000	0.875	0.717	0.717	1,599,177	No	243,721
BFD-49	0.000	0.833	0.832	0.832	3,514	No	243,721
BFD-49P	0.000	0.867	0.717	0.717	1,331,365	No	243,721
BFD-50	0.000	0.833	0.832	0.832	3,514	No	243,721
BFD-50P US	0.000	0.867	0.717	0.717	1,331,365	No	243,721
BFD-50P DS	0.000	0.854	0.717	0.717	1,213,924	Yes	243,721
===>Grouped by Line: **FW74-5-FWH26 to DISHDR**					***Sorted By:Flow Order***		
BFD-50T	0.000	1.305	1.195	1.195	793,787	No	243,721
BFD-50T (BR/SE)	0.000	0.966	0.717	0.717	1,625,743	No	243,721
BFD-50T (D/S)	0.000	1.302	1.195	1.195	614,572	No	243,721
BFD-50P-1	0.000	1.206	1.195	1.195	131,494	No	243,721
BFD-46T	0.000	1.325	1.195	1.195	1,016,737	No	243,721
BFD-46T (D/S)	0.000	1.280	1.195	1.195	664,329	No	243,721
BFD-46P	0.000	1.206	1.195	1.195	131,494	No	243,721
BFD-60	0.000	1.387	1.195	1.195	1,221,688	Yes	243,721
BFD-30	0.000	1.262	1.195	1.195	425,949	Yes	243,721
BFD-30P US	0.000	1.311	1.195	1.195	850,300	Yes	243,721
BFD-30P DS	0.000	1.328	1.195	1.195	975,111	Yes	243,721
BFD-31	0.000	1.448	1.195	1.195	1,608,249	Yes	243,721
BFD-31P US	0.000	1.340	1.195	1.195	1,366,083	Yes	243,721
BFD-61	0.000	1.421	1.195	1.195	1,433,151	Yes	243,721
BFD-61P	0.000	1.310	1.195	1.195	1,084,818	Yes	243,721
BFD-62	0.000	1.160	1.195	1.195	-133,830	No	243,721
BFD-62P US	0.000	1.193	1.195	1.195	-21,323	No	243,721

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **FW74-5-FWH26 to DISHDR**					***Sorted By:Flow Order***		
BFD-62P DS	0.000	1.285	1.195	1.195	848,469	Yes	243,721
BFD-63	0.000	1.291	1.195	1.195	610,091	Yes	243,721
BFD-63P US	0.000	1.307	1.195	1.195	1,055,215	Yes	243,721
BFD-63P DS	0.000	1.316	1.195	1.195	1,138,803	No	243,721
BFD-64	0.000	1.415	1.195	1.195	1,397,202	Yes	243,721
BFD-64P	0.000	1.320	1.195	1.195	1,171,292	Yes	243,721
BFD-65	0.000	1.468	1.195	1.195	1,735,281	Yes	243,721
BFD-65P	0.000	1.384	1.195	1.195	1,777,836	Yes	243,721
BFD-65P-1	0.000	1.464	1.195	1.195	2,529,638	No	243,721
BFD-72T	0.000	1.464	1.195	1.195	1,263,158	Yes	243,721
BFD-72T (BR/SE)	0.000	0.857	0.717	0.717	732,830	Yes	243,721
BFD-72T (D/S)	0.000	1.466	1.195	1.195	1,494,973	Yes	243,721
===>Grouped by Line: **FW75-1-DISHDR to SG21**					***Sorted By:Flow Order***		
BFD-72P US	0.000	0.887	0.717	0.717	2,221,690	Yes	243,721
BFD-72P DS	0.000	0.896	0.717	0.717	2,329,974	Yes	243,721
BFD-72	0.000	1.007	0.832	0.832	1,235,181	Yes	243,721
BFD-72P-1 US	0.000	0.893	0.717	0.717	1,837,086	Yes	243,721
BFD-72P-1 DS	0.000	0.877	0.717	0.717	1,672,720	No	243,721
BFD-VALVE-BFD-5	0.000	0.817	0.889	0.889	-175,916	No	243,721
BFD-72R	0.000	0.886	0.832	0.832	399,447	Yes	243,721
BFD-72R (D/S)	0.000	0.786	0.589	0.589	999,513	Yes	243,721
BFD-VALVE-FCV-417	0.000	0.817	0.889	0.889	-175,916	No	243,721
BFD-71R	0.000	0.792	0.589	0.589	1,174,091	Yes	243,721
BFD-71R (D/S)	0.000	0.871	0.832	0.832	334,763	Yes	243,721
BFD-71	0.000	0.901	0.832	0.832	484,716	Yes	243,721
BFD-70P US	0.000	0.877	0.717	0.717	1,664,656	Yes	243,721
BFD-70P DS	0.000	0.865	0.717	0.717	1,545,047	Yes	243,721
BFD-70	0.000	0.952	0.832	0.832	847,580	Yes	243,721
BFD-69P US	0.000	0.907	0.717	0.717	1,983,106	Yes	243,721
BFD-69P DS	0.000	0.902	0.717	0.717	1,927,204	Yes	243,721
BFD-69	0.000	0.916	0.832	0.832	659,931	Yes	243,721
BFD-68P US	0.000	0.885	0.717	0.717	1,987,080	No	243,721
BFD-68P DS	0.000	0.896	0.717	0.717	2,122,527	Yes	243,721
BFD-68	0.000	0.949	0.832	0.832	826,438	Yes	243,721
BFD-67P US	0.000	0.884	0.717	0.717	1,743,217	Yes	243,721
BFD-67P DS	0.000	0.877	0.717	0.717	1,672,720	No	243,721

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **FW75-1-DISHDR to SG21**					***Sorted By:Flow Order***		
BFD-VALVE-BFD-6	0.000	0.801	0.889	0.889	-183,748	No	243,721
BFD-VALVE-BFD-7	0.000	0.801	0.889	0.889	-183,743	No	243,721
BFD-67	0.000	0.663	0.633	0.633	218,423	No	243,721
BFD-66	0.000	0.663	0.633	0.633	218,423	No	243,721
BFD-66P	0.000	0.675	0.544	0.544	1,091,210	No	243,721
BFD-96	0.000	0.663	0.633	0.633	218,423	No	243,721
BFD-96P	0.000	0.691	0.544	0.544	1,573,874	No	243,721
BFD-97	0.000	0.663	0.633	0.633	218,423	No	243,721
BFD-97P	0.000	0.691	0.544	0.544	1,573,874	No	243,721
BFD-98	0.000	0.663	0.544	0.544	858,264	No	243,721
BFD-98P	0.000	0.691	0.544	0.544	1,573,874	No	243,721
BFD-98P-1	0.000	0.703	0.544	0.544	3,286,215	No	243,721
BFD-99	0.000	0.601	0.544	0.544	412,271	Yes	243,721
BFD-99N	0.000	0.649	0.544	0.544	699,488	Yes	243,721
===>Grouped by Line: **FW76-1-DISHDR to SG22**					***Sorted By:Flow Order***		
BFD-78P	0.000	0.889	0.717	0.717	2,249,047	No	243,721
BFD-78	0.000	0.848	0.832	0.832	114,076	No	243,721
BFD-78P-1 US	0.000	0.877	0.717	0.717	1,672,720	No	243,721
BFD-VALVE-BFD-5-1	0.000	0.817	0.889	0.889	-175,916	No	243,721
BFD-78P-2	0.000	0.885	0.717	0.717	1,987,080	No	243,721
BFD-VALVE-FCV-427	0.000	0.817	0.889	0.889	-175,916	No	243,721
BFD-77R	0.000	0.704	0.589	0.589	665,552	No	243,721
BFD-77R (D/S)	0.000	0.867	0.832	0.832	304,631	Yes	243,721
BFD-77P	0.000	0.886	0.717	0.717	2,002,721	Yes	243,721
BFD-77	0.000	0.945	0.832	0.832	796,645	Yes	243,721
BFD-76P US	0.000	0.880	0.717	0.717	1,695,945	Yes	243,721
BFD-76	0.000	0.967	0.832	0.832	949,552	Yes	243,721
BFD-75P	0.000	0.919	0.717	0.717	2,108,475	Yes	243,721
BFD-75	0.000	0.858	0.832	0.832	204,580	No	243,721
BFD-74P	0.000	0.885	0.717	0.717	1,987,080	No	243,721
BFD-74	0.000	0.848	0.832	0.832	114,076	No	243,721
BFD-73P	0.000	0.877	0.717	0.717	1,672,720	No	243,721
BFD-VALVE-BFD-6-1	0.000	0.801	0.889	0.889	-183,748	No	243,721
BFD-VALVE-BFD-7-1	0.000	0.801	0.889	0.889	-183,743	No	243,721
BFD-73	0.000	0.663	0.633	0.633	218,423	No	243,721
BFD-73P	0.000	0.675	0.544	0.544	1,091,210	No	243,721

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **FW76-1-DISHDR to SG22**					***Sorted By:Flow Order***		
BFD-91	0.000	0.663	0.633	0.633	218,423	No	243,721
BFD-91P	0.000	0.691	0.544	0.544	1,573,874	No	243,721
BFD-92	0.000	0.663	0.633	0.633	218,423	No	243,721
BFD-92P	0.000	0.691	0.544	0.544	1,573,874	No	243,721
BFD-92-1	0.000	0.672	0.633	0.633	321,576	No	243,721
BFD-92P-1	0.000	0.698	0.544	0.544	1,874,755	No	243,721
BFD-92-2	0.000	0.663	0.633	0.633	218,423	No	243,721
BFD-92P-2	0.000	0.691	0.544	0.544	1,573,874	No	243,721
BFD-92P-3	0.000	0.720	0.544	0.544	3,636,367	No	243,721
BFD-93	0.000	0.663	0.633	0.633	218,423	No	243,721
BFD-93P US	0.000	0.691	0.544	0.544	1,573,874	No	243,721
BFD-93P DS	0.000	0.697	0.544	0.544	1,639,908	No	243,721
BFD-94	0.000	0.862	0.633	0.633	1,867,345	No	243,721
BFD-95	0.000	0.823	0.633	0.633	1,455,855	Yes	243,721
BFD-95P	0.000	0.691	0.544	0.544	1,573,874	No	243,721
BFD-95R	0.000	0.684	0.633	0.633	491,962	No	243,721
BFD-95R (D/S)	0.000	0.750	0.703	0.703	484,227	No	243,721
BFD-95N	0.000	0.730	0.703	0.703	205,023	No	243,721
===>Grouped by Line: **FW76-2-DISHDR to SG22**					***Sorted By:Flow Order***		
BFD-78T (BR/SE)	0.000	0.880	0.717	0.717	852,775	No	243,721
BFD-78T	0.000	1.320	1.195	1.195	689,265	No	243,721
BFD-78T (D/S)	0.000	1.289	1.195	1.195	651,722	No	243,721
===>Grouped by Line: **FW77-1-DISHDR to SG24**					***Sorted By:Flow Order***		
BFD-84P	0.000	0.889	0.717	0.717	2,249,047	No	243,721
BFD-84	0.000	0.848	0.832	0.832	114,076	No	243,721
BFD-84P-1	0.000	0.877	0.717	0.717	1,672,720	No	243,721
BFD-VALVE-BFD-5-3	0.000	0.817	0.889	0.889	-175,916	No	243,721
BFD-84P-2	0.000	0.885	0.717	0.717	1,987,080	No	243,721
BFD-VALVE-FCV-447	0.000	0.817	0.889	0.889	-175,916	No	243,721
BFD-83R	0.000	0.680	0.589	0.589	525,392	Yes	243,721
BFD-83R (D/S)	0.000	0.893	0.832	0.832	529,625	No	243,721
BFD-83	0.000	0.953	0.832	0.832	853,023	Yes	243,721
BFD-82P US	0.000	0.882	0.717	0.717	1,347,783	Yes	243,721
BFD-82P DS	0.000	0.860	0.717	0.717	1,168,434	No	243,721
BFD-82	0.000	0.848	0.832	0.832	114,076	No	243,721

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>*Grouped by Line:* **FW77-1-DISHDR to SG24**					***Sorted By:Flow Order***		
BFD-81P	0.000	0.877	0.717	0.717	1,672,720	No	243,721
BFD-81	0.000	0.956	0.832	0.832	977,087	Yes	243,721
BFD-80	0.000	0.954	0.832	0.832	860,742	Yes	243,721
BFD-80P	0.000	0.855	0.717	0.717	1,123,383	Yes	243,721
BFD-VALVE-BFD-6-3	0.000	0.801	0.889	0.889	-183,748	No	243,721
BFD-VALVE-BFD-7-3	0.000	0.801	0.889	0.889	-183,743	No	243,721
BFD-79	0.000	0.675	0.633	0.633	309,272	Yes	243,721
BFD-104P	0.000	0.675	0.544	0.544	1,091,210	No	243,721
BFD-104	0.000	0.663	0.633	0.633	218,423	No	243,721
BFD-105P	0.000	0.691	0.544	0.544	1,573,874	No	243,721
BFD-105	0.000	0.670	0.544	0.544	907,970	Yes	243,721
BFD-105-1	0.000	0.663	0.633	0.633	218,423	No	243,721
BFD-105P-1	0.000	0.675	0.544	0.544	1,091,210	No	243,721
BFD-105P-2	0.000	0.720	0.544	0.544	3,636,367	No	243,721
BFD-106	0.000	0.575	0.633	0.633	-186,144	Yes	243,721
BFD-106P	0.000	0.675	0.544	0.544	1,091,210	No	243,721
BFD-106N	0.000	0.656	0.633	0.633	154,597	No	243,721
===>*Grouped by Line:* **FW77-2-DISHDR to SG24**					***Sorted By:Flow Order***		
BFD-84T (BR/SE)	0.000	0.887	0.717	0.717	889,280	Yes	243,721
BFD-84T	0.000	1.351	1.195	1.195	1,080,913	Yes	243,721
BFD-84T (D/S)	0.000	1.349	1.195	1.195	1,815,547	Yes	243,721
===>*Grouped by Line:* **FW78-1-DISHDR to SG23**					***Sorted By:Flow Order***		
BFD-89T (BR/SE)	0.000	0.856	0.717	0.717	1,062,491	No	243,721
BFD-89P	0.000	0.886	0.717	0.717	2,204,250	Yes	243,721
BFD-89	0.000	0.990	0.832	0.832	1,111,924	Yes	243,721
BFD-89P-1	0.000	0.866	0.717	0.717	1,552,305	Yes	243,721
BFD-VALVE-BFD-5-2	0.000	0.817	0.889	0.889	-175,916	No	243,721
BFD-89P-2	0.000	0.885	0.717	0.717	1,987,080	No	243,721
BFD-VALVE-FCV-437	0.000	0.817	0.889	0.889	-175,916	No	243,721
BFD-3R	0.000	0.694	0.589	0.589	607,569	No	243,721
BFD-3R (D/S)	0.000	0.884	0.832	0.832	452,389	Yes	243,721
BFD-3P	0.000	0.886	0.717	0.717	2,002,721	Yes	243,721
BFD-3	0.000	0.985	0.832	0.832	1,078,536	Yes	243,721
BFD-88P	0.000	0.877	0.717	0.717	1,672,720	No	243,721
BFD-88	0.000	1.008	0.832	0.832	1,236,548	Yes	243,721

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **FW78-1-DISHDR to SG23**					***Sorted By:Flow Order***		
BFD-87P US	0.000	0.892	0.717	0.717	1,821,105	Yes	243,721
BFD-87P DS	0.000	0.865	0.717	0.717	1,539,496	Yes	243,721
BFD-87	0.000	0.935	0.832	0.832	726,172	Yes	243,721
BFD-86P US	0.000	0.902	0.717	0.717	1,925,405	Yes	243,721
BFD-86P DS	0.000	0.877	0.717	0.717	1,672,720	No	243,721
BFD-VALVE-BFD-6-2	0.000	0.801	0.889	0.889	-183,748	No	243,721
BFD-VALVE-BFD-7-2	0.000	0.801	0.889	0.889	-183,743	No	243,721
BFD-86	0.000	0.648	0.633	0.633	114,658	Yes	243,721
BFD-85	0.000	0.660	0.633	0.633	201,713	Yes	243,721
BFD-100P	0.000	0.675	0.544	0.544	1,091,210	No	243,721
BFD-100	0.000	0.663	0.633	0.633	218,423	No	243,721
BFD-101P	0.000	0.691	0.544	0.544	1,573,874	No	243,721
BFD-101	0.000	0.674	0.633	0.633	302,018	Yes	243,721
BFD-102P	0.000	0.691	0.544	0.544	1,573,874	No	243,721
BFD-102	0.000	0.663	0.633	0.633	218,423	No	243,721
BFD-102P-1	0.000	0.691	0.544	0.544	1,573,874	No	243,721
BFD-102P-2	0.000	0.720	0.544	0.544	3,636,367	No	243,721
BFD-103	0.000	0.663	0.633	0.633	218,423	No	243,721
BFD-103P	0.000	0.691	0.544	0.544	1,573,874	No	243,721
BFD-103N	0.000	0.656	0.633	0.633	154,597	No	243,721
BFD-89T	0.000	1.217	1.195	1.195	310,959	No	243,721

Note:
[1] Predictions are based on last Tmeas to analysis ending period.

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).db

Wear Rate Report

Pass 1 Analysis Exclude Measured Wear

Report Date/Time: 7/6/2010 3:38:15PM
AnalysisDate/Time: 7/6/2010 3:20:36PM

CHECWORKS SFA Version: 3.0 SP-1 (build 109)

Duty Factor (Global) : 1.000

Run Name: FWH 23 DRNS DSCV
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 1.000

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***HD242A-1-FWH23A CV to FWH22A***								***Sorted By: Average Wear Rate***		
242-VALVE-LCV-1118	24	6.795	3.233	212.1	7.632	0.0	6.625	7.048	0.000	13.04	ARD
242-VALVE-3EX-9	22	4.086	1.962	212.1	4.386	0.0	8.625	7.048	0.000	13.04	ARD
242-8R	18	3.909	1.860	212.1	7.964	0.0	6.625	7.048	0.000	13.04	ARD
242-10T (D/S)	12	3.255	1.563	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
242-10T	12	3.255	1.563	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
242-8R (D/S)	18	2.464	1.183	212.1	4.410	0.0	8.625	7.048	0.000	13.04	ARD
242-12N	18	2.223	1.067	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
242-9P	58	1.747	0.839	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
242-11P	62	1.588	0.762	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
242-12N (D/S)	18	1.546	0.742	212.1	2.672	0.0	10.750	7.048	0.000	13.04	ARD
===>Grouped by Line:	***HD243A-1-FWH23B CV to FWH22B***								***Sorted By: Average Wear Rate***		
243-VALVE-LCV-1119	24	6.795	3.233	212.1	7.632	0.0	6.625	7.048	0.000	13.04	ARD
243-VALVE-3EX-9-1	22	4.086	1.962	212.1	4.386	0.0	8.625	7.048	0.000	13.04	ARD
243-9R	18	4.019	1.912	212.1	8.325	0.0	6.625	7.048	0.000	13.04	ARD
243-11T (D/S)	12	3.255	1.563	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
243-11T	12	3.255	1.563	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
243-9R (D/S)	18	2.467	1.185	212.1	4.416	0.0	8.625	7.048	0.000	13.04	ARD
243-13N	18	2.223	1.067	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
243-10P	58	1.747	0.839	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
243-12P	62	1.588	0.762	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
243-13N (D/S)	18	1.546	0.742	212.1	2.672	0.0	10.750	7.048	0.000	13.04	ARD
===>Grouped by Line:	***HD244A-1-FWH23C CV to FWH22C***								***Sorted By: Average Wear Rate***		
244-VALVE-LCV-1119	24	6.795	3.233	212.1	7.632	0.0	6.625	7.048	0.000	13.04	ARD
244-VALVE-3EX-9-2	22	4.086	1.962	212.1	4.386	0.0	8.625	7.048	0.000	13.04	ARD
244-9R	18	3.868	1.840	212.1	7.832	0.0	6.625	7.048	0.000	13.04	ARD

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***HD244A-1-FWH23C CV to FWH22C***								***Sorted By: Average Wear Rate***		
244-11T (D/S)	12	3.255	1.563	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
244-11T	12	3.255	1.563	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
244-13N	30	3.176	1.525	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
244-9R (D/S)	18	2.443	1.173	212.1	4.370	0.0	8.625	7.048	0.000	13.04	ARD
244-10P	58	1.747	0.839	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
244-12P	62	1.588	0.762	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).db

Wear Rate Report

Pass 1 Analysis Exclude Measured Wear

Report Date/Time: 7/6/2010 3:37:44PM
AnalysisDate/Time: 7/6/2010 3:20:36PM

CHECWORKS SFA Version: 3.0 SP-1 (build 109)
Duty Factor (Global) : 1.000

Run Name: FWH 23 DRNS DSCV
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 1.000

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***HD242A-1-FWH23A CV to FWH22A***									***Sorted By: Flow Order***	
242-10T (D/S)	12	3.255	1.563	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
242-11P	62	1.588	0.762	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
242-12N	18	2.223	1.067	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
242-12N (D/S)	18	1.546	0.742	212.1	2.672	0.0	10.750	7.048	0.000	13.04	ARD
242-VALVE-LCV-1118	24	6.795	3.233	212.1	7.632	0.0	6.625	7.048	0.000	13.04	ARD
242-8R	18	3.909	1.860	212.1	7.964	0.0	6.625	7.048	0.000	13.04	ARD
242-8R (D/S)	18	2.464	1.183	212.1	4.410	0.0	8.625	7.048	0.000	13.04	ARD
242-VALVE-3EX-9	22	4.086	1.962	212.1	4.386	0.0	8.625	7.048	0.000	13.04	ARD
242-9P	58	1.747	0.839	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
242-10T	12	3.255	1.563	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
===>Grouped by Line:	***HD243A-1-FWH23B CV to FWH22B***									***Sorted By: Flow Order***	
243-11T (D/S)	12	3.255	1.563	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
243-12P	62	1.588	0.762	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
243-13N	18	2.223	1.067	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
243-13N (D/S)	18	1.546	0.742	212.1	2.672	0.0	10.750	7.048	0.000	13.04	ARD
243-VALVE-LCV-1119	24	6.795	3.233	212.1	7.632	0.0	6.625	7.048	0.000	13.04	ARD
243-9R	18	4.019	1.912	212.1	8.325	0.0	6.625	7.048	0.000	13.04	ARD
243-9R (D/S)	18	2.467	1.185	212.1	4.416	0.0	8.625	7.048	0.000	13.04	ARD
243-VALVE-3EX-9-1	22	4.086	1.962	212.1	4.386	0.0	8.625	7.048	0.000	13.04	ARD
243-10P	58	1.747	0.839	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
243-11T	12	3.255	1.563	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
===>Grouped by Line:	***HD244A-1-FWH23C CV to FWH22C***									***Sorted By: Flow Order***	
244-11T (D/S)	12	3.255	1.563	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
244-12P	62	1.588	0.762	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
244-13N	30	3.176	1.525	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***HD244A-1-FWH23C CV to FWH22C***									***Sorted By: Flow Order***	
244-VALVE-LCV-1119	24	6.795	3.233	212.1	7.632	0.0	6.625	7.048	0.000	13.04	ARD
244-9R	18	3.868	1.840	212.1	7.832	0.0	6.625	7.048	0.000	13.04	ARD
244-9R (D/S)	18	2.443	1.173	212.1	4.370	0.0	8.625	7.048	0.000	13.04	ARD
244-VALVE-3EX-9-2	22	4.086	1.962	212.1	4.386	0.0	8.625	7.048	0.000	13.04	ARD
244-10P	58	1.747	0.839	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
244-11T	12	3.255	1.563	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).db

Service Life Report

Pass 1 Analysis Exclude Measured Wear

Report Date/Time: 7/6/2010 3:37:44PM
AnalysisDate/Time: 7/6/2010 3:20:36PM

Run Name: FWH 23 DRNS DSCV
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 1.000

CHECWORKS SFA Version: 3.0 SP-1 (build 109)
Duty Factor (Global) :1.000

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **HD242A-1-FWH23A CV to FWH22A**					***Sorted By:Remaining Life***		
242-VALVE-LCV-1118	0.000	0.091	0.012	0.012	214,434	No	243,721
242-VALVE-3EX-9	0.000	0.136	0.015	0.015	540,014	No	243,721
242-10T	0.000	0.159	0.014	0.014	813,096	No	243,721
242-10T (D/S)	0.000	0.159	0.014	0.014	813,096	No	243,721
242-8R	0.344	0.273	0.011	0.011	1,235,348	No	243,721
242-12N	0.000	0.188	0.017	0.017	1,406,058	No	243,721
242-8R (D/S)	0.323	0.226	0.014	0.014	1,565,139	No	243,721
242-9P	0.000	0.217	0.017	0.017	2,095,191	Yes	243,721
242-11P	0.000	0.206	0.017	0.017	2,171,521	No	243,721
242-12N (D/S)	0.000	0.207	0.021	0.021	2,195,042	No	243,721
===>Grouped by Line: **HD243A-1-FWH23B CV to FWH22B**					***Sorted By:Remaining Life***		
243-VALVE-LCV-1119	0.000	0.091	0.012	0.012	214,434	No	243,721
243-VALVE-3EX-9-1	0.000	0.136	0.015	0.015	540,014	No	243,721
243-11T	0.000	0.159	0.014	0.014	813,096	No	243,721
243-11T (D/S)	0.000	0.159	0.014	0.014	813,096	No	243,721
243-9R	0.409	0.313	0.011	0.011	1,381,343	Yes	243,721
243-13N	0.000	0.188	0.017	0.017	1,406,058	No	243,721
243-9R (D/S)	0.326	0.262	0.014	0.014	1,829,011	Yes	243,721
243-10P	0.000	0.201	0.017	0.017	1,927,964	No	243,721
243-12P	0.000	0.206	0.017	0.017	2,171,521	No	243,721
243-13N (D/S)	0.000	0.207	0.021	0.021	2,195,042	No	243,721
===>Grouped by Line: **HD244A-1-FWH23C CV to FWH22C**					***Sorted By:Remaining Life***		
244-VALVE-LCV-1119	0.000	0.091	0.012	0.012	214,434	No	243,721
244-VALVE-3EX-9-2	0.000	0.136	0.015	0.015	540,014	No	243,721
244-13N	0.000	0.162	0.017	0.017	831,960	No	243,721

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **HD244A-1-FWH23C CV to FWH22C**					***Sorted By:Remaining Life***		
244-9R	0.319	0.260	0.011	0.011	1,183,086	No	243,721
244-9R (D/S)	0.305	0.242	0.014	0.014	1,698,800	Yes	243,721
244-12P	0.000	0.206	0.017	0.017	2,171,521	No	243,721
244-10P	0.000	0.229	0.017	0.017	2,216,891	Yes	243,721
244-11T (D/S)	0.000	0.427	0.014	0.014	2,312,107	Yes	243,721
244-11T	0.000	0.541	0.014	0.014	2,951,033	Yes	243,721

Note:
[1] Predictions are based on last Tmeas to analysis ending period.

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).db

Service Life Report

Pass 1 Analysis Exclude Measured Wear

Report Date/Time: 7/6/2010 3:37:44PM
AnalysisDate/Time: 7/6/2010 3:20:36PM

Run Name: FWH 23 DRNS DSCV
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 1.000

CHECWORKS SFA Version: 3.0 SP-1 (build 109)
Duty Factor (Global) : 1.000

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **HD242A-1-FWH23A CV to FWH22A**					***Sorted By:Flow Order***		
242-10T (D/S)	0.000	0.159	0.014	0.014	813,096	No	243,721
242-11P	0.000	0.206	0.017	0.017	2,171,521	No	243,721
242-12N	0.000	0.188	0.017	0.017	1,406,058	No	243,721
242-12N (D/S)	0.000	0.207	0.021	0.021	2,195,042	No	243,721
242-VALVE-LCV-1118	0.000	0.091	0.012	0.012	214,434	No	243,721
242-8R	0.344	0.273	0.011	0.011	1,235,348	No	243,721
242-8R (D/S)	0.323	0.226	0.014	0.014	1,565,139	No	243,721
242-VALVE-3EX-9	0.000	0.136	0.015	0.015	540,014	No	243,721
242-9P	0.000	0.217	0.017	0.017	2,095,191	Yes	243,721
242-10T	0.000	0.159	0.014	0.014	813,096	No	243,721
===>Grouped by Line: **HD243A-1-FWH23B CV to FWH22B**					***Sorted By:Flow Order***		
243-11T (D/S)	0.000	0.159	0.014	0.014	813,096	No	243,721
243-12P	0.000	0.206	0.017	0.017	2,171,521	No	243,721
243-13N	0.000	0.188	0.017	0.017	1,406,058	No	243,721
243-13N (D/S)	0.000	0.207	0.021	0.021	2,195,042	No	243,721
243-VALVE-LCV-1119	0.000	0.091	0.012	0.012	214,434	No	243,721
243-9R	0.409	0.313	0.011	0.011	1,381,343	Yes	243,721
243-9R (D/S)	0.326	0.262	0.014	0.014	1,829,011	Yes	243,721
243-VALVE-3EX-9-1	0.000	0.136	0.015	0.015	540,014	No	243,721
243-10P	0.000	0.201	0.017	0.017	1,927,964	No	243,721
243-11T	0.000	0.159	0.014	0.014	813,096	No	243,721
===>Grouped by Line: **HD244A-1-FWH23C CV to FWH22C**					***Sorted By:Flow Order***		
244-11T (D/S)	0.000	0.427	0.014	0.014	2,312,107	Yes	243,721
244-12P	0.000	0.206	0.017	0.017	2,171,521	No	243,721
244-13N	0.000	0.162	0.017	0.017	831,960	No	243,721

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **HD244A-1-FWH23C CV to FWH22C**					***Sorted By:Flow Order***		
244-VALVE-LCV-1119	0.000	0.091	0.012	0.012	214,434	No	243,721
244-9R	0.319	0.260	0.011	0.011	1,183,086	No	243,721
244-9R (D/S)	0.305	0.242	0.014	0.014	1,698,800	Yes	243,721
244-VALVE-3EX-9-2	0.000	0.136	0.015	0.015	540,014	No	243,721
244-10P	0.000	0.229	0.017	0.017	2,216,891	Yes	243,721
244-11T	0.000	0.541	0.014	0.014	2,951,033	Yes	243,721

Note:
[1] Predictions are based on last Tmeas to analysis ending period.

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).db

Wear Rate Report

Pass 1 Analysis Exclude Measured Wear

Report Date/Time: 7/6/2010 3:38:15PM
AnalysisDate/Time: 7/6/2010 3:21:01PM

CHECWORKS SFA Version: 3.0 SP-1 (build 109)

Duty Factor (Global) : 1.000

Run Name: FWH 23 DRNS USCV
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 1.000

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***HD24A-1-FWH23A to CV***								***Sorted By: Average Wear Rate***		
242-7R (D/S)	7	4.349	2.069	212.1	7.632	0.0	6.625	7.048	0.000	13.04	ARD
3EXD-1N	31	3.970	1.906	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-20	2	3.005	1.443	212.1	4.357	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-5	2	2.985	1.433	212.1	4.327	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-1	2	2.938	1.411	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-2	2	2.938	1.411	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-21	2	2.938	1.411	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-22	2	2.938	1.411	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-3	2	2.938	1.411	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-4	2	2.938	1.411	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
242-5E	4	2.938	1.411	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-6	2	2.938	1.411	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
242-7E	2	2.938	1.411	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-7	2	2.938	1.411	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-8	2	2.938	1.411	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-9	2	2.938	1.411	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-10	2	2.938	1.411	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-11	2	2.938	1.411	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-12	2	2.938	1.411	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-13	2	2.938	1.411	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
242-7R	7	2.779	1.334	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
242-2E	1	2.620	1.258	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
242-4E	1	2.620	1.258	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
242-6P	54	2.541	1.220	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-14 (D/S)	15	2.382	1.144	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-14	15	2.382	1.144	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***HD24A-1-FWH23A to CV***								***Sorted By: Average Wear Rate***		
3EXD-1P	61	2.144	1.029	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-2P	52	1.985	0.953	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-20P-1 US	52	1.985	0.953	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-20P-1 DS	52	1.985	0.953	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-2P-1 US	52	1.985	0.953	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-21P	52	1.985	0.953	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-2P-1 DS	52	1.985	0.953	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-3P	52	1.985	0.953	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-22P	52	1.985	0.953	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
242-1P	52	1.985	0.953	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-4P	52	1.985	0.953	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-5P	52	1.985	0.953	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-6P US	52	1.985	0.953	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-6P DS	52	1.985	0.953	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-7P	52	1.985	0.953	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-8P	52	1.985	0.953	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-9P	52	1.985	0.953	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-10P	52	1.985	0.953	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-11P	52	1.985	0.953	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-12P	52	1.985	0.953	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-13P	52	1.985	0.953	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
242-3P	51	1.747	0.839	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-20P	65	1.588	0.762	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
===>Grouped by Line:	***HD25A-1-FWH23B to CV***								***Sorted By: Average Wear Rate***		
243-8R (D/S)	7	4.349	2.069	212.1	7.632	0.0	6.625	7.048	0.000	13.04	ARD
3EXD-23N	31	3.970	1.906	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-24	4	3.019	1.449	212.1	4.379	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-33	2	2.995	1.438	212.1	4.342	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-30	2	2.988	1.435	212.1	4.331	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-23	2	2.976	1.429	212.1	4.312	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-40	2	2.938	1.411	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-41	2	2.938	1.411	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-25	2	2.938	1.411	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-42	2	2.938	1.411	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***HD25A-1-FWH23B to CV***								***Sorted By: Average Wear Rate***		
3EXD-26	4	2.938	1.411	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-28	2	2.938	1.411	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-29	2	2.938	1.411	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
243-6E	4	2.938	1.411	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
243-8E	2	2.938	1.411	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-31	2	2.938	1.411	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-32	2	2.938	1.411	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-27	3	2.779	1.334	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
243-8R	7	2.779	1.334	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
243-2E	1	2.620	1.258	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
243-4E	1	2.620	1.258	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-24P	54	2.541	1.220	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-26P	54	2.541	1.220	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
243-7P	54	2.541	1.220	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-34 (D/S)	15	2.382	1.144	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-34	15	2.382	1.144	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-23P	61	2.144	1.029	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-40P-1	52	1.985	0.953	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-41P	52	1.985	0.953	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-25P	52	1.985	0.953	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-42P	52	1.985	0.953	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
243-1P	52	1.985	0.953	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-27P	53	1.985	0.953	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-28P	52	1.985	0.953	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-29P	52	1.985	0.953	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-30P	52	1.985	0.953	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-31P	52	1.985	0.953	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-32P	52	1.985	0.953	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-33P US	52	1.985	0.953	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-33P DS	52	1.985	0.953	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
243-3P	51	1.747	0.839	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
243-5P	51	1.747	0.839	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-40P	65	1.588	0.762	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
===>Grouped by Line:	***HD26A-1-FWH23C to CV***								***Sorted By: Average Wear Rate***		

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***HD26A-1-FWH23C to CV***								***Sorted By: Average Wear Rate***		
244-8R (D/S)	7	4.349	2.069	212.1	7.632	0.0	6.625	7.048	0.000	13.04	ARD
3EXD-43N	31	3.970	1.906	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-45	4	3.041	1.460	212.1	4.414	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-59	2	3.005	1.443	212.1	4.357	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-43	2	2.938	1.411	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-58	2	2.938	1.411	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-44	2	2.938	1.411	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-60	2	2.938	1.411	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-46	2	2.938	1.411	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-47	2	2.938	1.411	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-48	2	2.938	1.411	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-49	2	2.938	1.411	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
244-6E	4	2.938	1.411	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-50	2	2.938	1.411	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
244-8E	2	2.938	1.411	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
244-8R	7	2.779	1.334	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
244-2E	1	2.620	1.258	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
244-4E	1	2.620	1.258	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-45P	54	2.541	1.220	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
244-7P	54	2.541	1.220	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-51 (D/S)	15	2.382	1.144	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-51	15	2.382	1.144	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-43P	61	2.144	1.029	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-43P	52	1.985	0.953	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-58P-1	52	1.985	0.953	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-44P	52	1.985	0.953	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-59P US	52	1.985	0.953	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-59P DS	52	1.985	0.953	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-46P	52	1.985	0.953	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-60P	52	1.985	0.953	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
244-1P	52	1.985	0.953	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-47P	52	1.985	0.953	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-48P	52	1.985	0.953	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-49P	52	1.985	0.953	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***HD26A-1-FWH23C to CV***								***Sorted By: Average Wear Rate***		
3EXD-50P US	52	1.985	0.953	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-50P DS	52	1.985	0.953	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
244-3P	51	1.747	0.839	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
244-5P	51	1.747	0.839	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-58P US	65	1.588	0.762	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-58P DS	65	1.588	0.762	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).db

Wear Rate Report

Pass 1 Analysis Exclude Measured Wear

Report Date/Time: 7/6/2010 3:37:44PM
AnalysisDate/Time: 7/6/2010 3:21:01PM

CHECWORKS SFA Version: 3.0 SP-1 (build 109)
Duty Factor (Global) : 1.000

Run Name: FWH 23 DRNS USCV
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 1.000

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***HD24A-1-FWH23A to CV***									***Sorted By: Flow Order***	
3EXD-1N	31	3.970	1.906	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-1P	61	2.144	1.029	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-1	2	2.938	1.411	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-2P	52	1.985	0.953	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-2	2	2.938	1.411	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-2P-1 US	52	1.985	0.953	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-2P-1 DS	52	1.985	0.953	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-3	2	2.938	1.411	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-3P	52	1.985	0.953	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-4	2	2.938	1.411	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-4P	52	1.985	0.953	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-5	2	2.985	1.433	212.1	4.327	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-5P	52	1.985	0.953	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-6	2	2.938	1.411	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-6P US	52	1.985	0.953	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-6P DS	52	1.985	0.953	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-7	2	2.938	1.411	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-7P	52	1.985	0.953	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-8	2	2.938	1.411	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-8P	52	1.985	0.953	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-9	2	2.938	1.411	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-9P	52	1.985	0.953	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-10	2	2.938	1.411	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-10P	52	1.985	0.953	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-11	2	2.938	1.411	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-11P	52	1.985	0.953	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***HD24A-1-FWH23A to CV***									***Sorted By: Flow Order***	
3EXD-12	2	2.938	1.411	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-12P	52	1.985	0.953	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-13	2	2.938	1.411	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-13P	52	1.985	0.953	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-14	15	2.382	1.144	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-14 (D/S)	15	2.382	1.144	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-20P	65	1.588	0.762	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-20	2	3.005	1.443	212.1	4.357	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-20P-1 US	52	1.985	0.953	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-20P-1 DS	52	1.985	0.953	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-21	2	2.938	1.411	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-21P	52	1.985	0.953	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-22	2	2.938	1.411	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-22P	52	1.985	0.953	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
242-1P	52	1.985	0.953	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
242-2E	1	2.620	1.258	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
242-3P	51	1.747	0.839	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
242-4E	1	2.620	1.258	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
242-5E	4	2.938	1.411	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
242-6P	54	2.541	1.220	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
242-7E	2	2.938	1.411	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
242-7R	7	2.779	1.334	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
242-7R (D/S)	7	4.349	2.069	212.1	7.632	0.0	6.625	7.048	0.000	13.04	ARD
===>Grouped by Line:	***HD25A-1-FWH23B to CV***									***Sorted By: Flow Order***	
3EXD-23N	31	3.970	1.906	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-23P	61	2.144	1.029	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-23	2	2.976	1.429	212.1	4.312	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-24	4	3.019	1.449	212.1	4.379	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-24P	54	2.541	1.220	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-25	2	2.938	1.411	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-25P	52	1.985	0.953	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-26	4	2.938	1.411	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-26P	54	2.541	1.220	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-27	3	2.779	1.334	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	HD25A-1-FWH23B to CV									Sorted By: Flow Order	
3EXD-27P	53	1.985	0.953	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-28	2	2.938	1.411	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-28P	52	1.985	0.953	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-29	2	2.938	1.411	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-29P	52	1.985	0.953	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-30	2	2.988	1.435	212.1	4.331	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-30P	52	1.985	0.953	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-31	2	2.938	1.411	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-31P	52	1.985	0.953	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-32	2	2.938	1.411	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-32P	52	1.985	0.953	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-33	2	2.995	1.438	212.1	4.342	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-33P US	52	1.985	0.953	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-33P DS	52	1.985	0.953	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-34	15	2.382	1.144	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-34 (D/S)	15	2.382	1.144	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-40P	65	1.588	0.762	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-40	2	2.938	1.411	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-40P-1	52	1.985	0.953	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-41	2	2.938	1.411	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-41P	52	1.985	0.953	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-42	2	2.938	1.411	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-42P	52	1.985	0.953	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
243-1P	52	1.985	0.953	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
243-2E	1	2.620	1.258	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
243-3P	51	1.747	0.839	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
243-4E	1	2.620	1.258	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
243-5P	51	1.747	0.839	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
243-6E	4	2.938	1.411	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
243-7P	54	2.541	1.220	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
243-8E	2	2.938	1.411	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
243-8R	7	2.779	1.334	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
243-8R (D/S)	7	4.349	2.069	212.1	7.632	0.0	6.625	7.048	0.000	13.04	ARD
===>Grouped by Line:	HD26A-1-FWH23C to CV									Sorted By: Flow Order	

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	HD26A-1-FWH23C to CV									Sorted By: Flow Order	
3EXD-43N	31	3.970	1.906	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-43P	61	2.144	1.029	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-43	2	2.938	1.411	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-43P	52	1.985	0.953	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-44	2	2.938	1.411	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-44P	52	1.985	0.953	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-45	4	3.041	1.460	212.1	4.414	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-45P	54	2.541	1.220	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-46	2	2.938	1.411	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-46P	52	1.985	0.953	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-47	2	2.938	1.411	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-47P	52	1.985	0.953	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-48	2	2.938	1.411	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-48P	52	1.985	0.953	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-49	2	2.938	1.411	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-49P	52	1.985	0.953	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-50	2	2.938	1.411	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-50P US	52	1.985	0.953	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-50P DS	52	1.985	0.953	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-51	15	2.382	1.144	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-51 (D/S)	15	2.382	1.144	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-58P US	65	1.588	0.762	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-58P DS	65	1.588	0.762	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-58	2	2.938	1.411	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-58P-1	52	1.985	0.953	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-59	2	3.005	1.443	212.1	4.357	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-59P US	52	1.985	0.953	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-59P DS	52	1.985	0.953	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-60	2	2.938	1.411	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-60P	52	1.985	0.953	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
244-1P	52	1.985	0.953	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
244-2E	1	2.620	1.258	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
244-3P	51	1.747	0.839	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
244-4E	1	2.620	1.258	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***HD26A-1-FWH23C to CV***									***Sorted By: Flow Order***	
244-5P	51	1.747	0.839	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
244-6E	4	2.938	1.411	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
244-7P	54	2.541	1.220	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
244-8E	2	2.938	1.411	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
244-8R	7	2.779	1.334	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
244-8R (D/S)	7	4.349	2.069	212.1	7.632	0.0	6.625	7.048	0.000	13.04	ARD

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).db

Service Life Report

Pass 1 Analysis Exclude Measured Wear

Report Date/Time: 7/6/2010 3:37:44PM
AnalysisDate/Time: 7/6/2010 3:21:01PM

Run Name: FWH 23 DRNS USCV
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 1.000

CHECWORKS SFA Version: 3.0 SP-1 (build 109)
Duty Factor (Global) :1.000

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **HD24A-1-FWH23A to CV**					***Sorted By:Remaining Life***		
3EXD-1N	0.000	0.140	0.014	0.014	575,371	No	243,721
242-7R (D/S)	0.000	0.159	0.011	0.011	626,552	No	243,721
3EXD-21	0.000	0.130	0.014	0.014	716,128	No	243,721
3EXD-9	0.000	0.168	0.014	0.014	955,874	No	243,721
3EXD-10	0.000	0.168	0.014	0.014	955,874	No	243,721
3EXD-11	0.000	0.168	0.014	0.014	955,874	No	243,721
3EXD-12	0.000	0.168	0.014	0.014	955,874	No	243,721
3EXD-13	0.000	0.168	0.014	0.014	955,874	No	243,721
3EXD-22	0.000	0.168	0.014	0.014	955,874	No	243,721
242-5E	0.000	0.168	0.014	0.014	955,874	No	243,721
242-7E	0.000	0.168	0.014	0.014	955,874	No	243,721
3EXD-1	0.000	0.168	0.014	0.014	955,874	No	243,721
242-7R	0.000	0.173	0.014	0.014	1,039,500	No	243,721
3EXD-20	0.299	0.199	0.014	0.014	1,120,559	Yes	243,721
3EXD-2	0.000	0.197	0.014	0.014	1,132,233	Yes	243,721
242-2E	0.000	0.177	0.014	0.014	1,133,264	No	243,721
242-4E	0.000	0.177	0.014	0.014	1,133,264	No	243,721
3EXD-5	0.285	0.205	0.014	0.014	1,165,854	Yes	243,721
242-6P	0.000	0.179	0.017	0.017	1,166,850	No	243,721
3EXD-14	0.000	0.184	0.014	0.014	1,297,351	No	243,721
3EXD-14 (D/S)	0.000	0.184	0.014	0.014	1,297,351	No	243,721
3EXD-7	0.000	0.230	0.014	0.014	1,340,310	Yes	243,721
3EXD-3	0.000	0.238	0.014	0.014	1,390,058	Yes	243,721
3EXD-4	0.000	0.243	0.014	0.014	1,417,917	No	243,721
3EXD-8	0.000	0.246	0.014	0.014	1,439,679	Yes	243,721
3EXD-6	0.000	0.250	0.014	0.014	1,464,573	Yes	243,721
3EXD-1P	0.000	0.190	0.017	0.017	1,476,934	No	243,721

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>*Grouped by Line:* **HD24A-1-FWH23A to CV**					***Sorted By:Remaining Life***		
3EXD-6P US	0.000	0.195	0.017	0.017	1,635,697	No	243,721
3EXD-9P	0.000	0.195	0.017	0.017	1,635,697	No	243,721
3EXD-10P	0.000	0.195	0.017	0.017	1,635,697	No	243,721
3EXD-11P	0.000	0.195	0.017	0.017	1,635,697	No	243,721
3EXD-12P	0.000	0.195	0.017	0.017	1,635,697	No	243,721
3EXD-13P	0.000	0.195	0.017	0.017	1,635,697	No	243,721
3EXD-22P	0.000	0.195	0.017	0.017	1,635,697	No	243,721
242-1P	0.000	0.195	0.017	0.017	1,635,697	No	243,721
3EXD-20P-1 US	0.000	0.203	0.017	0.017	1,715,669	Yes	243,721
3EXD-5P	0.000	0.204	0.017	0.017	1,724,860	Yes	243,721
3EXD-2P	0.000	0.207	0.017	0.017	1,752,435	Yes	243,721
3EXD-4P	0.000	0.207	0.017	0.017	1,752,435	Yes	243,721
3EXD-3P	0.000	0.208	0.017	0.017	1,761,627	Yes	243,721
3EXD-20P-1 DS	0.000	0.211	0.017	0.017	1,789,201	Yes	243,721
3EXD-2P-1 US	0.000	0.214	0.017	0.017	1,816,776	Yes	243,721
3EXD-21P	0.000	0.215	0.017	0.017	1,825,968	Yes	243,721
3EXD-8P	0.000	0.222	0.017	0.017	1,890,309	Yes	243,721
242-3P	0.000	0.201	0.017	0.017	1,927,964	No	243,721
3EXD-6P DS	0.000	0.229	0.017	0.017	1,947,346	Yes	243,721
3EXD-7P	0.000	0.232	0.017	0.017	1,974,921	Yes	243,721
3EXD-2P-1 DS	0.000	0.239	0.017	0.017	2,046,565	No	243,721
3EXD-20P	0.000	0.211	0.017	0.017	2,230,812	Yes	243,721
===>*Grouped by Line:* **HD25A-1-FWH23B to CV**					***Sorted By:Remaining Life***		
3EXD-23N	0.000	0.140	0.014	0.014	575,371	No	243,721
243-8R (D/S)	0.000	0.159	0.011	0.011	626,552	No	243,721
3EXD-25	0.000	0.168	0.014	0.014	955,874	No	243,721
3EXD-26	0.000	0.168	0.014	0.014	955,874	No	243,721
3EXD-28	0.000	0.168	0.014	0.014	955,874	No	243,721
3EXD-31	0.000	0.168	0.014	0.014	955,874	No	243,721
3EXD-32	0.000	0.168	0.014	0.014	955,874	No	243,721
3EXD-40	0.000	0.168	0.014	0.014	955,874	No	243,721
3EXD-41	0.000	0.168	0.014	0.014	955,874	No	243,721
3EXD-42	0.000	0.168	0.014	0.014	955,874	No	243,721
243-6E	0.000	0.168	0.014	0.014	955,874	No	243,721
243-8E	0.000	0.168	0.014	0.014	955,874	No	243,721
243-8R	0.000	0.173	0.014	0.014	1,039,500	No	243,721

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **HD25A-1-FWH23B to CV**					***Sorted By:Remaining Life***		
243-2E	0.000	0.177	0.014	0.014	1,133,264	No	243,721
243-4E	0.000	0.177	0.014	0.014	1,133,264	No	243,721
3EXD-33	0.292	0.201	0.014	0.014	1,137,052	Yes	243,721
3EXD-24P	0.000	0.179	0.017	0.017	1,166,850	No	243,721
243-7P	0.000	0.179	0.017	0.017	1,166,850	No	243,721
3EXD-23	0.278	0.213	0.014	0.014	1,219,344	Yes	243,721
3EXD-27	0.000	0.200	0.014	0.014	1,221,893	Yes	243,721
3EXD-30	0.287	0.221	0.014	0.014	1,262,277	Yes	243,721
3EXD-24	0.309	0.230	0.014	0.014	1,301,771	Yes	243,721
3EXD-26P	0.000	0.203	0.017	0.017	1,338,164	Yes	243,721
3EXD-23P	0.000	0.207	0.017	0.017	1,615,800	Yes	243,721
3EXD-25P	0.000	0.195	0.017	0.017	1,635,697	No	243,721
3EXD-31P	0.000	0.195	0.017	0.017	1,635,697	No	243,721
3EXD-40P-1	0.000	0.195	0.017	0.017	1,635,697	No	243,721
3EXD-41P	0.000	0.195	0.017	0.017	1,635,697	No	243,721
3EXD-42P	0.000	0.195	0.017	0.017	1,635,697	No	243,721
243-1P	0.000	0.195	0.017	0.017	1,635,697	No	243,721
3EXD-29	0.000	0.282	0.014	0.014	1,663,321	Yes	243,721
3EXD-29P	0.000	0.211	0.017	0.017	1,789,201	Yes	243,721
3EXD-30P	0.000	0.212	0.017	0.017	1,798,393	Yes	243,721
3EXD-33P US	0.000	0.215	0.017	0.017	1,825,968	Yes	243,721
3EXD-32P	0.000	0.218	0.017	0.017	1,853,542	Yes	243,721
3EXD-33P DS	0.000	0.223	0.017	0.017	1,899,438	Yes	243,721
243-3P	0.000	0.201	0.017	0.017	1,927,964	No	243,721
243-5P	0.000	0.201	0.017	0.017	1,927,964	No	243,721
3EXD-28P	0.000	0.239	0.017	0.017	2,043,052	Yes	243,721
3EXD-27P	0.000	0.242	0.017	0.017	2,074,140	No	243,721
3EXD-40P	0.000	0.228	0.017	0.017	2,428,369	Yes	243,721
3EXD-34	0.000	0.494	0.014	0.014	3,670,627	Yes	243,721
3EXD-34 (D/S)	0.000	0.506	0.014	0.014	3,762,543	Yes	243,721
===>Grouped by Line: **HD26A-1-FWH23C to CV**					***Sorted By:Remaining Life***		
3EXD-43N	0.000	0.140	0.014	0.014	575,371	No	243,721
244-8R (D/S)	0.000	0.159	0.011	0.011	626,552	No	243,721
3EXD-43	0.000	0.168	0.014	0.014	955,874	No	243,721
3EXD-44	0.000	0.168	0.014	0.014	955,874	No	243,721
3EXD-46	0.000	0.168	0.014	0.014	955,874	No	243,721

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **HD26A-1-FWH23C to CV**					***Sorted By:Remaining Life***		
3EXD-47	0.000	0.168	0.014	0.014	955,874	No	243,721
3EXD-48	0.000	0.168	0.014	0.014	955,874	No	243,721
3EXD-49	0.000	0.168	0.014	0.014	955,874	No	243,721
3EXD-50	0.000	0.168	0.014	0.014	955,874	No	243,721
3EXD-58	0.000	0.168	0.014	0.014	955,874	No	243,721
244-6E	0.000	0.168	0.014	0.014	955,874	No	243,721
244-8E	0.000	0.168	0.014	0.014	955,874	No	243,721
244-8R	0.000	0.173	0.014	0.014	1,039,500	No	243,721
244-2E	0.000	0.177	0.014	0.014	1,133,264	No	243,721
244-4E	0.000	0.177	0.014	0.014	1,133,264	No	243,721
3EXD-45P	0.000	0.179	0.017	0.017	1,166,850	No	243,721
244-7P	0.000	0.179	0.017	0.017	1,166,850	No	243,721
3EXD-59	0.299	0.222	0.014	0.014	1,260,213	Yes	243,721
3EXD-45	0.325	0.225	0.014	0.014	1,266,579	Yes	243,721
3EXD-60	0.000	0.219	0.014	0.014	1,268,864	No	243,721
3EXD-43P	0.000	0.190	0.017	0.017	1,476,934	No	243,721
3EXD-43P	0.000	0.195	0.017	0.017	1,635,697	No	243,721
3EXD-46P	0.000	0.195	0.017	0.017	1,635,697	No	243,721
3EXD-47P	0.000	0.195	0.017	0.017	1,635,697	No	243,721
3EXD-48P	0.000	0.195	0.017	0.017	1,635,697	No	243,721
3EXD-49P	0.000	0.195	0.017	0.017	1,635,697	No	243,721
3EXD-50P US	0.000	0.195	0.017	0.017	1,635,697	No	243,721
244-1P	0.000	0.195	0.017	0.017	1,635,697	No	243,721
3EXD-44P	0.000	0.198	0.017	0.017	1,669,711	Yes	243,721
3EXD-60P	0.000	0.217	0.017	0.017	1,844,351	Yes	243,721
3EXD-58P-1	0.000	0.223	0.017	0.017	1,899,500	Yes	243,721
3EXD-59P DS	0.000	0.225	0.017	0.017	1,917,883	Yes	243,721
244-3P	0.000	0.201	0.017	0.017	1,927,964	No	243,721
244-5P	0.000	0.201	0.017	0.017	1,927,964	No	243,721
3EXD-59P US	0.000	0.227	0.017	0.017	1,936,266	Yes	243,721
3EXD-50P DS	0.000	0.243	0.017	0.017	2,077,740	No	243,721
3EXD-58P DS	0.000	0.206	0.017	0.017	2,171,521	No	243,721
3EXD-58P US	0.000	0.231	0.017	0.017	2,466,498	Yes	243,721
3EXD-51	0.000	0.446	0.014	0.014	3,304,040	No	243,721
3EXD-51 (D/S)	0.000	0.512	0.014	0.014	3,809,576	No	243,721

Note:
[1] Predictions are based on last Tmeas to analysis ending period.

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).db

Service Life Report

Pass 1 Analysis Exclude Measured Wear

Report Date/Time: 7/6/2010 3:37:44PM
AnalysisDate/Time: 7/6/2010 3:21:01PM

Run Name: FWH 23 DRNS USCV
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 1.000

CHECWORKS SFA Version: 3.0 SP-1 (build 109)
Duty Factor (Global) : 1.000

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **HD24A-1-FWH23A to CV**					***Sorted By:Flow Order***		
3EXD-1N	0.000	0.140	0.014	0.014	575,371	No	243,721
3EXD-1P	0.000	0.190	0.017	0.017	1,476,934	No	243,721
3EXD-1	0.000	0.168	0.014	0.014	955,874	No	243,721
3EXD-2P	0.000	0.207	0.017	0.017	1,752,435	Yes	243,721
3EXD-2	0.000	0.197	0.014	0.014	1,132,233	Yes	243,721
3EXD-2P-1 US	0.000	0.214	0.017	0.017	1,816,776	Yes	243,721
3EXD-2P-1 DS	0.000	0.239	0.017	0.017	2,046,565	No	243,721
3EXD-3	0.000	0.238	0.014	0.014	1,390,058	Yes	243,721
3EXD-3P	0.000	0.208	0.017	0.017	1,761,627	Yes	243,721
3EXD-4	0.000	0.243	0.014	0.014	1,417,917	No	243,721
3EXD-4P	0.000	0.207	0.017	0.017	1,752,435	Yes	243,721
3EXD-5	0.285	0.205	0.014	0.014	1,165,854	Yes	243,721
3EXD-5P	0.000	0.204	0.017	0.017	1,724,860	Yes	243,721
3EXD-6	0.000	0.250	0.014	0.014	1,464,573	Yes	243,721
3EXD-6P US	0.000	0.195	0.017	0.017	1,635,697	No	243,721
3EXD-6P DS	0.000	0.229	0.017	0.017	1,947,346	Yes	243,721
3EXD-7	0.000	0.230	0.014	0.014	1,340,310	Yes	243,721
3EXD-7P	0.000	0.232	0.017	0.017	1,974,921	Yes	243,721
3EXD-8	0.000	0.246	0.014	0.014	1,439,679	Yes	243,721
3EXD-8P	0.000	0.222	0.017	0.017	1,890,309	Yes	243,721
3EXD-9	0.000	0.168	0.014	0.014	955,874	No	243,721
3EXD-9P	0.000	0.195	0.017	0.017	1,635,697	No	243,721
3EXD-10	0.000	0.168	0.014	0.014	955,874	No	243,721
3EXD-10P	0.000	0.195	0.017	0.017	1,635,697	No	243,721
3EXD-11	0.000	0.168	0.014	0.014	955,874	No	243,721
3EXD-11P	0.000	0.195	0.017	0.017	1,635,697	No	243,721
3EXD-12	0.000	0.168	0.014	0.014	955,874	No	243,721

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **HD24A-1-FWH23A to CV**					***Sorted By:Flow Order***		
3EXD-12P	0.000	0.195	0.017	0.017	1,635,697	No	243,721
3EXD-13	0.000	0.168	0.014	0.014	955,874	No	243,721
3EXD-13P	0.000	0.195	0.017	0.017	1,635,697	No	243,721
3EXD-14	0.000	0.184	0.014	0.014	1,297,351	No	243,721
3EXD-14 (D/S)	0.000	0.184	0.014	0.014	1,297,351	No	243,721
3EXD-20P	0.000	0.211	0.017	0.017	2,230,812	Yes	243,721
3EXD-20	0.299	0.199	0.014	0.014	1,120,559	Yes	243,721
3EXD-20P-1 US	0.000	0.203	0.017	0.017	1,715,669	Yes	243,721
3EXD-20P-1 DS	0.000	0.211	0.017	0.017	1,789,201	Yes	243,721
3EXD-21	0.000	0.130	0.014	0.014	716,128	No	243,721
3EXD-21P	0.000	0.215	0.017	0.017	1,825,968	Yes	243,721
3EXD-22	0.000	0.168	0.014	0.014	955,874	No	243,721
3EXD-22P	0.000	0.195	0.017	0.017	1,635,697	No	243,721
242-1P	0.000	0.195	0.017	0.017	1,635,697	No	243,721
242-2E	0.000	0.177	0.014	0.014	1,133,264	No	243,721
242-3P	0.000	0.201	0.017	0.017	1,927,964	No	243,721
242-4E	0.000	0.177	0.014	0.014	1,133,264	No	243,721
242-5E	0.000	0.168	0.014	0.014	955,874	No	243,721
242-6P	0.000	0.179	0.017	0.017	1,166,850	No	243,721
242-7E	0.000	0.168	0.014	0.014	955,874	No	243,721
242-7R	0.000	0.173	0.014	0.014	1,039,500	No	243,721
242-7R (D/S)	0.000	0.159	0.011	0.011	626,552	No	243,721
===>Grouped by Line: **HD25A-1-FWH23B to CV**					***Sorted By:Flow Order***		
3EXD-23N	0.000	0.140	0.014	0.014	575,371	No	243,721
3EXD-23P	0.000	0.207	0.017	0.017	1,615,800	Yes	243,721
3EXD-23	0.278	0.213	0.014	0.014	1,219,344	Yes	243,721
3EXD-24	0.309	0.230	0.014	0.014	1,301,771	Yes	243,721
3EXD-24P	0.000	0.179	0.017	0.017	1,166,850	No	243,721
3EXD-25	0.000	0.168	0.014	0.014	955,874	No	243,721
3EXD-25P	0.000	0.195	0.017	0.017	1,635,697	No	243,721
3EXD-26	0.000	0.168	0.014	0.014	955,874	No	243,721
3EXD-26P	0.000	0.203	0.017	0.017	1,338,164	Yes	243,721
3EXD-27	0.000	0.200	0.014	0.014	1,221,893	Yes	243,721
3EXD-27P	0.000	0.242	0.017	0.017	2,074,140	No	243,721
3EXD-28	0.000	0.168	0.014	0.014	955,874	No	243,721
3EXD-28P	0.000	0.239	0.017	0.017	2,043,052	Yes	243,721

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **HD25A-1-FWH23B to CV**					***Sorted By:Flow Order***		
3EXD-29	0.000	0.282	0.014	0.014	1,663,321	Yes	243,721
3EXD-29P	0.000	0.211	0.017	0.017	1,789,201	Yes	243,721
3EXD-30	0.287	0.221	0.014	0.014	1,262,277	Yes	243,721
3EXD-30P	0.000	0.212	0.017	0.017	1,798,393	Yes	243,721
3EXD-31	0.000	0.168	0.014	0.014	955,874	No	243,721
3EXD-31P	0.000	0.195	0.017	0.017	1,635,697	No	243,721
3EXD-32	0.000	0.168	0.014	0.014	955,874	No	243,721
3EXD-32P	0.000	0.218	0.017	0.017	1,853,542	Yes	243,721
3EXD-33	0.292	0.201	0.014	0.014	1,137,052	Yes	243,721
3EXD-33P US	0.000	0.215	0.017	0.017	1,825,968	Yes	243,721
3EXD-33P DS	0.000	0.223	0.017	0.017	1,899,438	Yes	243,721
3EXD-34	0.000	0.494	0.014	0.014	3,670,627	Yes	243,721
3EXD-34 (D/S)	0.000	0.506	0.014	0.014	3,762,543	Yes	243,721
3EXD-40P	0.000	0.228	0.017	0.017	2,428,369	Yes	243,721
3EXD-40	0.000	0.168	0.014	0.014	955,874	No	243,721
3EXD-40P-1	0.000	0.195	0.017	0.017	1,635,697	No	243,721
3EXD-41	0.000	0.168	0.014	0.014	955,874	No	243,721
3EXD-41P	0.000	0.195	0.017	0.017	1,635,697	No	243,721
3EXD-42	0.000	0.168	0.014	0.014	955,874	No	243,721
3EXD-42P	0.000	0.195	0.017	0.017	1,635,697	No	243,721
243-1P	0.000	0.195	0.017	0.017	1,635,697	No	243,721
243-2E	0.000	0.177	0.014	0.014	1,133,264	No	243,721
243-3P	0.000	0.201	0.017	0.017	1,927,964	No	243,721
243-4E	0.000	0.177	0.014	0.014	1,133,264	No	243,721
243-5P	0.000	0.201	0.017	0.017	1,927,964	No	243,721
243-6E	0.000	0.168	0.014	0.014	955,874	No	243,721
243-7P	0.000	0.179	0.017	0.017	1,166,850	No	243,721
243-8E	0.000	0.168	0.014	0.014	955,874	No	243,721
243-8R	0.000	0.173	0.014	0.014	1,039,500	No	243,721
243-8R (D/S)	0.000	0.159	0.011	0.011	626,552	No	243,721
===>Grouped by Line: **HD26A-1-FWH23C to CV**					***Sorted By:Flow Order***		
3EXD-43N	0.000	0.140	0.014	0.014	575,371	No	243,721
3EXD-43P	0.000	0.190	0.017	0.017	1,476,934	No	243,721
3EXD-43	0.000	0.168	0.014	0.014	955,874	No	243,721
3EXD-43P	0.000	0.195	0.017	0.017	1,635,697	No	243,721
3EXD-44	0.000	0.168	0.014	0.014	955,874	No	243,721

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **HD26A-1-FWH23C to CV**					***Sorted By:Flow Order***		
3EXD-44P	0.000	0.198	0.017	0.017	1,669,711	Yes	243,721
3EXD-45	0.325	0.225	0.014	0.014	1,266,579	Yes	243,721
3EXD-45P	0.000	0.179	0.017	0.017	1,166,850	No	243,721
3EXD-46	0.000	0.168	0.014	0.014	955,874	No	243,721
3EXD-46P	0.000	0.195	0.017	0.017	1,635,697	No	243,721
3EXD-47	0.000	0.168	0.014	0.014	955,874	No	243,721
3EXD-47P	0.000	0.195	0.017	0.017	1,635,697	No	243,721
3EXD-48	0.000	0.168	0.014	0.014	955,874	No	243,721
3EXD-48P	0.000	0.195	0.017	0.017	1,635,697	No	243,721
3EXD-49	0.000	0.168	0.014	0.014	955,874	No	243,721
3EXD-49P	0.000	0.195	0.017	0.017	1,635,697	No	243,721
3EXD-50	0.000	0.168	0.014	0.014	955,874	No	243,721
3EXD-50P US	0.000	0.195	0.017	0.017	1,635,697	No	243,721
3EXD-50P DS	0.000	0.243	0.017	0.017	2,077,740	No	243,721
3EXD-51	0.000	0.446	0.014	0.014	3,304,040	No	243,721
3EXD-51 (D/S)	0.000	0.512	0.014	0.014	3,809,576	No	243,721
3EXD-58P US	0.000	0.231	0.017	0.017	2,466,498	Yes	243,721
3EXD-58P DS	0.000	0.206	0.017	0.017	2,171,521	No	243,721
3EXD-58	0.000	0.168	0.014	0.014	955,874	No	243,721
3EXD-58P-1	0.000	0.223	0.017	0.017	1,899,500	Yes	243,721
3EXD-59	0.299	0.222	0.014	0.014	1,260,213	Yes	243,721
3EXD-59P US	0.000	0.227	0.017	0.017	1,936,266	Yes	243,721
3EXD-59P DS	0.000	0.225	0.017	0.017	1,917,883	Yes	243,721
3EXD-60	0.000	0.219	0.014	0.014	1,268,864	No	243,721
3EXD-60P	0.000	0.217	0.017	0.017	1,844,351	Yes	243,721
244-1P	0.000	0.195	0.017	0.017	1,635,697	No	243,721
244-2E	0.000	0.177	0.014	0.014	1,133,264	No	243,721
244-3P	0.000	0.201	0.017	0.017	1,927,964	No	243,721
244-4E	0.000	0.177	0.014	0.014	1,133,264	No	243,721
244-5P	0.000	0.201	0.017	0.017	1,927,964	No	243,721
244-6E	0.000	0.168	0.014	0.014	955,874	No	243,721
244-7P	0.000	0.179	0.017	0.017	1,166,850	No	243,721
244-8E	0.000	0.168	0.014	0.014	955,874	No	243,721
244-8R	0.000	0.173	0.014	0.014	1,039,500	No	243,721
244-8R (D/S)	0.000	0.159	0.011	0.011	626,552	No	243,721

Note:
[1] Predictions are based on last Tmeas to analysis ending period.

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).db

Wear Rate Report

Pass 1 Analysis Exclude Measured Wear

Report Date/Time: 7/6/2010 3:38:15PM
AnalysisDate/Time: 7/6/2010 3:21:08PM

CHECWORKS SFA Version: 3.0 SP-1 (build 109)

Duty Factor (Global) : 1.000

Run Name: FWH 24 DRNS DSCV
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 1.000

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***HD21A-2-FWH24A CV to FWH23A***								***Sorted By: Average Wear Rate***		
4EXD-VALVE- LCV-1115	24	16.045	7.614	263.5	14.337	0.0	3.500	7.048	0.000	13.04	ARD
4EXD-4	12	4.990	2.393	263.5	4.100	0.0	6.625	7.048	0.000	13.04	ARD
4EXD-4 (D/S)	12	4.910	2.355	263.5	4.030	0.0	6.625	7.048	0.000	13.04	ARD
4EXD-1N	30	4.390	2.106	263.5	3.669	0.0	6.625	7.048	0.000	13.04	ARD
4EXD-1	4	4.141	1.987	263.5	3.747	0.0	6.625	7.048	0.000	13.04	ARD
4EXD-1-1	1	3.621	1.737	263.5	3.669	0.0	6.625	7.048	0.000	13.04	ARD
4EXD-1P	54	3.512	1.685	263.5	3.669	0.0	6.625	7.048	0.000	13.04	ARD
4EXD-4P	62	2.195	1.053	263.5	3.669	0.0	6.625	7.048	0.000	13.04	ARD
4EXD-5	18	0.005	0.004	263.5	14.337	0.0	3.500	7.048	0.000	13.04	ARD
4EXD-5 (D/S)	18	0.002	0.002	263.5	3.669	0.0	6.625	7.048	0.000	13.04	ARD
===>Grouped by Line:	***HD22A-2-FWH24B CV to FWH23B***								***Sorted By: Average Wear Rate***		
4EXD-VALVE-LCV-1116	24	16.045	7.614	263.5	14.337	0.0	3.500	7.048	0.000	13.04	ARD
4EXD-37	12	4.990	2.393	263.5	4.100	0.0	6.625	7.048	0.000	13.04	ARD
4EXD-37 (D/S)	12	4.850	2.327	263.5	3.977	0.0	6.625	7.048	0.000	13.04	ARD
4EXD-38	18	4.552	4.264	263.5	14.337	0.0	3.500	7.048	0.000	13.04	ARD
4EXD-2N	30	4.390	2.106	263.5	3.669	0.0	6.625	7.048	0.000	13.04	ARD
4EXD-2	4	4.060	1.948	263.5	3.669	0.0	6.625	7.048	0.000	13.04	ARD
4EXD-2-1	1	3.621	1.737	263.5	3.669	0.0	6.625	7.048	0.000	13.04	ARD
4EXD-2P	54	3.512	1.685	263.5	3.669	0.0	6.625	7.048	0.000	13.04	ARD
4EXD-37P US	62	2.195	1.053	263.5	3.669	0.0	6.625	7.048	0.000	13.04	ARD
4EXD-38 (D/S)	18	1.680	1.579	263.5	3.669	0.0	6.625	7.048	0.000	13.04	ARD
===>Grouped by Line:	***HD23A-2-FWH24C CV to FWH23C***								***Sorted By: Average Wear Rate***		
4EXD-VALVE-LCV-1117	24	16.045	7.614	263.5	14.337	0.0	3.500	7.048	0.000	13.04	ARD
4EXD-59	18	8.985	4.264	263.5	14.337	0.0	3.500	7.048	0.000	13.04	ARD
4EXD-58 (D/S)	12	5.101	2.447	263.5	4.199	0.0	6.625	7.048	0.000	13.04	ARD

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***HD23A-2-FWH24C CV to FWH23C***								***Sorted By: Average Wear Rate***		
4EXD-58	12	5.003	2.400	263.5	4.112	0.0	6.625	7.048	0.000	13.04	ARD
4EXD-3N	30	4.390	2.106	263.5	3.669	0.0	6.625	7.048	0.000	13.04	ARD
4EXD-3	4	4.060	1.948	263.5	3.669	0.0	6.625	7.048	0.000	13.04	ARD
4EXD-3-1	1	3.621	1.737	263.5	3.669	0.0	6.625	7.048	0.000	13.04	ARD
4EXD-3P	54	3.512	1.685	263.5	3.669	0.0	6.625	7.048	0.000	13.04	ARD
4EXD-59 (D/S)	18	3.292	1.579	263.5	3.669	0.0	6.625	7.048	0.000	13.04	ARD
4EXD-58P	62	2.195	1.053	263.5	3.669	0.0	6.625	7.048	0.000	13.04	ARD

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).db

Wear Rate Report

Pass 1 Analysis Exclude Measured Wear

Report Date/Time: 7/6/2010 3:37:44PM
AnalysisDate/Time: 7/6/2010 3:21:08PM

CHECWORKS SFA Version: 3.0 SP-1 (build 109)
Duty Factor (Global) : 1.000

Run Name: FWH 24 DRNS DSCV
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 1.000

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***HD21A-2-FWH24A CV to FWH23A***									***Sorted By: Flow Order***	
4EXD-4 (D/S)	12	4.910	2.355	263.5	4.030	0.0	6.625	7.048	0.000	13.04	ARD
4EXD-4P	62	2.195	1.053	263.5	3.669	0.0	6.625	7.048	0.000	13.04	ARD
4EXD-1-1	1	3.621	1.737	263.5	3.669	0.0	6.625	7.048	0.000	13.04	ARD
4EXD-1	4	4.141	1.987	263.5	3.747	0.0	6.625	7.048	0.000	13.04	ARD
4EXD-1P	54	3.512	1.685	263.5	3.669	0.0	6.625	7.048	0.000	13.04	ARD
4EXD-1N	30	4.390	2.106	263.5	3.669	0.0	6.625	7.048	0.000	13.04	ARD
4EXD-VALVE- LCV-1115	24	16.045	7.614	263.5	14.337	0.0	3.500	7.048	0.000	13.04	ARD
4EXD-5	18	0.005	0.004	263.5	14.337	0.0	3.500	7.048	0.000	13.04	ARD
4EXD-5 (D/S)	18	0.002	0.002	263.5	3.669	0.0	6.625	7.048	0.000	13.04	ARD
4EXD-4	12	4.990	2.393	263.5	4.100	0.0	6.625	7.048	0.000	13.04	ARD
===>Grouped by Line:	***HD22A-2-FWH24B CV to FWH23B***									***Sorted By: Flow Order***	
4EXD-37 (D/S)	12	4.850	2.327	263.5	3.977	0.0	6.625	7.048	0.000	13.04	ARD
4EXD-2-1	1	3.621	1.737	263.5	3.669	0.0	6.625	7.048	0.000	13.04	ARD
4EXD-37P US	62	2.195	1.053	263.5	3.669	0.0	6.625	7.048	0.000	13.04	ARD
4EXD-2	4	4.060	1.948	263.5	3.669	0.0	6.625	7.048	0.000	13.04	ARD
4EXD-2P	54	3.512	1.685	263.5	3.669	0.0	6.625	7.048	0.000	13.04	ARD
4EXD-2N	30	4.390	2.106	263.5	3.669	0.0	6.625	7.048	0.000	13.04	ARD
4EXD-VALVE-LCV-1116	24	16.045	7.614	263.5	14.337	0.0	3.500	7.048	0.000	13.04	ARD
4EXD-38	18	4.552	4.264	263.5	14.337	0.0	3.500	7.048	0.000	13.04	ARD
4EXD-38 (D/S)	18	1.680	1.579	263.5	3.669	0.0	6.625	7.048	0.000	13.04	ARD
4EXD-37	12	4.990	2.393	263.5	4.100	0.0	6.625	7.048	0.000	13.04	ARD
===>Grouped by Line:	***HD23A-2-FWH24C CV to FWH23C***									***Sorted By: Flow Order***	
4EXD-58 (D/S)	12	5.101	2.447	263.5	4.199	0.0	6.625	7.048	0.000	13.04	ARD
4EXD-58P	62	2.195	1.053	263.5	3.669	0.0	6.625	7.048	0.000	13.04	ARD
4EXD-3-1	1	3.621	1.737	263.5	3.669	0.0	6.625	7.048	0.000	13.04	ARD

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***HD23A-2-FWH24C CV to FWH23C***									***Sorted By: Flow Order***	
4EXD-3	4	4.060	1.948	263.5	3.669	0.0	6.625	7.048	0.000	13.04	ARD
4EXD-3P	54	3.512	1.685	263.5	3.669	0.0	6.625	7.048	0.000	13.04	ARD
4EXD-3N	30	4.390	2.106	263.5	3.669	0.0	6.625	7.048	0.000	13.04	ARD
4EXD-VALVE-LCV-1117	24	16.045	7.614	263.5	14.337	0.0	3.500	7.048	0.000	13.04	ARD
4EXD-59	18	8.985	4.264	263.5	14.337	0.0	3.500	7.048	0.000	13.04	ARD
4EXD-59 (D/S)	18	3.292	1.579	263.5	3.669	0.0	6.625	7.048	0.000	13.04	ARD
4EXD-58	12	5.003	2.400	263.5	4.112	0.0	6.625	7.048	0.000	13.04	ARD

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).db

Service Life Report

Pass 1 Analysis Exclude Measured Wear

Report Date/Time: 7/6/2010 3:37:44PM
AnalysisDate/Time: 7/6/2010 3:21:08PM

Run Name: FWH 24 DRNS DSCV
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 1.000

CHECWORKS SFA Version: 3.0 SP-1 (build 109)
Duty Factor (Global) :1.000

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **HD21A-2-FWH24A CV to FWH23A**					***Sorted By:Remaining Life***		
4EXD-VALVE- LCV-1115	0.000	-0.230	0.012	0.012	-162,164	No	243,721
4EXD-1N	0.000	0.158	0.022	0.022	565,151	No	243,721
4EXD-4 (D/S)	0.419	0.250	0.022	0.022	849,034	Yes	243,721
4EXD-1	0.312	0.236	0.022	0.022	943,666	Yes	243,721
4EXD-4	0.444	0.287	0.022	0.022	970,578	Yes	243,721
4EXD-1P	0.000	0.216	0.026	0.026	987,170	Yes	243,721
4EXD-1-1	0.000	0.251	0.022	0.022	1,152,246	Yes	243,721
4EXD-4P	0.000	0.216	0.026	0.026	1,582,879	No	243,721
4EXD-5	0.000	0.303	0.014	0.014	100,000,000	No	107,113
4EXD-5 (D/S)	0.000	0.315	0.026	0.026	100,000,000	No	107,113
===>Grouped by Line: **HD22A-2-FWH24B CV to FWH23B**					***Sorted By:Remaining Life***		
4EXD-VALVE-LCV-1116	0.000	-0.230	0.012	0.012	-162,164	No	243,721
4EXD-38	0.000	0.266	0.012	0.012	522,373	Yes	94,148
4EXD-2N	0.000	0.158	0.022	0.022	565,151	No	243,721
4EXD-2	0.000	0.167	0.022	0.022	652,169	No	243,721
4EXD-2-1	0.000	0.179	0.022	0.022	792,804	No	243,721
4EXD-2P	0.000	0.182	0.026	0.026	813,832	No	243,721
4EXD-37 (D/S)	0.400	0.299	0.022	0.022	1,042,794	Yes	243,721
4EXD-37	0.444	0.314	0.022	0.022	1,069,929	Yes	243,721
4EXD-38 (D/S)	0.000	0.245	0.022	0.022	1,235,387	Yes	94,148
4EXD-37P US	0.000	0.218	0.026	0.026	1,599,520	Yes	243,721
===>Grouped by Line: **HD23A-2-FWH24C CV to FWH23C**					***Sorted By:Remaining Life***		
4EXD-VALVE-LCV-1117	0.000	-0.230	0.012	0.012	-162,164	No	243,721
4EXD-59	0.000	0.110	0.012	0.012	202,997	No	243,721
4EXD-3N	0.000	0.158	0.022	0.022	565,151	No	243,721

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **HD23A-2-FWH24C CV to FWH23C**					***Sorted By:Remaining Life***		
4EXD-3	0.000	0.167	0.022	0.022	652,169	No	243,721
4EXD-3-1	0.000	0.179	0.022	0.022	792,804	No	243,721
4EXD-3P	0.000	0.182	0.026	0.026	813,832	No	243,721
4EXD-58	0.448	0.256	0.022	0.022	855,286	Yes	243,721
4EXD-58 (D/S)	0.478	0.293	0.022	0.022	971,423	Yes	243,721
4EXD-59 (D/S)	0.000	0.225	0.022	0.022	1,127,431	No	243,721
4EXD-58P	0.000	0.219	0.026	0.026	1,606,974	No	243,721

Note:
[1] Predictions are based on last Tmeas to analysis ending period.

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).db

Service Life Report

Pass 1 Analysis Exclude Measured Wear

Report Date/Time: 7/6/2010 3:37:44PM
AnalysisDate/Time: 7/6/2010 3:21:08PM

Run Name: FWH 24 DRNS DSCV
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 1.000

CHECWORKS SFA Version: 3.0 SP-1 (build 109)
Duty Factor (Global) : 1.000

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **HD21A-2-FWH24A CV to FWH23A**					***Sorted By:Flow Order***		
4EXD-4 (D/S)	0.419	0.250	0.022	0.022	849,034	Yes	243,721
4EXD-4P	0.000	0.216	0.026	0.026	1,582,879	No	243,721
4EXD-1-1	0.000	0.251	0.022	0.022	1,152,246	Yes	243,721
4EXD-1	0.312	0.236	0.022	0.022	943,666	Yes	243,721
4EXD-1P	0.000	0.216	0.026	0.026	987,170	Yes	243,721
4EXD-1N	0.000	0.158	0.022	0.022	565,151	No	243,721
4EXD-VALVE- LCV-1115	0.000	-0.230	0.012	0.012	-162,164	No	243,721
4EXD-5	0.000	0.303	0.014	0.014	100,000,000	No	107,113
4EXD-5 (D/S)	0.000	0.315	0.026	0.026	100,000,000	No	107,113
4EXD-4	0.444	0.287	0.022	0.022	970,578	Yes	243,721
===>Grouped by Line: **HD22A-2-FWH24B CV to FWH23B**					***Sorted By:Flow Order***		
4EXD-37 (D/S)	0.400	0.299	0.022	0.022	1,042,794	Yes	243,721
4EXD-2-1	0.000	0.179	0.022	0.022	792,804	No	243,721
4EXD-37P US	0.000	0.218	0.026	0.026	1,599,520	Yes	243,721
4EXD-2	0.000	0.167	0.022	0.022	652,169	No	243,721
4EXD-2P	0.000	0.182	0.026	0.026	813,832	No	243,721
4EXD-2N	0.000	0.158	0.022	0.022	565,151	No	243,721
4EXD-VALVE-LCV-1116	0.000	-0.230	0.012	0.012	-162,164	No	243,721
4EXD-38	0.000	0.266	0.012	0.012	522,373	Yes	94,148
4EXD-38 (D/S)	0.000	0.245	0.022	0.022	1,235,387	Yes	94,148
4EXD-37	0.444	0.314	0.022	0.022	1,069,929	Yes	243,721
===>Grouped by Line: **HD23A-2-FWH24C CV to FWH23C**					***Sorted By:Flow Order***		
4EXD-58 (D/S)	0.478	0.293	0.022	0.022	971,423	Yes	243,721
4EXD-58P	0.000	0.219	0.026	0.026	1,606,974	No	243,721
4EXD-3-1	0.000	0.179	0.022	0.022	792,804	No	243,721

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **HD23A-2-FWH24C CV to FWH23C**					***Sorted By:Flow Order***		
4EXD-3	0.000	0.167	0.022	0.022	652,169	No	243,721
4EXD-3P	0.000	0.182	0.026	0.026	813,832	No	243,721
4EXD-3N	0.000	0.158	0.022	0.022	565,151	No	243,721
4EXD-VALVE-LCV-1117	0.000	-0.230	0.012	0.012	-162,164	No	243,721
4EXD-59	0.000	0.110	0.012	0.012	202,997	No	243,721
4EXD-59 (D/S)	0.000	0.225	0.022	0.022	1,127,431	No	243,721
4EXD-58	0.448	0.256	0.022	0.022	855,286	Yes	243,721

Note:
[1] Predictions are based on last Tmeas to analysis ending period.

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).db

Wear Rate Report

Pass 1 Analysis Exclude Measured Wear

Report Date/Time: 7/6/2010 3:38:15PM
AnalysisDate/Time: 7/6/2010 3:21:22PM

CHECWORKS SFA Version: 3.0 SP-1 (build 109)

Duty Factor (Global) : 1.000

Run Name: FWH 24 DRNS USCV
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 1.000

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***HD21A-1-FWH24A to CV***								***Sorted By: Average Wear Rate***		
4EXD-VALVE-4EX-8	22	11.493	5.454	263.5	8.434	0.0	4.500	7.048	0.000	13.04	ARD
4EXD-6 (D/S)	7	10.269	4.873	263.5	14.337	0.0	3.500	7.048	0.000	13.04	ARD
4EXD-6P	57	8.023	3.807	263.5	14.337	0.0	3.500	7.048	0.000	13.04	ARD
4EXD-6	7	7.980	3.786	263.5	8.326	0.0	4.500	7.048	0.000	13.04	ARD
4EXD-7 (D/S)	16	7.068	3.354	263.5	8.326	0.0	4.500	7.048	0.000	13.04	ARD
4EXD-13N	31	5.487	2.632	263.5	3.669	0.0	6.625	7.048	0.000	13.04	ARD
4EXD-13	2	4.060	1.948	263.5	3.669	0.0	6.625	7.048	0.000	13.04	ARD
4EXD-11	2	4.060	1.948	263.5	3.669	0.0	6.625	7.048	0.000	13.04	ARD
4EXD-10	2	4.060	1.948	263.5	3.669	0.0	6.625	7.048	0.000	13.04	ARD
4EXD-9	2	4.060	1.948	263.5	3.669	0.0	6.625	7.048	0.000	13.04	ARD
4EXD-8	2	4.060	1.948	263.5	3.669	0.0	6.625	7.048	0.000	13.04	ARD
4EXD-12	3	3.841	1.842	263.5	3.669	0.0	6.625	7.048	0.000	13.04	ARD
4EXD-13T (D/S)	15	3.292	1.579	263.5	3.669	0.0	6.625	7.048	0.000	13.04	ARD
4EXD-13T	15	3.292	1.579	263.5	3.669	0.0	6.625	7.048	0.000	13.04	ARD
4EXD-13P	61	2.963	1.421	263.5	3.669	0.0	6.625	7.048	0.000	13.04	ARD
4EXD-11P	53	2.744	1.316	263.5	3.669	0.0	6.625	7.048	0.000	13.04	ARD
4EXD-10P	52	2.744	1.316	263.5	3.669	0.0	6.625	7.048	0.000	13.04	ARD
4EXD-9P	52	2.744	1.316	263.5	3.669	0.0	6.625	7.048	0.000	13.04	ARD
4EXD-8P	52	2.744	1.316	263.5	3.669	0.0	6.625	7.048	0.000	13.04	ARD
4EXD-7P	52	2.744	1.316	263.5	3.669	0.0	6.625	7.048	0.000	13.04	ARD
4EXD-7	16	2.744	1.316	263.5	3.669	0.0	6.625	7.048	0.000	13.04	ARD
4EXD-13P-1	65	2.195	1.053	263.5	3.669	0.0	6.625	7.048	0.000	13.04	ARD
===>Grouped by Line:	***HD22A-1-FWH24B to CV***								***Sorted By: Average Wear Rate***		
4EXD-VALVE-4EX-8-1	22	11.493	5.454	263.5	8.434	0.0	4.500	7.048	0.000	13.04	ARD
4EXD-39 (D/S)	7	10.269	4.873	263.5	14.337	0.0	3.500	7.048	0.000	13.04	ARD

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***HD22A-1-FWH24B to CV***								***Sorted By: Average Wear Rate***		
4EXD-39P	57	8.023	3.807	263.5	14.337	0.0	3.500	7.048	0.000	13.04	ARD
4EXD-39	7	7.980	3.786	263.5	8.326	0.0	4.500	7.048	0.000	13.04	ARD
4EXD-40 (D/S)	16	7.068	3.354	263.5	8.326	0.0	4.500	7.048	0.000	13.04	ARD
4EXD-48N	31	5.487	2.632	263.5	3.669	0.0	6.625	7.048	0.000	13.04	ARD
4EXD-47 (D/S)	12	4.499	2.158	263.5	3.669	0.0	6.625	7.048	0.000	13.04	ARD
4EXD-47	12	4.499	2.158	263.5	3.669	0.0	6.625	7.048	0.000	13.04	ARD
4EXD-46	2	4.060	1.948	263.5	3.669	0.0	6.625	7.048	0.000	13.04	ARD
4EXD-45	2	4.060	1.948	263.5	3.669	0.0	6.625	7.048	0.000	13.04	ARD
4EXD-43	2	4.060	1.948	263.5	3.669	0.0	6.625	7.048	0.000	13.04	ARD
4EXD-42	2	4.060	1.948	263.5	3.669	0.0	6.625	7.048	0.000	13.04	ARD
4EXD-41	2	4.060	1.948	263.5	3.669	0.0	6.625	7.048	0.000	13.04	ARD
4EXD-44	3	3.841	1.842	263.5	3.669	0.0	6.625	7.048	0.000	13.04	ARD
4EXD-48	1	3.621	1.737	263.5	3.669	0.0	6.625	7.048	0.000	13.04	ARD
4EXD-48P	61	2.963	1.421	263.5	3.669	0.0	6.625	7.048	0.000	13.04	ARD
4EXD-45P	52	2.744	1.316	263.5	3.669	0.0	6.625	7.048	0.000	13.04	ARD
4EXD-44P	53	2.744	1.316	263.5	3.669	0.0	6.625	7.048	0.000	13.04	ARD
4EXD-42P	52	2.744	1.316	263.5	3.669	0.0	6.625	7.048	0.000	13.04	ARD
4EXD-41P	52	2.744	1.316	263.5	3.669	0.0	6.625	7.048	0.000	13.04	ARD
4EXD-40P US	52	2.744	1.316	263.5	3.669	0.0	6.625	7.048	0.000	13.04	ARD
4EXD-40P DS	52	2.744	1.316	263.5	3.669	0.0	6.625	7.048	0.000	13.04	ARD
4EXD-40	16	2.744	1.316	263.5	3.669	0.0	6.625	7.048	0.000	13.04	ARD
4EXD-47P	51	2.414	1.158	263.5	3.669	0.0	6.625	7.048	0.000	13.04	ARD
4EXD-46P	62	2.195	1.053	263.5	3.669	0.0	6.625	7.048	0.000	13.04	ARD
===>Grouped by Line:	***HD23A-1-FWH24C to CV***								***Sorted By: Average Wear Rate***		
4EXD-VALVE-4EX-8-2	22	11.493	5.454	263.5	8.434	0.0	4.500	7.048	0.000	13.04	ARD
4EXD-60 (D/S)	7	10.269	4.873	263.5	14.337	0.0	3.500	7.048	0.000	13.04	ARD
4EXD-60P	57	8.023	3.807	263.5	14.337	0.0	3.500	7.048	0.000	13.04	ARD
4EXD-60	7	7.980	3.786	263.5	8.326	0.0	4.500	7.048	0.000	13.04	ARD
4EXD-61 (D/S)	16	7.068	3.354	263.5	8.326	0.0	4.500	7.048	0.000	13.04	ARD
4EXD-71N	31	5.487	2.632	263.5	3.669	0.0	6.625	7.048	0.000	13.04	ARD
4EXD-69 (D/S)	12	4.499	2.158	263.5	3.669	0.0	6.625	7.048	0.000	13.04	ARD
4EXD-69	12	4.499	2.158	263.5	3.669	0.0	6.625	7.048	0.000	13.04	ARD
4EXD-67	2	4.131	1.982	263.5	3.737	0.0	6.625	7.048	0.000	13.04	ARD
4EXD-68	2	4.060	1.948	263.5	3.669	0.0	6.625	7.048	0.000	13.04	ARD

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***HD23A-1-FWH24C to CV***								***Sorted By: Average Wear Rate***		
4EXD-71	2	4.060	1.948	263.5	3.669	0.0	6.625	7.048	0.000	13.04	ARD
4EXD-70	2	4.060	1.948	263.5	3.669	0.0	6.625	7.048	0.000	13.04	ARD
4EXD-66	2	4.060	1.948	263.5	3.669	0.0	6.625	7.048	0.000	13.04	ARD
4EXD-65	2	4.060	1.948	263.5	3.669	0.0	6.625	7.048	0.000	13.04	ARD
4EXD-64	2	4.060	1.948	263.5	3.669	0.0	6.625	7.048	0.000	13.04	ARD
4EXD-63	2	4.060	1.948	263.5	3.669	0.0	6.625	7.048	0.000	13.04	ARD
4EXD-62	2	4.060	1.948	263.5	3.669	0.0	6.625	7.048	0.000	13.04	ARD
4EXD-71P	61	2.963	1.421	263.5	3.669	0.0	6.625	7.048	0.000	13.04	ARD
4EXD-70P	52	2.744	1.316	263.5	3.669	0.0	6.625	7.048	0.000	13.04	ARD
4EXD-67P	52	2.744	1.316	263.5	3.669	0.0	6.625	7.048	0.000	13.04	ARD
4EXD-66P	52	2.744	1.316	263.5	3.669	0.0	6.625	7.048	0.000	13.04	ARD
4EXD-65P	52	2.744	1.316	263.5	3.669	0.0	6.625	7.048	0.000	13.04	ARD
4EXD-64P	52	2.744	1.316	263.5	3.669	0.0	6.625	7.048	0.000	13.04	ARD
4EXD-63P	52	2.744	1.316	263.5	3.669	0.0	6.625	7.048	0.000	13.04	ARD
4EXD-62P	52	2.744	1.316	263.5	3.669	0.0	6.625	7.048	0.000	13.04	ARD
4EXD-61P	52	2.744	1.316	263.5	3.669	0.0	6.625	7.048	0.000	13.04	ARD
4EXD-61	16	2.744	1.316	263.5	3.669	0.0	6.625	7.048	0.000	13.04	ARD
4EXD-69P	62	2.195	1.053	263.5	3.669	0.0	6.625	7.048	0.000	13.04	ARD

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).db

Wear Rate Report

Pass 1 Analysis Exclude Measured Wear

Report Date/Time: 7/6/2010 3:37:44PM
AnalysisDate/Time: 7/6/2010 3:21:22PM

CHECWORKS SFA Version: 3.0 SP-1 (build 109)
Duty Factor (Global) : 1.000

Run Name: FWH 24 DRNS USCV
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 1.000

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***HD21A-1-FWH24A to CV***									***Sorted By: Flow Order***	
4EXD-13N	31	5.487	2.632	263.5	3.669	0.0	6.625	7.048	0.000	13.04	ARD
4EXD-13P	61	2.963	1.421	263.5	3.669	0.0	6.625	7.048	0.000	13.04	ARD
4EXD-13T	15	3.292	1.579	263.5	3.669	0.0	6.625	7.048	0.000	13.04	ARD
4EXD-13T (D/S)	15	3.292	1.579	263.5	3.669	0.0	6.625	7.048	0.000	13.04	ARD
4EXD-13P-1	65	2.195	1.053	263.5	3.669	0.0	6.625	7.048	0.000	13.04	ARD
4EXD-13	2	4.060	1.948	263.5	3.669	0.0	6.625	7.048	0.000	13.04	ARD
4EXD-12	3	3.841	1.842	263.5	3.669	0.0	6.625	7.048	0.000	13.04	ARD
4EXD-11P	53	2.744	1.316	263.5	3.669	0.0	6.625	7.048	0.000	13.04	ARD
4EXD-11	2	4.060	1.948	263.5	3.669	0.0	6.625	7.048	0.000	13.04	ARD
4EXD-10P	52	2.744	1.316	263.5	3.669	0.0	6.625	7.048	0.000	13.04	ARD
4EXD-10	2	4.060	1.948	263.5	3.669	0.0	6.625	7.048	0.000	13.04	ARD
4EXD-9P	52	2.744	1.316	263.5	3.669	0.0	6.625	7.048	0.000	13.04	ARD
4EXD-9	2	4.060	1.948	263.5	3.669	0.0	6.625	7.048	0.000	13.04	ARD
4EXD-8P	52	2.744	1.316	263.5	3.669	0.0	6.625	7.048	0.000	13.04	ARD
4EXD-8	2	4.060	1.948	263.5	3.669	0.0	6.625	7.048	0.000	13.04	ARD
4EXD-7P	52	2.744	1.316	263.5	3.669	0.0	6.625	7.048	0.000	13.04	ARD
4EXD-7	16	2.744	1.316	263.5	3.669	0.0	6.625	7.048	0.000	13.04	ARD
4EXD-7 (D/S)	16	7.068	3.354	263.5	8.326	0.0	4.500	7.048	0.000	13.04	ARD
4EXD-VALVE-4EX-8	22	11.493	5.454	263.5	8.434	0.0	4.500	7.048	0.000	13.04	ARD
4EXD-6	7	7.980	3.786	263.5	8.326	0.0	4.500	7.048	0.000	13.04	ARD
4EXD-6 (D/S)	7	10.269	4.873	263.5	14.337	0.0	3.500	7.048	0.000	13.04	ARD
4EXD-6P	57	8.023	3.807	263.5	14.337	0.0	3.500	7.048	0.000	13.04	ARD
===>Grouped by Line:	***HD22A-1-FWH24B to CV***									***Sorted By: Flow Order***	
4EXD-48N	31	5.487	2.632	263.5	3.669	0.0	6.625	7.048	0.000	13.04	ARD
4EXD-48P	61	2.963	1.421	263.5	3.669	0.0	6.625	7.048	0.000	13.04	ARD

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***HD22A-1-FWH24B to CV***									***Sorted By: Flow Order***	
4EXD-48	1	3.621	1.737	263.5	3.669	0.0	6.625	7.048	0.000	13.04	ARD
4EXD-47P	51	2.414	1.158	263.5	3.669	0.0	6.625	7.048	0.000	13.04	ARD
4EXD-47	12	4.499	2.158	263.5	3.669	0.0	6.625	7.048	0.000	13.04	ARD
4EXD-47 (D/S)	12	4.499	2.158	263.5	3.669	0.0	6.625	7.048	0.000	13.04	ARD
4EXD-46P	62	2.195	1.053	263.5	3.669	0.0	6.625	7.048	0.000	13.04	ARD
4EXD-46	2	4.060	1.948	263.5	3.669	0.0	6.625	7.048	0.000	13.04	ARD
4EXD-45P	52	2.744	1.316	263.5	3.669	0.0	6.625	7.048	0.000	13.04	ARD
4EXD-45	2	4.060	1.948	263.5	3.669	0.0	6.625	7.048	0.000	13.04	ARD
4EXD-44	3	3.841	1.842	263.5	3.669	0.0	6.625	7.048	0.000	13.04	ARD
4EXD-44P	53	2.744	1.316	263.5	3.669	0.0	6.625	7.048	0.000	13.04	ARD
4EXD-43	2	4.060	1.948	263.5	3.669	0.0	6.625	7.048	0.000	13.04	ARD
4EXD-42P	52	2.744	1.316	263.5	3.669	0.0	6.625	7.048	0.000	13.04	ARD
4EXD-42	2	4.060	1.948	263.5	3.669	0.0	6.625	7.048	0.000	13.04	ARD
4EXD-41P	52	2.744	1.316	263.5	3.669	0.0	6.625	7.048	0.000	13.04	ARD
4EXD-41	2	4.060	1.948	263.5	3.669	0.0	6.625	7.048	0.000	13.04	ARD
4EXD-40P US	52	2.744	1.316	263.5	3.669	0.0	6.625	7.048	0.000	13.04	ARD
4EXD-40P DS	52	2.744	1.316	263.5	3.669	0.0	6.625	7.048	0.000	13.04	ARD
4EXD-40	16	2.744	1.316	263.5	3.669	0.0	6.625	7.048	0.000	13.04	ARD
4EXD-40 (D/S)	16	7.068	3.354	263.5	8.326	0.0	4.500	7.048	0.000	13.04	ARD
4EXD-VALVE-4EX-8-1	22	11.493	5.454	263.5	8.434	0.0	4.500	7.048	0.000	13.04	ARD
4EXD-39	7	7.980	3.786	263.5	8.326	0.0	4.500	7.048	0.000	13.04	ARD
4EXD-39 (D/S)	7	10.269	4.873	263.5	14.337	0.0	3.500	7.048	0.000	13.04	ARD
4EXD-39P	57	8.023	3.807	263.5	14.337	0.0	3.500	7.048	0.000	13.04	ARD
===>Grouped by Line:	***HD23A-1-FWH24C to CV***									***Sorted By: Flow Order***	
4EXD-71N	31	5.487	2.632	263.5	3.669	0.0	6.625	7.048	0.000	13.04	ARD
4EXD-71P	61	2.963	1.421	263.5	3.669	0.0	6.625	7.048	0.000	13.04	ARD
4EXD-71	2	4.060	1.948	263.5	3.669	0.0	6.625	7.048	0.000	13.04	ARD
4EXD-70P	52	2.744	1.316	263.5	3.669	0.0	6.625	7.048	0.000	13.04	ARD
4EXD-70	2	4.060	1.948	263.5	3.669	0.0	6.625	7.048	0.000	13.04	ARD
4EXD-69	12	4.499	2.158	263.5	3.669	0.0	6.625	7.048	0.000	13.04	ARD
4EXD-69 (D/S)	12	4.499	2.158	263.5	3.669	0.0	6.625	7.048	0.000	13.04	ARD
4EXD-69P	62	2.195	1.053	263.5	3.669	0.0	6.625	7.048	0.000	13.04	ARD
4EXD-68	2	4.060	1.948	263.5	3.669	0.0	6.625	7.048	0.000	13.04	ARD
4EXD-67P	52	2.744	1.316	263.5	3.669	0.0	6.625	7.048	0.000	13.04	ARD

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	HD23A-1-FWH24C to CV									Sorted By: Flow Order	
4EXD-67	2	4.131	1.982	263.5	3.737	0.0	6.625	7.048	0.000	13.04	ARD
4EXD-66P	52	2.744	1.316	263.5	3.669	0.0	6.625	7.048	0.000	13.04	ARD
4EXD-66	2	4.060	1.948	263.5	3.669	0.0	6.625	7.048	0.000	13.04	ARD
4EXD-65P	52	2.744	1.316	263.5	3.669	0.0	6.625	7.048	0.000	13.04	ARD
4EXD-65	2	4.060	1.948	263.5	3.669	0.0	6.625	7.048	0.000	13.04	ARD
4EXD-64P	52	2.744	1.316	263.5	3.669	0.0	6.625	7.048	0.000	13.04	ARD
4EXD-64	2	4.060	1.948	263.5	3.669	0.0	6.625	7.048	0.000	13.04	ARD
4EXD-63P	52	2.744	1.316	263.5	3.669	0.0	6.625	7.048	0.000	13.04	ARD
4EXD-63	2	4.060	1.948	263.5	3.669	0.0	6.625	7.048	0.000	13.04	ARD
4EXD-62P	52	2.744	1.316	263.5	3.669	0.0	6.625	7.048	0.000	13.04	ARD
4EXD-62	2	4.060	1.948	263.5	3.669	0.0	6.625	7.048	0.000	13.04	ARD
4EXD-61P	52	2.744	1.316	263.5	3.669	0.0	6.625	7.048	0.000	13.04	ARD
4EXD-61	16	2.744	1.316	263.5	3.669	0.0	6.625	7.048	0.000	13.04	ARD
4EXD-61 (D/S)	16	7.068	3.354	263.5	8.326	0.0	4.500	7.048	0.000	13.04	ARD
4EXD-VALVE-4EX-8-2	22	11.493	5.454	263.5	8.434	0.0	4.500	7.048	0.000	13.04	ARD
4EXD-60	7	7.980	3.786	263.5	8.326	0.0	4.500	7.048	0.000	13.04	ARD
4EXD-60 (D/S)	7	10.269	4.873	263.5	14.337	0.0	3.500	7.048	0.000	13.04	ARD
4EXD-60P	57	8.023	3.807	263.5	14.337	0.0	3.500	7.048	0.000	13.04	ARD

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).db

Service Life Report

Pass 1 Analysis Exclude Measured Wear

Report Date/Time: 7/6/2010 3:37:44PM
AnalysisDate/Time: 7/6/2010 3:21:22PM

Run Name: FWH 24 DRNS USCV
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 1.000

CHECWORKS SFA Version: 3.0 SP-1 (build 109)
Duty Factor (Global) :1.000

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **HD21A-1-FWH24A to CV**					***Sorted By:Remaining Life***		
4EXD-VALVE-4EX-8	0.000	-0.083	0.016	0.016	-120,101	No	243,721
4EXD-13N	0.000	0.127	0.022	0.022	350,506	No	243,721
4EXD-6 (D/S)	0.000	0.243	0.012	0.012	416,381	Yes	243,721
4EXD-7 (D/S)	0.000	0.185	0.015	0.015	444,862	No	243,721
4EXD-6	0.000	0.220	0.015	0.015	475,344	Yes	243,721
4EXD-6P	0.000	0.276	0.012	0.012	608,128	No	243,721
4EXD-11	0.000	0.167	0.022	0.022	652,169	No	243,721
4EXD-10	0.000	0.167	0.022	0.022	652,169	No	243,721
4EXD-9	0.000	0.167	0.022	0.022	652,169	No	243,721
4EXD-12	0.000	0.188	0.022	0.022	791,171	Yes	243,721
4EXD-13	0.000	0.204	0.022	0.022	818,162	Yes	243,721
4EXD-8	0.000	0.205	0.022	0.022	823,427	Yes	243,721
4EXD-13T (D/S)	0.000	0.188	0.022	0.022	922,891	No	243,721
4EXD-13T	0.000	0.188	0.022	0.022	922,891	No	243,721
4EXD-13P	0.000	0.198	0.026	0.026	1,058,629	No	243,721
4EXD-10P	0.000	0.204	0.026	0.026	1,183,965	No	243,721
4EXD-9P	0.000	0.204	0.026	0.026	1,183,965	No	243,721
4EXD-8P	0.000	0.217	0.026	0.026	1,275,348	Yes	243,721
4EXD-7P	0.000	0.217	0.026	0.026	1,275,348	Yes	243,721
4EXD-11P	0.000	0.229	0.026	0.026	1,351,757	Yes	243,721
4EXD-7	0.000	0.237	0.022	0.022	1,433,592	No	243,721
4EXD-13P-1	0.000	0.233	0.026	0.026	1,724,844	Yes	243,721
===>Grouped by Line: **HD22A-1-FWH24B to CV**					***Sorted By:Remaining Life***		
4EXD-VALVE-4EX-8-1	0.000	-0.083	0.016	0.016	-120,101	No	243,721
4EXD-39 (D/S)	0.000	0.198	0.012	0.012	335,183	No	243,721
4EXD-48N	0.000	0.127	0.022	0.022	350,506	No	243,721

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **HD22A-1-FWH24B to CV**					***Sorted By:Remaining Life***		
4EXD-39	0.000	0.176	0.015	0.015	371,527	No	243,721
4EXD-39P	0.000	0.220	0.014	0.014	475,908	No	243,721
4EXD-47	0.000	0.155	0.022	0.022	538,974	No	243,721
4EXD-47 (D/S)	0.000	0.155	0.022	0.022	538,974	No	243,721
4EXD-40 (D/S)	0.000	0.243	0.015	0.015	596,403	Yes	243,721
4EXD-46	0.000	0.167	0.022	0.022	652,169	No	243,721
4EXD-45	0.000	0.167	0.022	0.022	652,169	No	243,721
4EXD-43	0.000	0.167	0.022	0.022	652,169	No	243,721
4EXD-44	0.000	0.173	0.022	0.022	718,468	No	243,721
4EXD-42	0.000	0.189	0.022	0.022	750,700	Yes	243,721
4EXD-48	0.000	0.179	0.022	0.022	792,804	No	243,721
4EXD-41	0.000	0.236	0.022	0.022	962,849	No	243,721
4EXD-48P	0.000	0.198	0.026	0.026	1,058,629	No	243,721
4EXD-44P	0.000	0.204	0.026	0.026	1,183,965	No	243,721
4EXD-42P	0.000	0.204	0.026	0.026	1,183,965	No	243,721
4EXD-40P US	0.000	0.204	0.026	0.026	1,183,965	No	243,721
4EXD-45P	0.000	0.223	0.026	0.026	1,311,820	Yes	243,721
4EXD-40P DS	0.000	0.228	0.026	0.026	1,345,101	No	243,721
4EXD-41P	0.000	0.229	0.026	0.026	1,355,223	Yes	243,721
4EXD-47P	0.000	0.235	0.026	0.026	1,579,464	Yes	243,721
4EXD-46P	0.000	0.219	0.026	0.026	1,606,974	No	243,721
4EXD-40	0.000	0.276	0.022	0.022	1,692,978	Yes	243,721
===>Grouped by Line: **HD23A-1-FWH24C to CV**					***Sorted By:Remaining Life***		
4EXD-VALVE-4EX-8-2	0.000	-0.083	0.016	0.016	-120,101	No	243,721
4EXD-60P	0.000	-0.007	0.014	0.014	-47,048	No	243,721
4EXD-60	0.000	0.151	0.015	0.015	314,984	No	243,721
4EXD-71N	0.000	0.127	0.022	0.022	350,506	No	243,721
4EXD-60 (D/S)	0.000	0.251	0.012	0.012	430,546	No	243,721
4EXD-69	0.000	0.155	0.022	0.022	538,974	No	243,721
4EXD-69 (D/S)	0.000	0.155	0.022	0.022	538,974	No	243,721
4EXD-61 (D/S)	0.000	0.242	0.015	0.015	593,068	Yes	243,721
4EXD-68	0.000	0.167	0.022	0.022	652,169	No	243,721
4EXD-66	0.000	0.167	0.022	0.022	652,169	No	243,721
4EXD-65	0.000	0.167	0.022	0.022	652,169	No	243,721
4EXD-64	0.000	0.167	0.022	0.022	652,169	No	243,721
4EXD-62	0.000	0.167	0.022	0.022	652,169	No	243,721

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **HD23A-1-FWH24C to CV**					***Sorted By:Remaining Life***		
4EXD-63	0.000	0.193	0.022	0.022	768,690	Yes	243,721
4EXD-67	0.308	0.215	0.022	0.022	853,670	Yes	243,721
4EXD-70	0.000	0.230	0.022	0.022	935,097	No	243,721
4EXD-71	0.000	0.253	0.022	0.022	1,039,277	Yes	243,721
4EXD-67P	0.000	0.204	0.026	0.026	1,183,965	No	243,721
4EXD-66P	0.000	0.204	0.026	0.026	1,183,965	No	243,721
4EXD-65P	0.000	0.204	0.026	0.026	1,183,965	No	243,721
4EXD-64P	0.000	0.204	0.026	0.026	1,183,965	No	243,721
4EXD-63P	0.000	0.204	0.026	0.026	1,183,965	No	243,721
4EXD-62P	0.000	0.204	0.026	0.026	1,183,965	No	243,721
4EXD-61P	0.000	0.204	0.026	0.026	1,183,965	No	243,721
4EXD-71P	0.000	0.226	0.026	0.026	1,236,282	Yes	243,721
4EXD-70P	0.000	0.253	0.026	0.026	1,514,765	Yes	243,721
4EXD-69P	0.000	0.219	0.026	0.026	1,606,974	No	243,721
4EXD-61	0.000	0.281	0.022	0.022	1,723,177	No	243,721

Note:
[1] Predictions are based on last Tmeas to analysis ending period.

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).db

Service Life Report

Pass 1 Analysis Exclude Measured Wear

Report Date/Time: 7/6/2010 3:37:44PM
AnalysisDate/Time: 7/6/2010 3:21:22PM

Run Name: FWH 24 DRNS USCV
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 1.000

CHECWORKS SFA Version: 3.0 SP-1 (build 109)
Duty Factor (Global) : 1.000

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **HD21A-1-FWH24A to CV**					***Sorted By:Flow Order***		
4EXD-13N	0.000	0.127	0.022	0.022	350,506	No	243,721
4EXD-13P	0.000	0.198	0.026	0.026	1,058,629	No	243,721
4EXD-13T	0.000	0.188	0.022	0.022	922,891	No	243,721
4EXD-13T (D/S)	0.000	0.188	0.022	0.022	922,891	No	243,721
4EXD-13P-1	0.000	0.233	0.026	0.026	1,724,844	Yes	243,721
4EXD-13	0.000	0.204	0.022	0.022	818,162	Yes	243,721
4EXD-12	0.000	0.188	0.022	0.022	791,171	Yes	243,721
4EXD-11P	0.000	0.229	0.026	0.026	1,351,757	Yes	243,721
4EXD-11	0.000	0.167	0.022	0.022	652,169	No	243,721
4EXD-10P	0.000	0.204	0.026	0.026	1,183,965	No	243,721
4EXD-10	0.000	0.167	0.022	0.022	652,169	No	243,721
4EXD-9P	0.000	0.204	0.026	0.026	1,183,965	No	243,721
4EXD-9	0.000	0.167	0.022	0.022	652,169	No	243,721
4EXD-8P	0.000	0.217	0.026	0.026	1,275,348	Yes	243,721
4EXD-8	0.000	0.205	0.022	0.022	823,427	Yes	243,721
4EXD-7P	0.000	0.217	0.026	0.026	1,275,348	Yes	243,721
4EXD-7	0.000	0.237	0.022	0.022	1,433,592	No	243,721
4EXD-7 (D/S)	0.000	0.185	0.015	0.015	444,862	No	243,721
4EXD-VALVE-4EX-8	0.000	-0.083	0.016	0.016	-120,101	No	243,721
4EXD-6	0.000	0.220	0.015	0.015	475,344	Yes	243,721
4EXD-6 (D/S)	0.000	0.243	0.012	0.012	416,381	Yes	243,721
4EXD-6P	0.000	0.276	0.012	0.012	608,128	No	243,721
===>Grouped by Line: **HD22A-1-FWH24B to CV**					***Sorted By:Flow Order***		
4EXD-48N	0.000	0.127	0.022	0.022	350,506	No	243,721
4EXD-48P	0.000	0.198	0.026	0.026	1,058,629	No	243,721
4EXD-48	0.000	0.179	0.022	0.022	792,804	No	243,721

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **HD22A-1-FWH24B to CV**					***Sorted By:Flow Order***		
4EXD-47P	0.000	0.235	0.026	0.026	1,579,464	Yes	243,721
4EXD-47	0.000	0.155	0.022	0.022	538,974	No	243,721
4EXD-47 (D/S)	0.000	0.155	0.022	0.022	538,974	No	243,721
4EXD-46P	0.000	0.219	0.026	0.026	1,606,974	No	243,721
4EXD-46	0.000	0.167	0.022	0.022	652,169	No	243,721
4EXD-45P	0.000	0.223	0.026	0.026	1,311,820	Yes	243,721
4EXD-45	0.000	0.167	0.022	0.022	652,169	No	243,721
4EXD-44	0.000	0.173	0.022	0.022	718,468	No	243,721
4EXD-44P	0.000	0.204	0.026	0.026	1,183,965	No	243,721
4EXD-43	0.000	0.167	0.022	0.022	652,169	No	243,721
4EXD-42P	0.000	0.204	0.026	0.026	1,183,965	No	243,721
4EXD-42	0.000	0.189	0.022	0.022	750,700	Yes	243,721
4EXD-41P	0.000	0.229	0.026	0.026	1,355,223	Yes	243,721
4EXD-41	0.000	0.236	0.022	0.022	962,849	No	243,721
4EXD-40P US	0.000	0.204	0.026	0.026	1,183,965	No	243,721
4EXD-40P DS	0.000	0.228	0.026	0.026	1,345,101	No	243,721
4EXD-40	0.000	0.276	0.022	0.022	1,692,978	Yes	243,721
4EXD-40 (D/S)	0.000	0.243	0.015	0.015	596,403	Yes	243,721
4EXD-VALVE-4EX-8-1	0.000	-0.083	0.016	0.016	-120,101	No	243,721
4EXD-39	0.000	0.176	0.015	0.015	371,527	No	243,721
4EXD-39 (D/S)	0.000	0.198	0.012	0.012	335,183	No	243,721
4EXD-39P	0.000	0.220	0.014	0.014	475,908	No	243,721
===>Grouped by Line: **HD23A-1-FWH24C to CV**					***Sorted By:Flow Order***		
4EXD-71N	0.000	0.127	0.022	0.022	350,506	No	243,721
4EXD-71P	0.000	0.226	0.026	0.026	1,236,282	Yes	243,721
4EXD-71	0.000	0.253	0.022	0.022	1,039,277	Yes	243,721
4EXD-70P	0.000	0.253	0.026	0.026	1,514,765	Yes	243,721
4EXD-70	0.000	0.230	0.022	0.022	935,097	No	243,721
4EXD-69	0.000	0.155	0.022	0.022	538,974	No	243,721
4EXD-69 (D/S)	0.000	0.155	0.022	0.022	538,974	No	243,721
4EXD-69P	0.000	0.219	0.026	0.026	1,606,974	No	243,721
4EXD-68	0.000	0.167	0.022	0.022	652,169	No	243,721
4EXD-67P	0.000	0.204	0.026	0.026	1,183,965	No	243,721
4EXD-67	0.308	0.215	0.022	0.022	853,670	Yes	243,721
4EXD-66P	0.000	0.204	0.026	0.026	1,183,965	No	243,721
4EXD-66	0.000	0.167	0.022	0.022	652,169	No	243,721

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **HD23A-1-FWH24C to CV**					***Sorted By:Flow Order***		
4EXD-65P	0.000	0.204	0.026	0.026	1,183,965	No	243,721
4EXD-65	0.000	0.167	0.022	0.022	652,169	No	243,721
4EXD-64P	0.000	0.204	0.026	0.026	1,183,965	No	243,721
4EXD-64	0.000	0.167	0.022	0.022	652,169	No	243,721
4EXD-63P	0.000	0.204	0.026	0.026	1,183,965	No	243,721
4EXD-63	0.000	0.193	0.022	0.022	768,690	Yes	243,721
4EXD-62P	0.000	0.204	0.026	0.026	1,183,965	No	243,721
4EXD-62	0.000	0.167	0.022	0.022	652,169	No	243,721
4EXD-61P	0.000	0.204	0.026	0.026	1,183,965	No	243,721
4EXD-61	0.000	0.281	0.022	0.022	1,723,177	No	243,721
4EXD-61 (D/S)	0.000	0.242	0.015	0.015	593,068	Yes	243,721
4EXD-VALVE-4EX-8-2	0.000	-0.083	0.016	0.016	-120,101	No	243,721
4EXD-60	0.000	0.151	0.015	0.015	314,984	No	243,721
4EXD-60 (D/S)	0.000	0.251	0.012	0.012	430,546	No	243,721
4EXD-60P	0.000	-0.007	0.014	0.014	-47,048	No	243,721

Note:
[1] Predictions are based on last Tmeas to analysis ending period.

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).db

Wear Rate Report

Pass 1 Analysis Exclude Measured Wear

Report Date/Time: 7/6/2010 3:38:15PM
AnalysisDate/Time: 7/6/2010 3:21:34PM

CHECWORKS SFA Version: 3.0 SP-1 (build 109)

Duty Factor (Global) : 1.000

Run Name: FWH 25 DRNS TO HDT
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 1.000

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***HD9-1-FWH25A to HTR DRN TK***								***Sorted By: Average Wear Rate***		
5EXD-VALVE-5EX-8	22	4.020	1.680	386.3	3.438	0.0	10.750	6.811	0.000	58.80	ARD
5EXD-21N	31	3.840	1.605	386.3	3.272	0.0	10.750	6.811	0.000	58.80	ARD
5EXD-20N	30	3.072	1.284	386.3	3.272	0.0	10.750	6.811	0.000	58.80	ARD
5EXD-15	4	2.904	1.214	386.3	3.350	0.0	10.750	6.811	0.000	58.80	ARD
5EXD-20	2	2.898	1.211	386.3	3.342	0.0	10.750	6.811	0.000	58.80	ARD
5EXD-17	2	2.888	1.207	386.3	3.330	0.0	10.750	6.811	0.000	58.80	ARD
5EXD-21	2	2.841	1.188	386.3	3.272	0.0	10.750	6.811	0.000	58.80	ARD
5EXD-16	2	2.841	1.188	386.3	3.272	0.0	10.750	6.811	0.000	58.80	ARD
5EXD-18	2	2.841	1.188	386.3	3.272	0.0	10.750	6.811	0.000	58.80	ARD
5EXD-19	2	2.841	1.188	386.3	3.272	0.0	10.750	6.811	0.000	58.80	ARD
5EXD-16P	54	2.458	1.027	386.3	3.315	0.0	10.750	6.811	0.000	58.80	ARD
5EXD-21P	61	2.074	0.867	386.3	3.315	0.0	10.750	6.811	0.000	58.80	ARD
5EXD-15P	52	1.920	0.802	386.3	3.272	0.0	10.750	6.811	0.000	58.80	ARD
5EXD-17P US	52	1.920	0.802	386.3	3.272	0.0	10.750	6.811	0.000	58.80	ARD
5EXD-17P DS	52	1.920	0.802	386.3	3.272	0.0	10.750	6.811	0.000	58.80	ARD
5EXD-18P	52	1.920	0.802	386.3	3.315	0.0	10.750	6.811	0.000	58.80	ARD
5EXD-19P	52	1.920	0.802	386.3	3.272	0.0	10.750	6.811	0.000	58.80	ARD
5EXD-20P	52	1.920	0.802	386.3	3.298	0.0	10.750	6.811	0.000	58.80	ARD
5EXD-20P DS	52	1.920	0.802	386.3	3.298	0.0	10.750	6.811	0.000	58.80	ARD
===>Grouped by Line:	***HD9-2-FWH25B to HTR DRN TK***								***Sorted By: Average Wear Rate***		
5EXD-VALVE-5EX-8-1	22	4.020	1.680	386.3	3.438	0.0	10.750	6.811	0.000	58.80	ARD
5EXD-9N	31	3.840	1.605	386.3	3.272	0.0	10.750	6.811	0.000	58.80	ARD
5EXD-14N	30	3.072	1.284	386.3	3.272	0.0	10.750	6.811	0.000	58.80	ARD
5EXD-10	2	2.903	1.213	386.3	3.349	0.0	10.750	6.811	0.000	58.80	ARD
5EXD-9	2	2.841	1.188	386.3	3.272	0.0	10.750	6.811	0.000	58.80	ARD

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***HD9-2-FWH25B to HTR DRN TK***								***Sorted By: Average Wear Rate***		
5EXD-11	2	2.841	1.188	386.3	3.272	0.0	10.750	6.811	0.000	58.80	ARD
5EXD-12	2	2.841	1.188	386.3	3.272	0.0	10.750	6.811	0.000	58.80	ARD
5EXD-13	2	2.841	1.188	386.3	3.272	0.0	10.750	6.811	0.000	58.80	ARD
5EXD-14	2	2.841	1.188	386.3	3.272	0.0	10.750	6.811	0.000	58.80	ARD
5EXD-9P	61	2.074	0.867	386.3	3.315	0.0	10.750	6.811	0.000	58.80	ARD
5EXD-10P DS	52	1.920	0.802	386.3	3.272	0.0	10.750	6.811	0.000	58.80	ARD
5EXD-11P US	52	1.920	0.802	386.3	3.272	0.0	10.750	6.811	0.000	58.80	ARD
5EXD-12P	52	1.920	0.802	386.3	3.315	0.0	10.750	6.811	0.000	58.80	ARD
5EXD-13P	52	1.920	0.802	386.3	3.272	0.0	10.750	6.811	0.000	58.80	ARD
5EXD-14P	52	1.920	0.802	386.3	3.298	0.0	10.750	6.811	0.000	58.80	ARD
5EXD-14P DS	52	1.920	0.802	386.3	3.298	0.0	10.750	6.811	0.000	58.80	ARD
===>Grouped by Line:	***HD9-3-FWH25C to HTR DRN TK***								***Sorted By: Average Wear Rate***		
5EXD-VALVE-5EX-8-2	22	4.020	1.680	386.3	3.438	0.0	10.750	6.811	0.000	58.80	ARD
5EXD-1N	31	3.840	1.605	386.3	3.272	0.0	10.750	6.811	0.000	58.80	ARD
5EXD-8N	30	3.072	1.284	386.3	3.272	0.0	10.750	6.811	0.000	58.80	ARD
5EXD-3	2	2.890	1.208	386.3	3.332	0.0	10.750	6.811	0.000	58.80	ARD
5EXD-5	2	2.888	1.207	386.3	3.330	0.0	10.750	6.811	0.000	58.80	ARD
5EXD-4	2	2.878	1.203	386.3	3.317	0.0	10.750	6.811	0.000	58.80	ARD
5EXD-6	2	2.878	1.203	386.3	3.317	0.0	10.750	6.811	0.000	58.80	ARD
5EXD-7	4	2.873	1.201	386.3	3.311	0.0	10.750	6.811	0.000	58.80	ARD
5EXD-1	2	2.841	1.188	386.3	3.272	0.0	10.750	6.811	0.000	58.80	ARD
5EXD-2	2	2.841	1.188	386.3	3.272	0.0	10.750	6.811	0.000	58.80	ARD
5EXD-8	2	2.841	1.188	386.3	3.272	0.0	10.750	6.811	0.000	58.80	ARD
5EXD-8P	54	2.458	1.027	386.3	3.298	0.0	10.750	6.811	0.000	58.80	ARD
5EXD-1P	61	2.074	0.867	386.3	3.315	0.0	10.750	6.811	0.000	58.80	ARD
5EXD-2P	52	1.920	0.802	386.3	3.272	0.0	10.750	6.811	0.000	58.80	ARD
5EXD-3P US	52	1.920	0.802	386.3	3.315	0.0	10.750	6.811	0.000	58.80	ARD
5EXD-3P DS	52	1.920	0.802	386.3	3.315	0.0	10.750	6.811	0.000	58.80	ARD
5EXD-4P	52	1.920	0.802	386.3	3.272	0.0	10.750	6.811	0.000	58.80	ARD
5EXD-5P	52	1.920	0.802	386.3	3.272	0.0	10.750	6.811	0.000	58.80	ARD
5EXD-6P	52	1.920	0.802	386.3	3.315	0.0	10.750	6.811	0.000	58.80	ARD

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).db

Wear Rate Report

Pass 1 Analysis Exclude Measured Wear

Report Date/Time: 7/6/2010 3:37:44PM
AnalysisDate/Time: 7/6/2010 3:21:34PM

CHECWORKS SFA Version: 3.0 SP-1 (build 109)
Duty Factor (Global) : 1.000

Run Name: FWH 25 DRNS TO HDT
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 1.000

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***HD9-1-FWH25A to HTR DRN TK***									***Sorted By: Flow Order***	
5EXD-21N	31	3.840	1.605	386.3	3.272	0.0	10.750	6.811	0.000	58.80	ARD
5EXD-21P	61	2.074	0.867	386.3	3.315	0.0	10.750	6.811	0.000	58.80	ARD
5EXD-21	2	2.841	1.188	386.3	3.272	0.0	10.750	6.811	0.000	58.80	ARD
5EXD-15P	52	1.920	0.802	386.3	3.272	0.0	10.750	6.811	0.000	58.80	ARD
5EXD-15	4	2.904	1.214	386.3	3.350	0.0	10.750	6.811	0.000	58.80	ARD
5EXD-16P	54	2.458	1.027	386.3	3.315	0.0	10.750	6.811	0.000	58.80	ARD
5EXD-16	2	2.841	1.188	386.3	3.272	0.0	10.750	6.811	0.000	58.80	ARD
5EXD-17P US	52	1.920	0.802	386.3	3.272	0.0	10.750	6.811	0.000	58.80	ARD
5EXD-17P DS	52	1.920	0.802	386.3	3.272	0.0	10.750	6.811	0.000	58.80	ARD
5EXD-17	2	2.888	1.207	386.3	3.330	0.0	10.750	6.811	0.000	58.80	ARD
5EXD-18P	52	1.920	0.802	386.3	3.315	0.0	10.750	6.811	0.000	58.80	ARD
5EXD-18	2	2.841	1.188	386.3	3.272	0.0	10.750	6.811	0.000	58.80	ARD
5EXD-19P	52	1.920	0.802	386.3	3.272	0.0	10.750	6.811	0.000	58.80	ARD
5EXD-19	2	2.841	1.188	386.3	3.272	0.0	10.750	6.811	0.000	58.80	ARD
5EXD-20P	52	1.920	0.802	386.3	3.298	0.0	10.750	6.811	0.000	58.80	ARD
5EXD-20P DS	52	1.920	0.802	386.3	3.298	0.0	10.750	6.811	0.000	58.80	ARD
5EXD-20	2	2.898	1.211	386.3	3.342	0.0	10.750	6.811	0.000	58.80	ARD
5EXD-VALVE-5EX-8	22	4.020	1.680	386.3	3.438	0.0	10.750	6.811	0.000	58.80	ARD
5EXD-20N	30	3.072	1.284	386.3	3.272	0.0	10.750	6.811	0.000	58.80	ARD
===>Grouped by Line:	***HD9-2-FWH25B to HTR DRN TK***									***Sorted By: Flow Order***	
5EXD-9N	31	3.840	1.605	386.3	3.272	0.0	10.750	6.811	0.000	58.80	ARD
5EXD-9P	61	2.074	0.867	386.3	3.315	0.0	10.750	6.811	0.000	58.80	ARD
5EXD-9	2	2.841	1.188	386.3	3.272	0.0	10.750	6.811	0.000	58.80	ARD
5EXD-10P DS	52	1.920	0.802	386.3	3.272	0.0	10.750	6.811	0.000	58.80	ARD
5EXD-10	2	2.903	1.213	386.3	3.349	0.0	10.750	6.811	0.000	58.80	ARD

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***HD9-2-FWH25B to HTR DRN TK***									***Sorted By: Flow Order***	
5EXD-11P US	52	1.920	0.802	386.3	3.272	0.0	10.750	6.811	0.000	58.80	ARD
5EXD-11	2	2.841	1.188	386.3	3.272	0.0	10.750	6.811	0.000	58.80	ARD
5EXD-12P	52	1.920	0.802	386.3	3.315	0.0	10.750	6.811	0.000	58.80	ARD
5EXD-12	2	2.841	1.188	386.3	3.272	0.0	10.750	6.811	0.000	58.80	ARD
5EXD-13P	52	1.920	0.802	386.3	3.272	0.0	10.750	6.811	0.000	58.80	ARD
5EXD-13	2	2.841	1.188	386.3	3.272	0.0	10.750	6.811	0.000	58.80	ARD
5EXD-14P	52	1.920	0.802	386.3	3.298	0.0	10.750	6.811	0.000	58.80	ARD
5EXD-14P DS	52	1.920	0.802	386.3	3.298	0.0	10.750	6.811	0.000	58.80	ARD
5EXD-14	2	2.841	1.188	386.3	3.272	0.0	10.750	6.811	0.000	58.80	ARD
5EXD-VALVE-5EX-8-1	22	4.020	1.680	386.3	3.438	0.0	10.750	6.811	0.000	58.80	ARD
5EXD-14N	30	3.072	1.284	386.3	3.272	0.0	10.750	6.811	0.000	58.80	ARD
===>Grouped by Line:	***HD9-3-FWH25C to HTR DRN TK***									***Sorted By: Flow Order***	
5EXD-1N	31	3.840	1.605	386.3	3.272	0.0	10.750	6.811	0.000	58.80	ARD
5EXD-1P	61	2.074	0.867	386.3	3.315	0.0	10.750	6.811	0.000	58.80	ARD
5EXD-3	2	2.890	1.208	386.3	3.332	0.0	10.750	6.811	0.000	58.80	ARD
5EXD-2P	52	1.920	0.802	386.3	3.272	0.0	10.750	6.811	0.000	58.80	ARD
5EXD-4	2	2.878	1.203	386.3	3.317	0.0	10.750	6.811	0.000	58.80	ARD
5EXD-3P US	52	1.920	0.802	386.3	3.315	0.0	10.750	6.811	0.000	58.80	ARD
5EXD-3P DS	52	1.920	0.802	386.3	3.315	0.0	10.750	6.811	0.000	58.80	ARD
5EXD-5	2	2.888	1.207	386.3	3.330	0.0	10.750	6.811	0.000	58.80	ARD
5EXD-4P	52	1.920	0.802	386.3	3.272	0.0	10.750	6.811	0.000	58.80	ARD
5EXD-1	2	2.841	1.188	386.3	3.272	0.0	10.750	6.811	0.000	58.80	ARD
5EXD-5P	52	1.920	0.802	386.3	3.272	0.0	10.750	6.811	0.000	58.80	ARD
5EXD-2	2	2.841	1.188	386.3	3.272	0.0	10.750	6.811	0.000	58.80	ARD
5EXD-6P	52	1.920	0.802	386.3	3.315	0.0	10.750	6.811	0.000	58.80	ARD
5EXD-6	2	2.878	1.203	386.3	3.317	0.0	10.750	6.811	0.000	58.80	ARD
5EXD-7	4	2.873	1.201	386.3	3.311	0.0	10.750	6.811	0.000	58.80	ARD
5EXD-8P	54	2.458	1.027	386.3	3.298	0.0	10.750	6.811	0.000	58.80	ARD
5EXD-8	2	2.841	1.188	386.3	3.272	0.0	10.750	6.811	0.000	58.80	ARD
5EXD-VALVE-5EX-8-2	22	4.020	1.680	386.3	3.438	0.0	10.750	6.811	0.000	58.80	ARD
5EXD-8N	30	3.072	1.284	386.3	3.272	0.0	10.750	6.811	0.000	58.80	ARD

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).db

Service Life Report

Pass 1 Analysis Exclude Measured Wear

Report Date/Time: 7/6/2010 3:37:44PM
AnalysisDate/Time: 7/6/2010 3:21:34PM

Run Name: FWH 25 DRNS TO HDT
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 1.000

CHECWORKS SFA Version: 3.0 SP-1 (build 109)
Duty Factor (Global) :1.000

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **HD9-1-FWH25A to HTR DRN TK**					***Sorted By:Remaining Life***		
5EXD-VALVE-5EX-8	0.000	0.138	0.095	0.095	223,377	No	243,721
5EXD-21N	0.000	0.143	0.089	0.089	295,735	No	243,721
5EXD-20N	0.000	0.165	0.089	0.089	515,457	No	243,721
5EXD-21	0.000	0.171	0.089	0.089	604,534	No	243,721
5EXD-18	0.000	0.171	0.089	0.089	604,534	No	243,721
5EXD-20P	0.000	0.167	0.104	0.104	684,802	Yes	243,721
5EXD-21P	0.000	0.192	0.104	0.104	891,006	No	243,721
5EXD-19	0.000	0.215	0.089	0.089	925,893	Yes	243,721
5EXD-16	0.000	0.216	0.089	0.089	933,270	Yes	243,721
5EXD-20	0.304	0.225	0.089	0.089	983,000	Yes	243,721
5EXD-16P	0.000	0.222	0.104	0.104	1,005,827	Yes	243,721
5EXD-19P	0.000	0.197	0.104	0.104	1,008,939	No	243,721
5EXD-15	0.310	0.232	0.089	0.089	1,031,559	Yes	243,721
5EXD-17	0.295	0.238	0.089	0.089	1,077,698	Yes	243,721
5EXD-20P DS	0.000	0.216	0.104	0.104	1,225,256	No	243,721
5EXD-17P US	0.000	0.217	0.104	0.104	1,236,174	Yes	243,721
5EXD-17P DS	0.000	0.222	0.104	0.104	1,290,760	Yes	243,721
5EXD-15P	0.000	0.224	0.104	0.104	1,304,970	Yes	243,721
5EXD-18P	0.000	0.230	0.104	0.104	1,377,676	Yes	243,721
===>Grouped by Line: **HD9-2-FWH25B to HTR DRN TK**					***Sorted By:Remaining Life***		
5EXD-VALVE-5EX-8-1	0.000	0.138	0.095	0.095	223,377	No	243,721
5EXD-9N	0.000	0.143	0.089	0.089	295,735	No	243,721
5EXD-14N	0.000	0.165	0.089	0.089	515,457	No	243,721
5EXD-11	0.000	0.171	0.089	0.089	604,534	No	243,721
5EXD-12	0.000	0.171	0.089	0.089	604,534	No	243,721
5EXD-9	0.000	0.171	0.089	0.089	604,534	No	243,721

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>*Grouped by Line:* **HD9-2-FWH25B to HTR DRN TK**					***Sorted By:Remaining Life***		
5EXD-14P	0.000	0.161	0.104	0.104	624,198	Yes	243,721
5EXD-9P	0.000	0.192	0.104	0.104	891,006	No	243,721
5EXD-14	0.000	0.211	0.089	0.089	896,387	No	243,721
5EXD-13	0.000	0.211	0.089	0.089	896,387	Yes	243,721
5EXD-14P DS	0.000	0.187	0.104	0.104	908,657	No	243,721
5EXD-12P	0.000	0.197	0.104	0.104	1,008,939	No	243,721
5EXD-13P	0.000	0.197	0.104	0.104	1,008,939	No	243,721
5EXD-10	0.309	0.263	0.089	0.089	1,255,775	Yes	243,721
5EXD-11P US	0.000	0.230	0.104	0.104	1,370,474	Yes	243,721
5EXD-10P DS	0.000	0.231	0.104	0.104	1,381,391	Yes	243,721
===>*Grouped by Line:* **HD9-3-FWH25C to HTR DRN TK**					***Sorted By:Remaining Life***		
5EXD-VALVE-5EX-8-2	0.000	0.138	0.095	0.095	223,377	No	243,721
5EXD-1N	0.000	0.143	0.089	0.089	295,735	No	243,721
5EXD-8N	0.000	0.165	0.089	0.089	515,457	No	243,721
5EXD-1	0.000	0.171	0.089	0.089	604,534	No	243,721
5EXD-8	0.000	0.198	0.089	0.089	800,493	Yes	243,721
5EXD-2	0.000	0.208	0.089	0.089	881,122	Yes	243,721
5EXD-3	0.296	0.213	0.089	0.089	899,725	Yes	243,721
5EXD-8P	0.000	0.220	0.104	0.104	985,332	Yes	243,721
5EXD-3P DS	0.000	0.197	0.104	0.104	1,008,939	No	243,721
5EXD-6P	0.000	0.197	0.104	0.104	1,008,939	No	243,721
5EXD-7	0.280	0.228	0.089	0.089	1,016,282	Yes	243,721
5EXD-4	0.285	0.229	0.089	0.089	1,020,613	Yes	243,721
5EXD-6	0.285	0.230	0.089	0.089	1,028,771	Yes	243,721
5EXD-5	0.295	0.234	0.089	0.089	1,048,672	Yes	243,721
5EXD-5P	0.000	0.220	0.104	0.104	1,269,004	Yes	243,721
5EXD-1P	0.000	0.230	0.104	0.104	1,269,464	No	243,721
5EXD-4P	0.000	0.232	0.104	0.104	1,399,511	Yes	243,721
5EXD-2P	0.000	0.232	0.104	0.104	1,400,010	Yes	243,721
5EXD-3P US	0.000	0.243	0.104	0.104	1,516,498	Yes	243,721

Note:
[1] Predictions are based on last Tmeas to analysis ending period.

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).db

Service Life Report

Pass 1 Analysis Exclude Measured Wear

Report Date/Time: 7/6/2010 3:37:44PM
AnalysisDate/Time: 7/6/2010 3:21:34PM

Run Name: FWH 25 DRNS TO HDT
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 1.000

CHECWORKS SFA Version: 3.0 SP-1 (build 109)
Duty Factor (Global) : 1.000

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **HD9-1-FWH25A to HTR DRN TK**					***Sorted By:Flow Order***		
5EXD-21N	0.000	0.143	0.089	0.089	295,735	No	243,721
5EXD-21P	0.000	0.192	0.104	0.104	891,006	No	243,721
5EXD-21	0.000	0.171	0.089	0.089	604,534	No	243,721
5EXD-15P	0.000	0.224	0.104	0.104	1,304,970	Yes	243,721
5EXD-15	0.310	0.232	0.089	0.089	1,031,559	Yes	243,721
5EXD-16P	0.000	0.222	0.104	0.104	1,005,827	Yes	243,721
5EXD-16	0.000	0.216	0.089	0.089	933,270	Yes	243,721
5EXD-17P US	0.000	0.217	0.104	0.104	1,236,174	Yes	243,721
5EXD-17P DS	0.000	0.222	0.104	0.104	1,290,760	Yes	243,721
5EXD-17	0.295	0.238	0.089	0.089	1,077,698	Yes	243,721
5EXD-18P	0.000	0.230	0.104	0.104	1,377,676	Yes	243,721
5EXD-18	0.000	0.171	0.089	0.089	604,534	No	243,721
5EXD-19P	0.000	0.197	0.104	0.104	1,008,939	No	243,721
5EXD-19	0.000	0.215	0.089	0.089	925,893	Yes	243,721
5EXD-20P	0.000	0.167	0.104	0.104	684,802	Yes	243,721
5EXD-20P DS	0.000	0.216	0.104	0.104	1,225,256	No	243,721
5EXD-20	0.304	0.225	0.089	0.089	983,000	Yes	243,721
5EXD-VALVE-5EX-8	0.000	0.138	0.095	0.095	223,377	No	243,721
5EXD-20N	0.000	0.165	0.089	0.089	515,457	No	243,721
===>Grouped by Line: **HD9-2-FWH25B to HTR DRN TK**					***Sorted By:Flow Order***		
5EXD-9N	0.000	0.143	0.089	0.089	295,735	No	243,721
5EXD-9P	0.000	0.192	0.104	0.104	891,006	No	243,721
5EXD-9	0.000	0.171	0.089	0.089	604,534	No	243,721
5EXD-10P DS	0.000	0.231	0.104	0.104	1,381,391	Yes	243,721
5EXD-10	0.309	0.263	0.089	0.089	1,255,775	Yes	243,721
5EXD-11P US	0.000	0.230	0.104	0.104	1,370,474	Yes	243,721

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **HD9-2-FWH25B to HTR DRN TK**					***Sorted By:Flow Order***		
5EXD-11	0.000	0.171	0.089	0.089	604,534	No	243,721
5EXD-12P	0.000	0.197	0.104	0.104	1,008,939	No	243,721
5EXD-12	0.000	0.171	0.089	0.089	604,534	No	243,721
5EXD-13P	0.000	0.197	0.104	0.104	1,008,939	No	243,721
5EXD-13	0.000	0.211	0.089	0.089	896,387	Yes	243,721
5EXD-14P	0.000	0.161	0.104	0.104	624,198	Yes	243,721
5EXD-14P DS	0.000	0.187	0.104	0.104	908,657	No	243,721
5EXD-14	0.000	0.211	0.089	0.089	896,387	No	243,721
5EXD-VALVE-5EX-8-1	0.000	0.138	0.095	0.095	223,377	No	243,721
5EXD-14N	0.000	0.165	0.089	0.089	515,457	No	243,721
===>Grouped by Line: **HD9-3-FWH25C to HTR DRN TK**					***Sorted By:Flow Order***		
5EXD-1N	0.000	0.143	0.089	0.089	295,735	No	243,721
5EXD-1P	0.000	0.230	0.104	0.104	1,269,464	No	243,721
5EXD-3	0.296	0.213	0.089	0.089	899,725	Yes	243,721
5EXD-2P	0.000	0.232	0.104	0.104	1,400,010	Yes	243,721
5EXD-4	0.285	0.229	0.089	0.089	1,020,613	Yes	243,721
5EXD-3P US	0.000	0.243	0.104	0.104	1,516,498	Yes	243,721
5EXD-3P DS	0.000	0.197	0.104	0.104	1,008,939	No	243,721
5EXD-5	0.295	0.234	0.089	0.089	1,048,672	Yes	243,721
5EXD-4P	0.000	0.232	0.104	0.104	1,399,511	Yes	243,721
5EXD-1	0.000	0.171	0.089	0.089	604,534	No	243,721
5EXD-5P	0.000	0.220	0.104	0.104	1,269,004	Yes	243,721
5EXD-2	0.000	0.208	0.089	0.089	881,122	Yes	243,721
5EXD-6P	0.000	0.197	0.104	0.104	1,008,939	No	243,721
5EXD-6	0.285	0.230	0.089	0.089	1,028,771	Yes	243,721
5EXD-7	0.280	0.228	0.089	0.089	1,016,282	Yes	243,721
5EXD-8P	0.000	0.220	0.104	0.104	985,332	Yes	243,721
5EXD-8	0.000	0.198	0.089	0.089	800,493	Yes	243,721
5EXD-VALVE-5EX-8-2	0.000	0.138	0.095	0.095	223,377	No	243,721
5EXD-8N	0.000	0.165	0.089	0.089	515,457	No	243,721

Note:
[1] Predictions are based on last Tmeas to analysis ending period.

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).db

Wear Rate Report

Pass 1 Analysis Exclude Measured Wear

Report Date/Time: 7/6/2010 3:38:15PM
AnalysisDate/Time: 7/6/2010 3:21:38PM

CHECWORKS SFA Version: 3.0 SP-1 (build 109)

Duty Factor (Global) : 1.000

Run Name: FWH 26 DRNS DSCV
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 1.000

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***HD12-4-FWH26A CV to HTR DR TK***								***Sorted By: Average Wear Rate***		
6EX1D-N2	30	4.900	1.930	389.7	5.364	0.0	10.750	6.797	0.000	58.80	ARD
6EX1D-VALVE-LCV-1101	24	0.101	0.040	389.7	14.641	0.0	6.625	6.797	0.000	58.80	ARD
6EX1D-R2	18	0.013	0.005	389.7	14.641	0.0	6.625	6.797	0.000	58.80	ARD
6EX1D-R2 (D/S)	18	0.007	0.003	389.7	5.364	0.0	10.750	6.797	0.000	58.80	ARD
6EX1D-P2	68	0.006	0.002	389.7	5.364	0.0	10.750	6.797	0.000	58.80	ARD
===>Grouped by Line:	***HD12-5-FWH26B CV to HTR DR TK***								***Sorted By: Average Wear Rate***		
6EX2D-N2	30	4.900	1.930	389.7	5.364	0.0	10.750	6.797	0.000	58.80	ARD
6EX2D-VALVE-LCV-1102	24	0.101	0.040	389.7	14.641	0.0	6.625	6.797	0.000	58.80	ARD
6EX2D-R2	18	0.013	0.005	389.7	14.641	0.0	6.625	6.797	0.000	58.80	ARD
6EX2D-R2 (D/S)	18	0.007	0.003	389.7	5.364	0.0	10.750	6.797	0.000	58.80	ARD
6EX2D-P2	68	0.006	0.002	389.7	5.364	0.0	10.750	6.797	0.000	58.80	ARD
===>Grouped by Line:	***HD12-6-FWH26C CV to HTR DR TK***								***Sorted By: Average Wear Rate***		
6EX3D-N2	30	4.900	1.930	389.7	5.364	0.0	10.750	6.797	0.000	58.80	ARD
6EX3D-VALVE-LCV-1103	24	0.101	0.040	389.7	14.641	0.0	6.625	6.797	0.000	58.80	ARD
6EX3D-R2	18	0.013	0.005	389.7	14.641	0.0	6.625	6.797	0.000	58.80	ARD
6EX3D-R2 (D/S)	18	0.007	0.003	389.7	5.364	0.0	10.750	6.797	0.000	58.80	ARD
6EX3D-P2	68	0.006	0.002	389.7	5.364	0.0	10.750	6.797	0.000	58.80	ARD

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).db

Wear Rate Report

Pass 1 Analysis Exclude Measured Wear

Report Date/Time: 7/6/2010 3:37:44PM
AnalysisDate/Time: 7/6/2010 3:21:38PM

CHECWORKS SFA Version: 3.0 SP-1 (build 109)
Duty Factor (Global) : 1.000

Run Name: FWH 26 DRNS DSCV
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 1.000

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***HD12-4-FWH26A CV to HTR DR TK***									***Sorted By: Flow Order***	
6EX1D-VALVE-LCV-1101	24	0.101	0.040	389.7	14.641	0.0	6.625	6.797	0.000	58.80	ARD
6EX1D-R2	18	0.013	0.005	389.7	14.641	0.0	6.625	6.797	0.000	58.80	ARD
6EX1D-R2 (D/S)	18	0.007	0.003	389.7	5.364	0.0	10.750	6.797	0.000	58.80	ARD
6EX1D-P2	68	0.006	0.002	389.7	5.364	0.0	10.750	6.797	0.000	58.80	ARD
6EX1D-N2	30	4.900	1.930	389.7	5.364	0.0	10.750	6.797	0.000	58.80	ARD
===>Grouped by Line:	***HD12-5-FWH26B CV to HTR DR TK***									***Sorted By: Flow Order***	
6EX2D-VALVE-LCV-1102	24	0.101	0.040	389.7	14.641	0.0	6.625	6.797	0.000	58.80	ARD
6EX2D-R2	18	0.013	0.005	389.7	14.641	0.0	6.625	6.797	0.000	58.80	ARD
6EX2D-R2 (D/S)	18	0.007	0.003	389.7	5.364	0.0	10.750	6.797	0.000	58.80	ARD
6EX2D-P2	68	0.006	0.002	389.7	5.364	0.0	10.750	6.797	0.000	58.80	ARD
6EX2D-N2	30	4.900	1.930	389.7	5.364	0.0	10.750	6.797	0.000	58.80	ARD
===>Grouped by Line:	***HD12-6-FWH26C CV to HTR DR TK***									***Sorted By: Flow Order***	
6EX3D-VALVE-LCV-1103	24	0.101	0.040	389.7	14.641	0.0	6.625	6.797	0.000	58.80	ARD
6EX3D-R2	18	0.013	0.005	389.7	14.641	0.0	6.625	6.797	0.000	58.80	ARD
6EX3D-R2 (D/S)	18	0.007	0.003	389.7	5.364	0.0	10.750	6.797	0.000	58.80	ARD
6EX3D-P2	68	0.006	0.002	389.7	5.364	0.0	10.750	6.797	0.000	58.80	ARD
6EX3D-N2	30	4.900	1.930	389.7	5.364	0.0	10.750	6.797	0.000	58.80	ARD

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).db

Service Life Report

Pass 1 Analysis Exclude Measured Wear

Report Date/Time: 7/6/2010 3:37:44PM
AnalysisDate/Time: 7/6/2010 3:21:38PM

Run Name: FWH 26 DRNS DSCV
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 1.000

CHECWORKS SFA Version: 3.0 SP-1 (build 109)
Duty Factor (Global) :1.000

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **HD12-4-FWH26A CV to HTR DR TK**					***Sorted By:Remaining Life***		
6EX1D-N2	0.000	0.229	0.159	0.159	314,629	No	243,721
6EX1D-VALVE-LCV-1101	0.000	0.277	0.105	0.105	37,684,172	No	243,721
6EX1D-R2	0.000	0.280	0.104	0.104	100,000,000	No	243,721
6EX1D-R2 (D/S)	0.000	0.365	0.169	0.169	100,000,000	No	243,721
6EX1D-P2	0.000	0.365	0.169	0.169	100,000,000	No	243,721
===>Grouped by Line: **HD12-5-FWH26B CV to HTR DR TK**					***Sorted By:Remaining Life***		
6EX2D-N2	0.000	0.357	0.159	0.159	897,633	Yes	243,721
6EX2D-VALVE-LCV-1102	0.000	0.277	0.105	0.105	37,684,172	No	243,721
6EX2D-R2	0.000	0.280	0.104	0.104	100,000,000	No	243,721
6EX2D-R2 (D/S)	0.000	0.365	0.169	0.169	100,000,000	No	243,721
6EX2D-P2	0.000	0.365	0.169	0.169	100,000,000	No	243,721
===>Grouped by Line: **HD12-6-FWH26C CV to HTR DR TK**					***Sorted By:Remaining Life***		
6EX3D-N2	0.000	0.229	0.159	0.159	314,629	No	243,721
6EX3D-VALVE-LCV-1103	0.000	0.277	0.105	0.105	37,684,172	No	243,721
6EX3D-P2	0.000	0.365	0.169	0.169	100,000,000	No	243,721
6EX3D-R2	0.000	0.280	0.104	0.104	100,000,000	No	243,721
6EX3D-R2 (D/S)	0.000	0.365	0.169	0.169	100,000,000	No	243,721

Note:
[1] Predictions are based on last Tmeas to analysis ending period.

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).db

Service Life Report

Pass 1 Analysis Exclude Measured Wear

Report Date/Time: 7/6/2010 3:37:44PM
AnalysisDate/Time: 7/6/2010 3:21:38PM

Run Name: FWH 26 DRNS DSCV
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 1.000

CHECWORKS SFA Version: 3.0 SP-1 (build 109)
Duty Factor (Global) : 1.000

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **HD12-4-FWH26A CV to HTR DR TK**					***Sorted By:Flow Order***		
6EX1D-VALVE-LCV-1101	0.000	0.277	0.105	0.105	37,684,172	No	243,721
6EX1D-R2	0.000	0.280	0.104	0.104	100,000,000	No	243,721
6EX1D-R2 (D/S)	0.000	0.365	0.169	0.169	100,000,000	No	243,721
6EX1D-P2	0.000	0.365	0.169	0.169	100,000,000	No	243,721
6EX1D-N2	0.000	0.229	0.159	0.159	314,629	No	243,721
===>Grouped by Line: **HD12-5-FWH26B CV to HTR DR TK**					***Sorted By:Flow Order***		
6EX2D-VALVE-LCV-1102	0.000	0.277	0.105	0.105	37,684,172	No	243,721
6EX2D-R2	0.000	0.280	0.104	0.104	100,000,000	No	243,721
6EX2D-R2 (D/S)	0.000	0.365	0.169	0.169	100,000,000	No	243,721
6EX2D-P2	0.000	0.365	0.169	0.169	100,000,000	No	243,721
6EX2D-N2	0.000	0.357	0.159	0.159	897,633	Yes	243,721
===>Grouped by Line: **HD12-6-FWH26C CV to HTR DR TK**					***Sorted By:Flow Order***		
6EX3D-VALVE-LCV-1103	0.000	0.277	0.105	0.105	37,684,172	No	243,721
6EX3D-R2	0.000	0.280	0.104	0.104	100,000,000	No	243,721
6EX3D-R2 (D/S)	0.000	0.365	0.169	0.169	100,000,000	No	243,721
6EX3D-P2	0.000	0.365	0.169	0.169	100,000,000	No	243,721
6EX3D-N2	0.000	0.229	0.159	0.159	314,629	No	243,721

Note:
[1] Predictions are based on last Tmeas to analysis ending period.

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).db

Wear Rate Report

Pass 1 Analysis Exclude Measured Wear

Report Date/Time: 7/6/2010 3:38:15PM
AnalysisDate/Time: 7/6/2010 3:21:45PM

CHECWORKS SFA Version: 3.0 SP-1 (build 109)

Duty Factor (Global) : 1.000

Run Name: FWH 26 DRNS USCV
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 1.000

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***HD12-1-FWH26A to CV***								***Sorted By: Average Wear Rate***		
6EXD-9N	31	9.612	3.789	389.7	9.519	0.0	10.750	6.797	0.000	58.80	ARD
6EXD-1-1R (D/S)	17	4.637	1.828	389.7	15.157	0.0	6.625	6.797	0.000	58.80	ARD
6EXD-1	2	4.584	1.806	389.7	5.429	0.0	10.750	6.797	0.000	58.80	ARD
6EXD-8	2	4.437	1.748	389.7	5.242	0.0	10.750	6.797	0.000	58.80	ARD
6EXD-7	2	4.437	1.748	389.7	5.242	0.0	10.750	6.797	0.000	58.80	ARD
6EXD-6	2	4.437	1.748	389.7	5.242	0.0	10.750	6.797	0.000	58.80	ARD
6EXD-9P US	61	3.238	1.275	389.7	5.242	0.0	10.750	6.797	0.000	58.80	ARD
6EXD-1-1R	17	3.114	1.227	389.7	5.462	0.0	10.750	6.797	0.000	58.80	ARD
6EXD-8P	52	2.998	1.181	389.7	5.242	0.0	10.750	6.797	0.000	58.80	ARD
6EXD-7P	52	2.998	1.181	389.7	5.242	0.0	10.750	6.797	0.000	58.80	ARD
6EXD-6P	52	2.998	1.181	389.7	5.242	0.0	10.750	6.797	0.000	58.80	ARD
6EXD-1P	52	2.998	1.181	389.7	5.242	0.0	10.750	6.797	0.000	58.80	ARD
===>Grouped by Line:	***HD12-2-FWH26B to CV***								***Sorted By: Average Wear Rate***		
6EXD-13N	31	5.995	2.362	389.7	5.242	0.0	10.750	6.797	0.000	58.80	ARD
6EXD-2	2	4.604	1.814	389.7	5.455	0.0	10.750	6.797	0.000	58.80	ARD
6EXD-2-1R (D/S)	17	4.573	1.803	389.7	14.827	0.0	6.625	6.797	0.000	58.80	ARD
6EXD-12	2	4.437	1.748	389.7	5.242	0.0	10.750	6.797	0.000	58.80	ARD
6EXD-11	2	4.437	1.748	389.7	5.242	0.0	10.750	6.797	0.000	58.80	ARD
6EXD-13P	61	3.238	1.275	389.7	5.242	0.0	10.750	6.797	0.000	58.80	ARD
6EXD-2-1R	17	3.109	1.225	389.7	5.451	0.0	10.750	6.797	0.000	58.80	ARD
6EXD-12P	52	2.998	1.181	389.7	5.242	0.0	10.750	6.797	0.000	58.80	ARD
6EXD-11P	52	2.998	1.181	389.7	5.242	0.0	10.750	6.797	0.000	58.80	ARD
6EXD-2P	52	2.998	1.181	389.7	5.242	0.0	10.750	6.797	0.000	58.80	ARD
===>Grouped by Line:	***HD12-3-FWH26C to CV***								***Sorted By: Average Wear Rate***		
6EXD-18N	31	5.995	2.362	389.7	5.242	0.0	10.750	6.797	0.000	58.80	ARD

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***HD12-3-FWH26C to CV***								***Sorted By: Average Wear Rate***		
6EXD-3-1R (D/S)	17	4.537	1.788	389.7	14.641	0.0	6.625	6.797	0.000	58.80	ARD
6EXD-18	2	4.437	1.748	389.7	5.242	0.0	10.750	6.797	0.000	58.80	ARD
6EXD-17	2	4.437	1.748	389.7	5.242	0.0	10.750	6.797	0.000	58.80	ARD
6EXD-16	2	4.437	1.748	389.7	5.242	0.0	10.750	6.797	0.000	58.80	ARD
6EXD-15	2	4.437	1.748	389.7	5.242	0.0	10.750	6.797	0.000	58.80	ARD
6EXD-3	2	4.437	1.748	389.7	5.242	0.0	10.750	6.797	0.000	58.80	ARD
6EXD-18P	61	3.238	1.275	389.7	5.242	0.0	10.750	6.797	0.000	58.80	ARD
6EXD-17P	52	2.998	1.181	389.7	5.242	0.0	10.750	6.797	0.000	58.80	ARD
6EXD-16P	52	2.998	1.181	389.7	5.242	0.0	10.750	6.797	0.000	58.80	ARD
6EXD-15P-1	52	2.998	1.181	389.7	5.242	0.0	10.750	6.797	0.000	58.80	ARD
6EXD-15P	52	2.998	1.181	389.7	5.242	0.0	10.750	6.797	0.000	58.80	ARD
6EXD-3P	52	2.998	1.181	389.7	5.242	0.0	10.750	6.797	0.000	58.80	ARD
6EXD-3-1R	17	2.998	1.181	389.7	5.242	0.0	10.750	6.797	0.000	58.80	ARD

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).db

Wear Rate Report

Pass 1 Analysis Exclude Measured Wear

Report Date/Time: 7/6/2010 3:37:44PM
AnalysisDate/Time: 7/6/2010 3:21:45PM

CHECWORKS SFA Version: 3.0 SP-1 (build 109)
Duty Factor (Global) : 1.000

Run Name: FWH 26 DRNS USCV
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 1.000

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***HD12-1-FWH26A to CV***									***Sorted By: Flow Order***	
6EXD-9N	31	9.612	3.789	389.7	9.519	0.0	10.750	6.797	0.000	58.80	ARD
6EXD-9P US	61	3.238	1.275	389.7	5.242	0.0	10.750	6.797	0.000	58.80	ARD
6EXD-8	2	4.437	1.748	389.7	5.242	0.0	10.750	6.797	0.000	58.80	ARD
6EXD-8P	52	2.998	1.181	389.7	5.242	0.0	10.750	6.797	0.000	58.80	ARD
6EXD-7	2	4.437	1.748	389.7	5.242	0.0	10.750	6.797	0.000	58.80	ARD
6EXD-7P	52	2.998	1.181	389.7	5.242	0.0	10.750	6.797	0.000	58.80	ARD
6EXD-6	2	4.437	1.748	389.7	5.242	0.0	10.750	6.797	0.000	58.80	ARD
6EXD-6P	52	2.998	1.181	389.7	5.242	0.0	10.750	6.797	0.000	58.80	ARD
6EXD-1	2	4.584	1.806	389.7	5.429	0.0	10.750	6.797	0.000	58.80	ARD
6EXD-1P	52	2.998	1.181	389.7	5.242	0.0	10.750	6.797	0.000	58.80	ARD
6EXD-1-1R	17	3.114	1.227	389.7	5.462	0.0	10.750	6.797	0.000	58.80	ARD
6EXD-1-1R (D/S)	17	4.637	1.828	389.7	15.157	0.0	6.625	6.797	0.000	58.80	ARD
===>Grouped by Line:	***HD12-2-FWH26B to CV***									***Sorted By: Flow Order***	
6EXD-13N	31	5.995	2.362	389.7	5.242	0.0	10.750	6.797	0.000	58.80	ARD
6EXD-13P	61	3.238	1.275	389.7	5.242	0.0	10.750	6.797	0.000	58.80	ARD
6EXD-12	2	4.437	1.748	389.7	5.242	0.0	10.750	6.797	0.000	58.80	ARD
6EXD-12P	52	2.998	1.181	389.7	5.242	0.0	10.750	6.797	0.000	58.80	ARD
6EXD-11	2	4.437	1.748	389.7	5.242	0.0	10.750	6.797	0.000	58.80	ARD
6EXD-11P	52	2.998	1.181	389.7	5.242	0.0	10.750	6.797	0.000	58.80	ARD
6EXD-2	2	4.604	1.814	389.7	5.455	0.0	10.750	6.797	0.000	58.80	ARD
6EXD-2P	52	2.998	1.181	389.7	5.242	0.0	10.750	6.797	0.000	58.80	ARD
6EXD-2-1R	17	3.109	1.225	389.7	5.451	0.0	10.750	6.797	0.000	58.80	ARD
6EXD-2-1R (D/S)	17	4.573	1.803	389.7	14.827	0.0	6.625	6.797	0.000	58.80	ARD
===>Grouped by Line:	***HD12-3-FWH26C to CV***									***Sorted By: Flow Order***	
6EXD-18N	31	5.995	2.362	389.7	5.242	0.0	10.750	6.797	0.000	58.80	ARD

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***HD12-3-FWH26C to CV***									***Sorted By: Flow Order***	
6EXD-18P	61	3.238	1.275	389.7	5.242	0.0	10.750	6.797	0.000	58.80	ARD
6EXD-18	2	4.437	1.748	389.7	5.242	0.0	10.750	6.797	0.000	58.80	ARD
6EXD-17P	52	2.998	1.181	389.7	5.242	0.0	10.750	6.797	0.000	58.80	ARD
6EXD-17	2	4.437	1.748	389.7	5.242	0.0	10.750	6.797	0.000	58.80	ARD
6EXD-16P	52	2.998	1.181	389.7	5.242	0.0	10.750	6.797	0.000	58.80	ARD
6EXD-16	2	4.437	1.748	389.7	5.242	0.0	10.750	6.797	0.000	58.80	ARD
6EXD-15P-1	52	2.998	1.181	389.7	5.242	0.0	10.750	6.797	0.000	58.80	ARD
6EXD-15	2	4.437	1.748	389.7	5.242	0.0	10.750	6.797	0.000	58.80	ARD
6EXD-15P	52	2.998	1.181	389.7	5.242	0.0	10.750	6.797	0.000	58.80	ARD
6EXD-3	2	4.437	1.748	389.7	5.242	0.0	10.750	6.797	0.000	58.80	ARD
6EXD-3P	52	2.998	1.181	389.7	5.242	0.0	10.750	6.797	0.000	58.80	ARD
6EXD-3-1R	17	2.998	1.181	389.7	5.242	0.0	10.750	6.797	0.000	58.80	ARD
6EXD-3-1R (D/S)	17	4.537	1.788	389.7	14.641	0.0	6.625	6.797	0.000	58.80	ARD

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).db

Service Life Report

Pass 1 Analysis Exclude Measured Wear

Report Date/Time: 7/6/2010 3:37:44PM
AnalysisDate/Time: 7/6/2010 3:21:45PM

Run Name: FWH 26 DRNS USCV
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 1.000

CHECWORKS SFA Version: 3.0 SP-1 (build 109)
Duty Factor (Global) :1.000

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **HD12-1-FWH26A to CV**					***Sorted By:Remaining Life***		
6EXD-7	0.000	0.184	0.159	0.159	121,431	No	243,721
6EXD-8	0.000	0.184	0.159	0.159	121,431	No	243,721
6EXD-1P	0.000	0.224	0.159	0.159	476,682	No	243,721
6EXD-7P	0.000	0.224	0.159	0.159	476,682	No	243,721
6EXD-8P	0.000	0.224	0.159	0.159	476,682	No	243,721
6EXD-1	0.395	0.286	0.159	0.159	612,168	Yes	243,721
6EXD-9P US	0.000	0.265	0.159	0.159	723,804	Yes	243,721
6EXD-1-1R (D/S)	0.332	0.256	0.098	0.098	758,250	Yes	243,721
6EXD-6P	0.000	0.273	0.159	0.159	845,232	Yes	243,721
6EXD-6	0.000	0.365	0.159	0.159	1,031,294	Yes	243,721
6EXD-1-1R	0.410	0.342	0.159	0.159	1,305,466	Yes	243,721
6EXD-9N	1.614	1.504	0.159	0.159	3,108,223	No	243,721
===>Grouped by Line: **HD12-2-FWH26B to CV**					***Sorted By:Remaining Life***		
6EXD-13N	0.000	0.140	0.159	0.159	-67,487	No	243,721
6EXD-12	0.000	0.184	0.159	0.159	121,431	No	243,721
6EXD-11	0.000	0.184	0.159	0.159	121,431	No	243,721
6EXD-13P	0.000	0.217	0.159	0.159	395,544	No	243,721
6EXD-12P	0.000	0.224	0.159	0.159	476,682	No	243,721
6EXD-11P	0.000	0.224	0.159	0.159	476,682	No	243,721
6EXD-2P	0.000	0.224	0.159	0.159	476,682	No	243,721
6EXD-2	0.407	0.267	0.159	0.159	519,532	Yes	243,721
6EXD-2-1R (D/S)	0.299	0.223	0.098	0.098	604,904	Yes	243,721
6EXD-2-1R	0.405	0.340	0.159	0.159	1,295,910	Yes	243,721
===>Grouped by Line: **HD12-3-FWH26C to CV**					***Sorted By:Remaining Life***		
6EXD-18N	0.000	0.140	0.159	0.159	-67,487	No	243,721

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **HD12-3-FWH26C to CV**					***Sorted By:Remaining Life***		
6EXD-18	0.000	0.184	0.159	0.159	121,431	No	243,721
6EXD-17	0.000	0.184	0.159	0.159	121,431	No	243,721
6EXD-16	0.000	0.184	0.159	0.159	121,431	No	243,721
6EXD-3	0.000	0.184	0.159	0.159	121,431	No	243,721
6EXD-3-1R (D/S)	0.000	0.154	0.098	0.098	272,246	No	243,721
6EXD-15	0.000	0.228	0.159	0.159	345,795	Yes	243,721
6EXD-18P	0.000	0.217	0.159	0.159	395,544	No	243,721
6EXD-17P	0.000	0.224	0.159	0.159	476,682	No	243,721
6EXD-16P	0.000	0.224	0.159	0.159	476,682	No	243,721
6EXD-3P	0.000	0.224	0.159	0.159	476,682	No	243,721
6EXD-3-1R	0.000	0.224	0.159	0.159	476,682	No	243,721
6EXD-15P	0.000	0.256	0.159	0.159	713,677	Yes	243,721
6EXD-15P-1	0.000	0.266	0.159	0.159	787,857	Yes	243,721

Note:
[1] Predictions are based on last Tmeas to analysis ending period.

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).db

Service Life Report

Pass 1 Analysis Exclude Measured Wear

Report Date/Time: 7/6/2010 3:37:44PM
AnalysisDate/Time: 7/6/2010 3:21:45PM

Run Name: FWH 26 DRNS USCV
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 1.000

CHECWORKS SFA Version: 3.0 SP-1 (build 109)
Duty Factor (Global) : 1.000

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **HD12-1-FWH26A to CV**					***Sorted By:Flow Order***		
6EXD-9N	1.614	1.504	0.159	0.159	3,108,223	No	243,721
6EXD-9P US	0.000	0.265	0.159	0.159	723,804	Yes	243,721
6EXD-8	0.000	0.184	0.159	0.159	121,431	No	243,721
6EXD-8P	0.000	0.224	0.159	0.159	476,682	No	243,721
6EXD-7	0.000	0.184	0.159	0.159	121,431	No	243,721
6EXD-7P	0.000	0.224	0.159	0.159	476,682	No	243,721
6EXD-6	0.000	0.365	0.159	0.159	1,031,294	Yes	243,721
6EXD-6P	0.000	0.273	0.159	0.159	845,232	Yes	243,721
6EXD-1	0.395	0.286	0.159	0.159	612,168	Yes	243,721
6EXD-1P	0.000	0.224	0.159	0.159	476,682	No	243,721
6EXD-1-1R	0.410	0.342	0.159	0.159	1,305,466	Yes	243,721
6EXD-1-1R (D/S)	0.332	0.256	0.098	0.098	758,250	Yes	243,721
===>Grouped by Line: **HD12-2-FWH26B to CV**					***Sorted By:Flow Order***		
6EXD-13N	0.000	0.140	0.159	0.159	-67,487	No	243,721
6EXD-13P	0.000	0.217	0.159	0.159	395,544	No	243,721
6EXD-12	0.000	0.184	0.159	0.159	121,431	No	243,721
6EXD-12P	0.000	0.224	0.159	0.159	476,682	No	243,721
6EXD-11	0.000	0.184	0.159	0.159	121,431	No	243,721
6EXD-11P	0.000	0.224	0.159	0.159	476,682	No	243,721
6EXD-2	0.407	0.267	0.159	0.159	519,532	Yes	243,721
6EXD-2P	0.000	0.224	0.159	0.159	476,682	No	243,721
6EXD-2-1R	0.405	0.340	0.159	0.159	1,295,910	Yes	243,721
6EXD-2-1R (D/S)	0.299	0.223	0.098	0.098	604,904	Yes	243,721
===>Grouped by Line: **HD12-3-FWH26C to CV**					***Sorted By:Flow Order***		
6EXD-18N	0.000	0.140	0.159	0.159	-67,487	No	243,721

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **HD12-3-FWH26C to CV**					***Sorted By:Flow Order***		
6EXD-18P	0.000	0.217	0.159	0.159	395,544	No	243,721
6EXD-18	0.000	0.184	0.159	0.159	121,431	No	243,721
6EXD-17P	0.000	0.224	0.159	0.159	476,682	No	243,721
6EXD-17	0.000	0.184	0.159	0.159	121,431	No	243,721
6EXD-16P	0.000	0.224	0.159	0.159	476,682	No	243,721
6EXD-16	0.000	0.184	0.159	0.159	121,431	No	243,721
6EXD-15P-1	0.000	0.266	0.159	0.159	787,857	Yes	243,721
6EXD-15	0.000	0.228	0.159	0.159	345,795	Yes	243,721
6EXD-15P	0.000	0.256	0.159	0.159	713,677	Yes	243,721
6EXD-3	0.000	0.184	0.159	0.159	121,431	No	243,721
6EXD-3P	0.000	0.224	0.159	0.159	476,682	No	243,721
6EXD-3-1R	0.000	0.224	0.159	0.159	476,682	No	243,721
6EXD-3-1R (D/S)	0.000	0.154	0.098	0.098	272,246	No	243,721

Note:
[1] Predictions are based on last Tmeas to analysis ending period.

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).db

Wear Rate Report

Pass 1 Analysis Exclude Measured Wear

Report Date/Time: 7/6/2010 3:38:15PM
AnalysisDate/Time: 7/6/2010 3:21:49PM

CHECWORKS SFA Version: 3.0 SP-1 (build 109)

Duty Factor (Global) : 1.000

Run Name: HD - FWH 21 TO COND
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 1.000

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***HD-FWH 21A Drain to Cond 23***								***Sorted By: Average Wear Rate***		
1HD-208-1N	31	3.611	1.671	100.0	9.141	0.0	8.625	7.048	0.000	13.04	HBD
1HD-208-Valve-LCV1124	24	3.611	1.671	100.0	9.141	0.0	8.625	7.048	0.000	13.04	HBD
1HD-208-1R	18	2.022	0.936	100.0	9.141	0.0	8.625	7.048	0.000	13.04	HBD
1HD-208-Valve-1EX-1-5	22	1.806	0.837	100.0	4.021	0.0	12.750	7.048	0.000	13.04	HBD
1HD-208-2N	30	1.445	0.670	100.0	4.021	0.0	12.750	7.048	0.000	13.04	HBD
1HD-208-1R (D/S)	18	1.083	0.502	100.0	4.021	0.0	12.750	7.048	0.000	13.04	HBD
1HD-208-1P	58	0.795	0.368	100.0	4.021	0.0	12.750	7.048	0.000	13.04	HBD
===>Grouped by Line:	***HD-FWH 21B Drain to Cond 22***								***Sorted By: Average Wear Rate***		
1HD-208-4N	31	3.611	1.671	100.0	9.141	0.0	8.625	7.048	0.000	13.04	HBD
1HD-208-Valve-LCV1125	24	3.611	1.671	100.0	9.141	0.0	8.625	7.048	0.000	13.04	HBD
1HD-208-4R	18	2.022	0.936	100.0	9.141	0.0	8.625	7.048	0.000	13.04	HBD
1HD-208-Valve-1EX-1-3	22	1.806	0.837	100.0	4.021	0.0	12.750	7.048	0.000	13.04	HBD
1HD-208-5N	30	1.445	0.670	100.0	4.021	0.0	12.750	7.048	0.000	13.04	HBD
1HD-208-4R (D/S)	18	1.083	0.502	100.0	4.021	0.0	12.750	7.048	0.000	13.04	HBD
1HD-208-4P	58	0.795	0.368	100.0	4.021	0.0	12.750	7.048	0.000	13.04	HBD
===>Grouped by Line:	***HD-FWH 21C Drain to Cond 21***								***Sorted By: Average Wear Rate***		
1HD-208-6N	31	3.611	1.671	100.0	9.141	0.0	8.625	7.048	0.000	13.04	HBD
1HD-208-Valve-LCV1126	24	3.611	1.671	100.0	9.141	0.0	8.625	7.048	0.000	13.04	HBD
1HD-208-6R	18	2.022	0.936	100.0	9.141	0.0	8.625	7.048	0.000	13.04	HBD
1HD-208-Valve-1EX-1-1	22	1.806	0.837	100.0	4.021	0.0	12.750	7.048	0.000	13.04	HBD
1HD-208-7N	30	1.445	0.670	100.0	4.021	0.0	12.750	7.048	0.000	13.04	HBD
1HD-208-6R (D/S)	18	1.083	0.502	100.0	4.021	0.0	12.750	7.048	0.000	13.04	HBD
1HD-208-6P	58	0.795	0.368	100.0	4.021	0.0	12.750	7.048	0.000	13.04	HBD

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).db

Wear Rate Report

Pass 1 Analysis Exclude Measured Wear

Report Date/Time: 7/6/2010 3:37:44PM
AnalysisDate/Time: 7/6/2010 3:21:49PM

CHECWORKS SFA Version: 3.0 SP-1 (build 109)
Duty Factor (Global) : 1.000

Run Name: HD - FWH 21 TO COND
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 1.000

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***HD-FWH 21A Drain to Cond 23***									***Sorted By: Flow Order***	
1HD-208-1N	31	3.611	1.671	100.0	9.141	0.0	8.625	7.048	0.000	13.04	HBD
1HD-208-Valve-LCV1124	24	3.611	1.671	100.0	9.141	0.0	8.625	7.048	0.000	13.04	HBD
1HD-208-1R	18	2.022	0.936	100.0	9.141	0.0	8.625	7.048	0.000	13.04	HBD
1HD-208-1R (D/S)	18	1.083	0.502	100.0	4.021	0.0	12.750	7.048	0.000	13.04	HBD
1HD-208-Valve-1EX-1-5	22	1.806	0.837	100.0	4.021	0.0	12.750	7.048	0.000	13.04	HBD
1HD-208-1P	58	0.795	0.368	100.0	4.021	0.0	12.750	7.048	0.000	13.04	HBD
1HD-208-2N	30	1.445	0.670	100.0	4.021	0.0	12.750	7.048	0.000	13.04	HBD
===>Grouped by Line:	***HD-FWH 21B Drain to Cond 22***									***Sorted By: Flow Order***	
1HD-208-4N	31	3.611	1.671	100.0	9.141	0.0	8.625	7.048	0.000	13.04	HBD
1HD-208-Valve-LCV1125	24	3.611	1.671	100.0	9.141	0.0	8.625	7.048	0.000	13.04	HBD
1HD-208-4R	18	2.022	0.936	100.0	9.141	0.0	8.625	7.048	0.000	13.04	HBD
1HD-208-4R (D/S)	18	1.083	0.502	100.0	4.021	0.0	12.750	7.048	0.000	13.04	HBD
1HD-208-Valve-1EX-1-3	22	1.806	0.837	100.0	4.021	0.0	12.750	7.048	0.000	13.04	HBD
1HD-208-4P	58	0.795	0.368	100.0	4.021	0.0	12.750	7.048	0.000	13.04	HBD
1HD-208-5N	30	1.445	0.670	100.0	4.021	0.0	12.750	7.048	0.000	13.04	HBD
===>Grouped by Line:	***HD-FWH 21C Drain to Cond 21***									***Sorted By: Flow Order***	
1HD-208-6N	31	3.611	1.671	100.0	9.141	0.0	8.625	7.048	0.000	13.04	HBD
1HD-208-Valve-LCV1126	24	3.611	1.671	100.0	9.141	0.0	8.625	7.048	0.000	13.04	HBD
1HD-208-6R	18	2.022	0.936	100.0	9.141	0.0	8.625	7.048	0.000	13.04	HBD
1HD-208-6R (D/S)	18	1.083	0.502	100.0	4.021	0.0	12.750	7.048	0.000	13.04	HBD
1HD-208-Valve-1EX-1-1	22	1.806	0.837	100.0	4.021	0.0	12.750	7.048	0.000	13.04	HBD
1HD-208-6P	58	0.795	0.368	100.0	4.021	0.0	12.750	7.048	0.000	13.04	HBD
1HD-208-7N	30	1.445	0.670	100.0	4.021	0.0	12.750	7.048	0.000	13.04	HBD

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).db

Service Life Report

Pass 1 Analysis Exclude Measured Wear

Report Date/Time: 7/6/2010 3:37:44PM
AnalysisDate/Time: 7/6/2010 3:21:49PM

Run Name: HD - FWH 21 TO COND
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 1.000

CHECWORKS SFA Version: 3.0 SP-1 (build 109)
Duty Factor (Global) :1.000

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **HD-FWH 21A Drain to Cond 23**					***Sorted By:Remaining Life***		
1HD-208-Valve-LCV1124	0.000	0.150	0.015	0.015	703,188	No	243,721
1HD-208-1N	0.000	0.150	0.014	0.014	708,556	No	243,721
1HD-208-1R	0.000	0.194	0.014	0.014	1,679,014	No	243,721
1HD-208-Valve-1EX-1-5	0.000	0.200	0.023	0.023	1,852,829	No	243,721
1HD-208-2N	0.000	0.210	0.021	0.021	2,467,294	No	243,721
1HD-208-1R (D/S)	0.000	0.220	0.021	0.021	3,464,998	No	243,721
1HD-208-1P	0.000	0.228	0.021	0.021	4,916,204	No	243,721
===>Grouped by Line: **HD-FWH 21B Drain to Cond 22**					***Sorted By:Remaining Life***		
1HD-208-Valve-LCV1125	0.000	0.150	0.015	0.015	703,188	No	243,721
1HD-208-4N	0.000	0.150	0.014	0.014	708,556	No	243,721
1HD-208-4R	0.000	0.194	0.014	0.014	1,679,014	No	243,721
1HD-208-Valve-1EX-1-3	0.000	0.200	0.023	0.023	1,852,829	No	243,721
1HD-208-5N	0.000	0.210	0.021	0.021	2,467,294	No	243,721
1HD-208-4R (D/S)	0.000	0.220	0.021	0.021	3,464,998	No	243,721
1HD-208-4P	0.000	0.228	0.021	0.021	4,916,204	No	243,721
===>Grouped by Line: **HD-FWH 21C Drain to Cond 21**					***Sorted By:Remaining Life***		
1HD-208-Valve-LCV1126	0.000	0.150	0.015	0.015	703,188	No	243,721
1HD-208-6N	0.000	0.150	0.014	0.014	708,556	No	243,721
1HD-208-6R	0.000	0.194	0.014	0.014	1,679,014	No	243,721
1HD-208-Valve-1EX-1-1	0.000	0.200	0.023	0.023	1,852,829	No	243,721
1HD-208-7N	0.000	0.241	0.021	0.021	2,870,928	Yes	243,721
1HD-208-6R (D/S)	0.000	0.220	0.021	0.021	3,464,998	No	243,721
1HD-208-6P	0.000	0.234	0.021	0.021	5,067,692	Yes	243,721

Note:
[1] Predictions are based on last Tmeas to analysis ending period.

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).db

Service Life Report

Pass 1 Analysis Exclude Measured Wear

Report Date/Time: 7/6/2010 3:37:44PM
AnalysisDate/Time: 7/6/2010 3:21:49PM

Run Name: HD - FWH 21 TO COND
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 1.000

CHECWORKS SFA Version: 3.0 SP-1 (build 109)
Duty Factor (Global) : 1.000

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **HD-FWH 21A Drain to Cond 23**					***Sorted By:Flow Order***		
1HD-208-1N	0.000	0.150	0.014	0.014	708,556	No	243,721
1HD-208-Valve-LCV1124	0.000	0.150	0.015	0.015	703,188	No	243,721
1HD-208-1R	0.000	0.194	0.014	0.014	1,679,014	No	243,721
1HD-208-1R (D/S)	0.000	0.220	0.021	0.021	3,464,998	No	243,721
1HD-208-Valve-1EX-1-5	0.000	0.200	0.023	0.023	1,852,829	No	243,721
1HD-208-1P	0.000	0.228	0.021	0.021	4,916,204	No	243,721
1HD-208-2N	0.000	0.210	0.021	0.021	2,467,294	No	243,721
===>Grouped by Line: **HD-FWH 21B Drain to Cond 22**					***Sorted By:Flow Order***		
1HD-208-4N	0.000	0.150	0.014	0.014	708,556	No	243,721
1HD-208-Valve-LCV1125	0.000	0.150	0.015	0.015	703,188	No	243,721
1HD-208-4R	0.000	0.194	0.014	0.014	1,679,014	No	243,721
1HD-208-4R (D/S)	0.000	0.220	0.021	0.021	3,464,998	No	243,721
1HD-208-Valve-1EX-1-3	0.000	0.200	0.023	0.023	1,852,829	No	243,721
1HD-208-4P	0.000	0.228	0.021	0.021	4,916,204	No	243,721
1HD-208-5N	0.000	0.210	0.021	0.021	2,467,294	No	243,721
===>Grouped by Line: **HD-FWH 21C Drain to Cond 21**					***Sorted By:Flow Order***		
1HD-208-6N	0.000	0.150	0.014	0.014	708,556	No	243,721
1HD-208-Valve-LCV1126	0.000	0.150	0.015	0.015	703,188	No	243,721
1HD-208-6R	0.000	0.194	0.014	0.014	1,679,014	No	243,721
1HD-208-6R (D/S)	0.000	0.220	0.021	0.021	3,464,998	No	243,721
1HD-208-Valve-1EX-1-1	0.000	0.200	0.023	0.023	1,852,829	No	243,721
1HD-208-6P	0.000	0.234	0.021	0.021	5,067,692	Yes	243,721
1HD-208-7N	0.000	0.241	0.021	0.021	2,870,928	Yes	243,721

Note:
[1] Predictions are based on last Tmeas to analysis ending period.

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).db

Wear Rate Report

Pass 1 Analysis Exclude Measured Wear

Report Date/Time: 7/6/2010 3:38:15PM
AnalysisDate/Time: 7/6/2010 3:21:54PM

CHECWORKS SFA Version: 3.0 SP-1 (build 109)

Duty Factor (Global) : 1.000

Run Name: HD - FWH 22 TO FWH 21
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 1.000

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***HD-FWH 22A Drain to FWH 21A***								***Sorted By: Average Wear Rate***		
2EX-A-1N	31	1.852	0.891	169.4	2.794	0.0	12.750	7.048	0.000	13.04	HBD
===>Grouped by Line:	***HD-FWH 22B Drain to FWH 21B***								***Sorted By: Average Wear Rate***		
2EX-234-1N	31	3.974	1.912	169.4	6.351	0.0	8.625	7.048	0.000	13.04	HBD
2EX-234-Valve-2EX-1-1	22	3.974	1.912	169.4	6.351	0.0	8.625	7.048	0.000	13.04	HBD
2EX-234-Valve-LCV1122	25	3.974	1.912	169.4	6.351	0.0	8.625	7.048	0.000	13.04	HBD
2EX-234-31E	2	2.941	1.415	169.4	6.351	0.0	8.625	7.048	0.000	13.04	HBD
2EX-234-36R	18	2.225	1.070	169.4	6.351	0.0	8.625	7.048	0.000	13.04	HBD
2EX-234-Valve-2EX-7-1	22	1.852	0.891	169.4	2.794	0.0	12.750	7.048	0.000	13.04	HBD
2EX-234-5T	13	1.852	0.891	169.4	2.794	0.0	12.750	7.048	0.000	13.04	HBD
2EX-234-33P	58	1.749	0.841	169.4	6.351	0.0	8.625	7.048	0.000	13.04	HBD
2EX-234-3E	3	1.296	0.623	169.4	2.794	0.0	12.750	7.048	0.000	13.04	HBD
2EX-234-36R (D/S)	18	1.111	0.534	169.4	2.794	0.0	12.750	7.048	0.000	13.04	HBD
2EX-234-5T (D/S)	13	1.023	0.492	169.4	1.401	0.0	12.750	7.048	0.000	13.04	HBD
2EX-234-5T (BR/SE)	13	1.023	0.492	169.4	1.401	0.0	12.750	7.048	0.000	13.04	HBD
2EX-234-4P	53	0.926	0.445	169.4	2.794	0.0	12.750	7.048	0.000	13.04	HBD
2EX-234-6N	30	0.818	0.394	169.4	1.401	0.0	12.750	7.048	0.000	13.04	HBD
2EX-234-9N	30	0.818	0.394	169.4	1.401	0.0	12.750	7.048	0.000	13.04	HBD
2EX-234-3P	58	0.815	0.392	169.4	2.794	0.0	12.750	7.048	0.000	13.04	HBD
2EX-234-8E	2	0.757	0.364	169.4	1.401	0.0	12.750	7.048	0.000	13.04	HBD
2EX-234-9P	52	0.511	0.246	169.4	1.401	0.0	12.750	7.048	0.000	13.04	HBD
2EX-234-7P	63	0.409	0.197	169.4	1.401	0.0	12.750	7.048	0.000	13.04	HBD
2EX-234-6P	63	0.409	0.197	169.4	1.401	0.0	12.750	7.048	0.000	13.04	HBD
===>Grouped by Line:	***HD-FWH 22C Drain to FWH 21C***								***Sorted By: Average Wear Rate***		
2EX-C-45N	31	1.852	0.891	169.4	2.794	0.0	12.750	7.048	0.000	13.04	HBD

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).db

Wear Rate Report

Pass 1 Analysis Exclude Measured Wear

Report Date/Time: 7/6/2010 3:37:44PM
AnalysisDate/Time: 7/6/2010 3:21:54PM

CHECWORKS SFA Version: 3.0 SP-1 (build 109)
Duty Factor (Global) : 1.000

Run Name: HD - FWH 22 TO FWH 21
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 1.000

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***HD-FWH 22A Drain to FWH 21A***									***Sorted By: Flow Order***	
2EX-A-1N	31	1.852	0.891	169.4	2.794	0.0	12.750	7.048	0.000	13.04	HBD
===>Grouped by Line:	***HD-FWH 22B Drain to FWH 21B***									***Sorted By: Flow Order***	
2EX-234-1N	31	3.974	1.912	169.4	6.351	0.0	8.625	7.048	0.000	13.04	HBD
2EX-234-31E	2	2.941	1.415	169.4	6.351	0.0	8.625	7.048	0.000	13.04	HBD
2EX-234-Valve-2EX-1-1	22	3.974	1.912	169.4	6.351	0.0	8.625	7.048	0.000	13.04	HBD
2EX-234-33P	58	1.749	0.841	169.4	6.351	0.0	8.625	7.048	0.000	13.04	HBD
2EX-234-Valve-LCV1122	25	3.974	1.912	169.4	6.351	0.0	8.625	7.048	0.000	13.04	HBD
2EX-234-36R	18	2.225	1.070	169.4	6.351	0.0	8.625	7.048	0.000	13.04	HBD
2EX-234-36R (D/S)	18	1.111	0.534	169.4	2.794	0.0	12.750	7.048	0.000	13.04	HBD
2EX-234-Valve-2EX-7-1	22	1.852	0.891	169.4	2.794	0.0	12.750	7.048	0.000	13.04	HBD
2EX-234-3P	58	0.815	0.392	169.4	2.794	0.0	12.750	7.048	0.000	13.04	HBD
2EX-234-3E	3	1.296	0.623	169.4	2.794	0.0	12.750	7.048	0.000	13.04	HBD
2EX-234-4P	53	0.926	0.445	169.4	2.794	0.0	12.750	7.048	0.000	13.04	HBD
2EX-234-5T	13	1.852	0.891	169.4	2.794	0.0	12.750	7.048	0.000	13.04	HBD
2EX-234-5T (BR/SE)	13	1.023	0.492	169.4	1.401	0.0	12.750	7.048	0.000	13.04	HBD
2EX-234-6P	63	0.409	0.197	169.4	1.401	0.0	12.750	7.048	0.000	13.04	HBD
2EX-234-6N	30	0.818	0.394	169.4	1.401	0.0	12.750	7.048	0.000	13.04	HBD
2EX-234-5T (D/S)	13	1.023	0.492	169.4	1.401	0.0	12.750	7.048	0.000	13.04	HBD
2EX-234-7P	63	0.409	0.197	169.4	1.401	0.0	12.750	7.048	0.000	13.04	HBD
2EX-234-8E	2	0.757	0.364	169.4	1.401	0.0	12.750	7.048	0.000	13.04	HBD
2EX-234-9P	52	0.511	0.246	169.4	1.401	0.0	12.750	7.048	0.000	13.04	HBD
2EX-234-9N	30	0.818	0.394	169.4	1.401	0.0	12.750	7.048	0.000	13.04	HBD
===>Grouped by Line:	***HD-FWH 22C Drain to FWH 21C***									***Sorted By: Flow Order***	
2EX-C-45N	31	1.852	0.891	169.4	2.794	0.0	12.750	7.048	0.000	13.04	HBD

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).db

Service Life Report

Pass 1 Analysis Exclude Measured Wear

Report Date/Time: 7/6/2010 3:37:44PM
AnalysisDate/Time: 7/6/2010 3:21:54PM

Run Name: HD - FWH 22 TO FWH 21
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 1.000

CHECWORKS SFA Version: 3.0 SP-1 (build 109)
Duty Factor (Global) :1.000

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **HD-FWH 22A Drain to FWH 21A**					***Sorted By:Remaining Life***		
2EX-A-1N	0.000	0.198	0.021	0.021	1,743,379	No	243,721
===>Grouped by Line: **HD-FWH 22B Drain to FWH 21B**					***Sorted By:Remaining Life***		
2EX-234-Valve-LCV1122	0.000	0.139	0.015	0.015	568,515	No	243,721
2EX-234-Valve-2EX-1-1	0.000	0.139	0.015	0.015	568,515	No	243,721
2EX-234-1N	0.000	0.139	0.014	0.014	573,207	No	243,721
2EX-234-31E	0.000	0.168	0.014	0.014	952,620	No	243,721
2EX-234-36R	0.000	0.188	0.014	0.014	1,421,674	No	243,721
2EX-234-Valve-2EX-7-1	0.000	0.198	0.023	0.023	1,728,492	No	243,721
2EX-234-5T	0.000	0.198	0.021	0.021	1,743,379	No	243,721
2EX-234-33P	0.000	0.201	0.014	0.014	1,947,583	No	243,721
2EX-234-3E	0.000	0.214	0.021	0.021	2,707,682	No	243,721
2EX-234-36R (D/S)	0.000	0.219	0.021	0.021	3,243,406	No	243,721
2EX-234-5T (D/S)	0.000	0.222	0.021	0.021	3,566,730	No	243,721
2EX-234-5T (BR/SE)	0.000	0.222	0.021	0.021	3,566,730	No	243,721
2EX-234-4P	0.000	0.224	0.021	0.021	3,993,419	No	243,721
2EX-234-6N	0.000	0.227	0.021	0.021	4,585,078	No	243,721
2EX-234-9N	0.000	0.227	0.021	0.021	4,585,078	No	243,721
2EX-234-3P	0.000	0.227	0.021	0.021	4,607,066	No	243,721
2EX-234-8E	0.000	0.229	0.021	0.021	4,997,921	No	243,721
2EX-234-9P	0.000	0.236	0.021	0.021	7,640,120	No	243,721
2EX-234-7P	0.000	0.239	0.021	0.021	9,676,815	No	243,721
2EX-234-6P	0.000	0.239	0.021	0.021	9,676,815	No	243,721
===>Grouped by Line: **HD-FWH 22C Drain to FWH 21C**					***Sorted By:Remaining Life***		
2EX-C-45N	0.000	0.198	0.021	0.021	1,743,379	No	243,721

Note:
[1] Predictions are based on last Tmeas to analysis ending period.

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).db

Service Life Report

Pass 1 Analysis Exclude Measured Wear

Report Date/Time: 7/6/2010 3:37:44PM
AnalysisDate/Time: 7/6/2010 3:21:54PM

Run Name: HD - FWH 22 TO FWH 21
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 1.000

CHECWORKS SFA Version: 3.0 SP-1 (build 109)
Duty Factor (Global) : 1.000

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **HD-FWH 22A Drain to FWH 21A**					***Sorted By:Flow Order***		
2EX-A-1N	0.000	0.198	0.021	0.021	1,743,379	No	243,721
===>Grouped by Line: **HD-FWH 22B Drain to FWH 21B**					***Sorted By:Flow Order***		
2EX-234-1N	0.000	0.139	0.014	0.014	573,207	No	243,721
2EX-234-31E	0.000	0.168	0.014	0.014	952,620	No	243,721
2EX-234-Valve-2EX-1-1	0.000	0.139	0.015	0.015	568,515	No	243,721
2EX-234-33P	0.000	0.201	0.014	0.014	1,947,583	No	243,721
2EX-234-Valve-LCV1122	0.000	0.139	0.015	0.015	568,515	No	243,721
2EX-234-36R	0.000	0.188	0.014	0.014	1,421,674	No	243,721
2EX-234-36R (D/S)	0.000	0.219	0.021	0.021	3,243,406	No	243,721
2EX-234-Valve-2EX-7-1	0.000	0.198	0.023	0.023	1,728,492	No	243,721
2EX-234-3P	0.000	0.227	0.021	0.021	4,607,066	No	243,721
2EX-234-3E	0.000	0.214	0.021	0.021	2,707,682	No	243,721
2EX-234-4P	0.000	0.224	0.021	0.021	3,993,419	No	243,721
2EX-234-5T	0.000	0.198	0.021	0.021	1,743,379	No	243,721
2EX-234-5T (BR/SE)	0.000	0.222	0.021	0.021	3,566,730	No	243,721
2EX-234-6P	0.000	0.239	0.021	0.021	9,676,815	No	243,721
2EX-234-6N	0.000	0.227	0.021	0.021	4,585,078	No	243,721
2EX-234-5T (D/S)	0.000	0.222	0.021	0.021	3,566,730	No	243,721
2EX-234-7P	0.000	0.239	0.021	0.021	9,676,815	No	243,721
2EX-234-8E	0.000	0.229	0.021	0.021	4,997,921	No	243,721
2EX-234-9P	0.000	0.236	0.021	0.021	7,640,120	No	243,721
2EX-234-9N	0.000	0.227	0.021	0.021	4,585,078	No	243,721
===>Grouped by Line: **HD-FWH 22C Drain to FWH 21C**					***Sorted By:Flow Order***		
2EX-C-45N	0.000	0.198	0.021	0.021	1,743,379	No	243,721

Note:
[1] Predictions are based on last Tmeas to analysis ending period.

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).db

Wear Rate Report

Pass 1 Analysis Exclude Measured Wear

Report Date/Time: 7/6/2010 3:38:15PM
AnalysisDate/Time: 7/6/2010 3:22:04PM

CHECWORKS SFA Version: 3.0 SP-1 (build 109)

Duty Factor (Global) : 1.000

Run Name: HTR DRN PMP DISCH
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 1.000

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***HD20-1-HDP21 to BFP SUCTION***								***Sorted By: Average Wear Rate***		
HD-VALVE-LCV-1127	24	27.688	9.257	365.0	28.023	0.0	8.625	6.831	0.000	74.97	HBD
HD-8N	31	17.021	5.690	365.0	12.928	0.0	12.750	6.831	0.000	74.97	HBD
HD-VALVE-HD-1	25	17.021	5.690	365.0	12.928	0.0	12.750	6.831	0.000	74.97	HBD
HD-VALVE-HD-2	22	17.021	5.690	365.0	12.928	0.0	12.750	6.831	0.000	74.97	HBD
HD-7	18	15.505	5.184	365.0	28.023	0.0	8.625	6.831	0.000	74.97	HBD
HD-3	2	12.595	4.211	365.0	12.928	0.0	12.750	6.831	0.000	74.97	HBD
HD-8P	58	12.529	4.189	365.0	29.301	0.0	8.625	6.831	0.000	74.97	HBD
HD-7 (D/S)	18	10.212	3.414	365.0	12.928	0.0	12.750	6.831	0.000	74.97	HBD
HD-3P	52	8.510	2.845	365.0	12.928	0.0	12.750	6.831	0.000	74.97	HBD
HD-3P-1	52	8.510	2.845	365.0	12.928	0.0	12.750	6.831	0.000	74.97	HBD
HD-5P US	9	4.331	1.490	365.0	12.928	0.0	12.750	6.831	0.000	74.97	HBD
HD-5P DS	9	4.331	1.490	365.0	12.928	0.0	12.750	6.831	0.000	74.97	HBD
===>Grouped by Line:	***HD20-2-HDP22 to BFP SUCTION***								***Sorted By: Average Wear Rate***		
HD-VALVE-LCV-1127A	24	27.688	9.257	365.0	28.023	0.0	8.625	6.831	0.000	74.97	HBD
HD-10N	31	17.021	5.690	365.0	12.928	0.0	12.750	6.831	0.000	74.97	HBD
HD-VALVE-HD-1-1	25	17.021	5.690	365.0	12.928	0.0	12.750	6.831	0.000	74.97	HBD
HD-VALVE-HD-2-1	22	17.021	5.690	365.0	12.928	0.0	12.750	6.831	0.000	74.97	HBD
HD-9	18	15.505	5.184	365.0	28.023	0.0	8.625	6.831	0.000	74.97	HBD
HD-4	2	12.595	4.211	365.0	12.928	0.0	12.750	6.831	0.000	74.97	HBD
HD-10P	58	12.183	4.073	365.0	28.023	0.0	8.625	6.831	0.000	74.97	HBD
HD-6 (D/S)	12	10.540	3.524	365.0	8.274	0.0	16.000	6.831	0.000	74.97	HBD
HD-6	12	10.540	3.524	365.0	8.274	0.0	16.000	6.831	0.000	74.97	HBD
HD-9 (D/S)	18	10.212	3.414	365.0	12.928	0.0	12.750	6.831	0.000	74.97	HBD
HD-4A	52	8.510	2.845	365.0	12.928	0.0	12.750	6.831	0.000	74.97	HBD
HD-4P	58	7.489	2.504	365.0	12.928	0.0	12.750	6.831	0.000	74.97	HBD

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***HD20-2-HDP22 to BFP SUCTION***								***Sorted By: Average Wear Rate***		
HD-5AP US	62	5.142	1.719	365.0	8.274	0.0	16.000	6.831	0.000	74.97	HBD
HD-5AP DS	62	5.142	1.719	365.0	8.274	0.0	16.000	6.831	0.000	74.97	HBD
HD-6P DS	9	4.331	1.490	365.0	12.928	0.0	12.750	6.831	0.000	74.97	HBD
===>Grouped by Line:	***HD20-3-HDP DIS T to BFP SUC***								***Sorted By: Average Wear Rate***		
HD-5 (D/S)	12	15.529	5.191	365.0	16.547	0.0	16.000	6.831	0.000	74.97	HBD
HD-1	2	14.014	4.685	365.0	16.547	0.0	16.000	6.831	0.000	74.97	HBD
HD-11	2	14.014	4.685	365.0	16.547	0.0	16.000	6.831	0.000	74.97	HBD
HD-2	2	14.014	4.685	365.0	16.547	0.0	16.000	6.831	0.000	74.97	HBD
HD-13	2	14.014	4.685	365.0	16.547	0.0	16.000	6.831	0.000	74.97	HBD
HD-14	2	14.014	4.685	365.0	16.547	0.0	16.000	6.831	0.000	74.97	HBD
HD-15	2	14.014	4.685	365.0	16.547	0.0	16.000	6.831	0.000	74.97	HBD
HD-16	2	14.014	4.685	365.0	16.547	0.0	16.000	6.831	0.000	74.97	HBD
HD-12	1	12.499	4.178	365.0	16.547	0.0	16.000	6.831	0.000	74.97	HBD
HD-5 (BR/SE)	12	11.574	3.869	365.0	12.928	0.0	12.750	6.831	0.000	74.97	HBD
HD-17 (D/S)	15	11.362	3.799	365.0	16.547	0.0	16.000	6.831	0.000	74.97	HBD
HD-17	15	11.362	3.799	365.0	16.547	0.0	16.000	6.831	0.000	74.97	HBD
HD-5	12	10.540	3.524	365.0	8.274	0.0	16.000	6.831	0.000	74.97	HBD
HD-2P US	52	9.469	3.166	365.0	16.547	0.0	16.000	6.831	0.000	74.97	HBD
HD-1P	52	9.469	3.166	365.0	16.547	0.0	16.000	6.831	0.000	74.97	HBD
HD-12P	52	9.469	3.166	365.0	16.547	0.0	16.000	6.831	0.000	74.97	HBD
HD-14P	52	9.469	3.166	365.0	16.547	0.0	16.000	6.831	0.000	74.97	HBD
HD-15P	52	9.469	3.166	365.0	16.547	0.0	16.000	6.831	0.000	74.97	HBD
HD-15P-1 DS	52	9.469	3.166	365.0	16.547	0.0	16.000	6.831	0.000	74.97	HBD
HD-16P US	52	9.469	3.166	365.0	16.547	0.0	16.000	6.831	0.000	74.97	HBD
HD-13P	51	8.332	2.786	365.0	16.547	0.0	16.000	6.831	0.000	74.97	HBD
HD-17P	65	7.575	2.532	365.0	16.547	0.0	16.000	6.831	0.000	74.97	HBD
HD-11P DS	62	7.575	2.532	365.0	16.547	0.0	16.000	6.831	0.000	74.97	HBD

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).db

Wear Rate Report

Pass 1 Analysis Exclude Measured Wear

Report Date/Time: 7/6/2010 3:37:44PM
AnalysisDate/Time: 7/6/2010 3:22:04PM

CHECWORKS SFA Version: 3.0 SP-1 (build 109)
Duty Factor (Global) : 1.000

Run Name: HTR DRN PMP DISCH
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 1.000

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***HD20-1-HDP21 to BFP SUCTION***									***Sorted By: Flow Order***	
HD-8N	31	17.021	5.690	365.0	12.928	0.0	12.750	6.831	0.000	74.97	HBD
HD-VALVE-HD-1	25	17.021	5.690	365.0	12.928	0.0	12.750	6.831	0.000	74.97	HBD
HD-8P	58	12.529	4.189	365.0	29.301	0.0	8.625	6.831	0.000	74.97	HBD
HD-VALVE-LCV-1127	24	27.688	9.257	365.0	28.023	0.0	8.625	6.831	0.000	74.97	HBD
HD-7	18	15.505	5.184	365.0	28.023	0.0	8.625	6.831	0.000	74.97	HBD
HD-7 (D/S)	18	10.212	3.414	365.0	12.928	0.0	12.750	6.831	0.000	74.97	HBD
HD-VALVE-HD-2	22	17.021	5.690	365.0	12.928	0.0	12.750	6.831	0.000	74.97	HBD
HD-3P	52	8.510	2.845	365.0	12.928	0.0	12.750	6.831	0.000	74.97	HBD
HD-3	2	12.595	4.211	365.0	12.928	0.0	12.750	6.831	0.000	74.97	HBD
HD-3P-1	52	8.510	2.845	365.0	12.928	0.0	12.750	6.831	0.000	74.97	HBD
HD-5P US	9	4.331	1.490	365.0	12.928	0.0	12.750	6.831	0.000	74.97	HBD
HD-5P DS	9	4.331	1.490	365.0	12.928	0.0	12.750	6.831	0.000	74.97	HBD
===>Grouped by Line:	***HD20-2-HDP22 to BFP SUCTION***									***Sorted By: Flow Order***	
HD-10N	31	17.021	5.690	365.0	12.928	0.0	12.750	6.831	0.000	74.97	HBD
HD-VALVE-HD-1-1	25	17.021	5.690	365.0	12.928	0.0	12.750	6.831	0.000	74.97	HBD
HD-10P	58	12.183	4.073	365.0	28.023	0.0	8.625	6.831	0.000	74.97	HBD
HD-VALVE-LCV-1127A	24	27.688	9.257	365.0	28.023	0.0	8.625	6.831	0.000	74.97	HBD
HD-9	18	15.505	5.184	365.0	28.023	0.0	8.625	6.831	0.000	74.97	HBD
HD-9 (D/S)	18	10.212	3.414	365.0	12.928	0.0	12.750	6.831	0.000	74.97	HBD
HD-VALVE-HD-2-1	22	17.021	5.690	365.0	12.928	0.0	12.750	6.831	0.000	74.97	HBD
HD-4P	58	7.489	2.504	365.0	12.928	0.0	12.750	6.831	0.000	74.97	HBD
HD-4	2	12.595	4.211	365.0	12.928	0.0	12.750	6.831	0.000	74.97	HBD
HD-4A	52	8.510	2.845	365.0	12.928	0.0	12.750	6.831	0.000	74.97	HBD
HD-6P DS	9	4.331	1.490	365.0	12.928	0.0	12.750	6.831	0.000	74.97	HBD
HD-6	12	10.540	3.524	365.0	8.274	0.0	16.000	6.831	0.000	74.97	HBD

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***HD20-2-HDP22 to BFP SUCTION***									***Sorted By: Flow Order***	
HD-6 (D/S)	12	10.540	3.524	365.0	8.274	0.0	16.000	6.831	0.000	74.97	HBD
HD-5AP US	62	5.142	1.719	365.0	8.274	0.0	16.000	6.831	0.000	74.97	HBD
HD-5AP DS	62	5.142	1.719	365.0	8.274	0.0	16.000	6.831	0.000	74.97	HBD
===>Grouped by Line:	***HD20-3-HDP DIS T to BFP SUC***									***Sorted By: Flow Order***	
HD-5 (BR/SE)	12	11.574	3.869	365.0	12.928	0.0	12.750	6.831	0.000	74.97	HBD
HD-5	12	10.540	3.524	365.0	8.274	0.0	16.000	6.831	0.000	74.97	HBD
HD-5 (D/S)	12	15.529	5.191	365.0	16.547	0.0	16.000	6.831	0.000	74.97	HBD
HD-11P DS	62	7.575	2.532	365.0	16.547	0.0	16.000	6.831	0.000	74.97	HBD
HD-11	2	14.014	4.685	365.0	16.547	0.0	16.000	6.831	0.000	74.97	HBD
HD-2P US	52	9.469	3.166	365.0	16.547	0.0	16.000	6.831	0.000	74.97	HBD
HD-2	2	14.014	4.685	365.0	16.547	0.0	16.000	6.831	0.000	74.97	HBD
HD-12P	52	9.469	3.166	365.0	16.547	0.0	16.000	6.831	0.000	74.97	HBD
HD-12	1	12.499	4.178	365.0	16.547	0.0	16.000	6.831	0.000	74.97	HBD
HD-13P	51	8.332	2.786	365.0	16.547	0.0	16.000	6.831	0.000	74.97	HBD
HD-13	2	14.014	4.685	365.0	16.547	0.0	16.000	6.831	0.000	74.97	HBD
HD-14P	52	9.469	3.166	365.0	16.547	0.0	16.000	6.831	0.000	74.97	HBD
HD-14	2	14.014	4.685	365.0	16.547	0.0	16.000	6.831	0.000	74.97	HBD
HD-15P	52	9.469	3.166	365.0	16.547	0.0	16.000	6.831	0.000	74.97	HBD
HD-15	2	14.014	4.685	365.0	16.547	0.0	16.000	6.831	0.000	74.97	HBD
HD-15P-1 DS	52	9.469	3.166	365.0	16.547	0.0	16.000	6.831	0.000	74.97	HBD
HD-16	2	14.014	4.685	365.0	16.547	0.0	16.000	6.831	0.000	74.97	HBD
HD-16P US	52	9.469	3.166	365.0	16.547	0.0	16.000	6.831	0.000	74.97	HBD
HD-17	15	11.362	3.799	365.0	16.547	0.0	16.000	6.831	0.000	74.97	HBD
HD-17 (D/S)	15	11.362	3.799	365.0	16.547	0.0	16.000	6.831	0.000	74.97	HBD
HD-17P	65	7.575	2.532	365.0	16.547	0.0	16.000	6.831	0.000	74.97	HBD
HD-1	2	14.014	4.685	365.0	16.547	0.0	16.000	6.831	0.000	74.97	HBD
HD-1P	52	9.469	3.166	365.0	16.547	0.0	16.000	6.831	0.000	74.97	HBD

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).db

Service Life Report

Pass 1 Analysis Exclude Measured Wear

Report Date/Time: 7/6/2010 3:37:44PM
AnalysisDate/Time: 7/6/2010 3:22:04PM

Run Name: HTR DRN PMP DISCH
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 1.000

CHECWORKS SFA Version: 3.0 SP-1 (build 109)
Duty Factor (Global) :1.000

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **HD20-1-HDP21 to BFP SUCTION**					***Sorted By:Remaining Life***		
HD-VALVE-LCV-1127	0.000	-0.448	0.220	0.220	-221,981	No	243,721
HD-VALVE-HD-1	0.000	0.026	0.326	0.326	-183,099	No	243,721
HD-VALVE-HD-2	0.000	0.026	0.326	0.326	-183,099	No	243,721
HD-8N	0.000	0.026	0.304	0.304	-175,697	No	243,721
HD-3	0.000	0.150	0.304	0.304	-151,797	No	243,721
HD-3P-1	0.000	0.263	0.304	0.304	-107,673	No	243,721
HD-7	0.000	0.223	0.206	0.206	29,584	No	243,721
HD-8P	0.410	0.304	0.177	0.177	265,074	No	243,721
HD-7 (D/S)	0.000	0.417	0.304	0.304	290,142	No	243,721
HD-3P	0.000	0.468	0.304	0.304	504,824	Yes	243,721
HD-5P DS	0.000	0.430	0.304	0.304	739,137	Yes	243,721
HD-5P US	0.000	0.437	0.304	0.304	777,202	Yes	243,721
===>Grouped by Line: **HD20-2-HDP22 to BFP SUCTION**					***Sorted By:Remaining Life***		
HD-VALVE-LCV-1127A	0.000	-0.448	0.220	0.220	-221,981	No	243,721
HD-VALVE-HD-2-1	0.000	0.026	0.326	0.326	-183,099	No	243,721
HD-VALVE-HD-1-1	0.000	0.026	0.326	0.326	-183,099	No	243,721
HD-4	0.000	0.150	0.304	0.304	-151,797	No	243,721
HD-4P	0.000	0.292	0.304	0.304	-44,008	No	243,721
HD-9	0.000	0.241	0.206	0.206	59,016	Yes	243,721
HD-10N	0.000	0.431	0.304	0.304	195,652	No	243,721
HD-10P	0.000	0.299	0.206	0.206	199,996	No	243,721
HD-9 (D/S)	0.000	0.491	0.304	0.304	478,539	Yes	243,721
HD-6 (D/S)	0.000	0.577	0.382	0.382	485,247	No	243,721
HD-6	0.000	0.584	0.382	0.382	502,649	No	243,721
HD-4A	0.000	0.484	0.304	0.304	553,161	Yes	243,721
HD-5AP US	0.000	0.513	0.382	0.382	667,854	No	243,721

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **HD20-2-HDP22 to BFP SUCTION**					***Sorted By:Remaining Life***		
HD-5AP DS	0.000	0.513	0.382	0.382	667,854	No	243,721
HD-6P DS	0.000	0.483	0.304	0.304	1,051,500	Yes	243,721
===>Grouped by Line: **HD20-3-HDP DIS T to BFP SUC**					***Sorted By:Remaining Life***		
HD-2	0.000	0.266	0.382	0.382	-127,987	No	243,721
HD-13	0.000	0.266	0.382	0.382	-127,987	No	243,721
HD-14	0.000	0.266	0.382	0.382	-127,987	No	243,721
HD-15	0.000	0.266	0.382	0.382	-127,987	No	243,721
HD-12	0.000	0.308	0.382	0.382	-113,958	No	243,721
HD-17	0.000	0.340	0.382	0.382	-88,654	No	243,721
HD-17 (D/S)	0.000	0.340	0.382	0.382	-88,654	No	243,721
HD-16	0.000	0.396	0.382	0.382	27,234	Yes	243,721
HD-12P	0.000	0.393	0.382	0.382	29,512	No	243,721
HD-14P	0.000	0.393	0.382	0.382	29,512	No	243,721
HD-15P	0.000	0.393	0.382	0.382	29,512	No	243,721
HD-13P	0.000	0.424	0.382	0.382	132,947	No	243,721
HD-17P	0.000	0.445	0.382	0.382	219,142	No	243,721
HD-1	0.000	0.548	0.382	0.382	311,038	Yes	243,721
HD-11	0.000	0.549	0.382	0.382	312,742	Yes	243,721
HD-5	0.000	0.520	0.382	0.382	343,192	Yes	243,721
HD-5 (BR/SE)	0.000	0.469	0.304	0.304	373,402	Yes	243,721
HD-15P-1 DS	0.000	0.527	0.382	0.382	402,632	Yes	243,721
HD-5 (D/S)	0.000	0.626	0.382	0.382	411,246	Yes	243,721
HD-16P US	0.000	0.538	0.382	0.382	433,072	No	243,721
HD-1P	0.000	0.556	0.382	0.382	482,702	Yes	243,721
HD-2P US	0.000	0.569	0.382	0.382	518,137	Yes	243,721
HD-11P DS	0.000	0.608	0.382	0.382	781,101	Yes	243,721

Note:
[1] Predictions are based on last Tmeas to analysis ending period.

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).db

Service Life Report

Pass 1 Analysis Exclude Measured Wear

Report Date/Time: 7/6/2010 3:37:44PM
AnalysisDate/Time: 7/6/2010 3:22:04PM

Run Name: HTR DRN PMP DISCH
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 1.000

CHECWORKS SFA Version: 3.0 SP-1 (build 109)
Duty Factor (Global) : 1.000

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **HD20-1-HDP21 to BFP SUCTION**					***Sorted By:Flow Order***		
HD-8N	0.000	0.026	0.304	0.304	-175,697	No	243,721
HD-VALVE-HD-1	0.000	0.026	0.326	0.326	-183,099	No	243,721
HD-8P	0.410	0.304	0.177	0.177	265,074	No	243,721
HD-VALVE-LCV-1127	0.000	-0.448	0.220	0.220	-221,981	No	243,721
HD-7	0.000	0.223	0.206	0.206	29,584	No	243,721
HD-7 (D/S)	0.000	0.417	0.304	0.304	290,142	No	243,721
HD-VALVE-HD-2	0.000	0.026	0.326	0.326	-183,099	No	243,721
HD-3P	0.000	0.468	0.304	0.304	504,824	Yes	243,721
HD-3	0.000	0.150	0.304	0.304	-151,797	No	243,721
HD-3P-1	0.000	0.263	0.304	0.304	-107,673	No	243,721
HD-5P US	0.000	0.437	0.304	0.304	777,202	Yes	243,721
HD-5P DS	0.000	0.430	0.304	0.304	739,137	Yes	243,721
===>Grouped by Line: **HD20-2-HDP22 to BFP SUCTION**					***Sorted By:Flow Order***		
HD-10N	0.000	0.431	0.304	0.304	195,652	No	243,721
HD-VALVE-HD-1-1	0.000	0.026	0.326	0.326	-183,099	No	243,721
HD-10P	0.000	0.299	0.206	0.206	199,996	No	243,721
HD-VALVE-LCV-1127A	0.000	-0.448	0.220	0.220	-221,981	No	243,721
HD-9	0.000	0.241	0.206	0.206	59,016	Yes	243,721
HD-9 (D/S)	0.000	0.491	0.304	0.304	478,539	Yes	243,721
HD-VALVE-HD-2-1	0.000	0.026	0.326	0.326	-183,099	No	243,721
HD-4P	0.000	0.292	0.304	0.304	-44,008	No	243,721
HD-4	0.000	0.150	0.304	0.304	-151,797	No	243,721
HD-4A	0.000	0.484	0.304	0.304	553,161	Yes	243,721
HD-6P DS	0.000	0.483	0.304	0.304	1,051,500	Yes	243,721
HD-6	0.000	0.584	0.382	0.382	502,649	No	243,721
HD-6 (D/S)	0.000	0.577	0.382	0.382	485,247	No	243,721

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **HD20-2-HDP22 to BFP SUCTION**					***Sorted By:Flow Order***		
HD-5AP US	0.000	0.513	0.382	0.382	667,854	No	243,721
HD-5AP DS	0.000	0.513	0.382	0.382	667,854	No	243,721
===>Grouped by Line: **HD20-3-HDP DIS T to BFP SUC**					***Sorted By:Flow Order***		
HD-5 (BR/SE)	0.000	0.469	0.304	0.304	373,402	Yes	243,721
HD-5	0.000	0.520	0.382	0.382	343,192	Yes	243,721
HD-5 (D/S)	0.000	0.626	0.382	0.382	411,246	Yes	243,721
HD-11P DS	0.000	0.608	0.382	0.382	781,101	Yes	243,721
HD-11	0.000	0.549	0.382	0.382	312,742	Yes	243,721
HD-2P US	0.000	0.569	0.382	0.382	518,137	Yes	243,721
HD-2	0.000	0.266	0.382	0.382	-127,987	No	243,721
HD-12P	0.000	0.393	0.382	0.382	29,512	No	243,721
HD-12	0.000	0.308	0.382	0.382	-113,958	No	243,721
HD-13P	0.000	0.424	0.382	0.382	132,947	No	243,721
HD-13	0.000	0.266	0.382	0.382	-127,987	No	243,721
HD-14P	0.000	0.393	0.382	0.382	29,512	No	243,721
HD-14	0.000	0.266	0.382	0.382	-127,987	No	243,721
HD-15P	0.000	0.393	0.382	0.382	29,512	No	243,721
HD-15	0.000	0.266	0.382	0.382	-127,987	No	243,721
HD-15P-1 DS	0.000	0.527	0.382	0.382	402,632	Yes	243,721
HD-16	0.000	0.396	0.382	0.382	27,234	Yes	243,721
HD-16P US	0.000	0.538	0.382	0.382	433,072	No	243,721
HD-17	0.000	0.340	0.382	0.382	-88,654	No	243,721
HD-17 (D/S)	0.000	0.340	0.382	0.382	-88,654	No	243,721
HD-17P	0.000	0.445	0.382	0.382	219,142	No	243,721
HD-1	0.000	0.548	0.382	0.382	311,038	Yes	243,721
HD-1P	0.000	0.556	0.382	0.382	482,702	Yes	243,721

Note:
[1] Predictions are based on last Tmeas to analysis ending period.

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).db

Wear Rate Report

Pass 1 Analysis Exclude Measured Wear

Report Date/Time: 7/6/2010 3:38:15PM
AnalysisDate/Time: 7/6/2010 3:22:08PM

CHECWORKS SFA Version: 3.0 SP-1 (build 109)

Duty Factor (Global) : 1.000

Run Name: HTR DRN TANK DRN
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 1.000

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***HD19-1-HDT to HDP 21 SUCT***								***Sorted By: Average Wear Rate***		
5EX-VALVE-5EX-16	22	9.509	3.272	365.0	5.912	0.0	18.000	6.831	0.000	74.97	HBD
5EX-23N	30	7.608	2.617	365.0	5.912	0.0	18.000	6.831	0.000	74.97	HBD
5EX-22	3	6.809	2.343	365.0	6.057	0.0	18.000	6.831	0.000	74.97	HBD
5EX-21 (D/S)	16	6.068	2.088	365.0	6.097	0.0	18.000	6.831	0.000	74.97	HBD
5EX-21N	31	5.532	1.903	365.0	3.302	0.0	24.000	6.831	0.000	74.97	HBD
5EX-22P	53	4.854	1.670	365.0	6.045	0.0	18.000	6.831	0.000	74.97	HBD
5EX-23P-1	58	4.184	1.440	365.0	5.912	0.0	18.000	6.831	0.000	74.97	HBD
5EX-21P	61	2.988	1.028	365.0	3.302	0.0	24.000	6.831	0.000	74.97	HBD
5EX-21	16	2.793	0.961	365.0	3.337	0.0	24.000	6.831	0.000	74.97	HBD
===>Grouped by Line:	***HD19-2-HDT to HDP 22 SUCT***								***Sorted By: Average Wear Rate***		
5EX-VALVE-5EX-16-1	22	9.509	3.272	365.0	5.912	0.0	18.000	6.831	0.000	74.97	HBD
5EX-28N	30	7.608	2.617	365.0	5.912	0.0	18.000	6.831	0.000	74.97	HBD
5EX-26 (D/S)	16	6.037	2.077	365.0	6.064	0.0	18.000	6.831	0.000	74.97	HBD
5EX-26N	31	5.532	1.903	365.0	3.302	0.0	24.000	6.831	0.000	74.97	HBD
5EX-28P-1	58	4.184	1.440	365.0	5.912	0.0	18.000	6.831	0.000	74.97	HBD
5EX-27P	66	3.876	1.333	365.0	6.032	0.0	18.000	6.831	0.000	74.97	HBD
5EX-26P	61	2.988	1.028	365.0	3.302	0.0	24.000	6.831	0.000	74.97	HBD
5EX-26	16	2.788	0.959	365.0	3.329	0.0	24.000	6.831	0.000	74.97	HBD

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).db

Wear Rate Report

Pass 1 Analysis Exclude Measured Wear

Report Date/Time: 7/6/2010 3:37:44PM
AnalysisDate/Time: 7/6/2010 3:22:08PM

CHECWORKS SFA Version: 3.0 SP-1 (build 109)
Duty Factor (Global) : 1.000

Run Name: HTR DRN TANK DRN
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 1.000

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***HD19-1-HDT to HDP 21 SUCT***									***Sorted By: Flow Order***	
5EX-21N	31	5.532	1.903	365.0	3.302	0.0	24.000	6.831	0.000	74.97	HBD
5EX-21P	61	2.988	1.028	365.0	3.302	0.0	24.000	6.831	0.000	74.97	HBD
5EX-21	16	2.793	0.961	365.0	3.337	0.0	24.000	6.831	0.000	74.97	HBD
5EX-21 (D/S)	16	6.068	2.088	365.0	6.097	0.0	18.000	6.831	0.000	74.97	HBD
5EX-22	3	6.809	2.343	365.0	6.057	0.0	18.000	6.831	0.000	74.97	HBD
5EX-22P	53	4.854	1.670	365.0	6.045	0.0	18.000	6.831	0.000	74.97	HBD
5EX-VALVE-5EX-16	22	9.509	3.272	365.0	5.912	0.0	18.000	6.831	0.000	74.97	HBD
5EX-23P-1	58	4.184	1.440	365.0	5.912	0.0	18.000	6.831	0.000	74.97	HBD
5EX-23N	30	7.608	2.617	365.0	5.912	0.0	18.000	6.831	0.000	74.97	HBD
===>Grouped by Line:	***HD19-2-HDT to HDP 22 SUCT***									***Sorted By: Flow Order***	
5EX-26N	31	5.532	1.903	365.0	3.302	0.0	24.000	6.831	0.000	74.97	HBD
5EX-26P	61	2.988	1.028	365.0	3.302	0.0	24.000	6.831	0.000	74.97	HBD
5EX-26	16	2.788	0.959	365.0	3.329	0.0	24.000	6.831	0.000	74.97	HBD
5EX-26 (D/S)	16	6.037	2.077	365.0	6.064	0.0	18.000	6.831	0.000	74.97	HBD
5EX-27P	66	3.876	1.333	365.0	6.032	0.0	18.000	6.831	0.000	74.97	HBD
5EX-VALVE-5EX-16-1	22	9.509	3.272	365.0	5.912	0.0	18.000	6.831	0.000	74.97	HBD
5EX-28P-1	58	4.184	1.440	365.0	5.912	0.0	18.000	6.831	0.000	74.97	HBD
5EX-28N	30	7.608	2.617	365.0	5.912	0.0	18.000	6.831	0.000	74.97	HBD

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).db

Service Life Report

Pass 1 Analysis Exclude Measured Wear

Report Date/Time: 7/6/2010 3:37:44PM
AnalysisDate/Time: 7/6/2010 3:22:08PM

Run Name: HTR DRN TANK DRN
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 1.000

CHECWORKS SFA Version: 3.0 SP-1 (build 109)
Duty Factor (Global) :1.000

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **HD19-1-HDT to HDP 21 SUCT**					***Sorted By:Remaining Life***		
5EX-VALVE-5EX-16	0.000	0.047	0.129	0.129	-129,590	No	243,721
5EX-23N	0.000	0.100	0.121	0.121	-64,857	No	243,721
5EX-21N	0.000	0.221	0.161	0.161	277,702	No	243,721
5EX-23P-1	0.000	0.196	0.141	0.141	331,317	No	243,721
5EX-22	0.417	0.295	0.121	0.121	653,082	Yes	243,721
5EX-21P	0.000	0.292	0.188	0.188	883,728	No	243,721
5EX-21 (D/S)	0.445	0.352	0.121	0.121	971,019	Yes	243,721
5EX-22P	0.408	0.334	0.141	0.141	1,013,501	Yes	243,721
5EX-21	0.436	0.377	0.161	0.161	1,974,268	Yes	243,721
===>Grouped by Line: **HD19-2-HDT to HDP 22 SUCT**					***Sorted By:Remaining Life***		
5EX-VALVE-5EX-16-1	0.000	0.047	0.129	0.129	-129,590	No	243,721
5EX-28N	0.000	0.100	0.121	0.121	-64,857	No	243,721
5EX-26N	0.000	0.221	0.161	0.161	277,702	No	243,721
5EX-26 (D/S)	0.422	0.284	0.121	0.121	690,092	No	243,721
5EX-28P-1	0.000	0.265	0.141	0.141	755,141	Yes	243,721
5EX-26P	0.000	0.328	0.188	0.188	1,190,131	No	243,721
5EX-27P	0.399	0.323	0.141	0.141	1,194,366	Yes	243,721
5EX-26	0.423	0.370	0.161	0.161	1,914,875	Yes	243,721

Note:
[1] Predictions are based on last Tmeas to analysis ending period.

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).db

Service Life Report

Pass 1 Analysis Exclude Measured Wear

Report Date/Time: 7/6/2010 3:37:44PM
AnalysisDate/Time: 7/6/2010 3:22:08PM

Run Name: HTR DRN TANK DRN
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 1.000

CHECWORKS SFA Version: 3.0 SP-1 (build 109)
Duty Factor (Global) : 1.000

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **HD19-1-HDT to HDP 21 SUCT**					***Sorted By:Flow Order***		
5EX-21N	0.000	0.221	0.161	0.161	277,702	No	243,721
5EX-21P	0.000	0.292	0.188	0.188	883,728	No	243,721
5EX-21	0.436	0.377	0.161	0.161	1,974,268	Yes	243,721
5EX-21 (D/S)	0.445	0.352	0.121	0.121	971,019	Yes	243,721
5EX-22	0.417	0.295	0.121	0.121	653,082	Yes	243,721
5EX-22P	0.408	0.334	0.141	0.141	1,013,501	Yes	243,721
5EX-VALVE-5EX-16	0.000	0.047	0.129	0.129	-129,590	No	243,721
5EX-23P-1	0.000	0.196	0.141	0.141	331,317	No	243,721
5EX-23N	0.000	0.100	0.121	0.121	-64,857	No	243,721
===>Grouped by Line: **HD19-2-HDT to HDP 22 SUCT**					***Sorted By:Flow Order***		
5EX-26N	0.000	0.221	0.161	0.161	277,702	No	243,721
5EX-26P	0.000	0.328	0.188	0.188	1,190,131	No	243,721
5EX-26	0.423	0.370	0.161	0.161	1,914,875	Yes	243,721
5EX-26 (D/S)	0.422	0.284	0.121	0.121	690,092	No	243,721
5EX-27P	0.399	0.323	0.141	0.141	1,194,366	Yes	243,721
5EX-VALVE-5EX-16-1	0.000	0.047	0.129	0.129	-129,590	No	243,721
5EX-28P-1	0.000	0.265	0.141	0.141	755,141	Yes	243,721
5EX-28N	0.000	0.100	0.121	0.121	-64,857	No	243,721

Note:
[1] Predictions are based on last Tmeas to analysis ending period.

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).db

Wear Rate Report

Pass 1 Analysis Exclude Measured Wear

Report Date/Time: 7/6/2010 3:38:15PM
AnalysisDate/Time: 7/6/2010 3:22:09PM

CHECWORKS SFA Version: 3.0 SP-1 (build 109)

Duty Factor (Global) : 1.000

Run Name: MS - HP TURB TO MOPS
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 1.000

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***MS-HP Turbine to MPS A***								***Sorted By: Average Wear Rate***		
TEMP01	31	29.763	18.067	387.9	81.292	92.2	32.000	6.954	0.000	324.64	HBD
===>Grouped by Line:	***MS-HP Turbine to MPS B***								***Sorted By: Average Wear Rate***		
TEMP02	31	29.763	18.067	387.9	81.292	92.2	32.000	6.954	0.000	324.64	HBD
===>Grouped by Line:	***MS-HP Turbine to MPS C***								***Sorted By: Average Wear Rate***		
TEMP03	31	29.763	18.067	387.9	81.292	92.2	32.000	6.954	0.000	324.64	HBD
===>Grouped by Line:	***MS-HP Turbine to MPS D***								***Sorted By: Average Wear Rate***		
TEMP04	31	29.763	18.067	387.9	81.292	92.2	32.000	6.954	0.000	324.64	HBD

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).db

Wear Rate Report

Pass 1 Analysis Exclude Measured Wear

Report Date/Time: 7/6/2010 3:37:44PM
AnalysisDate/Time: 7/6/2010 3:22:09PM

CHECWORKS SFA Version: 3.0 SP-1 (build 109)
Duty Factor (Global) : 1.000

Run Name: MS - HP TURB TO MOPS
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 1.000

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***MS-HP Turbine to MPS A***									***Sorted By: Flow Order***	
TEMP01	31	29.763	18.067	387.9	81.292	92.2	32.000	6.954	0.000	324.64	HBD
===>Grouped by Line:	***MS-HP Turbine to MPS B***									***Sorted By: Flow Order***	
TEMP02	31	29.763	18.067	387.9	81.292	92.2	32.000	6.954	0.000	324.64	HBD
===>Grouped by Line:	***MS-HP Turbine to MPS C***									***Sorted By: Flow Order***	
TEMP03	31	29.763	18.067	387.9	81.292	92.2	32.000	6.954	0.000	324.64	HBD
===>Grouped by Line:	***MS-HP Turbine to MPS D***									***Sorted By: Flow Order***	
TEMP04	31	29.763	18.067	387.9	81.292	92.2	32.000	6.954	0.000	324.64	HBD

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).db

Service Life Report

Pass 1 Analysis Exclude Measured Wear

Report Date/Time: 7/6/2010 3:37:44PM
AnalysisDate/Time: 7/6/2010 3:22:09PM

Run Name: MS - HP TURB TO MOPS
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 1.000

CHECWORKS SFA Version: 3.0 SP-1 (build 109)
Duty Factor (Global) :1.000

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **MS-HP Turbine to MPS A**					***Sorted By:Remaining Life***		
TEMP01	0.000	-0.453	0.265	0.265	-218,718	No	243,721
===>Grouped by Line: **MS-HP Turbine to MPS B**					***Sorted By:Remaining Life***		
TEMP02	0.000	-0.453	0.265	0.265	-218,718	No	243,721
===>Grouped by Line: **MS-HP Turbine to MPS C**					***Sorted By:Remaining Life***		
TEMP03	0.000	-0.453	0.265	0.265	-218,718	No	243,721
===>Grouped by Line: **MS-HP Turbine to MPS D**					***Sorted By:Remaining Life***		
TEMP04	0.000	-0.453	0.265	0.265	-218,718	No	243,721

Note:
[1] Predictions are based on last Tmeas to analysis ending period.

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).db

Service Life Report

Pass 1 Analysis Exclude Measured Wear

Report Date/Time: 7/6/2010 3:37:44PM
AnalysisDate/Time: 7/6/2010 3:22:09PM

Run Name: MS - HP TURB TO MOPS
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 1.000

CHECWORKS SFA Version: 3.0 SP-1 (build 109)
Duty Factor (Global) : 1.000

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **MS-HP Turbine to MPS A**					***Sorted By:Flow Order***		
TEMP01	0.000	-0.453	0.265	0.265	-218,718	No	243,721
===>Grouped by Line: **MS-HP Turbine to MPS B**					***Sorted By:Flow Order***		
TEMP02	0.000	-0.453	0.265	0.265	-218,718	No	243,721
===>Grouped by Line: **MS-HP Turbine to MPS C**					***Sorted By:Flow Order***		
TEMP03	0.000	-0.453	0.265	0.265	-218,718	No	243,721
===>Grouped by Line: **MS-HP Turbine to MPS D**					***Sorted By:Flow Order***		
TEMP04	0.000	-0.453	0.265	0.265	-218,718	No	243,721

Note:
[1] Predictions are based on last Tmeas to analysis ending period.

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).db

Wear Rate Report

Pass 1 Analysis Exclude Measured Wear

Report Date/Time: 7/6/2010 3:38:15PM
AnalysisDate/Time: 7/6/2010 3:23:19PM

CHECWORKS SFA Version: 3.0 SP-1 (build 109)

Duty Factor (Global) : 1.000

Run Name: MSDT DRNS TO HDT
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 1.000

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***MSD33A-1-MSDT 21A to HDT***								***Sorted By: Average Wear Rate***		
1A-VALVE-5EX-29-1	25	6.971	1.438	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
1A-15N	30	6.161	1.271	384.5	3.991	0.0	6.625	6.959	0.000	117.60	ARD
1A-12N	31	4.184	0.863	384.5	2.069	0.0	8.625	6.959	0.000	117.60	ARD
1A-10	2	0.002	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
1A-1	2	0.002	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
1A-2	4	0.002	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
1A-3	2	0.002	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
1A-4	2	0.002	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
1A-5	2	0.002	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
1A-6	2	0.002	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
1A-7	2	0.002	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
1A-8	2	0.002	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
1A-9	2	0.002	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
1A-13	2	0.002	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
1A-15	2	0.002	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
1A-2P	54	0.002	0.001	384.5	3.693	0.0	6.625	6.959	0.000	117.60	ARD
1A-11 (D/S)	16	0.002	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
1A-10P	52	0.001	0.001	384.5	3.693	0.0	6.625	6.959	0.000	117.60	ARD
1A-3P	52	0.001	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
1A-4P	52	0.001	0.001	384.5	3.693	0.0	6.625	6.959	0.000	117.60	ARD
1A-5P	52	0.001	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
1A-6P	52	0.001	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
1A-7P	52	0.001	0.001	384.5	3.693	0.0	6.625	6.959	0.000	117.60	ARD
1A-8P	52	0.001	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
1A-9P	52	0.001	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
1A-13P	52	0.001	0.001	384.5	3.693	0.0	6.625	6.959	0.000	117.60	ARD

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***MSD33A-1-MSDT 21A to HDT***								***Sorted By: Average Wear Rate***		
1A-11P	66	0.001	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
1A-12 (D/S)	15	0.001	0.001	384.5	2.069	0.0	8.625	6.959	0.000	117.60	ARD
1A-12	15	0.001	0.001	384.5	2.069	0.0	8.625	6.959	0.000	117.60	ARD
1A-12P	61	0.001	0.000	384.5	2.096	0.0	8.625	6.959	0.000	117.60	ARD
1A-11	16	0.001	0.000	384.5	2.069	0.0	8.625	6.959	0.000	117.60	ARD
1A-12P-1	64	0.001	0.000	384.5	2.096	0.0	8.625	6.959	0.000	117.60	ARD
===>Grouped by Line:	***MSD34A-1-MSDT 22A to HDT***								***Sorted By: Average Wear Rate***		
2A-VALVE-5EX-29-2	25	6.971	1.438	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
2A-15N	30	5.577	1.150	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
2A-3N	31	4.184	0.863	384.5	2.069	0.0	8.625	6.959	0.000	117.60	ARD
2A-5	2	0.002	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
2A-1	2	0.002	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
2A-2	2	0.002	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
2A-7	2	0.002	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
2A-8	2	0.002	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
2A-9	2	0.002	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
2A-10	2	0.002	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
2A-12	2	0.002	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
2A-13	2	0.002	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
2A-15	2	0.002	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
2A-6	1	0.002	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
2A-4 (D/S)	16	0.002	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
2A-5P	52	0.001	0.001	384.5	3.693	0.0	6.625	6.959	0.000	117.60	ARD
2A-2P-1	52	0.001	0.001	384.5	3.693	0.0	6.625	6.959	0.000	117.60	ARD
2A-7P	52	0.001	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
2A-8P	52	0.001	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
2A-9P	52	0.001	0.001	384.5	3.693	0.0	6.625	6.959	0.000	117.60	ARD
2A-10P	52	0.001	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
2A-12P	52	0.001	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
2A-13P	52	0.001	0.001	384.5	3.693	0.0	6.625	6.959	0.000	117.60	ARD
2A-2P	58	0.001	0.001	384.5	3.693	0.0	6.625	6.959	0.000	117.60	ARD
2A-6P	51	0.001	0.001	384.5	3.693	0.0	6.625	6.959	0.000	117.60	ARD
2A-4P	66	0.001	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
2A-3 (D/S)	15	0.001	0.001	384.5	2.069	0.0	8.625	6.959	0.000	117.60	ARD

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***MSD34A-1-MSDT 22A to HDT***								***Sorted By: Average Wear Rate***		
2A-3	15	0.001	0.001	384.5	2.069	0.0	8.625	6.959	0.000	117.60	ARD
2A-3P-1	61	0.001	0.000	384.5	2.096	0.0	8.625	6.959	0.000	117.60	ARD
2A-4	16	0.001	0.000	384.5	2.069	0.0	8.625	6.959	0.000	117.60	ARD
2A-3P	64	0.001	0.000	384.5	2.096	0.0	8.625	6.959	0.000	117.60	ARD
===>Grouped by Line:	***MSD35A-1-MSDT 23A to HDT***								***Sorted By: Average Wear Rate***		
3A-VALVE-5EX-29-3	25	6.971	1.438	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
3A-15N	30	5.577	1.150	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
3A-16N	31	4.184	0.863	384.5	2.069	0.0	8.625	6.959	0.000	117.60	ARD
3A-2	2	0.002	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
3A-3	4	0.002	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
3A-17	2	0.002	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
3A-18	2	0.002	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
3A-19	2	0.002	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
3A-20	2	0.002	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
3A-21	2	0.002	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
3A-13	2	0.002	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
3A-15	2	0.002	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
3A-3P	54	0.002	0.001	384.5	3.693	0.0	6.625	6.959	0.000	117.60	ARD
3A-1 (D/S)	16	0.002	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
3A-17P	52	0.001	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
3A-18P	52	0.001	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
3A-19P	52	0.001	0.001	384.5	3.693	0.0	6.625	6.959	0.000	117.60	ARD
3A-20P	52	0.001	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
3A-21P	52	0.001	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
3A-13P	52	0.001	0.001	384.5	3.693	0.0	6.625	6.959	0.000	117.60	ARD
3A-2P	58	0.001	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
3A-16 (D/S)	15	0.001	0.001	384.5	2.069	0.0	8.625	6.959	0.000	117.60	ARD
3A-16	15	0.001	0.001	384.5	2.069	0.0	8.625	6.959	0.000	117.60	ARD
3A-16P US	61	0.001	0.000	384.5	2.096	0.0	8.625	6.959	0.000	117.60	ARD
3A-1	16	0.001	0.000	384.5	2.069	0.0	8.625	6.959	0.000	117.60	ARD
3A-1P	64	0.001	0.000	384.5	2.096	0.0	8.625	6.959	0.000	117.60	ARD
===>Grouped by Line:	***MSD36A-1-MSDT 21B to HDT***								***Sorted By: Average Wear Rate***		
1B-VALVE-5EX-29-4	25	6.971	1.438	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
1B-15N	30	5.577	1.150	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***MSD36A-1-MSDT 21B to HDT***								***Sorted By: Average Wear Rate***		
1B-3N	31	4.184	0.863	384.5	2.069	0.0	8.625	6.959	0.000	117.60	ARD
1B-1	2	0.001	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
1B-2	2	0.001	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
1B-6	2	0.001	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
1B-7	2	0.001	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
1B-8	2	0.001	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
1B-9	2	0.001	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
1B-13	2	0.001	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
1B-15	2	0.001	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
1B-10	1	0.001	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
1B-11	1	0.001	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
1B-12	1	0.001	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
1B-14	1	0.001	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
1B-5R (D/S)	7	0.001	0.001	384.5	3.693	0.0	6.625	6.959	0.000	117.60	ARD
1B-5P	57	0.001	0.001	384.5	3.693	0.0	6.625	6.959	0.000	117.60	ARD
1B-6P	52	0.001	0.001	384.5	3.693	0.0	6.625	6.959	0.000	117.60	ARD
1B-7P	52	0.001	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
1B-7P-1	52	0.001	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
1B-8P	52	0.001	0.001	384.5	3.693	0.0	6.625	6.959	0.000	117.60	ARD
1B-9P	52	0.001	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
1B-13P	52	0.001	0.001	384.5	3.693	0.0	6.625	6.959	0.000	117.60	ARD
1B-15P	52	0.001	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
1B-3	2	0.001	0.001	384.5	2.069	0.0	8.625	6.959	0.000	117.60	ARD
1B-4	2	0.001	0.001	384.5	2.069	0.0	8.625	6.959	0.000	117.60	ARD
1B-2P	58	0.001	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
1B-10P US	51	0.001	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
1B-10P DS	51	0.001	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
1B-11P US	51	0.001	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
1B-11P DS	51	0.001	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
1B-12P US	51	0.001	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
1B-12P DS	51	0.001	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
1B-14P	51	0.001	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
1B-5R	7	0.001	0.001	384.5	2.096	0.0	8.625	6.959	0.000	117.60	ARD
1B-5 (D/S)	15	0.001	0.001	384.5	2.069	0.0	8.625	6.959	0.000	117.60	ARD

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***MSD36A-1-MSDT 21B to HDT***								***Sorted By: Average Wear Rate***		
1B-5	15	0.001	0.001	384.5	2.069	0.0	8.625	6.959	0.000	117.60	ARD
1B-3P	61	0.000	0.000	384.5	2.096	0.0	8.625	6.959	0.000	117.60	ARD
1B-4P	52	0.000	0.000	384.5	2.069	0.0	8.625	6.959	0.000	117.60	ARD
===>Grouped by Line:	***MSD37A-1-MSDT 22B to HDT***								***Sorted By: Average Wear Rate***		
2B-VALVE-5EX-29-5	25	6.971	1.438	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
2B-15N	30	5.577	1.150	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
2B-1N	31	4.184	0.863	384.5	2.096	0.0	8.625	6.959	0.000	117.60	ARD
2B-3	4	0.001	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
2B-4	2	0.001	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
2B-5	2	0.001	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
2B-6	2	0.001	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
2B-7	2	0.001	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
2B-8	2	0.001	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
2B-13	2	0.001	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
2B-15	2	0.001	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
2B-9	1	0.001	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
2B-10	1	0.001	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
2B-11	1	0.001	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
2B-12	1	0.001	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
2B-3P	54	0.001	0.001	384.5	3.693	0.0	6.625	6.959	0.000	117.60	ARD
2B-2 (D/S)	16	0.001	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
2B-5P	52	0.001	0.001	384.5	3.693	0.0	6.625	6.959	0.000	117.60	ARD
2B-6P	52	0.001	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
2B-7P US	52	0.001	0.001	384.5	3.693	0.0	6.625	6.959	0.000	117.60	ARD
2B-7P DS	52	0.001	0.001	384.5	3.693	0.0	6.625	6.959	0.000	117.60	ARD
2B-8P US	52	0.001	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
2B-8P DS	52	0.001	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
2B-13P	52	0.001	0.001	384.5	3.693	0.0	6.625	6.959	0.000	117.60	ARD
2B-15P	52	0.001	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
2B-4P	58	0.001	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
2B-9P US	51	0.001	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
2B-9P DS	51	0.001	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
2B-10P US	51	0.001	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
2B-10P DS	51	0.001	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***MSD37A-1-MSDT 22B to HDT***								***Sorted By: Average Wear Rate***		
2B-11P	51	0.001	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
2B-12P US	51	0.001	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
2B-12P DS	51	0.001	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
2B-1 (D/S)	15	0.001	0.001	384.5	2.069	0.0	8.625	6.959	0.000	117.60	ARD
2B-1	15	0.001	0.001	384.5	2.069	0.0	8.625	6.959	0.000	117.60	ARD
2B-1P	61	0.000	0.000	384.5	2.096	0.0	8.625	6.959	0.000	117.60	ARD
2B-2	16	0.000	0.000	384.5	2.069	0.0	8.625	6.959	0.000	117.60	ARD
2B-2P	64	0.000	0.000	384.5	2.096	0.0	8.625	6.959	0.000	117.60	ARD
===>Grouped by Line:	***MSD38A-1-MSDT 23B to HDT***								***Sorted By: Average Wear Rate***		
3B-VALVE-5EX-29-6	25	6.971	1.438	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
3B-15N	30	5.577	1.150	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
3B-3N	31	4.184	0.863	384.5	2.069	0.0	8.625	6.959	0.000	117.60	ARD
3B-2	2	0.002	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
3B-6	2	0.002	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
3B-9	2	0.002	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
3B-13	2	0.002	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
3B-15	2	0.002	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
3B-7	1	0.002	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
3B-10	1	0.002	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
3B-11	1	0.002	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
3B-12	1	0.002	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
3B-14	1	0.002	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
3B-4 (D/S)	16	0.002	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
3B-2P-1	52	0.001	0.001	384.5	3.693	0.0	6.625	6.959	0.000	117.60	ARD
3B-6P	52	0.001	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
3B-8P	52	0.001	0.001	384.5	3.693	0.0	6.625	6.959	0.000	117.60	ARD
3B-9P DS	52	0.001	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
3B-13P	52	0.001	0.001	384.5	3.693	0.0	6.625	6.959	0.000	117.60	ARD
3B-15P	52	0.001	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
3B-2P	58	0.001	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
3B-7P	51	0.001	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
3B-10P US	51	0.001	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
3B-10P DS	51	0.001	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
3B-11P US	51	0.001	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***MSD38A-1-MSDT 23B to HDT***								***Sorted By: Average Wear Rate***		
3B-11P DS	51	0.001	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
3B-12P US	51	0.001	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
3B-14P	51	0.001	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
3B-5	4	0.001	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
3B-1	2	0.001	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
3B-8	2	0.001	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
3B-5P	54	0.001	0.001	384.5	3.693	0.0	6.625	6.959	0.000	117.60	ARD
3B-3 (D/S)	15	0.001	0.001	384.5	2.069	0.0	8.625	6.959	0.000	117.60	ARD
3B-3	15	0.001	0.001	384.5	2.069	0.0	8.625	6.959	0.000	117.60	ARD
3B-3P	61	0.001	0.000	384.5	2.096	0.0	8.625	6.959	0.000	117.60	ARD
3B-4	16	0.001	0.000	384.5	2.069	0.0	8.625	6.959	0.000	117.60	ARD
3B-4P	64	0.001	0.000	384.5	2.096	0.0	8.625	6.959	0.000	117.60	ARD

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).db

Wear Rate Report

Pass 1 Analysis Exclude Measured Wear

Report Date/Time: 7/6/2010 3:37:44PM
AnalysisDate/Time: 7/6/2010 3:23:19PM

CHECWORKS SFA Version: 3.0 SP-1 (build 109)
Duty Factor (Global) : 1.000

Run Name: MSDT DRNS TO HDT
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 1.000

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***MSD33A-1-MSDT 21A to HDT***									***Sorted By: Flow Order***	
1A-12N	31	4.184	0.863	384.5	2.069	0.0	8.625	6.959	0.000	117.60	ARD
1A-12P	61	0.001	0.000	384.5	2.096	0.0	8.625	6.959	0.000	117.60	ARD
1A-12	15	0.001	0.001	384.5	2.069	0.0	8.625	6.959	0.000	117.60	ARD
1A-12 (D/S)	15	0.001	0.001	384.5	2.069	0.0	8.625	6.959	0.000	117.60	ARD
1A-12P-1	64	0.001	0.000	384.5	2.096	0.0	8.625	6.959	0.000	117.60	ARD
1A-11	16	0.001	0.000	384.5	2.069	0.0	8.625	6.959	0.000	117.60	ARD
1A-11 (D/S)	16	0.002	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
1A-11P	66	0.001	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
1A-10	2	0.002	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
1A-10P	52	0.001	0.001	384.5	3.693	0.0	6.625	6.959	0.000	117.60	ARD
1A-1	2	0.002	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
1A-VALVE-5EX-29-1	25	6.971	1.438	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
1A-2	4	0.002	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
1A-2P	54	0.002	0.001	384.5	3.693	0.0	6.625	6.959	0.000	117.60	ARD
1A-3	2	0.002	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
1A-3P	52	0.001	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
1A-4	2	0.002	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
1A-4P	52	0.001	0.001	384.5	3.693	0.0	6.625	6.959	0.000	117.60	ARD
1A-5	2	0.002	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
1A-5P	52	0.001	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
1A-6	2	0.002	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
1A-6P	52	0.001	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
1A-7	2	0.002	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
1A-7P	52	0.001	0.001	384.5	3.693	0.0	6.625	6.959	0.000	117.60	ARD
1A-8	2	0.002	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
1A-8P	52	0.001	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***MSD33A-1-MSDT 21A to HDT***									***Sorted By: Flow Order***	
1A-9	2	0.002	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
1A-9P	52	0.001	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
1A-13	2	0.002	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
1A-13P	52	0.001	0.001	384.5	3.693	0.0	6.625	6.959	0.000	117.60	ARD
1A-15	2	0.002	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
1A-15N	30	6.161	1.271	384.5	3.991	0.0	6.625	6.959	0.000	117.60	ARD
===>Grouped by Line:	***MSD34A-1-MSDT 22A to HDT***									***Sorted By: Flow Order***	
2A-3N	31	4.184	0.863	384.5	2.069	0.0	8.625	6.959	0.000	117.60	ARD
2A-3P-1	61	0.001	0.000	384.5	2.096	0.0	8.625	6.959	0.000	117.60	ARD
2A-3	15	0.001	0.001	384.5	2.069	0.0	8.625	6.959	0.000	117.60	ARD
2A-3 (D/S)	15	0.001	0.001	384.5	2.069	0.0	8.625	6.959	0.000	117.60	ARD
2A-3P	64	0.001	0.000	384.5	2.096	0.0	8.625	6.959	0.000	117.60	ARD
2A-4	16	0.001	0.000	384.5	2.069	0.0	8.625	6.959	0.000	117.60	ARD
2A-4 (D/S)	16	0.002	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
2A-4P	66	0.001	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
2A-5	2	0.002	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
2A-5P	52	0.001	0.001	384.5	3.693	0.0	6.625	6.959	0.000	117.60	ARD
2A-1	2	0.002	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
2A-VALVE-5EX-29-2	25	6.971	1.438	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
2A-2P	58	0.001	0.001	384.5	3.693	0.0	6.625	6.959	0.000	117.60	ARD
2A-2	2	0.002	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
2A-2P-1	52	0.001	0.001	384.5	3.693	0.0	6.625	6.959	0.000	117.60	ARD
2A-6	1	0.002	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
2A-6P	51	0.001	0.001	384.5	3.693	0.0	6.625	6.959	0.000	117.60	ARD
2A-7	2	0.002	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
2A-7P	52	0.001	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
2A-8	2	0.002	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
2A-8P	52	0.001	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
2A-9	2	0.002	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
2A-9P	52	0.001	0.001	384.5	3.693	0.0	6.625	6.959	0.000	117.60	ARD
2A-10	2	0.002	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
2A-10P	52	0.001	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
2A-12	2	0.002	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
2A-12P	52	0.001	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***MSD34A-1-MSDT 22A to HDT***								***Sorted By: Flow Order***		
2A-13	2	0.002	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
2A-13P	52	0.001	0.001	384.5	3.693	0.0	6.625	6.959	0.000	117.60	ARD
2A-15	2	0.002	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
2A-15N	30	5.577	1.150	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
===>Grouped by Line:	***MSD35A-1-MSDT 23A to HDT***								***Sorted By: Flow Order***		
3A-16N	31	4.184	0.863	384.5	2.069	0.0	8.625	6.959	0.000	117.60	ARD
3A-16P US	61	0.001	0.000	384.5	2.096	0.0	8.625	6.959	0.000	117.60	ARD
3A-16	15	0.001	0.001	384.5	2.069	0.0	8.625	6.959	0.000	117.60	ARD
3A-16 (D/S)	15	0.001	0.001	384.5	2.069	0.0	8.625	6.959	0.000	117.60	ARD
3A-1P	64	0.001	0.000	384.5	2.096	0.0	8.625	6.959	0.000	117.60	ARD
3A-1	16	0.001	0.000	384.5	2.069	0.0	8.625	6.959	0.000	117.60	ARD
3A-1 (D/S)	16	0.002	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
3A-VALVE-5EX-29-3	25	6.971	1.438	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
3A-2P	58	0.001	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
3A-2	2	0.002	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
3A-3	4	0.002	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
3A-3P	54	0.002	0.001	384.5	3.693	0.0	6.625	6.959	0.000	117.60	ARD
3A-17	2	0.002	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
3A-17P	52	0.001	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
3A-18	2	0.002	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
3A-18P	52	0.001	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
3A-19	2	0.002	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
3A-19P	52	0.001	0.001	384.5	3.693	0.0	6.625	6.959	0.000	117.60	ARD
3A-20	2	0.002	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
3A-20P	52	0.001	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
3A-21	2	0.002	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
3A-21P	52	0.001	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
3A-13	2	0.002	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
3A-13P	52	0.001	0.001	384.5	3.693	0.0	6.625	6.959	0.000	117.60	ARD
3A-15	2	0.002	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
3A-15N	30	5.577	1.150	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
===>Grouped by Line:	***MSD36A-1-MSDT 21B to HDT***								***Sorted By: Flow Order***		
1B-3N	31	4.184	0.863	384.5	2.069	0.0	8.625	6.959	0.000	117.60	ARD
1B-3P	61	0.000	0.000	384.5	2.096	0.0	8.625	6.959	0.000	117.60	ARD

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	MSD36A-1-MSDT 21B to HDT									Sorted By: Flow Order	
1B-3	2	0.001	0.001	384.5	2.069	0.0	8.625	6.959	0.000	117.60	ARD
1B-4P	52	0.000	0.000	384.5	2.069	0.0	8.625	6.959	0.000	117.60	ARD
1B-4	2	0.001	0.001	384.5	2.069	0.0	8.625	6.959	0.000	117.60	ARD
1B-5	15	0.001	0.001	384.5	2.069	0.0	8.625	6.959	0.000	117.60	ARD
1B-5 (D/S)	15	0.001	0.001	384.5	2.069	0.0	8.625	6.959	0.000	117.60	ARD
1B-5R	7	0.001	0.001	384.5	2.096	0.0	8.625	6.959	0.000	117.60	ARD
1B-5R (D/S)	7	0.001	0.001	384.5	3.693	0.0	6.625	6.959	0.000	117.60	ARD
1B-5P	57	0.001	0.001	384.5	3.693	0.0	6.625	6.959	0.000	117.60	ARD
1B-1	2	0.001	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
1B-VALVE-5EX-29-4	25	6.971	1.438	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
1B-2P	58	0.001	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
1B-2	2	0.001	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
1B-6P	52	0.001	0.001	384.5	3.693	0.0	6.625	6.959	0.000	117.60	ARD
1B-6	2	0.001	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
1B-7P	52	0.001	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
1B-7	2	0.001	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
1B-7P-1	52	0.001	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
1B-8	2	0.001	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
1B-8P	52	0.001	0.001	384.5	3.693	0.0	6.625	6.959	0.000	117.60	ARD
1B-9	2	0.001	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
1B-9P	52	0.001	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
1B-10	1	0.001	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
1B-10P US	51	0.001	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
1B-10P DS	51	0.001	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
1B-11	1	0.001	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
1B-11P US	51	0.001	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
1B-11P DS	51	0.001	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
1B-12	1	0.001	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
1B-12P US	51	0.001	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
1B-12P DS	51	0.001	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
1B-14	1	0.001	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
1B-14P	51	0.001	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
1B-13	2	0.001	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
1B-13P	52	0.001	0.001	384.5	3.693	0.0	6.625	6.959	0.000	117.60	ARD

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***MSD36A-1-MSDT 21B to HDT***									***Sorted By: Flow Order***	
1B-15	2	0.001	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
1B-15P	52	0.001	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
1B-15N	30	5.577	1.150	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
===>Grouped by Line:	***MSD37A-1-MSDT 22B to HDT***									***Sorted By: Flow Order***	
2B-1N	31	4.184	0.863	384.5	2.096	0.0	8.625	6.959	0.000	117.60	ARD
2B-1P	61	0.000	0.000	384.5	2.096	0.0	8.625	6.959	0.000	117.60	ARD
2B-1	15	0.001	0.001	384.5	2.069	0.0	8.625	6.959	0.000	117.60	ARD
2B-1 (D/S)	15	0.001	0.001	384.5	2.069	0.0	8.625	6.959	0.000	117.60	ARD
2B-2P	64	0.000	0.000	384.5	2.096	0.0	8.625	6.959	0.000	117.60	ARD
2B-2	16	0.000	0.000	384.5	2.069	0.0	8.625	6.959	0.000	117.60	ARD
2B-2 (D/S)	16	0.001	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
2B-3	4	0.001	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
2B-3P	54	0.001	0.001	384.5	3.693	0.0	6.625	6.959	0.000	117.60	ARD
2B-4	2	0.001	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
2B-VALVE-5EX-29-5	25	6.971	1.438	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
2B-4P	58	0.001	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
2B-5	2	0.001	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
2B-5P	52	0.001	0.001	384.5	3.693	0.0	6.625	6.959	0.000	117.60	ARD
2B-6	2	0.001	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
2B-6P	52	0.001	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
2B-7	2	0.001	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
2B-7P US	52	0.001	0.001	384.5	3.693	0.0	6.625	6.959	0.000	117.60	ARD
2B-7P DS	52	0.001	0.001	384.5	3.693	0.0	6.625	6.959	0.000	117.60	ARD
2B-8	2	0.001	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
2B-8P US	52	0.001	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
2B-8P DS	52	0.001	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
2B-9	1	0.001	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
2B-9P US	51	0.001	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
2B-9P DS	51	0.001	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
2B-10	1	0.001	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
2B-10P US	51	0.001	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
2B-10P DS	51	0.001	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
2B-11	1	0.001	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
2B-11P	51	0.001	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***MSD37A-1-MSDT 22B to HDT***									***Sorted By: Flow Order***	
2B-12	1	0.001	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
2B-12P US	51	0.001	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
2B-12P DS	51	0.001	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
2B-13	2	0.001	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
2B-13P	52	0.001	0.001	384.5	3.693	0.0	6.625	6.959	0.000	117.60	ARD
2B-15	2	0.001	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
2B-15P	52	0.001	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
2B-15N	30	5.577	1.150	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
===>Grouped by Line:	***MSD38A-1-MSDT 23B to HDT***									***Sorted By: Flow Order***	
3B-3N	31	4.184	0.863	384.5	2.069	0.0	8.625	6.959	0.000	117.60	ARD
3B-3P	61	0.001	0.000	384.5	2.096	0.0	8.625	6.959	0.000	117.60	ARD
3B-3	15	0.001	0.001	384.5	2.069	0.0	8.625	6.959	0.000	117.60	ARD
3B-3 (D/S)	15	0.001	0.001	384.5	2.069	0.0	8.625	6.959	0.000	117.60	ARD
3B-4P	64	0.001	0.000	384.5	2.096	0.0	8.625	6.959	0.000	117.60	ARD
3B-4	16	0.001	0.000	384.5	2.069	0.0	8.625	6.959	0.000	117.60	ARD
3B-4 (D/S)	16	0.002	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
3B-5	4	0.001	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
3B-5P	54	0.001	0.001	384.5	3.693	0.0	6.625	6.959	0.000	117.60	ARD
3B-1	2	0.001	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
3B-VALVE-5EX-29-6	25	6.971	1.438	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
3B-2P	58	0.001	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
3B-2	2	0.002	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
3B-2P-1	52	0.001	0.001	384.5	3.693	0.0	6.625	6.959	0.000	117.60	ARD
3B-6	2	0.002	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
3B-6P	52	0.001	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
3B-7	1	0.002	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
3B-7P	51	0.001	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
3B-8	2	0.001	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
3B-8P	52	0.001	0.001	384.5	3.693	0.0	6.625	6.959	0.000	117.60	ARD
3B-9	2	0.002	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
3B-9P DS	52	0.001	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
3B-10	1	0.002	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
3B-10P US	51	0.001	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
3B-10P DS	51	0.001	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***MSD38A-1-MSDT 23B to HDT***								***Sorted By: Flow Order***		
3B-11	1	0.002	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
3B-11P US	51	0.001	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
3B-11P DS	51	0.001	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
3B-12	1	0.002	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
3B-12P US	51	0.001	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
3B-14	1	0.002	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
3B-14P	51	0.001	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
3B-13	2	0.002	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
3B-13P	52	0.001	0.001	384.5	3.693	0.0	6.625	6.959	0.000	117.60	ARD
3B-15	2	0.002	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
3B-15P	52	0.001	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
3B-15N	30	5.577	1.150	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).db

Service Life Report

Pass 1 Analysis Exclude Measured Wear

Report Date/Time: 7/6/2010 3:37:44PM
AnalysisDate/Time: 7/6/2010 3:23:19PM

Run Name: MSDT DRNS TO HDT
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 1.000

CHECWORKS SFA Version: 3.0 SP-1 (build 109)
Duty Factor (Global) :1.000

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **MSD33A-1-MSDT 21A to HDT**					***Sorted By:Remaining Life***		
1A-VALVE-5EX-29-1	0.000	0.086	0.048	0.048	234,761	No	243,721
1A-12N	0.000	0.206	0.058	0.058	1,501,068	No	243,721
1A-15N	0.438	0.337	0.044	0.044	2,019,729	Yes	243,721
1A-11 (D/S)	0.000	0.280	0.044	0.044	100,000,000	No	124,633
1A-11P	0.000	0.280	0.052	0.052	100,000,000	No	124,633
1A-10P	0.000	0.280	0.052	0.052	100,000,000	No	124,633
1A-10	0.000	0.280	0.044	0.044	100,000,000	No	124,633
1A-12	0.000	0.322	0.058	0.058	100,000,000	No	124,633
1A-12P	0.000	0.409	0.068	0.068	100,000,000	No	124,633
1A-12P-1	0.000	0.322	0.068	0.068	100,000,000	No	124,633
1A-11	0.000	0.322	0.058	0.058	100,000,000	No	124,633
1A-12 (D/S)	0.000	0.322	0.058	0.058	100,000,000	No	124,633
1A-1	0.000	0.280	0.044	0.044	100,000,000	No	124,633
1A-2	0.000	0.280	0.044	0.044	100,000,000	No	124,633
1A-2P	0.000	0.280	0.052	0.052	100,000,000	No	124,633
1A-3	0.000	0.280	0.044	0.044	100,000,000	No	124,633
1A-3P	0.000	0.280	0.052	0.052	100,000,000	No	124,633
1A-4	0.000	0.280	0.044	0.044	100,000,000	No	124,633
1A-4P	0.000	0.280	0.052	0.052	100,000,000	No	124,633
1A-5	0.000	0.280	0.044	0.044	100,000,000	No	124,633
1A-5P	0.000	0.280	0.052	0.052	100,000,000	No	124,633
1A-6	0.000	0.280	0.044	0.044	100,000,000	No	124,633
1A-6P	0.000	0.280	0.052	0.052	100,000,000	No	124,633
1A-7	0.000	0.280	0.044	0.044	100,000,000	No	124,633
1A-7P	0.000	0.280	0.052	0.052	100,000,000	No	124,633
1A-8	0.000	0.280	0.044	0.044	100,000,000	No	124,633
1A-8P	0.000	0.280	0.052	0.052	100,000,000	No	124,633

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **MSD33A-1-MSDT 21A to HDT**					***Sorted By:Remaining Life***		
1A-9	0.000	0.280	0.044	0.044	100,000,000	No	124,633
1A-9P	0.000	0.280	0.052	0.052	100,000,000	No	124,633
1A-13	0.000	0.280	0.044	0.044	100,000,000	No	124,633
1A-13P	0.000	0.280	0.052	0.052	100,000,000	No	124,633
1A-15	0.000	0.352	0.044	0.044	100,000,000	No	124,633
===>Grouped by Line: **MSD34A-1-MSDT 22A to HDT**					***Sorted By:Remaining Life***		
2A-VALVE-5EX-29-2	0.000	0.086	0.048	0.048	234,761	No	243,721
2A-15N	0.000	0.125	0.044	0.044	612,893	No	243,721
2A-3N	0.000	0.206	0.058	0.058	1,501,068	No	243,721
2A-3P-1	0.000	0.322	0.058	0.058	100,000,000	No	124,633
2A-3	0.000	0.322	0.058	0.058	100,000,000	No	124,633
2A-3 (D/S)	0.000	0.322	0.058	0.058	100,000,000	No	124,633
2A-3P	0.000	0.322	0.058	0.058	100,000,000	No	124,633
2A-4	0.000	0.322	0.058	0.058	100,000,000	No	124,633
2A-4 (D/S)	0.000	0.280	0.044	0.044	100,000,000	No	124,633
2A-4P	0.000	0.280	0.044	0.044	100,000,000	No	124,633
2A-5	0.000	0.280	0.044	0.044	100,000,000	No	124,633
2A-5P	0.000	0.280	0.044	0.044	100,000,000	No	124,633
2A-1	0.000	0.280	0.044	0.044	100,000,000	No	124,633
2A-2P	0.000	0.280	0.044	0.044	100,000,000	No	124,633
2A-2	0.000	0.280	0.044	0.044	100,000,000	No	124,633
2A-2P-1	0.000	0.280	0.044	0.044	100,000,000	No	124,633
2A-6	0.000	0.280	0.044	0.044	100,000,000	No	124,633
2A-6P	0.000	0.280	0.044	0.044	100,000,000	No	124,633
2A-7	0.000	0.280	0.044	0.044	100,000,000	No	124,633
2A-7P	0.000	0.280	0.044	0.044	100,000,000	No	124,633
2A-8	0.000	0.280	0.044	0.044	100,000,000	No	124,633
2A-8P	0.000	0.280	0.044	0.044	100,000,000	No	124,633
2A-9	0.000	0.280	0.044	0.044	100,000,000	No	124,633
2A-9P	0.000	0.280	0.044	0.044	100,000,000	No	124,633
2A-10	0.000	0.280	0.044	0.044	100,000,000	No	124,633
2A-10P	0.000	0.280	0.044	0.044	100,000,000	No	124,633
2A-12	0.000	0.280	0.044	0.044	100,000,000	No	124,633
2A-12P	0.000	0.280	0.044	0.044	100,000,000	No	124,633
2A-13	0.000	0.280	0.044	0.044	100,000,000	No	124,633
2A-13P	0.000	0.280	0.044	0.044	100,000,000	No	124,633

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line:	**MSD34A-1-MSDT 22A to HDT**				***Sorted By:Remaining Life***		
2A-15	0.000	0.280	0.044	0.044	100,000,000	No	124,633
===>Grouped by Line:	**MSD35A-1-MSDT 23A to HDT**				***Sorted By:Remaining Life***		
3A-VALVE-5EX-29-3	0.000	0.086	0.044	0.044	253,961	No	243,721
3A-15N	0.000	0.125	0.044	0.044	612,893	No	243,721
3A-16N	0.000	0.691	0.058	0.058	6,426,283	No	243,721
3A-16	0.000	0.422	0.058	0.058	100,000,000	No	124,633
3A-16 (D/S)	0.000	0.422	0.058	0.058	100,000,000	No	124,633
3A-1P	0.000	0.423	0.068	0.068	100,000,000	No	124,633
3A-1	0.000	0.322	0.058	0.058	100,000,000	No	124,633
3A-1 (D/S)	0.000	0.280	0.044	0.044	100,000,000	No	124,633
3A-2P	0.000	0.280	0.044	0.044	100,000,000	No	124,633
3A-2	0.000	0.280	0.044	0.044	100,000,000	No	124,633
3A-3	0.000	0.280	0.044	0.044	100,000,000	No	124,633
3A-3P	0.000	0.280	0.044	0.044	100,000,000	No	124,633
3A-17	0.000	0.280	0.044	0.044	100,000,000	No	124,633
3A-17P	0.000	0.280	0.044	0.044	100,000,000	No	124,633
3A-18	0.000	0.280	0.044	0.044	100,000,000	No	124,633
3A-16P US	0.000	0.428	0.058	0.058	100,000,000	No	124,633
3A-18P	0.000	0.280	0.044	0.044	100,000,000	No	124,633
3A-19	0.000	0.280	0.044	0.044	100,000,000	No	124,633
3A-19P	0.000	0.280	0.044	0.044	100,000,000	No	124,633
3A-20	0.000	0.280	0.044	0.044	100,000,000	No	124,633
3A-20P	0.000	0.280	0.044	0.044	100,000,000	No	124,633
3A-21	0.000	0.280	0.044	0.044	100,000,000	No	124,633
3A-21P	0.000	0.280	0.044	0.044	100,000,000	No	124,633
3A-13	0.000	0.280	0.044	0.044	100,000,000	No	124,633
3A-13P	0.000	0.280	0.044	0.044	100,000,000	No	124,633
3A-15	0.000	0.280	0.044	0.044	100,000,000	No	124,633
===>Grouped by Line:	**MSD36A-1-MSDT 21B to HDT**				***Sorted By:Remaining Life***		
1B-VALVE-5EX-29-4	0.000	0.086	0.048	0.048	234,761	No	243,721
1B-15N	0.000	0.125	0.044	0.044	612,893	No	243,721
1B-3N	0.000	0.265	0.058	0.058	2,107,917	No	243,721
1B-3P	0.000	0.322	0.066	0.066	100,000,000	No	107,113
1B-3	0.000	0.322	0.066	0.066	100,000,000	No	107,113
1B-4P	0.000	0.322	0.066	0.066	100,000,000	No	107,113

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **MSD36A-1-MSDT 21B to HDT**					***Sorted By:Remaining Life***		
1B-4	0.000	0.322	0.066	0.066	100,000,000	No	107,113
1B-5	0.000	0.322	0.066	0.066	100,000,000	No	107,113
1B-5 (D/S)	0.000	0.322	0.066	0.066	100,000,000	No	107,113
1B-5R	0.000	0.322	0.066	0.066	100,000,000	No	107,113
1B-5R (D/S)	0.000	0.280	0.051	0.051	100,000,000	No	107,113
1B-5P	0.000	0.280	0.051	0.051	100,000,000	No	107,113
1B-1	0.000	0.280	0.051	0.051	100,000,000	No	107,113
1B-2P	0.000	0.280	0.051	0.051	100,000,000	No	107,113
1B-2	0.000	0.280	0.051	0.051	100,000,000	No	107,113
1B-6P	0.000	0.280	0.051	0.051	100,000,000	No	107,113
1B-6	0.000	0.280	0.051	0.051	100,000,000	No	107,113
1B-7P	0.000	0.280	0.051	0.051	100,000,000	No	107,113
1B-7	0.000	0.280	0.051	0.051	100,000,000	No	107,113
1B-7P-1	0.000	0.280	0.051	0.051	100,000,000	No	107,113
1B-8	0.000	0.280	0.051	0.051	100,000,000	No	107,113
1B-8P	0.000	0.280	0.051	0.051	100,000,000	No	107,113
1B-9	0.000	0.280	0.051	0.051	100,000,000	No	107,113
1B-9P	0.000	0.280	0.051	0.051	100,000,000	No	107,113
1B-10	0.000	0.280	0.051	0.051	100,000,000	No	107,113
1B-10P US	0.000	0.280	0.051	0.051	100,000,000	No	107,113
1B-10P DS	0.000	0.280	0.051	0.051	100,000,000	No	107,113
1B-11	0.000	0.280	0.051	0.051	100,000,000	No	107,113
1B-11P US	0.000	0.280	0.051	0.051	100,000,000	No	107,113
1B-11P DS	0.000	0.280	0.051	0.051	100,000,000	No	107,113
1B-12	0.000	0.280	0.051	0.051	100,000,000	No	107,113
1B-12P US	0.000	0.280	0.051	0.051	100,000,000	No	107,113
1B-12P DS	0.000	0.280	0.051	0.051	100,000,000	No	107,113
1B-14	0.000	0.280	0.051	0.051	100,000,000	No	107,113
1B-14P	0.000	0.280	0.051	0.051	100,000,000	No	107,113
1B-13	0.000	0.280	0.051	0.051	100,000,000	No	107,113
1B-13P	0.000	0.280	0.051	0.051	100,000,000	No	107,113
1B-15	0.000	0.280	0.051	0.051	100,000,000	No	107,113
1B-15P	0.000	0.280	0.051	0.051	100,000,000	No	107,113
===>Grouped by Line: **MSD37A-1-MSDT 22B to HDT**					***Sorted By:Remaining Life***		
2B-VALVE-5EX-29-5	0.000	0.086	0.048	0.048	234,761	No	243,721
2B-15N	0.000	0.125	0.044	0.044	612,893	No	243,721

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **MSD37A-1-MSDT 22B to HDT**					***Sorted By:Remaining Life***		
2B-1N	0.000	0.285	0.058	0.058	2,310,981	No	243,721
2B-1 (D/S)	0.000	0.438	0.066	0.066	100,000,000	No	107,113
2B-2P	0.000	0.322	0.066	0.066	100,000,000	No	107,113
2B-2	0.000	0.322	0.066	0.066	100,000,000	No	107,113
2B-2 (D/S)	0.000	0.280	0.051	0.051	100,000,000	No	107,113
2B-3	0.000	0.242	0.051	0.051	100,000,000	No	107,113
2B-3P	0.000	0.280	0.051	0.051	100,000,000	No	107,113
2B-4	0.000	0.280	0.051	0.051	100,000,000	No	107,113
2B-4P	0.000	0.280	0.051	0.051	100,000,000	No	107,113
2B-5	0.000	0.280	0.051	0.051	100,000,000	No	107,113
2B-5P	0.000	0.280	0.051	0.051	100,000,000	No	107,113
2B-6	0.000	0.280	0.051	0.051	100,000,000	No	107,113
2B-6P	0.000	0.280	0.051	0.051	100,000,000	No	107,113
2B-7	0.000	0.280	0.051	0.051	100,000,000	No	107,113
2B-1P	0.000	0.322	0.066	0.066	100,000,000	No	107,113
2B-1	0.000	0.409	0.066	0.066	100,000,000	No	107,113
2B-7P US	0.000	0.280	0.051	0.051	100,000,000	No	107,113
2B-7P DS	0.000	0.280	0.051	0.051	100,000,000	No	107,113
2B-8	0.000	0.280	0.051	0.051	100,000,000	No	107,113
2B-8P US	0.000	0.280	0.051	0.051	100,000,000	No	107,113
2B-8P DS	0.000	0.280	0.051	0.051	100,000,000	No	107,113
2B-9	0.000	0.280	0.051	0.051	100,000,000	No	107,113
2B-9P US	0.000	0.280	0.051	0.051	100,000,000	No	107,113
2B-9P DS	0.000	0.280	0.051	0.051	100,000,000	No	107,113
2B-10	0.000	0.280	0.051	0.051	100,000,000	No	107,113
2B-10P US	0.000	0.280	0.051	0.051	100,000,000	No	107,113
2B-10P DS	0.000	0.280	0.051	0.051	100,000,000	No	107,113
2B-11	0.000	0.280	0.051	0.051	100,000,000	No	107,113
2B-11P	0.000	0.280	0.051	0.051	100,000,000	No	107,113
2B-12	0.000	0.280	0.051	0.051	100,000,000	No	107,113
2B-12P US	0.000	0.280	0.051	0.051	100,000,000	No	107,113
2B-12P DS	0.000	0.280	0.051	0.051	100,000,000	No	107,113
2B-13	0.000	0.280	0.051	0.051	100,000,000	No	107,113
2B-13P	0.000	0.280	0.051	0.051	100,000,000	No	107,113
2B-15	0.000	0.280	0.051	0.051	100,000,000	No	107,113
2B-15P	0.000	0.280	0.051	0.051	100,000,000	No	107,113

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **MSD38A-1-MSDT 23B to HDT**					***Sorted By:Remaining Life***		
3B-VALVE-5EX-29-6	0.000	0.086	0.048	0.048	234,761	No	243,721
3B-3N	0.000	0.206	0.058	0.058	1,501,068	No	243,721
3B-15N	0.000	0.288	0.044	0.044	1,852,374	No	243,721
3B-11P DS	0.000	0.349	0.052	0.052	100,000,000	No	124,633
3B-12	0.000	0.347	0.044	0.044	100,000,000	No	124,633
3B-12P US	0.000	0.347	0.052	0.052	100,000,000	No	124,633
3B-14	0.000	0.280	0.044	0.044	100,000,000	No	124,633
3B-14P	0.000	0.280	0.052	0.052	100,000,000	No	124,633
3B-13	0.000	0.280	0.044	0.044	100,000,000	No	124,633
3B-13P	0.000	0.280	0.052	0.052	100,000,000	No	124,633
3B-15	0.000	0.280	0.044	0.044	100,000,000	No	124,633
3B-15P	0.000	0.349	0.052	0.052	100,000,000	No	124,633
3B-3P	0.000	0.322	0.068	0.068	100,000,000	No	124,633
3B-3	0.000	0.427	0.058	0.058	100,000,000	No	124,633
3B-3 (D/S)	0.000	0.429	0.058	0.058	100,000,000	No	124,633
3B-4P	0.000	0.428	0.068	0.068	100,000,000	No	124,633
3B-4	0.000	0.455	0.058	0.058	100,000,000	No	124,633
3B-4 (D/S)	0.000	0.280	0.044	0.044	100,000,000	No	124,633
3B-5	0.000	0.280	0.044	0.044	100,000,000	No	109,224
3B-5P	0.000	0.280	0.052	0.052	100,000,000	No	109,224
3B-1	0.000	0.280	0.044	0.044	100,000,000	No	109,224
3B-2P	0.000	0.280	0.052	0.052	100,000,000	No	124,633
3B-2	0.000	0.280	0.044	0.044	100,000,000	No	124,633
3B-2P-1	0.000	0.280	0.052	0.052	100,000,000	No	124,633
3B-6	0.000	0.280	0.044	0.044	100,000,000	No	124,633
3B-6P	0.000	0.280	0.052	0.052	100,000,000	No	124,633
3B-7	0.000	0.280	0.044	0.044	100,000,000	No	124,633
3B-7P	0.000	0.280	0.052	0.052	100,000,000	No	124,633
3B-8	0.000	0.280	0.044	0.044	100,000,000	No	109,224
3B-8P	0.000	0.280	0.052	0.052	100,000,000	No	124,633
3B-9	0.000	0.280	0.044	0.044	100,000,000	No	124,633
3B-9P DS	0.000	0.250	0.052	0.052	100,000,000	No	124,633
3B-10	0.000	0.183	0.044	0.044	100,000,000	No	124,633
3B-10P US	0.000	0.238	0.052	0.052	100,000,000	No	124,633
3B-10P DS	0.000	0.280	0.052	0.052	100,000,000	No	124,633
3B-11	0.000	0.346	0.044	0.044	100,000,000	No	124,633
3B-11P US	0.000	0.347	0.052	0.052	100,000,000	No	124,633

Note:
[1] Predictions are based on last Tmeas to analysis ending period.

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).db

Service Life Report

Pass 1 Analysis Exclude Measured Wear

Report Date/Time: 7/6/2010 3:37:44PM
AnalysisDate/Time: 7/6/2010 3:23:19PM

Run Name: MSDT DRNS TO HDT
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 1.000

CHECWORKS SFA Version: 3.0 SP-1 (build 109)
Duty Factor (Global) : 1.000

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **MSD33A-1-MSDT 21A to HDT**					***Sorted By:Flow Order***		
1A-12N	0.000	0.206	0.058	0.058	1,501,068	No	243,721
1A-12P	0.000	0.409	0.068	0.068	100,000,000	No	124,633
1A-12	0.000	0.322	0.058	0.058	100,000,000	No	124,633
1A-12 (D/S)	0.000	0.322	0.058	0.058	100,000,000	No	124,633
1A-12P-1	0.000	0.322	0.068	0.068	100,000,000	No	124,633
1A-11	0.000	0.322	0.058	0.058	100,000,000	No	124,633
1A-11 (D/S)	0.000	0.280	0.044	0.044	100,000,000	No	124,633
1A-11P	0.000	0.280	0.052	0.052	100,000,000	No	124,633
1A-10	0.000	0.280	0.044	0.044	100,000,000	No	124,633
1A-10P	0.000	0.280	0.052	0.052	100,000,000	No	124,633
1A-1	0.000	0.280	0.044	0.044	100,000,000	No	124,633
1A-VALVE-5EX-29-1	0.000	0.086	0.048	0.048	234,761	No	243,721
1A-2	0.000	0.280	0.044	0.044	100,000,000	No	124,633
1A-2P	0.000	0.280	0.052	0.052	100,000,000	No	124,633
1A-3	0.000	0.280	0.044	0.044	100,000,000	No	124,633
1A-3P	0.000	0.280	0.052	0.052	100,000,000	No	124,633
1A-4	0.000	0.280	0.044	0.044	100,000,000	No	124,633
1A-4P	0.000	0.280	0.052	0.052	100,000,000	No	124,633
1A-5	0.000	0.280	0.044	0.044	100,000,000	No	124,633
1A-5P	0.000	0.280	0.052	0.052	100,000,000	No	124,633
1A-6	0.000	0.280	0.044	0.044	100,000,000	No	124,633
1A-6P	0.000	0.280	0.052	0.052	100,000,000	No	124,633
1A-7	0.000	0.280	0.044	0.044	100,000,000	No	124,633
1A-7P	0.000	0.280	0.052	0.052	100,000,000	No	124,633
1A-8	0.000	0.280	0.044	0.044	100,000,000	No	124,633
1A-8P	0.000	0.280	0.052	0.052	100,000,000	No	124,633
1A-9	0.000	0.280	0.044	0.044	100,000,000	No	124,633

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **MSD33A-1-MSDT 21A to HDT**					***Sorted By:Flow Order***		
1A-9P	0.000	0.280	0.052	0.052	100,000,000	No	124,633
1A-13	0.000	0.280	0.044	0.044	100,000,000	No	124,633
1A-13P	0.000	0.280	0.052	0.052	100,000,000	No	124,633
1A-15	0.000	0.352	0.044	0.044	100,000,000	No	124,633
1A-15N	0.438	0.337	0.044	0.044	2,019,729	Yes	243,721
===>Grouped by Line: **MSD34A-1-MSDT 22A to HDT**					***Sorted By:Flow Order***		
2A-3N	0.000	0.206	0.058	0.058	1,501,068	No	243,721
2A-3P-1	0.000	0.322	0.058	0.058	100,000,000	No	124,633
2A-3	0.000	0.322	0.058	0.058	100,000,000	No	124,633
2A-3 (D/S)	0.000	0.322	0.058	0.058	100,000,000	No	124,633
2A-3P	0.000	0.322	0.058	0.058	100,000,000	No	124,633
2A-4	0.000	0.322	0.058	0.058	100,000,000	No	124,633
2A-4 (D/S)	0.000	0.280	0.044	0.044	100,000,000	No	124,633
2A-4P	0.000	0.280	0.044	0.044	100,000,000	No	124,633
2A-5	0.000	0.280	0.044	0.044	100,000,000	No	124,633
2A-5P	0.000	0.280	0.044	0.044	100,000,000	No	124,633
2A-1	0.000	0.280	0.044	0.044	100,000,000	No	124,633
2A-VALVE-5EX-29-2	0.000	0.086	0.048	0.048	234,761	No	243,721
2A-2P	0.000	0.280	0.044	0.044	100,000,000	No	124,633
2A-2	0.000	0.280	0.044	0.044	100,000,000	No	124,633
2A-2P-1	0.000	0.280	0.044	0.044	100,000,000	No	124,633
2A-6	0.000	0.280	0.044	0.044	100,000,000	No	124,633
2A-6P	0.000	0.280	0.044	0.044	100,000,000	No	124,633
2A-7	0.000	0.280	0.044	0.044	100,000,000	No	124,633
2A-7P	0.000	0.280	0.044	0.044	100,000,000	No	124,633
2A-8	0.000	0.280	0.044	0.044	100,000,000	No	124,633
2A-8P	0.000	0.280	0.044	0.044	100,000,000	No	124,633
2A-9	0.000	0.280	0.044	0.044	100,000,000	No	124,633
2A-9P	0.000	0.280	0.044	0.044	100,000,000	No	124,633
2A-10	0.000	0.280	0.044	0.044	100,000,000	No	124,633
2A-10P	0.000	0.280	0.044	0.044	100,000,000	No	124,633
2A-12	0.000	0.280	0.044	0.044	100,000,000	No	124,633
2A-12P	0.000	0.280	0.044	0.044	100,000,000	No	124,633
2A-13	0.000	0.280	0.044	0.044	100,000,000	No	124,633
2A-13P	0.000	0.280	0.044	0.044	100,000,000	No	124,633
2A-15	0.000	0.280	0.044	0.044	100,000,000	No	124,633

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **MSD34A-1-MSDT 22A to HDT**					***Sorted By:Flow Order***		
2A-15N	0.000	0.125	0.044	0.044	612,893	No	243,721
===>Grouped by Line: **MSD35A-1-MSDT 23A to HDT**					***Sorted By:Flow Order***		
3A-16N	0.000	0.691	0.058	0.058	6,426,283	No	243,721
3A-16P US	0.000	0.428	0.058	0.058	100,000,000	No	124,633
3A-16	0.000	0.422	0.058	0.058	100,000,000	No	124,633
3A-16 (D/S)	0.000	0.422	0.058	0.058	100,000,000	No	124,633
3A-1P	0.000	0.423	0.068	0.068	100,000,000	No	124,633
3A-1	0.000	0.322	0.058	0.058	100,000,000	No	124,633
3A-1 (D/S)	0.000	0.280	0.044	0.044	100,000,000	No	124,633
3A-VALVE-5EX-29-3	0.000	0.086	0.044	0.044	253,961	No	243,721
3A-2P	0.000	0.280	0.044	0.044	100,000,000	No	124,633
3A-2	0.000	0.280	0.044	0.044	100,000,000	No	124,633
3A-3	0.000	0.280	0.044	0.044	100,000,000	No	124,633
3A-3P	0.000	0.280	0.044	0.044	100,000,000	No	124,633
3A-17	0.000	0.280	0.044	0.044	100,000,000	No	124,633
3A-17P	0.000	0.280	0.044	0.044	100,000,000	No	124,633
3A-18	0.000	0.280	0.044	0.044	100,000,000	No	124,633
3A-18P	0.000	0.280	0.044	0.044	100,000,000	No	124,633
3A-19	0.000	0.280	0.044	0.044	100,000,000	No	124,633
3A-19P	0.000	0.280	0.044	0.044	100,000,000	No	124,633
3A-20	0.000	0.280	0.044	0.044	100,000,000	No	124,633
3A-20P	0.000	0.280	0.044	0.044	100,000,000	No	124,633
3A-21	0.000	0.280	0.044	0.044	100,000,000	No	124,633
3A-21P	0.000	0.280	0.044	0.044	100,000,000	No	124,633
3A-13	0.000	0.280	0.044	0.044	100,000,000	No	124,633
3A-13P	0.000	0.280	0.044	0.044	100,000,000	No	124,633
3A-15	0.000	0.280	0.044	0.044	100,000,000	No	124,633
3A-15N	0.000	0.125	0.044	0.044	612,893	No	243,721
===>Grouped by Line: **MSD36A-1-MSDT 21B to HDT**					***Sorted By:Flow Order***		
1B-3N	0.000	0.265	0.058	0.058	2,107,917	No	243,721
1B-3P	0.000	0.322	0.066	0.066	100,000,000	No	107,113
1B-3	0.000	0.322	0.066	0.066	100,000,000	No	107,113
1B-4P	0.000	0.322	0.066	0.066	100,000,000	No	107,113
1B-4	0.000	0.322	0.066	0.066	100,000,000	No	107,113
1B-5	0.000	0.322	0.066	0.066	100,000,000	No	107,113

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **MSD36A-1-MSDT 21B to HDT**					***Sorted By:Flow Order***		
1B-5 (D/S)	0.000	0.322	0.066	0.066	100,000,000	No	107,113
1B-5R	0.000	0.322	0.066	0.066	100,000,000	No	107,113
1B-5R (D/S)	0.000	0.280	0.051	0.051	100,000,000	No	107,113
1B-5P	0.000	0.280	0.051	0.051	100,000,000	No	107,113
1B-1	0.000	0.280	0.051	0.051	100,000,000	No	107,113
1B-VALVE-5EX-29-4	0.000	0.086	0.048	0.048	234,761	No	243,721
1B-2P	0.000	0.280	0.051	0.051	100,000,000	No	107,113
1B-2	0.000	0.280	0.051	0.051	100,000,000	No	107,113
1B-6P	0.000	0.280	0.051	0.051	100,000,000	No	107,113
1B-6	0.000	0.280	0.051	0.051	100,000,000	No	107,113
1B-7P	0.000	0.280	0.051	0.051	100,000,000	No	107,113
1B-7	0.000	0.280	0.051	0.051	100,000,000	No	107,113
1B-7P-1	0.000	0.280	0.051	0.051	100,000,000	No	107,113
1B-8	0.000	0.280	0.051	0.051	100,000,000	No	107,113
1B-8P	0.000	0.280	0.051	0.051	100,000,000	No	107,113
1B-9	0.000	0.280	0.051	0.051	100,000,000	No	107,113
1B-9P	0.000	0.280	0.051	0.051	100,000,000	No	107,113
1B-10	0.000	0.280	0.051	0.051	100,000,000	No	107,113
1B-10P US	0.000	0.280	0.051	0.051	100,000,000	No	107,113
1B-10P DS	0.000	0.280	0.051	0.051	100,000,000	No	107,113
1B-11	0.000	0.280	0.051	0.051	100,000,000	No	107,113
1B-11P US	0.000	0.280	0.051	0.051	100,000,000	No	107,113
1B-11P DS	0.000	0.280	0.051	0.051	100,000,000	No	107,113
1B-12	0.000	0.280	0.051	0.051	100,000,000	No	107,113
1B-12P US	0.000	0.280	0.051	0.051	100,000,000	No	107,113
1B-12P DS	0.000	0.280	0.051	0.051	100,000,000	No	107,113
1B-14	0.000	0.280	0.051	0.051	100,000,000	No	107,113
1B-14P	0.000	0.280	0.051	0.051	100,000,000	No	107,113
1B-13	0.000	0.280	0.051	0.051	100,000,000	No	107,113
1B-13P	0.000	0.280	0.051	0.051	100,000,000	No	107,113
1B-15	0.000	0.280	0.051	0.051	100,000,000	No	107,113
1B-15P	0.000	0.280	0.051	0.051	100,000,000	No	107,113
1B-15N	0.000	0.125	0.044	0.044	612,893	No	243,721
===>Grouped by Line: **MSD37A-1-MSDT 22B to HDT**					***Sorted By:Flow Order***		
2B-1N	0.000	0.285	0.058	0.058	2,310,981	No	243,721
2B-1P	0.000	0.322	0.066	0.066	100,000,000	No	107,113

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **MSD37A-1-MSDT 22B to HDT**					***Sorted By:Flow Order***		
2B-1	0.000	0.409	0.066	0.066	100,000,000	No	107,113
2B-1 (D/S)	0.000	0.438	0.066	0.066	100,000,000	No	107,113
2B-2P	0.000	0.322	0.066	0.066	100,000,000	No	107,113
2B-2	0.000	0.322	0.066	0.066	100,000,000	No	107,113
2B-2 (D/S)	0.000	0.280	0.051	0.051	100,000,000	No	107,113
2B-3	0.000	0.242	0.051	0.051	100,000,000	No	107,113
2B-3P	0.000	0.280	0.051	0.051	100,000,000	No	107,113
2B-4	0.000	0.280	0.051	0.051	100,000,000	No	107,113
2B-VALVE-5EX-29-5	0.000	0.086	0.048	0.048	234,761	No	243,721
2B-4P	0.000	0.280	0.051	0.051	100,000,000	No	107,113
2B-5	0.000	0.280	0.051	0.051	100,000,000	No	107,113
2B-5P	0.000	0.280	0.051	0.051	100,000,000	No	107,113
2B-6	0.000	0.280	0.051	0.051	100,000,000	No	107,113
2B-6P	0.000	0.280	0.051	0.051	100,000,000	No	107,113
2B-7	0.000	0.280	0.051	0.051	100,000,000	No	107,113
2B-7P US	0.000	0.280	0.051	0.051	100,000,000	No	107,113
2B-7P DS	0.000	0.280	0.051	0.051	100,000,000	No	107,113
2B-8	0.000	0.280	0.051	0.051	100,000,000	No	107,113
2B-8P US	0.000	0.280	0.051	0.051	100,000,000	No	107,113
2B-8P DS	0.000	0.280	0.051	0.051	100,000,000	No	107,113
2B-9	0.000	0.280	0.051	0.051	100,000,000	No	107,113
2B-9P US	0.000	0.280	0.051	0.051	100,000,000	No	107,113
2B-9P DS	0.000	0.280	0.051	0.051	100,000,000	No	107,113
2B-10	0.000	0.280	0.051	0.051	100,000,000	No	107,113
2B-10P US	0.000	0.280	0.051	0.051	100,000,000	No	107,113
2B-10P DS	0.000	0.280	0.051	0.051	100,000,000	No	107,113
2B-11	0.000	0.280	0.051	0.051	100,000,000	No	107,113
2B-11P	0.000	0.280	0.051	0.051	100,000,000	No	107,113
2B-12	0.000	0.280	0.051	0.051	100,000,000	No	107,113
2B-12P US	0.000	0.280	0.051	0.051	100,000,000	No	107,113
2B-12P DS	0.000	0.280	0.051	0.051	100,000,000	No	107,113
2B-13	0.000	0.280	0.051	0.051	100,000,000	No	107,113
2B-13P	0.000	0.280	0.051	0.051	100,000,000	No	107,113
2B-15	0.000	0.280	0.051	0.051	100,000,000	No	107,113
2B-15P	0.000	0.280	0.051	0.051	100,000,000	No	107,113
2B-15N	0.000	0.125	0.044	0.044	612,893	No	243,721

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **MSD38A-1-MSDT 23B to HDT**					***Sorted By:Flow Order***		
3B-3N	0.000	0.206	0.058	0.058	1,501,068	No	243,721
3B-3P	0.000	0.322	0.068	0.068	100,000,000	No	124,633
3B-3	0.000	0.427	0.058	0.058	100,000,000	No	124,633
3B-3 (D/S)	0.000	0.429	0.058	0.058	100,000,000	No	124,633
3B-4P	0.000	0.428	0.068	0.068	100,000,000	No	124,633
3B-4	0.000	0.455	0.058	0.058	100,000,000	No	124,633
3B-4 (D/S)	0.000	0.280	0.044	0.044	100,000,000	No	124,633
3B-5	0.000	0.280	0.044	0.044	100,000,000	No	109,224
3B-5P	0.000	0.280	0.052	0.052	100,000,000	No	109,224
3B-1	0.000	0.280	0.044	0.044	100,000,000	No	109,224
3B-VALVE-5EX-29-6	0.000	0.086	0.048	0.048	234,761	No	243,721
3B-2P	0.000	0.280	0.052	0.052	100,000,000	No	124,633
3B-2	0.000	0.280	0.044	0.044	100,000,000	No	124,633
3B-2P-1	0.000	0.280	0.052	0.052	100,000,000	No	124,633
3B-6	0.000	0.280	0.044	0.044	100,000,000	No	124,633
3B-6P	0.000	0.280	0.052	0.052	100,000,000	No	124,633
3B-7	0.000	0.280	0.044	0.044	100,000,000	No	124,633
3B-7P	0.000	0.280	0.052	0.052	100,000,000	No	124,633
3B-8	0.000	0.280	0.044	0.044	100,000,000	No	109,224
3B-8P	0.000	0.280	0.052	0.052	100,000,000	No	124,633
3B-9	0.000	0.280	0.044	0.044	100,000,000	No	124,633
3B-9P DS	0.000	0.250	0.052	0.052	100,000,000	No	124,633
3B-10	0.000	0.183	0.044	0.044	100,000,000	No	124,633
3B-10P US	0.000	0.238	0.052	0.052	100,000,000	No	124,633
3B-10P DS	0.000	0.280	0.052	0.052	100,000,000	No	124,633
3B-11	0.000	0.346	0.044	0.044	100,000,000	No	124,633
3B-11P US	0.000	0.347	0.052	0.052	100,000,000	No	124,633
3B-11P DS	0.000	0.349	0.052	0.052	100,000,000	No	124,633
3B-12	0.000	0.347	0.044	0.044	100,000,000	No	124,633
3B-12P US	0.000	0.347	0.052	0.052	100,000,000	No	124,633
3B-14	0.000	0.280	0.044	0.044	100,000,000	No	124,633
3B-14P	0.000	0.280	0.052	0.052	100,000,000	No	124,633
3B-13	0.000	0.280	0.044	0.044	100,000,000	No	124,633
3B-13P	0.000	0.280	0.052	0.052	100,000,000	No	124,633
3B-15	0.000	0.280	0.044	0.044	100,000,000	No	124,633
3B-15P	0.000	0.349	0.052	0.052	100,000,000	No	124,633
3B-15N	0.000	0.288	0.044	0.044	1,852,374	No	243,721

Note:
[1] Predictions are based on last Tmeas to analysis ending period.

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).db

Wear Rate Report

Pass 1 Analysis Exclude Measured Wear

Report Date/Time: 7/6/2010 3:38:15PM
AnalysisDate/Time: 7/6/2010 3:23:54PM

CHECWORKS SFA Version: 3.0 SP-1 (build 109)

Duty Factor (Global) : 1.000

Run Name: MSR SHELL DRAINS
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 1.000

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***MSD27-1-MS21A to MSDT 21A***								***Sorted By: Average Wear Rate***		
1A-16N	31	0.737	0.152	384.5	0.293	0.0	12.750	6.959	0.000	117.60	ARD
1A-16 (D/S)	12	0.604	0.125	384.5	0.293	0.0	12.750	6.959	0.000	117.60	ARD
1A-16 (BR/SE)	12	0.501	0.103	384.5	0.293	0.0	12.750	6.959	0.000	117.60	ARD
1A-16P-1	61	0.418	0.086	384.5	0.309	0.0	12.750	6.959	0.000	117.60	ARD
1A-16P	62	0.295	0.061	384.5	0.293	0.0	12.750	6.959	0.000	117.60	ARD
===>Grouped by Line:	***MSD27-2-MS21A to MSDT 21A***								***Sorted By: Average Wear Rate***		
1A-17N	31	0.737	0.152	384.5	0.293	0.0	12.750	6.959	0.000	117.60	ARD
1A-17P-1	61	0.398	0.082	384.5	0.293	0.0	12.750	6.959	0.000	117.60	ARD
===>Grouped by Line:	***MSD27-3-MS21A to MSDT 21A***								***Sorted By: Average Wear Rate***		
1A-19N	31	0.737	0.152	384.5	0.293	0.0	12.750	6.959	0.000	117.60	ARD
1A-19 (D/S)	12	0.604	0.125	384.5	0.293	0.0	12.750	6.959	0.000	117.60	ARD
1A-19 (BR/SE)	12	0.501	0.103	384.5	0.293	0.0	12.750	6.959	0.000	117.60	ARD
1A-19P-1	61	0.418	0.086	384.5	0.308	0.0	12.750	6.959	0.000	117.60	ARD
1A-19P	62	0.295	0.061	384.5	0.293	0.0	12.750	6.959	0.000	117.60	ARD
===>Grouped by Line:	***MSD27-4-MS21A to MSDT 21A***								***Sorted By: Average Wear Rate***		
1A-17 (D/S)	12	1.097	0.226	384.5	0.587	0.0	12.750	6.959	0.000	117.60	ARD
1A-17	12	0.634	0.131	384.5	0.308	0.0	12.750	6.959	0.000	117.60	ARD
1A-17 (BR/SE)	12	0.501	0.103	384.5	0.293	0.0	12.750	6.959	0.000	117.60	ARD
===>Grouped by Line:	***MSD27-5-MS21A to MSDT 21A***								***Sorted By: Average Wear Rate***		
1A-18 (BR/SE)	11	1.909	0.394	384.5	0.888	0.0	12.750	6.959	0.000	117.60	ARD
1A-VALVE-5EX-19L	25	1.886	0.389	384.5	0.876	0.0	12.750	6.959	0.000	117.60	ARD
1A-VALVE-5EX-19M	25	1.886	0.389	384.5	0.876	0.0	12.750	6.959	0.000	117.60	ARD
1A-20N	30	1.508	0.311	384.5	0.876	0.0	12.750	6.959	0.000	117.60	ARD
1A-20	2	1.475	0.304	384.5	0.930	0.0	12.750	6.959	0.000	117.60	ARD
1A-18	11	1.405	0.290	384.5	0.619	0.0	12.750	6.959	0.000	117.60	ARD

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***MSD27-5-MS21A to MSDT 21A***								***Sorted By: Average Wear Rate***		
1A-20P	58	0.830	0.171	384.5	0.876	0.0	12.750	6.959	0.000	117.60	ARD
1A-20P-1	58	0.830	0.171	384.5	0.876	0.0	12.750	6.959	0.000	117.60	ARD
1A-18P DS	62	0.757	0.156	384.5	0.880	0.0	12.750	6.959	0.000	117.60	ARD
1A-18P US	62	0.754	0.156	384.5	0.876	0.0	12.750	6.959	0.000	117.60	ARD
1A-18 (D/S)	11	0.737	0.152	384.5	0.293	0.0	12.750	6.959	0.000	117.60	ARD
===>Grouped by Line:	***MSD28-1-MS22A to MSDT 22A***								***Sorted By: Average Wear Rate***		
2A-16N	31	0.737	0.152	384.5	0.293	0.0	12.750	6.959	0.000	117.60	ARD
2A-16 (D/S)	12	0.604	0.125	384.5	0.293	0.0	12.750	6.959	0.000	117.60	ARD
2A-16 (BR/SE)	12	0.501	0.103	384.5	0.293	0.0	12.750	6.959	0.000	117.60	ARD
2A-16P-1	61	0.417	0.086	384.5	0.308	0.0	12.750	6.959	0.000	117.60	ARD
2A-16P	62	0.309	0.064	384.5	0.307	0.0	12.750	6.959	0.000	117.60	ARD
===>Grouped by Line:	***MSD28-2-MS22A to MSDT 22A***								***Sorted By: Average Wear Rate***		
2A-17N	31	0.737	0.152	384.5	0.293	0.0	12.750	6.959	0.000	117.60	ARD
2A-17P1	62	0.295	0.061	384.5	0.293	0.0	12.750	6.959	0.000	117.60	ARD
===>Grouped by Line:	***MSD28-3-MS22A to MSDT 22A***								***Sorted By: Average Wear Rate***		
2A-19N	31	0.737	0.152	384.5	0.293	0.0	12.750	6.959	0.000	117.60	ARD
2A-19 (D/S)	12	0.604	0.125	384.5	0.293	0.0	12.750	6.959	0.000	117.60	ARD
2A-19 (BR/SE)	12	0.501	0.103	384.5	0.293	0.0	12.750	6.959	0.000	117.60	ARD
2A-19P-1	61	0.398	0.082	384.5	0.293	0.0	12.750	6.959	0.000	117.60	ARD
2A-19P	62	0.295	0.061	384.5	0.293	0.0	12.750	6.959	0.000	117.60	ARD
===>Grouped by Line:	***MSD28-4-MS22A to MSDT 22A***								***Sorted By: Average Wear Rate***		
2A-17 (D/S)	12	1.097	0.226	384.5	0.587	0.0	12.750	6.959	0.000	117.60	ARD
2A-17	12	0.604	0.125	384.5	0.293	0.0	12.750	6.959	0.000	117.60	ARD
2A-17P	62	0.535	0.110	384.5	0.587	0.0	12.750	6.959	0.000	117.60	ARD
2A-17 (BR/SE)	12	0.501	0.103	384.5	0.293	0.0	12.750	6.959	0.000	117.60	ARD
===>Grouped by Line:	***MSD28-5-MS22A to MSDT 22A***								***Sorted By: Average Wear Rate***		
2A-18 (BR/SE)	11	1.886	0.389	384.5	0.876	0.0	12.750	6.959	0.000	117.60	ARD
2A-VALVE-5EX-19J	25	1.886	0.389	384.5	0.876	0.0	12.750	6.959	0.000	117.60	ARD
2A-VALVE-5EX-19K	25	1.886	0.389	384.5	0.876	0.0	12.750	6.959	0.000	117.60	ARD
2A-20N	30	1.508	0.311	384.5	0.876	0.0	12.750	6.959	0.000	117.60	ARD
2A-20	2	1.395	0.288	384.5	0.876	0.0	12.750	6.959	0.000	117.60	ARD
2A-18	11	1.337	0.276	384.5	0.587	0.0	12.750	6.959	0.000	117.60	ARD
2A-20P	58	0.830	0.171	384.5	0.876	0.0	12.750	6.959	0.000	117.60	ARD
2A-20P-1	58	0.830	0.171	384.5	0.876	0.0	12.750	6.959	0.000	117.60	ARD

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***MSD28-5-MS22A to MSDT 22A***								***Sorted By: Average Wear Rate***		
2A-18P	62	0.754	0.156	384.5	0.876	0.0	12.750	6.959	0.000	117.60	ARD
2A-18 (D/S)	11	0.737	0.152	384.5	0.293	0.0	12.750	6.959	0.000	117.60	ARD
===>Grouped by Line:	***MSD29-1-MS23A to MSDT 23A***								***Sorted By: Average Wear Rate***		
3A-16N	31	0.737	0.152	384.5	0.293	0.0	12.750	6.959	0.000	117.60	ARD
3A-16 (D/S)	12	0.604	0.125	384.5	0.293	0.0	12.750	6.959	0.000	117.60	ARD
3A-16 (BR/SE)	12	0.501	0.103	384.5	0.293	0.0	12.750	6.959	0.000	117.60	ARD
3A-16P-1	61	0.398	0.082	384.5	0.293	0.0	12.750	6.959	0.000	117.60	ARD
3A-16P	62	0.295	0.061	384.5	0.293	0.0	12.750	6.959	0.000	117.60	ARD
===>Grouped by Line:	***MSD29-2-MS23A to MSDT 23A***								***Sorted By: Average Wear Rate***		
3A-17N	31	0.737	0.152	384.5	0.293	0.0	12.750	6.959	0.000	117.60	ARD
3A-17P1	62	0.295	0.061	384.5	0.293	0.0	12.750	6.959	0.000	117.60	ARD
===>Grouped by Line:	***MSD29-3-MS23A to MSDT 23A***								***Sorted By: Average Wear Rate***		
3A-19N	31	0.737	0.152	384.5	0.293	0.0	12.750	6.959	0.000	117.60	ARD
3A-19 (D/S)	12	0.604	0.125	384.5	0.293	0.0	12.750	6.959	0.000	117.60	ARD
3A-19 (BR/SE)	12	0.501	0.103	384.5	0.293	0.0	12.750	6.959	0.000	117.60	ARD
3A-19P-1	61	0.398	0.082	384.5	0.293	0.0	12.750	6.959	0.000	117.60	ARD
3A-19P	62	0.295	0.061	384.5	0.293	0.0	12.750	6.959	0.000	117.60	ARD
===>Grouped by Line:	***MSD29-4-MS23A to MSDT 23A***								***Sorted By: Average Wear Rate***		
3A-17 (D/S)	12	1.097	0.226	384.5	0.587	0.0	12.750	6.959	0.000	117.60	ARD
3A-17P	61	0.722	0.149	384.5	0.587	0.0	12.750	6.959	0.000	117.60	ARD
3A-17	12	0.633	0.131	384.5	0.308	0.0	12.750	6.959	0.000	117.60	ARD
3A-17 (BR/SE)	12	0.501	0.103	384.5	0.293	0.0	12.750	6.959	0.000	117.60	ARD
===>Grouped by Line:	***MSD29-5-MS23A to MSDT 23A***								***Sorted By: Average Wear Rate***		
3A-18 (BR/SE)	11	1.886	0.389	384.5	0.876	0.0	12.750	6.959	0.000	117.60	ARD
3A-VALVE-5EX-19G	25	1.886	0.389	384.5	0.876	0.0	12.750	6.959	0.000	117.60	ARD
3A-VALVE-5EX-19H	25	1.886	0.389	384.5	0.876	0.0	12.750	6.959	0.000	117.60	ARD
3A-21N	30	1.508	0.311	384.5	0.876	0.0	12.750	6.959	0.000	117.60	ARD
3A-21	2	1.419	0.293	384.5	0.892	0.0	12.750	6.959	0.000	117.60	ARD
3A-18	11	1.397	0.288	384.5	0.615	0.0	12.750	6.959	0.000	117.60	ARD
3A-20	2	1.395	0.288	384.5	0.876	0.0	12.750	6.959	0.000	117.60	ARD
3A-21P	52	0.955	0.197	384.5	0.888	0.0	12.750	6.959	0.000	117.60	ARD
3A-20P-1 DS	58	0.837	0.173	384.5	0.884	0.0	12.750	6.959	0.000	117.60	ARD
3A-20P	58	0.830	0.171	384.5	0.876	0.0	12.750	6.959	0.000	117.60	ARD
3A-20P-1 US	58	0.830	0.171	384.5	0.876	0.0	12.750	6.959	0.000	117.60	ARD

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***MSD29-5-MS23A to MSDT 23A***								***Sorted By: Average Wear Rate***		
3A-18P	62	0.754	0.156	384.5	0.876	0.0	12.750	6.959	0.000	117.60	ARD
3A-18 (D/S)	11	0.737	0.152	384.5	0.293	0.0	12.750	6.959	0.000	117.60	ARD
===>Grouped by Line:	***MSD30-1-MS21B to MSDT 21B***								***Sorted By: Average Wear Rate***		
1B-16N	31	0.737	0.152	384.5	0.293	0.0	12.750	6.959	0.000	117.60	ARD
1B-16 (D/S)	12	0.604	0.125	384.5	0.293	0.0	12.750	6.959	0.000	117.60	ARD
1B-16 (BR/SE)	12	0.501	0.103	384.5	0.293	0.0	12.750	6.959	0.000	117.60	ARD
1B-16P-1	61	0.421	0.087	384.5	0.311	0.0	12.750	6.959	0.000	117.60	ARD
1B-16P	62	0.295	0.061	384.5	0.293	0.0	12.750	6.959	0.000	117.60	ARD
===>Grouped by Line:	***MSD30-2-MS21B to MSDT 21B***								***Sorted By: Average Wear Rate***		
1B-18N	31	0.737	0.152	384.5	0.293	0.0	12.750	6.959	0.000	117.60	ARD
1B-18P	61	0.398	0.082	384.5	0.293	0.0	12.750	6.959	0.000	117.60	ARD
===>Grouped by Line:	***MSD30-3-MS21B to MSDT 21B***								***Sorted By: Average Wear Rate***		
1B-19N	31	0.737	0.152	384.5	0.293	0.0	12.750	6.959	0.000	117.60	ARD
1B-19 (D/S)	12	0.604	0.125	384.5	0.293	0.0	12.750	6.959	0.000	117.60	ARD
1B-19 (BR/SE)	12	0.501	0.103	384.5	0.293	0.0	12.750	6.959	0.000	117.60	ARD
1B-19P-1	61	0.418	0.086	384.5	0.308	0.0	12.750	6.959	0.000	117.60	ARD
1B-19P	62	0.308	0.064	384.5	0.307	0.0	12.750	6.959	0.000	117.60	ARD
===>Grouped by Line:	***MSD30-4-MS21B to MSDT 21B***								***Sorted By: Average Wear Rate***		
1B-18 (D/S)	12	1.097	0.226	384.5	0.587	0.0	12.750	6.959	0.000	117.60	ARD
1B-18	12	0.632	0.130	384.5	0.307	0.0	12.750	6.959	0.000	117.60	ARD
1B-18 (BR/SE)	12	0.501	0.103	384.5	0.293	0.0	12.750	6.959	0.000	117.60	ARD
===>Grouped by Line:	***MSD30-5-MS21B to MSDT 21B***								***Sorted By: Average Wear Rate***		
1B-17 (BR/SE)	11	1.886	0.389	384.5	0.876	0.0	12.750	6.959	0.000	117.60	ARD
1B-VALVE-5EX-19	25	1.886	0.389	384.5	0.876	0.0	12.750	6.959	0.000	117.60	ARD
1B-VALVE-5EX-19F	25	1.886	0.389	384.5	0.876	0.0	12.750	6.959	0.000	117.60	ARD
1B-20N	30	1.508	0.311	384.5	0.876	0.0	12.750	6.959	0.000	117.60	ARD
1B-20	2	1.395	0.288	384.5	0.876	0.0	12.750	6.959	0.000	117.60	ARD
1B-17 (D/S)	11	1.337	0.276	384.5	0.587	0.0	12.750	6.959	0.000	117.60	ARD
1B-20P	58	0.830	0.171	384.5	0.876	0.0	12.750	6.959	0.000	117.60	ARD
1B-20P-1	58	0.830	0.171	384.5	0.876	0.0	12.750	6.959	0.000	117.60	ARD
1B-17	11	0.775	0.160	384.5	0.309	0.0	12.750	6.959	0.000	117.60	ARD
1B-17P	62	0.754	0.156	384.5	0.876	0.0	12.750	6.959	0.000	117.60	ARD
===>Grouped by Line:	***MSD31-1-MS22B to MSDT 22B***								***Sorted By: Average Wear Rate***		

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***MSD31-1-MS22B to MSDT 22B***								***Sorted By: Average Wear Rate***		
2B-16N	31	0.737	0.152	384.5	0.293	0.0	12.750	6.959	0.000	117.60	ARD
2B-16 (D/S)	12	0.604	0.125	384.5	0.293	0.0	12.750	6.959	0.000	117.60	ARD
2B-16 (BR/SE)	12	0.501	0.103	384.5	0.293	0.0	12.750	6.959	0.000	117.60	ARD
2B-16P-1	61	0.418	0.086	384.5	0.309	0.0	12.750	6.959	0.000	117.60	ARD
2B-16P	62	0.295	0.061	384.5	0.293	0.0	12.750	6.959	0.000	117.60	ARD
===>Grouped by Line:	***MSD31-2-MS22B to MSDT 22B***								***Sorted By: Average Wear Rate***		
2B-18N	31	0.737	0.152	384.5	0.293	0.0	12.750	6.959	0.000	117.60	ARD
2B-18P1	62	0.295	0.061	384.5	0.293	0.0	12.750	6.959	0.000	117.60	ARD
===>Grouped by Line:	***MSD31-3-MS22B to MSDT 22B***								***Sorted By: Average Wear Rate***		
2B-19N	31	0.737	0.152	384.5	0.293	0.0	12.750	6.959	0.000	117.60	ARD
2B-19 (D/S)	12	0.604	0.125	384.5	0.293	0.0	12.750	6.959	0.000	117.60	ARD
2B-19 (BR/SE)	12	0.501	0.103	384.5	0.293	0.0	12.750	6.959	0.000	117.60	ARD
2B-19P-1	61	0.419	0.086	384.5	0.309	0.0	12.750	6.959	0.000	117.60	ARD
2B-19P	62	0.295	0.061	384.5	0.293	0.0	12.750	6.959	0.000	117.60	ARD
===>Grouped by Line:	***MSD31-4-MS22B to MSDT 22B***								***Sorted By: Average Wear Rate***		
2B-18 (D/S)	12	1.097	0.226	384.5	0.587	0.0	12.750	6.959	0.000	117.60	ARD
2B-18P	61	0.722	0.149	384.5	0.587	0.0	12.750	6.959	0.000	117.60	ARD
2B-18	12	0.626	0.129	384.5	0.304	0.0	12.750	6.959	0.000	117.60	ARD
2B-18 (BR/SE)	12	0.501	0.103	384.5	0.293	0.0	12.750	6.959	0.000	117.60	ARD
===>Grouped by Line:	***MSD31-5-MS22B to MSDT 22B***								***Sorted By: Average Wear Rate***		
2B-17 (BR/SE)	11	1.886	0.389	384.5	0.876	0.0	12.750	6.959	0.000	117.60	ARD
2B-VALVE-5EX-19D	25	1.886	0.389	384.5	0.876	0.0	12.750	6.959	0.000	117.60	ARD
2B-VALVE-5EX-19E	25	1.886	0.389	384.5	0.876	0.0	12.750	6.959	0.000	117.60	ARD
2B-20N	30	1.508	0.311	384.5	0.876	0.0	12.750	6.959	0.000	117.60	ARD
2B-20	2	1.395	0.288	384.5	0.876	0.0	12.750	6.959	0.000	117.60	ARD
2B-17 (D/S)	11	1.337	0.276	384.5	0.587	0.0	12.750	6.959	0.000	117.60	ARD
2B-20P	58	0.830	0.171	384.5	0.876	0.0	12.750	6.959	0.000	117.60	ARD
2B-20P-1	58	0.830	0.171	384.5	0.876	0.0	12.750	6.959	0.000	117.60	ARD
2B-17	11	0.774	0.160	384.5	0.309	0.0	12.750	6.959	0.000	117.60	ARD
2B-17P	62	0.754	0.156	384.5	0.876	0.0	12.750	6.959	0.000	117.60	ARD
===>Grouped by Line:	***MSD32-1-MS23B to MSDT 23B***								***Sorted By: Average Wear Rate***		
3B-16N	31	0.737	0.152	384.5	0.293	0.0	12.750	6.959	0.000	117.60	ARD
3B-16 (D/S)	12	0.604	0.125	384.5	0.293	0.0	12.750	6.959	0.000	117.60	ARD
3B-16 (BR/SE)	12	0.501	0.103	384.5	0.293	0.0	12.750	6.959	0.000	117.60	ARD

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***MSD32-1-MS23B to MSDT 23B***								***Sorted By: Average Wear Rate***		
3B-16P-1	61	0.398	0.082	384.5	0.293	0.0	12.750	6.959	0.000	117.60	ARD
3B-16P	62	0.295	0.061	384.5	0.293	0.0	12.750	6.959	0.000	117.60	ARD
===>Grouped by Line:	***MSD32-2-MS23B to MSDT 23B***								***Sorted By: Average Wear Rate***		
3B-18N	31	0.737	0.152	384.5	0.293	0.0	12.750	6.959	0.000	117.60	ARD
3B-18P1	62	0.295	0.061	384.5	0.293	0.0	12.750	6.959	0.000	117.60	ARD
===>Grouped by Line:	***MSD32-3-MS23B to MSDT 23B***								***Sorted By: Average Wear Rate***		
3B-19N	31	0.737	0.152	384.5	0.293	0.0	12.750	6.959	0.000	117.60	ARD
3B-19 (D/S)	12	0.604	0.125	384.5	0.293	0.0	12.750	6.959	0.000	117.60	ARD
3B-19 (BR/SE)	12	0.501	0.103	384.5	0.293	0.0	12.750	6.959	0.000	117.60	ARD
3B-19P-1	61	0.398	0.082	384.5	0.293	0.0	12.750	6.959	0.000	117.60	ARD
3B-19P	62	0.295	0.061	384.5	0.293	0.0	12.750	6.959	0.000	117.60	ARD
===>Grouped by Line:	***MSD32-4-MS23B to MSDT 23B***								***Sorted By: Average Wear Rate***		
3B-18 (D/S)	12	1.097	0.226	384.5	0.587	0.0	12.750	6.959	0.000	117.60	ARD
3B-18P	61	0.722	0.149	384.5	0.587	0.0	12.750	6.959	0.000	117.60	ARD
3B-18	12	0.636	0.131	384.5	0.309	0.0	12.750	6.959	0.000	117.60	ARD
3B-18 (BR/SE)	12	0.501	0.103	384.5	0.293	0.0	12.750	6.959	0.000	117.60	ARD
===>Grouped by Line:	***MSD32-5-MS23B to MSDT 23B***								***Sorted By: Average Wear Rate***		
3B-17 (BR/SE)	11	1.886	0.389	384.5	0.876	0.0	12.750	6.959	0.000	117.60	ARD
3B-VALVE-5EX-19B	25	1.886	0.389	384.5	0.876	0.0	12.750	6.959	0.000	117.60	ARD
3B-VALVE-5EX-19C	25	1.886	0.389	384.5	0.876	0.0	12.750	6.959	0.000	117.60	ARD
3B-21N	30	1.508	0.311	384.5	0.876	0.0	12.750	6.959	0.000	117.60	ARD
3B-20	2	1.395	0.288	384.5	0.876	0.0	12.750	6.959	0.000	117.60	ARD
3B-21	2	1.395	0.288	384.5	0.876	0.0	12.750	6.959	0.000	117.60	ARD
3B-17 (D/S)	11	1.337	0.276	384.5	0.587	0.0	12.750	6.959	0.000	117.60	ARD
3B-21P	52	0.943	0.194	384.5	0.876	0.0	12.750	6.959	0.000	117.60	ARD
3B-20P	58	0.830	0.171	384.5	0.876	0.0	12.750	6.959	0.000	117.60	ARD
3B-20P-1	58	0.830	0.171	384.5	0.876	0.0	12.750	6.959	0.000	117.60	ARD
3B-17	11	0.781	0.161	384.5	0.311	0.0	12.750	6.959	0.000	117.60	ARD
3B-17P	62	0.754	0.156	384.5	0.876	0.0	12.750	6.959	0.000	117.60	ARD

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).db

Wear Rate Report

Pass 1 Analysis Exclude Measured Wear

Report Date/Time: 7/6/2010 3:37:44PM
AnalysisDate/Time: 7/6/2010 3:23:54PM

CHECWORKS SFA Version: 3.0 SP-1 (build 109)
Duty Factor (Global) : 1.000

Run Name: MSR SHELL DRAINS
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 1.000

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***MSD27-1-MS21A to MSDT 21A***									***Sorted By: Flow Order***	
1A-16N	31	0.737	0.152	384.5	0.293	0.0	12.750	6.959	0.000	117.60	ARD
1A-16P-1	61	0.418	0.086	384.5	0.309	0.0	12.750	6.959	0.000	117.60	ARD
1A-16 (BR/SE)	12	0.501	0.103	384.5	0.293	0.0	12.750	6.959	0.000	117.60	ARD
1A-16 (D/S)	12	0.604	0.125	384.5	0.293	0.0	12.750	6.959	0.000	117.60	ARD
1A-16P	62	0.295	0.061	384.5	0.293	0.0	12.750	6.959	0.000	117.60	ARD
===>Grouped by Line:	***MSD27-2-MS21A to MSDT 21A***									***Sorted By: Flow Order***	
1A-17N	31	0.737	0.152	384.5	0.293	0.0	12.750	6.959	0.000	117.60	ARD
1A-17P-1	61	0.398	0.082	384.5	0.293	0.0	12.750	6.959	0.000	117.60	ARD
===>Grouped by Line:	***MSD27-3-MS21A to MSDT 21A***									***Sorted By: Flow Order***	
1A-19N	31	0.737	0.152	384.5	0.293	0.0	12.750	6.959	0.000	117.60	ARD
1A-19P-1	61	0.418	0.086	384.5	0.308	0.0	12.750	6.959	0.000	117.60	ARD
1A-19 (BR/SE)	12	0.501	0.103	384.5	0.293	0.0	12.750	6.959	0.000	117.60	ARD
1A-19 (D/S)	12	0.604	0.125	384.5	0.293	0.0	12.750	6.959	0.000	117.60	ARD
1A-19P	62	0.295	0.061	384.5	0.293	0.0	12.750	6.959	0.000	117.60	ARD
===>Grouped by Line:	***MSD27-4-MS21A to MSDT 21A***									***Sorted By: Flow Order***	
1A-17	12	0.634	0.131	384.5	0.308	0.0	12.750	6.959	0.000	117.60	ARD
1A-17 (BR/SE)	12	0.501	0.103	384.5	0.293	0.0	12.750	6.959	0.000	117.60	ARD
1A-17 (D/S)	12	1.097	0.226	384.5	0.587	0.0	12.750	6.959	0.000	117.60	ARD
===>Grouped by Line:	***MSD27-5-MS21A to MSDT 21A***									***Sorted By: Flow Order***	
1A-18 (D/S)	11	0.737	0.152	384.5	0.293	0.0	12.750	6.959	0.000	117.60	ARD
1A-18	11	1.405	0.290	384.5	0.619	0.0	12.750	6.959	0.000	117.60	ARD
1A-18 (BR/SE)	11	1.909	0.394	384.5	0.888	0.0	12.750	6.959	0.000	117.60	ARD
1A-18P US	62	0.754	0.156	384.5	0.876	0.0	12.750	6.959	0.000	117.60	ARD
1A-18P DS	62	0.757	0.156	384.5	0.880	0.0	12.750	6.959	0.000	117.60	ARD
1A-20	2	1.475	0.304	384.5	0.930	0.0	12.750	6.959	0.000	117.60	ARD

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***MSD27-5-MS21A to MSDT 21A***									***Sorted By: Flow Order***	
1A-VALVE-5EX-19L	25	1.886	0.389	384.5	0.876	0.0	12.750	6.959	0.000	117.60	ARD
1A-20P	58	0.830	0.171	384.5	0.876	0.0	12.750	6.959	0.000	117.60	ARD
1A-VALVE-5EX-19M	25	1.886	0.389	384.5	0.876	0.0	12.750	6.959	0.000	117.60	ARD
1A-20P-1	58	0.830	0.171	384.5	0.876	0.0	12.750	6.959	0.000	117.60	ARD
1A-20N	30	1.508	0.311	384.5	0.876	0.0	12.750	6.959	0.000	117.60	ARD
===>Grouped by Line:	***MSD28-1-MS22A to MSDT 22A***									***Sorted By: Flow Order***	
2A-16N	31	0.737	0.152	384.5	0.293	0.0	12.750	6.959	0.000	117.60	ARD
2A-16P-1	61	0.417	0.086	384.5	0.308	0.0	12.750	6.959	0.000	117.60	ARD
2A-16 (BR/SE)	12	0.501	0.103	384.5	0.293	0.0	12.750	6.959	0.000	117.60	ARD
2A-16 (D/S)	12	0.604	0.125	384.5	0.293	0.0	12.750	6.959	0.000	117.60	ARD
2A-16P	62	0.309	0.064	384.5	0.307	0.0	12.750	6.959	0.000	117.60	ARD
===>Grouped by Line:	***MSD28-2-MS22A to MSDT 22A***									***Sorted By: Flow Order***	
2A-17N	31	0.737	0.152	384.5	0.293	0.0	12.750	6.959	0.000	117.60	ARD
2A-17P1	62	0.295	0.061	384.5	0.293	0.0	12.750	6.959	0.000	117.60	ARD
===>Grouped by Line:	***MSD28-3-MS22A to MSDT 22A***									***Sorted By: Flow Order***	
2A-19N	31	0.737	0.152	384.5	0.293	0.0	12.750	6.959	0.000	117.60	ARD
2A-19P-1	61	0.398	0.082	384.5	0.293	0.0	12.750	6.959	0.000	117.60	ARD
2A-19 (BR/SE)	12	0.501	0.103	384.5	0.293	0.0	12.750	6.959	0.000	117.60	ARD
2A-19 (D/S)	12	0.604	0.125	384.5	0.293	0.0	12.750	6.959	0.000	117.60	ARD
2A-19P	62	0.295	0.061	384.5	0.293	0.0	12.750	6.959	0.000	117.60	ARD
===>Grouped by Line:	***MSD28-4-MS22A to MSDT 22A***									***Sorted By: Flow Order***	
2A-17	12	0.604	0.125	384.5	0.293	0.0	12.750	6.959	0.000	117.60	ARD
2A-17 (BR/SE)	12	0.501	0.103	384.5	0.293	0.0	12.750	6.959	0.000	117.60	ARD
2A-17 (D/S)	12	1.097	0.226	384.5	0.587	0.0	12.750	6.959	0.000	117.60	ARD
2A-17P	62	0.535	0.110	384.5	0.587	0.0	12.750	6.959	0.000	117.60	ARD
===>Grouped by Line:	***MSD28-5-MS22A to MSDT 22A***									***Sorted By: Flow Order***	
2A-18 (D/S)	11	0.737	0.152	384.5	0.293	0.0	12.750	6.959	0.000	117.60	ARD
2A-18	11	1.337	0.276	384.5	0.587	0.0	12.750	6.959	0.000	117.60	ARD
2A-18 (BR/SE)	11	1.886	0.389	384.5	0.876	0.0	12.750	6.959	0.000	117.60	ARD
2A-18P	62	0.754	0.156	384.5	0.876	0.0	12.750	6.959	0.000	117.60	ARD
2A-20	2	1.395	0.288	384.5	0.876	0.0	12.750	6.959	0.000	117.60	ARD
2A-VALVE-5EX-19J	25	1.886	0.389	384.5	0.876	0.0	12.750	6.959	0.000	117.60	ARD
2A-20P	58	0.830	0.171	384.5	0.876	0.0	12.750	6.959	0.000	117.60	ARD
2A-VALVE-5EX-19K	25	1.886	0.389	384.5	0.876	0.0	12.750	6.959	0.000	117.60	ARD

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***MSD28-5-MS22A to MSDT 22A***								***Sorted By: Flow Order***		
2A-20P-1	58	0.830	0.171	384.5	0.876	0.0	12.750	6.959	0.000	117.60	ARD
2A-20N	30	1.508	0.311	384.5	0.876	0.0	12.750	6.959	0.000	117.60	ARD
===>Grouped by Line:	***MSD29-1-MS23A to MSDT 23A***								***Sorted By: Flow Order***		
3A-16N	31	0.737	0.152	384.5	0.293	0.0	12.750	6.959	0.000	117.60	ARD
3A-16P-1	61	0.398	0.082	384.5	0.293	0.0	12.750	6.959	0.000	117.60	ARD
3A-16 (BR/SE)	12	0.501	0.103	384.5	0.293	0.0	12.750	6.959	0.000	117.60	ARD
3A-16 (D/S)	12	0.604	0.125	384.5	0.293	0.0	12.750	6.959	0.000	117.60	ARD
3A-16P	62	0.295	0.061	384.5	0.293	0.0	12.750	6.959	0.000	117.60	ARD
===>Grouped by Line:	***MSD29-2-MS23A to MSDT 23A***								***Sorted By: Flow Order***		
3A-17N	31	0.737	0.152	384.5	0.293	0.0	12.750	6.959	0.000	117.60	ARD
3A-17P1	62	0.295	0.061	384.5	0.293	0.0	12.750	6.959	0.000	117.60	ARD
===>Grouped by Line:	***MSD29-3-MS23A to MSDT 23A***								***Sorted By: Flow Order***		
3A-19N	31	0.737	0.152	384.5	0.293	0.0	12.750	6.959	0.000	117.60	ARD
3A-19P-1	61	0.398	0.082	384.5	0.293	0.0	12.750	6.959	0.000	117.60	ARD
3A-19 (BR/SE)	12	0.501	0.103	384.5	0.293	0.0	12.750	6.959	0.000	117.60	ARD
3A-19 (D/S)	12	0.604	0.125	384.5	0.293	0.0	12.750	6.959	0.000	117.60	ARD
3A-19P	62	0.295	0.061	384.5	0.293	0.0	12.750	6.959	0.000	117.60	ARD
===>Grouped by Line:	***MSD29-4-MS23A to MSDT 23A***								***Sorted By: Flow Order***		
3A-17	12	0.633	0.131	384.5	0.308	0.0	12.750	6.959	0.000	117.60	ARD
3A-17 (BR/SE)	12	0.501	0.103	384.5	0.293	0.0	12.750	6.959	0.000	117.60	ARD
3A-17 (D/S)	12	1.097	0.226	384.5	0.587	0.0	12.750	6.959	0.000	117.60	ARD
3A-17P	61	0.722	0.149	384.5	0.587	0.0	12.750	6.959	0.000	117.60	ARD
===>Grouped by Line:	***MSD29-5-MS23A to MSDT 23A***								***Sorted By: Flow Order***		
3A-18 (D/S)	11	0.737	0.152	384.5	0.293	0.0	12.750	6.959	0.000	117.60	ARD
3A-18	11	1.397	0.288	384.5	0.615	0.0	12.750	6.959	0.000	117.60	ARD
3A-18 (BR/SE)	11	1.886	0.389	384.5	0.876	0.0	12.750	6.959	0.000	117.60	ARD
3A-18P	62	0.754	0.156	384.5	0.876	0.0	12.750	6.959	0.000	117.60	ARD
3A-20	2	1.395	0.288	384.5	0.876	0.0	12.750	6.959	0.000	117.60	ARD
3A-VALVE-5EX-19G	25	1.886	0.389	384.5	0.876	0.0	12.750	6.959	0.000	117.60	ARD
3A-20P	58	0.830	0.171	384.5	0.876	0.0	12.750	6.959	0.000	117.60	ARD
3A-VALVE-5EX-19H	25	1.886	0.389	384.5	0.876	0.0	12.750	6.959	0.000	117.60	ARD
3A-20P-1 US	58	0.830	0.171	384.5	0.876	0.0	12.750	6.959	0.000	117.60	ARD
3A-20P-1 DS	58	0.837	0.173	384.5	0.884	0.0	12.750	6.959	0.000	117.60	ARD
3A-21	2	1.419	0.293	384.5	0.892	0.0	12.750	6.959	0.000	117.60	ARD

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***MSD29-5-MS23A to MSDT 23A***									***Sorted By: Flow Order***	
3A-21P	52	0.955	0.197	384.5	0.888	0.0	12.750	6.959	0.000	117.60	ARD
3A-21N	30	1.508	0.311	384.5	0.876	0.0	12.750	6.959	0.000	117.60	ARD
===>Grouped by Line:	***MSD30-1-MS21B to MSDT 21B***									***Sorted By: Flow Order***	
1B-16N	31	0.737	0.152	384.5	0.293	0.0	12.750	6.959	0.000	117.60	ARD
1B-16P-1	61	0.421	0.087	384.5	0.311	0.0	12.750	6.959	0.000	117.60	ARD
1B-16 (BR/SE)	12	0.501	0.103	384.5	0.293	0.0	12.750	6.959	0.000	117.60	ARD
1B-16 (D/S)	12	0.604	0.125	384.5	0.293	0.0	12.750	6.959	0.000	117.60	ARD
1B-16P	62	0.295	0.061	384.5	0.293	0.0	12.750	6.959	0.000	117.60	ARD
===>Grouped by Line:	***MSD30-2-MS21B to MSDT 21B***									***Sorted By: Flow Order***	
1B-18N	31	0.737	0.152	384.5	0.293	0.0	12.750	6.959	0.000	117.60	ARD
1B-18P	61	0.398	0.082	384.5	0.293	0.0	12.750	6.959	0.000	117.60	ARD
===>Grouped by Line:	***MSD30-3-MS21B to MSDT 21B***									***Sorted By: Flow Order***	
1B-19N	31	0.737	0.152	384.5	0.293	0.0	12.750	6.959	0.000	117.60	ARD
1B-19P-1	61	0.418	0.086	384.5	0.308	0.0	12.750	6.959	0.000	117.60	ARD
1B-19 (BR/SE)	12	0.501	0.103	384.5	0.293	0.0	12.750	6.959	0.000	117.60	ARD
1B-19 (D/S)	12	0.604	0.125	384.5	0.293	0.0	12.750	6.959	0.000	117.60	ARD
1B-19P	62	0.308	0.064	384.5	0.307	0.0	12.750	6.959	0.000	117.60	ARD
===>Grouped by Line:	***MSD30-4-MS21B to MSDT 21B***									***Sorted By: Flow Order***	
1B-18 (BR/SE)	12	0.501	0.103	384.5	0.293	0.0	12.750	6.959	0.000	117.60	ARD
1B-18	12	0.632	0.130	384.5	0.307	0.0	12.750	6.959	0.000	117.60	ARD
1B-18 (D/S)	12	1.097	0.226	384.5	0.587	0.0	12.750	6.959	0.000	117.60	ARD
===>Grouped by Line:	***MSD30-5-MS21B to MSDT 21B***									***Sorted By: Flow Order***	
1B-17	11	0.775	0.160	384.5	0.309	0.0	12.750	6.959	0.000	117.60	ARD
1B-17 (D/S)	11	1.337	0.276	384.5	0.587	0.0	12.750	6.959	0.000	117.60	ARD
1B-17 (BR/SE)	11	1.886	0.389	384.5	0.876	0.0	12.750	6.959	0.000	117.60	ARD
1B-17P	62	0.754	0.156	384.5	0.876	0.0	12.750	6.959	0.000	117.60	ARD
1B-20	2	1.395	0.288	384.5	0.876	0.0	12.750	6.959	0.000	117.60	ARD
1B-VALVE-5EX-19	25	1.886	0.389	384.5	0.876	0.0	12.750	6.959	0.000	117.60	ARD
1B-20P	58	0.830	0.171	384.5	0.876	0.0	12.750	6.959	0.000	117.60	ARD
1B-VALVE-5EX-19F	25	1.886	0.389	384.5	0.876	0.0	12.750	6.959	0.000	117.60	ARD
1B-20P-1	58	0.830	0.171	384.5	0.876	0.0	12.750	6.959	0.000	117.60	ARD
1B-20N	30	1.508	0.311	384.5	0.876	0.0	12.750	6.959	0.000	117.60	ARD
===>Grouped by Line:	***MSD31-1-MS22B to MSDT 22B***									***Sorted By: Flow Order***	

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***MSD31-1-MS22B to MSDT 22B***								***Sorted By: Flow Order***		
2B-16N	31	0.737	0.152	384.5	0.293	0.0	12.750	6.959	0.000	117.60	ARD
2B-16P-1	61	0.418	0.086	384.5	0.309	0.0	12.750	6.959	0.000	117.60	ARD
2B-16 (BR/SE)	12	0.501	0.103	384.5	0.293	0.0	12.750	6.959	0.000	117.60	ARD
2B-16 (D/S)	12	0.604	0.125	384.5	0.293	0.0	12.750	6.959	0.000	117.60	ARD
2B-16P	62	0.295	0.061	384.5	0.293	0.0	12.750	6.959	0.000	117.60	ARD
===>Grouped by Line:	***MSD31-2-MS22B to MSDT 22B***								***Sorted By: Flow Order***		
2B-18N	31	0.737	0.152	384.5	0.293	0.0	12.750	6.959	0.000	117.60	ARD
2B-18P1	62	0.295	0.061	384.5	0.293	0.0	12.750	6.959	0.000	117.60	ARD
===>Grouped by Line:	***MSD31-3-MS22B to MSDT 22B***								***Sorted By: Flow Order***		
2B-19N	31	0.737	0.152	384.5	0.293	0.0	12.750	6.959	0.000	117.60	ARD
2B-19P-1	61	0.419	0.086	384.5	0.309	0.0	12.750	6.959	0.000	117.60	ARD
2B-19 (BR/SE)	12	0.501	0.103	384.5	0.293	0.0	12.750	6.959	0.000	117.60	ARD
2B-19 (D/S)	12	0.604	0.125	384.5	0.293	0.0	12.750	6.959	0.000	117.60	ARD
2B-19P	62	0.295	0.061	384.5	0.293	0.0	12.750	6.959	0.000	117.60	ARD
===>Grouped by Line:	***MSD31-4-MS22B to MSDT 22B***								***Sorted By: Flow Order***		
2B-18 (BR/SE)	12	0.501	0.103	384.5	0.293	0.0	12.750	6.959	0.000	117.60	ARD
2B-18	12	0.626	0.129	384.5	0.304	0.0	12.750	6.959	0.000	117.60	ARD
2B-18 (D/S)	12	1.097	0.226	384.5	0.587	0.0	12.750	6.959	0.000	117.60	ARD
2B-18P	61	0.722	0.149	384.5	0.587	0.0	12.750	6.959	0.000	117.60	ARD
===>Grouped by Line:	***MSD31-5-MS22B to MSDT 22B***								***Sorted By: Flow Order***		
2B-17	11	0.774	0.160	384.5	0.309	0.0	12.750	6.959	0.000	117.60	ARD
2B-17 (D/S)	11	1.337	0.276	384.5	0.587	0.0	12.750	6.959	0.000	117.60	ARD
2B-17 (BR/SE)	11	1.886	0.389	384.5	0.876	0.0	12.750	6.959	0.000	117.60	ARD
2B-17P	62	0.754	0.156	384.5	0.876	0.0	12.750	6.959	0.000	117.60	ARD
2B-20	2	1.395	0.288	384.5	0.876	0.0	12.750	6.959	0.000	117.60	ARD
2B-VALVE-5EX-19D	25	1.886	0.389	384.5	0.876	0.0	12.750	6.959	0.000	117.60	ARD
2B-20P	58	0.830	0.171	384.5	0.876	0.0	12.750	6.959	0.000	117.60	ARD
2B-VALVE-5EX-19E	25	1.886	0.389	384.5	0.876	0.0	12.750	6.959	0.000	117.60	ARD
2B-20P-1	58	0.830	0.171	384.5	0.876	0.0	12.750	6.959	0.000	117.60	ARD
2B-20N	30	1.508	0.311	384.5	0.876	0.0	12.750	6.959	0.000	117.60	ARD
===>Grouped by Line:	***MSD32-1-MS23B to MSDT 23B***								***Sorted By: Flow Order***		
3B-16N	31	0.737	0.152	384.5	0.293	0.0	12.750	6.959	0.000	117.60	ARD
3B-16P-1	61	0.398	0.082	384.5	0.293	0.0	12.750	6.959	0.000	117.60	ARD
3B-16 (BR/SE)	12	0.501	0.103	384.5	0.293	0.0	12.750	6.959	0.000	117.60	ARD

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***MSD32-1-MS23B to MSDT 23B***								***Sorted By: Flow Order***		
3B-16 (D/S)	12	0.604	0.125	384.5	0.293	0.0	12.750	6.959	0.000	117.60	ARD
3B-16P	62	0.295	0.061	384.5	0.293	0.0	12.750	6.959	0.000	117.60	ARD
===>Grouped by Line:	***MSD32-2-MS23B to MSDT 23B***								***Sorted By: Flow Order***		
3B-18N	31	0.737	0.152	384.5	0.293	0.0	12.750	6.959	0.000	117.60	ARD
3B-18P1	62	0.295	0.061	384.5	0.293	0.0	12.750	6.959	0.000	117.60	ARD
===>Grouped by Line:	***MSD32-3-MS23B to MSDT 23B***								***Sorted By: Flow Order***		
3B-19N	31	0.737	0.152	384.5	0.293	0.0	12.750	6.959	0.000	117.60	ARD
3B-19P-1	61	0.398	0.082	384.5	0.293	0.0	12.750	6.959	0.000	117.60	ARD
3B-19 (BR/SE)	12	0.501	0.103	384.5	0.293	0.0	12.750	6.959	0.000	117.60	ARD
3B-19 (D/S)	12	0.604	0.125	384.5	0.293	0.0	12.750	6.959	0.000	117.60	ARD
3B-19P	62	0.295	0.061	384.5	0.293	0.0	12.750	6.959	0.000	117.60	ARD
===>Grouped by Line:	***MSD32-4-MS23B to MSDT 23B***								***Sorted By: Flow Order***		
3B-18 (BR/SE)	12	0.501	0.103	384.5	0.293	0.0	12.750	6.959	0.000	117.60	ARD
3B-18	12	0.636	0.131	384.5	0.309	0.0	12.750	6.959	0.000	117.60	ARD
3B-18 (D/S)	12	1.097	0.226	384.5	0.587	0.0	12.750	6.959	0.000	117.60	ARD
3B-18P	61	0.722	0.149	384.5	0.587	0.0	12.750	6.959	0.000	117.60	ARD
===>Grouped by Line:	***MSD32-5-MS23B to MSDT 23B***								***Sorted By: Flow Order***		
3B-17	11	0.781	0.161	384.5	0.311	0.0	12.750	6.959	0.000	117.60	ARD
3B-17 (D/S)	11	1.337	0.276	384.5	0.587	0.0	12.750	6.959	0.000	117.60	ARD
3B-17 (BR/SE)	11	1.886	0.389	384.5	0.876	0.0	12.750	6.959	0.000	117.60	ARD
3B-17P	62	0.754	0.156	384.5	0.876	0.0	12.750	6.959	0.000	117.60	ARD
3B-20	2	1.395	0.288	384.5	0.876	0.0	12.750	6.959	0.000	117.60	ARD
3B-VALVE-5EX-19B	25	1.886	0.389	384.5	0.876	0.0	12.750	6.959	0.000	117.60	ARD
3B-20P	58	0.830	0.171	384.5	0.876	0.0	12.750	6.959	0.000	117.60	ARD
3B-VALVE-5EX-19C	25	1.886	0.389	384.5	0.876	0.0	12.750	6.959	0.000	117.60	ARD
3B-20P-1	58	0.830	0.171	384.5	0.876	0.0	12.750	6.959	0.000	117.60	ARD
3B-21	2	1.395	0.288	384.5	0.876	0.0	12.750	6.959	0.000	117.60	ARD
3B-21P	52	0.943	0.194	384.5	0.876	0.0	12.750	6.959	0.000	117.60	ARD
3B-21N	30	1.508	0.311	384.5	0.876	0.0	12.750	6.959	0.000	117.60	ARD

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).db

Service Life Report

Pass 1 Analysis Exclude Measured Wear

Report Date/Time: 7/6/2010 3:37:44PM
AnalysisDate/Time: 7/6/2010 3:23:54PM

Run Name: MSR SHELL DRAINS
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 1.000

CHECWORKS SFA Version: 3.0 SP-1 (build 109)
Duty Factor (Global) :1.000

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **MSD27-1-MS21A to MSDT 21A**					***Sorted By:Remaining Life***		
1A-16N	0.000	0.230	0.085	0.085	8,308,051	No	243,721
1A-16 (BR/SE)	0.000	0.214	0.085	0.085	10,912,277	No	243,721
1A-16 (D/S)	0.000	0.367	0.085	0.085	19,763,982	No	243,721
1A-16P	0.000	0.242	0.100	0.100	20,440,796	No	243,721
1A-16P-1	0.410	0.376	0.100	0.100	28,010,412	Yes	243,721
===>Grouped by Line: **MSD27-2-MS21A to MSDT 21A**					***Sorted By:Remaining Life***		
1A-17N	0.000	0.230	0.085	0.085	8,308,051	No	243,721
1A-17P-1	0.000	0.239	0.100	0.100	14,834,947	No	243,721
===>Grouped by Line: **MSD27-3-MS21A to MSDT 21A**					***Sorted By:Remaining Life***		
1A-19N	0.000	0.230	0.085	0.085	8,308,051	No	243,721
1A-19 (BR/SE)	0.000	0.245	0.085	0.085	13,540,453	No	243,721
1A-19 (D/S)	0.000	0.370	0.085	0.085	19,974,896	No	243,721
1A-19P	0.000	0.242	0.100	0.100	20,440,796	No	243,721
1A-19P-1	0.408	0.377	0.100	0.100	28,129,732	No	243,721
===>Grouped by Line: **MSD27-4-MS21A to MSDT 21A**					***Sorted By:Remaining Life***		
1A-17 (D/S)	0.000	0.362	0.085	0.085	10,701,260	No	243,721
1A-17 (BR/SE)	0.000	0.222	0.085	0.085	11,590,516	No	243,721
1A-17	0.405	0.359	0.085	0.085	18,363,180	No	243,721
===>Grouped by Line: **MSD27-5-MS21A to MSDT 21A**					***Sorted By:Remaining Life***		
1A-VALVE-5EX-19L	0.000	0.198	0.091	0.091	2,389,824	No	243,721
1A-VALVE-5EX-19M	0.000	0.198	0.091	0.091	2,389,824	No	243,721
1A-18 (BR/SE)	0.290	0.226	0.085	0.085	3,133,916	No	243,721
1A-20N	0.000	0.266	0.085	0.085	5,096,436	No	243,721

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line:	**MSD27-5-MS21A to MSDT 21A**				***Sorted By:Remaining Life***		
1A-20	0.430	0.272	0.085	0.085	5,369,106	Yes	243,721
1A-20P	0.000	0.223	0.100	0.100	6,281,170	Yes	243,721
1A-20P-1	0.000	0.235	0.100	0.100	6,895,548	Yes	243,721
1A-18P DS	0.263	0.223	0.100	0.100	6,905,550	Yes	243,721
1A-18P US	0.000	0.229	0.100	0.100	7,267,378	No	243,721
1A-18	0.410	0.364	0.085	0.085	8,436,956	Yes	243,721
1A-18 (D/S)	0.000	0.369	0.085	0.085	16,332,685	Yes	243,721
===>Grouped by Line:	**MSD28-1-MS22A to MSDT 22A**				***Sorted By:Remaining Life***		
2A-16N	0.000	0.230	0.085	0.085	8,308,051	No	243,721
2A-16 (BR/SE)	0.000	0.247	0.085	0.085	13,692,912	No	243,721
2A-16 (D/S)	0.000	0.346	0.085	0.085	18,326,302	No	243,721
2A-16P-1	0.404	0.378	0.100	0.100	28,266,942	No	243,721
2A-16P	0.399	0.317	0.100	0.100	29,944,060	No	243,721
===>Grouped by Line:	**MSD28-2-MS22A to MSDT 22A**				***Sorted By:Remaining Life***		
2A-17N	0.000	0.230	0.085	0.085	8,308,051	No	243,721
2A-17P1	0.000	0.242	0.100	0.100	20,440,796	No	243,721
===>Grouped by Line:	**MSD28-3-MS22A to MSDT 22A**				***Sorted By:Remaining Life***		
2A-19N	0.000	0.230	0.085	0.085	8,308,051	No	243,721
2A-19 (D/S)	0.000	0.233	0.085	0.085	10,391,182	No	243,721
2A-19 (BR/SE)	0.000	0.236	0.085	0.085	12,773,847	No	243,721
2A-19P-1	0.000	0.239	0.100	0.100	14,834,947	No	243,721
2A-19P	0.000	0.242	0.100	0.100	20,440,796	No	243,721
===>Grouped by Line:	**MSD28-4-MS22A to MSDT 22A**				***Sorted By:Remaining Life***		
2A-17 (D/S)	0.000	0.219	0.085	0.085	5,194,379	No	243,721
2A-17	0.000	0.233	0.085	0.085	10,391,182	No	243,721
2A-17P	0.000	0.235	0.100	0.100	10,731,239	No	243,721
2A-17 (BR/SE)	0.000	0.236	0.085	0.085	12,773,847	No	243,721
===>Grouped by Line:	**MSD28-5-MS22A to MSDT 22A**				***Sorted By:Remaining Life***		
2A-VALVE-5EX-19J	0.000	0.198	0.091	0.091	2,389,824	No	243,721
2A-VALVE-5EX-19K	0.000	0.198	0.091	0.091	2,389,824	No	243,721
2A-18 (BR/SE)	0.000	0.198	0.085	0.085	2,526,435	No	243,721
2A-20	0.000	0.211	0.085	0.085	3,829,317	No	243,721

Component Name	--------- Thickness (in) -------- Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line:	**MSD28-5-MS22A to MSDT 22A**				***Sorted By:Remaining Life***		
2A-18	0.000	0.213	0.085	0.085	4,046,672	No	243,721
2A-20N	0.000	0.253	0.085	0.085	4,730,370	No	243,721
2A-20P	0.000	0.216	0.100	0.100	5,922,782	Yes	243,721
2A-20P-1	0.000	0.237	0.100	0.100	6,997,944	Yes	243,721
2A-18P	0.000	0.229	0.100	0.100	7,267,378	No	243,721
2A-18 (D/S)	0.000	0.230	0.085	0.085	8,308,051	No	243,721
===>Grouped by Line:	**MSD29-1-MS23A to MSDT 23A**				***Sorted By:Remaining Life***		
3A-16N	0.000	0.230	0.085	0.085	8,308,051	No	243,721
3A-16 (BR/SE)	0.000	0.236	0.085	0.085	12,773,847	No	243,721
3A-16P-1	0.000	0.239	0.100	0.100	14,834,947	No	243,721
3A-16 (D/S)	0.000	0.354	0.085	0.085	18,850,012	No	243,721
3A-16P	0.000	0.242	0.100	0.100	20,440,796	No	243,721
===>Grouped by Line:	**MSD29-2-MS23A to MSDT 23A**				***Sorted By:Remaining Life***		
3A-17N	0.000	0.230	0.085	0.085	8,308,051	No	243,721
3A-17P1	0.000	0.242	0.100	0.100	20,440,796	No	243,721
===>Grouped by Line:	**MSD29-3-MS23A to MSDT 23A**				***Sorted By:Remaining Life***		
3A-19N	0.000	0.230	0.085	0.085	8,308,051	No	243,721
3A-19 (BR/SE)	0.000	0.236	0.085	0.085	12,773,847	No	243,721
3A-19P-1	0.000	0.239	0.100	0.100	14,834,947	No	243,721
3A-19 (D/S)	0.000	0.349	0.085	0.085	18,498,486	No	243,721
3A-19P	0.000	0.242	0.100	0.100	20,440,796	No	243,721
===>Grouped by Line:	**MSD29-4-MS23A to MSDT 23A**				***Sorted By:Remaining Life***		
3A-17P	0.000	0.230	0.100	0.100	7,642,682	No	243,721
3A-17 (D/S)	0.000	0.355	0.100	0.100	9,865,193	No	243,721
3A-17 (BR/SE)	0.000	0.233	0.100	0.100	11,286,636	No	243,721
3A-17	0.402	0.355	0.100	0.100	17,133,662	No	243,721
===>Grouped by Line:	**MSD29-5-MS23A to MSDT 23A**				***Sorted By:Remaining Life***		
3A-VALVE-5EX-19G	0.000	0.198	0.091	0.091	2,389,824	No	243,721
3A-VALVE-5EX-19H	0.000	0.198	0.091	0.091	2,389,824	No	243,721
3A-18 (BR/SE)	0.000	0.216	0.085	0.085	2,944,476	No	243,721
3A-20	0.000	0.211	0.085	0.085	3,829,317	No	243,721
3A-21	0.305	0.223	0.085	0.085	4,131,319	Yes	243,721

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line:	**MSD29-5-MS23A to MSDT 23A**				***Sorted By:Remaining Life***		
3A-21N	0.000	0.266	0.085	0.085	5,090,560	No	243,721
3A-21P	0.292	0.218	0.100	0.100	5,231,043	Yes	243,721
3A-20P-1 DS	0.278	0.217	0.100	0.100	5,934,310	Yes	243,721
3A-20P	0.000	0.227	0.100	0.100	6,499,273	No	243,721
3A-20P-1 US	0.000	0.227	0.100	0.100	6,499,273	No	243,721
3A-18P	0.000	0.229	0.100	0.100	7,267,378	No	243,721
3A-18	0.393	0.342	0.085	0.085	7,797,789	No	243,721
3A-18 (D/S)	0.000	0.233	0.085	0.085	8,494,763	No	243,721
===>Grouped by Line:	**MSD30-1-MS21B to MSDT 21B**				***Sorted By:Remaining Life***		
1B-16N	0.000	0.230	0.085	0.085	8,308,051	No	243,721
1B-16 (BR/SE)	0.000	0.254	0.085	0.085	14,303,472	No	243,721
1B-16 (D/S)	0.000	0.361	0.085	0.085	19,342,148	No	243,721
1B-16P	0.000	0.242	0.100	0.100	20,440,796	No	243,721
1B-16P-1	0.435	0.398	0.100	0.100	30,009,024	Yes	243,721
===>Grouped by Line:	**MSD30-2-MS21B to MSDT 21B**				***Sorted By:Remaining Life***		
1B-18N	0.000	0.230	0.085	0.085	8,308,051	No	243,721
1B-18P	0.000	0.239	0.100	0.100	14,834,947	No	243,721
===>Grouped by Line:	**MSD30-3-MS21B to MSDT 21B**				***Sorted By:Remaining Life***		
1B-19N	0.000	0.230	0.085	0.085	8,308,051	No	243,721
1B-19 (BR/SE)	0.000	0.225	0.085	0.085	11,844,856	No	243,721
1B-19 (D/S)	0.000	0.354	0.085	0.085	18,850,012	No	243,721
1B-19P-1	0.407	0.376	0.100	0.100	28,036,848	No	243,721
1B-19P	0.398	0.360	0.100	0.100	35,875,264	Yes	243,721
===>Grouped by Line:	**MSD30-4-MS21B to MSDT 21B**				***Sorted By:Remaining Life***		
1B-18 (D/S)	0.000	0.356	0.085	0.085	10,468,850	No	243,721
1B-18 (BR/SE)	0.000	0.235	0.085	0.085	12,692,655	No	243,721
1B-18	0.396	0.353	0.085	0.085	18,012,070	No	243,721
===>Grouped by Line:	**MSD30-5-MS21B to MSDT 21B**				***Sorted By:Remaining Life***		
1B-VALVE-5EX-19	0.000	0.198	0.091	0.091	2,389,824	No	243,721
1B-VALVE-5EX-19F	0.000	0.198	0.091	0.091	2,389,824	No	243,721
1B-17 (BR/SE)	0.000	0.229	0.085	0.085	3,237,330	No	243,721
1B-20N	0.000	0.208	0.085	0.085	3,453,486	No	243,721

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line:	**MSD30-5-MS21B to MSDT 21B**				***Sorted By:Remaining Life***		
1B-20	0.000	0.211	0.085	0.085	3,829,317	No	243,721
1B-20P	0.000	0.227	0.100	0.100	6,499,273	No	243,721
1B-20P-1	0.000	0.227	0.100	0.100	6,499,273	No	243,721
1B-17P	0.000	0.229	0.100	0.100	7,267,378	No	243,721
1B-17 (D/S)	0.000	0.349	0.085	0.085	8,381,436	No	243,721
1B-17	0.415	0.360	0.085	0.085	15,020,887	No	243,721
===>Grouped by Line:	**MSD31-1-MS22B to MSDT 22B**				***Sorted By:Remaining Life***		
2B-16N	0.000	0.230	0.085	0.085	8,308,051	No	243,721
2B-16 (BR/SE)	0.000	0.260	0.085	0.085	14,812,153	No	243,721
2B-16 (D/S)	0.000	0.358	0.085	0.085	19,131,234	No	243,721
2B-16P	0.000	0.242	0.100	0.100	20,440,796	No	243,721
2B-16P-1	0.413	0.381	0.100	0.100	28,491,660	No	243,721
===>Grouped by Line:	**MSD31-2-MS22B to MSDT 22B**				***Sorted By:Remaining Life***		
2B-18N	0.000	0.230	0.085	0.085	8,308,051	No	243,721
2B-18P1	0.000	0.242	0.100	0.100	20,440,796	No	243,721
===>Grouped by Line:	**MSD31-3-MS22B to MSDT 22B**				***Sorted By:Remaining Life***		
2B-19N	0.000	0.230	0.085	0.085	8,308,051	No	243,721
2B-19 (BR/SE)	0.000	0.232	0.100	0.100	11,201,856	No	243,721
2B-19 (D/S)	0.000	0.345	0.100	0.100	17,191,908	No	243,721
2B-19P	0.000	0.242	0.100	0.100	20,440,796	No	243,721
2B-19P-1	0.419	0.374	0.100	0.100	27,728,474	Yes	243,721
===>Grouped by Line:	**MSD31-4-MS22B to MSDT 22B**				***Sorted By:Remaining Life***		
2B-18P	0.000	0.230	0.100	0.100	7,642,682	No	243,721
2B-18 (D/S)	0.000	0.347	0.100	0.100	9,555,313	No	243,721
2B-18 (BR/SE)	0.000	0.236	0.100	0.100	11,537,387	No	243,721
2B-18	0.367	0.341	0.100	0.100	16,373,966	No	243,721
===>Grouped by Line:	**MSD31-5-MS22B to MSDT 22B**				***Sorted By:Remaining Life***		
2B-VALVE-5EX-19D	0.000	0.198	0.091	0.091	2,389,824	No	243,721
2B-VALVE-5EX-19E	0.000	0.198	0.091	0.091	2,389,824	No	243,721
2B-17 (BR/SE)	0.000	0.217	0.100	0.100	2,638,459	No	243,721
2B-20N	0.000	0.208	0.085	0.085	3,453,486	No	243,721
2B-20	0.000	0.211	0.085	0.085	3,829,317	No	243,721

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line:	**MSD31-5-MS22B to MSDT 22B**				***Sorted By:Remaining Life***		
2B-20P	0.000	0.227	0.100	0.100	6,499,273	No	243,721
2B-20P-1	0.000	0.227	0.100	0.100	6,499,273	No	243,721
2B-17P	0.000	0.229	0.100	0.100	7,267,378	No	243,721
2B-17 (D/S)	0.000	0.352	0.100	0.100	8,013,487	No	243,721
2B-17	0.411	0.357	0.100	0.100	14,075,208	No	243,721
===>Grouped by Line:	**MSD32-1-MS23B to MSDT 23B**				***Sorted By:Remaining Life***		
3B-16N	0.000	0.230	0.085	0.085	8,308,051	No	243,721
3B-16 (BR/SE)	0.000	0.241	0.085	0.085	13,201,334	No	243,721
3B-16P-1	0.000	0.239	0.100	0.100	14,834,947	No	243,721
3B-16 (D/S)	0.000	0.348	0.085	0.085	18,428,182	No	243,721
3B-16P	0.000	0.242	0.100	0.100	20,440,796	No	243,721
===>Grouped by Line:	**MSD32-2-MS23B to MSDT 23B**				***Sorted By:Remaining Life***		
3B-18N	0.000	0.230	0.085	0.085	8,308,051	No	243,721
3B-18P1	0.000	0.242	0.100	0.100	20,440,796	No	243,721
===>Grouped by Line:	**MSD32-3-MS23B to MSDT 23B**				***Sorted By:Remaining Life***		
3B-19N	0.000	0.230	0.085	0.085	8,308,051	No	243,721
3B-19 (BR/SE)	0.000	0.244	0.085	0.085	13,455,673	No	243,721
3B-19P-1	0.000	0.239	0.100	0.100	14,834,947	No	243,721
3B-19 (D/S)	0.000	0.367	0.085	0.085	19,763,982	No	243,721
3B-19P	0.000	0.242	0.100	0.100	20,440,796	No	243,721
===>Grouped by Line:	**MSD32-4-MS23B to MSDT 23B**				***Sorted By:Remaining Life***		
3B-18P	0.000	0.230	0.100	0.100	7,642,682	No	243,721
3B-18 (D/S)	0.000	0.368	0.085	0.085	10,933,669	No	243,721
3B-18 (BR/SE)	0.000	0.227	0.085	0.085	12,014,416	No	243,721
3B-18	0.417	0.368	0.085	0.085	18,894,704	No	243,721
===>Grouped by Line:	**MSD32-5-MS23B to MSDT 23B**				***Sorted By:Remaining Life***		
3B-VALVE-5EX-19B	0.000	0.198	0.091	0.091	2,389,824	No	243,721
3B-VALVE-5EX-19C	0.000	0.198	0.091	0.091	2,389,824	No	243,721
3B-17 (BR/SE)	0.000	0.223	0.100	0.100	2,773,622	No	243,721
3B-21N	0.000	0.208	0.085	0.085	3,453,486	No	243,721
3B-21	0.000	0.211	0.085	0.085	3,829,317	No	243,721
3B-21P	0.000	0.224	0.100	0.100	5,577,548	No	243,721

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **MSD32-5-MS23B to MSDT 23B**					***Sorted By:Remaining Life***		
3B-20P	0.000	0.227	0.100	0.100	6,499,273	No	243,721
3B-20P-1	0.000	0.227	0.100	0.100	6,499,273	No	243,721
3B-17P	0.000	0.229	0.100	0.100	7,267,378	No	243,721
3B-20	0.000	0.350	0.085	0.085	8,066,033	Yes	243,721
3B-17 (D/S)	0.000	0.358	0.100	0.100	8,204,062	No	243,721
3B-17	0.437	0.356	0.100	0.100	13,959,305	No	243,721

Note:
[1] Predictions are based on last Tmeas to analysis ending period.

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).db

Service Life Report

Pass 1 Analysis Exclude Measured Wear

Report Date/Time: 7/6/2010 3:37:44PM
AnalysisDate/Time: 7/6/2010 3:23:54PM

Run Name: MSR SHELL DRAINS
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 1.000

CHECWORKS SFA Version: 3.0 SP-1 (build 109)
Duty Factor (Global) : 1.000

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **MSD27-1-MS21A to MSDT 21A**					***Sorted By:Flow Order***		
1A-16N	0.000	0.230	0.085	0.085	8,308,051	No	243,721
1A-16P-1	0.410	0.376	0.100	0.100	28,010,412	Yes	243,721
1A-16 (BR/SE)	0.000	0.214	0.085	0.085	10,912,277	No	243,721
1A-16 (D/S)	0.000	0.367	0.085	0.085	19,763,982	No	243,721
1A-16P	0.000	0.242	0.100	0.100	20,440,796	No	243,721
===>Grouped by Line: **MSD27-2-MS21A to MSDT 21A**					***Sorted By:Flow Order***		
1A-17N	0.000	0.230	0.085	0.085	8,308,051	No	243,721
1A-17P-1	0.000	0.239	0.100	0.100	14,834,947	No	243,721
===>Grouped by Line: **MSD27-3-MS21A to MSDT 21A**					***Sorted By:Flow Order***		
1A-19N	0.000	0.230	0.085	0.085	8,308,051	No	243,721
1A-19P-1	0.408	0.377	0.100	0.100	28,129,732	No	243,721
1A-19 (BR/SE)	0.000	0.245	0.085	0.085	13,540,453	No	243,721
1A-19 (D/S)	0.000	0.370	0.085	0.085	19,974,896	No	243,721
1A-19P	0.000	0.242	0.100	0.100	20,440,796	No	243,721
===>Grouped by Line: **MSD27-4-MS21A to MSDT 21A**					***Sorted By:Flow Order***		
1A-17	0.405	0.359	0.085	0.085	18,363,180	No	243,721
1A-17 (BR/SE)	0.000	0.222	0.085	0.085	11,590,516	No	243,721
1A-17 (D/S)	0.000	0.362	0.085	0.085	10,701,260	No	243,721
===>Grouped by Line: **MSD27-5-MS21A to MSDT 21A**					***Sorted By:Flow Order***		
1A-18 (D/S)	0.000	0.369	0.085	0.085	16,332,685	Yes	243,721
1A-18	0.410	0.364	0.085	0.085	8,436,956	Yes	243,721
1A-18 (BR/SE)	0.290	0.226	0.085	0.085	3,133,916	No	243,721
1A-18P US	0.000	0.229	0.100	0.100	7,267,378	No	243,721

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line:	**MSD27-5-MS21A to MSDT 21A**				***Sorted By:Flow Order***		
1A-18P DS	0.263	0.223	0.100	0.100	6,905,550	Yes	243,721
1A-20	0.430	0.272	0.085	0.085	5,369,106	Yes	243,721
1A-VALVE-5EX-19L	0.000	0.198	0.091	0.091	2,389,824	No	243,721
1A-20P	0.000	0.223	0.100	0.100	6,281,170	Yes	243,721
1A-VALVE-5EX-19M	0.000	0.198	0.091	0.091	2,389,824	No	243,721
1A-20P-1	0.000	0.235	0.100	0.100	6,895,548	Yes	243,721
1A-20N	0.000	0.266	0.085	0.085	5,096,436	No	243,721
===>Grouped by Line:	**MSD28-1-MS22A to MSDT 22A**				***Sorted By:Flow Order***		
2A-16N	0.000	0.230	0.085	0.085	8,308,051	No	243,721
2A-16P-1	0.404	0.378	0.100	0.100	28,266,942	No	243,721
2A-16 (BR/SE)	0.000	0.247	0.085	0.085	13,692,912	No	243,721
2A-16 (D/S)	0.000	0.346	0.085	0.085	18,326,302	No	243,721
2A-16P	0.399	0.317	0.100	0.100	29,944,060	No	243,721
===>Grouped by Line:	**MSD28-2-MS22A to MSDT 22A**				***Sorted By:Flow Order***		
2A-17N	0.000	0.230	0.085	0.085	8,308,051	No	243,721
2A-17P1	0.000	0.242	0.100	0.100	20,440,796	No	243,721
===>Grouped by Line:	**MSD28-3-MS22A to MSDT 22A**				***Sorted By:Flow Order***		
2A-19N	0.000	0.230	0.085	0.085	8,308,051	No	243,721
2A-19P-1	0.000	0.239	0.100	0.100	14,834,947	No	243,721
2A-19 (BR/SE)	0.000	0.236	0.085	0.085	12,773,847	No	243,721
2A-19 (D/S)	0.000	0.233	0.085	0.085	10,391,182	No	243,721
2A-19P	0.000	0.242	0.100	0.100	20,440,796	No	243,721
===>Grouped by Line:	**MSD28-4-MS22A to MSDT 22A**				***Sorted By:Flow Order***		
2A-17	0.000	0.233	0.085	0.085	10,391,182	No	243,721
2A-17 (BR/SE)	0.000	0.236	0.085	0.085	12,773,847	No	243,721
2A-17 (D/S)	0.000	0.219	0.085	0.085	5,194,379	No	243,721
2A-17P	0.000	0.235	0.100	0.100	10,731,239	No	243,721
===>Grouped by Line:	**MSD28-5-MS22A to MSDT 22A**				***Sorted By:Flow Order***		
2A-18 (D/S)	0.000	0.230	0.085	0.085	8,308,051	No	243,721
2A-18	0.000	0.213	0.085	0.085	4,046,672	No	243,721
2A-18 (BR/SE)	0.000	0.198	0.085	0.085	2,526,435	No	243,721
2A-18P	0.000	0.229	0.100	0.100	7,267,378	No	243,721

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line:	**MSD28-5-MS22A to MSDT 22A**				***Sorted By:Flow Order***		
2A-20	0.000	0.211	0.085	0.085	3,829,317	No	243,721
2A-VALVE-5EX-19J	0.000	0.198	0.091	0.091	2,389,824	No	243,721
2A-20P	0.000	0.216	0.100	0.100	5,922,782	Yes	243,721
2A-VALVE-5EX-19K	0.000	0.198	0.091	0.091	2,389,824	No	243,721
2A-20P-1	0.000	0.237	0.100	0.100	6,997,944	Yes	243,721
2A-20N	0.000	0.253	0.085	0.085	4,730,370	No	243,721
===>Grouped by Line:	**MSD29-1-MS23A to MSDT 23A**				***Sorted By:Flow Order***		
3A-16N	0.000	0.230	0.085	0.085	8,308,051	No	243,721
3A-16P-1	0.000	0.239	0.100	0.100	14,834,947	No	243,721
3A-16 (BR/SE)	0.000	0.236	0.085	0.085	12,773,847	No	243,721
3A-16 (D/S)	0.000	0.354	0.085	0.085	18,850,012	No	243,721
3A-16P	0.000	0.242	0.100	0.100	20,440,796	No	243,721
===>Grouped by Line:	**MSD29-2-MS23A to MSDT 23A**				***Sorted By:Flow Order***		
3A-17N	0.000	0.230	0.085	0.085	8,308,051	No	243,721
3A-17P1	0.000	0.242	0.100	0.100	20,440,796	No	243,721
===>Grouped by Line:	**MSD29-3-MS23A to MSDT 23A**				***Sorted By:Flow Order***		
3A-19N	0.000	0.230	0.085	0.085	8,308,051	No	243,721
3A-19P-1	0.000	0.239	0.100	0.100	14,834,947	No	243,721
3A-19 (BR/SE)	0.000	0.236	0.085	0.085	12,773,847	No	243,721
3A-19 (D/S)	0.000	0.349	0.085	0.085	18,498,486	No	243,721
3A-19P	0.000	0.242	0.100	0.100	20,440,796	No	243,721
===>Grouped by Line:	**MSD29-4-MS23A to MSDT 23A**				***Sorted By:Flow Order***		
3A-17	0.402	0.355	0.100	0.100	17,133,662	No	243,721
3A-17 (BR/SE)	0.000	0.233	0.100	0.100	11,286,636	No	243,721
3A-17 (D/S)	0.000	0.355	0.100	0.100	9,865,193	No	243,721
3A-17P	0.000	0.230	0.100	0.100	7,642,682	No	243,721
===>Grouped by Line:	**MSD29-5-MS23A to MSDT 23A**				***Sorted By:Flow Order***		
3A-18 (D/S)	0.000	0.233	0.085	0.085	8,494,763	No	243,721
3A-18	0.393	0.342	0.085	0.085	7,797,789	No	243,721
3A-18 (BR/SE)	0.000	0.216	0.085	0.085	2,944,476	No	243,721
3A-18P	0.000	0.229	0.100	0.100	7,267,378	No	243,721
3A-20	0.000	0.211	0.085	0.085	3,829,317	No	243,721

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line:	**MSD29-5-MS23A to MSDT 23A**				***Sorted By:Flow Order***		
3A-VALVE-5EX-19G	0.000	0.198	0.091	0.091	2,389,824	No	243,721
3A-20P	0.000	0.227	0.100	0.100	6,499,273	No	243,721
3A-VALVE-5EX-19H	0.000	0.198	0.091	0.091	2,389,824	No	243,721
3A-20P-1 US	0.000	0.227	0.100	0.100	6,499,273	No	243,721
3A-20P-1 DS	0.278	0.217	0.100	0.100	5,934,310	Yes	243,721
3A-21	0.305	0.223	0.085	0.085	4,131,319	Yes	243,721
3A-21P	0.292	0.218	0.100	0.100	5,231,043	Yes	243,721
3A-21N	0.000	0.266	0.085	0.085	5,090,560	No	243,721
===>Grouped by Line:	**MSD30-1-MS21B to MSDT 21B**				***Sorted By:Flow Order***		
1B-16N	0.000	0.230	0.085	0.085	8,308,051	No	243,721
1B-16P-1	0.435	0.398	0.100	0.100	30,009,024	Yes	243,721
1B-16 (BR/SE)	0.000	0.254	0.085	0.085	14,303,472	No	243,721
1B-16 (D/S)	0.000	0.361	0.085	0.085	19,342,148	No	243,721
1B-16P	0.000	0.242	0.100	0.100	20,440,796	No	243,721
===>Grouped by Line:	**MSD30-2-MS21B to MSDT 21B**				***Sorted By:Flow Order***		
1B-18N	0.000	0.230	0.085	0.085	8,308,051	No	243,721
1B-18P	0.000	0.239	0.100	0.100	14,834,947	No	243,721
===>Grouped by Line:	**MSD30-3-MS21B to MSDT 21B**				***Sorted By:Flow Order***		
1B-19N	0.000	0.230	0.085	0.085	8,308,051	No	243,721
1B-19P-1	0.407	0.376	0.100	0.100	28,036,848	No	243,721
1B-19 (BR/SE)	0.000	0.225	0.085	0.085	11,844,856	No	243,721
1B-19 (D/S)	0.000	0.354	0.085	0.085	18,850,012	No	243,721
1B-19P	0.398	0.360	0.100	0.100	35,875,264	Yes	243,721
===>Grouped by Line:	**MSD30-4-MS21B to MSDT 21B**				***Sorted By:Flow Order***		
1B-18 (BR/SE)	0.000	0.235	0.085	0.085	12,692,655	No	243,721
1B-18	0.396	0.353	0.085	0.085	18,012,070	No	243,721
1B-18 (D/S)	0.000	0.356	0.085	0.085	10,468,850	No	243,721
===>Grouped by Line:	**MSD30-5-MS21B to MSDT 21B**				***Sorted By:Flow Order***		
1B-17	0.415	0.360	0.085	0.085	15,020,887	No	243,721
1B-17 (D/S)	0.000	0.349	0.085	0.085	8,381,436	No	243,721
1B-17 (BR/SE)	0.000	0.229	0.085	0.085	3,237,330	No	243,721
1B-17P	0.000	0.229	0.100	0.100	7,267,378	No	243,721

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line:	**MSD30-5-MS21B to MSDT 21B**				***Sorted By:Flow Order***		
1B-20	0.000	0.211	0.085	0.085	3,829,317	No	243,721
1B-VALVE-5EX-19	0.000	0.198	0.091	0.091	2,389,824	No	243,721
1B-20P	0.000	0.227	0.100	0.100	6,499,273	No	243,721
1B-VALVE-5EX-19F	0.000	0.198	0.091	0.091	2,389,824	No	243,721
1B-20P-1	0.000	0.227	0.100	0.100	6,499,273	No	243,721
1B-20N	0.000	0.208	0.085	0.085	3,453,486	No	243,721
===>Grouped by Line:	**MSD31-1-MS22B to MSDT 22B**				***Sorted By:Flow Order***		
2B-16N	0.000	0.230	0.085	0.085	8,308,051	No	243,721
2B-16P-1	0.413	0.381	0.100	0.100	28,491,660	No	243,721
2B-16 (BR/SE)	0.000	0.260	0.085	0.085	14,812,153	No	243,721
2B-16 (D/S)	0.000	0.358	0.085	0.085	19,131,234	No	243,721
2B-16P	0.000	0.242	0.100	0.100	20,440,796	No	243,721
===>Grouped by Line:	**MSD31-2-MS22B to MSDT 22B**				***Sorted By:Flow Order***		
2B-18N	0.000	0.230	0.085	0.085	8,308,051	No	243,721
2B-18P1	0.000	0.242	0.100	0.100	20,440,796	No	243,721
===>Grouped by Line:	**MSD31-3-MS22B to MSDT 22B**				***Sorted By:Flow Order***		
2B-19N	0.000	0.230	0.085	0.085	8,308,051	No	243,721
2B-19P-1	0.419	0.374	0.100	0.100	27,728,474	Yes	243,721
2B-19 (BR/SE)	0.000	0.232	0.100	0.100	11,201,856	No	243,721
2B-19 (D/S)	0.000	0.345	0.100	0.100	17,191,908	No	243,721
2B-19P	0.000	0.242	0.100	0.100	20,440,796	No	243,721
===>Grouped by Line:	**MSD31-4-MS22B to MSDT 22B**				***Sorted By:Flow Order***		
2B-18 (BR/SE)	0.000	0.236	0.100	0.100	11,537,387	No	243,721
2B-18	0.367	0.341	0.100	0.100	16,373,966	No	243,721
2B-18 (D/S)	0.000	0.347	0.100	0.100	9,555,313	No	243,721
2B-18P	0.000	0.230	0.100	0.100	7,642,682	No	243,721
===>Grouped by Line:	**MSD31-5-MS22B to MSDT 22B**				***Sorted By:Flow Order***		
2B-17	0.411	0.357	0.100	0.100	14,075,208	No	243,721
2B-17 (D/S)	0.000	0.352	0.100	0.100	8,013,487	No	243,721
2B-17 (BR/SE)	0.000	0.217	0.100	0.100	2,638,459	No	243,721
2B-17P	0.000	0.229	0.100	0.100	7,267,378	No	243,721
2B-20	0.000	0.211	0.085	0.085	3,829,317	No	243,721

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line:	**MSD31-5-MS22B to MSDT 22B**				***Sorted By:Flow Order***		
2B-VALVE-5EX-19D	0.000	0.198	0.091	0.091	2,389,824	No	243,721
2B-20P	0.000	0.227	0.100	0.100	6,499,273	No	243,721
2B-VALVE-5EX-19E	0.000	0.198	0.091	0.091	2,389,824	No	243,721
2B-20P-1	0.000	0.227	0.100	0.100	6,499,273	No	243,721
2B-20N	0.000	0.208	0.085	0.085	3,453,486	No	243,721
===>Grouped by Line:	**MSD32-1-MS23B to MSDT 23B**				***Sorted By:Flow Order***		
3B-16N	0.000	0.230	0.085	0.085	8,308,051	No	243,721
3B-16P-1	0.000	0.239	0.100	0.100	14,834,947	No	243,721
3B-16 (BR/SE)	0.000	0.241	0.085	0.085	13,201,334	No	243,721
3B-16 (D/S)	0.000	0.348	0.085	0.085	18,428,182	No	243,721
3B-16P	0.000	0.242	0.100	0.100	20,440,796	No	243,721
===>Grouped by Line:	**MSD32-2-MS23B to MSDT 23B**				***Sorted By:Flow Order***		
3B-18N	0.000	0.230	0.085	0.085	8,308,051	No	243,721
3B-18P1	0.000	0.242	0.100	0.100	20,440,796	No	243,721
===>Grouped by Line:	**MSD32-3-MS23B to MSDT 23B**				***Sorted By:Flow Order***		
3B-19N	0.000	0.230	0.085	0.085	8,308,051	No	243,721
3B-19P-1	0.000	0.239	0.100	0.100	14,834,947	No	243,721
3B-19 (BR/SE)	0.000	0.244	0.085	0.085	13,455,673	No	243,721
3B-19 (D/S)	0.000	0.367	0.085	0.085	19,763,982	No	243,721
3B-19P	0.000	0.242	0.100	0.100	20,440,796	No	243,721
===>Grouped by Line:	**MSD32-4-MS23B to MSDT 23B**				***Sorted By:Flow Order***		
3B-18 (BR/SE)	0.000	0.227	0.085	0.085	12,014,416	No	243,721
3B-18	0.417	0.368	0.085	0.085	18,894,704	No	243,721
3B-18 (D/S)	0.000	0.368	0.085	0.085	10,933,669	No	243,721
3B-18P	0.000	0.230	0.100	0.100	7,642,682	No	243,721
===>Grouped by Line:	**MSD32-5-MS23B to MSDT 23B**				***Sorted By:Flow Order***		
3B-17	0.437	0.356	0.100	0.100	13,959,305	No	243,721
3B-17 (D/S)	0.000	0.358	0.100	0.100	8,204,062	No	243,721
3B-17 (BR/SE)	0.000	0.223	0.100	0.100	2,773,622	No	243,721
3B-17P	0.000	0.229	0.100	0.100	7,267,378	No	243,721
3B-20	0.000	0.350	0.085	0.085	8,066,033	Yes	243,721
3B-VALVE-5EX-19B	0.000	0.198	0.091	0.091	2,389,824	No	243,721

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **MSD32-5-MS23B to MSDT 23B**					***Sorted By:Flow Order***		
3B-20P	0.000	0.227	0.100	0.100	6,499,273	No	243,721
3B-VALVE-5EX-19C	0.000	0.198	0.091	0.091	2,389,824	No	243,721
3B-20P-1	0.000	0.227	0.100	0.100	6,499,273	No	243,721
3B-21	0.000	0.211	0.085	0.085	3,829,317	No	243,721
3B-21P	0.000	0.224	0.100	0.100	5,577,548	No	243,721
3B-21N	0.000	0.208	0.085	0.085	3,453,486	No	243,721

Note:
[1] Predictions are based on last Tmeas to analysis ending period.

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).db

Wear Rate Report

Pass 1 Analysis Exclude Measured Wear

Report Date/Time: 7/6/2010 3:38:15PM
AnalysisDate/Time: 7/6/2010 3:23:57PM

CHECWORKS SFA Version: 3.0 SP-1 (build 109)

Duty Factor (Global) : 1.000

Run Name: PD - MPS TO SEP TNK
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 1.000

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***PD-MPS A to Separating Tk A***								***Sorted By: Average Wear Rate***		
TEMP07	31	17.401	10.285	387.9	17.603	92.2	20.000	6.954	0.000	324.64	HBD
===>Grouped by Line:	***PD-MPS B to Separating Tk A***								***Sorted By: Average Wear Rate***		
TEMP08	31	17.401	10.285	387.9	17.603	92.2	20.000	6.954	0.000	324.64	HBD
===>Grouped by Line:	***PD-MPS C to Separating Tk B***								***Sorted By: Average Wear Rate***		
TEMP09	31	17.401	10.285	387.9	17.603	92.2	20.000	6.954	0.000	324.64	HBD
===>Grouped by Line:	***PD-MPS D to Separating Tk B***								***Sorted By: Average Wear Rate***		
TEMP10	31	17.401	10.285	387.9	17.603	92.2	20.000	6.954	0.000	324.64	HBD

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).db

Wear Rate Report

Pass 1 Analysis Exclude Measured Wear

Report Date/Time: 7/6/2010 3:37:44PM
AnalysisDate/Time: 7/6/2010 3:23:57PM

CHECWORKS SFA Version: 3.0 SP-1 (build 109)
Duty Factor (Global) : 1.000

Run Name: PD - MPS TO SEP TNK
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 1.000

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***PD-MPS A to Separating Tk A***									***Sorted By: Flow Order***	
TEMP07	31	17.401	10.285	387.9	17.603	92.2	20.000	6.954	0.000	324.64	HBD
===>Grouped by Line:	***PD-MPS B to Separating Tk A***									***Sorted By: Flow Order***	
TEMP08	31	17.401	10.285	387.9	17.603	92.2	20.000	6.954	0.000	324.64	HBD
===>Grouped by Line:	***PD-MPS C to Separating Tk B***									***Sorted By: Flow Order***	
TEMP09	31	17.401	10.285	387.9	17.603	92.2	20.000	6.954	0.000	324.64	HBD
===>Grouped by Line:	***PD-MPS D to Separating Tk B***									***Sorted By: Flow Order***	
TEMP10	31	17.401	10.285	387.9	17.603	92.2	20.000	6.954	0.000	324.64	HBD

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).db

Service Life Report

Pass 1 Analysis Exclude Measured Wear

Report Date/Time: 7/6/2010 3:37:44PM
AnalysisDate/Time: 7/6/2010 3:23:57PM

Run Name: PD - MPS TO SEP TNK
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 1.000

CHECWORKS SFA Version: 3.0 SP-1 (build 109)
Duty Factor (Global) :1.000

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **PD-MPS A to Separating Tk A**					***Sorted By:Remaining Life***		
TEMP07	0.000	-0.109	0.166	0.166	-162,782	No	243,721
===>Grouped by Line: **PD-MPS B to Separating Tk A**					***Sorted By:Remaining Life***		
TEMP08	0.000	-0.109	0.166	0.166	-162,782	No	243,721
===>Grouped by Line: **PD-MPS C to Separating Tk B**					***Sorted By:Remaining Life***		
TEMP09	0.000	-0.109	0.166	0.166	-162,782	No	243,721
===>Grouped by Line: **PD-MPS D to Separating Tk B**					***Sorted By:Remaining Life***		
TEMP10	0.000	-0.109	0.166	0.166	-162,782	No	243,721

Note:
[1] Predictions are based on last Tmeas to analysis ending period.

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).db

Service Life Report

Pass 1 Analysis Exclude Measured Wear

Report Date/Time: 7/6/2010 3:37:44PM
AnalysisDate/Time: 7/6/2010 3:23:57PM

Run Name: PD - MPS TO SEP TNK
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 1.000

CHECWORKS SFA Version: 3.0 SP-1 (build 109)
Duty Factor (Global) : 1.000

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **PD-MPS A to Separating Tk A**					***Sorted By:Flow Order***		
TEMP07	0.000	-0.109	0.166	0.166	-162,782	No	243,721
===>Grouped by Line: **PD-MPS B to Separating Tk A**					***Sorted By:Flow Order***		
TEMP08	0.000	-0.109	0.166	0.166	-162,782	No	243,721
===>Grouped by Line: **PD-MPS C to Separating Tk B**					***Sorted By:Flow Order***		
TEMP09	0.000	-0.109	0.166	0.166	-162,782	No	243,721
===>Grouped by Line: **PD-MPS D to Separating Tk B**					***Sorted By:Flow Order***		
TEMP10	0.000	-0.109	0.166	0.166	-162,782	No	243,721

Note:
[1] Predictions are based on last Tmeas to analysis ending period.

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).db

Wear Rate Report

Pass 1 Analysis Exclude Measured Wear

Report Date/Time: 7/6/2010 3:38:15PM
AnalysisDate/Time: 7/6/2010 3:24:10PM

CHECWORKS SFA Version: 3.0 SP-1 (build 109)

Duty Factor (Global) : 1.000

Run Name: RHTR DRN TK 21A USCV
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 1.000

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***MSD45A-1-RHDT21A to CV***								***Sorted By: Average Wear Rate***		
MS-1A11N	31	4.892	1.655	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A24FE	6	4.892	1.655	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A11	2	3.620	1.225	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A12	2	3.620	1.225	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A28	2	3.620	1.225	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A13	2	3.620	1.225	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A29	2	3.620	1.225	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A14	2	3.620	1.225	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A30	2	3.620	1.225	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A15	2	3.620	1.225	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A16	2	3.620	1.225	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A17	4	3.620	1.225	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A20	3	3.425	1.158	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A30R-1 (D/S)	17	3.282	1.146	495.9	15.767	3.3	4.500	6.403	0.000	60.39	HBD
MS-1A26	1	3.229	1.092	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A27	1	3.229	1.092	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A14A	1	3.229	1.092	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A18	1	3.229	1.092	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A19	1	3.229	1.092	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A21	1	3.229	1.092	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A17P US	54	3.131	1.059	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A17P DS	54	3.131	1.059	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A25 (D/S)	15	2.935	0.993	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A25	15	2.935	0.993	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A21R	18	2.740	0.927	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A11P-1	61	2.642	0.894	495.9	10.806	3.3	6.625	6.403	0.000	60.39	HBD

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***MSD45A-1-RHDT21A to CV***								***Sorted By: Average Wear Rate***		
MS-1A11P US	52	2.446	0.827	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A11P DS	52	2.446	0.827	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A12P US	52	2.446	0.827	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A12P DS	52	2.446	0.827	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A28P US	52	2.446	0.827	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A28P DS	52	2.446	0.827	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A13P US	52	2.446	0.827	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A29P US	52	2.446	0.827	495.9	10.806	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A13P DS	52	2.446	0.827	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A29P DS	52	2.446	0.827	495.9	10.806	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A14P US	52	2.446	0.827	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A14AP	52	2.446	0.827	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A30P-1	52	2.446	0.827	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A30R-1	17	2.446	0.827	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A14P DS	52	2.446	0.827	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A15P US	52	2.446	0.827	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A15P DS	52	2.446	0.827	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A16P	52	2.446	0.827	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A20P	53	2.446	0.827	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A26P	51	2.153	0.728	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A27P	51	2.153	0.728	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A18P	51	2.153	0.728	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A21P US	51	2.153	0.728	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A21P DS	51	2.153	0.728	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A22	2	2.149	0.727	495.9	3.910	3.3	8.625	6.403	0.000	60.39	HBD
MS-1A23	2	2.149	0.727	495.9	3.910	3.3	8.625	6.403	0.000	60.39	HBD
MS-1A24	4	2.149	0.727	495.9	3.910	3.3	8.625	6.403	0.000	60.39	HBD
MS-1A25P	65	1.957	0.662	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A24P-1	67	1.957	0.662	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A24P DS	54	1.859	0.629	495.9	3.910	3.3	8.625	6.403	0.000	60.39	HBD
MS-1A24R (D/S)	17	1.761	0.596	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A21R (D/S)	18	1.743	0.589	495.9	3.910	3.3	8.625	6.403	0.000	60.39	HBD
MS-1A21P-1	68	1.452	0.491	495.9	3.910	3.3	8.625	6.403	0.000	60.39	HBD
MS-1A22P US	52	1.452	0.491	495.9	3.910	3.3	8.625	6.403	0.000	60.39	HBD

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***MSD45A-1-RHDT21A to CV***								***Sorted By: Average Wear Rate***		
MS-1A22P DS	52	1.452	0.491	495.9	3.910	3.3	8.625	6.403	0.000	60.39	HBD
MS-1A22P-1	52	1.452	0.491	495.9	3.910	3.3	8.625	6.403	0.000	60.39	HBD
MS-1A24R	17	1.452	0.491	495.9	3.910	3.3	8.625	6.403	0.000	60.39	HBD
MS-1A25P-1	56	0.996	0.337	495.9	7.053	3.3	6.625	6.403	0.000	60.39	HBD

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).db

Wear Rate Report

Pass 1 Analysis Exclude Measured Wear

Report Date/Time: 7/6/2010 3:37:44PM
AnalysisDate/Time: 7/6/2010 3:24:10PM

CHECWORKS SFA Version: 3.0 SP-1 (build 109)
Duty Factor (Global) : 1.000

Run Name: RHTR DRN TK 21A USCV
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 1.000

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***MSD45A-1-RHDT21A to CV***									***Sorted By: Flow Order***	
MS-1A11N	31	4.892	1.655	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A11P-1	61	2.642	0.894	495.9	10.806	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A11	2	3.620	1.225	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A11P US	52	2.446	0.827	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A11P DS	52	2.446	0.827	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A12	2	3.620	1.225	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A12P US	52	2.446	0.827	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A12P DS	52	2.446	0.827	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A13	2	3.620	1.225	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A13P US	52	2.446	0.827	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A13P DS	52	2.446	0.827	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A14	2	3.620	1.225	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A14P US	52	2.446	0.827	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A14AP	52	2.446	0.827	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A14P DS	52	2.446	0.827	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A14A	1	3.229	1.092	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A15	2	3.620	1.225	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A15P US	52	2.446	0.827	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A15P DS	52	2.446	0.827	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A16	2	3.620	1.225	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A16P	52	2.446	0.827	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A17	4	3.620	1.225	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A17P US	54	3.131	1.059	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A17P DS	54	3.131	1.059	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A18	1	3.229	1.092	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A18P	51	2.153	0.728	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	MSD45A-1-RHDT21A to CV									Sorted By: Flow Order	
MS-1A19	1	3.229	1.092	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A20	3	3.425	1.158	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A20P	53	2.446	0.827	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A21	1	3.229	1.092	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A21P US	51	2.153	0.728	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A21P DS	51	2.153	0.728	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A21R	18	2.740	0.927	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A21R (D/S)	18	1.743	0.589	495.9	3.910	3.3	8.625	6.403	0.000	60.39	HBD
MS-1A21P-1	68	1.452	0.491	495.9	3.910	3.3	8.625	6.403	0.000	60.39	HBD
MS-1A22	2	2.149	0.727	495.9	3.910	3.3	8.625	6.403	0.000	60.39	HBD
MS-1A22P US	52	1.452	0.491	495.9	3.910	3.3	8.625	6.403	0.000	60.39	HBD
MS-1A22P DS	52	1.452	0.491	495.9	3.910	3.3	8.625	6.403	0.000	60.39	HBD
MS-1A22P-1	52	1.452	0.491	495.9	3.910	3.3	8.625	6.403	0.000	60.39	HBD
MS-1A23	2	2.149	0.727	495.9	3.910	3.3	8.625	6.403	0.000	60.39	HBD
MS-1A24	4	2.149	0.727	495.9	3.910	3.3	8.625	6.403	0.000	60.39	HBD
MS-1A24P DS	54	1.859	0.629	495.9	3.910	3.3	8.625	6.403	0.000	60.39	HBD
MS-1A24R	17	1.452	0.491	495.9	3.910	3.3	8.625	6.403	0.000	60.39	HBD
MS-1A24R (D/S)	17	1.761	0.596	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A24P-1	67	1.957	0.662	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A24FE	6	4.892	1.655	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A25P-1	56	0.996	0.337	495.9	7.053	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A25	15	2.935	0.993	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A25 (D/S)	15	2.935	0.993	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A25P	65	1.957	0.662	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A26	1	3.229	1.092	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A26P	51	2.153	0.728	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A27	1	3.229	1.092	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A27P	51	2.153	0.728	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A28	2	3.620	1.225	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A28P US	52	2.446	0.827	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A28P DS	52	2.446	0.827	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A29	2	3.620	1.225	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A29P US	52	2.446	0.827	495.9	10.806	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A29P DS	52	2.446	0.827	495.9	10.806	3.3	6.625	6.403	0.000	60.39	HBD

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***MSD45A-1-RHDT21A to CV***									***Sorted By: Flow Order***	
MS-1A30	2	3.620	1.225	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A30P-1	52	2.446	0.827	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A30R-1	17	2.446	0.827	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A30R-1 (D/S)	17	3.282	1.146	495.9	15.767	3.3	4.500	6.403	0.000	60.39	HBD

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).db

Service Life Report

Pass 1 Analysis Exclude Measured Wear

Report Date/Time: 7/6/2010 3:37:44PM
AnalysisDate/Time: 7/6/2010 3:24:10PM

Run Name: RHTR DRN TK 21A USCV
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 1.000

CHECWORKS SFA Version: 3.0 SP-1 (build 109)
Duty Factor (Global) :1.000

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **MSD45A-1-RHDT21A to CV**					***Sorted By:Remaining Life***		
MS-1A11N	0.000	0.296	0.233	0.233	333,589	No	243,721
MS-1A24FE	0.000	0.339	0.233	0.233	560,121	No	243,721
MS-1A30R-1	0.000	0.295	0.233	0.233	661,405	No	243,721
MS-1A15	0.000	0.349	0.233	0.233	830,055	Yes	243,721
MS-1A14A	0.000	0.341	0.233	0.233	867,673	Yes	243,721
MS-1A12	0.000	0.359	0.233	0.233	901,590	Yes	243,721
MS-1A17	0.000	0.371	0.233	0.233	987,432	Yes	243,721
MS-1A30	0.000	0.371	0.233	0.233	987,432	Yes	243,721
MS-1A30R-1 (D/S)	0.000	0.288	0.158	0.158	995,184	No	243,721
MS-1A11	0.000	0.377	0.233	0.233	1,030,353	Yes	243,721
MS-1A14	0.000	0.378	0.233	0.233	1,037,506	Yes	243,721
MS-1A28	0.000	0.378	0.233	0.233	1,037,506	Yes	243,721
MS-1A19	0.000	0.364	0.233	0.233	1,052,146	Yes	243,721
MS-1A16	0.000	0.382	0.233	0.233	1,066,121	Yes	243,721
MS-1A21	0.000	0.376	0.233	0.233	1,148,393	Yes	243,721
MS-1A29	0.000	0.394	0.233	0.233	1,151,902	Yes	243,721
MS-1A13	0.000	0.395	0.233	0.233	1,159,116	Yes	243,721
MS-1A17P US	0.000	0.375	0.233	0.233	1,174,242	Yes	243,721
MS-1A20	0.000	0.389	0.233	0.233	1,184,310	Yes	243,721
MS-1A17P DS	0.000	0.379	0.233	0.233	1,207,327	Yes	243,721
MS-1A27	0.000	0.388	0.233	0.233	1,244,640	Yes	243,721
MS-1A18	0.000	0.394	0.233	0.233	1,292,763	Yes	243,721
MS-1A26	0.000	0.402	0.233	0.233	1,356,928	Yes	243,721
MS-1A11P US	0.000	0.361	0.233	0.233	1,360,158	Yes	243,721
MS-1A11P DS	0.000	0.365	0.233	0.233	1,402,506	Yes	243,721
MS-1A12P DS	0.000	0.374	0.233	0.233	1,492,293	Yes	243,721
MS-1A28P US	0.000	0.374	0.233	0.233	1,497,791	Yes	243,721

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **MSD45A-1-RHDT21A to CV**					***Sorted By:Remaining Life***		
MS-1A16P	0.000	0.376	0.233	0.233	1,516,139	Yes	243,721
MS-1A12P US	0.000	0.377	0.233	0.233	1,524,055	Yes	243,721
MS-1A11P-1	0.000	0.389	0.233	0.233	1,528,271	Yes	243,721
MS-1A13P DS	0.000	0.379	0.233	0.233	1,550,726	Yes	243,721
MS-1A13P US	0.000	0.384	0.233	0.233	1,603,662	Yes	243,721
MS-1A14P US	0.000	0.387	0.233	0.233	1,635,424	Yes	243,721
MS-1A21P US	0.000	0.370	0.233	0.233	1,646,203	Yes	243,721
MS-1A14P DS	0.000	0.389	0.233	0.233	1,656,598	Yes	243,721
MS-1A30P-1	0.000	0.389	0.233	0.233	1,656,598	Yes	243,721
MS-1A14AP	0.000	0.390	0.233	0.233	1,667,185	Yes	243,721
MS-1A26P	0.000	0.372	0.233	0.233	1,675,208	No	243,721
MS-1A20P	0.000	0.391	0.233	0.233	1,677,772	Yes	243,721
MS-1A15P US	0.000	0.395	0.233	0.233	1,720,121	Yes	243,721
MS-1A15P DS	0.000	0.398	0.233	0.233	1,751,882	Yes	243,721
MS-1A28P DS	0.000	0.400	0.233	0.233	1,767,559	Yes	243,721
MS-1A23	0.000	0.451	0.303	0.303	1,777,962	Yes	243,721
MS-1A29P US	0.000	0.402	0.233	0.233	1,788,734	Yes	243,721
MS-1A18P	0.000	0.383	0.233	0.233	1,802,605	Yes	243,721
MS-1A21P DS	0.000	0.383	0.233	0.233	1,802,605	Yes	243,721
MS-1A29P DS	0.000	0.406	0.233	0.233	1,836,580	Yes	243,721
MS-1A27P	0.000	0.388	0.233	0.233	1,862,759	Yes	243,721
MS-1A24	0.000	0.459	0.303	0.303	1,874,356	Yes	243,721
MS-1A24P-1	0.000	0.383	0.233	0.233	1,990,446	Yes	243,721
MS-1A21R	0.000	0.445	0.233	0.233	2,005,067	No	243,721
MS-1A25P	0.000	0.387	0.233	0.233	2,043,382	Yes	243,721
MS-1A25	0.000	0.469	0.233	0.233	2,084,693	No	243,721
MS-1A25 (D/S)	0.000	0.473	0.233	0.233	2,119,984	No	243,721
MS-1A22	0.000	0.481	0.303	0.303	2,139,438	Yes	243,721
MS-1A24P DS	0.000	0.457	0.303	0.303	2,144,020	Yes	243,721
MS-1A21R (D/S)	0.000	0.458	0.303	0.303	2,300,832	No	243,721
MS-1A22P US	0.000	0.459	0.303	0.303	2,784,796	Yes	243,721
MS-1A22P DS	0.000	0.460	0.303	0.303	2,802,629	Yes	243,721
MS-1A21P-1	0.000	0.466	0.303	0.303	2,909,626	Yes	243,721
MS-1A22P-1	0.000	0.468	0.303	0.303	2,945,292	Yes	243,721
MS-1A24R	0.000	0.479	0.303	0.303	3,141,452	No	243,721
MS-1A24R (D/S)	0.000	0.477	0.233	0.233	3,587,539	No	243,721
MS-1A25P-1	0.000	0.396	0.233	0.233	4,239,835	Yes	243,721

Note:
[1] Predictions are based on last Tmeas to analysis ending period.

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).db

Service Life Report

Pass 1 Analysis Exclude Measured Wear

Report Date/Time: 7/6/2010 3:37:44PM
AnalysisDate/Time: 7/6/2010 3:24:10PM

Run Name: RHTR DRN TK 21A USCV
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 1.000

CHECWORKS SFA Version: 3.0 SP-1 (build 109)
Duty Factor (Global) : 1.000

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **MSD45A-1-RHDT21A to CV**					***Sorted By:Flow Order***		
MS-1A11N	0.000	0.296	0.233	0.233	333,589	No	243,721
MS-1A11P-1	0.000	0.389	0.233	0.233	1,528,271	Yes	243,721
MS-1A11	0.000	0.377	0.233	0.233	1,030,353	Yes	243,721
MS-1A11P US	0.000	0.361	0.233	0.233	1,360,158	Yes	243,721
MS-1A11P DS	0.000	0.365	0.233	0.233	1,402,506	Yes	243,721
MS-1A12	0.000	0.359	0.233	0.233	901,590	Yes	243,721
MS-1A12P US	0.000	0.377	0.233	0.233	1,524,055	Yes	243,721
MS-1A12P DS	0.000	0.374	0.233	0.233	1,492,293	Yes	243,721
MS-1A13	0.000	0.395	0.233	0.233	1,159,116	Yes	243,721
MS-1A13P US	0.000	0.384	0.233	0.233	1,603,662	Yes	243,721
MS-1A13P DS	0.000	0.379	0.233	0.233	1,550,726	Yes	243,721
MS-1A14	0.000	0.378	0.233	0.233	1,037,506	Yes	243,721
MS-1A14P US	0.000	0.387	0.233	0.233	1,635,424	Yes	243,721
MS-1A14AP	0.000	0.390	0.233	0.233	1,667,185	Yes	243,721
MS-1A14P DS	0.000	0.389	0.233	0.233	1,656,598	Yes	243,721
MS-1A14A	0.000	0.341	0.233	0.233	867,673	Yes	243,721
MS-1A15	0.000	0.349	0.233	0.233	830,055	Yes	243,721
MS-1A15P US	0.000	0.395	0.233	0.233	1,720,121	Yes	243,721
MS-1A15P DS	0.000	0.398	0.233	0.233	1,751,882	Yes	243,721
MS-1A16	0.000	0.382	0.233	0.233	1,066,121	Yes	243,721
MS-1A16P	0.000	0.376	0.233	0.233	1,516,139	Yes	243,721
MS-1A17	0.000	0.371	0.233	0.233	987,432	Yes	243,721
MS-1A17P US	0.000	0.375	0.233	0.233	1,174,242	Yes	243,721
MS-1A17P DS	0.000	0.379	0.233	0.233	1,207,327	Yes	243,721
MS-1A18	0.000	0.394	0.233	0.233	1,292,763	Yes	243,721
MS-1A18P	0.000	0.383	0.233	0.233	1,802,605	Yes	243,721
MS-1A19	0.000	0.364	0.233	0.233	1,052,146	Yes	243,721

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **MSD45A-1-RHDT21A to CV**					***Sorted By:Flow Order***		
MS-1A20	0.000	0.389	0.233	0.233	1,184,310	Yes	243,721
MS-1A20P	0.000	0.391	0.233	0.233	1,677,772	Yes	243,721
MS-1A21	0.000	0.376	0.233	0.233	1,148,393	Yes	243,721
MS-1A21P US	0.000	0.370	0.233	0.233	1,646,203	Yes	243,721
MS-1A21P DS	0.000	0.383	0.233	0.233	1,802,605	Yes	243,721
MS-1A21R	0.000	0.445	0.233	0.233	2,005,067	No	243,721
MS-1A21R (D/S)	0.000	0.458	0.303	0.303	2,300,832	No	243,721
MS-1A21P-1	0.000	0.466	0.303	0.303	2,909,626	Yes	243,721
MS-1A22	0.000	0.481	0.303	0.303	2,139,438	Yes	243,721
MS-1A22P US	0.000	0.459	0.303	0.303	2,784,796	Yes	243,721
MS-1A22P DS	0.000	0.460	0.303	0.303	2,802,629	Yes	243,721
MS-1A22P-1	0.000	0.468	0.303	0.303	2,945,292	Yes	243,721
MS-1A23	0.000	0.451	0.303	0.303	1,777,962	Yes	243,721
MS-1A24	0.000	0.459	0.303	0.303	1,874,356	Yes	243,721
MS-1A24P DS	0.000	0.457	0.303	0.303	2,144,020	Yes	243,721
MS-1A24R	0.000	0.479	0.303	0.303	3,141,452	No	243,721
MS-1A24R (D/S)	0.000	0.477	0.233	0.233	3,587,539	No	243,721
MS-1A24P-1	0.000	0.383	0.233	0.233	1,990,446	Yes	243,721
MS-1A24FE	0.000	0.339	0.233	0.233	560,121	No	243,721
MS-1A25P-1	0.000	0.396	0.233	0.233	4,239,835	Yes	243,721
MS-1A25	0.000	0.469	0.233	0.233	2,084,693	No	243,721
MS-1A25 (D/S)	0.000	0.473	0.233	0.233	2,119,984	No	243,721
MS-1A25P	0.000	0.387	0.233	0.233	2,043,382	Yes	243,721
MS-1A26	0.000	0.402	0.233	0.233	1,356,928	Yes	243,721
MS-1A26P	0.000	0.372	0.233	0.233	1,675,208	No	243,721
MS-1A27	0.000	0.388	0.233	0.233	1,244,640	Yes	243,721
MS-1A27P	0.000	0.388	0.233	0.233	1,862,759	Yes	243,721
MS-1A28	0.000	0.378	0.233	0.233	1,037,506	Yes	243,721
MS-1A28P US	0.000	0.374	0.233	0.233	1,497,791	Yes	243,721
MS-1A28P DS	0.000	0.400	0.233	0.233	1,767,559	Yes	243,721
MS-1A29	0.000	0.394	0.233	0.233	1,151,902	Yes	243,721
MS-1A29P US	0.000	0.402	0.233	0.233	1,788,734	Yes	243,721
MS-1A29P DS	0.000	0.406	0.233	0.233	1,836,580	Yes	243,721
MS-1A30	0.000	0.371	0.233	0.233	987,432	Yes	243,721
MS-1A30P-1	0.000	0.389	0.233	0.233	1,656,598	Yes	243,721
MS-1A30R-1	0.000	0.295	0.233	0.233	661,405	No	243,721
MS-1A30R-1 (D/S)	0.000	0.288	0.158	0.158	995,184	No	243,721

Note:
[1] Predictions are based on last Tmeas to analysis ending period.

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).db

Wear Rate Report

Pass 1 Analysis Exclude Measured Wear

Report Date/Time: 7/6/2010 3:38:15PM
AnalysisDate/Time: 7/6/2010 3:24:22PM

CHECWORKS SFA Version: 3.0 SP-1 (build 109)

Duty Factor (Global) : 1.000

Run Name: RHTR DRN TK 21B USCV
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 1.000

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***MSD48A-1-RHDT21B to CV***								***Sorted By: Average Wear Rate***		
MS-1B11N	31	4.892	1.655	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1B14FE	6	4.892	1.655	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1B25	4	3.620	1.225	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1B11	2	3.620	1.225	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1B12	2	3.620	1.225	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1B26	2	3.620	1.225	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1B27	2	3.620	1.225	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1B28	2	3.620	1.225	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1B14	2	3.620	1.225	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1B29	2	3.620	1.225	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1B15	2	3.620	1.225	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1B30	2	3.620	1.225	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1B16	2	3.620	1.225	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1B32	2	3.620	1.225	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1B18	2	3.620	1.225	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1B33	2	3.620	1.225	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1B19	2	3.620	1.225	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1B20	2	3.620	1.225	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1B33R (D/S)	17	3.282	1.146	495.9	15.767	3.3	4.500	6.403	0.000	60.39	HBD
MS-1B13	1	3.229	1.092	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1B31	1	3.229	1.092	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1B17	1	3.229	1.092	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1B25P	54	3.131	1.059	495.9	7.569	3.3	6.625	6.403	0.000	60.39	HBD
MS-1B24 (D/S)	15	2.935	0.993	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1B24	15	2.935	0.993	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1B20R	18	2.740	0.927	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***MSD48A-1-RHDT21B to CV***								***Sorted By: Average Wear Rate***		
MS-1B11P-1	61	2.642	0.894	495.9	10.806	3.3	6.625	6.403	0.000	60.39	HBD
MS-1B11P	52	2.446	0.827	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1B12P	52	2.446	0.827	495.9	10.806	3.3	6.625	6.403	0.000	60.39	HBD
MS-1B27P-1	52	2.446	0.827	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1B27P	52	2.446	0.827	495.9	10.806	3.3	6.625	6.403	0.000	60.39	HBD
MS-1B28P	52	2.446	0.827	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1B14P	52	2.446	0.827	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1B29P	52	2.446	0.827	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1B15P	52	2.446	0.827	495.9	10.806	3.3	6.625	6.403	0.000	60.39	HBD
MS-1B30P	52	2.446	0.827	495.9	10.806	3.3	6.625	6.403	0.000	60.39	HBD
MS-1B16P	52	2.446	0.827	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1B32P US	52	2.446	0.827	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1B32P DS	52	2.446	0.827	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1B18P DS	52	2.446	0.827	495.9	8.745	3.3	6.625	6.403	0.000	60.39	HBD
MS-1B33P	52	2.446	0.827	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1B19P US	52	2.446	0.827	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1B33R	17	2.446	0.827	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1B13P	51	2.153	0.728	495.9	10.806	3.3	6.625	6.403	0.000	60.39	HBD
MS-1B31P US	51	2.153	0.728	495.9	10.806	3.3	6.625	6.403	0.000	60.39	HBD
MS-1B31P DS	51	2.153	0.728	495.9	10.806	3.3	6.625	6.403	0.000	60.39	HBD
MS-1B17P	51	2.153	0.728	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1B21	2	2.149	0.727	495.9	3.910	3.3	8.625	6.403	0.000	60.39	HBD
MS-1B22	4	2.149	0.727	495.9	3.910	3.3	8.625	6.403	0.000	60.39	HBD
MS-1B23	2	2.149	0.727	495.9	3.910	3.3	8.625	6.403	0.000	60.39	HBD
MS-1B24P US	65	1.957	0.662	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1B22P	54	1.859	0.629	495.9	3.910	3.3	8.625	6.403	0.000	60.39	HBD
MS-1B23R (D/S)	17	1.761	0.596	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1B20R (D/S)	18	1.743	0.589	495.9	3.910	3.3	8.625	6.403	0.000	60.39	HBD
MS-1B20P-1	52	1.452	0.491	495.9	3.910	3.3	8.625	6.403	0.000	60.39	HBD
MS-1B20P	68	1.452	0.491	495.9	3.910	3.3	8.625	6.403	0.000	60.39	HBD
MS-1B23P	52	1.452	0.491	495.9	3.910	3.3	8.625	6.403	0.000	60.39	HBD
MS-1B23R	17	1.452	0.491	495.9	3.910	3.3	8.625	6.403	0.000	60.39	HBD
MS-1B14P-1 US	56	0.978	0.331	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).db

Wear Rate Report

Pass 1 Analysis Exclude Measured Wear

Report Date/Time: 7/6/2010 3:37:44PM
AnalysisDate/Time: 7/6/2010 3:24:22PM

CHECWORKS SFA Version: 3.0 SP-1 (build 109)
Duty Factor (Global) : 1.000

Run Name: RHTR DRN TK 21B USCV
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 1.000

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***MSD48A-1-RHDT21B to CV***									***Sorted By: Flow Order***	
MS-1B11N	31	4.892	1.655	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1B11P-1	61	2.642	0.894	495.9	10.806	3.3	6.625	6.403	0.000	60.39	HBD
MS-1B11	2	3.620	1.225	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1B11P	52	2.446	0.827	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1B12	2	3.620	1.225	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1B12P	52	2.446	0.827	495.9	10.806	3.3	6.625	6.403	0.000	60.39	HBD
MS-1B13	1	3.229	1.092	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1B13P	51	2.153	0.728	495.9	10.806	3.3	6.625	6.403	0.000	60.39	HBD
MS-1B14	2	3.620	1.225	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1B14P	52	2.446	0.827	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1B14FE	6	4.892	1.655	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1B14P-1 US	56	0.978	0.331	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1B15	2	3.620	1.225	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1B15P	52	2.446	0.827	495.9	10.806	3.3	6.625	6.403	0.000	60.39	HBD
MS-1B16	2	3.620	1.225	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1B16P	52	2.446	0.827	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1B17	1	3.229	1.092	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1B17P	51	2.153	0.728	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1B18	2	3.620	1.225	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1B18P DS	52	2.446	0.827	495.9	8.745	3.3	6.625	6.403	0.000	60.39	HBD
MS-1B19	2	3.620	1.225	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1B19P US	52	2.446	0.827	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1B20	2	3.620	1.225	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1B20P-1	52	1.452	0.491	495.9	3.910	3.3	8.625	6.403	0.000	60.39	HBD
MS-1B20R	18	2.740	0.927	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1B20R (D/S)	18	1.743	0.589	495.9	3.910	3.3	8.625	6.403	0.000	60.39	HBD

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	MSD48A-1-RHDT21B to CV									Sorted By: Flow Order	
MS-1B20P	68	1.452	0.491	495.9	3.910	3.3	8.625	6.403	0.000	60.39	HBD
MS-1B21	2	2.149	0.727	495.9	3.910	3.3	8.625	6.403	0.000	60.39	HBD
MS-1B22	4	2.149	0.727	495.9	3.910	3.3	8.625	6.403	0.000	60.39	HBD
MS-1B22P	54	1.859	0.629	495.9	3.910	3.3	8.625	6.403	0.000	60.39	HBD
MS-1B23	2	2.149	0.727	495.9	3.910	3.3	8.625	6.403	0.000	60.39	HBD
MS-1B23P	52	1.452	0.491	495.9	3.910	3.3	8.625	6.403	0.000	60.39	HBD
MS-1B23R	17	1.452	0.491	495.9	3.910	3.3	8.625	6.403	0.000	60.39	HBD
MS-1B23R (D/S)	17	1.761	0.596	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1B24	15	2.935	0.993	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1B24 (D/S)	15	2.935	0.993	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1B24P US	65	1.957	0.662	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1B25	4	3.620	1.225	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1B25P	54	3.131	1.059	495.9	7.569	3.3	6.625	6.403	0.000	60.39	HBD
MS-1B26	2	3.620	1.225	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1B27P-1	52	2.446	0.827	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1B27	2	3.620	1.225	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1B27P	52	2.446	0.827	495.9	10.806	3.3	6.625	6.403	0.000	60.39	HBD
MS-1B28	2	3.620	1.225	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1B28P	52	2.446	0.827	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1B29	2	3.620	1.225	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1B29P	52	2.446	0.827	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1B30	2	3.620	1.225	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1B30P	52	2.446	0.827	495.9	10.806	3.3	6.625	6.403	0.000	60.39	HBD
MS-1B31	1	3.229	1.092	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1B31P US	51	2.153	0.728	495.9	10.806	3.3	6.625	6.403	0.000	60.39	HBD
MS-1B31P DS	51	2.153	0.728	495.9	10.806	3.3	6.625	6.403	0.000	60.39	HBD
MS-1B32	2	3.620	1.225	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1B32P US	52	2.446	0.827	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1B32P DS	52	2.446	0.827	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1B33	2	3.620	1.225	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1B33P	52	2.446	0.827	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1B33R	17	2.446	0.827	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1B33R (D/S)	17	3.282	1.146	495.9	15.767	3.3	4.500	6.403	0.000	60.39	HBD

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).db

Service Life Report

Pass 1 Analysis Exclude Measured Wear

Report Date/Time: 7/6/2010 3:37:44PM
AnalysisDate/Time: 7/6/2010 3:24:22PM

Run Name: RHTR DRN TK 21B USCV
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 1.000

CHECWORKS SFA Version: 3.0 SP-1 (build 109)
Duty Factor (Global) :1.000

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **MSD48A-1-RHDT21B to CV**					***Sorted By:Remaining Life***		
MS-1B11N	0.000	0.296	0.233	0.233	333,589	No	243,721
MS-1B14FE	0.000	0.296	0.233	0.233	333,589	No	243,721
MS-1B20	0.000	0.331	0.233	0.233	703,959	No	243,721
MS-1B18	0.000	0.331	0.233	0.233	703,959	No	243,721
MS-1B16	0.000	0.331	0.233	0.233	703,959	No	243,721
MS-1B15	0.000	0.331	0.233	0.233	703,959	No	243,721
MS-1B14	0.000	0.331	0.233	0.233	703,959	No	243,721
MS-1B27	0.000	0.331	0.233	0.233	703,959	No	243,721
MS-1B28	0.000	0.331	0.233	0.233	703,959	No	243,721
MS-1B29	0.000	0.331	0.233	0.233	703,959	No	243,721
MS-1B30	0.000	0.331	0.233	0.233	703,959	No	243,721
MS-1B19	0.000	0.355	0.233	0.233	873,395	Yes	243,721
MS-1B17	0.000	0.342	0.233	0.233	876,625	No	243,721
MS-1B13	0.000	0.342	0.233	0.233	876,625	No	243,721
MS-1B31	0.000	0.342	0.233	0.233	876,625	No	243,721
MS-1B33	0.000	0.358	0.233	0.233	898,283	Yes	243,721
MS-1B32	0.000	0.361	0.233	0.233	919,743	Yes	243,721
MS-1B25	0.000	0.362	0.233	0.233	924,517	Yes	243,721
MS-1B12	0.000	0.369	0.233	0.233	973,125	Yes	243,721
MS-1B11	0.000	0.390	0.233	0.233	1,123,348	Yes	243,721
MS-1B26	0.000	0.390	0.233	0.233	1,125,904	Yes	243,721
MS-1B20R	0.000	0.356	0.233	0.233	1,161,833	No	243,721
MS-1B33R (D/S)	0.000	0.322	0.158	0.158	1,251,328	Yes	243,721
MS-1B11P	0.000	0.356	0.233	0.233	1,307,222	Yes	243,721
MS-1B25P	0.000	0.396	0.233	0.233	1,350,366	Yes	243,721
MS-1B16P	0.000	0.364	0.233	0.233	1,387,718	No	243,721
MS-1B15P	0.000	0.364	0.233	0.233	1,387,718	No	243,721

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>*Grouped by Line:* **MSD48A-1-RHDT21B to CV**					***Sorted By:Remaining Life***		
MS-1B14P	0.000	0.364	0.233	0.233	1,387,718	No	243,721
MS-1B27P	0.000	0.364	0.233	0.233	1,387,718	No	243,721
MS-1B28P	0.000	0.364	0.233	0.233	1,387,718	No	243,721
MS-1B29P	0.000	0.364	0.233	0.233	1,387,718	No	243,721
MS-1B30P	0.000	0.364	0.233	0.233	1,387,718	No	243,721
MS-1B11P-1	0.000	0.385	0.233	0.233	1,489,059	Yes	243,721
MS-1B32P US	0.000	0.385	0.233	0.233	1,615,520	Yes	243,721
MS-1B33P	0.000	0.386	0.233	0.233	1,626,107	Yes	243,721
MS-1B12P	0.000	0.387	0.233	0.233	1,635,424	Yes	243,721
MS-1B21	0.000	0.440	0.303	0.303	1,651,151	No	243,721
MS-1B23	0.000	0.440	0.303	0.303	1,651,151	No	243,721
MS-1B17P	0.000	0.372	0.233	0.233	1,675,208	No	243,721
MS-1B13P	0.000	0.372	0.233	0.233	1,675,208	No	243,721
MS-1B31P US	0.000	0.372	0.233	0.233	1,675,208	No	243,721
MS-1B19P US	0.000	0.394	0.233	0.233	1,704,230	Yes	243,721
MS-1B32P DS	0.000	0.394	0.233	0.233	1,710,805	Yes	243,721
MS-1B27P-1	0.000	0.401	0.233	0.233	1,777,902	Yes	243,721
MS-1B18P DS	0.000	0.413	0.233	0.233	1,905,386	Yes	243,721
MS-1B24 (D/S)	0.000	0.454	0.233	0.233	1,952,599	No	243,721
MS-1B31P DS	0.000	0.398	0.233	0.233	1,986,264	No	243,721
MS-1B24	0.000	0.467	0.233	0.233	2,067,293	No	243,721
MS-1B22	0.000	0.475	0.303	0.303	2,071,627	Yes	243,721
MS-1B22P	0.000	0.461	0.303	0.303	2,199,714	Yes	243,721
MS-1B20R (D/S)	0.000	0.452	0.303	0.303	2,204,546	No	243,721
MS-1B33R	0.000	0.444	0.233	0.233	2,240,162	No	243,721
MS-1B24P US	0.000	0.406	0.233	0.233	2,297,270	Yes	243,721
MS-1B23R	0.000	0.452	0.303	0.303	2,659,967	No	243,721
MS-1B20P-1	0.000	0.460	0.303	0.303	2,789,563	No	243,721
MS-1B20P	0.000	0.460	0.303	0.303	2,789,563	No	243,721
MS-1B23P	0.000	0.460	0.303	0.303	2,789,563	No	243,721
MS-1B23R (D/S)	0.000	0.464	0.233	0.233	3,396,382	No	243,721
MS-1B14P-1 US	0.000	0.405	0.233	0.233	4,555,575	No	243,721

Note:
[1] Predictions are based on last Tmeas to analysis ending period.

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).db

Service Life Report

Pass 1 Analysis Exclude Measured Wear

Report Date/Time: 7/6/2010 3:37:44PM
AnalysisDate/Time: 7/6/2010 3:24:22PM

Run Name: RHTR DRN TK 21B USCV
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 1.000

CHECWORKS SFA Version: 3.0 SP-1 (build 109)
Duty Factor (Global) : 1.000

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **MSD48A-1-RHDT21B to CV**					***Sorted By:Flow Order***		
MS-1B11N	0.000	0.296	0.233	0.233	333,589	No	243,721
MS-1B11P-1	0.000	0.385	0.233	0.233	1,489,059	Yes	243,721
MS-1B11	0.000	0.390	0.233	0.233	1,123,348	Yes	243,721
MS-1B11P	0.000	0.356	0.233	0.233	1,307,222	Yes	243,721
MS-1B12	0.000	0.369	0.233	0.233	973,125	Yes	243,721
MS-1B12P	0.000	0.387	0.233	0.233	1,635,424	Yes	243,721
MS-1B13	0.000	0.342	0.233	0.233	876,625	No	243,721
MS-1B13P	0.000	0.372	0.233	0.233	1,675,208	No	243,721
MS-1B14	0.000	0.331	0.233	0.233	703,959	No	243,721
MS-1B14P	0.000	0.364	0.233	0.233	1,387,718	No	243,721
MS-1B14FE	0.000	0.296	0.233	0.233	333,589	No	243,721
MS-1B14P-1 US	0.000	0.405	0.233	0.233	4,555,575	No	243,721
MS-1B15	0.000	0.331	0.233	0.233	703,959	No	243,721
MS-1B15P	0.000	0.364	0.233	0.233	1,387,718	No	243,721
MS-1B16	0.000	0.331	0.233	0.233	703,959	No	243,721
MS-1B16P	0.000	0.364	0.233	0.233	1,387,718	No	243,721
MS-1B17	0.000	0.342	0.233	0.233	876,625	No	243,721
MS-1B17P	0.000	0.372	0.233	0.233	1,675,208	No	243,721
MS-1B18	0.000	0.331	0.233	0.233	703,959	No	243,721
MS-1B18P DS	0.000	0.413	0.233	0.233	1,905,386	Yes	243,721
MS-1B19	0.000	0.355	0.233	0.233	873,395	Yes	243,721
MS-1B19P US	0.000	0.394	0.233	0.233	1,704,230	Yes	243,721
MS-1B20	0.000	0.331	0.233	0.233	703,959	No	243,721
MS-1B20P-1	0.000	0.460	0.303	0.303	2,789,563	No	243,721
MS-1B20R	0.000	0.356	0.233	0.233	1,161,833	No	243,721
MS-1B20R (D/S)	0.000	0.452	0.303	0.303	2,204,546	No	243,721
MS-1B20P	0.000	0.460	0.303	0.303	2,789,563	No	243,721

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **MSD48A-1-RHDT21B to CV**					***Sorted By:Flow Order***		
MS-1B21	0.000	0.440	0.303	0.303	1,651,151	No	243,721
MS-1B22	0.000	0.475	0.303	0.303	2,071,627	Yes	243,721
MS-1B22P	0.000	0.461	0.303	0.303	2,199,714	Yes	243,721
MS-1B23	0.000	0.440	0.303	0.303	1,651,151	No	243,721
MS-1B23P	0.000	0.460	0.303	0.303	2,789,563	No	243,721
MS-1B23R	0.000	0.452	0.303	0.303	2,659,967	No	243,721
MS-1B23R (D/S)	0.000	0.464	0.233	0.233	3,396,382	No	243,721
MS-1B24	0.000	0.467	0.233	0.233	2,067,293	No	243,721
MS-1B24 (D/S)	0.000	0.454	0.233	0.233	1,952,599	No	243,721
MS-1B24P US	0.000	0.406	0.233	0.233	2,297,270	Yes	243,721
MS-1B25	0.000	0.362	0.233	0.233	924,517	Yes	243,721
MS-1B25P	0.000	0.396	0.233	0.233	1,350,366	Yes	243,721
MS-1B26	0.000	0.390	0.233	0.233	1,125,904	Yes	243,721
MS-1B27P-1	0.000	0.401	0.233	0.233	1,777,902	Yes	243,721
MS-1B27	0.000	0.331	0.233	0.233	703,959	No	243,721
MS-1B27P	0.000	0.364	0.233	0.233	1,387,718	No	243,721
MS-1B28	0.000	0.331	0.233	0.233	703,959	No	243,721
MS-1B28P	0.000	0.364	0.233	0.233	1,387,718	No	243,721
MS-1B29	0.000	0.331	0.233	0.233	703,959	No	243,721
MS-1B29P	0.000	0.364	0.233	0.233	1,387,718	No	243,721
MS-1B30	0.000	0.331	0.233	0.233	703,959	No	243,721
MS-1B30P	0.000	0.364	0.233	0.233	1,387,718	No	243,721
MS-1B31	0.000	0.342	0.233	0.233	876,625	No	243,721
MS-1B31P US	0.000	0.372	0.233	0.233	1,675,208	No	243,721
MS-1B31P DS	0.000	0.398	0.233	0.233	1,986,264	No	243,721
MS-1B32	0.000	0.361	0.233	0.233	919,743	Yes	243,721
MS-1B32P US	0.000	0.385	0.233	0.233	1,615,520	Yes	243,721
MS-1B32P DS	0.000	0.394	0.233	0.233	1,710,805	Yes	243,721
MS-1B33	0.000	0.358	0.233	0.233	898,283	Yes	243,721
MS-1B33P	0.000	0.386	0.233	0.233	1,626,107	Yes	243,721
MS-1B33R	0.000	0.444	0.233	0.233	2,240,162	No	243,721
MS-1B33R (D/S)	0.000	0.322	0.158	0.158	1,251,328	Yes	243,721

Note:
[1] Predictions are based on last Tmeas to analysis ending period.

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).db

Wear Rate Report

Pass 1 Analysis Exclude Measured Wear

Report Date/Time: 7/6/2010 3:38:15PM
AnalysisDate/Time: 7/6/2010 3:24:33PM

CHECWORKS SFA Version: 3.0 SP-1 (build 109)

Duty Factor (Global) : 1.000

Run Name: RHTR DRN TK 22A USCV
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 1.000

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***MSD46A-1-RHDT22A to CV***								***Sorted By: Average Wear Rate***		
MS-2A11N	31	4.892	1.655	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2A15FE	6	4.892	1.655	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2A11	2	3.620	1.225	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2A12	2	3.620	1.225	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2A13	2	3.620	1.225	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2A14	2	3.620	1.225	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2A15	2	3.620	1.225	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2A22	4	3.620	1.225	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2A23	2	3.620	1.225	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2A23R (D/S)	17	3.282	1.146	495.9	15.767	3.3	4.500	6.403	0.000	60.39	HBD
MS-2A22P US	54	3.131	1.059	495.9	10.806	3.3	6.625	6.403	0.000	60.39	HBD
MS-2A22P DS	54	3.131	1.059	495.9	10.806	3.3	6.625	6.403	0.000	60.39	HBD
MS-2A15R-1	18	2.740	0.927	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2A15R-3	18	2.740	0.927	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2A11P-1	61	2.642	0.894	495.9	10.806	3.3	6.625	6.403	0.000	60.39	HBD
MS-2A11P US	52	2.446	0.827	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2A11P DS	52	2.446	0.827	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2A12P US	52	2.446	0.827	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2A12P DS	52	2.446	0.827	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2A13P	52	2.446	0.827	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2A14P	52	2.446	0.827	495.9	10.806	3.3	6.625	6.403	0.000	60.39	HBD
MS-2A23P-1	52	2.446	0.827	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2A23R	17	2.446	0.827	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2A16	2	2.149	0.727	495.9	3.910	3.3	8.625	6.403	0.000	60.39	HBD
MS-2A17	2	2.149	0.727	495.9	3.910	3.3	8.625	6.403	0.000	60.39	HBD
MS-2A18	2	2.149	0.727	495.9	3.910	3.3	8.625	6.403	0.000	60.39	HBD

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***MSD46A-1-RHDT22A to CV***								***Sorted By: Average Wear Rate***		
MS-2A19	2	2.149	0.727	495.9	3.910	3.3	8.625	6.403	0.000	60.39	HBD
MS-2A20	2	2.149	0.727	495.9	3.910	3.3	8.625	6.403	0.000	60.39	HBD
MS-2A21	2	2.149	0.727	495.9	3.910	3.3	8.625	6.403	0.000	60.39	HBD
MS-2A15P-2	67	1.957	0.662	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2A15R-2 (D/S)	17	1.761	0.596	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2A21R (D/S)	17	1.761	0.596	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2A15P-5 (D/S)	15	1.743	0.589	495.9	3.910	3.3	8.625	6.403	0.000	60.39	HBD
MS-2A15R-1 (D/S)	18	1.743	0.589	495.9	3.910	3.3	8.625	6.403	0.000	60.39	HBD
MS-2A15R-3 (D/S)	18	1.743	0.589	495.9	3.910	3.3	8.625	6.403	0.000	60.39	HBD
MS-2A15P-5	15	1.743	0.589	495.9	3.910	3.3	8.625	6.403	0.000	60.39	HBD
MS-2A21P DS	52	1.496	0.506	495.9	4.039	3.3	8.625	6.403	0.000	60.39	HBD
MS-2A16P	52	1.452	0.491	495.9	4.917	3.3	8.625	6.403	0.000	60.39	HBD
MS-2A17P US	52	1.452	0.491	495.9	3.910	3.3	8.625	6.403	0.000	60.39	HBD
MS-2A17P DS	52	1.452	0.491	495.9	3.910	3.3	8.625	6.403	0.000	60.39	HBD
MS-2A18P US	52	1.452	0.491	495.9	3.910	3.3	8.625	6.403	0.000	60.39	HBD
MS-2A18P DS	52	1.452	0.491	495.9	3.910	3.3	8.625	6.403	0.000	60.39	HBD
MS-2A19P US	52	1.452	0.491	495.9	3.910	3.3	8.625	6.403	0.000	60.39	HBD
MS-2A19P DS	52	1.452	0.491	495.9	3.910	3.3	8.625	6.403	0.000	60.39	HBD
MS-2A15P-1	68	1.452	0.491	495.9	3.910	3.3	8.625	6.403	0.000	60.39	HBD
MS-2A20P	52	1.452	0.491	495.9	10.736	3.3	8.625	6.403	0.000	60.39	HBD
MS-2A15R-2	17	1.452	0.491	495.9	3.910	3.3	8.625	6.403	0.000	60.39	HBD
MS-2A21P US	52	1.452	0.491	495.9	3.910	3.3	8.625	6.403	0.000	60.39	HBD
MS-2A21R	17	1.452	0.491	495.9	3.910	3.3	8.625	6.403	0.000	60.39	HBD
MS-2A15P-4	68	1.452	0.491	495.9	3.910	3.3	8.625	6.403	0.000	60.39	HBD
MS-2A15P-6	65	1.162	0.393	495.9	3.910	3.3	8.625	6.403	0.000	60.39	HBD
MS-2A15P-3	56	1.002	0.339	495.9	7.098	3.3	6.625	6.403	0.000	60.39	HBD

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).db

Wear Rate Report

Pass 1 Analysis Exclude Measured Wear

Report Date/Time: 7/6/2010 3:37:44PM
AnalysisDate/Time: 7/6/2010 3:24:33PM

CHECWORKS SFA Version: 3.0 SP-1 (build 109)
Duty Factor (Global) : 1.000

Run Name: RHTR DRN TK 22A USCV
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 1.000

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***MSD46A-1-RHDT22A to CV***									***Sorted By: Flow Order***	
MS-2A11N	31	4.892	1.655	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2A11P-1	61	2.642	0.894	495.9	10.806	3.3	6.625	6.403	0.000	60.39	HBD
MS-2A11	2	3.620	1.225	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2A11P US	52	2.446	0.827	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2A11P DS	52	2.446	0.827	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2A12	2	3.620	1.225	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2A12P US	52	2.446	0.827	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2A12P DS	52	2.446	0.827	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2A13	2	3.620	1.225	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2A13P	52	2.446	0.827	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2A14	2	3.620	1.225	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2A14P	52	2.446	0.827	495.9	10.806	3.3	6.625	6.403	0.000	60.39	HBD
MS-2A15	2	3.620	1.225	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2A15R-1	18	2.740	0.927	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2A15R-1 (D/S)	18	1.743	0.589	495.9	3.910	3.3	8.625	6.403	0.000	60.39	HBD
MS-2A15P-1	68	1.452	0.491	495.9	3.910	3.3	8.625	6.403	0.000	60.39	HBD
MS-2A15R-2	17	1.452	0.491	495.9	3.910	3.3	8.625	6.403	0.000	60.39	HBD
MS-2A15R-2 (D/S)	17	1.761	0.596	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2A15P-2	67	1.957	0.662	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2A15FE	6	4.892	1.655	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2A15P-3	56	1.002	0.339	495.9	7.098	3.3	6.625	6.403	0.000	60.39	HBD
MS-2A15R-3	18	2.740	0.927	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2A15R-3 (D/S)	18	1.743	0.589	495.9	3.910	3.3	8.625	6.403	0.000	60.39	HBD
MS-2A15P-4	68	1.452	0.491	495.9	3.910	3.3	8.625	6.403	0.000	60.39	HBD
MS-2A15P-5	15	1.743	0.589	495.9	3.910	3.3	8.625	6.403	0.000	60.39	HBD
MS-2A15P-5 (D/S)	15	1.743	0.589	495.9	3.910	3.3	8.625	6.403	0.000	60.39	HBD

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***MSD46A-1-RHDT22A to CV***									***Sorted By: Flow Order***	
MS-2A15P-6	65	1.162	0.393	495.9	3.910	3.3	8.625	6.403	0.000	60.39	HBD
MS-2A16	2	2.149	0.727	495.9	3.910	3.3	8.625	6.403	0.000	60.39	HBD
MS-2A16P	52	1.452	0.491	495.9	4.917	3.3	8.625	6.403	0.000	60.39	HBD
MS-2A17	2	2.149	0.727	495.9	3.910	3.3	8.625	6.403	0.000	60.39	HBD
MS-2A17P US	52	1.452	0.491	495.9	3.910	3.3	8.625	6.403	0.000	60.39	HBD
MS-2A17P DS	52	1.452	0.491	495.9	3.910	3.3	8.625	6.403	0.000	60.39	HBD
MS-2A18	2	2.149	0.727	495.9	3.910	3.3	8.625	6.403	0.000	60.39	HBD
MS-2A18P US	52	1.452	0.491	495.9	3.910	3.3	8.625	6.403	0.000	60.39	HBD
MS-2A18P DS	52	1.452	0.491	495.9	3.910	3.3	8.625	6.403	0.000	60.39	HBD
MS-2A19	2	2.149	0.727	495.9	3.910	3.3	8.625	6.403	0.000	60.39	HBD
MS-2A19P US	52	1.452	0.491	495.9	3.910	3.3	8.625	6.403	0.000	60.39	HBD
MS-2A19P DS	52	1.452	0.491	495.9	3.910	3.3	8.625	6.403	0.000	60.39	HBD
MS-2A20	2	2.149	0.727	495.9	3.910	3.3	8.625	6.403	0.000	60.39	HBD
MS-2A20P	52	1.452	0.491	495.9	10.736	3.3	8.625	6.403	0.000	60.39	HBD
MS-2A21	2	2.149	0.727	495.9	3.910	3.3	8.625	6.403	0.000	60.39	HBD
MS-2A21P US	52	1.452	0.491	495.9	3.910	3.3	8.625	6.403	0.000	60.39	HBD
MS-2A21P DS	52	1.496	0.506	495.9	4.039	3.3	8.625	6.403	0.000	60.39	HBD
MS-2A21R	17	1.452	0.491	495.9	3.910	3.3	8.625	6.403	0.000	60.39	HBD
MS-2A21R (D/S)	17	1.761	0.596	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2A22	4	3.620	1.225	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2A22P US	54	3.131	1.059	495.9	10.806	3.3	6.625	6.403	0.000	60.39	HBD
MS-2A22P DS	54	3.131	1.059	495.9	10.806	3.3	6.625	6.403	0.000	60.39	HBD
MS-2A23	2	3.620	1.225	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2A23P-1	52	2.446	0.827	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2A23R	17	2.446	0.827	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2A23R (D/S)	17	3.282	1.146	495.9	15.767	3.3	4.500	6.403	0.000	60.39	HBD

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).db

Service Life Report

Pass 1 Analysis Exclude Measured Wear

Report Date/Time: 7/6/2010 3:37:44PM
AnalysisDate/Time: 7/6/2010 3:24:33PM

Run Name: RHTR DRN TK 22A USCV
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 1.000

CHECWORKS SFA Version: 3.0 SP-1 (build 109)
Duty Factor (Global) :1.000

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **MSD46A-1-RHDT22A to CV**					***Sorted By:Remaining Life***		
MS-2A15FE	0.000	0.379	0.233	0.233	771,864	No	243,721
MS-2A11N	0.000	0.400	0.233	0.233	886,750	No	243,721
MS-2A13	0.000	0.359	0.233	0.233	899,081	Yes	243,721
MS-2A11	0.000	0.359	0.233	0.233	901,590	Yes	243,721
MS-2A22	0.000	0.373	0.233	0.233	1,001,739	Yes	243,721
MS-2A23	0.000	0.373	0.233	0.233	1,001,739	Yes	243,721
MS-2A12	0.000	0.380	0.233	0.233	1,051,814	Yes	243,721
MS-2A15	0.000	0.383	0.233	0.233	1,073,274	Yes	243,721
MS-2A22P DS	0.000	0.375	0.233	0.233	1,174,242	Yes	243,721
MS-2A22P US	0.000	0.376	0.233	0.233	1,182,514	Yes	243,721
MS-2A14	0.000	0.402	0.233	0.233	1,206,680	Yes	243,721
MS-2A23R	0.000	0.352	0.233	0.233	1,264,873	No	243,721
MS-2A16	0.000	0.419	0.303	0.303	1,392,388	Yes	243,721
MS-2A12P DS	0.000	0.366	0.233	0.233	1,413,093	Yes	243,721
MS-2A23R (D/S)	0.000	0.345	0.158	0.158	1,430,716	No	243,721
MS-2A12P US	0.000	0.373	0.233	0.233	1,487,203	Yes	243,721
MS-2A13P	0.000	0.374	0.233	0.233	1,497,791	Yes	243,721
MS-2A23P-1	0.000	0.382	0.233	0.233	1,582,488	Yes	243,721
MS-2A11P DS	0.000	0.387	0.233	0.233	1,635,424	Yes	243,721
MS-2A11P US	0.000	0.387	0.233	0.233	1,635,424	Yes	243,721
MS-2A11P-1	0.000	0.402	0.233	0.233	1,656,097	Yes	243,721
MS-2A21	0.000	0.453	0.303	0.303	1,802,060	No	243,721
MS-2A19	0.000	0.457	0.303	0.303	1,850,257	Yes	243,721
MS-2A14P	0.000	0.408	0.233	0.233	1,857,819	Yes	243,721
MS-2A15R-1	0.000	0.436	0.233	0.233	1,919,991	No	243,721
MS-2A17	0.000	0.474	0.303	0.303	2,055,093	Yes	243,721
MS-2A15R-3	0.000	0.452	0.233	0.233	2,071,236	No	243,721

Component Name	--------- Thickness (in) -------- Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **MSD46A-1-RHDT22A to CV**					***Sorted By:Remaining Life***		
MS-2A18	0.000	0.480	0.303	0.303	2,127,389	Yes	243,721
MS-2A20	0.000	0.481	0.303	0.303	2,139,438	Yes	243,721
MS-2A15P-2	0.000	0.403	0.233	0.233	2,255,126	Yes	243,721
MS-2A15R-2	0.000	0.446	0.303	0.303	2,552,970	No	243,721
MS-2A18P DS	0.000	0.448	0.303	0.303	2,588,636	Yes	243,721
MS-2A15P-1	0.000	0.455	0.303	0.303	2,713,466	Yes	243,721
MS-2A19P DS	0.000	0.456	0.303	0.303	2,731,298	Yes	243,721
MS-2A17P US	0.000	0.456	0.303	0.303	2,731,298	Yes	243,721
MS-2A20P	0.000	0.457	0.303	0.303	2,749,131	Yes	243,721
MS-2A15P-4	0.000	0.457	0.303	0.303	2,749,131	Yes	243,721
MS-2A18P US	0.000	0.461	0.303	0.303	2,820,462	Yes	243,721
MS-2A15R-3 (D/S)	0.000	0.496	0.303	0.303	2,865,537	No	243,721
MS-2A19P US	0.000	0.464	0.303	0.303	2,873,961	Yes	243,721
MS-2A15R-1 (D/S)	0.000	0.497	0.303	0.303	2,880,397	No	243,721
MS-2A17P DS	0.000	0.466	0.303	0.303	2,909,626	Yes	243,721
MS-2A21P DS	0.560	0.473	0.303	0.303	2,940,180	Yes	243,721
MS-2A16P	0.000	0.469	0.303	0.303	2,963,125	Yes	243,721
MS-2A21P US	0.000	0.471	0.303	0.303	2,998,790	Yes	243,721
MS-2A15R-2 (D/S)	0.000	0.444	0.233	0.233	3,102,294	No	243,721
MS-2A15P-6	0.000	0.444	0.303	0.303	3,131,796	Yes	243,721
MS-2A21R (D/S)	0.000	0.473	0.233	0.233	3,528,721	No	243,721
MS-2A21R	0.000	0.501	0.303	0.303	3,533,774	No	243,721
MS-2A15P-3	0.000	0.403	0.233	0.233	4,394,639	Yes	243,721
MS-2A15P-5 (D/S)	0.000	0.677	0.303	0.303	5,555,317	No	243,721
MS-2A15P-5	0.000	0.677	0.303	0.303	5,555,317	No	243,721

Note:
[1] Predictions are based on last Tmeas to analysis ending period.

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).db

Service Life Report

Pass 1 Analysis Exclude Measured Wear

Report Date/Time: 7/6/2010 3:37:44PM
AnalysisDate/Time: 7/6/2010 3:24:33PM

Run Name: RHTR DRN TK 22A USCV
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 1.000

CHECWORKS SFA Version: 3.0 SP-1 (build 109)
Duty Factor (Global) : 1.000

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **MSD46A-1-RHDT22A to CV**					***Sorted By:Flow Order***		
MS-2A11N	0.000	0.400	0.233	0.233	886,750	No	243,721
MS-2A11P-1	0.000	0.402	0.233	0.233	1,656,097	Yes	243,721
MS-2A11	0.000	0.359	0.233	0.233	901,590	Yes	243,721
MS-2A11P US	0.000	0.387	0.233	0.233	1,635,424	Yes	243,721
MS-2A11P DS	0.000	0.387	0.233	0.233	1,635,424	Yes	243,721
MS-2A12	0.000	0.380	0.233	0.233	1,051,814	Yes	243,721
MS-2A12P US	0.000	0.373	0.233	0.233	1,487,203	Yes	243,721
MS-2A12P DS	0.000	0.366	0.233	0.233	1,413,093	Yes	243,721
MS-2A13	0.000	0.359	0.233	0.233	899,081	Yes	243,721
MS-2A13P	0.000	0.374	0.233	0.233	1,497,791	Yes	243,721
MS-2A14	0.000	0.402	0.233	0.233	1,206,680	Yes	243,721
MS-2A14P	0.000	0.408	0.233	0.233	1,857,819	Yes	243,721
MS-2A15	0.000	0.383	0.233	0.233	1,073,274	Yes	243,721
MS-2A15R-1	0.000	0.436	0.233	0.233	1,919,991	No	243,721
MS-2A15R-1 (D/S)	0.000	0.497	0.303	0.303	2,880,397	No	243,721
MS-2A15P-1	0.000	0.455	0.303	0.303	2,713,466	Yes	243,721
MS-2A15R-2	0.000	0.446	0.303	0.303	2,552,970	No	243,721
MS-2A15R-2 (D/S)	0.000	0.444	0.233	0.233	3,102,294	No	243,721
MS-2A15P-2	0.000	0.403	0.233	0.233	2,255,126	Yes	243,721
MS-2A15FE	0.000	0.379	0.233	0.233	771,864	No	243,721
MS-2A15P-3	0.000	0.403	0.233	0.233	4,394,639	Yes	243,721
MS-2A15R-3	0.000	0.452	0.233	0.233	2,071,236	No	243,721
MS-2A15R-3 (D/S)	0.000	0.496	0.303	0.303	2,865,537	No	243,721
MS-2A15P-4	0.000	0.457	0.303	0.303	2,749,131	Yes	243,721
MS-2A15P-5	0.000	0.677	0.303	0.303	5,555,317	No	243,721
MS-2A15P-5 (D/S)	0.000	0.677	0.303	0.303	5,555,317	No	243,721
MS-2A15P-6	0.000	0.444	0.303	0.303	3,131,796	Yes	243,721

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **MSD46A-1-RHDT22A to CV**					***Sorted By:Flow Order***		
MS-2A16	0.000	0.419	0.303	0.303	1,392,388	Yes	243,721
MS-2A16P	0.000	0.469	0.303	0.303	2,963,125	Yes	243,721
MS-2A17	0.000	0.474	0.303	0.303	2,055,093	Yes	243,721
MS-2A17P US	0.000	0.456	0.303	0.303	2,731,298	Yes	243,721
MS-2A17P DS	0.000	0.466	0.303	0.303	2,909,626	Yes	243,721
MS-2A18	0.000	0.480	0.303	0.303	2,127,389	Yes	243,721
MS-2A18P US	0.000	0.461	0.303	0.303	2,820,462	Yes	243,721
MS-2A18P DS	0.000	0.448	0.303	0.303	2,588,636	Yes	243,721
MS-2A19	0.000	0.457	0.303	0.303	1,850,257	Yes	243,721
MS-2A19P US	0.000	0.464	0.303	0.303	2,873,961	Yes	243,721
MS-2A19P DS	0.000	0.456	0.303	0.303	2,731,298	Yes	243,721
MS-2A20	0.000	0.481	0.303	0.303	2,139,438	Yes	243,721
MS-2A20P	0.000	0.457	0.303	0.303	2,749,131	Yes	243,721
MS-2A21	0.000	0.453	0.303	0.303	1,802,060	No	243,721
MS-2A21P US	0.000	0.471	0.303	0.303	2,998,790	Yes	243,721
MS-2A21P DS	0.560	0.473	0.303	0.303	2,940,180	Yes	243,721
MS-2A21R	0.000	0.501	0.303	0.303	3,533,774	No	243,721
MS-2A21R (D/S)	0.000	0.473	0.233	0.233	3,528,721	No	243,721
MS-2A22	0.000	0.373	0.233	0.233	1,001,739	Yes	243,721
MS-2A22P US	0.000	0.376	0.233	0.233	1,182,514	Yes	243,721
MS-2A22P DS	0.000	0.375	0.233	0.233	1,174,242	Yes	243,721
MS-2A23	0.000	0.373	0.233	0.233	1,001,739	Yes	243,721
MS-2A23P-1	0.000	0.382	0.233	0.233	1,582,488	Yes	243,721
MS-2A23R	0.000	0.352	0.233	0.233	1,264,873	No	243,721
MS-2A23R (D/S)	0.000	0.345	0.158	0.158	1,430,716	No	243,721

Note:
[1] Predictions are based on last Tmeas to analysis ending period.

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).db

Wear Rate Report

Pass 1 Analysis Exclude Measured Wear

Report Date/Time: 7/6/2010 3:38:15PM
AnalysisDate/Time: 7/6/2010 3:24:44PM

CHECWORKS SFA Version: 3.0 SP-1 (build 109)

Duty Factor (Global) : 1.000

Run Name: RHTR DRN TK 22B USCV
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 1.000

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***MSD49A-1-RHDT22B to CV***								***Sorted By: Average Wear Rate***		
MS-2B11N	31	4.892	1.655	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B17FE	6	4.892	1.655	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B11	2	3.620	1.225	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B12	2	3.620	1.225	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B13	2	3.620	1.225	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B14	2	3.620	1.225	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B15	2	3.620	1.225	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B16	1	3.229	1.092	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B17	1	3.229	1.092	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B17R-1	18	2.740	0.927	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B18R	18	2.740	0.927	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B11P-1	61	2.642	0.894	495.9	10.806	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B11P	52	2.446	0.827	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B12P	52	2.446	0.827	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B13P	52	2.446	0.827	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B14P	52	2.446	0.827	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B15P	52	2.446	0.827	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B16P	51	2.153	0.728	495.9	10.806	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B17P-3	51	2.153	0.728	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B17P-1 US	67	1.957	0.662	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B17R-2 (D/S)	17	1.761	0.596	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B18	2	1.411	0.477	495.9	2.450	3.3	10.750	6.403	0.000	60.39	HBD
MS-2B20	2	1.411	0.477	495.9	2.450	3.3	10.750	6.403	0.000	60.39	HBD
MS-2B21	2	1.411	0.477	495.9	2.450	3.3	10.750	6.403	0.000	60.39	HBD
MS-2B19	1	1.258	0.426	495.9	2.450	3.3	10.750	6.403	0.000	60.39	HBD
MS-2B17R-1 (D/S)	18	1.144	0.387	495.9	2.450	3.3	10.750	6.403	0.000	60.39	HBD

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***MSD49A-1-RHDT22B to CV***								***Sorted By: Average Wear Rate***		
MS-2B18R (D/S)	18	1.144	0.387	495.9	2.450	3.3	10.750	6.403	0.000	60.39	HBD
MS-2B17P-2 DS	56	0.978	0.331	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B17P DS	68	0.969	0.328	495.9	2.495	3.3	10.750	6.403	0.000	60.39	HBD
MS-2B17R-2	17	0.953	0.322	495.9	2.450	3.3	10.750	6.403	0.000	60.39	HBD
MS-2B18P-1 US	68	0.953	0.322	495.9	2.450	3.3	10.750	6.403	0.000	60.39	HBD
MS-2B18P	52	0.953	0.322	495.9	2.450	3.3	10.750	6.403	0.000	60.39	HBD
MS-2B20P	52	0.953	0.322	495.9	9.664	3.3	10.750	6.403	0.000	60.39	HBD
MS-2B21P US	52	0.953	0.322	495.9	2.450	3.3	10.750	6.403	0.000	60.39	HBD
MS-2B19P	51	0.839	0.284	495.9	2.450	3.3	10.750	6.403	0.000	60.39	HBD
MS-2B22	2	0.477	0.477	495.9	2.450	3.3	10.750	6.403	0.000	60.39	HBD
MS-TEMP-02E	2	0.477	0.477	495.9	2.450	3.3	10.750	6.403	0.000	60.39	HBD
MS-TEMP-05E	2	0.477	0.477	495.9	2.450	3.3	10.750	6.403	0.000	60.39	HBD
MS-TEMP-07E	2	0.477	0.477	495.9	2.450	3.3	10.750	6.403	0.000	60.39	HBD
MS-2B21P DS	52	0.322	0.322	495.9	2.450	3.3	10.750	6.403	0.000	60.39	HBD
MS-TEMP-01P	52	0.322	0.322	495.9	9.664	3.3	10.750	6.403	0.000	60.39	HBD
MS-TEMP-03P	52	0.322	0.322	495.9	2.450	3.3	10.750	6.403	0.000	60.39	HBD
MS-TEMP-04P	52	0.322	0.322	495.9	2.450	3.3	10.750	6.403	0.000	60.39	HBD
MS-TEMP-06P	52	0.322	0.322	495.9	3.053	3.3	10.750	6.403	0.000	60.39	HBD
MS-TEMP-08P	52	0.322	0.322	495.9	2.450	3.3	10.750	6.403	0.000	60.39	HBD

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).db

Wear Rate Report

Pass 1 Analysis Exclude Measured Wear

Report Date/Time: 7/6/2010 3:37:44PM
AnalysisDate/Time: 7/6/2010 3:24:44PM

CHECWORKS SFA Version: 3.0 SP-1 (build 109)
Duty Factor (Global) : 1.000

Run Name: RHTR DRN TK 22B USCV
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 1.000

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***MSD49A-1-RHDT22B to CV***									***Sorted By: Flow Order***	
MS-2B11N	31	4.892	1.655	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B11P-1	61	2.642	0.894	495.9	10.806	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B11	2	3.620	1.225	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B11P	52	2.446	0.827	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B12	2	3.620	1.225	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B12P	52	2.446	0.827	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B13	2	3.620	1.225	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B13P	52	2.446	0.827	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B14	2	3.620	1.225	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B14P	52	2.446	0.827	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B15	2	3.620	1.225	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B15P	52	2.446	0.827	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B16	1	3.229	1.092	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B16P	51	2.153	0.728	495.9	10.806	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B17	1	3.229	1.092	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B17P-3	51	2.153	0.728	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B17R-1	18	2.740	0.927	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B17R-1 (D/S)	18	1.144	0.387	495.9	2.450	3.3	10.750	6.403	0.000	60.39	HBD
MS-2B17P DS	68	0.969	0.328	495.9	2.495	3.3	10.750	6.403	0.000	60.39	HBD
MS-2B17R-2	17	0.953	0.322	495.9	2.450	3.3	10.750	6.403	0.000	60.39	HBD
MS-2B17R-2 (D/S)	17	1.761	0.596	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B17P-1 US	67	1.957	0.662	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B17FE	6	4.892	1.655	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B17P-2 DS	56	0.978	0.331	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B18R	18	2.740	0.927	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B18R (D/S)	18	1.144	0.387	495.9	2.450	3.3	10.750	6.403	0.000	60.39	HBD

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***MSD49A-1-RHDT22B to CV***									***Sorted By: Flow Order***	
MS-2B18P-1 US	68	0.953	0.322	495.9	2.450	3.3	10.750	6.403	0.000	60.39	HBD
MS-2B18	2	1.411	0.477	495.9	2.450	3.3	10.750	6.403	0.000	60.39	HBD
MS-2B18P	52	0.953	0.322	495.9	2.450	3.3	10.750	6.403	0.000	60.39	HBD
MS-2B19	1	1.258	0.426	495.9	2.450	3.3	10.750	6.403	0.000	60.39	HBD
MS-2B19P	51	0.839	0.284	495.9	2.450	3.3	10.750	6.403	0.000	60.39	HBD
MS-2B20	2	1.411	0.477	495.9	2.450	3.3	10.750	6.403	0.000	60.39	HBD
MS-2B20P	52	0.953	0.322	495.9	9.664	3.3	10.750	6.403	0.000	60.39	HBD
MS-2B21	2	1.411	0.477	495.9	2.450	3.3	10.750	6.403	0.000	60.39	HBD
MS-2B21P US	52	0.953	0.322	495.9	2.450	3.3	10.750	6.403	0.000	60.39	HBD
MS-2B21P DS	52	0.322	0.322	495.9	2.450	3.3	10.750	6.403	0.000	60.39	HBD
MS-2B22	2	0.477	0.477	495.9	2.450	3.3	10.750	6.403	0.000	60.39	HBD
MS-TEMP-01P	52	0.322	0.322	495.9	9.664	3.3	10.750	6.403	0.000	60.39	HBD
MS-TEMP-02E	2	0.477	0.477	495.9	2.450	3.3	10.750	6.403	0.000	60.39	HBD
MS-TEMP-03P	52	0.322	0.322	495.9	2.450	3.3	10.750	6.403	0.000	60.39	HBD
MS-TEMP-04P	52	0.322	0.322	495.9	2.450	3.3	10.750	6.403	0.000	60.39	HBD
MS-TEMP-05E	2	0.477	0.477	495.9	2.450	3.3	10.750	6.403	0.000	60.39	HBD
MS-TEMP-06P	52	0.322	0.322	495.9	3.053	3.3	10.750	6.403	0.000	60.39	HBD
MS-TEMP-07E	2	0.477	0.477	495.9	2.450	3.3	10.750	6.403	0.000	60.39	HBD
MS-TEMP-08P	52	0.322	0.322	495.9	2.450	3.3	10.750	6.403	0.000	60.39	HBD

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).db

Service Life Report

Pass 1 Analysis Exclude Measured Wear

Report Date/Time: 7/6/2010 3:37:44PM
AnalysisDate/Time: 7/6/2010 3:24:44PM

Run Name: RHTR DRN TK 22B USCV
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 1.000

CHECWORKS SFA Version: 3.0 SP-1 (build 109)
Duty Factor (Global) :1.000

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **MSD49A-1-RHDT22B to CV**					***Sorted By:Remaining Life***		
MS-2B17FE	0.000	0.296	0.233	0.233	333,589	No	243,721
MS-2B14	0.000	0.331	0.233	0.233	703,959	No	243,721
MS-2B11N	0.000	0.391	0.233	0.233	834,938	Yes	243,721
MS-2B17	0.000	0.342	0.233	0.233	873,834	Yes	243,721
MS-2B15	0.000	0.374	0.233	0.233	1,008,861	Yes	243,721
MS-2B16	0.000	0.371	0.233	0.233	1,106,077	Yes	243,721
MS-2B11	0.000	0.395	0.233	0.233	1,156,606	Yes	243,721
MS-2B17R-1	0.000	0.356	0.233	0.233	1,161,833	No	243,721
MS-2B12	0.000	0.402	0.233	0.233	1,211,746	Yes	243,721
MS-2B13	0.000	0.405	0.233	0.233	1,230,508	Yes	243,721
MS-2B14P	0.000	0.365	0.233	0.233	1,397,324	Yes	243,721
MS-2B15P	0.000	0.367	0.233	0.233	1,418,499	Yes	243,721
MS-2B11P-1	0.000	0.379	0.233	0.233	1,428,029	Yes	243,721
MS-2B12P	0.000	0.368	0.233	0.233	1,428,525	Yes	243,721
MS-2B11P	0.000	0.381	0.233	0.233	1,566,719	Yes	243,721
MS-2B13P	0.000	0.381	0.233	0.233	1,571,966	Yes	243,721
MS-2B16P	0.000	0.378	0.233	0.233	1,748,258	Yes	243,721
MS-2B21	0.000	0.476	0.378	0.378	1,804,419	Yes	243,721
MS-2B17P-3	0.000	0.390	0.233	0.233	1,884,961	Yes	243,721
MS-2B17P-1 US	0.000	0.388	0.233	0.233	2,052,594	Yes	243,721
MS-2B20	0.000	0.555	0.378	0.378	3,247,258	No	243,721
MS-2B19	0.000	0.559	0.378	0.378	3,728,203	No	243,721
MS-2B18	0.000	0.586	0.378	0.378	3,825,090	Yes	243,721
MS-2B22	0.000	0.593	0.378	0.378	3,950,277	No	17,520
MS-TEMP-02E	0.000	0.593	0.378	0.378	3,950,277	No	17,520
MS-TEMP-05E	0.000	0.593	0.378	0.378	3,950,277	No	17,520
MS-TEMP-07E	0.000	0.593	0.378	0.378	3,950,277	No	17,520

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **MSD49A-1-RHDT22B to CV**					***Sorted By:Remaining Life***		
MS-2B17R-1 (D/S)	0.000	0.562	0.378	0.378	4,173,078	No	243,721
MS-2B17P DS	0.636	0.545	0.378	0.378	4,467,999	Yes	243,721
MS-2B17R-2 (D/S)	0.000	0.540	0.233	0.233	4,515,775	No	243,721
MS-2B18R (D/S)	0.000	0.581	0.378	0.378	4,593,648	No	243,721
MS-2B17P-2 DS	0.000	0.408	0.233	0.233	4,634,979	Yes	243,721
MS-2B18P	0.000	0.567	0.378	0.378	5,151,801	No	243,721
MS-2B20P	0.000	0.567	0.378	0.378	5,151,801	No	243,721
MS-2B21P US	0.000	0.567	0.378	0.378	5,151,801	No	243,721
MS-2B18P-1 US	0.000	0.569	0.378	0.378	5,196,533	Yes	243,721
MS-2B18R	0.000	0.832	0.233	0.233	5,659,844	No	243,721
MS-2B21P DS	0.000	0.593	0.378	0.378	5,854,820	No	17,520
MS-TEMP-01P	0.000	0.593	0.378	0.378	5,854,820	No	17,520
MS-TEMP-03P	0.000	0.593	0.378	0.378	5,854,820	No	17,520
MS-TEMP-04P	0.000	0.593	0.378	0.378	5,854,820	No	17,520
MS-TEMP-06P	0.000	0.593	0.378	0.378	5,854,820	No	17,520
MS-TEMP-08P	0.000	0.593	0.378	0.378	5,854,820	No	17,520
MS-2B19P	0.000	0.571	0.378	0.378	5,952,574	No	243,721
MS-2B17R-2	0.000	0.608	0.378	0.378	6,255,778	No	243,721

Note:
[1] Predictions are based on last Tmeas to analysis ending period.

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).db

Service Life Report

Pass 1 Analysis Exclude Measured Wear

Report Date/Time: 7/6/2010 3:37:44PM
AnalysisDate/Time: 7/6/2010 3:24:44PM

Run Name: RHTR DRN TK 22B USCV
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 1.000

CHECWORKS SFA Version: 3.0 SP-1 (build 109)
Duty Factor (Global) : 1.000

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **MSD49A-1-RHDT22B to CV**					***Sorted By:Flow Order***		
MS-2B11N	0.000	0.391	0.233	0.233	834,938	Yes	243,721
MS-2B11P-1	0.000	0.379	0.233	0.233	1,428,029	Yes	243,721
MS-2B11	0.000	0.395	0.233	0.233	1,156,606	Yes	243,721
MS-2B11P	0.000	0.381	0.233	0.233	1,566,719	Yes	243,721
MS-2B12	0.000	0.402	0.233	0.233	1,211,746	Yes	243,721
MS-2B12P	0.000	0.368	0.233	0.233	1,428,525	Yes	243,721
MS-2B13	0.000	0.405	0.233	0.233	1,230,508	Yes	243,721
MS-2B13P	0.000	0.381	0.233	0.233	1,571,966	Yes	243,721
MS-2B14	0.000	0.331	0.233	0.233	703,959	No	243,721
MS-2B14P	0.000	0.365	0.233	0.233	1,397,324	Yes	243,721
MS-2B15	0.000	0.374	0.233	0.233	1,008,861	Yes	243,721
MS-2B15P	0.000	0.367	0.233	0.233	1,418,499	Yes	243,721
MS-2B16	0.000	0.371	0.233	0.233	1,106,077	Yes	243,721
MS-2B16P	0.000	0.378	0.233	0.233	1,748,258	Yes	243,721
MS-2B17	0.000	0.342	0.233	0.233	873,834	Yes	243,721
MS-2B17P-3	0.000	0.390	0.233	0.233	1,884,961	Yes	243,721
MS-2B17R-1	0.000	0.356	0.233	0.233	1,161,833	No	243,721
MS-2B17R-1 (D/S)	0.000	0.562	0.378	0.378	4,173,078	No	243,721
MS-2B17P DS	0.636	0.545	0.378	0.378	4,467,999	Yes	243,721
MS-2B17R-2	0.000	0.608	0.378	0.378	6,255,778	No	243,721
MS-2B17R-2 (D/S)	0.000	0.540	0.233	0.233	4,515,775	No	243,721
MS-2B17P-1 US	0.000	0.388	0.233	0.233	2,052,594	Yes	243,721
MS-2B17FE	0.000	0.296	0.233	0.233	333,589	No	243,721
MS-2B17P-2 DS	0.000	0.408	0.233	0.233	4,634,979	Yes	243,721
MS-2B18R	0.000	0.832	0.233	0.233	5,659,844	No	243,721
MS-2B18R (D/S)	0.000	0.581	0.378	0.378	4,593,648	No	243,721
MS-2B18P-1 US	0.000	0.569	0.378	0.378	5,196,533	Yes	243,721

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **MSD49A-1-RHDT22B to CV**					***Sorted By:Flow Order***		
MS-2B18	0.000	0.586	0.378	0.378	3,825,090	Yes	243,721
MS-2B18P	0.000	0.567	0.378	0.378	5,151,801	No	243,721
MS-2B19	0.000	0.559	0.378	0.378	3,728,203	No	243,721
MS-2B19P	0.000	0.571	0.378	0.378	5,952,574	No	243,721
MS-2B20	0.000	0.555	0.378	0.378	3,247,258	No	243,721
MS-2B20P	0.000	0.567	0.378	0.378	5,151,801	No	243,721
MS-2B21	0.000	0.476	0.378	0.378	1,804,419	Yes	243,721
MS-2B21P US	0.000	0.567	0.378	0.378	5,151,801	No	243,721
MS-2B21P DS	0.000	0.593	0.378	0.378	5,854,820	No	17,520
MS-2B22	0.000	0.593	0.378	0.378	3,950,277	No	17,520
MS-TEMP-01P	0.000	0.593	0.378	0.378	5,854,820	No	17,520
MS-TEMP-02E	0.000	0.593	0.378	0.378	3,950,277	No	17,520
MS-TEMP-03P	0.000	0.593	0.378	0.378	5,854,820	No	17,520
MS-TEMP-04P	0.000	0.593	0.378	0.378	5,854,820	No	17,520
MS-TEMP-05E	0.000	0.593	0.378	0.378	3,950,277	No	17,520
MS-TEMP-06P	0.000	0.593	0.378	0.378	5,854,820	No	17,520
MS-TEMP-07E	0.000	0.593	0.378	0.378	3,950,277	No	17,520
MS-TEMP-08P	0.000	0.593	0.378	0.378	5,854,820	No	17,520

Note:
[1] Predictions are based on last Tmeas to analysis ending period.

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).db

Wear Rate Report

Pass 1 Analysis Exclude Measured Wear

Report Date/Time: 7/6/2010 3:38:15PM
AnalysisDate/Time: 7/6/2010 3:24:52PM

CHECWORKS SFA Version: 3.0 SP-1 (build 109)

Duty Factor (Global) : 1.000

Run Name: RHTR DRN TK 23A USCV
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 1.000

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***MSD47-1-RHDT23A to CV***								***Sorted By: Average Wear Rate***		
MS-3A23R (D/S)	7	5.835	2.038	495.9	15.767	3.3	4.500	6.403	0.000	60.39	HBD
MS-3A11N	31	4.892	1.655	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3A16FE	6	4.892	1.655	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3A20	2	3.620	1.225	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3A21	4	3.620	1.225	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3A13	2	3.620	1.225	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3A22	2	3.620	1.225	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3A23	2	3.620	1.225	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3A15	2	3.620	1.225	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3A16	2	3.620	1.225	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3A23R	7	3.425	1.158	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3A11	1	3.229	1.092	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3A12	1	3.229	1.092	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3A14	1	3.229	1.092	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3A19R (D/S)	7	3.131	1.059	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3A17R	18	2.740	0.927	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3A11P	61	2.642	0.894	495.9	10.806	3.3	6.625	6.403	0.000	60.39	HBD
MS-3A19P US	57	2.446	0.827	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3A19P DS	57	2.446	0.827	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3A21P US	52	2.446	0.827	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3A21P DS	52	2.446	0.827	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3A14P	52	2.446	0.827	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3A22P	52	2.446	0.827	495.9	10.806	3.3	6.625	6.403	0.000	60.39	HBD
MS-3A15P	52	2.446	0.827	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3A16P	52	2.446	0.827	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3A12P	51	2.153	0.728	495.9	10.806	3.3	6.625	6.403	0.000	60.39	HBD

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***MSD47-1-RHDT23A to CV***								***Sorted By: Average Wear Rate***		
MS-3A13P	51	2.153	0.728	495.9	10.806	3.3	6.625	6.403	0.000	60.39	HBD
MS-3A15P-1 US	51	2.153	0.728	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3A15P-1 DS	51	2.153	0.728	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3A17	4	2.149	0.727	495.9	3.910	3.3	8.625	6.403	0.000	60.39	HBD
MS-3A18	2	2.149	0.727	495.9	3.910	3.3	8.625	6.403	0.000	60.39	HBD
MS-3A19R	7	2.033	0.688	495.9	3.910	3.3	8.625	6.403	0.000	60.39	HBD
MS-3A17P	54	1.859	0.629	495.9	3.910	3.3	8.625	6.403	0.000	60.39	HBD
MS-3A19 (D/S)	15	1.743	0.589	495.9	3.910	3.3	8.625	6.403	0.000	60.39	HBD
MS-3A17R (D/S)	18	1.743	0.589	495.9	3.910	3.3	8.625	6.403	0.000	60.39	HBD
MS-3A19	15	1.743	0.589	495.9	3.910	3.3	8.625	6.403	0.000	60.39	HBD
MS-3A18P	52	1.452	0.491	495.9	3.910	3.3	8.625	6.403	0.000	60.39	HBD
MS-3A17P-1	56	0.978	0.331	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).db

Wear Rate Report

Pass 1 Analysis Exclude Measured Wear

Report Date/Time: 7/6/2010 3:37:44PM
AnalysisDate/Time: 7/6/2010 3:24:52PM

CHECWORKS SFA Version: 3.0 SP-1 (build 109)
Duty Factor (Global) : 1.000

Run Name: RHTR DRN TK 23A USCV
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 1.000

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***MSD47-1-RHDT23A to CV***									***Sorted By: Flow Order***	
MS-3A11N	31	4.892	1.655	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3A11P	61	2.642	0.894	495.9	10.806	3.3	6.625	6.403	0.000	60.39	HBD
MS-3A11	1	3.229	1.092	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3A12P	51	2.153	0.728	495.9	10.806	3.3	6.625	6.403	0.000	60.39	HBD
MS-3A12	1	3.229	1.092	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3A13P	51	2.153	0.728	495.9	10.806	3.3	6.625	6.403	0.000	60.39	HBD
MS-3A13	2	3.620	1.225	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3A14P	52	2.446	0.827	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3A14	1	3.229	1.092	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3A15P-1 US	51	2.153	0.728	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3A15P-1 DS	51	2.153	0.728	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3A15	2	3.620	1.225	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3A15P	52	2.446	0.827	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3A16	2	3.620	1.225	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3A16P	52	2.446	0.827	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3A16FE	6	4.892	1.655	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3A17P-1	56	0.978	0.331	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3A17R	18	2.740	0.927	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3A17R (D/S)	18	1.743	0.589	495.9	3.910	3.3	8.625	6.403	0.000	60.39	HBD
MS-3A17	4	2.149	0.727	495.9	3.910	3.3	8.625	6.403	0.000	60.39	HBD
MS-3A17P	54	1.859	0.629	495.9	3.910	3.3	8.625	6.403	0.000	60.39	HBD
MS-3A18	2	2.149	0.727	495.9	3.910	3.3	8.625	6.403	0.000	60.39	HBD
MS-3A18P	52	1.452	0.491	495.9	3.910	3.3	8.625	6.403	0.000	60.39	HBD
MS-3A19	15	1.743	0.589	495.9	3.910	3.3	8.625	6.403	0.000	60.39	HBD
MS-3A19 (D/S)	15	1.743	0.589	495.9	3.910	3.3	8.625	6.403	0.000	60.39	HBD
MS-3A19R	7	2.033	0.688	495.9	3.910	3.3	8.625	6.403	0.000	60.39	HBD

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***MSD47-1-RHDT23A to CV***									***Sorted By: Flow Order***	
MS-3A19R (D/S)	7	3.131	1.059	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3A19P US	57	2.446	0.827	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3A19P DS	57	2.446	0.827	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3A20	2	3.620	1.225	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3A21	4	3.620	1.225	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3A21P US	52	2.446	0.827	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3A21P DS	52	2.446	0.827	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3A22	2	3.620	1.225	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3A22P	52	2.446	0.827	495.9	10.806	3.3	6.625	6.403	0.000	60.39	HBD
MS-3A23	2	3.620	1.225	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3A23R	7	3.425	1.158	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3A23R (D/S)	7	5.835	2.038	495.9	15.767	3.3	4.500	6.403	0.000	60.39	HBD

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).db

Service Life Report

Pass 1 Analysis Exclude Measured Wear

Report Date/Time: 7/6/2010 3:37:44PM
AnalysisDate/Time: 7/6/2010 3:24:52PM

Run Name: RHTR DRN TK 23A USCV
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 1.000

CHECWORKS SFA Version: 3.0 SP-1 (build 109)
Duty Factor (Global) :1.000

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **MSD47-1-RHDT23A to CV**					***Sorted By:Remaining Life***		
MS-3A11N	0.000	0.296	0.233	0.233	333,589	No	243,721
MS-3A16FE	0.000	0.296	0.233	0.233	333,589	No	243,721
MS-3A22	0.000	0.331	0.233	0.233	703,959	No	243,721
MS-3A23	0.000	0.331	0.233	0.233	703,959	No	243,721
MS-3A23R (D/S)	0.000	0.322	0.158	0.158	705,539	Yes	243,721
MS-3A12	0.000	0.342	0.233	0.233	876,625	No	243,721
MS-3A11	0.000	0.342	0.233	0.233	876,625	No	243,721
MS-3A19R (D/S)	0.000	0.345	0.233	0.233	926,537	No	243,721
MS-3A21	0.000	0.363	0.233	0.233	934,050	Yes	243,721
MS-3A14	0.000	0.353	0.233	0.233	963,920	Yes	243,721
MS-3A16	0.000	0.368	0.233	0.233	965,972	Yes	243,721
MS-3A20	0.000	0.368	0.233	0.233	969,818	Yes	243,721
MS-3A13	0.000	0.373	0.233	0.233	1,001,739	Yes	243,721
MS-3A15	0.000	0.380	0.233	0.233	1,051,814	Yes	243,721
MS-3A17R	0.000	0.356	0.233	0.233	1,161,833	No	243,721
MS-3A23R	0.000	0.388	0.233	0.233	1,171,444	Yes	243,721
MS-3A11P	0.000	0.358	0.233	0.233	1,231,551	No	243,721
MS-3A21P DS	0.000	0.364	0.233	0.233	1,387,718	No	243,721
MS-3A22P	0.000	0.364	0.233	0.233	1,387,718	No	243,721
MS-3A19P US	0.000	0.364	0.233	0.233	1,387,718	No	243,721
MS-3A14P	0.000	0.374	0.233	0.233	1,497,791	Yes	243,721
MS-3A21P US	0.000	0.384	0.233	0.233	1,604,933	Yes	243,721
MS-3A15P	0.000	0.388	0.233	0.233	1,646,011	Yes	243,721
MS-3A19P DS	0.000	0.388	0.233	0.233	1,647,282	Yes	243,721
MS-3A17	0.000	0.440	0.303	0.303	1,651,151	No	243,721
MS-3A18	0.000	0.440	0.303	0.303	1,651,151	No	243,721
MS-3A12P	0.000	0.372	0.233	0.233	1,675,208	No	243,721

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **MSD47-1-RHDT23A to CV**					***Sorted By:Remaining Life***		
MS-3A16P	0.000	0.393	0.233	0.233	1,698,946	Yes	243,721
MS-3A19R	0.000	0.443	0.303	0.303	1,786,677	No	243,721
MS-3A13P	0.000	0.384	0.233	0.233	1,814,635	Yes	243,721
MS-3A15P-1 US	0.000	0.389	0.233	0.233	1,874,790	Yes	243,721
MS-3A17P	0.000	0.448	0.303	0.303	2,021,728	No	243,721
MS-3A15P-1 DS	0.000	0.407	0.233	0.233	2,091,345	Yes	243,721
MS-3A19	0.000	0.452	0.303	0.303	2,204,546	No	243,721
MS-3A19 (D/S)	0.000	0.452	0.303	0.303	2,204,546	No	243,721
MS-3A17R (D/S)	0.000	0.452	0.303	0.303	2,204,546	No	243,721
MS-3A18P	0.000	0.460	0.303	0.303	2,789,563	No	243,721
MS-3A17P-1	0.000	0.410	0.233	0.233	4,690,365	Yes	243,721

Note:
[1] Predictions are based on last Tmeas to analysis ending period.

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).db

Service Life Report

Pass 1 Analysis Exclude Measured Wear

Report Date/Time: 7/6/2010 3:37:44PM
AnalysisDate/Time: 7/6/2010 3:24:52PM

Run Name: RHTR DRN TK 23A USCV
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 1.000

CHECWORKS SFA Version: 3.0 SP-1 (build 109)
Duty Factor (Global) : 1.000

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **MSD47-1-RHDT23A to CV**					***Sorted By:Flow Order***		
MS-3A11N	0.000	0.296	0.233	0.233	333,589	No	243,721
MS-3A11P	0.000	0.358	0.233	0.233	1,231,551	No	243,721
MS-3A11	0.000	0.342	0.233	0.233	876,625	No	243,721
MS-3A12P	0.000	0.372	0.233	0.233	1,675,208	No	243,721
MS-3A12	0.000	0.342	0.233	0.233	876,625	No	243,721
MS-3A13P	0.000	0.384	0.233	0.233	1,814,635	Yes	243,721
MS-3A13	0.000	0.373	0.233	0.233	1,001,739	Yes	243,721
MS-3A14P	0.000	0.374	0.233	0.233	1,497,791	Yes	243,721
MS-3A14	0.000	0.353	0.233	0.233	963,920	Yes	243,721
MS-3A15P-1 US	0.000	0.389	0.233	0.233	1,874,790	Yes	243,721
MS-3A15P-1 DS	0.000	0.407	0.233	0.233	2,091,345	Yes	243,721
MS-3A15	0.000	0.380	0.233	0.233	1,051,814	Yes	243,721
MS-3A15P	0.000	0.388	0.233	0.233	1,646,011	Yes	243,721
MS-3A16	0.000	0.368	0.233	0.233	965,972	Yes	243,721
MS-3A16P	0.000	0.393	0.233	0.233	1,698,946	Yes	243,721
MS-3A16FE	0.000	0.296	0.233	0.233	333,589	No	243,721
MS-3A17P-1	0.000	0.410	0.233	0.233	4,690,365	Yes	243,721
MS-3A17R	0.000	0.356	0.233	0.233	1,161,833	No	243,721
MS-3A17R (D/S)	0.000	0.452	0.303	0.303	2,204,546	No	243,721
MS-3A17	0.000	0.440	0.303	0.303	1,651,151	No	243,721
MS-3A17P	0.000	0.448	0.303	0.303	2,021,728	No	243,721
MS-3A18	0.000	0.440	0.303	0.303	1,651,151	No	243,721
MS-3A18P	0.000	0.460	0.303	0.303	2,789,563	No	243,721
MS-3A19	0.000	0.452	0.303	0.303	2,204,546	No	243,721
MS-3A19 (D/S)	0.000	0.452	0.303	0.303	2,204,546	No	243,721
MS-3A19R	0.000	0.443	0.303	0.303	1,786,677	No	243,721
MS-3A19R (D/S)	0.000	0.345	0.233	0.233	926,537	No	243,721

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **MSD47-1-RHDT23A to CV**					***Sorted By:Flow Order***		
MS-3A19P US	0.000	0.364	0.233	0.233	1,387,718	No	243,721
MS-3A19P DS	0.000	0.388	0.233	0.233	1,647,282	Yes	243,721
MS-3A20	0.000	0.368	0.233	0.233	969,818	Yes	243,721
MS-3A21	0.000	0.363	0.233	0.233	934,050	Yes	243,721
MS-3A21P US	0.000	0.384	0.233	0.233	1,604,933	Yes	243,721
MS-3A21P DS	0.000	0.364	0.233	0.233	1,387,718	No	243,721
MS-3A22	0.000	0.331	0.233	0.233	703,959	No	243,721
MS-3A22P	0.000	0.364	0.233	0.233	1,387,718	No	243,721
MS-3A23	0.000	0.331	0.233	0.233	703,959	No	243,721
MS-3A23R	0.000	0.388	0.233	0.233	1,171,444	Yes	243,721
MS-3A23R (D/S)	0.000	0.322	0.158	0.158	705,539	Yes	243,721

Note:
[1] Predictions are based on last Tmeas to analysis ending period.

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).db

Wear Rate Report

Pass 1 Analysis Exclude Measured Wear

Report Date/Time: 7/6/2010 3:38:15PM
AnalysisDate/Time: 7/6/2010 3:35:21PM

CHECWORKS SFA Version: 3.0 SP-1 (build 109)

Duty Factor (Global) : 1.000

Run Name: RHTR DRN TK 23B USCV
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 1.000

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***MSD50A-1-RHDT23B to CV***								***Sorted By: Average Wear Rate***		
MS-3B11N	31	4.892	1.655	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3B21FE	6	4.892	1.655	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3B34 (D/S)	12	4.012	1.357	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3B34	12	4.012	1.357	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3B19	2	3.680	1.245	495.9	7.038	3.3	6.625	6.403	0.000	60.39	HBD
MS-3B35	2	3.620	1.225	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3B36	2	3.620	1.225	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3B12	2	3.620	1.225	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3B37	2	3.620	1.225	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3B13	2	3.620	1.225	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3B14	4	3.620	1.225	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3B38	2	3.620	1.225	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3B15	2	3.620	1.225	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3B39	2	3.620	1.225	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3B16	4	3.620	1.225	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3B40	4	3.620	1.225	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3B17	2	3.620	1.225	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3B18	2	3.620	1.225	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3B20	4	3.620	1.225	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3B21	2	3.620	1.225	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3B22	2	3.620	1.225	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3B23	2	3.620	1.225	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3B31	2	3.620	1.225	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3B30	2	3.620	1.225	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3B31	2	3.620	1.225	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3B32	2	3.620	1.225	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***MSD50A-1-RHDT23B to CV***								***Sorted By: Average Wear Rate***		
MS-3B33	2	3.620	1.225	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3B42R (D/S)	17	3.282	1.146	495.9	15.767	3.3	4.500	6.403	0.000	60.39	HBD
MS-3B11	1	3.229	1.092	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3B24	1	3.229	1.092	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3B14P	54	3.131	1.059	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3B16P	54	3.131	1.059	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3B20P US	54	3.131	1.059	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3B40R	18	2.740	0.927	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3B11P-1	61	2.642	0.894	495.9	10.806	3.3	6.625	6.403	0.000	60.39	HBD
MS-3B35P	52	2.446	0.827	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3B36P	52	2.446	0.827	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3B12P	52	2.446	0.827	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3B37P	52	2.446	0.827	495.9	10.806	3.3	6.625	6.403	0.000	60.39	HBD
MS-3B13P	52	2.446	0.827	495.9	10.806	3.3	6.625	6.403	0.000	60.39	HBD
MS-3B38P US	52	2.446	0.827	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3B38P DS	52	2.446	0.827	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3B17P	52	2.446	0.827	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3B18P DS	52	2.446	0.827	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3B21P	52	2.446	0.827	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3B22P US	52	2.446	0.827	495.9	10.806	3.3	6.625	6.403	0.000	60.39	HBD
MS-3B22P DS	52	2.446	0.827	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3B23P US	52	2.446	0.827	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3B31P	52	2.446	0.827	495.9	8.745	3.3	6.625	6.403	0.000	60.39	HBD
MS-3B30P	52	2.446	0.827	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3B31P	52	2.446	0.827	495.9	8.745	3.3	6.625	6.403	0.000	60.39	HBD
MS-3B32P	52	2.446	0.827	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3B33P	52	2.446	0.827	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3B11P	51	2.153	0.728	495.9	10.806	3.3	6.625	6.403	0.000	60.39	HBD
MS-3B24P US	51	2.153	0.728	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3B24P DS	51	2.153	0.728	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3B41	2	2.149	0.727	495.9	3.910	3.3	8.625	6.403	0.000	60.39	HBD
MS-3B42	2	2.149	0.727	495.9	3.910	3.3	8.625	6.403	0.000	60.39	HBD
MS-3B34P	62	1.957	0.662	495.9	8.745	3.3	6.625	6.403	0.000	60.39	HBD
MS-3B40R (D/S)	18	1.743	0.589	495.9	3.910	3.3	8.625	6.403	0.000	60.39	HBD

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***MSD50A-1-RHDT23B to CV***								***Sorted By: Average Wear Rate***		
MS-3B25	2	1.527	1.232	495.9	6.959	3.3	6.625	6.403	0.000	60.39	HBD
MS-3B26	2	1.518	1.225	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3B27	2	1.518	1.225	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3B28	2	1.518	1.225	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3B29	2	1.518	1.225	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3B30	2	1.518	1.225	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3B40P	68	1.452	0.491	495.9	3.910	3.3	8.625	6.403	0.000	60.39	HBD
MS-3B41P US	52	1.452	0.491	495.9	10.736	3.3	8.625	6.403	0.000	60.39	HBD
MS-3B41P DS	52	1.452	0.491	495.9	10.736	3.3	8.625	6.403	0.000	60.39	HBD
MS-3B42P US	52	1.452	0.491	495.9	3.910	3.3	8.625	6.403	0.000	60.39	HBD
MS-3B42P DS	52	1.452	0.491	495.9	3.910	3.3	8.625	6.403	0.000	60.39	HBD
MS-3B42R	17	1.452	0.491	495.9	3.910	3.3	8.625	6.403	0.000	60.39	HBD
MS-3B26P US	52	1.026	0.827	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3B27P	52	1.026	0.827	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3B28P	52	1.026	0.827	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3B29P	52	1.026	0.827	495.9	8.745	3.3	6.625	6.403	0.000	60.39	HBD
MS-3B30P	52	1.026	0.827	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3B21P-1	56	0.987	0.334	495.9	6.983	3.3	6.625	6.403	0.000	60.39	HBD
MS-3B25P	51	0.905	0.730	495.9	6.939	3.3	6.625	6.403	0.000	60.39	HBD

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).db

Wear Rate Report

Pass 1 Analysis Exclude Measured Wear

Report Date/Time: 7/6/2010 3:37:44PM
AnalysisDate/Time: 7/6/2010 3:35:21PM

CHECWORKS SFA Version: 3.0 SP-1 (build 109)
Duty Factor (Global) : 1.000

Run Name: RHTR DRN TK 23B USCV
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 1.000

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***MSD50A-1-RHDT23B to CV***									***Sorted By: Flow Order***	
MS-3B11N	31	4.892	1.655	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3B11P-1	61	2.642	0.894	495.9	10.806	3.3	6.625	6.403	0.000	60.39	HBD
MS-3B11	1	3.229	1.092	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3B11P	51	2.153	0.728	495.9	10.806	3.3	6.625	6.403	0.000	60.39	HBD
MS-3B12	2	3.620	1.225	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3B12P	52	2.446	0.827	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3B13	2	3.620	1.225	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3B13P	52	2.446	0.827	495.9	10.806	3.3	6.625	6.403	0.000	60.39	HBD
MS-3B14	4	3.620	1.225	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3B14P	54	3.131	1.059	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3B15	2	3.620	1.225	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3B16	4	3.620	1.225	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3B16P	54	3.131	1.059	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3B17	2	3.620	1.225	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3B17P	52	2.446	0.827	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3B18	2	3.620	1.225	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3B18P DS	52	2.446	0.827	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3B19	2	3.680	1.245	495.9	7.038	3.3	6.625	6.403	0.000	60.39	HBD
MS-3B20	4	3.620	1.225	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3B20P US	54	3.131	1.059	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3B21	2	3.620	1.225	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3B21P	52	2.446	0.827	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3B21FE	6	4.892	1.655	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3B21P-1	56	0.987	0.334	495.9	6.983	3.3	6.625	6.403	0.000	60.39	HBD
MS-3B22	2	3.620	1.225	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3B22P US	52	2.446	0.827	495.9	10.806	3.3	6.625	6.403	0.000	60.39	HBD

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***MSD50A-1-RHDT23B to CV***									***Sorted By: Flow Order***	
MS-3B22P DS	52	2.446	0.827	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3B23	2	3.620	1.225	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3B23P US	52	2.446	0.827	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3B24	1	3.229	1.092	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3B24P US	51	2.153	0.728	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3B24P DS	51	2.153	0.728	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3B25	2	1.527	1.232	495.9	6.959	3.3	6.625	6.403	0.000	60.39	HBD
MS-3B25P	51	0.905	0.730	495.9	6.939	3.3	6.625	6.403	0.000	60.39	HBD
MS-3B26	2	1.518	1.225	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3B26P US	52	1.026	0.827	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3B27	2	1.518	1.225	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3B27P	52	1.026	0.827	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3B28	2	1.518	1.225	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3B28P	52	1.026	0.827	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3B29	2	1.518	1.225	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3B29P	52	1.026	0.827	495.9	8.745	3.3	6.625	6.403	0.000	60.39	HBD
MS-3B30	2	1.518	1.225	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3B30P	52	1.026	0.827	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3B31	2	3.620	1.225	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3B31P	52	2.446	0.827	495.9	8.745	3.3	6.625	6.403	0.000	60.39	HBD
MS-3B30	2	3.620	1.225	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3B30P	52	2.446	0.827	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3B31	2	3.620	1.225	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3B31P	52	2.446	0.827	495.9	8.745	3.3	6.625	6.403	0.000	60.39	HBD
MS-3B32	2	3.620	1.225	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3B32P	52	2.446	0.827	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3B33	2	3.620	1.225	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3B33P	52	2.446	0.827	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3B34	12	4.012	1.357	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3B34 (D/S)	12	4.012	1.357	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3B34P	62	1.957	0.662	495.9	8.745	3.3	6.625	6.403	0.000	60.39	HBD
MS-3B35	2	3.620	1.225	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3B35P	52	2.446	0.827	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3B36	2	3.620	1.225	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***MSD50A-1-RHDT23B to CV***									***Sorted By: Flow Order***	
MS-3B36P	52	2.446	0.827	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3B37	2	3.620	1.225	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3B37P	52	2.446	0.827	495.9	10.806	3.3	6.625	6.403	0.000	60.39	HBD
MS-3B38	2	3.620	1.225	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3B38P US	52	2.446	0.827	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3B38P DS	52	2.446	0.827	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3B39	2	3.620	1.225	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3B40	4	3.620	1.225	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3B40R	18	2.740	0.927	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3B40R (D/S)	18	1.743	0.589	495.9	3.910	3.3	8.625	6.403	0.000	60.39	HBD
MS-3B40P	68	1.452	0.491	495.9	3.910	3.3	8.625	6.403	0.000	60.39	HBD
MS-3B41	2	2.149	0.727	495.9	3.910	3.3	8.625	6.403	0.000	60.39	HBD
MS-3B41P US	52	1.452	0.491	495.9	10.736	3.3	8.625	6.403	0.000	60.39	HBD
MS-3B41P DS	52	1.452	0.491	495.9	10.736	3.3	8.625	6.403	0.000	60.39	HBD
MS-3B42	2	2.149	0.727	495.9	3.910	3.3	8.625	6.403	0.000	60.39	HBD
MS-3B42P US	52	1.452	0.491	495.9	3.910	3.3	8.625	6.403	0.000	60.39	HBD
MS-3B42P DS	52	1.452	0.491	495.9	3.910	3.3	8.625	6.403	0.000	60.39	HBD
MS-3B42R	17	1.452	0.491	495.9	3.910	3.3	8.625	6.403	0.000	60.39	HBD
MS-3B42R (D/S)	17	3.282	1.146	495.9	15.767	3.3	4.500	6.403	0.000	60.39	HBD

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).db

Service Life Report

Pass 1 Analysis Exclude Measured Wear

Report Date/Time: 7/6/2010 3:37:44PM
AnalysisDate/Time: 7/6/2010 3:35:21PM

Run Name: RHTR DRN TK 23B USCV
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 1.000

CHECWORKS SFA Version: 3.0 SP-1 (build 109)
Duty Factor (Global) :1.000

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **MSD50A-1-RHDT23B to CV**					***Sorted By:Remaining Life***		
MS-3B11N	0.000	0.296	0.233	0.233	333,589	No	243,721
MS-3B21FE	0.000	0.296	0.233	0.233	333,589	No	243,721
MS-3B31	0.000	0.317	0.233	0.233	601,144	Yes	243,721
MS-3B42R (D/S)	0.000	0.246	0.158	0.158	668,701	No	243,721
MS-3B17	0.000	0.331	0.233	0.233	703,959	No	243,721
MS-3B16	0.000	0.331	0.233	0.233	703,959	No	243,721
MS-3B15	0.000	0.331	0.233	0.233	703,959	No	243,721
MS-3B13	0.000	0.331	0.233	0.233	703,959	No	243,721
MS-3B12	0.000	0.331	0.233	0.233	703,959	No	243,721
MS-3B31	0.000	0.331	0.233	0.233	703,959	No	243,721
MS-3B32	0.000	0.331	0.233	0.233	703,959	No	243,721
MS-3B33	0.000	0.331	0.233	0.233	703,959	No	243,721
MS-3B21	0.000	0.331	0.233	0.233	703,959	No	243,721
MS-3B18	0.000	0.331	0.233	0.233	703,959	No	243,721
MS-3B35	0.000	0.331	0.233	0.233	703,959	No	243,721
MS-3B36	0.000	0.331	0.233	0.233	703,959	No	243,721
MS-3B37	0.000	0.331	0.233	0.233	703,959	No	243,721
MS-3B38	0.000	0.331	0.233	0.233	703,959	No	243,721
MS-3B34 (D/S)	0.000	0.351	0.233	0.233	761,044	No	243,721
MS-3B22	0.000	0.344	0.233	0.233	795,755	Yes	243,721
MS-3B11	0.000	0.342	0.233	0.233	876,625	No	243,721
MS-3B24	0.000	0.342	0.233	0.233	876,625	No	243,721
MS-3B16P	0.000	0.345	0.233	0.233	926,537	No	243,721
MS-3B20	0.000	0.364	0.233	0.233	937,777	Yes	243,721
MS-3B23	0.000	0.368	0.233	0.233	969,818	Yes	243,721
MS-3B30	0.000	0.374	0.233	0.233	1,008,892	Yes	243,721
MS-3B25	0.441	0.377	0.233	0.233	1,026,717	Yes	107,113

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **MSD50A-1-RHDT23B to CV**					***Sorted By:Remaining Life***		
MS-3B39	0.000	0.383	0.233	0.233	1,077,120	Yes	243,721
MS-3B40	0.000	0.383	0.233	0.233	1,077,120	Yes	243,721
MS-3B14	0.000	0.391	0.233	0.233	1,133,057	Yes	243,721
MS-3B19	0.457	0.399	0.233	0.233	1,167,310	Yes	243,721
MS-3B14P	0.000	0.382	0.233	0.233	1,229,621	Yes	243,721
MS-3B11P-1	0.000	0.358	0.233	0.233	1,231,551	No	243,721
MS-3B34	0.000	0.428	0.233	0.233	1,258,125	No	243,721
MS-3B27	0.000	0.413	0.233	0.233	1,291,725	No	107,113
MS-3B28	0.000	0.413	0.233	0.233	1,291,725	No	107,113
MS-3B29	0.000	0.413	0.233	0.233	1,291,725	No	107,113
MS-3B30	0.000	0.413	0.233	0.233	1,291,725	No	107,113
MS-3B26	0.000	0.416	0.233	0.233	1,306,829	Yes	107,113
MS-3B20P US	0.000	0.391	0.233	0.233	1,307,895	Yes	243,721
MS-3B17P	0.000	0.364	0.233	0.233	1,387,718	No	243,721
MS-3B12P	0.000	0.364	0.233	0.233	1,387,718	No	243,721
MS-3B31P	0.000	0.364	0.233	0.233	1,387,718	No	243,721
MS-3B32P	0.000	0.364	0.233	0.233	1,387,718	No	243,721
MS-3B21P	0.000	0.364	0.233	0.233	1,387,718	No	243,721
MS-3B35P	0.000	0.364	0.233	0.233	1,387,718	No	243,721
MS-3B36P	0.000	0.364	0.233	0.233	1,387,718	No	243,721
MS-3B37P	0.000	0.364	0.233	0.233	1,387,718	No	243,721
MS-3B38P US	0.000	0.364	0.233	0.233	1,387,718	No	243,721
MS-3B33P	0.000	0.374	0.233	0.233	1,497,791	Yes	243,721
MS-3B22P DS	0.000	0.374	0.233	0.233	1,499,062	Yes	243,721
MS-3B13P	0.000	0.378	0.233	0.233	1,540,205	Yes	243,721
MS-3B31P	0.000	0.383	0.233	0.233	1,593,075	Yes	243,721
MS-3B30P	0.000	0.385	0.233	0.233	1,614,249	Yes	243,721
MS-3B41	0.000	0.440	0.303	0.303	1,651,151	No	243,721
MS-3B18P DS	0.000	0.391	0.233	0.233	1,672,468	Yes	243,721
MS-3B11P	0.000	0.372	0.233	0.233	1,675,208	No	243,721
MS-3B24P US	0.000	0.372	0.233	0.233	1,675,208	No	243,721
MS-3B38P DS	0.000	0.392	0.233	0.233	1,689,630	Yes	243,721
MS-3B26P US	0.000	0.395	0.233	0.233	1,714,939	Yes	107,113
MS-3B22P US	0.000	0.402	0.233	0.233	1,788,489	Yes	243,721
MS-3B34P	0.000	0.378	0.233	0.233	1,914,782	No	243,721
MS-3B25P	0.437	0.394	0.233	0.233	1,927,164	Yes	107,113
MS-3B23P US	0.000	0.415	0.233	0.233	1,933,135	Yes	243,721

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **MSD50A-1-RHDT23B to CV**					***Sorted By:Remaining Life***		
MS-3B27P	0.000	0.419	0.233	0.233	1,975,484	No	107,113
MS-3B28P	0.000	0.419	0.233	0.233	1,975,484	No	107,113
MS-3B29P	0.000	0.419	0.233	0.233	1,975,484	No	107,113
MS-3B30P	0.000	0.419	0.233	0.233	1,975,484	No	107,113
MS-3B24P DS	0.000	0.401	0.233	0.233	2,020,400	Yes	243,721
MS-3B42	0.000	0.476	0.303	0.303	2,082,277	Yes	243,721
MS-3B40R	0.000	0.455	0.233	0.233	2,099,353	Yes	243,721
MS-3B40R (D/S)	0.000	0.471	0.303	0.303	2,495,098	Yes	243,721
MS-3B40P	0.000	0.460	0.303	0.303	2,789,563	No	243,721
MS-3B41P US	0.000	0.460	0.303	0.303	2,789,563	No	243,721
MS-3B42P DS	0.000	0.460	0.303	0.303	2,789,563	No	243,721
MS-3B42R	0.000	0.460	0.303	0.303	2,789,563	No	243,721
MS-3B42P US	0.000	0.463	0.303	0.303	2,842,345	Yes	243,721
MS-3B41P DS	0.000	0.469	0.303	0.303	2,949,342	Yes	243,721
MS-3B21P-1	0.000	0.395	0.233	0.233	4,250,992	No	243,721

Note:
[1] Predictions are based on last Tmeas to analysis ending period.

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).db

Service Life Report

Pass 1 Analysis Exclude Measured Wear

Report Date/Time: 7/6/2010 3:37:44PM
AnalysisDate/Time: 7/6/2010 3:35:21PM

Run Name: RHTR DRN TK 23B USCV
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 1.000

CHECWORKS SFA Version: 3.0 SP-1 (build 109)
Duty Factor (Global) : 1.000

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **MSD50A-1-RHDT23B to CV**					***Sorted By:Flow Order***		
MS-3B11N	0.000	0.296	0.233	0.233	333,589	No	243,721
MS-3B11P-1	0.000	0.358	0.233	0.233	1,231,551	No	243,721
MS-3B11	0.000	0.342	0.233	0.233	876,625	No	243,721
MS-3B11P	0.000	0.372	0.233	0.233	1,675,208	No	243,721
MS-3B12	0.000	0.331	0.233	0.233	703,959	No	243,721
MS-3B12P	0.000	0.364	0.233	0.233	1,387,718	No	243,721
MS-3B13	0.000	0.331	0.233	0.233	703,959	No	243,721
MS-3B13P	0.000	0.378	0.233	0.233	1,540,205	Yes	243,721
MS-3B14	0.000	0.391	0.233	0.233	1,133,057	Yes	243,721
MS-3B14P	0.000	0.382	0.233	0.233	1,229,621	Yes	243,721
MS-3B15	0.000	0.331	0.233	0.233	703,959	No	243,721
MS-3B16	0.000	0.331	0.233	0.233	703,959	No	243,721
MS-3B16P	0.000	0.345	0.233	0.233	926,537	No	243,721
MS-3B17	0.000	0.331	0.233	0.233	703,959	No	243,721
MS-3B17P	0.000	0.364	0.233	0.233	1,387,718	No	243,721
MS-3B18	0.000	0.331	0.233	0.233	703,959	No	243,721
MS-3B18P DS	0.000	0.391	0.233	0.233	1,672,468	Yes	243,721
MS-3B19	0.457	0.399	0.233	0.233	1,167,310	Yes	243,721
MS-3B20	0.000	0.364	0.233	0.233	937,777	Yes	243,721
MS-3B20P US	0.000	0.391	0.233	0.233	1,307,895	Yes	243,721
MS-3B21	0.000	0.331	0.233	0.233	703,959	No	243,721
MS-3B21P	0.000	0.364	0.233	0.233	1,387,718	No	243,721
MS-3B21FE	0.000	0.296	0.233	0.233	333,589	No	243,721
MS-3B21P-1	0.000	0.395	0.233	0.233	4,250,992	No	243,721
MS-3B22	0.000	0.344	0.233	0.233	795,755	Yes	243,721
MS-3B22P US	0.000	0.402	0.233	0.233	1,788,489	Yes	243,721
MS-3B22P DS	0.000	0.374	0.233	0.233	1,499,062	Yes	243,721

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **MSD50A-1-RHDT23B to CV**					***Sorted By:Flow Order***		
MS-3B23	0.000	0.368	0.233	0.233	969,818	Yes	243,721
MS-3B23P US	0.000	0.415	0.233	0.233	1,933,135	Yes	243,721
MS-3B24	0.000	0.342	0.233	0.233	876,625	No	243,721
MS-3B24P US	0.000	0.372	0.233	0.233	1,675,208	No	243,721
MS-3B24P DS	0.000	0.401	0.233	0.233	2,020,400	Yes	243,721
MS-3B25	0.441	0.377	0.233	0.233	1,026,717	Yes	107,113
MS-3B25P	0.437	0.394	0.233	0.233	1,927,164	Yes	107,113
MS-3B26	0.000	0.416	0.233	0.233	1,306,829	Yes	107,113
MS-3B26P US	0.000	0.395	0.233	0.233	1,714,939	Yes	107,113
MS-3B27	0.000	0.413	0.233	0.233	1,291,725	No	107,113
MS-3B27P	0.000	0.419	0.233	0.233	1,975,484	No	107,113
MS-3B28	0.000	0.413	0.233	0.233	1,291,725	No	107,113
MS-3B28P	0.000	0.419	0.233	0.233	1,975,484	No	107,113
MS-3B29	0.000	0.413	0.233	0.233	1,291,725	No	107,113
MS-3B29P	0.000	0.419	0.233	0.233	1,975,484	No	107,113
MS-3B30	0.000	0.413	0.233	0.233	1,291,725	No	107,113
MS-3B30P	0.000	0.419	0.233	0.233	1,975,484	No	107,113
MS-3B31	0.000	0.331	0.233	0.233	703,959	No	243,721
MS-3B31P	0.000	0.364	0.233	0.233	1,387,718	No	243,721
MS-3B30	0.000	0.374	0.233	0.233	1,008,892	Yes	243,721
MS-3B30P	0.000	0.385	0.233	0.233	1,614,249	Yes	243,721
MS-3B31	0.000	0.317	0.233	0.233	601,144	Yes	243,721
MS-3B31P	0.000	0.383	0.233	0.233	1,593,075	Yes	243,721
MS-3B32	0.000	0.331	0.233	0.233	703,959	No	243,721
MS-3B32P	0.000	0.364	0.233	0.233	1,387,718	No	243,721
MS-3B33	0.000	0.331	0.233	0.233	703,959	No	243,721
MS-3B33P	0.000	0.374	0.233	0.233	1,497,791	Yes	243,721
MS-3B34	0.000	0.428	0.233	0.233	1,258,125	No	243,721
MS-3B34 (D/S)	0.000	0.351	0.233	0.233	761,044	No	243,721
MS-3B34P	0.000	0.378	0.233	0.233	1,914,782	No	243,721
MS-3B35	0.000	0.331	0.233	0.233	703,959	No	243,721
MS-3B35P	0.000	0.364	0.233	0.233	1,387,718	No	243,721
MS-3B36	0.000	0.331	0.233	0.233	703,959	No	243,721
MS-3B36P	0.000	0.364	0.233	0.233	1,387,718	No	243,721
MS-3B37	0.000	0.331	0.233	0.233	703,959	No	243,721
MS-3B37P	0.000	0.364	0.233	0.233	1,387,718	No	243,721
MS-3B38	0.000	0.331	0.233	0.233	703,959	No	243,721

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **MSD50A-1-RHDT23B to CV**					***Sorted By:Flow Order***		
MS-3B38P US	0.000	0.364	0.233	0.233	1,387,718	No	243,721
MS-3B38P DS	0.000	0.392	0.233	0.233	1,689,630	Yes	243,721
MS-3B39	0.000	0.383	0.233	0.233	1,077,120	Yes	243,721
MS-3B40	0.000	0.383	0.233	0.233	1,077,120	Yes	243,721
MS-3B40R	0.000	0.455	0.233	0.233	2,099,353	Yes	243,721
MS-3B40R (D/S)	0.000	0.471	0.303	0.303	2,495,098	Yes	243,721
MS-3B40P	0.000	0.460	0.303	0.303	2,789,563	No	243,721
MS-3B41	0.000	0.440	0.303	0.303	1,651,151	No	243,721
MS-3B41P US	0.000	0.460	0.303	0.303	2,789,563	No	243,721
MS-3B41P DS	0.000	0.469	0.303	0.303	2,949,342	Yes	243,721
MS-3B42	0.000	0.476	0.303	0.303	2,082,277	Yes	243,721
MS-3B42P US	0.000	0.463	0.303	0.303	2,842,345	Yes	243,721
MS-3B42P DS	0.000	0.460	0.303	0.303	2,789,563	No	243,721
MS-3B42R	0.000	0.460	0.303	0.303	2,789,563	No	243,721
MS-3B42R (D/S)	0.000	0.246	0.158	0.158	668,701	No	243,721

Note:
[1] Predictions are based on last Tmeas to analysis ending period.

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).db

Wear Rate Report

Pass 1 Analysis Exclude Measured Wear

Report Date/Time: 7/6/2010 3:38:15PM
AnalysisDate/Time: 7/6/2010 3:35:55PM

CHECWORKS SFA Version: 3.0 SP-1 (build 109)

Duty Factor (Global) : 1.000

Run Name: RHTR DTK A DRN DSCV
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 1.000

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***MSD45B-1-RHDT21A CV to FWH26***								***Sorted By: Average Wear Rate***		
MS-1A-VALVE-LCV-1104	24	9.117	3.185	495.9	15.767	3.3	4.500	6.403	0.000	60.39	HBD
MS-1A30R2	18	0.001	0.001	495.9	15.767	3.3	4.500	6.403	0.000	60.39	HBD
MS-1A31	2	0.001	0.001	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A32	1	0.001	0.001	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A30R2 (D/S)	18	0.001	0.000	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A30P2	68	0.001	0.000	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A31P	52	0.001	0.000	495.9	10.806	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A32P	51	0.000	0.000	495.9	10.806	3.3	6.625	6.403	0.000	60.39	HBD
===>Grouped by Line:	***MSD45C-1-RHDT A HDR to FWH26***								***Sorted By: Average Wear Rate***		
MS-1A34T1 (BR/SE)	12	3.327	1.125	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A34T1 (D/S)	12	1.563	0.529	495.9	2.450	3.3	10.750	6.403	0.000	60.39	HBD
MS-1A34P1	62	0.763	0.258	495.9	2.450	3.3	10.750	6.403	0.000	60.39	HBD
===>Grouped by Line:	***MSD45C-2-RHDT A HDR to FWH26***								***Sorted By: Average Wear Rate***		
MS-1A34T2 (BR/SE)	12	3.327	1.125	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A34T2 (D/S)	12	2.830	0.957	495.9	4.965	3.3	10.750	6.403	0.000	60.39	HBD
MS-1A35	1	2.278	0.770	495.9	4.965	3.3	10.750	6.403	0.000	60.39	HBD
MS-1A34T2	12	1.563	0.529	495.9	2.450	3.3	10.750	6.403	0.000	60.39	HBD
MS-1A34P2	62	1.381	0.467	495.9	4.965	3.3	10.750	6.403	0.000	60.39	HBD
===>Grouped by Line:	***MSD45C-3-RHDT A HDR to FWH26***								***Sorted By: Average Wear Rate***		
MS-1A35T (D/S)	12	4.014	1.358	495.9	7.499	3.3	10.750	6.403	0.000	60.39	HBD
MS-1A36	3	3.427	1.159	495.9	7.499	3.3	10.750	6.403	0.000	60.39	HBD
MS-1A35T (BR/SE)	12	3.327	1.125	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A37	1	3.231	1.093	495.9	7.499	3.3	10.750	6.403	0.000	60.39	HBD
MS-1A38	1	3.231	1.093	495.9	7.499	3.3	10.750	6.403	0.000	60.39	HBD
MS-1A39	1	3.231	1.093	495.9	7.499	3.3	10.750	6.403	0.000	60.39	HBD

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***MSD45C-3-RHDT A HDR to FWH26***								***Sorted By: Average Wear Rate***		
MS-1A40	1	3.231	1.093	495.9	7.499	3.3	10.750	6.403	0.000	60.39	HBD
MS-1A35T	12	2.830	0.957	495.9	4.965	3.3	10.750	6.403	0.000	60.39	HBD
MS-1A36P US	51	2.154	0.729	495.9	7.499	3.3	10.750	6.403	0.000	60.39	HBD
MS-1A36P DS	51	2.154	0.729	495.9	7.499	3.3	10.750	6.403	0.000	60.39	HBD
MS-1A37P US	51	2.154	0.729	495.9	7.499	3.3	10.750	6.403	0.000	60.39	HBD
MS-1A37P DS	51	2.154	0.729	495.9	7.499	3.3	10.750	6.403	0.000	60.39	HBD
MS-1A38P	51	2.154	0.729	495.9	7.499	3.3	10.750	6.403	0.000	60.39	HBD
MS-1A39P	51	2.154	0.729	495.9	8.204	3.3	10.750	6.403	0.000	60.39	HBD
MS-1A40P	51	2.154	0.729	495.9	7.499	3.3	10.750	6.403	0.000	60.39	HBD
MS-1A41	14	0.001	0.001	495.9	7.499	3.3	10.750	6.403	0.000	60.39	HBD
MS-1A41 (D/S)	14	0.001	0.001	495.9	4.965	3.3	10.750	6.403	0.000	60.39	HBD
MS-1A41 (BR/SE)	14	0.001	0.001	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
===>Grouped by Line:	***MSD45C-4-RHDT A HDR to FWH26C***								***Sorted By: Average Wear Rate***		
MS-1A-VALVE-MS-14-2	22	4.892	1.655	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A66 (D/S)	12	4.012	1.357	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A66	12	4.012	1.357	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A67R	18	2.740	0.927	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A67N	30	2.324	0.786	495.9	3.910	3.3	8.625	6.403	0.000	60.39	HBD
MS-1A66P US	58	2.153	0.728	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A66P DS	58	2.153	0.728	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A67 (D/S)	12	2.074	1.357	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A67	12	2.074	1.357	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A67P-1	62	1.957	0.662	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A67P US	62	1.957	0.662	495.9	8.745	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A67P DS	62	1.957	0.662	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A67R (D/S)	18	1.743	0.589	495.9	3.910	3.3	8.625	6.403	0.000	60.39	HBD
MS-1A63	2	0.001	0.001	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A64	2	0.001	0.001	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A65	2	0.001	0.001	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A64P US	52	0.001	0.000	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A64P DS	52	0.001	0.000	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A65P US	52	0.001	0.000	495.9	8.745	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A65P DS	52	0.001	0.000	495.9	8.745	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A63P US	64	0.000	0.000	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***MSD45C-4-RHDT A HDR to FWH26C***								***Sorted By: Average Wear Rate***		
MS-1A63P DS	64	0.000	0.000	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
===>Grouped by Line:	***MSD45C-5-RHDT A HDR to FWH26***								***Sorted By: Average Wear Rate***		
MS-1A68	14	5.784	1.956	495.9	7.870	3.3	8.625	6.403	0.000	60.39	HBD
MS-1A42	1	3.470	1.174	495.9	7.870	3.3	8.625	6.403	0.000	60.39	HBD
MS-1A43	1	3.470	1.174	495.9	7.870	3.3	8.625	6.403	0.000	60.39	HBD
MS-1A44	1	3.470	1.174	495.9	7.870	3.3	8.625	6.403	0.000	60.39	HBD
MS-1A45	1	3.470	1.174	495.9	7.870	3.3	8.625	6.403	0.000	60.39	HBD
MS-1A68 (BR/SE)	14	3.425	1.158	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A41R (D/S)	7	3.365	1.138	495.9	7.870	3.3	8.625	6.403	0.000	60.39	HBD
MS-1A68 (D/S)	14	3.195	1.081	495.9	3.910	3.3	8.625	6.403	0.000	60.39	HBD
MS-1A41P-1 US	57	2.629	0.889	495.9	7.870	3.3	8.625	6.403	0.000	60.39	HBD
MS-1A41P-1 DS	57	2.629	0.889	495.9	7.870	3.3	8.625	6.403	0.000	60.39	HBD
MS-1A41R	7	2.416	0.817	495.9	4.965	3.3	10.750	6.403	0.000	60.39	HBD
MS-1A42P US	51	2.314	0.783	495.9	15.283	3.3	8.625	6.403	0.000	60.39	HBD
MS-1A42P DS	51	2.314	0.783	495.9	15.283	3.3	8.625	6.403	0.000	60.39	HBD
MS-1A43P US	51	2.314	0.783	495.9	7.870	3.3	8.625	6.403	0.000	60.39	HBD
MS-1A43P DS	51	2.314	0.783	495.9	7.870	3.3	8.625	6.403	0.000	60.39	HBD
MS-1A44P US	51	2.314	0.783	495.9	7.870	3.3	8.625	6.403	0.000	60.39	HBD
MS-1A44P DS	51	2.314	0.783	495.9	9.952	3.3	8.625	6.403	0.000	60.39	HBD
MS-1A45P US	51	2.314	0.783	495.9	7.870	3.3	8.625	6.403	0.000	60.39	HBD
===>Grouped by Line:	***MSD45D-1-RHDT A HDR to FWH26B***								***Sorted By: Average Wear Rate***		
MS-1A-VALVE-MS-14-1	22	4.892	1.655	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A62 (D/S)	12	4.012	1.357	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A61 (D/S)	12	4.012	1.357	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A62	12	4.012	1.357	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A61	12	4.012	1.357	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A55	4	3.620	1.225	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A56	2	3.620	1.225	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A57	4	3.620	1.225	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A58	2	3.620	1.225	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A59	2	3.620	1.225	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A60	2	3.620	1.225	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A55P	54	3.131	1.059	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A57P	54	3.131	1.059	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***MSD45D-1-RHDT A HDR to FWH26B***								***Sorted By: Average Wear Rate***		
MS-1A57P DS	54	3.131	1.059	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A62R	18	2.740	0.927	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A58P	52	2.446	0.827	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A59P US	52	2.446	0.827	495.9	8.745	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A59P DS	52	2.446	0.827	495.9	8.745	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A62N	30	2.324	0.786	495.9	3.910	3.3	8.625	6.403	0.000	60.39	HBD
MS-1A60P US	58	2.153	0.728	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A60P DS	58	2.153	0.728	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A61P US	62	1.957	0.662	495.9	8.745	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A61P-1	62	1.957	0.662	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A68P	64	1.957	0.662	495.9	8.745	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A61P DS	62	1.957	0.662	495.9	8.745	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A62R (D/S)	18	1.743	0.589	495.9	3.910	3.3	8.625	6.403	0.000	60.39	HBD
===>Grouped by Line:	***MSD45D-2-RHDT A HDR to FWH26A***								***Sorted By: Average Wear Rate***		
MS-1A-VALVE-MS-14	22	4.892	1.655	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A54 (D/S)	12	4.012	1.357	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A53 (D/S)	12	4.012	1.357	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A54	12	4.012	1.357	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A53	12	4.012	1.357	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A46	2	3.620	1.225	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A47	4	3.620	1.225	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A48	2	3.620	1.225	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A49	4	3.620	1.225	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A50	2	3.620	1.225	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A51	2	3.620	1.225	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A52	2	3.620	1.225	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A45R (D/S)	7	3.131	1.059	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A47P US	54	3.131	1.059	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A47P DS	54	3.131	1.059	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A49P US	54	3.131	1.059	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A49P DS	54	3.131	1.059	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A54R	18	2.740	0.927	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A46P	52	2.446	0.827	495.9	8.745	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A50P	52	2.446	0.827	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***MSD45D-2-RHDT A HDR to FWH26A***								***Sorted By: Average Wear Rate***		
MS-1A51P US	52	2.446	0.827	495.9	8.745	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A51P DS	52	2.446	0.827	495.9	8.745	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A54N	30	2.324	0.786	495.9	3.910	3.3	8.625	6.403	0.000	60.39	HBD
MS-1A52P US	58	2.153	0.728	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A52P DS	58	2.153	0.728	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A45R	7	2.033	0.688	495.9	3.910	3.3	8.625	6.403	0.000	60.39	HBD
MS-1A53P US	62	1.957	0.662	495.9	8.745	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A53P-1	62	1.957	0.662	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A53P DS	62	1.957	0.662	495.9	8.745	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A45P-1 US	67	1.957	0.662	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A45P-1 DS	67	1.957	0.662	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A54R (D/S)	18	1.743	0.589	495.9	3.910	3.3	8.625	6.403	0.000	60.39	HBD
===>Grouped by Line:	***MSD46A-2-RHDT22A CV to FWH26***								***Sorted By: Average Wear Rate***		
MS-2A-VALVE-LCV-1104A	24	14.651	5.118	495.9	33.594	3.3	3.500	6.403	0.000	60.39	HBD
MS-2A24R	18	0.001	0.001	495.9	15.767	3.3	4.500	6.403	0.000	60.39	HBD
MS-2A24	2	0.001	0.001	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2A25	1	0.001	0.001	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2A24R (D/S)	18	0.001	0.000	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2A23P	68	0.001	0.000	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2A24P	52	0.001	0.000	495.9	10.806	3.3	6.625	6.403	0.000	60.39	HBD
MS-2A25P	51	0.000	0.000	495.9	10.806	3.3	6.625	6.403	0.000	60.39	HBD
===>Grouped by Line:	***MSD47-2-RHDT23A CV to FWH26***								***Sorted By: Average Wear Rate***		
MS-3A-VALVE-LCV-1104B	24	9.117	3.185	495.9	15.767	3.3	4.500	6.403	0.000	60.39	HBD
MS-3A24R	18	0.001	0.001	495.9	15.767	3.3	4.500	6.403	0.000	60.39	HBD
MS-3A24	2	0.001	0.001	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3A25	1	0.001	0.001	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3A24R (D/S)	18	0.001	0.000	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3A23P	68	0.001	0.000	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3A24P	52	0.001	0.000	495.9	10.806	3.3	6.625	6.403	0.000	60.39	HBD
MS-3A25P	51	0.000	0.000	495.9	10.806	3.3	6.625	6.403	0.000	60.39	HBD

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).db

Wear Rate Report

Pass 1 Analysis Exclude Measured Wear

Report Date/Time: 7/6/2010 3:37:44PM
AnalysisDate/Time: 7/6/2010 3:35:55PM

CHECWORKS SFA Version: 3.0 SP-1 (build 109)
Duty Factor (Global) : 1.000

Run Name: RHTR DTK A DRN DSCV
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 1.000

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***MSD45B-1-RHDT21A CV to FWH26***									***Sorted By: Flow Order***	
MS-1A-VALVE-LCV-1104	24	9.117	3.185	495.9	15.767	3.3	4.500	6.403	0.000	60.39	HBD
MS-1A30R2	18	0.001	0.001	495.9	15.767	3.3	4.500	6.403	0.000	60.39	HBD
MS-1A30R2 (D/S)	18	0.001	0.000	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A30P2	68	0.001	0.000	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A31	2	0.001	0.001	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A31P	52	0.001	0.000	495.9	10.806	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A32	1	0.001	0.001	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A32P	51	0.000	0.000	495.9	10.806	3.3	6.625	6.403	0.000	60.39	HBD
===>Grouped by Line:	***MSD45C-1-RHDT A HDR to FWH26***									***Sorted By: Flow Order***	
MS-1A34T1 (D/S)	12	1.563	0.529	495.9	2.450	3.3	10.750	6.403	0.000	60.39	HBD
MS-1A34P1	62	0.763	0.258	495.9	2.450	3.3	10.750	6.403	0.000	60.39	HBD
MS-1A34T1 (BR/SE)	12	3.327	1.125	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
===>Grouped by Line:	***MSD45C-2-RHDT A HDR to FWH26***									***Sorted By: Flow Order***	
MS-1A34T2	12	1.563	0.529	495.9	2.450	3.3	10.750	6.403	0.000	60.39	HBD
MS-1A34T2 (D/S)	12	2.830	0.957	495.9	4.965	3.3	10.750	6.403	0.000	60.39	HBD
MS-1A34P2	62	1.381	0.467	495.9	4.965	3.3	10.750	6.403	0.000	60.39	HBD
MS-1A35	1	2.278	0.770	495.9	4.965	3.3	10.750	6.403	0.000	60.39	HBD
MS-1A34T2 (BR/SE)	12	3.327	1.125	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
===>Grouped by Line:	***MSD45C-3-RHDT A HDR to FWH26***									***Sorted By: Flow Order***	
MS-1A35T (BR/SE)	12	3.327	1.125	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A35T	12	2.830	0.957	495.9	4.965	3.3	10.750	6.403	0.000	60.39	HBD
MS-1A35T (D/S)	12	4.014	1.358	495.9	7.499	3.3	10.750	6.403	0.000	60.39	HBD
MS-1A36	3	3.427	1.159	495.9	7.499	3.3	10.750	6.403	0.000	60.39	HBD
MS-1A36P US	51	2.154	0.729	495.9	7.499	3.3	10.750	6.403	0.000	60.39	HBD
MS-1A36P DS	51	2.154	0.729	495.9	7.499	3.3	10.750	6.403	0.000	60.39	HBD

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***MSD45C-3-RHDT A HDR to FWH26***									***Sorted By: Flow Order***	
MS-1A37	1	3.231	1.093	495.9	7.499	3.3	10.750	6.403	0.000	60.39	HBD
MS-1A37P US	51	2.154	0.729	495.9	7.499	3.3	10.750	6.403	0.000	60.39	HBD
MS-1A37P DS	51	2.154	0.729	495.9	7.499	3.3	10.750	6.403	0.000	60.39	HBD
MS-1A38	1	3.231	1.093	495.9	7.499	3.3	10.750	6.403	0.000	60.39	HBD
MS-1A38P	51	2.154	0.729	495.9	7.499	3.3	10.750	6.403	0.000	60.39	HBD
MS-1A39	1	3.231	1.093	495.9	7.499	3.3	10.750	6.403	0.000	60.39	HBD
MS-1A39P	51	2.154	0.729	495.9	8.204	3.3	10.750	6.403	0.000	60.39	HBD
MS-1A40	1	3.231	1.093	495.9	7.499	3.3	10.750	6.403	0.000	60.39	HBD
MS-1A40P	51	2.154	0.729	495.9	7.499	3.3	10.750	6.403	0.000	60.39	HBD
MS-1A41	14	0.001	0.001	495.9	7.499	3.3	10.750	6.403	0.000	60.39	HBD
MS-1A41 (BR/SE)	14	0.001	0.001	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A41 (D/S)	14	0.001	0.001	495.9	4.965	3.3	10.750	6.403	0.000	60.39	HBD
===>Grouped by Line:	***MSD45C-4-RHDT A HDR to FWH26C***									***Sorted By: Flow Order***	
MS-1A63P US	64	0.000	0.000	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A63P DS	64	0.000	0.000	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A63	2	0.001	0.001	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A64P US	52	0.001	0.000	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A64P DS	52	0.001	0.000	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A64	2	0.001	0.001	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A65P US	52	0.001	0.000	495.9	8.745	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A65P DS	52	0.001	0.000	495.9	8.745	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A65	2	0.001	0.001	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A-VALVE-MS-14-2	22	4.892	1.655	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A66P US	58	2.153	0.728	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A66P DS	58	2.153	0.728	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A66	12	4.012	1.357	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A66 (D/S)	12	4.012	1.357	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A67P US	62	1.957	0.662	495.9	8.745	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A67P DS	62	1.957	0.662	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A67	12	2.074	1.357	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A67 (D/S)	12	2.074	1.357	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A67P-1	62	1.957	0.662	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A67R	18	2.740	0.927	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A67R (D/S)	18	1.743	0.589	495.9	3.910	3.3	8.625	6.403	0.000	60.39	HBD

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***MSD45C-4-RHDT A HDR to FWH26C***									***Sorted By: Flow Order***	
MS-1A67N	30	2.324	0.786	495.9	3.910	3.3	8.625	6.403	0.000	60.39	HBD
===>Grouped by Line:	***MSD45C-5-RHDT A HDR to FWH26***									***Sorted By: Flow Order***	
MS-1A41R	7	2.416	0.817	495.9	4.965	3.3	10.750	6.403	0.000	60.39	HBD
MS-1A41R (D/S)	7	3.365	1.138	495.9	7.870	3.3	8.625	6.403	0.000	60.39	HBD
MS-1A41P-1 US	57	2.629	0.889	495.9	7.870	3.3	8.625	6.403	0.000	60.39	HBD
MS-1A41P-1 DS	57	2.629	0.889	495.9	7.870	3.3	8.625	6.403	0.000	60.39	HBD
MS-1A42	1	3.470	1.174	495.9	7.870	3.3	8.625	6.403	0.000	60.39	HBD
MS-1A42P US	51	2.314	0.783	495.9	15.283	3.3	8.625	6.403	0.000	60.39	HBD
MS-1A42P DS	51	2.314	0.783	495.9	15.283	3.3	8.625	6.403	0.000	60.39	HBD
MS-1A43	1	3.470	1.174	495.9	7.870	3.3	8.625	6.403	0.000	60.39	HBD
MS-1A43P US	51	2.314	0.783	495.9	7.870	3.3	8.625	6.403	0.000	60.39	HBD
MS-1A43P DS	51	2.314	0.783	495.9	7.870	3.3	8.625	6.403	0.000	60.39	HBD
MS-1A44	1	3.470	1.174	495.9	7.870	3.3	8.625	6.403	0.000	60.39	HBD
MS-1A44P US	51	2.314	0.783	495.9	7.870	3.3	8.625	6.403	0.000	60.39	HBD
MS-1A44P DS	51	2.314	0.783	495.9	9.952	3.3	8.625	6.403	0.000	60.39	HBD
MS-1A45	1	3.470	1.174	495.9	7.870	3.3	8.625	6.403	0.000	60.39	HBD
MS-1A45P US	51	2.314	0.783	495.9	7.870	3.3	8.625	6.403	0.000	60.39	HBD
MS-1A68	14	5.784	1.956	495.9	7.870	3.3	8.625	6.403	0.000	60.39	HBD
MS-1A68 (BR/SE)	14	3.425	1.158	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A68 (D/S)	14	3.195	1.081	495.9	3.910	3.3	8.625	6.403	0.000	60.39	HBD
===>Grouped by Line:	***MSD45D-1-RHDT A HDR to FWH26B***									***Sorted By: Flow Order***	
MS-1A68P	64	1.957	0.662	495.9	8.745	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A55	4	3.620	1.225	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A55P	54	3.131	1.059	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A56	2	3.620	1.225	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A57	4	3.620	1.225	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A57P	54	3.131	1.059	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A57P DS	54	3.131	1.059	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A58	2	3.620	1.225	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A58P	52	2.446	0.827	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A59	2	3.620	1.225	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A59P US	52	2.446	0.827	495.9	8.745	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A59P DS	52	2.446	0.827	495.9	8.745	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A60	2	3.620	1.225	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***MSD45D-1-RHDT A HDR to FWH26B***									***Sorted By: Flow Order***	
MS-1A-VALVE-MS-14-1	22	4.892	1.655	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A60P US	58	2.153	0.728	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A60P DS	58	2.153	0.728	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A61	12	4.012	1.357	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A61 (D/S)	12	4.012	1.357	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A61P US	62	1.957	0.662	495.9	8.745	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A61P DS	62	1.957	0.662	495.9	8.745	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A62	12	4.012	1.357	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A62 (D/S)	12	4.012	1.357	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A61P-1	62	1.957	0.662	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A62R	18	2.740	0.927	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A62R (D/S)	18	1.743	0.589	495.9	3.910	3.3	8.625	6.403	0.000	60.39	HBD
MS-1A62N	30	2.324	0.786	495.9	3.910	3.3	8.625	6.403	0.000	60.39	HBD
===>Grouped by Line:	***MSD45D-2-RHDT A HDR to FWH26A***									***Sorted By: Flow Order***	
MS-1A45R	7	2.033	0.688	495.9	3.910	3.3	8.625	6.403	0.000	60.39	HBD
MS-1A45R (D/S)	7	3.131	1.059	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A45P-1 US	67	1.957	0.662	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A45P-1 DS	67	1.957	0.662	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A46	2	3.620	1.225	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A46P	52	2.446	0.827	495.9	8.745	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A47	4	3.620	1.225	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A47P US	54	3.131	1.059	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A47P DS	54	3.131	1.059	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A48	2	3.620	1.225	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A49	4	3.620	1.225	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A49P US	54	3.131	1.059	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A49P DS	54	3.131	1.059	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A50	2	3.620	1.225	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A50P	52	2.446	0.827	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A51	2	3.620	1.225	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A51P US	52	2.446	0.827	495.9	8.745	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A51P DS	52	2.446	0.827	495.9	8.745	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A52	2	3.620	1.225	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A-VALVE-MS-14	22	4.892	1.655	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***MSD45D-2-RHDT A HDR to FWH26A***									***Sorted By: Flow Order***	
MS-1A52P US	58	2.153	0.728	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A52P DS	58	2.153	0.728	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A53	12	4.012	1.357	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A53 (D/S)	12	4.012	1.357	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A53P US	62	1.957	0.662	495.9	8.745	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A53P DS	62	1.957	0.662	495.9	8.745	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A54	12	4.012	1.357	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A54 (D/S)	12	4.012	1.357	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A53P-1	62	1.957	0.662	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A54R	18	2.740	0.927	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A54R (D/S)	18	1.743	0.589	495.9	3.910	3.3	8.625	6.403	0.000	60.39	HBD
MS-1A54N	30	2.324	0.786	495.9	3.910	3.3	8.625	6.403	0.000	60.39	HBD
===>Grouped by Line:	***MSD46A-2-RHDT22A CV to FWH26***									***Sorted By: Flow Order***	
MS-2A-VALVE-LCV-1104A	24	14.651	5.118	495.9	33.594	3.3	3.500	6.403	0.000	60.39	HBD
MS-2A24R	18	0.001	0.001	495.9	15.767	3.3	4.500	6.403	0.000	60.39	HBD
MS-2A24R (D/S)	18	0.001	0.000	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2A23P	68	0.001	0.000	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2A24	2	0.001	0.001	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2A24P	52	0.001	0.000	495.9	10.806	3.3	6.625	6.403	0.000	60.39	HBD
MS-2A25	1	0.001	0.001	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2A25P	51	0.000	0.000	495.9	10.806	3.3	6.625	6.403	0.000	60.39	HBD
===>Grouped by Line:	***MSD47-2-RHDT23A CV to FWH26***									***Sorted By: Flow Order***	
MS-3A-VALVE-LCV-1104B	24	9.117	3.185	495.9	15.767	3.3	4.500	6.403	0.000	60.39	HBD
MS-3A24R	18	0.001	0.001	495.9	15.767	3.3	4.500	6.403	0.000	60.39	HBD
MS-3A24R (D/S)	18	0.001	0.000	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3A23P	68	0.001	0.000	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3A24	2	0.001	0.001	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3A24P	52	0.001	0.000	495.9	10.806	3.3	6.625	6.403	0.000	60.39	HBD
MS-3A25	1	0.001	0.001	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3A25P	51	0.000	0.000	495.9	10.806	3.3	6.625	6.403	0.000	60.39	HBD

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).db

Service Life Report

Pass 1 Analysis Exclude Measured Wear

Report Date/Time: 7/6/2010 3:37:44PM
AnalysisDate/Time: 7/6/2010 3:35:55PM

Run Name: RHTR DTK A DRN DSCV
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 1.000

CHECWORKS SFA Version: 3.0 SP-1 (build 109)
Duty Factor (Global) :1.000

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **MSD45B-1-RHDT21A CV to FWH26**					***Sorted By:Remaining Life***		
MS-1A-VALVE-LCV-1104	0.000	0.083	0.169	0.169	-132,536	No	243,721
MS-1A31	0.000	0.432	0.215	0.215	100,000,000	No	107,113
MS-1A30R2 (D/S)	0.000	0.432	0.215	0.215	100,000,000	No	107,113
MS-1A30P2	0.000	0.432	0.206	0.206	100,000,000	No	107,113
MS-1A30R2	0.000	0.337	0.146	0.146	100,000,000	No	107,113
MS-1A31P	0.000	0.432	0.206	0.206	100,000,000	No	107,113
MS-1A32	0.000	0.432	0.215	0.215	100,000,000	No	107,113
MS-1A32P	0.000	0.432	0.206	0.206	100,000,000	No	107,113
===>Grouped by Line: **MSD45C-1-RHDT A HDR to FWH26**					***Sorted By:Remaining Life***		
MS-1A34T1 (BR/SE)	0.000	0.339	0.233	0.233	829,650	No	243,721
MS-1A34T1 (D/S)	0.000	0.551	0.378	0.378	2,860,156	No	243,721
MS-1A34P1	0.000	0.573	0.378	0.378	6,619,886	No	243,721
===>Grouped by Line: **MSD45C-2-RHDT A HDR to FWH26**					***Sorted By:Remaining Life***		
MS-1A35	0.000	0.550	0.378	0.378	1,951,863	Yes	243,721
MS-1A34T2 (D/S)	0.000	0.591	0.378	0.378	1,954,420	Yes	243,721
MS-1A34T2	0.000	0.582	0.378	0.378	3,380,677	Yes	243,721
MS-1A34P2	0.000	0.612	0.378	0.378	4,391,052	Yes	243,721
MS-1A34T2 (BR/SE)	0.000	1.618	0.233	0.233	10,786,384	No	243,721
===>Grouped by Line: **MSD45C-3-RHDT A HDR to FWH26**					***Sorted By:Remaining Life***		
MS-1A36	0.000	0.497	0.378	0.378	898,603	Yes	243,721
MS-1A38	0.000	0.499	0.378	0.378	969,133	Yes	243,721
MS-1A39	0.000	0.536	0.378	0.378	1,267,799	Yes	243,721
MS-1A35T (D/S)	0.000	0.575	0.378	0.378	1,273,917	Yes	243,721
MS-1A37	0.000	0.561	0.378	0.378	1,471,425	Yes	243,721

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>*Grouped by Line:* **MSD45C-3-RHDT A HDR to FWH26**					***Sorted By:Remaining Life***		
MS-1A40	0.000	0.563	0.378	0.378	1,484,213	Yes	243,721
MS-1A38P	0.000	0.534	0.378	0.378	1,878,127	No	243,721
MS-1A35T	0.000	0.587	0.378	0.378	1,916,055	Yes	243,721
MS-1A39P	0.000	0.558	0.378	0.378	2,162,074	Yes	243,721
MS-1A40P	0.000	0.570	0.378	0.378	2,309,593	Yes	243,721
MS-1A36P US	0.000	0.570	0.378	0.378	2,310,734	Yes	243,721
MS-1A36P DS	0.000	0.571	0.378	0.378	2,321,617	Yes	243,721
MS-1A37P US	0.000	0.583	0.378	0.378	2,465,892	Yes	243,721
MS-1A37P DS	0.000	0.600	0.378	0.378	2,667,040	Yes	243,721
MS-1A35T (BR/SE)	0.000	1.563	0.233	0.233	10,356,053	No	243,721
MS-1A41	0.000	0.594	0.349	0.349	100,000,000	No	107,113
MS-1A41 (BR/SE)	0.000	0.432	0.215	0.215	100,000,000	No	107,113
MS-1A41 (D/S)	0.000	0.594	0.349	0.349	100,000,000	No	107,113
===>*Grouped by Line:* **MSD45C-4-RHDT A HDR to FWH26C**					***Sorted By:Remaining Life***		
MS-1A66 (D/S)	0.000	0.263	0.233	0.233	194,543	No	243,721
MS-1A-VALVE-MS-14-2	0.000	0.296	0.249	0.249	248,187	No	243,721
MS-1A66P DS	0.000	0.255	0.233	0.233	266,005	Yes	243,721
MS-1A66	0.000	0.276	0.233	0.233	278,465	No	243,721
MS-1A67P-1	0.000	0.339	0.233	0.233	1,410,596	Yes	243,721
MS-1A67R	0.000	0.402	0.233	0.233	1,595,182	Yes	243,721
MS-1A67 (D/S)	0.000	0.499	0.233	0.233	1,715,364	No	118,262
MS-1A67	0.000	0.502	0.233	0.233	1,734,730	No	118,262
MS-1A67P US	0.000	0.370	0.233	0.233	1,810,530	Yes	243,721
MS-1A66P US	0.000	0.384	0.233	0.233	1,818,956	Yes	243,721
MS-1A67P DS	0.000	0.372	0.233	0.233	1,847,316	Yes	243,721
MS-1A67R (D/S)	0.000	0.452	0.303	0.303	2,208,211	Yes	243,721
MS-1A67N	0.000	2.842	0.303	0.303	28,300,432	No	243,721
MS-1A63P US	0.000	0.432	0.206	0.206	100,000,000	No	107,113
MS-1A63P DS	0.000	0.432	0.206	0.206	100,000,000	No	107,113
MS-1A63	0.000	0.432	0.215	0.215	100,000,000	No	107,113
MS-1A64P US	0.000	0.432	0.206	0.206	100,000,000	No	107,113
MS-1A64P DS	0.000	0.432	0.206	0.206	100,000,000	No	107,113
MS-1A64	0.000	0.432	0.215	0.215	100,000,000	No	107,113
MS-1A65P US	0.000	0.432	0.206	0.206	100,000,000	No	107,113
MS-1A65P DS	0.000	0.432	0.206	0.206	100,000,000	No	107,113
MS-1A65	0.000	0.432	0.215	0.215	100,000,000	No	107,113

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **MSD45C-5-RHDT A HDR to FWH26**					***Sorted By:Remaining Life***		
MS-1A68	0.000	0.439	0.303	0.303	606,522	Yes	243,721
MS-1A42	0.000	0.427	0.303	0.303	925,652	Yes	243,721
MS-1A45P US	0.000	0.401	0.303	0.303	1,096,668	Yes	243,721
MS-1A45	0.000	0.453	0.303	0.303	1,119,675	Yes	243,721
MS-1A68 (BR/SE)	0.000	0.393	0.233	0.233	1,212,986	Yes	243,721
MS-1A44	0.000	0.467	0.303	0.303	1,224,149	Yes	243,721
MS-1A41R (D/S)	0.000	0.474	0.303	0.303	1,312,726	No	243,721
MS-1A43	0.000	0.485	0.303	0.303	1,358,472	Yes	243,721
MS-1A68 (D/S)	0.000	0.479	0.303	0.303	1,422,994	Yes	243,721
MS-1A41P-1 DS	0.000	0.452	0.303	0.303	1,461,356	Yes	243,721
MS-1A41P-1 US	0.000	0.454	0.303	0.303	1,481,057	No	243,721
MS-1A42P US	0.000	0.445	0.303	0.303	1,589,188	Yes	243,721
MS-1A44P US	0.000	0.446	0.303	0.303	1,600,382	Yes	243,721
MS-1A44P DS	0.000	0.449	0.303	0.303	1,633,962	Yes	243,721
MS-1A42P DS	0.000	0.451	0.303	0.303	1,656,350	Yes	243,721
MS-1A41R	0.000	0.538	0.378	0.378	1,712,516	No	243,721
MS-1A43P US	0.000	0.466	0.303	0.303	1,824,254	No	243,721
MS-1A43P DS	0.000	0.483	0.303	0.303	2,014,546	Yes	243,721
===>Grouped by Line: **MSD45D-1-RHDT A HDR to FWH26B**					***Sorted By:Remaining Life***		
MS-1A-VALVE-MS-14-1	0.000	0.296	0.249	0.249	248,187	No	243,721
MS-1A57P DS	0.000	0.345	0.233	0.233	926,537	No	243,721
MS-1A55	0.000	0.367	0.233	0.233	958,818	Yes	243,721
MS-1A57P	0.000	0.352	0.233	0.233	984,004	Yes	243,721
MS-1A60	0.000	0.381	0.233	0.233	1,062,813	Yes	243,721
MS-1A56	0.000	0.384	0.233	0.233	1,080,427	Yes	243,721
MS-1A58	0.000	0.386	0.233	0.233	1,094,734	Yes	243,721
MS-1A59	0.000	0.386	0.233	0.233	1,097,290	Yes	243,721
MS-1A57	0.000	0.391	0.233	0.233	1,130,502	Yes	243,721
MS-1A55P	0.000	0.381	0.233	0.233	1,223,870	Yes	243,721
MS-1A62N	0.000	0.435	0.303	0.303	1,473,275	No	243,721
MS-1A59P US	0.000	0.382	0.233	0.233	1,576,745	Yes	243,721
MS-1A59P DS	0.000	0.383	0.233	0.233	1,594,346	Yes	243,721
MS-1A58P	0.000	0.387	0.233	0.233	1,629,926	Yes	243,721
MS-1A61 (D/S)	0.000	0.497	0.233	0.233	1,707,929	No	243,721
MS-1A60P DS	0.000	0.378	0.233	0.233	1,745,646	Yes	243,721
MS-1A62R	0.000	0.420	0.233	0.233	1,767,799	No	243,721

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **MSD45D-1-RHDT A HDR to FWH26B**					***Sorted By:Remaining Life***		
MS-1A60P US	0.000	0.390	0.233	0.233	1,891,141	Yes	243,721
MS-1A61P DS	0.000	0.378	0.233	0.233	1,914,782	No	243,721
MS-1A61	0.000	0.534	0.233	0.233	1,946,786	No	243,721
MS-1A68P	0.000	0.383	0.233	0.233	1,986,424	Yes	243,721
MS-1A61P US	0.000	0.388	0.233	0.233	2,052,594	Yes	243,721
MS-1A61P-1	0.000	0.388	0.233	0.233	2,057,560	Yes	243,721
MS-1A62 (D/S)	0.000	0.555	0.233	0.233	2,079,573	No	243,721
MS-1A62	0.000	0.593	0.233	0.233	2,324,885	No	243,721
MS-1A62R (D/S)	0.000	0.471	0.303	0.303	2,491,711	No	243,721
===>Grouped by Line: **MSD45D-2-RHDT A HDR to FWH26A**					***Sorted By:Remaining Life***		
MS-1A-VALVE-MS-14	0.000	0.296	0.249	0.249	248,187	No	243,721
MS-1A49	0.000	0.337	0.233	0.233	748,060	Yes	243,721
MS-1A49P DS	0.000	0.345	0.233	0.233	926,537	No	243,721
MS-1A50	0.000	0.367	0.233	0.233	958,818	Yes	243,721
MS-1A48	0.000	0.373	0.233	0.233	1,005,585	Yes	243,721
MS-1A51	0.000	0.383	0.233	0.233	1,073,274	Yes	243,721
MS-1A49P US	0.000	0.364	0.233	0.233	1,084,199	Yes	243,721
MS-1A52	0.000	0.384	0.233	0.233	1,084,274	Yes	243,721
MS-1A46	0.000	0.397	0.233	0.233	1,177,269	Yes	243,721
MS-1A47P US	0.000	0.381	0.233	0.233	1,224,810	No	243,721
MS-1A47	0.000	0.406	0.233	0.233	1,241,650	Yes	243,721
MS-1A47P DS	0.000	0.385	0.233	0.233	1,257,895	Yes	243,721
MS-1A50P	0.000	0.369	0.233	0.233	1,444,855	Yes	243,721
MS-1A54N	0.000	0.435	0.303	0.303	1,473,275	No	243,721
MS-1A51P US	0.000	0.372	0.233	0.233	1,476,616	Yes	243,721
MS-1A51P DS	0.000	0.385	0.233	0.233	1,615,520	Yes	243,721
MS-1A46P	0.000	0.386	0.233	0.233	1,626,107	Yes	243,721
MS-1A52P US	0.000	0.372	0.233	0.233	1,675,208	No	243,721
MS-1A53 (D/S)	0.000	0.494	0.233	0.233	1,688,563	No	243,721
MS-1A53	0.000	0.517	0.233	0.233	1,837,041	No	243,721
MS-1A54 (D/S)	0.000	0.521	0.233	0.233	1,860,083	No	243,721
MS-1A54	0.000	0.523	0.233	0.233	1,872,994	No	243,721
MS-1A54R	0.000	0.433	0.233	0.233	1,890,686	No	243,721
MS-1A45P-1 US	0.000	0.379	0.233	0.233	1,933,488	Yes	243,721
MS-1A53P DS	0.000	0.380	0.233	0.233	1,951,688	Yes	243,721
MS-1A53P-1	0.000	0.382	0.233	0.233	1,978,156	Yes	243,721

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line:	**MSD45D-2-RHDT A HDR to FWH26A**				***Sorted By:Remaining Life***		
MS-1A45P-1 DS	0.000	0.383	0.233	0.233	1,986,424	Yes	243,721
MS-1A53P US	0.000	0.388	0.233	0.233	2,052,594	Yes	243,721
MS-1A52P DS	0.000	0.404	0.233	0.233	2,058,448	No	243,721
MS-1A45R	0.000	0.473	0.303	0.303	2,157,901	No	243,721
MS-1A45R (D/S)	0.000	0.510	0.233	0.233	2,291,797	No	243,721
MS-1A54R (D/S)	0.000	0.474	0.303	0.303	2,536,293	No	243,721
===>Grouped by Line:	**MSD46A-2-RHDT22A CV to FWH26**				***Sorted By:Remaining Life***		
MS-2A-VALVE-LCV-1104A	0.000	0.030	0.132	0.132	-117,421	No	243,721
MS-2A24R	0.000	0.337	0.146	0.146	100,000,000	No	107,113
MS-2A23P	0.000	0.432	0.206	0.206	100,000,000	No	107,113
MS-2A24	0.000	0.432	0.215	0.215	100,000,000	No	107,113
MS-2A24R (D/S)	0.000	0.432	0.215	0.215	100,000,000	No	107,113
MS-2A24P	0.000	0.432	0.206	0.206	100,000,000	No	107,113
MS-2A25	0.000	0.432	0.215	0.215	100,000,000	No	107,113
MS-2A25P	0.000	0.432	0.206	0.206	100,000,000	No	107,113
===>Grouped by Line:	**MSD47-2-RHDT23A CV to FWH26**				***Sorted By:Remaining Life***		
MS-3A-VALVE-LCV-1104B	0.000	0.083	0.169	0.169	-132,536	No	243,721
MS-3A24R	0.000	0.337	0.146	0.146	100,000,000	No	107,113
MS-3A24R (D/S)	0.000	0.432	0.215	0.215	100,000,000	No	107,113
MS-3A23P	0.000	0.432	0.206	0.206	100,000,000	No	107,113
MS-3A24	0.000	0.432	0.215	0.215	100,000,000	No	107,113
MS-3A24P	0.000	0.432	0.206	0.206	100,000,000	No	107,113
MS-3A25	0.000	0.432	0.215	0.215	100,000,000	No	107,113
MS-3A25P	0.000	0.432	0.206	0.206	100,000,000	No	107,113

Note:
[1] Predictions are based on last Tmeas to analysis ending period.

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).db

Service Life Report

Pass 1 Analysis Exclude Measured Wear

Report Date/Time: 7/6/2010 3:37:44PM
AnalysisDate/Time: 7/6/2010 3:35:55PM

Run Name: RHTR DTK A DRN DSCV
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 1.000

CHECWORKS SFA Version: 3.0 SP-1 (build 109)
Duty Factor (Global) : 1.000

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **MSD45B-1-RHDT21A CV to FWH26**					***Sorted By:Flow Order***		
MS-1A-VALVE-LCV-1104	0.000	0.083	0.169	0.169	-132,536	No	243,721
MS-1A30R2	0.000	0.337	0.146	0.146	100,000,000	No	107,113
MS-1A30R2 (D/S)	0.000	0.432	0.215	0.215	100,000,000	No	107,113
MS-1A30P2	0.000	0.432	0.206	0.206	100,000,000	No	107,113
MS-1A31	0.000	0.432	0.215	0.215	100,000,000	No	107,113
MS-1A31P	0.000	0.432	0.206	0.206	100,000,000	No	107,113
MS-1A32	0.000	0.432	0.215	0.215	100,000,000	No	107,113
MS-1A32P	0.000	0.432	0.206	0.206	100,000,000	No	107,113
===>Grouped by Line: **MSD45C-1-RHDT A HDR to FWH26**					***Sorted By:Flow Order***		
MS-1A34T1 (D/S)	0.000	0.551	0.378	0.378	2,860,156	No	243,721
MS-1A34P1	0.000	0.573	0.378	0.378	6,619,886	No	243,721
MS-1A34T1 (BR/SE)	0.000	0.339	0.233	0.233	829,650	No	243,721
===>Grouped by Line: **MSD45C-2-RHDT A HDR to FWH26**					***Sorted By:Flow Order***		
MS-1A34T2	0.000	0.582	0.378	0.378	3,380,677	Yes	243,721
MS-1A34T2 (D/S)	0.000	0.591	0.378	0.378	1,954,420	Yes	243,721
MS-1A34P2	0.000	0.612	0.378	0.378	4,391,052	Yes	243,721
MS-1A35	0.000	0.550	0.378	0.378	1,951,863	Yes	243,721
MS-1A34T2 (BR/SE)	0.000	1.618	0.233	0.233	10,786,384	No	243,721
===>Grouped by Line: **MSD45C-3-RHDT A HDR to FWH26**					***Sorted By:Flow Order***		
MS-1A35T (BR/SE)	0.000	1.563	0.233	0.233	10,356,053	No	243,721
MS-1A35T	0.000	0.587	0.378	0.378	1,916,055	Yes	243,721
MS-1A35T (D/S)	0.000	0.575	0.378	0.378	1,273,917	Yes	243,721
MS-1A36	0.000	0.497	0.378	0.378	898,603	Yes	243,721
MS-1A36P US	0.000	0.570	0.378	0.378	2,310,734	Yes	243,721

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **MSD45C-3-RHDT A HDR to FWH26**					***Sorted By:Flow Order***		
MS-1A36P DS	0.000	0.571	0.378	0.378	2,321,617	Yes	243,721
MS-1A37	0.000	0.561	0.378	0.378	1,471,425	Yes	243,721
MS-1A37P US	0.000	0.583	0.378	0.378	2,465,892	Yes	243,721
MS-1A37P DS	0.000	0.600	0.378	0.378	2,667,040	Yes	243,721
MS-1A38	0.000	0.499	0.378	0.378	969,133	Yes	243,721
MS-1A38P	0.000	0.534	0.378	0.378	1,878,127	No	243,721
MS-1A39	0.000	0.536	0.378	0.378	1,267,799	Yes	243,721
MS-1A39P	0.000	0.558	0.378	0.378	2,162,074	Yes	243,721
MS-1A40	0.000	0.563	0.378	0.378	1,484,213	Yes	243,721
MS-1A40P	0.000	0.570	0.378	0.378	2,309,593	Yes	243,721
MS-1A41	0.000	0.594	0.349	0.349	100,000,000	No	107,113
MS-1A41 (BR/SE)	0.000	0.432	0.215	0.215	100,000,000	No	107,113
MS-1A41 (D/S)	0.000	0.594	0.349	0.349	100,000,000	No	107,113
===>Grouped by Line: **MSD45C-4-RHDT A HDR to FWH26C**					***Sorted By:Flow Order***		
MS-1A63P US	0.000	0.432	0.206	0.206	100,000,000	No	107,113
MS-1A63P DS	0.000	0.432	0.206	0.206	100,000,000	No	107,113
MS-1A63	0.000	0.432	0.215	0.215	100,000,000	No	107,113
MS-1A64P US	0.000	0.432	0.206	0.206	100,000,000	No	107,113
MS-1A64P DS	0.000	0.432	0.206	0.206	100,000,000	No	107,113
MS-1A64	0.000	0.432	0.215	0.215	100,000,000	No	107,113
MS-1A65P US	0.000	0.432	0.206	0.206	100,000,000	No	107,113
MS-1A65P DS	0.000	0.432	0.206	0.206	100,000,000	No	107,113
MS-1A65	0.000	0.432	0.215	0.215	100,000,000	No	107,113
MS-1A-VALVE-MS-14-2	0.000	0.296	0.249	0.249	248,187	No	243,721
MS-1A66P US	0.000	0.384	0.233	0.233	1,818,956	Yes	243,721
MS-1A66P DS	0.000	0.255	0.233	0.233	266,005	Yes	243,721
MS-1A66	0.000	0.276	0.233	0.233	278,465	No	243,721
MS-1A66 (D/S)	0.000	0.263	0.233	0.233	194,543	No	243,721
MS-1A67P US	0.000	0.370	0.233	0.233	1,810,530	Yes	243,721
MS-1A67P DS	0.000	0.372	0.233	0.233	1,847,316	Yes	243,721
MS-1A67	0.000	0.502	0.233	0.233	1,734,730	No	118,262
MS-1A67 (D/S)	0.000	0.499	0.233	0.233	1,715,364	No	118,262
MS-1A67P-1	0.000	0.339	0.233	0.233	1,410,596	Yes	243,721
MS-1A67R	0.000	0.402	0.233	0.233	1,595,182	Yes	243,721
MS-1A67R (D/S)	0.000	0.452	0.303	0.303	2,208,211	Yes	243,721
MS-1A67N	0.000	2.842	0.303	0.303	28,300,432	No	243,721

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **MSD45C-5-RHDT A HDR to FWH26**					***Sorted By:Flow Order***		
MS-1A41R	0.000	0.538	0.378	0.378	1,712,516	No	243,721
MS-1A41R (D/S)	0.000	0.474	0.303	0.303	1,312,726	No	243,721
MS-1A41P-1 US	0.000	0.454	0.303	0.303	1,481,057	No	243,721
MS-1A41P-1 DS	0.000	0.452	0.303	0.303	1,461,356	Yes	243,721
MS-1A42	0.000	0.427	0.303	0.303	925,652	Yes	243,721
MS-1A42P US	0.000	0.445	0.303	0.303	1,589,188	Yes	243,721
MS-1A42P DS	0.000	0.451	0.303	0.303	1,656,350	Yes	243,721
MS-1A43	0.000	0.485	0.303	0.303	1,358,472	Yes	243,721
MS-1A43P US	0.000	0.466	0.303	0.303	1,824,254	No	243,721
MS-1A43P DS	0.000	0.483	0.303	0.303	2,014,546	Yes	243,721
MS-1A44	0.000	0.467	0.303	0.303	1,224,149	Yes	243,721
MS-1A44P US	0.000	0.446	0.303	0.303	1,600,382	Yes	243,721
MS-1A44P DS	0.000	0.449	0.303	0.303	1,633,962	Yes	243,721
MS-1A45	0.000	0.453	0.303	0.303	1,119,675	Yes	243,721
MS-1A45P US	0.000	0.401	0.303	0.303	1,096,668	Yes	243,721
MS-1A68	0.000	0.439	0.303	0.303	606,522	Yes	243,721
MS-1A68 (BR/SE)	0.000	0.393	0.233	0.233	1,212,986	Yes	243,721
MS-1A68 (D/S)	0.000	0.479	0.303	0.303	1,422,994	Yes	243,721
===>Grouped by Line: **MSD45D-1-RHDT A HDR to FWH26B**					***Sorted By:Flow Order***		
MS-1A68P	0.000	0.383	0.233	0.233	1,986,424	Yes	243,721
MS-1A55	0.000	0.367	0.233	0.233	958,818	Yes	243,721
MS-1A55P	0.000	0.381	0.233	0.233	1,223,870	Yes	243,721
MS-1A56	0.000	0.384	0.233	0.233	1,080,427	Yes	243,721
MS-1A57	0.000	0.391	0.233	0.233	1,130,502	Yes	243,721
MS-1A57P	0.000	0.352	0.233	0.233	984,004	Yes	243,721
MS-1A57P DS	0.000	0.345	0.233	0.233	926,537	No	243,721
MS-1A58	0.000	0.386	0.233	0.233	1,094,734	Yes	243,721
MS-1A58P	0.000	0.387	0.233	0.233	1,629,926	Yes	243,721
MS-1A59	0.000	0.386	0.233	0.233	1,097,290	Yes	243,721
MS-1A59P US	0.000	0.382	0.233	0.233	1,576,745	Yes	243,721
MS-1A59P DS	0.000	0.383	0.233	0.233	1,594,346	Yes	243,721
MS-1A60	0.000	0.381	0.233	0.233	1,062,813	Yes	243,721
MS-1A-VALVE-MS-14-1	0.000	0.296	0.249	0.249	248,187	No	243,721
MS-1A60P US	0.000	0.390	0.233	0.233	1,891,141	Yes	243,721
MS-1A60P DS	0.000	0.378	0.233	0.233	1,745,646	Yes	243,721
MS-1A61	0.000	0.534	0.233	0.233	1,946,786	No	243,721

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **MSD45D-1-RHDT A HDR to FWH26B**					***Sorted By:Flow Order***		
MS-1A61 (D/S)	0.000	0.497	0.233	0.233	1,707,929	No	243,721
MS-1A61P US	0.000	0.388	0.233	0.233	2,052,594	Yes	243,721
MS-1A61P DS	0.000	0.378	0.233	0.233	1,914,782	No	243,721
MS-1A62	0.000	0.593	0.233	0.233	2,324,885	No	243,721
MS-1A62 (D/S)	0.000	0.555	0.233	0.233	2,079,573	No	243,721
MS-1A61P-1	0.000	0.388	0.233	0.233	2,057,560	Yes	243,721
MS-1A62R	0.000	0.420	0.233	0.233	1,767,799	No	243,721
MS-1A62R (D/S)	0.000	0.471	0.303	0.303	2,491,711	No	243,721
MS-1A62N	0.000	0.435	0.303	0.303	1,473,275	No	243,721
===>Grouped by Line: **MSD45D-2-RHDT A HDR to FWH26A**					***Sorted By:Flow Order***		
MS-1A45R	0.000	0.473	0.303	0.303	2,157,901	No	243,721
MS-1A45R (D/S)	0.000	0.510	0.233	0.233	2,291,797	No	243,721
MS-1A45P-1 US	0.000	0.379	0.233	0.233	1,933,488	Yes	243,721
MS-1A45P-1 DS	0.000	0.383	0.233	0.233	1,986,424	Yes	243,721
MS-1A46	0.000	0.397	0.233	0.233	1,177,269	Yes	243,721
MS-1A46P	0.000	0.386	0.233	0.233	1,626,107	Yes	243,721
MS-1A47	0.000	0.406	0.233	0.233	1,241,650	Yes	243,721
MS-1A47P US	0.000	0.381	0.233	0.233	1,224,810	No	243,721
MS-1A47P DS	0.000	0.385	0.233	0.233	1,257,895	Yes	243,721
MS-1A48	0.000	0.373	0.233	0.233	1,005,585	Yes	243,721
MS-1A49	0.000	0.337	0.233	0.233	748,060	Yes	243,721
MS-1A49P US	0.000	0.364	0.233	0.233	1,084,199	Yes	243,721
MS-1A49P DS	0.000	0.345	0.233	0.233	926,537	No	243,721
MS-1A50	0.000	0.367	0.233	0.233	958,818	Yes	243,721
MS-1A50P	0.000	0.369	0.233	0.233	1,444,855	Yes	243,721
MS-1A51	0.000	0.383	0.233	0.233	1,073,274	Yes	243,721
MS-1A51P US	0.000	0.372	0.233	0.233	1,476,616	Yes	243,721
MS-1A51P DS	0.000	0.385	0.233	0.233	1,615,520	Yes	243,721
MS-1A52	0.000	0.384	0.233	0.233	1,084,274	Yes	243,721
MS-1A-VALVE-MS-14	0.000	0.296	0.249	0.249	248,187	No	243,721
MS-1A52P US	0.000	0.372	0.233	0.233	1,675,208	No	243,721
MS-1A52P DS	0.000	0.404	0.233	0.233	2,058,448	No	243,721
MS-1A53	0.000	0.517	0.233	0.233	1,837,041	No	243,721
MS-1A53 (D/S)	0.000	0.494	0.233	0.233	1,688,563	No	243,721
MS-1A53P US	0.000	0.388	0.233	0.233	2,052,594	Yes	243,721
MS-1A53P DS	0.000	0.380	0.233	0.233	1,951,688	Yes	243,721

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **MSD45D-2-RHDT A HDR to FWH26A**					***Sorted By:Flow Order***		
MS-1A54	0.000	0.523	0.233	0.233	1,872,994	No	243,721
MS-1A54 (D/S)	0.000	0.521	0.233	0.233	1,860,083	No	243,721
MS-1A53P-1	0.000	0.382	0.233	0.233	1,978,156	Yes	243,721
MS-1A54R	0.000	0.433	0.233	0.233	1,890,686	No	243,721
MS-1A54R (D/S)	0.000	0.474	0.303	0.303	2,536,293	No	243,721
MS-1A54N	0.000	0.435	0.303	0.303	1,473,275	No	243,721
===>Grouped by Line: **MSD46A-2-RHDT22A CV to FWH26**					***Sorted By:Flow Order***		
MS-2A-VALVE-LCV-1104A	0.000	0.030	0.132	0.132	-117,421	No	243,721
MS-2A24R	0.000	0.337	0.146	0.146	100,000,000	No	107,113
MS-2A24R (D/S)	0.000	0.432	0.215	0.215	100,000,000	No	107,113
MS-2A23P	0.000	0.432	0.206	0.206	100,000,000	No	107,113
MS-2A24	0.000	0.432	0.215	0.215	100,000,000	No	107,113
MS-2A24P	0.000	0.432	0.206	0.206	100,000,000	No	107,113
MS-2A25	0.000	0.432	0.215	0.215	100,000,000	No	107,113
MS-2A25P	0.000	0.432	0.206	0.206	100,000,000	No	107,113
===>Grouped by Line: **MSD47-2-RHDT23A CV to FWH26**					***Sorted By:Flow Order***		
MS-3A-VALVE-LCV-1104B	0.000	0.083	0.169	0.169	-132,536	No	243,721
MS-3A24R	0.000	0.337	0.146	0.146	100,000,000	No	107,113
MS-3A24R (D/S)	0.000	0.432	0.215	0.215	100,000,000	No	107,113
MS-3A23P	0.000	0.432	0.206	0.206	100,000,000	No	107,113
MS-3A24	0.000	0.432	0.215	0.215	100,000,000	No	107,113
MS-3A24P	0.000	0.432	0.206	0.206	100,000,000	No	107,113
MS-3A25	0.000	0.432	0.215	0.215	100,000,000	No	107,113
MS-3A25P	0.000	0.432	0.206	0.206	100,000,000	No	107,113

Note:
[1] Predictions are based on last Tmeas to analysis ending period.

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).db

Wear Rate Report

Pass 1 Analysis Exclude Measured Wear

Report Date/Time: 7/6/2010 3:38:15PM
AnalysisDate/Time: 7/6/2010 3:36:21PM

CHECWORKS SFA Version: 3.0 SP-1 (build 109)

Duty Factor (Global) : 1.000

Run Name: RHTR DTK B DRN DSCV
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 1.000

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***MSD48B-1-RHDT21B CV to FWH26***								***Sorted By: Average Wear Rate***		
MS-1B-VALVE-LCV-1105	24	9.117	3.185	495.9	15.767	3.3	4.500	6.403	0.000	60.39	HBD
MS-1B35	1	3.229	1.092	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1B34P US	52	2.446	0.827	495.9	10.806	3.3	6.625	6.403	0.000	60.39	HBD
MS-1B34P DS	52	2.446	0.827	495.9	10.806	3.3	6.625	6.403	0.000	60.39	HBD
MS-1B35P	51	2.153	0.728	495.9	10.806	3.3	6.625	6.403	0.000	60.39	HBD
MS-1B34R	18	0.001	0.001	495.9	15.767	3.3	4.500	6.403	0.000	60.39	HBD
MS-1B34	2	0.001	0.001	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1B34R (D/S)	18	0.001	0.000	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1B33P-1	68	0.001	0.000	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
===>Grouped by Line:	***MSD48B-2-RHDT B HDR to FWH26***								***Sorted By: Average Wear Rate***		
MS-1B36 (D/S)	12	4.312	1.458	495.9	7.870	3.3	8.625	6.403	0.000	60.39	HBD
MS-1B37	2	3.891	1.316	495.9	7.870	3.3	8.625	6.403	0.000	60.39	HBD
MS-1B38	1	3.470	1.174	495.9	7.870	3.3	8.625	6.403	0.000	60.39	HBD
MS-1B39	1	3.470	1.174	495.9	7.870	3.3	8.625	6.403	0.000	60.39	HBD
MS-1B36 (BR/SE)	12	3.327	1.125	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1B37P	52	2.629	0.889	495.9	7.870	3.3	8.625	6.403	0.000	60.39	HBD
MS-1B36	12	2.382	0.806	495.9	3.910	3.3	8.625	6.403	0.000	60.39	HBD
MS-1B38P	51	2.314	0.783	495.9	7.870	3.3	8.625	6.403	0.000	60.39	HBD
MS-1B39P	51	2.314	0.783	495.9	7.870	3.3	8.625	6.403	0.000	60.39	HBD
MS-1B36P US	62	2.103	0.711	495.9	15.283	3.3	8.625	6.403	0.000	60.39	HBD
MS-1B36P DS	62	2.103	0.711	495.9	15.283	3.3	8.625	6.403	0.000	60.39	HBD
===>Grouped by Line:	***MSD49C-1-RHDT B HDR to FWH26***								***Sorted By: Average Wear Rate***		
MS-2B34 (D/S)	12	4.014	1.358	495.9	7.499	3.3	10.750	6.403	0.000	60.39	HBD
MS-2B34 (BR/SE)	12	3.576	1.209	495.9	7.870	3.3	8.625	6.403	0.000	60.39	HBD
MS-2B36P US	54	3.133	1.060	495.9	7.499	3.3	10.750	6.403	0.000	60.39	HBD

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***MSD49C-1-RHDT B HDR to FWH26***								***Sorted By: Average Wear Rate***		
MS-2B36P DS	54	3.133	1.060	495.9	7.499	3.3	10.750	6.403	0.000	60.39	HBD
MS-2B63	14	2.258	1.822	495.9	7.499	3.3	10.750	6.403	0.000	60.39	HBD
MS-2B63 (D/S)	14	1.592	1.284	495.9	4.965	3.3	10.750	6.403	0.000	60.39	HBD
MS-2B63 (BR/SE)	14	1.436	1.158	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B35	2	0.005	0.005	495.9	7.499	3.3	10.750	6.403	0.000	60.39	HBD
MS-2B36	4	0.005	0.005	495.9	7.499	3.3	10.750	6.403	0.000	60.39	HBD
MS-2B35P	52	0.003	0.003	495.9	9.471	3.3	10.750	6.403	0.000	60.39	HBD
MS-2B33P	62	0.003	0.003	495.9	7.499	3.3	10.750	6.403	0.000	60.39	HBD
===>Grouped by Line:	***MSD49C-2-RHDT B HDR to FWH26C***								***Sorted By: Average Wear Rate***		
MS-2B-VALVE-MS-15-2	22	4.892	1.655	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B54 (D/S)	12	4.012	1.357	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B55 (D/S)	12	4.012	1.357	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B55	12	4.012	1.357	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B54	12	4.012	1.357	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B51	2	3.620	1.225	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B52	4	3.620	1.225	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B50P US	54	3.131	1.059	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B52P US	54	3.131	1.059	495.9	8.745	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B52P DS	54	3.131	1.059	495.9	8.745	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B55R	18	2.740	0.927	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B53P US	58	2.153	0.728	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B53P DS	58	2.153	0.728	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B54P	62	1.957	0.662	495.9	8.745	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B55P	62	1.957	0.662	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B55R (D/S)	18	1.743	0.589	495.9	3.910	3.3	8.625	6.403	0.000	60.39	HBD
MS-2B50	4	1.518	1.225	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B63P	64	0.821	0.662	495.9	8.745	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B53	2	0.001	0.001	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
===>Grouped by Line:	***MSD49C-3-RHDT B HDR***								***Sorted By: Average Wear Rate***		
MS-2B64	14	3.797	1.284	495.9	4.965	3.3	10.750	6.403	0.000	60.39	HBD
MS-2B64 (BR/SE)	14	3.425	1.158	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B64 (D/S)	14	2.097	0.709	495.9	2.450	3.3	10.750	6.403	0.000	60.39	HBD
MS-2B63P-1 US	64	1.381	0.467	495.9	4.965	3.3	10.750	6.403	0.000	60.39	HBD
===>Grouped by Line:	***MSD49C-4-RHDT B HDR to FWH26B***								***Sorted By: Average Wear Rate***		

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***MSD49C-4-RHDT B HDR to FWH26B***								***Sorted By: Average Wear Rate***		
MS-2B-VALVE-MS-15-1	22	4.892	1.655	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B49 (D/S)	12	4.012	1.357	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B49	12	4.012	1.357	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B44	4	3.620	1.225	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B45	2	3.620	1.225	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B46	2	3.620	1.225	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B47	2	3.620	1.225	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B44P US	54	3.131	1.059	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B49R	18	2.740	0.927	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B45P US	52	2.446	0.827	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B45P DS	52	2.446	0.827	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B46P US	52	2.446	0.827	495.9	8.745	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B46P DS	52	2.446	0.827	495.9	8.745	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B49N	30	2.324	0.786	495.9	3.910	3.3	8.625	6.403	0.000	60.39	HBD
MS-2B47P US	58	2.153	0.728	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B47P DS	58	2.153	0.728	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B64P	64	1.957	0.662	495.9	8.745	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B48P US	62	1.957	0.662	495.9	8.745	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B49P	62	1.957	0.662	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B48P DS	62	1.957	0.662	495.9	8.745	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B49R (D/S)	18	1.743	0.589	495.9	3.910	3.3	8.625	6.403	0.000	60.39	HBD
===>Grouped by Line:	***MSD49C-5-RHDT B HDR to FWH26A***								***Sorted By: Average Wear Rate***		
MS-2B-VALVE-MS-15	22	4.892	1.655	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B42 (D/S)	12	4.012	1.357	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B43 (D/S)	12	4.012	1.357	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B43	12	4.012	1.357	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B42	12	4.012	1.357	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B43N	30	3.914	1.324	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B37	2	3.620	1.225	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B38	4	3.620	1.225	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B39	2	3.620	1.225	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B40	2	3.620	1.225	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B41	2	3.620	1.225	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B64R (D/S)	7	3.131	1.059	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***MSD49C-5-RHDT B HDR to FWH26A***								***Sorted By: Average Wear Rate***		
MS-2B38P	54	3.131	1.059	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B64P-1 US	57	2.446	0.827	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B37P	52	2.446	0.827	495.9	8.745	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B39P	52	2.446	0.827	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B40P US	52	2.446	0.827	495.9	8.745	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B40P DS	52	2.446	0.827	495.9	8.745	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B41P	58	2.153	0.728	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B43P	62	1.957	0.662	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B42P US	62	1.957	0.662	495.9	8.745	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B42P DS	62	1.957	0.662	495.9	8.745	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B64R	7	1.335	0.451	495.9	2.450	3.3	10.750	6.403	0.000	60.39	HBD
MS-2B43R	18	1.149	0.927	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B43R (D/S)	18	0.731	0.589	495.9	3.910	3.3	8.625	6.403	0.000	60.39	HBD
===>Grouped by Line:	***MSD50C-1-RHDT23B CV to FWH26***								***Sorted By: Average Wear Rate***		
MS-3B-VALVE-LCV-1105B	24	9.117	3.185	495.9	15.767	3.3	4.500	6.403	0.000	60.39	HBD
MS-3B43P US	54	1.859	0.629	495.9	10.736	3.3	8.625	6.403	0.000	60.39	HBD
MS-3B43R	18	0.001	0.001	495.9	15.767	3.3	4.500	6.403	0.000	60.39	HBD
MS-3B43	4	0.000	0.000	495.9	3.910	3.3	8.625	6.403	0.000	60.39	HBD
MS-3B43R (D/S)	18	0.000	0.000	495.9	3.910	3.3	8.625	6.403	0.000	60.39	HBD

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).db

Wear Rate Report

Pass 1 Analysis Exclude Measured Wear

Report Date/Time: 7/6/2010 3:37:44PM
AnalysisDate/Time: 7/6/2010 3:36:21PM

CHECWORKS SFA Version: 3.0 SP-1 (build 109)
Duty Factor (Global) : 1.000

Run Name: RHTR DTK B DRN DSCV
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 1.000

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***MSD48B-1-RHDT21B CV to FWH26***									***Sorted By: Flow Order***	
MS-1B-VALVE-LCV-1105	24	9.117	3.185	495.9	15.767	3.3	4.500	6.403	0.000	60.39	HBD
MS-1B34R	18	0.001	0.001	495.9	15.767	3.3	4.500	6.403	0.000	60.39	HBD
MS-1B34R (D/S)	18	0.001	0.000	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1B33P-1	68	0.001	0.000	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1B34	2	0.001	0.001	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1B34P US	52	2.446	0.827	495.9	10.806	3.3	6.625	6.403	0.000	60.39	HBD
MS-1B34P DS	52	2.446	0.827	495.9	10.806	3.3	6.625	6.403	0.000	60.39	HBD
MS-1B35	1	3.229	1.092	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1B35P	51	2.153	0.728	495.9	10.806	3.3	6.625	6.403	0.000	60.39	HBD
===>Grouped by Line:	***MSD48B-2-RHDT B HDR to FWH26***									***Sorted By: Flow Order***	
MS-1B36 (BR/SE)	12	3.327	1.125	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1B36 (D/S)	12	4.312	1.458	495.9	7.870	3.3	8.625	6.403	0.000	60.39	HBD
MS-1B36P US	62	2.103	0.711	495.9	15.283	3.3	8.625	6.403	0.000	60.39	HBD
MS-1B36P DS	62	2.103	0.711	495.9	15.283	3.3	8.625	6.403	0.000	60.39	HBD
MS-1B37	2	3.891	1.316	495.9	7.870	3.3	8.625	6.403	0.000	60.39	HBD
MS-1B37P	52	2.629	0.889	495.9	7.870	3.3	8.625	6.403	0.000	60.39	HBD
MS-1B38	1	3.470	1.174	495.9	7.870	3.3	8.625	6.403	0.000	60.39	HBD
MS-1B38P	51	2.314	0.783	495.9	7.870	3.3	8.625	6.403	0.000	60.39	HBD
MS-1B39	1	3.470	1.174	495.9	7.870	3.3	8.625	6.403	0.000	60.39	HBD
MS-1B39P	51	2.314	0.783	495.9	7.870	3.3	8.625	6.403	0.000	60.39	HBD
MS-1B36	12	2.382	0.806	495.9	3.910	3.3	8.625	6.403	0.000	60.39	HBD
===>Grouped by Line:	***MSD49C-1-RHDT B HDR to FWH26***									***Sorted By: Flow Order***	
MS-2B34 (BR/SE)	12	3.576	1.209	495.9	7.870	3.3	8.625	6.403	0.000	60.39	HBD
MS-2B34 (D/S)	12	4.014	1.358	495.9	7.499	3.3	10.750	6.403	0.000	60.39	HBD
MS-2B33P	62	0.003	0.003	495.9	7.499	3.3	10.750	6.403	0.000	60.39	HBD

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***MSD49C-1-RHDT B HDR to FWH26***									***Sorted By: Flow Order***	
MS-2B35	2	0.005	0.005	495.9	7.499	3.3	10.750	6.403	0.000	60.39	HBD
MS-2B35P	52	0.003	0.003	495.9	9.471	3.3	10.750	6.403	0.000	60.39	HBD
MS-2B36	4	0.005	0.005	495.9	7.499	3.3	10.750	6.403	0.000	60.39	HBD
MS-2B36P US	54	3.133	1.060	495.9	7.499	3.3	10.750	6.403	0.000	60.39	HBD
MS-2B36P DS	54	3.133	1.060	495.9	7.499	3.3	10.750	6.403	0.000	60.39	HBD
MS-2B63	14	2.258	1.822	495.9	7.499	3.3	10.750	6.403	0.000	60.39	HBD
MS-2B63 (BR/SE)	14	1.436	1.158	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B63 (D/S)	14	1.592	1.284	495.9	4.965	3.3	10.750	6.403	0.000	60.39	HBD
===>Grouped by Line:	***MSD49C-2-RHDT B HDR to FWH26C***									***Sorted By: Flow Order***	
MS-2B63P	64	0.821	0.662	495.9	8.745	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B50	4	1.518	1.225	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B50P US	54	3.131	1.059	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B51	2	3.620	1.225	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B52	4	3.620	1.225	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B52P US	54	3.131	1.059	495.9	8.745	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B52P DS	54	3.131	1.059	495.9	8.745	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B53	2	0.001	0.001	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B-VALVE-MS-15-2	22	4.892	1.655	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B53P US	58	2.153	0.728	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B53P DS	58	2.153	0.728	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B54	12	4.012	1.357	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B54 (D/S)	12	4.012	1.357	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B54P	62	1.957	0.662	495.9	8.745	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B55	12	4.012	1.357	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B55 (D/S)	12	4.012	1.357	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B55P	62	1.957	0.662	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B55R	18	2.740	0.927	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B55R (D/S)	18	1.743	0.589	495.9	3.910	3.3	8.625	6.403	0.000	60.39	HBD
===>Grouped by Line:	***MSD49C-3-RHDT B HDR***									***Sorted By: Flow Order***	
MS-2B63P-1 US	64	1.381	0.467	495.9	4.965	3.3	10.750	6.403	0.000	60.39	HBD
MS-2B64	14	3.797	1.284	495.9	4.965	3.3	10.750	6.403	0.000	60.39	HBD
MS-2B64 (BR/SE)	14	3.425	1.158	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B64 (D/S)	14	2.097	0.709	495.9	2.450	3.3	10.750	6.403	0.000	60.39	HBD
===>Grouped by Line:	***MSD49C-4-RHDT B HDR to FWH26B***									***Sorted By: Flow Order***	

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***MSD49C-4-RHDT B HDR to FWH26B***								***Sorted By: Flow Order***		
MS-2B64P	64	1.957	0.662	495.9	8.745	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B44	4	3.620	1.225	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B44P US	54	3.131	1.059	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B45	2	3.620	1.225	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B45P US	52	2.446	0.827	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B45P DS	52	2.446	0.827	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B46	2	3.620	1.225	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B46P US	52	2.446	0.827	495.9	8.745	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B46P DS	52	2.446	0.827	495.9	8.745	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B47	2	3.620	1.225	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B-VALVE-MS-15-1	22	4.892	1.655	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B47P US	58	2.153	0.728	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B47P DS	58	2.153	0.728	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B48P US	62	1.957	0.662	495.9	8.745	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B48P DS	62	1.957	0.662	495.9	8.745	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B49	12	4.012	1.357	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B49 (D/S)	12	4.012	1.357	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B49P	62	1.957	0.662	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B49R	18	2.740	0.927	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B49R (D/S)	18	1.743	0.589	495.9	3.910	3.3	8.625	6.403	0.000	60.39	HBD
MS-2B49N	30	2.324	0.786	495.9	3.910	3.3	8.625	6.403	0.000	60.39	HBD
===>Grouped by Line:	***MSD49C-5-RHDT B HDR to FWH26A***								***Sorted By: Flow Order***		
MS-2B64R	7	1.335	0.451	495.9	2.450	3.3	10.750	6.403	0.000	60.39	HBD
MS-2B64R (D/S)	7	3.131	1.059	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B64P-1 US	57	2.446	0.827	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B37	2	3.620	1.225	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B37P	52	2.446	0.827	495.9	8.745	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B38	4	3.620	1.225	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B38P	54	3.131	1.059	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B39	2	3.620	1.225	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B39P	52	2.446	0.827	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B40	2	3.620	1.225	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B40P US	52	2.446	0.827	495.9	8.745	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B40P DS	52	2.446	0.827	495.9	8.745	3.3	6.625	6.403	0.000	60.39	HBD

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***MSD49C-5-RHDT B HDR to FWH26A***								***Sorted By: Flow Order***		
MS-2B41	2	3.620	1.225	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B-VALVE-MS-15	22	4.892	1.655	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B41P	58	2.153	0.728	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B42	12	4.012	1.357	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B42 (D/S)	12	4.012	1.357	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B42P US	62	1.957	0.662	495.9	8.745	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B42P DS	62	1.957	0.662	495.9	8.745	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B43	12	4.012	1.357	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B43 (D/S)	12	4.012	1.357	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B43P	62	1.957	0.662	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B43R	18	1.149	0.927	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B43R (D/S)	18	0.731	0.589	495.9	3.910	3.3	8.625	6.403	0.000	60.39	HBD
MS-2B43N	30	3.914	1.324	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
===>Grouped by Line:	***MSD50C-1-RHDT23B CV to FWH26***								***Sorted By: Flow Order***		
MS-3B-VALVE-LCV-1105B	24	9.117	3.185	495.9	15.767	3.3	4.500	6.403	0.000	60.39	HBD
MS-3B43R	18	0.001	0.001	495.9	15.767	3.3	4.500	6.403	0.000	60.39	HBD
MS-3B43R (D/S)	18	0.000	0.000	495.9	3.910	3.3	8.625	6.403	0.000	60.39	HBD
MS-3B43	4	0.000	0.000	495.9	3.910	3.3	8.625	6.403	0.000	60.39	HBD
MS-3B43P US	54	1.859	0.629	495.9	10.736	3.3	8.625	6.403	0.000	60.39	HBD

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).db

Service Life Report

Pass 1 Analysis Exclude Measured Wear

Report Date/Time: 7/6/2010 3:37:44PM
AnalysisDate/Time: 7/6/2010 3:36:21PM

Run Name: RHTR DTK B DRN DSCV
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 1.000

CHECWORKS SFA Version: 3.0 SP-1 (build 109)
Duty Factor (Global) :1.000

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **MSD48B-1-RHDT21B CV to FWH26**					***Sorted By:Remaining Life***		
MS-1B-VALVE-LCV-1105	0.000	0.083	0.169	0.169	-132,536	No	243,721
MS-1B35	0.000	0.310	0.233	0.233	617,176	Yes	243,721
MS-1B34P US	0.000	0.388	0.233	0.233	1,640,707	Yes	243,721
MS-1B34P DS	0.000	0.394	0.233	0.233	1,705,184	Yes	243,721
MS-1B35P	0.000	0.393	0.233	0.233	1,926,263	Yes	243,721
MS-1B33P-1	0.000	0.432	0.206	0.206	100,000,000	No	107,113
MS-1B34	0.000	0.432	0.215	0.215	100,000,000	No	107,113
MS-1B34R (D/S)	0.000	0.432	0.215	0.215	100,000,000	No	107,113
MS-1B34R	0.000	0.337	0.146	0.146	100,000,000	No	107,113
===>Grouped by Line: **MSD48B-2-RHDT B HDR to FWH26**					***Sorted By:Remaining Life***		
MS-1B39	0.000	0.369	0.303	0.303	493,327	Yes	243,721
MS-1B36 (D/S)	0.000	0.428	0.303	0.303	749,243	No	243,721
MS-1B37	0.000	0.440	0.303	0.303	909,683	Yes	243,721
MS-1B38	0.000	0.478	0.303	0.303	1,303,040	Yes	243,721
MS-1B37P	0.000	0.456	0.303	0.303	1,502,040	Yes	243,721
MS-1B36	0.000	0.448	0.303	0.303	1,578,985	No	243,721
MS-1B36P DS	0.000	0.439	0.303	0.303	1,676,476	Yes	243,721
MS-1B36P US	0.000	0.441	0.303	0.303	1,703,077	No	243,721
MS-1B38P	0.000	0.462	0.303	0.303	1,779,480	Yes	243,721
MS-1B39P	0.000	0.470	0.303	0.303	1,869,524	Yes	243,721
MS-1B36 (BR/SE)	0.000	0.822	0.233	0.233	4,584,517	No	243,721
===>Grouped by Line: **MSD49C-1-RHDT B HDR to FWH26**					***Sorted By:Remaining Life***		
MS-2B63	0.000	0.566	0.378	0.378	906,693	No	107,113
MS-2B36P DS	0.000	0.507	0.378	0.378	1,066,044	No	243,721
MS-2B34 (D/S)	0.000	0.552	0.378	0.378	1,123,344	No	243,721

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>*Grouped by Line:* **MSD49C-1-RHDT B HDR to FWH26**					***Sorted By:Remaining Life***		
MS-2B63 (D/S)	0.000	0.575	0.378	0.378	1,341,651	No	107,113
MS-2B63 (BR/SE)	0.000	0.414	0.233	0.233	1,373,125	No	107,113
MS-2B36P US	0.000	0.552	0.378	0.378	1,435,471	Yes	243,721
MS-2B34 (BR/SE)	0.000	1.446	0.303	0.303	8,277,802	No	243,721
MS-2B33P	0.000	0.594	0.378	0.378	100,000,000	No	62,244
MS-2B35	0.000	0.594	0.378	0.378	100,000,000	No	62,244
MS-2B35P	0.000	0.594	0.378	0.378	100,000,000	No	62,244
MS-2B36	0.000	0.594	0.378	0.378	100,000,000	No	62,244
===>*Grouped by Line:* **MSD49C-2-RHDT B HDR to FWH26C**					***Sorted By:Remaining Life***		
MS-2B-VALVE-MS-15-2	0.000	0.296	0.249	0.249	248,187	No	243,721
MS-2B52	0.000	0.329	0.233	0.233	684,476	Yes	243,721
MS-2B55R	0.000	0.332	0.233	0.233	938,144	Yes	243,721
MS-2B52P US	0.000	0.369	0.233	0.233	1,125,011	Yes	243,721
MS-2B52P DS	0.000	0.372	0.233	0.233	1,150,369	Yes	243,721
MS-2B53P DS	0.000	0.332	0.233	0.233	1,190,271	Yes	243,721
MS-2B50	0.000	0.401	0.233	0.233	1,204,592	Yes	107,113
MS-2B51	0.000	0.401	0.233	0.233	1,205,883	Yes	243,721
MS-2B50P US	0.000	0.385	0.233	0.233	1,254,435	Yes	243,721
MS-2B55P	0.000	0.329	0.233	0.233	1,273,278	Yes	243,721
MS-2B53P US	0.000	0.383	0.233	0.233	1,806,925	Yes	243,721
MS-2B54	0.000	0.529	0.233	0.233	1,909,031	Yes	243,721
MS-2B54 (D/S)	0.000	0.539	0.233	0.233	1,973,587	Yes	243,721
MS-2B54P	0.000	0.399	0.233	0.233	2,204,633	Yes	243,721
MS-2B55	0.000	0.605	0.233	0.233	2,401,778	Yes	243,721
MS-2B55 (D/S)	0.000	0.609	0.233	0.233	2,427,601	Yes	243,721
MS-2B63P	0.000	0.416	0.233	0.233	2,429,610	No	107,113
MS-2B55R (D/S)	0.000	0.484	0.303	0.303	2,681,641	Yes	243,721
MS-2B53	0.000	0.432	0.215	0.215	100,000,000	No	107,113
===>*Grouped by Line:* **MSD49C-3-RHDT B HDR**					***Sorted By:Remaining Life***		
MS-2B64 (BR/SE)	0.000	0.361	0.233	0.233	970,994	Yes	243,721
MS-2B64	0.000	0.579	0.378	0.378	1,368,932	Yes	243,721
MS-2B64 (D/S)	0.000	0.572	0.378	0.378	2,396,034	Yes	243,721
MS-2B63P-1 US	0.000	0.556	0.378	0.378	3,334,129	No	243,721
===>*Grouped by Line:* **MSD49C-4-RHDT B HDR to FWH26B**					***Sorted By:Remaining Life***		

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **MSD49C-4-RHDT B HDR to FWH26B**					***Sorted By:Remaining Life***		
MS-2B-VALVE-MS-15-1	0.000	0.296	0.249	0.249	248,187	No	243,721
MS-2B47	0.000	0.339	0.233	0.233	762,367	Yes	243,721
MS-2B46	0.000	0.379	0.233	0.233	1,048,506	Yes	243,721
MS-2B45	0.000	0.381	0.233	0.233	1,062,813	Yes	243,721
MS-2B44P US	0.000	0.365	0.233	0.233	1,092,470	Yes	243,721
MS-2B46P DS	0.000	0.341	0.233	0.233	1,149,685	Yes	243,721
MS-2B44	0.000	0.425	0.233	0.233	1,377,566	Yes	243,721
MS-2B46P US	0.000	0.367	0.233	0.233	1,424,951	Yes	243,721
MS-2B49N	0.000	0.435	0.303	0.303	1,473,275	No	243,721
MS-2B49 (D/S)	0.000	0.489	0.233	0.233	1,656,285	No	243,721
MS-2B47P US	0.000	0.372	0.233	0.233	1,675,208	No	243,721
MS-2B45P US	0.000	0.391	0.233	0.233	1,679,043	Yes	243,721
MS-2B64P	0.000	0.360	0.233	0.233	1,682,043	Yes	243,721
MS-2B45P DS	0.000	0.394	0.233	0.233	1,710,805	Yes	243,721
MS-2B47P DS	0.000	0.379	0.233	0.233	1,757,677	Yes	243,721
MS-2B49P	0.000	0.374	0.233	0.233	1,867,319	Yes	243,721
MS-2B48P DS	0.000	0.376	0.233	0.233	1,893,786	Yes	243,721
MS-2B49	0.000	0.529	0.233	0.233	1,914,508	No	243,721
MS-2B49R	0.000	0.451	0.233	0.233	2,061,542	No	243,721
MS-2B48P US	0.000	0.392	0.233	0.233	2,105,530	Yes	243,721
MS-2B49R (D/S)	0.000	0.491	0.303	0.303	2,792,312	No	243,721
===>Grouped by Line: **MSD49C-5-RHDT B HDR to FWH26A**					***Sorted By:Remaining Life***		
MS-2B-VALVE-MS-15	0.000	0.296	0.249	0.249	248,187	No	243,721
MS-2B43N	0.000	0.323	0.233	0.233	597,122	No	243,721
MS-2B37	0.000	0.331	0.233	0.233	703,959	No	243,721
MS-2B38	0.000	0.331	0.233	0.233	703,959	No	243,721
MS-2B39	0.000	0.331	0.233	0.233	703,959	No	243,721
MS-2B40	0.000	0.331	0.233	0.233	703,959	No	243,721
MS-2B38P	0.000	0.345	0.233	0.233	926,537	No	243,721
MS-2B43 (D/S)	0.000	0.418	0.233	0.233	1,197,938	No	243,721
MS-2B41	0.000	0.408	0.233	0.233	1,255,957	Yes	243,721
MS-2B37P	0.000	0.364	0.233	0.233	1,387,718	No	243,721
MS-2B39P	0.000	0.364	0.233	0.233	1,387,718	No	243,721
MS-2B40P US	0.000	0.364	0.233	0.233	1,387,718	No	243,721
MS-2B64P-1 US	0.000	0.368	0.233	0.233	1,435,539	Yes	243,721
MS-2B40P DS	0.000	0.387	0.233	0.233	1,636,695	Yes	243,721

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **MSD49C-5-RHDT B HDR to FWH26A**					***Sorted By:Remaining Life***		
MS-2B43	0.000	0.489	0.233	0.233	1,656,285	No	243,721
MS-2B43R	0.000	0.418	0.233	0.233	1,749,599	No	107,113
MS-2B41P	0.000	0.383	0.233	0.233	1,806,998	Yes	243,721
MS-2B43P	0.000	0.374	0.233	0.233	1,867,319	Yes	243,721
MS-2B42 (D/S)	0.000	0.522	0.233	0.233	1,868,372	Yes	243,721
MS-2B42	0.000	0.534	0.233	0.233	1,945,839	Yes	243,721
MS-2B64R (D/S)	0.000	0.469	0.233	0.233	1,952,677	Yes	243,721
MS-2B42P US	0.000	0.385	0.233	0.233	2,014,089	Yes	243,721
MS-2B42P DS	0.000	0.397	0.233	0.233	2,171,699	Yes	243,721
MS-2B43R (D/S)	0.000	0.491	0.303	0.303	2,792,312	No	107,113
MS-2B64R	0.000	0.582	0.378	0.378	3,964,723	Yes	243,721
===>Grouped by Line: **MSD50C-1-RHDT23B CV to FWH26**					***Sorted By:Remaining Life***		
MS-3B-VALVE-LCV-1105B	0.000	0.083	0.169	0.169	-132,536	No	243,721
MS-3B43P US	0.000	0.377	0.303	0.303	1,033,190	Yes	243,721
MS-3B43R	0.000	0.337	0.146	0.146	100,000,000	No	107,113
MS-3B43R (D/S)	0.000	0.500	0.280	0.280	100,000,000	No	107,113
MS-3B43	0.000	0.500	0.280	0.280	100,000,000	No	107,113

Note:
[1] Predictions are based on last Tmeas to analysis ending period.

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).db

Service Life Report

Pass 1 Analysis Exclude Measured Wear

Report Date/Time: 7/6/2010 3:37:44PM
AnalysisDate/Time: 7/6/2010 3:36:21PM

Run Name: RHTR DTK B DRN DSCV
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 1.000

CHECWORKS SFA Version: 3.0 SP-1 (build 109)
Duty Factor (Global) : 1.000

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **MSD48B-1-RHDT21B CV to FWH26**					***Sorted By:Flow Order***		
MS-1B-VALVE-LCV-1105	0.000	0.083	0.169	0.169	-132,536	No	243,721
MS-1B34R	0.000	0.337	0.146	0.146	100,000,000	No	107,113
MS-1B34R (D/S)	0.000	0.432	0.215	0.215	100,000,000	No	107,113
MS-1B33P-1	0.000	0.432	0.206	0.206	100,000,000	No	107,113
MS-1B34	0.000	0.432	0.215	0.215	100,000,000	No	107,113
MS-1B34P US	0.000	0.388	0.233	0.233	1,640,707	Yes	243,721
MS-1B34P DS	0.000	0.394	0.233	0.233	1,705,184	Yes	243,721
MS-1B35	0.000	0.310	0.233	0.233	617,176	Yes	243,721
MS-1B35P	0.000	0.393	0.233	0.233	1,926,263	Yes	243,721
===>Grouped by Line: **MSD48B-2-RHDT B HDR to FWH26**					***Sorted By:Flow Order***		
MS-1B36 (BR/SE)	0.000	0.822	0.233	0.233	4,584,517	No	243,721
MS-1B36 (D/S)	0.000	0.428	0.303	0.303	749,243	No	243,721
MS-1B36P US	0.000	0.441	0.303	0.303	1,703,077	No	243,721
MS-1B36P DS	0.000	0.439	0.303	0.303	1,676,476	Yes	243,721
MS-1B37	0.000	0.440	0.303	0.303	909,683	Yes	243,721
MS-1B37P	0.000	0.456	0.303	0.303	1,502,040	Yes	243,721
MS-1B38	0.000	0.478	0.303	0.303	1,303,040	Yes	243,721
MS-1B38P	0.000	0.462	0.303	0.303	1,779,480	Yes	243,721
MS-1B39	0.000	0.369	0.303	0.303	493,327	Yes	243,721
MS-1B39P	0.000	0.470	0.303	0.303	1,869,524	Yes	243,721
MS-1B36	0.000	0.448	0.303	0.303	1,578,985	No	243,721
===>Grouped by Line: **MSD49C-1-RHDT B HDR to FWH26**					***Sorted By:Flow Order***		
MS-2B34 (BR/SE)	0.000	1.446	0.303	0.303	8,277,802	No	243,721
MS-2B34 (D/S)	0.000	0.552	0.378	0.378	1,123,344	No	243,721
MS-2B33P	0.000	0.594	0.378	0.378	100,000,000	No	62,244

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line:	**MSD49C-1-RHDT B HDR to FWH26**				***Sorted By:Flow Order***		
MS-2B35	0.000	0.594	0.378	0.378	100,000,000	No	62,244
MS-2B35P	0.000	0.594	0.378	0.378	100,000,000	No	62,244
MS-2B36	0.000	0.594	0.378	0.378	100,000,000	No	62,244
MS-2B36P US	0.000	0.552	0.378	0.378	1,435,471	Yes	243,721
MS-2B36P DS	0.000	0.507	0.378	0.378	1,066,044	No	243,721
MS-2B63	0.000	0.566	0.378	0.378	906,693	No	107,113
MS-2B63 (BR/SE)	0.000	0.414	0.233	0.233	1,373,125	No	107,113
MS-2B63 (D/S)	0.000	0.575	0.378	0.378	1,341,651	No	107,113
===>Grouped by Line:	**MSD49C-2-RHDT B HDR to FWH26C**				***Sorted By:Flow Order***		
MS-2B63P	0.000	0.416	0.233	0.233	2,429,610	No	107,113
MS-2B50	0.000	0.401	0.233	0.233	1,204,592	Yes	107,113
MS-2B50P US	0.000	0.385	0.233	0.233	1,254,435	Yes	243,721
MS-2B51	0.000	0.401	0.233	0.233	1,205,883	Yes	243,721
MS-2B52	0.000	0.329	0.233	0.233	684,476	Yes	243,721
MS-2B52P US	0.000	0.369	0.233	0.233	1,125,011	Yes	243,721
MS-2B52P DS	0.000	0.372	0.233	0.233	1,150,369	Yes	243,721
MS-2B53	0.000	0.432	0.215	0.215	100,000,000	No	107,113
MS-2B-VALVE-MS-15-2	0.000	0.296	0.249	0.249	248,187	No	243,721
MS-2B53P US	0.000	0.383	0.233	0.233	1,806,925	Yes	243,721
MS-2B53P DS	0.000	0.332	0.233	0.233	1,190,271	Yes	243,721
MS-2B54	0.000	0.529	0.233	0.233	1,909,031	Yes	243,721
MS-2B54 (D/S)	0.000	0.539	0.233	0.233	1,973,587	Yes	243,721
MS-2B54P	0.000	0.399	0.233	0.233	2,204,633	Yes	243,721
MS-2B55	0.000	0.605	0.233	0.233	2,401,778	Yes	243,721
MS-2B55 (D/S)	0.000	0.609	0.233	0.233	2,427,601	Yes	243,721
MS-2B55P	0.000	0.329	0.233	0.233	1,273,278	Yes	243,721
MS-2B55R	0.000	0.332	0.233	0.233	938,144	Yes	243,721
MS-2B55R (D/S)	0.000	0.484	0.303	0.303	2,681,641	Yes	243,721
===>Grouped by Line:	**MSD49C-3-RHDT B HDR**				***Sorted By:Flow Order***		
MS-2B63P-1 US	0.000	0.556	0.378	0.378	3,334,129	No	243,721
MS-2B64	0.000	0.579	0.378	0.378	1,368,932	Yes	243,721
MS-2B64 (BR/SE)	0.000	0.361	0.233	0.233	970,994	Yes	243,721
MS-2B64 (D/S)	0.000	0.572	0.378	0.378	2,396,034	Yes	243,721
===>Grouped by Line:	**MSD49C-4-RHDT B HDR to FWH26B**				***Sorted By:Flow Order***		

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **MSD49C-4-RHDT B HDR to FWH26B**					***Sorted By:Flow Order***		
MS-2B64P	0.000	0.360	0.233	0.233	1,682,043	Yes	243,721
MS-2B44	0.000	0.425	0.233	0.233	1,377,566	Yes	243,721
MS-2B44P US	0.000	0.365	0.233	0.233	1,092,470	Yes	243,721
MS-2B45	0.000	0.381	0.233	0.233	1,062,813	Yes	243,721
MS-2B45P US	0.000	0.391	0.233	0.233	1,679,043	Yes	243,721
MS-2B45P DS	0.000	0.394	0.233	0.233	1,710,805	Yes	243,721
MS-2B46	0.000	0.379	0.233	0.233	1,048,506	Yes	243,721
MS-2B46P US	0.000	0.367	0.233	0.233	1,424,951	Yes	243,721
MS-2B46P DS	0.000	0.341	0.233	0.233	1,149,685	Yes	243,721
MS-2B47	0.000	0.339	0.233	0.233	762,367	Yes	243,721
MS-2B-VALVE-MS-15-1	0.000	0.296	0.249	0.249	248,187	No	243,721
MS-2B47P US	0.000	0.372	0.233	0.233	1,675,208	No	243,721
MS-2B47P DS	0.000	0.379	0.233	0.233	1,757,677	Yes	243,721
MS-2B48P US	0.000	0.392	0.233	0.233	2,105,530	Yes	243,721
MS-2B48P DS	0.000	0.376	0.233	0.233	1,893,786	Yes	243,721
MS-2B49	0.000	0.529	0.233	0.233	1,914,508	No	243,721
MS-2B49 (D/S)	0.000	0.489	0.233	0.233	1,656,285	No	243,721
MS-2B49P	0.000	0.374	0.233	0.233	1,867,319	Yes	243,721
MS-2B49R	0.000	0.451	0.233	0.233	2,061,542	No	243,721
MS-2B49R (D/S)	0.000	0.491	0.303	0.303	2,792,312	No	243,721
MS-2B49N	0.000	0.435	0.303	0.303	1,473,275	No	243,721
===>Grouped by Line: **MSD49C-5-RHDT B HDR to FWH26A**					***Sorted By:Flow Order***		
MS-2B64R	0.000	0.582	0.378	0.378	3,964,723	Yes	243,721
MS-2B64R (D/S)	0.000	0.469	0.233	0.233	1,952,677	Yes	243,721
MS-2B64P-1 US	0.000	0.368	0.233	0.233	1,435,539	Yes	243,721
MS-2B37	0.000	0.331	0.233	0.233	703,959	No	243,721
MS-2B37P	0.000	0.364	0.233	0.233	1,387,718	No	243,721
MS-2B38	0.000	0.331	0.233	0.233	703,959	No	243,721
MS-2B38P	0.000	0.345	0.233	0.233	926,537	No	243,721
MS-2B39	0.000	0.331	0.233	0.233	703,959	No	243,721
MS-2B39P	0.000	0.364	0.233	0.233	1,387,718	No	243,721
MS-2B40	0.000	0.331	0.233	0.233	703,959	No	243,721
MS-2B40P US	0.000	0.364	0.233	0.233	1,387,718	No	243,721
MS-2B40P DS	0.000	0.387	0.233	0.233	1,636,695	Yes	243,721
MS-2B41	0.000	0.408	0.233	0.233	1,255,957	Yes	243,721
MS-2B-VALVE-MS-15	0.000	0.296	0.249	0.249	248,187	No	243,721

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **MSD49C-5-RHDT B HDR to FWH26A**					***Sorted By:Flow Order***		
MS-2B41P	0.000	0.383	0.233	0.233	1,806,998	Yes	243,721
MS-2B42	0.000	0.534	0.233	0.233	1,945,839	Yes	243,721
MS-2B42 (D/S)	0.000	0.522	0.233	0.233	1,868,372	Yes	243,721
MS-2B42P US	0.000	0.385	0.233	0.233	2,014,089	Yes	243,721
MS-2B42P DS	0.000	0.397	0.233	0.233	2,171,699	Yes	243,721
MS-2B43	0.000	0.489	0.233	0.233	1,656,285	No	243,721
MS-2B43 (D/S)	0.000	0.418	0.233	0.233	1,197,938	No	243,721
MS-2B43P	0.000	0.374	0.233	0.233	1,867,319	Yes	243,721
MS-2B43R	0.000	0.418	0.233	0.233	1,749,599	No	107,113
MS-2B43R (D/S)	0.000	0.491	0.303	0.303	2,792,312	No	107,113
MS-2B43N	0.000	0.323	0.233	0.233	597,122	No	243,721
===>Grouped by Line: **MSD50C-1-RHDT23B CV to FWH26**					***Sorted By:Flow Order***		
MS-3B-VALVE-LCV-1105B	0.000	0.083	0.169	0.169	-132,536	No	243,721
MS-3B43R	0.000	0.337	0.146	0.146	100,000,000	No	107,113
MS-3B43R (D/S)	0.000	0.500	0.280	0.280	100,000,000	No	107,113
MS-3B43	0.000	0.500	0.280	0.280	100,000,000	No	107,113
MS-3B43P US	0.000	0.377	0.303	0.303	1,033,190	Yes	243,721

Note:
[1] Predictions are based on last Tmeas to analysis ending period.

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).db

Wear Rate Report

Pass 1 Analysis Exclude Measured Wear

Report Date/Time: 7/6/2010 3:38:15PM
AnalysisDate/Time: 7/6/2010 3:36:26PM

CHECWORKS SFA Version: 3.0 SP-1 (build 109)

Duty Factor (Global) : 1.000

Run Name: RHTR TO RHTR DRN TK
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 1.000

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***MSD39-1-RHTR 21A to RHDT 21A***								***Sorted By: Average Wear Rate***		
MS-1AN	31	4.892	1.655	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1AN-1	30	3.914	1.324	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A0P	61	2.642	0.894	495.9	10.806	3.3	6.625	6.403	0.000	60.39	HBD
===>Grouped by Line:	***MSD40-1-RHTR 22A to RHDT 22A***								***Sorted By: Average Wear Rate***		
MS-2AN	31	4.892	1.655	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2AN-1	30	3.914	1.324	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2A0P	61	2.642	0.894	495.9	10.806	3.3	6.625	6.403	0.000	60.39	HBD
===>Grouped by Line:	***MSD41-1-RHTR 23A to RHDT 23A***								***Sorted By: Average Wear Rate***		
MS-3AN	31	4.892	1.655	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3AN-1	30	3.914	1.324	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3A0P	61	2.642	0.894	495.9	10.806	3.3	6.625	6.403	0.000	60.39	HBD
===>Grouped by Line:	***MSD42-1-RHTR 21B to RHDT 21B***								***Sorted By: Average Wear Rate***		
MS-1BN	31	4.892	1.655	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1BN-1	30	3.914	1.324	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1B0P	61	2.642	0.894	495.9	10.806	3.3	6.625	6.403	0.000	60.39	HBD
===>Grouped by Line:	***MSD43-1-RHTR 22B to RHDT 22B***								***Sorted By: Average Wear Rate***		
MS-2BN	31	4.892	1.655	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2BN-1	30	3.914	1.324	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B0P	61	2.642	0.894	495.9	10.806	3.3	6.625	6.403	0.000	60.39	HBD
===>Grouped by Line:	***MSD44-1-RHTR 23B to RHDT 23B***								***Sorted By: Average Wear Rate***		
MS-3BN	31	4.892	1.655	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3BN-1	30	3.914	1.324	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3B0P	61	2.642	0.894	495.9	10.806	3.3	6.625	6.403	0.000	60.39	HBD

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).db

Wear Rate Report

Pass 1 Analysis Exclude Measured Wear

Report Date/Time: 7/6/2010 3:37:44PM
AnalysisDate/Time: 7/6/2010 3:36:26PM

CHECWORKS SFA Version: 3.0 SP-1 (build 109)
Duty Factor (Global) : 1.000

Run Name: RHTR TO RHTR DRN TK
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 1.000

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***MSD39-1-RHTR 21A to RHDT 21A***								***Sorted By: Flow Order***		
MS-1AN	31	4.892	1.655	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A0P	61	2.642	0.894	495.9	10.806	3.3	6.625	6.403	0.000	60.39	HBD
MS-1AN-1	30	3.914	1.324	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
===>Grouped by Line:	***MSD40-1-RHTR 22A to RHDT 22A***								***Sorted By: Flow Order***		
MS-2AN	31	4.892	1.655	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2A0P	61	2.642	0.894	495.9	10.806	3.3	6.625	6.403	0.000	60.39	HBD
MS-2AN-1	30	3.914	1.324	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
===>Grouped by Line:	***MSD41-1-RHTR 23A to RHDT 23A***								***Sorted By: Flow Order***		
MS-3AN	31	4.892	1.655	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3A0P	61	2.642	0.894	495.9	10.806	3.3	6.625	6.403	0.000	60.39	HBD
MS-3AN-1	30	3.914	1.324	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
===>Grouped by Line:	***MSD42-1-RHTR 21B to RHDT 21B***								***Sorted By: Flow Order***		
MS-1BN	31	4.892	1.655	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1B0P	61	2.642	0.894	495.9	10.806	3.3	6.625	6.403	0.000	60.39	HBD
MS-1BN-1	30	3.914	1.324	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
===>Grouped by Line:	***MSD43-1-RHTR 22B to RHDT 22B***								***Sorted By: Flow Order***		
MS-2BN	31	4.892	1.655	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B0P	61	2.642	0.894	495.9	10.806	3.3	6.625	6.403	0.000	60.39	HBD
MS-2BN-1	30	3.914	1.324	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
===>Grouped by Line:	***MSD44-1-RHTR 23B to RHDT 23B***								***Sorted By: Flow Order***		
MS-3BN	31	4.892	1.655	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3B0P	61	2.642	0.894	495.9	10.806	3.3	6.625	6.403	0.000	60.39	HBD
MS-3BN-1	30	3.914	1.324	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).db

Service Life Report

Pass 1 Analysis Exclude Measured Wear

Report Date/Time: 7/6/2010 3:37:44PM
AnalysisDate/Time: 7/6/2010 3:36:26PM

Run Name: RHTR TO RHTR DRN TK
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 1.000

CHECWORKS SFA Version: 3.0 SP-1 (build 109)
Duty Factor (Global) :1.000

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **MSD39-1-RHTR 21A to RHDT 21A**					***Sorted By:Remaining Life***		
MS-1AN	0.000	0.378	0.233	0.233	767,514	No	243,721
MS-1AN-1	0.000	0.393	0.233	0.233	1,057,514	Yes	243,721
MS-1A0P	0.000	0.393	0.233	0.233	1,565,486	Yes	243,721
===>Grouped by Line: **MSD40-1-RHTR 22A to RHDT 22A**					***Sorted By:Remaining Life***		
MS-2AN-1	0.000	0.347	0.233	0.233	757,234	Yes	243,721
MS-2A0P	0.000	0.386	0.233	0.233	1,499,250	Yes	243,721
MS-2AN	0.000	0.773	0.233	0.233	2,861,254	Yes	243,721
===>Grouped by Line: **MSD41-1-RHTR 23A to RHDT 23A**					***Sorted By:Remaining Life***		
MS-3AN-1	0.000	0.323	0.233	0.233	597,122	No	243,721
MS-3A0P	0.000	0.377	0.233	0.233	1,414,550	Yes	243,721
MS-3AN	0.000	0.801	0.233	0.233	3,005,550	No	243,721
===>Grouped by Line: **MSD42-1-RHTR 21B to RHDT 21B**					***Sorted By:Remaining Life***		
MS-1BN	0.000	0.404	0.233	0.233	904,193	No	243,721
MS-1BN-1	0.000	0.386	0.233	0.233	1,011,565	Yes	243,721
MS-1B0P	0.000	0.385	0.233	0.233	1,491,598	Yes	243,721
===>Grouped by Line: **MSD43-1-RHTR 22B to RHDT 22B**					***Sorted By:Remaining Life***		
MS-2BN-1	0.000	0.323	0.233	0.233	597,122	No	243,721
MS-2B0P	0.000	0.370	0.233	0.233	1,345,929	Yes	243,721
MS-2BN	0.000	0.732	0.233	0.233	2,640,294	No	243,721
===>Grouped by Line: **MSD44-1-RHTR 23B to RHDT 23B**					***Sorted By:Remaining Life***		
MS-3BN	0.000	0.296	0.233	0.233	333,589	No	243,721
MS-3BN-1	0.000	0.323	0.233	0.233	597,122	No	243,721

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **MSD44-1-RHTR 23B to RHDT 23B**					***Sorted By:Remaining Life***		
MS-3B0P	0.000	0.358	0.233	0.233	1,231,551	No	243,721

Note:
[1] Predictions are based on last Tmeas to analysis ending period.

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).db

Service Life Report

Pass 1 Analysis Exclude Measured Wear

Report Date/Time: 7/6/2010 3:37:44PM
AnalysisDate/Time: 7/6/2010 3:36:26PM

Run Name: RHTR TO RHTR DRN TK
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 1.000

CHECWORKS SFA Version: 3.0 SP-1 (build 109)
Duty Factor (Global) : 1.000

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line:	**MSD39-1-RHTR 21A to RHDT 21A**				***Sorted By:Flow Order***		
MS-1AN	0.000	0.378	0.233	0.233	767,514	No	243,721
MS-1A0P	0.000	0.393	0.233	0.233	1,565,486	Yes	243,721
MS-1AN-1	0.000	0.393	0.233	0.233	1,057,514	Yes	243,721
===>Grouped by Line:	**MSD40-1-RHTR 22A to RHDT 22A**				***Sorted By:Flow Order***		
MS-2AN	0.000	0.773	0.233	0.233	2,861,254	Yes	243,721
MS-2A0P	0.000	0.386	0.233	0.233	1,499,250	Yes	243,721
MS-2AN-1	0.000	0.347	0.233	0.233	757,234	Yes	243,721
===>Grouped by Line:	**MSD41-1-RHTR 23A to RHDT 23A**				***Sorted By:Flow Order***		
MS-3AN	0.000	0.801	0.233	0.233	3,005,550	No	243,721
MS-3A0P	0.000	0.377	0.233	0.233	1,414,550	Yes	243,721
MS-3AN-1	0.000	0.323	0.233	0.233	597,122	No	243,721
===>Grouped by Line:	**MSD42-1-RHTR 21B to RHDT 21B**				***Sorted By:Flow Order***		
MS-1BN	0.000	0.404	0.233	0.233	904,193	No	243,721
MS-1B0P	0.000	0.385	0.233	0.233	1,491,598	Yes	243,721
MS-1BN-1	0.000	0.386	0.233	0.233	1,011,565	Yes	243,721
===>Grouped by Line:	**MSD43-1-RHTR 22B to RHDT 22B**				***Sorted By:Flow Order***		
MS-2BN	0.000	0.732	0.233	0.233	2,640,294	No	243,721
MS-2B0P	0.000	0.370	0.233	0.233	1,345,929	Yes	243,721
MS-2BN-1	0.000	0.323	0.233	0.233	597,122	No	243,721
===>Grouped by Line:	**MSD44-1-RHTR 23B to RHDT 23B**				***Sorted By:Flow Order***		
MS-3BN	0.000	0.296	0.233	0.233	333,589	No	243,721
MS-3B0P	0.000	0.358	0.233	0.233	1,231,551	No	243,721

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **MSD44-1-RHTR 23B to RHDT 23B**					***Sorted By:Flow Order***		
MS-3BN-1	0.000	0.323	0.233	0.233	597,122	No	243,721

Note:
[1] Predictions are based on last Tmeas to analysis ending period.

Appendix I

Pass 2 Wear Rate Analysis Reports

Wear Rate Analysis Run **Page**

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).DB

Wear Rate Report

Pass 2 Analysis Include Measured Wear

Report Date/Time: 7/7/2010 9:54:36AM
AnalysisDate/Time: 6/11/2010 11:30:17AM

CHECWORKS SFA Version: 3.0 (build 105)
Duty Factor (Global) : 1.000

Run Name: 1ST POINT EXTRAC STM
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 0.951

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***ES?-1-1STPT ES TO FWH 21A***								***Sorted By: Average Wear Rate***		
LPFW21A-1P1	31	9.536	7.887	168.4	227.620	75.3	26.000	7.137	0.000	50.17	HBD
LPFW21A-1N	30	6.365	5.259	168.4	227.620	75.3	26.000	7.137	0.000	50.17	HBD
LPFW21A-1P2	1	5.020	4.146	168.4	227.620	75.3	26.000	7.137	0.000	50.17	HBD
LPFW21A-1P4	1	5.020	4.146	168.4	227.620	75.3	26.000	7.137	0.000	50.17	HBD
LPFW21A-1P3	51	3.501	2.892	168.4	227.620	75.3	26.000	7.137	0.000	50.17	HBD
===>Grouped by Line:	***ES?-1-1STPT ES TO FWH 21B***								***Sorted By: Average Wear Rate***		
LPFW21B-1P1	31	9.536	7.887	168.4	227.620	75.3	26.000	7.137	0.000	50.17	HBD
LPFW21B-1N	30	6.365	5.259	168.4	227.620	75.3	26.000	7.137	0.000	50.17	HBD
LPFW21B-1P2	1	5.020	4.146	168.4	227.620	75.3	26.000	7.137	0.000	50.17	HBD
LPFW21B-1P4	1	5.020	4.146	168.4	227.620	75.3	26.000	7.137	0.000	50.17	HBD
LPFW21B-1P3	51	3.501	2.892	168.4	227.620	75.3	26.000	7.137	0.000	50.17	HBD
===>Grouped by Line:	***ES?-1-1STPT ES TO FWH 21C***								***Sorted By: Average Wear Rate***		
LPFW21C-1P1	31	9.536	7.887	168.4	227.620	75.3	26.000	7.137	0.000	50.17	HBD
LPFW21C-1N	30	6.365	5.259	168.4	227.620	75.3	26.000	7.137	0.000	50.17	HBD
LPFW21C-1P2	1	5.020	4.146	168.4	227.620	75.3	26.000	7.137	0.000	50.17	HBD
LPFW21C-1P4	1	5.020	4.146	168.4	227.620	75.3	26.000	7.137	0.000	50.17	HBD
LPFW21C-1P3	51	3.501	2.892	168.4	227.620	75.3	26.000	7.137	0.000	50.17	HBD
===>Grouped by Line:	***ES?-2-1STPT ES TO FWH 21A***								***Sorted By: Average Wear Rate***		
LPFW21A-2P1	31	9.536	7.887	168.4	227.620	75.3	26.000	7.137	0.000	50.17	HBD
LPFW21A-2N	30	6.365	5.259	168.4	227.620	75.3	26.000	7.137	0.000	50.17	HBD
LPFW21A-2P3	2	5.860	4.841	168.4	227.620	75.3	26.000	7.137	0.000	50.17	HBD
LPFW21A-2P5	2	5.860	4.841	168.4	227.620	75.3	26.000	7.137	0.000	50.17	HBD
LPFW21A-2P4	52	3.978	3.287	168.4	227.620	75.3	26.000	7.137	0.000	50.17	HBD
LPFW21A-2P2	61	3.238	5.678	168.4	227.620	75.3	26.000	7.137	0.000	50.17	HBD
===>Grouped by Line:	***ES?-2-1STPT ES TO FWH 21B***								***Sorted By: Average Wear Rate***		
LPFW21B-2P1	31	9.536	7.887	168.4	227.620	75.3	26.000	7.137	0.000	50.17	HBD
LPFW21B-2N	30	6.365	5.259	168.4	227.620	75.3	26.000	7.137	0.000	50.17	HBD

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***ES?-2-1STPT ES TO FWH 21B***								***Sorted By: Average Wear Rate***		
LPFW21B-2P3	2	5.860	4.841	168.4	227.620	75.3	26.000	7.137	0.000	50.17	HBD
LPFW21B-2P5	2	5.860	4.841	168.4	227.620	75.3	26.000	7.137	0.000	50.17	HBD
LPFW21B-2P4	52	3.978	3.287	168.4	227.620	75.3	26.000	7.137	0.000	50.17	HBD
LPFW21B-2P2	61	3.238	5.678	168.4	227.620	75.3	26.000	7.137	0.000	50.17	HBD
===>Grouped by Line:	***ES?-2-1STPT ES TO FWH 21C***								***Sorted By: Average Wear Rate***		
LPFW21C-2P1	31	9.536	7.887	168.4	227.620	75.3	26.000	7.137	0.000	50.17	HBD
LPFW21C-2N	30	6.365	5.259	168.4	227.620	75.3	26.000	7.137	0.000	50.17	HBD
LPFW21C-2P3	2	5.860	4.841	168.4	227.620	75.3	26.000	7.137	0.000	50.17	HBD
LPFW21C-2P5	2	5.860	4.841	168.4	227.620	75.3	26.000	7.137	0.000	50.17	HBD
LPFW21C-2P4	52	3.978	3.287	168.4	227.620	75.3	26.000	7.137	0.000	50.17	HBD
LPFW21C-2P2	61	3.238	5.678	168.4	227.620	75.3	26.000	7.137	0.000	50.17	HBD
===>Grouped by Line:	***ES?-3-1STPT ES TO FWH 21A***								***Sorted By: Average Wear Rate***		
LPFW21A-3P1	31	9.536	7.887	168.4	227.620	75.3	26.000	7.137	0.000	50.17	HBD
LPFW21A-3N	30	6.365	5.259	168.4	227.620	75.3	26.000	7.137	0.000	50.17	HBD
LPFW21A-3P3	2	5.860	4.841	168.4	227.620	75.3	26.000	7.137	0.000	50.17	HBD
LPFW21A-3P5	2	5.860	4.841	168.4	227.620	75.3	26.000	7.137	0.000	50.17	HBD
LPFW21A-3P4	52	3.978	3.287	168.4	227.620	75.3	26.000	7.137	0.000	50.17	HBD
LPFW21A-3P2	61	3.238	5.678	168.4	227.620	75.3	26.000	7.137	0.000	50.17	HBD
===>Grouped by Line:	***ES?-3-1STPT ES TO FWH 21B***								***Sorted By: Average Wear Rate***		
LPFW21B-3P1	31	9.536	7.887	168.4	227.620	75.3	26.000	7.137	0.000	50.17	HBD
LPFW21B-3N	30	6.365	5.259	168.4	227.620	75.3	26.000	7.137	0.000	50.17	HBD
LPFW21B-3P3	2	5.860	4.841	168.4	227.620	75.3	26.000	7.137	0.000	50.17	HBD
LPFW21B-3P5	2	5.860	4.841	168.4	227.620	75.3	26.000	7.137	0.000	50.17	HBD
LPFW21B-3P4	52	3.978	3.287	168.4	227.620	75.3	26.000	7.137	0.000	50.17	HBD
LPFW21B-3P2	61	3.238	5.678	168.4	227.620	75.3	26.000	7.137	0.000	50.17	HBD
===>Grouped by Line:	***ES?-3-1STPT ES TO FWH 21C***								***Sorted By: Average Wear Rate***		
LPFW21C-3P1	31	9.536	7.887	168.4	227.620	75.3	26.000	7.137	0.000	50.17	HBD
LPFW21C-3N	30	6.365	5.259	168.4	227.620	75.3	26.000	7.137	0.000	50.17	HBD
LPFW21C-3P3	2	5.860	4.841	168.4	227.620	75.3	26.000	7.137	0.000	50.17	HBD
LPFW21C-3P5	2	5.860	4.841	168.4	227.620	75.3	26.000	7.137	0.000	50.17	HBD
LPFW21C-3P4	52	3.978	3.287	168.4	227.620	75.3	26.000	7.137	0.000	50.17	HBD
LPFW21C-3P2	61	3.238	5.678	168.4	227.620	75.3	26.000	7.137	0.000	50.17	HBD
===>Grouped by Line:	***ES?-4-1STPT ES TO FWH 21A***								***Sorted By: Average Wear Rate***		
LPFW21A-4P1	31	9.536	7.887	168.4	227.620	75.3	26.000	7.137	0.000	50.17	HBD
LPFW21A-4N	30	6.365	5.259	168.4	227.620	75.3	26.000	7.137	0.000	50.17	HBD

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***ES?-4-1STPT ES TO FWH 21A***								***Sorted By: Average Wear Rate***		
LPFW21A-4P2	1	5.020	4.146	168.4	227.620	75.3	26.000	7.137	0.000	50.17	HBD
LPFW21A-4P5	1	5.020	4.146	168.4	227.620	75.3	26.000	7.137	0.000	50.17	HBD
LPFW21A-4P3	51	3.501	2.892	168.4	227.620	75.3	26.000	7.137	0.000	50.17	HBD
LPFW21A-4P4	51	3.501	2.892	168.4	227.620	75.3	26.000	7.137	0.000	50.17	HBD
===>Grouped by Line:	***ES?-4-1STPT ES TO FWH 21B***								***Sorted By: Average Wear Rate***		
LPFW21B-4P1	31	9.536	7.887	168.4	227.620	75.3	26.000	7.137	0.000	50.17	HBD
LPFW21B-4N	30	6.365	5.259	168.4	227.620	75.3	26.000	7.137	0.000	50.17	HBD
LPFW21B-4P2	1	5.020	4.146	168.4	227.620	75.3	26.000	7.137	0.000	50.17	HBD
LPFW21B-4P5	1	5.020	4.146	168.4	227.620	75.3	26.000	7.137	0.000	50.17	HBD
LPFW21B-4P3	51	3.501	2.892	168.4	227.620	75.3	26.000	7.137	0.000	50.17	HBD
LPFW21B-4P4	51	3.501	2.892	168.4	227.620	75.3	26.000	7.137	0.000	50.17	HBD
===>Grouped by Line:	***ES?-4-1STPT ES TO FWH 21C***								***Sorted By: Average Wear Rate***		
LPFW21C-4P1	31	9.536	7.887	168.4	227.620	75.3	26.000	7.137	0.000	50.17	HBD
LPFW21C-4N	30	6.365	5.259	168.4	227.620	75.3	26.000	7.137	0.000	50.17	HBD
LPFW21C-4P2	1	5.020	4.146	168.4	227.620	75.3	26.000	7.137	0.000	50.17	HBD
LPFW21C-4P5	1	5.020	4.146	168.4	227.620	75.3	26.000	7.137	0.000	50.17	HBD
LPFW21C-4P3	51	3.501	2.892	168.4	227.620	75.3	26.000	7.137	0.000	50.17	HBD
LPFW21C-4P4	51	3.501	2.892	168.4	227.620	75.3	26.000	7.137	0.000	50.17	HBD

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).DB

Wear Rate Report

Pass 2 Analysis Include Measured Wear

Report Date/Time: 7/7/2010 9:54:36AM
AnalysisDate/Time: 5/11/2010 11:30:17AM

CHECWORKS SFA Version: 3.0 (build 105)
Duty Factor (Global) : 1.000

Run Name: 1ST POINT EXTRAC STM
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 0.951

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***ES?-1-1STPT ES TO FWH 21A***									***Sorted By: Flow Order***	
LPFW21A-1P1	31	9.536	7.887	168.4	227.620	75.3	26.000	7.137	0.000	50.17	HBD
LPFW21A-1P2	1	5.020	4.146	168.4	227.620	75.3	26.000	7.137	0.000	50.17	HBD
LPFW21A-1P3	51	3.501	2.892	168.4	227.620	75.3	26.000	7.137	0.000	50.17	HBD
LPFW21A-1P4	1	5.020	4.146	168.4	227.620	75.3	26.000	7.137	0.000	50.17	HBD
LPFW21A-1N	30	6.365	5.259	168.4	227.620	75.3	26.000	7.137	0.000	50.17	HBD
===>Grouped by Line:	***ES?-1-1STPT ES TO FWH 21B***									***Sorted By: Flow Order***	
LPFW21B-1P1	31	9.536	7.887	168.4	227.620	75.3	26.000	7.137	0.000	50.17	HBD
LPFW21B-1P2	1	5.020	4.146	168.4	227.620	75.3	26.000	7.137	0.000	50.17	HBD
LPFW21B-1P3	51	3.501	2.892	168.4	227.620	75.3	26.000	7.137	0.000	50.17	HBD
LPFW21B-1P4	1	5.020	4.146	168.4	227.620	75.3	26.000	7.137	0.000	50.17	HBD
LPFW21B-1N	30	6.365	5.259	168.4	227.620	75.3	26.000	7.137	0.000	50.17	HBD
===>Grouped by Line:	***ES?-1-1STPT ES TO FWH 21C***									***Sorted By: Flow Order***	
LPFW21C-1P1	31	9.536	7.887	168.4	227.620	75.3	26.000	7.137	0.000	50.17	HBD
LPFW21C-1P2	1	5.020	4.146	168.4	227.620	75.3	26.000	7.137	0.000	50.17	HBD
LPFW21C-1P3	51	3.501	2.892	168.4	227.620	75.3	26.000	7.137	0.000	50.17	HBD
LPFW21C-1P4	1	5.020	4.146	168.4	227.620	75.3	26.000	7.137	0.000	50.17	HBD
LPFW21C-1N	30	6.365	5.259	168.4	227.620	75.3	26.000	7.137	0.000	50.17	HBD
===>Grouped by Line:	***ES?-2-1STPT ES TO FWH 21A***									***Sorted By: Flow Order***	
LPFW21A-2P1	31	9.536	7.887	168.4	227.620	75.3	26.000	7.137	0.000	50.17	HBD
LPFW21A-2P2	61	3.238	5.678	168.4	227.620	75.3	26.000	7.137	0.000	50.17	HBD
LPFW21A-2P3	2	5.860	4.841	168.4	227.620	75.3	26.000	7.137	0.000	50.17	HBD
LPFW21A-2P4	52	3.978	3.287	168.4	227.620	75.3	26.000	7.137	0.000	50.17	HBD
LPFW21A-2P5	2	5.860	4.841	168.4	227.620	75.3	26.000	7.137	0.000	50.17	HBD
LPFW21A-2N	30	6.365	5.259	168.4	227.620	75.3	26.000	7.137	0.000	50.17	HBD
===>Grouped by Line:	***ES?-2-1STPT ES TO FWH 21B***									***Sorted By: Flow Order***	
LPFW21B-2P1	31	9.536	7.887	168.4	227.620	75.3	26.000	7.137	0.000	50.17	HBD
LPFW21B-2P2	61	3.238	5.678	168.4	227.620	75.3	26.000	7.137	0.000	50.17	HBD

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***ES?-2-1STPT ES TO FWH 21B***									***Sorted By: Flow Order***	
LPFW21B-2P3	2	5.860	4.841	168.4	227.620	75.3	26.000	7.137	0.000	50.17	HBD
LPFW21B-2P4	52	3.978	3.287	168.4	227.620	75.3	26.000	7.137	0.000	50.17	HBD
LPFW21B-2P5	2	5.860	4.841	168.4	227.620	75.3	26.000	7.137	0.000	50.17	HBD
LPFW21B-2N	30	6.365	5.259	168.4	227.620	75.3	26.000	7.137	0.000	50.17	HBD
===>Grouped by Line:	***ES?-2-1STPT ES TO FWH 21C***									***Sorted By: Flow Order***	
LPFW21C-2P1	31	9.536	7.887	168.4	227.620	75.3	26.000	7.137	0.000	50.17	HBD
LPFW21C-2P2	61	3.238	5.678	168.4	227.620	75.3	26.000	7.137	0.000	50.17	HBD
LPFW21C-2P3	2	5.860	4.841	168.4	227.620	75.3	26.000	7.137	0.000	50.17	HBD
LPFW21C-2P4	52	3.978	3.287	168.4	227.620	75.3	26.000	7.137	0.000	50.17	HBD
LPFW21C-2P5	2	5.860	4.841	168.4	227.620	75.3	26.000	7.137	0.000	50.17	HBD
LPFW21C-2N	30	6.365	5.259	168.4	227.620	75.3	26.000	7.137	0.000	50.17	HBD
===>Grouped by Line:	***ES?-3-1STPT ES TO FWH 21A***									***Sorted By: Flow Order***	
LPFW21A-3P1	31	9.536	7.887	168.4	227.620	75.3	26.000	7.137	0.000	50.17	HBD
LPFW21A-3P2	61	3.238	5.678	168.4	227.620	75.3	26.000	7.137	0.000	50.17	HBD
LPFW21A-3P3	2	5.860	4.841	168.4	227.620	75.3	26.000	7.137	0.000	50.17	HBD
LPFW21A-3P4	52	3.978	3.287	168.4	227.620	75.3	26.000	7.137	0.000	50.17	HBD
LPFW21A-3P5	2	5.860	4.841	168.4	227.620	75.3	26.000	7.137	0.000	50.17	HBD
LPFW21A-3N	30	6.365	5.259	168.4	227.620	75.3	26.000	7.137	0.000	50.17	HBD
===>Grouped by Line:	***ES?-3-1STPT ES TO FWH 21B***									***Sorted By: Flow Order***	
LPFW21B-3P1	31	9.536	7.887	168.4	227.620	75.3	26.000	7.137	0.000	50.17	HBD
LPFW21B-3P2	61	3.238	5.678	168.4	227.620	75.3	26.000	7.137	0.000	50.17	HBD
LPFW21B-3P3	2	5.860	4.841	168.4	227.620	75.3	26.000	7.137	0.000	50.17	HBD
LPFW21B-3P4	52	3.978	3.287	168.4	227.620	75.3	26.000	7.137	0.000	50.17	HBD
LPFW21B-3P5	2	5.860	4.841	168.4	227.620	75.3	26.000	7.137	0.000	50.17	HBD
LPFW21B-3N	30	6.365	5.259	168.4	227.620	75.3	26.000	7.137	0.000	50.17	HBD
===>Grouped by Line:	***ES?-3-1STPT ES TO FWH 21C***									***Sorted By: Flow Order***	
LPFW21C-3P1	31	9.536	7.887	168.4	227.620	75.3	26.000	7.137	0.000	50.17	HBD
LPFW21C-3P2	61	3.238	5.678	168.4	227.620	75.3	26.000	7.137	0.000	50.17	HBD
LPFW21C-3P3	2	5.860	4.841	168.4	227.620	75.3	26.000	7.137	0.000	50.17	HBD
LPFW21C-3P4	52	3.978	3.287	168.4	227.620	75.3	26.000	7.137	0.000	50.17	HBD
LPFW21C-3P5	2	5.860	4.841	168.4	227.620	75.3	26.000	7.137	0.000	50.17	HBD
LPFW21C-3N	30	6.365	5.259	168.4	227.620	75.3	26.000	7.137	0.000	50.17	HBD
===>Grouped by Line:	***ES?-4-1STPT ES TO FWH 21A***									***Sorted By: Flow Order***	
LPFW21A-4P1	31	9.536	7.887	168.4	227.620	75.3	26.000	7.137	0.000	50.17	HBD
LPFW21A-4P2	1	5.020	4.146	168.4	227.620	75.3	26.000	7.137	0.000	50.17	HBD
LPFW21A-4P3	51	3.501	2.892	168.4	227.620	75.3	26.000	7.137	0.000	50.17	HBD

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***ES?-4-1STPT ES TO FWH 21A***									***Sorted By: Flow Order***	
LPFW21A-4P4	51	3.501	2.892	168.4	227.620	75.3	26.000	7.137	0.000	50.17	HBD
LPFW21A-4P5	1	5.020	4.146	168.4	227.620	75.3	26.000	7.137	0.000	50.17	HBD
LPFW21A-4N	30	6.365	5.259	168.4	227.620	75.3	26.000	7.137	0.000	50.17	HBD
===>Grouped by Line:	***ES?-4-1STPT ES TO FWH 21B***									***Sorted By: Flow Order***	
LPFW21B-4P1	31	9.536	7.887	168.4	227.620	75.3	26.000	7.137	0.000	50.17	HBD
LPFW21B-4P2	1	5.020	4.146	168.4	227.620	75.3	26.000	7.137	0.000	50.17	HBD
LPFW21B-4P3	51	3.501	2.892	168.4	227.620	75.3	26.000	7.137	0.000	50.17	HBD
LPFW21B-4P4	51	3.501	2.892	168.4	227.620	75.3	26.000	7.137	0.000	50.17	HBD
LPFW21B-4P5	1	5.020	4.146	168.4	227.620	75.3	26.000	7.137	0.000	50.17	HBD
LPFW21B-4N	30	6.365	5.259	168.4	227.620	75.3	26.000	7.137	0.000	50.17	HBD
===>Grouped by Line:	***ES?-4-1STPT ES TO FWH 21C***									***Sorted By: Flow Order***	
LPFW21C-4P1	31	9.536	7.887	168.4	227.620	75.3	26.000	7.137	0.000	50.17	HBD
LPFW21C-4P2	1	5.020	4.146	168.4	227.620	75.3	26.000	7.137	0.000	50.17	HBD
LPFW21C-4P3	51	3.501	2.892	168.4	227.620	75.3	26.000	7.137	0.000	50.17	HBD
LPFW21C-4P4	51	3.501	2.892	168.4	227.620	75.3	26.000	7.137	0.000	50.17	HBD
LPFW21C-4P5	1	5.020	4.146	168.4	227.620	75.3	26.000	7.137	0.000	50.17	HBD
LPFW21C-4N	30	6.365	5.259	168.4	227.620	75.3	26.000	7.137	0.000	50.17	HBD

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).DB

Service Life Report

Pass 2 Analysis Include Measured Wear

Report Date/Time: 7/7/2010 9:54:36AM
AnalysisDate/Time:

Run Name: 1ST POINT EXTRAC STM
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 0.951

CHECWORKS SFA Version: 3.0 (build 105)
Duty Factor (Global) :1.000

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line:	**ES?-1-1STPT ES TO FWH 21A**				***Sorted By:Remaining Life***		
LPFW21A-1P1	0.000	0.278	0.043	0.043	260,592	No	243,721
LPFW21A-1N	0.000	0.218	0.043	0.043	290,958	Yes	243,721
LPFW21A-1P4	0.000	0.265	0.043	0.043	469,125	Yes	243,721
LPFW21A-1P2	0.000	0.331	0.043	0.043	608,580	Yes	243,721
LPFW21A-1P3	0.000	0.253	0.043	0.043	636,621	Yes	243,721
===>Grouped by Line:	**ES?-1-1STPT ES TO FWH 21B**				***Sorted By:Remaining Life***		
LPFW21B-1P1	0.000	0.110	0.043	0.043	73,752	No	243,721
LPFW21B-1N	0.000	0.198	0.043	0.043	257,586	No	243,721
LPFW21B-1P2	0.000	0.235	0.043	0.043	405,811	No	243,721
LPFW21B-1P4	0.000	0.235	0.043	0.043	405,811	No	243,721
LPFW21B-1P3	0.000	0.278	0.043	0.043	709,710	No	243,721
===>Grouped by Line:	**ES?-1-1STPT ES TO FWH 21C**				***Sorted By:Remaining Life***		
LPFW21C-1P1	0.000	0.110	0.043	0.043	73,752	No	243,721
LPFW21C-1N	0.000	0.198	0.043	0.043	257,586	No	243,721
LPFW21C-1P2	0.000	0.235	0.043	0.043	405,811	No	243,721
LPFW21C-1P4	0.000	0.235	0.043	0.043	405,811	No	243,721
LPFW21C-1P3	0.000	0.278	0.043	0.043	709,710	No	243,721
===>Grouped by Line:	**ES?-2-1STPT ES TO FWH 21A**				***Sorted By:Remaining Life***		
LPFW21A-2P1	0.000	0.298	0.043	0.043	282,804	Yes	243,721
LPFW21A-2N	0.000	0.240	0.043	0.043	327,606	Yes	243,721
LPFW21A-2P5	0.000	0.236	0.043	0.043	349,303	Yes	243,721
LPFW21A-2P2	0.000	0.315	0.043	0.043	418,468	Yes	243,721
LPFW21A-2P3	0.000	0.339	0.051	0.051	522,235	Yes	243,721
LPFW21A-2P4	0.000	0.248	0.043	0.043	546,221	Yes	243,721
===>Grouped by Line:	**ES?-2-1STPT ES TO FWH 21B**				***Sorted By:Remaining Life***		
LPFW21B-2P1	0.000	0.110	0.043	0.043	73,752	No	243,721

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line:	**ES?-2-1STPT ES TO FWH 21B**				***Sorted By:Remaining Life***		
LPFW21B-2N	0.000	0.198	0.043	0.043	257,586	No	243,721
LPFW21B-2P3	0.000	0.212	0.051	0.051	291,767	No	243,721
LPFW21B-2P5	0.000	0.212	0.043	0.043	305,205	No	243,721
LPFW21B-2P2	0.000	0.285	0.043	0.043	372,747	No	243,721
LPFW21B-2P4	0.000	0.264	0.043	0.043	589,144	No	243,721
===>Grouped by Line:	**ES?-2-1STPT ES TO FWH 21C**				***Sorted By:Remaining Life***		
LPFW21C-2P1	0.000	0.110	0.043	0.043	73,752	No	243,721
LPFW21C-2N	0.000	0.198	0.043	0.043	257,586	No	243,721
LPFW21C-2P3	0.000	0.212	0.051	0.051	291,767	No	243,721
LPFW21C-2P5	0.000	0.212	0.043	0.043	305,205	No	243,721
LPFW21C-2P2	0.000	0.285	0.043	0.043	372,747	No	243,721
LPFW21C-2P4	0.000	0.264	0.043	0.043	589,144	No	243,721
===>Grouped by Line:	**ES?-3-1STPT ES TO FWH 21A**				***Sorted By:Remaining Life***		
LPFW21A-3P1	0.000	0.256	0.043	0.043	236,158	No	243,721
LPFW21A-3N	0.000	0.202	0.043	0.043	264,305	Yes	243,721
LPFW21A-3P5	0.000	0.217	0.043	0.043	314,924	Yes	243,721
LPFW21A-3P3	0.000	0.237	0.051	0.051	337,675	Yes	243,721
LPFW21A-3P2	0.000	0.329	0.043	0.043	440,065	Yes	243,721
LPFW21A-3P4	0.000	0.251	0.043	0.043	554,217	Yes	243,721
===>Grouped by Line:	**ES?-3-1STPT ES TO FWH 21B**				***Sorted By:Remaining Life***		
LPFW21B-3P1	0.000	0.110	0.043	0.043	73,752	No	243,721
LPFW21B-3N	0.000	0.198	0.043	0.043	257,586	No	243,721
LPFW21B-3P3	0.000	0.212	0.051	0.051	291,767	No	243,721
LPFW21B-3P5	0.000	0.212	0.043	0.043	305,205	No	243,721
LPFW21B-3P2	0.000	0.285	0.043	0.043	372,747	No	243,721
LPFW21B-3P4	0.000	0.264	0.043	0.043	589,144	No	243,721
===>Grouped by Line:	**ES?-3-1STPT ES TO FWH 21C**				***Sorted By:Remaining Life***		
LPFW21C-3P1	0.000	0.110	0.043	0.043	73,752	No	243,721
LPFW21C-3N	0.000	0.198	0.043	0.043	257,586	No	243,721
LPFW21C-3P3	0.000	0.212	0.051	0.051	291,767	No	243,721
LPFW21C-3P5	0.000	0.212	0.043	0.043	305,205	No	243,721
LPFW21C-3P2	0.000	0.285	0.043	0.043	372,747	No	243,721
LPFW21C-3P4	0.000	0.264	0.043	0.043	589,144	No	243,721
===>Grouped by Line:	**ES?-4-1STPT ES TO FWH 21A**				***Sorted By:Remaining Life***		
LPFW21A-4P1	0.000	0.238	0.043	0.043	216,166	No	243,721

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **ES?-4-1STPT ES TO FWH 21A**					***Sorted By:Remaining Life***		
LPFW21A-4N	0.000	0.211	0.043	0.043	279,297	Yes	243,721
LPFW21A-4P5	0.000	0.234	0.043	0.043	403,624	Yes	243,721
LPFW21A-4P2	0.000	0.311	0.043	0.043	566,321	Yes	243,721
LPFW21A-4P3	0.000	0.230	0.043	0.043	566,959	Yes	243,721
LPFW21A-4P4	0.000	0.322	0.043	0.043	845,607	Yes	243,721
===>Grouped by Line: **ES?-4-1STPT ES TO FWH 21B**					***Sorted By:Remaining Life***		
LPFW21B-4P1	0.000	0.110	0.043	0.043	73,752	No	243,721
LPFW21B-4N	0.000	0.198	0.043	0.043	257,586	No	243,721
LPFW21B-4P2	0.000	0.235	0.043	0.043	405,811	No	243,721
LPFW21B-4P5	0.000	0.235	0.043	0.043	405,811	No	243,721
LPFW21B-4P3	0.000	0.278	0.043	0.043	709,710	No	243,721
LPFW21B-4P4	0.000	0.278	0.043	0.043	709,710	No	243,721
===>Grouped by Line: **ES?-4-1STPT ES TO FWH 21C**					***Sorted By:Remaining Life***		
LPFW21C-4P1	0.000	0.110	0.043	0.043	73,752	No	243,721
LPFW21C-4N	0.000	0.198	0.043	0.043	257,586	No	243,721
LPFW21C-4P2	0.000	0.235	0.043	0.043	405,811	No	243,721
LPFW21C-4P5	0.000	0.235	0.043	0.043	405,811	No	243,721
LPFW21C-4P3	0.000	0.278	0.043	0.043	709,710	No	243,721
LPFW21C-4P4	0.000	0.278	0.043	0.043	709,710	No	243,721

Note:
[1] Predictions are based on last Tmeas to analysis ending period.

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).DB

Service Life Report

Pass 2 Analysis Include Measured Wear

Report Date/Time: 7/7/2010 9:54:36AM
AnalysisDate/Time:

Run Name: 1ST POINT EXTRAC STM
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 0.951

CHECWORKS SFA Version: 3.0 (build 105)
Duty Factor (Global) : 1.000

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **ES?-1-1STPT ES TO FWH 21A**					***Sorted By:Flow Order***		
LPFW21A-1P1	0.000	0.278	0.043	0.043	260,592	No	243,721
LPFW21A-1P2	0.000	0.331	0.043	0.043	608,580	Yes	243,721
LPFW21A-1P3	0.000	0.253	0.043	0.043	636,621	Yes	243,721
LPFW21A-1P4	0.000	0.265	0.043	0.043	469,125	Yes	243,721
LPFW21A-1N	0.000	0.218	0.043	0.043	290,958	Yes	243,721
===>Grouped by Line: **ES?-1-1STPT ES TO FWH 21B**					***Sorted By:Flow Order***		
LPFW21B-1P1	0.000	0.110	0.043	0.043	73,752	No	243,721
LPFW21B-1P2	0.000	0.235	0.043	0.043	405,811	No	243,721
LPFW21B-1P3	0.000	0.278	0.043	0.043	709,710	No	243,721
LPFW21B-1P4	0.000	0.235	0.043	0.043	405,811	No	243,721
LPFW21B-1N	0.000	0.198	0.043	0.043	257,586	No	243,721
===>Grouped by Line: **ES?-1-1STPT ES TO FWH 21C**					***Sorted By:Flow Order***		
LPFW21C-1P1	0.000	0.110	0.043	0.043	73,752	No	243,721
LPFW21C-1P2	0.000	0.235	0.043	0.043	405,811	No	243,721
LPFW21C-1P3	0.000	0.278	0.043	0.043	709,710	No	243,721
LPFW21C-1P4	0.000	0.235	0.043	0.043	405,811	No	243,721
LPFW21C-1N	0.000	0.198	0.043	0.043	257,586	No	243,721
===>Grouped by Line: **ES?-2-1STPT ES TO FWH 21A**					***Sorted By:Flow Order***		
LPFW21A-2P1	0.000	0.298	0.043	0.043	282,804	Yes	243,721
LPFW21A-2P2	0.000	0.315	0.043	0.043	418,468	Yes	243,721
LPFW21A-2P3	0.000	0.339	0.051	0.051	522,235	Yes	243,721
LPFW21A-2P4	0.000	0.248	0.043	0.043	546,221	Yes	243,721
LPFW21A-2P5	0.000	0.236	0.043	0.043	349,303	Yes	243,721
LPFW21A-2N	0.000	0.240	0.043	0.043	327,606	Yes	243,721
===>Grouped by Line: **ES?-2-1STPT ES TO FWH 21B**					***Sorted By:Flow Order***		
LPFW21B-2P1	0.000	0.110	0.043	0.043	73,752	No	243,721

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line:	**ES?-2-1STPT ES TO FWH 21B**				***Sorted By:Flow Order***		
LPFW21B-2P2	0.000	0.285	0.043	0.043	372,747	No	243,721
LPFW21B-2P3	0.000	0.212	0.051	0.051	291,767	No	243,721
LPFW21B-2P4	0.000	0.264	0.043	0.043	589,144	No	243,721
LPFW21B-2P5	0.000	0.212	0.043	0.043	305,205	No	243,721
LPFW21B-2N	0.000	0.198	0.043	0.043	257,586	No	243,721
===>Grouped by Line:	**ES?-2-1STPT ES TO FWH 21C**				***Sorted By:Flow Order***		
LPFW21C-2P1	0.000	0.110	0.043	0.043	73,752	No	243,721
LPFW21C-2P2	0.000	0.285	0.043	0.043	372,747	No	243,721
LPFW21C-2P3	0.000	0.212	0.051	0.051	291,767	No	243,721
LPFW21C-2P4	0.000	0.264	0.043	0.043	589,144	No	243,721
LPFW21C-2P5	0.000	0.212	0.043	0.043	305,205	No	243,721
LPFW21C-2N	0.000	0.198	0.043	0.043	257,586	No	243,721
===>Grouped by Line:	**ES?-3-1STPT ES TO FWH 21A**				***Sorted By:Flow Order***		
LPFW21A-3P1	0.000	0.256	0.043	0.043	236,158	No	243,721
LPFW21A-3P2	0.000	0.329	0.043	0.043	440,065	Yes	243,721
LPFW21A-3P3	0.000	0.237	0.051	0.051	337,675	Yes	243,721
LPFW21A-3P4	0.000	0.251	0.043	0.043	554,217	Yes	243,721
LPFW21A-3P5	0.000	0.217	0.043	0.043	314,924	Yes	243,721
LPFW21A-3N	0.000	0.202	0.043	0.043	264,305	Yes	243,721
===>Grouped by Line:	**ES?-3-1STPT ES TO FWH 21B**				***Sorted By:Flow Order***		
LPFW21B-3P1	0.000	0.110	0.043	0.043	73,752	No	243,721
LPFW21B-3P2	0.000	0.285	0.043	0.043	372,747	No	243,721
LPFW21B-3P3	0.000	0.212	0.051	0.051	291,767	No	243,721
LPFW21B-3P4	0.000	0.264	0.043	0.043	589,144	No	243,721
LPFW21B-3P5	0.000	0.212	0.043	0.043	305,205	No	243,721
LPFW21B-3N	0.000	0.198	0.043	0.043	257,586	No	243,721
===>Grouped by Line:	**ES?-3-1STPT ES TO FWH 21C**				***Sorted By:Flow Order***		
LPFW21C-3P1	0.000	0.110	0.043	0.043	73,752	No	243,721
LPFW21C-3P2	0.000	0.285	0.043	0.043	372,747	No	243,721
LPFW21C-3P3	0.000	0.212	0.051	0.051	291,767	No	243,721
LPFW21C-3P4	0.000	0.264	0.043	0.043	589,144	No	243,721
LPFW21C-3P5	0.000	0.212	0.043	0.043	305,205	No	243,721
LPFW21C-3N	0.000	0.198	0.043	0.043	257,586	No	243,721
===>Grouped by Line:	**ES?-4-1STPT ES TO FWH 21A**				***Sorted By:Flow Order***		
LPFW21A-4P1	0.000	0.238	0.043	0.043	216,166	No	243,721

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line:	**ES?-4-1STPT ES TO FWH 21A**				***Sorted By:Flow Order***		
LPFW21A-4P2	0.000	0.311	0.043	0.043	566,321	Yes	243,721
LPFW21A-4P3	0.000	0.230	0.043	0.043	566,959	Yes	243,721
LPFW21A-4P4	0.000	0.322	0.043	0.043	845,607	Yes	243,721
LPFW21A-4P5	0.000	0.234	0.043	0.043	403,624	Yes	243,721
LPFW21A-4N	0.000	0.211	0.043	0.043	279,297	Yes	243,721
===>Grouped by Line:	**ES?-4-1STPT ES TO FWH 21B**				***Sorted By:Flow Order***		
LPFW21B-4P1	0.000	0.110	0.043	0.043	73,752	No	243,721
LPFW21B-4P2	0.000	0.235	0.043	0.043	405,811	No	243,721
LPFW21B-4P3	0.000	0.278	0.043	0.043	709,710	No	243,721
LPFW21B-4P4	0.000	0.278	0.043	0.043	709,710	No	243,721
LPFW21B-4P5	0.000	0.235	0.043	0.043	405,811	No	243,721
LPFW21B-4N	0.000	0.198	0.043	0.043	257,586	No	243,721
===>Grouped by Line:	**ES?-4-1STPT ES TO FWH 21C**				***Sorted By:Flow Order***		
LPFW21C-4P1	0.000	0.110	0.043	0.043	73,752	No	243,721
LPFW21C-4P2	0.000	0.235	0.043	0.043	405,811	No	243,721
LPFW21C-4P3	0.000	0.278	0.043	0.043	709,710	No	243,721
LPFW21C-4P4	0.000	0.278	0.043	0.043	709,710	No	243,721
LPFW21C-4P5	0.000	0.235	0.043	0.043	405,811	No	243,721
LPFW21C-4N	0.000	0.198	0.043	0.043	257,586	No	243,721

Note:
[1] Predictions are based on last Tmeas to analysis ending period.

3

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).DB

Wear Report

Pass 2 Analysis Include Measured Wear

Report Date/Time: 07-Jul-2010 9:54 am
AnalysisDate/Time: 07-Jul-2010 9:54 am

Run Name: 1ST POINT EXTRAC STM
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 0.951

CHECWORKS SFA Version: 3.0 (build 105)
Duty Factor (Global) : 1.000

Component Name	Tinit	Total Lifetime Wear (mils) Prd. [1]	Total Lifetime Wear (mils) Meas.	In-Service Component Wear(mils) Prd. [1]	In-Service Component Wear(mils) Meas.	In-Service Component Tmeas, Method, Time (in) [3]	[2]	(hrs) [3]	In-Service Component Thickness (mils) [4] Tp	Tm	Incremental Wear (mils) [5] PRWEAR	Time (hrs) Last Inspected
===>Grouped by Line:	**ES?-1-1STPT ES TO FWH 21A**										***Sorted By: Flow Order***	
LPFW21A-1P2	0.000	116.0	47.0	116.0	47.0	0.355	GW	193,769	259.0	355.0	23.7	193,769
LPFW21A-1P3	0.000	80.9	119.0	80.9	119.0	0.270	GW	193,769	294.1	270.0	16.5	193,769
LPFW21A-1P4	0.000	116.0	112.0	116.0	112.0	0.289	GW	193,769	259.0	289.0	23.7	193,769
LPFW21A-1N	0.000	147.0	159.0	147.0	159.0	0.248	MT	193,769	228.0	248.0	30.1	193,769
===>Grouped by Line:	**ES?-2-1STPT ES TO FWH 21A**										***Sorted By: Flow Order***	
LPFW21A-2P1	0.000	220.2	60.0	220.2	60.0	0.343	GW	193,769	154.8	343.0	45.1	193,769
LPFW21A-2P2	0.000	57.6	36.0	57.6	36.0	0.347	GW	193,769	317.4	347.0	32.5	193,769
LPFW21A-2P3	0.000	135.4	31.0	135.4	31.0	0.367	GW	193,769	239.6	367.0	27.7	193,769
LPFW21A-2P4	0.000	91.9	127.0	91.9	127.0	0.267	GW	193,769	283.1	267.0	18.8	193,769
LPFW21A-2P5	0.000	135.4	121.0	135.4	121.0	0.264	GW	193,769	239.6	264.0	27.7	193,769
LPFW21A-2N	0.000	147.0	135.0	147.0	135.0	0.270	GW	193,769	228.0	270.0	30.1	193,769
===>Grouped by Line:	**ES?-3-1STPT ES TO FWH 21A**										***Sorted By: Flow Order***	
LPFW21A-3P2	0.000	57.6	40.0	57.6	40.0	0.361	GW	193,769	317.4	361.0	32.5	193,769
LPFW21A-3P3	0.000	135.4	140.0	135.4	140.0	0.265	GW	193,769	239.6	265.0	27.7	193,769
LPFW21A-3P4	0.000	91.9	140.0	91.9	140.0	0.270	GW	193,769	283.1	270.0	18.8	193,769
LPFW21A-3P5	0.000	135.4	168.0	135.4	168.0	0.245	GW	193,769	239.6	245.0	27.7	193,769
LPFW21A-3N	0.000	147.0	175.0	147.0	175.0	0.232	GW	193,769	228.0	232.0	30.1	193,769
===>Grouped by Line:	**ES?-4-1STPT ES TO FWH 21A**										***Sorted By: Flow Order***	
LPFW21A-4P2	0.000	116.0	72.0	116.0	72.0	0.335	GW	193,769	259.0	335.0	23.7	193,769
LPFW21A-4P3	0.000	80.9	163.0	80.9	163.0	0.247	GW	193,769	294.1	247.0	16.5	193,769
LPFW21A-4P4	0.000	80.9	71.0	80.9	71.0	0.339	GW	193,769	294.1	339.0	16.5	193,769
LPFW21A-4P5	0.000	116.0	155.0	116.0	155.0	0.258	GW	193,769	259.0	258.0	23.7	193,769
LPFW21A-4N	0.000	147.0	205.0	147.0	205.0	0.241	GW	193,769	228.0	241.0	30.1	193,769

Notes:

[1] Predictions are for the time of last inspection (last known meas. wear).

[2] GW = Tmeas is minimum thickness from Band, Blanket or Area Method of greatest wear.
MT = Tmeas is component minimum thickness.
PW = Tmeas is Tinit - predicted wear.
US = Tmeas is user specified.

[3] If no Tmeas has been determined from measured data, then Tmeas = Tinit and Time = current component installation time.
Tmeas is used to determine Predicted Thickness and Component Predicted Time to Tcrit.

[4] These two values are used for thickness plot.
Tp = Predicted thickness at Tmeas.
Tm = Last measured thickness (Tmeas).

[5] PRWEAR = Incremental wear from last Tmeas time to analysis ending period.

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).DB

Wear Rate Report

Pass 2 Analysis Include Measured Wear

Report Date/Time: 7/7/2010 9:54:36AM
AnalysisDate/Time: 6/11/2010 11:30:27AM

CHECWORKS SFA Version: 3.0 (build 105)
Duty Factor (Global) : 1.000

Run Name: 2ND POINT EXTRAC STM
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 0.792

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***ES?-1-2NDPT ES TO FWH 22A***								***Sorted By: Average Wear Rate***		
LPFW22A-1P1	31	0.039	0.039	211.5	183.157	78.0	22.000	7.153	0.000	54.21	HBD
LPFW22A-1N	30	0.022	0.022	211.5	183.157	78.0	22.000	7.153	0.000	54.21	HBD
LPFW22A-1P2	3	0.018	0.018	211.5	183.157	78.0	22.000	7.153	0.000	54.21	HBD
LPFW22A-1P5	1	0.017	0.017	211.5	183.157	78.0	22.000	7.153	0.000	54.21	HBD
LPFW22A-1P3	53	0.016	0.016	211.5	183.157	78.0	22.000	7.153	0.000	54.21	HBD
LPFW22A-1P4	53	0.016	0.016	211.5	183.157	78.0	22.000	7.153	0.000	54.21	HBD
===>Grouped by Line:	***ES?-1-2NDPT ES TO FWH 22B***								***Sorted By: Average Wear Rate***		
LPFW22B-1P1	31	0.033	0.033	211.5	183.157	78.0	22.000	7.153	0.000	54.21	HBD
LPFW22B-1N	30	0.022	0.022	211.5	183.157	78.0	22.000	7.153	0.000	54.21	HBD
LPFW22B-1P2	3	0.018	0.018	211.5	183.157	78.0	22.000	7.153	0.000	54.21	HBD
LPFW22B-1P5	1	0.017	0.017	211.5	183.157	78.0	22.000	7.153	0.000	54.21	HBD
LPFW22B-1P3	53	0.016	0.016	211.5	183.157	78.0	22.000	7.153	0.000	54.21	HBD
LPFW22B-1P4	53	0.016	0.016	211.5	183.157	78.0	22.000	7.153	0.000	54.21	HBD
===>Grouped by Line:	***ES?-1-2NDPT ES TO FWH 22C***								***Sorted By: Average Wear Rate***		
LPFW22C-1P1	31	0.033	0.033	211.5	183.157	78.0	22.000	7.153	0.000	54.21	HBD
LPFW22C-1N	30	0.022	0.022	211.5	183.157	78.0	22.000	7.153	0.000	54.21	HBD
LPFW22C-1E	2	0.020	0.020	211.5	183.157	78.0	22.000	7.153	0.000	54.21	HBD
LPFW22C-1P4	3	0.018	0.018	211.5	183.157	78.0	22.000	7.153	0.000	54.21	HBD
LPFW22C-1P2	52	0.014	0.014	211.5	183.157	78.0	22.000	7.153	0.000	54.21	HBD
LPFW22C-1P3	52	0.014	0.014	211.5	183.157	78.0	22.000	7.153	0.000	54.21	HBD
===>Grouped by Line:	***ES?-2-2NDPT ES TO FWH 22A***								***Sorted By: Average Wear Rate***		
LPFW22A-2P1	31	0.033	0.033	211.5	183.157	78.0	22.000	7.153	0.000	54.21	HBD
LPFW22A-2N	30	0.022	0.022	211.5	183.157	78.0	22.000	7.153	0.000	54.21	HBD
LPFW22A-2P2	3	0.018	0.018	211.5	183.157	78.0	22.000	7.153	0.000	54.21	HBD
===>Grouped by Line:	***ES?-2-2NDPT ES TO FWH 22B***								***Sorted By: Average Wear Rate***		
LPFW22B-2P1	31	0.033	0.033	211.5	183.157	78.0	22.000	7.153	0.000	54.21	HBD
LPFW22B-2N	30	0.022	0.022	211.5	183.157	78.0	22.000	7.153	0.000	54.21	HBD

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***ES?-2-2NDPT ES TO FWH 22B***								***Sorted By: Average Wear Rate***		
LPFW22B-2P2	3	0.018	0.018	211.5	183.157	78.0	22.000	7.153	0.000	54.21	HBD
LPFW22B-2P3	53	0.015	0.015	211.5	212.492	78.0	22.000	7.153	0.000	54.21	HBD
===>Grouped by Line:	***ES?-2-2NDPT ES TO FWH 22C***								***Sorted By: Average Wear Rate***		
LPFW22C-2P1	31	0.033	0.033	211.5	183.157	78.0	22.000	7.153	0.000	54.21	HBD
LPFW22C-2N	30	0.022	0.022	211.5	183.157	78.0	22.000	7.153	0.000	54.21	HBD
LPFW22C-2P2	3	0.018	0.018	211.5	183.157	78.0	22.000	7.153	0.000	54.21	HBD

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).DB

Wear Rate Report

Pass 2 Analysis Include Measured Wear

Report Date/Time: 7/7/2010 9:54:36AM
AnalysisDate/Time: 6/11/2010 11:30:27AM

CHECWORKS SFA Version: 3.0 (build 105)
Duty Factor (Global) : 1.000

Run Name: 2ND POINT EXTRAC STM
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 0.792

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***ES?-1-2NDPT ES TO FWH 22A***									***Sorted By: Flow Order***	
LPFW22A-1P1	31	0.039	0.039	211.5	183.157	78.0	22.000	7.153	0.000	54.21	HBD
LPFW22A-1P2	3	0.018	0.018	211.5	183.157	78.0	22.000	7.153	0.000	54.21	HBD
LPFW22A-1P3	53	0.016	0.016	211.5	183.157	78.0	22.000	7.153	0.000	54.21	HBD
LPFW22A-1P4	53	0.016	0.016	211.5	183.157	78.0	22.000	7.153	0.000	54.21	HBD
LPFW22A-1P5	1	0.017	0.017	211.5	183.157	78.0	22.000	7.153	0.000	54.21	HBD
LPFW22A-1N	30	0.022	0.022	211.5	183.157	78.0	22.000	7.153	0.000	54.21	HBD
===>Grouped by Line:	***ES?-1-2NDPT ES TO FWH 22B***									***Sorted By: Flow Order***	
LPFW22B-1P1	31	0.033	0.033	211.5	183.157	78.0	22.000	7.153	0.000	54.21	HBD
LPFW22B-1P2	3	0.018	0.018	211.5	183.157	78.0	22.000	7.153	0.000	54.21	HBD
LPFW22B-1P3	53	0.016	0.016	211.5	183.157	78.0	22.000	7.153	0.000	54.21	HBD
LPFW22B-1P4	53	0.016	0.016	211.5	183.157	78.0	22.000	7.153	0.000	54.21	HBD
LPFW22B-1P5	1	0.017	0.017	211.5	183.157	78.0	22.000	7.153	0.000	54.21	HBD
LPFW22B-1N	30	0.022	0.022	211.5	183.157	78.0	22.000	7.153	0.000	54.21	HBD
===>Grouped by Line:	***ES?-1-2NDPT ES TO FWH 22C***									***Sorted By: Flow Order***	
LPFW22C-1P1	31	0.033	0.033	211.5	183.157	78.0	22.000	7.153	0.000	54.21	HBD
LPFW22C-1E	2	0.020	0.020	211.5	183.157	78.0	22.000	7.153	0.000	54.21	HBD
LPFW22C-1P2	52	0.014	0.014	211.5	183.157	78.0	22.000	7.153	0.000	54.21	HBD
LPFW22C-1P3	52	0.014	0.014	211.5	183.157	78.0	22.000	7.153	0.000	54.21	HBD
LPFW22C-1P4	3	0.018	0.018	211.5	183.157	78.0	22.000	7.153	0.000	54.21	HBD
LPFW22C-1N	30	0.022	0.022	211.5	183.157	78.0	22.000	7.153	0.000	54.21	HBD
===>Grouped by Line:	***ES?-2-2NDPT ES TO FWH 22A***									***Sorted By: Flow Order***	
LPFW22A-2P1	31	0.033	0.033	211.5	183.157	78.0	22.000	7.153	0.000	54.21	HBD
LPFW22A-2P2	3	0.018	0.018	211.5	183.157	78.0	22.000	7.153	0.000	54.21	HBD
LPFW22A-2N	30	0.022	0.022	211.5	183.157	78.0	22.000	7.153	0.000	54.21	HBD
===>Grouped by Line:	***ES?-2-2NDPT ES TO FWH 22B***									***Sorted By: Flow Order***	
LPFW22B-2P1	31	0.033	0.033	211.5	183.157	78.0	22.000	7.153	0.000	54.21	HBD
LPFW22B-2P2	3	0.018	0.018	211.5	183.157	78.0	22.000	7.153	0.000	54.21	HBD

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***ES?-2-2NDPT ES TO FWH 22B***									***Sorted By: Flow Order***	
LPFW22B-2P3	53	0.015	0.015	211.5	212.492	78.0	22.000	7.153	0.000	54.21	HBD
LPFW22B-2N	30	0.022	0.022	211.5	183.157	78.0	22.000	7.153	0.000	54.21	HBD
===>Grouped by Line:	***ES?-2-2NDPT ES TO FWH 22C***									***Sorted By: Flow Order***	
LPFW22C-2P1	31	0.033	0.033	211.5	183.157	78.0	22.000	7.153	0.000	54.21	HBD
LPFW22C-2P2	3	0.018	0.018	211.5	183.157	78.0	22.000	7.153	0.000	54.21	HBD
LPFW22C-2N	30	0.022	0.022	211.5	183.157	78.0	22.000	7.153	0.000	54.21	HBD

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).DB

Service Life Report

Pass 2 Analysis Include Measured Wear

Report Date/Time: 7/7/2010 9:54:36AM
AnalysisDate/Time:

Run Name: 2ND POINT EXTRAC STM
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 0.792

CHECWORKS SFA Version: 3.0 (build 105)
Duty Factor (Global) :1.000

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **ES?-1-2NDPT ES TO FWH 22A**					***Sorted By:Remaining Life***		
LPFW22A-1P1	0.000	0.375	0.037	0.037	75,045,376	No	33,915
LPFW22A-1N	0.000	0.375	0.037	0.037	134,787,824	No	33,915
LPFW22A-1P2	0.000	0.375	0.037	0.037	161,202,384	No	33,915
LPFW22A-1P5	0.000	0.375	0.037	0.037	170,974,288	No	33,915
LPFW22A-1P4	0.000	0.375	0.037	0.037	179,742,320	No	33,915
LPFW22A-1P3	0.000	0.375	0.037	0.037	179,742,320	No	33,915
===>Grouped by Line: **ES?-1-2NDPT ES TO FWH 22B**					***Sorted By:Remaining Life***		
LPFW22B-1P1	0.000	0.375	0.037	0.037	89,854,200	No	33,915
LPFW22B-1N	0.000	0.375	0.037	0.037	134,787,824	No	33,915
LPFW22B-1P2	0.000	0.375	0.037	0.037	161,202,384	No	33,915
LPFW22B-1P5	0.000	0.375	0.037	0.037	170,974,288	No	33,915
LPFW22B-1P4	0.000	0.375	0.037	0.037	179,742,320	No	33,915
LPFW22B-1P3	0.000	0.375	0.037	0.037	179,742,320	No	33,915
===>Grouped by Line: **ES?-1-2NDPT ES TO FWH 22C**					***Sorted By:Remaining Life***		
LPFW22C-1P1	0.000	0.375	0.037	0.037	89,838,040	No	49,952
LPFW22C-1N	0.000	0.375	0.037	0.037	134,771,664	No	49,952
LPFW22C-1E	0.000	0.375	0.037	0.037	146,391,984	No	49,952
LPFW22C-1P4	0.000	0.375	0.037	0.037	161,186,224	No	49,952
LPFW22C-1P2	0.000	0.375	0.037	0.037	215,664,704	No	49,952
LPFW22C-1P3	0.000	0.375	0.037	0.037	215,664,704	No	49,952
===>Grouped by Line: **ES?-2-2NDPT ES TO FWH 22A**					***Sorted By:Remaining Life***		
LPFW22A-2P1	0.000	0.375	0.037	0.037	89,854,200	No	33,915
LPFW22A-2N	0.000	0.375	0.037	0.037	134,787,824	No	33,915
LPFW22A-2P2	0.000	0.375	0.037	0.037	161,202,384	No	33,915
===>Grouped by Line: **ES?-2-2NDPT ES TO FWH 22B**					***Sorted By:Remaining Life***		
LPFW22B-2P1	0.000	0.375	0.037	0.037	89,854,200	No	33,915

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **ES?-2-2NDPT ES TO FWH 22B**					***Sorted By:Remaining Life***		
LPFW22B-2N	0.000	0.375	0.037	0.037	134,787,824	No	33,915
LPFW22B-2P2	0.000	0.375	0.037	0.037	161,202,384	No	33,915
LPFW22B-2P3	0.000	0.375	0.037	0.037	200,184,640	No	33,915
===>Grouped by Line: **ES?-2-2NDPT ES TO FWH 22C**					***Sorted By:Remaining Life***		
LPFW22C-2P1	0.000	0.375	0.037	0.037	89,838,040	No	49,952
LPFW22C-2N	0.000	0.375	0.037	0.037	134,771,664	No	49,952
LPFW22C-2P2	0.000	0.375	0.037	0.037	161,186,224	No	49,952

Note:
[1] Predictions are based on last Tmeas to analysis ending period.

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).DB

Service Life Report

Pass 2 Analysis Include Measured Wear

Report Date/Time: 7/7/2010 9:54:36AM
AnalysisDate/Time:

Run Name: 2ND POINT EXTRAC STM
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 0.792

CHECWORKS SFA Version: 3.0 (build 105)
Duty Factor (Global) : 1.000

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **ES?-1-2NDPT ES TO FWH 22A**					***Sorted By:Flow Order***		
LPFW22A-1P1	0.000	0.375	0.037	0.037	75,045,376	No	33,915
LPFW22A-1P2	0.000	0.375	0.037	0.037	161,202,384	No	33,915
LPFW22A-1P3	0.000	0.375	0.037	0.037	179,742,320	No	33,915
LPFW22A-1P4	0.000	0.375	0.037	0.037	179,742,320	No	33,915
LPFW22A-1P5	0.000	0.375	0.037	0.037	170,974,288	No	33,915
LPFW22A-1N	0.000	0.375	0.037	0.037	134,787,824	No	33,915
===>Grouped by Line: **ES?-1-2NDPT ES TO FWH 22B**					***Sorted By:Flow Order***		
LPFW22B-1P1	0.000	0.375	0.037	0.037	89,854,200	No	33,915
LPFW22B-1P2	0.000	0.375	0.037	0.037	161,202,384	No	33,915
LPFW22B-1P3	0.000	0.375	0.037	0.037	179,742,320	No	33,915
LPFW22B-1P4	0.000	0.375	0.037	0.037	179,742,320	No	33,915
LPFW22B-1P5	0.000	0.375	0.037	0.037	170,974,288	No	33,915
LPFW22B-1N	0.000	0.375	0.037	0.037	134,787,824	No	33,915
===>Grouped by Line: **ES?-1-2NDPT ES TO FWH 22C**					***Sorted By:Flow Order***		
LPFW22C-1P1	0.000	0.375	0.037	0.037	89,838,040	No	49,952
LPFW22C-1E	0.000	0.375	0.037	0.037	146,391,984	No	49,952
LPFW22C-1P2	0.000	0.375	0.037	0.037	215,664,704	No	49,952
LPFW22C-1P3	0.000	0.375	0.037	0.037	215,664,704	No	49,952
LPFW22C-1P4	0.000	0.375	0.037	0.037	161,186,224	No	49,952
LPFW22C-1N	0.000	0.375	0.037	0.037	134,771,664	No	49,952
===>Grouped by Line: **ES?-2-2NDPT ES TO FWH 22A**					***Sorted By:Flow Order***		
LPFW22A-2P1	0.000	0.375	0.037	0.037	89,854,200	No	33,915
LPFW22A-2P2	0.000	0.375	0.037	0.037	161,202,384	No	33,915
LPFW22A-2N	0.000	0.375	0.037	0.037	134,787,824	No	33,915
===>Grouped by Line: **ES?-2-2NDPT ES TO FWH 22B**					***Sorted By:Flow Order***		
LPFW22B-2P1	0.000	0.375	0.037	0.037	89,854,200	No	33,915

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **ES?-2-2NDPT ES TO FWH 22B**					***Sorted By:Flow Order***		
LPFW22B-2P2	0.000	0.375	0.037	0.037	161,202,384	No	33,915
LPFW22B-2P3	0.000	0.375	0.037	0.037	200,184,640	No	33,915
LPFW22B-2N	0.000	0.375	0.037	0.037	134,787,824	No	33,915
===>Grouped by Line: **ES?-2-2NDPT ES TO FWH 22C**					***Sorted By:Flow Order***		
LPFW22C-2P1	0.000	0.375	0.037	0.037	89,838,040	No	49,952
LPFW22C-2P2	0.000	0.375	0.037	0.037	161,186,224	No	49,952
LPFW22C-2N	0.000	0.375	0.037	0.037	134,771,664	No	49,952

Note:
[1] Predictions are based on last Tmeas to analysis ending period.

2

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).DB

Wear Report

Pass 2 Analysis Include Measured Wear

Report Date/Time: 07-Jul-2010 9:54 am
AnalysisDate/Time: 07-Jul-2010 9:54 am

Run Name: 2ND POINT EXTRAC STM
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 0.792

CHECWORKS SFA Version: 3.0 (build 105)
Duty Factor (Global) : 1.000

Component Name	Tinit	Total Lifetime Wear (mils) Prd. [1]	Meas.	In-Service Component Wear(mils) Prd. [1]	Meas.	In-Service Component Tmeas, Method, Time (in) [3]	[2]	(hrs) [3]	In-Service Component Thickness (mils) [4] Tp	Tm	Incremental Wear (mils) [5] PRWEAR	Time (hrs) Last Inspected
===>Grouped by Line:	**ES?-1-2NDPT ES TO FWH 22A**										***Sorted By: Flow Order***	
LPFW22A-1P1	0.000	358.4	161.0	0.0	0.0	0.375	ER	209,806	375.0	375.0	0.2	0
LPFW22A-1P2	0.000	199.9	263.0	0.0	0.0	0.375	ER	209,806	375.0	375.0	0.1	0
LPFW22A-1P3	0.000	179.2	271.0	0.0	0.0	0.375	ER	209,806	375.0	375.0	0.1	0
LPFW22A-1P4	0.000	179.2	283.0	0.0	0.0	0.375	ER	209,806	375.0	375.0	0.1	0
LPFW22A-1P5	0.000	188.4	223.0	0.0	0.0	0.375	ER	209,806	375.0	375.0	0.1	0
LPFW22A-1N	0.000	239.0	239.0	0.0	0.0	0.375	ER	209,806	375.0	375.0	0.1	0
===>Grouped by Line:	**ES?-1-2NDPT ES TO FWH 22B**										***Sorted By: Flow Order***	
LPFW22B-1P1	0.000	358.4	177.0	0.0	0.0	0.375	ER	209,806	375.0	375.0	0.1	0
LPFW22B-1P2	0.000	199.9	211.0	0.0	0.0	0.375	ER	209,806	375.0	375.0	0.1	0
LPFW22B-1P3	0.000	179.2	166.0	0.0	0.0	0.375	ER	209,806	375.0	375.0	0.1	0
LPFW22B-1P4	0.000	179.2	266.0	0.0	0.0	0.375	ER	209,806	375.0	375.0	0.1	0
LPFW22B-1P5	0.000	188.4	221.0	0.0	0.0	0.375	ER	209,806	375.0	375.0	0.1	0
LPFW22B-1N	0.000	239.0	176.0	0.0	0.0	0.375	ER	209,806	375.0	375.0	0.1	0
===>Grouped by Line:	**ES?-1-2NDPT ES TO FWH 22C**										***Sorted By: Flow Order***	
LPFW22C-1N	0.000	239.0	201.0	0.0	0.0	0.375	ER	193,769	375.0	375.0	0.1	0
===>Grouped by Line:	**ES?-2-2NDPT ES TO FWH 22A**										***Sorted By: Flow Order***	
LPFW22A-2P1	0.000	358.4	217.0	0.0	0.0	0.375	ER	209,806	375.0	375.0	0.1	0
LPFW22A-2P2	0.000	199.9	248.0	0.0	0.0	0.375	ER	209,806	375.0	375.0	0.1	0
LPFW22A-2N	0.000	239.0	185.0	0.0	0.0	0.375	ER	209,806	375.0	375.0	0.1	0
===>Grouped by Line:	**ES?-2-2NDPT ES TO FWH 22B**										***Sorted By: Flow Order***	
LPFW22B-2P1	0.000	358.4	102.0	0.0	0.0	0.375	ER	209,806	375.0	375.0	0.1	0
LPFW22B-2P2	0.000	199.9	214.0	0.0	0.0	0.375	ER	209,806	375.0	375.0	0.1	0
LPFW22B-2P3	0.000	69.7	93.0	0.0	0.0	0.375	ER	209,806	375.0	375.0	0.1	0
LPFW22B-2N	0.000	239.0	185.0	0.0	0.0	0.375	ER	209,806	375.0	375.0	0.1	0

Component Name	Tinit	Total Lifetime Wear (mils) Prd. [1]	Total Lifetime Wear (mils) Meas.	In-Service Component Wear(mils) Prd. [1]	In-Service Component Wear(mils) Meas.	In-Service Component Tmeas, Method, Time (in) [3]	[2]	(hrs) [3]	In-Service Component Thickness (mils) [4] Tp	Tm	Incremental Wear (mils) [5] PRWEAR	Time (hrs) Last Inspected
===>Grouped by Line:	**ES?-2-2NDPT ES TO FWH 22C**											***Sorted By: Flow Order***
LPFW22C-2N	0.000	239.0	125.0	0.0	0.0	0.375	ER	193,769	375.0	375.0	0.1	0

Notes:
[1] Predictions are for the time of last inspection (last known meas. wear).
[2] GW = Tmeas is minimum thickness from Band, Blanket or Area Method of greatest wear.
MT = Tmeas is component minimum thickness.
PW = Tmeas is Tinit - predicted wear.
US = Tmeas is user specified.
[3] If no Tmeas has been determined from measured data, then Tmeas = Tinit and Time = current component installation time.
Tmeas is used to determine Predicted Thickness and Component Predicted Time to Tcrit.
[4] These two values are used for thickness plot.
Tp = Predicted thickness at Tmeas.
Tm = Last measured thickness (Tmeas).
[5] PRWEAR = Incremental wear from last Tmeas time to analysis ending period.

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).DB

Wear Rate Report

Pass 2 Analysis Include Measured Wear

Report Date/Time: 7/7/2010 9:54:36AM
AnalysisDate/Time: 6/11/2010 11:31:03AM

CHECWORKS SFA Version: 3.0 (build 105)
Duty Factor (Global) : 1.000

Run Name: 3RD POINT EXTRAC STM
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 0.781

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***ES1-1-3RDPT ES to FWH 23A***								***Sorted By: Average Wear Rate***		
3EXA-18N	31	9.069	4.219	261.1	8.129	92.3	20.000	7.288	0.000	112.00	HBD
3EXA-15 (BR/SE)	10	6.047	2.813	261.1	8.129	92.3	20.000	7.288	0.000	112.00	HBD
3EXA-15 (D/S)	10	5.990	2.972	261.1	0.357	92.3	28.000	7.288	0.000	112.00	HBD
3EXA-16	2	5.989	2.787	261.1	8.129	92.3	20.000	7.288	0.000	112.00	HBD
3EXA-18	3	5.056	2.352	261.1	8.129	92.3	20.000	7.288	0.000	112.00	HBD
3EXA-17	3	5.056	2.352	261.1	8.129	92.3	20.000	7.288	0.000	112.00	HBD
3EXA-17P	53	4.534	2.110	261.1	8.129	92.3	20.000	7.288	0.000	112.00	HBD
3EXA-18X	6	3.034	1.498	261.1	19.167	92.3	20.000	7.288	0.000	112.00	HBD
3EXA-16P	52	2.214	1.093	261.1	15.526	92.3	20.000	7.288	0.000	112.00	HBD
3EXA-15P	60	2.170	1.076	261.1	0.357	92.3	28.000	7.288	0.000	112.00	HBD
===>Grouped by Line:	***ES1-2-3RDPT ES to FWH 23A***								***Sorted By: Average Wear Rate***		
3EXA-22N	31	9.069	4.219	261.1	8.129	92.3	20.000	7.288	0.000	112.00	HBD
3EXA-19	2	5.567	2.590	261.1	8.129	92.3	20.000	7.288	0.000	112.00	HBD
3EXA-22	3	5.056	2.352	261.1	8.129	92.3	20.000	7.288	0.000	112.00	HBD
3EXA-21	3	5.056	2.352	261.1	8.129	92.3	20.000	7.288	0.000	112.00	HBD
3EXA-20	3	5.056	2.352	261.1	8.129	92.3	20.000	7.288	0.000	112.00	HBD
3EXA-21P	53	4.534	2.110	261.1	8.129	92.3	20.000	7.288	0.000	112.00	HBD
3EXA-20P	53	4.534	2.110	261.1	8.129	92.3	20.000	7.288	0.000	112.00	HBD
3EXA-22X	6	3.034	1.498	261.1	19.167	92.3	20.000	7.288	0.000	112.00	HBD
3EXA-19P	52	2.214	1.093	261.1	15.526	92.3	20.000	7.288	0.000	112.00	HBD
===>Grouped by Line:	***ES1-3-3RDPT ES to FWH 23A***								***Sorted By: Average Wear Rate***		
3EXA-14 (D/S)	12	10.959	5.134	261.1	6.461	92.3	28.000	7.288	0.000	112.00	HBD
3EXA-VALVE 3EX-2	25	8.022	3.758	261.1	6.461	92.3	28.000	7.288	0.000	112.00	HBD
3EXA-14	12	7.831	3.887	261.1	0.357	92.3	28.000	7.288	0.000	112.00	HBD
3EXA-9	4	6.593	3.090	261.1	6.822	92.3	28.000	7.288	0.000	112.00	HBD
3EXA-8	4	6.590	3.088	261.1	6.884	92.3	28.000	7.288	0.000	112.00	HBD
3EXA-14 (BR/SE)	12	6.578	3.060	261.1	8.129	92.3	20.000	7.288	0.000	112.00	HBD

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***ES1-3-3RDPT ES to FWH 23A***								***Sorted By: Average Wear Rate***		
3EXA-8P	54	6.416	3.006	261.1	6.461	92.3	28.000	7.288	0.000	112.00	HBD
3EXA-7P	54	6.416	3.006	261.1	6.461	92.3	28.000	7.288	0.000	112.00	HBD
3EXA-10	2	6.130	2.873	261.1	6.808	92.3	28.000	7.288	0.000	112.00	HBD
3EXA-VALVE 3EX-1	22	6.076	2.846	261.1	14.172	92.3	28.000	7.288	0.000	112.00	HBD
3EXA-12P	58	2.939	1.377	261.1	6.548	92.3	28.000	7.288	0.000	112.00	HBD
3EXA-13P	58	2.938	1.377	261.1	6.563	92.3	28.000	7.288	0.000	112.00	HBD
3EXA-9P	52	2.132	1.052	261.1	15.783	92.3	28.000	7.288	0.000	112.00	HBD
3EXA-14P US	62	2.007	0.940	261.1	6.461	92.3	28.000	7.288	0.000	112.00	HBD
3EXA-14P DS	62	2.007	0.940	261.1	6.461	92.3	28.000	7.288	0.000	112.00	HBD
3EXA-14P DS1	62	2.001	0.938	261.1	6.696	92.3	28.000	7.288	0.000	112.00	HBD
3EXA-4	14	0.026	0.024	261.1	6.461	92.3	28.000	7.288	0.000	112.00	HBD
3EXA-4 (D/S)	14	0.019	0.018	261.1	0.357	92.3	28.000	7.288	0.000	112.00	HBD
3EXA-7	2	0.012	0.011	261.1	6.461	92.3	28.000	7.288	0.000	112.00	HBD
3EXA-6	2	0.012	0.011	261.1	6.461	92.3	28.000	7.288	0.000	112.00	HBD
3EXA-5	4	0.012	0.011	261.1	6.461	92.3	28.000	7.288	0.000	112.00	HBD
3EXA-4P US	54	0.011	0.010	261.1	6.461	92.3	28.000	7.288	0.000	112.00	HBD
3EXA-4 (BR/SE)	14	0.008	0.008	261.1	8.129	92.3	20.000	7.288	0.000	112.00	HBD
3EXA-6P DS	52	0.007	0.006	261.1	6.461	92.3	28.000	7.288	0.000	112.00	HBD
3EXA-5P	52	0.004	0.003	261.1	15.708	92.3	28.000	7.288	0.000	112.00	HBD
===>Grouped by Line:	***ES1-4-3RDPT ES to FWH 23A***								***Sorted By: Average Wear Rate***		
3EXA-1N	30	6.047	2.813	261.1	8.129	92.3	20.000	7.288	0.000	112.00	HBD
3EXA-1	2	0.011	0.010	261.1	8.129	92.3	20.000	7.288	0.000	112.00	HBD
3EXA-1P	64	0.005	0.004	261.1	8.294	92.3	20.000	7.288	0.000	112.00	HBD
3EXA-1A	64	0.005	0.004	261.1	8.294	92.3	20.000	7.288	0.000	112.00	HBD
===>Grouped by Line:	***ES1-5-3RDPT ES to FWH 23A***								***Sorted By: Average Wear Rate***		
3EXA-2N	30	6.047	2.813	261.1	8.129	92.3	20.000	7.288	0.000	112.00	HBD
3EXA-2	2	5.567	2.590	261.1	8.129	92.3	20.000	7.288	0.000	112.00	HBD
3EXA-2A	54	5.557	2.592	261.1	9.132	92.3	20.000	7.288	0.000	112.00	HBD
3EXA-2P	54	4.441	2.660	261.1	8.294	92.3	20.000	7.288	0.000	112.00	HBD
3EXA-3	4	4.224	2.528	261.1	8.847	92.3	20.000	7.288	0.000	112.00	HBD
3EXA-11RP	67	2.306	1.969	261.1	8.129	92.3	20.000	7.288	0.000	112.00	HBD
3EXA-11R (D/S)	7	0.010	0.009	261.1	8.129	92.3	20.000	7.288	0.000	112.00	HBD
3EXA-11R	7	0.008	0.007	261.1	0.357	92.3	28.000	7.288	0.000	112.00	HBD
===>Grouped by Line:	***ES2-1-3RDPT ES to FWH 23B***								***Sorted By: Average Wear Rate***		
3EXB-14N	31	9.069	4.219	261.1	8.129	92.3	20.000	7.288	0.000	112.00	HBD
3EXB-11 (BR/SE)	10	6.047	2.813	261.1	8.129	92.3	20.000	7.288	0.000	112.00	HBD

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***ES2-1-3RDPT ES to FWH 23B***								***Sorted By: Average Wear Rate***		
3EXB-11 (D/S)	10	5.990	2.972	261.1	0.357	92.3	28.000	7.288	0.000	112.00	HBD
3EXB-12	2	5.989	2.787	261.1	8.129	92.3	20.000	7.288	0.000	112.00	HBD
3EXB-14	3	5.056	2.352	261.1	8.129	92.3	20.000	7.288	0.000	112.00	HBD
3EXB-13	3	5.056	2.352	261.1	8.129	92.3	20.000	7.288	0.000	112.00	HBD
3EXB-13P	53	4.534	2.110	261.1	8.129	92.3	20.000	7.288	0.000	112.00	HBD
3EXB-14X	6	3.034	1.498	261.1	19.167	92.3	20.000	7.288	0.000	112.00	HBD
3EXB-12P	52	2.214	1.093	261.1	15.526	92.3	20.000	7.288	0.000	112.00	HBD
3EXB-11P	60	2.170	1.076	261.1	0.357	92.3	28.000	7.288	0.000	112.00	HBD
===>Grouped by Line:	***ES2-2-3RDPT ES to FWH 23B***								***Sorted By: Average Wear Rate***		
3EXB-18N	31	9.069	4.219	261.1	8.129	92.3	20.000	7.288	0.000	112.00	HBD
3EXB-15	2	5.567	2.590	261.1	8.129	92.3	20.000	7.288	0.000	112.00	HBD
3EXB-18	3	5.056	2.352	261.1	8.129	92.3	20.000	7.288	0.000	112.00	HBD
3EXB-17	3	5.056	2.352	261.1	8.129	92.3	20.000	7.288	0.000	112.00	HBD
3EXB-16	3	5.056	2.352	261.1	8.129	92.3	20.000	7.288	0.000	112.00	HBD
3EXB-17P	53	4.534	2.110	261.1	8.129	92.3	20.000	7.288	0.000	112.00	HBD
3EXB-16P	53	4.534	2.110	261.1	8.129	92.3	20.000	7.288	0.000	112.00	HBD
3EXB-18X	6	3.034	1.498	261.1	19.167	92.3	20.000	7.288	0.000	112.00	HBD
3EXB-15P	52	2.214	1.093	261.1	15.526	92.3	20.000	7.288	0.000	112.00	HBD
===>Grouped by Line:	***ES2-3-3RDPT ES to FWH 23B***								***Sorted By: Average Wear Rate***		
3EXB-4	14	12.864	6.027	261.1	6.461	92.3	28.000	7.288	0.000	112.00	HBD
3EXB-10 (D/S)	12	10.959	5.134	261.1	6.461	92.3	28.000	7.288	0.000	112.00	HBD
3EXB-4 (D/S)	14	9.200	4.566	261.1	0.357	92.3	28.000	7.288	0.000	112.00	HBD
3EXB-VALVE 3EX-4	25	8.022	3.758	261.1	6.461	92.3	28.000	7.288	0.000	112.00	HBD
3EXB-10	12	7.831	3.887	261.1	0.357	92.3	28.000	7.288	0.000	112.00	HBD
3EXB-10 (BR/SE)	12	6.578	3.060	261.1	8.129	92.3	20.000	7.288	0.000	112.00	HBD
3EXB-4A DS	54	6.416	3.006	261.1	6.461	92.3	28.000	7.288	0.000	112.00	HBD
3EXB-4A US	54	6.412	3.004	261.1	6.515	92.3	28.000	7.288	0.000	112.00	HBD
3EXB-6	2	6.154	2.883	261.1	6.461	92.3	28.000	7.288	0.000	112.00	HBD
3EXB-5	4	6.129	2.873	261.1	6.812	92.3	28.000	7.288	0.000	112.00	HBD
3EXB-9	2	6.128	2.872	261.1	6.832	92.3	28.000	7.288	0.000	112.00	HBD
3EXB-VALVE 3EX-3	22	6.076	2.846	261.1	14.172	92.3	28.000	7.288	0.000	112.00	HBD
3EXB-8	3	5.570	2.609	261.1	6.776	92.3	28.000	7.288	0.000	112.00	HBD
3EXB-7	1	5.270	2.469	261.1	6.461	92.3	28.000	7.288	0.000	112.00	HBD
3EXB-4 (BR/SE)	14	4.234	1.970	261.1	8.129	92.3	20.000	7.288	0.000	112.00	HBD
3EXB-6P DS	51	3.673	1.721	261.1	6.548	92.3	28.000	7.288	0.000	112.00	HBD
3EXB-6P US	51	3.671	1.720	261.1	6.588	92.3	28.000	7.288	0.000	112.00	HBD

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***ES2-3-3RDPT ES to FWH 23B***								***Sorted By: Average Wear Rate***		
3EXB-9A	58	2.942	1.378	261.1	6.461	92.3	28.000	7.288	0.000	112.00	HBD
3EXB-9P	58	2.939	1.377	261.1	6.532	92.3	28.000	7.288	0.000	112.00	HBD
3EXB-7P	53	2.552	1.260	261.1	15.730	92.3	28.000	7.288	0.000	112.00	HBD
3EXB-5P	52	2.134	1.053	261.1	15.806	92.3	28.000	7.288	0.000	112.00	HBD
3EXB-10P US	62	2.007	0.940	261.1	6.461	92.3	28.000	7.288	0.000	112.00	HBD
3EXB-10P DS1	62	2.007	0.940	261.1	6.461	92.3	28.000	7.288	0.000	112.00	HBD
3EXB-10P DS	62	2.007	0.940	261.1	6.461	92.3	28.000	7.288	0.000	112.00	HBD
===>Grouped by Line:	***ES2-4-3RDPT ES to FWH 23B***								***Sorted By: Average Wear Rate***		
3EXB-1N	30	6.047	2.813	261.1	8.129	92.3	20.000	7.288	0.000	112.00	HBD
3EXB-1	2	5.449	2.538	261.1	8.733	92.3	20.000	7.288	0.000	112.00	HBD
3EXB-4P US	64	2.375	1.106	261.1	8.355	92.3	20.000	7.288	0.000	112.00	HBD
3EXB-1A	64	2.370	1.104	261.1	8.407	92.3	20.000	7.288	0.000	112.00	HBD
===>Grouped by Line:	***ES2-5-3RDPT ES to FWH 23B***								***Sorted By: Average Wear Rate***		
3EXB-2N	30	6.047	2.813	261.1	8.129	92.3	20.000	7.288	0.000	112.00	HBD
3EXB-2	2	5.350	2.494	261.1	9.328	92.3	20.000	7.288	0.000	112.00	HBD
3EXB-3	2	4.178	2.502	261.1	9.204	92.3	20.000	7.288	0.000	112.00	HBD
3EXB-2A	52	3.637	1.696	261.1	8.958	92.3	20.000	7.288	0.000	112.00	HBD
3EXB-2P DS	52	2.891	1.732	261.1	8.294	92.3	20.000	7.288	0.000	112.00	HBD
3EXB-2P US	52	2.819	1.689	261.1	9.088	92.3	20.000	7.288	0.000	112.00	HBD
3EXB-3P US	57	2.471	2.110	261.1	8.129	92.3	20.000	7.288	0.000	112.00	HBD
3EXB-3P DS	57	2.471	2.110	261.1	8.129	92.3	20.000	7.288	0.000	112.00	HBD
3EXB-10R (D/S)	7	0.009	0.009	261.1	8.129	92.3	20.000	7.288	0.000	112.00	HBD
3EXB-10R	7	0.007	0.007	261.1	0.357	92.3	28.000	7.288	0.000	112.00	HBD
===>Grouped by Line:	***ES3-1-3RDPT ES to FWH 23C***								***Sorted By: Average Wear Rate***		
3EXC-18N	31	9.069	4.219	261.1	8.129	92.3	20.000	7.288	0.000	112.00	HBD
3EXC-15 (BR/SE)	10	6.047	2.813	261.1	8.129	92.3	20.000	7.288	0.000	112.00	HBD
3EXC-15 (D/S)	10	5.990	2.972	261.1	0.357	92.3	28.000	7.288	0.000	112.00	HBD
3EXC-16	2	5.989	2.787	261.1	8.129	92.3	20.000	7.288	0.000	112.00	HBD
3EXC-18	3	5.056	2.352	261.1	8.129	92.3	20.000	7.288	0.000	112.00	HBD
3EXC-17	3	5.056	2.352	261.1	8.129	92.3	20.000	7.288	0.000	112.00	HBD
3EXC-17P	53	4.534	2.110	261.1	8.129	92.3	20.000	7.288	0.000	112.00	HBD
3EXC-18X	6	3.034	1.498	261.1	19.167	92.3	20.000	7.288	0.000	112.00	HBD
3EXC-16P	52	2.214	1.093	261.1	15.526	92.3	20.000	7.288	0.000	112.00	HBD
3EXC-15P	60	2.170	1.076	261.1	0.357	92.3	28.000	7.288	0.000	112.00	HBD
===>Grouped by Line:	***ES3-2-3RDPT ES to FWH 23C***								***Sorted By: Average Wear Rate***		

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***ES3-2-3RDPT ES to FWH 23C***								***Sorted By: Average Wear Rate***		
3EXC-22N	31	9.069	4.219	261.1	8.129	92.3	20.000	7.288	0.000	112.00	HBD
3EXC-19	2	5.567	2.590	261.1	8.129	92.3	20.000	7.288	0.000	112.00	HBD
3EXC-22	3	5.056	2.352	261.1	8.129	92.3	20.000	7.288	0.000	112.00	HBD
3EXC-21	3	5.056	2.352	261.1	8.129	92.3	20.000	7.288	0.000	112.00	HBD
3EXC-20	3	5.056	2.352	261.1	8.129	92.3	20.000	7.288	0.000	112.00	HBD
3EXC-21P	53	4.534	2.110	261.1	8.129	92.3	20.000	7.288	0.000	112.00	HBD
3EXC-20P	53	4.534	2.110	261.1	8.129	92.3	20.000	7.288	0.000	112.00	HBD
3EXC-22X	6	3.034	1.498	261.1	19.167	92.3	20.000	7.288	0.000	112.00	HBD
3EXC-19P	52	2.214	1.093	261.1	15.526	92.3	20.000	7.288	0.000	112.00	HBD
===>Grouped by Line:	***ES3-3-3RDPT ES to FWH 23C***								***Sorted By: Average Wear Rate***		
3EXC-4	14	12.864	6.027	261.1	6.461	92.3	28.000	7.288	0.000	112.00	HBD
3EXC-14 (D/S)	12	10.959	5.134	261.1	6.461	92.3	28.000	7.288	0.000	112.00	HBD
3EXC-4 (D/S)	14	9.200	4.566	261.1	0.357	92.3	28.000	7.288	0.000	112.00	HBD
3EXC-VALVE 3EX-6	25	8.022	3.758	261.1	6.461	92.3	28.000	7.288	0.000	112.00	HBD
3EXC-14	12	7.831	3.887	261.1	0.357	92.3	28.000	7.288	0.000	112.00	HBD
3EXC-8	4	6.621	3.102	261.1	6.461	92.3	28.000	7.288	0.000	112.00	HBD
3EXC-9	4	6.593	3.090	261.1	6.826	92.3	28.000	7.288	0.000	112.00	HBD
3EXC-14 (BR/SE)	12	6.578	3.060	261.1	8.129	92.3	20.000	7.288	0.000	112.00	HBD
3EXC-8P	54	6.416	3.006	261.1	6.461	92.3	28.000	7.288	0.000	112.00	HBD
3EXC-7P	54	6.416	3.006	261.1	6.466	92.3	28.000	7.288	0.000	112.00	HBD
3EXC-7	2	6.154	2.883	261.1	6.461	92.3	28.000	7.288	0.000	112.00	HBD
3EXC-5	2	6.154	2.883	261.1	6.461	92.3	28.000	7.288	0.000	112.00	HBD
3EXC-10	2	6.129	2.872	261.1	6.816	92.3	28.000	7.288	0.000	112.00	HBD
3EXC-6	2	6.123	2.870	261.1	6.913	92.3	28.000	7.288	0.000	112.00	HBD
3EXC-VALVE 3EX-5	22	6.076	2.846	261.1	14.172	92.3	28.000	7.288	0.000	112.00	HBD
3EXC-4 (BR/SE)	14	4.234	1.970	261.1	8.129	92.3	20.000	7.288	0.000	112.00	HBD
3EXC-4P	52	4.178	1.957	261.1	6.461	92.3	28.000	7.288	0.000	112.00	HBD
3EXC-6P	52	4.171	1.954	261.1	6.588	92.3	28.000	7.288	0.000	112.00	HBD
3EXC-VALVE PCV-1161	23	4.069	1.908	261.1	15.684	92.3	24.000	7.288	0.000	112.00	HBD
3EXC-13P	58	2.942	1.378	261.1	6.461	92.3	28.000	7.288	0.000	112.00	HBD
3EXC-9P	52	2.135	1.054	261.1	15.827	92.3	28.000	7.288	0.000	112.00	HBD
3EXC-5P	52	2.125	1.049	261.1	15.708	92.3	28.000	7.288	0.000	112.00	HBD
3EXC-14P US	62	2.007	0.940	261.1	6.461	92.3	28.000	7.288	0.000	112.00	HBD
3EXC-14P DS	62	2.007	0.940	261.1	6.461	92.3	28.000	7.288	0.000	112.00	HBD
3EXC-14P DS1	62	1.997	0.936	261.1	6.905	92.3	28.000	7.288	0.000	112.00	HBD
3EXC-13R	7	0.003	0.002	261.1	6.461	92.3	28.000	7.288	0.000	112.00	HBD

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***ES3-3-3RDPT ES to FWH 23C***								***Sorted By: Average Wear Rate***		
3EXC-13R (D/S)	7	0.002	0.002	261.1	15.684	92.3	24.000	7.288	0.000	112.00	HBD
3EXC-12R (D/S)	18	0.002	0.002	261.1	6.461	92.3	28.000	7.288	0.000	112.00	HBD
3EXC-12R	18	0.002	0.002	261.1	15.684	92.3	24.000	7.288	0.000	112.00	HBD
3EXC-12P	68	0.002	0.002	261.1	6.461	92.3	28.000	7.288	0.000	112.00	HBD
===>Grouped by Line:	***ES3-4-3RDPT ES to FWH 23C***								***Sorted By: Average Wear Rate***		
3EXC-1N	30	6.047	2.813	261.1	8.129	92.3	20.000	7.288	0.000	112.00	HBD
3EXC-1	2	5.567	2.590	261.1	8.129	92.3	20.000	7.288	0.000	112.00	HBD
3EXC-1A	64	2.379	1.109	261.1	8.294	92.3	20.000	7.288	0.000	112.00	HBD
3EXC-4P-1 US	64	2.372	1.106	261.1	8.380	92.3	20.000	7.288	0.000	112.00	HBD
===>Grouped by Line:	***ES3-5-3RDPT ES to FWH 23C***								***Sorted By: Average Wear Rate***		
3EXC-2N	30	6.047	2.813	261.1	8.129	92.3	20.000	7.288	0.000	112.00	HBD
3EXC-2	2	5.567	2.590	261.1	8.129	92.3	20.000	7.288	0.000	112.00	HBD
3EXC-11R (D/S)	7	5.031	2.341	261.1	8.129	92.3	20.000	7.288	0.000	112.00	HBD
3EXC-2P	54	4.441	2.660	261.1	8.294	92.3	20.000	7.288	0.000	112.00	HBD
3EXC-2A	54	4.348	2.606	261.1	8.940	92.3	20.000	7.288	0.000	112.00	HBD
3EXC-3	4	4.329	2.590	261.1	8.129	92.3	20.000	7.288	0.000	112.00	HBD
3EXC-11R	7	3.705	1.838	261.1	0.359	92.3	28.000	7.288	0.000	112.00	HBD
3EXC-3P	57	2.471	2.110	261.1	8.129	92.3	20.000	7.288	0.000	112.00	HBD

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).DB

Wear Rate Report

Pass 2 Analysis Include Measured Wear

Report Date/Time: 7/7/2010 9:54:36AM
AnalysisDate/Time: 3/11/2010 11:31:03AM

CHECWORKS SFA Version: 3.0 (build 105)
Duty Factor (Global) : 1.000

Run Name: 3RD POINT EXTRAC STM
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 0.781

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***ES1-1-3RDPT ES to FWH 23A***									***Sorted By: Flow Order***	
3EXA-18N	31	9.069	4.219	261.1	8.129	92.3	20.000	7.288	0.000	112.00	HBD
3EXA-18X	6	3.034	1.498	261.1	19.167	92.3	20.000	7.288	0.000	112.00	HBD
3EXA-18	3	5.056	2.352	261.1	8.129	92.3	20.000	7.288	0.000	112.00	HBD
3EXA-17	3	5.056	2.352	261.1	8.129	92.3	20.000	7.288	0.000	112.00	HBD
3EXA-17P	53	4.534	2.110	261.1	8.129	92.3	20.000	7.288	0.000	112.00	HBD
3EXA-16	2	5.989	2.787	261.1	8.129	92.3	20.000	7.288	0.000	112.00	HBD
3EXA-16P	52	2.214	1.093	261.1	15.526	92.3	20.000	7.288	0.000	112.00	HBD
3EXA-15 (BR/SE)	10	6.047	2.813	261.1	8.129	92.3	20.000	7.288	0.000	112.00	HBD
3EXA-15 (D/S)	10	5.990	2.972	261.1	0.357	92.3	28.000	7.288	0.000	112.00	HBD
3EXA-15P	60	2.170	1.076	261.1	0.357	92.3	28.000	7.288	0.000	112.00	HBD
===>Grouped by Line:	***ES1-2-3RDPT ES to FWH 23A***									***Sorted By: Flow Order***	
3EXA-22N	31	9.069	4.219	261.1	8.129	92.3	20.000	7.288	0.000	112.00	HBD
3EXA-22X	6	3.034	1.498	261.1	19.167	92.3	20.000	7.288	0.000	112.00	HBD
3EXA-22	3	5.056	2.352	261.1	8.129	92.3	20.000	7.288	0.000	112.00	HBD
3EXA-21	3	5.056	2.352	261.1	8.129	92.3	20.000	7.288	0.000	112.00	HBD
3EXA-21P	53	4.534	2.110	261.1	8.129	92.3	20.000	7.288	0.000	112.00	HBD
3EXA-20	3	5.056	2.352	261.1	8.129	92.3	20.000	7.288	0.000	112.00	HBD
3EXA-20P	53	4.534	2.110	261.1	8.129	92.3	20.000	7.288	0.000	112.00	HBD
3EXA-19	2	5.567	2.590	261.1	8.129	92.3	20.000	7.288	0.000	112.00	HBD
3EXA-19P	52	2.214	1.093	261.1	15.526	92.3	20.000	7.288	0.000	112.00	HBD
===>Grouped by Line:	***ES1-3-3RDPT ES to FWH 23A***									***Sorted By: Flow Order***	
3EXA-14	12	7.831	3.887	261.1	0.357	92.3	28.000	7.288	0.000	112.00	HBD
3EXA-14 (BR/SE)	12	6.578	3.060	261.1	8.129	92.3	20.000	7.288	0.000	112.00	HBD
3EXA-14 (D/S)	12	10.959	5.134	261.1	6.461	92.3	28.000	7.288	0.000	112.00	HBD
3EXA-14P US	62	2.007	0.940	261.1	6.461	92.3	28.000	7.288	0.000	112.00	HBD
3EXA-14P DS1	62	2.001	0.938	261.1	6.696	92.3	28.000	7.288	0.000	112.00	HBD
3EXA-14P DS	62	2.007	0.940	261.1	6.461	92.3	28.000	7.288	0.000	112.00	HBD

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***ES1-3-3RDPT ES to FWH 23A***									***Sorted By: Flow Order***	
3EXA-VALVE 3EX-1	22	6.076	2.846	261.1	14.172	92.3	28.000	7.288	0.000	112.00	HBD
3EXA-13P	58	2.938	1.377	261.1	6.563	92.3	28.000	7.288	0.000	112.00	HBD
3EXA-VALVE 3EX-2	25	8.022	3.758	261.1	6.461	92.3	28.000	7.288	0.000	112.00	HBD
3EXA-12P	58	2.939	1.377	261.1	6.548	92.3	28.000	7.288	0.000	112.00	HBD
3EXA-10	2	6.130	2.873	261.1	6.808	92.3	28.000	7.288	0.000	112.00	HBD
3EXA-9P	52	2.132	1.052	261.1	15.783	92.3	28.000	7.288	0.000	112.00	HBD
3EXA-9	4	6.593	3.090	261.1	6.822	92.3	28.000	7.288	0.000	112.00	HBD
3EXA-8P	54	6.416	3.006	261.1	6.461	92.3	28.000	7.288	0.000	112.00	HBD
3EXA-8	4	6.590	3.088	261.1	6.884	92.3	28.000	7.288	0.000	112.00	HBD
3EXA-7P	54	6.416	3.006	261.1	6.461	92.3	28.000	7.288	0.000	112.00	HBD
3EXA-7	2	0.012	0.011	261.1	6.461	92.3	28.000	7.288	0.000	112.00	HBD
3EXA-6P DS	52	0.007	0.006	261.1	6.461	92.3	28.000	7.288	0.000	112.00	HBD
3EXA-6	2	0.012	0.011	261.1	6.461	92.3	28.000	7.288	0.000	112.00	HBD
3EXA-5P	52	0.004	0.003	261.1	15.708	92.3	28.000	7.288	0.000	112.00	HBD
3EXA-5	4	0.012	0.011	261.1	6.461	92.3	28.000	7.288	0.000	112.00	HBD
3EXA-4P US	54	0.011	0.010	261.1	6.461	92.3	28.000	7.288	0.000	112.00	HBD
3EXA-4	14	0.026	0.024	261.1	6.461	92.3	28.000	7.288	0.000	112.00	HBD
3EXA-4 (BR/SE)	14	0.008	0.008	261.1	8.129	92.3	20.000	7.288	0.000	112.00	HBD
3EXA-4 (D/S)	14	0.019	0.018	261.1	0.357	92.3	28.000	7.288	0.000	112.00	HBD
===>Grouped by Line:	***ES1-4-3RDPT ES to FWH 23A***									***Sorted By: Flow Order***	
3EXA-1P	64	0.005	0.004	261.1	8.294	92.3	20.000	7.288	0.000	112.00	HBD
3EXA-1A	64	0.005	0.004	261.1	8.294	92.3	20.000	7.288	0.000	112.00	HBD
3EXA-1	2	0.011	0.010	261.1	8.129	92.3	20.000	7.288	0.000	112.00	HBD
3EXA-1N	30	6.047	2.813	261.1	8.129	92.3	20.000	7.288	0.000	112.00	HBD
===>Grouped by Line:	***ES1-5-3RDPT ES to FWH 23A***									***Sorted By: Flow Order***	
3EXA-11R	7	0.008	0.007	261.1	0.357	92.3	28.000	7.288	0.000	112.00	HBD
3EXA-11R (D/S)	7	0.010	0.009	261.1	8.129	92.3	20.000	7.288	0.000	112.00	HBD
3EXA-11RP	67	2.306	1.969	261.1	8.129	92.3	20.000	7.288	0.000	112.00	HBD
3EXA-3	4	4.224	2.528	261.1	8.847	92.3	20.000	7.288	0.000	112.00	HBD
3EXA-2P	54	4.441	2.660	261.1	8.294	92.3	20.000	7.288	0.000	112.00	HBD
3EXA-2A	54	5.557	2.592	261.1	9.132	92.3	20.000	7.288	0.000	112.00	HBD
3EXA-2	2	5.567	2.590	261.1	8.129	92.3	20.000	7.288	0.000	112.00	HBD
3EXA-2N	30	6.047	2.813	261.1	8.129	92.3	20.000	7.288	0.000	112.00	HBD
===>Grouped by Line:	***ES2-1-3RDPT ES to FWH 23B***									***Sorted By: Flow Order***	
3EXB-14N	31	9.069	4.219	261.1	8.129	92.3	20.000	7.288	0.000	112.00	HBD
3EXB-14X	6	3.034	1.498	261.1	19.167	92.3	20.000	7.288	0.000	112.00	HBD

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***ES2-1-3RDPT ES to FWH 23B***									***Sorted By: Flow Order***	
3EXB-14	3	5.056	2.352	261.1	8.129	92.3	20.000	7.288	0.000	112.00	HBD
3EXB-13	3	5.056	2.352	261.1	8.129	92.3	20.000	7.288	0.000	112.00	HBD
3EXB-13P	53	4.534	2.110	261.1	8.129	92.3	20.000	7.288	0.000	112.00	HBD
3EXB-12	2	5.989	2.787	261.1	8.129	92.3	20.000	7.288	0.000	112.00	HBD
3EXB-12P	52	2.214	1.093	261.1	15.526	92.3	20.000	7.288	0.000	112.00	HBD
3EXB-11 (BR/SE)	10	6.047	2.813	261.1	8.129	92.3	20.000	7.288	0.000	112.00	HBD
3EXB-11 (D/S)	10	5.990	2.972	261.1	0.357	92.3	28.000	7.288	0.000	112.00	HBD
3EXB-11P	60	2.170	1.076	261.1	0.357	92.3	28.000	7.288	0.000	112.00	HBD
===>Grouped by Line:	***ES2-2-3RDPT ES to FWH 23B***									***Sorted By: Flow Order***	
3EXB-18N	31	9.069	4.219	261.1	8.129	92.3	20.000	7.288	0.000	112.00	HBD
3EXB-18X	6	3.034	1.498	261.1	19.167	92.3	20.000	7.288	0.000	112.00	HBD
3EXB-18	3	5.056	2.352	261.1	8.129	92.3	20.000	7.288	0.000	112.00	HBD
3EXB-17	3	5.056	2.352	261.1	8.129	92.3	20.000	7.288	0.000	112.00	HBD
3EXB-17P	53	4.534	2.110	261.1	8.129	92.3	20.000	7.288	0.000	112.00	HBD
3EXB-16	3	5.056	2.352	261.1	8.129	92.3	20.000	7.288	0.000	112.00	HBD
3EXB-16P	53	4.534	2.110	261.1	8.129	92.3	20.000	7.288	0.000	112.00	HBD
3EXB-15	2	5.567	2.590	261.1	8.129	92.3	20.000	7.288	0.000	112.00	HBD
3EXB-15P	52	2.214	1.093	261.1	15.526	92.3	20.000	7.288	0.000	112.00	HBD
===>Grouped by Line:	***ES2-3-3RDPT ES to FWH 23B***									***Sorted By: Flow Order***	
3EXB-10	12	7.831	3.887	261.1	0.357	92.3	28.000	7.288	0.000	112.00	HBD
3EXB-10 (BR/SE)	12	6.578	3.060	261.1	8.129	92.3	20.000	7.288	0.000	112.00	HBD
3EXB-10 (D/S)	12	10.959	5.134	261.1	6.461	92.3	28.000	7.288	0.000	112.00	HBD
3EXB-10P US	62	2.007	0.940	261.1	6.461	92.3	28.000	7.288	0.000	112.00	HBD
3EXB-10P DS1	62	2.007	0.940	261.1	6.461	92.3	28.000	7.288	0.000	112.00	HBD
3EXB-10P DS	62	2.007	0.940	261.1	6.461	92.3	28.000	7.288	0.000	112.00	HBD
3EXB-VALVE 3EX-3	22	6.076	2.846	261.1	14.172	92.3	28.000	7.288	0.000	112.00	HBD
3EXB-9P	58	2.939	1.377	261.1	6.532	92.3	28.000	7.288	0.000	112.00	HBD
3EXB-VALVE 3EX-4	25	8.022	3.758	261.1	6.461	92.3	28.000	7.288	0.000	112.00	HBD
3EXB-9A	58	2.942	1.378	261.1	6.461	92.3	28.000	7.288	0.000	112.00	HBD
3EXB-9	2	6.128	2.872	261.1	6.832	92.3	28.000	7.288	0.000	112.00	HBD
3EXB-8	3	5.570	2.609	261.1	6.776	92.3	28.000	7.288	0.000	112.00	HBD
3EXB-7P	53	2.552	1.260	261.1	15.730	92.3	28.000	7.288	0.000	112.00	HBD
3EXB-7	1	5.270	2.469	261.1	6.461	92.3	28.000	7.288	0.000	112.00	HBD
3EXB-6P US	51	3.671	1.720	261.1	6.588	92.3	28.000	7.288	0.000	112.00	HBD
3EXB-6P DS	51	3.673	1.721	261.1	6.548	92.3	28.000	7.288	0.000	112.00	HBD
3EXB-6	2	6.154	2.883	261.1	6.461	92.3	28.000	7.288	0.000	112.00	HBD

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***ES2-3-3RDPT ES to FWH 23B***									***Sorted By: Flow Order***	
3EXB-5P	52	2.134	1.053	261.1	15.806	92.3	28.000	7.288	0.000	112.00	HBD
3EXB-5	4	6.129	2.873	261.1	6.812	92.3	28.000	7.288	0.000	112.00	HBD
3EXB-4A US	54	6.412	3.004	261.1	6.515	92.3	28.000	7.288	0.000	112.00	HBD
3EXB-4A DS	54	6.416	3.006	261.1	6.461	92.3	28.000	7.288	0.000	112.00	HBD
3EXB-4	14	12.864	6.027	261.1	6.461	92.3	28.000	7.288	0.000	112.00	HBD
3EXB-4 (BR/SE)	14	4.234	1.970	261.1	8.129	92.3	20.000	7.288	0.000	112.00	HBD
3EXB-4 (D/S)	14	9.200	4.566	261.1	0.357	92.3	28.000	7.288	0.000	112.00	HBD
===>Grouped by Line:	***ES2-4-3RDPT ES to FWH 23B***									***Sorted By: Flow Order***	
3EXB-4P US	64	2.375	1.106	261.1	8.355	92.3	20.000	7.288	0.000	112.00	HBD
3EXB-1A	64	2.370	1.104	261.1	8.407	92.3	20.000	7.288	0.000	112.00	HBD
3EXB-1	2	5.449	2.538	261.1	8.733	92.3	20.000	7.288	0.000	112.00	HBD
3EXB-1N	30	6.047	2.813	261.1	8.129	92.3	20.000	7.288	0.000	112.00	HBD
===>Grouped by Line:	***ES2-5-3RDPT ES to FWH 23B***									***Sorted By: Flow Order***	
3EXB-10R	7	0.007	0.007	261.1	0.357	92.3	28.000	7.288	0.000	112.00	HBD
3EXB-10R (D/S)	7	0.009	0.009	261.1	8.129	92.3	20.000	7.288	0.000	112.00	HBD
3EXB-3P US	57	2.471	2.110	261.1	8.129	92.3	20.000	7.288	0.000	112.00	HBD
3EXB-3P DS	57	2.471	2.110	261.1	8.129	92.3	20.000	7.288	0.000	112.00	HBD
3EXB-3	2	4.178	2.502	261.1	9.204	92.3	20.000	7.288	0.000	112.00	HBD
3EXB-2P US	52	2.819	1.689	261.1	9.088	92.3	20.000	7.288	0.000	112.00	HBD
3EXB-2P DS	52	2.891	1.732	261.1	8.294	92.3	20.000	7.288	0.000	112.00	HBD
3EXB-2A	52	3.637	1.696	261.1	8.958	92.3	20.000	7.288	0.000	112.00	HBD
3EXB-2	2	5.350	2.494	261.1	9.328	92.3	20.000	7.288	0.000	112.00	HBD
3EXB-2N	30	6.047	2.813	261.1	8.129	92.3	20.000	7.288	0.000	112.00	HBD
===>Grouped by Line:	***ES3-1-3RDPT ES to FWH 23C***									***Sorted By: Flow Order***	
3EXC-18N	31	9.069	4.219	261.1	8.129	92.3	20.000	7.288	0.000	112.00	HBD
3EXC-18X	6	3.034	1.498	261.1	19.167	92.3	20.000	7.288	0.000	112.00	HBD
3EXC-18	3	5.056	2.352	261.1	8.129	92.3	20.000	7.288	0.000	112.00	HBD
3EXC-17	3	5.056	2.352	261.1	8.129	92.3	20.000	7.288	0.000	112.00	HBD
3EXC-17P	53	4.534	2.110	261.1	8.129	92.3	20.000	7.288	0.000	112.00	HBD
3EXC-16	2	5.989	2.787	261.1	8.129	92.3	20.000	7.288	0.000	112.00	HBD
3EXC-16P	52	2.214	1.093	261.1	15.526	92.3	20.000	7.288	0.000	112.00	HBD
3EXC-15 (BR/SE)	10	6.047	2.813	261.1	8.129	92.3	20.000	7.288	0.000	112.00	HBD
3EXC-15 (D/S)	10	5.990	2.972	261.1	0.357	92.3	28.000	7.288	0.000	112.00	HBD
3EXC-15P	60	2.170	1.076	261.1	0.357	92.3	28.000	7.288	0.000	112.00	HBD
===>Grouped by Line:	***ES3-2-3RDPT ES to FWH 23C***									***Sorted By: Flow Order***	
3EXC-22N	31	9.069	4.219	261.1	8.129	92.3	20.000	7.288	0.000	112.00	HBD

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***ES3-2-3RDPT ES to FWH 23C***									***Sorted By: Flow Order***	
3EXC-22X	6	3.034	1.498	261.1	19.167	92.3	20.000	7.288	0.000	112.00	HBD
3EXC-22	3	5.056	2.352	261.1	8.129	92.3	20.000	7.288	0.000	112.00	HBD
3EXC-21	3	5.056	2.352	261.1	8.129	92.3	20.000	7.288	0.000	112.00	HBD
3EXC-21P	53	4.534	2.110	261.1	8.129	92.3	20.000	7.288	0.000	112.00	HBD
3EXC-20	3	5.056	2.352	261.1	8.129	92.3	20.000	7.288	0.000	112.00	HBD
3EXC-20P	53	4.534	2.110	261.1	8.129	92.3	20.000	7.288	0.000	112.00	HBD
3EXC-19	2	5.567	2.590	261.1	8.129	92.3	20.000	7.288	0.000	112.00	HBD
3EXC-19P	52	2.214	1.093	261.1	15.526	92.3	20.000	7.288	0.000	112.00	HBD
===>Grouped by Line:	***ES3-3-3RDPT ES to FWH 23C***									***Sorted By: Flow Order***	
3EXC-14	12	7.831	3.887	261.1	0.357	92.3	28.000	7.288	0.000	112.00	HBD
3EXC-14 (BR/SE)	12	6.578	3.060	261.1	8.129	92.3	20.000	7.288	0.000	112.00	HBD
3EXC-14 (D/S)	12	10.959	5.134	261.1	6.461	92.3	28.000	7.288	0.000	112.00	HBD
3EXC-14P US	62	2.007	0.940	261.1	6.461	92.3	28.000	7.288	0.000	112.00	HBD
3EXC-14P DS1	62	1.997	0.936	261.1	6.905	92.3	28.000	7.288	0.000	112.00	HBD
3EXC-14P DS	62	2.007	0.940	261.1	6.461	92.3	28.000	7.288	0.000	112.00	HBD
3EXC-VALVE 3EX-5	22	6.076	2.846	261.1	14.172	92.3	28.000	7.288	0.000	112.00	HBD
3EXC-13P	58	2.942	1.378	261.1	6.461	92.3	28.000	7.288	0.000	112.00	HBD
3EXC-VALVE 3EX-6	25	8.022	3.758	261.1	6.461	92.3	28.000	7.288	0.000	112.00	HBD
3EXC-13R	7	0.003	0.002	261.1	6.461	92.3	28.000	7.288	0.000	112.00	HBD
3EXC-13R (D/S)	7	0.002	0.002	261.1	15.684	92.3	24.000	7.288	0.000	112.00	HBD
3EXC-VALVE PCV-1161	23	4.069	1.908	261.1	15.684	92.3	24.000	7.288	0.000	112.00	HBD
3EXC-12R	18	0.002	0.002	261.1	15.684	92.3	24.000	7.288	0.000	112.00	HBD
3EXC-12R (D/S)	18	0.002	0.002	261.1	6.461	92.3	28.000	7.288	0.000	112.00	HBD
3EXC-12P	68	0.002	0.002	261.1	6.461	92.3	28.000	7.288	0.000	112.00	HBD
3EXC-10	2	6.129	2.872	261.1	6.816	92.3	28.000	7.288	0.000	112.00	HBD
3EXC-9P	52	2.135	1.054	261.1	15.827	92.3	28.000	7.288	0.000	112.00	HBD
3EXC-9	4	6.593	3.090	261.1	6.826	92.3	28.000	7.288	0.000	112.00	HBD
3EXC-8P	54	6.416	3.006	261.1	6.461	92.3	28.000	7.288	0.000	112.00	HBD
3EXC-8	4	6.621	3.102	261.1	6.461	92.3	28.000	7.288	0.000	112.00	HBD
3EXC-7P	54	6.416	3.006	261.1	6.466	92.3	28.000	7.288	0.000	112.00	HBD
3EXC-7	2	6.154	2.883	261.1	6.461	92.3	28.000	7.288	0.000	112.00	HBD
3EXC-6P	52	4.171	1.954	261.1	6.588	92.3	28.000	7.288	0.000	112.00	HBD
3EXC-6	2	6.123	2.870	261.1	6.913	92.3	28.000	7.288	0.000	112.00	HBD
3EXC-5P	52	2.125	1.049	261.1	15.708	92.3	28.000	7.288	0.000	112.00	HBD
3EXC-5	2	6.154	2.883	261.1	6.461	92.3	28.000	7.288	0.000	112.00	HBD
3EXC-4P	52	4.178	1.957	261.1	6.461	92.3	28.000	7.288	0.000	112.00	HBD

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***ES3-3-3RDPT ES to FWH 23C***									***Sorted By: Flow Order***	
3EXC-4	14	12.864	6.027	261.1	6.461	92.3	28.000	7.288	0.000	112.00	HBD
3EXC-4 (BR/SE)	14	4.234	1.970	261.1	8.129	92.3	20.000	7.288	0.000	112.00	HBD
3EXC-4 (D/S)	14	9.200	4.566	261.1	0.357	92.3	28.000	7.288	0.000	112.00	HBD
===>Grouped by Line:	***ES3-4-3RDPT ES to FWH 23C***									***Sorted By: Flow Order***	
3EXC-4P-1 US	64	2.372	1.106	261.1	8.380	92.3	20.000	7.288	0.000	112.00	HBD
3EXC-1A	64	2.379	1.109	261.1	8.294	92.3	20.000	7.288	0.000	112.00	HBD
3EXC-1	2	5.567	2.590	261.1	8.129	92.3	20.000	7.288	0.000	112.00	HBD
3EXC-1N	30	6.047	2.813	261.1	8.129	92.3	20.000	7.288	0.000	112.00	HBD
===>Grouped by Line:	***ES3-5-3RDPT ES to FWH 23C***									***Sorted By: Flow Order***	
3EXC-11R	7	3.705	1.838	261.1	0.359	92.3	28.000	7.288	0.000	112.00	HBD
3EXC-11R (D/S)	7	5.031	2.341	261.1	8.129	92.3	20.000	7.288	0.000	112.00	HBD
3EXC-3P	57	2.471	2.110	261.1	8.129	92.3	20.000	7.288	0.000	112.00	HBD
3EXC-3	4	4.329	2.590	261.1	8.129	92.3	20.000	7.288	0.000	112.00	HBD
3EXC-2P	54	4.441	2.660	261.1	8.294	92.3	20.000	7.288	0.000	112.00	HBD
3EXC-2A	54	4.348	2.606	261.1	8.940	92.3	20.000	7.288	0.000	112.00	HBD
3EXC-2	2	5.567	2.590	261.1	8.129	92.3	20.000	7.288	0.000	112.00	HBD
3EXC-2N	30	6.047	2.813	261.1	8.129	92.3	20.000	7.288	0.000	112.00	HBD

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).DB

Service Life Report

Pass 2 Analysis Include Measured Wear

Report Date/Time: 7/7/2010 9:54:36AM
AnalysisDate/Time:

Run Name: 3RD POINT EXTRAC STM
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 0.781

CHECWORKS SFA Version: 3.0 (build 105)
Duty Factor (Global) :1.000

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **ES1-1-3RDPT ES to FWH 23A**					***Sorted By:Remaining Life***		
3EXA-18N	0.000	-0.002	0.033	0.033	-69,765	No	243,721
3EXA-15 (BR/SE)	0.000	0.082	0.036	0.036	141,955	No	243,721
3EXA-16	0.000	0.083	0.033	0.033	157,457	No	243,721
3EXA-15 (D/S)	0.000	0.146	0.051	0.051	280,518	No	243,721
3EXA-18	0.000	0.109	0.033	0.033	283,146	No	243,721
3EXA-17	0.000	0.109	0.033	0.033	283,146	No	243,721
3EXA-17P	0.000	0.124	0.033	0.033	376,001	No	243,721
3EXA-18X	0.000	0.166	0.033	0.033	773,648	No	243,721
3EXA-16P	0.000	0.188	0.033	0.033	1,243,121	No	243,721
3EXA-15P	0.000	0.252	0.051	0.051	1,639,477	No	243,721
===>Grouped by Line: **ES1-2-3RDPT ES to FWH 23A**					***Sorted By:Remaining Life***		
3EXA-22N	0.000	-0.002	0.033	0.033	-69,765	No	243,721
3EXA-19	0.000	0.095	0.033	0.033	209,113	No	243,721
3EXA-22	0.000	0.109	0.033	0.033	283,146	No	243,721
3EXA-21	0.000	0.109	0.033	0.033	283,146	No	243,721
3EXA-20	0.000	0.109	0.033	0.033	283,146	No	243,721
3EXA-21P	0.000	0.124	0.033	0.033	376,001	No	243,721
3EXA-20P	0.000	0.124	0.033	0.033	376,001	No	243,721
3EXA-22X	0.000	0.166	0.033	0.033	773,648	No	243,721
3EXA-19P	0.000	0.188	0.033	0.033	1,243,121	No	243,721
===>Grouped by Line: **ES1-3-3RDPT ES to FWH 23A**					***Sorted By:Remaining Life***		
3EXA-14 (D/S)	0.000	0.008	0.051	0.051	-69,438	No	243,721
3EXA-14 (BR/SE)	0.000	0.067	0.036	0.036	88,215	No	243,721
3EXA-VALVE 3EX-2	0.000	0.089	0.050	0.050	91,805	No	243,721
3EXA-14	0.000	0.095	0.051	0.051	99,112	No	243,721
3EXA-VALVE 3EX-1	0.000	0.143	0.050	0.050	287,873	No	243,721
3EXA-10	0.413	0.166	0.047	0.047	362,817	Yes	243,721
3EXA-9	0.417	0.228	0.047	0.047	512,878	Yes	243,721

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line:	**ES1-3-3RDPT ES to FWH 23A**				***Sorted By:Remaining Life***		
3EXA-8	0.434	0.265	0.047	0.047	619,756	Yes	243,721
3EXA-7P	0.000	0.287	0.051	0.051	688,283	No	243,721
3EXA-8P	0.000	0.297	0.051	0.051	718,344	No	243,721
3EXA-13P	0.342	0.236	0.051	0.051	1,180,719	Yes	243,721
3EXA-12P	0.338	0.265	0.051	0.051	1,366,138	Yes	243,721
3EXA-14P US	0.000	0.257	0.051	0.051	1,919,732	No	243,721
3EXA-9P	0.345	0.299	0.051	0.051	2,068,732	Yes	243,721
3EXA-14P DS1	0.381	0.291	0.051	0.051	2,243,854	No	243,721
3EXA-14P DS	0.000	0.316	0.051	0.051	2,469,149	Yes	243,721
3EXA-4	0.000	0.312	0.047	0.047	97,945,328	No	78,608
3EXA-6P DS	0.000	0.312	0.047	0.047	100,000,000	No	78,608
3EXA-5P	0.000	0.312	0.047	0.047	100,000,000	No	78,608
3EXA-4 (BR/SE)	0.000	0.250	0.033	0.033	100,000,000	No	78,608
3EXA-4 (D/S)	0.000	0.312	0.047	0.047	129,308,896	No	78,608
3EXA-7	0.000	0.312	0.047	0.047	204,831,392	No	78,608
3EXA-6	0.000	0.312	0.047	0.047	204,831,392	No	78,608
3EXA-5	0.000	0.312	0.047	0.047	204,831,392	No	78,608
3EXA-4P US	0.000	0.312	0.047	0.047	235,232,080	No	78,608
===>Grouped by Line:	**ES1-4-3RDPT ES to FWH 23A**				***Sorted By:Remaining Life***		
3EXA-1N	0.000	0.082	0.033	0.033	150,955	No	243,721
3EXA-1P	0.000	0.250	0.033	0.033	100,000,000	No	78,608
3EXA-1A	0.000	0.250	0.033	0.033	100,000,000	No	78,608
3EXA-1	0.000	0.250	0.033	0.033	185,816,352	No	78,608
===>Grouped by Line:	**ES1-5-3RDPT ES to FWH 23A**				***Sorted By:Remaining Life***		
3EXA-2N	0.000	0.082	0.033	0.033	150,955	No	243,721
3EXA-2	0.000	0.095	0.033	0.033	209,113	No	243,721
3EXA-2P	0.000	0.174	0.039	0.039	444,155	No	150,169
3EXA-11RP	0.000	0.222	0.039	0.039	813,314	No	107,113
3EXA-3	0.388	0.289	0.033	0.033	886,119	Yes	150,169
3EXA-2A	0.411	0.303	0.039	0.039	891,812	Yes	243,721
3EXA-11R	0.000	0.312	0.047	0.047	100,000,000	No	78,608
3EXA-11R (D/S)	0.000	0.250	0.033	0.033	205,630,432	No	78,608
===>Grouped by Line:	**ES2-1-3RDPT ES to FWH 23B**				***Sorted By:Remaining Life***		
3EXB-11 (BR/SE)	0.000	0.082	0.036	0.036	141,955	No	243,721
3EXB-12	0.000	0.083	0.033	0.033	157,457	No	243,721
3EXB-14N	0.000	0.146	0.033	0.033	233,086	Yes	243,721
3EXB-11 (D/S)	0.000	0.146	0.051	0.051	280,518	No	243,721

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line:	**ES2-1-3RDPT ES to FWH 23B**				***Sorted By:Remaining Life***		
3EXB-14	0.000	0.109	0.033	0.033	283,146	No	243,721
3EXB-13	0.000	0.109	0.033	0.033	283,146	No	243,721
3EXB-13P	0.000	0.124	0.033	0.033	376,001	No	243,721
3EXB-14X	0.000	0.166	0.033	0.033	773,648	No	243,721
3EXB-12P	0.000	0.188	0.033	0.033	1,243,121	No	243,721
3EXB-11P	0.000	0.252	0.051	0.051	1,639,477	No	243,721
===>Grouped by Line:	**ES2-2-3RDPT ES to FWH 23B**				***Sorted By:Remaining Life***		
3EXB-18N	0.000	-0.002	0.033	0.033	-69,765	No	243,721
3EXB-15	0.000	0.095	0.033	0.033	209,113	No	243,721
3EXB-18	0.000	0.109	0.033	0.033	283,146	No	243,721
3EXB-17	0.000	0.109	0.033	0.033	283,146	No	243,721
3EXB-16	0.000	0.109	0.033	0.033	283,146	No	243,721
3EXB-17P	0.000	0.124	0.033	0.033	376,001	No	243,721
3EXB-16P	0.000	0.124	0.033	0.033	376,001	No	243,721
3EXB-18X	0.000	0.166	0.033	0.033	773,648	No	243,721
3EXB-15P	0.000	0.188	0.033	0.033	1,243,121	No	243,721
===>Grouped by Line:	**ES2-3-3RDPT ES to FWH 23B**				***Sorted By:Remaining Life***		
3EXB-10 (D/S)	0.000	0.008	0.051	0.051	-69,438	No	243,721
3EXB-10 (BR/SE)	0.000	0.067	0.036	0.036	88,215	No	243,721
3EXB-VALVE 3EX-4	0.000	0.089	0.050	0.050	91,805	No	243,721
3EXB-10	0.000	0.095	0.051	0.051	99,112	No	243,721
3EXB-4A DS	0.000	0.134	0.051	0.051	242,877	No	243,721
3EXB-4	0.000	0.240	0.055	0.055	269,384	No	243,721
3EXB-VALVE 3EX-3	0.000	0.143	0.050	0.050	287,873	No	243,721
3EXB-4 (D/S)	0.000	0.253	0.055	0.055	380,445	No	243,721
3EXB-7	0.000	0.166	0.047	0.047	423,160	No	243,721
3EXB-4A US	0.328	0.265	0.051	0.051	625,458	No	243,721
3EXB-5	0.414	0.257	0.047	0.047	642,815	Yes	243,721
3EXB-4 (BR/SE)	0.000	0.188	0.039	0.039	663,836	No	243,721
3EXB-8	0.403	0.259	0.047	0.047	711,872	Yes	243,721
3EXB-6	0.000	0.282	0.047	0.047	714,740	Yes	243,721
3EXB-9	0.420	0.282	0.047	0.047	718,728	Yes	243,721
3EXB-9P	0.333	0.219	0.051	0.051	1,067,979	Yes	243,721
3EXB-6P DS	0.338	0.264	0.051	0.051	1,087,018	Yes	243,721
3EXB-9A	0.000	0.231	0.051	0.051	1,144,057	No	243,721
3EXB-6P US	0.349	0.295	0.051	0.051	1,244,714	Yes	243,721
3EXB-10P DS1	0.000	0.200	0.051	0.051	1,387,693	Yes	243,721
3EXB-7P	0.322	0.257	0.051	0.051	1,432,237	Yes	243,721

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line:	**ES2-3-3RDPT ES to FWH 23B**				***Sorted By:Remaining Life***		
3EXB-5P	0.355	0.230	0.051	0.051	1,494,902	Yes	243,721
3EXB-10P US	0.000	0.257	0.051	0.051	1,919,732	No	243,721
3EXB-10P DS	0.000	0.285	0.051	0.051	2,179,756	Yes	243,721
===>Grouped by Line:	**ES2-4-3RDPT ES to FWH 23B**				***Sorted By:Remaining Life***		
3EXB-1N	0.000	0.082	0.033	0.033	150,955	No	243,721
3EXB-1	0.367	0.275	0.033	0.033	834,068	Yes	243,721
3EXB-4P US	0.262	0.203	0.039	0.039	1,299,815	Yes	243,721
3EXB-1A	0.272	0.233	0.039	0.039	1,537,121	Yes	243,721
===>Grouped by Line:	**ES2-5-3RDPT ES to FWH 23B**				***Sorted By:Remaining Life***		
3EXB-2N	0.000	0.082	0.033	0.033	150,955	No	243,721
3EXB-2	0.477	0.228	0.033	0.033	685,366	Yes	243,721
3EXB-2P DS	0.000	0.200	0.039	0.039	816,453	No	150,169
3EXB-3	0.454	0.319	0.033	0.033	1,001,680	Yes	150,169
3EXB-3P DS	0.000	0.352	0.039	0.039	1,300,364	No	107,113
3EXB-3P US	0.000	0.354	0.039	0.039	1,309,367	No	107,113
3EXB-2A	0.378	0.307	0.033	0.033	1,413,220	Yes	243,721
3EXB-2P US	0.402	0.312	0.039	0.039	1,417,444	Yes	150,169
3EXB-10R	0.000	0.312	0.047	0.047	100,000,000	No	33,915
3EXB-10R (D/S)	0.000	0.250	0.033	0.033	205,682,272	No	33,915
===>Grouped by Line:	**ES3-1-3RDPT ES to FWH 23C**				***Sorted By:Remaining Life***		
3EXC-18N	0.000	-0.002	0.033	0.033	-69,765	No	243,721
3EXC-15 (BR/SE)	0.000	0.082	0.036	0.036	141,955	No	243,721
3EXC-16	0.000	0.083	0.033	0.033	157,457	No	243,721
3EXC-15 (D/S)	0.000	0.146	0.051	0.051	280,518	No	243,721
3EXC-18	0.000	0.109	0.033	0.033	283,146	No	243,721
3EXC-17	0.000	0.109	0.033	0.033	283,146	No	243,721
3EXC-17P	0.000	0.124	0.033	0.033	376,001	No	243,721
3EXC-18X	0.000	0.166	0.033	0.033	773,648	No	243,721
3EXC-16P	0.000	0.188	0.033	0.033	1,243,121	No	243,721
3EXC-15P	0.000	0.252	0.051	0.051	1,639,477	No	243,721
===>Grouped by Line:	**ES3-2-3RDPT ES to FWH 23C**				***Sorted By:Remaining Life***		
3EXC-21	0.000	0.109	0.033	0.033	283,146	No	243,721
3EXC-20	0.000	0.109	0.033	0.033	283,146	No	243,721
3EXC-22N	0.000	0.185	0.033	0.033	314,266	No	243,721
3EXC-21P	0.000	0.124	0.033	0.033	376,001	No	243,721
3EXC-20P	0.000	0.124	0.033	0.033	376,001	No	243,721

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line:	**ES3-2-3RDPT ES to FWH 23C**				***Sorted By:Remaining Life***		
3EXC-22X	0.000	0.166	0.033	0.033	773,648	No	243,721
3EXC-22	0.000	0.244	0.033	0.033	784,226	No	243,721
3EXC-19	0.000	0.309	0.033	0.033	932,385	Yes	243,721
3EXC-19P	0.000	0.188	0.033	0.033	1,243,121	No	243,721
===>Grouped by Line:	**ES3-3-3RDPT ES to FWH 23C**				***Sorted By:Remaining Life***		
3EXC-VALVE 3EX-6	0.000	0.089	0.050	0.050	91,805	No	243,721
3EXC-14	0.000	0.095	0.051	0.051	99,112	Yes	243,721
3EXC-8P	0.000	0.134	0.051	0.051	242,877	No	243,721
3EXC-4	0.000	0.233	0.055	0.055	259,407	No	243,721
3EXC-7	0.000	0.141	0.047	0.047	287,653	No	243,721
3EXC-VALVE 3EX-5	0.000	0.143	0.050	0.050	287,873	No	243,721
3EXC-4 (D/S)	0.000	0.257	0.055	0.055	388,243	No	243,721
3EXC-VALVE PCV-1161	0.000	0.137	0.043	0.043	431,565	No	243,721
3EXC-14 (D/S)	0.000	0.317	0.051	0.051	454,686	Yes	243,721
3EXC-8	0.000	0.250	0.047	0.047	573,879	Yes	243,721
3EXC-9	0.418	0.255	0.047	0.047	590,903	Yes	243,721
3EXC-4P	0.000	0.197	0.055	0.055	636,164	Yes	243,721
3EXC-7P	0.314	0.279	0.051	0.051	666,564	Yes	243,721
3EXC-6	0.443	0.266	0.047	0.047	671,019	Yes	243,721
3EXC-5	0.000	0.268	0.047	0.047	672,202	Yes	243,721
3EXC-14 (BR/SE)	0.000	0.281	0.036	0.036	701,196	No	243,721
3EXC-4 (BR/SE)	0.000	0.212	0.039	0.039	768,127	No	243,721
3EXC-10	0.415	0.343	0.047	0.047	904,736	Yes	243,721
3EXC-6P	0.349	0.263	0.051	0.051	950,988	Yes	243,721
3EXC-13P	0.000	0.231	0.051	0.051	1,144,057	No	243,721
3EXC-5P	0.000	0.253	0.051	0.051	1,692,573	No	243,721
3EXC-14P US	0.000	0.257	0.051	0.051	1,919,732	No	243,721
3EXC-14P DS	0.000	0.257	0.051	0.051	1,919,732	No	243,721
3EXC-9P	0.364	0.291	0.051	0.051	1,994,269	Yes	243,721
3EXC-14P DS1	0.440	0.304	0.051	0.051	2,368,391	No	243,721
3EXC-13R	0.000	0.312	0.050	0.050	100,000,000	No	94,148
3EXC-13R (D/S)	0.000	0.250	0.043	0.043	100,000,000	No	94,148
3EXC-12R	0.000	0.250	0.043	0.043	100,000,000	No	94,148
3EXC-12R (D/S)	0.000	0.312	0.050	0.050	100,000,000	No	94,148
3EXC-12P	0.000	0.312	0.050	0.050	100,000,000	No	94,148
===>Grouped by Line:	**ES3-4-3RDPT ES to FWH 23C**				***Sorted By:Remaining Life***		
3EXC-1N	0.000	0.302	0.033	0.033	837,905	No	243,721
3EXC-1	0.000	0.305	0.033	0.033	917,962	Yes	243,721

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **ES3-4-3RDPT ES to FWH 23C**					***Sorted By:Remaining Life***		
3EXC-1A	0.000	0.184	0.039	0.039	1,144,064	No	243,721
3EXC-4P-1 US	0.267	0.231	0.039	0.039	1,522,780	Yes	243,721
===>Grouped by Line: **ES3-5-3RDPT ES to FWH 23C**					***Sorted By:Remaining Life***		
3EXC-3	0.000	0.176	0.033	0.033	481,927	No	150,169
3EXC-2N	0.000	0.281	0.033	0.033	769,889	No	243,721
3EXC-2A	0.000	0.289	0.039	0.039	839,390	Yes	150,169
3EXC-2	0.000	0.288	0.033	0.033	862,027	Yes	243,721
3EXC-11R	0.319	0.234	0.047	0.047	893,242	Yes	243,721
3EXC-11R (D/S)	0.000	0.274	0.033	0.033	901,165	Yes	243,721
3EXC-2P	0.000	0.331	0.039	0.039	960,595	Yes	150,169
3EXC-3P	0.000	0.361	0.039	0.039	1,339,025	Yes	107,113

Note:
[1] Predictions are based on last Tmeas to analysis ending period.

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).DB

Service Life Report

Pass 2 Analysis Include Measured Wear

Report Date/Time: 7/7/2010 9:54:36AM
AnalysisDate/Time:

Run Name: 3RD POINT EXTRAC STM
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 0.781

CHECWORKS SFA Version: 3.0 (build 105)
Duty Factor (Global) : 1.000

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **ES1-1-3RDPT ES to FWH 23A**					***Sorted By:Flow Order***		
3EXA-18N	0.000	-0.002	0.033	0.033	-69,765	No	243,721
3EXA-18X	0.000	0.166	0.033	0.033	773,648	No	243,721
3EXA-18	0.000	0.109	0.033	0.033	283,146	No	243,721
3EXA-17	0.000	0.109	0.033	0.033	283,146	No	243,721
3EXA-17P	0.000	0.124	0.033	0.033	376,001	No	243,721
3EXA-16	0.000	0.083	0.033	0.033	157,457	No	243,721
3EXA-16P	0.000	0.188	0.033	0.033	1,243,121	No	243,721
3EXA-15 (BR/SE)	0.000	0.082	0.036	0.036	141,955	No	243,721
3EXA-15 (D/S)	0.000	0.146	0.051	0.051	280,518	No	243,721
3EXA-15P	0.000	0.252	0.051	0.051	1,639,477	No	243,721
===>Grouped by Line: **ES1-2-3RDPT ES to FWH 23A**					***Sorted By:Flow Order***		
3EXA-22N	0.000	-0.002	0.033	0.033	-69,765	No	243,721
3EXA-22X	0.000	0.166	0.033	0.033	773,648	No	243,721
3EXA-22	0.000	0.109	0.033	0.033	283,146	No	243,721
3EXA-21	0.000	0.109	0.033	0.033	283,146	No	243,721
3EXA-21P	0.000	0.124	0.033	0.033	376,001	No	243,721
3EXA-20	0.000	0.109	0.033	0.033	283,146	No	243,721
3EXA-20P	0.000	0.124	0.033	0.033	376,001	No	243,721
3EXA-19	0.000	0.095	0.033	0.033	209,113	No	243,721
3EXA-19P	0.000	0.188	0.033	0.033	1,243,121	No	243,721
===>Grouped by Line: **ES1-3-3RDPT ES to FWH 23A**					***Sorted By:Flow Order***		
3EXA-14	0.000	0.095	0.051	0.051	99,112	No	243,721
3EXA-14 (BR/SE)	0.000	0.067	0.036	0.036	88,215	No	243,721
3EXA-14 (D/S)	0.000	0.008	0.051	0.051	-69,438	No	243,721
3EXA-14P US	0.000	0.257	0.051	0.051	1,919,732	No	243,721
3EXA-14P DS1	0.381	0.291	0.051	0.051	2,243,854	No	243,721
3EXA-14P DS	0.000	0.316	0.051	0.051	2,469,149	Yes	243,721
3EXA-VALVE 3EX-1	0.000	0.143	0.050	0.050	287,873	No	243,721

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>*Grouped by Line:* **ES1-3-3RDPT ES to FWH 23A**					***Sorted By:Flow Order***		
3EXA-13P	0.342	0.236	0.051	0.051	1,180,719	Yes	243,721
3EXA-VALVE 3EX-2	0.000	0.089	0.050	0.050	91,805	No	243,721
3EXA-12P	0.338	0.265	0.051	0.051	1,366,138	Yes	243,721
3EXA-10	0.413	0.166	0.047	0.047	362,817	Yes	243,721
3EXA-9P	0.345	0.299	0.051	0.051	2,068,732	Yes	243,721
3EXA-9	0.417	0.228	0.047	0.047	512,878	Yes	243,721
3EXA-8P	0.000	0.297	0.051	0.051	718,344	No	243,721
3EXA-8	0.434	0.265	0.047	0.047	619,756	Yes	243,721
3EXA-7P	0.000	0.287	0.051	0.051	688,283	No	243,721
3EXA-7	0.000	0.312	0.047	0.047	204,831,392	No	78,608
3EXA-6P DS	0.000	0.312	0.047	0.047	100,000,000	No	78,608
3EXA-6	0.000	0.312	0.047	0.047	204,831,392	No	78,608
3EXA-5P	0.000	0.312	0.047	0.047	100,000,000	No	78,608
3EXA-5	0.000	0.312	0.047	0.047	204,831,392	No	78,608
3EXA-4P US	0.000	0.312	0.047	0.047	235,232,080	No	78,608
3EXA-4	0.000	0.312	0.047	0.047	97,945,328	No	78,608
3EXA-4 (BR/SE)	0.000	0.250	0.033	0.033	100,000,000	No	78,608
3EXA-4 (D/S)	0.000	0.312	0.047	0.047	129,308,896	No	78,608
===>*Grouped by Line:* **ES1-4-3RDPT ES to FWH 23A**					***Sorted By:Flow Order***		
3EXA-1P	0.000	0.250	0.033	0.033	100,000,000	No	78,608
3EXA-1A	0.000	0.250	0.033	0.033	100,000,000	No	78,608
3EXA-1	0.000	0.250	0.033	0.033	185,816,352	No	78,608
3EXA-1N	0.000	0.082	0.033	0.033	150,955	No	243,721
===>*Grouped by Line:* **ES1-5-3RDPT ES to FWH 23A**					***Sorted By:Flow Order***		
3EXA-11R	0.000	0.312	0.047	0.047	100,000,000	No	78,608
3EXA-11R (D/S)	0.000	0.250	0.033	0.033	205,630,432	No	78,608
3EXA-11RP	0.000	0.222	0.039	0.039	813,314	No	107,113
3EXA-3	0.388	0.289	0.033	0.033	886,119	Yes	150,169
3EXA-2P	0.000	0.174	0.039	0.039	444,155	No	150,169
3EXA-2A	0.411	0.303	0.039	0.039	891,812	Yes	243,721
3EXA-2	0.000	0.095	0.033	0.033	209,113	No	243,721
3EXA-2N	0.000	0.082	0.033	0.033	150,955	No	243,721
===>*Grouped by Line:* **ES2-1-3RDPT ES to FWH 23B**					***Sorted By:Flow Order***		
3EXB-14N	0.000	0.146	0.033	0.033	233,086	Yes	243,721
3EXB-14X	0.000	0.166	0.033	0.033	773,648	No	243,721
3EXB-14	0.000	0.109	0.033	0.033	283,146	No	243,721
3EXB-13	0.000	0.109	0.033	0.033	283,146	No	243,721

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line:	**ES2-1-3RDPT ES to FWH 23B**				***Sorted By:Flow Order***		
3EXB-13P	0.000	0.124	0.033	0.033	376,001	No	243,721
3EXB-12	0.000	0.083	0.033	0.033	157,457	No	243,721
3EXB-12P	0.000	0.188	0.033	0.033	1,243,121	No	243,721
3EXB-11 (BR/SE)	0.000	0.082	0.036	0.036	141,955	No	243,721
3EXB-11 (D/S)	0.000	0.146	0.051	0.051	280,518	No	243,721
3EXB-11P	0.000	0.252	0.051	0.051	1,639,477	No	243,721
===>Grouped by Line:	**ES2-2-3RDPT ES to FWH 23B**				***Sorted By:Flow Order***		
3EXB-18N	0.000	-0.002	0.033	0.033	-69,765	No	243,721
3EXB-18X	0.000	0.166	0.033	0.033	773,648	No	243,721
3EXB-18	0.000	0.109	0.033	0.033	283,146	No	243,721
3EXB-17	0.000	0.109	0.033	0.033	283,146	No	243,721
3EXB-17P	0.000	0.124	0.033	0.033	376,001	No	243,721
3EXB-16	0.000	0.109	0.033	0.033	283,146	No	243,721
3EXB-16P	0.000	0.124	0.033	0.033	376,001	No	243,721
3EXB-15	0.000	0.095	0.033	0.033	209,113	No	243,721
3EXB-15P	0.000	0.188	0.033	0.033	1,243,121	No	243,721
===>Grouped by Line:	**ES2-3-3RDPT ES to FWH 23B**				***Sorted By:Flow Order***		
3EXB-10	0.000	0.095	0.051	0.051	99,112	No	243,721
3EXB-10 (BR/SE)	0.000	0.067	0.036	0.036	88,215	No	243,721
3EXB-10 (D/S)	0.000	0.008	0.051	0.051	-69,438	No	243,721
3EXB-10P US	0.000	0.257	0.051	0.051	1,919,732	No	243,721
3EXB-10P DS1	0.000	0.200	0.051	0.051	1,387,693	Yes	243,721
3EXB-10P DS	0.000	0.285	0.051	0.051	2,179,756	Yes	243,721
3EXB-VALVE 3EX-3	0.000	0.143	0.050	0.050	287,873	No	243,721
3EXB-9P	0.333	0.219	0.051	0.051	1,067,979	Yes	243,721
3EXB-VALVE 3EX-4	0.000	0.089	0.050	0.050	91,805	No	243,721
3EXB-9A	0.000	0.231	0.051	0.051	1,144,057	No	243,721
3EXB-9	0.420	0.282	0.047	0.047	718,728	Yes	243,721
3EXB-8	0.403	0.259	0.047	0.047	711,872	Yes	243,721
3EXB-7P	0.322	0.257	0.051	0.051	1,432,237	Yes	243,721
3EXB-7	0.000	0.166	0.047	0.047	423,160	No	243,721
3EXB-6P US	0.349	0.295	0.051	0.051	1,244,714	Yes	243,721
3EXB-6P DS	0.338	0.264	0.051	0.051	1,087,018	Yes	243,721
3EXB-6	0.000	0.282	0.047	0.047	714,740	Yes	243,721
3EXB-5P	0.355	0.230	0.051	0.051	1,494,902	Yes	243,721
3EXB-5	0.414	0.257	0.047	0.047	642,815	Yes	243,721
3EXB-4A US	0.328	0.265	0.051	0.051	625,458	No	243,721

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line:	**ES2-3-3RDPT ES to FWH 23B**				***Sorted By:Flow Order***		
3EXB-4A DS	0.000	0.134	0.051	0.051	242,877	No	243,721
3EXB-4	0.000	0.240	0.055	0.055	269,384	No	243,721
3EXB-4 (BR/SE)	0.000	0.188	0.039	0.039	663,836	No	243,721
3EXB-4 (D/S)	0.000	0.253	0.055	0.055	380,445	No	243,721
===>Grouped by Line:	**ES2-4-3RDPT ES to FWH 23B**				***Sorted By:Flow Order***		
3EXB-4P US	0.262	0.203	0.039	0.039	1,299,815	Yes	243,721
3EXB-1A	0.272	0.233	0.039	0.039	1,537,121	Yes	243,721
3EXB-1	0.367	0.275	0.033	0.033	834,068	Yes	243,721
3EXB-1N	0.000	0.082	0.033	0.033	150,955	No	243,721
===>Grouped by Line:	**ES2-5-3RDPT ES to FWH 23B**				***Sorted By:Flow Order***		
3EXB-10R	0.000	0.312	0.047	0.047	100,000,000	No	33,915
3EXB-10R (D/S)	0.000	0.250	0.033	0.033	205,682,272	No	33,915
3EXB-3P US	0.000	0.354	0.039	0.039	1,309,367	No	107,113
3EXB-3P DS	0.000	0.352	0.039	0.039	1,300,364	No	107,113
3EXB-3	0.454	0.319	0.033	0.033	1,001,680	Yes	150,169
3EXB-2P US	0.402	0.312	0.039	0.039	1,417,444	Yes	150,169
3EXB-2P DS	0.000	0.200	0.039	0.039	816,453	No	150,169
3EXB-2A	0.378	0.307	0.033	0.033	1,413,220	Yes	243,721
3EXB-2	0.477	0.228	0.033	0.033	685,366	Yes	243,721
3EXB-2N	0.000	0.082	0.033	0.033	150,955	No	243,721
===>Grouped by Line:	**ES3-1-3RDPT ES to FWH 23C**				***Sorted By:Flow Order***		
3EXC-18N	0.000	-0.002	0.033	0.033	-69,765	No	243,721
3EXC-18X	0.000	0.166	0.033	0.033	773,648	No	243,721
3EXC-18	0.000	0.109	0.033	0.033	283,146	No	243,721
3EXC-17	0.000	0.109	0.033	0.033	283,146	No	243,721
3EXC-17P	0.000	0.124	0.033	0.033	376,001	No	243,721
3EXC-16	0.000	0.083	0.033	0.033	157,457	No	243,721
3EXC-16P	0.000	0.188	0.033	0.033	1,243,121	No	243,721
3EXC-15 (BR/SE)	0.000	0.082	0.036	0.036	141,955	No	243,721
3EXC-15 (D/S)	0.000	0.146	0.051	0.051	280,518	No	243,721
3EXC-15P	0.000	0.252	0.051	0.051	1,639,477	No	243,721
===>Grouped by Line:	**ES3-2-3RDPT ES to FWH 23C**				***Sorted By:Flow Order***		
3EXC-22N	0.000	0.185	0.033	0.033	314,266	No	243,721
3EXC-22X	0.000	0.166	0.033	0.033	773,648	No	243,721
3EXC-22	0.000	0.244	0.033	0.033	784,226	No	243,721
3EXC-21	0.000	0.109	0.033	0.033	283,146	No	243,721

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line:	**ES3-2-3RDPT ES to FWH 23C**				***Sorted By:Flow Order***		
3EXC-21P	0.000	0.124	0.033	0.033	376,001	No	243,721
3EXC-20	0.000	0.109	0.033	0.033	283,146	No	243,721
3EXC-20P	0.000	0.124	0.033	0.033	376,001	No	243,721
3EXC-19	0.000	0.309	0.033	0.033	932,385	Yes	243,721
3EXC-19P	0.000	0.188	0.033	0.033	1,243,121	No	243,721
===>Grouped by Line:	**ES3-3-3RDPT ES to FWH 23C**				***Sorted By:Flow Order***		
3EXC-14	0.000	0.095	0.051	0.051	99,112	Yes	243,721
3EXC-14 (BR/SE)	0.000	0.281	0.036	0.036	701,196	No	243,721
3EXC-14 (D/S)	0.000	0.317	0.051	0.051	454,686	Yes	243,721
3EXC-14P US	0.000	0.257	0.051	0.051	1,919,732	No	243,721
3EXC-14P DS1	0.440	0.304	0.051	0.051	2,368,391	No	243,721
3EXC-14P DS	0.000	0.257	0.051	0.051	1,919,732	No	243,721
3EXC-VALVE 3EX-5	0.000	0.143	0.050	0.050	287,873	No	243,721
3EXC-13P	0.000	0.231	0.051	0.051	1,144,057	No	243,721
3EXC-VALVE 3EX-6	0.000	0.089	0.050	0.050	91,805	No	243,721
3EXC-13R	0.000	0.312	0.050	0.050	100,000,000	No	94,148
3EXC-13R (D/S)	0.000	0.250	0.043	0.043	100,000,000	No	94,148
3EXC-VALVE PCV-1161	0.000	0.137	0.043	0.043	431,565	No	243,721
3EXC-12R	0.000	0.250	0.043	0.043	100,000,000	No	94,148
3EXC-12R (D/S)	0.000	0.312	0.050	0.050	100,000,000	No	94,148
3EXC-12P	0.000	0.312	0.050	0.050	100,000,000	No	94,148
3EXC-10	0.415	0.343	0.047	0.047	904,736	Yes	243,721
3EXC-9P	0.364	0.291	0.051	0.051	1,994,269	Yes	243,721
3EXC-9	0.418	0.255	0.047	0.047	590,903	Yes	243,721
3EXC-8P	0.000	0.134	0.051	0.051	242,877	No	243,721
3EXC-8	0.000	0.250	0.047	0.047	573,879	Yes	243,721
3EXC-7P	0.314	0.279	0.051	0.051	666,564	Yes	243,721
3EXC-7	0.000	0.141	0.047	0.047	287,653	No	243,721
3EXC-6P	0.349	0.263	0.051	0.051	950,988	Yes	243,721
3EXC-6	0.443	0.266	0.047	0.047	671,019	Yes	243,721
3EXC-5P	0.000	0.253	0.051	0.051	1,692,573	No	243,721
3EXC-5	0.000	0.268	0.047	0.047	672,202	Yes	243,721
3EXC-4P	0.000	0.197	0.055	0.055	636,164	Yes	243,721
3EXC-4	0.000	0.233	0.055	0.055	259,407	No	243,721
3EXC-4 (BR/SE)	0.000	0.212	0.039	0.039	768,127	No	243,721
3EXC-4 (D/S)	0.000	0.257	0.055	0.055	388,243	No	243,721
===>Grouped by Line:	**ES3-4-3RDPT ES to FWH 23C**				***Sorted By:Flow Order***		

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **ES3-4-3RDPT ES to FWH 23C**					***Sorted By:Flow Order***		
3EXC-4P-1 US	0.267	0.231	0.039	0.039	1,522,780	Yes	243,721
3EXC-1A	0.000	0.184	0.039	0.039	1,144,064	No	243,721
3EXC-1	0.000	0.305	0.033	0.033	917,962	Yes	243,721
3EXC-1N	0.000	0.302	0.033	0.033	837,905	No	243,721
===>Grouped by Line: **ES3-5-3RDPT ES to FWH 23C**					***Sorted By:Flow Order***		
3EXC-11R	0.319	0.234	0.047	0.047	893,242	Yes	243,721
3EXC-11R (D/S)	0.000	0.274	0.033	0.033	901,165	Yes	243,721
3EXC-3P	0.000	0.361	0.039	0.039	1,339,025	Yes	107,113
3EXC-3	0.000	0.176	0.033	0.033	481,927	No	150,169
3EXC-2P	0.000	0.331	0.039	0.039	960,595	Yes	150,169
3EXC-2A	0.000	0.289	0.039	0.039	839,390	Yes	150,169
3EXC-2	0.000	0.288	0.033	0.033	862,027	Yes	243,721
3EXC-2N	0.000	0.281	0.033	0.033	769,889	No	243,721

Note:
[1] Predictions are based on last Tmeas to analysis ending period.

6

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).DB

Wear Report

Pass 2 Analysis Include Measured Wear

Report Date/Time: 07-Jul-2010 9:54 am
AnalysisDate/Time: 07-Jul-2010 9:54 am

Run Name: 3RD POINT EXTRAC STM
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 0.781

CHECWORKS SFA Version: 3.0 (build 105)
Duty Factor (Global) : 1.000

Component Name	Tinit	Total Lifetime Wear (mils) Prd. [1]	Total Lifetime Wear (mils) Meas.	In-Service Component Wear(mils) Prd. [1]	In-Service Component Wear(mils) Meas.	In-Service Component Tmeas, Method, Time (in) [3]	[2]	(hrs) [3]	In-Service Component Thickness (mils) [4] Tp	Tm	Incremental Wear (mils) [5] PRWEAR	Time (hrs) Last Inspected
===>Grouped by Line:	**ES1-3-3RDPT ES to FWH 23A**										***Sorted By: Flow Order***	
3EXA-14P DS	0.000	50.5	28.0	50.5	28.0	0.321	MT	193,769	262.0	321.0	5.4	193,769
3EXA-13P	0.342	64.9	81.0	64.9	81.0	0.253		149,573	277.1	253.0	16.8	149,573
3EXA-12P	0.338	54.1	45.0	54.1	45.0	0.293	MT	119,088	283.9	293.0	27.6	119,088
3EXA-10	0.413	149.1	142.0	149.1	142.0	0.187	MT	180,272	263.9	187.0	21.4	180,272
3EXA-9P	0.345	51.5	37.0	51.5	37.0	0.307	GW	180,272	293.5	307.0	7.8	180,272
3EXA-9	0.417	161.0	97.0	161.0	97.0	0.250	MT	181,453	256.0	250.0	22.5	181,453
3EXA-8	0.434	121.4	107.0	121.4	107.0	0.327	MT	119,088	312.6	327.0	61.9	119,088
3EXA-6P DS	0.000	77.0	48.0	0.0	0.0	0.313	ER	165,113	312.5	312.5	0.1	0
3EXA-6	0.000	136.0	200.0	0.0	0.0	0.313	ER	165,113	312.5	312.5	0.1	0
3EXA-5P	0.000	46.6	94.0	0.0	0.0	0.313	ER	165,113	312.5	312.5	0.0	0
3EXA-5	0.000	136.0	205.0	0.0	0.0	0.313	ER	165,113	312.5	312.5	0.1	0
3EXA-4P US	0.000	141.8	133.0	0.0	0.0	0.313	ER	165,113	312.5	312.5	0.1	0
===>Grouped by Line:	**ES1-4-3RDPT ES to FWH 23A**										***Sorted By: Flow Order***	
3EXA-1P	0.000	39.1	92.0	0.0	0.0	0.250	ER	165,113	250.0	250.0	0.0	0
3EXA-1A	0.000	43.9	86.0	0.0	0.0	0.250	ER	165,113	250.0	250.0	0.0	0
===>Grouped by Line:	**ES1-5-3RDPT ES to FWH 23A**										***Sorted By: Flow Order***	
3EXA-11R	0.000	81.0	99.0	0.0	0.0	0.313	ER	165,113	312.5	312.5	0.1	0
3EXA-11R (D/S)	0.000	111.3	138.0	0.0	0.0	0.250	ER	165,113	250.0	250.0	0.1	0
3EXA-11RP	0.000	89.5	183.0	0.0	0.0	0.250	ER	136,608	250.0	250.0	28.2	0
3EXA-3	0.388	21.5	48.0	21.5	48.0	0.340	MT	119,088	366.5	340.0	50.9	119,088
3EXA-2A	0.411	102.5	56.0	102.5	56.0	0.355	MT	119,088	308.5	355.0	52.2	119,088
===>Grouped by Line:	**ES2-1-3RDPT ES to FWH 23B**										***Sorted By: Flow Order***	
3EXB-14N	0.000	243.9	227.0	243.9	227.0	0.154	MT	226,201	6.1	154.0	8.4	226,201
===>Grouped by Line:	**ES2-3-3RDPT ES to FWH 23B**										***Sorted By: Flow Order***	

Component Name	Tinit	Total Lifetime Wear (mils) Prd. [1]	Total Lifetime Wear (mils) Meas.	In-Service Component Wear(mils) Prd. [1]	In-Service Component Wear(mils) Meas.	In-Service Component Tmeas, Method, Time (in) [3]	[2]	(hrs) [3]	In-Service Component Thickness (mils) [4] Tp	Tm	Incremental Wear (mils) [5] PRWEAR	Time (hrs) Last Inspected
===>Grouped by Line:	**ES2-3-3RDPT ES to FWH 23B**										***Sorted By: Flow Order***	
3EXB-10P DS1	0.000	50.4	74.0	50.4	74.0	0.205	MT	193,297	262.1	205.0	5.4	193,297
3EXB-10P DS	0.000	50.4	59.0	50.4	59.0	0.290	GW	193,297	262.1	290.0	5.4	193,297
3EXB-9P	0.333	68.3	93.0	68.3	93.0	0.232		165,113	264.7	232.0	13.5	165,113
3EXB-9	0.420	164.8	132.0	164.8	132.0	0.288	MT	226,201	255.2	288.0	5.7	226,201
3EXB-8	0.403	102.6	92.0	102.6	92.0	0.311	MT	119,088	300.4	311.0	52.3	119,088
3EXB-7P	0.322	46.7	41.0	46.7	41.0	0.281	MT	119,088	275.3	281.0	24.3	119,088
3EXB-6P US	0.349	81.1	33.0	81.1	33.0	0.316	MT	149,573	267.9	316.0	21.0	149,573
3EXB-6P DS	0.338	85.3	57.0	85.3	57.0	0.281	MT	165,113	252.7	281.0	16.8	165,113
3EXB-6	0.000	160.1	252.0	160.1	252.0	0.293	MT	209,806	152.4	293.0	11.2	209,806
3EXB-5P	0.355	44.8	94.0	44.8	94.0	0.245		136,608	310.2	245.0	14.6	136,608
3EXB-5	0.414	112.9	99.0	112.9	99.0	0.315	MT	119,088	301.1	315.0	57.6	119,088
===>Grouped by Line:	**ES2-4-3RDPT ES to FWH 23B**										***Sorted By: Flow Order***	
3EXB-4P US	0.262	55.2	48.0	55.2	48.0	0.214	MT	165,113	206.8	214.0	10.8	165,113
3EXB-1A	0.272	63.7	37.0	63.7	37.0	0.235	MT	226,201	208.3	235.0	2.2	226,201
3EXB-1	0.367	146.5	234.0	146.5	234.0	0.280	MT	226,201	220.5	280.0	5.1	226,201
===>Grouped by Line:	**ES2-5-3RDPT ES to FWH 23B**										***Sorted By: Flow Order***	
3EXB-10R	0.000	89.6	118.0	0.0	0.0	0.313	ER	209,806	312.5	312.5	0.0	0
3EXB-10R (D/S)	0.000	122.5	254.0	0.0	0.0	0.250	ER	209,806	250.0	250.0	0.0	0
3EXB-3P US	0.000	95.9	188.0	0.0	0.0	0.375	MT	165,113	240.4	375.0	20.7	0
3EXB-3	0.454	41.0	104.0	41.0	104.0	0.350	MT	149,573	413.0	350.0	30.6	149,573
3EXB-2P US	0.402	27.7	69.0	27.7	69.0	0.333	MT	149,573	374.3	333.0	20.7	149,573
3EXB-2A	0.378	67.1	37.0	67.1	37.0	0.341	MT	119,088	310.9	341.0	34.1	119,088
3EXB-2	0.477	130.2	173.0	130.2	173.0	0.247	MT	180,225	346.8	247.0	18.6	180,225
===>Grouped by Line:	**ES3-2-3RDPT ES to FWH 23C**										***Sorted By: Flow Order***	
3EXC-19	0.000	144.9	148.0	144.9	148.0	0.319	MT	209,806	105.1	319.0	10.0	209,806
===>Grouped by Line:	**ES3-3-3RDPT ES to FWH 23C**										***Sorted By: Flow Order***	
3EXC-14	0.000	202.8	77.0	202.8	77.0	0.313	ER	0	94.6	312.5	217.9	209,806
3EXC-14 (D/S)	0.000	285.0	64.0	285.0	64.0	0.337	MT	209,806	27.5	337.0	19.9	209,806
3EXC-12R (D/S)	0.000	93.3	58.0	0.0	0.0	0.313	ER	149,573	312.5	312.5	0.0	0
3EXC-12P	0.000	70.7	39.0	0.0	0.0	0.313	ER	149,573	312.5	312.5	0.0	0
3EXC-10	0.415	164.8	96.5	164.8	96.5	0.349	MT	226,201	250.2	349.0	5.7	226,201
3EXC-9P	0.364	39.1	53.0	39.1	53.0	0.311	MT	119,088	324.9	311.0	20.4	119,088
3EXC-9	0.418	121.5	101.0	121.5	101.0	0.317	MT	119,088	296.5	317.0	62.0	119,088
3EXC-8	0.000	178.0	178.0	178.0	178.0	0.256	MT	226,201	134.5	256.0	6.2	226,201

Component Name	Tinit	Total Lifetime Wear (mils) Prd. [1]	Total Lifetime Wear (mils) Meas.	In-Service Component Wear(mils) Prd. [1]	In-Service Component Wear(mils) Meas.	In-Service Component Tmeas, Method, Time (in) [3]	[2]	(hrs) [3]	In-Service Component Thickness (mils) [4] Tp	Tm	Incremental Wear (mils) [5] PRWEAR	Time (hrs) Last Inspected
===>Grouped by Line:	**ES3-3-3RDPT ES to FWH 23C**										***Sorted By: Flow Order***	
3EXC-7P	0.314	42.3	22.0	42.3	22.0	0.291	MT	209,806	147.1	291.0	11.6	209,806
3EXC-6P	0.349	76.9	47.0	76.9	47.0	0.302	MT	119,088	272.1	302.0	39.2	119,088
3EXC-6	0.443	112.8	119.0	112.8	119.0	0.324	MT	119,088	330.2	324.0	57.6	119,088
3EXC-5	0.000	160.1	121.5	160.1	121.5	0.279	MT	209,806	152.4	279.0	11.2	209,806
3EXC-4P	0.000	77.0	76.5	77.0	76.5	0.236	MT	119,088	235.5	236.0	39.3	119,088
===>Grouped by Line:	**ES3-4-3RDPT ES to FWH 23C**										***Sorted By: Flow Order***	
3EXC-4P-1 US	0.267	39.0	50.0	39.0	50.0	0.242	MT	165,113	211.8	242.0	10.8	106,128
3EXC-1	0.000	139.6	72.0	139.6	72.0	0.320	MT	192,277	110.4	320.0	15.3	192,277
===>Grouped by Line:	**ES3-5-3RDPT ES to FWH 23C**										***Sorted By: Flow Order***	
3EXC-11R	0.319	92.1	126.0	92.1	126.0	0.245	MT	191,927	226.9	245.0	10.9	191,927
3EXC-11R (D/S)	0.000	126.0	137.0	126.0	137.0	0.288	MT	191,927	124.0	288.0	13.9	191,927
3EXC-3P	0.000	113.6	242.0	17.7	48.0	0.374	MT	192,077	232.3	374.0	12.5	192,077
3EXC-2P	0.000	65.8	57.0	65.8	57.0	0.341	MT	209,806	184.2	341.0	10.3	209,806
3EXC-2A	0.000	37.3	49.0	37.3	49.0	0.326		136,608	337.7	326.0	37.3	136,608
3EXC-2	0.000	136.1	172.0	136.1	172.0	0.307	GW	181,477	113.9	307.0	18.8	181,477

Notes:
[1] Predictions are for the time of last inspection (last known meas. wear).
[2] GW = Tmeas is minimum thickness from Band, Blanket or Area Method of greatest wear.
MT = Tmeas is component minimum thickness.
PW = Tmeas is Tinit - predicted wear.
US = Tmeas is user specified.
[3] If no Tmeas has been determined from measured data, then Tmeas = Tinit and Time = current component installation time.
Tmeas is used to determine Predicted Thickness and Component Predicted Time to Tcrit.
[4] These two values are used for thickness plot.
Tp = Predicted thickness at Tmeas.
Tm = Last measured thickness (Tmeas).
[5] PRWEAR = Incremental wear from last Tmeas time to analysis ending period.

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).DB

Wear Rate Report

Pass 2 Analysis Include Measured Wear

Report Date/Time: 7/7/2010 9:54:36AM
AnalysisDate/Time: 6/11/2010 11:31:35AM

CHECWORKS SFA Version: 3.0 (build 105)
Duty Factor (Global) : 1.000

Run Name: 5TH POINT EXTRAC STM
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 0.831

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line: ES7-1-5THPT ES to FWH 25ABC									***Sorted By: Average Wear Rate***		
5EX-VALVE-5EX-1	22	15.839	9.593	387.9	58.034	92.2	28.000	6.954	0.000	324.64	HBD
5EX-VALVE-5EX-3	25	14.273	8.638	387.9	40.204	92.2	28.000	6.954	0.000	324.64	HBD
5EX-VALVE-5EX-4	25	14.273	8.638	387.9	40.204	92.2	28.000	6.954	0.000	324.64	HBD
5EX-18 (D/S)	12	0.098	0.095	387.9	40.204	92.2	28.000	6.954	0.000	324.64	HBD
5EX-18 (BR/SE)	12	0.067	0.065	387.9	40.953	92.2	20.000	6.954	0.000	324.64	HBD
5EX-8	14	0.014	0.014	387.9	40.204	92.2	28.000	6.954	0.000	324.64	HBD
5EX-8 (D/S)	14	0.011	0.011	387.9	25.799	92.2	28.000	6.954	0.000	324.64	HBD
5EX-15	2	0.007	0.007	387.9	40.204	92.2	28.000	6.954	0.000	324.64	HBD
5EX-14	4	0.007	0.007	387.9	40.204	92.2	28.000	6.954	0.000	324.64	HBD
5EX-13	2	0.007	0.007	387.9	40.204	92.2	28.000	6.954	0.000	324.64	HBD
5EX-12	4	0.007	0.007	387.9	40.204	92.2	28.000	6.954	0.000	324.64	HBD
5EX-13P US	54	0.007	0.007	387.9	40.204	92.2	28.000	6.954	0.000	324.64	HBD
5EX-13P	54	0.007	0.007	387.9	40.204	92.2	28.000	6.954	0.000	324.64	HBD
5EX-13P DS	54	0.007	0.007	387.9	40.204	92.2	28.000	6.954	0.000	324.64	HBD
5EX-8P US	54	0.007	0.007	387.9	40.204	92.2	28.000	6.954	0.000	324.64	HBD
5EX-8P DS	54	0.007	0.007	387.9	40.204	92.2	28.000	6.954	0.000	324.64	HBD
5EX-11P	54	0.007	0.007	387.9	40.579	92.2	28.000	6.954	0.000	324.64	HBD
5EX-16	4	0.007	0.006	387.9	40.204	92.2	28.000	6.954	0.000	324.64	HBD
5EX-11	4	0.007	0.006	387.9	40.204	92.2	28.000	6.954	0.000	324.64	HBD
5EX-17	3	0.006	0.006	387.9	41.506	92.2	28.000	6.954	0.000	324.64	HBD
5EX-16P DS	53	0.005	0.005	387.9	41.296	92.2	28.000	6.954	0.000	324.64	HBD
5EX-16P US	53	0.005	0.005	387.9	40.204	92.2	28.000	6.954	0.000	324.64	HBD
5EX-8 (BR/SE)	14	0.005	0.005	387.9	32.872	92.2	18.000	6.954	0.000	324.64	HBD
5EX-14P	52	0.004	0.004	387.9	40.204	92.2	28.000	6.954	0.000	324.64	HBD
5EX-15P US	54	0.004	0.004	387.9	83.908	92.2	28.000	6.954	0.000	324.64	HBD
5EX-15P DS	54	0.004	0.004	387.9	83.908	92.2	28.000	6.954	0.000	324.64	HBD
5EX-17P	58	0.003	0.003	387.9	40.204	92.2	28.000	6.954	0.000	324.64	HBD
5EX-17P-1	58	0.003	0.003	387.9	40.204	92.2	28.000	6.954	0.000	324.64	HBD

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***ES7-2-5THPT ESHDR to FWH 25C***								***Sorted By: Average Wear Rate***		
5EX-VALVE 5EX-5-2	22	12.802	7.670	387.9	34.887	92.2	18.000	6.954	0.000	324.64	HBD
5EX-10N	30	0.010	0.007	387.9	32.872	92.2	18.000	6.954	0.000	324.64	HBD
5EX-9	2	0.006	0.006	387.9	32.872	92.2	18.000	6.954	0.000	324.64	HBD
5EX-10	2	0.006	0.006	387.9	32.872	92.2	18.000	6.954	0.000	324.64	HBD
5EX-9-10	52	0.004	0.004	387.9	33.428	92.2	18.000	6.954	0.000	324.64	HBD
===>Grouped by Line:	***ES7-3-5THPT ESHDR 25CT to BT***								***Sorted By: Average Wear Rate***		
5EX-5	14	0.011	0.011	387.9	25.799	92.2	28.000	6.954	0.000	324.64	HBD
5EX-5 (D/S)	14	0.010	0.010	387.9	9.204	92.2	28.000	6.954	0.000	324.64	HBD
5EX-5 (BR/SE)	14	0.005	0.005	387.9	32.872	92.2	18.000	6.954	0.000	324.64	HBD
5EX-5P US	64	0.002	0.002	387.9	25.799	92.2	28.000	6.954	0.000	324.64	HBD
5EX-5P DS	64	0.002	0.002	387.9	25.799	92.2	28.000	6.954	0.000	324.64	HBD
===>Grouped by Line:	***ES7-4-5THPT ESHDR to FWH 25B***								***Sorted By: Average Wear Rate***		
5EX-VALVE 5EX-5-1	22	12.802	7.670	387.9	34.887	92.2	18.000	6.954	0.000	324.64	HBD
5EX-7N	30	0.011	0.007	387.9	32.872	92.2	18.000	6.954	0.000	324.64	HBD
5EX-6	2	0.006	0.006	387.9	32.872	92.2	18.000	6.954	0.000	324.64	HBD
5EX-7	2	0.006	0.006	387.9	32.872	92.2	18.000	6.954	0.000	324.64	HBD
5EX-6-7	52	0.004	0.004	387.9	33.428	92.2	18.000	6.954	0.000	324.64	HBD
5EX-6P1	64	0.003	0.003	387.9	33.738	92.2	18.000	6.954	0.000	324.64	HBD
===>Grouped by Line:	***ES7-5-5THPT ESHDR to FWH 25A***								***Sorted By: Average Wear Rate***		
5EX-VALVE 5EX-5	22	12.802	7.670	387.9	34.887	92.2	18.000	6.954	0.000	324.64	HBD
5EX-1N	30	0.010	0.007	387.9	32.872	92.2	18.000	6.954	0.000	324.64	HBD
5EX-1-2	54	0.007	0.006	387.9	33.428	92.2	18.000	6.954	0.000	324.64	HBD
5EX-3	2	0.006	0.006	387.9	34.550	92.2	18.000	6.954	0.000	324.64	HBD
5EX-2	4	0.006	0.006	387.9	32.872	92.2	18.000	6.954	0.000	324.64	HBD
5EX-1	2	0.006	0.006	387.9	32.872	92.2	18.000	6.954	0.000	324.64	HBD
5EX-4 (D/S)	7	0.006	0.006	387.9	32.872	92.2	18.000	6.954	0.000	324.64	HBD
5EX-3P US	57	0.005	0.005	387.9	34.633	92.2	18.000	6.954	0.000	324.64	HBD
5EX-2P	52	0.004	0.004	387.9	35.010	92.2	18.000	6.954	0.000	324.64	HBD
5EX-4	7	0.004	0.004	387.9	9.204	92.2	28.000	6.954	0.000	324.64	HBD
===>Grouped by Line:	***ES7A-1-SEP TKA VNT to FWH25***								***Sorted By: Average Wear Rate***		
MOPS1	31	16.509	11.202	387.9	40.953	92.2	20.000	6.954	0.000	324.64	HBD
MOPS5	2	0.007	0.007	387.9	40.953	92.2	20.000	6.954	0.000	324.64	HBD
MOPS7	4	0.007	0.007	387.9	40.953	92.2	20.000	6.954	0.000	324.64	HBD
MOPS8	54	0.007	0.007	387.9	40.953	92.2	20.000	6.954	0.000	324.64	HBD
MOPS6	4	0.007	0.007	387.9	40.953	92.2	20.000	6.954	0.000	324.64	HBD

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***ES7A-1-SEP TKA VNT to FWH25***								***Sorted By: Average Wear Rate***		
MOPS2	3	0.006	0.006	387.9	40.953	92.2	20.000	6.954	0.000	324.64	HBD
MOPS3	3	0.006	0.006	387.9	40.953	92.2	20.000	6.954	0.000	324.64	HBD
MOPS4	53	0.006	0.005	387.9	41.324	92.2	20.000	6.954	0.000	324.64	HBD
===>Grouped by Line:	***ES7A-2-SEP TKB VNT to FWH25***								***Sorted By: Average Wear Rate***		
MOPS9	31	17.026	11.553	387.9	43.429	92.2	20.000	6.954	0.000	324.64	HBD
MOPS10	61	0.008	0.008	387.9	41.324	92.2	20.000	6.954	0.000	324.64	HBD
MOPS12	54	0.007	0.007	387.9	40.953	92.2	20.000	6.954	0.000	324.64	HBD
MOPS16	54	0.007	0.007	387.9	40.953	92.2	20.000	6.954	0.000	324.64	HBD
MOPS11	4	0.007	0.007	387.9	40.953	92.2	20.000	6.954	0.000	324.64	HBD
MOPS13	2	0.007	0.007	387.9	40.953	92.2	20.000	6.954	0.000	324.64	HBD
MOPS15	4	0.007	0.007	387.9	40.953	92.2	20.000	6.954	0.000	324.64	HBD
MOPS17	1	0.006	0.006	387.9	40.953	92.2	20.000	6.954	0.000	324.64	HBD
MOPS14	52	0.005	0.005	387.9	41.324	92.2	20.000	6.954	0.000	324.64	HBD
MOPS18	51	0.003	0.003	387.9	69.242	92.2	20.000	6.954	0.000	324.64	HBD

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).DB

Wear Rate Report

Pass 2 Analysis Include Measured Wear

Report Date/Time: 7/7/2010 9:54:36AM
AnalysisDate/Time: 6/11/2010 11:31:35AM

CHECWORKS SFA Version: 3.0 (build 105)
Duty Factor (Global) : 1.000

Run Name: 5TH POINT EXTRAC STM
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 0.831

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***ES7-1-5THPT ES to FWH 25ABC***									***Sorted By: Flow Order***	
5EX-18 (D/S)	12	0.098	0.095	387.9	40.204	92.2	28.000	6.954	0.000	324.64	HBD
5EX-VALVE-5EX-1	22	15.839	9.593	387.9	58.034	92.2	28.000	6.954	0.000	324.64	HBD
5EX-17P	58	0.003	0.003	387.9	40.204	92.2	28.000	6.954	0.000	324.64	HBD
5EX-VALVE-5EX-3	25	14.273	8.638	387.9	40.204	92.2	28.000	6.954	0.000	324.64	HBD
5EX-17P-1	58	0.003	0.003	387.9	40.204	92.2	28.000	6.954	0.000	324.64	HBD
5EX-VALVE-5EX-4	25	14.273	8.638	387.9	40.204	92.2	28.000	6.954	0.000	324.64	HBD
5EX-17	3	0.006	0.006	387.9	41.506	92.2	28.000	6.954	0.000	324.64	HBD
5EX-16P US	53	0.005	0.005	387.9	40.204	92.2	28.000	6.954	0.000	324.64	HBD
5EX-16P DS	53	0.005	0.005	387.9	41.296	92.2	28.000	6.954	0.000	324.64	HBD
5EX-16	4	0.007	0.006	387.9	40.204	92.2	28.000	6.954	0.000	324.64	HBD
5EX-15P US	54	0.004	0.004	387.9	83.908	92.2	28.000	6.954	0.000	324.64	HBD
5EX-15P DS	54	0.004	0.004	387.9	83.908	92.2	28.000	6.954	0.000	324.64	HBD
5EX-15	2	0.007	0.007	387.9	40.204	92.2	28.000	6.954	0.000	324.64	HBD
5EX-14P	52	0.004	0.004	387.9	40.204	92.2	28.000	6.954	0.000	324.64	HBD
5EX-14	4	0.007	0.007	387.9	40.204	92.2	28.000	6.954	0.000	324.64	HBD
5EX-13P US	54	0.007	0.007	387.9	40.204	92.2	28.000	6.954	0.000	324.64	HBD
5EX-13P	54	0.007	0.007	387.9	40.204	92.2	28.000	6.954	0.000	324.64	HBD
5EX-13P DS	54	0.007	0.007	387.9	40.204	92.2	28.000	6.954	0.000	324.64	HBD
5EX-13	2	0.007	0.007	387.9	40.204	92.2	28.000	6.954	0.000	324.64	HBD
5EX-12	4	0.007	0.007	387.9	40.204	92.2	28.000	6.954	0.000	324.64	HBD
5EX-11P	54	0.007	0.007	387.9	40.579	92.2	28.000	6.954	0.000	324.64	HBD
5EX-11	4	0.007	0.006	387.9	40.204	92.2	28.000	6.954	0.000	324.64	HBD
5EX-8P US	54	0.007	0.007	387.9	40.204	92.2	28.000	6.954	0.000	324.64	HBD
5EX-8P DS	54	0.007	0.007	387.9	40.204	92.2	28.000	6.954	0.000	324.64	HBD
5EX-8	14	0.014	0.014	387.9	40.204	92.2	28.000	6.954	0.000	324.64	HBD
5EX-8 (BR/SE)	14	0.005	0.005	387.9	32.872	92.2	18.000	6.954	0.000	324.64	HBD
5EX-8 (D/S)	14	0.011	0.011	387.9	25.799	92.2	28.000	6.954	0.000	324.64	HBD
5EX-18 (BR/SE)	12	0.067	0.065	387.9	40.953	92.2	20.000	6.954	0.000	324.64	HBD

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***ES7-2-5THPT ESHDR to FWH 25C***								***Sorted By: Flow Order***		
5EX-VALVE 5EX-5-2	22	12.802	7.670	387.9	34.887	92.2	18.000	6.954	0.000	324.64	HBD
5EX-9	2	0.006	0.006	387.9	32.872	92.2	18.000	6.954	0.000	324.64	HBD
5EX-9-10	52	0.004	0.004	387.9	33.428	92.2	18.000	6.954	0.000	324.64	HBD
5EX-10	2	0.006	0.006	387.9	32.872	92.2	18.000	6.954	0.000	324.64	HBD
5EX-10N	30	0.010	0.007	387.9	32.872	92.2	18.000	6.954	0.000	324.64	HBD
===>Grouped by Line:	***ES7-3-5THPT ESHDR 25CT to BT***								***Sorted By: Flow Order***		
5EX-5P US	64	0.002	0.002	387.9	25.799	92.2	28.000	6.954	0.000	324.64	HBD
5EX-5P DS	64	0.002	0.002	387.9	25.799	92.2	28.000	6.954	0.000	324.64	HBD
5EX-5	14	0.011	0.011	387.9	25.799	92.2	28.000	6.954	0.000	324.64	HBD
5EX-5 (BR/SE)	14	0.005	0.005	387.9	32.872	92.2	18.000	6.954	0.000	324.64	HBD
5EX-5 (D/S)	14	0.010	0.010	387.9	9.204	92.2	28.000	6.954	0.000	324.64	HBD
===>Grouped by Line:	***ES7-4-5THPT ESHDR to FWH 25B***								***Sorted By: Flow Order***		
5EX-6P1	64	0.003	0.003	387.9	33.738	92.2	18.000	6.954	0.000	324.64	HBD
5EX-VALVE 5EX-5-1	22	12.802	7.670	387.9	34.887	92.2	18.000	6.954	0.000	324.64	HBD
5EX-6	2	0.006	0.006	387.9	32.872	92.2	18.000	6.954	0.000	324.64	HBD
5EX-6-7	52	0.004	0.004	387.9	33.428	92.2	18.000	6.954	0.000	324.64	HBD
5EX-7	2	0.006	0.006	387.9	32.872	92.2	18.000	6.954	0.000	324.64	HBD
5EX-7N	30	0.011	0.007	387.9	32.872	92.2	18.000	6.954	0.000	324.64	HBD
===>Grouped by Line:	***ES7-5-5THPT ESHDR to FWH 25A***								***Sorted By: Flow Order***		
5EX-4	7	0.004	0.004	387.9	9.204	92.2	28.000	6.954	0.000	324.64	HBD
5EX-4 (D/S)	7	0.006	0.006	387.9	32.872	92.2	18.000	6.954	0.000	324.64	HBD
5EX-3P US	57	0.005	0.005	387.9	34.633	92.2	18.000	6.954	0.000	324.64	HBD
5EX-3	2	0.006	0.006	387.9	34.550	92.2	18.000	6.954	0.000	324.64	HBD
5EX-2P	52	0.004	0.004	387.9	35.010	92.2	18.000	6.954	0.000	324.64	HBD
5EX-VALVE 5EX-5	22	12.802	7.670	387.9	34.887	92.2	18.000	6.954	0.000	324.64	HBD
5EX-2	4	0.006	0.006	387.9	32.872	92.2	18.000	6.954	0.000	324.64	HBD
5EX-1-2	54	0.007	0.006	387.9	33.428	92.2	18.000	6.954	0.000	324.64	HBD
5EX-1	2	0.006	0.006	387.9	32.872	92.2	18.000	6.954	0.000	324.64	HBD
5EX-1N	30	0.010	0.007	387.9	32.872	92.2	18.000	6.954	0.000	324.64	HBD
===>Grouped by Line:	***ES7A-1-SEP TKA VNT to FWH25***								***Sorted By: Flow Order***		
MOPS1	31	16.509	11.202	387.9	40.953	92.2	20.000	6.954	0.000	324.64	HBD
MOPS2	3	0.006	0.006	387.9	40.953	92.2	20.000	6.954	0.000	324.64	HBD
MOPS3	3	0.006	0.006	387.9	40.953	92.2	20.000	6.954	0.000	324.64	HBD
MOPS4	53	0.006	0.005	387.9	41.324	92.2	20.000	6.954	0.000	324.64	HBD
MOPS5	2	0.007	0.007	387.9	40.953	92.2	20.000	6.954	0.000	324.64	HBD
MOPS6	4	0.007	0.007	387.9	40.953	92.2	20.000	6.954	0.000	324.64	HBD

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***ES7A-1-SEP TKA VNT to FWH25***									***Sorted By: Flow Order***	
MOPS7	4	0.007	0.007	387.9	40.953	92.2	20.000	6.954	0.000	324.64	HBD
MOPS8	54	0.007	0.007	387.9	40.953	92.2	20.000	6.954	0.000	324.64	HBD
===>Grouped by Line:	***ES7A-2-SEP TKB VNT to FWH25***									***Sorted By: Flow Order***	
MOPS9	31	17.026	11.553	387.9	43.429	92.2	20.000	6.954	0.000	324.64	HBD
MOPS10	61	0.008	0.008	387.9	41.324	92.2	20.000	6.954	0.000	324.64	HBD
MOPS11	4	0.007	0.007	387.9	40.953	92.2	20.000	6.954	0.000	324.64	HBD
MOPS12	54	0.007	0.007	387.9	40.953	92.2	20.000	6.954	0.000	324.64	HBD
MOPS13	2	0.007	0.007	387.9	40.953	92.2	20.000	6.954	0.000	324.64	HBD
MOPS14	52	0.005	0.005	387.9	41.324	92.2	20.000	6.954	0.000	324.64	HBD
MOPS15	4	0.007	0.007	387.9	40.953	92.2	20.000	6.954	0.000	324.64	HBD
MOPS16	54	0.007	0.007	387.9	40.953	92.2	20.000	6.954	0.000	324.64	HBD
MOPS17	1	0.006	0.006	387.9	40.953	92.2	20.000	6.954	0.000	324.64	HBD
MOPS18	51	0.003	0.003	387.9	69.242	92.2	20.000	6.954	0.000	324.64	HBD

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).DB

Service Life Report

Pass 2 Analysis Include Measured Wear

Report Date/Time: 7/7/2010 9:54:36AM
AnalysisDate/Time:

Run Name: 5TH POINT EXTRAC STM
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 0.831

CHECWORKS SFA Version: 3.0 (build 105)
Duty Factor (Global) :1.000

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **ES7-1-5THPT ES to FWH 25ABC**					***Sorted By:Remaining Life***		
5EX-VALVE-5EX-1	0.000	-0.066	0.248	0.248	-189,641	No	243,721
5EX-VALVE-5EX-4	0.000	-0.022	0.248	0.248	-183,716	No	243,721
5EX-VALVE-5EX-3	0.000	-0.022	0.248	0.248	-183,716	No	243,721
5EX-18 (D/S)	0.000	0.374	0.232	0.232	13,094,638	No	107,113
5EX-18 (BR/SE)	0.000	0.374	0.166	0.166	27,935,028	No	107,113
5EX-8	0.000	0.375	0.269	0.269	68,494,088	No	94,148
5EX-8 (D/S)	0.000	0.375	0.269	0.269	83,390,600	No	94,148
5EX-14P	0.000	0.375	0.267	0.267	100,000,000	No	94,148
5EX-15P DS	0.000	0.375	0.267	0.267	100,000,000	No	94,148
5EX-15P US	0.000	0.375	0.267	0.267	100,000,000	No	94,148
5EX-16	0.000	0.375	0.269	0.269	100,000,000	No	94,148
5EX-16P DS	0.539	0.539	0.267	0.267	100,000,000	No	94,148
5EX-16P US	0.000	0.375	0.267	0.267	100,000,000	No	94,148
5EX-17	0.570	0.570	0.269	0.269	100,000,000	No	94,148
5EX-17P-1	0.000	0.375	0.267	0.267	100,000,000	No	94,148
5EX-17P	0.000	0.375	0.267	0.267	100,000,000	No	94,148
5EX-15	0.000	0.375	0.269	0.269	100,000,000	No	94,148
5EX-14	0.000	0.375	0.269	0.269	100,000,000	No	94,148
5EX-13P US	0.000	0.375	0.267	0.267	100,000,000	No	94,148
5EX-13P	0.000	0.375	0.267	0.267	100,000,000	No	94,148
5EX-13P DS	0.000	0.375	0.267	0.267	100,000,000	No	94,148
5EX-13	0.000	0.375	0.269	0.269	100,000,000	No	94,148
5EX-12	0.000	0.375	0.269	0.269	100,000,000	No	94,148
5EX-11P	0.000	0.375	0.267	0.267	100,000,000	No	94,148
5EX-11	0.000	0.375	0.269	0.269	100,000,000	No	94,148
5EX-8P US	0.000	0.375	0.267	0.267	100,000,000	No	94,148
5EX-8P DS	0.000	0.375	0.267	0.267	100,000,000	No	94,148
5EX-8 (BR/SE)	0.000	0.312	0.173	0.173	100,000,000	No	94,148
===>Grouped by Line: **ES7-2-5THPT ESHDR to FWH 25C**					***Sorted By:Remaining Life***		

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line:	**ES7-2-5THPT ESHDR to FWH 25C**				***Sorted By:Remaining Life***		
5EX-VALVE 5EX-5-2	0.000	-0.044	0.160	0.160	-163,436	No	243,721
5EX-9	0.000	0.312	0.149	0.149	100,000,000	No	107,113
5EX-9-10	0.000	0.375	0.172	0.172	100,000,000	No	107,113
5EX-10	0.000	0.312	0.149	0.149	100,000,000	No	107,113
5EX-10N	0.000	0.312	0.149	0.149	100,000,000	No	168,193
===>Grouped by Line:	**ES7-3-5THPT ESHDR 25CT to BT**				***Sorted By:Remaining Life***		
5EX-5	0.000	0.375	0.269	0.269	83,390,600	No	94,148
5EX-5 (D/S)	0.000	0.375	0.269	0.269	94,424,888	No	94,148
5EX-5P US	0.000	0.375	0.267	0.267	100,000,000	No	94,148
5EX-5P DS	0.000	0.375	0.267	0.267	100,000,000	No	94,148
5EX-5 (BR/SE)	0.000	0.312	0.173	0.173	100,000,000	No	94,148
===>Grouped by Line:	**ES7-4-5THPT ESHDR to FWH 25B**				***Sorted By:Remaining Life***		
5EX-VALVE 5EX-5-1	0.000	-0.044	0.160	0.160	-163,436	No	243,721
5EX-6P1	0.000	0.375	0.172	0.172	100,000,000	No	94,148
5EX-6	0.000	0.312	0.149	0.149	100,000,000	No	107,113
5EX-6-7	0.000	0.375	0.172	0.172	100,000,000	No	107,113
5EX-7	0.000	0.312	0.149	0.149	100,000,000	No	107,113
5EX-7N	0.000	0.312	0.149	0.149	100,000,000	No	243,721
===>Grouped by Line:	**ES7-5-5THPT ESHDR to FWH 25A**				***Sorted By:Remaining Life***		
5EX-VALVE 5EX-5	0.000	-0.044	0.160	0.160	-163,436	No	243,721
5EX-4	0.000	0.375	0.269	0.269	100,000,000	No	94,148
5EX-4 (D/S)	0.000	0.312	0.173	0.173	100,000,000	No	94,148
5EX-3P US	0.507	0.507	0.172	0.172	100,000,000	No	94,148
5EX-3	0.498	0.498	0.173	0.173	100,000,000	No	94,148
5EX-2P	0.513	0.513	0.172	0.172	100,000,000	No	94,148
5EX-2	0.000	0.312	0.149	0.149	100,000,000	No	107,113
5EX-1-2	0.000	0.375	0.172	0.172	100,000,000	No	107,113
5EX-1	0.000	0.312	0.149	0.149	100,000,000	No	107,113
5EX-1N	0.000	0.231	0.149	0.149	100,000,000	No	168,193
===>Grouped by Line:	**ES7A-1-SEP TKA VNT to FWH25**				***Sorted By:Remaining Life***		
MOPS1	0.000	0.538	0.166	0.166	291,221	No	178,777
MOPS6	0.000	0.375	0.192	0.192	100,000,000	No	107,113
MOPS7	0.000	0.375	0.192	0.192	100,000,000	No	107,113
MOPS8	0.000	0.375	0.191	0.191	100,000,000	No	107,113
MOPS2	0.000	0.375	0.192	0.192	100,000,000	No	107,113
MOPS3	0.000	0.375	0.192	0.192	100,000,000	No	107,113

Component Name	--------- Thickness (in) -------- Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line:	**ES7A-1-SEP TKA VNT to FWH25**				***Sorted By:Remaining Life***		
MOPS4	0.000	0.375	0.191	0.191	100,000,000	No	107,113
MOPS5	0.000	0.375	0.192	0.192	100,000,000	No	107,113
===>Grouped by Line:	**ES7A-2-SEP TKB VNT to FWH25**				***Sorted By:Remaining Life***		
MOPS9	0.633	0.441	0.166	0.166	208,517	No	178,777
MOPS10	0.000	0.375	0.191	0.191	100,000,000	No	107,113
MOPS11	0.000	0.375	0.192	0.192	100,000,000	No	107,113
MOPS12	0.000	0.375	0.191	0.191	100,000,000	No	107,113
MOPS13	0.000	0.375	0.192	0.192	100,000,000	No	107,113
MOPS14	0.000	0.375	0.191	0.191	100,000,000	No	107,113
MOPS15	0.000	0.375	0.192	0.192	100,000,000	No	107,113
MOPS16	0.000	0.375	0.191	0.191	100,000,000	No	107,113
MOPS17	0.000	0.375	0.192	0.192	100,000,000	No	107,113
MOPS18	0.000	0.375	0.191	0.191	100,000,000	No	107,113

Note:
[1] Predictions are based on last Tmeas to analysis ending period.

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).DB

Service Life Report

Pass 2 Analysis Include Measured Wear

Report Date/Time: 7/7/2010 9:54:36AM
AnalysisDate/Time:

Run Name: 5TH POINT EXTRAC STM
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 0.831

CHECWORKS SFA Version: 3.0 (build 105)
Duty Factor (Global) : 1.000

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **ES7-1-5THPT ES to FWH 25ABC**					***Sorted By:Flow Order***		
5EX-18 (D/S)	0.000	0.374	0.232	0.232	13,094,638	No	107,113
5EX-VALVE-5EX-1	0.000	-0.066	0.248	0.248	-189,641	No	243,721
5EX-17P	0.000	0.375	0.267	0.267	100,000,000	No	94,148
5EX-VALVE-5EX-3	0.000	-0.022	0.248	0.248	-183,716	No	243,721
5EX-17P-1	0.000	0.375	0.267	0.267	100,000,000	No	94,148
5EX-VALVE-5EX-4	0.000	-0.022	0.248	0.248	-183,716	No	243,721
5EX-17	0.570	0.570	0.269	0.269	100,000,000	No	94,148
5EX-16P US	0.000	0.375	0.267	0.267	100,000,000	No	94,148
5EX-16P DS	0.539	0.539	0.267	0.267	100,000,000	No	94,148
5EX-16	0.000	0.375	0.269	0.269	100,000,000	No	94,148
5EX-15P US	0.000	0.375	0.267	0.267	100,000,000	No	94,148
5EX-15P DS	0.000	0.375	0.267	0.267	100,000,000	No	94,148
5EX-15	0.000	0.375	0.269	0.269	100,000,000	No	94,148
5EX-14P	0.000	0.375	0.267	0.267	100,000,000	No	94,148
5EX-14	0.000	0.375	0.269	0.269	100,000,000	No	94,148
5EX-13P US	0.000	0.375	0.267	0.267	100,000,000	No	94,148
5EX-13P	0.000	0.375	0.267	0.267	100,000,000	No	94,148
5EX-13P DS	0.000	0.375	0.267	0.267	100,000,000	No	94,148
5EX-13	0.000	0.375	0.269	0.269	100,000,000	No	94,148
5EX-12	0.000	0.375	0.269	0.269	100,000,000	No	94,148
5EX-11P	0.000	0.375	0.267	0.267	100,000,000	No	94,148
5EX-11	0.000	0.375	0.269	0.269	100,000,000	No	94,148
5EX-8P US	0.000	0.375	0.267	0.267	100,000,000	No	94,148
5EX-8P DS	0.000	0.375	0.267	0.267	100,000,000	No	94,148
5EX-8	0.000	0.375	0.269	0.269	68,494,088	No	94,148
5EX-8 (BR/SE)	0.000	0.312	0.173	0.173	100,000,000	No	94,148
5EX-8 (D/S)	0.000	0.375	0.269	0.269	83,390,600	No	94,148
5EX-18 (BR/SE)	0.000	0.374	0.166	0.166	27,935,028	No	107,113
===>Grouped by Line: **ES7-2-5THPT ESHDR to FWH 25C**					***Sorted By:Flow Order***		

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line:	**ES7-2-5THPT ESHDR to FWH 25C**				***Sorted By:Flow Order***		
5EX-VALVE 5EX-5-2	0.000	-0.044	0.160	0.160	-163,436	No	243,721
5EX-9	0.000	0.312	0.149	0.149	100,000,000	No	107,113
5EX-9-10	0.000	0.375	0.172	0.172	100,000,000	No	107,113
5EX-10	0.000	0.312	0.149	0.149	100,000,000	No	107,113
5EX-10N	0.000	0.312	0.149	0.149	100,000,000	No	168,193
===>Grouped by Line:	**ES7-3-5THPT ESHDR 25CT to BT**				***Sorted By:Flow Order***		
5EX-5P US	0.000	0.375	0.267	0.267	100,000,000	No	94,148
5EX-5P DS	0.000	0.375	0.267	0.267	100,000,000	No	94,148
5EX-5	0.000	0.375	0.269	0.269	83,390,600	No	94,148
5EX-5 (BR/SE)	0.000	0.312	0.173	0.173	100,000,000	No	94,148
5EX-5 (D/S)	0.000	0.375	0.269	0.269	94,424,888	No	94,148
===>Grouped by Line:	**ES7-4-5THPT ESHDR to FWH 25B**				***Sorted By:Flow Order***		
5EX-6P1	0.000	0.375	0.172	0.172	100,000,000	No	94,148
5EX-VALVE 5EX-5-1	0.000	-0.044	0.160	0.160	-163,436	No	243,721
5EX-6	0.000	0.312	0.149	0.149	100,000,000	No	107,113
5EX-6-7	0.000	0.375	0.172	0.172	100,000,000	No	107,113
5EX-7	0.000	0.312	0.149	0.149	100,000,000	No	107,113
5EX-7N	0.000	0.312	0.149	0.149	100,000,000	No	243,721
===>Grouped by Line:	**ES7-5-5THPT ESHDR to FWH 25A**				***Sorted By:Flow Order***		
5EX-4	0.000	0.375	0.269	0.269	100,000,000	No	94,148
5EX-4 (D/S)	0.000	0.312	0.173	0.173	100,000,000	No	94,148
5EX-3P US	0.507	0.507	0.172	0.172	100,000,000	No	94,148
5EX-3	0.498	0.498	0.173	0.173	100,000,000	No	94,148
5EX-2P	0.513	0.513	0.172	0.172	100,000,000	No	94,148
5EX-VALVE 5EX-5	0.000	-0.044	0.160	0.160	-163,436	No	243,721
5EX-2	0.000	0.312	0.149	0.149	100,000,000	No	107,113
5EX-1-2	0.000	0.375	0.172	0.172	100,000,000	No	107,113
5EX-1	0.000	0.312	0.149	0.149	100,000,000	No	107,113
5EX-1N	0.000	0.231	0.149	0.149	100,000,000	No	168,193
===>Grouped by Line:	**ES7A-1-SEP TKA VNT to FWH25**				***Sorted By:Flow Order***		
MOPS1	0.000	0.538	0.166	0.166	291,221	No	178,777
MOPS2	0.000	0.375	0.192	0.192	100,000,000	No	107,113
MOPS3	0.000	0.375	0.192	0.192	100,000,000	No	107,113
MOPS4	0.000	0.375	0.191	0.191	100,000,000	No	107,113
MOPS5	0.000	0.375	0.192	0.192	100,000,000	No	107,113
MOPS6	0.000	0.375	0.192	0.192	100,000,000	No	107,113

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **ES7A-1-SEP TKA VNT to FWH25**					***Sorted By:Flow Order***		
MOPS7	0.000	0.375	0.192	0.192	100,000,000	No	107,113
MOPS8	0.000	0.375	0.191	0.191	100,000,000	No	107,113
===>Grouped by Line: **ES7A-2-SEP TKB VNT to FWH25**					***Sorted By:Flow Order***		
MOPS9	0.633	0.441	0.166	0.166	208,517	No	178,777
MOPS10	0.000	0.375	0.191	0.191	100,000,000	No	107,113
MOPS11	0.000	0.375	0.192	0.192	100,000,000	No	107,113
MOPS12	0.000	0.375	0.191	0.191	100,000,000	No	107,113
MOPS13	0.000	0.375	0.192	0.192	100,000,000	No	107,113
MOPS14	0.000	0.375	0.191	0.191	100,000,000	No	107,113
MOPS15	0.000	0.375	0.192	0.192	100,000,000	No	107,113
MOPS16	0.000	0.375	0.191	0.191	100,000,000	No	107,113
MOPS17	0.000	0.375	0.192	0.192	100,000,000	No	107,113
MOPS18	0.000	0.375	0.191	0.191	100,000,000	No	107,113

Note:
[1] Predictions are based on last Tmeas to analysis ending period.

3

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).DB

Wear Report

Pass 2 Analysis Include Measured Wear

Report Date/Time: 07-Jul-2010 9:54 am
AnalysisDate/Time: 07-Jul-2010 9:54 am

Run Name: 5TH POINT EXTRAC STM
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 0.831

CHECWORKS SFA Version: 3.0 (build 105)
Duty Factor (Global) : 1.000

Component Name	Tinit	Total Lifetime Wear (mils) Prd. [1]	Total Lifetime Wear (mils) Meas.	In-Service Component Wear(mils) Prd. [1]	In-Service Component Wear(mils) Meas.	In-Service Component Tmeas, Method, Time (in) [3]	[2]	(hrs) [3]	In-Service Component Thickness (mils) [4] Tp	Tm	Incremental Wear (mils) [5] PRWEAR	Time (hrs) Last Inspected
===>Grouped by Line:	**ES7-1-5THPT ES to FWH 25ABC**										***Sorted By: Flow Order***	
5EX-17P	0.000	33.8	74.0	0.0	0.0	0.375	ER	149,573	375.0	375.0	0.0	0
5EX-17	0.570	65.1	71.0	0.0	0.0	0.570	ER	149,573	570.0	570.0	0.1	0
5EX-16P DS	0.539	81.7	80.0	0.0	0.0	0.539	ER	149,573	539.0	539.0	0.1	0
5EX-16	0.000	99.0	99.0	0.0	0.0	0.375	ER	149,573	375.0	375.0	0.1	0
5EX-15P US	0.000	59.9	42.0	0.0	0.0	0.375	ER	149,573	375.0	375.0	0.0	0
5EX-15P DS	0.000	59.9	102.0	0.0	0.0	0.375	ER	149,573	375.0	375.0	0.0	0
5EX-15	0.000	106.5	110.0	0.0	0.0	0.375	ER	149,573	375.0	375.0	0.1	0
5EX-14	0.000	106.5	136.0	0.0	0.0	0.375	ER	149,573	375.0	375.0	0.1	0
5EX-13P US	0.000	230.8	46.0	0.0	0.0	0.375	ER	149,573	375.0	375.0	0.1	0
5EX-13P	0.000	230.8	62.0	0.0	0.0	0.375	ER	149,573	375.0	375.0	0.1	0
5EX-13P DS	0.000	230.8	64.0	0.0	0.0	0.375	ER	149,573	375.0	375.0	0.1	0
5EX-13	0.000	106.5	63.0	0.0	0.0	0.375	ER	149,573	375.0	375.0	0.1	0
5EX-12	0.000	106.5	84.0	0.0	0.0	0.375	ER	149,573	375.0	375.0	0.1	0
5EX-11P	0.000	103.6	96.0	0.0	0.0	0.375	ER	149,573	375.0	375.0	0.1	0
5EX-11	0.000	99.0	75.0	0.0	0.0	0.375	ER	149,573	375.0	375.0	0.1	0
5EX-8P DS	0.000	103.2	44.0	0.0	0.0	0.375	ER	149,573	375.0	375.0	0.1	0
===>Grouped by Line:	**ES7-5-5THPT ESHDR to FWH 25A**										***Sorted By: Flow Order***	
5EX-4	0.000	64.3	78.0	0.0	0.0	0.375	ER	149,573	375.0	375.0	0.0	0
5EX-4 (D/S)	0.000	86.4	92.0	0.0	0.0	0.312	ER	149,573	312.0	312.0	0.1	0
5EX-3P US	0.507	79.6	67.0	0.0	0.0	0.507	ER	149,573	507.0	507.0	0.1	0
5EX-3	0.498	79.8	105.0	0.0	0.0	0.498	ER	149,573	498.0	498.0	0.1	0
5EX-2P	0.513	53.9	61.0	0.0	0.0	0.513	ER	149,573	513.0	513.0	0.0	0
5EX-1-2	0.000	72.6	107.0	0.0	0.0	0.375	ER	136,608	375.0	375.0	0.1	0
5EX-1	0.000	69.0	75.5	0.0	0.0	0.312	ER	136,608	312.0	312.0	0.1	0

Notes:

[1] Predictions are for the time of last inspection (last known meas. wear).

[2] GW = Tmeas is minimum thickness from Band, Blanket or Area Method of greatest wear.
MT = Tmeas is component minimum thickness.
PW = Tmeas is Tinit - predicted wear.
US = Tmeas is user specified.

[3] If no Tmeas has been determined from measured data, then Tmeas = Tinit and Time = current component installation time.
Tmeas is used to determine Predicted Thickness and Component Predicted Time to Tcrit.

[4] These two values are used for thickness plot.
Tp = Predicted thickness at Tmeas.
Tm = Last measured thickness (Tmeas).

[5] PRWEAR = Incremental wear from last Tmeas time to analysis ending period.

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).DB

Wear Rate Report

Pass 2 Analysis Include Measured Wear

Report Date/Time: 7/7/2010 9:54:36AM
AnalysisDate/Time: 6/11/2010 11:32:08AM

CHECWORKS SFA Version: 3.0 (build 105)
Duty Factor (Global) : 1.000

Run Name: 6TH POINT EXTRAC STM
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 0.875

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***ES8-1-6THPT ES to HDR***								***Sorted By: Average Wear Rate***		
6EX-28N	31	21.028	11.593	444.8	50.558	92.0	12.750	6.665	0.000	260.62	HBD
6EX-27P	54	0.010	0.007	444.8	51.109	92.0	12.750	6.665	0.000	260.62	HBD
6EX-28	4	0.010	0.007	444.8	51.109	92.0	12.750	6.665	0.000	260.62	HBD
6EX-27	4	0.010	0.007	444.8	50.558	92.0	12.750	6.665	0.000	260.62	HBD
6EX-23	2	0.009	0.007	444.8	50.558	92.0	12.750	6.665	0.000	260.62	HBD
6EX-23P	54	0.008	0.006	444.8	69.447	92.0	12.750	6.665	0.000	260.62	HBD
6EX-22P	52	0.007	0.005	444.8	50.558	92.0	12.750	6.665	0.000	260.62	HBD
6EX-22R	18	0.006	0.005	444.8	49.777	92.0	12.750	6.665	0.000	260.62	HBD
6EX-22R (D/S)	18	0.004	0.003	444.8	23.633	92.0	18.000	6.665	0.000	260.62	HBD
6EX-22A	68	0.004	0.003	444.8	23.633	92.0	18.000	6.665	0.000	260.62	HBD
===>Grouped by Line:	***ES8-2-6THPT ES to HDR***								***Sorted By: Average Wear Rate***		
6EX-26-1N	31	21.157	11.664	444.8	51.109	92.0	12.750	6.665	0.000	260.62	HBD
6EX-26P	54	0.010	0.007	444.8	50.558	92.0	12.750	6.665	0.000	260.62	HBD
6EX-26-1	4	0.010	0.007	444.8	51.109	92.0	12.750	6.665	0.000	260.62	HBD
6EX-25	2	0.010	0.007	444.8	50.558	92.0	12.750	6.665	0.000	260.62	HBD
6EX-26-2	1	0.009	0.006	444.8	50.558	92.0	12.750	6.665	0.000	260.62	HBD
6EX-24	1	0.009	0.006	444.8	50.558	92.0	12.750	6.665	0.000	260.62	HBD
6EX-25P	51	0.006	0.004	444.8	50.558	92.0	12.750	6.665	0.000	260.62	HBD
6EX-24P	52	0.005	0.004	444.8	69.447	92.0	12.750	6.665	0.000	260.62	HBD
===>Grouped by Line:	***ES8-3-6THPT ESHDR to FWH 26***								***Sorted By: Average Wear Rate***		
6EX-VALVE-6EX-3	25	15.981	8.805	444.8	49.189	92.0	18.000	6.665	0.000	260.62	HBD
6EX-VALVE-6EX-4	25	15.981	8.805	444.8	49.189	92.0	18.000	6.665	0.000	260.62	HBD
6EX-VALVE-6EX-1	22	14.777	8.141	444.8	49.958	92.0	18.000	6.665	0.000	260.62	HBD
6EX-14	14	0.018	0.014	444.8	49.196	92.0	18.000	6.665	0.000	260.62	HBD
6EX-22 (D/S)	12	0.016	0.012	444.8	49.196	92.0	18.000	6.665	0.000	260.62	HBD
6EX-14 (D/S)	14	0.015	0.011	444.8	32.168	92.0	18.000	6.665	0.000	260.62	HBD
6EX-22	12	0.011	0.008	444.8	23.633	92.0	18.000	6.665	0.000	260.62	HBD

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***ES8-3-6THPT ESHDR to FWH 26***								***Sorted By: Average Wear Rate***		
6EX-22 (BR/SE)	12	0.011	0.008	444.8	49.777	92.0	12.750	6.665	0.000	260.62	HBD
6EX-21C	54	0.009	0.007	444.8	49.196	92.0	18.000	6.665	0.000	260.62	HBD
6EX-21	4	0.009	0.007	444.8	49.196	92.0	18.000	6.665	0.000	260.62	HBD
6EX-20	4	0.009	0.007	444.8	49.196	92.0	18.000	6.665	0.000	260.62	HBD
6EX-19	2	0.009	0.007	444.8	49.196	92.0	18.000	6.665	0.000	260.62	HBD
6EX-18	2	0.009	0.007	444.8	49.196	92.0	18.000	6.665	0.000	260.62	HBD
6EX-17	2	0.009	0.007	444.8	49.196	92.0	18.000	6.665	0.000	260.62	HBD
6EX-16	2	0.009	0.007	444.8	49.196	92.0	18.000	6.665	0.000	260.62	HBD
6EX-19P	54	0.006	0.005	444.8	77.952	92.0	18.000	6.665	0.000	260.62	HBD
6EX-18P	52	0.006	0.004	444.8	49.196	92.0	18.000	6.665	0.000	260.62	HBD
6EX-17P	52	0.006	0.004	444.8	49.196	92.0	18.000	6.665	0.000	260.62	HBD
6EX-46P	52	0.006	0.004	444.8	49.196	92.0	18.000	6.665	0.000	260.62	HBD
6EX-16P	52	0.006	0.004	444.8	49.827	92.0	18.000	6.665	0.000	260.62	HBD
6EX-14 (BR/SE)	14	0.006	0.004	444.8	32.641	92.0	12.750	6.665	0.000	260.62	HBD
6EX-20B	58	0.003	0.003	444.8	49.196	92.0	18.000	6.665	0.000	260.62	HBD
6EX-20A	58	0.003	0.003	444.8	49.196	92.0	18.000	6.665	0.000	260.62	HBD
6EX-21P	62	0.003	0.002	444.8	49.196	92.0	18.000	6.665	0.000	260.62	HBD
===>Grouped by Line:	***ES8-4-6THPT ESHDR to FWH 26C***								***Sorted By: Average Wear Rate***		
6EX-VALVE-6EX-5-2	22	12.416	6.790	444.8	33.594	92.0	12.750	6.665	0.000	260.62	HBD
6EX-11N	30	11.299	6.183	444.8	32.641	92.0	12.750	6.665	0.000	260.62	HBD
6EX-13P	54	0.008	0.006	444.8	33.594	92.0	12.750	6.665	0.000	260.62	HBD
6EX-15	2	0.008	0.006	444.8	33.166	92.0	12.750	6.665	0.000	260.62	HBD
6EX-13	4	0.008	0.006	444.8	33.166	92.0	12.750	6.665	0.000	260.62	HBD
6EX-12	2	0.008	0.006	444.8	33.166	92.0	12.750	6.665	0.000	260.62	HBD
6EX-11	4	0.008	0.006	444.8	33.166	92.0	12.750	6.665	0.000	260.62	HBD
6EX-13C	1	0.006	0.005	444.8	33.166	92.0	12.750	6.665	0.000	260.62	HBD
6EX-15P	52	0.005	0.004	444.8	33.166	92.0	12.750	6.665	0.000	260.62	HBD
6EX-12P	58	0.004	0.003	444.8	33.594	92.0	12.750	6.665	0.000	260.62	HBD
6EX-14P	64	0.002	0.002	444.8	49.250	92.0	12.750	6.665	0.000	260.62	HBD
6EX-14R (D/S)	17	0.002	0.002	444.8	48.775	92.0	12.750	6.665	0.000	260.62	HBD
6EX-14R	17	0.001	0.001	444.8	34.282	92.0	18.000	6.665	0.000	260.62	HBD
===>Grouped by Line:	***ES8-5-6THPT ESHDR 26CT to BT***								***Sorted By: Average Wear Rate***		
6EX-10	14	0.015	0.011	444.8	32.168	92.0	18.000	6.665	0.000	260.62	HBD
6EX-10 (D/S)	14	0.011	0.008	444.8	14.562	92.0	18.000	6.665	0.000	260.62	HBD
6EX-10 (BR/SE)	14	0.006	0.004	444.8	32.641	92.0	12.750	6.665	0.000	260.62	HBD
6EX-10P	64	0.003	0.002	444.8	32.168	92.0	18.000	6.665	0.000	260.62	HBD

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***ES8-6-6THPT ESHDR to FWH 26B***								***Sorted By: Average Wear Rate***		
6EX-VALVE-6EX-5-1	22	12.416	6.790	444.8	33.594	92.0	12.750	6.665	0.000	260.62	HBD
6EX-6N	30	7.511	6.429	444.8	35.070	92.0	12.750	6.665	0.000	260.62	HBD
6EX-6P	54	0.008	0.006	444.8	33.594	92.0	12.750	6.665	0.000	260.62	HBD
6EX-6	4	0.008	0.006	444.8	34.678	92.0	12.750	6.665	0.000	260.62	HBD
6EX-9	2	0.008	0.006	444.8	33.166	92.0	12.750	6.665	0.000	260.62	HBD
6EX-8	4	0.008	0.006	444.8	33.166	92.0	12.750	6.665	0.000	260.62	HBD
6EX-7	2	0.008	0.006	444.8	33.166	92.0	12.750	6.665	0.000	260.62	HBD
6EX-8B	1	0.006	0.005	444.8	33.166	92.0	12.750	6.665	0.000	260.62	HBD
6EX-8BP	52	0.005	0.004	444.8	33.166	92.0	12.750	6.665	0.000	260.62	HBD
6EX-7P	58	0.004	0.003	444.8	33.594	92.0	12.750	6.665	0.000	260.62	HBD
6EX-9P	64	0.002	0.002	444.8	49.250	92.0	12.750	6.665	0.000	260.62	HBD
6EX-10R (D/S)	17	0.002	0.002	444.8	48.775	92.0	12.750	6.665	0.000	260.62	HBD
6EX-10R	17	0.001	0.001	444.8	34.282	92.0	18.000	6.665	0.000	260.62	HBD
===>Grouped by Line:	***ES8-7-6THPT ESHDR to FWH 26A***								***Sorted By: Average Wear Rate***		
6EX-VALVE-6EX-5	22	12.416	6.790	444.8	33.594	92.0	12.750	6.665	0.000	260.62	HBD
6EX-1N	30	7.704	6.601	444.8	36.773	92.0	12.750	6.665	0.000	260.62	HBD
6EX-3P	54	0.008	0.006	444.8	33.166	92.0	12.750	6.665	0.000	260.62	HBD
6EX-1	4	0.008	0.006	444.8	34.678	92.0	12.750	6.665	0.000	260.62	HBD
6EX-5	4	0.008	0.006	444.8	33.166	92.0	12.750	6.665	0.000	260.62	HBD
6EX-4	4	0.008	0.006	444.8	33.166	92.0	12.750	6.665	0.000	260.62	HBD
6EX-3	2	0.008	0.006	444.8	33.166	92.0	12.750	6.665	0.000	260.62	HBD
6EX-2	2	0.008	0.006	444.8	33.166	92.0	12.750	6.665	0.000	260.62	HBD
6EX-5P	67	0.006	0.004	444.8	33.166	92.0	12.750	6.665	0.000	260.62	HBD
6EX-4P	54	0.006	0.004	444.8	49.250	92.0	12.750	6.665	0.000	260.62	HBD
6EX-1P	52	0.005	0.004	444.8	33.594	92.0	12.750	6.665	0.000	260.62	HBD
6EX-2P	58	0.004	0.003	444.8	33.594	92.0	12.750	6.665	0.000	260.62	HBD
6EX-5A (D/S)	17	0.003	0.002	444.8	32.641	92.0	12.750	6.665	0.000	260.62	HBD
6EX-5A	17	0.003	0.002	444.8	14.562	92.0	18.000	6.665	0.000	260.62	HBD
6EX-51	64	0.002	0.002	444.8	14.562	92.0	18.000	6.665	0.000	260.62	HBD

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).DB

Wear Rate Report

Pass 2 Analysis Include Measured Wear

Report Date/Time: 7/7/2010 9:54:36AM
AnalysisDate/Time: 6/11/2010 11:32:08AM

CHECWORKS SFA Version: 3.0 (build 105)
Duty Factor (Global) : 1.000

Run Name: 6TH POINT EXTRAC STM
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 0.875

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***ES8-1-6THPT ES to HDR***									***Sorted By: Flow Order***	
6EX-28N	31	21.028	11.593	444.8	50.558	92.0	12.750	6.665	0.000	260.62	HBD
6EX-28	4	0.010	0.007	444.8	51.109	92.0	12.750	6.665	0.000	260.62	HBD
6EX-27P	54	0.010	0.007	444.8	51.109	92.0	12.750	6.665	0.000	260.62	HBD
6EX-27	4	0.010	0.007	444.8	50.558	92.0	12.750	6.665	0.000	260.62	HBD
6EX-23P	54	0.008	0.006	444.8	69.447	92.0	12.750	6.665	0.000	260.62	HBD
6EX-23	2	0.009	0.007	444.8	50.558	92.0	12.750	6.665	0.000	260.62	HBD
6EX-22P	52	0.007	0.005	444.8	50.558	92.0	12.750	6.665	0.000	260.62	HBD
6EX-22R	18	0.006	0.005	444.8	49.777	92.0	12.750	6.665	0.000	260.62	HBD
6EX-22R (D/S)	18	0.004	0.003	444.8	23.633	92.0	18.000	6.665	0.000	260.62	HBD
6EX-22A	68	0.004	0.003	444.8	23.633	92.0	18.000	6.665	0.000	260.62	HBD
===>Grouped by Line:	***ES8-2-6THPT ES to HDR***									***Sorted By: Flow Order***	
6EX-26-1N	31	21.157	11.664	444.8	51.109	92.0	12.750	6.665	0.000	260.62	HBD
6EX-26-1	4	0.010	0.007	444.8	51.109	92.0	12.750	6.665	0.000	260.62	HBD
6EX-26P	54	0.010	0.007	444.8	50.558	92.0	12.750	6.665	0.000	260.62	HBD
6EX-26-2	1	0.009	0.006	444.8	50.558	92.0	12.750	6.665	0.000	260.62	HBD
6EX-25P	51	0.006	0.004	444.8	50.558	92.0	12.750	6.665	0.000	260.62	HBD
6EX-25	2	0.010	0.007	444.8	50.558	92.0	12.750	6.665	0.000	260.62	HBD
6EX-24P	52	0.005	0.004	444.8	69.447	92.0	12.750	6.665	0.000	260.62	HBD
6EX-24	1	0.009	0.006	444.8	50.558	92.0	12.750	6.665	0.000	260.62	HBD
===>Grouped by Line:	***ES8-3-6THPT ESHDR to FWH 26***									***Sorted By: Flow Order***	
6EX-22	12	0.011	0.008	444.8	23.633	92.0	18.000	6.665	0.000	260.62	HBD
6EX-22 (BR/SE)	12	0.011	0.008	444.8	49.777	92.0	12.750	6.665	0.000	260.62	HBD
6EX-22 (D/S)	12	0.016	0.012	444.8	49.196	92.0	18.000	6.665	0.000	260.62	HBD
6EX-21P	62	0.003	0.002	444.8	49.196	92.0	18.000	6.665	0.000	260.62	HBD
6EX-21	4	0.009	0.007	444.8	49.196	92.0	18.000	6.665	0.000	260.62	HBD
6EX-21C	54	0.009	0.007	444.8	49.196	92.0	18.000	6.665	0.000	260.62	HBD
6EX-VALVE-6EX-1	22	14.777	8.141	444.8	49.958	92.0	18.000	6.665	0.000	260.62	HBD

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***ES8-3-6THPT ESHDR to FWH 26***									***Sorted By: Flow Order***	
6EX-20B	58	0.003	0.003	444.8	49.196	92.0	18.000	6.665	0.000	260.62	HBD
6EX-VALVE-6EX-3	25	15.981	8.805	444.8	49.189	92.0	18.000	6.665	0.000	260.62	HBD
6EX-20A	58	0.003	0.003	444.8	49.196	92.0	18.000	6.665	0.000	260.62	HBD
6EX-VALVE-6EX-4	25	15.981	8.805	444.8	49.189	92.0	18.000	6.665	0.000	260.62	HBD
6EX-20	4	0.009	0.007	444.8	49.196	92.0	18.000	6.665	0.000	260.62	HBD
6EX-19P	54	0.006	0.005	444.8	77.952	92.0	18.000	6.665	0.000	260.62	HBD
6EX-19	2	0.009	0.007	444.8	49.196	92.0	18.000	6.665	0.000	260.62	HBD
6EX-18P	52	0.006	0.004	444.8	49.196	92.0	18.000	6.665	0.000	260.62	HBD
6EX-18	2	0.009	0.007	444.8	49.196	92.0	18.000	6.665	0.000	260.62	HBD
6EX-17P	52	0.006	0.004	444.8	49.196	92.0	18.000	6.665	0.000	260.62	HBD
6EX-17	2	0.009	0.007	444.8	49.196	92.0	18.000	6.665	0.000	260.62	HBD
6EX-16P	52	0.006	0.004	444.8	49.827	92.0	18.000	6.665	0.000	260.62	HBD
6EX-16	2	0.009	0.007	444.8	49.196	92.0	18.000	6.665	0.000	260.62	HBD
6EX-46P	52	0.006	0.004	444.8	49.196	92.0	18.000	6.665	0.000	260.62	HBD
6EX-14	14	0.018	0.014	444.8	49.196	92.0	18.000	6.665	0.000	260.62	HBD
6EX-14 (BR/SE)	14	0.006	0.004	444.8	32.641	92.0	12.750	6.665	0.000	260.62	HBD
6EX-14 (D/S)	14	0.015	0.011	444.8	32.168	92.0	18.000	6.665	0.000	260.62	HBD
===>Grouped by Line:	***ES8-4-6THPT ESHDR to FWH 26C***									***Sorted By: Flow Order***	
6EX-14R	17	0.001	0.001	444.8	34.282	92.0	18.000	6.665	0.000	260.62	HBD
6EX-14R (D/S)	17	0.002	0.002	444.8	48.775	92.0	12.750	6.665	0.000	260.62	HBD
6EX-14P	64	0.002	0.002	444.8	49.250	92.0	12.750	6.665	0.000	260.62	HBD
6EX-15	2	0.008	0.006	444.8	33.166	92.0	12.750	6.665	0.000	260.62	HBD
6EX-15P	52	0.005	0.004	444.8	33.166	92.0	12.750	6.665	0.000	260.62	HBD
6EX-13C	1	0.006	0.005	444.8	33.166	92.0	12.750	6.665	0.000	260.62	HBD
6EX-13	4	0.008	0.006	444.8	33.166	92.0	12.750	6.665	0.000	260.62	HBD
6EX-13P	54	0.008	0.006	444.8	33.594	92.0	12.750	6.665	0.000	260.62	HBD
6EX-VALVE-6EX-5-2	22	12.416	6.790	444.8	33.594	92.0	12.750	6.665	0.000	260.62	HBD
6EX-12P	58	0.004	0.003	444.8	33.594	92.0	12.750	6.665	0.000	260.62	HBD
6EX-12	2	0.008	0.006	444.8	33.166	92.0	12.750	6.665	0.000	260.62	HBD
6EX-11	4	0.008	0.006	444.8	33.166	92.0	12.750	6.665	0.000	260.62	HBD
6EX-11N	30	11.299	6.183	444.8	32.641	92.0	12.750	6.665	0.000	260.62	HBD
===>Grouped by Line:	***ES8-5-6THPT ESHDR 26CT to BT***									***Sorted By: Flow Order***	
6EX-10P	64	0.003	0.002	444.8	32.168	92.0	18.000	6.665	0.000	260.62	HBD
6EX-10	14	0.015	0.011	444.8	32.168	92.0	18.000	6.665	0.000	260.62	HBD
6EX-10 (BR/SE)	14	0.006	0.004	444.8	32.641	92.0	12.750	6.665	0.000	260.62	HBD
6EX-10 (D/S)	14	0.011	0.008	444.8	14.562	92.0	18.000	6.665	0.000	260.62	HBD

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***ES8-6-6THPT ESHDR to FWH 26B***									***Sorted By: Flow Order***	
6EX-10R	17	0.001	0.001	444.8	34.282	92.0	18.000	6.665	0.000	260.62	HBD
6EX-10R (D/S)	17	0.002	0.002	444.8	48.775	92.0	12.750	6.665	0.000	260.62	HBD
6EX-9P	64	0.002	0.002	444.8	49.250	92.0	12.750	6.665	0.000	260.62	HBD
6EX-9	2	0.008	0.006	444.8	33.166	92.0	12.750	6.665	0.000	260.62	HBD
6EX-8BP	52	0.005	0.004	444.8	33.166	92.0	12.750	6.665	0.000	260.62	HBD
6EX-8B	1	0.006	0.005	444.8	33.166	92.0	12.750	6.665	0.000	260.62	HBD
6EX-8	4	0.008	0.006	444.8	33.166	92.0	12.750	6.665	0.000	260.62	HBD
6EX-6P	54	0.008	0.006	444.8	33.594	92.0	12.750	6.665	0.000	260.62	HBD
6EX-VALVE-6EX-5-1	22	12.416	6.790	444.8	33.594	92.0	12.750	6.665	0.000	260.62	HBD
6EX-7P	58	0.004	0.003	444.8	33.594	92.0	12.750	6.665	0.000	260.62	HBD
6EX-7	2	0.008	0.006	444.8	33.166	92.0	12.750	6.665	0.000	260.62	HBD
6EX-6	4	0.008	0.006	444.8	34.678	92.0	12.750	6.665	0.000	260.62	HBD
6EX-6N	30	7.511	6.429	444.8	35.070	92.0	12.750	6.665	0.000	260.62	HBD
===>Grouped by Line:	***ES8-7-6THPT ESHDR to FWH 26A***									***Sorted By: Flow Order***	
6EX-51	64	0.002	0.002	444.8	14.562	92.0	18.000	6.665	0.000	260.62	HBD
6EX-5A	17	0.003	0.002	444.8	14.562	92.0	18.000	6.665	0.000	260.62	HBD
6EX-5A (D/S)	17	0.003	0.002	444.8	32.641	92.0	12.750	6.665	0.000	260.62	HBD
6EX-5P	67	0.006	0.004	444.8	33.166	92.0	12.750	6.665	0.000	260.62	HBD
6EX-5	4	0.008	0.006	444.8	33.166	92.0	12.750	6.665	0.000	260.62	HBD
6EX-4P	54	0.006	0.004	444.8	49.250	92.0	12.750	6.665	0.000	260.62	HBD
6EX-4	4	0.008	0.006	444.8	33.166	92.0	12.750	6.665	0.000	260.62	HBD
6EX-3P	54	0.008	0.006	444.8	33.166	92.0	12.750	6.665	0.000	260.62	HBD
6EX-3	2	0.008	0.006	444.8	33.166	92.0	12.750	6.665	0.000	260.62	HBD
6EX-1P	52	0.005	0.004	444.8	33.594	92.0	12.750	6.665	0.000	260.62	HBD
6EX-VALVE-6EX-5	22	12.416	6.790	444.8	33.594	92.0	12.750	6.665	0.000	260.62	HBD
6EX-2P	58	0.004	0.003	444.8	33.594	92.0	12.750	6.665	0.000	260.62	HBD
6EX-2	2	0.008	0.006	444.8	33.166	92.0	12.750	6.665	0.000	260.62	HBD
6EX-1	4	0.008	0.006	444.8	34.678	92.0	12.750	6.665	0.000	260.62	HBD
6EX-1N	30	7.704	6.601	444.8	36.773	92.0	12.750	6.665	0.000	260.62	HBD

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).DB

Service Life Report

Pass 2 Analysis Include Measured Wear

Report Date/Time: 7/7/2010 9:54:36AM
AnalysisDate/Time:

Run Name: 6TH POINT EXTRAC STM
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 0.875

CHECWORKS SFA Version: 3.0 (build 105)
Duty Factor (Global) :1.000

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **ES8-1-6THPT ES to HDR**					***Sorted By:Remaining Life***		
6EX-28N	0.000	0.231	0.189	0.189	31,924	No	243,721
6EX-28	0.000	0.515	0.189	0.189	100,000,000	No	150,169
6EX-23P	0.000	0.375	0.189	0.189	100,000,000	No	150,169
6EX-23	0.000	0.375	0.189	0.189	100,000,000	No	137,593
6EX-22P	0.000	0.375	0.189	0.189	100,000,000	No	150,169
6EX-22R	0.000	0.330	0.189	0.189	100,000,000	No	137,593
6EX-22R (D/S)	0.000	0.438	0.267	0.267	100,000,000	No	137,593
6EX-22A	0.000	0.438	0.267	0.267	100,000,000	No	150,169
6EX-27	0.000	0.375	0.189	0.189	100,000,000	No	150,169
6EX-27P	0.000	0.530	0.189	0.189	100,000,000	No	150,169
===>Grouped by Line: **ES8-2-6THPT ES to HDR**					***Sorted By:Remaining Life***		
6EX-26-1N	0.000	0.228	0.189	0.189	28,986	No	243,721
6EX-26-1	0.000	0.365	0.189	0.189	100,000,000	No	150,169
6EX-26P	0.000	0.375	0.189	0.189	100,000,000	No	150,169
6EX-26-2	0.000	0.375	0.189	0.189	100,000,000	No	150,169
6EX-25P	0.000	0.375	0.189	0.189	100,000,000	No	150,169
6EX-25	0.000	0.375	0.189	0.189	100,000,000	No	150,169
6EX-24P	0.000	0.375	0.189	0.189	100,000,000	No	150,169
6EX-24	0.000	0.375	0.189	0.189	100,000,000	No	150,169
===>Grouped by Line: **ES8-3-6THPT ESHDR to FWH 26**					***Sorted By:Remaining Life***		
6EX-VALVE-6EX-3	0.000	-0.007	0.286	0.286	-181,272	No	243,721
6EX-VALVE-6EX-4	0.000	-0.007	0.286	0.286	-181,272	No	243,721
6EX-VALVE-6EX-1	0.000	0.027	0.286	0.286	-176,184	No	243,721
6EX-22	0.000	0.438	0.267	0.267	100,000,000	No	137,593
6EX-22 (BR/SE)	0.000	0.330	0.189	0.189	100,000,000	No	137,593
6EX-21P	0.000	0.438	0.267	0.267	100,000,000	No	137,593
6EX-21	0.000	0.438	0.267	0.267	100,000,000	No	137,593
6EX-21C	0.000	0.438	0.267	0.267	100,000,000	No	137,593

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line:	**ES8-3-6THPT ESHDR to FWH 26**				***Sorted By:Remaining Life***		
6EX-20B	0.000	0.438	0.317	0.317	100,000,000	No	107,113
6EX-20A	0.000	0.438	0.317	0.317	100,000,000	No	107,113
6EX-20	0.000	0.438	0.267	0.267	100,000,000	No	137,593
6EX-19P	0.000	0.438	0.267	0.267	100,000,000	No	137,593
6EX-19	0.000	0.438	0.267	0.267	100,000,000	No	137,593
6EX-18P	0.000	0.438	0.267	0.267	100,000,000	No	137,593
6EX-18	0.000	0.438	0.267	0.267	100,000,000	No	137,593
6EX-17P	0.000	0.438	0.267	0.267	100,000,000	No	137,593
6EX-17	0.000	0.438	0.267	0.267	100,000,000	No	137,593
6EX-16P	0.000	0.438	0.267	0.267	100,000,000	No	137,593
6EX-16	0.000	0.438	0.267	0.267	100,000,000	No	137,593
6EX-46P	0.000	0.438	0.267	0.267	100,000,000	No	137,593
6EX-14 (BR/SE)	0.000	0.330	0.189	0.189	100,000,000	No	137,593
6EX-14	0.000	0.438	0.267	0.267	108,754,984	No	137,593
6EX-22 (D/S)	0.000	0.438	0.267	0.267	127,706,600	No	137,593
6EX-14 (D/S)	0.000	0.438	0.267	0.267	134,236,896	No	137,593
===>Grouped by Line:	**ES8-4-6THPT ESHDR to FWH 26C**				***Sorted By:Remaining Life***		
6EX-VALVE-6EX-5-2	0.000	0.030	0.202	0.202	-152,750	No	243,721
6EX-11N	0.000	1.921	0.189	0.189	2,453,582	Yes	243,721
6EX-14R	0.000	0.692	0.267	0.267	100,000,000	No	137,593
6EX-14R (D/S)	0.000	0.570	0.189	0.189	100,000,000	No	137,593
6EX-14P	0.000	0.375	0.189	0.189	100,000,000	No	137,593
6EX-15	0.000	0.375	0.189	0.189	100,000,000	No	137,593
6EX-15P	0.000	0.375	0.189	0.189	100,000,000	No	137,593
6EX-13C	0.000	0.375	0.189	0.189	100,000,000	No	137,593
6EX-13	0.000	0.375	0.189	0.189	100,000,000	No	137,593
6EX-13P	0.000	0.375	0.189	0.189	100,000,000	No	137,593
6EX-12P	0.000	0.375	0.189	0.189	100,000,000	No	137,593
6EX-12	0.000	0.375	0.189	0.189	100,000,000	No	137,593
6EX-11	0.000	0.375	0.189	0.189	100,000,000	No	137,593
===>Grouped by Line:	**ES8-5-6THPT ESHDR 26CT to BT**				***Sorted By:Remaining Life***		
6EX-10 (BR/SE)	0.000	0.330	0.189	0.189	100,000,000	No	137,593
6EX-10 (D/S)	0.000	0.438	0.267	0.267	100,000,000	No	137,593
6EX-10P	0.000	0.438	0.267	0.267	100,000,000	No	137,593
6EX-10	0.000	0.438	0.267	0.267	134,236,896	No	137,593
===>Grouped by Line:	**ES8-6-6THPT ESHDR to FWH 26B**				***Sorted By:Remaining Life***		
6EX-VALVE-6EX-5-1	0.000	0.030	0.202	0.202	-152,750	No	243,721

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line:	**ES8-6-6THPT ESHDR to FWH 26B**				***Sorted By:Remaining Life***		
6EX-6N	0.531	0.447	0.189	0.189	351,910	Yes	118,262
6EX-10R	0.000	0.683	0.267	0.267	100,000,000	No	137,593
6EX-10R (D/S)	0.000	0.568	0.189	0.189	100,000,000	No	137,593
6EX-9P	0.000	0.375	0.189	0.189	100,000,000	No	137,593
6EX-9	0.000	0.375	0.189	0.189	100,000,000	No	137,593
6EX-8BP	0.000	0.375	0.189	0.189	100,000,000	No	137,593
6EX-8B	0.000	0.375	0.189	0.189	100,000,000	No	137,593
6EX-8	0.000	0.375	0.189	0.189	100,000,000	No	137,593
6EX-6P	0.000	0.375	0.189	0.189	100,000,000	No	137,593
6EX-7P	0.000	0.375	0.189	0.189	100,000,000	No	137,593
6EX-7	0.000	0.375	0.189	0.189	100,000,000	No	137,593
6EX-6	0.000	0.506	0.189	0.189	100,000,000	No	137,593
===>Grouped by Line:	**ES8-7-6THPT ESHDR to FWH 26A**				***Sorted By:Remaining Life***		
6EX-VALVE-6EX-5	0.000	0.030	0.202	0.202	-152,750	No	243,721
6EX-1N	0.661	0.521	0.189	0.189	440,250	Yes	118,262
6EX-51	0.000	0.438	0.267	0.267	100,000,000	No	137,593
6EX-5A	0.000	0.438	0.267	0.267	100,000,000	No	137,593
6EX-5A (D/S)	0.000	0.330	0.189	0.189	100,000,000	No	137,593
6EX-5P	0.000	0.375	0.189	0.189	100,000,000	No	137,593
6EX-5	0.000	0.375	0.189	0.189	100,000,000	No	137,593
6EX-4P	0.000	0.375	0.189	0.189	100,000,000	No	137,593
6EX-4	0.000	0.375	0.189	0.189	100,000,000	No	137,593
6EX-3P	0.000	0.375	0.189	0.189	100,000,000	No	137,593
6EX-3	0.000	0.375	0.189	0.189	100,000,000	No	137,593
6EX-1P	0.000	0.375	0.189	0.189	100,000,000	No	137,593
6EX-2P	0.000	0.375	0.189	0.189	100,000,000	No	137,593
6EX-2	0.000	0.517	0.189	0.189	100,000,000	No	137,593
6EX-1	0.000	0.479	0.189	0.189	100,000,000	No	137,593

Note:
[1] Predictions are based on last Tmeas to analysis ending period.

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).DB

Service Life Report

Pass 2 Analysis Include Measured Wear

Report Date/Time: 7/7/2010 9:54:36AM
AnalysisDate/Time:

Run Name: 6TH POINT EXTRAC STM
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 0.875

CHECWORKS SFA Version: 3.0 (build 105)
Duty Factor (Global) : 1.000

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **ES8-1-6THPT ES to HDR**					***Sorted By:Flow Order***		
6EX-28N	0.000	0.231	0.189	0.189	31,924	No	243,721
6EX-28	0.000	0.515	0.189	0.189	100,000,000	No	150,169
6EX-27P	0.000	0.530	0.189	0.189	100,000,000	No	150,169
6EX-27	0.000	0.375	0.189	0.189	100,000,000	No	150,169
6EX-23P	0.000	0.375	0.189	0.189	100,000,000	No	150,169
6EX-23	0.000	0.375	0.189	0.189	100,000,000	No	137,593
6EX-22P	0.000	0.375	0.189	0.189	100,000,000	No	150,169
6EX-22R	0.000	0.330	0.189	0.189	100,000,000	No	137,593
6EX-22R (D/S)	0.000	0.438	0.267	0.267	100,000,000	No	137,593
6EX-22A	0.000	0.438	0.267	0.267	100,000,000	No	150,169
===>Grouped by Line: **ES8-2-6THPT ES to HDR**					***Sorted By:Flow Order***		
6EX-26-1N	0.000	0.228	0.189	0.189	28,986	No	243,721
6EX-26-1	0.000	0.365	0.189	0.189	100,000,000	No	150,169
6EX-26P	0.000	0.375	0.189	0.189	100,000,000	No	150,169
6EX-26-2	0.000	0.375	0.189	0.189	100,000,000	No	150,169
6EX-25P	0.000	0.375	0.189	0.189	100,000,000	No	150,169
6EX-25	0.000	0.375	0.189	0.189	100,000,000	No	150,169
6EX-24P	0.000	0.375	0.189	0.189	100,000,000	No	150,169
6EX-24	0.000	0.375	0.189	0.189	100,000,000	No	150,169
===>Grouped by Line: **ES8-3-6THPT ESHDR to FWH 26**					***Sorted By:Flow Order***		
6EX-22	0.000	0.438	0.267	0.267	100,000,000	No	137,593
6EX-22 (BR/SE)	0.000	0.330	0.189	0.189	100,000,000	No	137,593
6EX-22 (D/S)	0.000	0.438	0.267	0.267	127,706,600	No	137,593
6EX-21P	0.000	0.438	0.267	0.267	100,000,000	No	137,593
6EX-21	0.000	0.438	0.267	0.267	100,000,000	No	137,593
6EX-21C	0.000	0.438	0.267	0.267	100,000,000	No	137,593
6EX-VALVE-6EX-1	0.000	0.027	0.286	0.286	-176,184	No	243,721
6EX-20B	0.000	0.438	0.317	0.317	100,000,000	No	107,113

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line:	**ES8-3-6THPT ESHDR to FWH 26**				***Sorted By:Flow Order***		
6EX-VALVE-6EX-3	0.000	-0.007	0.286	0.286	-181,272	No	243,721
6EX-20A	0.000	0.438	0.317	0.317	100,000,000	No	107,113
6EX-VALVE-6EX-4	0.000	-0.007	0.286	0.286	-181,272	No	243,721
6EX-20	0.000	0.438	0.267	0.267	100,000,000	No	137,593
6EX-19P	0.000	0.438	0.267	0.267	100,000,000	No	137,593
6EX-19	0.000	0.438	0.267	0.267	100,000,000	No	137,593
6EX-18P	0.000	0.438	0.267	0.267	100,000,000	No	137,593
6EX-18	0.000	0.438	0.267	0.267	100,000,000	No	137,593
6EX-17P	0.000	0.438	0.267	0.267	100,000,000	No	137,593
6EX-17	0.000	0.438	0.267	0.267	100,000,000	No	137,593
6EX-16P	0.000	0.438	0.267	0.267	100,000,000	No	137,593
6EX-16	0.000	0.438	0.267	0.267	100,000,000	No	137,593
6EX-46P	0.000	0.438	0.267	0.267	100,000,000	No	137,593
6EX-14	0.000	0.438	0.267	0.267	108,754,984	No	137,593
6EX-14 (BR/SE)	0.000	0.330	0.189	0.189	100,000,000	No	137,593
6EX-14 (D/S)	0.000	0.438	0.267	0.267	134,236,896	No	137,593
===>Grouped by Line:	**ES8-4-6THPT ESHDR to FWH 26C**				***Sorted By:Flow Order***		
6EX-14R	0.000	0.692	0.267	0.267	100,000,000	No	137,593
6EX-14R (D/S)	0.000	0.570	0.189	0.189	100,000,000	No	137,593
6EX-14P	0.000	0.375	0.189	0.189	100,000,000	No	137,593
6EX-15	0.000	0.375	0.189	0.189	100,000,000	No	137,593
6EX-15P	0.000	0.375	0.189	0.189	100,000,000	No	137,593
6EX-13C	0.000	0.375	0.189	0.189	100,000,000	No	137,593
6EX-13	0.000	0.375	0.189	0.189	100,000,000	No	137,593
6EX-13P	0.000	0.375	0.189	0.189	100,000,000	No	137,593
6EX-VALVE-6EX-5-2	0.000	0.030	0.202	0.202	-152,750	No	243,721
6EX-12P	0.000	0.375	0.189	0.189	100,000,000	No	137,593
6EX-12	0.000	0.375	0.189	0.189	100,000,000	No	137,593
6EX-11	0.000	0.375	0.189	0.189	100,000,000	No	137,593
6EX-11N	0.000	1.921	0.189	0.189	2,453,582	Yes	243,721
===>Grouped by Line:	**ES8-5-6THPT ESHDR 26CT to BT**				***Sorted By:Flow Order***		
6EX-10P	0.000	0.438	0.267	0.267	100,000,000	No	137,593
6EX-10	0.000	0.438	0.267	0.267	134,236,896	No	137,593
6EX-10 (BR/SE)	0.000	0.330	0.189	0.189	100,000,000	No	137,593
6EX-10 (D/S)	0.000	0.438	0.267	0.267	100,000,000	No	137,593
===>Grouped by Line:	**ES8-6-6THPT ESHDR to FWH 26B**				***Sorted By:Flow Order***		
6EX-10R	0.000	0.683	0.267	0.267	100,000,000	No	137,593

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **ES8-6-6THPT ESHDR to FWH 26B**					***Sorted By:Flow Order***		
6EX-10R (D/S)	0.000	0.568	0.189	0.189	100,000,000	No	137,593
6EX-9P	0.000	0.375	0.189	0.189	100,000,000	No	137,593
6EX-9	0.000	0.375	0.189	0.189	100,000,000	No	137,593
6EX-8BP	0.000	0.375	0.189	0.189	100,000,000	No	137,593
6EX-8B	0.000	0.375	0.189	0.189	100,000,000	No	137,593
6EX-8	0.000	0.375	0.189	0.189	100,000,000	No	137,593
6EX-6P	0.000	0.375	0.189	0.189	100,000,000	No	137,593
6EX-VALVE-6EX-5-1	0.000	0.030	0.202	0.202	-152,750	No	243,721
6EX-7P	0.000	0.375	0.189	0.189	100,000,000	No	137,593
6EX-7	0.000	0.375	0.189	0.189	100,000,000	No	137,593
6EX-6	0.000	0.506	0.189	0.189	100,000,000	No	137,593
6EX-6N	0.531	0.447	0.189	0.189	351,910	Yes	118,262
===>Grouped by Line: **ES8-7-6THPT ESHDR to FWH 26A**					***Sorted By:Flow Order***		
6EX-51	0.000	0.438	0.267	0.267	100,000,000	No	137,593
6EX-5A	0.000	0.438	0.267	0.267	100,000,000	No	137,593
6EX-5A (D/S)	0.000	0.330	0.189	0.189	100,000,000	No	137,593
6EX-5P	0.000	0.375	0.189	0.189	100,000,000	No	137,593
6EX-5	0.000	0.375	0.189	0.189	100,000,000	No	137,593
6EX-4P	0.000	0.375	0.189	0.189	100,000,000	No	137,593
6EX-4	0.000	0.375	0.189	0.189	100,000,000	No	137,593
6EX-3P	0.000	0.375	0.189	0.189	100,000,000	No	137,593
6EX-3	0.000	0.375	0.189	0.189	100,000,000	No	137,593
6EX-1P	0.000	0.375	0.189	0.189	100,000,000	No	137,593
6EX-VALVE-6EX-5	0.000	0.030	0.202	0.202	-152,750	No	243,721
6EX-2P	0.000	0.375	0.189	0.189	100,000,000	No	137,593
6EX-2	0.000	0.517	0.189	0.189	100,000,000	No	137,593
6EX-1	0.000	0.479	0.189	0.189	100,000,000	No	137,593
6EX-1N	0.661	0.521	0.189	0.189	440,250	Yes	118,262

Note:
[1] Predictions are based on last Tmeas to analysis ending period.

3

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).DB

Wear Report

Pass 2 Analysis Include Measured Wear

Report Date/Time: 07-Jul-2010 9:54 am
AnalysisDate/Time: 07-Jul-2010 9:54 am

Run Name: 6TH POINT EXTRAC STM
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 0.875

CHECWORKS SFA Version: 3.0 (build 105)
Duty Factor (Global) : 1.000

Component Name	Tinit	Total Lifetime Wear (mils) Prd. [1]	Total Lifetime Wear (mils) Meas.	In-Service Component Wear(mils) Prd. [1]	In-Service Component Wear(mils) Meas.	In-Service Component Tmeas, Method, Time (in) [3]	[2]	(hrs) [3]	In-Service Component Thickness (mils) [4] Tp	Tm	Incremental Wear (mils) [5] PRWEAR	Time (hrs) Last Inspected
===>Grouped by Line:	**ES8-3-6THPT ESHDR to FWH 26**										***Sorted By: Flow Order***	
6EX-20B	0.000	122.3	91.0	0.0	0.0	0.438	ER	136,608	438.0	438.0	0.0	0
6EX-20A	0.000	122.3	163.0	0.0	0.0	0.438	ER	136,608	438.0	438.0	0.0	0
===>Grouped by Line:	**ES8-4-6THPT ESHDR to FWH 26C**										***Sorted By: Flow Order***	
6EX-11N	0.000	246.0	246.0	246.0	246.0	1.989	MT	149,573	84.0	1,989.0	68.4	149,573
===>Grouped by Line:	**ES8-6-6THPT ESHDR to FWH 26B**										***Sorted By: Flow Order***	
6EX-6N	0.531	64.7	204.0	64.7	204.0	0.506	MT	165,113	488.3	506.0	58.7	193,769
===>Grouped by Line:	**ES8-7-6THPT ESHDR to FWH 26A**										***Sorted By: Flow Order***	
6EX-1N	0.661	43.7	42.0	43.7	42.0	0.581	MT	165,113	617.3	581.0	60.3	165,113

Notes:
[1] Predictions are for the time of last inspection (last known meas. wear).
[2] GW = Tmeas is minimum thickness from Band, Blanket or Area Method of greatest wear.
MT = Tmeas is component minimum thickness.
PW = Tmeas is Tinit - predicted wear.
US = Tmeas is user specified.
[3] If no Tmeas has been determined from measured data, then Tmeas = Tinit and Time = current component installation time.
Tmeas is used to determine Predicted Thickness and Component Predicted Time to Tcrit.
[4] These two values are used for thickness plot.
Tp = Predicted thickness at Tmeas.
Tm = Last measured thickness (Tmeas).
[5] PRWEAR = Incremental wear from last Tmeas time to analysis ending period.

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).DB

Wear Rate Report

Pass 2 Analysis Include Measured Wear

Report Date/Time: 7/7/2010 9:54:36AM
AnalysisDate/Time: 6/11/2010 11:32:36AM

CHECWORKS SFA Version: 3.0 (build 105)
Duty Factor (Global) : 1.000

Run Name: BLOWDOWN
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 1.020

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***SG51-1-CONT PEN to SGBFTK***								***Sorted By: Average Wear Rate***		
MS46-Valve-MS-71-A	20	18.078	5.478	511.5	15.718	0.0	1.315	6.336	4.850	354.75	ARD
MS46-VALVE-HCV-5046	24	6.002	1.818	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD
MS46-VALVE-PCV-1214	22	6.002	1.818	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD
MS46-VALVE-PCV-1214A	22	6.002	1.818	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD
MS46-VALVE-MS-131-A	22	6.002	1.818	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD
MS46-1	2	4.441	1.346	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD
MS46-2	2	4.441	1.346	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD
MS46-5	2	4.441	1.346	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD
MS46-6	1	3.961	1.200	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD
MS46-6-1	1	3.961	1.200	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD
MS46-4 (D/S)	16	3.721	1.127	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD
MS46-7 (D/S)	15	3.601	1.091	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD
MS46-7	15	3.601	1.091	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD
MS46-2R	18	3.361	1.018	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD
MS46-2P-3	52	3.232	0.979	511.5	4.145	0.0	2.375	6.336	4.850	354.75	ARD
MS46-1P US	52	3.181	0.964	511.5	4.083	0.0	2.375	6.336	4.850	354.75	ARD
MS46-1P DS	52	3.156	0.956	511.5	4.048	0.0	2.375	6.336	4.850	354.75	ARD
MS46-1P-1	52	3.001	0.909	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD
MS46-5P	52	3.001	0.909	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD
MS46-6P1	52	3.001	0.909	511.5	3.833	0.0	2.375	6.336	4.850	354.75	ARD
MS46-6P US	52	3.001	0.909	511.5	3.833	0.0	2.375	6.336	4.850	354.75	ARD
MS46-3FE	6	2.839	0.860	511.5	1.709	0.0	3.500	6.336	4.850	354.75	ARD
MS46-2P	58	2.641	0.800	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD
MS46-2P-1	58	2.641	0.800	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD
MS46-6-1P	58	2.641	0.800	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD
MS46-4P US	66	2.401	0.727	511.5	3.833	0.0	2.375	6.336	4.850	354.75	ARD
MS46-4P DS	66	2.401	0.727	511.5	3.833	0.0	2.375	6.336	4.850	354.75	ARD
MS46-3	3	1.987	0.602	511.5	1.709	0.0	3.500	6.336	4.850	354.75	ARD

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***SG51-1-CONT PEN to SGBFTK***								***Sorted By: Average Wear Rate***		
MS46-2R (D/S)	18	1.703	0.516	511.5	1.709	0.0	3.500	6.336	4.850	354.75	ARD
MS46-4	16	1.451	0.440	511.5	1.750	0.0	3.500	6.336	4.850	354.75	ARD
MS46-2P-2	68	1.419	0.430	511.5	1.709	0.0	3.500	6.336	4.850	354.75	ARD
MS46-3P	53	1.419	0.430	511.5	1.706	0.0	3.500	6.336	4.850	354.75	ARD
MS46-4P-1 US	56	0.568	0.172	511.5	1.709	0.0	3.500	6.336	4.850	354.75	ARD
MS46-4P-1 DS	56	0.568	0.172	511.5	1.709	0.0	3.500	6.336	4.850	354.75	ARD
MS46-7R (D/S)	7	0.006	0.002	511.5	15.718	0.0	1.315	6.336	4.850	354.75	ARD
MS46-7P2	67	0.004	0.001	511.5	15.718	0.0	1.315	6.336	4.850	354.75	ARD
MS46-7R	7	0.002	0.001	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD
===>Grouped by Line:	***SG52-1-CONT PEN to SGBFTK***								***Sorted By: Average Wear Rate***		
MS45-VALVE-MS-71-B	20	18.078	5.478	511.5	15.718	0.0	1.315	6.336	4.850	354.75	ARD
MS45-VALVE-HCV-5047	22	6.002	1.818	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD
MS45-VALVE-PCV-1215	22	6.002	1.818	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD
MS45-VALVE-PCV-1215A	22	6.002	1.818	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD
MS45-VALVE-MS-131-B	22	6.002	1.818	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD
MS45-3FE	6	4.847	1.469	511.5	3.040	0.0	3.500	6.336	4.850	354.75	ARD
MS45-1	2	4.441	1.346	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD
MS45-2	2	4.441	1.346	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD
MS45-6	2	4.441	1.346	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD
MS45-5 (D/S)	16	3.721	1.127	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD
MS45-7 (D/S)	15	3.601	1.091	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD
MS45-7	15	3.601	1.091	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD
MS45-2R	18	3.361	1.018	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD
MS45-1P-1	52	3.207	0.972	511.5	4.110	0.0	2.375	6.336	4.850	354.75	ARD
MS45-1P	52	3.001	0.909	511.5	3.833	0.0	2.375	6.336	4.850	354.75	ARD
MS45-2P	58	2.641	0.800	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD
MS45-2P-1	58	2.641	0.800	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD
MS45-6P	58	2.641	0.800	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD
MS45-5P	66	2.401	0.727	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD
MS45-3	3	1.987	0.602	511.5	1.709	0.0	3.500	6.336	4.850	354.75	ARD
MS45-4	1	1.873	0.568	511.5	1.709	0.0	3.500	6.336	4.850	354.75	ARD
MS45-2R (D/S)	18	1.703	0.516	511.5	1.709	0.0	3.500	6.336	4.850	354.75	ARD
MS45-2P-3	68	1.419	0.430	511.5	1.706	0.0	3.500	6.336	4.850	354.75	ARD
MS45-3P	53	1.419	0.430	511.5	1.706	0.0	3.500	6.336	4.850	354.75	ARD
MS45-5	16	1.419	0.430	511.5	1.709	0.0	3.500	6.336	4.850	354.75	ARD
MS45-4P	51	1.249	0.378	511.5	1.706	0.0	3.500	6.336	4.850	354.75	ARD

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***SG52-1-CONT PEN to SGBFTK***								***Sorted By: Average Wear Rate***		
MS45-3P-1	56	0.969	0.294	511.5	3.040	0.0	3.500	6.336	4.850	354.75	ARD
MS45-7R (D/S)	7	0.006	0.002	511.5	15.718	0.0	1.315	6.336	4.850	354.75	ARD
MS45-7P2	57	0.004	0.001	511.5	15.718	0.0	1.315	6.336	4.850	354.75	ARD
MS45-7R	7	0.002	0.001	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD
===>Grouped by Line:	***SG53-1-CONT PEN to SGBFTK***								***Sorted By: Average Wear Rate***		
MS47-VALVE-MS-71C	20	18.078	5.478	511.5	15.718	0.0	1.315	6.336	4.850	354.75	ARD
MS47-VALVE-HCV-5048	22	6.002	1.818	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD
MS47-VALVE-PCV-1216	22	6.002	1.818	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD
MS47-VALVE-PCV-1216A	22	6.002	1.818	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD
MS47-VALVE-MS-131C	22	6.002	1.818	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD
MS47-5	2	5.224	1.583	511.5	4.556	0.0	2.375	6.336	4.850	354.75	ARD
MS47-1	2	4.441	1.346	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD
MS47-10	2	4.441	1.346	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD
MS47-2	2	4.441	1.346	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD
MS47-7	2	4.441	1.346	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD
MS47-8	2	4.441	1.346	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD
MS47-6	1	3.961	1.200	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD
MS47-4 (D/S)	16	3.721	1.127	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD
MS47-9 (D/S)	15	3.601	1.091	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD
MS47-9	15	3.601	1.091	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD
MS47-2R	18	3.361	1.018	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD
MS47-1P-1	52	3.132	0.949	511.5	4.006	0.0	2.375	6.336	4.850	354.75	ARD
MS47-8VP	52	3.107	0.941	511.5	3.972	0.0	2.375	6.336	4.850	354.75	ARD
MS47-1P	52	3.001	0.909	511.5	3.833	0.0	2.375	6.336	4.850	354.75	ARD
MS47-5P US	52	3.001	0.909	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD
MS47-7P1	52	3.001	0.909	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD
MS47-3FE	6	2.839	0.860	511.5	1.709	0.0	3.500	6.336	4.850	354.75	ARD
MS47-2P	58	2.641	0.800	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD
MS47-2P-1	58	2.641	0.800	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD
MS47-6P	51	2.641	0.800	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD
MS47-9P	62	2.401	0.727	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD
MS47-4P DS	66	2.401	0.727	511.5	3.833	0.0	2.375	6.336	4.850	354.75	ARD
MS47-3	3	1.987	0.602	511.5	1.709	0.0	3.500	6.336	4.850	354.75	ARD
MS47-2R (D/S)	18	1.703	0.516	511.5	1.709	0.0	3.500	6.336	4.850	354.75	ARD
MS47-2P-2	68	1.419	0.430	511.5	1.709	0.0	3.500	6.336	4.850	354.75	ARD
MS47-3P	53	1.419	0.430	511.5	1.706	0.0	3.500	6.336	4.850	354.75	ARD

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***SG53-1-CONT PEN to SGBFTK***								***Sorted By: Average Wear Rate***		
MS47-4	16	1.419	0.430	511.5	1.709	0.0	3.500	6.336	4.850	354.75	ARD
MS47-4P-1	56	0.568	0.172	511.5	1.709	0.0	3.500	6.336	4.850	354.75	ARD
MS47-10R (D/S)	17	0.006	0.002	511.5	15.718	0.0	1.315	6.336	4.850	354.75	ARD
MS47-10P2	67	0.004	0.001	511.5	15.718	0.0	1.315	6.336	4.850	354.75	ARD
MS47-10P1	52	0.003	0.001	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD
MS47-10R	17	0.003	0.001	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD
===>Grouped by Line:	***SG54-1-CONT PEN to SGBFTK***								***Sorted By: Average Wear Rate***		
MS48-VALVE-MS-71D	20	18.078	5.478	511.5	15.718	0.0	1.315	6.336	4.850	354.75	ARD
MS48-VALVE-HCV-5049	22	6.002	1.818	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD
MS48-VALVE-PCV-1217	22	6.002	1.818	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD
MS48-VALVE-PCV-1217A	22	6.002	1.818	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD
MS48-VALVE-MS-131D	22	6.002	1.818	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD
MS48-1	2	4.441	1.346	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD
MS48-10	2	4.441	1.346	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD
MS48-2	2	4.441	1.346	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD
MS48-5	2	4.441	1.346	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD
MS48-7	2	4.441	1.346	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD
MS48-8	2	4.441	1.346	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD
MS48-6	1	3.961	1.200	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD
MS48-4 (D/S)	16	3.721	1.127	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD
MS48-9 (D/S)	15	3.601	1.091	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD
MS48-9	15	3.601	1.091	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD
MS48-2R	18	3.361	1.018	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD
MS48-1P-1	52	3.001	0.909	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD
MS48-1P	52	3.001	0.909	511.5	3.833	0.0	2.375	6.336	4.850	354.75	ARD
MS48-10P1	52	3.001	0.909	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD
MS48-1P-2	52	3.001	0.909	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD
MS48-5P	52	3.001	0.909	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD
MS48-7P1	52	3.001	0.909	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD
MS48-8VP	52	3.001	0.909	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD
MS48-3FE	6	2.839	0.860	511.5	1.709	0.0	3.500	6.336	4.850	354.75	ARD
MS48-2P	58	2.641	0.800	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD
MS48-2P-1	58	2.641	0.800	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD
MS48-6P	51	2.641	0.800	511.5	3.833	0.0	2.375	6.336	4.850	354.75	ARD
MS48-9P	65	2.401	0.727	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD
MS48-4P	66	2.401	0.727	511.5	3.833	0.0	2.375	6.336	4.850	354.75	ARD

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***SG54-1-CONT PEN to SGBFTK***								***Sorted By: Average Wear Rate***		
MS48-3	2	2.101	0.636	511.5	1.709	0.0	3.500	6.336	4.850	354.75	ARD
MS48-2R (D/S)	18	1.703	0.516	511.5	1.709	0.0	3.500	6.336	4.850	354.75	ARD
MS48-2P-2	68	1.419	0.430	511.5	1.709	0.0	3.500	6.336	4.850	354.75	ARD
MS48-3P	52	1.419	0.430	511.5	1.706	0.0	3.500	6.336	4.850	354.75	ARD
MS48-4	16	1.419	0.430	511.5	1.709	0.0	3.500	6.336	4.850	354.75	ARD
MS48-4P-1	56	0.568	0.172	511.5	1.706	0.0	3.500	6.336	4.850	354.75	ARD
MS48-10R (D/S)	17	0.006	0.002	511.5	15.718	0.0	1.315	6.336	4.850	354.75	ARD
MS48-10P2	67	0.004	0.001	511.5	15.718	0.0	1.315	6.336	4.850	354.75	ARD
MS48-10R	17	0.003	0.001	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).DB

Wear Rate Report

Pass 2 Analysis Include Measured Wear

Report Date/Time: 7/7/2010 9:54:36AM
AnalysisDate/Time: 3/11/2010 11:32:36AM

CHECWORKS SFA Version: 3.0 (build 105)
Duty Factor (Global) : 1.000

Run Name: BLOWDOWN
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 1.020

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***SG51-1-CONT PEN to SGBFTK***									***Sorted By: Flow Order***	
MS46-1P-1	52	3.001	0.909	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD
MS46-1	2	4.441	1.346	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD
MS46-1P US	52	3.181	0.964	511.5	4.083	0.0	2.375	6.336	4.850	354.75	ARD
MS46-1P DS	52	3.156	0.956	511.5	4.048	0.0	2.375	6.336	4.850	354.75	ARD
MS46-2	2	4.441	1.346	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD
MS46-2P-3	52	3.232	0.979	511.5	4.145	0.0	2.375	6.336	4.850	354.75	ARD
MS46-VALVE-PCV-1214	22	6.002	1.818	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD
MS46-2P	58	2.641	0.800	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD
MS46-VALVE-PCV-1214A	22	6.002	1.818	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD
MS46-2P-1	58	2.641	0.800	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD
MS46-2R	18	3.361	1.018	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD
MS46-2R (D/S)	18	1.703	0.516	511.5	1.709	0.0	3.500	6.336	4.850	354.75	ARD
MS46-2P-2	68	1.419	0.430	511.5	1.709	0.0	3.500	6.336	4.850	354.75	ARD
MS46-3	3	1.987	0.602	511.5	1.709	0.0	3.500	6.336	4.850	354.75	ARD
MS46-3P	53	1.419	0.430	511.5	1.706	0.0	3.500	6.336	4.850	354.75	ARD
MS46-3FE	6	2.839	0.860	511.5	1.709	0.0	3.500	6.336	4.850	354.75	ARD
MS46-4P-1 US	56	0.568	0.172	511.5	1.709	0.0	3.500	6.336	4.850	354.75	ARD
MS46-4P-1 DS	56	0.568	0.172	511.5	1.709	0.0	3.500	6.336	4.850	354.75	ARD
MS46-4	16	1.451	0.440	511.5	1.750	0.0	3.500	6.336	4.850	354.75	ARD
MS46-4 (D/S)	16	3.721	1.127	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD
MS46-4P US	66	2.401	0.727	511.5	3.833	0.0	2.375	6.336	4.850	354.75	ARD
MS46-4P DS	66	2.401	0.727	511.5	3.833	0.0	2.375	6.336	4.850	354.75	ARD
MS46-5	2	4.441	1.346	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD
MS46-5P	52	3.001	0.909	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD
MS46-VALVE-MS-131-A	22	6.002	1.818	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD
MS46-6P1	52	3.001	0.909	511.5	3.833	0.0	2.375	6.336	4.850	354.75	ARD
MS46-6	1	3.961	1.200	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD
MS46-6P US	52	3.001	0.909	511.5	3.833	0.0	2.375	6.336	4.850	354.75	ARD

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***SG51-1-CONT PEN to SGBFTK***									***Sorted By: Flow Order***	
MS46-6-1	1	3.961	1.200	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD
MS46-6-1P	58	2.641	0.800	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD
MS46-7	15	3.601	1.091	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD
MS46-7 (D/S)	15	3.601	1.091	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD
MS46-VALVE-HCV-5046	24	6.002	1.818	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD
MS46-7R	7	0.002	0.001	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD
MS46-7R (D/S)	7	0.006	0.002	511.5	15.718	0.0	1.315	6.336	4.850	354.75	ARD
MS46-7P2	67	0.004	0.001	511.5	15.718	0.0	1.315	6.336	4.850	354.75	ARD
MS46-Valve-MS-71-A	20	18.078	5.478	511.5	15.718	0.0	1.315	6.336	4.850	354.75	ARD
===>Grouped by Line:	***SG52-1-CONT PEN to SGBFTK***									***Sorted By: Flow Order***	
MS45-1P-1	52	3.207	0.972	511.5	4.110	0.0	2.375	6.336	4.850	354.75	ARD
MS45-1	2	4.441	1.346	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD
MS45-1P	52	3.001	0.909	511.5	3.833	0.0	2.375	6.336	4.850	354.75	ARD
MS45-2	2	4.441	1.346	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD
MS45-VALVE-PCV-1215	22	6.002	1.818	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD
MS45-2P	58	2.641	0.800	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD
MS45-VALVE-PCV-1215A	22	6.002	1.818	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD
MS45-2P-1	58	2.641	0.800	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD
MS45-2R	18	3.361	1.018	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD
MS45-2R (D/S)	18	1.703	0.516	511.5	1.709	0.0	3.500	6.336	4.850	354.75	ARD
MS45-2P-3	68	1.419	0.430	511.5	1.706	0.0	3.500	6.336	4.850	354.75	ARD
MS45-3	3	1.987	0.602	511.5	1.709	0.0	3.500	6.336	4.850	354.75	ARD
MS45-3P	53	1.419	0.430	511.5	1.706	0.0	3.500	6.336	4.850	354.75	ARD
MS45-3FE	6	4.847	1.469	511.5	3.040	0.0	3.500	6.336	4.850	354.75	ARD
MS45-3P-1	56	0.969	0.294	511.5	3.040	0.0	3.500	6.336	4.850	354.75	ARD
MS45-4	1	1.873	0.568	511.5	1.709	0.0	3.500	6.336	4.850	354.75	ARD
MS45-4P	51	1.249	0.378	511.5	1.706	0.0	3.500	6.336	4.850	354.75	ARD
MS45-5	16	1.419	0.430	511.5	1.709	0.0	3.500	6.336	4.850	354.75	ARD
MS45-5 (D/S)	16	3.721	1.127	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD
MS45-VALVE-MS-131-B	22	6.002	1.818	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD
MS45-5P	66	2.401	0.727	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD
MS45-6	2	4.441	1.346	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD
MS45-6P	58	2.641	0.800	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD
MS45-7	15	3.601	1.091	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD
MS45-7 (D/S)	15	3.601	1.091	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD
MS45-VALVE-HCV-5047	22	6.002	1.818	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***SG52-1-CONT PEN to SGBFTK***									***Sorted By: Flow Order***	
MS45-7R	7	0.002	0.001	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD
MS45-7R (D/S)	7	0.006	0.002	511.5	15.718	0.0	1.315	6.336	4.850	354.75	ARD
MS45-7P2	57	0.004	0.001	511.5	15.718	0.0	1.315	6.336	4.850	354.75	ARD
MS45-VALVE-MS-71-B	20	18.078	5.478	511.5	15.718	0.0	1.315	6.336	4.850	354.75	ARD
===>Grouped by Line:	***SG53-1-CONT PEN to SGBFTK***									***Sorted By: Flow Order***	
MS47-1P-1	52	3.132	0.949	511.5	4.006	0.0	2.375	6.336	4.850	354.75	ARD
MS47-1	2	4.441	1.346	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD
MS47-1P	52	3.001	0.909	511.5	3.833	0.0	2.375	6.336	4.850	354.75	ARD
MS47-2	2	4.441	1.346	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD
MS47-VALVE-PCV-1216	22	6.002	1.818	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD
MS47-2P	58	2.641	0.800	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD
MS47-VALVE-PCV-1216A	22	6.002	1.818	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD
MS47-2P-1	58	2.641	0.800	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD
MS47-2R	18	3.361	1.018	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD
MS47-2R (D/S)	18	1.703	0.516	511.5	1.709	0.0	3.500	6.336	4.850	354.75	ARD
MS47-2P-2	68	1.419	0.430	511.5	1.709	0.0	3.500	6.336	4.850	354.75	ARD
MS47-3	3	1.987	0.602	511.5	1.709	0.0	3.500	6.336	4.850	354.75	ARD
MS47-3P	53	1.419	0.430	511.5	1.706	0.0	3.500	6.336	4.850	354.75	ARD
MS47-3FE	6	2.839	0.860	511.5	1.709	0.0	3.500	6.336	4.850	354.75	ARD
MS47-4P-1	56	0.568	0.172	511.5	1.709	0.0	3.500	6.336	4.850	354.75	ARD
MS47-4	16	1.419	0.430	511.5	1.709	0.0	3.500	6.336	4.850	354.75	ARD
MS47-4 (D/S)	16	3.721	1.127	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD
MS47-4P DS	66	2.401	0.727	511.5	3.833	0.0	2.375	6.336	4.850	354.75	ARD
MS47-5	2	5.224	1.583	511.5	4.556	0.0	2.375	6.336	4.850	354.75	ARD
MS47-5P US	52	3.001	0.909	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD
MS47-6	1	3.961	1.200	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD
MS47-6P	51	2.641	0.800	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD
MS47-VALVE-MS-131C	22	6.002	1.818	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD
MS47-7	2	4.441	1.346	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD
MS47-7P1	52	3.001	0.909	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD
MS47-8	2	4.441	1.346	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD
MS47-8VP	52	3.107	0.941	511.5	3.972	0.0	2.375	6.336	4.850	354.75	ARD
MS47-9	15	3.601	1.091	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD
MS47-9 (D/S)	15	3.601	1.091	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD
MS47-9P	62	2.401	0.727	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD
MS47-10	2	4.441	1.346	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***SG53-1-CONT PEN to SGBFTK***									***Sorted By: Flow Order***	
MS47-VALVE-HCV-5048	22	6.002	1.818	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD
MS47-10P1	52	0.003	0.001	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD
MS47-10R	17	0.003	0.001	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD
MS47-10R (D/S)	17	0.006	0.002	511.5	15.718	0.0	1.315	6.336	4.850	354.75	ARD
MS47-10P2	67	0.004	0.001	511.5	15.718	0.0	1.315	6.336	4.850	354.75	ARD
MS47-VALVE-MS-71C	20	18.078	5.478	511.5	15.718	0.0	1.315	6.336	4.850	354.75	ARD
===>Grouped by Line:	***SG54-1-CONT PEN to SGBFTK***									***Sorted By: Flow Order***	
MS48-1P-1	52	3.001	0.909	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD
MS48-1	2	4.441	1.346	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD
MS48-1P	52	3.001	0.909	511.5	3.833	0.0	2.375	6.336	4.850	354.75	ARD
MS48-2	2	4.441	1.346	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD
MS48-1P-2	52	3.001	0.909	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD
MS48-VALVE-PCV-1217	22	6.002	1.818	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD
MS48-2P	58	2.641	0.800	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD
MS48-VALVE-PCV-1217A	22	6.002	1.818	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD
MS48-2P-1	58	2.641	0.800	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD
MS48-2R	18	3.361	1.018	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD
MS48-2R (D/S)	18	1.703	0.516	511.5	1.709	0.0	3.500	6.336	4.850	354.75	ARD
MS48-2P-2	68	1.419	0.430	511.5	1.709	0.0	3.500	6.336	4.850	354.75	ARD
MS48-3	2	2.101	0.636	511.5	1.709	0.0	3.500	6.336	4.850	354.75	ARD
MS48-3P	52	1.419	0.430	511.5	1.706	0.0	3.500	6.336	4.850	354.75	ARD
MS48-3FE	6	2.839	0.860	511.5	1.709	0.0	3.500	6.336	4.850	354.75	ARD
MS48-4P-1	56	0.568	0.172	511.5	1.706	0.0	3.500	6.336	4.850	354.75	ARD
MS48-4	16	1.419	0.430	511.5	1.709	0.0	3.500	6.336	4.850	354.75	ARD
MS48-4 (D/S)	16	3.721	1.127	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD
MS48-4P	66	2.401	0.727	511.5	3.833	0.0	2.375	6.336	4.850	354.75	ARD
MS48-5	2	4.441	1.346	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD
MS48-5P	52	3.001	0.909	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD
MS48-6	1	3.961	1.200	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD
MS48-6P	51	2.641	0.800	511.5	3.833	0.0	2.375	6.336	4.850	354.75	ARD
MS48-VALVE-MS-131D	22	6.002	1.818	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD
MS48-7	2	4.441	1.346	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD
MS48-7P1	52	3.001	0.909	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD
MS48-8	2	4.441	1.346	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD
MS48-8VP	52	3.001	0.909	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD
MS48-9	15	3.601	1.091	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***SG54-1-CONT PEN to SGBFTK***									***Sorted By: Flow Order***	
MS48-9 (D/S)	15	3.601	1.091	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD
MS48-9P	65	2.401	0.727	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD
MS48-10	2	4.441	1.346	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD
MS48-10P1	52	3.001	0.909	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD
MS48-VALVE-HCV-5049	22	6.002	1.818	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD
MS48-10R	17	0.003	0.001	511.5	3.826	0.0	2.375	6.336	4.850	354.75	ARD
MS48-10R (D/S)	17	0.006	0.002	511.5	15.718	0.0	1.315	6.336	4.850	354.75	ARD
MS48-10P2	67	0.004	0.001	511.5	15.718	0.0	1.315	6.336	4.850	354.75	ARD
MS48-VALVE-MS-71D	20	18.078	5.478	511.5	15.718	0.0	1.315	6.336	4.850	354.75	ARD

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).DB

Service Life Report

Pass 2 Analysis Include Measured Wear

Report Date/Time: 7/7/2010 9:54:36AM
AnalysisDate/Time:

Run Name: BLOWDOWN
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 1.020

CHECWORKS SFA Version: 3.0 (build 105)
Duty Factor (Global) :1.000

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **SG51-1-CONT PEN to SGBFTK**					***Sorted By:Remaining Life***		
MS46-Valve-MS-71-A	0.000	-0.324	0.040	0.040	-196,586	No	243,721
MS46-VALVE-MS-131-A	0.000	0.051	0.089	0.089	-112,432	No	243,721
MS46-VALVE-HCV-5046	0.000	0.051	0.089	0.089	-112,432	No	243,721
MS46-VALVE-PCV-1214A	0.000	0.051	0.072	0.072	-95,109	No	243,721
MS46-VALVE-PCV-1214	0.000	0.051	0.072	0.072	-95,109	No	243,721
MS46-6-1	0.000	0.108	0.072	0.072	262,419	No	243,721
MS46-7 (D/S)	0.000	0.118	0.083	0.083	275,665	No	243,721
MS46-7	0.000	0.118	0.083	0.083	275,665	No	243,721
MS46-2R	0.000	0.124	0.083	0.083	352,810	No	243,721
MS46-1P-1	0.000	0.135	0.083	0.083	491,671	No	243,721
MS46-6P1	0.000	0.135	0.083	0.083	491,671	No	243,721
MS46-2P-1	0.000	0.145	0.083	0.083	668,403	No	243,721
MS46-2P	0.000	0.145	0.083	0.083	668,403	No	243,721
MS46-6-1P	0.000	0.145	0.083	0.083	668,403	No	243,721
MS46-1P DS	0.244	0.168	0.083	0.083	773,364	Yes	243,721
MS46-1P US	0.248	0.172	0.083	0.083	801,241	Yes	243,721
MS46-4P DS	0.000	0.151	0.083	0.083	815,680	No	243,721
MS46-1	0.000	0.236	0.083	0.083	995,781	No	243,721
MS46-3FE	0.000	0.221	0.123	0.123	998,163	No	243,721
MS46-2P-3	0.256	0.195	0.083	0.083	998,472	No	243,721
MS46-6P US	0.000	0.198	0.083	0.083	1,098,909	No	243,721
MS46-2	0.000	0.263	0.083	0.083	1,171,547	No	243,721
MS46-5P	0.000	0.211	0.083	0.083	1,224,158	No	243,721
MS46-4 (D/S)	0.000	0.253	0.083	0.083	1,316,110	Yes	243,721
MS46-4P US	0.000	0.200	0.083	0.083	1,408,848	No	243,721
MS46-5	0.000	0.311	0.083	0.083	1,483,969	Yes	243,721
MS46-3	0.000	0.243	0.123	0.123	1,748,174	Yes	243,721
MS46-6	0.000	0.346	0.072	0.072	2,004,490	No	243,721
MS46-2R (D/S)	0.000	0.253	0.123	0.123	2,199,849	No	243,721
MS46-3P	0.000	0.256	0.123	0.123	2,711,259	Yes	243,721

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **SG51-1-CONT PEN to SGBFTK**					***Sorted By:Remaining Life***		
MS46-4	0.317	0.263	0.123	0.123	2,790,481	Yes	243,721
MS46-2P-2	0.000	0.264	0.123	0.123	2,874,222	Yes	243,721
MS46-4P-1 DS	0.000	0.274	0.123	0.123	7,711,700	Yes	243,721
MS46-4P-1 US	0.000	0.285	0.123	0.123	8,249,728	No	243,721
MS46-7R	0.000	0.803	0.090	0.090	100,000,000	No	243,721
MS46-7R (D/S)	0.000	0.341	0.050	0.050	100,000,000	No	243,721
MS46-7P2	0.000	0.257	0.050	0.050	100,000,000	No	243,721
===>Grouped by Line: **SG52-1-CONT PEN to SGBFTK**					***Sorted By:Remaining Life***		
MS45-VALVE-MS-71-B	0.000	-0.324	0.040	0.040	-196,586	No	243,721
MS45-VALVE-MS-131-B	0.000	0.051	0.089	0.089	-112,432	No	243,721
MS45-VALVE-HCV-5047	0.000	0.051	0.089	0.089	-112,432	No	243,721
MS45-VALVE-PCV-1215	0.000	0.051	0.072	0.072	-95,109	No	243,721
MS45-VALVE-PCV-1215A	0.000	0.051	0.072	0.072	-95,109	No	243,721
MS45-2	0.000	0.094	0.083	0.083	71,335	No	243,721
MS45-5 (D/S)	0.000	0.114	0.083	0.083	240,826	No	243,721
MS45-3FE	0.000	0.165	0.123	0.123	251,227	No	243,721
MS45-7	0.000	0.118	0.083	0.083	275,665	No	243,721
MS45-7 (D/S)	0.000	0.118	0.083	0.083	275,665	No	243,721
MS45-6	0.000	0.181	0.083	0.083	633,860	No	243,721
MS45-2P	0.000	0.145	0.083	0.083	668,403	No	243,721
MS45-2P-1	0.000	0.145	0.083	0.083	668,403	No	243,721
MS45-6P	0.000	0.145	0.083	0.083	668,403	No	243,721
MS45-5P	0.000	0.151	0.083	0.083	815,680	No	243,721
MS45-1P-1	0.252	0.175	0.083	0.083	828,575	Yes	243,721
MS45-1P	0.000	0.178	0.083	0.083	906,267	Yes	243,721
MS45-1	0.000	0.236	0.083	0.083	995,781	No	243,721
MS45-2R	0.000	0.210	0.083	0.083	1,090,019	No	243,721
MS45-4	0.000	0.248	0.123	0.123	1,926,738	No	243,721
MS45-3	0.000	0.288	0.123	0.123	2,394,137	Yes	243,721
MS45-5	0.000	0.261	0.123	0.123	2,800,691	No	243,721
MS45-2R (D/S)	0.000	0.303	0.123	0.123	3,056,113	Yes	243,721
MS45-2P-3	0.000	0.282	0.123	0.123	3,229,180	Yes	243,721
MS45-4P	0.000	0.265	0.123	0.123	3,292,290	No	243,721
MS45-3P	0.000	0.321	0.123	0.123	4,023,621	Yes	243,721
MS45-3P-1	0.000	0.268	0.123	0.123	4,320,636	Yes	243,721
MS45-7R	0.000	0.807	0.090	0.090	100,000,000	No	243,721
MS45-7R (D/S)	0.000	0.342	0.050	0.050	100,000,000	No	243,721
MS45-7P2	0.000	0.241	0.050	0.050	100,000,000	No	243,721

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line:	**SG53-1-CONT PEN to SGBFTK**				***Sorted By:Remaining Life***		
MS47-VALVE-MS-71C	0.000	-0.324	0.040	0.040	-196,586	No	243,721
MS47-VALVE-MS-131C	0.000	0.051	0.089	0.089	-112,432	No	243,721
MS47-VALVE-HCV-5048	0.000	0.051	0.089	0.089	-112,432	No	243,721
MS47-VALVE-PCV-1216	0.000	0.051	0.072	0.072	-95,109	No	243,721
MS47-VALVE-PCV-1216A	0.000	0.051	0.072	0.072	-95,109	No	243,721
MS47-2	0.000	0.094	0.083	0.083	71,335	No	243,721
MS47-10	0.000	0.094	0.083	0.083	71,335	No	243,721
MS47-7	0.000	0.094	0.072	0.072	147,091	No	243,721
MS47-8	0.000	0.094	0.072	0.072	147,091	No	243,721
MS47-4 (D/S)	0.000	0.114	0.083	0.083	240,826	No	243,721
MS47-6	0.000	0.108	0.072	0.072	262,419	No	243,721
MS47-2R	0.000	0.124	0.083	0.083	352,810	No	243,721
MS47-9	0.000	0.118	0.072	0.072	369,098	No	243,721
MS47-9 (D/S)	0.000	0.118	0.072	0.072	369,098	No	243,721
MS47-7P1	0.000	0.135	0.083	0.083	491,671	No	243,721
MS47-2P	0.000	0.145	0.083	0.083	668,403	No	243,721
MS47-2P-1	0.000	0.145	0.083	0.083	668,403	No	243,721
MS47-6P	0.000	0.145	0.083	0.083	668,403	No	243,721
MS47-9P	0.000	0.151	0.083	0.083	815,680	No	243,721
MS47-8VP	0.236	0.174	0.083	0.083	842,316	Yes	243,721
MS47-1P	0.000	0.174	0.083	0.083	867,729	Yes	243,721
MS47-5	0.299	0.237	0.072	0.072	912,601	No	243,721
MS47-1P-1	0.240	0.188	0.083	0.083	966,505	No	243,721
MS47-4P DS	0.000	0.164	0.083	0.083	970,477	Yes	243,721
MS47-3FE	0.000	0.221	0.123	0.123	998,163	No	243,721
MS47-5P US	0.000	0.190	0.083	0.083	1,027,033	Yes	243,721
MS47-1	0.000	0.349	0.083	0.083	1,731,392	No	243,721
MS47-3	0.000	0.274	0.123	0.123	2,199,230	Yes	243,721
MS47-2R (D/S)	0.000	0.253	0.123	0.123	2,199,849	No	243,721
MS47-3P	0.000	0.261	0.123	0.123	2,800,691	No	243,721
MS47-4	0.000	0.261	0.123	0.123	2,800,691	No	243,721
MS47-2P-2	0.000	0.264	0.123	0.123	2,874,222	No	243,721
MS47-4P-1	0.000	0.290	0.123	0.123	8,504,356	Yes	243,721
MS47-10P1	0.000	0.218	0.088	0.088	100,000,000	No	243,721
MS47-10R	0.000	0.218	0.094	0.094	100,000,000	No	243,721
MS47-10R (D/S)	0.000	0.179	0.052	0.052	100,000,000	No	243,721
MS47-10P2	0.000	0.179	0.050	0.050	100,000,000	No	243,721
===>Grouped by Line:	**SG54-1-CONT PEN to SGBFTK**				***Sorted By:Remaining Life***		

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **SG54-1-CONT PEN to SGBFTK**					***Sorted By:Remaining Life***		
MS48-VALVE-MS-71D	0.000	-0.324	0.040	0.040	-196,586	No	243,721
MS48-VALVE-MS-131D	0.000	0.051	0.089	0.089	-112,432	No	243,721
MS48-VALVE-HCV-5049	0.000	0.051	0.089	0.089	-112,432	No	243,721
MS48-VALVE-PCV-1217	0.000	0.051	0.072	0.072	-95,109	No	243,721
MS48-VALVE-PCV-1217A	0.000	0.051	0.072	0.072	-95,109	No	243,721
MS48-2	0.000	0.094	0.083	0.083	71,335	No	243,721
MS48-5	0.000	0.094	0.083	0.083	71,335	No	243,721
MS48-7	0.000	0.094	0.083	0.083	71,335	No	243,721
MS48-8	0.000	0.094	0.083	0.083	71,335	No	243,721
MS48-10	0.000	0.094	0.083	0.083	71,335	No	243,721
MS48-6	0.000	0.108	0.083	0.083	177,481	No	243,721
MS48-4 (D/S)	0.000	0.114	0.083	0.083	240,826	No	243,721
MS48-9	0.000	0.118	0.083	0.083	275,665	No	243,721
MS48-9 (D/S)	0.000	0.118	0.083	0.083	275,665	No	243,721
MS48-2R	0.000	0.124	0.083	0.083	352,810	No	243,721
MS48-1P-1	0.000	0.135	0.083	0.083	491,671	No	243,721
MS48-1P-2	0.000	0.135	0.083	0.083	491,671	No	243,721
MS48-5P	0.000	0.135	0.083	0.083	491,671	No	243,721
MS48-7P1	0.000	0.135	0.083	0.083	491,671	No	243,721
MS48-10P1	0.000	0.135	0.083	0.083	491,671	No	243,721
MS48-2P	0.000	0.145	0.083	0.083	668,403	No	243,721
MS48-2P-1	0.000	0.145	0.083	0.083	668,403	No	243,721
MS48-6P	0.000	0.145	0.083	0.083	668,403	No	243,721
MS48-4P	0.000	0.151	0.083	0.083	815,680	No	243,721
MS48-9P	0.000	0.151	0.083	0.083	815,680	No	243,721
MS48-1P	0.000	0.174	0.083	0.083	867,729	Yes	243,721
MS48-3FE	0.000	0.221	0.123	0.123	998,163	No	243,721
MS48-8VP	0.000	0.190	0.083	0.083	1,025,292	Yes	243,721
MS48-1	0.000	0.298	0.083	0.083	1,399,391	No	243,721
MS48-3	0.000	0.234	0.123	0.123	1,527,187	Yes	243,721
MS48-2R (D/S)	0.000	0.253	0.123	0.123	2,199,849	No	243,721
MS48-2P-2	0.000	0.261	0.123	0.123	2,800,691	No	243,721
MS48-4	0.000	0.261	0.123	0.123	2,800,691	No	243,721
MS48-3P	0.000	0.276	0.123	0.123	3,118,665	Yes	243,721
MS48-4P-1	0.000	0.255	0.123	0.123	6,721,957	Yes	243,721
MS48-10R	0.000	0.218	0.094	0.094	100,000,000	No	243,721
MS48-10R (D/S)	0.000	0.179	0.052	0.052	100,000,000	No	243,721
MS48-10P2	0.000	0.179	0.050	0.050	100,000,000	No	243,721

Note:
[1] Predictions are based on last Tmeas to analysis ending period.

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).DB

Service Life Report

Pass 2 Analysis Include Measured Wear

Report Date/Time: 7/7/2010 9:54:36AM
AnalysisDate/Time:

Run Name: BLOWDOWN
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 1.020

CHECWORKS SFA Version: 3.0 (build 105)
Duty Factor (Global) : 1.000

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **SG51-1-CONT PEN to SGBFTK**					***Sorted By:Flow Order***		
MS46-1P-1	0.000	0.135	0.083	0.083	491,671	No	243,721
MS46-1	0.000	0.236	0.083	0.083	995,781	No	243,721
MS46-1P US	0.248	0.172	0.083	0.083	801,241	Yes	243,721
MS46-1P DS	0.244	0.168	0.083	0.083	773,364	Yes	243,721
MS46-2	0.000	0.263	0.083	0.083	1,171,547	No	243,721
MS46-2P-3	0.256	0.195	0.083	0.083	998,472	No	243,721
MS46-VALVE-PCV-1214	0.000	0.051	0.072	0.072	-95,109	No	243,721
MS46-2P	0.000	0.145	0.083	0.083	668,403	No	243,721
MS46-VALVE-PCV-1214A	0.000	0.051	0.072	0.072	-95,109	No	243,721
MS46-2P-1	0.000	0.145	0.083	0.083	668,403	No	243,721
MS46-2R	0.000	0.124	0.083	0.083	352,810	No	243,721
MS46-2R (D/S)	0.000	0.253	0.123	0.123	2,199,849	No	243,721
MS46-2P-2	0.000	0.264	0.123	0.123	2,874,222	Yes	243,721
MS46-3	0.000	0.243	0.123	0.123	1,748,174	Yes	243,721
MS46-3P	0.000	0.256	0.123	0.123	2,711,259	Yes	243,721
MS46-3FE	0.000	0.221	0.123	0.123	998,163	No	243,721
MS46-4P-1 US	0.000	0.285	0.123	0.123	8,249,728	No	243,721
MS46-4P-1 DS	0.000	0.274	0.123	0.123	7,711,700	Yes	243,721
MS46-4	0.317	0.263	0.123	0.123	2,790,481	Yes	243,721
MS46-4 (D/S)	0.000	0.253	0.083	0.083	1,316,110	Yes	243,721
MS46-4P US	0.000	0.200	0.083	0.083	1,408,848	No	243,721
MS46-4P DS	0.000	0.151	0.083	0.083	815,680	No	243,721
MS46-5	0.000	0.311	0.083	0.083	1,483,969	Yes	243,721
MS46-5P	0.000	0.211	0.083	0.083	1,224,158	No	243,721
MS46-VALVE-MS-131-A	0.000	0.051	0.089	0.089	-112,432	No	243,721
MS46-6P1	0.000	0.135	0.083	0.083	491,671	No	243,721
MS46-6	0.000	0.346	0.072	0.072	2,004,490	No	243,721
MS46-6P US	0.000	0.198	0.083	0.083	1,098,909	No	243,721
MS46-6-1	0.000	0.108	0.072	0.072	262,419	No	243,721
MS46-6-1P	0.000	0.145	0.083	0.083	668,403	No	243,721

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **SG51-1-CONT PEN to SGBFTK**					***Sorted By:Flow Order***		
MS46-7	0.000	0.118	0.083	0.083	275,665	No	243,721
MS46-7 (D/S)	0.000	0.118	0.083	0.083	275,665	No	243,721
MS46-VALVE-HCV-5046	0.000	0.051	0.089	0.089	-112,432	No	243,721
MS46-7R	0.000	0.803	0.090	0.090	100,000,000	No	243,721
MS46-7R (D/S)	0.000	0.341	0.050	0.050	100,000,000	No	243,721
MS46-7P2	0.000	0.257	0.050	0.050	100,000,000	No	243,721
MS46-Valve-MS-71-A	0.000	-0.324	0.040	0.040	-196,586	No	243,721
===>Grouped by Line: **SG52-1-CONT PEN to SGBFTK**					***Sorted By:Flow Order***		
MS45-1P-1	0.252	0.175	0.083	0.083	828,575	Yes	243,721
MS45-1	0.000	0.236	0.083	0.083	995,781	No	243,721
MS45-1P	0.000	0.178	0.083	0.083	906,267	Yes	243,721
MS45-2	0.000	0.094	0.083	0.083	71,335	No	243,721
MS45-VALVE-PCV-1215	0.000	0.051	0.072	0.072	-95,109	No	243,721
MS45-2P	0.000	0.145	0.083	0.083	668,403	No	243,721
MS45-VALVE-PCV-1215A	0.000	0.051	0.072	0.072	-95,109	No	243,721
MS45-2P-1	0.000	0.145	0.083	0.083	668,403	No	243,721
MS45-2R	0.000	0.210	0.083	0.083	1,090,019	No	243,721
MS45-2R (D/S)	0.000	0.303	0.123	0.123	3,056,113	Yes	243,721
MS45-2P-3	0.000	0.282	0.123	0.123	3,229,180	Yes	243,721
MS45-3	0.000	0.288	0.123	0.123	2,394,137	Yes	243,721
MS45-3P	0.000	0.321	0.123	0.123	4,023,621	Yes	243,721
MS45-3FE	0.000	0.165	0.123	0.123	251,227	No	243,721
MS45-3P-1	0.000	0.268	0.123	0.123	4,320,636	Yes	243,721
MS45-4	0.000	0.248	0.123	0.123	1,926,738	No	243,721
MS45-4P	0.000	0.265	0.123	0.123	3,292,290	No	243,721
MS45-5	0.000	0.261	0.123	0.123	2,800,691	No	243,721
MS45-5 (D/S)	0.000	0.114	0.083	0.083	240,826	No	243,721
MS45-VALVE-MS-131-B	0.000	0.051	0.089	0.089	-112,432	No	243,721
MS45-5P	0.000	0.151	0.083	0.083	815,680	No	243,721
MS45-6	0.000	0.181	0.083	0.083	633,860	No	243,721
MS45-6P	0.000	0.145	0.083	0.083	668,403	No	243,721
MS45-7	0.000	0.118	0.083	0.083	275,665	No	243,721
MS45-7 (D/S)	0.000	0.118	0.083	0.083	275,665	No	243,721
MS45-VALVE-HCV-5047	0.000	0.051	0.089	0.089	-112,432	No	243,721
MS45-7R	0.000	0.807	0.090	0.090	100,000,000	No	243,721
MS45-7R (D/S)	0.000	0.342	0.050	0.050	100,000,000	No	243,721
MS45-7P2	0.000	0.241	0.050	0.050	100,000,000	No	243,721
MS45-VALVE-MS-71-B	0.000	-0.324	0.040	0.040	-196,586	No	243,721

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line:	**SG53-1-CONT PEN to SGBFTK**				***Sorted By:Flow Order***		
MS47-1P-1	0.240	0.188	0.083	0.083	966,505	No	243,721
MS47-1	0.000	0.349	0.083	0.083	1,731,392	No	243,721
MS47-1P	0.000	0.174	0.083	0.083	867,729	Yes	243,721
MS47-2	0.000	0.094	0.083	0.083	71,335	No	243,721
MS47-VALVE-PCV-1216	0.000	0.051	0.072	0.072	-95,109	No	243,721
MS47-2P	0.000	0.145	0.083	0.083	668,403	No	243,721
MS47-VALVE-PCV-1216A	0.000	0.051	0.072	0.072	-95,109	No	243,721
MS47-2P-1	0.000	0.145	0.083	0.083	668,403	No	243,721
MS47-2R	0.000	0.124	0.083	0.083	352,810	No	243,721
MS47-2R (D/S)	0.000	0.253	0.123	0.123	2,199,849	No	243,721
MS47-2P-2	0.000	0.264	0.123	0.123	2,874,222	No	243,721
MS47-3	0.000	0.274	0.123	0.123	2,199,230	Yes	243,721
MS47-3P	0.000	0.261	0.123	0.123	2,800,691	No	243,721
MS47-3FE	0.000	0.221	0.123	0.123	998,163	No	243,721
MS47-4P-1	0.000	0.290	0.123	0.123	8,504,356	Yes	243,721
MS47-4	0.000	0.261	0.123	0.123	2,800,691	No	243,721
MS47-4 (D/S)	0.000	0.114	0.083	0.083	240,826	No	243,721
MS47-4P DS	0.000	0.164	0.083	0.083	970,477	Yes	243,721
MS47-5	0.299	0.237	0.072	0.072	912,601	No	243,721
MS47-5P US	0.000	0.190	0.083	0.083	1,027,033	Yes	243,721
MS47-6	0.000	0.108	0.072	0.072	262,419	No	243,721
MS47-6P	0.000	0.145	0.083	0.083	668,403	No	243,721
MS47-VALVE-MS-131C	0.000	0.051	0.089	0.089	-112,432	No	243,721
MS47-7	0.000	0.094	0.072	0.072	147,091	No	243,721
MS47-7P1	0.000	0.135	0.083	0.083	491,671	No	243,721
MS47-8	0.000	0.094	0.072	0.072	147,091	No	243,721
MS47-8VP	0.236	0.174	0.083	0.083	842,316	Yes	243,721
MS47-9	0.000	0.118	0.072	0.072	369,098	No	243,721
MS47-9 (D/S)	0.000	0.118	0.072	0.072	369,098	No	243,721
MS47-9P	0.000	0.151	0.083	0.083	815,680	No	243,721
MS47-10	0.000	0.094	0.083	0.083	71,335	No	243,721
MS47-VALVE-HCV-5048	0.000	0.051	0.089	0.089	-112,432	No	243,721
MS47-10P1	0.000	0.218	0.088	0.088	100,000,000	No	243,721
MS47-10R	0.000	0.218	0.094	0.094	100,000,000	No	243,721
MS47-10R (D/S)	0.000	0.179	0.052	0.052	100,000,000	No	243,721
MS47-10P2	0.000	0.179	0.050	0.050	100,000,000	No	243,721
MS47-VALVE-MS-71C	0.000	-0.324	0.040	0.040	-196,586	No	243,721
===>Grouped by Line:	**SG54-1-CONT PEN to SGBFTK**				***Sorted By:Flow Order***		

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **SG54-1-CONT PEN to SGBFTK**					***Sorted By:Flow Order***		
MS48-1P-1	0.000	0.135	0.083	0.083	491,671	No	243,721
MS48-1	0.000	0.298	0.083	0.083	1,399,391	No	243,721
MS48-1P	0.000	0.174	0.083	0.083	867,729	Yes	243,721
MS48-2	0.000	0.094	0.083	0.083	71,335	No	243,721
MS48-1P-2	0.000	0.135	0.083	0.083	491,671	No	243,721
MS48-VALVE-PCV-1217	0.000	0.051	0.072	0.072	-95,109	No	243,721
MS48-2P	0.000	0.145	0.083	0.083	668,403	No	243,721
MS48-VALVE-PCV-1217A	0.000	0.051	0.072	0.072	-95,109	No	243,721
MS48-2P-1	0.000	0.145	0.083	0.083	668,403	No	243,721
MS48-2R	0.000	0.124	0.083	0.083	352,810	No	243,721
MS48-2R (D/S)	0.000	0.253	0.123	0.123	2,199,849	No	243,721
MS48-2P-2	0.000	0.261	0.123	0.123	2,800,691	No	243,721
MS48-3	0.000	0.234	0.123	0.123	1,527,187	Yes	243,721
MS48-3P	0.000	0.276	0.123	0.123	3,118,665	Yes	243,721
MS48-3FE	0.000	0.221	0.123	0.123	998,163	No	243,721
MS48-4P-1	0.000	0.255	0.123	0.123	6,721,957	Yes	243,721
MS48-4	0.000	0.261	0.123	0.123	2,800,691	No	243,721
MS48-4 (D/S)	0.000	0.114	0.083	0.083	240,826	No	243,721
MS48-4P	0.000	0.151	0.083	0.083	815,680	No	243,721
MS48-5	0.000	0.094	0.083	0.083	71,335	No	243,721
MS48-5P	0.000	0.135	0.083	0.083	491,671	No	243,721
MS48-6	0.000	0.108	0.083	0.083	177,481	No	243,721
MS48-6P	0.000	0.145	0.083	0.083	668,403	No	243,721
MS48-VALVE-MS-131D	0.000	0.051	0.089	0.089	-112,432	No	243,721
MS48-7	0.000	0.094	0.083	0.083	71,335	No	243,721
MS48-7P1	0.000	0.135	0.083	0.083	491,671	No	243,721
MS48-8	0.000	0.094	0.083	0.083	71,335	No	243,721
MS48-8VP	0.000	0.190	0.083	0.083	1,025,292	Yes	243,721
MS48-9	0.000	0.118	0.083	0.083	275,665	No	243,721
MS48-9 (D/S)	0.000	0.118	0.083	0.083	275,665	No	243,721
MS48-9P	0.000	0.151	0.083	0.083	815,680	No	243,721
MS48-10	0.000	0.094	0.083	0.083	71,335	No	243,721
MS48-10P1	0.000	0.135	0.083	0.083	491,671	No	243,721
MS48-VALVE-HCV-5049	0.000	0.051	0.089	0.089	-112,432	No	243,721
MS48-10R	0.000	0.218	0.094	0.094	100,000,000	No	243,721
MS48-10R (D/S)	0.000	0.179	0.052	0.052	100,000,000	No	243,721
MS48-10P2	0.000	0.179	0.050	0.050	100,000,000	No	243,721
MS48-VALVE-MS-71D	0.000	-0.324	0.040	0.040	-196,586	No	243,721

Note:
[1] Predictions are based on last Tmeas to analysis ending period.

5

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).DB

Wear Report

Pass 2 Analysis Include Measured Wear

Report Date/Time: 07-Jul-2010 9:54 am
AnalysisDate/Time: 07-Jul-2010 9:54 am

Run Name: BLOWDOWN
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 1.020

CHECWORKS SFA Version: 3.0 (build 105)
Duty Factor (Global) : 1.000

Component Name	Tinit	Total Lifetime Wear (mils) Prd. [1]	Meas.	In-Service Component Wear(mils) Prd. [1]	Meas.	In-Service Component Tmeas, Method, Time (in) [3]	[2]	(hrs) [3]	In-Service Component Thickness (mils) [4] Tp	Tm	Incremental Wear (mils) [5] PRWEAR	Time (hrs) Last Inspected
===>Grouped by Line:	**SG51-1-CONT PEN to SGBFTK**										***Sorted By: Flow Order***	
MS46-1P US	0.248	55.2	43.0	55.2	43.0	0.205	MT	106,128	192.8	205.0	33.3	106,128
MS46-1P DS	0.244	54.7	43.0	54.7	43.0	0.201	MT	106,128	189.3	201.0	33.1	106,128
MS46-2P-2	0.000	24.6	39.0	24.6	39.0	0.279	MT	106,128	275.4	279.0	14.9	106,128
MS46-3	0.000	34.5	49.0	34.5	49.0	0.264	MT	106,128	265.5	264.0	20.8	106,128
MS46-3P	0.000	24.6	37.0	24.6	37.0	0.271	MT	106,128	275.4	271.0	14.9	106,128
MS46-4P-1 DS	0.000	14.2	37.0	14.2	37.0	0.276	MT	165,113	285.8	276.0	1.5	165,113
MS46-4	0.317	36.4	50.0	36.4	50.0	0.267	MT	165,113	280.6	267.0	4.0	165,113
MS46-4 (D/S)	0.000	93.4	109.0	93.4	109.0	0.263	MT	165,113	124.6	263.0	10.1	165,113
MS46-5	0.000	114.0	114.0	114.0	114.0	0.321	GW	181,477	104.0	321.0	9.6	181,477
===>Grouped by Line:	**SG52-1-CONT PEN to SGBFTK**										***Sorted By: Flow Order***	
MS45-1P-1	0.252	55.6	43.0	55.6	43.0	0.209	MT	106,128	196.4	209.0	33.6	106,128
MS45-1P	0.000	52.0	39.0	52.0	39.0	0.209	MT	106,128	166.0	209.0	31.5	106,128
MS45-2R (D/S)	0.000	44.4	53.0	44.4	53.0	0.306	GW	193,769	255.6	306.0	2.9	193,769
MS45-2P-3	0.000	37.0	50.0	37.0	50.0	0.284	GW	193,769	263.0	284.0	2.5	193,769
MS45-3	0.000	51.8	42.0	51.8	42.0	0.291	GW	193,769	248.2	291.0	3.4	193,769
MS45-3P	0.000	37.0	35.0	37.0	35.0	0.323	GW	193,769	263.0	323.0	2.5	193,769
MS45-3P-1	0.000	19.9	35.0	19.9	35.0	0.275	MT	125,459	280.1	275.0	7.1	125,459
===>Grouped by Line:	**SG53-1-CONT PEN to SGBFTK**										***Sorted By: Flow Order***	
MS47-1P	0.000	52.0	43.0	52.0	43.0	0.205	MT	106,128	166.0	205.0	31.5	106,128
MS47-3	0.000	34.5	31.0	34.5	31.0	0.295	MT	106,128	265.5	295.0	20.8	106,128
MS47-4P-1	0.000	14.8	32.0	14.8	32.0	0.291	GW	193,769	285.2	291.0	1.0	193,769
MS47-4P DS	0.000	58.9	54.0	58.9	54.0	0.172	MT	149,573	159.1	172.0	7.9	149,573
MS47-5P US	0.000	73.6	33.0	73.6	33.0	0.200	MT	149,573	144.4	200.0	9.9	149,573
MS47-8VP	0.236	60.5	36.0	60.5	36.0	0.200	MT	119,088	175.5	200.0	26.0	119,088
===>Grouped by Line:	**SG54-1-CONT PEN to SGBFTK**										***Sorted By: Flow Order***	

Component Name	Tinit	Total Lifetime Wear (mils) Prd. [1]	Total Lifetime Wear (mils) Meas.	In-Service Component Wear(mils) Prd. [1]	In-Service Component Wear(mils) Meas.	In-Service Component Tmeas, Method, Time (in) [3]	[2]	(hrs) [3]	In-Service Component Thickness (mils) [4] Tp	Tm	Incremental Wear (mils) [5] PRWEAR	Time (hrs) Last Inspected
===>Grouped by Line:	**SG54-1-CONT PEN to SGBFTK**											***Sorted By: Flow Order***
MS48-1P	0.000	52.0	35.0	52.0	35.0	0.205	MT	106,128	166.0	205.0	31.5	106,128
MS48-3	0.000	36.4	49.0	36.4	49.0	0.256	MT	106,128	263.6	256.0	22.0	106,128
MS48-3P	0.000	24.6	32.0	24.6	32.0	0.291	MT	106,128	275.4	291.0	14.9	106,128
MS48-4P-1	0.000	14.8	53.0	14.8	53.0	0.256	GW	193,769	285.2	256.0	1.0	193,769
MS48-8VP	0.000	58.4	36.0	58.4	36.0	0.215	MT	119,088	159.6	215.0	25.1	119,088

Notes:
[1] Predictions are for the time of last inspection (last known meas. wear).
[2] GW = Tmeas is minimum thickness from Band, Blanket or Area Method of greatest wear.
MT = Tmeas is component minimum thickness.
PW = Tmeas is Tinit - predicted wear.
US = Tmeas is user specified.
[3] If no Tmeas has been determined from measured data, then Tmeas = Tinit and Time = current component installation time.
Tmeas is used to determine Predicted Thickness and Component Predicted Time to Tcrit.
[4] These two values are used for thickness plot.
Tp = Predicted thickness at Tmeas.
Tm = Last measured thickness (Tmeas).
[5] PRWEAR = Incremental wear from last Tmeas time to analysis ending period.

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).DB

Wear Rate Report

Pass 2 Analysis Include Measured Wear

Report Date/Time: 7/7/2010 9:54:36AM
AnalysisDate/Time: 6/11/2010 11:32:49AM

CHECWORKS SFA Version: 3.0 (build 105)
Duty Factor (Global) : 1.000

Run Name: CND DWNSTRM HDPD
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 0.540

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***CD83-1-HDR HDP to BFP21T***								***Sorted By: Average Wear Rate***		
CD-82T	14	6.455	2.700	377.7	15.770	0.0	30.000	6.855	0.000	98.03	ARD
CD-81T (D/S)	12	4.812	2.013	377.7	15.770	0.0	30.000	6.855	0.000	98.03	ARD
CD-81T	12	4.812	2.013	377.7	15.770	0.0	30.000	6.855	0.000	98.03	ARD
CD-82T (D/S)	14	4.382	1.833	377.7	7.885	0.0	30.000	6.855	0.000	98.03	ARD
CD-82T (BR/SE)	14	3.769	1.577	377.7	12.729	0.0	24.000	6.855	0.000	98.03	ARD
===>Grouped by Line:	***CD83-2-HDR to BFP21***								***Sorted By: Average Wear Rate***		
CD-72FE	6	7.129	2.982	377.7	19.891	0.0	24.000	6.855	0.000	98.03	ARD
CD-VALVE-CD-21	22	5.274	2.206	377.7	12.318	0.0	24.000	6.855	0.000	98.03	ARD
CD-9	2	3.984	1.667	377.7	12.731	0.0	24.000	6.855	0.000	98.03	ARD
CD-66	2	3.984	1.667	377.7	12.731	0.0	24.000	6.855	0.000	98.03	ARD
CD-67	2	3.984	1.667	377.7	12.731	0.0	24.000	6.855	0.000	98.03	ARD
CD-68	2	3.984	1.667	377.7	12.731	0.0	24.000	6.855	0.000	98.03	ARD
CD-69	2	3.984	1.667	377.7	12.731	0.0	24.000	6.855	0.000	98.03	ARD
CD-70	2	3.984	1.667	377.7	12.731	0.0	24.000	6.855	0.000	98.03	ARD
CD-71	2	3.984	1.667	377.7	12.731	0.0	24.000	6.855	0.000	98.03	ARD
CD-38	2	3.984	1.667	377.7	12.731	0.0	24.000	6.855	0.000	98.03	ARD
CD-8	4	3.984	1.667	377.7	12.731	0.0	24.000	6.855	0.000	98.03	ARD
CD-72	4	3.984	1.667	377.7	12.731	0.0	24.000	6.855	0.000	98.03	ARD
CD-73	2	3.984	1.667	377.7	12.731	0.0	24.000	6.855	0.000	98.03	ARD
CD-7	4	3.984	1.667	377.7	12.731	0.0	24.000	6.855	0.000	98.03	ARD
CD-65	2	3.984	1.667	377.7	12.731	0.0	24.000	6.855	0.000	98.03	ARD
CD-64	3	3.769	1.577	377.7	12.731	0.0	24.000	6.855	0.000	98.03	ARD
CD-74	1	3.554	1.487	377.7	12.731	0.0	24.000	6.855	0.000	98.03	ARD
CD-72P US	54	3.446	1.442	377.7	12.731	0.0	24.000	6.855	0.000	98.03	ARD
CD-72P DS	54	3.446	1.442	377.7	12.731	0.0	24.000	6.855	0.000	98.03	ARD
CD-7P	54	3.446	1.442	377.7	12.731	0.0	24.000	6.855	0.000	98.03	ARD
CD-65R (D/S)	17	2.803	1.172	377.7	22.881	0.0	18.000	6.855	0.000	98.03	ARD
CD-65N	30	2.769	2.605	377.7	22.881	0.0	18.000	6.855	0.000	98.03	ARD

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***CD83-2-HDR to BFP21***								***Sorted By: Average Wear Rate***		
CD-66P	52	2.692	1.126	377.7	12.731	0.0	24.000	6.855	0.000	98.03	ARD
CD-67P	52	2.692	1.126	377.7	12.731	0.0	24.000	6.855	0.000	98.03	ARD
CD-69P	52	2.692	1.126	377.7	12.731	0.0	24.000	6.855	0.000	98.03	ARD
CD-70P	52	2.692	1.126	377.7	12.731	0.0	24.000	6.855	0.000	98.03	ARD
CD-71P	52	2.692	1.126	377.7	12.731	0.0	24.000	6.855	0.000	98.03	ARD
CD-38P	52	2.692	1.126	377.7	12.731	0.0	24.000	6.855	0.000	98.03	ARD
CD-8P	52	2.692	1.126	377.7	12.731	0.0	24.000	6.855	0.000	98.03	ARD
CD-73P	52	2.692	1.126	377.7	12.731	0.0	24.000	6.855	0.000	98.03	ARD
CD-64P	53	2.692	1.126	377.7	12.731	0.0	24.000	6.855	0.000	98.03	ARD
CD-65P	52	2.692	1.126	377.7	12.731	0.0	24.000	6.855	0.000	98.03	ARD
CD-65R	17	2.692	1.126	377.7	12.731	0.0	24.000	6.855	0.000	98.03	ARD
CD-68P	58	2.369	0.991	377.7	12.731	0.0	24.000	6.855	0.000	98.03	ARD
CD-9P	64	2.154	0.901	377.7	12.731	0.0	24.000	6.855	0.000	98.03	ARD
CD-72P-1 US	56	1.426	0.596	377.7	19.891	0.0	24.000	6.855	0.000	98.03	ARD
CD-72P-1 DS	56	1.426	0.596	377.7	19.891	0.0	24.000	6.855	0.000	98.03	ARD
===>Grouped by Line:	***CD83-3-HDR to BFP22***								***Sorted By: Average Wear Rate***		
CD-76FE	6	7.129	2.982	377.7	19.891	0.0	24.000	6.855	0.000	98.03	ARD
CD-75N	30	6.228	2.605	377.7	22.881	0.0	18.000	6.855	0.000	98.03	ARD
CD-VALVE-CD-21-1	22	5.274	2.206	377.7	12.318	0.0	24.000	6.855	0.000	98.03	ARD
CD-84T	12	4.415	1.847	377.7	12.731	0.0	24.000	6.855	0.000	98.03	ARD
CD-6	4	3.984	1.667	377.7	12.731	0.0	24.000	6.855	0.000	98.03	ARD
CD-76	2	3.984	1.667	377.7	12.731	0.0	24.000	6.855	0.000	98.03	ARD
CD-10	2	3.984	1.667	377.7	12.731	0.0	24.000	6.855	0.000	98.03	ARD
CD-75	2	3.984	1.667	377.7	12.731	0.0	24.000	6.855	0.000	98.03	ARD
CD-84T (BR/SE)	12	3.661	1.532	377.7	12.731	0.0	24.000	6.855	0.000	98.03	ARD
CD-76P US	54	3.446	1.442	377.7	12.731	0.0	24.000	6.855	0.000	98.03	ARD
CD-82R (D/S)	7	3.446	1.441	377.7	12.729	0.0	24.000	6.855	0.000	98.03	ARD
CD-83T (D/S)	15	3.231	1.351	377.7	12.731	0.0	24.000	6.855	0.000	98.03	ARD
CD-83T	15	3.231	1.351	377.7	12.731	0.0	24.000	6.855	0.000	98.03	ARD
CD-75R (D/S)	17	2.803	1.172	377.7	22.881	0.0	18.000	6.855	0.000	98.03	ARD
CD-82R	7	2.788	1.166	377.7	7.885	0.0	30.000	6.855	0.000	98.03	ARD
CD-82P US	57	2.692	1.126	377.7	12.731	0.0	24.000	6.855	0.000	98.03	ARD
CD-10P DS	52	2.692	1.126	377.7	12.731	0.0	24.000	6.855	0.000	98.03	ARD
CD-75P US	52	2.692	1.126	377.7	12.731	0.0	24.000	6.855	0.000	98.03	ARD
CD-75P	52	2.692	1.126	377.7	12.731	0.0	24.000	6.855	0.000	98.03	ARD
CD-75R	17	2.692	1.126	377.7	12.731	0.0	24.000	6.855	0.000	98.03	ARD

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***CD83-3-HDR to BFP22***								***Sorted By: Average Wear Rate***		
CD-76P DS	56	1.426	0.596	377.7	19.891	0.0	24.000	6.855	0.000	98.03	ARD

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).DB

Wear Rate Report

Pass 2 Analysis Include Measured Wear

Report Date/Time: 7/7/2010 9:54:36AM
AnalysisDate/Time: 6/11/2010 11:32:49AM

CHECWORKS SFA Version: 3.0 (build 105)
Duty Factor (Global) : 1.000

Run Name: CND DWNSTRM HDPD
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 0.540

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***CD83-1-HDR HDP to BFP21T***									***Sorted By: Flow Order***	
CD-81T (D/S)	12	4.812	2.013	377.7	15.770	0.0	30.000	6.855	0.000	98.03	ARD
CD-82T	14	6.455	2.700	377.7	15.770	0.0	30.000	6.855	0.000	98.03	ARD
CD-82T (BR/SE)	14	3.769	1.577	377.7	12.729	0.0	24.000	6.855	0.000	98.03	ARD
CD-82T (D/S)	14	4.382	1.833	377.7	7.885	0.0	30.000	6.855	0.000	98.03	ARD
CD-81T	12	4.812	2.013	377.7	15.770	0.0	30.000	6.855	0.000	98.03	ARD
===>Grouped by Line:	***CD83-2-HDR to BFP21***									***Sorted By: Flow Order***	
CD-9P	64	2.154	0.901	377.7	12.731	0.0	24.000	6.855	0.000	98.03	ARD
CD-9	2	3.984	1.667	377.7	12.731	0.0	24.000	6.855	0.000	98.03	ARD
CD-66P	52	2.692	1.126	377.7	12.731	0.0	24.000	6.855	0.000	98.03	ARD
CD-66	2	3.984	1.667	377.7	12.731	0.0	24.000	6.855	0.000	98.03	ARD
CD-67P	52	2.692	1.126	377.7	12.731	0.0	24.000	6.855	0.000	98.03	ARD
CD-67	2	3.984	1.667	377.7	12.731	0.0	24.000	6.855	0.000	98.03	ARD
CD-VALVE-CD-21	22	5.274	2.206	377.7	12.318	0.0	24.000	6.855	0.000	98.03	ARD
CD-68P	58	2.369	0.991	377.7	12.731	0.0	24.000	6.855	0.000	98.03	ARD
CD-68	2	3.984	1.667	377.7	12.731	0.0	24.000	6.855	0.000	98.03	ARD
CD-69P	52	2.692	1.126	377.7	12.731	0.0	24.000	6.855	0.000	98.03	ARD
CD-69	2	3.984	1.667	377.7	12.731	0.0	24.000	6.855	0.000	98.03	ARD
CD-70P	52	2.692	1.126	377.7	12.731	0.0	24.000	6.855	0.000	98.03	ARD
CD-70	2	3.984	1.667	377.7	12.731	0.0	24.000	6.855	0.000	98.03	ARD
CD-71P	52	2.692	1.126	377.7	12.731	0.0	24.000	6.855	0.000	98.03	ARD
CD-71	2	3.984	1.667	377.7	12.731	0.0	24.000	6.855	0.000	98.03	ARD
CD-38P	52	2.692	1.126	377.7	12.731	0.0	24.000	6.855	0.000	98.03	ARD
CD-38	2	3.984	1.667	377.7	12.731	0.0	24.000	6.855	0.000	98.03	ARD
CD-8P	52	2.692	1.126	377.7	12.731	0.0	24.000	6.855	0.000	98.03	ARD
CD-8	4	3.984	1.667	377.7	12.731	0.0	24.000	6.855	0.000	98.03	ARD
CD-72	4	3.984	1.667	377.7	12.731	0.0	24.000	6.855	0.000	98.03	ARD
CD-72P US	54	3.446	1.442	377.7	12.731	0.0	24.000	6.855	0.000	98.03	ARD

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***CD83-2-HDR to BFP21***									***Sorted By: Flow Order***	
CD-72P DS	54	3.446	1.442	377.7	12.731	0.0	24.000	6.855	0.000	98.03	ARD
CD-72FE	6	7.129	2.982	377.7	19.891	0.0	24.000	6.855	0.000	98.03	ARD
CD-72P-1 US	56	1.426	0.596	377.7	19.891	0.0	24.000	6.855	0.000	98.03	ARD
CD-72P-1 DS	56	1.426	0.596	377.7	19.891	0.0	24.000	6.855	0.000	98.03	ARD
CD-73	2	3.984	1.667	377.7	12.731	0.0	24.000	6.855	0.000	98.03	ARD
CD-73P	52	2.692	1.126	377.7	12.731	0.0	24.000	6.855	0.000	98.03	ARD
CD-7	4	3.984	1.667	377.7	12.731	0.0	24.000	6.855	0.000	98.03	ARD
CD-7P	54	3.446	1.442	377.7	12.731	0.0	24.000	6.855	0.000	98.03	ARD
CD-74	1	3.554	1.487	377.7	12.731	0.0	24.000	6.855	0.000	98.03	ARD
CD-64	3	3.769	1.577	377.7	12.731	0.0	24.000	6.855	0.000	98.03	ARD
CD-64P	53	2.692	1.126	377.7	12.731	0.0	24.000	6.855	0.000	98.03	ARD
CD-65	2	3.984	1.667	377.7	12.731	0.0	24.000	6.855	0.000	98.03	ARD
CD-65P	52	2.692	1.126	377.7	12.731	0.0	24.000	6.855	0.000	98.03	ARD
CD-65R	17	2.692	1.126	377.7	12.731	0.0	24.000	6.855	0.000	98.03	ARD
CD-65R (D/S)	17	2.803	1.172	377.7	22.881	0.0	18.000	6.855	0.000	98.03	ARD
CD-65N	30	2.769	2.605	377.7	22.881	0.0	18.000	6.855	0.000	98.03	ARD
===>Grouped by Line:	***CD83-3-HDR to BFP22***									***Sorted By: Flow Order***	
CD-82R	7	2.788	1.166	377.7	7.885	0.0	30.000	6.855	0.000	98.03	ARD
CD-82R (D/S)	7	3.446	1.441	377.7	12.729	0.0	24.000	6.855	0.000	98.03	ARD
CD-82P US	57	2.692	1.126	377.7	12.731	0.0	24.000	6.855	0.000	98.03	ARD
CD-83T	15	3.231	1.351	377.7	12.731	0.0	24.000	6.855	0.000	98.03	ARD
CD-83T (D/S)	15	3.231	1.351	377.7	12.731	0.0	24.000	6.855	0.000	98.03	ARD
CD-84T	12	4.415	1.847	377.7	12.731	0.0	24.000	6.855	0.000	98.03	ARD
CD-84T (BR/SE)	12	3.661	1.532	377.7	12.731	0.0	24.000	6.855	0.000	98.03	ARD
CD-VALVE-CD-21-1	22	5.274	2.206	377.7	12.318	0.0	24.000	6.855	0.000	98.03	ARD
CD-6	4	3.984	1.667	377.7	12.731	0.0	24.000	6.855	0.000	98.03	ARD
CD-76P US	54	3.446	1.442	377.7	12.731	0.0	24.000	6.855	0.000	98.03	ARD
CD-76FE	6	7.129	2.982	377.7	19.891	0.0	24.000	6.855	0.000	98.03	ARD
CD-76P DS	56	1.426	0.596	377.7	19.891	0.0	24.000	6.855	0.000	98.03	ARD
CD-76	2	3.984	1.667	377.7	12.731	0.0	24.000	6.855	0.000	98.03	ARD
CD-10P DS	52	2.692	1.126	377.7	12.731	0.0	24.000	6.855	0.000	98.03	ARD
CD-10	2	3.984	1.667	377.7	12.731	0.0	24.000	6.855	0.000	98.03	ARD
CD-75P US	52	2.692	1.126	377.7	12.731	0.0	24.000	6.855	0.000	98.03	ARD
CD-75	2	3.984	1.667	377.7	12.731	0.0	24.000	6.855	0.000	98.03	ARD
CD-75P	52	2.692	1.126	377.7	12.731	0.0	24.000	6.855	0.000	98.03	ARD
CD-75R	17	2.692	1.126	377.7	12.731	0.0	24.000	6.855	0.000	98.03	ARD

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***CD83-3-HDR to BFP22***									***Sorted By: Flow Order***	
CD-75R (D/S)	17	2.803	1.172	377.7	22.881	0.0	18.000	6.855	0.000	98.03	ARD
CD-75N	30	6.228	2.605	377.7	22.881	0.0	18.000	6.855	0.000	98.03	ARD

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).DB

Service Life Report

Pass 2 Analysis Include Measured Wear

Report Date/Time: 7/7/2010 9:54:36AM
AnalysisDate/Time:

Run Name: CND DWNSTRM HDPD
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 0.540

CHECWORKS SFA Version: 3.0 (build 105)
Duty Factor (Global) :1.000

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **CD83-1-HDR HDP to BFP21T**					***Sorted By:Remaining Life***		
CD-82T	0.000	0.622	0.561	0.561	196,551	No	243,721
CD-81T	0.000	0.627	0.561	0.561	286,541	No	243,721
CD-81T (D/S)	0.000	0.629	0.561	0.561	295,244	No	243,721
CD-82T (D/S)	0.000	0.624	0.561	0.561	301,068	No	243,721
CD-82T (BR/SE)	0.000	0.645	0.449	0.449	1,090,106	No	243,721
===>Grouped by Line: **CD83-2-HDR to BFP21**					***Sorted By:Remaining Life***		
CD-VALVE-CD-21	0.000	0.541	0.559	0.559	-68,477	No	243,721
CD-38	0.000	0.577	0.523	0.523	285,979	No	243,721
CD-70	0.000	0.577	0.523	0.523	285,979	No	243,721
CD-68	0.000	0.577	0.523	0.523	285,979	No	243,721
CD-67	0.000	0.577	0.523	0.523	285,979	No	243,721
CD-66	0.000	0.577	0.523	0.523	285,979	No	243,721
CD-8	0.000	0.577	0.523	0.523	285,979	No	243,721
CD-72	0.000	0.577	0.523	0.523	285,979	No	243,721
CD-7	0.000	0.577	0.523	0.523	285,979	No	243,721
CD-65	0.000	0.577	0.523	0.523	285,979	No	243,721
CD-72FE	0.000	0.623	0.523	0.523	294,638	No	243,721
CD-74	0.000	0.589	0.523	0.523	391,262	No	243,721
CD-72P US	0.000	0.592	0.523	0.523	421,696	No	243,721
CD-7P	0.000	0.592	0.523	0.523	421,696	No	243,721
CD-71	0.000	0.612	0.523	0.523	471,522	Yes	243,721
CD-65P	0.000	0.589	0.523	0.523	512,775	Yes	243,721
CD-69	0.000	0.647	0.523	0.523	653,870	Yes	243,721
CD-64	0.000	0.641	0.523	0.523	659,657	Yes	243,721
CD-65R (D/S)	0.000	0.484	0.392	0.392	687,186	No	243,721
CD-73	0.000	0.655	0.523	0.523	692,688	Yes	243,721
CD-9	0.000	0.656	0.523	0.523	698,658	Yes	243,721
CD-8P	0.000	0.613	0.523	0.523	702,902	No	243,721
CD-71P	0.000	0.613	0.523	0.523	702,902	No	243,721

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **CD83-2-HDR to BFP21**					***Sorted By:Remaining Life***		
CD-67P	0.000	0.613	0.523	0.523	702,902	No	243,721
CD-73P	0.000	0.613	0.523	0.523	702,902	No	243,721
CD-64P	0.000	0.613	0.523	0.523	702,902	No	243,721
CD-65R	0.000	0.613	0.523	0.523	702,902	No	243,721
CD-69P	0.000	0.619	0.523	0.523	746,346	Yes	243,721
CD-72P DS	0.000	0.648	0.523	0.523	759,097	No	243,721
CD-66P	0.000	0.626	0.523	0.523	800,571	Yes	243,721
CD-68P	0.000	0.622	0.523	0.523	878,199	No	243,721
CD-9P	0.000	0.628	0.523	0.523	1,024,280	No	243,721
CD-38P	0.000	0.655	0.523	0.523	1,026,141	Yes	243,721
CD-70P	0.000	0.673	0.523	0.523	1,169,178	Yes	243,721
CD-65N	0.000	0.849	0.392	0.392	1,536,865	No	78,608
CD-72P-1 US	0.000	0.657	0.523	0.523	1,966,083	Yes	243,721
CD-72P-1 DS	0.000	0.668	0.523	0.523	2,135,007	Yes	243,721
===>Grouped by Line: **CD83-3-HDR to BFP22**					***Sorted By:Remaining Life***		
CD-76FE	0.000	0.490	0.523	0.523	-90,158	No	243,721
CD-VALVE-CD-21-1	0.000	0.541	0.559	0.559	-68,477	No	243,721
CD-82R	0.000	0.593	0.561	0.561	238,536	Yes	243,721
CD-76	0.000	0.577	0.523	0.523	285,979	No	243,721
CD-76P US	0.000	0.595	0.523	0.523	438,111	Yes	243,721
CD-83T	0.000	0.598	0.523	0.523	488,650	No	243,721
CD-83T (D/S)	0.000	0.598	0.523	0.523	488,650	No	243,721
CD-84T	0.000	0.642	0.523	0.523	566,401	Yes	243,721
CD-75R (D/S)	0.000	0.469	0.392	0.392	571,901	Yes	243,721
CD-75P US	0.000	0.599	0.523	0.523	595,108	Yes	243,721
CD-6	0.000	0.644	0.523	0.523	635,631	Yes	243,721
CD-10P DS	0.000	0.608	0.523	0.523	665,112	Yes	243,721
CD-75P	0.000	0.613	0.523	0.523	702,902	No	243,721
CD-10	0.000	0.660	0.523	0.523	719,721	Yes	243,721
CD-84T (BR/SE)	0.000	0.669	0.523	0.523	834,077	Yes	243,721
CD-75	0.000	0.690	0.523	0.523	876,720	Yes	243,721
CD-82P US	0.000	0.641	0.523	0.523	921,795	Yes	243,721
CD-75R	0.000	0.665	0.523	0.523	1,108,474	Yes	243,721
CD-82R (D/S)	0.000	0.652	0.449	0.449	1,230,440	Yes	243,721
CD-76P DS	0.000	0.648	0.523	0.523	1,844,714	No	243,721
CD-75N	0.000	0.982	0.392	0.392	1,982,812	No	243,721

Note:
[1] Predictions are based on last Tmeas to analysis ending period.

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).DB

Service Life Report

Pass 2 Analysis Include Measured Wear

Report Date/Time: 7/7/2010 9:54:36AM
AnalysisDate/Time:

Run Name: CND DWNSTRM HDPD
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 0.540

CHECWORKS SFA Version: 3.0 (build 105)
Duty Factor (Global) : 1.000

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **CD83-1-HDR HDP to BFP21T**					***Sorted By:Flow Order***		
CD-81T (D/S)	0.000	0.629	0.561	0.561	295,244	No	243,721
CD-82T	0.000	0.622	0.561	0.561	196,551	No	243,721
CD-82T (BR/SE)	0.000	0.645	0.449	0.449	1,090,106	No	243,721
CD-82T (D/S)	0.000	0.624	0.561	0.561	301,068	No	243,721
CD-81T	0.000	0.627	0.561	0.561	286,541	No	243,721
===>Grouped by Line: **CD83-2-HDR to BFP21**					***Sorted By:Flow Order***		
CD-9P	0.000	0.628	0.523	0.523	1,024,280	No	243,721
CD-9	0.000	0.656	0.523	0.523	698,658	Yes	243,721
CD-66P	0.000	0.626	0.523	0.523	800,571	Yes	243,721
CD-66	0.000	0.577	0.523	0.523	285,979	No	243,721
CD-67P	0.000	0.613	0.523	0.523	702,902	No	243,721
CD-67	0.000	0.577	0.523	0.523	285,979	No	243,721
CD-VALVE-CD-21	0.000	0.541	0.559	0.559	-68,477	No	243,721
CD-68P	0.000	0.622	0.523	0.523	878,199	No	243,721
CD-68	0.000	0.577	0.523	0.523	285,979	No	243,721
CD-69P	0.000	0.619	0.523	0.523	746,346	Yes	243,721
CD-69	0.000	0.647	0.523	0.523	653,870	Yes	243,721
CD-70P	0.000	0.673	0.523	0.523	1,169,178	Yes	243,721
CD-70	0.000	0.577	0.523	0.523	285,979	No	243,721
CD-71P	0.000	0.613	0.523	0.523	702,902	No	243,721
CD-71	0.000	0.612	0.523	0.523	471,522	Yes	243,721
CD-38P	0.000	0.655	0.523	0.523	1,026,141	Yes	243,721
CD-38	0.000	0.577	0.523	0.523	285,979	No	243,721
CD-8P	0.000	0.613	0.523	0.523	702,902	No	243,721
CD-8	0.000	0.577	0.523	0.523	285,979	No	243,721
CD-72	0.000	0.577	0.523	0.523	285,979	No	243,721
CD-72P US	0.000	0.592	0.523	0.523	421,696	No	243,721
CD-72P DS	0.000	0.648	0.523	0.523	759,097	No	243,721
CD-72FE	0.000	0.623	0.523	0.523	294,638	No	243,721

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **CD83-2-HDR to BFP21**					***Sorted By:Flow Order***		
CD-72P-1 US	0.000	0.657	0.523	0.523	1,966,083	Yes	243,721
CD-72P-1 DS	0.000	0.668	0.523	0.523	2,135,007	Yes	243,721
CD-73	0.000	0.655	0.523	0.523	692,688	Yes	243,721
CD-73P	0.000	0.613	0.523	0.523	702,902	No	243,721
CD-7	0.000	0.577	0.523	0.523	285,979	No	243,721
CD-7P	0.000	0.592	0.523	0.523	421,696	No	243,721
CD-74	0.000	0.589	0.523	0.523	391,262	No	243,721
CD-64	0.000	0.641	0.523	0.523	659,657	Yes	243,721
CD-64P	0.000	0.613	0.523	0.523	702,902	No	243,721
CD-65	0.000	0.577	0.523	0.523	285,979	No	243,721
CD-65P	0.000	0.589	0.523	0.523	512,775	Yes	243,721
CD-65R	0.000	0.613	0.523	0.523	702,902	No	243,721
CD-65R (D/S)	0.000	0.484	0.392	0.392	687,186	No	243,721
CD-65N	0.000	0.849	0.392	0.392	1,536,865	No	78,608
===>Grouped by Line: **CD83-3-HDR to BFP22**					***Sorted By:Flow Order***		
CD-82R	0.000	0.593	0.561	0.561	238,536	Yes	243,721
CD-82R (D/S)	0.000	0.652	0.449	0.449	1,230,440	Yes	243,721
CD-82P US	0.000	0.641	0.523	0.523	921,795	Yes	243,721
CD-83T	0.000	0.598	0.523	0.523	488,650	No	243,721
CD-83T (D/S)	0.000	0.598	0.523	0.523	488,650	No	243,721
CD-84T	0.000	0.642	0.523	0.523	566,401	Yes	243,721
CD-84T (BR/SE)	0.000	0.669	0.523	0.523	834,077	Yes	243,721
CD-VALVE-CD-21-1	0.000	0.541	0.559	0.559	-68,477	No	243,721
CD-6	0.000	0.644	0.523	0.523	635,631	Yes	243,721
CD-76P US	0.000	0.595	0.523	0.523	438,111	Yes	243,721
CD-76FE	0.000	0.490	0.523	0.523	-90,158	No	243,721
CD-76P DS	0.000	0.648	0.523	0.523	1,844,714	No	243,721
CD-76	0.000	0.577	0.523	0.523	285,979	No	243,721
CD-10P DS	0.000	0.608	0.523	0.523	665,112	Yes	243,721
CD-10	0.000	0.660	0.523	0.523	719,721	Yes	243,721
CD-75P US	0.000	0.599	0.523	0.523	595,108	Yes	243,721
CD-75	0.000	0.690	0.523	0.523	876,720	Yes	243,721
CD-75P	0.000	0.613	0.523	0.523	702,902	No	243,721
CD-75R	0.000	0.665	0.523	0.523	1,108,474	Yes	243,721
CD-75R (D/S)	0.000	0.469	0.392	0.392	571,901	Yes	243,721
CD-75N	0.000	0.982	0.392	0.392	1,982,812	No	243,721

Note:
[1] Predictions are based on last Tmeas to analysis ending period.

3

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).DB

Wear Report

Pass 2 Analysis Include Measured Wear

Report Date/Time: 07-Jul-2010 9:54 am
AnalysisDate/Time: 07-Jul-2010 9:54 am

Run Name: CND DWNSTRM HDPD
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 0.540

CHECWORKS SFA Version: 3.0 (build 105)
Duty Factor (Global) : 1.000

Component Name	Tinit	Total Lifetime Wear (mils) Prd. [1]	Meas.	In-Service Component Wear(mils) Prd. [1]	Meas.	In-Service Component Tmeas, Method, Time (in) [3]	[2]	(hrs) [3]	In-Service Component Thickness (mils) [4] Tp	Tm	Incremental Wear (mils) [5] PRWEAR	Time (hrs) Last Inspected
===>Grouped by Line:	**CD83-2-HDR to BFP21**											***Sorted By: Flow Order***
CD-9	0.000	107.5	114.0	107.5	114.0	0.659	MT	226,201	580.5	659.0	3.3	226,201
CD-66P	0.000	51.6	80.0	51.6	80.0	0.649	MT	119,088	636.4	649.0	23.3	119,088
CD-69P	0.000	66.6	95.0	66.6	95.0	0.627	GW	181,477	621.4	627.0	8.3	181,477
CD-69	0.000	68.0	68.0	68.0	68.0	0.690	MT	106,128	620.0	690.0	42.9	106,128
CD-70P	0.000	45.9	41.0	45.9	41.0	0.702	MT	106,128	642.1	702.0	29.0	106,128
CD-71	0.000	76.3	76.0	76.3	76.0	0.647	MT	119,088	611.7	647.0	34.6	119,088
CD-38P	0.000	51.6	68.0	51.6	68.0	0.678	MT	119,088	636.4	678.0	23.3	119,088
CD-72P-1 US	0.000	35.3	88.0	35.3	88.0	0.661	GW	181,477	652.7	661.0	4.4	181,477
CD-72P-1 DS	0.000	28.8	41.0	28.8	41.0	0.679	MT	125,459	659.2	679.0	10.9	125,459
CD-73	0.000	80.4	70.0	80.4	70.0	0.685	MT	125,459	607.6	685.0	30.5	125,459
CD-64	0.000	64.3	59.0	64.3	59.0	0.682	MT	106,128	623.7	682.0	40.5	106,128
CD-65P	0.000	51.6	82.0	51.6	82.0	0.612	MT	119,088	636.4	612.0	23.3	119,088
===>Grouped by Line:	**CD83-3-HDR to BFP22**											***Sorted By: Flow Order***
CD-82R	0.000	70.8	41.0	70.8	41.0	0.600	MT	193,769	555.2	600.0	6.8	193,769
CD-82R (D/S)	0.000	87.5	50.0	87.5	50.0	0.660	MT	193,769	599.5	660.0	8.4	193,769
CD-82P US	0.000	59.1	68.0	59.1	68.0	0.657	MT	136,608	628.9	657.0	15.8	136,608
CD-84T	0.000	97.0	85.0	97.0	85.0	0.668	MT	136,608	591.0	668.0	25.8	136,608
CD-84T (BR/SE)	0.000	80.4	65.0	80.4	65.0	0.690	MT	136,608	607.6	690.0	21.4	136,608
CD-6	0.000	87.5	73.0	87.5	73.0	0.667	MT	136,608	600.5	667.0	23.3	136,608
CD-76P US	0.000	75.7	110.0	75.7	110.0	0.615		136,608	612.3	615.0	20.2	136,608
CD-10P DS	0.000	59.1	64.0	59.1	64.0	0.624	MT	136,608	628.9	624.0	15.8	136,608
CD-10	0.000	87.5	60.0	87.5	60.0	0.683	MT	136,608	600.5	683.0	23.3	136,608
CD-75P US	0.000	59.1	73.0	59.1	73.0	0.615	MT	136,608	628.9	615.0	15.8	136,608
CD-75	0.000	104.4	70.5	104.4	70.5	0.696	MT	209,806	583.6	696.0	6.5	209,806
CD-75R	0.000	59.1	37.0	59.1	37.0	0.681	MT	136,608	628.9	681.0	15.8	136,608
CD-75R (D/S)	0.000	61.6	87.0	61.6	87.0	0.485		136,608	500.4	485.0	16.4	136,608

Notes:

[1] Predictions are for the time of last inspection (last known meas. wear).

[2] GW = Tmeas is minimum thickness from Band, Blanket or Area Method of greatest wear.
MT = Tmeas is component minimum thickness.
PW = Tmeas is Tinit - predicted wear.
US = Tmeas is user specified.

[3] If no Tmeas has been determined from measured data, then Tmeas = Tinit and Time = current component installation time.
Tmeas is used to determine Predicted Thickness and Component Predicted Time to Tcrit.

[4] These two values are used for thickness plot.
Tp = Predicted thickness at Tmeas.
Tm = Last measured thickness (Tmeas).

[5] PRWEAR = Incremental wear from last Tmeas time to analysis ending period.

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).DB

Wear Rate Report

Pass 2 Analysis Include Measured Wear

Report Date/Time: 7/7/2010 9:54:36AM
AnalysisDate/Time: 6/11/2010 11:33:11AM

CHECWORKS SFA Version: 3.0 (build 105)
Duty Factor (Global) : 1.000

Run Name: CND FWH 22 TO FWH 23
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 0.632

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***CD80A-1-FWH 22A to HEADER***								***Sorted By: Average Wear Rate***		
CD-101N	31	5.642	2.672	204.3	16.572	0.0	14.000	7.048	0.000	128.01	HBD
CD-VALVE-CD-8	22	5.642	2.672	204.3	16.572	0.0	14.000	7.048	0.000	128.01	HBD
CD-102	2	4.175	1.977	204.3	16.572	0.0	14.000	7.048	0.000	128.01	HBD
CD-103	4	4.175	1.977	204.3	16.572	0.0	14.000	7.048	0.000	128.01	HBD
CD-104	4	4.175	1.977	204.3	16.572	0.0	14.000	7.048	0.000	128.01	HBD
CD-105	2	4.175	1.977	204.3	16.572	0.0	14.000	7.048	0.000	128.01	HBD
CD-106	4	4.175	1.977	204.3	16.572	0.0	14.000	7.048	0.000	128.01	HBD
CD-104P	54	3.611	1.710	204.3	16.572	0.0	14.000	7.048	0.000	128.01	HBD
CD-106P	54	3.611	1.710	204.3	16.572	0.0	14.000	7.048	0.000	128.01	HBD
CD-107	18	3.159	1.496	204.3	16.572	0.0	14.000	7.048	0.000	128.01	HBD
CD-101P	61	3.047	1.443	204.3	16.572	0.0	14.000	7.048	0.000	128.01	HBD
CD-102P	52	2.821	1.336	204.3	16.572	0.0	14.000	7.048	0.000	128.01	HBD
CD-105P	52	2.821	1.336	204.3	16.572	0.0	14.000	7.048	0.000	128.01	HBD
CD-107 (D/S)	18	2.152	1.019	204.3	8.066	0.0	20.000	7.048	0.000	128.01	HBD
CD-107P	9	1.578	0.754	204.3	16.572	0.0	14.000	7.048	0.000	128.01	HBD
===>Grouped by Line:	***CD80A-2-FWH 22B to HEADER***								***Sorted By: Average Wear Rate***		
CD-108N	31	5.642	2.672	204.3	16.572	0.0	14.000	7.048	0.000	128.01	HBD
CD-VALVE-CD-8-1	22	5.642	2.672	204.3	16.572	0.0	14.000	7.048	0.000	128.01	HBD
CD-109	2	4.175	1.977	204.3	16.572	0.0	14.000	7.048	0.000	128.01	HBD
CD-110	2	4.175	1.977	204.3	16.572	0.0	14.000	7.048	0.000	128.01	HBD
CD-111	4	4.175	1.977	204.3	16.572	0.0	14.000	7.048	0.000	128.01	HBD
CD-112	2	4.175	1.977	204.3	16.572	0.0	14.000	7.048	0.000	128.01	HBD
CD-108P	61	3.047	1.443	204.3	16.572	0.0	14.000	7.048	0.000	128.01	HBD
CD-109P	52	2.821	1.336	204.3	16.572	0.0	14.000	7.048	0.000	128.01	HBD
CD-112P	52	2.821	1.336	204.3	16.572	0.0	14.000	7.048	0.000	128.01	HBD
CD-111P	58	2.482	1.176	204.3	16.572	0.0	14.000	7.048	0.000	128.01	HBD
===>Grouped by Line:	***CD80A-3-FWH 22C to HEADER***								***Sorted By: Average Wear Rate***		

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***CD80A-3-FWH 22C to HEADER***								***Sorted By: Average Wear Rate***		
CD-113N	31	5.642	2.672	204.3	16.572	0.0	14.000	7.048	0.000	128.01	HBD
CD-VALVE-CD-8-2	22	5.642	2.672	204.3	16.572	0.0	14.000	7.048	0.000	128.01	HBD
CD-114	2	4.175	1.977	204.3	16.572	0.0	14.000	7.048	0.000	128.01	HBD
CD-115	2	4.175	1.977	204.3	16.572	0.0	14.000	7.048	0.000	128.01	HBD
CD-116	4	4.175	1.977	204.3	16.572	0.0	14.000	7.048	0.000	128.01	HBD
CD-117	2	4.175	1.977	204.3	16.572	0.0	14.000	7.048	0.000	128.01	HBD
CD-116P	54	3.611	1.710	204.3	16.572	0.0	14.000	7.048	0.000	128.01	HBD
CD-113P	61	3.047	1.443	204.3	16.572	0.0	14.000	7.048	0.000	128.01	HBD
CD-114P	52	2.821	1.336	204.3	16.572	0.0	14.000	7.048	0.000	128.01	HBD
CD-117P	52	2.821	1.336	204.3	16.572	0.0	14.000	7.048	0.000	128.01	HBD
CD-116P-1	58	2.482	1.176	204.3	16.572	0.0	14.000	7.048	0.000	128.01	HBD
===>Grouped by Line:	***CD80A-4-FWH 22 OUTLET HEADER***								***Sorted By: Average Wear Rate***		
CD-118T (D/S)	12	4.337	2.054	204.3	16.155	0.0	20.000	7.048	0.000	128.01	HBD
CD-118T (BR/SE)	12	3.836	1.817	204.3	16.572	0.0	14.000	7.048	0.000	128.01	HBD
CD-120	18	2.962	1.403	204.3	16.155	0.0	20.000	7.048	0.000	128.01	HBD
CD-118T	12	2.941	1.393	204.3	8.066	0.0	20.000	7.048	0.000	128.01	HBD
CD-120 (D/S)	18	2.516	1.191	204.3	11.170	0.0	24.000	7.048	0.000	128.01	HBD
CD-118P	62	2.115	1.002	204.3	16.155	0.0	20.000	7.048	0.000	128.01	HBD
CD-119P	9	1.468	0.701	204.3	16.155	0.0	20.000	7.048	0.000	128.01	HBD
===>Grouped by Line:	***CD80A-5-FWH 22 to FWH 23 HEAD***								***Sorted By: Average Wear Rate***		
CD-VALVE-CD-1110	23	6.617	3.134	204.3	24.124	0.0	20.000	7.048	0.000	128.01	HBD
CD-135	14	5.784	2.739	204.3	16.746	0.0	24.000	7.048	0.000	128.01	HBD
CD-130	14	5.784	2.739	204.3	16.746	0.0	24.000	7.048	0.000	128.01	HBD
CD-130 (D/S)	14	5.771	2.733	204.3	16.679	0.0	24.000	7.048	0.000	128.01	HBD
CD-132	19	5.294	2.507	204.3	24.124	0.0	20.000	7.048	0.000	128.01	HBD
CD-135 (D/S)	14	4.612	2.184	204.3	11.170	0.0	24.000	7.048	0.000	128.01	HBD
CD-134 (D/S)	12	4.312	2.042	204.3	16.746	0.0	24.000	7.048	0.000	128.01	HBD
CD-121 (D/S)	12	4.312	2.042	204.3	16.746	0.0	24.000	7.048	0.000	128.01	HBD
CD-134	12	4.302	2.037	204.3	16.679	0.0	24.000	7.048	0.000	128.01	HBD
CD-131 (D/S)	7	4.235	2.006	204.3	24.124	0.0	20.000	7.048	0.000	128.01	HBD
CD-132 (D/S)	19	4.197	1.988	204.3	16.679	0.0	24.000	7.048	0.000	128.01	HBD
CD-135 (BR/SE)	14	3.949	1.870	204.3	16.572	0.0	14.000	7.048	0.000	128.01	HBD
CD-123	2	3.891	1.843	204.3	16.746	0.0	24.000	7.048	0.000	128.01	HBD
CD-125	2	3.891	1.843	204.3	16.746	0.0	24.000	7.048	0.000	128.01	HBD
CD-128	2	3.891	1.843	204.3	16.746	0.0	24.000	7.048	0.000	128.01	HBD
CD-129	4	3.891	1.843	204.3	16.746	0.0	24.000	7.048	0.000	128.01	HBD

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***CD80A-5-FWH 22 to FWH 23 HEAD***								***Sorted By: Average Wear Rate***		
CD-133	2	3.882	1.839	204.3	16.679	0.0	24.000	7.048	0.000	128.01	HBD
CD-121 (BR/SE)	12	3.836	1.817	204.3	16.572	0.0	14.000	7.048	0.000	128.01	HBD
CD-124	3	3.681	1.743	204.3	16.746	0.0	24.000	7.048	0.000	128.01	HBD
CD-131	7	3.673	1.739	204.3	16.679	0.0	24.000	7.048	0.000	128.01	HBD
CD-126	1	3.471	1.644	204.3	16.746	0.0	24.000	7.048	0.000	128.01	HBD
CD-121	12	3.438	1.628	204.3	11.170	0.0	24.000	7.048	0.000	128.01	HBD
CD-129P	54	3.365	1.594	204.3	16.746	0.0	24.000	7.048	0.000	128.01	HBD
CD-122 (D/S)	15	3.155	1.494	204.3	16.746	0.0	24.000	7.048	0.000	128.01	HBD
CD-122	15	3.155	1.494	204.3	16.746	0.0	24.000	7.048	0.000	128.01	HBD
CD-131P-1	58	2.912	1.379	204.3	24.124	0.0	20.000	7.048	0.000	128.01	HBD
CD-124P	53	2.629	1.245	204.3	16.746	0.0	24.000	7.048	0.000	128.01	HBD
CD-125P	52	2.629	1.245	204.3	16.746	0.0	24.000	7.048	0.000	128.01	HBD
CD-128P	52	2.629	1.245	204.3	16.746	0.0	24.000	7.048	0.000	128.01	HBD
CD-132P	69	2.623	1.242	204.3	16.679	0.0	24.000	7.048	0.000	128.01	HBD
CD-126P	51	2.314	1.096	204.3	16.746	0.0	24.000	7.048	0.000	128.01	HBD
CD-121P	62	2.103	0.996	204.3	16.746	0.0	24.000	7.048	0.000	128.01	HBD
CD-122P	65	2.103	0.996	204.3	16.746	0.0	24.000	7.048	0.000	128.01	HBD
CD-130P	62	2.099	0.994	204.3	16.679	0.0	24.000	7.048	0.000	128.01	HBD
CD-127P	9	1.476	0.705	204.3	16.746	0.0	24.000	7.048	0.000	128.01	HBD
===>Grouped by Line:	***CD80A-6-FWH 23 INLET HEADER***								***Sorted By: Average Wear Rate***		
CD-137	14	4.612	2.184	204.3	11.170	0.0	24.000	7.048	0.000	128.01	HBD
CD-137 (BR/SE)	14	3.949	1.870	204.3	16.572	0.0	14.000	7.048	0.000	128.01	HBD
CD-137 (D/S)	14	2.866	1.369	204.3	5.577	0.0	24.000	7.048	0.000	128.01	HBD
CD-136 (D/S)	15	2.516	1.191	204.3	11.170	0.0	24.000	7.048	0.000	128.01	HBD
CD-136	15	2.516	1.191	204.3	11.170	0.0	24.000	7.048	0.000	128.01	HBD
CD-136P	65	1.677	0.794	204.3	11.170	0.0	24.000	7.048	0.000	128.01	HBD
===>Grouped by Line:	***CD80A-7-HEADER to FWH 23A***								***Sorted By: Average Wear Rate***		
CD-VALVE-CD-16	22	5.642	2.672	204.3	16.572	0.0	14.000	7.048	0.000	128.01	HBD
CD-141N	30	4.513	2.137	204.3	16.572	0.0	14.000	7.048	0.000	128.01	HBD
CD-139	2	4.175	1.977	204.3	16.572	0.0	14.000	7.048	0.000	128.01	HBD
CD-140	2	4.175	1.977	204.3	16.572	0.0	14.000	7.048	0.000	128.01	HBD
CD-138 (BR/SE)	14	3.949	1.870	204.3	16.572	0.0	14.000	7.048	0.000	128.01	HBD
CD-141	1	3.724	1.763	204.3	16.572	0.0	14.000	7.048	0.000	128.01	HBD
CD-138	14	2.866	1.369	204.3	5.577	0.0	24.000	7.048	0.000	128.01	HBD
CD-139P	52	2.821	1.336	204.3	16.572	0.0	14.000	7.048	0.000	128.01	HBD
CD-140P	52	2.821	1.336	204.3	16.572	0.0	14.000	7.048	0.000	128.01	HBD

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***CD80A-7-HEADER to FWH 23A***								***Sorted By: Average Wear Rate***		
CD-138P	64	2.257	1.069	204.3	16.572	0.0	14.000	7.048	0.000	128.01	HBD
CD-137P	64	1.042	0.498	204.3	5.577	0.0	24.000	7.048	0.000	128.01	HBD
===>Grouped by Line:	***CD80A-8-HEADER to FWH 23B***								***Sorted By: Average Wear Rate***		
CD-VALVE-CD-16-1	22	5.642	2.672	204.3	16.572	0.0	14.000	7.048	0.000	128.01	HBD
CD-144N	30	4.513	2.137	204.3	16.572	0.0	14.000	7.048	0.000	128.01	HBD
CD-142	2	4.175	1.977	204.3	16.572	0.0	14.000	7.048	0.000	128.01	HBD
CD-143	2	4.175	1.977	204.3	16.572	0.0	14.000	7.048	0.000	128.01	HBD
CD-144	1	3.724	1.763	204.3	16.572	0.0	14.000	7.048	0.000	128.01	HBD
CD-142P	52	2.821	1.336	204.3	16.572	0.0	14.000	7.048	0.000	128.01	HBD
CD-143P	52	2.821	1.336	204.3	16.572	0.0	14.000	7.048	0.000	128.01	HBD
CD-141P	64	2.257	1.069	204.3	16.572	0.0	14.000	7.048	0.000	128.01	HBD
===>Grouped by Line:	***CD80A-9-HEADER to FWH 23C***								***Sorted By: Average Wear Rate***		
CD-VALVE-CD-16-2	22	5.642	2.672	204.3	16.572	0.0	14.000	7.048	0.000	128.01	HBD
CD-147N	30	4.513	2.137	204.3	16.572	0.0	14.000	7.048	0.000	128.01	HBD
CD-145	2	4.175	1.977	204.3	16.572	0.0	14.000	7.048	0.000	128.01	HBD
CD-146	2	4.175	1.977	204.3	16.572	0.0	14.000	7.048	0.000	128.01	HBD
CD-147	1	3.724	1.763	204.3	16.572	0.0	14.000	7.048	0.000	128.01	HBD
CD-145P	52	2.821	1.336	204.3	16.572	0.0	14.000	7.048	0.000	128.01	HBD
CD-146P	52	2.821	1.336	204.3	16.572	0.0	14.000	7.048	0.000	128.01	HBD
CD-144P	64	2.257	1.069	204.3	16.572	0.0	14.000	7.048	0.000	128.01	HBD

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).DB

Wear Rate Report

Pass 2 Analysis Include Measured Wear

Report Date/Time: 7/7/2010 9:54:36AM
AnalysisDate/Time: 6/11/2010 11:33:11AM

CHECWORKS SFA Version: 3.0 (build 105)
Duty Factor (Global) : 1.000

Run Name: CND FWH 22 TO FWH 23
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 0.632

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***CD80A-1-FWH 22A to HEADER***									***Sorted By: Flow Order***	
CD-101N	31	5.642	2.672	204.3	16.572	0.0	14.000	7.048	0.000	128.01	HBD
CD-101P	61	3.047	1.443	204.3	16.572	0.0	14.000	7.048	0.000	128.01	HBD
CD-102	2	4.175	1.977	204.3	16.572	0.0	14.000	7.048	0.000	128.01	HBD
CD-102P	52	2.821	1.336	204.3	16.572	0.0	14.000	7.048	0.000	128.01	HBD
CD-VALVE-CD-8	22	5.642	2.672	204.3	16.572	0.0	14.000	7.048	0.000	128.01	HBD
CD-103	4	4.175	1.977	204.3	16.572	0.0	14.000	7.048	0.000	128.01	HBD
CD-104	4	4.175	1.977	204.3	16.572	0.0	14.000	7.048	0.000	128.01	HBD
CD-104P	54	3.611	1.710	204.3	16.572	0.0	14.000	7.048	0.000	128.01	HBD
CD-105	2	4.175	1.977	204.3	16.572	0.0	14.000	7.048	0.000	128.01	HBD
CD-105P	52	2.821	1.336	204.3	16.572	0.0	14.000	7.048	0.000	128.01	HBD
CD-106	4	4.175	1.977	204.3	16.572	0.0	14.000	7.048	0.000	128.01	HBD
CD-106P	54	3.611	1.710	204.3	16.572	0.0	14.000	7.048	0.000	128.01	HBD
CD-107P	9	1.578	0.754	204.3	16.572	0.0	14.000	7.048	0.000	128.01	HBD
CD-107	18	3.159	1.496	204.3	16.572	0.0	14.000	7.048	0.000	128.01	HBD
CD-107 (D/S)	18	2.152	1.019	204.3	8.066	0.0	20.000	7.048	0.000	128.01	HBD
===>Grouped by Line:	***CD80A-2-FWH 22B to HEADER***									***Sorted By: Flow Order***	
CD-108N	31	5.642	2.672	204.3	16.572	0.0	14.000	7.048	0.000	128.01	HBD
CD-108P	61	3.047	1.443	204.3	16.572	0.0	14.000	7.048	0.000	128.01	HBD
CD-109	2	4.175	1.977	204.3	16.572	0.0	14.000	7.048	0.000	128.01	HBD
CD-109P	52	2.821	1.336	204.3	16.572	0.0	14.000	7.048	0.000	128.01	HBD
CD-110	2	4.175	1.977	204.3	16.572	0.0	14.000	7.048	0.000	128.01	HBD
CD-111	4	4.175	1.977	204.3	16.572	0.0	14.000	7.048	0.000	128.01	HBD
CD-VALVE-CD-8-1	22	5.642	2.672	204.3	16.572	0.0	14.000	7.048	0.000	128.01	HBD
CD-111P	58	2.482	1.176	204.3	16.572	0.0	14.000	7.048	0.000	128.01	HBD
CD-112	2	4.175	1.977	204.3	16.572	0.0	14.000	7.048	0.000	128.01	HBD
CD-112P	52	2.821	1.336	204.3	16.572	0.0	14.000	7.048	0.000	128.01	HBD
===>Grouped by Line:	***CD80A-3-FWH 22C to HEADER***									***Sorted By: Flow Order***	

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***CD80A-3-FWH 22C to HEADER***									***Sorted By: Flow Order***	
CD-113N	31	5.642	2.672	204.3	16.572	0.0	14.000	7.048	0.000	128.01	HBD
CD-113P	61	3.047	1.443	204.3	16.572	0.0	14.000	7.048	0.000	128.01	HBD
CD-114	2	4.175	1.977	204.3	16.572	0.0	14.000	7.048	0.000	128.01	HBD
CD-114P	52	2.821	1.336	204.3	16.572	0.0	14.000	7.048	0.000	128.01	HBD
CD-115	2	4.175	1.977	204.3	16.572	0.0	14.000	7.048	0.000	128.01	HBD
CD-116	4	4.175	1.977	204.3	16.572	0.0	14.000	7.048	0.000	128.01	HBD
CD-116P	54	3.611	1.710	204.3	16.572	0.0	14.000	7.048	0.000	128.01	HBD
CD-VALVE-CD-8-2	22	5.642	2.672	204.3	16.572	0.0	14.000	7.048	0.000	128.01	HBD
CD-116P-1	58	2.482	1.176	204.3	16.572	0.0	14.000	7.048	0.000	128.01	HBD
CD-117	2	4.175	1.977	204.3	16.572	0.0	14.000	7.048	0.000	128.01	HBD
CD-117P	52	2.821	1.336	204.3	16.572	0.0	14.000	7.048	0.000	128.01	HBD
===>Grouped by Line:	***CD80A-4-FWH 22 OUTLET HEADER***									***Sorted By: Flow Order***	
CD-118T	12	2.941	1.393	204.3	8.066	0.0	20.000	7.048	0.000	128.01	HBD
CD-118T (BR/SE)	12	3.836	1.817	204.3	16.572	0.0	14.000	7.048	0.000	128.01	HBD
CD-118T (D/S)	12	4.337	2.054	204.3	16.155	0.0	20.000	7.048	0.000	128.01	HBD
CD-118P	62	2.115	1.002	204.3	16.155	0.0	20.000	7.048	0.000	128.01	HBD
CD-119P	9	1.468	0.701	204.3	16.155	0.0	20.000	7.048	0.000	128.01	HBD
CD-120	18	2.962	1.403	204.3	16.155	0.0	20.000	7.048	0.000	128.01	HBD
CD-120 (D/S)	18	2.516	1.191	204.3	11.170	0.0	24.000	7.048	0.000	128.01	HBD
===>Grouped by Line:	***CD80A-5-FWH 22 to FWH 23 HEAD***									***Sorted By: Flow Order***	
CD-121 (BR/SE)	12	3.836	1.817	204.3	16.572	0.0	14.000	7.048	0.000	128.01	HBD
CD-121	12	3.438	1.628	204.3	11.170	0.0	24.000	7.048	0.000	128.01	HBD
CD-121 (D/S)	12	4.312	2.042	204.3	16.746	0.0	24.000	7.048	0.000	128.01	HBD
CD-121P	62	2.103	0.996	204.3	16.746	0.0	24.000	7.048	0.000	128.01	HBD
CD-122	15	3.155	1.494	204.3	16.746	0.0	24.000	7.048	0.000	128.01	HBD
CD-122 (D/S)	15	3.155	1.494	204.3	16.746	0.0	24.000	7.048	0.000	128.01	HBD
CD-122P	65	2.103	0.996	204.3	16.746	0.0	24.000	7.048	0.000	128.01	HBD
CD-123	2	3.891	1.843	204.3	16.746	0.0	24.000	7.048	0.000	128.01	HBD
CD-124	3	3.681	1.743	204.3	16.746	0.0	24.000	7.048	0.000	128.01	HBD
CD-124P	53	2.629	1.245	204.3	16.746	0.0	24.000	7.048	0.000	128.01	HBD
CD-125	2	3.891	1.843	204.3	16.746	0.0	24.000	7.048	0.000	128.01	HBD
CD-125P	52	2.629	1.245	204.3	16.746	0.0	24.000	7.048	0.000	128.01	HBD
CD-126	1	3.471	1.644	204.3	16.746	0.0	24.000	7.048	0.000	128.01	HBD
CD-126P	51	2.314	1.096	204.3	16.746	0.0	24.000	7.048	0.000	128.01	HBD
CD-127P	9	1.476	0.705	204.3	16.746	0.0	24.000	7.048	0.000	128.01	HBD
CD-128	2	3.891	1.843	204.3	16.746	0.0	24.000	7.048	0.000	128.01	HBD

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***CD80A-5-FWH 22 to FWH 23 HEAD***								***Sorted By: Flow Order***		
CD-128P	52	2.629	1.245	204.3	16.746	0.0	24.000	7.048	0.000	128.01	HBD
CD-129	4	3.891	1.843	204.3	16.746	0.0	24.000	7.048	0.000	128.01	HBD
CD-129P	54	3.365	1.594	204.3	16.746	0.0	24.000	7.048	0.000	128.01	HBD
CD-130	14	5.784	2.739	204.3	16.746	0.0	24.000	7.048	0.000	128.01	HBD
CD-130 (D/S)	14	5.771	2.733	204.3	16.679	0.0	24.000	7.048	0.000	128.01	HBD
CD-130P	62	2.099	0.994	204.3	16.679	0.0	24.000	7.048	0.000	128.01	HBD
CD-131	7	3.673	1.739	204.3	16.679	0.0	24.000	7.048	0.000	128.01	HBD
CD-131 (D/S)	7	4.235	2.006	204.3	24.124	0.0	20.000	7.048	0.000	128.01	HBD
CD-VALVE-CD-1110	23	6.617	3.134	204.3	24.124	0.0	20.000	7.048	0.000	128.01	HBD
CD-131P-1	58	2.912	1.379	204.3	24.124	0.0	20.000	7.048	0.000	128.01	HBD
CD-132	19	5.294	2.507	204.3	24.124	0.0	20.000	7.048	0.000	128.01	HBD
CD-132 (D/S)	19	4.197	1.988	204.3	16.679	0.0	24.000	7.048	0.000	128.01	HBD
CD-132P	69	2.623	1.242	204.3	16.679	0.0	24.000	7.048	0.000	128.01	HBD
CD-133	2	3.882	1.839	204.3	16.679	0.0	24.000	7.048	0.000	128.01	HBD
CD-134	12	4.302	2.037	204.3	16.679	0.0	24.000	7.048	0.000	128.01	HBD
CD-134 (D/S)	12	4.312	2.042	204.3	16.746	0.0	24.000	7.048	0.000	128.01	HBD
CD-135	14	5.784	2.739	204.3	16.746	0.0	24.000	7.048	0.000	128.01	HBD
CD-135 (BR/SE)	14	3.949	1.870	204.3	16.572	0.0	14.000	7.048	0.000	128.01	HBD
CD-135 (D/S)	14	4.612	2.184	204.3	11.170	0.0	24.000	7.048	0.000	128.01	HBD
===>Grouped by Line:	***CD80A-6-FWH 23 INLET HEADER***								***Sorted By: Flow Order***		
CD-136 (D/S)	15	2.516	1.191	204.3	11.170	0.0	24.000	7.048	0.000	128.01	HBD
CD-136P	65	1.677	0.794	204.3	11.170	0.0	24.000	7.048	0.000	128.01	HBD
CD-137	14	4.612	2.184	204.3	11.170	0.0	24.000	7.048	0.000	128.01	HBD
CD-137 (D/S)	14	2.866	1.369	204.3	5.577	0.0	24.000	7.048	0.000	128.01	HBD
CD-137 (BR/SE)	14	3.949	1.870	204.3	16.572	0.0	14.000	7.048	0.000	128.01	HBD
CD-136	15	2.516	1.191	204.3	11.170	0.0	24.000	7.048	0.000	128.01	HBD
===>Grouped by Line:	***CD80A-7-HEADER to FWH 23A***								***Sorted By: Flow Order***		
CD-137P	64	1.042	0.498	204.3	5.577	0.0	24.000	7.048	0.000	128.01	HBD
CD-138	14	2.866	1.369	204.3	5.577	0.0	24.000	7.048	0.000	128.01	HBD
CD-138 (BR/SE)	14	3.949	1.870	204.3	16.572	0.0	14.000	7.048	0.000	128.01	HBD
CD-138P	64	2.257	1.069	204.3	16.572	0.0	14.000	7.048	0.000	128.01	HBD
CD-139	2	4.175	1.977	204.3	16.572	0.0	14.000	7.048	0.000	128.01	HBD
CD-139P	52	2.821	1.336	204.3	16.572	0.0	14.000	7.048	0.000	128.01	HBD
CD-VALVE-CD-16	22	5.642	2.672	204.3	16.572	0.0	14.000	7.048	0.000	128.01	HBD
CD-140	2	4.175	1.977	204.3	16.572	0.0	14.000	7.048	0.000	128.01	HBD
CD-140P	52	2.821	1.336	204.3	16.572	0.0	14.000	7.048	0.000	128.01	HBD

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***CD80A-7-HEADER to FWH 23A***									***Sorted By: Flow Order***	
CD-141	1	3.724	1.763	204.3	16.572	0.0	14.000	7.048	0.000	128.01	HBD
CD-141N	30	4.513	2.137	204.3	16.572	0.0	14.000	7.048	0.000	128.01	HBD
===>Grouped by Line:	***CD80A-8-HEADER to FWH 23B***									***Sorted By: Flow Order***	
CD-141P	64	2.257	1.069	204.3	16.572	0.0	14.000	7.048	0.000	128.01	HBD
CD-142	2	4.175	1.977	204.3	16.572	0.0	14.000	7.048	0.000	128.01	HBD
CD-142P	52	2.821	1.336	204.3	16.572	0.0	14.000	7.048	0.000	128.01	HBD
CD-VALVE-CD-16-1	22	5.642	2.672	204.3	16.572	0.0	14.000	7.048	0.000	128.01	HBD
CD-143	2	4.175	1.977	204.3	16.572	0.0	14.000	7.048	0.000	128.01	HBD
CD-143P	52	2.821	1.336	204.3	16.572	0.0	14.000	7.048	0.000	128.01	HBD
CD-144	1	3.724	1.763	204.3	16.572	0.0	14.000	7.048	0.000	128.01	HBD
CD-144N	30	4.513	2.137	204.3	16.572	0.0	14.000	7.048	0.000	128.01	HBD
===>Grouped by Line:	***CD80A-9-HEADER to FWH 23C***									***Sorted By: Flow Order***	
CD-144P	64	2.257	1.069	204.3	16.572	0.0	14.000	7.048	0.000	128.01	HBD
CD-145	2	4.175	1.977	204.3	16.572	0.0	14.000	7.048	0.000	128.01	HBD
CD-145P	52	2.821	1.336	204.3	16.572	0.0	14.000	7.048	0.000	128.01	HBD
CD-VALVE-CD-16-2	22	5.642	2.672	204.3	16.572	0.0	14.000	7.048	0.000	128.01	HBD
CD-146	2	4.175	1.977	204.3	16.572	0.0	14.000	7.048	0.000	128.01	HBD
CD-146P	52	2.821	1.336	204.3	16.572	0.0	14.000	7.048	0.000	128.01	HBD
CD-147	1	3.724	1.763	204.3	16.572	0.0	14.000	7.048	0.000	128.01	HBD
CD-147N	30	4.513	2.137	204.3	16.572	0.0	14.000	7.048	0.000	128.01	HBD

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).DB

Service Life Report

Pass 2 Analysis Include Measured Wear

Report Date/Time: 7/7/2010 9:54:36AM
AnalysisDate/Time:

Run Name: CND FWH 22 TO FWH 23
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 0.632

CHECWORKS SFA Version: 3.0 (build 105)
Duty Factor (Global) :1.000

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **CD80A-1-FWH 22A to HEADER**					***Sorted By:Remaining Life***		
CD-VALVE-CD-8	0.000	0.281	0.326	0.326	-116,498	No	243,721
CD-106	0.000	0.322	0.305	0.305	74,963	No	243,721
CD-105	0.000	0.322	0.305	0.305	74,963	No	243,721
CD-102	0.000	0.322	0.305	0.305	74,963	No	243,721
CD-106P	0.000	0.338	0.305	0.305	167,087	No	243,721
CD-107	0.000	0.350	0.305	0.305	264,476	No	243,721
CD-101P	0.000	0.357	0.305	0.305	318,439	Yes	243,721
CD-101N	0.000	0.409	0.305	0.305	341,304	No	243,721
CD-105P	0.000	0.360	0.305	0.305	357,970	No	243,721
CD-102P	0.000	0.360	0.305	0.305	357,970	No	243,721
CD-104P	0.000	0.378	0.305	0.305	373,763	Yes	243,721
CD-103	0.000	0.480	0.305	0.305	777,034	Yes	243,721
CD-107 (D/S)	0.000	0.534	0.436	0.436	846,768	No	243,721
CD-104	0.000	0.498	0.305	0.305	856,785	Yes	243,721
CD-107P	0.000	0.394	0.305	0.305	1,035,892	No	243,721
===>Grouped by Line: **CD80A-2-FWH 22B to HEADER**					***Sorted By:Remaining Life***		
CD-VALVE-CD-8-1	0.000	0.281	0.326	0.326	-116,498	No	243,721
CD-110	0.000	0.322	0.305	0.305	74,963	No	243,721
CD-111	0.000	0.322	0.305	0.305	74,963	No	243,721
CD-109	0.000	0.322	0.305	0.305	74,963	No	243,721
CD-112	0.000	0.322	0.305	0.305	74,963	No	243,721
CD-108P	0.000	0.353	0.305	0.305	293,332	No	243,721
CD-109P	0.000	0.360	0.305	0.305	357,970	No	243,721
CD-112P	0.000	0.360	0.305	0.305	357,970	No	243,721
CD-108N	0.000	0.449	0.305	0.305	471,241	No	243,721
CD-111P	0.000	0.369	0.305	0.305	476,961	No	243,721
===>Grouped by Line: **CD80A-3-FWH 22C to HEADER**					***Sorted By:Remaining Life***		
CD-VALVE-CD-8-2	0.000	0.281	0.326	0.326	-116,498	No	243,721

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line:	**CD80A-3-FWH 22C to HEADER**				***Sorted By:Remaining Life***		
CD-113N	0.000	0.281	0.305	0.305	-74,327	No	243,721
CD-114	0.000	0.322	0.305	0.305	74,963	No	243,721
CD-117	0.000	0.322	0.305	0.305	74,963	No	243,721
CD-116P	0.000	0.338	0.305	0.305	167,087	No	243,721
CD-113P	0.000	0.353	0.305	0.305	293,332	No	243,721
CD-114P	0.000	0.360	0.305	0.305	357,970	No	243,721
CD-117P	0.000	0.360	0.305	0.305	357,970	No	243,721
CD-116P-1	0.000	0.369	0.305	0.305	476,961	No	243,721
CD-115	0.000	0.451	0.305	0.305	648,725	Yes	243,721
CD-116	0.000	0.453	0.305	0.305	657,587	Yes	243,721
===>Grouped by Line:	**CD80A-4-FWH 22 OUTLET HEADER**				***Sorted By:Remaining Life***		
CD-120	0.000	0.512	0.436	0.436	474,624	No	243,721
CD-118T (D/S)	0.000	0.547	0.436	0.436	475,264	Yes	243,721
CD-118T (BR/SE)	0.000	0.418	0.305	0.305	547,186	Yes	243,721
CD-120 (D/S)	0.000	0.618	0.523	0.523	700,480	No	243,721
CD-118T	0.000	0.550	0.436	0.436	718,698	Yes	243,721
CD-118P	0.000	0.535	0.436	0.436	870,327	No	243,721
CD-119P	0.000	0.553	0.436	0.436	1,467,999	No	243,721
===>Grouped by Line:	**CD80A-5-FWH 22 to FWH 23 HEAD**				***Sorted By:Remaining Life***		
CD-VALVE-CD-1110	0.000	0.410	0.466	0.466	-119,564	No	243,721
CD-135	0.000	0.527	0.523	0.523	13,886	No	243,721
CD-130	0.000	0.527	0.523	0.523	13,886	No	243,721
CD-130 (D/S)	0.000	0.527	0.523	0.523	15,072	No	243,721
CD-132	0.000	0.447	0.436	0.436	38,801	No	243,721
CD-135 (BR/SE)	0.000	0.328	0.305	0.305	108,654	No	243,721
CD-121 (BR/SE)	0.000	0.331	0.305	0.305	126,986	No	243,721
CD-135 (D/S)	0.000	0.560	0.523	0.523	148,155	No	243,721
CD-131 (D/S)	0.000	0.476	0.436	0.436	177,160	No	243,721
CD-134 (D/S)	0.000	0.568	0.523	0.523	194,357	No	243,721
CD-121 (D/S)	0.000	0.568	0.523	0.523	194,357	No	243,721
CD-134	0.000	0.568	0.523	0.523	195,947	No	243,721
CD-132 (D/S)	0.000	0.571	0.523	0.523	213,712	No	243,721
CD-123	0.000	0.580	0.523	0.523	271,004	No	243,721
CD-125	0.000	0.580	0.523	0.523	271,004	No	243,721
CD-128	0.000	0.580	0.523	0.523	271,004	No	243,721
CD-129	0.000	0.580	0.523	0.523	271,004	No	243,721
CD-133	0.000	0.580	0.523	0.523	272,767	No	243,721
CD-124	0.000	0.586	0.523	0.523	315,898	No	243,721

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line:	**CD80A-5-FWH 22 to FWH 23 HEAD**				***Sorted By:Remaining Life***		
CD-131	0.000	0.586	0.523	0.523	317,761	No	243,721
CD-126	0.000	0.591	0.523	0.523	366,234	No	243,721
CD-121	0.000	0.592	0.523	0.523	374,474	No	243,721
CD-129P	0.000	0.594	0.523	0.523	393,761	No	243,721
CD-122	0.000	0.600	0.523	0.523	454,320	No	243,721
CD-122 (D/S)	0.000	0.600	0.523	0.523	454,320	No	243,721
CD-131P-1	0.000	0.513	0.436	0.436	491,612	No	243,721
CD-124P	0.000	0.615	0.523	0.523	648,112	No	243,721
CD-125P	0.000	0.615	0.523	0.523	648,112	No	243,721
CD-128P	0.000	0.615	0.523	0.523	648,112	No	243,721
CD-132P	0.000	0.615	0.523	0.523	650,720	No	243,721
CD-126P	0.000	0.624	0.523	0.523	806,668	No	243,721
CD-121P	0.000	0.629	0.523	0.523	938,798	No	243,721
CD-122P	0.000	0.629	0.523	0.523	938,798	No	243,721
CD-130P	0.000	0.630	0.523	0.523	942,058	No	243,721
CD-127P	0.000	0.647	0.523	0.523	1,543,465	No	243,721
===>Grouped by Line:	**CD80A-6-FWH 23 INLET HEADER**				***Sorted By:Remaining Life***		
CD-137 (BR/SE)	0.000	0.328	0.305	0.305	108,654	No	243,721
CD-137	0.000	0.560	0.523	0.523	148,155	No	243,721
CD-137 (D/S)	0.000	0.608	0.523	0.523	547,272	No	243,721
CD-136	0.000	0.618	0.523	0.523	700,480	No	243,721
CD-136 (D/S)	0.000	0.618	0.523	0.523	700,480	No	243,721
CD-136P	0.000	0.641	0.523	0.523	1,308,038	No	243,721
===>Grouped by Line:	**CD80A-7-HEADER to FWH 23A**				***Sorted By:Remaining Life***		
CD-VALVE-CD-16	0.000	0.281	0.305	0.305	-74,544	No	243,721
CD-141N	0.000	0.312	0.305	0.305	30,439	No	243,721
CD-139	0.000	0.322	0.305	0.305	74,635	No	243,721
CD-140	0.000	0.322	0.305	0.305	74,635	No	243,721
CD-138 (BR/SE)	0.000	0.328	0.305	0.305	108,654	No	243,721
CD-141	0.000	0.334	0.305	0.305	146,061	No	243,721
CD-139P	0.000	0.360	0.305	0.305	357,484	No	243,721
CD-140P	0.000	0.360	0.305	0.305	357,484	No	243,721
CD-138	0.000	0.608	0.523	0.523	547,272	No	243,721
CD-138P	0.000	0.375	0.305	0.305	575,514	No	243,721
CD-137P	0.000	0.659	0.523	0.523	2,397,748	No	243,721
===>Grouped by Line:	**CD80A-8-HEADER to FWH 23B**				***Sorted By:Remaining Life***		
CD-VALVE-CD-16-1	0.000	0.281	0.305	0.305	-74,544	No	243,721

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **CD80A-8-HEADER to FWH 23B**					***Sorted By:Remaining Life***		
CD-144N	0.000	0.312	0.305	0.305	30,439	No	243,721
CD-142	0.000	0.322	0.305	0.305	74,635	No	243,721
CD-143	0.000	0.322	0.305	0.305	74,635	No	243,721
CD-144	0.000	0.334	0.305	0.305	146,061	No	243,721
CD-142P	0.000	0.360	0.305	0.305	357,484	No	243,721
CD-143P	0.000	0.360	0.305	0.305	357,484	No	243,721
CD-141P	0.000	0.375	0.305	0.305	575,514	No	243,721
===>Grouped by Line: **CD80A-9-HEADER to FWH 23C**					***Sorted By:Remaining Life***		
CD-VALVE-CD-16-2	0.000	0.281	0.305	0.305	-74,544	No	243,721
CD-145	0.000	0.322	0.305	0.305	74,635	No	243,721
CD-145P	0.000	0.360	0.305	0.305	357,484	No	243,721
CD-144P	0.000	0.375	0.305	0.305	575,514	No	243,721
CD-146	0.000	0.457	0.305	0.305	675,250	Yes	243,721
CD-146P	0.000	0.409	0.305	0.305	683,048	Yes	243,721
CD-147	0.000	0.493	0.305	0.305	932,225	Yes	243,721
CD-147N	0.000	0.572	0.305	0.305	1,096,157	Yes	243,721

Note:
[1] Predictions are based on last Tmeas to analysis ending period.

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).DB

Service Life Report

Pass 2 Analysis Include Measured Wear

Report Date/Time: 7/7/2010 9:54:36AM
AnalysisDate/Time:

Run Name: CND FWH 22 TO FWH 23
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 0.632

CHECWORKS SFA Version: 3.0 (build 105)
Duty Factor (Global) : 1.000

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **CD80A-1-FWH 22A to HEADER**					***Sorted By:Flow Order***		
CD-101N	0.000	0.409	0.305	0.305	341,304	No	243,721
CD-101P	0.000	0.357	0.305	0.305	318,439	Yes	243,721
CD-102	0.000	0.322	0.305	0.305	74,963	No	243,721
CD-102P	0.000	0.360	0.305	0.305	357,970	No	243,721
CD-VALVE-CD-8	0.000	0.281	0.326	0.326	-116,498	No	243,721
CD-103	0.000	0.480	0.305	0.305	777,034	Yes	243,721
CD-104	0.000	0.498	0.305	0.305	856,785	Yes	243,721
CD-104P	0.000	0.378	0.305	0.305	373,763	Yes	243,721
CD-105	0.000	0.322	0.305	0.305	74,963	No	243,721
CD-105P	0.000	0.360	0.305	0.305	357,970	No	243,721
CD-106	0.000	0.322	0.305	0.305	74,963	No	243,721
CD-106P	0.000	0.338	0.305	0.305	167,087	No	243,721
CD-107P	0.000	0.394	0.305	0.305	1,035,892	No	243,721
CD-107	0.000	0.350	0.305	0.305	264,476	No	243,721
CD-107 (D/S)	0.000	0.534	0.436	0.436	846,768	No	243,721
===>Grouped by Line: **CD80A-2-FWH 22B to HEADER**					***Sorted By:Flow Order***		
CD-108N	0.000	0.449	0.305	0.305	471,241	No	243,721
CD-108P	0.000	0.353	0.305	0.305	293,332	No	243,721
CD-109	0.000	0.322	0.305	0.305	74,963	No	243,721
CD-109P	0.000	0.360	0.305	0.305	357,970	No	243,721
CD-110	0.000	0.322	0.305	0.305	74,963	No	243,721
CD-111	0.000	0.322	0.305	0.305	74,963	No	243,721
CD-VALVE-CD-8-1	0.000	0.281	0.326	0.326	-116,498	No	243,721
CD-111P	0.000	0.369	0.305	0.305	476,961	No	243,721
CD-112	0.000	0.322	0.305	0.305	74,963	No	243,721
CD-112P	0.000	0.360	0.305	0.305	357,970	No	243,721
===>Grouped by Line: **CD80A-3-FWH 22C to HEADER**					***Sorted By:Flow Order***		
CD-113N	0.000	0.281	0.305	0.305	-74,327	No	243,721

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line:	**CD80A-3-FWH 22C to HEADER**				***Sorted By:Flow Order***		
CD-113P	0.000	0.353	0.305	0.305	293,332	No	243,721
CD-114	0.000	0.322	0.305	0.305	74,963	No	243,721
CD-114P	0.000	0.360	0.305	0.305	357,970	No	243,721
CD-115	0.000	0.451	0.305	0.305	648,725	Yes	243,721
CD-116	0.000	0.453	0.305	0.305	657,587	Yes	243,721
CD-116P	0.000	0.338	0.305	0.305	167,087	No	243,721
CD-VALVE-CD-8-2	0.000	0.281	0.326	0.326	-116,498	No	243,721
CD-116P-1	0.000	0.369	0.305	0.305	476,961	No	243,721
CD-117	0.000	0.322	0.305	0.305	74,963	No	243,721
CD-117P	0.000	0.360	0.305	0.305	357,970	No	243,721
===>Grouped by Line:	**CD80A-4-FWH 22 OUTLET HEADER**				***Sorted By:Flow Order***		
CD-118T	0.000	0.550	0.436	0.436	718,698	Yes	243,721
CD-118T (BR/SE)	0.000	0.418	0.305	0.305	547,186	Yes	243,721
CD-118T (D/S)	0.000	0.547	0.436	0.436	475,264	Yes	243,721
CD-118P	0.000	0.535	0.436	0.436	870,327	No	243,721
CD-119P	0.000	0.553	0.436	0.436	1,467,999	No	243,721
CD-120	0.000	0.512	0.436	0.436	474,624	No	243,721
CD-120 (D/S)	0.000	0.618	0.523	0.523	700,480	No	243,721
===>Grouped by Line:	**CD80A-5-FWH 22 to FWH 23 HEAD**				***Sorted By:Flow Order***		
CD-121 (BR/SE)	0.000	0.331	0.305	0.305	126,986	No	243,721
CD-121	0.000	0.592	0.523	0.523	374,474	No	243,721
CD-121 (D/S)	0.000	0.568	0.523	0.523	194,357	No	243,721
CD-121P	0.000	0.629	0.523	0.523	938,798	No	243,721
CD-122	0.000	0.600	0.523	0.523	454,320	No	243,721
CD-122 (D/S)	0.000	0.600	0.523	0.523	454,320	No	243,721
CD-122P	0.000	0.629	0.523	0.523	938,798	No	243,721
CD-123	0.000	0.580	0.523	0.523	271,004	No	243,721
CD-124	0.000	0.586	0.523	0.523	315,898	No	243,721
CD-124P	0.000	0.615	0.523	0.523	648,112	No	243,721
CD-125	0.000	0.580	0.523	0.523	271,004	No	243,721
CD-125P	0.000	0.615	0.523	0.523	648,112	No	243,721
CD-126	0.000	0.591	0.523	0.523	366,234	No	243,721
CD-126P	0.000	0.624	0.523	0.523	806,668	No	243,721
CD-127P	0.000	0.647	0.523	0.523	1,543,465	No	243,721
CD-128	0.000	0.580	0.523	0.523	271,004	No	243,721
CD-128P	0.000	0.615	0.523	0.523	648,112	No	243,721
CD-129	0.000	0.580	0.523	0.523	271,004	No	243,721

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line:	**CD80A-5-FWH 22 to FWH 23 HEAD**				***Sorted By:Flow Order***		
CD-129P	0.000	0.594	0.523	0.523	393,761	No	243,721
CD-130	0.000	0.527	0.523	0.523	13,886	No	243,721
CD-130 (D/S)	0.000	0.527	0.523	0.523	15,072	No	243,721
CD-130P	0.000	0.630	0.523	0.523	942,058	No	243,721
CD-131	0.000	0.586	0.523	0.523	317,761	No	243,721
CD-131 (D/S)	0.000	0.476	0.436	0.436	177,160	No	243,721
CD-VALVE-CD-1110	0.000	0.410	0.466	0.466	-119,564	No	243,721
CD-131P-1	0.000	0.513	0.436	0.436	491,612	No	243,721
CD-132	0.000	0.447	0.436	0.436	38,801	No	243,721
CD-132 (D/S)	0.000	0.571	0.523	0.523	213,712	No	243,721
CD-132P	0.000	0.615	0.523	0.523	650,720	No	243,721
CD-133	0.000	0.580	0.523	0.523	272,767	No	243,721
CD-134	0.000	0.568	0.523	0.523	195,947	No	243,721
CD-134 (D/S)	0.000	0.568	0.523	0.523	194,357	No	243,721
CD-135	0.000	0.527	0.523	0.523	13,886	No	243,721
CD-135 (BR/SE)	0.000	0.328	0.305	0.305	108,654	No	243,721
CD-135 (D/S)	0.000	0.560	0.523	0.523	148,155	No	243,721
===>Grouped by Line:	**CD80A-6-FWH 23 INLET HEADER**				***Sorted By:Flow Order***		
CD-136 (D/S)	0.000	0.618	0.523	0.523	700,480	No	243,721
CD-136P	0.000	0.641	0.523	0.523	1,308,038	No	243,721
CD-137	0.000	0.560	0.523	0.523	148,155	No	243,721
CD-137 (D/S)	0.000	0.608	0.523	0.523	547,272	No	243,721
CD-137 (BR/SE)	0.000	0.328	0.305	0.305	108,654	No	243,721
CD-136	0.000	0.618	0.523	0.523	700,480	No	243,721
===>Grouped by Line:	**CD80A-7-HEADER to FWH 23A**				***Sorted By:Flow Order***		
CD-137P	0.000	0.659	0.523	0.523	2,397,748	No	243,721
CD-138	0.000	0.608	0.523	0.523	547,272	No	243,721
CD-138 (BR/SE)	0.000	0.328	0.305	0.305	108,654	No	243,721
CD-138P	0.000	0.375	0.305	0.305	575,514	No	243,721
CD-139	0.000	0.322	0.305	0.305	74,635	No	243,721
CD-139P	0.000	0.360	0.305	0.305	357,484	No	243,721
CD-VALVE-CD-16	0.000	0.281	0.305	0.305	-74,544	No	243,721
CD-140	0.000	0.322	0.305	0.305	74,635	No	243,721
CD-140P	0.000	0.360	0.305	0.305	357,484	No	243,721
CD-141	0.000	0.334	0.305	0.305	146,061	No	243,721
CD-141N	0.000	0.312	0.305	0.305	30,439	No	243,721
===>Grouped by Line:	**CD80A-8-HEADER to FWH 23B**				***Sorted By:Flow Order***		

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **CD80A-8-HEADER to FWH 23B**					***Sorted By:Flow Order***		
CD-141P	0.000	0.375	0.305	0.305	575,514	No	243,721
CD-142	0.000	0.322	0.305	0.305	74,635	No	243,721
CD-142P	0.000	0.360	0.305	0.305	357,484	No	243,721
CD-VALVE-CD-16-1	0.000	0.281	0.305	0.305	-74,544	No	243,721
CD-143	0.000	0.322	0.305	0.305	74,635	No	243,721
CD-143P	0.000	0.360	0.305	0.305	357,484	No	243,721
CD-144	0.000	0.334	0.305	0.305	146,061	No	243,721
CD-144N	0.000	0.312	0.305	0.305	30,439	No	243,721
===>Grouped by Line: **CD80A-9-HEADER to FWH 23C**					***Sorted By:Flow Order***		
CD-144P	0.000	0.375	0.305	0.305	575,514	No	243,721
CD-145	0.000	0.322	0.305	0.305	74,635	No	243,721
CD-145P	0.000	0.360	0.305	0.305	357,484	No	243,721
CD-VALVE-CD-16-2	0.000	0.281	0.305	0.305	-74,544	No	243,721
CD-146	0.000	0.457	0.305	0.305	675,250	Yes	243,721
CD-146P	0.000	0.409	0.305	0.305	683,048	Yes	243,721
CD-147	0.000	0.493	0.305	0.305	932,225	Yes	243,721
CD-147N	0.000	0.572	0.305	0.305	1,096,157	Yes	243,721

Note:
[1] Predictions are based on last Tmeas to analysis ending period.

4

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).DB

Wear Report

Pass 2 Analysis Include Measured Wear

Report Date/Time: 07-Jul-2010 9:54 am
AnalysisDate/Time: 07-Jul-2010 9:54 am

Run Name: CND FWH 22 TO FWH 23
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 0.632

CHECWORKS SFA Version: 3.0 (build 105)
Duty Factor (Global) : 1.000

Component Name	Tinit	Total Lifetime Wear (mils) Prd. [1]	Total Lifetime Wear (mils) Meas.	In-Service Component Wear(mils) Prd. [1]	In-Service Component Wear(mils) Meas.	In-Service Component Tmeas, Method, Time (in) [3]	[2]	(hrs) [3]	In-Service Component Thickness (mils) [4] Tp	Tm	Incremental Wear (mils) [5] PRWEAR	Time (hrs) Last Inspected
===>Grouped by Line:	**CD80A-1-FWH 22A to HEADER**										***Sorted By: Flow Order***	
CD-101P	0.000	76.1	75.0	76.1	75.0	0.366	MT	192,577	361.9	366.0	8.6	192,577
CD-103	0.000	104.5	108.0	104.5	108.0	0.492	GW	193,077	333.5	492.0	11.7	193,077
CD-104	0.000	104.5	114.0	104.5	114.0	0.510	GW	193,077	333.5	510.0	11.7	193,077
CD-104P	0.000	90.3	107.0	90.3	107.0	0.388	GW	193,077	347.7	388.0	10.1	193,077
===>Grouped by Line:	**CD80A-3-FWH 22C to HEADER**										***Sorted By: Flow Order***	
CD-115	0.000	108.5	108.5	108.5	108.5	0.459	MT	209,806	329.5	459.0	7.7	209,806
CD-116	0.000	108.5	125.0	108.5	125.0	0.461	MT	209,806	329.5	461.0	7.7	209,806
===>Grouped by Line:	**CD80A-4-FWH 22 OUTLET HEADER**										***Sorted By: Flow Order***	
CD-118T	0.000	73.7	74.0	73.7	74.0	0.558	GW	193,769	520.3	558.0	8.1	193,769
CD-118T (BR/SE)	0.000	96.2	39.0	96.2	39.0	0.429	GW	193,769	341.8	429.0	10.6	193,769
CD-118T (D/S)	0.000	108.7	68.0	108.7	68.0	0.559	MT	193,769	485.3	559.0	12.0	193,769
===>Grouped by Line:	**CD80A-9-HEADER to FWH 23C**										***Sorted By: Flow Order***	
CD-146	0.000	104.6	93.0	104.6	93.0	0.469	GW	193,477	333.4	469.0	11.6	193,477
CD-146P	0.000	70.6	78.0	70.6	78.0	0.417	GW	193,477	367.4	417.0	7.8	193,477
CD-147	0.000	93.3	66.0	93.3	66.0	0.503	GW	193,477	344.7	503.0	10.3	193,477
CD-147N	0.000	113.0	67.0	113.0	67.0	0.585	GW	193,477	325.0	585.0	12.5	193,477

Notes:

[1] Predictions are for the time of last inspection (last known meas. wear).

[2] GW = Tmeas is minimum thickness from Band, Blanket or Area Method of greatest wear.
MT = Tmeas is component minimum thickness.
PW = Tmeas is Tinit - predicted wear.
US = Tmeas is user specified.

[3] If no Tmeas has been determined from measured data, then Tmeas = Tinit and Time = current component installation time.
Tmeas is used to determine Predicted Thickness and Component Predicted Time to Tcrit.

[4] These two values are used for thickness plot.
Tp = Predicted thickness at Tmeas.
Tm = Last measured thickness (Tmeas).

[5] PRWEAR = Incremental wear from last Tmeas time to analysis ending period.

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).DB

Wear Rate Report

Pass 2 Analysis Include Measured Wear

Report Date/Time: 7/7/2010 9:54:36AM
AnalysisDate/Time: 6/11/2010 11:33:19AM

CHECWORKS SFA Version: 3.0 (build 105)
Duty Factor (Global) : 1.000

Run Name: CND FWH 23 TO FWH 24
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 0.439

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***CD80-1-FWH 23A to FWH 24A***								***Sorted By: Average Wear Rate***		
CD-11N	31	6.051	2.880	255.5	16.955	0.0	14.000	7.048	0.000	126.02	HBD
CD-41N	30	4.841	2.304	255.5	16.955	0.0	14.000	7.048	0.000	126.02	HBD
CD-11	4	4.478	2.131	255.5	16.955	0.0	14.000	7.048	0.000	126.02	HBD
CD-12	4	4.478	2.131	255.5	16.955	0.0	14.000	7.048	0.000	126.02	HBD
CD-2	2	4.478	2.131	255.5	16.955	0.0	14.000	7.048	0.000	126.02	HBD
CD-5	2	4.478	2.131	255.5	16.955	0.0	14.000	7.048	0.000	126.02	HBD
CD-1	1	3.994	1.901	255.5	16.955	0.0	14.000	7.048	0.000	126.02	HBD
CD-17	1	3.994	1.901	255.5	16.955	0.0	14.000	7.048	0.000	126.02	HBD
CD-41	1	3.994	1.901	255.5	16.955	0.0	14.000	7.048	0.000	126.02	HBD
CD-12P	54	3.873	1.843	255.5	16.955	0.0	14.000	7.048	0.000	126.02	HBD
CD-2P	52	3.025	1.440	255.5	16.955	0.0	14.000	7.048	0.000	126.02	HBD
CD-5P	52	3.025	1.440	255.5	16.955	0.0	14.000	7.048	0.000	126.02	HBD
CD-1P	51	2.662	1.267	255.5	16.955	0.0	14.000	7.048	0.000	126.02	HBD
CD-17P	51	2.662	1.267	255.5	16.955	0.0	14.000	7.048	0.000	126.02	HBD
===>Grouped by Line:	***CD80-2-FWH 23B to FWH 24B***								***Sorted By: Average Wear Rate***		
CD-14N	31	6.051	2.880	255.5	16.955	0.0	14.000	7.048	0.000	126.02	HBD
CD-42N	30	4.841	2.304	255.5	16.955	0.0	14.000	7.048	0.000	126.02	HBD
CD-14	4	4.478	2.131	255.5	16.955	0.0	14.000	7.048	0.000	126.02	HBD
CD-13	4	4.478	2.131	255.5	16.955	0.0	14.000	7.048	0.000	126.02	HBD
CD-3	2	4.478	2.131	255.5	16.955	0.0	14.000	7.048	0.000	126.02	HBD
CD-4	4	4.478	2.131	255.5	16.955	0.0	14.000	7.048	0.000	126.02	HBD
CD-19	2	4.478	2.131	255.5	16.955	0.0	14.000	7.048	0.000	126.02	HBD
CD-42	1	3.994	1.901	255.5	16.955	0.0	14.000	7.048	0.000	126.02	HBD
CD-13P US	54	3.873	1.843	255.5	16.955	0.0	14.000	7.048	0.000	126.02	HBD
CD-4P	54	3.873	1.843	255.5	16.955	0.0	14.000	7.048	0.000	126.02	HBD
CD-19P	52	3.025	1.440	255.5	16.955	0.0	14.000	7.048	0.000	126.02	HBD
===>Grouped by Line:	***CD80-3-FWH 23C to FWH 24C***								***Sorted By: Average Wear Rate***		

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***CD80-3-FWH 23C to FWH 24C***								***Sorted By: Average Wear Rate***		
CD-16N	31	6.051	2.880	255.5	16.955	0.0	14.000	7.048	0.000	126.02	HBD
CD-43N	30	4.841	2.304	255.5	16.955	0.0	14.000	7.048	0.000	126.02	HBD
CD-16	4	4.478	2.131	255.5	16.955	0.0	14.000	7.048	0.000	126.02	HBD
CD-15	4	4.478	2.131	255.5	16.955	0.0	14.000	7.048	0.000	126.02	HBD
CD-39	2	4.478	2.131	255.5	16.955	0.0	14.000	7.048	0.000	126.02	HBD
CD-40	4	4.478	2.131	255.5	16.955	0.0	14.000	7.048	0.000	126.02	HBD
CD-22	2	4.478	2.131	255.5	16.955	0.0	14.000	7.048	0.000	126.02	HBD
CD-43	1	3.994	1.901	255.5	16.955	0.0	14.000	7.048	0.000	126.02	HBD
CD-15P US	54	3.873	1.843	255.5	16.955	0.0	14.000	7.048	0.000	126.02	HBD
CD-40P	54	3.873	1.843	255.5	16.955	0.0	14.000	7.048	0.000	126.02	HBD
CD-22P	52	3.025	1.440	255.5	16.955	0.0	14.000	7.048	0.000	126.02	HBD

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).DB

Wear Rate Report

Pass 2 Analysis Include Measured Wear

Report Date/Time: 7/7/2010 9:54:36AM
AnalysisDate/Time: 5/11/2010 11:33:19AM

CHECWORKS SFA Version: 3.0 (build 105)
Duty Factor (Global) : 1.000

Run Name: CND FWH 23 TO FWH 24
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 0.439

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***CD80-1-FWH 23A to FWH 24A***									***Sorted By: Flow Order***	
CD-11N	31	6.051	2.880	255.5	16.955	0.0	14.000	7.048	0.000	126.02	HBD
CD-11	4	4.478	2.131	255.5	16.955	0.0	14.000	7.048	0.000	126.02	HBD
CD-12	4	4.478	2.131	255.5	16.955	0.0	14.000	7.048	0.000	126.02	HBD
CD-12P	54	3.873	1.843	255.5	16.955	0.0	14.000	7.048	0.000	126.02	HBD
CD-1	1	3.994	1.901	255.5	16.955	0.0	14.000	7.048	0.000	126.02	HBD
CD-1P	51	2.662	1.267	255.5	16.955	0.0	14.000	7.048	0.000	126.02	HBD
CD-2	2	4.478	2.131	255.5	16.955	0.0	14.000	7.048	0.000	126.02	HBD
CD-2P	52	3.025	1.440	255.5	16.955	0.0	14.000	7.048	0.000	126.02	HBD
CD-17	1	3.994	1.901	255.5	16.955	0.0	14.000	7.048	0.000	126.02	HBD
CD-17P	51	2.662	1.267	255.5	16.955	0.0	14.000	7.048	0.000	126.02	HBD
CD-5	2	4.478	2.131	255.5	16.955	0.0	14.000	7.048	0.000	126.02	HBD
CD-5P	52	3.025	1.440	255.5	16.955	0.0	14.000	7.048	0.000	126.02	HBD
CD-41	1	3.994	1.901	255.5	16.955	0.0	14.000	7.048	0.000	126.02	HBD
CD-41N	30	4.841	2.304	255.5	16.955	0.0	14.000	7.048	0.000	126.02	HBD
===>Grouped by Line:	***CD80-2-FWH 23B to FWH 24B***									***Sorted By: Flow Order***	
CD-14N	31	6.051	2.880	255.5	16.955	0.0	14.000	7.048	0.000	126.02	HBD
CD-14	4	4.478	2.131	255.5	16.955	0.0	14.000	7.048	0.000	126.02	HBD
CD-13	4	4.478	2.131	255.5	16.955	0.0	14.000	7.048	0.000	126.02	HBD
CD-13P US	54	3.873	1.843	255.5	16.955	0.0	14.000	7.048	0.000	126.02	HBD
CD-3	2	4.478	2.131	255.5	16.955	0.0	14.000	7.048	0.000	126.02	HBD
CD-4	4	4.478	2.131	255.5	16.955	0.0	14.000	7.048	0.000	126.02	HBD
CD-4P	54	3.873	1.843	255.5	16.955	0.0	14.000	7.048	0.000	126.02	HBD
CD-19	2	4.478	2.131	255.5	16.955	0.0	14.000	7.048	0.000	126.02	HBD
CD-19P	52	3.025	1.440	255.5	16.955	0.0	14.000	7.048	0.000	126.02	HBD
CD-42	1	3.994	1.901	255.5	16.955	0.0	14.000	7.048	0.000	126.02	HBD
CD-42N	30	4.841	2.304	255.5	16.955	0.0	14.000	7.048	0.000	126.02	HBD
===>Grouped by Line:	***CD80-3-FWH 23C to FWH 24C***									***Sorted By: Flow Order***	

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***CD80-3-FWH 23C to FWH 24C***									***Sorted By: Flow Order***	
CD-16N	31	6.051	2.880	255.5	16.955	0.0	14.000	7.048	0.000	126.02	HBD
CD-16	4	4.478	2.131	255.5	16.955	0.0	14.000	7.048	0.000	126.02	HBD
CD-15	4	4.478	2.131	255.5	16.955	0.0	14.000	7.048	0.000	126.02	HBD
CD-15P US	54	3.873	1.843	255.5	16.955	0.0	14.000	7.048	0.000	126.02	HBD
CD-39	2	4.478	2.131	255.5	16.955	0.0	14.000	7.048	0.000	126.02	HBD
CD-40	4	4.478	2.131	255.5	16.955	0.0	14.000	7.048	0.000	126.02	HBD
CD-40P	54	3.873	1.843	255.5	16.955	0.0	14.000	7.048	0.000	126.02	HBD
CD-22	2	4.478	2.131	255.5	16.955	0.0	14.000	7.048	0.000	126.02	HBD
CD-22P	52	3.025	1.440	255.5	16.955	0.0	14.000	7.048	0.000	126.02	HBD
CD-43	1	3.994	1.901	255.5	16.955	0.0	14.000	7.048	0.000	126.02	HBD
CD-43N	30	4.841	2.304	255.5	16.955	0.0	14.000	7.048	0.000	126.02	HBD

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).DB

Service Life Report

Pass 2 Analysis Include Measured Wear

Report Date/Time: 7/7/2010 9:54:36AM
AnalysisDate/Time:

Run Name: CND FWH 23 TO FWH 24
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 0.439

CHECWORKS SFA Version: 3.0 (build 105)
Duty Factor (Global) :1.000

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **CD80-1-FWH 23A to FWH 24A**					***Sorted By:Remaining Life***		
CD-41N	0.000	0.303	0.305	0.305	-6,108	No	243,721
CD-5	0.000	0.313	0.305	0.305	34,914	No	243,721
CD-41	0.000	0.327	0.305	0.305	101,212	No	243,721
CD-17	0.000	0.327	0.305	0.305	101,212	No	243,721
CD-1	0.000	0.327	0.305	0.305	101,212	No	243,721
CD-11	0.000	0.368	0.305	0.305	258,859	Yes	243,721
CD-5P	0.000	0.354	0.305	0.305	297,454	No	243,721
CD-12P	0.000	0.377	0.305	0.305	342,696	Yes	243,721
CD-12	0.000	0.391	0.305	0.305	355,493	Yes	243,721
CD-17P	0.000	0.364	0.305	0.305	407,840	No	243,721
CD-1P	0.000	0.364	0.305	0.305	407,840	No	243,721
CD-2	0.000	0.410	0.305	0.305	433,454	Yes	243,721
CD-2P	0.000	0.378	0.305	0.305	443,300	Yes	243,721
CD-11N	0.000	0.492	0.305	0.305	568,523	No	243,721
===>Grouped by Line: **CD80-2-FWH 23B to FWH 24B**					***Sorted By:Remaining Life***		
CD-3	0.000	0.313	0.305	0.305	34,914	No	243,721
CD-4P	0.000	0.330	0.305	0.305	120,376	No	243,721
CD-42	0.000	0.379	0.305	0.305	341,076	Yes	243,721
CD-13P US	0.000	0.380	0.305	0.305	356,581	Yes	243,721
CD-42N	0.000	0.412	0.305	0.305	406,916	No	243,721
CD-13	0.000	0.408	0.305	0.305	422,296	Yes	243,721
CD-4	0.000	0.422	0.305	0.305	482,776	Yes	243,721
CD-14N	0.000	0.486	0.305	0.305	551,112	No	243,721
CD-14	0.000	0.440	0.305	0.305	553,822	Yes	243,721
CD-19P	0.000	0.401	0.305	0.305	582,048	Yes	243,721
CD-19	0.000	0.455	0.305	0.305	617,791	Yes	243,721
===>Grouped by Line: **CD80-3-FWH 23C to FWH 24C**					***Sorted By:Remaining Life***		
CD-43	0.000	0.327	0.305	0.305	101,212	No	243,721

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **CD80-3-FWH 23C to FWH 24C**					***Sorted By:Remaining Life***		
CD-22P	0.000	0.354	0.305	0.305	297,454	No	243,721
CD-15P US	0.000	0.378	0.305	0.305	347,076	Yes	243,721
CD-22	0.000	0.416	0.305	0.305	457,494	Yes	243,721
CD-43N	0.000	0.430	0.305	0.305	476,573	No	243,721
CD-15	0.000	0.424	0.305	0.305	488,059	Yes	243,721
CD-40	0.000	0.426	0.305	0.305	499,365	Yes	243,721
CD-16	0.000	0.436	0.305	0.305	537,381	Yes	243,721
CD-40P	0.000	0.418	0.305	0.305	537,945	Yes	243,721
CD-39	0.000	0.443	0.305	0.305	569,238	Yes	243,721
CD-16N	0.000	0.512	0.305	0.305	630,192	No	243,721

Note:
[1] Predictions are based on last Tmeas to analysis ending period.

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).DB

Service Life Report

Pass 2 Analysis Include Measured Wear

Report Date/Time: 7/7/2010 9:54:36AM
AnalysisDate/Time:

Run Name: CND FWH 23 TO FWH 24
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 0.439

CHECWORKS SFA Version: 3.0 (build 105)
Duty Factor (Global) : 1.000

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **CD80-1-FWH 23A to FWH 24A**					***Sorted By:Flow Order***		
CD-11N	0.000	0.492	0.305	0.305	568,523	No	243,721
CD-11	0.000	0.368	0.305	0.305	258,859	Yes	243,721
CD-12	0.000	0.391	0.305	0.305	355,493	Yes	243,721
CD-12P	0.000	0.377	0.305	0.305	342,696	Yes	243,721
CD-1	0.000	0.327	0.305	0.305	101,212	No	243,721
CD-1P	0.000	0.364	0.305	0.305	407,840	No	243,721
CD-2	0.000	0.410	0.305	0.305	433,454	Yes	243,721
CD-2P	0.000	0.378	0.305	0.305	443,300	Yes	243,721
CD-17	0.000	0.327	0.305	0.305	101,212	No	243,721
CD-17P	0.000	0.364	0.305	0.305	407,840	No	243,721
CD-5	0.000	0.313	0.305	0.305	34,914	No	243,721
CD-5P	0.000	0.354	0.305	0.305	297,454	No	243,721
CD-41	0.000	0.327	0.305	0.305	101,212	No	243,721
CD-41N	0.000	0.303	0.305	0.305	-6,108	No	243,721
===>Grouped by Line: **CD80-2-FWH 23B to FWH 24B**					***Sorted By:Flow Order***		
CD-14N	0.000	0.486	0.305	0.305	551,112	No	243,721
CD-14	0.000	0.440	0.305	0.305	553,822	Yes	243,721
CD-13	0.000	0.408	0.305	0.305	422,296	Yes	243,721
CD-13P US	0.000	0.380	0.305	0.305	356,581	Yes	243,721
CD-3	0.000	0.313	0.305	0.305	34,914	No	243,721
CD-4	0.000	0.422	0.305	0.305	482,776	Yes	243,721
CD-4P	0.000	0.330	0.305	0.305	120,376	No	243,721
CD-19	0.000	0.455	0.305	0.305	617,791	Yes	243,721
CD-19P	0.000	0.401	0.305	0.305	582,048	Yes	243,721
CD-42	0.000	0.379	0.305	0.305	341,076	Yes	243,721
CD-42N	0.000	0.412	0.305	0.305	406,916	No	243,721
===>Grouped by Line: **CD80-3-FWH 23C to FWH 24C**					***Sorted By:Flow Order***		
CD-16N	0.000	0.512	0.305	0.305	630,192	No	243,721

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **CD80-3-FWH 23C to FWH 24C**					***Sorted By:Flow Order***		
CD-16	0.000	0.436	0.305	0.305	537,381	Yes	243,721
CD-15	0.000	0.424	0.305	0.305	488,059	Yes	243,721
CD-15P US	0.000	0.378	0.305	0.305	347,076	Yes	243,721
CD-39	0.000	0.443	0.305	0.305	569,238	Yes	243,721
CD-40	0.000	0.426	0.305	0.305	499,365	Yes	243,721
CD-40P	0.000	0.418	0.305	0.305	537,945	Yes	243,721
CD-22	0.000	0.416	0.305	0.305	457,494	Yes	243,721
CD-22P	0.000	0.354	0.305	0.305	297,454	No	243,721
CD-43	0.000	0.327	0.305	0.305	101,212	No	243,721
CD-43N	0.000	0.430	0.305	0.305	476,573	No	243,721

Note:
[1] Predictions are based on last Tmeas to analysis ending period.

2

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).DB

Wear Report

Pass 2 Analysis Include Measured Wear

Report Date/Time: 07-Jul-2010 9:54 am
AnalysisDate/Time: 07-Jul-2010 9:54 am

Run Name: CND FWH 23 TO FWH 24
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 0.439

CHECWORKS SFA Version: 3.0 (build 105)
Duty Factor (Global) : 1.000

Component Name	Tinit	Total Lifetime Wear (mils) Prd. [1]	Total Lifetime Wear (mils) Meas.	In-Service Component Wear(mils) Prd. [1]	In-Service Component Wear(mils) Meas.	In-Service Component Tmeas, Method, Time (in) [3]	[2]	(hrs) [3]	In-Service Component Thickness (mils) [4] Tp	Tm	Incremental Wear (mils) [5] PRWEAR	Time (hrs) Last Inspected
===>Grouped by Line:	**CD80-1-FWH 23A to FWH 24A**										***Sorted By: Flow Order***	
CD-11	0.000	104.5	129.0	104.5	129.0	0.388		165,113	333.5	388.0	20.1	165,113
CD-12	0.000	83.0	81.0	83.0	81.0	0.433	MT	119,088	355.0	433.0	41.6	119,088
CD-12P	0.000	64.0	48.0	64.0	48.0	0.413	MT	119,088	366.2	413.0	36.0	106,128
CD-2	0.000	74.0	99.0	74.0	99.0	0.461	MT	106,128	364.0	461.0	50.6	106,128
CD-2P	0.000	50.0	58.0	50.0	58.0	0.412	MT	106,128	388.0	412.0	34.2	106,128
===>Grouped by Line:	**CD80-2-FWH 23B to FWH 24B**										***Sorted By: Flow Order***	
CD-14	0.000	100.2	159.0	100.2	159.0	0.464	MT	149,573	337.8	464.0	24.3	149,573
CD-13	0.000	100.2	121.0	100.2	121.0	0.432	MT	149,573	337.8	432.0	24.3	149,573
CD-13P US	0.000	86.7	44.0	86.7	44.0	0.401	MT	149,573	351.3	401.0	21.0	149,573
CD-4	0.000	74.0	61.0	74.0	61.0	0.473	MT	106,128	364.0	473.0	50.6	106,128
CD-19	0.000	108.8	66.0	108.8	66.0	0.471	GW	181,477	329.2	471.0	15.8	181,477
CD-19P	0.000	75.8	39.0	75.8	39.0	0.409	GW	193,769	362.2	409.0	8.4	193,769
CD-42	0.000	97.0	128.0	97.0	128.0	0.393	GW	181,477	341.0	393.0	14.1	181,477
===>Grouped by Line:	**CD80-3-FWH 23C to FWH 24C**										***Sorted By: Flow Order***	
CD-16	0.000	100.2	108.0	100.2	108.0	0.460	MT	149,573	337.8	460.0	24.3	149,573
CD-15	0.000	100.2	101.0	100.2	101.0	0.448	MT	149,573	337.8	448.0	24.3	149,573
CD-15P US	0.000	86.7	39.0	86.7	39.0	0.399	MT	149,573	351.3	399.0	21.0	149,573
CD-39	0.000	112.0	104.0	112.0	104.0	0.456	GW	193,177	326.0	456.0	12.6	193,177
CD-40	0.000	112.0	112.0	112.0	112.0	0.439	GW	193,177	326.0	439.0	12.6	193,177
CD-40P	0.000	96.9	62.0	96.9	62.0	0.429	GW	193,177	341.1	429.0	10.9	193,177
CD-22	0.000	108.8	124.0	108.8	124.0	0.432	GW	181,477	329.2	432.0	15.8	181,477

Notes:

[1] Predictions are for the time of last inspection (last known meas. wear).

[2] GW = Tmeas is minimum thickness from Band, Blanket or Area Method of greatest wear.
MT = Tmeas is component minimum thickness.
PW = Tmeas is Tinit - predicted wear.
US = Tmeas is user specified.

[3] If no Tmeas has been determined from measured data, then Tmeas = Tinit and Time = current component installation time.
Tmeas is used to determine Predicted Thickness and Component Predicted Time to Tcrit.

[4] These two values are used for thickness plot.
Tp = Predicted thickness at Tmeas.
Tm = Last measured thickness (Tmeas).

[5] PRWEAR = Incremental wear from last Tmeas time to analysis ending period.

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).DB

Wear Rate Report

Pass 2 Analysis Include Measured Wear

Report Date/Time: 7/7/2010 9:54:36AM
AnalysisDate/Time: 6/11/2010 11:33:27AM

CHECWORKS SFA Version: 3.0 (build 105)
Duty Factor (Global) : 1.000

Run Name: CND FWH 24 TO FWH 25
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 0.340

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***CD81-1-FWH 24A to FWH 25A***								***Sorted By: Average Wear Rate***		
CD-37N	31	5.588	2.631	300.5	17.360	0.0	14.000	7.048	0.000	123.54	HBD
CD-56N	30	4.471	2.105	300.5	17.360	0.0	14.000	7.048	0.000	123.54	HBD
CD-37	4	4.135	1.947	300.5	17.360	0.0	14.000	7.048	0.000	123.54	HBD
CD-18	4	4.135	1.947	300.5	17.360	0.0	14.000	7.048	0.000	123.54	HBD
CD-46	2	4.135	1.947	300.5	17.360	0.0	14.000	7.048	0.000	123.54	HBD
CD-47	2	4.135	1.947	300.5	17.360	0.0	14.000	7.048	0.000	123.54	HBD
CD-48	4	4.135	1.947	300.5	17.360	0.0	14.000	7.048	0.000	123.54	HBD
CD-28	2	4.135	1.947	300.5	17.360	0.0	14.000	7.048	0.000	123.54	HBD
CD-56	1	3.688	1.736	300.5	17.360	0.0	14.000	7.048	0.000	123.54	HBD
CD-18P	54	3.576	1.684	300.5	17.360	0.0	14.000	7.048	0.000	123.54	HBD
CD-48P	54	3.576	1.684	300.5	17.360	0.0	14.000	7.048	0.000	123.54	HBD
CD-46P	52	2.794	1.315	300.5	17.360	0.0	14.000	7.048	0.000	123.54	HBD
CD-47P	52	2.794	1.315	300.5	17.360	0.0	14.000	7.048	0.000	123.54	HBD
CD-28P	52	2.794	1.315	300.5	17.360	0.0	14.000	7.048	0.000	123.54	HBD
===>Grouped by Line:	***CD81-2-FWH 24B to FWH 25B***								***Sorted By: Average Wear Rate***		
CD-21N	31	5.588	2.631	300.5	17.360	0.0	14.000	7.048	0.000	123.54	HBD
CD-44N	30	4.471	2.105	300.5	17.360	0.0	14.000	7.048	0.000	123.54	HBD
CD-21	4	4.135	1.947	300.5	17.360	0.0	14.000	7.048	0.000	123.54	HBD
CD-20	4	4.135	1.947	300.5	17.360	0.0	14.000	7.048	0.000	123.54	HBD
CD-49	2	4.135	1.947	300.5	17.360	0.0	14.000	7.048	0.000	123.54	HBD
CD-51	2	4.135	1.947	300.5	17.360	0.0	14.000	7.048	0.000	123.54	HBD
CD-52	4	4.135	1.947	300.5	17.360	0.0	14.000	7.048	0.000	123.54	HBD
CD-29	4	4.135	1.947	300.5	17.360	0.0	14.000	7.048	0.000	123.54	HBD
CD-50	3	3.912	1.842	300.5	17.360	0.0	14.000	7.048	0.000	123.54	HBD
CD-57	1	3.688	1.736	300.5	17.360	0.0	14.000	7.048	0.000	123.54	HBD
CD-44	1	3.688	1.736	300.5	17.360	0.0	14.000	7.048	0.000	123.54	HBD
CD-20P	54	3.576	1.684	300.5	17.360	0.0	14.000	7.048	0.000	123.54	HBD
CD-52P	54	3.576	1.684	300.5	17.360	0.0	14.000	7.048	0.000	123.54	HBD

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***CD81-2-FWH 24B to FWH 25B***								***Sorted By: Average Wear Rate***		
CD-29P	54	3.576	1.684	300.5	17.360	0.0	14.000	7.048	0.000	123.54	HBD
CD-50P	53	2.794	1.315	300.5	17.360	0.0	14.000	7.048	0.000	123.54	HBD
CD-51P	52	2.794	1.315	300.5	17.360	0.0	14.000	7.048	0.000	123.54	HBD
===>Grouped by Line:	***CD81-3-FWH 24C to FWH 25C***								***Sorted By: Average Wear Rate***		
CD-24N	31	5.588	2.631	300.5	17.360	0.0	14.000	7.048	0.000	123.54	HBD
CD-45N	30	4.471	2.105	300.5	17.360	0.0	14.000	7.048	0.000	123.54	HBD
CD-24	4	4.135	1.947	300.5	17.360	0.0	14.000	7.048	0.000	123.54	HBD
CD-23	4	4.135	1.947	300.5	17.360	0.0	14.000	7.048	0.000	123.54	HBD
CD-53	2	4.135	1.947	300.5	17.360	0.0	14.000	7.048	0.000	123.54	HBD
CD-54	2	4.135	1.947	300.5	17.360	0.0	14.000	7.048	0.000	123.54	HBD
CD-55	2	4.135	1.947	300.5	17.360	0.0	14.000	7.048	0.000	123.54	HBD
CD-30	2	4.135	1.947	300.5	17.360	0.0	14.000	7.048	0.000	123.54	HBD
CD-45	1	3.688	1.736	300.5	17.360	0.0	14.000	7.048	0.000	123.54	HBD
CD-23P	54	3.576	1.684	300.5	17.360	0.0	14.000	7.048	0.000	123.54	HBD
CD-53P	52	2.794	1.315	300.5	17.360	0.0	14.000	7.048	0.000	123.54	HBD
CD-54P	52	2.794	1.315	300.5	17.360	0.0	14.000	7.048	0.000	123.54	HBD
CD-55P	52	2.794	1.315	300.5	17.360	0.0	14.000	7.048	0.000	123.54	HBD
CD-30P	52	2.794	1.315	300.5	17.360	0.0	14.000	7.048	0.000	123.54	HBD

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).DB

Wear Rate Report

Pass 2 Analysis Include Measured Wear

Report Date/Time: 7/7/2010 9:54:36AM
AnalysisDate/Time: 6/11/2010 11:33:27AM

CHECWORKS SFA Version: 3.0 (build 105)
Duty Factor (Global) : 1.000

Run Name: CND FWH 24 TO FWH 25
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 0.340

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***CD81-1-FWH 24A to FWH 25A***									***Sorted By: Flow Order***	
CD-37N	31	5.588	2.631	300.5	17.360	0.0	14.000	7.048	0.000	123.54	HBD
CD-37	4	4.135	1.947	300.5	17.360	0.0	14.000	7.048	0.000	123.54	HBD
CD-18	4	4.135	1.947	300.5	17.360	0.0	14.000	7.048	0.000	123.54	HBD
CD-18P	54	3.576	1.684	300.5	17.360	0.0	14.000	7.048	0.000	123.54	HBD
CD-46	2	4.135	1.947	300.5	17.360	0.0	14.000	7.048	0.000	123.54	HBD
CD-46P	52	2.794	1.315	300.5	17.360	0.0	14.000	7.048	0.000	123.54	HBD
CD-47	2	4.135	1.947	300.5	17.360	0.0	14.000	7.048	0.000	123.54	HBD
CD-47P	52	2.794	1.315	300.5	17.360	0.0	14.000	7.048	0.000	123.54	HBD
CD-48	4	4.135	1.947	300.5	17.360	0.0	14.000	7.048	0.000	123.54	HBD
CD-48P	54	3.576	1.684	300.5	17.360	0.0	14.000	7.048	0.000	123.54	HBD
CD-28	2	4.135	1.947	300.5	17.360	0.0	14.000	7.048	0.000	123.54	HBD
CD-28P	52	2.794	1.315	300.5	17.360	0.0	14.000	7.048	0.000	123.54	HBD
CD-56	1	3.688	1.736	300.5	17.360	0.0	14.000	7.048	0.000	123.54	HBD
CD-56N	30	4.471	2.105	300.5	17.360	0.0	14.000	7.048	0.000	123.54	HBD
===>Grouped by Line:	***CD81-2-FWH 24B to FWH 25B***									***Sorted By: Flow Order***	
CD-21N	31	5.588	2.631	300.5	17.360	0.0	14.000	7.048	0.000	123.54	HBD
CD-21	4	4.135	1.947	300.5	17.360	0.0	14.000	7.048	0.000	123.54	HBD
CD-20	4	4.135	1.947	300.5	17.360	0.0	14.000	7.048	0.000	123.54	HBD
CD-20P	54	3.576	1.684	300.5	17.360	0.0	14.000	7.048	0.000	123.54	HBD
CD-49	2	4.135	1.947	300.5	17.360	0.0	14.000	7.048	0.000	123.54	HBD
CD-50	3	3.912	1.842	300.5	17.360	0.0	14.000	7.048	0.000	123.54	HBD
CD-50P	53	2.794	1.315	300.5	17.360	0.0	14.000	7.048	0.000	123.54	HBD
CD-51	2	4.135	1.947	300.5	17.360	0.0	14.000	7.048	0.000	123.54	HBD
CD-51P	52	2.794	1.315	300.5	17.360	0.0	14.000	7.048	0.000	123.54	HBD
CD-52	4	4.135	1.947	300.5	17.360	0.0	14.000	7.048	0.000	123.54	HBD
CD-52P	54	3.576	1.684	300.5	17.360	0.0	14.000	7.048	0.000	123.54	HBD
CD-57	1	3.688	1.736	300.5	17.360	0.0	14.000	7.048	0.000	123.54	HBD

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***CD81-2-FWH 24B to FWH 25B***									***Sorted By: Flow Order***	
CD-29	4	4.135	1.947	300.5	17.360	0.0	14.000	7.048	0.000	123.54	HBD
CD-29P	54	3.576	1.684	300.5	17.360	0.0	14.000	7.048	0.000	123.54	HBD
CD-44	1	3.688	1.736	300.5	17.360	0.0	14.000	7.048	0.000	123.54	HBD
CD-44N	30	4.471	2.105	300.5	17.360	0.0	14.000	7.048	0.000	123.54	HBD
===>Grouped by Line:	***CD81-3-FWH 24C to FWH 25C***									***Sorted By: Flow Order***	
CD-24N	31	5.588	2.631	300.5	17.360	0.0	14.000	7.048	0.000	123.54	HBD
CD-24	4	4.135	1.947	300.5	17.360	0.0	14.000	7.048	0.000	123.54	HBD
CD-23	4	4.135	1.947	300.5	17.360	0.0	14.000	7.048	0.000	123.54	HBD
CD-23P	54	3.576	1.684	300.5	17.360	0.0	14.000	7.048	0.000	123.54	HBD
CD-53	2	4.135	1.947	300.5	17.360	0.0	14.000	7.048	0.000	123.54	HBD
CD-53P	52	2.794	1.315	300.5	17.360	0.0	14.000	7.048	0.000	123.54	HBD
CD-54	2	4.135	1.947	300.5	17.360	0.0	14.000	7.048	0.000	123.54	HBD
CD-54P	52	2.794	1.315	300.5	17.360	0.0	14.000	7.048	0.000	123.54	HBD
CD-55	2	4.135	1.947	300.5	17.360	0.0	14.000	7.048	0.000	123.54	HBD
CD-55P	52	2.794	1.315	300.5	17.360	0.0	14.000	7.048	0.000	123.54	HBD
CD-30	2	4.135	1.947	300.5	17.360	0.0	14.000	7.048	0.000	123.54	HBD
CD-30P	52	2.794	1.315	300.5	17.360	0.0	14.000	7.048	0.000	123.54	HBD
CD-45	1	3.688	1.736	300.5	17.360	0.0	14.000	7.048	0.000	123.54	HBD
CD-45N	30	4.471	2.105	300.5	17.360	0.0	14.000	7.048	0.000	123.54	HBD

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).DB

Service Life Report

Pass 2 Analysis Include Measured Wear

Report Date/Time: 7/7/2010 9:54:36AM
AnalysisDate/Time:

Run Name: CND FWH 24 TO FWH 25
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 0.340

CHECWORKS SFA Version: 3.0 (build 105)
Duty Factor (Global) :1.000

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **CD81-1-FWH 24A to FWH 25A**					***Sorted By:Remaining Life***		
CD-47	0.000	0.323	0.305	0.305	81,091	No	243,721
CD-48	0.000	0.323	0.305	0.305	81,091	No	243,721
CD-28	0.000	0.323	0.305	0.305	81,091	No	243,721
CD-48P	0.000	0.338	0.305	0.305	174,654	No	243,721
CD-18P	0.000	0.369	0.305	0.305	332,546	Yes	243,721
CD-47P	0.000	0.360	0.305	0.305	368,516	No	243,721
CD-28P	0.000	0.360	0.305	0.305	368,516	No	243,721
CD-37N	0.000	0.417	0.305	0.305	372,317	No	243,721
CD-46	0.000	0.392	0.305	0.305	390,288	Yes	243,721
CD-18	0.000	0.403	0.305	0.305	442,717	Yes	243,721
CD-46P	0.000	0.373	0.305	0.305	453,984	Yes	243,721
CD-37	0.000	0.416	0.305	0.305	500,287	Yes	243,721
CD-56	0.000	0.420	0.305	0.305	580,715	Yes	243,721
CD-56N	0.000	0.501	0.305	0.305	815,251	No	243,721
===>Grouped by Line: **CD81-2-FWH 24B to FWH 25B**					***Sorted By:Remaining Life***		
CD-44N	0.000	0.314	0.305	0.305	36,180	No	243,721
CD-49	0.000	0.323	0.305	0.305	81,091	No	243,721
CD-52	0.000	0.323	0.305	0.305	81,091	No	243,721
CD-29	0.000	0.323	0.305	0.305	81,091	No	243,721
CD-57	0.000	0.335	0.305	0.305	153,673	No	243,721
CD-44	0.000	0.335	0.305	0.305	153,673	No	243,721
CD-20P	0.000	0.338	0.305	0.305	174,654	No	243,721
CD-52P	0.000	0.338	0.305	0.305	174,654	No	243,721
CD-29P	0.000	0.338	0.305	0.305	174,654	No	243,721
CD-51	0.000	0.381	0.305	0.305	343,722	Yes	243,721
CD-21	0.000	0.408	0.305	0.305	463,571	Yes	243,721
CD-50	0.000	0.404	0.305	0.305	470,506	Yes	243,721
CD-21N	0.000	0.451	0.305	0.305	485,531	Yes	243,721
CD-51P	0.000	0.384	0.305	0.305	529,632	Yes	243,721

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **CD81-2-FWH 24B to FWH 25B**					***Sorted By:Remaining Life***		
CD-50P	0.000	0.406	0.305	0.305	669,891	No	243,721
CD-20	0.000	0.461	0.305	0.305	700,490	Yes	243,721
===>Grouped by Line: **CD81-3-FWH 24C to FWH 25C**					***Sorted By:Remaining Life***		
CD-54	0.000	0.323	0.305	0.305	81,091	No	243,721
CD-55	0.000	0.323	0.305	0.305	81,091	No	243,721
CD-45	0.000	0.335	0.305	0.305	153,673	No	243,721
CD-53P	0.000	0.360	0.305	0.305	368,516	No	243,721
CD-54P	0.000	0.360	0.305	0.305	368,516	No	243,721
CD-53	0.000	0.405	0.305	0.305	448,503	Yes	243,721
CD-24N	0.000	0.440	0.305	0.305	449,875	No	243,721
CD-24	0.000	0.408	0.305	0.305	462,003	Yes	243,721
CD-23P	0.000	0.405	0.305	0.305	518,302	Yes	243,721
CD-30P	0.000	0.392	0.305	0.305	580,518	Yes	243,721
CD-55P	0.000	0.401	0.305	0.305	640,455	Yes	243,721
CD-23	0.000	0.469	0.305	0.305	736,489	Yes	243,721
CD-30	0.000	0.472	0.305	0.305	753,878	Yes	243,721
CD-45N	0.000	0.491	0.305	0.305	774,595	No	243,721

Note:
[1] Predictions are based on last Tmeas to analysis ending period.

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).DB

Service Life Report

Pass 2 Analysis Include Measured Wear

Report Date/Time: 7/7/2010 9:54:36AM
AnalysisDate/Time:

Run Name: CND FWH 24 TO FWH 25
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 0.340

CHECWORKS SFA Version: 3.0 (build 105)
Duty Factor (Global) : 1.000

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **CD81-1-FWH 24A to FWH 25A**					***Sorted By:Flow Order***		
CD-37N	0.000	0.417	0.305	0.305	372,317	No	243,721
CD-37	0.000	0.416	0.305	0.305	500,287	Yes	243,721
CD-18	0.000	0.403	0.305	0.305	442,717	Yes	243,721
CD-18P	0.000	0.369	0.305	0.305	332,546	Yes	243,721
CD-46	0.000	0.392	0.305	0.305	390,288	Yes	243,721
CD-46P	0.000	0.373	0.305	0.305	453,984	Yes	243,721
CD-47	0.000	0.323	0.305	0.305	81,091	No	243,721
CD-47P	0.000	0.360	0.305	0.305	368,516	No	243,721
CD-48	0.000	0.323	0.305	0.305	81,091	No	243,721
CD-48P	0.000	0.338	0.305	0.305	174,654	No	243,721
CD-28	0.000	0.323	0.305	0.305	81,091	No	243,721
CD-28P	0.000	0.360	0.305	0.305	368,516	No	243,721
CD-56	0.000	0.420	0.305	0.305	580,715	Yes	243,721
CD-56N	0.000	0.501	0.305	0.305	815,251	No	243,721
===>Grouped by Line: **CD81-2-FWH 24B to FWH 25B**					***Sorted By:Flow Order***		
CD-21N	0.000	0.451	0.305	0.305	485,531	Yes	243,721
CD-21	0.000	0.408	0.305	0.305	463,571	Yes	243,721
CD-20	0.000	0.461	0.305	0.305	700,490	Yes	243,721
CD-20P	0.000	0.338	0.305	0.305	174,654	No	243,721
CD-49	0.000	0.323	0.305	0.305	81,091	No	243,721
CD-50	0.000	0.404	0.305	0.305	470,506	Yes	243,721
CD-50P	0.000	0.406	0.305	0.305	669,891	No	243,721
CD-51	0.000	0.381	0.305	0.305	343,722	Yes	243,721
CD-51P	0.000	0.384	0.305	0.305	529,632	Yes	243,721
CD-52	0.000	0.323	0.305	0.305	81,091	No	243,721
CD-52P	0.000	0.338	0.305	0.305	174,654	No	243,721
CD-57	0.000	0.335	0.305	0.305	153,673	No	243,721
CD-29	0.000	0.323	0.305	0.305	81,091	No	243,721
CD-29P	0.000	0.338	0.305	0.305	174,654	No	243,721

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **CD81-2-FWH 24B to FWH 25B**					***Sorted By:Flow Order***		
CD-44	0.000	0.335	0.305	0.305	153,673	No	243,721
CD-44N	0.000	0.314	0.305	0.305	36,180	No	243,721
===>Grouped by Line: **CD81-3-FWH 24C to FWH 25C**					***Sorted By:Flow Order***		
CD-24N	0.000	0.440	0.305	0.305	449,875	No	243,721
CD-24	0.000	0.408	0.305	0.305	462,003	Yes	243,721
CD-23	0.000	0.469	0.305	0.305	736,489	Yes	243,721
CD-23P	0.000	0.405	0.305	0.305	518,302	Yes	243,721
CD-53	0.000	0.405	0.305	0.305	448,503	Yes	243,721
CD-53P	0.000	0.360	0.305	0.305	368,516	No	243,721
CD-54	0.000	0.323	0.305	0.305	81,091	No	243,721
CD-54P	0.000	0.360	0.305	0.305	368,516	No	243,721
CD-55	0.000	0.323	0.305	0.305	81,091	No	243,721
CD-55P	0.000	0.401	0.305	0.305	640,455	Yes	243,721
CD-30	0.000	0.472	0.305	0.305	753,878	Yes	243,721
CD-30P	0.000	0.392	0.305	0.305	580,518	Yes	243,721
CD-45	0.000	0.335	0.305	0.305	153,673	No	243,721
CD-45N	0.000	0.491	0.305	0.305	774,595	No	243,721

Note:
[1] Predictions are based on last Tmeas to analysis ending period.

2

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).DB

Wear Report

Pass 2 Analysis Include Measured Wear

Report Date/Time: 07-Jul-2010 9:54 am
AnalysisDate/Time: 07-Jul-2010 9:54 am

Run Name: CND FWH 24 TO FWH 25
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 0.340

CHECWORKS SFA Version: 3.0 (build 105)
Duty Factor (Global) : 1.000

Component Name	Tinit	Total Lifetime Wear (mils) Prd. [1]	Total Lifetime Wear (mils) Meas.	In-Service Component Wear(mils) Prd. [1]	In-Service Component Wear(mils) Meas.	In-Service Component Tmeas, Method, Time (in) [3]	[2]	(hrs) [3]	In-Service Component Thickness (mils) [4] Tp	Tm	Incremental Wear (mils) [5] PRWEAR	Time (hrs) Last Inspected
===>Grouped by Line:	**CD81-1-FWH 24A to FWH 25A**										***Sorted By: Flow Order***	
CD-37	0.000	42.8	32.0	42.8	32.0	0.420	MT	226,201	326.8	420.0	3.9	226,201
CD-18	0.000	68.4	54.0	68.4	54.0	0.450	MT	106,128	369.6	450.0	46.7	106,128
CD-18P	0.000	66.3	38.0	66.3	38.0	0.402	MT	119,088	371.7	402.0	33.2	119,088
CD-46	0.000	76.7	91.0	76.7	91.0	0.430	MT	119,088	361.3	430.0	38.3	119,088
CD-46P	0.000	51.8	61.0	51.8	61.0	0.399	MT	119,088	386.2	399.0	25.9	119,088
CD-56	0.000	82.6	115.0	82.6	115.0	0.440	MT	149,573	355.4	440.0	20.0	149,573
===>Grouped by Line:	**CD81-2-FWH 24B to FWH 25B**										***Sorted By: Flow Order***	
CD-21N	0.000	41.0	42.0	41.0	42.0	0.456	MT	226,201	287.8	456.0	5.3	226,201
CD-21	0.000	88.0	88.0	88.0	88.0	0.435	MT	136,608	350.0	435.0	27.1	136,608
CD-20	0.000	100.7	67.0	100.7	67.0	0.475	GW	181,477	337.3	475.0	14.4	181,477
CD-50	0.000	64.7	71.0	64.7	71.0	0.448	MT	106,128	373.3	448.0	44.2	106,128
CD-51	0.000	68.4	75.0	68.4	75.0	0.428	MT	106,128	369.6	428.0	46.7	106,128
CD-51P	0.000	46.2	64.0	46.2	64.0	0.416	MT	106,128	391.8	416.0	31.5	106,128
===>Grouped by Line:	**CD81-3-FWH 24C to FWH 25C**										***Sorted By: Flow Order***	
CD-24	0.000	100.7	141.0	100.7	141.0	0.422	GW	181,477	337.3	422.0	14.4	181,477
CD-23	0.000	100.7	54.0	100.7	54.0	0.483	GW	181,477	337.3	483.0	14.4	181,477
CD-23P	0.000	87.0	37.0	87.0	37.0	0.417	GW	181,477	351.0	417.0	12.5	181,477
CD-53	0.000	100.7	112.0	100.7	112.0	0.419	GW	181,477	337.3	419.0	14.4	181,477
CD-55P	0.000	51.8	41.0	51.8	41.0	0.427	MT	119,088	386.2	427.0	25.9	119,088
CD-30	0.000	107.5	74.0	107.5	74.0	0.480	MT	209,806	330.5	480.0	7.5	209,806
CD-30P	0.000	51.8	46.0	51.8	46.0	0.418	MT	119,088	386.2	418.0	25.9	119,088

Notes:

[1] Predictions are for the time of last inspection (last known meas. wear).

[2] GW = Tmeas is minimum thickness from Band, Blanket or Area Method of greatest wear.
MT = Tmeas is component minimum thickness.
PW = Tmeas is Tinit - predicted wear.
US = Tmeas is user specified.

[3] If no Tmeas has been determined from measured data, then Tmeas = Tinit and Time = current component installation time.
Tmeas is used to determine Predicted Thickness and Component Predicted Time to Tcrit.

[4] These two values are used for thickness plot.
Tp = Predicted thickness at Tmeas.
Tm = Last measured thickness (Tmeas).

[5] PRWEAR = Incremental wear from last Tmeas time to analysis ending period.

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).DB

Wear Rate Report

Pass 2 Analysis Include Measured Wear

Report Date/Time: 7/7/2010 9:54:36AM
AnalysisDate/Time: 6/11/2010 11:33:36AM

CHECWORKS SFA Version: 3.0 (build 105)
Duty Factor (Global) : 1.000

Run Name: CND FWH 25 TO HEADER
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 0.376

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***CD82-1-FWH 25A to HDR***								***Sorted By: Average Wear Rate***		
CD-32N	31	4.847	2.110	382.4	18.295	0.0	14.000	6.809	0.000	115.80	HBD
CD-VALVE-CD-18	22	4.789	2.085	382.4	17.949	0.0	14.000	6.809	0.000	115.80	HBD
CD-32	4	3.587	1.562	382.4	18.295	0.0	14.000	6.809	0.000	115.80	HBD
CD-31	4	3.587	1.562	382.4	18.295	0.0	14.000	6.809	0.000	115.80	HBD
CD-60	2	3.587	1.562	382.4	18.295	0.0	14.000	6.809	0.000	115.80	HBD
CD-61	4	3.587	1.562	382.4	18.295	0.0	14.000	6.809	0.000	115.80	HBD
CD-31P	54	3.102	1.351	382.4	18.295	0.0	14.000	6.809	0.000	115.80	HBD
CD-61P	54	3.102	1.351	382.4	18.295	0.0	14.000	6.809	0.000	115.80	HBD
CD-61R	18	2.715	1.182	382.4	18.295	0.0	14.000	6.809	0.000	115.80	HBD
CD-60P	52	2.424	1.055	382.4	18.295	0.0	14.000	6.809	0.000	115.80	HBD
CD-31P-1 US	58	2.133	0.929	382.4	18.295	0.0	14.000	6.809	0.000	115.80	HBD
CD-31P-1 DS	58	2.133	0.929	382.4	18.295	0.0	14.000	6.809	0.000	115.80	HBD
CD-61R (D/S)	18	1.383	0.608	382.4	6.156	0.0	24.000	6.809	0.000	115.80	HBD
===>Grouped by Line:	***CD82-2-FWH 25B to HDR***								***Sorted By: Average Wear Rate***		
CD-34N	31	4.847	2.110	382.4	18.295	0.0	14.000	6.809	0.000	115.80	HBD
CD-VALVE-CD-18-1	22	4.789	2.085	382.4	17.949	0.0	14.000	6.809	0.000	115.80	HBD
CD-34	4	3.587	1.562	382.4	18.295	0.0	14.000	6.809	0.000	115.80	HBD
CD-33	4	3.587	1.562	382.4	18.295	0.0	14.000	6.809	0.000	115.80	HBD
CD-62	2	3.587	1.562	382.4	18.295	0.0	14.000	6.809	0.000	115.80	HBD
CD-33P	54	3.102	1.351	382.4	18.295	0.0	14.000	6.809	0.000	115.80	HBD
CD-62P	52	2.424	1.055	382.4	18.295	0.0	14.000	6.809	0.000	115.80	HBD
CD-33P-1 US	58	2.133	0.929	382.4	18.295	0.0	14.000	6.809	0.000	115.80	HBD
CD-33P-1 DS	58	2.133	0.929	382.4	18.295	0.0	14.000	6.809	0.000	115.80	HBD
===>Grouped by Line:	***CD82-3-FWH 25C to HDR***								***Sorted By: Average Wear Rate***		
CD-36N	31	4.847	2.110	382.4	18.295	0.0	14.000	6.809	0.000	115.80	HBD
CD-VALVE-CD-18-2	22	4.789	2.085	382.4	17.949	0.0	14.000	6.809	0.000	115.80	HBD
CD-36	4	3.587	1.562	382.4	18.295	0.0	14.000	6.809	0.000	115.80	HBD

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***CD82-3-FWH 25C to HDR***								***Sorted By: Average Wear Rate***		
CD-35	4	3.587	1.562	382.4	18.295	0.0	14.000	6.809	0.000	115.80	HBD
CD-63	2	3.587	1.562	382.4	18.295	0.0	14.000	6.809	0.000	115.80	HBD
CD-58	4	3.587	1.562	382.4	18.295	0.0	14.000	6.809	0.000	115.80	HBD
CD-35P	54	3.102	1.351	382.4	18.295	0.0	14.000	6.809	0.000	115.80	HBD
CD-58P	54	3.102	1.351	382.4	18.295	0.0	14.000	6.809	0.000	115.80	HBD
CD-35P-1	58	2.133	0.929	382.4	18.295	0.0	14.000	6.809	0.000	115.80	HBD
===>Grouped by Line:	***CD82-4-HDR 25BT to 25CT***								***Sorted By: Average Wear Rate***		
CD-62T (BR/SE)	12	3.296	1.435	382.4	18.295	0.0	14.000	6.809	0.000	115.80	HBD
CD-62T (D/S)	12	2.954	1.286	382.4	12.331	0.0	24.000	6.809	0.000	115.80	HBD
CD-62T	12	1.890	0.830	382.4	6.156	0.0	24.000	6.809	0.000	115.80	HBD
CD-62P-1	62	1.441	0.627	382.4	12.331	0.0	24.000	6.809	0.000	115.80	HBD
===>Grouped by Line:	***CD82-5-HDR 25CT to HDP OUT***								***Sorted By: Average Wear Rate***		
CD-59T (D/S)	12	3.705	1.613	382.4	18.488	0.0	24.000	6.809	0.000	115.80	HBD
CD-59	4	3.343	1.455	382.4	18.488	0.0	24.000	6.809	0.000	115.80	HBD
CD-59T (BR/SE)	12	3.296	1.435	382.4	18.295	0.0	14.000	6.809	0.000	115.80	HBD
CD-80T (BR/SE)	12	3.072	1.337	382.4	18.485	0.0	24.000	6.809	0.000	115.80	HBD
CD-59T	12	2.954	1.286	382.4	12.331	0.0	24.000	6.809	0.000	115.80	HBD
CD-59P	54	2.891	1.259	382.4	18.488	0.0	24.000	6.809	0.000	115.80	HBD
CD-80T	12	2.741	1.193	382.4	11.450	0.0	30.000	6.809	0.000	115.80	HBD

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).DB

Wear Rate Report

Pass 2 Analysis Include Measured Wear

Report Date/Time: 7/7/2010 9:54:36AM
AnalysisDate/Time: 3/11/2010 11:33:36AM

CHECWORKS SFA Version: 3.0 (build 105)
Duty Factor (Global) : 1.000

Run Name: CND FWH 25 TO HEADER
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 0.376

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***CD82-1-FWH 25A to HDR***									***Sorted By: Flow Order***	
CD-32N	31	4.847	2.110	382.4	18.295	0.0	14.000	6.809	0.000	115.80	HBD
CD-32	4	3.587	1.562	382.4	18.295	0.0	14.000	6.809	0.000	115.80	HBD
CD-31	4	3.587	1.562	382.4	18.295	0.0	14.000	6.809	0.000	115.80	HBD
CD-31P	54	3.102	1.351	382.4	18.295	0.0	14.000	6.809	0.000	115.80	HBD
CD-VALVE-CD-18	22	4.789	2.085	382.4	17.949	0.0	14.000	6.809	0.000	115.80	HBD
CD-31P-1 US	58	2.133	0.929	382.4	18.295	0.0	14.000	6.809	0.000	115.80	HBD
CD-31P-1 DS	58	2.133	0.929	382.4	18.295	0.0	14.000	6.809	0.000	115.80	HBD
CD-60	2	3.587	1.562	382.4	18.295	0.0	14.000	6.809	0.000	115.80	HBD
CD-60P	52	2.424	1.055	382.4	18.295	0.0	14.000	6.809	0.000	115.80	HBD
CD-61	4	3.587	1.562	382.4	18.295	0.0	14.000	6.809	0.000	115.80	HBD
CD-61P	54	3.102	1.351	382.4	18.295	0.0	14.000	6.809	0.000	115.80	HBD
CD-61R	18	2.715	1.182	382.4	18.295	0.0	14.000	6.809	0.000	115.80	HBD
CD-61R (D/S)	18	1.383	0.608	382.4	6.156	0.0	24.000	6.809	0.000	115.80	HBD
===>Grouped by Line:	***CD82-2-FWH 25B to HDR***									***Sorted By: Flow Order***	
CD-34N	31	4.847	2.110	382.4	18.295	0.0	14.000	6.809	0.000	115.80	HBD
CD-34	4	3.587	1.562	382.4	18.295	0.0	14.000	6.809	0.000	115.80	HBD
CD-33	4	3.587	1.562	382.4	18.295	0.0	14.000	6.809	0.000	115.80	HBD
CD-33P	54	3.102	1.351	382.4	18.295	0.0	14.000	6.809	0.000	115.80	HBD
CD-VALVE-CD-18-1	22	4.789	2.085	382.4	17.949	0.0	14.000	6.809	0.000	115.80	HBD
CD-33P-1 US	58	2.133	0.929	382.4	18.295	0.0	14.000	6.809	0.000	115.80	HBD
CD-33P-1 DS	58	2.133	0.929	382.4	18.295	0.0	14.000	6.809	0.000	115.80	HBD
CD-62	2	3.587	1.562	382.4	18.295	0.0	14.000	6.809	0.000	115.80	HBD
CD-62P	52	2.424	1.055	382.4	18.295	0.0	14.000	6.809	0.000	115.80	HBD
===>Grouped by Line:	***CD82-3-FWH 25C to HDR***									***Sorted By: Flow Order***	
CD-36N	31	4.847	2.110	382.4	18.295	0.0	14.000	6.809	0.000	115.80	HBD
CD-36	4	3.587	1.562	382.4	18.295	0.0	14.000	6.809	0.000	115.80	HBD
CD-35	4	3.587	1.562	382.4	18.295	0.0	14.000	6.809	0.000	115.80	HBD

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***CD82-3-FWH 25C to HDR***									***Sorted By: Flow Order***	
CD-35P	54	3.102	1.351	382.4	18.295	0.0	14.000	6.809	0.000	115.80	HBD
CD-VALVE-CD-18-2	22	4.789	2.085	382.4	17.949	0.0	14.000	6.809	0.000	115.80	HBD
CD-35P-1	58	2.133	0.929	382.4	18.295	0.0	14.000	6.809	0.000	115.80	HBD
CD-63	2	3.587	1.562	382.4	18.295	0.0	14.000	6.809	0.000	115.80	HBD
CD-58	4	3.587	1.562	382.4	18.295	0.0	14.000	6.809	0.000	115.80	HBD
CD-58P	54	3.102	1.351	382.4	18.295	0.0	14.000	6.809	0.000	115.80	HBD
===>Grouped by Line:	***CD82-4-HDR 25BT to 25CT***									***Sorted By: Flow Order***	
CD-62T	12	1.890	0.830	382.4	6.156	0.0	24.000	6.809	0.000	115.80	HBD
CD-62T (BR/SE)	12	3.296	1.435	382.4	18.295	0.0	14.000	6.809	0.000	115.80	HBD
CD-62T (D/S)	12	2.954	1.286	382.4	12.331	0.0	24.000	6.809	0.000	115.80	HBD
CD-62P-1	62	1.441	0.627	382.4	12.331	0.0	24.000	6.809	0.000	115.80	HBD
===>Grouped by Line:	***CD82-5-HDR 25CT to HDP OUT***									***Sorted By: Flow Order***	
CD-59T (BR/SE)	12	3.296	1.435	382.4	18.295	0.0	14.000	6.809	0.000	115.80	HBD
CD-59T	12	2.954	1.286	382.4	12.331	0.0	24.000	6.809	0.000	115.80	HBD
CD-59T (D/S)	12	3.705	1.613	382.4	18.488	0.0	24.000	6.809	0.000	115.80	HBD
CD-59	4	3.343	1.455	382.4	18.488	0.0	24.000	6.809	0.000	115.80	HBD
CD-59P	54	2.891	1.259	382.4	18.488	0.0	24.000	6.809	0.000	115.80	HBD
CD-80T (BR/SE)	12	3.072	1.337	382.4	18.485	0.0	24.000	6.809	0.000	115.80	HBD
CD-80T	12	2.741	1.193	382.4	11.450	0.0	30.000	6.809	0.000	115.80	HBD

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).DB

Service Life Report

Pass 2 Analysis Include Measured Wear

Report Date/Time: 7/7/2010 9:54:36AM
AnalysisDate/Time:

Run Name: CND FWH 25 TO HEADER
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 0.376

CHECWORKS SFA Version: 3.0 (build 105)
Duty Factor (Global) :1.000

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **CD82-1-FWH 25A to HDR**					***Sorted By:Remaining Life***		
CD-VALVE-CD-18	0.000	0.305	0.326	0.326	-84,784	No	243,721
CD-60	0.000	0.338	0.305	0.305	186,658	No	243,721
CD-32	0.000	0.338	0.305	0.305	186,658	No	243,721
CD-61P	0.000	0.352	0.305	0.305	303,297	No	243,721
CD-61	0.000	0.393	0.305	0.305	492,705	Yes	243,721
CD-60P	0.000	0.371	0.305	0.305	544,975	No	243,721
CD-31P-1 US	0.000	0.379	0.305	0.305	695,631	No	243,721
CD-32N	0.000	0.475	0.305	0.305	705,630	No	243,721
CD-31	0.000	0.431	0.305	0.305	706,536	Yes	243,721
CD-31P	0.000	0.426	0.305	0.305	787,239	No	243,721
CD-31P-1 DS	0.000	0.415	0.305	0.305	1,039,997	No	243,721
CD-61R	0.000	0.525	0.305	0.305	1,634,492	Yes	243,721
CD-61R (D/S)	0.000	0.644	0.523	0.523	1,743,089	Yes	243,721
===>Grouped by Line: **CD82-2-FWH 25B to HDR**					***Sorted By:Remaining Life***		
CD-VALVE-CD-18-1	0.000	0.305	0.326	0.326	-84,784	No	243,721
CD-62	0.000	0.338	0.305	0.305	186,658	No	243,721
CD-62P	0.000	0.371	0.305	0.305	544,975	No	243,721
CD-33P	0.000	0.410	0.305	0.305	680,038	Yes	243,721
CD-33P-1 DS	0.000	0.379	0.305	0.305	695,631	No	243,721
CD-34N	0.000	0.474	0.305	0.305	700,930	No	243,721
CD-33	0.000	0.436	0.305	0.305	735,018	Yes	243,721
CD-34	0.000	0.439	0.305	0.305	751,846	Yes	243,721
CD-33P-1 US	0.000	0.397	0.305	0.305	868,737	Yes	243,721
===>Grouped by Line: **CD82-3-FWH 25C to HDR**					***Sorted By:Remaining Life***		
CD-VALVE-CD-18-2	0.000	0.305	0.326	0.326	-84,784	No	243,721
CD-63	0.000	0.338	0.305	0.305	186,658	No	243,721
CD-35P	0.000	0.364	0.305	0.305	385,529	Yes	243,721
CD-58	0.000	0.409	0.305	0.305	582,459	Yes	243,721

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **CD82-3-FWH 25C to HDR**					***Sorted By:Remaining Life***		
CD-58P	0.000	0.406	0.305	0.305	657,516	Yes	243,721
CD-36	0.000	0.426	0.305	0.305	678,742	Yes	243,721
CD-35	0.000	0.427	0.305	0.305	684,351	Yes	243,721
CD-35P-1	0.000	0.379	0.305	0.305	695,631	No	243,721
CD-36N	0.000	0.473	0.305	0.305	695,911	No	243,721
===>Grouped by Line: **CD82-4-HDR 25BT to 25CT**					***Sorted By:Remaining Life***		
CD-62T (BR/SE)	0.000	0.408	0.305	0.305	631,936	Yes	243,721
CD-62T (D/S)	0.000	0.669	0.523	0.523	996,434	No	243,721
CD-62T	0.000	0.672	0.523	0.523	1,572,223	No	243,721
CD-62P-1	0.000	0.648	0.523	0.523	1,747,863	No	243,721
===>Grouped by Line: **CD82-5-HDR 25CT to HDP OUT**					***Sorted By:Remaining Life***		
CD-80T	0.000	0.633	0.561	0.561	526,515	No	243,721
CD-59T (BR/SE)	0.000	0.398	0.305	0.305	566,010	Yes	243,721
CD-59T (D/S)	0.000	0.658	0.523	0.523	732,594	Yes	243,721
CD-59P	0.000	0.637	0.523	0.523	796,094	Yes	243,721
CD-59T	0.000	0.664	0.523	0.523	958,910	Yes	243,721
CD-59	0.000	0.692	0.523	0.523	1,021,337	Yes	243,721
CD-80T (BR/SE)	0.000	0.644	0.449	0.449	1,276,967	Yes	243,721

Note:
[1] Predictions are based on last Tmeas to analysis ending period.

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).DB

Service Life Report

Pass 2 Analysis Include Measured Wear

Report Date/Time: 7/7/2010 9:54:36AM
AnalysisDate/Time:

Run Name: CND FWH 25 TO HEADER
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 0.376

CHECWORKS SFA Version: 3.0 (build 105)
Duty Factor (Global) : 1.000

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **CD82-1-FWH 25A to HDR**					***Sorted By:Flow Order***		
CD-32N	0.000	0.475	0.305	0.305	705,630	No	243,721
CD-32	0.000	0.338	0.305	0.305	186,658	No	243,721
CD-31	0.000	0.431	0.305	0.305	706,536	Yes	243,721
CD-31P	0.000	0.426	0.305	0.305	787,239	No	243,721
CD-VALVE-CD-18	0.000	0.305	0.326	0.326	-84,784	No	243,721
CD-31P-1 US	0.000	0.379	0.305	0.305	695,631	No	243,721
CD-31P-1 DS	0.000	0.415	0.305	0.305	1,039,997	No	243,721
CD-60	0.000	0.338	0.305	0.305	186,658	No	243,721
CD-60P	0.000	0.371	0.305	0.305	544,975	No	243,721
CD-61	0.000	0.393	0.305	0.305	492,705	Yes	243,721
CD-61P	0.000	0.352	0.305	0.305	303,297	No	243,721
CD-61R	0.000	0.525	0.305	0.305	1,634,492	Yes	243,721
CD-61R (D/S)	0.000	0.644	0.523	0.523	1,743,089	Yes	243,721
===>Grouped by Line: **CD82-2-FWH 25B to HDR**					***Sorted By:Flow Order***		
CD-34N	0.000	0.474	0.305	0.305	700,930	No	243,721
CD-34	0.000	0.439	0.305	0.305	751,846	Yes	243,721
CD-33	0.000	0.436	0.305	0.305	735,018	Yes	243,721
CD-33P	0.000	0.410	0.305	0.305	680,038	Yes	243,721
CD-VALVE-CD-18-1	0.000	0.305	0.326	0.326	-84,784	No	243,721
CD-33P-1 US	0.000	0.397	0.305	0.305	868,737	Yes	243,721
CD-33P-1 DS	0.000	0.379	0.305	0.305	695,631	No	243,721
CD-62	0.000	0.338	0.305	0.305	186,658	No	243,721
CD-62P	0.000	0.371	0.305	0.305	544,975	No	243,721
===>Grouped by Line: **CD82-3-FWH 25C to HDR**					***Sorted By:Flow Order***		
CD-36N	0.000	0.473	0.305	0.305	695,911	No	243,721
CD-36	0.000	0.426	0.305	0.305	678,742	Yes	243,721
CD-35	0.000	0.427	0.305	0.305	684,351	Yes	243,721
CD-35P	0.000	0.364	0.305	0.305	385,529	Yes	243,721

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **CD82-3-FWH 25C to HDR**					***Sorted By:Flow Order***		
CD-VALVE-CD-18-2	0.000	0.305	0.326	0.326	-84,784	No	243,721
CD-35P-1	0.000	0.379	0.305	0.305	695,631	No	243,721
CD-63	0.000	0.338	0.305	0.305	186,658	No	243,721
CD-58	0.000	0.409	0.305	0.305	582,459	Yes	243,721
CD-58P	0.000	0.406	0.305	0.305	657,516	Yes	243,721
===>Grouped by Line: **CD82-4-HDR 25BT to 25CT**					***Sorted By:Flow Order***		
CD-62T	0.000	0.672	0.523	0.523	1,572,223	No	243,721
CD-62T (BR/SE)	0.000	0.408	0.305	0.305	631,936	Yes	243,721
CD-62T (D/S)	0.000	0.669	0.523	0.523	996,434	No	243,721
CD-62P-1	0.000	0.648	0.523	0.523	1,747,863	No	243,721
===>Grouped by Line: **CD82-5-HDR 25CT to HDP OUT**					***Sorted By:Flow Order***		
CD-59T (BR/SE)	0.000	0.398	0.305	0.305	566,010	Yes	243,721
CD-59T	0.000	0.664	0.523	0.523	958,910	Yes	243,721
CD-59T (D/S)	0.000	0.658	0.523	0.523	732,594	Yes	243,721
CD-59	0.000	0.692	0.523	0.523	1,021,337	Yes	243,721
CD-59P	0.000	0.637	0.523	0.523	796,094	Yes	243,721
CD-80T (BR/SE)	0.000	0.644	0.449	0.449	1,276,967	Yes	243,721
CD-80T	0.000	0.633	0.561	0.561	526,515	No	243,721

Note:
[1] Predictions are based on last Tmeas to analysis ending period.

2

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).DB

Wear Report

Pass 2 Analysis Include Measured Wear

Report Date/Time: 07-Jul-2010 9:54 am
AnalysisDate/Time: 07-Jul-2010 9:54 am

Run Name: CND FWH 25 TO HEADER
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 0.376

CHECWORKS SFA Version: 3.0 (build 105)
Duty Factor (Global) : 1.000

Component Name	Tinit	Total Lifetime Wear (mils) Prd. [1]	Total Lifetime Wear (mils) Meas.	In-Service Component Wear(mils) Prd. [1]	In-Service Component Wear(mils) Meas.	In-Service Component Tmeas, Method, Time (in) [3]	[2]	(hrs) [3]	In-Service Component Thickness (mils) [4] Tp	Tm	Incremental Wear (mils) [5] PRWEAR	Time (hrs) Last Inspected
===>Grouped by Line:	**CD82-1-FWH 25A to HDR**										***Sorted By: Flow Order***	
CD-31	0.000	96.7	80.5	96.7	80.5	0.434	MT	226,201	341.3	434.0	3.1	226,201
CD-61	0.000	60.6	69.0	60.6	69.0	0.432	MT	106,128	377.4	432.0	39.2	106,128
CD-61R	0.000	70.9	75.0	70.9	75.0	0.530	MT	209,806	367.1	530.0	4.6	209,806
CD-61R (D/S)	0.000	36.1	45.0	36.1	45.0	0.646	MT	209,806	651.9	646.0	2.4	209,806
===>Grouped by Line:	**CD82-2-FWH 25B to HDR**										***Sorted By: Flow Order***	
CD-34	0.000	93.8	101.0	93.8	101.0	0.445	MT	209,806	344.2	445.0	6.0	209,806
CD-33	0.000	93.8	92.0	93.8	92.0	0.442	MT	209,806	344.2	442.0	6.0	209,806
CD-33P	0.000	81.1	40.0	81.1	40.0	0.415	MT	209,806	356.9	415.0	5.2	209,806
CD-33P-1 US	0.000	46.3	38.0	46.3	38.0	0.410	MT	136,608	391.7	410.0	13.0	136,608
===>Grouped by Line:	**CD82-3-FWH 25C to HDR**										***Sorted By: Flow Order***	
CD-36	0.000	81.7	77.0	81.7	77.0	0.444	MT	149,573	356.3	444.0	18.1	149,573
CD-35	0.000	81.7	104.0	81.7	104.0	0.445	MT	149,573	356.3	445.0	18.1	149,573
CD-35P	0.000	70.7	72.0	70.7	72.0	0.380	MT	149,573	367.3	380.0	15.6	149,573
CD-58	0.000	60.6	55.0	60.6	55.0	0.448	MT	106,128	377.4	448.0	39.2	106,128
CD-58P	0.000	37.4	41.0	37.4	41.0	0.409	MT	226,201	354.4	409.0	2.7	226,201
===>Grouped by Line:	**CD82-4-HDR 25BT to 25CT**										***Sorted By: Flow Order***	
CD-62T (BR/SE)	0.000	86.2	30.0	86.2	30.0	0.414	MT	209,806	351.8	414.0	5.6	209,806
===>Grouped by Line:	**CD82-5-HDR 25CT to HDP OUT**										***Sorted By: Flow Order***	
CD-59T (BR/SE)	0.000	83.4	53.0	83.4	53.0	0.406	GW	193,769	354.6	406.0	8.4	193,769
CD-59T	0.000	74.7	46.0	74.7	46.0	0.671	GW	193,769	613.3	671.0	7.5	193,769
CD-59T (D/S)	0.000	93.7	35.0	93.7	35.0	0.667	GW	193,769	594.3	667.0	9.4	193,769
CD-59	0.000	56.4	75.0	56.4	75.0	0.729	MT	106,128	631.6	729.0	36.6	106,128
CD-59P	0.000	75.6	77.0	75.6	77.0	0.642	MT	209,806	612.4	642.0	4.9	209,806
CD-80T (BR/SE)	0.000	75.6	78.0	75.6	78.0	0.654	GW	181,477	611.4	654.0	9.9	181,477

Notes:

[1] Predictions are for the time of last inspection (last known meas. wear).

[2] GW = Tmeas is minimum thickness from Band, Blanket or Area Method of greatest wear.
MT = Tmeas is component minimum thickness.
PW = Tmeas is Tinit - predicted wear.
US = Tmeas is user specified.

[3] If no Tmeas has been determined from measured data, then Tmeas = Tinit and Time = current component installation time.
Tmeas is used to determine Predicted Thickness and Component Predicted Time to Tcrit.

[4] These two values are used for thickness plot.
Tp = Predicted thickness at Tmeas.
Tm = Last measured thickness (Tmeas).

[5] PRWEAR = Incremental wear from last Tmeas time to analysis ending period.

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).DB

Wear Rate Report

Pass 2 Analysis Include Measured Wear

Report Date/Time: 7/7/2010 9:54:36AM
AnalysisDate/Time: 6/11/2010 11:33:56AM

CHECWORKS SFA Version: 3.0 (build 105)
Duty Factor (Global) : 1.000

Run Name: CROSSUNDER
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 1.000

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***MS56-1-PRESEP to MSR-A***								***Sorted By: Average Wear Rate***		
5EX-49N	31	0.040	0.024	387.9	83.669	90.5	33.000	6.943	0.000	117.60	ARD
5EX-49	2	0.025	0.015	387.9	83.669	90.5	33.250	6.943	0.000	117.60	ARD
5EX-52	2	0.025	0.015	387.9	83.669	90.5	33.250	6.943	0.000	117.60	ARD
5EX-53	4	0.025	0.015	387.9	83.669	90.5	33.250	6.943	0.000	117.60	ARD
5EX-49EJ1	6	0.020	0.012	387.9	83.669	90.5	33.000	6.943	0.000	117.60	ARD
5EX-49EJ2	6	0.020	0.012	387.9	83.669	90.5	33.000	6.943	0.000	117.60	ARD
5EX-49P1	61	0.017	0.010	387.9	163.213	90.5	33.000	6.943	0.000	117.60	ARD
5EX-49P2	52	0.017	0.010	387.9	83.669	90.5	33.000	6.943	0.000	117.60	ARD
5EX-53R	18	0.016	0.010	387.9	83.669	90.5	33.000	6.943	0.000	117.60	ARD
5EX-52P	51	0.015	0.009	387.9	83.958	90.5	33.000	6.943	0.000	117.60	ARD
5EX-53R (D/S)	18	0.012	0.007	387.9	36.948	90.5	48.500	6.943	0.000	117.60	ARD
5EX-53P	68	0.009	0.005	387.9	36.948	90.5	48.500	6.943	0.000	117.60	ARD
===>Grouped by Line:	***MS56-2-PRESEP to MSR-A***								***Sorted By: Average Wear Rate***		
5EX-50N	31	0.040	0.024	387.9	83.669	90.5	33.000	6.943	0.000	117.60	ARD
5EX-50	2	0.025	0.015	387.9	83.669	90.5	33.250	6.943	0.000	117.60	ARD
5EX-51	2	0.025	0.015	387.9	83.669	90.5	33.250	6.943	0.000	117.60	ARD
5EX-62	1	0.021	0.013	387.9	83.669	90.5	33.250	6.943	0.000	117.60	ARD
5EX-50EJ1	6	0.020	0.012	387.9	83.669	90.5	33.000	6.943	0.000	117.60	ARD
5EX-50EJ2	6	0.020	0.012	387.9	83.669	90.5	33.000	6.943	0.000	117.60	ARD
5EX-50P1	61	0.017	0.010	387.9	163.213	90.5	33.000	6.943	0.000	117.60	ARD
5EX-50P2	52	0.017	0.010	387.9	83.669	90.5	33.000	6.943	0.000	117.60	ARD
5EX-50P3	51	0.015	0.009	387.9	83.669	90.5	33.000	6.943	0.000	117.60	ARD
5EX-51P	51	0.015	0.009	387.9	83.958	90.5	33.000	6.943	0.000	117.60	ARD
===>Grouped by Line:	***MS56-3-PRESEP to MSR-A***								***Sorted By: Average Wear Rate***		
5EX-55	14	0.048	0.029	387.9	78.113	90.5	48.500	6.943	0.000	117.60	ARD
5EX-54 (D/S)	12	0.041	0.025	387.9	78.113	90.5	48.500	6.943	0.000	117.60	ARD
5EX-55 (D/S)	14	0.039	0.024	387.9	50.606	90.5	48.500	6.943	0.000	117.60	ARD

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***MS56-3-PRESEP to MSR-A***								***Sorted By: Average Wear Rate***		
5EX-54 (BR/SE)	12	0.029	0.018	387.9	83.669	90.5	33.000	6.943	0.000	117.60	ARD
5EX-54	12	0.029	0.017	387.9	36.948	90.5	48.500	6.943	0.000	117.60	ARD
5EX-55 (BR/SE)	14	0.019	0.011	387.9	81.811	90.5	27.500	6.943	0.000	117.60	ARD
5EX-54P	62	0.007	0.005	387.9	78.113	90.5	48.500	6.943	0.000	117.60	ARD
===>Grouped by Line:	***MS56-4-PRESEP to MSR23A***								***Sorted By: Average Wear Rate***		
5EX-56N	30	0.027	0.016	387.9	81.811	90.5	27.500	6.943	0.000	117.60	ARD
5EX-56	2	0.025	0.015	387.9	81.811	90.5	27.750	6.943	0.000	117.60	ARD
5EX-55EJ1	6	0.020	0.012	387.9	81.998	90.5	27.500	6.943	0.000	117.60	ARD
5EX-55EJ2	6	0.020	0.012	387.9	81.998	90.5	27.500	6.943	0.000	117.60	ARD
5EX-56P	52	0.017	0.010	387.9	81.811	90.5	27.500	6.943	0.000	117.60	ARD
===>Grouped by Line:	***MS56-5-PRESEP to MSR-A***								***Sorted By: Average Wear Rate***		
5EX-57	14	0.050	0.030	387.9	83.004	90.5	38.000	6.943	0.000	117.60	ARD
5EX-57 (D/S)	14	0.035	0.021	387.9	39.808	90.5	38.000	6.943	0.000	117.60	ARD
5EX-55R (D/S)	7	0.022	0.013	387.9	83.004	90.5	38.000	6.943	0.000	117.60	ARD
5EX-57 (BR/SE)	14	0.019	0.011	387.9	81.811	90.5	27.500	6.943	0.000	117.60	ARD
5EX-55R	7	0.016	0.009	387.9	50.606	90.5	48.500	6.943	0.000	117.60	ARD
5EX-55P-1	68	0.013	0.008	387.9	83.004	90.5	38.000	6.943	0.000	117.60	ARD
===>Grouped by Line:	***MS56-6-PRESEP to MSR22A***								***Sorted By: Average Wear Rate***		
5EX-58N	30	0.027	0.016	387.9	81.811	90.5	27.500	6.943	0.000	117.60	ARD
5EX-58	2	0.025	0.015	387.9	81.811	90.5	27.750	6.943	0.000	117.60	ARD
5EX-57EJ1	6	0.020	0.012	387.9	81.998	90.5	27.500	6.943	0.000	117.60	ARD
5EX-57EJ2	6	0.020	0.012	387.9	81.998	90.5	27.500	6.943	0.000	117.60	ARD
5EX-58P	52	0.017	0.010	387.9	81.811	90.5	27.500	6.943	0.000	117.60	ARD
===>Grouped by Line:	***MS56-7-PRESEP to MSR21A***								***Sorted By: Average Wear Rate***		
5EX-60N	30	0.027	0.016	387.9	81.811	90.5	27.500	6.943	0.000	117.60	ARD
5EX-59	2	0.025	0.015	387.9	81.811	90.5	27.750	6.943	0.000	117.60	ARD
5EX-60	2	0.025	0.015	387.9	81.811	90.5	27.750	6.943	0.000	117.60	ARD
5EX-57R (D/S)	7	0.022	0.014	387.9	81.811	90.5	27.750	6.943	0.000	117.60	ARD
5EX-57P2	57	0.020	0.012	387.9	81.811	90.5	27.750	6.943	0.000	117.60	ARD
5EX-59EJ1	6	0.020	0.012	387.9	81.998	90.5	27.500	6.943	0.000	117.60	ARD
5EX-59EJ2	6	0.020	0.012	387.9	81.998	90.5	27.500	6.943	0.000	117.60	ARD
5EX-60P	52	0.017	0.010	387.9	81.811	90.5	27.500	6.943	0.000	117.60	ARD
5EX-57R	7	0.014	0.009	387.9	39.808	90.5	38.250	6.943	0.000	117.60	ARD
5EX-59P	56	0.005	0.003	387.9	81.998	90.5	27.750	6.943	0.000	117.60	ARD
===>Grouped by Line:	***MS57-1-PRESEP to MSR-B***								***Sorted By: Average Wear Rate***		

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***MS57-1-PRESEP to MSR-B***								***Sorted By: Average Wear Rate***		
5EX-37N	31	0.037	0.024	387.9	83.669	90.5	33.000	6.943	0.000	117.60	ARD
5EX-37	2	0.025	0.015	387.9	83.669	90.5	33.250	6.943	0.000	117.60	ARD
5EX-40	2	0.025	0.015	387.9	83.669	90.5	33.250	6.943	0.000	117.60	ARD
5EX-41	2	0.025	0.015	387.9	83.669	90.5	33.250	6.943	0.000	117.60	ARD
5EX-37EJ1	6	0.020	0.012	387.9	83.669	90.5	33.000	6.943	0.000	117.60	ARD
5EX-37EJ2	6	0.020	0.012	387.9	83.669	90.5	33.000	6.943	0.000	117.60	ARD
5EX-37P1	61	0.017	0.010	387.9	163.213	90.5	33.000	6.943	0.000	117.60	ARD
5EX-37P2	52	0.017	0.010	387.9	83.669	90.5	33.000	6.943	0.000	117.60	ARD
5EX-41R	18	0.016	0.010	387.9	83.669	90.5	33.000	6.943	0.000	117.60	ARD
5EX-40P	51	0.015	0.009	387.9	83.958	90.5	33.000	6.943	0.000	117.60	ARD
5EX-41R (D/S)	18	0.012	0.007	387.9	36.948	90.5	48.500	6.943	0.000	117.60	ARD
===>Grouped by Line:	***MS57-2-PRESEP to MSR-B***								***Sorted By: Average Wear Rate***		
5EX-38N	31	0.040	0.024	387.9	83.669	90.5	33.000	6.943	0.000	117.60	ARD
5EX-38	2	0.025	0.015	387.9	83.669	90.5	33.250	6.943	0.000	117.60	ARD
5EX-39	2	0.025	0.015	387.9	83.669	90.5	33.250	6.943	0.000	117.60	ARD
5EX-61	1	0.021	0.013	387.9	83.669	90.5	33.250	6.943	0.000	117.60	ARD
5EX-61EJ1	6	0.020	0.012	387.9	83.669	90.5	33.000	6.943	0.000	117.60	ARD
5EX-61EJ2	6	0.020	0.012	387.9	83.669	90.5	33.000	6.943	0.000	117.60	ARD
5EX-38P	61	0.017	0.010	387.9	163.213	90.5	33.000	6.943	0.000	117.60	ARD
5EX-61P1	52	0.017	0.010	387.9	83.669	90.5	33.000	6.943	0.000	117.60	ARD
5EX-61P2	51	0.015	0.009	387.9	83.669	90.5	33.000	6.943	0.000	117.60	ARD
5EX-39P	51	0.015	0.009	387.9	83.958	90.5	33.000	6.943	0.000	117.60	ARD
===>Grouped by Line:	***MS57-3-PRESEP to MSR-B***								***Sorted By: Average Wear Rate***		
5EX-43	14	0.048	0.029	387.9	78.113	90.5	48.500	6.943	0.000	117.60	ARD
5EX-42 (D/S)	12	0.041	0.025	387.9	78.113	90.5	48.500	6.943	0.000	117.60	ARD
5EX-43 (D/S)	14	0.039	0.024	387.9	50.606	90.5	48.500	6.943	0.000	117.60	ARD
5EX-42 (BR/SE)	12	0.029	0.018	387.9	83.669	90.5	33.000	6.943	0.000	117.60	ARD
5EX-42	12	0.029	0.017	387.9	36.948	90.5	48.500	6.943	0.000	117.60	ARD
5EX-43 (BR/SE)	14	0.019	0.011	387.9	81.811	90.5	27.500	6.943	0.000	117.60	ARD
5EX-41P	62	0.007	0.005	387.9	78.113	90.5	48.500	6.943	0.000	117.60	ARD
===>Grouped by Line:	***MS57-4-PRESEP to MSR23B***								***Sorted By: Average Wear Rate***		
5EX-44N	30	0.027	0.016	387.9	81.811	90.5	27.500	6.943	0.000	117.60	ARD
5EX-44	2	0.025	0.015	387.9	81.811	90.5	27.750	6.943	0.000	117.60	ARD
5EX-43EJ1	6	0.020	0.012	387.9	81.998	90.5	27.500	6.943	0.000	117.60	ARD
5EX-43EJ2	6	0.020	0.012	387.9	81.998	90.5	27.500	6.943	0.000	117.60	ARD
===>Grouped by Line:	***MS57-5-PRESEP to MSR-B***								***Sorted By: Average Wear Rate***		

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
5EX-45	14	0.050	0.030	387.9	83.004	90.5	38.000	6.943	0.000	117.60	ARD
5EX-45 (D/S)	14	0.035	0.021	387.9	39.808	90.5	38.000	6.943	0.000	117.60	ARD
5EX-43R (D/S)	7	0.022	0.013	387.9	83.004	90.5	38.000	6.943	0.000	117.60	ARD
5EX-43P1	57	0.020	0.012	387.9	83.004	90.5	38.000	6.943	0.000	117.60	ARD
5EX-45 (BR/SE)	14	0.019	0.011	387.9	81.811	90.5	27.500	6.943	0.000	117.60	ARD
5EX-43R	7	0.016	0.009	387.9	50.606	90.5	48.500	6.943	0.000	117.60	ARD
===>Grouped by Line:	***MS57-6-PRESEP to MSR22B***								***Sorted By: Average Wear Rate***		
5EX-46N	30	0.027	0.016	387.9	81.811	90.5	27.500	6.943	0.000	117.60	ARD
5EX-46	2	0.025	0.015	387.9	81.811	90.5	27.750	6.943	0.000	117.60	ARD
5EX-45EJ1	6	0.020	0.012	387.9	81.998	90.5	27.500	6.943	0.000	117.60	ARD
5EX-45EJ2	6	0.020	0.012	387.9	81.998	90.5	27.500	6.943	0.000	117.60	ARD
===>Grouped by Line:	***MS57-7-PRESEP to MSR21B***								***Sorted By: Average Wear Rate***		
5EX-48N	30	0.027	0.016	387.9	81.811	90.5	27.500	6.943	0.000	117.60	ARD
5EX-47	2	0.025	0.015	387.9	81.811	90.5	27.750	6.943	0.000	117.60	ARD
5EX-48	2	0.025	0.015	387.9	81.811	90.5	27.750	6.943	0.000	117.60	ARD
5EX-45R (D/S)	7	0.022	0.014	387.9	81.811	90.5	27.750	6.943	0.000	117.60	ARD
5EX-47EJ2	6	0.022	0.013	387.9	92.605	90.5	27.500	6.943	0.000	117.60	ARD
5EX-47EJ1	6	0.020	0.013	387.9	92.605	90.5	27.500	6.943	0.000	117.60	ARD
5EX-47P2	57	0.020	0.012	387.9	81.811	90.5	27.750	6.943	0.000	117.60	ARD
5EX-45R	7	0.014	0.009	387.9	39.808	90.5	38.250	6.943	0.000	117.60	ARD

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).DB

Wear Rate Report

Pass 2 Analysis Include Measured Wear

Report Date/Time: 7/7/2010 9:54:36AM
AnalysisDate/Time: 6/11/2010 11:33:56AM

CHECWORKS SFA Version: 3.0 (build 105)
Duty Factor (Global) : 1.000

Run Name: CROSSUNDER
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 1.000

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***MS56-1-PRESEP to MSR-A***									***Sorted By: Flow Order***	
5EX-49N	31	0.040	0.024	387.9	83.669	90.5	33.000	6.943	0.000	117.60	ARD
5EX-49P1	61	0.017	0.010	387.9	163.213	90.5	33.000	6.943	0.000	117.60	ARD
5EX-49	2	0.025	0.015	387.9	83.669	90.5	33.250	6.943	0.000	117.60	ARD
5EX-49EJ1	6	0.020	0.012	387.9	83.669	90.5	33.000	6.943	0.000	117.60	ARD
5EX-49P2	52	0.017	0.010	387.9	83.669	90.5	33.000	6.943	0.000	117.60	ARD
5EX-49EJ2	6	0.020	0.012	387.9	83.669	90.5	33.000	6.943	0.000	117.60	ARD
5EX-52	2	0.025	0.015	387.9	83.669	90.5	33.250	6.943	0.000	117.60	ARD
5EX-52P	51	0.015	0.009	387.9	83.958	90.5	33.000	6.943	0.000	117.60	ARD
5EX-53	4	0.025	0.015	387.9	83.669	90.5	33.250	6.943	0.000	117.60	ARD
5EX-53R	18	0.016	0.010	387.9	83.669	90.5	33.000	6.943	0.000	117.60	ARD
5EX-53R (D/S)	18	0.012	0.007	387.9	36.948	90.5	48.500	6.943	0.000	117.60	ARD
5EX-53P	68	0.009	0.005	387.9	36.948	90.5	48.500	6.943	0.000	117.60	ARD
===>Grouped by Line:	***MS56-2-PRESEP to MSR-A***									***Sorted By: Flow Order***	
5EX-50N	31	0.040	0.024	387.9	83.669	90.5	33.000	6.943	0.000	117.60	ARD
5EX-50P1	61	0.017	0.010	387.9	163.213	90.5	33.000	6.943	0.000	117.60	ARD
5EX-50	2	0.025	0.015	387.9	83.669	90.5	33.250	6.943	0.000	117.60	ARD
5EX-50P2	52	0.017	0.010	387.9	83.669	90.5	33.000	6.943	0.000	117.60	ARD
5EX-62	1	0.021	0.013	387.9	83.669	90.5	33.250	6.943	0.000	117.60	ARD
5EX-50EJ1	6	0.020	0.012	387.9	83.669	90.5	33.000	6.943	0.000	117.60	ARD
5EX-50P3	51	0.015	0.009	387.9	83.669	90.5	33.000	6.943	0.000	117.60	ARD
5EX-50EJ2	6	0.020	0.012	387.9	83.669	90.5	33.000	6.943	0.000	117.60	ARD
5EX-51	2	0.025	0.015	387.9	83.669	90.5	33.250	6.943	0.000	117.60	ARD
5EX-51P	51	0.015	0.009	387.9	83.958	90.5	33.000	6.943	0.000	117.60	ARD
===>Grouped by Line:	***MS56-3-PRESEP to MSR-A***									***Sorted By: Flow Order***	
5EX-54	12	0.029	0.017	387.9	36.948	90.5	48.500	6.943	0.000	117.60	ARD
5EX-54 (BR/SE)	12	0.029	0.018	387.9	83.669	90.5	33.000	6.943	0.000	117.60	ARD
5EX-54 (D/S)	12	0.041	0.025	387.9	78.113	90.5	48.500	6.943	0.000	117.60	ARD

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***MS56-3-PRESEP to MSR-A***									***Sorted By: Flow Order***	
5EX-54P	62	0.007	0.005	387.9	78.113	90.5	48.500	6.943	0.000	117.60	ARD
5EX-55	14	0.048	0.029	387.9	78.113	90.5	48.500	6.943	0.000	117.60	ARD
5EX-55 (BR/SE)	14	0.019	0.011	387.9	81.811	90.5	27.500	6.943	0.000	117.60	ARD
5EX-55 (D/S)	14	0.039	0.024	387.9	50.606	90.5	48.500	6.943	0.000	117.60	ARD
===>Grouped by Line:	***MS56-4-PRESEP to MSR23A***									***Sorted By: Flow Order***	
5EX-55EJ1	6	0.020	0.012	387.9	81.998	90.5	27.500	6.943	0.000	117.60	ARD
5EX-55EJ2	6	0.020	0.012	387.9	81.998	90.5	27.500	6.943	0.000	117.60	ARD
5EX-56	2	0.025	0.015	387.9	81.811	90.5	27.750	6.943	0.000	117.60	ARD
5EX-56P	52	0.017	0.010	387.9	81.811	90.5	27.500	6.943	0.000	117.60	ARD
5EX-56N	30	0.027	0.016	387.9	81.811	90.5	27.500	6.943	0.000	117.60	ARD
===>Grouped by Line:	***MS56-5-PRESEP to MSR-A***									***Sorted By: Flow Order***	
5EX-55R	7	0.016	0.009	387.9	50.606	90.5	48.500	6.943	0.000	117.60	ARD
5EX-55R (D/S)	7	0.022	0.013	387.9	83.004	90.5	38.000	6.943	0.000	117.60	ARD
5EX-55P-1	68	0.013	0.008	387.9	83.004	90.5	38.000	6.943	0.000	117.60	ARD
5EX-57	14	0.050	0.030	387.9	83.004	90.5	38.000	6.943	0.000	117.60	ARD
5EX-57 (BR/SE)	14	0.019	0.011	387.9	81.811	90.5	27.500	6.943	0.000	117.60	ARD
5EX-57 (D/S)	14	0.035	0.021	387.9	39.808	90.5	38.000	6.943	0.000	117.60	ARD
===>Grouped by Line:	***MS56-6-PRESEP to MSR22A***									***Sorted By: Flow Order***	
5EX-57EJ1	6	0.020	0.012	387.9	81.998	90.5	27.500	6.943	0.000	117.60	ARD
5EX-57EJ2	6	0.020	0.012	387.9	81.998	90.5	27.500	6.943	0.000	117.60	ARD
5EX-58	2	0.025	0.015	387.9	81.811	90.5	27.750	6.943	0.000	117.60	ARD
5EX-58P	52	0.017	0.010	387.9	81.811	90.5	27.500	6.943	0.000	117.60	ARD
5EX-58N	30	0.027	0.016	387.9	81.811	90.5	27.500	6.943	0.000	117.60	ARD
===>Grouped by Line:	***MS56-7-PRESEP to MSR21A***									***Sorted By: Flow Order***	
5EX-57R	7	0.014	0.009	387.9	39.808	90.5	38.250	6.943	0.000	117.60	ARD
5EX-57R (D/S)	7	0.022	0.014	387.9	81.811	90.5	27.750	6.943	0.000	117.60	ARD
5EX-57P2	57	0.020	0.012	387.9	81.811	90.5	27.750	6.943	0.000	117.60	ARD
5EX-59	2	0.025	0.015	387.9	81.811	90.5	27.750	6.943	0.000	117.60	ARD
5EX-59EJ1	6	0.020	0.012	387.9	81.998	90.5	27.500	6.943	0.000	117.60	ARD
5EX-59P	56	0.005	0.003	387.9	81.998	90.5	27.750	6.943	0.000	117.60	ARD
5EX-59EJ2	6	0.020	0.012	387.9	81.998	90.5	27.500	6.943	0.000	117.60	ARD
5EX-60	2	0.025	0.015	387.9	81.811	90.5	27.750	6.943	0.000	117.60	ARD
5EX-60P	52	0.017	0.010	387.9	81.811	90.5	27.500	6.943	0.000	117.60	ARD
5EX-60N	30	0.027	0.016	387.9	81.811	90.5	27.500	6.943	0.000	117.60	ARD
===>Grouped by Line:	***MS57-1-PRESEP to MSR-B***									***Sorted By: Flow Order***	
5EX-37N	31	0.037	0.024	387.9	83.669	90.5	33.000	6.943	0.000	117.60	ARD

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***MS57-1-PRESEP to MSR-B***									***Sorted By: Flow Order***	
5EX-37P1	61	0.017	0.010	387.9	163.213	90.5	33.000	6.943	0.000	117.60	ARD
5EX-37	2	0.025	0.015	387.9	83.669	90.5	33.250	6.943	0.000	117.60	ARD
5EX-37EJ1	6	0.020	0.012	387.9	83.669	90.5	33.000	6.943	0.000	117.60	ARD
5EX-37P2	52	0.017	0.010	387.9	83.669	90.5	33.000	6.943	0.000	117.60	ARD
5EX-37EJ2	6	0.020	0.012	387.9	83.669	90.5	33.000	6.943	0.000	117.60	ARD
5EX-40	2	0.025	0.015	387.9	83.669	90.5	33.250	6.943	0.000	117.60	ARD
5EX-40P	51	0.015	0.009	387.9	83.958	90.5	33.000	6.943	0.000	117.60	ARD
5EX-41	2	0.025	0.015	387.9	83.669	90.5	33.250	6.943	0.000	117.60	ARD
5EX-41R	18	0.016	0.010	387.9	83.669	90.5	33.000	6.943	0.000	117.60	ARD
5EX-41R (D/S)	18	0.012	0.007	387.9	36.948	90.5	48.500	6.943	0.000	117.60	ARD
===>Grouped by Line:	***MS57-2-PRESEP to MSR-B***									***Sorted By: Flow Order***	
5EX-38N	31	0.040	0.024	387.9	83.669	90.5	33.000	6.943	0.000	117.60	ARD
5EX-38P	61	0.017	0.010	387.9	163.213	90.5	33.000	6.943	0.000	117.60	ARD
5EX-38	2	0.025	0.015	387.9	83.669	90.5	33.250	6.943	0.000	117.60	ARD
5EX-61P1	52	0.017	0.010	387.9	83.669	90.5	33.000	6.943	0.000	117.60	ARD
5EX-61	1	0.021	0.013	387.9	83.669	90.5	33.250	6.943	0.000	117.60	ARD
5EX-61EJ1	6	0.020	0.012	387.9	83.669	90.5	33.000	6.943	0.000	117.60	ARD
5EX-61P2	51	0.015	0.009	387.9	83.669	90.5	33.000	6.943	0.000	117.60	ARD
5EX-61EJ2	6	0.020	0.012	387.9	83.669	90.5	33.000	6.943	0.000	117.60	ARD
5EX-39	2	0.025	0.015	387.9	83.669	90.5	33.250	6.943	0.000	117.60	ARD
5EX-39P	51	0.015	0.009	387.9	83.958	90.5	33.000	6.943	0.000	117.60	ARD
===>Grouped by Line:	***MS57-3-PRESEP to MSR-B***									***Sorted By: Flow Order***	
5EX-42	12	0.029	0.017	387.9	36.948	90.5	48.500	6.943	0.000	117.60	ARD
5EX-42 (BR/SE)	12	0.029	0.018	387.9	83.669	90.5	33.000	6.943	0.000	117.60	ARD
5EX-42 (D/S)	12	0.041	0.025	387.9	78.113	90.5	48.500	6.943	0.000	117.60	ARD
5EX-41P	62	0.007	0.005	387.9	78.113	90.5	48.500	6.943	0.000	117.60	ARD
5EX-43	14	0.048	0.029	387.9	78.113	90.5	48.500	6.943	0.000	117.60	ARD
5EX-43 (BR/SE)	14	0.019	0.011	387.9	81.811	90.5	27.500	6.943	0.000	117.60	ARD
5EX-43 (D/S)	14	0.039	0.024	387.9	50.606	90.5	48.500	6.943	0.000	117.60	ARD
===>Grouped by Line:	***MS57-4-PRESEP to MSR23B***									***Sorted By: Flow Order***	
5EX-43EJ1	6	0.020	0.012	387.9	81.998	90.5	27.500	6.943	0.000	117.60	ARD
5EX-43EJ2	6	0.020	0.012	387.9	81.998	90.5	27.500	6.943	0.000	117.60	ARD
5EX-44	2	0.025	0.015	387.9	81.811	90.5	27.750	6.943	0.000	117.60	ARD
5EX-44N	30	0.027	0.016	387.9	81.811	90.5	27.500	6.943	0.000	117.60	ARD
===>Grouped by Line:	***MS57-5-PRESEP to MSR-B***									***Sorted By: Flow Order***	
5EX-43R	7	0.016	0.009	387.9	50.606	90.5	48.500	6.943	0.000	117.60	ARD

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***MS57-5-PRESEP to MSR-B***									***Sorted By: Flow Order***	
5EX-43R (D/S)	7	0.022	0.013	387.9	83.004	90.5	38.000	6.943	0.000	117.60	ARD
5EX-43P1	57	0.020	0.012	387.9	83.004	90.5	38.000	6.943	0.000	117.60	ARD
5EX-45	14	0.050	0.030	387.9	83.004	90.5	38.000	6.943	0.000	117.60	ARD
5EX-45 (BR/SE)	14	0.019	0.011	387.9	81.811	90.5	27.500	6.943	0.000	117.60	ARD
5EX-45 (D/S)	14	0.035	0.021	387.9	39.808	90.5	38.000	6.943	0.000	117.60	ARD
===>Grouped by Line:	***MS57-6-PRESEP to MSR22B***									***Sorted By: Flow Order***	
5EX-45EJ1	6	0.020	0.012	387.9	81.998	90.5	27.500	6.943	0.000	117.60	ARD
5EX-45EJ2	6	0.020	0.012	387.9	81.998	90.5	27.500	6.943	0.000	117.60	ARD
5EX-46	2	0.025	0.015	387.9	81.811	90.5	27.750	6.943	0.000	117.60	ARD
5EX-46N	30	0.027	0.016	387.9	81.811	90.5	27.500	6.943	0.000	117.60	ARD
===>Grouped by Line:	***MS57-7-PRESEP to MSR21B***									***Sorted By: Flow Order***	
5EX-45R	7	0.014	0.009	387.9	39.808	90.5	38.250	6.943	0.000	117.60	ARD
5EX-45R (D/S)	7	0.022	0.014	387.9	81.811	90.5	27.750	6.943	0.000	117.60	ARD
5EX-47P2	57	0.020	0.012	387.9	81.811	90.5	27.750	6.943	0.000	117.60	ARD
5EX-47	2	0.025	0.015	387.9	81.811	90.5	27.750	6.943	0.000	117.60	ARD
5EX-47EJ1	6	0.020	0.013	387.9	92.605	90.5	27.500	6.943	0.000	117.60	ARD
5EX-47EJ2	6	0.022	0.013	387.9	92.605	90.5	27.500	6.943	0.000	117.60	ARD
5EX-48	2	0.025	0.015	387.9	81.811	90.5	27.750	6.943	0.000	117.60	ARD
5EX-48N	30	0.027	0.016	387.9	81.811	90.5	27.500	6.943	0.000	117.60	ARD

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).DB

Service Life Report

Pass 2 Analysis Include Measured Wear

Report Date/Time: 7/7/2010 9:54:36AM
AnalysisDate/Time:

Run Name: CROSSUNDER
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 1.000

CHECWORKS SFA Version: 3.0 (build 105)
Duty Factor (Global) :1.000

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **MS56-1-PRESEP to MSR-A**					***Sorted By:Remaining Life***		
5EX-49N	0.000	0.499	0.230	0.230	97,588,304	No	243,721
5EX-53P	0.000	1.000	0.337	0.337	100,000,000	No	243,721
5EX-53R (D/S)	0.000	1.000	0.337	0.337	100,000,000	No	243,721
5EX-52P	0.000	0.500	0.230	0.230	100,000,000	No	243,721
5EX-49EJ1	0.000	0.499	0.230	0.230	195,370,864	No	243,721
5EX-49EJ2	0.000	0.499	0.230	0.230	195,370,864	No	243,721
5EX-49P1	0.000	0.500	0.230	0.230	225,904,656	No	243,721
5EX-53	0.000	0.624	0.231	0.231	231,955,408	No	243,721
5EX-52	0.000	0.624	0.231	0.231	231,955,408	No	243,721
5EX-49	0.000	0.624	0.231	0.231	231,955,408	No	243,721
5EX-49P2	0.000	0.500	0.230	0.230	234,725,264	No	243,721
5EX-53R	0.000	0.500	0.230	0.230	238,119,104	No	243,721
===>Grouped by Line: **MS56-2-PRESEP to MSR-A**					***Sorted By:Remaining Life***		
5EX-50N	0.000	0.499	0.230	0.230	97,588,304	No	243,721
5EX-50P3	0.000	0.500	0.230	0.230	100,000,000	No	243,721
5EX-51P	0.000	0.500	0.230	0.230	100,000,000	No	243,721
5EX-50EJ1	0.000	0.499	0.230	0.230	195,370,864	No	243,721
5EX-50EJ2	0.000	0.499	0.230	0.230	195,370,864	No	243,721
5EX-50P1	0.000	0.500	0.230	0.230	225,904,656	No	243,721
5EX-50	0.000	0.624	0.231	0.231	231,955,408	No	243,721
5EX-51	0.000	0.624	0.231	0.231	231,955,408	No	243,721
5EX-50P2	0.000	0.500	0.230	0.230	234,725,264	No	243,721
5EX-62	0.000	0.624	0.231	0.231	270,925,056	No	243,721
===>Grouped by Line: **MS56-3-PRESEP to MSR-A**					***Sorted By:Remaining Life***		
5EX-54P	0.000	1.000	0.337	0.337	100,000,000	No	243,721
5EX-54 (BR/SE)	0.000	0.499	0.230	0.230	134,704,032	No	243,721
5EX-55	0.000	0.999	0.337	0.337	200,531,600	No	243,721
5EX-54 (D/S)	0.000	0.999	0.337	0.337	235,477,296	No	243,721

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line:	**MS56-3-PRESEP to MSR-A**				***Sorted By:Remaining Life***		
5EX-55 (BR/SE)	0.000	0.499	0.191	0.191	237,067,680	No	243,721
5EX-55 (D/S)	0.000	0.999	0.337	0.337	246,367,904	No	243,721
5EX-54	0.000	0.999	0.337	0.337	332,244,448	No	243,721
===>Grouped by Line:	**MS56-4-PRESEP to MSR23A**				***Sorted By:Remaining Life***		
5EX-56N	0.000	0.499	0.191	0.191	165,879,488	No	243,721
5EX-55EJ1	0.000	0.499	0.191	0.191	221,515,296	No	243,721
5EX-55EJ2	0.000	0.499	0.191	0.191	221,515,296	No	243,721
5EX-56	0.000	0.624	0.193	0.193	252,317,584	No	243,721
5EX-56P	0.000	0.500	0.191	0.191	265,648,544	No	243,721
===>Grouped by Line:	**MS56-5-PRESEP to MSR-A**				***Sorted By:Remaining Life***		
5EX-57	0.000	0.499	0.264	0.264	67,425,360	No	243,721
5EX-57 (D/S)	0.000	0.499	0.264	0.264	95,913,800	No	243,721
5EX-55P-1	0.000	0.500	0.264	0.264	100,000,000	No	243,721
5EX-55R (D/S)	0.000	0.499	0.264	0.264	156,481,152	No	243,721
5EX-57 (BR/SE)	0.000	0.499	0.191	0.191	237,067,680	No	243,721
5EX-55R	0.000	1.000	0.337	0.337	616,177,664	No	243,721
===>Grouped by Line:	**MS56-6-PRESEP to MSR22A**				***Sorted By:Remaining Life***		
5EX-58N	0.000	0.499	0.191	0.191	165,879,488	No	243,721
5EX-57EJ1	0.000	0.499	0.191	0.191	221,515,296	No	243,721
5EX-57EJ2	0.000	0.499	0.191	0.191	221,515,296	No	243,721
5EX-58	0.000	0.624	0.193	0.193	252,317,584	No	243,721
5EX-58P	0.000	0.500	0.191	0.191	265,648,544	No	243,721
===>Grouped by Line:	**MS56-7-PRESEP to MSR21A**				***Sorted By:Remaining Life***		
5EX-59EJ2	0.000	0.299	0.219	0.219	57,559,192	No	243,721
5EX-59EJ1	0.000	0.351	0.219	0.219	94,935,520	No	243,721
5EX-57R	0.000	0.625	0.266	0.266	100,000,000	No	243,721
5EX-59P	0.000	0.319	0.193	0.193	100,000,000	No	243,721
5EX-60N	0.000	0.499	0.191	0.191	165,879,488	No	243,721
5EX-59	0.000	0.624	0.193	0.193	252,317,584	No	243,721
5EX-60	0.000	0.624	0.193	0.193	252,317,584	No	243,721
5EX-60P	0.000	0.500	0.191	0.191	265,648,544	No	243,721
5EX-57R (D/S)	0.000	0.624	0.193	0.193	279,259,424	No	243,721
5EX-57P2	0.000	0.624	0.193	0.193	309,886,336	No	243,721
===>Grouped by Line:	**MS57-1-PRESEP to MSR-B**				***Sorted By:Remaining Life***		
5EX-37N	0.000	0.499	0.230	0.230	97,679,800	No	201,090

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line:	**MS57-1-PRESEP to MSR-B**				***Sorted By:Remaining Life***		
5EX-40P	0.000	0.500	0.230	0.230	100,000,000	No	243,721
5EX-41R (D/S)	0.000	1.000	0.337	0.337	100,000,000	No	243,721
5EX-37EJ1	0.000	0.499	0.230	0.230	195,370,864	No	243,721
5EX-37EJ2	0.000	0.499	0.230	0.230	195,370,864	No	243,721
5EX-37	0.000	0.624	0.248	0.248	221,805,152	No	243,721
5EX-40	0.000	0.624	0.248	0.248	221,805,152	No	243,721
5EX-41	0.000	0.624	0.248	0.248	221,805,152	No	243,721
5EX-37P1	0.000	0.500	0.230	0.230	225,904,656	No	243,721
5EX-37P2	0.000	0.500	0.230	0.230	234,725,264	No	243,721
5EX-41R	0.000	0.500	0.230	0.230	238,119,104	No	243,721
===>Grouped by Line:	**MS57-2-PRESEP to MSR-B**				***Sorted By:Remaining Life***		
5EX-38N	0.000	0.499	0.230	0.230	97,588,304	No	243,721
5EX-61P2	0.000	0.500	0.230	0.230	100,000,000	No	243,721
5EX-39P	0.000	0.500	0.230	0.230	100,000,000	No	243,721
5EX-61EJ1	0.000	0.499	0.230	0.230	195,370,864	No	243,721
5EX-61EJ2	0.000	0.499	0.230	0.230	195,370,864	No	243,721
5EX-38	0.000	0.624	0.248	0.248	221,805,152	No	243,721
5EX-39	0.000	0.624	0.248	0.248	221,805,152	No	243,721
5EX-38P	0.000	0.500	0.230	0.230	225,904,656	No	243,721
5EX-61P1	0.000	0.500	0.230	0.230	234,725,264	No	243,721
5EX-61	0.000	0.624	0.248	0.248	259,072,448	No	243,721
===>Grouped by Line:	**MS57-3-PRESEP to MSR-B**				***Sorted By:Remaining Life***		
5EX-41P	0.000	1.000	0.337	0.337	100,000,000	No	243,721
5EX-42 (BR/SE)	0.000	0.499	0.230	0.230	134,704,032	No	243,721
5EX-43	0.000	0.999	0.337	0.337	200,531,600	No	243,721
5EX-42 (D/S)	0.000	0.999	0.337	0.337	235,477,296	No	243,721
5EX-43 (BR/SE)	0.000	0.499	0.191	0.191	237,067,680	No	243,721
5EX-43 (D/S)	0.000	0.999	0.337	0.337	246,367,904	No	243,721
5EX-42	0.000	0.999	0.337	0.337	332,244,448	No	243,721
===>Grouped by Line:	**MS57-4-PRESEP to MSR23B**				***Sorted By:Remaining Life***		
5EX-44N	0.000	0.499	0.219	0.219	151,046,160	No	243,721
5EX-43EJ1	0.000	0.499	0.191	0.191	221,515,296	No	243,721
5EX-43EJ2	0.000	0.499	0.191	0.191	221,515,296	No	243,721
5EX-44	0.000	0.624	0.207	0.207	243,919,760	No	243,721
===>Grouped by Line:	**MS57-5-PRESEP to MSR-B**				***Sorted By:Remaining Life***		
5EX-45	0.000	0.499	0.264	0.264	67,425,360	No	243,721

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line:	**MS57-5-PRESEP to MSR-B**				***Sorted By:Remaining Life***		
5EX-45 (D/S)	0.000	0.499	0.264	0.264	95,913,800	No	243,721
5EX-43R (D/S)	0.000	0.499	0.264	0.264	156,481,152	No	243,721
5EX-43P1	0.000	0.499	0.264	0.264	173,662,352	No	243,721
5EX-45 (BR/SE)	0.000	0.499	0.191	0.191	237,067,680	No	243,721
5EX-43R	0.000	1.000	0.337	0.337	616,177,664	No	243,721
===>Grouped by Line:	**MS57-6-PRESEP to MSR22B**				***Sorted By:Remaining Life***		
5EX-46N	0.000	0.499	0.219	0.219	151,046,160	No	243,721
5EX-45EJ1	0.000	0.499	0.191	0.191	221,515,296	No	243,721
5EX-45EJ2	0.000	0.499	0.191	0.191	221,515,296	No	243,721
5EX-46	0.000	0.624	0.207	0.207	243,919,760	No	243,721
===>Grouped by Line:	**MS57-7-PRESEP to MSR21B**				***Sorted By:Remaining Life***		
5EX-47EJ1	0.000	0.232	0.219	0.219	8,766,024	No	201,090
5EX-47EJ2	0.000	0.314	0.219	0.219	63,760,160	No	243,721
5EX-45R	0.000	0.625	0.266	0.266	100,000,000	No	243,721
5EX-48N	0.000	0.499	0.219	0.219	151,046,160	No	243,721
5EX-47	0.000	0.624	0.207	0.207	243,919,760	No	243,721
5EX-48	0.000	0.624	0.207	0.207	243,919,760	No	243,721
5EX-45R (D/S)	0.000	0.624	0.193	0.193	279,259,424	No	243,721
5EX-47P2	0.000	0.624	0.193	0.193	309,886,336	No	243,721

Note:
[1] Predictions are based on last Tmeas to analysis ending period.

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).DB

Service Life Report

Pass 2 Analysis Include Measured Wear

Report Date/Time: 7/7/2010 9:54:36AM
AnalysisDate/Time:

Run Name: CROSSUNDER
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 1.000

CHECWORKS SFA Version: 3.0 (build 105)
Duty Factor (Global) : 1.000

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **MS56-1-PRESEP to MSR-A**					***Sorted By:Flow Order***		
5EX-49N	0.000	0.499	0.230	0.230	97,588,304	No	243,721
5EX-49P1	0.000	0.500	0.230	0.230	225,904,656	No	243,721
5EX-49	0.000	0.624	0.231	0.231	231,955,408	No	243,721
5EX-49EJ1	0.000	0.499	0.230	0.230	195,370,864	No	243,721
5EX-49P2	0.000	0.500	0.230	0.230	234,725,264	No	243,721
5EX-49EJ2	0.000	0.499	0.230	0.230	195,370,864	No	243,721
5EX-52	0.000	0.624	0.231	0.231	231,955,408	No	243,721
5EX-52P	0.000	0.500	0.230	0.230	100,000,000	No	243,721
5EX-53	0.000	0.624	0.231	0.231	231,955,408	No	243,721
5EX-53R	0.000	0.500	0.230	0.230	238,119,104	No	243,721
5EX-53R (D/S)	0.000	1.000	0.337	0.337	100,000,000	No	243,721
5EX-53P	0.000	1.000	0.337	0.337	100,000,000	No	243,721
===>Grouped by Line: **MS56-2-PRESEP to MSR-A**					***Sorted By:Flow Order***		
5EX-50N	0.000	0.499	0.230	0.230	97,588,304	No	243,721
5EX-50P1	0.000	0.500	0.230	0.230	225,904,656	No	243,721
5EX-50	0.000	0.624	0.231	0.231	231,955,408	No	243,721
5EX-50P2	0.000	0.500	0.230	0.230	234,725,264	No	243,721
5EX-62	0.000	0.624	0.231	0.231	270,925,056	No	243,721
5EX-50EJ1	0.000	0.499	0.230	0.230	195,370,864	No	243,721
5EX-50P3	0.000	0.500	0.230	0.230	100,000,000	No	243,721
5EX-50EJ2	0.000	0.499	0.230	0.230	195,370,864	No	243,721
5EX-51	0.000	0.624	0.231	0.231	231,955,408	No	243,721
5EX-51P	0.000	0.500	0.230	0.230	100,000,000	No	243,721
===>Grouped by Line: **MS56-3-PRESEP to MSR-A**					***Sorted By:Flow Order***		
5EX-54	0.000	0.999	0.337	0.337	332,244,448	No	243,721
5EX-54 (BR/SE)	0.000	0.499	0.230	0.230	134,704,032	No	243,721
5EX-54 (D/S)	0.000	0.999	0.337	0.337	235,477,296	No	243,721
5EX-54P	0.000	1.000	0.337	0.337	100,000,000	No	243,721

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **MS56-3-PRESEP to MSR-A**					***Sorted By:Flow Order***		
5EX-55	0.000	0.999	0.337	0.337	200,531,600	No	243,721
5EX-55 (BR/SE)	0.000	0.499	0.191	0.191	237,067,680	No	243,721
5EX-55 (D/S)	0.000	0.999	0.337	0.337	246,367,904	No	243,721
===>Grouped by Line: **MS56-4-PRESEP to MSR23A**					***Sorted By:Flow Order***		
5EX-55EJ1	0.000	0.499	0.191	0.191	221,515,296	No	243,721
5EX-55EJ2	0.000	0.499	0.191	0.191	221,515,296	No	243,721
5EX-56	0.000	0.624	0.193	0.193	252,317,584	No	243,721
5EX-56P	0.000	0.500	0.191	0.191	265,648,544	No	243,721
5EX-56N	0.000	0.499	0.191	0.191	165,879,488	No	243,721
===>Grouped by Line: **MS56-5-PRESEP to MSR-A**					***Sorted By:Flow Order***		
5EX-55R	0.000	1.000	0.337	0.337	616,177,664	No	243,721
5EX-55R (D/S)	0.000	0.499	0.264	0.264	156,481,152	No	243,721
5EX-55P-1	0.000	0.500	0.264	0.264	100,000,000	No	243,721
5EX-57	0.000	0.499	0.264	0.264	67,425,360	No	243,721
5EX-57 (BR/SE)	0.000	0.499	0.191	0.191	237,067,680	No	243,721
5EX-57 (D/S)	0.000	0.499	0.264	0.264	95,913,800	No	243,721
===>Grouped by Line: **MS56-6-PRESEP to MSR22A**					***Sorted By:Flow Order***		
5EX-57EJ1	0.000	0.499	0.191	0.191	221,515,296	No	243,721
5EX-57EJ2	0.000	0.499	0.191	0.191	221,515,296	No	243,721
5EX-58	0.000	0.624	0.193	0.193	252,317,584	No	243,721
5EX-58P	0.000	0.500	0.191	0.191	265,648,544	No	243,721
5EX-58N	0.000	0.499	0.191	0.191	165,879,488	No	243,721
===>Grouped by Line: **MS56-7-PRESEP to MSR21A**					***Sorted By:Flow Order***		
5EX-57R	0.000	0.625	0.266	0.266	100,000,000	No	243,721
5EX-57R (D/S)	0.000	0.624	0.193	0.193	279,259,424	No	243,721
5EX-57P2	0.000	0.624	0.193	0.193	309,886,336	No	243,721
5EX-59	0.000	0.624	0.193	0.193	252,317,584	No	243,721
5EX-59EJ1	0.000	0.351	0.219	0.219	94,935,520	No	243,721
5EX-59P	0.000	0.319	0.193	0.193	100,000,000	No	243,721
5EX-59EJ2	0.000	0.299	0.219	0.219	57,559,192	No	243,721
5EX-60	0.000	0.624	0.193	0.193	252,317,584	No	243,721
5EX-60P	0.000	0.500	0.191	0.191	265,648,544	No	243,721
5EX-60N	0.000	0.499	0.191	0.191	165,879,488	No	243,721
===>Grouped by Line: **MS57-1-PRESEP to MSR-B**					***Sorted By:Flow Order***		
5EX-37N	0.000	0.499	0.230	0.230	97,679,800	No	201,090

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line:	**MS57-1-PRESEP to MSR-B**				***Sorted By:Flow Order***		
5EX-37P1	0.000	0.500	0.230	0.230	225,904,656	No	243,721
5EX-37	0.000	0.624	0.248	0.248	221,805,152	No	243,721
5EX-37EJ1	0.000	0.499	0.230	0.230	195,370,864	No	243,721
5EX-37P2	0.000	0.500	0.230	0.230	234,725,264	No	243,721
5EX-37EJ2	0.000	0.499	0.230	0.230	195,370,864	No	243,721
5EX-40	0.000	0.624	0.248	0.248	221,805,152	No	243,721
5EX-40P	0.000	0.500	0.230	0.230	100,000,000	No	243,721
5EX-41	0.000	0.624	0.248	0.248	221,805,152	No	243,721
5EX-41R	0.000	0.500	0.230	0.230	238,119,104	No	243,721
5EX-41R (D/S)	0.000	1.000	0.337	0.337	100,000,000	No	243,721
===>Grouped by Line:	**MS57-2-PRESEP to MSR-B**				***Sorted By:Flow Order***		
5EX-38N	0.000	0.499	0.230	0.230	97,588,304	No	243,721
5EX-38P	0.000	0.500	0.230	0.230	225,904,656	No	243,721
5EX-38	0.000	0.624	0.248	0.248	221,805,152	No	243,721
5EX-61P1	0.000	0.500	0.230	0.230	234,725,264	No	243,721
5EX-61	0.000	0.624	0.248	0.248	259,072,448	No	243,721
5EX-61EJ1	0.000	0.499	0.230	0.230	195,370,864	No	243,721
5EX-61P2	0.000	0.500	0.230	0.230	100,000,000	No	243,721
5EX-61EJ2	0.000	0.499	0.230	0.230	195,370,864	No	243,721
5EX-39	0.000	0.624	0.248	0.248	221,805,152	No	243,721
5EX-39P	0.000	0.500	0.230	0.230	100,000,000	No	243,721
===>Grouped by Line:	**MS57-3-PRESEP to MSR-B**				***Sorted By:Flow Order***		
5EX-42	0.000	0.999	0.337	0.337	332,244,448	No	243,721
5EX-42 (BR/SE)	0.000	0.499	0.230	0.230	134,704,032	No	243,721
5EX-42 (D/S)	0.000	0.999	0.337	0.337	235,477,296	No	243,721
5EX-41P	0.000	1.000	0.337	0.337	100,000,000	No	243,721
5EX-43	0.000	0.999	0.337	0.337	200,531,600	No	243,721
5EX-43 (BR/SE)	0.000	0.499	0.191	0.191	237,067,680	No	243,721
5EX-43 (D/S)	0.000	0.999	0.337	0.337	246,367,904	No	243,721
===>Grouped by Line:	**MS57-4-PRESEP to MSR23B**				***Sorted By:Flow Order***		
5EX-43EJ1	0.000	0.499	0.191	0.191	221,515,296	No	243,721
5EX-43EJ2	0.000	0.499	0.191	0.191	221,515,296	No	243,721
5EX-44	0.000	0.624	0.207	0.207	243,919,760	No	243,721
5EX-44N	0.000	0.499	0.219	0.219	151,046,160	No	243,721
===>Grouped by Line:	**MS57-5-PRESEP to MSR-B**				***Sorted By:Flow Order***		
5EX-43R	0.000	1.000	0.337	0.337	616,177,664	No	243,721

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **MS57-5-PRESEP to MSR-B**					***Sorted By:Flow Order***		
5EX-43R (D/S)	0.000	0.499	0.264	0.264	156,481,152	No	243,721
5EX-43P1	0.000	0.499	0.264	0.264	173,662,352	No	243,721
5EX-45	0.000	0.499	0.264	0.264	67,425,360	No	243,721
5EX-45 (BR/SE)	0.000	0.499	0.191	0.191	237,067,680	No	243,721
5EX-45 (D/S)	0.000	0.499	0.264	0.264	95,913,800	No	243,721
===>Grouped by Line: **MS57-6-PRESEP to MSR22B**					***Sorted By:Flow Order***		
5EX-45EJ1	0.000	0.499	0.191	0.191	221,515,296	No	243,721
5EX-45EJ2	0.000	0.499	0.191	0.191	221,515,296	No	243,721
5EX-46	0.000	0.624	0.207	0.207	243,919,760	No	243,721
5EX-46N	0.000	0.499	0.219	0.219	151,046,160	No	243,721
===>Grouped by Line: **MS57-7-PRESEP to MSR21B**					***Sorted By:Flow Order***		
5EX-45R	0.000	0.625	0.266	0.266	100,000,000	No	243,721
5EX-45R (D/S)	0.000	0.624	0.193	0.193	279,259,424	No	243,721
5EX-47P2	0.000	0.624	0.193	0.193	309,886,336	No	243,721
5EX-47	0.000	0.624	0.207	0.207	243,919,760	No	243,721
5EX-47EJ1	0.000	0.232	0.219	0.219	8,766,024	No	201,090
5EX-47EJ2	0.000	0.314	0.219	0.219	63,760,160	No	243,721
5EX-48	0.000	0.624	0.207	0.207	243,919,760	No	243,721
5EX-48N	0.000	0.499	0.219	0.219	151,046,160	No	243,721

Note:
[1] Predictions are based on last Tmeas to analysis ending period.

4

Wear Report

Company:
Plant:
Unit:
DB Name: IPEC2(v4).DB

Report Date/Time: 07-Jul-2010 9:54 am
AnalysisDate/Time: 07-Jul-2010 9:54 am

Run Name:
Ending Period:
Total Plant Operating Hours:
WRA Data Option:
Line Correction Factor:

CHECWORKS SFA Version:
Duty Factor (Global) :

Component Name	Tinit	Total Lifetime Wear (mils) Prd. [1]	Meas.	In-Service Component Wear(mils) Prd. [1]	Meas.	In-Service Component Tmeas, Method, Time (in) [3]	[2]	(hrs) [3]	In-Service Component Thickness (mils) [4] Tp	Tm	Incremental Wear (mils) [5] PRWEAR	Time (hrs) Last Inspected

===>Grouped by Line: ***Sorted By: Flow Order***

Notes:
[1] Predictions are for the time of last inspection (last known meas. wear).
[2] GW = Tmeas is minimum thickness from Band, Blanket or Area Method of greatest wear.
MT = Tmeas is component minimum thickness.
PW = Tmeas is Tinit - predicted wear.
US = Tmeas is user specified.
[3] If no Tmeas has been determined from measured data, then Tmeas = Tinit and Time = current component installation time.
Tmeas is used to determine Predicted Thickness and Component Predicted Time to Tcrit.
[4] These two values are used for thickness plot.
Tp = Predicted thickness at Tmeas.
Tm = Last measured thickness (Tmeas).
[5] PRWEAR = Incremental wear from last Tmeas time to analysis ending period.

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).DB

Wear Rate Report

Pass 2 Analysis Include Measured Wear

Report Date/Time: 7/7/2010 9:54:36AM
AnalysisDate/Time: 6/11/2010 11:33:58AM

CHECWORKS SFA Version: 3.0 (build 105)
Duty Factor (Global) : 1.000

Run Name: ES - BFPT DRN TO COND
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 1.000

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***ES-BFPT Drain to Condenser 22***									***Sorted By: Average Wear Rate***	
TEMP06	31	0.476	0.266	101.7	0.034	86.8	48.000	7.282	0.000	93.74	HBD
===>Grouped by Line:	***ES-BFPT Drain to Condenser 23***									***Sorted By: Average Wear Rate***	
TEMP05	31	0.476	0.266	101.7	0.034	86.8	48.000	7.282	0.000	93.74	HBD

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).DB

Wear Rate Report

Pass 2 Analysis Include Measured Wear

Report Date/Time: 7/7/2010 9:54:36AM
AnalysisDate/Time: 6/11/2010 11:33:58AM

CHECWORKS SFA Version: 3.0 (build 105)
Duty Factor (Global) : 1.000

Run Name: ES - BFPT DRN TO COND
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 1.000

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***ES-BFPT Drain to Condenser 22***									***Sorted By: Flow Order***	
TEMP06	31	0.476	0.266	101.7	0.034	86.8	48.000	7.282	0.000	93.74	HBD
===>Grouped by Line:	***ES-BFPT Drain to Condenser 23***									***Sorted By: Flow Order***	
TEMP05	31	0.476	0.266	101.7	0.034	86.8	48.000	7.282	0.000	93.74	HBD

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).DB

Service Life Report

Pass 2 Analysis Include Measured Wear

Report Date/Time: 7/7/2010 9:54:36AM
AnalysisDate/Time:

Run Name: ES - BFPT DRN TO COND
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 1.000

CHECWORKS SFA Version: 3.0 (build 105)
Duty Factor (Global) :1.000

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **ES-BFPT Drain to Condenser 22**					***Sorted By:Remaining Life***		
TEMP06	0.000	0.612	0.080	0.080	17,519,908	No	243,721
===>Grouped by Line: **ES-BFPT Drain to Condenser 23**					***Sorted By:Remaining Life***		
TEMP05	0.000	0.612	0.080	0.080	17,519,908	No	243,721

Note:
[1] Predictions are based on last Tmeas to analysis ending period.

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).DB

Service Life Report

Pass 2 Analysis Include Measured Wear

Report Date/Time: 7/7/2010 9:54:36AM
AnalysisDate/Time:

Run Name: ES - BFPT DRN TO COND
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 1.000

CHECWORKS SFA Version: 3.0 (build 105)
Duty Factor (Global) : 1.000

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **ES-BFPT Drain to Condenser 22**					***Sorted By:Flow Order***		
TEMP06	0.000	0.612	0.080	0.080	17,519,908	No	243,721
===>Grouped by Line: **ES-BFPT Drain to Condenser 23**					***Sorted By:Flow Order***		
TEMP05	0.000	0.612	0.080	0.080	17,519,908	No	243,721

Note:
[1] Predictions are based on last Tmeas to analysis ending period.

1

Wear Report

Company:
Plant:
Unit:
DB Name: IPEC2(v4).DB

Report Date/Time: 07-Jul-2010 9:54 am
AnalysisDate/Time: 07-Jul-2010 9:54 am

Run Name:
Ending Period:
Total Plant Operating Hours:
WRA Data Option:
Line Correction Factor:

CHECWORKS SFA Version:
Duty Factor (Global) :

Component Name	Tinit	Total Lifetime Wear (mils) Prd. [1]	Total Lifetime Wear (mils) Meas.	In-Service Component Wear(mils) Prd. [1]	In-Service Component Wear(mils) Meas.	In-Service Component Tmeas, Method, Time (in) [3]	[2]	(hrs) [3]	In-Service Component Thickness (mils) [4] Tp	Tm	Incremental Wear (mils) [5] PRWEAR	Time (hrs) Last Inspected

===>Grouped by Line: ***Sorted By: Flow Order***

Notes:
[1] Predictions are for the time of last inspection (last known meas. wear).
[2] GW = Tmeas is minimum thickness from Band, Blanket or Area Method of greatest wear.
MT = Tmeas is component minimum thickness.
PW = Tmeas is Tinit - predicted wear.
US = Tmeas is user specified.
[3] If no Tmeas has been determined from measured data, then Tmeas = Tinit and Time = current component installation time.
Tmeas is used to determine Predicted Thickness and Component Predicted Time to Tcrit.
[4] These two values are used for thickness plot.
Tp = Predicted thickness at Tmeas.
Tm = Last measured thickness (Tmeas).
[5] PRWEAR = Incremental wear from last Tmeas time to analysis ending period.

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).DB

Wear Rate Report

Pass 2 Analysis Include Measured Wear

Report Date/Time: 7/7/2010 9:54:36AM
AnalysisDate/Time: 6/11/2010 11:34:22AM

CHECWORKS SFA Version: 3.0 (build 105)
Duty Factor (Global) : 1.000

Run Name: FW BFP TO FWH 26
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 0.490

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***FW71-1-BFP21 DISCH to HDR***								***Sorted By: Average Wear Rate***		
BFD VALVE-BFD-1	25	7.208	2.996	380.7	24.354	0.0	20.000	6.845	0.000	98.03	ARD
BFD VALVE-BFD-2-21	22	7.173	2.982	380.7	24.168	0.0	20.000	6.845	0.000	98.03	ARD
BFD-14R	18	4.944	2.055	380.7	33.616	0.0	16.000	6.845	0.000	98.03	ARD
BFD-14	4	4.756	1.977	380.7	20.295	0.0	20.000	6.845	0.000	98.03	ARD
BFD-2	4	4.756	1.977	380.7	20.295	0.0	20.000	6.845	0.000	98.03	ARD
BFD-4	2	4.756	1.977	380.7	20.295	0.0	20.000	6.845	0.000	98.03	ARD
BFD-5	2	4.756	1.977	380.7	20.295	0.0	20.000	6.845	0.000	98.03	ARD
BFD-6	2	4.756	1.977	380.7	20.295	0.0	20.000	6.845	0.000	98.03	ARD
BFD-7	2	4.756	1.977	380.7	20.295	0.0	20.000	6.845	0.000	98.03	ARD
BFD-8	2	4.756	1.977	380.7	20.295	0.0	20.000	6.845	0.000	98.03	ARD
BFD-9	2	4.756	1.977	380.7	20.295	0.0	20.000	6.845	0.000	98.03	ARD
BFD-10	2	4.756	1.977	380.7	20.295	0.0	20.000	6.845	0.000	98.03	ARD
BFD-14P-1	54	4.113	1.710	380.7	20.295	0.0	20.000	6.845	0.000	98.03	ARD
BFD-2P US	54	4.113	1.710	380.7	20.295	0.0	20.000	6.845	0.000	98.03	ARD
BFD-2P DS	54	4.113	1.710	380.7	20.295	0.0	20.000	6.845	0.000	98.03	ARD
BFD-14N	31	3.903	3.669	380.7	33.616	0.0	16.000	6.845	0.000	98.03	ARD
BFD-14R (D/S)	18	3.856	1.603	380.7	20.295	0.0	20.000	6.845	0.000	98.03	ARD
BFD-4P US	52	3.213	1.336	380.7	20.295	0.0	20.000	6.845	0.000	98.03	ARD
BFD-5P	52	3.213	1.336	380.7	20.295	0.0	20.000	6.845	0.000	98.03	ARD
BFD-6P	52	3.213	1.336	380.7	20.295	0.0	20.000	6.845	0.000	98.03	ARD
BFD-7P US	52	3.213	1.336	380.7	20.295	0.0	20.000	6.845	0.000	98.03	ARD
BFD-7P DS	52	3.213	1.336	380.7	20.295	0.0	20.000	6.845	0.000	98.03	ARD
BFD-8P	52	3.213	1.336	380.7	20.295	0.0	20.000	6.845	0.000	98.03	ARD
BFD-9P US	52	3.213	1.336	380.7	20.295	0.0	20.000	6.845	0.000	98.03	ARD
BFD-9P DS	52	3.213	1.336	380.7	20.295	0.0	20.000	6.845	0.000	98.03	ARD
BFD-10P US	52	3.213	1.336	380.7	20.295	0.0	20.000	6.845	0.000	98.03	ARD
BFD-10P DS	52	3.213	1.336	380.7	20.295	0.0	20.000	6.845	0.000	98.03	ARD
BFD-14P-2	58	2.828	1.175	380.7	20.295	0.0	20.000	6.845	0.000	98.03	ARD

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***FW71-1-BFP21 DISCH to HDR***								***Sorted By: Average Wear Rate***		
BFD-14P	61	2.107	1.981	380.7	33.616	0.0	16.000	6.845	0.000	98.03	ARD
===>Grouped by Line:	***FW72-1-BFP22 DISCH to HDR***								***Sorted By: Average Wear Rate***		
BFD-15N	31	8.828	3.669	380.7	33.616	0.0	16.000	6.845	0.000	98.03	ARD
BFD-VALVE-BFD-1-1	25	7.208	2.996	380.7	24.354	0.0	20.000	6.845	0.000	98.03	ARD
BFD-VALVE-BFD-2-22	22	7.173	2.982	380.7	24.168	0.0	20.000	6.845	0.000	98.03	ARD
BFD-15R	18	4.944	2.055	380.7	33.616	0.0	16.000	6.845	0.000	98.03	ARD
BFD-15	2	4.756	1.977	380.7	20.295	0.0	20.000	6.845	0.000	98.03	ARD
BFD-16	2	4.756	1.977	380.7	20.295	0.0	20.000	6.845	0.000	98.03	ARD
BFD-13	2	4.756	1.977	380.7	20.295	0.0	20.000	6.845	0.000	98.03	ARD
BFD-17	2	4.756	1.977	380.7	20.295	0.0	20.000	6.845	0.000	98.03	ARD
BFD-18	2	4.756	1.977	380.7	20.295	0.0	20.000	6.845	0.000	98.03	ARD
BFD-19	2	4.756	1.977	380.7	20.295	0.0	20.000	6.845	0.000	98.03	ARD
BFD-20	2	4.756	1.977	380.7	20.295	0.0	20.000	6.845	0.000	98.03	ARD
BFD-21	2	4.756	1.977	380.7	20.295	0.0	20.000	6.845	0.000	98.03	ARD
BFD-22	2	4.756	1.977	380.7	20.295	0.0	20.000	6.845	0.000	98.03	ARD
BFD-12	1	4.242	1.763	380.7	20.295	0.0	20.000	6.845	0.000	98.03	ARD
BFD-15R (D/S)	18	3.856	1.603	380.7	20.295	0.0	20.000	6.845	0.000	98.03	ARD
BFD-23R	18	3.599	1.496	380.7	20.295	0.0	20.000	6.845	0.000	98.03	ARD
BFD-15P-1	68	3.213	1.336	380.7	20.295	0.0	20.000	6.845	0.000	98.03	ARD
BFD-15P US	52	3.213	1.336	380.7	20.295	0.0	20.000	6.845	0.000	98.03	ARD
BFD-15P DS	52	3.213	1.336	380.7	20.295	0.0	20.000	6.845	0.000	98.03	ARD
BFD-16P	52	3.213	1.336	380.7	20.295	0.0	20.000	6.845	0.000	98.03	ARD
BFD-13P	52	3.213	1.336	380.7	20.295	0.0	20.000	6.845	0.000	98.03	ARD
BFD-17P	52	3.213	1.336	380.7	20.295	0.0	20.000	6.845	0.000	98.03	ARD
BFD-18P	52	3.213	1.336	380.7	20.295	0.0	20.000	6.845	0.000	98.03	ARD
BFD-19P	52	3.213	1.336	380.7	20.295	0.0	20.000	6.845	0.000	98.03	ARD
BFD-20P	52	3.213	1.336	380.7	20.295	0.0	20.000	6.845	0.000	98.03	ARD
BFD-21P US	52	3.213	1.336	380.7	20.295	0.0	20.000	6.845	0.000	98.03	ARD
BFD-21P DS	52	3.213	1.336	380.7	20.295	0.0	20.000	6.845	0.000	98.03	ARD
BFD-22P	52	3.213	1.336	380.7	20.295	0.0	20.000	6.845	0.000	98.03	ARD
BFD-12P	51	2.828	1.175	380.7	20.295	0.0	20.000	6.845	0.000	98.03	ARD
BFD-12P-1	58	2.828	1.175	380.7	20.295	0.0	20.000	6.845	0.000	98.03	ARD
BFD-12P-2	58	2.828	1.175	380.7	20.295	0.0	20.000	6.845	0.000	98.03	ARD
BFD-23R (D/S)	18	2.255	0.937	380.7	8.648	0.0	30.000	6.845	0.000	98.03	ARD
===>Grouped by Line:	***FW73-1-BFPHDR to FWH26ABC***								***Sorted By: Average Wear Rate***		
BFD-11 (D/S)	12	4.540	1.887	380.7	17.296	0.0	30.000	6.845	0.000	98.03	ARD

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***FW73-1-BFPHDR to FWH26ABC***								***Sorted By: Average Wear Rate***		
BFD-11 (BR/SE)	12	4.370	1.817	380.7	20.295	0.0	20.000	6.845	0.000	98.03	ARD
BFD-23	2	4.097	1.703	380.7	17.296	0.0	30.000	6.845	0.000	98.03	ARD
BFD-24	4	4.097	1.703	380.7	17.296	0.0	30.000	6.845	0.000	98.03	ARD
BFD-25	2	4.097	1.703	380.7	17.296	0.0	30.000	6.845	0.000	98.03	ARD
BFD-26	4	4.097	1.703	380.7	17.296	0.0	30.000	6.845	0.000	98.03	ARD
BFD-27	2	4.097	1.703	380.7	17.296	0.0	30.000	6.845	0.000	98.03	ARD
BFD-28	2	4.097	1.703	380.7	17.296	0.0	30.000	6.845	0.000	98.03	ARD
BFD-29	2	4.097	1.703	380.7	17.296	0.0	30.000	6.845	0.000	98.03	ARD
BFD-32	2	4.097	1.703	380.7	17.296	0.0	30.000	6.845	0.000	98.03	ARD
BFD-24P DS	54	3.543	1.473	380.7	17.296	0.0	30.000	6.845	0.000	98.03	ARD
BFD-26P US	54	3.543	1.473	380.7	17.296	0.0	30.000	6.845	0.000	98.03	ARD
BFD-32T (D/S)	15	3.322	1.381	380.7	17.296	0.0	30.000	6.845	0.000	98.03	ARD
BFD-32T	15	3.322	1.381	380.7	17.296	0.0	30.000	6.845	0.000	98.03	ARD
BFD-11	12	3.082	1.281	380.7	8.648	0.0	30.000	6.845	0.000	98.03	ARD
BFD-25P	52	2.768	1.151	380.7	17.296	0.0	30.000	6.845	0.000	98.03	ARD
BFD-27P	52	2.768	1.151	380.7	17.296	0.0	30.000	6.845	0.000	98.03	ARD
BFD-28P	52	2.768	1.151	380.7	17.296	0.0	30.000	6.845	0.000	98.03	ARD
BFD-29P	52	2.768	1.151	380.7	17.296	0.0	30.000	6.845	0.000	98.03	ARD
BFD-32P	52	2.768	1.151	380.7	17.296	0.0	30.000	6.845	0.000	98.03	ARD
===>Grouped by Line:	***FW73-2-BFPHDR to FWH26ABC***								***Sorted By: Average Wear Rate***		
BFD-32T-C	14	6.090	2.532	380.7	17.296	0.0	30.000	6.845	0.000	98.03	ARD
BFD-32T-C (D/S)	14	4.857	2.019	380.7	11.536	0.0	30.000	6.845	0.000	98.03	ARD
BFD-32T-C (BR/SE)	14	4.098	1.704	380.7	16.725	0.0	18.000	6.845	0.000	98.03	ARD
BFD-32P-1	65	2.215	0.921	380.7	17.296	0.0	30.000	6.845	0.000	98.03	ARD
===>Grouped by Line:	***FW73-3-BFPHDR to FWH26C***								***Sorted By: Average Wear Rate***		
BFD-VALVE-BFD-3-2	22	5.856	2.434	380.7	16.729	0.0	18.000	6.845	0.000	98.03	ARD
BFD-42N	30	4.684	1.947	380.7	16.729	0.0	18.000	6.845	0.000	98.03	ARD
BFD-40	2	4.333	1.801	380.7	16.729	0.0	18.000	6.845	0.000	98.03	ARD
BFD-41	2	4.333	1.801	380.7	16.729	0.0	18.000	6.845	0.000	98.03	ARD
BFD-42	1	3.865	1.606	380.7	16.729	0.0	18.000	6.845	0.000	98.03	ARD
BFD-41P	52	2.928	1.217	380.7	16.729	0.0	18.000	6.845	0.000	98.03	ARD
BFD-42P	52	2.928	1.217	380.7	16.729	0.0	18.000	6.845	0.000	98.03	ARD
BFD-41P-1	58	2.576	1.071	380.7	16.729	0.0	18.000	6.845	0.000	98.03	ARD
BFD-40P US	64	2.342	0.974	380.7	16.729	0.0	18.000	6.845	0.000	98.03	ARD
===>Grouped by Line:	***FW73-4-BFPHDR to FWH26ABC***								***Sorted By: Average Wear Rate***		
BFD-32T-B	14	4.857	2.019	380.7	11.536	0.0	30.000	6.845	0.000	98.03	ARD

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***FW73-4-BFPHDR to FWH26ABC***								***Sorted By: Average Wear Rate***		
BFD-32T-B (BR/SE)	14	4.098	1.704	380.7	16.725	0.0	18.000	6.845	0.000	98.03	ARD
BFD-32T-B (D/S)	14	3.030	1.278	380.7	5.759	0.0	30.000	6.845	0.000	98.03	ARD
BFD-32P-2	64	1.766	0.734	380.7	11.536	0.0	30.000	6.845	0.000	98.03	ARD
===>Grouped by Line:	***FW73-5-BFPHDR to FWH26B***								***Sorted By: Average Wear Rate***		
BFD-VALVE-BFD-3-1	22	5.856	2.434	380.7	16.729	0.0	18.000	6.845	0.000	98.03	ARD
BFD-39N	30	4.684	1.947	380.7	16.729	0.0	18.000	6.845	0.000	98.03	ARD
BFD-37	2	4.333	1.801	380.7	16.729	0.0	18.000	6.845	0.000	98.03	ARD
BFD-38	2	4.333	1.801	380.7	16.729	0.0	18.000	6.845	0.000	98.03	ARD
BFD-39	1	3.865	1.606	380.7	16.729	0.0	18.000	6.845	0.000	98.03	ARD
BFD-38P	52	2.928	1.217	380.7	16.729	0.0	18.000	6.845	0.000	98.03	ARD
BFD-39P	52	2.928	1.217	380.7	16.729	0.0	18.000	6.845	0.000	98.03	ARD
BFD-38P-1	58	2.576	1.071	380.7	16.729	0.0	18.000	6.845	0.000	98.03	ARD
BFD-37P	64	2.342	0.974	380.7	16.729	0.0	18.000	6.845	0.000	98.03	ARD
===>Grouped by Line:	***FW73-6-BFPHDR to FWH26A***								***Sorted By: Average Wear Rate***		
BFD-VALVE-BFD-3	22	5.856	2.434	380.7	16.729	0.0	18.000	6.845	0.000	98.03	ARD
BFD-36N	30	4.684	1.947	380.7	16.729	0.0	18.000	6.845	0.000	98.03	ARD
BFD-33	2	4.333	1.801	380.7	16.729	0.0	18.000	6.845	0.000	98.03	ARD
BFD-34	2	4.333	1.801	380.7	16.729	0.0	18.000	6.845	0.000	98.03	ARD
BFD-35	2	4.333	1.801	380.7	16.729	0.0	18.000	6.845	0.000	98.03	ARD
BFD-36	1	3.865	1.606	380.7	16.729	0.0	18.000	6.845	0.000	98.03	ARD
BFD-33R (D/S)	7	3.747	1.558	380.7	16.725	0.0	18.000	6.845	0.000	98.03	ARD
BFD-33P-1 DS	57	2.928	1.217	380.7	16.729	0.0	18.000	6.845	0.000	98.03	ARD
BFD-33P US	52	2.928	1.217	380.7	16.729	0.0	18.000	6.845	0.000	98.03	ARD
BFD-33P DS	52	2.928	1.217	380.7	16.729	0.0	18.000	6.845	0.000	98.03	ARD
BFD-34P US	52	2.928	1.217	380.7	16.729	0.0	18.000	6.845	0.000	98.03	ARD
BFD-34P DS	52	2.928	1.217	380.7	16.729	0.0	18.000	6.845	0.000	98.03	ARD
BFD-35P	52	2.928	1.217	380.7	16.729	0.0	18.000	6.845	0.000	98.03	ARD
BFD-34P-1	58	2.576	1.071	380.7	16.729	0.0	18.000	6.845	0.000	98.03	ARD
BFD-33R	7	1.928	0.813	380.7	5.759	0.0	30.000	6.845	0.000	98.03	ARD

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).DB

Wear Rate Report

Pass 2 Analysis Include Measured Wear

Report Date/Time: 7/7/2010 9:54:36AM
AnalysisDate/Time: 6/11/2010 11:34:22AM

CHECWORKS SFA Version: 3.0 (build 105)
Duty Factor (Global) : 1.000

Run Name: FW BFP TO FWH 26
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 0.490

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***FW71-1-BFP21 DISCH to HDR***									***Sorted By: Flow Order***	
BFD-14N	31	3.903	3.669	380.7	33.616	0.0	16.000	6.845	0.000	98.03	ARD
BFD-14P	61	2.107	1.981	380.7	33.616	0.0	16.000	6.845	0.000	98.03	ARD
BFD-14R	18	4.944	2.055	380.7	33.616	0.0	16.000	6.845	0.000	98.03	ARD
BFD-14R (D/S)	18	3.856	1.603	380.7	20.295	0.0	20.000	6.845	0.000	98.03	ARD
BFD-14	4	4.756	1.977	380.7	20.295	0.0	20.000	6.845	0.000	98.03	ARD
BFD-14P-1	54	4.113	1.710	380.7	20.295	0.0	20.000	6.845	0.000	98.03	ARD
BFD VALVE-BFD-1	25	7.208	2.996	380.7	24.354	0.0	20.000	6.845	0.000	98.03	ARD
BFD-14P-2	58	2.828	1.175	380.7	20.295	0.0	20.000	6.845	0.000	98.03	ARD
BFD VALVE-BFD-2-21	22	7.173	2.982	380.7	24.168	0.0	20.000	6.845	0.000	98.03	ARD
BFD-2	4	4.756	1.977	380.7	20.295	0.0	20.000	6.845	0.000	98.03	ARD
BFD-2P US	54	4.113	1.710	380.7	20.295	0.0	20.000	6.845	0.000	98.03	ARD
BFD-2P DS	54	4.113	1.710	380.7	20.295	0.0	20.000	6.845	0.000	98.03	ARD
BFD-4	2	4.756	1.977	380.7	20.295	0.0	20.000	6.845	0.000	98.03	ARD
BFD-4P US	52	3.213	1.336	380.7	20.295	0.0	20.000	6.845	0.000	98.03	ARD
BFD-5	2	4.756	1.977	380.7	20.295	0.0	20.000	6.845	0.000	98.03	ARD
BFD-5P	52	3.213	1.336	380.7	20.295	0.0	20.000	6.845	0.000	98.03	ARD
BFD-6	2	4.756	1.977	380.7	20.295	0.0	20.000	6.845	0.000	98.03	ARD
BFD-6P	52	3.213	1.336	380.7	20.295	0.0	20.000	6.845	0.000	98.03	ARD
BFD-7	2	4.756	1.977	380.7	20.295	0.0	20.000	6.845	0.000	98.03	ARD
BFD-7P US	52	3.213	1.336	380.7	20.295	0.0	20.000	6.845	0.000	98.03	ARD
BFD-7P DS	52	3.213	1.336	380.7	20.295	0.0	20.000	6.845	0.000	98.03	ARD
BFD-8	2	4.756	1.977	380.7	20.295	0.0	20.000	6.845	0.000	98.03	ARD
BFD-8P	52	3.213	1.336	380.7	20.295	0.0	20.000	6.845	0.000	98.03	ARD
BFD-9	2	4.756	1.977	380.7	20.295	0.0	20.000	6.845	0.000	98.03	ARD
BFD-9P US	52	3.213	1.336	380.7	20.295	0.0	20.000	6.845	0.000	98.03	ARD
BFD-9P DS	52	3.213	1.336	380.7	20.295	0.0	20.000	6.845	0.000	98.03	ARD
BFD-10	2	4.756	1.977	380.7	20.295	0.0	20.000	6.845	0.000	98.03	ARD
BFD-10P US	52	3.213	1.336	380.7	20.295	0.0	20.000	6.845	0.000	98.03	ARD

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***FW71-1-BFP21 DISCH to HDR***									***Sorted By: Flow Order***	
BFD-10P DS	52	3.213	1.336	380.7	20.295	0.0	20.000	6.845	0.000	98.03	ARD
===>Grouped by Line:	***FW72-1-BFP22 DISCH to HDR***									***Sorted By: Flow Order***	
BFD-15N	31	8.828	3.669	380.7	33.616	0.0	16.000	6.845	0.000	98.03	ARD
BFD-15R	18	4.944	2.055	380.7	33.616	0.0	16.000	6.845	0.000	98.03	ARD
BFD-15R (D/S)	18	3.856	1.603	380.7	20.295	0.0	20.000	6.845	0.000	98.03	ARD
BFD-15P-1	68	3.213	1.336	380.7	20.295	0.0	20.000	6.845	0.000	98.03	ARD
BFD-15	2	4.756	1.977	380.7	20.295	0.0	20.000	6.845	0.000	98.03	ARD
BFD-15P US	52	3.213	1.336	380.7	20.295	0.0	20.000	6.845	0.000	98.03	ARD
BFD-15P DS	52	3.213	1.336	380.7	20.295	0.0	20.000	6.845	0.000	98.03	ARD
BFD-12	1	4.242	1.763	380.7	20.295	0.0	20.000	6.845	0.000	98.03	ARD
BFD-12P	51	2.828	1.175	380.7	20.295	0.0	20.000	6.845	0.000	98.03	ARD
BFD-VALVE-BFD-1-1	25	7.208	2.996	380.7	24.354	0.0	20.000	6.845	0.000	98.03	ARD
BFD-12P-1	58	2.828	1.175	380.7	20.295	0.0	20.000	6.845	0.000	98.03	ARD
BFD-VALVE-BFD-2-22	22	7.173	2.982	380.7	24.168	0.0	20.000	6.845	0.000	98.03	ARD
BFD-12P-2	58	2.828	1.175	380.7	20.295	0.0	20.000	6.845	0.000	98.03	ARD
BFD-16	2	4.756	1.977	380.7	20.295	0.0	20.000	6.845	0.000	98.03	ARD
BFD-16P	52	3.213	1.336	380.7	20.295	0.0	20.000	6.845	0.000	98.03	ARD
BFD-13	2	4.756	1.977	380.7	20.295	0.0	20.000	6.845	0.000	98.03	ARD
BFD-13P	52	3.213	1.336	380.7	20.295	0.0	20.000	6.845	0.000	98.03	ARD
BFD-17	2	4.756	1.977	380.7	20.295	0.0	20.000	6.845	0.000	98.03	ARD
BFD-17P	52	3.213	1.336	380.7	20.295	0.0	20.000	6.845	0.000	98.03	ARD
BFD-18	2	4.756	1.977	380.7	20.295	0.0	20.000	6.845	0.000	98.03	ARD
BFD-18P	52	3.213	1.336	380.7	20.295	0.0	20.000	6.845	0.000	98.03	ARD
BFD-19	2	4.756	1.977	380.7	20.295	0.0	20.000	6.845	0.000	98.03	ARD
BFD-19P	52	3.213	1.336	380.7	20.295	0.0	20.000	6.845	0.000	98.03	ARD
BFD-20	2	4.756	1.977	380.7	20.295	0.0	20.000	6.845	0.000	98.03	ARD
BFD-20P	52	3.213	1.336	380.7	20.295	0.0	20.000	6.845	0.000	98.03	ARD
BFD-21	2	4.756	1.977	380.7	20.295	0.0	20.000	6.845	0.000	98.03	ARD
BFD-21P US	52	3.213	1.336	380.7	20.295	0.0	20.000	6.845	0.000	98.03	ARD
BFD-21P DS	52	3.213	1.336	380.7	20.295	0.0	20.000	6.845	0.000	98.03	ARD
BFD-22	2	4.756	1.977	380.7	20.295	0.0	20.000	6.845	0.000	98.03	ARD
BFD-22P	52	3.213	1.336	380.7	20.295	0.0	20.000	6.845	0.000	98.03	ARD
BFD-23R	18	3.599	1.496	380.7	20.295	0.0	20.000	6.845	0.000	98.03	ARD
BFD-23R (D/S)	18	2.255	0.937	380.7	8.648	0.0	30.000	6.845	0.000	98.03	ARD
===>Grouped by Line:	***FW73-1-BFPHDR to FWH26ABC***									***Sorted By: Flow Order***	
BFD-11 (BR/SE)	12	4.370	1.817	380.7	20.295	0.0	20.000	6.845	0.000	98.03	ARD

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***FW73-1-BFPHDR to FWH26ABC***									***Sorted By: Flow Order***	
BFD-11	12	3.082	1.281	380.7	8.648	0.0	30.000	6.845	0.000	98.03	ARD
BFD-11 (D/S)	12	4.540	1.887	380.7	17.296	0.0	30.000	6.845	0.000	98.03	ARD
BFD-23	2	4.097	1.703	380.7	17.296	0.0	30.000	6.845	0.000	98.03	ARD
BFD-24	4	4.097	1.703	380.7	17.296	0.0	30.000	6.845	0.000	98.03	ARD
BFD-24P DS	54	3.543	1.473	380.7	17.296	0.0	30.000	6.845	0.000	98.03	ARD
BFD-25	2	4.097	1.703	380.7	17.296	0.0	30.000	6.845	0.000	98.03	ARD
BFD-25P	52	2.768	1.151	380.7	17.296	0.0	30.000	6.845	0.000	98.03	ARD
BFD-26	4	4.097	1.703	380.7	17.296	0.0	30.000	6.845	0.000	98.03	ARD
BFD-26P US	54	3.543	1.473	380.7	17.296	0.0	30.000	6.845	0.000	98.03	ARD
BFD-27	2	4.097	1.703	380.7	17.296	0.0	30.000	6.845	0.000	98.03	ARD
BFD-27P	52	2.768	1.151	380.7	17.296	0.0	30.000	6.845	0.000	98.03	ARD
BFD-28	2	4.097	1.703	380.7	17.296	0.0	30.000	6.845	0.000	98.03	ARD
BFD-28P	52	2.768	1.151	380.7	17.296	0.0	30.000	6.845	0.000	98.03	ARD
BFD-29	2	4.097	1.703	380.7	17.296	0.0	30.000	6.845	0.000	98.03	ARD
BFD-29P	52	2.768	1.151	380.7	17.296	0.0	30.000	6.845	0.000	98.03	ARD
BFD-32	2	4.097	1.703	380.7	17.296	0.0	30.000	6.845	0.000	98.03	ARD
BFD-32P	52	2.768	1.151	380.7	17.296	0.0	30.000	6.845	0.000	98.03	ARD
BFD-32T	15	3.322	1.381	380.7	17.296	0.0	30.000	6.845	0.000	98.03	ARD
BFD-32T (D/S)	15	3.322	1.381	380.7	17.296	0.0	30.000	6.845	0.000	98.03	ARD
===>Grouped by Line:	***FW73-2-BFPHDR to FWH26ABC***									***Sorted By: Flow Order***	
BFD-32P-1	65	2.215	0.921	380.7	17.296	0.0	30.000	6.845	0.000	98.03	ARD
BFD-32T-C	14	6.090	2.532	380.7	17.296	0.0	30.000	6.845	0.000	98.03	ARD
BFD-32T-C (BR/SE)	14	4.098	1.704	380.7	16.725	0.0	18.000	6.845	0.000	98.03	ARD
BFD-32T-C (D/S)	14	4.857	2.019	380.7	11.536	0.0	30.000	6.845	0.000	98.03	ARD
===>Grouped by Line:	***FW73-3-BFPHDR to FWH26C***									***Sorted By: Flow Order***	
BFD-40P US	64	2.342	0.974	380.7	16.729	0.0	18.000	6.845	0.000	98.03	ARD
BFD-40	2	4.333	1.801	380.7	16.729	0.0	18.000	6.845	0.000	98.03	ARD
BFD-41P	52	2.928	1.217	380.7	16.729	0.0	18.000	6.845	0.000	98.03	ARD
BFD-VALVE-BFD-3-2	22	5.856	2.434	380.7	16.729	0.0	18.000	6.845	0.000	98.03	ARD
BFD-41P-1	58	2.576	1.071	380.7	16.729	0.0	18.000	6.845	0.000	98.03	ARD
BFD-41	2	4.333	1.801	380.7	16.729	0.0	18.000	6.845	0.000	98.03	ARD
BFD-42P	52	2.928	1.217	380.7	16.729	0.0	18.000	6.845	0.000	98.03	ARD
BFD-42	1	3.865	1.606	380.7	16.729	0.0	18.000	6.845	0.000	98.03	ARD
BFD-42N	30	4.684	1.947	380.7	16.729	0.0	18.000	6.845	0.000	98.03	ARD
===>Grouped by Line:	***FW73-4-BFPHDR to FWH26ABC***									***Sorted By: Flow Order***	
BFD-32P-2	64	1.766	0.734	380.7	11.536	0.0	30.000	6.845	0.000	98.03	ARD

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***FW73-4-BFPHDR to FWH26ABC***									***Sorted By: Flow Order***	
BFD-32T-B	14	4.857	2.019	380.7	11.536	0.0	30.000	6.845	0.000	98.03	ARD
BFD-32T-B (BR/SE)	14	4.098	1.704	380.7	16.725	0.0	18.000	6.845	0.000	98.03	ARD
BFD-32T-B (D/S)	14	3.030	1.278	380.7	5.759	0.0	30.000	6.845	0.000	98.03	ARD
===>Grouped by Line:	***FW73-5-BFPHDR to FWH26B***									***Sorted By: Flow Order***	
BFD-37P	64	2.342	0.974	380.7	16.729	0.0	18.000	6.845	0.000	98.03	ARD
BFD-37	2	4.333	1.801	380.7	16.729	0.0	18.000	6.845	0.000	98.03	ARD
BFD-38P	52	2.928	1.217	380.7	16.729	0.0	18.000	6.845	0.000	98.03	ARD
BFD-VALVE-BFD-3-1	22	5.856	2.434	380.7	16.729	0.0	18.000	6.845	0.000	98.03	ARD
BFD-38P-1	58	2.576	1.071	380.7	16.729	0.0	18.000	6.845	0.000	98.03	ARD
BFD-38	2	4.333	1.801	380.7	16.729	0.0	18.000	6.845	0.000	98.03	ARD
BFD-39P	52	2.928	1.217	380.7	16.729	0.0	18.000	6.845	0.000	98.03	ARD
BFD-39	1	3.865	1.606	380.7	16.729	0.0	18.000	6.845	0.000	98.03	ARD
BFD-39N	30	4.684	1.947	380.7	16.729	0.0	18.000	6.845	0.000	98.03	ARD
===>Grouped by Line:	***FW73-6-BFPHDR to FWH26A***									***Sorted By: Flow Order***	
BFD-33R	7	1.928	0.813	380.7	5.759	0.0	30.000	6.845	0.000	98.03	ARD
BFD-33R (D/S)	7	3.747	1.558	380.7	16.725	0.0	18.000	6.845	0.000	98.03	ARD
BFD-33P-1 DS	57	2.928	1.217	380.7	16.729	0.0	18.000	6.845	0.000	98.03	ARD
BFD-33	2	4.333	1.801	380.7	16.729	0.0	18.000	6.845	0.000	98.03	ARD
BFD-33P US	52	2.928	1.217	380.7	16.729	0.0	18.000	6.845	0.000	98.03	ARD
BFD-33P DS	52	2.928	1.217	380.7	16.729	0.0	18.000	6.845	0.000	98.03	ARD
BFD-34	2	4.333	1.801	380.7	16.729	0.0	18.000	6.845	0.000	98.03	ARD
BFD-34P US	52	2.928	1.217	380.7	16.729	0.0	18.000	6.845	0.000	98.03	ARD
BFD-34P DS	52	2.928	1.217	380.7	16.729	0.0	18.000	6.845	0.000	98.03	ARD
BFD-VALVE-BFD-3	22	5.856	2.434	380.7	16.729	0.0	18.000	6.845	0.000	98.03	ARD
BFD-34P-1	58	2.576	1.071	380.7	16.729	0.0	18.000	6.845	0.000	98.03	ARD
BFD-35	2	4.333	1.801	380.7	16.729	0.0	18.000	6.845	0.000	98.03	ARD
BFD-35P	52	2.928	1.217	380.7	16.729	0.0	18.000	6.845	0.000	98.03	ARD
BFD-36	1	3.865	1.606	380.7	16.729	0.0	18.000	6.845	0.000	98.03	ARD
BFD-36N	30	4.684	1.947	380.7	16.729	0.0	18.000	6.845	0.000	98.03	ARD

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).DB

Service Life Report

Pass 2 Analysis Include Measured Wear

Report Date/Time: 7/7/2010 9:54:36AM
AnalysisDate/Time:

Run Name: FW BFP TO FWH 26
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 0.490

CHECWORKS SFA Version: 3.0 (build 105)
Duty Factor (Global) :1.000

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **FW71-1-BFP21 DISCH to HDR**					***Sorted By:Remaining Life***		
BFD VALVE-BFD-1	0.000	0.830	0.988	0.988	-206,603	No	243,721
BFD VALVE-BFD-2-21	0.000	0.831	0.988	0.988	-206,423	No	243,721
BFD-10P DS	0.000	0.952	0.924	0.924	182,137	Yes	243,721
BFD-8	0.000	1.009	0.924	0.924	375,029	Yes	243,721
BFD-4	0.000	1.019	0.924	0.924	419,341	Yes	243,721
BFD-10	0.000	1.049	0.924	0.924	552,939	Yes	243,721
BFD-7	0.000	1.053	0.924	0.924	569,619	Yes	243,721
BFD-14N	0.000	0.996	0.740	0.740	612,061	No	78,608
BFD-2	0.000	1.065	0.924	0.924	623,177	Yes	243,721
BFD-6	0.000	1.072	0.924	0.924	653,356	Yes	243,721
BFD-5	0.000	1.078	0.924	0.924	680,399	Yes	243,721
BFD-9	0.000	1.104	0.924	0.924	797,184	Yes	243,721
BFD-14P-1	0.000	0.953	0.797	0.797	798,993	Yes	243,721
BFD-10P US	0.000	0.924	0.797	0.797	837,056	Yes	243,721
BFD-2P US	0.000	0.975	0.797	0.797	912,234	Yes	243,721
BFD-14	0.000	1.147	0.924	0.924	986,153	No	243,721
BFD-9P DS	0.000	0.951	0.797	0.797	1,014,128	No	243,721
BFD-2P DS	0.000	1.010	0.797	0.797	1,091,560	No	243,721
BFD-9P US	0.000	0.963	0.797	0.797	1,091,937	Yes	243,721
BFD-14P	0.000	0.987	0.740	0.740	1,094,142	No	78,608
BFD-8P	0.000	0.968	0.797	0.797	1,125,487	Yes	243,721
BFD-6P	0.000	0.984	0.797	0.797	1,225,502	Yes	243,721
BFD-5P	0.000	0.985	0.797	0.797	1,232,061	Yes	243,721
BFD-4P US	0.000	0.997	0.797	0.797	1,315,674	Yes	243,721
BFD-14P-2	0.000	0.985	0.797	0.797	1,402,150	Yes	243,721
BFD-7P US	0.000	1.017	0.797	0.797	1,447,341	Yes	243,721
BFD-7P DS	0.000	1.027	0.797	0.797	1,512,420	Yes	243,721
BFD-14R	0.000	1.111	0.740	0.740	1,583,612	No	243,721
BFD-14R (D/S)	0.000	1.440	0.924	0.924	2,815,629	Yes	243,721

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **FW72-1-BFP22 DISCH to HDR**					***Sorted By:Remaining Life***		
BFD-VALVE-BFD-1-1	0.000	0.830	0.988	0.988	-206,603	No	243,721
BFD-VALVE-BFD-2-22	0.000	0.831	0.988	0.988	-206,423	No	243,721
BFD-15	0.000	0.899	0.924	0.924	-101,874	No	243,721
BFD-18	0.000	0.899	0.924	0.924	-101,874	No	243,721
BFD-19	0.000	0.899	0.924	0.924	-101,874	No	243,721
BFD-20	0.000	0.899	0.924	0.924	-101,874	No	243,721
BFD-15N	0.000	0.896	0.740	0.740	372,676	No	243,721
BFD-16	0.000	1.048	0.924	0.924	545,150	Yes	243,721
BFD-17	0.000	1.058	0.924	0.924	591,775	Yes	243,721
BFD-21	0.000	1.069	0.924	0.924	640,518	Yes	243,721
BFD-12	0.000	1.058	0.924	0.924	664,132	Yes	243,721
BFD-22	0.000	1.080	0.924	0.924	689,262	Yes	243,721
BFD-23R (D/S)	0.000	1.274	1.195	1.195	739,514	Yes	243,721
BFD-13	0.000	1.108	0.924	0.924	811,022	Yes	243,721
BFD-15R	0.000	0.946	0.740	0.740	881,244	No	243,721
BFD-15P-1	0.000	0.942	0.797	0.797	950,666	No	243,721
BFD-15P US	0.000	0.942	0.797	0.797	950,666	No	243,721
BFD-18P	0.000	0.942	0.797	0.797	950,666	No	243,721
BFD-19P	0.000	0.942	0.797	0.797	950,666	No	243,721
BFD-20P	0.000	0.942	0.797	0.797	950,666	No	243,721
BFD-21P DS	0.000	0.942	0.797	0.797	950,666	No	243,721
BFD-12P	0.000	0.945	0.797	0.797	1,104,051	Yes	243,721
BFD-21P US	0.000	0.969	0.797	0.797	1,132,175	Yes	243,721
BFD-12P-1	0.000	0.952	0.797	0.797	1,160,257	No	243,721
BFD-12P-2	0.000	0.952	0.797	0.797	1,160,257	No	243,721
BFD-22P	0.000	0.983	0.797	0.797	1,223,990	Yes	243,721
BFD-15P DS	0.000	0.990	0.797	0.797	1,269,767	Yes	243,721
BFD-16P	0.000	0.991	0.797	0.797	1,276,288	Yes	243,721
BFD-13P	0.000	1.027	0.797	0.797	1,512,382	Yes	243,721
BFD-17P	0.000	1.052	0.797	0.797	1,676,878	Yes	243,721
BFD-15R (D/S)	0.000	1.441	0.924	0.924	2,820,597	No	243,721
BFD-23R	0.000	1.328	0.797	0.797	3,111,136	Yes	243,721
===>Grouped by Line: **FW73-1-BFPHDR to FWH26ABC**					***Sorted By:Remaining Life***		
BFD-24	0.000	1.146	1.195	1.195	-145,112	No	243,721
BFD-27	0.000	1.146	1.195	1.195	-145,112	No	243,721
BFD-27P	0.000	1.183	1.195	1.195	-84,991	No	243,721
BFD-29P	0.000	1.183	1.195	1.195	-84,991	No	243,721
BFD-32P	0.000	1.183	1.195	1.195	-84,991	No	243,721

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line:	**FW73-1-BFPHDR to FWH26ABC**				***Sorted By:Remaining Life***		
BFD-11 (D/S)	0.000	1.311	1.195	1.195	538,974	No	243,721
BFD-26P US	0.000	1.290	1.195	1.195	567,354	Yes	243,721
BFD-25	0.000	1.323	1.195	1.195	659,518	No	243,721
BFD-26	0.000	1.325	1.195	1.195	669,806	Yes	243,721
BFD-32T (D/S)	0.000	1.305	1.195	1.195	695,838	No	243,721
BFD-24P DS	0.000	1.313	1.195	1.195	701,187	Yes	243,721
BFD-32T	0.000	1.307	1.195	1.195	708,526	No	243,721
BFD-11	0.000	1.307	1.195	1.195	763,107	No	243,721
BFD-23	0.000	1.354	1.195	1.195	820,273	Yes	243,721
BFD-32	0.000	1.375	1.195	1.195	926,699	Yes	243,721
BFD-11 (BR/SE)	0.000	1.003	0.797	0.797	993,126	No	243,721
BFD-25P	0.000	1.334	1.195	1.195	1,055,495	Yes	243,721
BFD-28P	0.000	1.349	1.195	1.195	1,170,420	No	243,721
BFD-28	0.000	1.430	1.195	1.195	1,206,932	Yes	243,721
BFD-29	0.000	1.440	1.195	1.195	1,262,550	Yes	243,721
===>Grouped by Line:	**FW73-2-BFPHDR to FWH26ABC**				***Sorted By:Remaining Life***		
BFD-32P-1	0.000	1.198	1.195	1.195	32,635	No	243,721
BFD-32T-C	0.000	1.273	1.195	1.195	268,353	No	243,721
BFD-32T-C (D/S)	0.000	1.278	1.195	1.195	359,051	No	243,721
BFD-32T-C (BR/SE)	0.000	0.878	0.717	0.717	828,636	No	243,721
===>Grouped by Line:	**FW73-3-BFPHDR to FWH26C**				***Sorted By:Remaining Life***		
BFD-VALVE-BFD-3-2	0.000	0.775	0.889	0.889	-191,886	No	243,721
BFD-41	0.000	0.817	0.832	0.832	-67,734	No	243,721
BFD-42N	0.000	0.885	0.832	0.832	240,289	Yes	243,721
BFD-42	0.000	0.972	0.832	0.832	761,964	Yes	243,721
BFD-40	0.000	1.020	0.832	0.832	911,891	Yes	243,721
BFD-42P	0.000	0.857	0.717	0.717	1,004,631	No	243,721
BFD-41P-1	0.000	0.866	0.717	0.717	1,221,581	No	243,721
BFD-41P	0.000	0.908	0.717	0.717	1,374,559	Yes	243,721
BFD-40P US	0.000	0.879	0.717	0.717	1,460,993	Yes	243,721
===>Grouped by Line:	**FW73-4-BFPHDR to FWH26ABC**				***Sorted By:Remaining Life***		
BFD-32P-2	0.000	1.211	1.195	1.195	189,882	No	243,721
BFD-32T-B	0.000	1.333	1.195	1.195	600,263	Yes	243,721
BFD-32T-B (BR/SE)	0.000	0.876	0.717	0.717	818,332	Yes	243,721
BFD-32T-B (D/S)	0.000	1.351	1.195	1.195	1,067,026	Yes	243,721
===>Grouped by Line:	**FW73-5-BFPHDR to FWH26B**				***Sorted By:Remaining Life***		

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **FW73-5-BFPHDR to FWH26B**					***Sorted By:Remaining Life***		
BFD-VALVE-BFD-3-1	0.000	0.775	0.889	0.889	-191,886	No	243,721
BFD-37	0.000	0.817	0.832	0.832	-67,734	No	243,721
BFD-39N	0.000	0.876	0.832	0.832	196,018	Yes	243,721
BFD-39	0.000	0.955	0.832	0.832	673,055	Yes	243,721
BFD-38	0.000	0.979	0.832	0.832	713,466	Yes	243,721
BFD-38P	0.000	0.857	0.717	0.717	1,004,631	No	243,721
BFD-39P	0.000	0.873	0.717	0.717	1,122,635	Yes	243,721
BFD-38P-1	0.000	0.866	0.717	0.717	1,221,581	No	243,721
BFD-37P	0.000	0.873	0.717	0.717	1,402,372	No	243,721
===>Grouped by Line: **FW73-6-BFPHDR to FWH26A**					***Sorted By:Remaining Life***		
BFD-VALVE-BFD-3	0.000	0.775	0.889	0.889	-191,886	No	243,721
BFD-36N	0.000	0.808	0.832	0.832	-98,935	Yes	243,721
BFD-33R	0.000	1.206	1.195	1.195	122,839	No	243,721
BFD-34	0.000	0.914	0.832	0.832	397,647	Yes	243,721
BFD-33	0.000	0.952	0.832	0.832	585,320	Yes	243,721
BFD-33R (D/S)	0.000	0.833	0.717	0.717	651,176	No	243,721
BFD-36	0.000	0.980	0.832	0.832	805,625	Yes	243,721
BFD-34P DS	0.000	0.857	0.717	0.717	1,004,631	No	243,721
BFD-33P-1 DS	0.000	0.863	0.717	0.717	1,050,654	Yes	243,721
BFD-35	0.000	1.061	0.832	0.832	1,115,448	No	243,721
BFD-33P US	0.000	0.879	0.717	0.717	1,165,824	Yes	243,721
BFD-35P	0.000	0.880	0.717	0.717	1,170,355	Yes	243,721
BFD-34P-1	0.000	0.866	0.717	0.717	1,221,581	No	243,721
BFD-33P DS	0.000	0.890	0.717	0.717	1,248,231	Yes	243,721
BFD-34P US	0.000	0.897	0.717	0.717	1,298,617	Yes	243,721

Note:
[1] Predictions are based on last Tmeas to analysis ending period.

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).DB

Service Life Report

Pass 2 Analysis Include Measured Wear

Report Date/Time: 7/7/2010 9:54:36AM
AnalysisDate/Time:

Run Name: FW BFP TO FWH 26
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 0.490

CHECWORKS SFA Version: 3.0 (build 105)
Duty Factor (Global) : 1.000

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **FW71-1-BFP21 DISCH to HDR**					***Sorted By:Flow Order***		
BFD-14N	0.000	0.996	0.740	0.740	612,061	No	78,608
BFD-14P	0.000	0.987	0.740	0.740	1,094,142	No	78,608
BFD-14R	0.000	1.111	0.740	0.740	1,583,612	No	243,721
BFD-14R (D/S)	0.000	1.440	0.924	0.924	2,815,629	Yes	243,721
BFD-14	0.000	1.147	0.924	0.924	986,153	No	243,721
BFD-14P-1	0.000	0.953	0.797	0.797	798,993	Yes	243,721
BFD VALVE-BFD-1	0.000	0.830	0.988	0.988	-206,603	No	243,721
BFD-14P-2	0.000	0.985	0.797	0.797	1,402,150	Yes	243,721
BFD VALVE-BFD-2-21	0.000	0.831	0.988	0.988	-206,423	No	243,721
BFD-2	0.000	1.065	0.924	0.924	623,177	Yes	243,721
BFD-2P US	0.000	0.975	0.797	0.797	912,234	Yes	243,721
BFD-2P DS	0.000	1.010	0.797	0.797	1,091,560	No	243,721
BFD-4	0.000	1.019	0.924	0.924	419,341	Yes	243,721
BFD-4P US	0.000	0.997	0.797	0.797	1,315,674	Yes	243,721
BFD-5	0.000	1.078	0.924	0.924	680,399	Yes	243,721
BFD-5P	0.000	0.985	0.797	0.797	1,232,061	Yes	243,721
BFD-6	0.000	1.072	0.924	0.924	653,356	Yes	243,721
BFD-6P	0.000	0.984	0.797	0.797	1,225,502	Yes	243,721
BFD-7	0.000	1.053	0.924	0.924	569,619	Yes	243,721
BFD-7P US	0.000	1.017	0.797	0.797	1,447,341	Yes	243,721
BFD-7P DS	0.000	1.027	0.797	0.797	1,512,420	Yes	243,721
BFD-8	0.000	1.009	0.924	0.924	375,029	Yes	243,721
BFD-8P	0.000	0.968	0.797	0.797	1,125,487	Yes	243,721
BFD-9	0.000	1.104	0.924	0.924	797,184	Yes	243,721
BFD-9P US	0.000	0.963	0.797	0.797	1,091,937	Yes	243,721
BFD-9P DS	0.000	0.951	0.797	0.797	1,014,128	No	243,721
BFD-10	0.000	1.049	0.924	0.924	552,939	Yes	243,721
BFD-10P US	0.000	0.924	0.797	0.797	837,056	Yes	243,721
BFD-10P DS	0.000	0.952	0.924	0.924	182,137	Yes	243,721

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **FW72-1-BFP22 DISCH to HDR**					***Sorted By:Flow Order***		
BFD-15N	0.000	0.896	0.740	0.740	372,676	No	243,721
BFD-15R	0.000	0.946	0.740	0.740	881,244	No	243,721
BFD-15R (D/S)	0.000	1.441	0.924	0.924	2,820,597	No	243,721
BFD-15P-1	0.000	0.942	0.797	0.797	950,666	No	243,721
BFD-15	0.000	0.899	0.924	0.924	-101,874	No	243,721
BFD-15P US	0.000	0.942	0.797	0.797	950,666	No	243,721
BFD-15P DS	0.000	0.990	0.797	0.797	1,269,767	Yes	243,721
BFD-12	0.000	1.058	0.924	0.924	664,132	Yes	243,721
BFD-12P	0.000	0.945	0.797	0.797	1,104,051	Yes	243,721
BFD-VALVE-BFD-1-1	0.000	0.830	0.988	0.988	-206,603	No	243,721
BFD-12P-1	0.000	0.952	0.797	0.797	1,160,257	No	243,721
BFD-VALVE-BFD-2-22	0.000	0.831	0.988	0.988	-206,423	No	243,721
BFD-12P-2	0.000	0.952	0.797	0.797	1,160,257	No	243,721
BFD-16	0.000	1.048	0.924	0.924	545,150	Yes	243,721
BFD-16P	0.000	0.991	0.797	0.797	1,276,288	Yes	243,721
BFD-13	0.000	1.108	0.924	0.924	811,022	Yes	243,721
BFD-13P	0.000	1.027	0.797	0.797	1,512,382	Yes	243,721
BFD-17	0.000	1.058	0.924	0.924	591,775	Yes	243,721
BFD-17P	0.000	1.052	0.797	0.797	1,676,878	Yes	243,721
BFD-18	0.000	0.899	0.924	0.924	-101,874	No	243,721
BFD-18P	0.000	0.942	0.797	0.797	950,666	No	243,721
BFD-19	0.000	0.899	0.924	0.924	-101,874	No	243,721
BFD-19P	0.000	0.942	0.797	0.797	950,666	No	243,721
BFD-20	0.000	0.899	0.924	0.924	-101,874	No	243,721
BFD-20P	0.000	0.942	0.797	0.797	950,666	No	243,721
BFD-21	0.000	1.069	0.924	0.924	640,518	Yes	243,721
BFD-21P US	0.000	0.969	0.797	0.797	1,132,175	Yes	243,721
BFD-21P DS	0.000	0.942	0.797	0.797	950,666	No	243,721
BFD-22	0.000	1.080	0.924	0.924	689,262	Yes	243,721
BFD-22P	0.000	0.983	0.797	0.797	1,223,990	Yes	243,721
BFD-23R	0.000	1.328	0.797	0.797	3,111,136	Yes	243,721
BFD-23R (D/S)	0.000	1.274	1.195	1.195	739,514	Yes	243,721
===>Grouped by Line: **FW73-1-BFPHDR to FWH26ABC**					***Sorted By:Flow Order***		
BFD-11 (BR/SE)	0.000	1.003	0.797	0.797	993,126	No	243,721
BFD-11	0.000	1.307	1.195	1.195	763,107	No	243,721
BFD-11 (D/S)	0.000	1.311	1.195	1.195	538,974	No	243,721
BFD-23	0.000	1.354	1.195	1.195	820,273	Yes	243,721
BFD-24	0.000	1.146	1.195	1.195	-145,112	No	243,721

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line:	**FW73-1-BFPHDR to FWH26ABC**				***Sorted By:Flow Order***		
BFD-24P DS	0.000	1.313	1.195	1.195	701,187	Yes	243,721
BFD-25	0.000	1.323	1.195	1.195	659,518	No	243,721
BFD-25P	0.000	1.334	1.195	1.195	1,055,495	Yes	243,721
BFD-26	0.000	1.325	1.195	1.195	669,806	Yes	243,721
BFD-26P US	0.000	1.290	1.195	1.195	567,354	Yes	243,721
BFD-27	0.000	1.146	1.195	1.195	-145,112	No	243,721
BFD-27P	0.000	1.183	1.195	1.195	-84,991	No	243,721
BFD-28	0.000	1.430	1.195	1.195	1,206,932	Yes	243,721
BFD-28P	0.000	1.349	1.195	1.195	1,170,420	No	243,721
BFD-29	0.000	1.440	1.195	1.195	1,262,550	Yes	243,721
BFD-29P	0.000	1.183	1.195	1.195	-84,991	No	243,721
BFD-32	0.000	1.375	1.195	1.195	926,699	Yes	243,721
BFD-32P	0.000	1.183	1.195	1.195	-84,991	No	243,721
BFD-32T	0.000	1.307	1.195	1.195	708,526	No	243,721
BFD-32T (D/S)	0.000	1.305	1.195	1.195	695,838	No	243,721
===>Grouped by Line:	**FW73-2-BFPHDR to FWH26ABC**				***Sorted By:Flow Order***		
BFD-32P-1	0.000	1.198	1.195	1.195	32,635	No	243,721
BFD-32T-C	0.000	1.273	1.195	1.195	268,353	No	243,721
BFD-32T-C (BR/SE)	0.000	0.878	0.717	0.717	828,636	No	243,721
BFD-32T-C (D/S)	0.000	1.278	1.195	1.195	359,051	No	243,721
===>Grouped by Line:	**FW73-3-BFPHDR to FWH26C**				***Sorted By:Flow Order***		
BFD-40P US	0.000	0.879	0.717	0.717	1,460,993	Yes	243,721
BFD-40	0.000	1.020	0.832	0.832	911,891	Yes	243,721
BFD-41P	0.000	0.908	0.717	0.717	1,374,559	Yes	243,721
BFD-VALVE-BFD-3-2	0.000	0.775	0.889	0.889	-191,886	No	243,721
BFD-41P-1	0.000	0.866	0.717	0.717	1,221,581	No	243,721
BFD-41	0.000	0.817	0.832	0.832	-67,734	No	243,721
BFD-42P	0.000	0.857	0.717	0.717	1,004,631	No	243,721
BFD-42	0.000	0.972	0.832	0.832	761,964	Yes	243,721
BFD-42N	0.000	0.885	0.832	0.832	240,289	Yes	243,721
===>Grouped by Line:	**FW73-4-BFPHDR to FWH26ABC**				***Sorted By:Flow Order***		
BFD-32P-2	0.000	1.211	1.195	1.195	189,882	No	243,721
BFD-32T-B	0.000	1.333	1.195	1.195	600,263	Yes	243,721
BFD-32T-B (BR/SE)	0.000	0.876	0.717	0.717	818,332	Yes	243,721
BFD-32T-B (D/S)	0.000	1.351	1.195	1.195	1,067,026	Yes	243,721
===>Grouped by Line:	**FW73-5-BFPHDR to FWH26B**				***Sorted By:Flow Order***		

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **FW73-5-BFPHDR to FWH26B**					***Sorted By:Flow Order***		
BFD-37P	0.000	0.873	0.717	0.717	1,402,372	No	243,721
BFD-37	0.000	0.817	0.832	0.832	-67,734	No	243,721
BFD-38P	0.000	0.857	0.717	0.717	1,004,631	No	243,721
BFD-VALVE-BFD-3-1	0.000	0.775	0.889	0.889	-191,886	No	243,721
BFD-38P-1	0.000	0.866	0.717	0.717	1,221,581	No	243,721
BFD-38	0.000	0.979	0.832	0.832	713,466	Yes	243,721
BFD-39P	0.000	0.873	0.717	0.717	1,122,635	Yes	243,721
BFD-39	0.000	0.955	0.832	0.832	673,055	Yes	243,721
BFD-39N	0.000	0.876	0.832	0.832	196,018	Yes	243,721
===>Grouped by Line: **FW73-6-BFPHDR to FWH26A**					***Sorted By:Flow Order***		
BFD-33R	0.000	1.206	1.195	1.195	122,839	No	243,721
BFD-33R (D/S)	0.000	0.833	0.717	0.717	651,176	No	243,721
BFD-33P-1 DS	0.000	0.863	0.717	0.717	1,050,654	Yes	243,721
BFD-33	0.000	0.952	0.832	0.832	585,320	Yes	243,721
BFD-33P US	0.000	0.879	0.717	0.717	1,165,824	Yes	243,721
BFD-33P DS	0.000	0.890	0.717	0.717	1,248,231	Yes	243,721
BFD-34	0.000	0.914	0.832	0.832	397,647	Yes	243,721
BFD-34P US	0.000	0.897	0.717	0.717	1,298,617	Yes	243,721
BFD-34P DS	0.000	0.857	0.717	0.717	1,004,631	No	243,721
BFD-VALVE-BFD-3	0.000	0.775	0.889	0.889	-191,886	No	243,721
BFD-34P-1	0.000	0.866	0.717	0.717	1,221,581	No	243,721
BFD-35	0.000	1.061	0.832	0.832	1,115,448	No	243,721
BFD-35P	0.000	0.880	0.717	0.717	1,170,355	Yes	243,721
BFD-36	0.000	0.980	0.832	0.832	805,625	Yes	243,721
BFD-36N	0.000	0.808	0.832	0.832	-98,935	Yes	243,721

Note:
[1] Predictions are based on last Tmeas to analysis ending period.

4

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).DB

Wear Report

Pass 2 Analysis Include Measured Wear

Report Date/Time: 07-Jul-2010 9:54 am
AnalysisDate/Time: 07-Jul-2010 9:54 am

Run Name: FW BFP TO FWH 26
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 0.490

CHECWORKS SFA Version: 3.0 (build 105)
Duty Factor (Global) : 1.000

Component Name	Tinit	Total Lifetime Wear (mils) Prd. [1]	Total Lifetime Wear (mils) Meas.	In-Service Component Wear(mils) Prd. [1]	In-Service Component Wear(mils) Meas.	In-Service Component Tmeas, Method, Time (in) [3]	[2]	(hrs) [3]	In-Service Component Thickness (mils) [4] Tp	Tm	Incremental Wear (mils) [5] PRWEAR	Time (hrs) Last Inspected
===>Grouped by Line:	**FW71-1-BFP21 DISCH to HDR**										***Sorted By: Flow Order***	
BFD-14R (D/S)	0.000	98.0	135.0	98.0	135.0	1.449	GW	193,769	933.0	1,449.0	9.3	193,769
BFD-14P-1	0.000	111.0	93.0	111.0	93.0	0.956	MT	226,201	920.0	956.0	3.4	226,201
BFD-14P-2	0.000	67.5	58.0	67.5	58.0	0.996	MT	165,113	963.5	996.0	11.2	165,113
BFD-2	0.000	113.5	143.0	113.5	143.0	1.084	MT	165,113	917.5	1,084.0	18.9	165,113
BFD-2P US	0.000	98.1	81.0	98.1	81.0	0.991	MT	165,113	932.9	991.0	16.3	165,113
BFD-4	0.000	113.5	152.0	113.5	152.0	1.038	MT	165,113	917.5	1,038.0	18.9	165,113
BFD-4P US	0.000	76.7	70.0	76.7	70.0	1.010	MT	165,113	954.3	1,010.0	12.7	165,113
BFD-5	0.000	128.4	96.0	128.4	96.0	1.082	MT	226,201	902.6	1,082.0	4.0	226,201
BFD-5P	0.000	54.9	40.0	54.9	40.0	1.019	MT	106,128	976.1	1,019.0	34.5	106,128
BFD-6	0.000	81.3	74.0	81.3	74.0	1.123	MT	106,128	949.7	1,123.0	51.1	106,128
BFD-6P	0.000	54.9	53.0	54.9	53.0	1.018	MT	106,128	976.1	1,018.0	34.5	106,128
BFD-7	0.000	128.4	184.5	128.4	184.5	1.057	MT	226,201	902.6	1,057.0	4.0	226,201
BFD-7P US	0.000	86.7	131.0	86.7	131.0	1.020	MT	226,201	944.3	1,020.0	2.7	226,201
BFD-7P DS	0.000	76.7	91.0	76.7	91.0	1.040	MT	165,113	954.3	1,040.0	12.7	165,113
BFD-8	0.000	113.5	165.0	113.5	165.0	1.028	MT	165,113	917.5	1,028.0	18.9	165,113
BFD-8P	0.000	76.7	70.0	76.7	70.0	0.981	MT	165,113	954.3	981.0	12.7	165,113
BFD-9	0.000	117.7	120.0	117.7	120.0	1.119	GW	181,477	913.3	1,119.0	14.6	181,477
BFD-9P US	0.000	79.5	60.0	79.5	60.0	0.973	GW	181,477	951.5	973.0	9.9	181,477
BFD-10	0.000	104.6	141.0	104.6	141.0	1.077	MT	136,608	926.4	1,077.0	27.7	136,608
BFD-10P US	0.000	70.7	82.0	70.7	82.0	0.943	MT	136,608	960.3	943.0	18.7	136,608
BFD-10P DS	0.000	70.7	81.0	70.7	81.0	0.971	MT	136,608	960.3	971.0	18.7	136,608
===>Grouped by Line:	**FW72-1-BFP22 DISCH to HDR**										***Sorted By: Flow Order***	
BFD-15P DS	0.000	76.7	58.0	76.7	58.0	1.003	MT	165,113	954.3	1,003.0	12.7	165,113
BFD-12	0.000	101.2	125.0	101.2	125.0	1.075	MT	165,113	929.8	1,075.0	16.8	165,113
BFD-12P	0.000	67.5	95.0	67.5	95.0	0.956	MT	165,113	963.5	956.0	11.2	165,113
BFD-16	0.000	120.8	163.0	120.8	163.0	1.059	GW	193,769	910.2	1,059.0	11.5	193,769
BFD-16P	0.000	81.7	78.0	81.7	78.0	0.999	GW	193,769	949.3	999.0	7.8	193,769

Component Name	Tinit	Total Lifetime Wear (mils) Prd. [1]	Total Lifetime Wear (mils) Meas.	In-Service Component Wear(mils) Prd. [1]	In-Service Component Wear(mils) Meas.	In-Service Component Tmeas, Method, Time (in) [3]	[2]	(hrs) [3]	In-Service Component Thickness (mils) [4] Tp	Tm	Incremental Wear (mils) [5] PRWEAR	Time (hrs) Last Inspected
===>Grouped by Line:	**FW72-1-BFP22 DISCH to HDR**										***Sorted By: Flow Order***	
BFD-13	0.000	120.8	113.0	120.8	113.0	1.119	GW	193,769	910.2	1,119.0	11.5	193,769
BFD-13P	0.000	81.7	72.0	81.7	72.0	1.035	GW	193,769	949.3	1,035.0	7.8	193,769
BFD-17	0.000	128.4	183.0	128.4	183.0	1.062	MT	226,201	902.6	1,062.0	4.0	226,201
BFD-17P	0.000	86.7	55.0	86.7	55.0	1.055	MT	226,201	944.3	1,055.0	2.7	226,201
BFD-21	0.000	128.4	155.0	128.4	155.0	1.073	MT	226,201	902.6	1,073.0	4.0	226,201
BFD-21P US	0.000	70.7	46.0	70.7	46.0	0.988	MT	136,608	960.3	988.0	18.7	136,608
BFD-22	0.000	128.4	213.5	128.4	213.5	1.084	MT	226,201	902.6	1,084.0	4.0	226,201
BFD-22P	0.000	70.7	63.0	70.7	63.0	1.002	MT	136,608	960.3	1,002.0	18.7	136,608
BFD-23R	0.000	89.1	68.0	89.1	68.0	1.339	GW	181,477	941.9	1,339.0	11.0	181,477
BFD-23R (D/S)	0.000	55.8	134.0	55.8	134.0	1.281	GW	181,477	1,204.2	1,281.0	6.9	181,477
===>Grouped by Line:	**FW73-1-BFPHDR to FWH26ABC**										***Sorted By: Flow Order***	
BFD-23	0.000	101.4	156.0	101.4	156.0	1.367	MT	181,477	1,158.6	1,367.0	12.6	181,477
BFD-24P DS	0.000	81.4	55.0	81.4	55.0	1.330	MT	149,573	1,178.6	1,330.0	17.1	149,573
BFD-25P	0.000	63.6	56.0	63.6	56.0	1.347	MT	149,573	1,196.4	1,347.0	13.4	149,573
BFD-26	0.000	94.2	196.0	94.2	196.0	1.345	MT	149,573	1,165.8	1,345.0	19.8	149,573
BFD-26P US	0.000	77.9	91.0	77.9	91.0	1.311	MT	136,608	1,182.1	1,311.0	20.7	136,608
BFD-28	0.000	110.6	127.0	110.6	127.0	1.433	MT	226,201	1,149.4	1,433.0	3.4	226,201
BFD-29	0.000	107.4	123.5	107.4	123.5	1.447	MT	209,806	1,152.6	1,447.0	6.6	209,806
BFD-32	0.000	104.1	132.0	104.1	132.0	1.385	MT	193,769	1,155.9	1,385.0	9.9	193,769
===>Grouped by Line:	**FW73-3-BFPHDR to FWH26C**										***Sorted By: Flow Order***	
BFD-40P US	0.000	51.5	52.0	51.5	52.0	0.893	MT	136,608	886.5	893.0	13.7	136,608
BFD-40	0.000	110.1	140.0	110.1	140.0	1.030	GW	193,769	827.9	1,030.0	10.5	193,769
BFD-41P	0.000	74.4	55.0	74.4	55.0	0.915	GW	193,769	863.6	915.0	7.1	193,769
BFD-42	0.000	101.3	115.0	101.3	115.0	0.978	MT	209,806	836.7	978.0	6.2	209,806
BFD-42N	0.000	122.8	45.0	122.8	45.0	0.893	MT	209,806	815.2	893.0	7.5	209,806
===>Grouped by Line:	**FW73-4-BFPHDR to FWH26ABC**										***Sorted By: Flow Order***	
BFD-32T-B	0.000	123.4	80.0	123.4	80.0	1.345	GW	193,769	1,136.6	1,345.0	11.7	193,769
BFD-32T-B (BR/SE)	0.000	104.1	68.0	104.1	68.0	0.886	GW	193,769	832.9	886.0	9.9	193,769
BFD-32T-B (D/S)	0.000	76.9	76.0	76.9	76.0	1.358	GW	193,769	1,183.1	1,358.0	7.4	193,769
===>Grouped by Line:	**FW73-5-BFPHDR to FWH26B**										***Sorted By: Flow Order***	
BFD-38	0.000	95.3	194.0	95.3	194.0	1.004	MT	136,608	842.7	1,004.0	25.3	136,608
BFD-39P	0.000	64.4	65.0	64.4	65.0	0.890		136,608	873.6	890.0	17.1	136,608
BFD-39	0.000	85.0	85.0	85.0	85.0	0.978	MT	136,608	853.0	978.0	22.5	136,608
BFD-39N	0.000	116.0	50.0	116.0	50.0	0.890	GW	181,477	822.0	890.0	14.4	181,477

Component Name	Tinit	Total Lifetime Wear (mils) Prd. [1]	Total Lifetime Wear (mils) Meas.	In-Service Component Wear(mils) Prd. [1]	In-Service Component Wear(mils) Meas.	In-Service Component Tmeas, Method, Time (in) [3]	[2]	(hrs) [3]	In-Service Component Thickness (mils) [4] Tp	Tm	Incremental Wear (mils) [5] PRWEAR	Time (hrs) Last Inspected
===>Grouped by Line:	**FW73-6-BFPHDR to FWH26A**										***Sorted By: Flow Order***	
BFD-33P-1 DS	0.000	64.4	130.0	64.4	130.0	0.880	MT	136,608	873.6	880.0	17.1	136,608
BFD-33	0.000	117.0	152.0	117.0	152.0	0.956	MT	226,201	821.0	956.0	3.6	226,201
BFD-33P US	0.000	64.4	60.0	64.4	60.0	0.896	MT	136,608	873.6	896.0	17.1	136,608
BFD-33P DS	0.000	69.8	37.0	69.8	37.0	0.902	MT	165,113	868.2	902.0	11.6	165,113
BFD-34	0.000	103.4	139.0	103.4	139.0	0.931	MT	165,113	834.6	931.0	17.2	165,113
BFD-34P US	0.000	69.8	39.0	69.8	39.0	0.909		165,113	868.2	909.0	11.6	165,113
BFD-35P	0.000	79.0	56.0	79.0	56.0	0.882	MT	226,201	859.0	882.0	2.4	226,201
BFD-36	0.000	104.3	80.0	104.3	80.0	0.983	MT	226,201	833.7	983.0	3.2	226,201
BFD-36N	0.000	126.4	96.0	126.4	96.0	0.938	ER	0	807.7	938.0	130.3	226,201

Notes:
[1] Predictions are for the time of last inspection (last known meas. wear).
[2] GW = Tmeas is minimum thickness from Band, Blanket or Area Method of greatest wear.
MT = Tmeas is component minimum thickness.
PW = Tmeas is Tinit - predicted wear.
US = Tmeas is user specified.
[3] If no Tmeas has been determined from measured data, then Tmeas = Tinit and Time = current component installation time.
Tmeas is used to determine Predicted Thickness and Component Predicted Time to Tcrit.
[4] These two values are used for thickness plot.
Tp = Predicted thickness at Tmeas.
Tm = Last measured thickness (Tmeas).
[5] PRWEAR = Incremental wear from last Tmeas time to analysis ending period.

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).DB

Wear Rate Report

Pass 2 Analysis Include Measured Wear

Report Date/Time: 7/7/2010 9:54:36AM
AnalysisDate/Time: 6/11/2010 11:35:06AM

CHECWORKS SFA Version: 3.0 (build 105)
Duty Factor (Global) : 1.000

Run Name: FW FWH 26 TO STM GEN
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 1.158

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***FW74-1-FWH26A to DISHDR***								***Sorted By: Average Wear Rate***		
BFD-55N	31	5.925	2.283	429.6	17.382	0.0	18.000	6.624	0.000	98.03	HBD
BFD-VALVE-BFD-4	22	5.925	2.283	429.6	17.382	0.0	18.000	6.624	0.000	98.03	HBD
BFD-55	4	4.385	1.689	429.6	17.382	0.0	18.000	6.624	0.000	98.03	HBD
BFD-56	2	4.385	1.689	429.6	17.382	0.0	18.000	6.624	0.000	98.03	HBD
BFD-57	2	4.385	1.689	429.6	17.382	0.0	18.000	6.624	0.000	98.03	HBD
BFD-58	2	4.385	1.689	429.6	17.382	0.0	18.000	6.624	0.000	98.03	HBD
BFD-59	2	4.385	1.689	429.6	17.382	0.0	18.000	6.624	0.000	98.03	HBD
BFD-55P	54	3.792	1.461	429.6	17.382	0.0	18.000	6.624	0.000	98.03	HBD
BFD-59R	18	3.318	1.278	429.6	17.377	0.0	18.000	6.624	0.000	98.03	HBD
BFD-57P	52	2.963	1.141	429.6	17.382	0.0	18.000	6.624	0.000	98.03	HBD
BFD-58P	52	2.963	1.141	429.6	17.382	0.0	18.000	6.624	0.000	98.03	HBD
BFD-59P	52	2.963	1.141	429.6	17.382	0.0	18.000	6.624	0.000	98.03	HBD
BFD-56P-1	58	2.607	1.004	429.6	17.382	0.0	18.000	6.624	0.000	98.03	HBD
BFD-59R (D/S)	18	1.691	0.661	429.6	5.984	0.0	30.000	6.624	0.000	98.03	HBD
===>Grouped by Line:	***FW74-2-FWH26B to DISHDR***								***Sorted By: Average Wear Rate***		
BFD-51N	31	5.925	2.283	429.6	17.382	0.0	18.000	6.624	0.000	98.03	HBD
BFD-VALVE-BFD-4-1	22	5.925	2.283	429.6	17.382	0.0	18.000	6.624	0.000	98.03	HBD
BFD-51	4	4.385	1.689	429.6	17.382	0.0	18.000	6.624	0.000	98.03	HBD
BFD-52	2	4.385	1.689	429.6	17.382	0.0	18.000	6.624	0.000	98.03	HBD
BFD-53	2	4.385	1.689	429.6	17.382	0.0	18.000	6.624	0.000	98.03	HBD
BFD-54	2	4.385	1.689	429.6	17.382	0.0	18.000	6.624	0.000	98.03	HBD
BFD-51P	54	3.792	1.461	429.6	17.382	0.0	18.000	6.624	0.000	98.03	HBD
BFD-52P	52	2.963	1.141	429.6	17.382	0.0	18.000	6.624	0.000	98.03	HBD
BFD-53P	52	2.963	1.141	429.6	17.382	0.0	18.000	6.624	0.000	98.03	HBD
BFD-54P	52	2.963	1.141	429.6	17.382	0.0	18.000	6.624	0.000	98.03	HBD
BFD-52P-1	58	2.607	1.004	429.6	17.382	0.0	18.000	6.624	0.000	98.03	HBD
===>Grouped by Line:	***FW74-3-FWH26 to DISHDR***								***Sorted By: Average Wear Rate***		

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***FW74-3-FWH26 to DISHDR***								***Sorted By: Average Wear Rate***		
BFD-54T (BR/SE)	12	4.029	1.552	429.6	17.377	0.0	18.000	6.624	0.000	98.03	HBD
BFD-54T (D/S)	12	3.663	1.411	429.6	11.986	0.0	30.000	6.624	0.000	98.03	HBD
BFD-54T	12	2.311	0.904	429.6	5.984	0.0	30.000	6.624	0.000	98.03	HBD
BFD-54P-1	62	1.787	0.688	429.6	11.986	0.0	30.000	6.624	0.000	98.03	HBD
===>Grouped by Line:	***FW74-4-FWH26C to DISHDR***								***Sorted By: Average Wear Rate***		
BFD-47N	31	5.925	2.283	429.6	17.382	0.0	18.000	6.624	0.000	98.03	HBD
BFD-VALVE-BFD-4-2	22	5.925	2.283	429.6	17.382	0.0	18.000	6.624	0.000	98.03	HBD
BFD-47	2	4.385	1.689	429.6	17.382	0.0	18.000	6.624	0.000	98.03	HBD
BFD-48	2	4.385	1.689	429.6	17.382	0.0	18.000	6.624	0.000	98.03	HBD
BFD-49	2	4.385	1.689	429.6	17.382	0.0	18.000	6.624	0.000	98.03	HBD
BFD-50	2	4.385	1.689	429.6	17.382	0.0	18.000	6.624	0.000	98.03	HBD
BFD-47P	52	2.963	1.141	429.6	17.382	0.0	18.000	6.624	0.000	98.03	HBD
BFD-48P	52	2.963	1.141	429.6	17.382	0.0	18.000	6.624	0.000	98.03	HBD
BFD-49P	52	2.963	1.141	429.6	17.382	0.0	18.000	6.624	0.000	98.03	HBD
BFD-50P US	52	2.963	1.141	429.6	17.382	0.0	18.000	6.624	0.000	98.03	HBD
BFD-50P DS	52	2.963	1.141	429.6	17.382	0.0	18.000	6.624	0.000	98.03	HBD
BFD-48P-1	58	2.607	1.004	429.6	17.382	0.0	18.000	6.624	0.000	98.03	HBD
===>Grouped by Line:	***FW74-5-FWH26 to DISHDR***								***Sorted By: Average Wear Rate***		
BFD-72T	13	5.603	2.159	429.6	17.970	0.0	30.000	6.624	0.000	98.03	HBD
BFD-72T (BR/SE)	13	5.048	1.945	429.6	13.049	0.0	18.000	6.624	0.000	98.03	HBD
BFD-72T (D/S)	13	4.770	1.838	429.6	13.478	0.0	30.000	6.624	0.000	98.03	HBD
BFD-50T (D/S)	12	4.594	1.770	429.6	17.970	0.0	30.000	6.624	0.000	98.03	HBD
BFD-60	2	4.146	1.597	429.6	17.970	0.0	30.000	6.624	0.000	98.03	HBD
BFD-30	4	4.146	1.597	429.6	17.970	0.0	30.000	6.624	0.000	98.03	HBD
BFD-31	2	4.146	1.597	429.6	17.970	0.0	30.000	6.624	0.000	98.03	HBD
BFD-61	2	4.146	1.597	429.6	17.970	0.0	30.000	6.624	0.000	98.03	HBD
BFD-62	2	4.146	1.597	429.6	17.970	0.0	30.000	6.624	0.000	98.03	HBD
BFD-63	2	4.146	1.597	429.6	17.970	0.0	30.000	6.624	0.000	98.03	HBD
BFD-64	2	4.146	1.597	429.6	17.970	0.0	30.000	6.624	0.000	98.03	HBD
BFD-65	2	4.146	1.597	429.6	17.970	0.0	30.000	6.624	0.000	98.03	HBD
BFD-50T (BR/SE)	12	4.029	1.552	429.6	17.377	0.0	18.000	6.624	0.000	98.03	HBD
BFD-50T	12	3.663	1.411	429.6	11.986	0.0	30.000	6.624	0.000	98.03	HBD
BFD-30P US	54	3.586	1.381	429.6	17.970	0.0	30.000	6.624	0.000	98.03	HBD
BFD-30P DS	54	3.586	1.381	429.6	17.970	0.0	30.000	6.624	0.000	98.03	HBD
BFD-46T (D/S)	15	3.362	1.295	429.6	17.970	0.0	30.000	6.624	0.000	98.03	HBD
BFD-46T	15	3.362	1.295	429.6	17.970	0.0	30.000	6.624	0.000	98.03	HBD

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***FW74-5-FWH26 to DISHDR***								***Sorted By: Average Wear Rate***		
BFD-31P US	52	2.801	1.079	429.6	17.970	0.0	30.000	6.624	0.000	98.03	HBD
BFD-61P	52	2.801	1.079	429.6	17.970	0.0	30.000	6.624	0.000	98.03	HBD
BFD-62P US	52	2.801	1.079	429.6	17.970	0.0	30.000	6.624	0.000	98.03	HBD
BFD-62P DS	52	2.801	1.079	429.6	17.970	0.0	30.000	6.624	0.000	98.03	HBD
BFD-63P US	52	2.801	1.079	429.6	17.970	0.0	30.000	6.624	0.000	98.03	HBD
BFD-63P DS	52	2.801	1.079	429.6	17.970	0.0	30.000	6.624	0.000	98.03	HBD
BFD-64P	52	2.801	1.079	429.6	17.970	0.0	30.000	6.624	0.000	98.03	HBD
BFD-65P	52	2.801	1.079	429.6	17.970	0.0	30.000	6.624	0.000	98.03	HBD
BFD-65P-1	52	2.801	1.079	429.6	17.970	0.0	30.000	6.624	0.000	98.03	HBD
BFD-46P	65	2.241	0.863	429.6	17.970	0.0	30.000	6.624	0.000	98.03	HBD
BFD-50P-1	62	2.241	0.863	429.6	17.970	0.0	30.000	6.624	0.000	98.03	HBD
===>Grouped by Line:	***FW75-1-DISHDR to SG21***								***Sorted By: Average Wear Rate***		
BFD-VALVE-BFD-6	25	5.707	2.199	429.6	15.861	0.0	18.000	6.624	0.000	98.03	HBD
BFD-VALVE-BFD-7	22	5.707	2.199	429.6	15.859	0.0	18.000	6.624	0.000	98.03	HBD
BFD-72R (D/S)	7	5.190	2.000	429.6	27.724	0.0	12.750	6.624	0.000	98.03	HBD
BFD-VALVE-BFD-5	22	5.048	1.945	429.6	13.049	0.0	18.000	6.624	0.000	98.03	HBD
BFD-VALVE-FCV-417	24	5.048	1.945	429.6	13.049	0.0	18.000	6.624	0.000	98.03	HBD
BFD-71R	18	4.540	1.749	429.6	27.714	0.0	12.750	6.624	0.000	98.03	HBD
BFD-99N	30	3.923	1.511	429.6	12.461	0.0	18.000	6.624	0.000	98.03	HBD
BFD-72	2	3.735	1.439	429.6	13.049	0.0	18.000	6.624	0.000	98.03	HBD
BFD-71	4	3.735	1.439	429.6	13.049	0.0	18.000	6.624	0.000	98.03	HBD
BFD-70	2	3.735	1.439	429.6	13.049	0.0	18.000	6.624	0.000	98.03	HBD
BFD-68	2	3.735	1.439	429.6	13.049	0.0	18.000	6.624	0.000	98.03	HBD
BFD-67	4	3.629	1.398	429.6	12.461	0.0	18.000	6.624	0.000	98.03	HBD
BFD-66	4	3.629	1.398	429.6	12.461	0.0	18.000	6.624	0.000	98.03	HBD
BFD-96	2	3.629	1.398	429.6	12.461	0.0	18.000	6.624	0.000	98.03	HBD
BFD-97	2	3.629	1.398	429.6	12.461	0.0	18.000	6.624	0.000	98.03	HBD
BFD-98	2	3.629	1.398	429.6	12.461	0.0	18.000	6.624	0.000	98.03	HBD
BFD-99	2	3.629	1.398	429.6	12.461	0.0	18.000	6.624	0.000	98.03	HBD
BFD-72R	7	3.534	1.361	429.6	13.049	0.0	18.000	6.624	0.000	98.03	HBD
BFD-69	1	3.332	1.284	429.6	13.049	0.0	18.000	6.624	0.000	98.03	HBD
BFD-66P	54	3.138	1.209	429.6	12.461	0.0	18.000	6.624	0.000	98.03	HBD
BFD-71R (D/S)	18	3.029	1.167	429.6	13.049	0.0	18.000	6.624	0.000	98.03	HBD
BFD-72P-1 US	52	2.524	0.972	429.6	13.049	0.0	18.000	6.624	0.000	98.03	HBD
BFD-72P-1 DS	52	2.524	0.972	429.6	13.049	0.0	18.000	6.624	0.000	98.03	HBD
BFD-70P US	52	2.524	0.972	429.6	13.049	0.0	18.000	6.624	0.000	98.03	HBD

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***FW75-1-DISHDR to SG21***								***Sorted By: Average Wear Rate***		
BFD-70P DS	52	2.524	0.972	429.6	13.049	0.0	18.000	6.624	0.000	98.03	HBD
BFD-69P US	52	2.524	0.972	429.6	13.049	0.0	18.000	6.624	0.000	98.03	HBD
BFD-69P DS	52	2.524	0.972	429.6	13.049	0.0	18.000	6.624	0.000	98.03	HBD
BFD-67P US	52	2.524	0.972	429.6	13.049	0.0	18.000	6.624	0.000	98.03	HBD
BFD-67P DS	52	2.524	0.972	429.6	13.049	0.0	18.000	6.624	0.000	98.03	HBD
BFD-96P	52	2.452	0.945	429.6	12.461	0.0	18.000	6.624	0.000	98.03	HBD
BFD-97P	52	2.452	0.945	429.6	12.461	0.0	18.000	6.624	0.000	98.03	HBD
BFD-98P	52	2.452	0.945	429.6	12.461	0.0	18.000	6.624	0.000	98.03	HBD
BFD-68P US	51	2.221	0.856	429.6	13.049	0.0	18.000	6.624	0.000	98.03	HBD
BFD-68P DS	51	2.221	0.856	429.6	13.049	0.0	18.000	6.624	0.000	98.03	HBD
BFD-72P US	64	2.019	0.778	429.6	13.049	0.0	18.000	6.624	0.000	98.03	HBD
BFD-72P DS	64	2.019	0.778	429.6	13.049	0.0	18.000	6.624	0.000	98.03	HBD
BFD-98P-1	9	1.251	0.489	429.6	12.461	0.0	18.000	6.624	0.000	98.03	HBD
===>Grouped by Line:	***FW76-1-DISHDR to SG22***								***Sorted By: Average Wear Rate***		
BFD-VALVE-BFD-6-1	25	5.707	2.199	429.6	15.861	0.0	18.000	6.624	0.000	98.03	HBD
BFD-VALVE-BFD-7-1	22	5.707	2.199	429.6	15.859	0.0	18.000	6.624	0.000	98.03	HBD
BFD-VALVE-BFD-5-1	22	5.048	1.945	429.6	13.049	0.0	18.000	6.624	0.000	98.03	HBD
BFD-VALVE-FCV-427	24	5.048	1.945	429.6	13.049	0.0	18.000	6.624	0.000	98.03	HBD
BFD-77R	18	4.540	1.749	429.6	27.714	0.0	12.750	6.624	0.000	98.03	HBD
BFD-78	2	3.735	1.439	429.6	13.049	0.0	18.000	6.624	0.000	98.03	HBD
BFD-77	2	3.735	1.439	429.6	13.049	0.0	18.000	6.624	0.000	98.03	HBD
BFD-76	2	3.735	1.439	429.6	13.049	0.0	18.000	6.624	0.000	98.03	HBD
BFD-74	2	3.735	1.439	429.6	13.049	0.0	18.000	6.624	0.000	98.03	HBD
BFD-73	4	3.629	1.398	429.6	12.461	0.0	18.000	6.624	0.000	98.03	HBD
BFD-91	2	3.629	1.398	429.6	12.461	0.0	18.000	6.624	0.000	98.03	HBD
BFD-92	2	3.629	1.398	429.6	12.461	0.0	18.000	6.624	0.000	98.03	HBD
BFD-92-2	2	3.629	1.398	429.6	12.461	0.0	18.000	6.624	0.000	98.03	HBD
BFD-93	2	3.629	1.398	429.6	12.461	0.0	18.000	6.624	0.000	98.03	HBD
BFD-95	3	3.433	1.322	429.6	12.461	0.0	18.000	6.624	0.000	98.03	HBD
BFD-95N	30	3.426	1.320	429.6	10.047	0.0	20.000	6.624	0.000	98.03	HBD
BFD-75	1	3.332	1.284	429.6	13.049	0.0	18.000	6.624	0.000	98.03	HBD
BFD-92-1	1	3.236	1.247	429.6	12.461	0.0	18.000	6.624	0.000	98.03	HBD
BFD-94	1	3.236	1.247	429.6	12.461	0.0	18.000	6.624	0.000	98.03	HBD
BFD-73P	54	3.138	1.209	429.6	12.461	0.0	18.000	6.624	0.000	98.03	HBD
BFD-77R (D/S)	18	3.029	1.167	429.6	13.049	0.0	18.000	6.624	0.000	98.03	HBD
BFD-95R	18	2.746	1.058	429.6	12.461	0.0	18.000	6.624	0.000	98.03	HBD

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***FW76-1-DISHDR to SG22***								***Sorted By: Average Wear Rate***		
BFD-95R (D/S)	18	2.569	0.990	429.6	10.047	0.0	20.000	6.624	0.000	98.03	HBD
BFD-78P-1 US	52	2.524	0.972	429.6	13.049	0.0	18.000	6.624	0.000	98.03	HBD
BFD-76P US	52	2.524	0.972	429.6	13.049	0.0	18.000	6.624	0.000	98.03	HBD
BFD-75P	52	2.524	0.972	429.6	13.049	0.0	18.000	6.624	0.000	98.03	HBD
BFD-73P	52	2.524	0.972	429.6	13.049	0.0	18.000	6.624	0.000	98.03	HBD
BFD-91P	52	2.452	0.945	429.6	12.461	0.0	18.000	6.624	0.000	98.03	HBD
BFD-92P	52	2.452	0.945	429.6	12.461	0.0	18.000	6.624	0.000	98.03	HBD
BFD-92P-2	52	2.452	0.945	429.6	12.461	0.0	18.000	6.624	0.000	98.03	HBD
BFD-93P US	52	2.452	0.945	429.6	12.461	0.0	18.000	6.624	0.000	98.03	HBD
BFD-93P DS	52	2.452	0.945	429.6	12.461	0.0	18.000	6.624	0.000	98.03	HBD
BFD-95P	53	2.452	0.945	429.6	12.461	0.0	18.000	6.624	0.000	98.03	HBD
BFD-78P-2	58	2.221	0.856	429.6	13.049	0.0	18.000	6.624	0.000	98.03	HBD
BFD-77P	58	2.221	0.856	429.6	13.049	0.0	18.000	6.624	0.000	98.03	HBD
BFD-74P	51	2.221	0.856	429.6	13.049	0.0	18.000	6.624	0.000	98.03	HBD
BFD-92P-1	51	2.158	0.831	429.6	12.461	0.0	18.000	6.624	0.000	98.03	HBD
BFD-78P	64	2.019	0.778	429.6	13.049	0.0	18.000	6.624	0.000	98.03	HBD
BFD-92P-3	9	1.251	0.489	429.6	12.461	0.0	18.000	6.624	0.000	98.03	HBD
===>Grouped by Line:	***FW76-2-DISHDR to SG22***								***Sorted By: Average Wear Rate***		
BFD-78T (BR/SE)	13	5.048	1.945	429.6	13.049	0.0	18.000	6.624	0.000	98.03	HBD
BFD-78T	13	4.770	1.838	429.6	13.478	0.0	30.000	6.624	0.000	98.03	HBD
BFD-78T (D/S)	13	3.803	1.465	429.6	8.985	0.0	30.000	6.624	0.000	98.03	HBD
===>Grouped by Line:	***FW77-1-DISHDR to SG24***								***Sorted By: Average Wear Rate***		
BFD-VALVE-BFD-6-3	25	5.707	2.199	429.6	15.861	0.0	18.000	6.624	0.000	98.03	HBD
BFD-VALVE-BFD-7-3	22	5.707	2.199	429.6	15.859	0.0	18.000	6.624	0.000	98.03	HBD
BFD-VALVE-BFD-5-3	22	5.048	1.945	429.6	13.049	0.0	18.000	6.624	0.000	98.03	HBD
BFD-VALVE-FCV-447	24	5.048	1.945	429.6	13.049	0.0	18.000	6.624	0.000	98.03	HBD
BFD-83R	18	4.540	1.749	429.6	27.714	0.0	12.750	6.624	0.000	98.03	HBD
BFD-106N	30	3.923	1.511	429.6	12.461	0.0	18.000	6.624	0.000	98.03	HBD
BFD-84	2	3.735	1.439	429.6	13.049	0.0	18.000	6.624	0.000	98.03	HBD
BFD-83	4	3.735	1.439	429.6	13.049	0.0	18.000	6.624	0.000	98.03	HBD
BFD-82	2	3.735	1.439	429.6	13.049	0.0	18.000	6.624	0.000	98.03	HBD
BFD-80	4	3.735	1.439	429.6	13.049	0.0	18.000	6.624	0.000	98.03	HBD
BFD-79	4	3.629	1.398	429.6	12.461	0.0	18.000	6.624	0.000	98.03	HBD
BFD-104	2	3.629	1.398	429.6	12.461	0.0	18.000	6.624	0.000	98.03	HBD
BFD-105	2	3.629	1.398	429.6	12.461	0.0	18.000	6.624	0.000	98.03	HBD
BFD-105-1	4	3.629	1.398	429.6	12.461	0.0	18.000	6.624	0.000	98.03	HBD

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***FW77-1-DISHDR to SG24***								***Sorted By: Average Wear Rate***		
BFD-106	4	3.629	1.398	429.6	12.461	0.0	18.000	6.624	0.000	98.03	HBD
BFD-81	1	3.332	1.284	429.6	13.049	0.0	18.000	6.624	0.000	98.03	HBD
BFD-82P US	54	3.231	1.245	429.6	13.049	0.0	18.000	6.624	0.000	98.03	HBD
BFD-82P DS	54	3.231	1.245	429.6	13.049	0.0	18.000	6.624	0.000	98.03	HBD
BFD-80P	54	3.231	1.245	429.6	13.049	0.0	18.000	6.624	0.000	98.03	HBD
BFD-104P	54	3.138	1.209	429.6	12.461	0.0	18.000	6.624	0.000	98.03	HBD
BFD-105P-1	54	3.138	1.209	429.6	12.461	0.0	18.000	6.624	0.000	98.03	HBD
BFD-106P	54	3.138	1.209	429.6	12.461	0.0	18.000	6.624	0.000	98.03	HBD
BFD-83R (D/S)	18	3.029	1.167	429.6	13.049	0.0	18.000	6.624	0.000	98.03	HBD
BFD-84P-1	52	2.524	0.972	429.6	13.049	0.0	18.000	6.624	0.000	98.03	HBD
BFD-81P	52	2.524	0.972	429.6	13.049	0.0	18.000	6.624	0.000	98.03	HBD
BFD-105P	52	2.452	0.945	429.6	12.461	0.0	18.000	6.624	0.000	98.03	HBD
BFD-84P-2	58	2.221	0.856	429.6	13.049	0.0	18.000	6.624	0.000	98.03	HBD
BFD-84P	64	2.019	0.778	429.6	13.049	0.0	18.000	6.624	0.000	98.03	HBD
BFD-105P-2	9	1.251	0.489	429.6	12.461	0.0	18.000	6.624	0.000	98.03	HBD
===>Grouped by Line:	***FW77-2-DISHDR to SG24***								***Sorted By: Average Wear Rate***		
BFD-84T (BR/SE)	13	5.048	1.945	429.6	13.049	0.0	18.000	6.624	0.000	98.03	HBD
BFD-84T	13	3.803	1.465	429.6	8.985	0.0	30.000	6.624	0.000	98.03	HBD
BFD-84T (D/S)	13	2.202	0.861	429.6	4.493	0.0	30.000	6.624	0.000	98.03	HBD
===>Grouped by Line:	***FW78-1-DISHDR to SG23***								***Sorted By: Average Wear Rate***		
BFD-VALVE-BFD-6-2	25	5.707	2.199	429.6	15.861	0.0	18.000	6.624	0.000	98.03	HBD
BFD-VALVE-BFD-7-2	22	5.707	2.199	429.6	15.859	0.0	18.000	6.624	0.000	98.03	HBD
BFD-VALVE-BFD-5-2	22	5.048	1.945	429.6	13.049	0.0	18.000	6.624	0.000	98.03	HBD
BFD-VALVE-FCV-437	24	5.048	1.945	429.6	13.049	0.0	18.000	6.624	0.000	98.03	HBD
BFD-3R	18	4.540	1.749	429.6	27.714	0.0	12.750	6.624	0.000	98.03	HBD
BFD-103N	30	3.923	1.511	429.6	12.461	0.0	18.000	6.624	0.000	98.03	HBD
BFD-89	2	3.735	1.439	429.6	13.049	0.0	18.000	6.624	0.000	98.03	HBD
BFD-3	2	3.735	1.439	429.6	13.049	0.0	18.000	6.624	0.000	98.03	HBD
BFD-88	2	3.735	1.439	429.6	13.049	0.0	18.000	6.624	0.000	98.03	HBD
BFD-87	2	3.735	1.439	429.6	13.049	0.0	18.000	6.624	0.000	98.03	HBD
BFD-86	4	3.629	1.398	429.6	12.461	0.0	18.000	6.624	0.000	98.03	HBD
BFD-85	4	3.629	1.398	429.6	12.461	0.0	18.000	6.624	0.000	98.03	HBD
BFD-100	2	3.629	1.398	429.6	12.461	0.0	18.000	6.624	0.000	98.03	HBD
BFD-101	2	3.629	1.398	429.6	12.461	0.0	18.000	6.624	0.000	98.03	HBD
BFD-102	2	3.629	1.398	429.6	12.461	0.0	18.000	6.624	0.000	98.03	HBD
BFD-103	2	3.629	1.398	429.6	12.461	0.0	18.000	6.624	0.000	98.03	HBD

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***FW78-1-DISHDR to SG23***								***Sorted By: Average Wear Rate***		
BFD-89T (BR/SE)	12	3.433	1.322	429.6	13.049	0.0	18.000	6.624	0.000	98.03	HBD
BFD-100P	54	3.138	1.209	429.6	12.461	0.0	18.000	6.624	0.000	98.03	HBD
BFD-3R (D/S)	18	3.029	1.167	429.6	13.049	0.0	18.000	6.624	0.000	98.03	HBD
BFD-89P-1	52	2.524	0.972	429.6	13.049	0.0	18.000	6.624	0.000	98.03	HBD
BFD-88P	52	2.524	0.972	429.6	13.049	0.0	18.000	6.624	0.000	98.03	HBD
BFD-87P US	52	2.524	0.972	429.6	13.049	0.0	18.000	6.624	0.000	98.03	HBD
BFD-87P DS	52	2.524	0.972	429.6	13.049	0.0	18.000	6.624	0.000	98.03	HBD
BFD-86P US	52	2.524	0.972	429.6	13.049	0.0	18.000	6.624	0.000	98.03	HBD
BFD-86P DS	52	2.524	0.972	429.6	13.049	0.0	18.000	6.624	0.000	98.03	HBD
BFD-101P	52	2.452	0.945	429.6	12.461	0.0	18.000	6.624	0.000	98.03	HBD
BFD-102P	52	2.452	0.945	429.6	12.461	0.0	18.000	6.624	0.000	98.03	HBD
BFD-102P-1	52	2.452	0.945	429.6	12.461	0.0	18.000	6.624	0.000	98.03	HBD
BFD-103P	52	2.452	0.945	429.6	12.461	0.0	18.000	6.624	0.000	98.03	HBD
BFD-89P-2	58	2.221	0.856	429.6	13.049	0.0	18.000	6.624	0.000	98.03	HBD
BFD-3P	58	2.221	0.856	429.6	13.049	0.0	18.000	6.624	0.000	98.03	HBD
BFD-89P	64	2.019	0.778	429.6	13.049	0.0	18.000	6.624	0.000	98.03	HBD
BFD-89T	12	1.806	0.706	429.6	4.493	0.0	30.000	6.624	0.000	98.03	HBD
BFD-102P-2	9	1.251	0.489	429.6	12.461	0.0	18.000	6.624	0.000	98.03	HBD

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).DB

Wear Rate Report

Pass 2 Analysis Include Measured Wear

Report Date/Time: 7/7/2010 9:54:36AM
AnalysisDate/Time: 6/11/2010 11:35:06AM

CHECWORKS SFA Version: 3.0 (build 105)
Duty Factor (Global) : 1.000

Run Name: FW FWH 26 TO STM GEN
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 1.158

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***FW74-1-FWH26A to DISHDR***									***Sorted By: Flow Order***	
BFD-55N	31	5.925	2.283	429.6	17.382	0.0	18.000	6.624	0.000	98.03	HBD
BFD-55	4	4.385	1.689	429.6	17.382	0.0	18.000	6.624	0.000	98.03	HBD
BFD-55P	54	3.792	1.461	429.6	17.382	0.0	18.000	6.624	0.000	98.03	HBD
BFD-56	2	4.385	1.689	429.6	17.382	0.0	18.000	6.624	0.000	98.03	HBD
BFD-VALVE-BFD-4	22	5.925	2.283	429.6	17.382	0.0	18.000	6.624	0.000	98.03	HBD
BFD-56P-1	58	2.607	1.004	429.6	17.382	0.0	18.000	6.624	0.000	98.03	HBD
BFD-57	2	4.385	1.689	429.6	17.382	0.0	18.000	6.624	0.000	98.03	HBD
BFD-57P	52	2.963	1.141	429.6	17.382	0.0	18.000	6.624	0.000	98.03	HBD
BFD-58	2	4.385	1.689	429.6	17.382	0.0	18.000	6.624	0.000	98.03	HBD
BFD-58P	52	2.963	1.141	429.6	17.382	0.0	18.000	6.624	0.000	98.03	HBD
BFD-59	2	4.385	1.689	429.6	17.382	0.0	18.000	6.624	0.000	98.03	HBD
BFD-59P	52	2.963	1.141	429.6	17.382	0.0	18.000	6.624	0.000	98.03	HBD
BFD-59R	18	3.318	1.278	429.6	17.377	0.0	18.000	6.624	0.000	98.03	HBD
BFD-59R (D/S)	18	1.691	0.661	429.6	5.984	0.0	30.000	6.624	0.000	98.03	HBD
===>Grouped by Line:	***FW74-2-FWH26B to DISHDR***									***Sorted By: Flow Order***	
BFD-51N	31	5.925	2.283	429.6	17.382	0.0	18.000	6.624	0.000	98.03	HBD
BFD-51	4	4.385	1.689	429.6	17.382	0.0	18.000	6.624	0.000	98.03	HBD
BFD-51P	54	3.792	1.461	429.6	17.382	0.0	18.000	6.624	0.000	98.03	HBD
BFD-52	2	4.385	1.689	429.6	17.382	0.0	18.000	6.624	0.000	98.03	HBD
BFD-52P	52	2.963	1.141	429.6	17.382	0.0	18.000	6.624	0.000	98.03	HBD
BFD-VALVE-BFD-4-1	22	5.925	2.283	429.6	17.382	0.0	18.000	6.624	0.000	98.03	HBD
BFD-52P-1	58	2.607	1.004	429.6	17.382	0.0	18.000	6.624	0.000	98.03	HBD
BFD-53	2	4.385	1.689	429.6	17.382	0.0	18.000	6.624	0.000	98.03	HBD
BFD-53P	52	2.963	1.141	429.6	17.382	0.0	18.000	6.624	0.000	98.03	HBD
BFD-54	2	4.385	1.689	429.6	17.382	0.0	18.000	6.624	0.000	98.03	HBD
BFD-54P	52	2.963	1.141	429.6	17.382	0.0	18.000	6.624	0.000	98.03	HBD
===>Grouped by Line:	***FW74-3-FWH26 to DISHDR***									***Sorted By: Flow Order***	

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***FW74-3-FWH26 to DISHDR***									***Sorted By: Flow Order***	
BFD-54T	12	2.311	0.904	429.6	5.984	0.0	30.000	6.624	0.000	98.03	HBD
BFD-54T (BR/SE)	12	4.029	1.552	429.6	17.377	0.0	18.000	6.624	0.000	98.03	HBD
BFD-54T (D/S)	12	3.663	1.411	429.6	11.986	0.0	30.000	6.624	0.000	98.03	HBD
BFD-54P-1	62	1.787	0.688	429.6	11.986	0.0	30.000	6.624	0.000	98.03	HBD
===>Grouped by Line:	***FW74-4-FWH26C to DISHDR***									***Sorted By: Flow Order***	
BFD-47N	31	5.925	2.283	429.6	17.382	0.0	18.000	6.624	0.000	98.03	HBD
BFD-47	2	4.385	1.689	429.6	17.382	0.0	18.000	6.624	0.000	98.03	HBD
BFD-47P	52	2.963	1.141	429.6	17.382	0.0	18.000	6.624	0.000	98.03	HBD
BFD-48	2	4.385	1.689	429.6	17.382	0.0	18.000	6.624	0.000	98.03	HBD
BFD-48P	52	2.963	1.141	429.6	17.382	0.0	18.000	6.624	0.000	98.03	HBD
BFD-VALVE-BFD-4-2	22	5.925	2.283	429.6	17.382	0.0	18.000	6.624	0.000	98.03	HBD
BFD-48P-1	58	2.607	1.004	429.6	17.382	0.0	18.000	6.624	0.000	98.03	HBD
BFD-49	2	4.385	1.689	429.6	17.382	0.0	18.000	6.624	0.000	98.03	HBD
BFD-49P	52	2.963	1.141	429.6	17.382	0.0	18.000	6.624	0.000	98.03	HBD
BFD-50	2	4.385	1.689	429.6	17.382	0.0	18.000	6.624	0.000	98.03	HBD
BFD-50P US	52	2.963	1.141	429.6	17.382	0.0	18.000	6.624	0.000	98.03	HBD
BFD-50P DS	52	2.963	1.141	429.6	17.382	0.0	18.000	6.624	0.000	98.03	HBD
===>Grouped by Line:	***FW74-5-FWH26 to DISHDR***									***Sorted By: Flow Order***	
BFD-50T	12	3.663	1.411	429.6	11.986	0.0	30.000	6.624	0.000	98.03	HBD
BFD-50T (BR/SE)	12	4.029	1.552	429.6	17.377	0.0	18.000	6.624	0.000	98.03	HBD
BFD-50T (D/S)	12	4.594	1.770	429.6	17.970	0.0	30.000	6.624	0.000	98.03	HBD
BFD-50P-1	62	2.241	0.863	429.6	17.970	0.0	30.000	6.624	0.000	98.03	HBD
BFD-46T	15	3.362	1.295	429.6	17.970	0.0	30.000	6.624	0.000	98.03	HBD
BFD-46T (D/S)	15	3.362	1.295	429.6	17.970	0.0	30.000	6.624	0.000	98.03	HBD
BFD-46P	65	2.241	0.863	429.6	17.970	0.0	30.000	6.624	0.000	98.03	HBD
BFD-60	2	4.146	1.597	429.6	17.970	0.0	30.000	6.624	0.000	98.03	HBD
BFD-30	4	4.146	1.597	429.6	17.970	0.0	30.000	6.624	0.000	98.03	HBD
BFD-30P US	54	3.586	1.381	429.6	17.970	0.0	30.000	6.624	0.000	98.03	HBD
BFD-30P DS	54	3.586	1.381	429.6	17.970	0.0	30.000	6.624	0.000	98.03	HBD
BFD-31	2	4.146	1.597	429.6	17.970	0.0	30.000	6.624	0.000	98.03	HBD
BFD-31P US	52	2.801	1.079	429.6	17.970	0.0	30.000	6.624	0.000	98.03	HBD
BFD-61	2	4.146	1.597	429.6	17.970	0.0	30.000	6.624	0.000	98.03	HBD
BFD-61P	52	2.801	1.079	429.6	17.970	0.0	30.000	6.624	0.000	98.03	HBD
BFD-62	2	4.146	1.597	429.6	17.970	0.0	30.000	6.624	0.000	98.03	HBD
BFD-62P US	52	2.801	1.079	429.6	17.970	0.0	30.000	6.624	0.000	98.03	HBD
BFD-62P DS	52	2.801	1.079	429.6	17.970	0.0	30.000	6.624	0.000	98.03	HBD

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***FW74-5-FWH26 to DISHDR***									***Sorted By: Flow Order***	
BFD-63	2	4.146	1.597	429.6	17.970	0.0	30.000	6.624	0.000	98.03	HBD
BFD-63P US	52	2.801	1.079	429.6	17.970	0.0	30.000	6.624	0.000	98.03	HBD
BFD-63P DS	52	2.801	1.079	429.6	17.970	0.0	30.000	6.624	0.000	98.03	HBD
BFD-64	2	4.146	1.597	429.6	17.970	0.0	30.000	6.624	0.000	98.03	HBD
BFD-64P	52	2.801	1.079	429.6	17.970	0.0	30.000	6.624	0.000	98.03	HBD
BFD-65	2	4.146	1.597	429.6	17.970	0.0	30.000	6.624	0.000	98.03	HBD
BFD-65P	52	2.801	1.079	429.6	17.970	0.0	30.000	6.624	0.000	98.03	HBD
BFD-65P-1	52	2.801	1.079	429.6	17.970	0.0	30.000	6.624	0.000	98.03	HBD
BFD-72T	13	5.603	2.159	429.6	17.970	0.0	30.000	6.624	0.000	98.03	HBD
BFD-72T (BR/SE)	13	5.048	1.945	429.6	13.049	0.0	18.000	6.624	0.000	98.03	HBD
BFD-72T (D/S)	13	4.770	1.838	429.6	13.478	0.0	30.000	6.624	0.000	98.03	HBD
===>Grouped by Line:	***FW75-1-DISHDR to SG21***									***Sorted By: Flow Order***	
BFD-72P US	64	2.019	0.778	429.6	13.049	0.0	18.000	6.624	0.000	98.03	HBD
BFD-72P DS	64	2.019	0.778	429.6	13.049	0.0	18.000	6.624	0.000	98.03	HBD
BFD-72	2	3.735	1.439	429.6	13.049	0.0	18.000	6.624	0.000	98.03	HBD
BFD-72P-1 US	52	2.524	0.972	429.6	13.049	0.0	18.000	6.624	0.000	98.03	HBD
BFD-72P-1 DS	52	2.524	0.972	429.6	13.049	0.0	18.000	6.624	0.000	98.03	HBD
BFD-VALVE-BFD-5	22	5.048	1.945	429.6	13.049	0.0	18.000	6.624	0.000	98.03	HBD
BFD-72R	7	3.534	1.361	429.6	13.049	0.0	18.000	6.624	0.000	98.03	HBD
BFD-72R (D/S)	7	5.190	2.000	429.6	27.724	0.0	12.750	6.624	0.000	98.03	HBD
BFD-VALVE-FCV-417	24	5.048	1.945	429.6	13.049	0.0	18.000	6.624	0.000	98.03	HBD
BFD-71R	18	4.540	1.749	429.6	27.714	0.0	12.750	6.624	0.000	98.03	HBD
BFD-71R (D/S)	18	3.029	1.167	429.6	13.049	0.0	18.000	6.624	0.000	98.03	HBD
BFD-71	4	3.735	1.439	429.6	13.049	0.0	18.000	6.624	0.000	98.03	HBD
BFD-70P US	52	2.524	0.972	429.6	13.049	0.0	18.000	6.624	0.000	98.03	HBD
BFD-70P DS	52	2.524	0.972	429.6	13.049	0.0	18.000	6.624	0.000	98.03	HBD
BFD-70	2	3.735	1.439	429.6	13.049	0.0	18.000	6.624	0.000	98.03	HBD
BFD-69P US	52	2.524	0.972	429.6	13.049	0.0	18.000	6.624	0.000	98.03	HBD
BFD-69P DS	52	2.524	0.972	429.6	13.049	0.0	18.000	6.624	0.000	98.03	HBD
BFD-69	1	3.332	1.284	429.6	13.049	0.0	18.000	6.624	0.000	98.03	HBD
BFD-68P US	51	2.221	0.856	429.6	13.049	0.0	18.000	6.624	0.000	98.03	HBD
BFD-68P DS	51	2.221	0.856	429.6	13.049	0.0	18.000	6.624	0.000	98.03	HBD
BFD-68	2	3.735	1.439	429.6	13.049	0.0	18.000	6.624	0.000	98.03	HBD
BFD-67P US	52	2.524	0.972	429.6	13.049	0.0	18.000	6.624	0.000	98.03	HBD
BFD-67P DS	52	2.524	0.972	429.6	13.049	0.0	18.000	6.624	0.000	98.03	HBD
BFD-VALVE-BFD-6	25	5.707	2.199	429.6	15.861	0.0	18.000	6.624	0.000	98.03	HBD

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***FW75-1-DISHDR to SG21***									***Sorted By: Flow Order***	
BFD-VALVE-BFD-7	22	5.707	2.199	429.6	15.859	0.0	18.000	6.624	0.000	98.03	HBD
BFD-67	4	3.629	1.398	429.6	12.461	0.0	18.000	6.624	0.000	98.03	HBD
BFD-66	4	3.629	1.398	429.6	12.461	0.0	18.000	6.624	0.000	98.03	HBD
BFD-66P	54	3.138	1.209	429.6	12.461	0.0	18.000	6.624	0.000	98.03	HBD
BFD-96	2	3.629	1.398	429.6	12.461	0.0	18.000	6.624	0.000	98.03	HBD
BFD-96P	52	2.452	0.945	429.6	12.461	0.0	18.000	6.624	0.000	98.03	HBD
BFD-97	2	3.629	1.398	429.6	12.461	0.0	18.000	6.624	0.000	98.03	HBD
BFD-97P	52	2.452	0.945	429.6	12.461	0.0	18.000	6.624	0.000	98.03	HBD
BFD-98	2	3.629	1.398	429.6	12.461	0.0	18.000	6.624	0.000	98.03	HBD
BFD-98P	52	2.452	0.945	429.6	12.461	0.0	18.000	6.624	0.000	98.03	HBD
BFD-98P-1	9	1.251	0.489	429.6	12.461	0.0	18.000	6.624	0.000	98.03	HBD
BFD-99	2	3.629	1.398	429.6	12.461	0.0	18.000	6.624	0.000	98.03	HBD
BFD-99N	30	3.923	1.511	429.6	12.461	0.0	18.000	6.624	0.000	98.03	HBD
===>Grouped by Line:	***FW76-1-DISHDR to SG22***									***Sorted By: Flow Order***	
BFD-78P	64	2.019	0.778	429.6	13.049	0.0	18.000	6.624	0.000	98.03	HBD
BFD-78	2	3.735	1.439	429.6	13.049	0.0	18.000	6.624	0.000	98.03	HBD
BFD-78P-1 US	52	2.524	0.972	429.6	13.049	0.0	18.000	6.624	0.000	98.03	HBD
BFD-VALVE-BFD-5-1	22	5.048	1.945	429.6	13.049	0.0	18.000	6.624	0.000	98.03	HBD
BFD-78P-2	58	2.221	0.856	429.6	13.049	0.0	18.000	6.624	0.000	98.03	HBD
BFD-VALVE-FCV-427	24	5.048	1.945	429.6	13.049	0.0	18.000	6.624	0.000	98.03	HBD
BFD-77R	18	4.540	1.749	429.6	27.714	0.0	12.750	6.624	0.000	98.03	HBD
BFD-77R (D/S)	18	3.029	1.167	429.6	13.049	0.0	18.000	6.624	0.000	98.03	HBD
BFD-77P	58	2.221	0.856	429.6	13.049	0.0	18.000	6.624	0.000	98.03	HBD
BFD-77	2	3.735	1.439	429.6	13.049	0.0	18.000	6.624	0.000	98.03	HBD
BFD-76P US	52	2.524	0.972	429.6	13.049	0.0	18.000	6.624	0.000	98.03	HBD
BFD-76	2	3.735	1.439	429.6	13.049	0.0	18.000	6.624	0.000	98.03	HBD
BFD-75P	52	2.524	0.972	429.6	13.049	0.0	18.000	6.624	0.000	98.03	HBD
BFD-75	1	3.332	1.284	429.6	13.049	0.0	18.000	6.624	0.000	98.03	HBD
BFD-74P	51	2.221	0.856	429.6	13.049	0.0	18.000	6.624	0.000	98.03	HBD
BFD-74	2	3.735	1.439	429.6	13.049	0.0	18.000	6.624	0.000	98.03	HBD
BFD-73P	52	2.524	0.972	429.6	13.049	0.0	18.000	6.624	0.000	98.03	HBD
BFD-VALVE-BFD-6-1	25	5.707	2.199	429.6	15.861	0.0	18.000	6.624	0.000	98.03	HBD
BFD-VALVE-BFD-7-1	22	5.707	2.199	429.6	15.859	0.0	18.000	6.624	0.000	98.03	HBD
BFD-73	4	3.629	1.398	429.6	12.461	0.0	18.000	6.624	0.000	98.03	HBD
BFD-73P	54	3.138	1.209	429.6	12.461	0.0	18.000	6.624	0.000	98.03	HBD
BFD-91	2	3.629	1.398	429.6	12.461	0.0	18.000	6.624	0.000	98.03	HBD

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***FW76-1-DISHDR to SG22***									***Sorted By: Flow Order***	
BFD-91P	52	2.452	0.945	429.6	12.461	0.0	18.000	6.624	0.000	98.03	HBD
BFD-92	2	3.629	1.398	429.6	12.461	0.0	18.000	6.624	0.000	98.03	HBD
BFD-92P	52	2.452	0.945	429.6	12.461	0.0	18.000	6.624	0.000	98.03	HBD
BFD-92-1	1	3.236	1.247	429.6	12.461	0.0	18.000	6.624	0.000	98.03	HBD
BFD-92P-1	51	2.158	0.831	429.6	12.461	0.0	18.000	6.624	0.000	98.03	HBD
BFD-92-2	2	3.629	1.398	429.6	12.461	0.0	18.000	6.624	0.000	98.03	HBD
BFD-92P-2	52	2.452	0.945	429.6	12.461	0.0	18.000	6.624	0.000	98.03	HBD
BFD-92P-3	9	1.251	0.489	429.6	12.461	0.0	18.000	6.624	0.000	98.03	HBD
BFD-93	2	3.629	1.398	429.6	12.461	0.0	18.000	6.624	0.000	98.03	HBD
BFD-93P US	52	2.452	0.945	429.6	12.461	0.0	18.000	6.624	0.000	98.03	HBD
BFD-93P DS	52	2.452	0.945	429.6	12.461	0.0	18.000	6.624	0.000	98.03	HBD
BFD-94	1	3.236	1.247	429.6	12.461	0.0	18.000	6.624	0.000	98.03	HBD
BFD-95	3	3.433	1.322	429.6	12.461	0.0	18.000	6.624	0.000	98.03	HBD
BFD-95P	53	2.452	0.945	429.6	12.461	0.0	18.000	6.624	0.000	98.03	HBD
BFD-95R	18	2.746	1.058	429.6	12.461	0.0	18.000	6.624	0.000	98.03	HBD
BFD-95R (D/S)	18	2.569	0.990	429.6	10.047	0.0	20.000	6.624	0.000	98.03	HBD
BFD-95N	30	3.426	1.320	429.6	10.047	0.0	20.000	6.624	0.000	98.03	HBD
===>Grouped by Line:	***FW76-2-DISHDR to SG22***									***Sorted By: Flow Order***	
BFD-78T (BR/SE)	13	5.048	1.945	429.6	13.049	0.0	18.000	6.624	0.000	98.03	HBD
BFD-78T	13	4.770	1.838	429.6	13.478	0.0	30.000	6.624	0.000	98.03	HBD
BFD-78T (D/S)	13	3.803	1.465	429.6	8.985	0.0	30.000	6.624	0.000	98.03	HBD
===>Grouped by Line:	***FW77-1-DISHDR to SG24***									***Sorted By: Flow Order***	
BFD-84P	64	2.019	0.778	429.6	13.049	0.0	18.000	6.624	0.000	98.03	HBD
BFD-84	2	3.735	1.439	429.6	13.049	0.0	18.000	6.624	0.000	98.03	HBD
BFD-84P-1	52	2.524	0.972	429.6	13.049	0.0	18.000	6.624	0.000	98.03	HBD
BFD-VALVE-BFD-5-3	22	5.048	1.945	429.6	13.049	0.0	18.000	6.624	0.000	98.03	HBD
BFD-84P-2	58	2.221	0.856	429.6	13.049	0.0	18.000	6.624	0.000	98.03	HBD
BFD-VALVE-FCV-447	24	5.048	1.945	429.6	13.049	0.0	18.000	6.624	0.000	98.03	HBD
BFD-83R	18	4.540	1.749	429.6	27.714	0.0	12.750	6.624	0.000	98.03	HBD
BFD-83R (D/S)	18	3.029	1.167	429.6	13.049	0.0	18.000	6.624	0.000	98.03	HBD
BFD-83	4	3.735	1.439	429.6	13.049	0.0	18.000	6.624	0.000	98.03	HBD
BFD-82P US	54	3.231	1.245	429.6	13.049	0.0	18.000	6.624	0.000	98.03	HBD
BFD-82P DS	54	3.231	1.245	429.6	13.049	0.0	18.000	6.624	0.000	98.03	HBD
BFD-82	2	3.735	1.439	429.6	13.049	0.0	18.000	6.624	0.000	98.03	HBD
BFD-81P	52	2.524	0.972	429.6	13.049	0.0	18.000	6.624	0.000	98.03	HBD
BFD-81	1	3.332	1.284	429.6	13.049	0.0	18.000	6.624	0.000	98.03	HBD

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***FW77-1-DISHDR to SG24***									***Sorted By: Flow Order***	
BFD-80	4	3.735	1.439	429.6	13.049	0.0	18.000	6.624	0.000	98.03	HBD
BFD-80P	54	3.231	1.245	429.6	13.049	0.0	18.000	6.624	0.000	98.03	HBD
BFD-VALVE-BFD-6-3	25	5.707	2.199	429.6	15.861	0.0	18.000	6.624	0.000	98.03	HBD
BFD-VALVE-BFD-7-3	22	5.707	2.199	429.6	15.859	0.0	18.000	6.624	0.000	98.03	HBD
BFD-79	4	3.629	1.398	429.6	12.461	0.0	18.000	6.624	0.000	98.03	HBD
BFD-104P	54	3.138	1.209	429.6	12.461	0.0	18.000	6.624	0.000	98.03	HBD
BFD-104	2	3.629	1.398	429.6	12.461	0.0	18.000	6.624	0.000	98.03	HBD
BFD-105P	52	2.452	0.945	429.6	12.461	0.0	18.000	6.624	0.000	98.03	HBD
BFD-105	2	3.629	1.398	429.6	12.461	0.0	18.000	6.624	0.000	98.03	HBD
BFD-105-1	4	3.629	1.398	429.6	12.461	0.0	18.000	6.624	0.000	98.03	HBD
BFD-105P-1	54	3.138	1.209	429.6	12.461	0.0	18.000	6.624	0.000	98.03	HBD
BFD-105P-2	9	1.251	0.489	429.6	12.461	0.0	18.000	6.624	0.000	98.03	HBD
BFD-106	4	3.629	1.398	429.6	12.461	0.0	18.000	6.624	0.000	98.03	HBD
BFD-106P	54	3.138	1.209	429.6	12.461	0.0	18.000	6.624	0.000	98.03	HBD
BFD-106N	30	3.923	1.511	429.6	12.461	0.0	18.000	6.624	0.000	98.03	HBD
===>Grouped by Line:	***FW77-2-DISHDR to SG24***									***Sorted By: Flow Order***	
BFD-84T (BR/SE)	13	5.048	1.945	429.6	13.049	0.0	18.000	6.624	0.000	98.03	HBD
BFD-84T	13	3.803	1.465	429.6	8.985	0.0	30.000	6.624	0.000	98.03	HBD
BFD-84T (D/S)	13	2.202	0.861	429.6	4.493	0.0	30.000	6.624	0.000	98.03	HBD
===>Grouped by Line:	***FW78-1-DISHDR to SG23***									***Sorted By: Flow Order***	
BFD-89T (BR/SE)	12	3.433	1.322	429.6	13.049	0.0	18.000	6.624	0.000	98.03	HBD
BFD-89P	64	2.019	0.778	429.6	13.049	0.0	18.000	6.624	0.000	98.03	HBD
BFD-89	2	3.735	1.439	429.6	13.049	0.0	18.000	6.624	0.000	98.03	HBD
BFD-89P-1	52	2.524	0.972	429.6	13.049	0.0	18.000	6.624	0.000	98.03	HBD
BFD-VALVE-BFD-5-2	22	5.048	1.945	429.6	13.049	0.0	18.000	6.624	0.000	98.03	HBD
BFD-89P-2	58	2.221	0.856	429.6	13.049	0.0	18.000	6.624	0.000	98.03	HBD
BFD-VALVE-FCV-437	24	5.048	1.945	429.6	13.049	0.0	18.000	6.624	0.000	98.03	HBD
BFD-3R	18	4.540	1.749	429.6	27.714	0.0	12.750	6.624	0.000	98.03	HBD
BFD-3R (D/S)	18	3.029	1.167	429.6	13.049	0.0	18.000	6.624	0.000	98.03	HBD
BFD-3P	58	2.221	0.856	429.6	13.049	0.0	18.000	6.624	0.000	98.03	HBD
BFD-3	2	3.735	1.439	429.6	13.049	0.0	18.000	6.624	0.000	98.03	HBD
BFD-88P	52	2.524	0.972	429.6	13.049	0.0	18.000	6.624	0.000	98.03	HBD
BFD-88	2	3.735	1.439	429.6	13.049	0.0	18.000	6.624	0.000	98.03	HBD
BFD-87P US	52	2.524	0.972	429.6	13.049	0.0	18.000	6.624	0.000	98.03	HBD
BFD-87P DS	52	2.524	0.972	429.6	13.049	0.0	18.000	6.624	0.000	98.03	HBD
BFD-87	2	3.735	1.439	429.6	13.049	0.0	18.000	6.624	0.000	98.03	HBD

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***FW78-1-DISHDR to SG23***									***Sorted By: Flow Order***	
BFD-86P US	52	2.524	0.972	429.6	13.049	0.0	18.000	6.624	0.000	98.03	HBD
BFD-86P DS	52	2.524	0.972	429.6	13.049	0.0	18.000	6.624	0.000	98.03	HBD
BFD-VALVE-BFD-6-2	25	5.707	2.199	429.6	15.861	0.0	18.000	6.624	0.000	98.03	HBD
BFD-VALVE-BFD-7-2	22	5.707	2.199	429.6	15.859	0.0	18.000	6.624	0.000	98.03	HBD
BFD-86	4	3.629	1.398	429.6	12.461	0.0	18.000	6.624	0.000	98.03	HBD
BFD-85	4	3.629	1.398	429.6	12.461	0.0	18.000	6.624	0.000	98.03	HBD
BFD-100P	54	3.138	1.209	429.6	12.461	0.0	18.000	6.624	0.000	98.03	HBD
BFD-100	2	3.629	1.398	429.6	12.461	0.0	18.000	6.624	0.000	98.03	HBD
BFD-101P	52	2.452	0.945	429.6	12.461	0.0	18.000	6.624	0.000	98.03	HBD
BFD-101	2	3.629	1.398	429.6	12.461	0.0	18.000	6.624	0.000	98.03	HBD
BFD-102P	52	2.452	0.945	429.6	12.461	0.0	18.000	6.624	0.000	98.03	HBD
BFD-102	2	3.629	1.398	429.6	12.461	0.0	18.000	6.624	0.000	98.03	HBD
BFD-102P-1	52	2.452	0.945	429.6	12.461	0.0	18.000	6.624	0.000	98.03	HBD
BFD-102P-2	9	1.251	0.489	429.6	12.461	0.0	18.000	6.624	0.000	98.03	HBD
BFD-103	2	3.629	1.398	429.6	12.461	0.0	18.000	6.624	0.000	98.03	HBD
BFD-103P	52	2.452	0.945	429.6	12.461	0.0	18.000	6.624	0.000	98.03	HBD
BFD-103N	30	3.923	1.511	429.6	12.461	0.0	18.000	6.624	0.000	98.03	HBD
BFD-89T	12	1.806	0.706	429.6	4.493	0.0	30.000	6.624	0.000	98.03	HBD

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).DB

Service Life Report

Pass 2 Analysis Include Measured Wear

Report Date/Time: 7/7/2010 9:54:36AM
AnalysisDate/Time:

Run Name: FW FWH 26 TO STM GEN
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 1.158

CHECWORKS SFA Version: 3.0 (build 105)
Duty Factor (Global) :1.000

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **FW74-1-FWH26A to DISHDR**					***Sorted By:Remaining Life***		
BFD-VALVE-BFD-4	0.000	0.773	0.889	0.889	-193,829	No	243,721
BFD-55N	0.000	0.773	0.832	0.832	-135,548	No	243,721
BFD-59R (D/S)	0.000	1.213	1.195	1.195	238,538	No	243,721
BFD-56	0.000	0.972	0.832	0.832	723,313	Yes	243,721
BFD-58	0.000	0.972	0.832	0.832	723,749	Yes	243,721
BFD-57	0.000	0.987	0.832	0.832	801,095	Yes	243,721
BFD-59	0.000	0.990	0.832	0.832	817,087	Yes	243,721
BFD-59R	0.000	0.845	0.717	0.717	875,327	No	243,721
BFD-55P	0.000	0.876	0.717	0.717	954,810	Yes	243,721
BFD-57P	0.000	0.877	0.717	0.717	1,224,903	Yes	243,721
BFD-58P	0.000	0.888	0.717	0.717	1,310,380	Yes	243,721
BFD-56P-1	0.000	0.884	0.717	0.717	1,453,074	Yes	243,721
BFD-59P	0.000	1.036	0.717	0.717	2,446,208	Yes	243,721
BFD-55	0.000	1.340	0.832	0.832	2,632,006	No	243,721
===>Grouped by Line: **FW74-2-FWH26B to DISHDR**					***Sorted By:Remaining Life***		
BFD-VALVE-BFD-4-1	0.000	0.773	0.889	0.889	-193,829	No	243,721
BFD-51N	0.000	0.773	0.832	0.832	-135,548	No	243,721
BFD-54	0.000	0.816	0.832	0.832	-79,402	No	243,721
BFD-53	0.000	0.960	0.832	0.832	661,523	Yes	243,721
BFD-51P	0.000	0.832	0.717	0.717	692,627	No	243,721
BFD-52	0.000	1.026	0.832	0.832	1,006,769	Yes	243,721
BFD-52P	0.000	0.856	0.717	0.717	1,063,688	No	243,721
BFD-54P	0.000	0.856	0.717	0.717	1,063,688	No	243,721
BFD-52P-1	0.000	0.860	0.717	0.717	1,243,943	Yes	243,721
BFD-53P	0.000	0.896	0.717	0.717	1,371,776	Yes	243,721
BFD-51	0.000	1.249	0.832	0.832	2,163,131	No	243,721
===>Grouped by Line: **FW74-3-FWH26 to DISHDR**					***Sorted By:Remaining Life***		
BFD-54P-1	0.000	1.210	1.195	1.195	195,009	No	243,721

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line:	**FW74-3-FWH26 to DISHDR**				***Sorted By:Remaining Life***		
BFD-54T (BR/SE)	0.000	0.862	0.717	0.717	818,501	Yes	243,721
BFD-54T (D/S)	0.000	1.335	1.195	1.195	868,035	Yes	243,721
BFD-54T	0.000	1.336	1.195	1.195	1,364,934	Yes	243,721
===>Grouped by Line:	**FW74-4-FWH26C to DISHDR**				***Sorted By:Remaining Life***		
BFD-VALVE-BFD-4-2	0.000	0.773	0.889	0.889	-193,829	No	243,721
BFD-47N	0.000	0.773	0.832	0.832	-135,548	No	243,721
BFD-49	0.000	0.816	0.832	0.832	-79,402	No	243,721
BFD-50	0.000	0.816	0.832	0.832	-79,402	No	243,721
BFD-48	0.000	1.007	0.832	0.832	909,588	Yes	243,721
BFD-50P DS	0.000	0.851	0.717	0.717	1,032,232	Yes	243,721
BFD-48P	0.000	0.856	0.717	0.717	1,063,688	No	243,721
BFD-49P	0.000	0.856	0.717	0.717	1,063,688	No	243,721
BFD-50P US	0.000	0.856	0.717	0.717	1,063,688	No	243,721
BFD-47P	0.000	0.883	0.717	0.717	1,270,962	Yes	243,721
BFD-48P-1	0.000	0.865	0.717	0.717	1,294,999	No	243,721
BFD-47	0.000	1.104	0.832	0.832	1,412,579	No	243,721
===>Grouped by Line:	**FW74-5-FWH26 to DISHDR**				***Sorted By:Remaining Life***		
BFD-62	0.000	1.145	1.195	1.195	-148,808	No	243,721
BFD-62P US	0.000	1.182	1.195	1.195	-97,615	No	243,721
BFD-50P-1	0.000	1.198	1.195	1.195	27,353	No	243,721
BFD-46P	0.000	1.198	1.195	1.195	27,353	No	243,721
BFD-30	0.000	1.260	1.195	1.195	356,676	Yes	243,721
BFD-50T (D/S)	0.000	1.299	1.195	1.195	514,569	No	243,721
BFD-63	0.000	1.289	1.195	1.195	515,719	Yes	243,721
BFD-46T (D/S)	0.000	1.277	1.195	1.195	557,544	No	243,721
BFD-72T (BR/SE)	0.000	0.856	0.717	0.717	628,327	Yes	243,721
BFD-50T	0.000	1.303	1.195	1.195	669,358	No	243,721
BFD-30P US	0.000	1.308	1.195	1.195	718,168	Yes	243,721
BFD-62P DS	0.000	1.284	1.195	1.195	721,608	Yes	243,721
BFD-30P DS	0.000	1.325	1.195	1.195	825,968	Yes	243,721
BFD-46T	0.000	1.322	1.195	1.195	861,921	No	243,721
BFD-63P US	0.000	1.306	1.195	1.195	900,175	Yes	243,721
BFD-61P	0.000	1.310	1.195	1.195	932,341	Yes	243,721
BFD-63P DS	0.000	1.316	1.195	1.195	981,202	No	243,721
BFD-64P	0.000	1.319	1.195	1.195	1,004,725	Yes	243,721
BFD-60	0.000	1.385	1.195	1.195	1,041,640	Yes	243,721
BFD-72T	0.000	1.463	1.195	1.195	1,086,373	Yes	243,721
BFD-31P US	0.000	1.338	1.195	1.195	1,163,653	Yes	243,721

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>*Grouped by Line:* **FW74-5-FWH26 to DISHDR**					***Sorted By:Remaining Life***		
BFD-64	0.000	1.414	1.195	1.195	1,199,845	Yes	243,721
BFD-61	0.000	1.420	1.195	1.195	1,233,197	Yes	243,721
BFD-72T (D/S)	0.000	1.465	1.195	1.195	1,286,593	Yes	243,721
BFD-31	0.000	1.445	1.195	1.195	1,372,813	Yes	243,721
BFD-50T (BR/SE)	0.000	0.963	0.717	0.717	1,387,923	No	243,721
BFD-65	0.000	1.468	1.195	1.195	1,496,383	Yes	243,721
BFD-65P	0.000	1.384	1.195	1.195	1,533,138	Yes	243,721
BFD-65P-1	0.000	1.464	1.195	1.195	2,182,474	No	243,721
===>*Grouped by Line:* **FW75-1-DISHDR to SG21**					***Sorted By:Remaining Life***		
BFD-VALVE-BFD-6	0.000	0.779	0.889	0.889	-191,922	No	243,721
BFD-VALVE-BFD-7	0.000	0.779	0.889	0.889	-191,918	No	243,721
BFD-VALVE-BFD-5	0.000	0.798	0.889	0.889	-185,157	No	243,721
BFD-VALVE-FCV-417	0.000	0.798	0.889	0.889	-185,157	No	243,721
BFD-67	0.000	0.649	0.633	0.633	102,434	No	243,721
BFD-66	0.000	0.649	0.633	0.633	102,434	No	243,721
BFD-96	0.000	0.649	0.633	0.633	102,434	No	243,721
BFD-97	0.000	0.649	0.633	0.633	102,434	No	243,721
BFD-71R (D/S)	0.000	0.869	0.832	0.832	280,328	Yes	243,721
BFD-72R	0.000	0.884	0.832	0.832	331,466	Yes	243,721
BFD-99	0.000	0.601	0.544	0.544	351,458	Yes	243,721
BFD-71	0.000	0.899	0.832	0.832	409,844	Yes	243,721
BFD-69	0.000	0.915	0.832	0.832	563,060	Yes	243,721
BFD-99N	0.000	0.647	0.544	0.544	592,932	Yes	243,721
BFD-98	0.000	0.649	0.544	0.544	655,069	No	243,721
BFD-68	0.000	0.947	0.832	0.832	702,580	Yes	243,721
BFD-70	0.000	0.950	0.832	0.832	720,840	Yes	243,721
BFD-72R (D/S)	0.000	0.783	0.589	0.589	849,746	Yes	243,721
BFD-66P	0.000	0.663	0.544	0.544	856,265	No	243,721
BFD-71R	0.000	0.790	0.589	0.589	1,005,260	Yes	243,721
BFD-72	0.000	1.005	0.832	0.832	1,055,613	Yes	243,721
BFD-96P	0.000	0.682	0.544	0.544	1,273,144	No	243,721
BFD-97P	0.000	0.682	0.544	0.544	1,273,144	No	243,721
BFD-98P	0.000	0.682	0.544	0.544	1,273,144	No	243,721
BFD-70P DS	0.000	0.864	0.717	0.717	1,323,246	Yes	243,721
BFD-67P DS	0.000	0.868	0.717	0.717	1,358,518	No	243,721
BFD-72P-1 DS	0.000	0.868	0.717	0.717	1,358,518	No	243,721
BFD-70P US	0.000	0.875	0.717	0.717	1,421,532	Yes	243,721
BFD-67P US	0.000	0.883	0.717	0.717	1,494,406	Yes	243,721

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **FW75-1-DISHDR to SG21**					***Sorted By:Remaining Life***		
BFD-72P-1 US	0.000	0.892	0.717	0.717	1,575,482	Yes	243,721
BFD-68P US	0.000	0.876	0.717	0.717	1,630,033	No	243,721
BFD-69P DS	0.000	0.901	0.717	0.717	1,659,914	Yes	243,721
BFD-69P US	0.000	0.906	0.717	0.717	1,701,600	Yes	243,721
BFD-68P DS	0.000	0.895	0.717	0.717	1,822,018	Yes	243,721
BFD-72P US	0.000	0.886	0.717	0.717	1,905,346	Yes	243,721
BFD-72P DS	0.000	0.895	0.717	0.717	2,001,191	Yes	243,721
BFD-98P-1	0.000	0.702	0.544	0.544	2,827,134	No	243,721
===>Grouped by Line: **FW76-1-DISHDR to SG22**					***Sorted By:Remaining Life***		
BFD-VALVE-BFD-6-1	0.000	0.779	0.889	0.889	-191,922	No	243,721
BFD-VALVE-BFD-7-1	0.000	0.779	0.889	0.889	-191,918	No	243,721
BFD-VALVE-BFD-5-1	0.000	0.798	0.889	0.889	-185,157	No	243,721
BFD-VALVE-FCV-427	0.000	0.798	0.889	0.889	-185,157	No	243,721
BFD-78	0.000	0.834	0.832	0.832	12,309	No	243,721
BFD-74	0.000	0.834	0.832	0.832	12,309	No	243,721
BFD-75	0.000	0.845	0.832	0.832	90,479	No	243,721
BFD-95N	0.000	0.717	0.703	0.703	90,861	No	243,721
BFD-73	0.000	0.649	0.633	0.633	102,434	No	243,721
BFD-91	0.000	0.649	0.633	0.633	102,434	No	243,721
BFD-92	0.000	0.649	0.633	0.633	102,434	No	243,721
BFD-92-2	0.000	0.649	0.633	0.633	102,434	No	243,721
BFD-93	0.000	0.649	0.633	0.633	102,434	No	243,721
BFD-92-1	0.000	0.660	0.633	0.633	191,528	No	243,721
BFD-77R (D/S)	0.000	0.866	0.832	0.832	258,489	Yes	243,721
BFD-95R (D/S)	0.000	0.741	0.703	0.703	332,011	No	243,721
BFD-95R	0.000	0.674	0.633	0.633	338,692	No	243,721
BFD-77R	0.000	0.703	0.589	0.589	570,219	No	243,721
BFD-77	0.000	0.942	0.832	0.832	671,826	Yes	243,721
BFD-76	0.000	0.966	0.832	0.832	813,207	Yes	243,721
BFD-73P	0.000	0.663	0.544	0.544	856,265	No	243,721
BFD-95	0.000	0.818	0.633	0.633	1,225,576	Yes	243,721
BFD-91P	0.000	0.682	0.544	0.544	1,273,144	No	243,721
BFD-92P	0.000	0.682	0.544	0.544	1,273,144	No	243,721
BFD-92P-2	0.000	0.682	0.544	0.544	1,273,144	No	243,721
BFD-93P US	0.000	0.682	0.544	0.544	1,273,144	No	243,721
BFD-95P	0.000	0.682	0.544	0.544	1,273,144	No	243,721
BFD-78P-1 US	0.000	0.868	0.717	0.717	1,358,518	No	243,721
BFD-73P	0.000	0.868	0.717	0.717	1,358,518	No	243,721

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>*Grouped by Line:* **FW76-1-DISHDR to SG22**					***Sorted By:Remaining Life***		
BFD-93P DS	0.000	0.694	0.544	0.544	1,384,543	No	243,721
BFD-76P US	0.000	0.878	0.717	0.717	1,448,557	Yes	243,721
BFD-92P-1	0.000	0.690	0.544	0.544	1,533,017	No	243,721
BFD-94	0.000	0.858	0.633	0.633	1,580,982	No	243,721
BFD-78P-2	0.000	0.876	0.717	0.717	1,630,033	No	243,721
BFD-74P	0.000	0.876	0.717	0.717	1,630,033	No	243,721
BFD-77P	0.000	0.884	0.717	0.717	1,713,520	Yes	243,721
BFD-75P	0.000	0.918	0.717	0.717	1,814,175	Yes	243,721
BFD-78P	0.000	0.882	0.717	0.717	1,856,295	No	243,721
BFD-92P-3	0.000	0.715	0.544	0.544	3,055,809	No	243,721
===>*Grouped by Line:* **FW76-2-DISHDR to SG22**					***Sorted By:Remaining Life***		
BFD-78T (D/S)	0.000	1.288	1.195	1.195	558,273	No	243,721
BFD-78T	0.000	1.319	1.195	1.195	590,699	No	243,721
BFD-78T (BR/SE)	0.000	0.879	0.717	0.717	731,924	No	243,721
===>*Grouped by Line:* **FW77-1-DISHDR to SG24**					***Sorted By:Remaining Life***		
BFD-VALVE-BFD-6-3	0.000	0.779	0.889	0.889	-191,922	No	243,721
BFD-VALVE-BFD-7-3	0.000	0.779	0.889	0.889	-191,918	No	243,721
BFD-VALVE-BFD-5-3	0.000	0.798	0.889	0.889	-185,157	No	243,721
BFD-VALVE-FCV-447	0.000	0.798	0.889	0.889	-185,157	No	243,721
BFD-106	0.000	0.575	0.633	0.633	-172,282	Yes	243,721
BFD-84	0.000	0.834	0.832	0.832	12,309	No	243,721
BFD-82	0.000	0.834	0.832	0.832	12,309	No	243,721
BFD-106N	0.000	0.641	0.633	0.633	47,308	No	243,721
BFD-104	0.000	0.649	0.633	0.633	102,434	No	243,721
BFD-105-1	0.000	0.649	0.633	0.633	102,434	No	243,721
BFD-79	0.000	0.675	0.633	0.633	262,498	Yes	243,721
BFD-83R	0.000	0.680	0.589	0.589	451,396	Yes	243,721
BFD-83R (D/S)	0.000	0.893	0.832	0.832	455,052	No	243,721
BFD-83	0.000	0.950	0.832	0.832	720,521	Yes	243,721
BFD-80	0.000	0.953	0.832	0.832	738,805	Yes	243,721
BFD-105	0.000	0.668	0.544	0.544	772,999	Yes	243,721
BFD-81	0.000	0.955	0.832	0.832	839,292	Yes	243,721
BFD-104P	0.000	0.663	0.544	0.544	856,265	No	243,721
BFD-105P-1	0.000	0.663	0.544	0.544	856,265	No	243,721
BFD-106P	0.000	0.663	0.544	0.544	856,265	No	243,721
BFD-82P DS	0.000	0.848	0.717	0.717	922,964	No	243,721
BFD-80P	0.000	0.854	0.717	0.717	965,649	Yes	243,721
BFD-82P US	0.000	0.880	0.717	0.717	1,147,847	Yes	243,721

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **FW77-1-DISHDR to SG24**					***Sorted By:Remaining Life***		
BFD-105P	0.000	0.682	0.544	0.544	1,273,144	No	243,721
BFD-84P-1	0.000	0.868	0.717	0.717	1,358,518	No	243,721
BFD-81P	0.000	0.868	0.717	0.717	1,358,518	No	243,721
BFD-84P-2	0.000	0.876	0.717	0.717	1,630,033	No	243,721
BFD-84P	0.000	0.882	0.717	0.717	1,856,295	No	243,721
BFD-105P-2	0.000	0.715	0.544	0.544	3,055,809	No	243,721
===>Grouped by Line: **FW77-2-DISHDR to SG24**					***Sorted By:Remaining Life***		
BFD-84T (BR/SE)	0.000	0.886	0.717	0.717	763,453	Yes	243,721
BFD-84T	0.000	1.350	1.195	1.195	928,968	Yes	243,721
BFD-84T (D/S)	0.000	1.349	1.195	1.195	1,563,474	Yes	243,721
===>Grouped by Line: **FW78-1-DISHDR to SG23**					***Sorted By:Remaining Life***		
BFD-VALVE-BFD-6-2	0.000	0.779	0.889	0.889	-191,922	No	243,721
BFD-VALVE-BFD-7-2	0.000	0.779	0.889	0.889	-191,918	No	243,721
BFD-VALVE-BFD-5-2	0.000	0.798	0.889	0.889	-185,157	No	243,721
BFD-VALVE-FCV-437	0.000	0.798	0.889	0.889	-185,157	No	243,721
BFD-103N	0.000	0.641	0.633	0.633	47,308	No	243,721
BFD-86	0.000	0.644	0.633	0.633	73,815	Yes	243,721
BFD-100	0.000	0.649	0.633	0.633	102,434	No	243,721
BFD-102	0.000	0.649	0.633	0.633	102,434	No	243,721
BFD-103	0.000	0.649	0.633	0.633	102,434	No	243,721
BFD-85	0.000	0.656	0.633	0.633	149,006	Yes	243,721
BFD-89T	0.000	1.210	1.195	1.195	183,637	No	243,721
BFD-101	0.000	0.674	0.633	0.633	256,232	Yes	243,721
BFD-3R (D/S)	0.000	0.883	0.832	0.832	386,108	Yes	243,721
BFD-3R	0.000	0.693	0.589	0.589	520,138	No	243,721
BFD-87	0.000	0.932	0.832	0.832	610,959	Yes	243,721
BFD-89T (BR/SE)	0.000	0.842	0.717	0.717	831,460	No	243,721
BFD-100P	0.000	0.663	0.544	0.544	856,265	No	243,721
BFD-3	0.000	0.982	0.832	0.832	915,297	Yes	243,721
BFD-89	0.000	0.988	0.832	0.832	951,566	Yes	243,721
BFD-88	0.000	1.007	0.832	0.832	1,065,625	Yes	243,721
BFD-103P	0.000	0.682	0.544	0.544	1,273,144	No	243,721
BFD-101P	0.000	0.682	0.544	0.544	1,273,144	No	243,721
BFD-102P	0.000	0.682	0.544	0.544	1,273,144	No	243,721
BFD-102P-1	0.000	0.682	0.544	0.544	1,273,144	No	243,721
BFD-87P DS	0.000	0.863	0.717	0.717	1,313,430	Yes	243,721
BFD-89P-1	0.000	0.865	0.717	0.717	1,331,926	Yes	243,721
BFD-88P	0.000	0.868	0.717	0.717	1,358,518	No	243,721

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **FW78-1-DISHDR to SG23**					***Sorted By:Remaining Life***		
BFD-86P DS	0.000	0.868	0.717	0.717	1,358,518	No	243,721
BFD-87P US	0.000	0.890	0.717	0.717	1,556,658	Yes	243,721
BFD-89P-2	0.000	0.876	0.717	0.717	1,630,033	No	243,721
BFD-86P US	0.000	0.900	0.717	0.717	1,646,742	Yes	243,721
BFD-3P	0.000	0.884	0.717	0.717	1,713,520	Yes	243,721
BFD-89P	0.000	0.885	0.717	0.717	1,895,014	Yes	243,721
BFD-102P-2	0.000	0.715	0.544	0.544	3,055,809	No	243,721

Note:
[1] Predictions are based on last Tmeas to analysis ending period.

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).DB

Service Life Report

Pass 2 Analysis Include Measured Wear

Report Date/Time: 7/7/2010 9:54:36AM
AnalysisDate/Time:

Run Name: FW FWH 26 TO STM GEN
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 1.158

CHECWORKS SFA Version: 3.0 (build 105)
Duty Factor (Global) : 1.000

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **FW74-1-FWH26A to DISHDR**					***Sorted By:Flow Order***		
BFD-55N	0.000	0.773	0.832	0.832	-135,548	No	243,721
BFD-55	0.000	1.340	0.832	0.832	2,632,006	No	243,721
BFD-55P	0.000	0.876	0.717	0.717	954,810	Yes	243,721
BFD-56	0.000	0.972	0.832	0.832	723,313	Yes	243,721
BFD-VALVE-BFD-4	0.000	0.773	0.889	0.889	-193,829	No	243,721
BFD-56P-1	0.000	0.884	0.717	0.717	1,453,074	Yes	243,721
BFD-57	0.000	0.987	0.832	0.832	801,095	Yes	243,721
BFD-57P	0.000	0.877	0.717	0.717	1,224,903	Yes	243,721
BFD-58	0.000	0.972	0.832	0.832	723,749	Yes	243,721
BFD-58P	0.000	0.888	0.717	0.717	1,310,380	Yes	243,721
BFD-59	0.000	0.990	0.832	0.832	817,087	Yes	243,721
BFD-59P	0.000	1.036	0.717	0.717	2,446,208	Yes	243,721
BFD-59R	0.000	0.845	0.717	0.717	875,327	No	243,721
BFD-59R (D/S)	0.000	1.213	1.195	1.195	238,538	No	243,721
===>Grouped by Line: **FW74-2-FWH26B to DISHDR**					***Sorted By:Flow Order***		
BFD-51N	0.000	0.773	0.832	0.832	-135,548	No	243,721
BFD-51	0.000	1.249	0.832	0.832	2,163,131	No	243,721
BFD-51P	0.000	0.832	0.717	0.717	692,627	No	243,721
BFD-52	0.000	1.026	0.832	0.832	1,006,769	Yes	243,721
BFD-52P	0.000	0.856	0.717	0.717	1,063,688	No	243,721
BFD-VALVE-BFD-4-1	0.000	0.773	0.889	0.889	-193,829	No	243,721
BFD-52P-1	0.000	0.860	0.717	0.717	1,243,943	Yes	243,721
BFD-53	0.000	0.960	0.832	0.832	661,523	Yes	243,721
BFD-53P	0.000	0.896	0.717	0.717	1,371,776	Yes	243,721
BFD-54	0.000	0.816	0.832	0.832	-79,402	No	243,721
BFD-54P	0.000	0.856	0.717	0.717	1,063,688	No	243,721
===>Grouped by Line: **FW74-3-FWH26 to DISHDR**					***Sorted By:Flow Order***		
BFD-54T	0.000	1.336	1.195	1.195	1,364,934	Yes	243,721

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **FW74-3-FWH26 to DISHDR**					***Sorted By:Flow Order***		
BFD-54T (BR/SE)	0.000	0.862	0.717	0.717	818,501	Yes	243,721
BFD-54T (D/S)	0.000	1.335	1.195	1.195	868,035	Yes	243,721
BFD-54P-1	0.000	1.210	1.195	1.195	195,009	No	243,721
===>Grouped by Line: **FW74-4-FWH26C to DISHDR**					***Sorted By:Flow Order***		
BFD-47N	0.000	0.773	0.832	0.832	-135,548	No	243,721
BFD-47	0.000	1.104	0.832	0.832	1,412,579	No	243,721
BFD-47P	0.000	0.883	0.717	0.717	1,270,962	Yes	243,721
BFD-48	0.000	1.007	0.832	0.832	909,588	Yes	243,721
BFD-48P	0.000	0.856	0.717	0.717	1,063,688	No	243,721
BFD-VALVE-BFD-4-2	0.000	0.773	0.889	0.889	-193,829	No	243,721
BFD-48P-1	0.000	0.865	0.717	0.717	1,294,999	No	243,721
BFD-49	0.000	0.816	0.832	0.832	-79,402	No	243,721
BFD-49P	0.000	0.856	0.717	0.717	1,063,688	No	243,721
BFD-50	0.000	0.816	0.832	0.832	-79,402	No	243,721
BFD-50P US	0.000	0.856	0.717	0.717	1,063,688	No	243,721
BFD-50P DS	0.000	0.851	0.717	0.717	1,032,232	Yes	243,721
===>Grouped by Line: **FW74-5-FWH26 to DISHDR**					***Sorted By:Flow Order***		
BFD-50T	0.000	1.303	1.195	1.195	669,358	No	243,721
BFD-50T (BR/SE)	0.000	0.963	0.717	0.717	1,387,923	No	243,721
BFD-50T (D/S)	0.000	1.299	1.195	1.195	514,569	No	243,721
BFD-50P-1	0.000	1.198	1.195	1.195	27,353	No	243,721
BFD-46T	0.000	1.322	1.195	1.195	861,921	No	243,721
BFD-46T (D/S)	0.000	1.277	1.195	1.195	557,544	No	243,721
BFD-46P	0.000	1.198	1.195	1.195	27,353	No	243,721
BFD-60	0.000	1.385	1.195	1.195	1,041,640	Yes	243,721
BFD-30	0.000	1.260	1.195	1.195	356,676	Yes	243,721
BFD-30P US	0.000	1.308	1.195	1.195	718,168	Yes	243,721
BFD-30P DS	0.000	1.325	1.195	1.195	825,968	Yes	243,721
BFD-31	0.000	1.445	1.195	1.195	1,372,813	Yes	243,721
BFD-31P US	0.000	1.338	1.195	1.195	1,163,653	Yes	243,721
BFD-61	0.000	1.420	1.195	1.195	1,233,197	Yes	243,721
BFD-61P	0.000	1.310	1.195	1.195	932,341	Yes	243,721
BFD-62	0.000	1.145	1.195	1.195	-148,808	No	243,721
BFD-62P US	0.000	1.182	1.195	1.195	-97,615	No	243,721
BFD-62P DS	0.000	1.284	1.195	1.195	721,608	Yes	243,721
BFD-63	0.000	1.289	1.195	1.195	515,719	Yes	243,721
BFD-63P US	0.000	1.306	1.195	1.195	900,175	Yes	243,721

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **FW74-5-FWH26 to DISHDR**					***Sorted By:Flow Order***		
BFD-63P DS	0.000	1.316	1.195	1.195	981,202	No	243,721
BFD-64	0.000	1.414	1.195	1.195	1,199,845	Yes	243,721
BFD-64P	0.000	1.319	1.195	1.195	1,004,725	Yes	243,721
BFD-65	0.000	1.468	1.195	1.195	1,496,383	Yes	243,721
BFD-65P	0.000	1.384	1.195	1.195	1,533,138	Yes	243,721
BFD-65P-1	0.000	1.464	1.195	1.195	2,182,474	No	243,721
BFD-72T	0.000	1.463	1.195	1.195	1,086,373	Yes	243,721
BFD-72T (BR/SE)	0.000	0.856	0.717	0.717	628,327	Yes	243,721
BFD-72T (D/S)	0.000	1.465	1.195	1.195	1,286,593	Yes	243,721
===>Grouped by Line: **FW75-1-DISHDR to SG21**					***Sorted By:Flow Order***		
BFD-72P US	0.000	0.886	0.717	0.717	1,905,346	Yes	243,721
BFD-72P DS	0.000	0.895	0.717	0.717	2,001,191	Yes	243,721
BFD-72	0.000	1.005	0.832	0.832	1,055,613	Yes	243,721
BFD-72P-1 US	0.000	0.892	0.717	0.717	1,575,482	Yes	243,721
BFD-72P-1 DS	0.000	0.868	0.717	0.717	1,358,518	No	243,721
BFD-VALVE-BFD-5	0.000	0.798	0.889	0.889	-185,157	No	243,721
BFD-72R	0.000	0.884	0.832	0.832	331,466	Yes	243,721
BFD-72R (D/S)	0.000	0.783	0.589	0.589	849,746	Yes	243,721
BFD-VALVE-FCV-417	0.000	0.798	0.889	0.889	-185,157	No	243,721
BFD-71R	0.000	0.790	0.589	0.589	1,005,260	Yes	243,721
BFD-71R (D/S)	0.000	0.869	0.832	0.832	280,328	Yes	243,721
BFD-71	0.000	0.899	0.832	0.832	409,844	Yes	243,721
BFD-70P US	0.000	0.875	0.717	0.717	1,421,532	Yes	243,721
BFD-70P DS	0.000	0.864	0.717	0.717	1,323,246	Yes	243,721
BFD-70	0.000	0.950	0.832	0.832	720,840	Yes	243,721
BFD-69P US	0.000	0.906	0.717	0.717	1,701,600	Yes	243,721
BFD-69P DS	0.000	0.901	0.717	0.717	1,659,914	Yes	243,721
BFD-69	0.000	0.915	0.832	0.832	563,060	Yes	243,721
BFD-68P US	0.000	0.876	0.717	0.717	1,630,033	No	243,721
BFD-68P DS	0.000	0.895	0.717	0.717	1,822,018	Yes	243,721
BFD-68	0.000	0.947	0.832	0.832	702,580	Yes	243,721
BFD-67P US	0.000	0.883	0.717	0.717	1,494,406	Yes	243,721
BFD-67P DS	0.000	0.868	0.717	0.717	1,358,518	No	243,721
BFD-VALVE-BFD-6	0.000	0.779	0.889	0.889	-191,922	No	243,721
BFD-VALVE-BFD-7	0.000	0.779	0.889	0.889	-191,918	No	243,721
BFD-67	0.000	0.649	0.633	0.633	102,434	No	243,721
BFD-66	0.000	0.649	0.633	0.633	102,434	No	243,721
BFD-66P	0.000	0.663	0.544	0.544	856,265	No	243,721

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **FW75-1-DISHDR to SG21**					***Sorted By:Flow Order***		
BFD-96	0.000	0.649	0.633	0.633	102,434	No	243,721
BFD-96P	0.000	0.682	0.544	0.544	1,273,144	No	243,721
BFD-97	0.000	0.649	0.633	0.633	102,434	No	243,721
BFD-97P	0.000	0.682	0.544	0.544	1,273,144	No	243,721
BFD-98	0.000	0.649	0.544	0.544	655,069	No	243,721
BFD-98P	0.000	0.682	0.544	0.544	1,273,144	No	243,721
BFD-98P-1	0.000	0.702	0.544	0.544	2,827,134	No	243,721
BFD-99	0.000	0.601	0.544	0.544	351,458	Yes	243,721
BFD-99N	0.000	0.647	0.544	0.544	592,932	Yes	243,721
===>Grouped by Line: **FW76-1-DISHDR to SG22**					***Sorted By:Flow Order***		
BFD-78P	0.000	0.882	0.717	0.717	1,856,295	No	243,721
BFD-78	0.000	0.834	0.832	0.832	12,309	No	243,721
BFD-78P-1 US	0.000	0.868	0.717	0.717	1,358,518	No	243,721
BFD-VALVE-BFD-5-1	0.000	0.798	0.889	0.889	-185,157	No	243,721
BFD-78P-2	0.000	0.876	0.717	0.717	1,630,033	No	243,721
BFD-VALVE-FCV-427	0.000	0.798	0.889	0.889	-185,157	No	243,721
BFD-77R	0.000	0.703	0.589	0.589	570,219	No	243,721
BFD-77R (D/S)	0.000	0.866	0.832	0.832	258,489	Yes	243,721
BFD-77P	0.000	0.884	0.717	0.717	1,713,520	Yes	243,721
BFD-77	0.000	0.942	0.832	0.832	671,826	Yes	243,721
BFD-76P US	0.000	0.878	0.717	0.717	1,448,557	Yes	243,721
BFD-76	0.000	0.966	0.832	0.832	813,207	Yes	243,721
BFD-75P	0.000	0.918	0.717	0.717	1,814,175	Yes	243,721
BFD-75	0.000	0.845	0.832	0.832	90,479	No	243,721
BFD-74P	0.000	0.876	0.717	0.717	1,630,033	No	243,721
BFD-74	0.000	0.834	0.832	0.832	12,309	No	243,721
BFD-73P	0.000	0.868	0.717	0.717	1,358,518	No	243,721
BFD-VALVE-BFD-6-1	0.000	0.779	0.889	0.889	-191,922	No	243,721
BFD-VALVE-BFD-7-1	0.000	0.779	0.889	0.889	-191,918	No	243,721
BFD-73	0.000	0.649	0.633	0.633	102,434	No	243,721
BFD-73P	0.000	0.663	0.544	0.544	856,265	No	243,721
BFD-91	0.000	0.649	0.633	0.633	102,434	No	243,721
BFD-91P	0.000	0.682	0.544	0.544	1,273,144	No	243,721
BFD-92	0.000	0.649	0.633	0.633	102,434	No	243,721
BFD-92P	0.000	0.682	0.544	0.544	1,273,144	No	243,721
BFD-92-1	0.000	0.660	0.633	0.633	191,528	No	243,721
BFD-92P-1	0.000	0.690	0.544	0.544	1,533,017	No	243,721
BFD-92-2	0.000	0.649	0.633	0.633	102,434	No	243,721

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **FW76-1-DISHDR to SG22**					***Sorted By:Flow Order***		
BFD-92P-2	0.000	0.682	0.544	0.544	1,273,144	No	243,721
BFD-92P-3	0.000	0.715	0.544	0.544	3,055,809	No	243,721
BFD-93	0.000	0.649	0.633	0.633	102,434	No	243,721
BFD-93P US	0.000	0.682	0.544	0.544	1,273,144	No	243,721
BFD-93P DS	0.000	0.694	0.544	0.544	1,384,543	No	243,721
BFD-94	0.000	0.858	0.633	0.633	1,580,982	No	243,721
BFD-95	0.000	0.818	0.633	0.633	1,225,576	Yes	243,721
BFD-95P	0.000	0.682	0.544	0.544	1,273,144	No	243,721
BFD-95R	0.000	0.674	0.633	0.633	338,692	No	243,721
BFD-95R (D/S)	0.000	0.741	0.703	0.703	332,011	No	243,721
BFD-95N	0.000	0.717	0.703	0.703	90,861	No	243,721
===>Grouped by Line: **FW76-2-DISHDR to SG22**					***Sorted By:Flow Order***		
BFD-78T (BR/SE)	0.000	0.879	0.717	0.717	731,924	No	243,721
BFD-78T	0.000	1.319	1.195	1.195	590,699	No	243,721
BFD-78T (D/S)	0.000	1.288	1.195	1.195	558,273	No	243,721
===>Grouped by Line: **FW77-1-DISHDR to SG24**					***Sorted By:Flow Order***		
BFD-84P	0.000	0.882	0.717	0.717	1,856,295	No	243,721
BFD-84	0.000	0.834	0.832	0.832	12,309	No	243,721
BFD-84P-1	0.000	0.868	0.717	0.717	1,358,518	No	243,721
BFD-VALVE-BFD-5-3	0.000	0.798	0.889	0.889	-185,157	No	243,721
BFD-84P-2	0.000	0.876	0.717	0.717	1,630,033	No	243,721
BFD-VALVE-FCV-447	0.000	0.798	0.889	0.889	-185,157	No	243,721
BFD-83R	0.000	0.680	0.589	0.589	451,396	Yes	243,721
BFD-83R (D/S)	0.000	0.893	0.832	0.832	455,052	No	243,721
BFD-83	0.000	0.950	0.832	0.832	720,521	Yes	243,721
BFD-82P US	0.000	0.880	0.717	0.717	1,147,847	Yes	243,721
BFD-82P DS	0.000	0.848	0.717	0.717	922,964	No	243,721
BFD-82	0.000	0.834	0.832	0.832	12,309	No	243,721
BFD-81P	0.000	0.868	0.717	0.717	1,358,518	No	243,721
BFD-81	0.000	0.955	0.832	0.832	839,292	Yes	243,721
BFD-80	0.000	0.953	0.832	0.832	738,805	Yes	243,721
BFD-80P	0.000	0.854	0.717	0.717	965,649	Yes	243,721
BFD-VALVE-BFD-6-3	0.000	0.779	0.889	0.889	-191,922	No	243,721
BFD-VALVE-BFD-7-3	0.000	0.779	0.889	0.889	-191,918	No	243,721
BFD-79	0.000	0.675	0.633	0.633	262,498	Yes	243,721
BFD-104P	0.000	0.663	0.544	0.544	856,265	No	243,721
BFD-104	0.000	0.649	0.633	0.633	102,434	No	243,721

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **FW77-1-DISHDR to SG24**					***Sorted By:Flow Order***		
BFD-105P	0.000	0.682	0.544	0.544	1,273,144	No	243,721
BFD-105	0.000	0.668	0.544	0.544	772,999	Yes	243,721
BFD-105-1	0.000	0.649	0.633	0.633	102,434	No	243,721
BFD-105P-1	0.000	0.663	0.544	0.544	856,265	No	243,721
BFD-105P-2	0.000	0.715	0.544	0.544	3,055,809	No	243,721
BFD-106	0.000	0.575	0.633	0.633	-172,282	Yes	243,721
BFD-106P	0.000	0.663	0.544	0.544	856,265	No	243,721
BFD-106N	0.000	0.641	0.633	0.633	47,308	No	243,721
===>Grouped by Line: **FW77-2-DISHDR to SG24**					***Sorted By:Flow Order***		
BFD-84T (BR/SE)	0.000	0.886	0.717	0.717	763,453	Yes	243,721
BFD-84T	0.000	1.350	1.195	1.195	928,968	Yes	243,721
BFD-84T (D/S)	0.000	1.349	1.195	1.195	1,563,474	Yes	243,721
===>Grouped by Line: **FW78-1-DISHDR to SG23**					***Sorted By:Flow Order***		
BFD-89T (BR/SE)	0.000	0.842	0.717	0.717	831,460	No	243,721
BFD-89P	0.000	0.885	0.717	0.717	1,895,014	Yes	243,721
BFD-89	0.000	0.988	0.832	0.832	951,566	Yes	243,721
BFD-89P-1	0.000	0.865	0.717	0.717	1,331,926	Yes	243,721
BFD-VALVE-BFD-5-2	0.000	0.798	0.889	0.889	-185,157	No	243,721
BFD-89P-2	0.000	0.876	0.717	0.717	1,630,033	No	243,721
BFD-VALVE-FCV-437	0.000	0.798	0.889	0.889	-185,157	No	243,721
BFD-3R	0.000	0.693	0.589	0.589	520,138	No	243,721
BFD-3R (D/S)	0.000	0.883	0.832	0.832	386,108	Yes	243,721
BFD-3P	0.000	0.884	0.717	0.717	1,713,520	Yes	243,721
BFD-3	0.000	0.982	0.832	0.832	915,297	Yes	243,721
BFD-88P	0.000	0.868	0.717	0.717	1,358,518	No	243,721
BFD-88	0.000	1.007	0.832	0.832	1,065,625	Yes	243,721
BFD-87P US	0.000	0.890	0.717	0.717	1,556,658	Yes	243,721
BFD-87P DS	0.000	0.863	0.717	0.717	1,313,430	Yes	243,721
BFD-87	0.000	0.932	0.832	0.832	610,959	Yes	243,721
BFD-86P US	0.000	0.900	0.717	0.717	1,646,742	Yes	243,721
BFD-86P DS	0.000	0.868	0.717	0.717	1,358,518	No	243,721
BFD-VALVE-BFD-6-2	0.000	0.779	0.889	0.889	-191,922	No	243,721
BFD-VALVE-BFD-7-2	0.000	0.779	0.889	0.889	-191,918	No	243,721
BFD-86	0.000	0.644	0.633	0.633	73,815	Yes	243,721
BFD-85	0.000	0.656	0.633	0.633	149,006	Yes	243,721
BFD-100P	0.000	0.663	0.544	0.544	856,265	No	243,721
BFD-100	0.000	0.649	0.633	0.633	102,434	No	243,721

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **FW78-1-DISHDR to SG23**					***Sorted By:Flow Order***		
BFD-101P	0.000	0.682	0.544	0.544	1,273,144	No	243,721
BFD-101	0.000	0.674	0.633	0.633	256,232	Yes	243,721
BFD-102P	0.000	0.682	0.544	0.544	1,273,144	No	243,721
BFD-102	0.000	0.649	0.633	0.633	102,434	No	243,721
BFD-102P-1	0.000	0.682	0.544	0.544	1,273,144	No	243,721
BFD-102P-2	0.000	0.715	0.544	0.544	3,055,809	No	243,721
BFD-103	0.000	0.649	0.633	0.633	102,434	No	243,721
BFD-103P	0.000	0.682	0.544	0.544	1,273,144	No	243,721
BFD-103N	0.000	0.641	0.633	0.633	47,308	No	243,721
BFD-89T	0.000	1.210	1.195	1.195	183,637	No	243,721

Note:
[1] Predictions are based on last Tmeas to analysis ending period.

7

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).DB

Wear Report

Pass 2 Analysis Include Measured Wear

Report Date/Time: 07-Jul-2010 9:54 am
AnalysisDate/Time: 07-Jul-2010 9:54 am

Run Name: FW FWH 26 TO STM GEN
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 1.158

CHECWORKS SFA Version: 3.0 (build 105)
Duty Factor (Global) : 1.000

Component Name	Tinit	Total Lifetime Wear (mils) Prd. [1]	Total Lifetime Wear (mils) Meas.	In-Service Component Wear(mils) Prd. [1]	In-Service Component Wear(mils) Meas.	In-Service Component Tmeas, Method, Time (in) [3]	[2]	(hrs) [3]	In-Service Component Thickness (mils) [4] Tp	Tm	Incremental Wear (mils) [5] PRWEAR	Time (hrs) Last Inspected
===>Grouped by Line:	**FW74-1-FWH26A to DISHDR**										***Sorted By: Flow Order***	
BFD-55P	0.000	94.7	51.0	94.7	51.0	0.887	GW	181,477	843.3	887.0	10.8	181,477
BFD-56	0.000	90.9	152.0	90.9	152.0	0.984	GW	181,477	828.5	984.0	12.5	125,459
BFD-56P-1	0.000	65.1	61.0	65.1	61.0	0.891	GW	181,477	872.9	891.0	7.4	181,477
BFD-57	0.000	109.5	175.0	109.5	175.0	0.999	GW	181,477	828.5	999.0	12.5	181,477
BFD-57P	0.000	74.0	74.0	74.0	74.0	0.885	GW	181,477	864.0	885.0	8.4	181,477
BFD-58	0.000	118.6	131.5	118.6	131.5	0.975	MT	226,201	819.4	975.0	3.4	226,201
BFD-58P	0.000	80.1	54.0	80.1	54.0	0.890	MT	226,201	857.9	890.0	2.3	226,201
BFD-59	0.000	118.6	106.5	118.6	106.5	0.993	MT	226,201	819.4	993.0	3.4	226,201
BFD-59P	0.000	80.1	108.0	80.1	108.0	1.038	MT	226,201	857.9	1,038.0	2.3	226,201
===>Grouped by Line:	**FW74-2-FWH26B to DISHDR**										***Sorted By: Flow Order***	
BFD-52	0.000	112.2	262.0	112.2	262.0	1.036	GW	193,769	825.8	1,036.0	9.8	193,769
BFD-52P-1	0.000	61.1	106.0	61.1	106.0	0.871	MT	149,573	876.9	871.0	11.4	149,573
BFD-53	0.000	118.6	122.0	118.6	122.0	0.963	MT	226,201	819.4	963.0	3.4	226,201
BFD-53P	0.000	80.1	61.0	80.1	61.0	0.898	MT	226,201	857.9	898.0	2.3	226,201
===>Grouped by Line:	**FW74-3-FWH26 to DISHDR**										***Sorted By: Flow Order***	
BFD-54T	0.000	59.0	86.0	59.0	86.0	1.341	GW	193,769	1,201.0	1,341.0	5.2	193,769
BFD-54T (BR/SE)	0.000	103.1	142.0	103.1	142.0	0.871	MT	193,769	833.9	871.0	9.0	193,769
BFD-54T (D/S)	0.000	93.7	86.0	93.7	86.0	1.343	GW	193,769	1,166.3	1,343.0	8.2	193,769
===>Grouped by Line:	**FW74-4-FWH26C to DISHDR**										***Sorted By: Flow Order***	
BFD-47P	0.000	78.0	51.0	78.0	51.0	0.887	MT	209,806	860.0	887.0	4.4	209,806
BFD-48	0.000	115.5	277.0	115.5	277.0	1.014	MT	209,806	822.5	1,014.0	6.5	209,806
BFD-50P DS	0.000	66.9	70.0	66.9	70.0	0.867	MT	136,608	871.1	867.0	15.5	136,608
===>Grouped by Line:	**FW74-5-FWH26 to DISHDR**										***Sorted By: Flow Order***	
BFD-60	0.000	97.2	168.0	97.2	168.0	1.403	MT	149,573	1,162.8	1,403.0	18.1	149,573

Component Name	Tinit	Total Lifetime Wear (mils) Prd. [1]	Total Lifetime Wear (mils) Meas.	In-Service Component Wear(mils) Prd. [1]	In-Service Component Wear(mils) Meas.	In-Service Component Tmeas, Method, Time (in) [3]	[2]	(hrs) [3]	In-Service Component Thickness (mils) [4] Tp	Tm	Incremental Wear (mils) [5] PRWEAR	Time (hrs) Last Inspected
===>Grouped by Line:	**FW74-5-FWH26 to DISHDR**										***Sorted By: Flow Order***	
BFD-30	0.000	100.3	93.0	100.3	93.0	1.275	MT	165,113	1,159.7	1,275.0	15.0	165,113
BFD-30P US	0.000	81.0	79.0	81.0	79.0	1.327	MT	136,608	1,179.0	1,327.0	18.8	136,608
BFD-30P DS	0.000	81.0	88.0	81.0	88.0	1.344	MT	136,608	1,179.0	1,344.0	18.8	136,608
BFD-31	0.000	93.6	129.0	93.6	129.0	1.467	MT	136,608	1,166.4	1,467.0	21.7	136,608
BFD-31P US	0.000	63.3	82.0	63.3	82.0	1.353	MT	136,608	1,196.7	1,353.0	14.7	136,608
BFD-61	0.000	109.2	115.5	109.2	115.5	1.426	MT	209,806	1,150.8	1,426.0	6.2	209,806
BFD-61P	0.000	73.8	59.0	73.8	59.0	1.314	MT	209,806	1,186.2	1,314.0	4.2	209,806
BFD-62P DS	0.000	67.8	74.0	67.8	74.0	1.294	MT	165,113	1,192.2	1,294.0	10.1	165,113
BFD-63	0.000	100.3	118.0	100.3	118.0	1.304	MT	165,113	1,159.7	1,304.0	15.0	165,113
BFD-63P US	0.000	67.8	97.0	67.8	97.0	1.316	MT	165,113	1,192.2	1,316.0	10.1	165,113
BFD-64	0.000	106.1	110.0	106.1	110.0	1.423	GW	193,769	1,153.9	1,423.0	9.3	193,769
BFD-64P	0.000	71.7	33.0	71.7	33.0	1.325	MT	193,769	1,188.3	1,325.0	6.3	193,769
BFD-65	0.000	112.2	167.0	112.2	167.0	1.471	MT	226,201	1,147.8	1,471.0	3.2	226,201
BFD-65P	0.000	75.8	155.0	75.8	155.0	1.386	MT	226,201	1,184.2	1,386.0	2.2	226,201
BFD-72T	0.000	147.5	33.0	147.5	33.0	1.471	MT	209,806	1,112.5	1,471.0	8.4	209,806
BFD-72T (BR/SE)	0.000	132.9	74.0	132.9	74.0	0.864	MT	209,806	805.1	864.0	7.5	209,806
BFD-72T (D/S)	0.000	125.6	29.0	125.6	29.0	1.472	MT	209,806	1,134.4	1,472.0	7.1	209,806
===>Grouped by Line:	**FW75-1-DISHDR to SG21**										***Sorted By: Flow Order***	
BFD-72P US	0.000	47.4	53.0	47.4	53.0	0.895	MT	149,573	890.6	895.0	8.8	149,573
BFD-72P DS	0.000	48.9	41.0	48.9	41.0	0.902	MT	165,113	889.1	902.0	7.3	165,113
BFD-72	0.000	90.4	70.0	90.4	70.0	1.019	MT	165,113	847.6	1,019.0	13.5	165,113
BFD-72P-1 US	0.000	61.1	54.0	61.1	54.0	0.901	MT	165,113	876.9	901.0	9.1	165,113
BFD-72R	0.000	82.9	68.0	82.9	68.0	0.899	MT	149,573	855.1	899.0	15.4	149,573
BFD-72R (D/S)	0.000	121.7	172.0	121.7	172.0	0.806	MT	149,573	722.3	806.0	22.7	149,573
BFD-71R	0.000	113.4	109.0	113.4	109.0	0.803	MT	181,477	729.6	803.0	12.9	181,477
BFD-71R (D/S)	0.000	75.7	85.0	75.7	85.0	0.878	GW	181,477	862.3	878.0	8.6	181,477
BFD-71	0.000	93.3	144.0	93.3	144.0	0.910	GW	181,477	844.7	910.0	10.6	181,477
BFD-70P US	0.000	57.0	50.0	57.0	50.0	0.888	MT	136,608	881.0	888.0	13.2	136,608
BFD-70P DS	0.000	61.1	92.0	61.1	92.0	0.873	MT	165,113	876.9	873.0	9.1	165,113
BFD-70	0.000	90.4	92.0	90.4	92.0	0.964		165,113	847.6	964.0	13.5	165,113
BFD-69P US	0.000	61.1	80.0	61.1	80.0	0.915	MT	165,113	876.9	915.0	9.1	165,113
BFD-69P DS	0.000	66.5	33.0	66.5	33.0	0.905	MT	209,806	871.5	905.0	3.8	209,806
BFD-69	0.000	85.2	54.0	85.2	54.0	0.922	GW	193,769	852.8	922.0	7.4	193,769
BFD-68P DS	0.000	53.8	48.0	53.8	48.0	0.903		165,113	884.2	903.0	8.0	165,113
BFD-68	0.000	90.4	81.0	90.4	81.0	0.961		165,113	847.6	961.0	13.5	165,113
BFD-67P US	0.000	61.1	66.0	61.1	66.0	0.892	MT	165,113	876.9	892.0	9.1	165,113
BFD-99	0.000	95.5	139.0	95.5	139.0	0.606	MT	209,806	654.5	606.0	5.4	209,806
BFD-99N	0.000	94.9	87.0	94.9	87.0	0.661		165,113	655.1	661.0	14.2	165,113

Component Name	Tinit	Total Lifetime Wear (mils) Prd. [1]	Total Lifetime Wear (mils) Meas.	In-Service Component Wear(mils) Prd. [1]	In-Service Component Wear(mils) Meas.	In-Service Component Tmeas, Method, Time (in) [3]	[2]	(hrs) [3]	In-Service Component Thickness (mils) [4] Tp	Tm	Incremental Wear (mils) [5] PRWEAR	Time (hrs) Last Inspected
===>Grouped by Line:	**FW76-1-DISHDR to SG22**										***Sorted By: Flow Order***	
BFD-77R (D/S)	0.000	79.7	72.0	79.7	72.0	0.871	MT	209,806	858.3	871.0	4.5	209,806
BFD-77P	0.000	50.2	51.0	50.2	51.0	0.896	MT	136,608	887.8	896.0	11.6	136,608
BFD-77	0.000	84.4	72.0	84.4	72.0	0.962	MT	136,608	853.6	962.0	19.6	136,608
BFD-76P US	0.000	57.0	46.0	57.0	46.0	0.891	MT	136,608	881.0	891.0	13.2	136,608
BFD-76	0.000	95.6	55.0	95.6	55.0	0.974	MT	193,769	842.4	974.0	8.3	193,769
BFD-75P	0.000	64.6	57.0	64.6	57.0	0.924	GW	193,769	873.4	924.0	5.6	193,769
BFD-95	0.000	60.2	87.0	60.2	87.0	0.853	MT	106,128	689.8	853.0	35.3	106,128
===>Grouped by Line:	**FW77-1-DISHDR to SG24**										***Sorted By: Flow Order***	
BFD-83R	0.000	28.7	106.0	28.7	106.0	0.683	MT	226,201	720.2	683.0	3.5	226,201
BFD-83	0.000	84.4	81.0	84.4	81.0	0.970	MT	136,608	853.6	970.0	19.6	136,608
BFD-82P US	0.000	73.0	43.0	73.0	43.0	0.897	MT	136,608	865.0	897.0	16.9	136,608
BFD-81	0.000	87.7	105.0	87.7	105.0	0.960	MT	209,806	850.3	960.0	5.0	209,806
BFD-80	0.000	98.4	81.5	98.4	81.5	0.959	MT	209,806	839.6	959.0	5.6	209,806
BFD-80P	0.000	85.1	59.0	85.1	59.0	0.859	MT	209,806	852.9	859.0	4.8	209,806
BFD-79	0.000	20.3	25.0	20.3	25.0	0.680	MT	209,806	654.5	680.0	5.4	209,806
BFD-105	0.000	87.8	69.0	87.8	69.0	0.681	MT	165,113	662.2	681.0	13.1	165,113
BFD-106	0.000	95.5	170.0	95.5	170.0	0.580	MT	209,806	654.5	580.0	5.4	209,806
===>Grouped by Line:	**FW77-2-DISHDR to SG24**										***Sorted By: Flow Order***	
BFD-84T (BR/SE)	0.000	132.9	76.0	132.9	76.0	0.894	MT	209,806	805.1	894.0	7.5	209,806
BFD-84T	0.000	100.1	132.0	100.1	132.0	1.356	MT	209,806	1,159.9	1,356.0	5.7	209,806
BFD-84T (D/S)	0.000	57.9	98.0	57.9	98.0	1.352	MT	209,806	1,202.1	1,352.0	3.3	209,806
===>Grouped by Line:	**FW78-1-DISHDR to SG23**										***Sorted By: Flow Order***	
BFD-89P	0.000	50.4	47.0	50.4	47.0	0.891	GW	181,477	887.6	891.0	5.7	181,477
BFD-89	0.000	93.3	85.0	93.3	85.0	0.999	GW	181,477	844.7	999.0	10.6	181,477
BFD-89P-1	0.000	63.0	94.0	63.0	94.0	0.872	GW	181,477	875.0	872.0	7.2	181,477
BFD-3R (D/S)	0.000	79.7	64.0	79.7	64.0	0.888	MT	209,806	858.3	888.0	4.5	209,806
BFD-3P	0.000	50.2	68.0	50.2	68.0	0.896	MT	136,608	887.8	896.0	11.6	136,608
BFD-3	0.000	84.4	72.0	84.4	72.0	1.002	MT	136,608	853.6	1,002.0	19.6	136,608
BFD-88	0.000	101.1	56.0	101.1	56.0	1.010	MT	226,201	836.9	1,010.0	2.9	226,201
BFD-87P US	0.000	57.0	109.0	57.0	109.0	0.903	MT	136,608	881.0	903.0	13.2	136,608
BFD-87P DS	0.000	57.0	51.0	57.0	51.0	0.876		136,608	881.0	876.0	13.2	136,608
BFD-87	0.000	84.4	99.0	84.4	99.0	0.952	MT	136,608	853.6	952.0	19.6	136,608
BFD-86P US	0.000	57.0	57.0	57.0	57.0	0.913	MT	136,608	881.0	913.0	13.2	136,608
BFD-86	0.000	71.4	87.0	71.4	87.0	0.674	MT	119,088	678.6	674.0	29.5	119,088
BFD-85	0.000	71.4	64.0	71.4	64.0	0.686	MT	119,088	678.6	686.0	29.5	119,088

Component Name	Tinit	Total Lifetime Wear (mils) Prd. [1]	Total Lifetime Wear (mils) Meas.	In-Service Component Wear(mils) Prd. [1]	In-Service Component Wear(mils) Meas.	In-Service Component Tmeas, Method, Time (in) [3]	[2]	(hrs) [3]	In-Service Component Thickness (mils) [4] Tp	Tm	Incremental Wear (mils) [5] PRWEAR	Time (hrs) Last Inspected
===>Grouped by Line:	**FW78-1-DISHDR to SG23**											***Sorted By: Flow Order***
BFD-101	0.000	95.5	68.5	95.5	68.5	0.679	GW	209,806	654.5	679.0	5.4	209,806

Notes:
[1] Predictions are for the time of last inspection (last known meas. wear).
[2] GW = Tmeas is minimum thickness from Band, Blanket or Area Method of greatest wear.
MT = Tmeas is component minimum thickness.
PW = Tmeas is Tinit - predicted wear.
US = Tmeas is user specified.
[3] If no Tmeas has been determined from measured data, then Tmeas = Tinit and Time = current component installation time.
Tmeas is used to determine Predicted Thickness and Component Predicted Time to Tcrit.
[4] These two values are used for thickness plot.
Tp = Predicted thickness at Tmeas.
Tm = Last measured thickness (Tmeas).
[5] PRWEAR = Incremental wear from last Tmeas time to analysis ending period.

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).DB

Wear Rate Report

Pass 2 Analysis Include Measured Wear

Report Date/Time: 7/7/2010 9:54:36AM
AnalysisDate/Time: 6/11/2010 11:35:15AM

CHECWORKS SFA Version: 3.0 (build 105)
Duty Factor (Global) : 1.000

Run Name: FWH 23 DRNS DSCV
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 0.994

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***HD242A-1-FWH23A CV to FWH22A***								***Sorted By: Average Wear Rate***		
242-VALVE-LCV-1118	24	6.757	3.214	212.1	7.632	0.0	6.625	7.048	0.000	13.04	ARD
242-VALVE-3EX-9	22	4.063	1.951	212.1	4.386	0.0	8.625	7.048	0.000	13.04	ARD
242-8R	18	3.887	1.849	212.1	7.964	0.0	6.625	7.048	0.000	13.04	ARD
242-10T (D/S)	12	3.237	1.554	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
242-10T	12	3.237	1.554	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
242-8R (D/S)	18	2.450	1.176	212.1	4.410	0.0	8.625	7.048	0.000	13.04	ARD
242-12N	18	2.211	1.061	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
242-9P	58	1.737	0.834	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
242-11P	62	1.579	0.758	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
242-12N (D/S)	18	1.537	0.738	212.1	2.672	0.0	10.750	7.048	0.000	13.04	ARD
===>Grouped by Line:	***HD243A-1-FWH23B CV to FWH22B***								***Sorted By: Average Wear Rate***		
243-VALVE-LCV-1119	24	6.757	3.214	212.1	7.632	0.0	6.625	7.048	0.000	13.04	ARD
243-VALVE-3EX-9-1	22	4.063	1.951	212.1	4.386	0.0	8.625	7.048	0.000	13.04	ARD
243-9R	18	3.996	1.901	212.1	8.325	0.0	6.625	7.048	0.000	13.04	ARD
243-11T (D/S)	12	3.237	1.554	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
243-11T	12	3.237	1.554	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
243-9R (D/S)	18	2.453	1.178	212.1	4.416	0.0	8.625	7.048	0.000	13.04	ARD
243-13N	18	2.211	1.061	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
243-10P	58	1.737	0.834	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
243-12P	62	1.579	0.758	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
243-13N (D/S)	18	1.537	0.738	212.1	2.672	0.0	10.750	7.048	0.000	13.04	ARD
===>Grouped by Line:	***HD244A-1-FWH23C CV to FWH22C***								***Sorted By: Average Wear Rate***		
244-VALVE-LCV-1119	24	6.757	3.214	212.1	7.632	0.0	6.625	7.048	0.000	13.04	ARD
244-VALVE-3EX-9-2	22	4.063	1.951	212.1	4.386	0.0	8.625	7.048	0.000	13.04	ARD
244-9R	18	3.846	1.830	212.1	7.832	0.0	6.625	7.048	0.000	13.04	ARD
244-11T (D/S)	12	3.237	1.554	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
244-11T	12	3.237	1.554	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***HD244A-1-FWH23C CV to FWH22C***								***Sorted By: Average Wear Rate***		
244-13N	30	3.158	1.516	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
244-9R (D/S)	18	2.429	1.166	212.1	4.370	0.0	8.625	7.048	0.000	13.04	ARD
244-10P	58	1.737	0.834	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
244-12P	62	1.579	0.758	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).DB

Wear Rate Report

Pass 2 Analysis Include Measured Wear

Report Date/Time: 7/7/2010 9:54:36AM
AnalysisDate/Time: 3/11/2010 11:35:15AM

CHECWORKS SFA Version: 3.0 (build 105)
Duty Factor (Global) : 1.000

Run Name: FWH 23 DRNS DSCV
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 0.994

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***HD242A-1-FWH23A CV to FWH22A***									***Sorted By: Flow Order***	
242-10T (D/S)	12	3.237	1.554	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
242-11P	62	1.579	0.758	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
242-12N	18	2.211	1.061	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
242-12N (D/S)	18	1.537	0.738	212.1	2.672	0.0	10.750	7.048	0.000	13.04	ARD
242-VALVE-LCV-1118	24	6.757	3.214	212.1	7.632	0.0	6.625	7.048	0.000	13.04	ARD
242-8R	18	3.887	1.849	212.1	7.964	0.0	6.625	7.048	0.000	13.04	ARD
242-8R (D/S)	18	2.450	1.176	212.1	4.410	0.0	8.625	7.048	0.000	13.04	ARD
242-VALVE-3EX-9	22	4.063	1.951	212.1	4.386	0.0	8.625	7.048	0.000	13.04	ARD
242-9P	58	1.737	0.834	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
242-10T	12	3.237	1.554	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
===>Grouped by Line:	***HD243A-1-FWH23B CV to FWH22B***									***Sorted By: Flow Order***	
243-11T (D/S)	12	3.237	1.554	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
243-12P	62	1.579	0.758	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
243-13N	18	2.211	1.061	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
243-13N (D/S)	18	1.537	0.738	212.1	2.672	0.0	10.750	7.048	0.000	13.04	ARD
243-VALVE-LCV-1119	24	6.757	3.214	212.1	7.632	0.0	6.625	7.048	0.000	13.04	ARD
243-9R	18	3.996	1.901	212.1	8.325	0.0	6.625	7.048	0.000	13.04	ARD
243-9R (D/S)	18	2.453	1.178	212.1	4.416	0.0	8.625	7.048	0.000	13.04	ARD
243-VALVE-3EX-9-1	22	4.063	1.951	212.1	4.386	0.0	8.625	7.048	0.000	13.04	ARD
243-10P	58	1.737	0.834	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
243-11T	12	3.237	1.554	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
===>Grouped by Line:	***HD244A-1-FWH23C CV to FWH22C***									***Sorted By: Flow Order***	
244-11T (D/S)	12	3.237	1.554	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
244-12P	62	1.579	0.758	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
244-13N	30	3.158	1.516	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
244-VALVE-LCV-1119	24	6.757	3.214	212.1	7.632	0.0	6.625	7.048	0.000	13.04	ARD
244-9R	18	3.846	1.830	212.1	7.832	0.0	6.625	7.048	0.000	13.04	ARD

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***HD244A-1-FWH23C CV to FWH22C***									***Sorted By: Flow Order***	
244-9R (D/S)	18	2.429	1.166	212.1	4.370	0.0	8.625	7.048	0.000	13.04	ARD
244-VALVE-3EX-9-2	22	4.063	1.951	212.1	4.386	0.0	8.625	7.048	0.000	13.04	ARD
244-10P	58	1.737	0.834	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
244-11T	12	3.237	1.554	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).DB

Service Life Report

Pass 2 Analysis Include Measured Wear

Report Date/Time: 7/7/2010 9:54:36AM
AnalysisDate/Time:

Run Name: FWH 23 DRNS DSCV
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 0.994

CHECWORKS SFA Version: 3.0 (build 105)
Duty Factor (Global) :1.000

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **HD242A-1-FWH23A CV to FWH22A**					***Sorted By:Remaining Life***		
242-VALVE-LCV-1118	0.000	0.092	0.012	0.012	218,562	No	243,721
242-VALVE-3EX-9	0.000	0.137	0.015	0.015	545,964	No	243,721
242-10T (D/S)	0.000	0.160	0.014	0.014	820,597	No	243,721
242-10T	0.000	0.160	0.014	0.014	820,597	No	243,721
242-8R	0.344	0.273	0.011	0.011	1,243,053	No	243,721
242-12N	0.000	0.188	0.017	0.017	1,416,927	No	243,721
242-8R (D/S)	0.323	0.226	0.014	0.014	1,574,714	No	243,721
242-9P	0.000	0.217	0.017	0.017	2,107,660	Yes	243,721
242-11P	0.000	0.206	0.017	0.017	2,186,737	No	243,721
242-12N (D/S)	0.000	0.207	0.021	0.021	2,210,393	No	243,721
===>Grouped by Line: **HD243A-1-FWH23B CV to FWH22B**					***Sorted By:Remaining Life***		
243-VALVE-LCV-1119	0.000	0.092	0.012	0.012	218,562	No	243,721
243-VALVE-3EX-9-1	0.000	0.137	0.015	0.015	545,964	No	243,721
243-11T	0.000	0.160	0.014	0.014	820,597	No	243,721
243-11T (D/S)	0.000	0.160	0.014	0.014	820,597	No	243,721
243-9R	0.409	0.313	0.011	0.011	1,389,877	Yes	243,721
243-13N	0.000	0.188	0.017	0.017	1,416,927	No	243,721
243-9R (D/S)	0.326	0.262	0.014	0.014	1,840,085	Yes	243,721
243-10P	0.000	0.202	0.017	0.017	1,941,798	No	243,721
243-12P	0.000	0.206	0.017	0.017	2,186,737	No	243,721
243-13N (D/S)	0.000	0.207	0.021	0.021	2,210,393	No	243,721
===>Grouped by Line: **HD244A-1-FWH23C CV to FWH22C**					***Sorted By:Remaining Life***		
244-VALVE-LCV-1119	0.000	0.092	0.012	0.012	218,562	No	243,721
244-VALVE-3EX-9-2	0.000	0.137	0.015	0.015	545,964	No	243,721
244-13N	0.000	0.162	0.017	0.017	839,569	No	243,721
244-9R	0.319	0.260	0.011	0.011	1,190,494	No	243,721
244-9R (D/S)	0.305	0.242	0.014	0.014	1,709,135	Yes	243,721
244-12P	0.000	0.206	0.017	0.017	2,186,737	No	243,721

Component Name	--------- Thickness (in) -------- Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **HD244A-1-FWH23C CV to FWH22C**					***Sorted By:Remaining Life***		
244-10P	0.000	0.229	0.017	0.017	2,229,953	Yes	243,721
244-11T (D/S)	0.000	0.427	0.014	0.014	2,325,529	Yes	243,721
244-11T	0.000	0.541	0.014	0.014	2,968,084	Yes	243,721

Note:
[1] Predictions are based on last Tmeas to analysis ending period.

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).DB

Service Life Report

Pass 2 Analysis Include Measured Wear

Report Date/Time: 7/7/2010 9:54:36AM
AnalysisDate/Time:

Run Name: FWH 23 DRNS DSCV
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 0.994

CHECWORKS SFA Version: 3.0 (build 105)
Duty Factor (Global) : 1.000

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **HD242A-1-FWH23A CV to FWH22A**					***Sorted By:Flow Order***		
242-10T (D/S)	0.000	0.160	0.014	0.014	820,597	No	243,721
242-11P	0.000	0.206	0.017	0.017	2,186,737	No	243,721
242-12N	0.000	0.188	0.017	0.017	1,416,927	No	243,721
242-12N (D/S)	0.000	0.207	0.021	0.021	2,210,393	No	243,721
242-VALVE-LCV-1118	0.000	0.092	0.012	0.012	218,562	No	243,721
242-8R	0.344	0.273	0.011	0.011	1,243,053	No	243,721
242-8R (D/S)	0.323	0.226	0.014	0.014	1,574,714	No	243,721
242-VALVE-3EX-9	0.000	0.137	0.015	0.015	545,964	No	243,721
242-9P	0.000	0.217	0.017	0.017	2,107,660	Yes	243,721
242-10T	0.000	0.160	0.014	0.014	820,597	No	243,721
===>Grouped by Line: **HD243A-1-FWH23B CV to FWH22B**					***Sorted By:Flow Order***		
243-11T (D/S)	0.000	0.160	0.014	0.014	820,597	No	243,721
243-12P	0.000	0.206	0.017	0.017	2,186,737	No	243,721
243-13N	0.000	0.188	0.017	0.017	1,416,927	No	243,721
243-13N (D/S)	0.000	0.207	0.021	0.021	2,210,393	No	243,721
243-VALVE-LCV-1119	0.000	0.092	0.012	0.012	218,562	No	243,721
243-9R	0.409	0.313	0.011	0.011	1,389,877	Yes	243,721
243-9R (D/S)	0.326	0.262	0.014	0.014	1,840,085	Yes	243,721
243-VALVE-3EX-9-1	0.000	0.137	0.015	0.015	545,964	No	243,721
243-10P	0.000	0.202	0.017	0.017	1,941,798	No	243,721
243-11T	0.000	0.160	0.014	0.014	820,597	No	243,721
===>Grouped by Line: **HD244A-1-FWH23C CV to FWH22C**					***Sorted By:Flow Order***		
244-11T (D/S)	0.000	0.427	0.014	0.014	2,325,529	Yes	243,721
244-12P	0.000	0.206	0.017	0.017	2,186,737	No	243,721
244-13N	0.000	0.162	0.017	0.017	839,569	No	243,721
244-VALVE-LCV-1119	0.000	0.092	0.012	0.012	218,562	No	243,721
244-9R	0.319	0.260	0.011	0.011	1,190,494	No	243,721
244-9R (D/S)	0.305	0.242	0.014	0.014	1,709,135	Yes	243,721

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **HD244A-1-FWH23C CV to FWH22C**					***Sorted By:Flow Order***		
244-VALVE-3EX-9-2	0.000	0.137	0.015	0.015	545,964	No	243,721
244-10P	0.000	0.229	0.017	0.017	2,229,953	Yes	243,721
244-11T	0.000	0.541	0.014	0.014	2,968,084	Yes	243,721

Note:
[1] Predictions are based on last Tmeas to analysis ending period.

2

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).DB

Wear Report

Pass 2 Analysis Include Measured Wear

Report Date/Time: 07-Jul-2010 9:54 am
AnalysisDate/Time: 07-Jul-2010 9:54 am

Run Name: FWH 23 DRNS DSCV
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 0.994

CHECWORKS SFA Version: 3.0 (build 105)
Duty Factor (Global) : 1.000

Component Name	Tinit	Total Lifetime Wear (mils) Prd. [1]	Total Lifetime Wear (mils) Meas.	In-Service Component Wear(mils) Prd. [1]	In-Service Component Wear(mils) Meas.	In-Service Component Tmeas, Method, Time (in) [3]	[2]	(hrs) [3]	In-Service Component Thickness (mils) [4] Tp	Tm	Incremental Wear (mils) [5] PRWEAR	Time (hrs) Last Inspected
===>Grouped by Line:	**HD242A-1-FWH23A CV to FWH22A**										***Sorted By: Flow Order***	
242-9P	0.000	38.8	44.0	38.8	44.0	0.227	MT	149,573	211.2	227.0	9.5	149,573
===>Grouped by Line:	**HD243A-1-FWH23B CV to FWH22B**										***Sorted By: Flow Order***	
243-9R	0.409	84.9	66.0	84.9	66.0	0.339		136,608	324.1	339.0	26.3	136,608
243-9R (D/S)	0.326	52.0	43.0	52.0	43.0	0.278		136,608	274.0	278.0	16.2	136,608
===>Grouped by Line:	**HD244A-1-FWH23C CV to FWH22C**										***Sorted By: Flow Order***	
244-11T (D/S)	0.000	81.0	81.0	81.0	81.0	0.436	MT	193,769	169.0	436.0	9.1	193,769
244-9R (D/S)	0.305	51.5	47.0	51.5	47.0	0.258	MT	136,608	253.5	258.0	16.1	136,608
244-10P	0.000	40.4	57.0	40.4	57.0	0.237	MT	165,113	209.6	237.0	7.9	165,113
244-11T	0.000	81.0	105.0	81.0	105.0	0.550	GW	193,769	169.0	550.0	9.1	193,769

Notes:
[1] Predictions are for the time of last inspection (last known meas. wear).
[2] GW = Tmeas is minimum thickness from Band, Blanket or Area Method of greatest wear.
MT = Tmeas is component minimum thickness.
PW = Tmeas is Tinit - predicted wear.
US = Tmeas is user specified.
[3] If no Tmeas has been determined from measured data, then Tmeas = Tinit and Time = current component installation time.
Tmeas is used to determine Predicted Thickness and Component Predicted Time to Tcrit.
[4] These two values are used for thickness plot.
Tp = Predicted thickness at Tmeas.
Tm = Last measured thickness (Tmeas).
[5] PRWEAR = Incremental wear from last Tmeas time to analysis ending period.

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).DB

Wear Rate Report

Pass 2 Analysis Include Measured Wear

Report Date/Time: 7/7/2010 9:54:36AM
AnalysisDate/Time: 6/11/2010 11:35:43AM

CHECWORKS SFA Version: 3.0 (build 105)
Duty Factor (Global) : 1.000

Run Name: FWH 23 DRNS USCV
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 1.332

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***HD24A-1-FWH23A to CV***								***Sorted By: Average Wear Rate***		
242-7R (D/S)	7	5.793	2.756	212.1	7.632	0.0	6.625	7.048	0.000	13.04	ARD
3EXD-1N	31	5.288	2.539	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-20	2	4.002	1.922	212.1	4.357	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-5	2	3.977	1.909	212.1	4.327	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-1	2	3.913	1.879	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-2	2	3.913	1.879	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-21	2	3.913	1.879	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-22	2	3.913	1.879	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-3	2	3.913	1.879	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-4	2	3.913	1.879	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
242-5E	4	3.913	1.879	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-6	2	3.913	1.879	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
242-7E	2	3.913	1.879	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-7	2	3.913	1.879	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-8	2	3.913	1.879	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-9	2	3.913	1.879	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-10	2	3.913	1.879	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-11	2	3.913	1.879	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-12	2	3.913	1.879	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-13	2	3.913	1.879	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
242-7R	7	3.702	1.777	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
242-2E	1	3.490	1.676	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
242-4E	1	3.490	1.676	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
242-6P	54	3.384	1.625	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-14 (D/S)	15	3.173	1.523	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-14	15	3.173	1.523	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-1P	61	2.856	1.371	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-2P	52	2.644	1.270	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***HD24A-1-FWH23A to CV***								***Sorted By: Average Wear Rate***		
3EXD-20P-1 US	52	2.644	1.270	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-20P-1 DS	52	2.644	1.270	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-2P-1 US	52	2.644	1.270	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-2P-1 DS	52	2.644	1.270	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-21P	52	2.644	1.270	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-22P	52	2.644	1.270	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-3P	52	2.644	1.270	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
242-1P	52	2.644	1.270	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-4P	52	2.644	1.270	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-5P	52	2.644	1.270	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-6P US	52	2.644	1.270	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-6P DS	52	2.644	1.270	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-7P	52	2.644	1.270	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-8P	52	2.644	1.270	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-9P	52	2.644	1.270	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-10P	52	2.644	1.270	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-11P	52	2.644	1.270	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-12P	52	2.644	1.270	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-13P	52	2.644	1.270	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
242-3P	51	2.327	1.117	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-20P	65	2.115	1.016	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
===>Grouped by Line:	***HD25A-1-FWH23B to CV***								***Sorted By: Average Wear Rate***		
243-8R (D/S)	7	5.793	2.756	212.1	7.632	0.0	6.625	7.048	0.000	13.04	ARD
3EXD-23N	31	5.288	2.539	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-24	4	4.021	1.931	212.1	4.379	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-33	2	3.990	1.916	212.1	4.342	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-30	2	3.980	1.911	212.1	4.331	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-23	2	3.964	1.903	212.1	4.312	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-40	2	3.913	1.879	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-41	2	3.913	1.879	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-25	2	3.913	1.879	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-42	2	3.913	1.879	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-26	4	3.913	1.879	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-28	2	3.913	1.879	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-29	2	3.913	1.879	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
243-6E	4	3.913	1.879	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***HD25A-1-FWH23B to CV***								***Sorted By: Average Wear Rate***		
243-8E	2	3.913	1.879	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-31	2	3.913	1.879	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-32	2	3.913	1.879	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-27	3	3.702	1.777	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
243-8R	7	3.702	1.777	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
243-2E	1	3.490	1.676	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
243-4E	1	3.490	1.676	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-24P	54	3.384	1.625	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-26P	54	3.384	1.625	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
243-7P	54	3.384	1.625	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-34 (D/S)	15	3.173	1.523	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-34	15	3.173	1.523	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-23P	61	2.856	1.371	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-40P-1	52	2.644	1.270	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-41P	52	2.644	1.270	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-25P	52	2.644	1.270	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-42P	52	2.644	1.270	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
243-1P	52	2.644	1.270	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-27P	53	2.644	1.270	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-28P	52	2.644	1.270	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-29P	52	2.644	1.270	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-30P	52	2.644	1.270	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-31P	52	2.644	1.270	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-32P	52	2.644	1.270	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-33P US	52	2.644	1.270	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-33P DS	52	2.644	1.270	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
243-3P	51	2.327	1.117	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
243-5P	51	2.327	1.117	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-40P	65	2.115	1.016	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
===>Grouped by Line:	***HD26A-1-FWH23C to CV***								***Sorted By: Average Wear Rate***		
244-8R (D/S)	7	5.793	2.756	212.1	7.632	0.0	6.625	7.048	0.000	13.04	ARD
3EXD-43N	31	5.288	2.539	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-45	4	4.051	1.945	212.1	4.414	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-59	2	4.002	1.922	212.1	4.357	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-43	2	3.913	1.879	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-58	2	3.913	1.879	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***HD26A-1-FWH23C to CV***								***Sorted By: Average Wear Rate***		
3EXD-44	2	3.913	1.879	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-46	2	3.913	1.879	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-60	2	3.913	1.879	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-47	2	3.913	1.879	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-48	2	3.913	1.879	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-49	2	3.913	1.879	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
244-6E	4	3.913	1.879	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-50	2	3.913	1.879	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
244-8E	2	3.913	1.879	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
244-8R	7	3.702	1.777	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
244-2E	1	3.490	1.676	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
244-4E	1	3.490	1.676	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-45P	54	3.384	1.625	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
244-7P	54	3.384	1.625	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-51 (D/S)	15	3.173	1.523	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-51	15	3.173	1.523	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-43P	61	2.856	1.371	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-43P	52	2.644	1.270	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-58P-1	52	2.644	1.270	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-44P	52	2.644	1.270	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-59P US	52	2.644	1.270	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-59P DS	52	2.644	1.270	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-46P	52	2.644	1.270	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-60P	52	2.644	1.270	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
244-1P	52	2.644	1.270	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-47P	52	2.644	1.270	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-48P	52	2.644	1.270	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-49P	52	2.644	1.270	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-50P US	52	2.644	1.270	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-50P DS	52	2.644	1.270	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
244-3P	51	2.327	1.117	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
244-5P	51	2.327	1.117	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-58P US	65	2.115	1.016	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-58P DS	65	2.115	1.016	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).DB

Wear Rate Report

Pass 2 Analysis Include Measured Wear

Report Date/Time: 7/7/2010 9:54:36AM
AnalysisDate/Time: 3/11/2010 11:35:43AM

CHECWORKS SFA Version: 3.0 (build 105)
Duty Factor (Global) : 1.000

Run Name: FWH 23 DRNS USCV
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 1.332

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***HD24A-1-FWH23A to CV***									***Sorted By: Flow Order***	
3EXD-1N	31	5.288	2.539	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-1P	61	2.856	1.371	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-1	2	3.913	1.879	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-2P	52	2.644	1.270	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-2	2	3.913	1.879	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-2P-1 US	52	2.644	1.270	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-2P-1 DS	52	2.644	1.270	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-3	2	3.913	1.879	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-3P	52	2.644	1.270	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-4	2	3.913	1.879	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-4P	52	2.644	1.270	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-5	2	3.977	1.909	212.1	4.327	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-5P	52	2.644	1.270	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-6	2	3.913	1.879	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-6P US	52	2.644	1.270	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-6P DS	52	2.644	1.270	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-7	2	3.913	1.879	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-7P	52	2.644	1.270	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-8	2	3.913	1.879	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-8P	52	2.644	1.270	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-9	2	3.913	1.879	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-9P	52	2.644	1.270	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-10	2	3.913	1.879	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-10P	52	2.644	1.270	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-11	2	3.913	1.879	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-11P	52	2.644	1.270	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-12	2	3.913	1.879	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-12P	52	2.644	1.270	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***HD24A-1-FWH23A to CV***									***Sorted By: Flow Order***	
3EXD-13	2	3.913	1.879	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-13P	52	2.644	1.270	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-14	15	3.173	1.523	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-14 (D/S)	15	3.173	1.523	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-20P	65	2.115	1.016	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-20	2	4.002	1.922	212.1	4.357	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-20P-1 US	52	2.644	1.270	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-20P-1 DS	52	2.644	1.270	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-21	2	3.913	1.879	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-21P	52	2.644	1.270	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-22	2	3.913	1.879	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-22P	52	2.644	1.270	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
242-1P	52	2.644	1.270	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
242-2E	1	3.490	1.676	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
242-3P	51	2.327	1.117	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
242-4E	1	3.490	1.676	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
242-5E	4	3.913	1.879	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
242-6P	54	3.384	1.625	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
242-7E	2	3.913	1.879	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
242-7R	7	3.702	1.777	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
242-7R (D/S)	7	5.793	2.756	212.1	7.632	0.0	6.625	7.048	0.000	13.04	ARD
===>Grouped by Line:	***HD25A-1-FWH23B to CV***									***Sorted By: Flow Order***	
3EXD-23N	31	5.288	2.539	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-23P	61	2.856	1.371	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-23	2	3.964	1.903	212.1	4.312	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-24	4	4.021	1.931	212.1	4.379	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-24P	54	3.384	1.625	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-25	2	3.913	1.879	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-25P	52	2.644	1.270	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-26	4	3.913	1.879	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-26P	54	3.384	1.625	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-27	3	3.702	1.777	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-27P	53	2.644	1.270	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-28	2	3.913	1.879	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-28P	52	2.644	1.270	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-29	2	3.913	1.879	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***HD25A-1-FWH23B to CV***									***Sorted By: Flow Order***	
3EXD-29P	52	2.644	1.270	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-30	2	3.980	1.911	212.1	4.331	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-30P	52	2.644	1.270	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-31	2	3.913	1.879	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-31P	52	2.644	1.270	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-32	2	3.913	1.879	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-32P	52	2.644	1.270	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-33	2	3.990	1.916	212.1	4.342	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-33P US	52	2.644	1.270	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-33P DS	52	2.644	1.270	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-34	15	3.173	1.523	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-34 (D/S)	15	3.173	1.523	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-40P	65	2.115	1.016	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-40	2	3.913	1.879	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-40P-1	52	2.644	1.270	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-41	2	3.913	1.879	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-41P	52	2.644	1.270	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-42	2	3.913	1.879	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-42P	52	2.644	1.270	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
243-1P	52	2.644	1.270	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
243-2E	1	3.490	1.676	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
243-3P	51	2.327	1.117	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
243-4E	1	3.490	1.676	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
243-5P	51	2.327	1.117	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
243-6E	4	3.913	1.879	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
243-7P	54	3.384	1.625	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
243-8E	2	3.913	1.879	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
243-8R	7	3.702	1.777	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
243-8R (D/S)	7	5.793	2.756	212.1	7.632	0.0	6.625	7.048	0.000	13.04	ARD
===>Grouped by Line:	***HD26A-1-FWH23C to CV***									***Sorted By: Flow Order***	
3EXD-43N	31	5.288	2.539	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-43P	61	2.856	1.371	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-43	2	3.913	1.879	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-43P	52	2.644	1.270	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-44	2	3.913	1.879	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-44P	52	2.644	1.270	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***HD26A-1-FWH23C to CV***									***Sorted By: Flow Order***	
3EXD-45	4	4.051	1.945	212.1	4.414	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-45P	54	3.384	1.625	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-46	2	3.913	1.879	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-46P	52	2.644	1.270	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-47	2	3.913	1.879	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-47P	52	2.644	1.270	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-48	2	3.913	1.879	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-48P	52	2.644	1.270	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-49	2	3.913	1.879	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-49P	52	2.644	1.270	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-50	2	3.913	1.879	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-50P US	52	2.644	1.270	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-50P DS	52	2.644	1.270	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-51	15	3.173	1.523	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-51 (D/S)	15	3.173	1.523	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-58P US	65	2.115	1.016	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-58P DS	65	2.115	1.016	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-58	2	3.913	1.879	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-58P-1	52	2.644	1.270	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-59	2	4.002	1.922	212.1	4.357	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-59P US	52	2.644	1.270	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-59P DS	52	2.644	1.270	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-60	2	3.913	1.879	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
3EXD-60P	52	2.644	1.270	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
244-1P	52	2.644	1.270	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
244-2E	1	3.490	1.676	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
244-3P	51	2.327	1.117	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
244-4E	1	3.490	1.676	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
244-5P	51	2.327	1.117	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
244-6E	4	3.913	1.879	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
244-7P	54	3.384	1.625	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
244-8E	2	3.913	1.879	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
244-8R	7	3.702	1.777	212.1	4.252	0.0	8.625	7.048	0.000	13.04	ARD
244-8R (D/S)	7	5.793	2.756	212.1	7.632	0.0	6.625	7.048	0.000	13.04	ARD

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).DB

Service Life Report

Pass 2 Analysis Include Measured Wear

Report Date/Time: 7/7/2010 9:54:36AM
AnalysisDate/Time:

Run Name: FWH 23 DRNS USCV
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 1.332

CHECWORKS SFA Version: 3.0 (build 105)
Duty Factor (Global) :1.000

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **HD24A-1-FWH23A to CV**					***Sorted By:Remaining Life***		
3EXD-1N	0.000	0.103	0.014	0.014	305,408	No	243,721
242-7R (D/S)	0.000	0.119	0.011	0.011	342,660	No	243,721
3EXD-21	0.000	0.119	0.014	0.014	486,004	No	243,721
3EXD-1	0.000	0.141	0.014	0.014	591,060	No	243,721
3EXD-9	0.000	0.141	0.014	0.014	591,060	No	243,721
3EXD-10	0.000	0.141	0.014	0.014	591,060	No	243,721
3EXD-11	0.000	0.141	0.014	0.014	591,060	No	243,721
3EXD-12	0.000	0.141	0.014	0.014	591,060	No	243,721
3EXD-13	0.000	0.141	0.014	0.014	591,060	No	243,721
3EXD-22	0.000	0.141	0.014	0.014	591,060	No	243,721
242-5E	0.000	0.141	0.014	0.014	591,060	No	243,721
242-7E	0.000	0.141	0.014	0.014	591,060	No	243,721
242-7R	0.000	0.147	0.014	0.014	653,840	No	243,721
242-2E	0.000	0.153	0.014	0.014	724,231	No	243,721
242-4E	0.000	0.153	0.014	0.014	724,231	No	243,721
242-6P	0.000	0.156	0.017	0.017	749,445	No	243,721
3EXD-20	0.299	0.188	0.014	0.014	789,618	Yes	243,721
3EXD-2	0.000	0.186	0.014	0.014	798,382	Yes	243,721
3EXD-5	0.285	0.194	0.014	0.014	823,622	Yes	243,721
3EXD-14	0.000	0.162	0.014	0.014	847,414	No	243,721
3EXD-14 (D/S)	0.000	0.162	0.014	0.014	847,414	No	243,721
3EXD-1P	0.000	0.171	0.017	0.017	982,231	No	243,721
3EXD-7	0.000	0.227	0.014	0.014	989,430	Yes	243,721
3EXD-4	0.000	0.232	0.014	0.014	1,012,851	No	243,721
3EXD-3	0.000	0.237	0.014	0.014	1,039,178	Yes	243,721
3EXD-8	0.000	0.243	0.014	0.014	1,064,028	Yes	243,721
3EXD-6	0.000	0.247	0.014	0.014	1,082,730	Yes	243,721
3EXD-6P US	0.000	0.176	0.017	0.017	1,101,417	No	243,721
3EXD-9P	0.000	0.176	0.017	0.017	1,101,417	No	243,721
3EXD-10P	0.000	0.176	0.017	0.017	1,101,417	No	243,721

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **HD24A-1-FWH23A to CV**					***Sorted By:Remaining Life***		
3EXD-11P	0.000	0.176	0.017	0.017	1,101,417	No	243,721
3EXD-12P	0.000	0.176	0.017	0.017	1,101,417	No	243,721
3EXD-13P	0.000	0.176	0.017	0.017	1,101,417	No	243,721
3EXD-22P	0.000	0.176	0.017	0.017	1,101,417	No	243,721
242-1P	0.000	0.176	0.017	0.017	1,101,417	No	243,721
3EXD-20P-1 US	0.000	0.196	0.017	0.017	1,236,380	Yes	243,721
3EXD-5P	0.000	0.197	0.017	0.017	1,243,280	Yes	243,721
3EXD-2P	0.000	0.200	0.017	0.017	1,263,981	Yes	243,721
3EXD-4P	0.000	0.200	0.017	0.017	1,263,981	Yes	243,721
3EXD-3P	0.000	0.201	0.017	0.017	1,270,881	Yes	243,721
3EXD-20P-1 DS	0.000	0.204	0.017	0.017	1,291,582	Yes	243,721
3EXD-2P-1 US	0.000	0.207	0.017	0.017	1,312,283	Yes	243,721
3EXD-21P	0.000	0.208	0.017	0.017	1,319,183	Yes	243,721
242-3P	0.000	0.185	0.017	0.017	1,320,828	No	243,721
3EXD-8P	0.000	0.215	0.017	0.017	1,367,485	Yes	243,721
3EXD-6P DS	0.000	0.226	0.017	0.017	1,445,144	Yes	243,721
3EXD-7P	0.000	0.229	0.017	0.017	1,465,845	Yes	243,721
3EXD-2P-1 DS	0.000	0.232	0.017	0.017	1,484,790	No	243,721
3EXD-20P	0.000	0.205	0.017	0.017	1,623,108	Yes	243,721
===>Grouped by Line: **HD25A-1-FWH23B to CV**					***Sorted By:Remaining Life***		
3EXD-23N	0.000	0.103	0.014	0.014	305,408	No	243,721
243-8R (D/S)	0.000	0.119	0.011	0.011	342,660	No	243,721
3EXD-25	0.000	0.141	0.014	0.014	591,060	No	243,721
3EXD-26	0.000	0.141	0.014	0.014	591,060	No	243,721
3EXD-28	0.000	0.141	0.014	0.014	591,060	No	243,721
3EXD-31	0.000	0.141	0.014	0.014	591,060	No	243,721
3EXD-32	0.000	0.141	0.014	0.014	591,060	No	243,721
3EXD-40	0.000	0.141	0.014	0.014	591,060	No	243,721
3EXD-41	0.000	0.141	0.014	0.014	591,060	No	243,721
3EXD-42	0.000	0.141	0.014	0.014	591,060	No	243,721
243-6E	0.000	0.141	0.014	0.014	591,060	No	243,721
243-8E	0.000	0.141	0.014	0.014	591,060	No	243,721
243-8R	0.000	0.147	0.014	0.014	653,840	No	243,721
243-2E	0.000	0.153	0.014	0.014	724,231	No	243,721
243-4E	0.000	0.153	0.014	0.014	724,231	No	243,721
3EXD-24P	0.000	0.156	0.017	0.017	749,445	No	243,721
243-7P	0.000	0.156	0.017	0.017	749,445	No	243,721
3EXD-33	0.292	0.190	0.014	0.014	802,000	Yes	243,721

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **HD25A-1-FWH23B to CV**					***Sorted By:Remaining Life***		
3EXD-23	0.278	0.202	0.014	0.014	863,779	Yes	243,721
3EXD-27	0.000	0.190	0.014	0.014	865,692	Yes	243,721
3EXD-30	0.287	0.210	0.014	0.014	896,009	Yes	243,721
3EXD-24	0.309	0.218	0.014	0.014	925,658	Yes	243,721
3EXD-26P	0.000	0.194	0.017	0.017	952,979	Yes	243,721
3EXD-25P	0.000	0.176	0.017	0.017	1,101,417	No	243,721
3EXD-31P	0.000	0.176	0.017	0.017	1,101,417	No	243,721
3EXD-40P-1	0.000	0.176	0.017	0.017	1,101,417	No	243,721
3EXD-41P	0.000	0.176	0.017	0.017	1,101,417	No	243,721
3EXD-42P	0.000	0.176	0.017	0.017	1,101,417	No	243,721
243-1P	0.000	0.176	0.017	0.017	1,101,417	No	243,721
3EXD-23P	0.000	0.199	0.017	0.017	1,161,406	Yes	243,721
3EXD-29	0.000	0.281	0.014	0.014	1,244,322	Yes	243,721
3EXD-29P	0.000	0.204	0.017	0.017	1,291,582	Yes	243,721
3EXD-30P	0.000	0.205	0.017	0.017	1,298,482	Yes	243,721
3EXD-33P US	0.000	0.208	0.017	0.017	1,319,183	Yes	243,721
243-3P	0.000	0.185	0.017	0.017	1,320,828	No	243,721
243-5P	0.000	0.185	0.017	0.017	1,320,828	No	243,721
3EXD-32P	0.000	0.211	0.017	0.017	1,339,884	Yes	243,721
3EXD-33P DS	0.000	0.217	0.017	0.017	1,383,489	Yes	243,721
3EXD-27P	0.000	0.235	0.017	0.017	1,505,491	No	243,721
3EXD-28P	0.000	0.238	0.017	0.017	1,529,394	Yes	243,721
3EXD-40P	0.000	0.223	0.017	0.017	1,780,568	Yes	243,721
3EXD-34	0.000	0.492	0.014	0.014	2,747,161	Yes	243,721
3EXD-34 (D/S)	0.000	0.504	0.014	0.014	2,816,164	Yes	243,721
===>Grouped by Line: **HD26A-1-FWH23C to CV**					***Sorted By:Remaining Life***		
3EXD-43N	0.000	0.103	0.014	0.014	305,408	No	243,721
244-8R (D/S)	0.000	0.119	0.011	0.011	342,660	No	243,721
3EXD-58	0.000	0.141	0.014	0.014	591,060	No	243,721
244-6E	0.000	0.141	0.014	0.014	591,060	No	243,721
244-8E	0.000	0.141	0.014	0.014	591,060	No	243,721
3EXD-43	0.000	0.141	0.014	0.014	591,060	No	243,721
3EXD-44	0.000	0.141	0.014	0.014	591,060	No	243,721
3EXD-46	0.000	0.141	0.014	0.014	591,060	No	243,721
3EXD-47	0.000	0.141	0.014	0.014	591,060	No	243,721
3EXD-48	0.000	0.141	0.014	0.014	591,060	No	243,721
3EXD-49	0.000	0.141	0.014	0.014	591,060	No	243,721
3EXD-50	0.000	0.141	0.014	0.014	591,060	No	243,721

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **HD26A-1-FWH23C to CV**					***Sorted By:Remaining Life***		
244-8R	0.000	0.147	0.014	0.014	653,840	No	243,721
244-2E	0.000	0.153	0.014	0.014	724,231	No	243,721
244-4E	0.000	0.153	0.014	0.014	724,231	No	243,721
244-7P	0.000	0.156	0.017	0.017	749,445	No	243,721
3EXD-45P	0.000	0.156	0.017	0.017	749,445	No	243,721
3EXD-59	0.299	0.211	0.014	0.014	894,460	Yes	243,721
3EXD-45	0.325	0.214	0.014	0.014	899,238	Yes	243,721
3EXD-60	0.000	0.208	0.014	0.014	900,954	No	243,721
3EXD-43P	0.000	0.171	0.017	0.017	982,231	No	243,721
244-1P	0.000	0.176	0.017	0.017	1,101,417	No	243,721
3EXD-43P	0.000	0.176	0.017	0.017	1,101,417	No	243,721
3EXD-46P	0.000	0.176	0.017	0.017	1,101,417	No	243,721
3EXD-47P	0.000	0.176	0.017	0.017	1,101,417	No	243,721
3EXD-48P	0.000	0.176	0.017	0.017	1,101,417	No	243,721
3EXD-49P	0.000	0.176	0.017	0.017	1,101,417	No	243,721
3EXD-50P US	0.000	0.176	0.017	0.017	1,101,417	No	243,721
3EXD-44P	0.000	0.191	0.017	0.017	1,201,878	Yes	243,721
244-3P	0.000	0.185	0.017	0.017	1,320,828	No	243,721
244-5P	0.000	0.185	0.017	0.017	1,320,828	No	243,721
3EXD-60P	0.000	0.210	0.017	0.017	1,332,984	Yes	243,721
3EXD-58P-1	0.000	0.216	0.017	0.017	1,374,386	Yes	243,721
3EXD-59P DS	0.000	0.218	0.017	0.017	1,388,186	Yes	243,721
3EXD-59P US	0.000	0.220	0.017	0.017	1,401,987	Yes	243,721
3EXD-58P DS	0.000	0.191	0.017	0.017	1,503,671	No	243,721
3EXD-50P DS	0.000	0.239	0.017	0.017	1,529,713	No	243,721
3EXD-58P US	0.000	0.228	0.017	0.017	1,821,562	Yes	243,721
3EXD-51	0.000	0.445	0.014	0.014	2,476,044	No	243,721
3EXD-51 (D/S)	0.000	0.511	0.014	0.014	2,855,560	No	243,721

Note:
[1] Predictions are based on last Tmeas to analysis ending period.

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).DB

Service Life Report

Pass 2 Analysis Include Measured Wear

Report Date/Time: 7/7/2010 9:54:36AM
AnalysisDate/Time:

Run Name: FWH 23 DRNS USCV
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 1.332

CHECWORKS SFA Version: 3.0 (build 105)
Duty Factor (Global) : 1.000

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **HD24A-1-FWH23A to CV**					***Sorted By:Flow Order***		
3EXD-1N	0.000	0.103	0.014	0.014	305,408	No	243,721
3EXD-1P	0.000	0.171	0.017	0.017	982,231	No	243,721
3EXD-1	0.000	0.141	0.014	0.014	591,060	No	243,721
3EXD-2P	0.000	0.200	0.017	0.017	1,263,981	Yes	243,721
3EXD-2	0.000	0.186	0.014	0.014	798,382	Yes	243,721
3EXD-2P-1 US	0.000	0.207	0.017	0.017	1,312,283	Yes	243,721
3EXD-2P-1 DS	0.000	0.232	0.017	0.017	1,484,790	No	243,721
3EXD-3	0.000	0.237	0.014	0.014	1,039,178	Yes	243,721
3EXD-3P	0.000	0.201	0.017	0.017	1,270,881	Yes	243,721
3EXD-4	0.000	0.232	0.014	0.014	1,012,851	No	243,721
3EXD-4P	0.000	0.200	0.017	0.017	1,263,981	Yes	243,721
3EXD-5	0.285	0.194	0.014	0.014	823,622	Yes	243,721
3EXD-5P	0.000	0.197	0.017	0.017	1,243,280	Yes	243,721
3EXD-6	0.000	0.247	0.014	0.014	1,082,730	Yes	243,721
3EXD-6P US	0.000	0.176	0.017	0.017	1,101,417	No	243,721
3EXD-6P DS	0.000	0.226	0.017	0.017	1,445,144	Yes	243,721
3EXD-7	0.000	0.227	0.014	0.014	989,430	Yes	243,721
3EXD-7P	0.000	0.229	0.017	0.017	1,465,845	Yes	243,721
3EXD-8	0.000	0.243	0.014	0.014	1,064,028	Yes	243,721
3EXD-8P	0.000	0.215	0.017	0.017	1,367,485	Yes	243,721
3EXD-9	0.000	0.141	0.014	0.014	591,060	No	243,721
3EXD-9P	0.000	0.176	0.017	0.017	1,101,417	No	243,721
3EXD-10	0.000	0.141	0.014	0.014	591,060	No	243,721
3EXD-10P	0.000	0.176	0.017	0.017	1,101,417	No	243,721
3EXD-11	0.000	0.141	0.014	0.014	591,060	No	243,721
3EXD-11P	0.000	0.176	0.017	0.017	1,101,417	No	243,721
3EXD-12	0.000	0.141	0.014	0.014	591,060	No	243,721
3EXD-12P	0.000	0.176	0.017	0.017	1,101,417	No	243,721
3EXD-13	0.000	0.141	0.014	0.014	591,060	No	243,721
3EXD-13P	0.000	0.176	0.017	0.017	1,101,417	No	243,721

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **HD24A-1-FWH23A to CV**					***Sorted By:Flow Order***		
3EXD-14	0.000	0.162	0.014	0.014	847,414	No	243,721
3EXD-14 (D/S)	0.000	0.162	0.014	0.014	847,414	No	243,721
3EXD-20P	0.000	0.205	0.017	0.017	1,623,108	Yes	243,721
3EXD-20	0.299	0.188	0.014	0.014	789,618	Yes	243,721
3EXD-20P-1 US	0.000	0.196	0.017	0.017	1,236,380	Yes	243,721
3EXD-20P-1 DS	0.000	0.204	0.017	0.017	1,291,582	Yes	243,721
3EXD-21	0.000	0.119	0.014	0.014	486,004	No	243,721
3EXD-21P	0.000	0.208	0.017	0.017	1,319,183	Yes	243,721
3EXD-22	0.000	0.141	0.014	0.014	591,060	No	243,721
3EXD-22P	0.000	0.176	0.017	0.017	1,101,417	No	243,721
242-1P	0.000	0.176	0.017	0.017	1,101,417	No	243,721
242-2E	0.000	0.153	0.014	0.014	724,231	No	243,721
242-3P	0.000	0.185	0.017	0.017	1,320,828	No	243,721
242-4E	0.000	0.153	0.014	0.014	724,231	No	243,721
242-5E	0.000	0.141	0.014	0.014	591,060	No	243,721
242-6P	0.000	0.156	0.017	0.017	749,445	No	243,721
242-7E	0.000	0.141	0.014	0.014	591,060	No	243,721
242-7R	0.000	0.147	0.014	0.014	653,840	No	243,721
242-7R (D/S)	0.000	0.119	0.011	0.011	342,660	No	243,721
===>Grouped by Line: **HD25A-1-FWH23B to CV**					***Sorted By:Flow Order***		
3EXD-23N	0.000	0.103	0.014	0.014	305,408	No	243,721
3EXD-23P	0.000	0.199	0.017	0.017	1,161,406	Yes	243,721
3EXD-23	0.278	0.202	0.014	0.014	863,779	Yes	243,721
3EXD-24	0.309	0.218	0.014	0.014	925,658	Yes	243,721
3EXD-24P	0.000	0.156	0.017	0.017	749,445	No	243,721
3EXD-25	0.000	0.141	0.014	0.014	591,060	No	243,721
3EXD-25P	0.000	0.176	0.017	0.017	1,101,417	No	243,721
3EXD-26	0.000	0.141	0.014	0.014	591,060	No	243,721
3EXD-26P	0.000	0.194	0.017	0.017	952,979	Yes	243,721
3EXD-27	0.000	0.190	0.014	0.014	865,692	Yes	243,721
3EXD-27P	0.000	0.235	0.017	0.017	1,505,491	No	243,721
3EXD-28	0.000	0.141	0.014	0.014	591,060	No	243,721
3EXD-28P	0.000	0.238	0.017	0.017	1,529,394	Yes	243,721
3EXD-29	0.000	0.281	0.014	0.014	1,244,322	Yes	243,721
3EXD-29P	0.000	0.204	0.017	0.017	1,291,582	Yes	243,721
3EXD-30	0.287	0.210	0.014	0.014	896,009	Yes	243,721
3EXD-30P	0.000	0.205	0.017	0.017	1,298,482	Yes	243,721
3EXD-31	0.000	0.141	0.014	0.014	591,060	No	243,721

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **HD25A-1-FWH23B to CV**					***Sorted By:Flow Order***		
3EXD-31P	0.000	0.176	0.017	0.017	1,101,417	No	243,721
3EXD-32	0.000	0.141	0.014	0.014	591,060	No	243,721
3EXD-32P	0.000	0.211	0.017	0.017	1,339,884	Yes	243,721
3EXD-33	0.292	0.190	0.014	0.014	802,000	Yes	243,721
3EXD-33P US	0.000	0.208	0.017	0.017	1,319,183	Yes	243,721
3EXD-33P DS	0.000	0.217	0.017	0.017	1,383,489	Yes	243,721
3EXD-34	0.000	0.492	0.014	0.014	2,747,161	Yes	243,721
3EXD-34 (D/S)	0.000	0.504	0.014	0.014	2,816,164	Yes	243,721
3EXD-40P	0.000	0.223	0.017	0.017	1,780,568	Yes	243,721
3EXD-40	0.000	0.141	0.014	0.014	591,060	No	243,721
3EXD-40P-1	0.000	0.176	0.017	0.017	1,101,417	No	243,721
3EXD-41	0.000	0.141	0.014	0.014	591,060	No	243,721
3EXD-41P	0.000	0.176	0.017	0.017	1,101,417	No	243,721
3EXD-42	0.000	0.141	0.014	0.014	591,060	No	243,721
3EXD-42P	0.000	0.176	0.017	0.017	1,101,417	No	243,721
243-1P	0.000	0.176	0.017	0.017	1,101,417	No	243,721
243-2E	0.000	0.153	0.014	0.014	724,231	No	243,721
243-3P	0.000	0.185	0.017	0.017	1,320,828	No	243,721
243-4E	0.000	0.153	0.014	0.014	724,231	No	243,721
243-5P	0.000	0.185	0.017	0.017	1,320,828	No	243,721
243-6E	0.000	0.141	0.014	0.014	591,060	No	243,721
243-7P	0.000	0.156	0.017	0.017	749,445	No	243,721
243-8E	0.000	0.141	0.014	0.014	591,060	No	243,721
243-8R	0.000	0.147	0.014	0.014	653,840	No	243,721
243-8R (D/S)	0.000	0.119	0.011	0.011	342,660	No	243,721
===>Grouped by Line: **HD26A-1-FWH23C to CV**					***Sorted By:Flow Order***		
3EXD-43N	0.000	0.103	0.014	0.014	305,408	No	243,721
3EXD-43P	0.000	0.171	0.017	0.017	982,231	No	243,721
3EXD-43	0.000	0.141	0.014	0.014	591,060	No	243,721
3EXD-43P	0.000	0.176	0.017	0.017	1,101,417	No	243,721
3EXD-44	0.000	0.141	0.014	0.014	591,060	No	243,721
3EXD-44P	0.000	0.191	0.017	0.017	1,201,878	Yes	243,721
3EXD-45	0.325	0.214	0.014	0.014	899,238	Yes	243,721
3EXD-45P	0.000	0.156	0.017	0.017	749,445	No	243,721
3EXD-46	0.000	0.141	0.014	0.014	591,060	No	243,721
3EXD-46P	0.000	0.176	0.017	0.017	1,101,417	No	243,721
3EXD-47	0.000	0.141	0.014	0.014	591,060	No	243,721
3EXD-47P	0.000	0.176	0.017	0.017	1,101,417	No	243,721

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **HD26A-1-FWH23C to CV**					***Sorted By:Flow Order***		
3EXD-48	0.000	0.141	0.014	0.014	591,060	No	243,721
3EXD-48P	0.000	0.176	0.017	0.017	1,101,417	No	243,721
3EXD-49	0.000	0.141	0.014	0.014	591,060	No	243,721
3EXD-49P	0.000	0.176	0.017	0.017	1,101,417	No	243,721
3EXD-50	0.000	0.141	0.014	0.014	591,060	No	243,721
3EXD-50P US	0.000	0.176	0.017	0.017	1,101,417	No	243,721
3EXD-50P DS	0.000	0.239	0.017	0.017	1,529,713	No	243,721
3EXD-51	0.000	0.445	0.014	0.014	2,476,044	No	243,721
3EXD-51 (D/S)	0.000	0.511	0.014	0.014	2,855,560	No	243,721
3EXD-58P US	0.000	0.228	0.017	0.017	1,821,562	Yes	243,721
3EXD-58P DS	0.000	0.191	0.017	0.017	1,503,671	No	243,721
3EXD-58	0.000	0.141	0.014	0.014	591,060	No	243,721
3EXD-58P-1	0.000	0.216	0.017	0.017	1,374,386	Yes	243,721
3EXD-59	0.299	0.211	0.014	0.014	894,460	Yes	243,721
3EXD-59P US	0.000	0.220	0.017	0.017	1,401,987	Yes	243,721
3EXD-59P DS	0.000	0.218	0.017	0.017	1,388,186	Yes	243,721
3EXD-60	0.000	0.208	0.014	0.014	900,954	No	243,721
3EXD-60P	0.000	0.210	0.017	0.017	1,332,984	Yes	243,721
244-1P	0.000	0.176	0.017	0.017	1,101,417	No	243,721
244-2E	0.000	0.153	0.014	0.014	724,231	No	243,721
244-3P	0.000	0.185	0.017	0.017	1,320,828	No	243,721
244-4E	0.000	0.153	0.014	0.014	724,231	No	243,721
244-5P	0.000	0.185	0.017	0.017	1,320,828	No	243,721
244-6E	0.000	0.141	0.014	0.014	591,060	No	243,721
244-7P	0.000	0.156	0.017	0.017	749,445	No	243,721
244-8E	0.000	0.141	0.014	0.014	591,060	No	243,721
244-8R	0.000	0.147	0.014	0.014	653,840	No	243,721
244-8R (D/S)	0.000	0.119	0.011	0.011	342,660	No	243,721

Note:
[1] Predictions are based on last Tmeas to analysis ending period.

4

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).DB

Wear Report

Pass 2 Analysis Include Measured Wear

Report Date/Time: 07-Jul-2010 9:54 am
AnalysisDate/Time: 07-Jul-2010 9:54 am

Run Name: FWH 23 DRNS USCV
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 1.332

CHECWORKS SFA Version: 3.0 (build 105)
Duty Factor (Global) : 1.000

Component Name	Tinit	Total Lifetime Wear (mils) Prd. [1]	Meas.	In-Service Component Wear(mils) Prd. [1]	Meas.	In-Service Component Tmeas, Method, Time (in) [3]	[2]	(hrs) [3]	In-Service Component Thickness (mils) [4] Tp	Tm	Incremental Wear (mils) [5] PRWEAR	Time (hrs) Last Inspected
===>Grouped by Line:	**HD24A-1-FWH23A to CV**										***Sorted By: Flow Order***	
3EXD-2P	0.000	43.6	61.0	43.6	61.0	0.230	MT	106,128	206.4	230.0	30.0	106,128
3EXD-2	0.000	64.5	59.0	64.5	59.0	0.230	MT	106,128	185.5	230.0	44.4	106,128
3EXD-2P-1 US	0.000	43.6	50.0	43.6	50.0	0.237	MT	106,128	206.4	237.0	30.0	106,128
3EXD-3	0.000	105.1	104.0	105.1	104.0	0.241	MT	226,201	144.9	241.0	3.8	226,201
3EXD-3P	0.000	43.6	50.0	43.6	50.0	0.231	MT	106,128	206.4	231.0	30.0	106,128
3EXD-4P	0.000	43.6	49.0	43.6	49.0	0.230	MT	106,128	206.4	230.0	30.0	106,128
3EXD-5	0.285	65.5	46.0	65.5	46.0	0.239	MT	106,128	219.5	239.0	45.1	106,128
3EXD-5P	0.000	43.6	58.0	43.6	58.0	0.227	MT	106,128	206.4	227.0	30.0	106,128
3EXD-6	0.000	94.5	68.0	94.5	68.0	0.261	MT	179,304	155.5	261.0	14.4	179,304
3EXD-6P DS	0.000	63.8	30.0	63.8	30.0	0.236	GW	179,257	186.2	236.0	9.7	179,257
3EXD-7	0.000	94.4	66.0	94.4	66.0	0.241	MT	179,257	155.6	241.0	14.4	179,257
3EXD-7P	0.000	63.8	38.0	63.8	38.0	0.239	GW	179,257	186.2	239.0	9.7	179,257
3EXD-8	0.000	94.4	45.0	94.4	45.0	0.257	GW	179,257	155.6	257.0	14.4	179,257
3EXD-8P	0.000	43.6	31.0	43.6	31.0	0.245	MT	106,128	206.4	245.0	30.0	106,128
3EXD-20P	0.000	34.8	54.0	34.8	54.0	0.229	MT	106,128	215.2	229.0	24.0	106,128
3EXD-20	0.299	65.9	66.0	65.9	66.0	0.233	MT	106,128	233.1	233.0	45.4	106,128
3EXD-20P-1 US	0.000	43.6	53.0	43.6	53.0	0.226	MT	106,128	206.4	226.0	30.0	106,128
3EXD-20P-1 DS	0.000	43.6	50.0	43.6	50.0	0.234	MT	106,128	206.4	234.0	30.0	106,128
3EXD-21P	0.000	43.6	47.0	43.6	47.0	0.238	MT	106,128	206.4	238.0	30.0	106,128
===>Grouped by Line:	**HD25A-1-FWH23B to CV**										***Sorted By: Flow Order***	
3EXD-23P	0.000	47.0	47.0	47.0	47.0	0.231	MT	106,128	203.0	231.0	32.4	106,128
3EXD-23	0.278	65.3	47.0	65.3	47.0	0.247	MT	106,128	212.7	247.0	45.0	106,128
3EXD-24	0.309	66.2	45.0	66.2	45.0	0.264	MT	106,128	242.8	264.0	45.6	106,128
3EXD-26P	0.000	55.8	51.0	55.8	51.0	0.232	MT	106,128	194.2	232.0	38.4	106,128
3EXD-27	0.000	61.0	57.0	61.0	57.0	0.232	MT	106,128	189.0	232.0	42.0	106,128
3EXD-28P	0.000	32.6	46.0	32.6	46.0	0.241	MT	226,201	179.0	241.0	2.5	226,201
3EXD-29	0.000	105.1	135.0	105.1	135.0	0.285	MT	226,201	144.9	285.0	3.8	226,201

Component Name	Tinit	Total Lifetime Wear (mils) Prd. [1]	Total Lifetime Wear (mils) Meas.	In-Service Component Wear(mils) Prd. [1]	In-Service Component Wear(mils) Meas.	In-Service Component Tmeas, Method, Time (in) [3]	[2]	(hrs) [3]	In-Service Component Thickness (mils) [4] Tp	Tm	Incremental Wear (mils) [5] PRWEAR	Time (hrs) Last Inspected
===>Grouped by Line:	**HD25A-1-FWH23B to CV**										***Sorted By: Flow Order***	
3EXD-29P	0.000	43.6	50.0	43.6	50.0	0.234	MT	106,128	206.4	234.0	30.0	106,128
3EXD-30	0.287	65.6	52.0	65.6	52.0	0.255	MT	106,128	221.4	255.0	45.2	106,128
3EXD-30P	0.000	43.6	45.0	43.6	45.0	0.235	MT	106,128	206.4	235.0	30.0	106,128
3EXD-32P	0.000	43.6	35.0	43.6	35.0	0.241	MT	106,128	206.4	241.0	30.0	106,128
3EXD-33	0.292	65.7	57.0	65.7	57.0	0.235	MT	106,128	226.3	235.0	45.3	106,128
3EXD-33P US	0.000	43.6	47.0	43.6	47.0	0.238	MT	106,128	206.4	238.0	30.0	106,128
3EXD-33P DS	0.000	48.9	54.0	48.9	54.0	0.242	MT	119,088	201.1	242.0	24.7	119,088
3EXD-34	0.000	82.4	114.5	82.4	114.5	0.498	MT	209,806	167.6	498.0	5.9	209,806
3EXD-34 (D/S)	0.000	82.4	97.0	82.4	97.0	0.510	MT	209,806	167.6	510.0	5.9	209,806
3EXD-40P	0.000	39.1	27.0	39.1	27.0	0.243	MT	119,088	210.9	243.0	19.7	119,088
===>Grouped by Line:	**HD26A-1-FWH23C to CV**										***Sorted By: Flow Order***	
3EXD-44P	0.000	43.6	46.0	43.6	46.0	0.221	MT	106,128	206.4	221.0	30.0	106,128
3EXD-45	0.325	66.7	65.0	66.7	65.0	0.260	MT	106,128	258.3	260.0	46.0	106,128
3EXD-58P US	0.000	44.9	55.0	44.9	55.0	0.242	MT	136,608	205.1	242.0	14.0	136,608
3EXD-58P-1	0.000	43.6	40.0	43.6	40.0	0.246	MT	106,128	206.4	246.0	30.0	106,128
3EXD-59	0.299	65.9	43.0	65.9	43.0	0.256	MT	106,128	233.1	256.0	45.4	106,128
3EXD-59P US	0.000	43.6	37.0	43.6	37.0	0.250	MT	106,128	206.4	250.0	30.0	106,128
3EXD-59P DS	0.000	43.6	58.0	43.6	58.0	0.248	MT	106,128	206.4	248.0	30.0	106,128
3EXD-60P	0.000	43.6	58.0	43.6	58.0	0.240	MT	106,128	206.4	240.0	30.0	106,128

Notes:
[1] Predictions are for the time of last inspection (last known meas. wear).
[2] GW = Tmeas is minimum thickness from Band, Blanket or Area Method of greatest wear.
MT = Tmeas is component minimum thickness.
PW = Tmeas is Tinit - predicted wear.
US = Tmeas is user specified.
[3] If no Tmeas has been determined from measured data, then Tmeas = Tinit and Time = current component installation time.
Tmeas is used to determine Predicted Thickness and Component Predicted Time to Tcrit.
[4] These two values are used for thickness plot.
Tp = Predicted thickness at Tmeas.
Tm = Last measured thickness (Tmeas).
[5] PRWEAR = Incremental wear from last Tmeas time to analysis ending period.

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).DB

Wear Rate Report

Pass 2 Analysis Include Measured Wear

Report Date/Time: 7/7/2010 9:54:36AM
AnalysisDate/Time: 6/11/2010 11:35:52AM

CHECWORKS SFA Version: 3.0 (build 105)
Duty Factor (Global) : 1.000

Run Name: FWH 24 DRNS DSCV
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 1.442

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***HD21A-2-FWH24A CV to FWH23A***								***Sorted By: Average Wear Rate***		
4EXD-VALVE- LCV-1115	24	23.133	10.977	263.5	14.337	0.0	3.500	7.048	0.000	13.04	ARD
4EXD-4	12	7.194	3.451	263.5	4.100	0.0	6.625	7.048	0.000	13.04	ARD
4EXD-4 (D/S)	12	7.078	3.396	263.5	4.030	0.0	6.625	7.048	0.000	13.04	ARD
4EXD-1N	30	6.329	3.036	263.5	3.669	0.0	6.625	7.048	0.000	13.04	ARD
4EXD-1	4	5.971	2.864	263.5	3.747	0.0	6.625	7.048	0.000	13.04	ARD
4EXD-1-1	1	5.221	2.505	263.5	3.669	0.0	6.625	7.048	0.000	13.04	ARD
4EXD-1P	54	5.063	2.429	263.5	3.669	0.0	6.625	7.048	0.000	13.04	ARD
4EXD-4P	62	3.164	1.518	263.5	3.669	0.0	6.625	7.048	0.000	13.04	ARD
4EXD-5	18	0.007	0.006	263.5	14.337	0.0	3.500	7.048	0.000	13.04	ARD
4EXD-5 (D/S)	18	0.003	0.002	263.5	3.669	0.0	6.625	7.048	0.000	13.04	ARD
===>Grouped by Line:	***HD22A-2-FWH24B CV to FWH23B***								***Sorted By: Average Wear Rate***		
4EXD-VALVE-LCV-1116	24	23.133	10.977	263.5	14.337	0.0	3.500	7.048	0.000	13.04	ARD
4EXD-37	12	7.194	3.451	263.5	4.100	0.0	6.625	7.048	0.000	13.04	ARD
4EXD-37 (D/S)	12	6.993	3.354	263.5	3.977	0.0	6.625	7.048	0.000	13.04	ARD
4EXD-38	18	6.563	6.147	263.5	14.337	0.0	3.500	7.048	0.000	13.04	ARD
4EXD-2N	30	6.329	3.036	263.5	3.669	0.0	6.625	7.048	0.000	13.04	ARD
4EXD-2	4	5.854	2.808	263.5	3.669	0.0	6.625	7.048	0.000	13.04	ARD
4EXD-2-1	1	5.221	2.505	263.5	3.669	0.0	6.625	7.048	0.000	13.04	ARD
4EXD-2P	54	5.063	2.429	263.5	3.669	0.0	6.625	7.048	0.000	13.04	ARD
4EXD-37P US	62	3.164	1.518	263.5	3.669	0.0	6.625	7.048	0.000	13.04	ARD
4EXD-38 (D/S)	18	2.422	2.277	263.5	3.669	0.0	6.625	7.048	0.000	13.04	ARD
===>Grouped by Line:	***HD23A-2-FWH24C CV to FWH23C***								***Sorted By: Average Wear Rate***		
4EXD-VALVE-LCV-1117	24	23.133	10.977	263.5	14.337	0.0	3.500	7.048	0.000	13.04	ARD
4EXD-59	18	12.955	6.147	263.5	14.337	0.0	3.500	7.048	0.000	13.04	ARD
4EXD-58 (D/S)	12	7.355	3.528	263.5	4.199	0.0	6.625	7.048	0.000	13.04	ARD
4EXD-58	12	7.212	3.460	263.5	4.112	0.0	6.625	7.048	0.000	13.04	ARD
4EXD-3N	30	6.329	3.036	263.5	3.669	0.0	6.625	7.048	0.000	13.04	ARD

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***HD23A-2-FWH24C CV to FWH23C***								***Sorted By: Average Wear Rate***		
4EXD-3	4	5.854	2.808	263.5	3.669	0.0	6.625	7.048	0.000	13.04	ARD
4EXD-3-1	1	5.221	2.505	263.5	3.669	0.0	6.625	7.048	0.000	13.04	ARD
4EXD-3P	54	5.063	2.429	263.5	3.669	0.0	6.625	7.048	0.000	13.04	ARD
4EXD-59 (D/S)	18	4.746	2.277	263.5	3.669	0.0	6.625	7.048	0.000	13.04	ARD
4EXD-58P	62	3.164	1.518	263.5	3.669	0.0	6.625	7.048	0.000	13.04	ARD

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).DB

Wear Rate Report

Pass 2 Analysis Include Measured Wear

Report Date/Time: 7/7/2010 9:54:36AM
AnalysisDate/Time: 6/11/2010 11:35:52AM

CHECWORKS SFA Version: 3.0 (build 105)
Duty Factor (Global) : 1.000

Run Name: FWH 24 DRNS DSCV
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 1.442

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***HD21A-2-FWH24A CV to FWH23A***									***Sorted By: Flow Order***	
4EXD-4 (D/S)	12	7.078	3.396	263.5	4.030	0.0	6.625	7.048	0.000	13.04	ARD
4EXD-4P	62	3.164	1.518	263.5	3.669	0.0	6.625	7.048	0.000	13.04	ARD
4EXD-1-1	1	5.221	2.505	263.5	3.669	0.0	6.625	7.048	0.000	13.04	ARD
4EXD-1	4	5.971	2.864	263.5	3.747	0.0	6.625	7.048	0.000	13.04	ARD
4EXD-1P	54	5.063	2.429	263.5	3.669	0.0	6.625	7.048	0.000	13.04	ARD
4EXD-1N	30	6.329	3.036	263.5	3.669	0.0	6.625	7.048	0.000	13.04	ARD
4EXD-VALVE- LCV-1115	24	23.133	10.977	263.5	14.337	0.0	3.500	7.048	0.000	13.04	ARD
4EXD-5	18	0.007	0.006	263.5	14.337	0.0	3.500	7.048	0.000	13.04	ARD
4EXD-5 (D/S)	18	0.003	0.002	263.5	3.669	0.0	6.625	7.048	0.000	13.04	ARD
4EXD-4	12	7.194	3.451	263.5	4.100	0.0	6.625	7.048	0.000	13.04	ARD
===>Grouped by Line:	***HD22A-2-FWH24B CV to FWH23B***									***Sorted By: Flow Order***	
4EXD-37 (D/S)	12	6.993	3.354	263.5	3.977	0.0	6.625	7.048	0.000	13.04	ARD
4EXD-2-1	1	5.221	2.505	263.5	3.669	0.0	6.625	7.048	0.000	13.04	ARD
4EXD-37P US	62	3.164	1.518	263.5	3.669	0.0	6.625	7.048	0.000	13.04	ARD
4EXD-2	4	5.854	2.808	263.5	3.669	0.0	6.625	7.048	0.000	13.04	ARD
4EXD-2P	54	5.063	2.429	263.5	3.669	0.0	6.625	7.048	0.000	13.04	ARD
4EXD-2N	30	6.329	3.036	263.5	3.669	0.0	6.625	7.048	0.000	13.04	ARD
4EXD-VALVE-LCV-1116	24	23.133	10.977	263.5	14.337	0.0	3.500	7.048	0.000	13.04	ARD
4EXD-38	18	6.563	6.147	263.5	14.337	0.0	3.500	7.048	0.000	13.04	ARD
4EXD-38 (D/S)	18	2.422	2.277	263.5	3.669	0.0	6.625	7.048	0.000	13.04	ARD
4EXD-37	12	7.194	3.451	263.5	4.100	0.0	6.625	7.048	0.000	13.04	ARD
===>Grouped by Line:	***HD23A-2-FWH24C CV to FWH23C***									***Sorted By: Flow Order***	
4EXD-58 (D/S)	12	7.355	3.528	263.5	4.199	0.0	6.625	7.048	0.000	13.04	ARD
4EXD-58P	62	3.164	1.518	263.5	3.669	0.0	6.625	7.048	0.000	13.04	ARD
4EXD-3-1	1	5.221	2.505	263.5	3.669	0.0	6.625	7.048	0.000	13.04	ARD
4EXD-3	4	5.854	2.808	263.5	3.669	0.0	6.625	7.048	0.000	13.04	ARD
4EXD-3P	54	5.063	2.429	263.5	3.669	0.0	6.625	7.048	0.000	13.04	ARD

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***HD23A-2-FWH24C CV to FWH23C***									***Sorted By: Flow Order***	
4EXD-3N	30	6.329	3.036	263.5	3.669	0.0	6.625	7.048	0.000	13.04	ARD
4EXD-VALVE-LCV-1117	24	23.133	10.977	263.5	14.337	0.0	3.500	7.048	0.000	13.04	ARD
4EXD-59	18	12.955	6.147	263.5	14.337	0.0	3.500	7.048	0.000	13.04	ARD
4EXD-59 (D/S)	18	4.746	2.277	263.5	3.669	0.0	6.625	7.048	0.000	13.04	ARD
4EXD-58	12	7.212	3.460	263.5	4.112	0.0	6.625	7.048	0.000	13.04	ARD

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).DB

Service Life Report

Pass 2 Analysis Include Measured Wear

Report Date/Time: 7/7/2010 9:54:36AM
AnalysisDate/Time:

Run Name: FWH 24 DRNS DSCV
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 1.442

CHECWORKS SFA Version: 3.0 (build 105)
Duty Factor (Global) :1.000

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **HD21A-2-FWH24A CV to FWH23A**					***Sorted By:Remaining Life***		
4EXD-VALVE- LCV-1115	0.000	-0.428	0.012	0.012	-187,152	No	243,721
4EXD-1N	0.000	0.104	0.022	0.022	236,323	No	243,721
4EXD-4 (D/S)	0.419	0.248	0.022	0.022	583,528	Yes	243,721
4EXD-1	0.312	0.234	0.022	0.022	649,166	Yes	243,721
4EXD-4	0.444	0.285	0.022	0.022	667,832	Yes	243,721
4EXD-1P	0.000	0.214	0.026	0.026	679,340	Yes	243,721
4EXD-1-1	0.000	0.249	0.022	0.022	793,838	Yes	243,721
4EXD-4P	0.000	0.212	0.026	0.026	1,072,507	No	243,721
4EXD-5	0.000	0.303	0.014	0.014	100,000,000	No	107,113
4EXD-5 (D/S)	0.000	0.315	0.026	0.026	100,000,000	No	107,113
===>Grouped by Line: **HD22A-2-FWH24B CV to FWH23B**					***Sorted By:Remaining Life***		
4EXD-VALVE-LCV-1116	0.000	-0.428	0.012	0.012	-187,152	No	243,721
4EXD-2N	0.000	0.104	0.022	0.022	236,323	No	243,721
4EXD-2	0.000	0.117	0.022	0.022	296,680	No	243,721
4EXD-38	0.000	0.251	0.012	0.012	341,481	Yes	94,148
4EXD-2-1	0.000	0.135	0.022	0.022	394,225	No	243,721
4EXD-2P	0.000	0.139	0.026	0.026	408,810	No	243,721
4EXD-37 (D/S)	0.400	0.289	0.022	0.022	697,900	Yes	243,721
4EXD-37	0.444	0.304	0.022	0.022	716,720	Yes	243,721
4EXD-38 (D/S)	0.000	0.239	0.022	0.022	836,040	Yes	94,148
4EXD-37P US	0.000	0.214	0.026	0.026	1,084,049	Yes	243,721
===>Grouped by Line: **HD23A-2-FWH24C CV to FWH23C**					***Sorted By:Remaining Life***		
4EXD-VALVE-LCV-1117	0.000	-0.428	0.012	0.012	-187,152	No	243,721
4EXD-59	0.000	0.074	0.012	0.012	88,201	No	243,721
4EXD-3N	0.000	0.104	0.022	0.022	236,323	No	243,721
4EXD-3	0.000	0.117	0.022	0.022	296,680	No	243,721
4EXD-3-1	0.000	0.135	0.022	0.022	394,225	No	243,721
4EXD-3P	0.000	0.139	0.026	0.026	408,810	No	243,721

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **HD23A-2-FWH24C CV to FWH23C**					***Sorted By:Remaining Life***		
4EXD-58	0.448	0.236	0.022	0.022	541,021	Yes	243,721
4EXD-58 (D/S)	0.478	0.272	0.022	0.022	621,575	Yes	243,721
4EXD-59 (D/S)	0.000	0.212	0.022	0.022	729,783	No	243,721
4EXD-58P	0.000	0.192	0.026	0.026	958,939	No	243,721

Note:
[1] Predictions are based on last Tmeas to analysis ending period.

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).DB

Service Life Report

Pass 2 Analysis Include Measured Wear

Report Date/Time: 7/7/2010 9:54:36AM
AnalysisDate/Time:

Run Name: FWH 24 DRNS DSCV
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 1.442

CHECWORKS SFA Version: 3.0 (build 105)
Duty Factor (Global) : 1.000

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **HD21A-2-FWH24A CV to FWH23A**					***Sorted By:Flow Order***		
4EXD-4 (D/S)	0.419	0.248	0.022	0.022	583,528	Yes	243,721
4EXD-4P	0.000	0.212	0.026	0.026	1,072,507	No	243,721
4EXD-1-1	0.000	0.249	0.022	0.022	793,838	Yes	243,721
4EXD-1	0.312	0.234	0.022	0.022	649,166	Yes	243,721
4EXD-1P	0.000	0.214	0.026	0.026	679,340	Yes	243,721
4EXD-1N	0.000	0.104	0.022	0.022	236,323	No	243,721
4EXD-VALVE- LCV-1115	0.000	-0.428	0.012	0.012	-187,152	No	243,721
4EXD-5	0.000	0.303	0.014	0.014	100,000,000	No	107,113
4EXD-5 (D/S)	0.000	0.315	0.026	0.026	100,000,000	No	107,113
4EXD-4	0.444	0.285	0.022	0.022	667,832	Yes	243,721
===>Grouped by Line: **HD22A-2-FWH24B CV to FWH23B**					***Sorted By:Flow Order***		
4EXD-37 (D/S)	0.400	0.289	0.022	0.022	697,900	Yes	243,721
4EXD-2-1	0.000	0.135	0.022	0.022	394,225	No	243,721
4EXD-37P US	0.000	0.214	0.026	0.026	1,084,049	Yes	243,721
4EXD-2	0.000	0.117	0.022	0.022	296,680	No	243,721
4EXD-2P	0.000	0.139	0.026	0.026	408,810	No	243,721
4EXD-2N	0.000	0.104	0.022	0.022	236,323	No	243,721
4EXD-VALVE-LCV-1116	0.000	-0.428	0.012	0.012	-187,152	No	243,721
4EXD-38	0.000	0.251	0.012	0.012	341,481	Yes	94,148
4EXD-38 (D/S)	0.000	0.239	0.022	0.022	836,040	Yes	94,148
4EXD-37	0.444	0.304	0.022	0.022	716,720	Yes	243,721
===>Grouped by Line: **HD23A-2-FWH24C CV to FWH23C**					***Sorted By:Flow Order***		
4EXD-58 (D/S)	0.478	0.272	0.022	0.022	621,575	Yes	243,721
4EXD-58P	0.000	0.192	0.026	0.026	958,939	No	243,721
4EXD-3-1	0.000	0.135	0.022	0.022	394,225	No	243,721
4EXD-3	0.000	0.117	0.022	0.022	296,680	No	243,721
4EXD-3P	0.000	0.139	0.026	0.026	408,810	No	243,721
4EXD-3N	0.000	0.104	0.022	0.022	236,323	No	243,721

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **HD23A-2-FWH24C CV to FWH23C**					***Sorted By:Flow Order***		
4EXD-VALVE-LCV-1117	0.000	-0.428	0.012	0.012	-187,152	No	243,721
4EXD-59	0.000	0.074	0.012	0.012	88,201	No	243,721
4EXD-59 (D/S)	0.000	0.212	0.022	0.022	729,783	No	243,721
4EXD-58	0.448	0.236	0.022	0.022	541,021	Yes	243,721

Note:
[1] Predictions are based on last Tmeas to analysis ending period.

2

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).DB

Wear Report

Pass 2 Analysis Include Measured Wear

Report Date/Time: 07-Jul-2010 9:54 am
AnalysisDate/Time: 07-Jul-2010 9:54 am

Run Name: FWH 24 DRNS DSCV
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 1.442

CHECWORKS SFA Version: 3.0 (build 105)
Duty Factor (Global) : 1.000

Component Name	Tinit	Total Lifetime Wear (mils) Prd. [1]	Total Lifetime Wear (mils) Meas.	In-Service Component Wear(mils) Prd. [1]	In-Service Component Wear(mils) Meas.	In-Service Component Tmeas, Method, Time (in) [3]	[2]	(hrs) [3]	In-Service Component Thickness (mils) [4] Tp	Tm	Incremental Wear (mils) [5] PRWEAR	Time (hrs) Last Inspected
===>Grouped by Line:	**HD21A-2-FWH24A CV to FWH23A**										***Sorted By: Flow Order***	
4EXD-4 (D/S)	0.419	190.1	188.0	190.1	188.0	0.255	MT	226,201	228.9	255.0	6.8	226,201
4EXD-1-1	0.000	140.3	64.5	140.3	64.5	0.254	MT	226,201	139.7	254.0	5.0	226,201
4EXD-1	0.312	73.7	56.0	73.7	56.0	0.240	MT	226,201	151.6	240.0	5.7	226,201
4EXD-1P	0.000	136.0	135.0	136.0	135.0	0.219	MT	226,201	144.0	219.0	4.9	226,201
4EXD-4	0.444	193.2	229.0	193.2	229.0	0.292	MT	226,201	250.8	292.0	6.9	226,201
===>Grouped by Line:	**HD22A-2-FWH24B CV to FWH23B**										***Sorted By: Flow Order***	
4EXD-37 (D/S)	0.400	162.8	79.0	162.8	79.0	0.321	MT	165,113	237.2	321.0	31.7	165,113
4EXD-37P US	0.000	73.7	140.0	73.7	140.0	0.228	MT	165,113	206.3	228.0	14.4	165,113
4EXD-38	0.000	312.7	324.0	22.8	50.0	0.299	MT	178,596	193.2	299.0	47.7	178,596
4EXD-38 (D/S)	0.000	114.4	217.0	8.4	62.0	0.257	MT	178,596	271.6	257.0	17.7	178,596
4EXD-37	0.444	167.5	107.0	167.5	107.0	0.337	MT	165,113	276.5	337.0	32.6	165,113
===>Grouped by Line:	**HD23A-2-FWH24C CV to FWH23C**										***Sorted By: Flow Order***	
4EXD-58 (D/S)	0.478	136.0	137.0	136.0	137.0	0.341	MT	119,088	342.0	341.0	68.6	119,088
4EXD-58	0.448	133.4	145.0	133.4	145.0	0.303	MT	119,088	314.6	303.0	67.3	119,088

Notes:
[1] Predictions are for the time of last inspection (last known meas. wear).
[2] GW = Tmeas is minimum thickness from Band, Blanket or Area Method of greatest wear.
MT = Tmeas is component minimum thickness.
PW = Tmeas is Tinit - predicted wear.
US = Tmeas is user specified.
[3] If no Tmeas has been determined from measured data, then Tmeas = Tinit and Time = current component installation time.
Tmeas is used to determine Predicted Thickness and Component Predicted Time to Tcrit.
[4] These two values are used for thickness plot.
Tp = Predicted thickness at Tmeas.
Tm = Last measured thickness (Tmeas).
[5] PRWEAR = Incremental wear from last Tmeas time to analysis ending period.

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).DB

Wear Rate Report

Pass 2 Analysis Include Measured Wear

Report Date/Time: 7/7/2010 9:54:36AM
AnalysisDate/Time: 6/11/2010 11:36:07AM

CHECWORKS SFA Version: 3.0 (build 105)
Duty Factor (Global) : 1.000

Run Name: FWH 24 DRNS USCV
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 1.066

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***HD21A-1-FWH24A to CV***								***Sorted By: Average Wear Rate***		
4EXD-VALVE-4EX-8	22	12.246	5.811	263.5	8.434	0.0	4.500	7.048	0.000	13.04	ARD
4EXD-6 (D/S)	7	10.942	5.192	263.5	14.337	0.0	3.500	7.048	0.000	13.04	ARD
4EXD-6P	57	8.549	4.056	263.5	14.337	0.0	3.500	7.048	0.000	13.04	ARD
4EXD-6	7	8.503	4.035	263.5	8.326	0.0	4.500	7.048	0.000	13.04	ARD
4EXD-7 (D/S)	16	7.531	3.574	263.5	8.326	0.0	4.500	7.048	0.000	13.04	ARD
4EXD-13N	31	5.847	2.805	263.5	3.669	0.0	6.625	7.048	0.000	13.04	ARD
4EXD-13	2	4.327	2.075	263.5	3.669	0.0	6.625	7.048	0.000	13.04	ARD
4EXD-11	2	4.327	2.075	263.5	3.669	0.0	6.625	7.048	0.000	13.04	ARD
4EXD-10	2	4.327	2.075	263.5	3.669	0.0	6.625	7.048	0.000	13.04	ARD
4EXD-9	2	4.327	2.075	263.5	3.669	0.0	6.625	7.048	0.000	13.04	ARD
4EXD-8	2	4.327	2.075	263.5	3.669	0.0	6.625	7.048	0.000	13.04	ARD
4EXD-12	3	4.093	1.963	263.5	3.669	0.0	6.625	7.048	0.000	13.04	ARD
4EXD-13T (D/S)	15	3.508	1.683	263.5	3.669	0.0	6.625	7.048	0.000	13.04	ARD
4EXD-13T	15	3.508	1.683	263.5	3.669	0.0	6.625	7.048	0.000	13.04	ARD
4EXD-13P	61	3.157	1.515	263.5	3.669	0.0	6.625	7.048	0.000	13.04	ARD
4EXD-11P	53	2.923	1.402	263.5	3.669	0.0	6.625	7.048	0.000	13.04	ARD
4EXD-10P	52	2.923	1.402	263.5	3.669	0.0	6.625	7.048	0.000	13.04	ARD
4EXD-9P	52	2.923	1.402	263.5	3.669	0.0	6.625	7.048	0.000	13.04	ARD
4EXD-8P	52	2.923	1.402	263.5	3.669	0.0	6.625	7.048	0.000	13.04	ARD
4EXD-7P	52	2.923	1.402	263.5	3.669	0.0	6.625	7.048	0.000	13.04	ARD
4EXD-7	16	2.923	1.402	263.5	3.669	0.0	6.625	7.048	0.000	13.04	ARD
4EXD-13P-1	65	2.339	1.122	263.5	3.669	0.0	6.625	7.048	0.000	13.04	ARD
===>Grouped by Line:	***HD22A-1-FWH24B to CV***								***Sorted By: Average Wear Rate***		
4EXD-VALVE-4EX-8-1	22	12.246	5.811	263.5	8.434	0.0	4.500	7.048	0.000	13.04	ARD
4EXD-39 (D/S)	7	10.942	5.192	263.5	14.337	0.0	3.500	7.048	0.000	13.04	ARD
4EXD-39P	57	8.549	4.056	263.5	14.337	0.0	3.500	7.048	0.000	13.04	ARD
4EXD-39	7	8.503	4.035	263.5	8.326	0.0	4.500	7.048	0.000	13.04	ARD
4EXD-40 (D/S)	16	7.531	3.574	263.5	8.326	0.0	4.500	7.048	0.000	13.04	ARD

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***HD22A-1-FWH24B to CV***								***Sorted By: Average Wear Rate***		
4EXD-48N	31	5.847	2.805	263.5	3.669	0.0	6.625	7.048	0.000	13.04	ARD
4EXD-47 (D/S)	12	4.794	2.300	263.5	3.669	0.0	6.625	7.048	0.000	13.04	ARD
4EXD-47	12	4.794	2.300	263.5	3.669	0.0	6.625	7.048	0.000	13.04	ARD
4EXD-46	2	4.327	2.075	263.5	3.669	0.0	6.625	7.048	0.000	13.04	ARD
4EXD-45	2	4.327	2.075	263.5	3.669	0.0	6.625	7.048	0.000	13.04	ARD
4EXD-43	2	4.327	2.075	263.5	3.669	0.0	6.625	7.048	0.000	13.04	ARD
4EXD-42	2	4.327	2.075	263.5	3.669	0.0	6.625	7.048	0.000	13.04	ARD
4EXD-41	2	4.327	2.075	263.5	3.669	0.0	6.625	7.048	0.000	13.04	ARD
4EXD-44	3	4.093	1.963	263.5	3.669	0.0	6.625	7.048	0.000	13.04	ARD
4EXD-48	1	3.859	1.851	263.5	3.669	0.0	6.625	7.048	0.000	13.04	ARD
4EXD-48P	61	3.157	1.515	263.5	3.669	0.0	6.625	7.048	0.000	13.04	ARD
4EXD-45P	52	2.923	1.402	263.5	3.669	0.0	6.625	7.048	0.000	13.04	ARD
4EXD-44P	53	2.923	1.402	263.5	3.669	0.0	6.625	7.048	0.000	13.04	ARD
4EXD-42P	52	2.923	1.402	263.5	3.669	0.0	6.625	7.048	0.000	13.04	ARD
4EXD-41P	52	2.923	1.402	263.5	3.669	0.0	6.625	7.048	0.000	13.04	ARD
4EXD-40P US	52	2.923	1.402	263.5	3.669	0.0	6.625	7.048	0.000	13.04	ARD
4EXD-40P DS	52	2.923	1.402	263.5	3.669	0.0	6.625	7.048	0.000	13.04	ARD
4EXD-40	16	2.923	1.402	263.5	3.669	0.0	6.625	7.048	0.000	13.04	ARD
4EXD-47P	51	2.573	1.234	263.5	3.669	0.0	6.625	7.048	0.000	13.04	ARD
4EXD-46P	62	2.339	1.122	263.5	3.669	0.0	6.625	7.048	0.000	13.04	ARD
===>Grouped by Line:	***HD23A-1-FWH24C to CV***								***Sorted By: Average Wear Rate***		
4EXD-VALVE-4EX-8-2	22	12.246	5.811	263.5	8.434	0.0	4.500	7.048	0.000	13.04	ARD
4EXD-60 (D/S)	7	10.942	5.192	263.5	14.337	0.0	3.500	7.048	0.000	13.04	ARD
4EXD-60P	57	8.549	4.056	263.5	14.337	0.0	3.500	7.048	0.000	13.04	ARD
4EXD-60	7	8.503	4.035	263.5	8.326	0.0	4.500	7.048	0.000	13.04	ARD
4EXD-61 (D/S)	16	7.531	3.574	263.5	8.326	0.0	4.500	7.048	0.000	13.04	ARD
4EXD-71N	31	5.847	2.805	263.5	3.669	0.0	6.625	7.048	0.000	13.04	ARD
4EXD-69 (D/S)	12	4.794	2.300	263.5	3.669	0.0	6.625	7.048	0.000	13.04	ARD
4EXD-69	12	4.794	2.300	263.5	3.669	0.0	6.625	7.048	0.000	13.04	ARD
4EXD-67	2	4.402	2.112	263.5	3.737	0.0	6.625	7.048	0.000	13.04	ARD
4EXD-68	2	4.327	2.075	263.5	3.669	0.0	6.625	7.048	0.000	13.04	ARD
4EXD-71	2	4.327	2.075	263.5	3.669	0.0	6.625	7.048	0.000	13.04	ARD
4EXD-70	2	4.327	2.075	263.5	3.669	0.0	6.625	7.048	0.000	13.04	ARD
4EXD-66	2	4.327	2.075	263.5	3.669	0.0	6.625	7.048	0.000	13.04	ARD
4EXD-65	2	4.327	2.075	263.5	3.669	0.0	6.625	7.048	0.000	13.04	ARD
4EXD-64	2	4.327	2.075	263.5	3.669	0.0	6.625	7.048	0.000	13.04	ARD

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***HD23A-1-FWH24C to CV***								***Sorted By: Average Wear Rate***		
4EXD-63	2	4.327	2.075	263.5	3.669	0.0	6.625	7.048	0.000	13.04	ARD
4EXD-62	2	4.327	2.075	263.5	3.669	0.0	6.625	7.048	0.000	13.04	ARD
4EXD-71P	61	3.157	1.515	263.5	3.669	0.0	6.625	7.048	0.000	13.04	ARD
4EXD-67P	52	2.923	1.402	263.5	3.669	0.0	6.625	7.048	0.000	13.04	ARD
4EXD-70P	52	2.923	1.402	263.5	3.669	0.0	6.625	7.048	0.000	13.04	ARD
4EXD-66P	52	2.923	1.402	263.5	3.669	0.0	6.625	7.048	0.000	13.04	ARD
4EXD-65P	52	2.923	1.402	263.5	3.669	0.0	6.625	7.048	0.000	13.04	ARD
4EXD-64P	52	2.923	1.402	263.5	3.669	0.0	6.625	7.048	0.000	13.04	ARD
4EXD-63P	52	2.923	1.402	263.5	3.669	0.0	6.625	7.048	0.000	13.04	ARD
4EXD-62P	52	2.923	1.402	263.5	3.669	0.0	6.625	7.048	0.000	13.04	ARD
4EXD-61P	52	2.923	1.402	263.5	3.669	0.0	6.625	7.048	0.000	13.04	ARD
4EXD-61	16	2.923	1.402	263.5	3.669	0.0	6.625	7.048	0.000	13.04	ARD
4EXD-69P	62	2.339	1.122	263.5	3.669	0.0	6.625	7.048	0.000	13.04	ARD

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).DB

Wear Rate Report

Pass 2 Analysis Include Measured Wear

Report Date/Time: 7/7/2010 9:54:36AM
AnalysisDate/Time: 6/11/2010 11:36:07AM

CHECWORKS SFA Version: 3.0 (build 105)
Duty Factor (Global) : 1.000

Run Name: FWH 24 DRNS USCV
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 1.066

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***HD21A-1-FWH24A to CV***									***Sorted By: Flow Order***	
4EXD-13N	31	5.847	2.805	263.5	3.669	0.0	6.625	7.048	0.000	13.04	ARD
4EXD-13P	61	3.157	1.515	263.5	3.669	0.0	6.625	7.048	0.000	13.04	ARD
4EXD-13T	15	3.508	1.683	263.5	3.669	0.0	6.625	7.048	0.000	13.04	ARD
4EXD-13T (D/S)	15	3.508	1.683	263.5	3.669	0.0	6.625	7.048	0.000	13.04	ARD
4EXD-13P-1	65	2.339	1.122	263.5	3.669	0.0	6.625	7.048	0.000	13.04	ARD
4EXD-13	2	4.327	2.075	263.5	3.669	0.0	6.625	7.048	0.000	13.04	ARD
4EXD-12	3	4.093	1.963	263.5	3.669	0.0	6.625	7.048	0.000	13.04	ARD
4EXD-11P	53	2.923	1.402	263.5	3.669	0.0	6.625	7.048	0.000	13.04	ARD
4EXD-11	2	4.327	2.075	263.5	3.669	0.0	6.625	7.048	0.000	13.04	ARD
4EXD-10P	52	2.923	1.402	263.5	3.669	0.0	6.625	7.048	0.000	13.04	ARD
4EXD-10	2	4.327	2.075	263.5	3.669	0.0	6.625	7.048	0.000	13.04	ARD
4EXD-9P	52	2.923	1.402	263.5	3.669	0.0	6.625	7.048	0.000	13.04	ARD
4EXD-9	2	4.327	2.075	263.5	3.669	0.0	6.625	7.048	0.000	13.04	ARD
4EXD-8P	52	2.923	1.402	263.5	3.669	0.0	6.625	7.048	0.000	13.04	ARD
4EXD-8	2	4.327	2.075	263.5	3.669	0.0	6.625	7.048	0.000	13.04	ARD
4EXD-7P	52	2.923	1.402	263.5	3.669	0.0	6.625	7.048	0.000	13.04	ARD
4EXD-7	16	2.923	1.402	263.5	3.669	0.0	6.625	7.048	0.000	13.04	ARD
4EXD-7 (D/S)	16	7.531	3.574	263.5	8.326	0.0	4.500	7.048	0.000	13.04	ARD
4EXD-VALVE-4EX-8	22	12.246	5.811	263.5	8.434	0.0	4.500	7.048	0.000	13.04	ARD
4EXD-6	7	8.503	4.035	263.5	8.326	0.0	4.500	7.048	0.000	13.04	ARD
4EXD-6 (D/S)	7	10.942	5.192	263.5	14.337	0.0	3.500	7.048	0.000	13.04	ARD
4EXD-6P	57	8.549	4.056	263.5	14.337	0.0	3.500	7.048	0.000	13.04	ARD
===>Grouped by Line:	***HD22A-1-FWH24B to CV***									***Sorted By: Flow Order***	
4EXD-48N	31	5.847	2.805	263.5	3.669	0.0	6.625	7.048	0.000	13.04	ARD
4EXD-48P	61	3.157	1.515	263.5	3.669	0.0	6.625	7.048	0.000	13.04	ARD
4EXD-48	1	3.859	1.851	263.5	3.669	0.0	6.625	7.048	0.000	13.04	ARD
4EXD-47P	51	2.573	1.234	263.5	3.669	0.0	6.625	7.048	0.000	13.04	ARD

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***HD22A-1-FWH24B to CV***									***Sorted By: Flow Order***	
4EXD-47	12	4.794	2.300	263.5	3.669	0.0	6.625	7.048	0.000	13.04	ARD
4EXD-47 (D/S)	12	4.794	2.300	263.5	3.669	0.0	6.625	7.048	0.000	13.04	ARD
4EXD-46P	62	2.339	1.122	263.5	3.669	0.0	6.625	7.048	0.000	13.04	ARD
4EXD-46	2	4.327	2.075	263.5	3.669	0.0	6.625	7.048	0.000	13.04	ARD
4EXD-45P	52	2.923	1.402	263.5	3.669	0.0	6.625	7.048	0.000	13.04	ARD
4EXD-45	2	4.327	2.075	263.5	3.669	0.0	6.625	7.048	0.000	13.04	ARD
4EXD-44	3	4.093	1.963	263.5	3.669	0.0	6.625	7.048	0.000	13.04	ARD
4EXD-44P	53	2.923	1.402	263.5	3.669	0.0	6.625	7.048	0.000	13.04	ARD
4EXD-43	2	4.327	2.075	263.5	3.669	0.0	6.625	7.048	0.000	13.04	ARD
4EXD-42P	52	2.923	1.402	263.5	3.669	0.0	6.625	7.048	0.000	13.04	ARD
4EXD-42	2	4.327	2.075	263.5	3.669	0.0	6.625	7.048	0.000	13.04	ARD
4EXD-41P	52	2.923	1.402	263.5	3.669	0.0	6.625	7.048	0.000	13.04	ARD
4EXD-41	2	4.327	2.075	263.5	3.669	0.0	6.625	7.048	0.000	13.04	ARD
4EXD-40P US	52	2.923	1.402	263.5	3.669	0.0	6.625	7.048	0.000	13.04	ARD
4EXD-40P DS	52	2.923	1.402	263.5	3.669	0.0	6.625	7.048	0.000	13.04	ARD
4EXD-40	16	2.923	1.402	263.5	3.669	0.0	6.625	7.048	0.000	13.04	ARD
4EXD-40 (D/S)	16	7.531	3.574	263.5	8.326	0.0	4.500	7.048	0.000	13.04	ARD
4EXD-VALVE-4EX-8-1	22	12.246	5.811	263.5	8.434	0.0	4.500	7.048	0.000	13.04	ARD
4EXD-39	7	8.503	4.035	263.5	8.326	0.0	4.500	7.048	0.000	13.04	ARD
4EXD-39 (D/S)	7	10.942	5.192	263.5	14.337	0.0	3.500	7.048	0.000	13.04	ARD
4EXD-39P	57	8.549	4.056	263.5	14.337	0.0	3.500	7.048	0.000	13.04	ARD
===>Grouped by Line:	***HD23A-1-FWH24C to CV***									***Sorted By: Flow Order***	
4EXD-71N	31	5.847	2.805	263.5	3.669	0.0	6.625	7.048	0.000	13.04	ARD
4EXD-71P	61	3.157	1.515	263.5	3.669	0.0	6.625	7.048	0.000	13.04	ARD
4EXD-71	2	4.327	2.075	263.5	3.669	0.0	6.625	7.048	0.000	13.04	ARD
4EXD-70P	52	2.923	1.402	263.5	3.669	0.0	6.625	7.048	0.000	13.04	ARD
4EXD-70	2	4.327	2.075	263.5	3.669	0.0	6.625	7.048	0.000	13.04	ARD
4EXD-69	12	4.794	2.300	263.5	3.669	0.0	6.625	7.048	0.000	13.04	ARD
4EXD-69 (D/S)	12	4.794	2.300	263.5	3.669	0.0	6.625	7.048	0.000	13.04	ARD
4EXD-69P	62	2.339	1.122	263.5	3.669	0.0	6.625	7.048	0.000	13.04	ARD
4EXD-68	2	4.327	2.075	263.5	3.669	0.0	6.625	7.048	0.000	13.04	ARD
4EXD-67P	52	2.923	1.402	263.5	3.669	0.0	6.625	7.048	0.000	13.04	ARD
4EXD-67	2	4.402	2.112	263.5	3.737	0.0	6.625	7.048	0.000	13.04	ARD
4EXD-66P	52	2.923	1.402	263.5	3.669	0.0	6.625	7.048	0.000	13.04	ARD
4EXD-66	2	4.327	2.075	263.5	3.669	0.0	6.625	7.048	0.000	13.04	ARD
4EXD-65P	52	2.923	1.402	263.5	3.669	0.0	6.625	7.048	0.000	13.04	ARD

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***HD23A-1-FWH24C to CV***									***Sorted By: Flow Order***	
4EXD-65	2	4.327	2.075	263.5	3.669	0.0	6.625	7.048	0.000	13.04	ARD
4EXD-64P	52	2.923	1.402	263.5	3.669	0.0	6.625	7.048	0.000	13.04	ARD
4EXD-64	2	4.327	2.075	263.5	3.669	0.0	6.625	7.048	0.000	13.04	ARD
4EXD-63P	52	2.923	1.402	263.5	3.669	0.0	6.625	7.048	0.000	13.04	ARD
4EXD-63	2	4.327	2.075	263.5	3.669	0.0	6.625	7.048	0.000	13.04	ARD
4EXD-62P	52	2.923	1.402	263.5	3.669	0.0	6.625	7.048	0.000	13.04	ARD
4EXD-62	2	4.327	2.075	263.5	3.669	0.0	6.625	7.048	0.000	13.04	ARD
4EXD-61P	52	2.923	1.402	263.5	3.669	0.0	6.625	7.048	0.000	13.04	ARD
4EXD-61	16	2.923	1.402	263.5	3.669	0.0	6.625	7.048	0.000	13.04	ARD
4EXD-61 (D/S)	16	7.531	3.574	263.5	8.326	0.0	4.500	7.048	0.000	13.04	ARD
4EXD-VALVE-4EX-8-2	22	12.246	5.811	263.5	8.434	0.0	4.500	7.048	0.000	13.04	ARD
4EXD-60	7	8.503	4.035	263.5	8.326	0.0	4.500	7.048	0.000	13.04	ARD
4EXD-60 (D/S)	7	10.942	5.192	263.5	14.337	0.0	3.500	7.048	0.000	13.04	ARD
4EXD-60P	57	8.549	4.056	263.5	14.337	0.0	3.500	7.048	0.000	13.04	ARD

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).DB

Service Life Report

Pass 2 Analysis Include Measured Wear

Report Date/Time: 7/7/2010 9:54:36AM
AnalysisDate/Time:

Run Name: FWH 24 DRNS USCV
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 1.066

CHECWORKS SFA Version: 3.0 (build 105)
Duty Factor (Global) :1.000

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **HD21A-1-FWH24A to CV**					***Sorted By:Remaining Life***		
4EXD-VALVE-4EX-8	0.000	-0.104	0.016	0.016	-127,706	No	243,721
4EXD-13N	0.000	0.117	0.022	0.022	297,690	No	243,721
4EXD-6 (D/S)	0.000	0.243	0.012	0.012	389,689	Yes	243,721
4EXD-7 (D/S)	0.000	0.181	0.015	0.015	406,935	No	243,721
4EXD-6	0.000	0.220	0.015	0.015	445,025	Yes	243,721
4EXD-6P	0.000	0.274	0.012	0.012	565,611	No	243,721
4EXD-9	0.000	0.160	0.022	0.022	580,795	No	243,721
4EXD-11	0.000	0.160	0.022	0.022	580,795	No	243,721
4EXD-10	0.000	0.160	0.022	0.022	580,795	No	243,721
4EXD-12	0.000	0.186	0.022	0.022	729,758	Yes	243,721
4EXD-13	0.000	0.201	0.022	0.022	755,089	Yes	243,721
4EXD-8	0.000	0.203	0.022	0.022	762,290	Yes	243,721
4EXD-13T	0.000	0.182	0.022	0.022	834,864	No	243,721
4EXD-13T (D/S)	0.000	0.182	0.022	0.022	834,864	No	243,721
4EXD-13P	0.000	0.192	0.026	0.026	962,252	No	243,721
4EXD-9P	0.000	0.199	0.026	0.026	1,079,877	No	243,721
4EXD-10P	0.000	0.199	0.026	0.026	1,079,877	No	243,721
4EXD-7P	0.000	0.216	0.026	0.026	1,186,411	Yes	243,721
4EXD-8P	0.000	0.216	0.026	0.026	1,186,411	Yes	243,721
4EXD-11P	0.000	0.227	0.026	0.026	1,255,859	Yes	243,721
4EXD-7	0.000	0.236	0.022	0.022	1,334,920	No	243,721
4EXD-13P-1	0.000	0.231	0.026	0.026	1,605,995	Yes	243,721
===>Grouped by Line: **HD22A-1-FWH24B to CV**					***Sorted By:Remaining Life***		
4EXD-VALVE-4EX-8-1	0.000	-0.104	0.016	0.016	-127,706	No	243,721
4EXD-48N	0.000	0.117	0.022	0.022	297,690	No	243,721
4EXD-39 (D/S)	0.000	0.194	0.012	0.012	308,380	No	243,721
4EXD-39	0.000	0.173	0.015	0.015	342,489	No	243,721
4EXD-39P	0.000	0.219	0.014	0.014	442,449	No	243,721
4EXD-47	0.000	0.147	0.022	0.022	474,564	No	243,721

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **HD22A-1-FWH24B to CV**					***Sorted By:Remaining Life***		
4EXD-47 (D/S)	0.000	0.147	0.022	0.022	474,564	No	243,721
4EXD-40 (D/S)	0.000	0.243	0.015	0.015	558,637	Yes	243,721
4EXD-46	0.000	0.160	0.022	0.022	580,795	No	243,721
4EXD-43	0.000	0.160	0.022	0.022	580,795	No	243,721
4EXD-45	0.000	0.160	0.022	0.022	580,795	No	243,721
4EXD-44	0.000	0.166	0.022	0.022	643,016	No	243,721
4EXD-42	0.000	0.186	0.022	0.022	691,777	Yes	243,721
4EXD-48	0.000	0.173	0.022	0.022	712,779	No	243,721
4EXD-41	0.000	0.234	0.022	0.022	893,135	No	243,721
4EXD-48P	0.000	0.192	0.026	0.026	962,252	No	243,721
4EXD-40P US	0.000	0.199	0.026	0.026	1,079,877	No	243,721
4EXD-44P	0.000	0.199	0.026	0.026	1,079,877	No	243,721
4EXD-42P	0.000	0.199	0.026	0.026	1,079,877	No	243,721
4EXD-45P	0.000	0.221	0.026	0.026	1,218,379	Yes	243,721
4EXD-40P DS	0.000	0.226	0.026	0.026	1,249,613	No	243,721
4EXD-41P	0.000	0.228	0.026	0.026	1,261,372	Yes	243,721
4EXD-47P	0.000	0.233	0.026	0.026	1,469,558	Yes	243,721
4EXD-46P	0.000	0.215	0.026	0.026	1,476,865	No	243,721
4EXD-40	0.000	0.276	0.022	0.022	1,587,755	Yes	243,721
===>Grouped by Line: **HD23A-1-FWH24C to CV**					***Sorted By:Remaining Life***		
4EXD-VALVE-4EX-8-2	0.000	-0.104	0.016	0.016	-127,706	No	243,721
4EXD-60P	0.000	-0.022	0.014	0.014	-72,796	No	243,721
4EXD-60	0.000	0.149	0.015	0.015	290,500	No	243,721
4EXD-71N	0.000	0.117	0.022	0.022	297,690	No	243,721
4EXD-60 (D/S)	0.000	0.250	0.012	0.012	401,975	No	243,721
4EXD-69	0.000	0.147	0.022	0.022	474,564	No	243,721
4EXD-69 (D/S)	0.000	0.147	0.022	0.022	474,564	No	243,721
4EXD-61 (D/S)	0.000	0.241	0.015	0.015	554,499	Yes	243,721
4EXD-68	0.000	0.160	0.022	0.022	580,795	No	243,721
4EXD-66	0.000	0.160	0.022	0.022	580,795	No	243,721
4EXD-65	0.000	0.160	0.022	0.022	580,795	No	243,721
4EXD-64	0.000	0.160	0.022	0.022	580,795	No	243,721
4EXD-62	0.000	0.160	0.022	0.022	580,795	No	243,721
4EXD-63	0.000	0.190	0.022	0.022	708,660	Yes	243,721
4EXD-67	0.308	0.212	0.022	0.022	788,412	Yes	243,721
4EXD-70	0.000	0.227	0.022	0.022	864,830	No	243,721
4EXD-71	0.000	0.253	0.022	0.022	974,267	Yes	243,721
4EXD-67P	0.000	0.199	0.026	0.026	1,079,877	No	243,721

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **HD23A-1-FWH24C to CV**					***Sorted By:Remaining Life***		
4EXD-66P	0.000	0.199	0.026	0.026	1,079,877	No	243,721
4EXD-65P	0.000	0.199	0.026	0.026	1,079,877	No	243,721
4EXD-64P	0.000	0.199	0.026	0.026	1,079,877	No	243,721
4EXD-63P	0.000	0.199	0.026	0.026	1,079,877	No	243,721
4EXD-62P	0.000	0.199	0.026	0.026	1,079,877	No	243,721
4EXD-61P	0.000	0.199	0.026	0.026	1,079,877	No	243,721
4EXD-71P	0.000	0.224	0.026	0.026	1,147,488	Yes	243,721
4EXD-70P	0.000	0.253	0.026	0.026	1,420,505	Yes	243,721
4EXD-69P	0.000	0.215	0.026	0.026	1,476,865	No	243,721
4EXD-61	0.000	0.281	0.022	0.022	1,615,088	No	243,721

Note:
[1] Predictions are based on last Tmeas to analysis ending period.

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).DB

Service Life Report

Pass 2 Analysis Include Measured Wear

Report Date/Time: 7/7/2010 9:54:36AM
AnalysisDate/Time:

Run Name: FWH 24 DRNS USCV
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 1.066

CHECWORKS SFA Version: 3.0 (build 105)
Duty Factor (Global) : 1.000

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **HD21A-1-FWH24A to CV**					***Sorted By:Flow Order***		
4EXD-13N	0.000	0.117	0.022	0.022	297,690	No	243,721
4EXD-13P	0.000	0.192	0.026	0.026	962,252	No	243,721
4EXD-13T	0.000	0.182	0.022	0.022	834,864	No	243,721
4EXD-13T (D/S)	0.000	0.182	0.022	0.022	834,864	No	243,721
4EXD-13P-1	0.000	0.231	0.026	0.026	1,605,995	Yes	243,721
4EXD-13	0.000	0.201	0.022	0.022	755,089	Yes	243,721
4EXD-12	0.000	0.186	0.022	0.022	729,758	Yes	243,721
4EXD-11P	0.000	0.227	0.026	0.026	1,255,859	Yes	243,721
4EXD-11	0.000	0.160	0.022	0.022	580,795	No	243,721
4EXD-10P	0.000	0.199	0.026	0.026	1,079,877	No	243,721
4EXD-10	0.000	0.160	0.022	0.022	580,795	No	243,721
4EXD-9P	0.000	0.199	0.026	0.026	1,079,877	No	243,721
4EXD-9	0.000	0.160	0.022	0.022	580,795	No	243,721
4EXD-8P	0.000	0.216	0.026	0.026	1,186,411	Yes	243,721
4EXD-8	0.000	0.203	0.022	0.022	762,290	Yes	243,721
4EXD-7P	0.000	0.216	0.026	0.026	1,186,411	Yes	243,721
4EXD-7	0.000	0.236	0.022	0.022	1,334,920	No	243,721
4EXD-7 (D/S)	0.000	0.181	0.015	0.015	406,935	No	243,721
4EXD-VALVE-4EX-8	0.000	-0.104	0.016	0.016	-127,706	No	243,721
4EXD-6	0.000	0.220	0.015	0.015	445,025	Yes	243,721
4EXD-6 (D/S)	0.000	0.243	0.012	0.012	389,689	Yes	243,721
4EXD-6P	0.000	0.274	0.012	0.012	565,611	No	243,721
===>Grouped by Line: **HD22A-1-FWH24B to CV**					***Sorted By:Flow Order***		
4EXD-48N	0.000	0.117	0.022	0.022	297,690	No	243,721
4EXD-48P	0.000	0.192	0.026	0.026	962,252	No	243,721
4EXD-48	0.000	0.173	0.022	0.022	712,779	No	243,721
4EXD-47P	0.000	0.233	0.026	0.026	1,469,558	Yes	243,721
4EXD-47	0.000	0.147	0.022	0.022	474,564	No	243,721
4EXD-47 (D/S)	0.000	0.147	0.022	0.022	474,564	No	243,721

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **HD22A-1-FWH24B to CV**					***Sorted By:Flow Order***		
4EXD-46P	0.000	0.215	0.026	0.026	1,476,865	No	243,721
4EXD-46	0.000	0.160	0.022	0.022	580,795	No	243,721
4EXD-45P	0.000	0.221	0.026	0.026	1,218,379	Yes	243,721
4EXD-45	0.000	0.160	0.022	0.022	580,795	No	243,721
4EXD-44	0.000	0.166	0.022	0.022	643,016	No	243,721
4EXD-44P	0.000	0.199	0.026	0.026	1,079,877	No	243,721
4EXD-43	0.000	0.160	0.022	0.022	580,795	No	243,721
4EXD-42P	0.000	0.199	0.026	0.026	1,079,877	No	243,721
4EXD-42	0.000	0.186	0.022	0.022	691,777	Yes	243,721
4EXD-41P	0.000	0.228	0.026	0.026	1,261,372	Yes	243,721
4EXD-41	0.000	0.234	0.022	0.022	893,135	No	243,721
4EXD-40P US	0.000	0.199	0.026	0.026	1,079,877	No	243,721
4EXD-40P DS	0.000	0.226	0.026	0.026	1,249,613	No	243,721
4EXD-40	0.000	0.276	0.022	0.022	1,587,755	Yes	243,721
4EXD-40 (D/S)	0.000	0.243	0.015	0.015	558,637	Yes	243,721
4EXD-VALVE-4EX-8-1	0.000	-0.104	0.016	0.016	-127,706	No	243,721
4EXD-39	0.000	0.173	0.015	0.015	342,489	No	243,721
4EXD-39 (D/S)	0.000	0.194	0.012	0.012	308,380	No	243,721
4EXD-39P	0.000	0.219	0.014	0.014	442,449	No	243,721
===>Grouped by Line: **HD23A-1-FWH24C to CV**					***Sorted By:Flow Order***		
4EXD-71N	0.000	0.117	0.022	0.022	297,690	No	243,721
4EXD-71P	0.000	0.224	0.026	0.026	1,147,488	Yes	243,721
4EXD-71	0.000	0.253	0.022	0.022	974,267	Yes	243,721
4EXD-70P	0.000	0.253	0.026	0.026	1,420,505	Yes	243,721
4EXD-70	0.000	0.227	0.022	0.022	864,830	No	243,721
4EXD-69	0.000	0.147	0.022	0.022	474,564	No	243,721
4EXD-69 (D/S)	0.000	0.147	0.022	0.022	474,564	No	243,721
4EXD-69P	0.000	0.215	0.026	0.026	1,476,865	No	243,721
4EXD-68	0.000	0.160	0.022	0.022	580,795	No	243,721
4EXD-67P	0.000	0.199	0.026	0.026	1,079,877	No	243,721
4EXD-67	0.308	0.212	0.022	0.022	788,412	Yes	243,721
4EXD-66P	0.000	0.199	0.026	0.026	1,079,877	No	243,721
4EXD-66	0.000	0.160	0.022	0.022	580,795	No	243,721
4EXD-65P	0.000	0.199	0.026	0.026	1,079,877	No	243,721
4EXD-65	0.000	0.160	0.022	0.022	580,795	No	243,721
4EXD-64P	0.000	0.199	0.026	0.026	1,079,877	No	243,721
4EXD-64	0.000	0.160	0.022	0.022	580,795	No	243,721
4EXD-63P	0.000	0.199	0.026	0.026	1,079,877	No	243,721

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **HD23A-1-FWH24C to CV**					***Sorted By:Flow Order***		
4EXD-63	0.000	0.190	0.022	0.022	708,660	Yes	243,721
4EXD-62P	0.000	0.199	0.026	0.026	1,079,877	No	243,721
4EXD-62	0.000	0.160	0.022	0.022	580,795	No	243,721
4EXD-61P	0.000	0.199	0.026	0.026	1,079,877	No	243,721
4EXD-61	0.000	0.281	0.022	0.022	1,615,088	No	243,721
4EXD-61 (D/S)	0.000	0.241	0.015	0.015	554,499	Yes	243,721
4EXD-VALVE-4EX-8-2	0.000	-0.104	0.016	0.016	-127,706	No	243,721
4EXD-60	0.000	0.149	0.015	0.015	290,500	No	243,721
4EXD-60 (D/S)	0.000	0.250	0.012	0.012	401,975	No	243,721
4EXD-60P	0.000	-0.022	0.014	0.014	-72,796	No	243,721

Note:
[1] Predictions are based on last Tmeas to analysis ending period.

3

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).DB

Wear Report

Pass 2 Analysis Include Measured Wear

Report Date/Time: 07-Jul-2010 9:54 am
AnalysisDate/Time: 07-Jul-2010 9:54 am

Run Name: FWH 24 DRNS USCV
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 1.066

CHECWORKS SFA Version: 3.0 (build 105)
Duty Factor (Global) : 1.000

Component Name	Tinit	Total Lifetime Wear (mils) Prd. [1]	Total Lifetime Wear (mils) Meas.	In-Service Component Wear(mils) Prd. [1]	In-Service Component Wear(mils) Meas.	In-Service Component Tmeas, Method, Time (in) [3]	[2]	(hrs) [3]	In-Service Component Thickness (mils) [4] Tp	Tm	Incremental Wear (mils) [5] PRWEAR	Time (hrs) Last Inspected
===>Grouped by Line:	**HD21A-1-FWH24A to CV**										***Sorted By: Flow Order***	
4EXD-13P-1	0.000	38.5	71.0	38.5	71.0	0.258	MT	106,128	241.5	258.0	26.5	106,128
4EXD-13	0.000	71.3	68.0	71.3	68.0	0.250	MT	106,128	208.7	250.0	49.1	106,128
4EXD-12	0.000	67.4	68.0	67.4	68.0	0.232	MT	106,128	212.6	232.0	46.4	106,128
4EXD-11P	0.000	48.2	49.0	48.2	49.0	0.260	MT	106,128	231.8	260.0	33.2	106,128
4EXD-8P	0.000	54.1	67.0	54.1	67.0	0.243	MT	119,088	225.9	243.0	27.3	119,088
4EXD-8	0.000	80.0	80.0	80.0	80.0	0.243	MT	119,088	200.0	243.0	40.4	119,088
4EXD-7P	0.000	54.1	74.0	54.1	74.0	0.243	MT	119,088	225.9	243.0	27.3	119,088
4EXD-6	0.000	104.8	53.0	104.8	53.0	0.228	MT	226,201	8.5	228.0	8.1	226,201
4EXD-6 (D/S)	0.000	134.8	31.0	134.8	31.0	0.253	MT	226,201	-78.0	253.0	10.4	226,201
===>Grouped by Line:	**HD22A-1-FWH24B to CV**										***Sorted By: Flow Order***	
4EXD-47P	0.000	42.4	45.0	42.4	45.0	0.262	MT	106,128	237.6	262.0	29.2	106,128
4EXD-45P	0.000	48.2	40.0	48.2	40.0	0.254	MT	106,128	231.8	254.0	33.2	106,128
4EXD-42	0.000	71.3	79.0	71.3	79.0	0.235	MT	106,128	208.7	235.0	49.1	106,128
4EXD-41P	0.000	54.1	69.0	54.1	69.0	0.255	MT	119,088	225.9	255.0	27.3	119,088
4EXD-40	0.000	78.5	62.0	78.5	62.0	0.279	MT	226,201	201.5	279.0	2.8	226,201
4EXD-40 (D/S)	0.000	195.7	118.0	195.7	118.0	0.250	MT	226,201	34.6	250.0	7.1	209,806
===>Grouped by Line:	**HD23A-1-FWH24C to CV**										***Sorted By: Flow Order***	
4EXD-71P	0.000	52.0	62.0	52.0	62.0	0.260	MT	106,128	228.0	260.0	35.8	106,128
4EXD-71	0.000	116.2	75.0	116.2	75.0	0.257	MT	226,201	163.8	257.0	4.2	226,201
4EXD-70P	0.000	36.1	57.0	36.1	57.0	0.256	MT	226,201	201.5	256.0	2.8	226,201
4EXD-67	0.308	72.5	46.0	72.5	46.0	0.262	MT	106,128	235.5	262.0	49.9	106,128
4EXD-63	0.000	71.3	68.0	71.3	68.0	0.239	MT	106,128	208.7	239.0	49.1	106,128
4EXD-61 (D/S)	0.000	195.7	109.0	195.7	109.0	0.255	MT	209,806	41.3	255.0	13.8	209,806

Notes:

[1] Predictions are for the time of last inspection (last known meas. wear).

[2] GW = Tmeas is minimum thickness from Band, Blanket or Area Method of greatest wear.
MT = Tmeas is component minimum thickness.
PW = Tmeas is Tinit - predicted wear.
US = Tmeas is user specified.

[3] If no Tmeas has been determined from measured data, then Tmeas = Tinit and Time = current component installation time.
Tmeas is used to determine Predicted Thickness and Component Predicted Time to Tcrit.

[4] These two values are used for thickness plot.
Tp = Predicted thickness at Tmeas.
Tm = Last measured thickness (Tmeas).

[5] PRWEAR = Incremental wear from last Tmeas time to analysis ending period.

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).DB

Wear Rate Report

Pass 2 Analysis Include Measured Wear

Report Date/Time: 7/7/2010 9:54:36AM
AnalysisDate/Time: 6/11/2010 11:36:19AM

CHECWORKS SFA Version: 3.0 (build 105)
Duty Factor (Global) : 1.000

Run Name: FWH 25 DRNS TO HDT
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 0.922

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***HD9-1-FWH25A to HTR DRN TK***								***Sorted By: Average Wear Rate***		
5EXD-VALVE-5EX-8	22	3.705	1.548	386.3	3.438	0.0	10.750	6.811	0.000	58.80	ARD
5EXD-21N	31	3.538	1.479	386.3	3.272	0.0	10.750	6.811	0.000	58.80	ARD
5EXD-20N	30	2.831	1.183	386.3	3.272	0.0	10.750	6.811	0.000	58.80	ARD
5EXD-15	4	2.676	1.119	386.3	3.350	0.0	10.750	6.811	0.000	58.80	ARD
5EXD-20	2	2.671	1.116	386.3	3.342	0.0	10.750	6.811	0.000	58.80	ARD
5EXD-17	2	2.662	1.112	386.3	3.330	0.0	10.750	6.811	0.000	58.80	ARD
5EXD-21	2	2.618	1.094	386.3	3.272	0.0	10.750	6.811	0.000	58.80	ARD
5EXD-16	2	2.618	1.094	386.3	3.272	0.0	10.750	6.811	0.000	58.80	ARD
5EXD-18	2	2.618	1.094	386.3	3.272	0.0	10.750	6.811	0.000	58.80	ARD
5EXD-19	2	2.618	1.094	386.3	3.272	0.0	10.750	6.811	0.000	58.80	ARD
5EXD-16P	54	2.265	0.946	386.3	3.315	0.0	10.750	6.811	0.000	58.80	ARD
5EXD-21P	61	1.911	0.799	386.3	3.315	0.0	10.750	6.811	0.000	58.80	ARD
5EXD-15P	52	1.769	0.739	386.3	3.272	0.0	10.750	6.811	0.000	58.80	ARD
5EXD-17P US	52	1.769	0.739	386.3	3.272	0.0	10.750	6.811	0.000	58.80	ARD
5EXD-17P DS	52	1.769	0.739	386.3	3.272	0.0	10.750	6.811	0.000	58.80	ARD
5EXD-18P	52	1.769	0.739	386.3	3.315	0.0	10.750	6.811	0.000	58.80	ARD
5EXD-19P	52	1.769	0.739	386.3	3.272	0.0	10.750	6.811	0.000	58.80	ARD
5EXD-20P	52	1.769	0.739	386.3	3.298	0.0	10.750	6.811	0.000	58.80	ARD
5EXD-20P DS	52	1.769	0.739	386.3	3.298	0.0	10.750	6.811	0.000	58.80	ARD
===>Grouped by Line:	***HD9-2-FWH25B to HTR DRN TK***								***Sorted By: Average Wear Rate***		
5EXD-VALVE-5EX-8-1	22	3.705	1.548	386.3	3.438	0.0	10.750	6.811	0.000	58.80	ARD
5EXD-9N	31	3.538	1.479	386.3	3.272	0.0	10.750	6.811	0.000	58.80	ARD
5EXD-14N	30	2.831	1.183	386.3	3.272	0.0	10.750	6.811	0.000	58.80	ARD
5EXD-10	2	2.675	1.118	386.3	3.349	0.0	10.750	6.811	0.000	58.80	ARD
5EXD-9	2	2.618	1.094	386.3	3.272	0.0	10.750	6.811	0.000	58.80	ARD
5EXD-11	2	2.618	1.094	386.3	3.272	0.0	10.750	6.811	0.000	58.80	ARD
5EXD-12	2	2.618	1.094	386.3	3.272	0.0	10.750	6.811	0.000	58.80	ARD
5EXD-13	2	2.618	1.094	386.3	3.272	0.0	10.750	6.811	0.000	58.80	ARD

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***HD9-2-FWH25B to HTR DRN TK***								***Sorted By: Average Wear Rate***		
5EXD-14	2	2.618	1.094	386.3	3.272	0.0	10.750	6.811	0.000	58.80	ARD
5EXD-9P	61	1.911	0.799	386.3	3.315	0.0	10.750	6.811	0.000	58.80	ARD
5EXD-10P DS	52	1.769	0.739	386.3	3.272	0.0	10.750	6.811	0.000	58.80	ARD
5EXD-11P US	52	1.769	0.739	386.3	3.272	0.0	10.750	6.811	0.000	58.80	ARD
5EXD-12P	52	1.769	0.739	386.3	3.315	0.0	10.750	6.811	0.000	58.80	ARD
5EXD-13P	52	1.769	0.739	386.3	3.272	0.0	10.750	6.811	0.000	58.80	ARD
5EXD-14P	52	1.769	0.739	386.3	3.298	0.0	10.750	6.811	0.000	58.80	ARD
5EXD-14P DS	52	1.769	0.739	386.3	3.298	0.0	10.750	6.811	0.000	58.80	ARD
===>Grouped by Line:	***HD9-3-FWH25C to HTR DRN TK***								***Sorted By: Average Wear Rate***		
5EXD-VALVE-5EX-8-2	22	3.705	1.548	386.3	3.438	0.0	10.750	6.811	0.000	58.80	ARD
5EXD-1N	31	3.538	1.479	386.3	3.272	0.0	10.750	6.811	0.000	58.80	ARD
5EXD-8N	30	2.831	1.183	386.3	3.272	0.0	10.750	6.811	0.000	58.80	ARD
5EXD-3	2	2.663	1.113	386.3	3.332	0.0	10.750	6.811	0.000	58.80	ARD
5EXD-5	2	2.662	1.112	386.3	3.330	0.0	10.750	6.811	0.000	58.80	ARD
5EXD-4	2	2.652	1.108	386.3	3.317	0.0	10.750	6.811	0.000	58.80	ARD
5EXD-6	2	2.652	1.108	386.3	3.317	0.0	10.750	6.811	0.000	58.80	ARD
5EXD-7	4	2.647	1.106	386.3	3.311	0.0	10.750	6.811	0.000	58.80	ARD
5EXD-1	2	2.618	1.094	386.3	3.272	0.0	10.750	6.811	0.000	58.80	ARD
5EXD-2	2	2.618	1.094	386.3	3.272	0.0	10.750	6.811	0.000	58.80	ARD
5EXD-8	2	2.618	1.094	386.3	3.272	0.0	10.750	6.811	0.000	58.80	ARD
5EXD-8P	54	2.265	0.946	386.3	3.298	0.0	10.750	6.811	0.000	58.80	ARD
5EXD-1P	61	1.911	0.799	386.3	3.315	0.0	10.750	6.811	0.000	58.80	ARD
5EXD-2P	52	1.769	0.739	386.3	3.272	0.0	10.750	6.811	0.000	58.80	ARD
5EXD-3P US	52	1.769	0.739	386.3	3.315	0.0	10.750	6.811	0.000	58.80	ARD
5EXD-3P DS	52	1.769	0.739	386.3	3.315	0.0	10.750	6.811	0.000	58.80	ARD
5EXD-4P	52	1.769	0.739	386.3	3.272	0.0	10.750	6.811	0.000	58.80	ARD
5EXD-5P	52	1.769	0.739	386.3	3.272	0.0	10.750	6.811	0.000	58.80	ARD
5EXD-6P	52	1.769	0.739	386.3	3.315	0.0	10.750	6.811	0.000	58.80	ARD

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).DB

Wear Rate Report

Pass 2 Analysis Include Measured Wear

Report Date/Time: 7/7/2010 9:54:36AM
AnalysisDate/Time: 6/11/2010 11:36:19AM

CHECWORKS SFA Version: 3.0 (build 105)
Duty Factor (Global) : 1.000

Run Name: FWH 25 DRNS TO HDT
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 0.922

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***HD9-1-FWH25A to HTR DRN TK***									***Sorted By: Flow Order***	
5EXD-21N	31	3.538	1.479	386.3	3.272	0.0	10.750	6.811	0.000	58.80	ARD
5EXD-21P	61	1.911	0.799	386.3	3.315	0.0	10.750	6.811	0.000	58.80	ARD
5EXD-21	2	2.618	1.094	386.3	3.272	0.0	10.750	6.811	0.000	58.80	ARD
5EXD-15P	52	1.769	0.739	386.3	3.272	0.0	10.750	6.811	0.000	58.80	ARD
5EXD-15	4	2.676	1.119	386.3	3.350	0.0	10.750	6.811	0.000	58.80	ARD
5EXD-16P	54	2.265	0.946	386.3	3.315	0.0	10.750	6.811	0.000	58.80	ARD
5EXD-16	2	2.618	1.094	386.3	3.272	0.0	10.750	6.811	0.000	58.80	ARD
5EXD-17P US	52	1.769	0.739	386.3	3.272	0.0	10.750	6.811	0.000	58.80	ARD
5EXD-17P DS	52	1.769	0.739	386.3	3.272	0.0	10.750	6.811	0.000	58.80	ARD
5EXD-17	2	2.662	1.112	386.3	3.330	0.0	10.750	6.811	0.000	58.80	ARD
5EXD-18P	52	1.769	0.739	386.3	3.315	0.0	10.750	6.811	0.000	58.80	ARD
5EXD-18	2	2.618	1.094	386.3	3.272	0.0	10.750	6.811	0.000	58.80	ARD
5EXD-19P	52	1.769	0.739	386.3	3.272	0.0	10.750	6.811	0.000	58.80	ARD
5EXD-19	2	2.618	1.094	386.3	3.272	0.0	10.750	6.811	0.000	58.80	ARD
5EXD-20P	52	1.769	0.739	386.3	3.298	0.0	10.750	6.811	0.000	58.80	ARD
5EXD-20P DS	52	1.769	0.739	386.3	3.298	0.0	10.750	6.811	0.000	58.80	ARD
5EXD-20	2	2.671	1.116	386.3	3.342	0.0	10.750	6.811	0.000	58.80	ARD
5EXD-VALVE-5EX-8	22	3.705	1.548	386.3	3.438	0.0	10.750	6.811	0.000	58.80	ARD
5EXD-20N	30	2.831	1.183	386.3	3.272	0.0	10.750	6.811	0.000	58.80	ARD
===>Grouped by Line:	***HD9-2-FWH25B to HTR DRN TK***									***Sorted By: Flow Order***	
5EXD-9N	31	3.538	1.479	386.3	3.272	0.0	10.750	6.811	0.000	58.80	ARD
5EXD-9P	61	1.911	0.799	386.3	3.315	0.0	10.750	6.811	0.000	58.80	ARD
5EXD-9	2	2.618	1.094	386.3	3.272	0.0	10.750	6.811	0.000	58.80	ARD
5EXD-10P DS	52	1.769	0.739	386.3	3.272	0.0	10.750	6.811	0.000	58.80	ARD
5EXD-10	2	2.675	1.118	386.3	3.349	0.0	10.750	6.811	0.000	58.80	ARD
5EXD-11P US	52	1.769	0.739	386.3	3.272	0.0	10.750	6.811	0.000	58.80	ARD
5EXD-11	2	2.618	1.094	386.3	3.272	0.0	10.750	6.811	0.000	58.80	ARD

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***HD9-2-FWH25B to HTR DRN TK***									***Sorted By: Flow Order***	
5EXD-12P	52	1.769	0.739	386.3	3.315	0.0	10.750	6.811	0.000	58.80	ARD
5EXD-12	2	2.618	1.094	386.3	3.272	0.0	10.750	6.811	0.000	58.80	ARD
5EXD-13P	52	1.769	0.739	386.3	3.272	0.0	10.750	6.811	0.000	58.80	ARD
5EXD-13	2	2.618	1.094	386.3	3.272	0.0	10.750	6.811	0.000	58.80	ARD
5EXD-14P	52	1.769	0.739	386.3	3.298	0.0	10.750	6.811	0.000	58.80	ARD
5EXD-14P DS	52	1.769	0.739	386.3	3.298	0.0	10.750	6.811	0.000	58.80	ARD
5EXD-14	2	2.618	1.094	386.3	3.272	0.0	10.750	6.811	0.000	58.80	ARD
5EXD-VALVE-5EX-8-1	22	3.705	1.548	386.3	3.438	0.0	10.750	6.811	0.000	58.80	ARD
5EXD-14N	30	2.831	1.183	386.3	3.272	0.0	10.750	6.811	0.000	58.80	ARD
===>Grouped by Line:	***HD9-3-FWH25C to HTR DRN TK***									***Sorted By: Flow Order***	
5EXD-1N	31	3.538	1.479	386.3	3.272	0.0	10.750	6.811	0.000	58.80	ARD
5EXD-1P	61	1.911	0.799	386.3	3.315	0.0	10.750	6.811	0.000	58.80	ARD
5EXD-3	2	2.663	1.113	386.3	3.332	0.0	10.750	6.811	0.000	58.80	ARD
5EXD-2P	52	1.769	0.739	386.3	3.272	0.0	10.750	6.811	0.000	58.80	ARD
5EXD-4	2	2.652	1.108	386.3	3.317	0.0	10.750	6.811	0.000	58.80	ARD
5EXD-3P US	52	1.769	0.739	386.3	3.315	0.0	10.750	6.811	0.000	58.80	ARD
5EXD-3P DS	52	1.769	0.739	386.3	3.315	0.0	10.750	6.811	0.000	58.80	ARD
5EXD-5	2	2.662	1.112	386.3	3.330	0.0	10.750	6.811	0.000	58.80	ARD
5EXD-4P	52	1.769	0.739	386.3	3.272	0.0	10.750	6.811	0.000	58.80	ARD
5EXD-1	2	2.618	1.094	386.3	3.272	0.0	10.750	6.811	0.000	58.80	ARD
5EXD-5P	52	1.769	0.739	386.3	3.272	0.0	10.750	6.811	0.000	58.80	ARD
5EXD-2	2	2.618	1.094	386.3	3.272	0.0	10.750	6.811	0.000	58.80	ARD
5EXD-6P	52	1.769	0.739	386.3	3.315	0.0	10.750	6.811	0.000	58.80	ARD
5EXD-6	2	2.652	1.108	386.3	3.317	0.0	10.750	6.811	0.000	58.80	ARD
5EXD-7	4	2.647	1.106	386.3	3.311	0.0	10.750	6.811	0.000	58.80	ARD
5EXD-8P	54	2.265	0.946	386.3	3.298	0.0	10.750	6.811	0.000	58.80	ARD
5EXD-8	2	2.618	1.094	386.3	3.272	0.0	10.750	6.811	0.000	58.80	ARD
5EXD-VALVE-5EX-8-2	22	3.705	1.548	386.3	3.438	0.0	10.750	6.811	0.000	58.80	ARD
5EXD-8N	30	2.831	1.183	386.3	3.272	0.0	10.750	6.811	0.000	58.80	ARD

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).DB

Service Life Report

Pass 2 Analysis Include Measured Wear

Report Date/Time: 7/7/2010 9:54:36AM
AnalysisDate/Time:

Run Name: FWH 25 DRNS TO HDT
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 0.922

CHECWORKS SFA Version: 3.0 (build 105)
Duty Factor (Global) :1.000

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **HD9-1-FWH25A to HTR DRN TK**					***Sorted By:Remaining Life***		
5EXD-VALVE-5EX-8	0.000	0.147	0.095	0.095	292,078	No	243,721
5EXD-21N	0.000	0.152	0.089	0.089	370,599	No	243,721
5EXD-20N	0.000	0.171	0.089	0.089	609,038	No	243,721
5EXD-21	0.000	0.177	0.089	0.089	705,702	No	243,721
5EXD-18	0.000	0.177	0.089	0.089	705,702	No	243,721
5EXD-20P	0.000	0.167	0.104	0.104	746,023	Yes	243,721
5EXD-21P	0.000	0.197	0.104	0.104	1,016,576	No	243,721
5EXD-19	0.000	0.217	0.089	0.089	1,023,920	Yes	243,721
5EXD-16	0.000	0.218	0.089	0.089	1,031,925	Yes	243,721
5EXD-20	0.304	0.227	0.089	0.089	1,085,892	Yes	243,721
5EXD-16P	0.000	0.223	0.104	0.104	1,100,153	Yes	243,721
5EXD-15	0.310	0.233	0.089	0.089	1,128,077	Yes	243,721
5EXD-19P	0.000	0.201	0.104	0.104	1,144,555	No	243,721
5EXD-17	0.295	0.238	0.089	0.089	1,176,602	Yes	243,721
5EXD-20P DS	0.000	0.218	0.104	0.104	1,348,783	No	243,721
5EXD-17P US	0.000	0.219	0.104	0.104	1,360,630	Yes	243,721
5EXD-17P DS	0.000	0.224	0.104	0.104	1,419,866	Yes	243,721
5EXD-15P	0.000	0.224	0.104	0.104	1,424,777	Yes	243,721
5EXD-18P	0.000	0.231	0.104	0.104	1,502,133	Yes	243,721
===>Grouped by Line: **HD9-2-FWH25B to HTR DRN TK**					***Sorted By:Remaining Life***		
5EXD-VALVE-5EX-8-1	0.000	0.147	0.095	0.095	292,078	No	243,721
5EXD-9N	0.000	0.152	0.089	0.089	370,599	No	243,721
5EXD-14N	0.000	0.171	0.089	0.089	609,038	No	243,721
5EXD-14P	0.000	0.162	0.104	0.104	681,700	Yes	243,721
5EXD-9	0.000	0.177	0.089	0.089	705,702	No	243,721
5EXD-11	0.000	0.177	0.089	0.089	705,702	No	243,721
5EXD-12	0.000	0.177	0.089	0.089	705,702	No	243,721
5EXD-13	0.000	0.213	0.089	0.089	991,900	Yes	243,721
5EXD-14	0.000	0.213	0.089	0.089	991,900	No	243,721

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **HD9-2-FWH25B to HTR DRN TK**					***Sorted By:Remaining Life***		
5EXD-14P DS	0.000	0.189	0.104	0.104	1,005,216	No	243,721
5EXD-9P	0.000	0.197	0.104	0.104	1,016,576	No	243,721
5EXD-12P	0.000	0.201	0.104	0.104	1,144,555	No	243,721
5EXD-13P	0.000	0.201	0.104	0.104	1,144,555	No	243,721
5EXD-10	0.309	0.264	0.089	0.089	1,371,391	Yes	243,721
5EXD-11P US	0.000	0.230	0.104	0.104	1,495,860	Yes	243,721
5EXD-10P DS	0.000	0.231	0.104	0.104	1,507,707	Yes	243,721
===>Grouped by Line: **HD9-3-FWH25C to HTR DRN TK**					***Sorted By:Remaining Life***		
5EXD-VALVE-5EX-8-2	0.000	0.147	0.095	0.095	292,078	No	243,721
5EXD-1N	0.000	0.152	0.089	0.089	370,599	No	243,721
5EXD-8N	0.000	0.171	0.089	0.089	609,038	No	243,721
5EXD-1	0.000	0.177	0.089	0.089	705,702	No	243,721
5EXD-8	0.000	0.200	0.089	0.089	887,838	Yes	243,721
5EXD-2	0.000	0.210	0.089	0.089	971,609	Yes	243,721
5EXD-3	0.296	0.215	0.089	0.089	991,797	Yes	243,721
5EXD-8P	0.000	0.221	0.104	0.104	1,079,657	Yes	243,721
5EXD-7	0.280	0.230	0.089	0.089	1,113,244	Yes	243,721
5EXD-4	0.285	0.231	0.089	0.089	1,122,982	Yes	243,721
5EXD-6	0.285	0.232	0.089	0.089	1,126,797	Yes	243,721
5EXD-3P DS	0.000	0.201	0.104	0.104	1,144,555	No	243,721
5EXD-6P	0.000	0.201	0.104	0.104	1,144,555	No	243,721
5EXD-5	0.295	0.234	0.089	0.089	1,145,104	Yes	243,721
5EXD-5P	0.000	0.222	0.104	0.104	1,392,530	Yes	243,721
5EXD-1P	0.000	0.231	0.104	0.104	1,396,757	No	243,721
5EXD-4P	0.000	0.233	0.104	0.104	1,525,827	Yes	243,721
5EXD-2P	0.000	0.234	0.104	0.104	1,534,696	Yes	243,721
5EXD-3P US	0.000	0.244	0.104	0.104	1,651,184	Yes	243,721

Note:
[1] Predictions are based on last Tmeas to analysis ending period.

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).DB

Service Life Report

Pass 2 Analysis Include Measured Wear

Report Date/Time: 7/7/2010 9:54:36AM
AnalysisDate/Time:

Run Name: FWH 25 DRNS TO HDT
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 0.922

CHECWORKS SFA Version: 3.0 (build 105)
Duty Factor (Global) : 1.000

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **HD9-1-FWH25A to HTR DRN TK**					***Sorted By:Flow Order***		
5EXD-21N	0.000	0.152	0.089	0.089	370,599	No	243,721
5EXD-21P	0.000	0.197	0.104	0.104	1,016,576	No	243,721
5EXD-21	0.000	0.177	0.089	0.089	705,702	No	243,721
5EXD-15P	0.000	0.224	0.104	0.104	1,424,777	Yes	243,721
5EXD-15	0.310	0.233	0.089	0.089	1,128,077	Yes	243,721
5EXD-16P	0.000	0.223	0.104	0.104	1,100,153	Yes	243,721
5EXD-16	0.000	0.218	0.089	0.089	1,031,925	Yes	243,721
5EXD-17P US	0.000	0.219	0.104	0.104	1,360,630	Yes	243,721
5EXD-17P DS	0.000	0.224	0.104	0.104	1,419,866	Yes	243,721
5EXD-17	0.295	0.238	0.089	0.089	1,176,602	Yes	243,721
5EXD-18P	0.000	0.231	0.104	0.104	1,502,133	Yes	243,721
5EXD-18	0.000	0.177	0.089	0.089	705,702	No	243,721
5EXD-19P	0.000	0.201	0.104	0.104	1,144,555	No	243,721
5EXD-19	0.000	0.217	0.089	0.089	1,023,920	Yes	243,721
5EXD-20P	0.000	0.167	0.104	0.104	746,023	Yes	243,721
5EXD-20P DS	0.000	0.218	0.104	0.104	1,348,783	No	243,721
5EXD-20	0.304	0.227	0.089	0.089	1,085,892	Yes	243,721
5EXD-VALVE-5EX-8	0.000	0.147	0.095	0.095	292,078	No	243,721
5EXD-20N	0.000	0.171	0.089	0.089	609,038	No	243,721
===>Grouped by Line: **HD9-2-FWH25B to HTR DRN TK**					***Sorted By:Flow Order***		
5EXD-9N	0.000	0.152	0.089	0.089	370,599	No	243,721
5EXD-9P	0.000	0.197	0.104	0.104	1,016,576	No	243,721
5EXD-9	0.000	0.177	0.089	0.089	705,702	No	243,721
5EXD-10P DS	0.000	0.231	0.104	0.104	1,507,707	Yes	243,721
5EXD-10	0.309	0.264	0.089	0.089	1,371,391	Yes	243,721
5EXD-11P US	0.000	0.230	0.104	0.104	1,495,860	Yes	243,721
5EXD-11	0.000	0.177	0.089	0.089	705,702	No	243,721
5EXD-12P	0.000	0.201	0.104	0.104	1,144,555	No	243,721
5EXD-12	0.000	0.177	0.089	0.089	705,702	No	243,721

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **HD9-2-FWH25B to HTR DRN TK**					***Sorted By:Flow Order***		
5EXD-13P	0.000	0.201	0.104	0.104	1,144,555	No	243,721
5EXD-13	0.000	0.213	0.089	0.089	991,900	Yes	243,721
5EXD-14P	0.000	0.162	0.104	0.104	681,700	Yes	243,721
5EXD-14P DS	0.000	0.189	0.104	0.104	1,005,216	No	243,721
5EXD-14	0.000	0.213	0.089	0.089	991,900	No	243,721
5EXD-VALVE-5EX-8-1	0.000	0.147	0.095	0.095	292,078	No	243,721
5EXD-14N	0.000	0.171	0.089	0.089	609,038	No	243,721
===>Grouped by Line: **HD9-3-FWH25C to HTR DRN TK**					***Sorted By:Flow Order***		
5EXD-1N	0.000	0.152	0.089	0.089	370,599	No	243,721
5EXD-1P	0.000	0.231	0.104	0.104	1,396,757	No	243,721
5EXD-3	0.296	0.215	0.089	0.089	991,797	Yes	243,721
5EXD-2P	0.000	0.234	0.104	0.104	1,534,696	Yes	243,721
5EXD-4	0.285	0.231	0.089	0.089	1,122,982	Yes	243,721
5EXD-3P US	0.000	0.244	0.104	0.104	1,651,184	Yes	243,721
5EXD-3P DS	0.000	0.201	0.104	0.104	1,144,555	No	243,721
5EXD-5	0.295	0.234	0.089	0.089	1,145,104	Yes	243,721
5EXD-4P	0.000	0.233	0.104	0.104	1,525,827	Yes	243,721
5EXD-1	0.000	0.177	0.089	0.089	705,702	No	243,721
5EXD-5P	0.000	0.222	0.104	0.104	1,392,530	Yes	243,721
5EXD-2	0.000	0.210	0.089	0.089	971,609	Yes	243,721
5EXD-6P	0.000	0.201	0.104	0.104	1,144,555	No	243,721
5EXD-6	0.285	0.232	0.089	0.089	1,126,797	Yes	243,721
5EXD-7	0.280	0.230	0.089	0.089	1,113,244	Yes	243,721
5EXD-8P	0.000	0.221	0.104	0.104	1,079,657	Yes	243,721
5EXD-8	0.000	0.200	0.089	0.089	887,838	Yes	243,721
5EXD-VALVE-5EX-8-2	0.000	0.147	0.095	0.095	292,078	No	243,721
5EXD-8N	0.000	0.171	0.089	0.089	609,038	No	243,721

Note:
[1] Predictions are based on last Tmeas to analysis ending period.

2

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).DB

Wear Report

Pass 2 Analysis Include Measured Wear

Report Date/Time: 07-Jul-2010 9:54 am
AnalysisDate/Time: 07-Jul-2010 9:54 am

Run Name: FWH 25 DRNS TO HDT
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 0.922

CHECWORKS SFA Version: 3.0 (build 105)
Duty Factor (Global) : 1.000

Component Name	Tinit	Total Lifetime Wear (mils) Prd. [1]	Meas.	In-Service Component Wear(mils) Prd. [1]	Meas.	In-Service Component Tmeas, Method, Time (in) [3]	[2]	(hrs) [3]	In-Service Component Thickness (mils) [4] Tp	Tm	Incremental Wear (mils) [5] PRWEAR	Time (hrs) Last Inspected
===>Grouped by Line:	**HD9-1-FWH25A to HTR DRN TK**										***Sorted By: Flow Order***	
5EXD-15P	0.000	40.7	74.0	40.7	74.0	0.233	MT	149,573	209.3	233.0	8.6	149,573
5EXD-15	0.310	61.5	64.0	61.5	64.0	0.246	MT	149,573	248.5	246.0	13.0	149,573
5EXD-16P	0.000	52.0	40.0	52.0	40.0	0.234	MT	149,573	198.0	234.0	11.0	149,573
5EXD-16	0.000	44.8	58.0	44.8	58.0	0.246	MT	106,128	205.2	246.0	28.1	106,128
5EXD-17P US	0.000	30.2	27.0	30.2	27.0	0.238	MT	106,128	219.8	238.0	19.0	106,128
5EXD-17P DS	0.000	30.2	57.0	30.2	57.0	0.243	MT	106,128	219.8	243.0	19.0	106,128
5EXD-17	0.295	63.5	45.0	63.5	45.0	0.249	MT	165,113	231.5	249.0	10.6	165,113
5EXD-18P	0.000	42.2	62.0	42.2	62.0	0.238	MT	165,113	207.8	238.0	7.0	165,113
5EXD-19	0.000	44.8	41.0	44.8	41.0	0.245	MT	106,128	205.2	245.0	28.1	106,128
5EXD-20P	0.000	46.4	168.0	46.4	168.0	0.170	MT	209,806	203.6	170.0	2.9	209,806
5EXD-20	0.304	45.6	48.0	45.6	48.0	0.256	MT	106,128	258.4	256.0	28.7	106,128
===>Grouped by Line:	**HD9-2-FWH25B to HTR DRN TK**										***Sorted By: Flow Order***	
5EXD-10P DS	0.000	40.7	36.0	40.7	36.0	0.240	MT	149,573	209.3	240.0	8.6	149,573
5EXD-10	0.309	61.5	32.0	61.5	32.0	0.277	MT	149,573	247.5	277.0	13.0	149,573
5EXD-11P US	0.000	40.7	39.0	40.7	39.0	0.239	MT	149,573	209.3	239.0	8.6	149,573
5EXD-13	0.000	44.8	57.0	44.8	57.0	0.241	MT	106,128	205.2	241.0	28.1	106,128
5EXD-14P	0.000	44.9	138.0	44.9	138.0	0.166	MT	193,769	205.1	166.0	4.3	193,769
===>Grouped by Line:	**HD9-3-FWH25C to HTR DRN TK**										***Sorted By: Flow Order***	
5EXD-3	0.296	51.1	58.0	51.1	58.0	0.238	MT	119,088	244.9	238.0	23.0	119,088
5EXD-2P	0.000	33.9	48.0	33.9	48.0	0.249	MT	119,088	216.1	249.0	15.3	119,088
5EXD-4	0.285	50.9	31.0	50.9	31.0	0.254	MT	119,088	234.1	254.0	22.9	119,088
5EXD-3P US	0.000	43.8	41.0	43.8	41.0	0.249	GW	181,477	206.2	249.0	5.5	181,477
5EXD-5	0.295	63.5	50.0	63.5	50.0	0.245	MT	165,113	231.5	245.0	10.6	165,113
5EXD-4P	0.000	42.2	35.0	42.2	35.0	0.240	MT	165,113	207.8	240.0	7.0	165,113
5EXD-5P	0.000	33.9	42.0	33.9	42.0	0.237	MT	119,088	216.1	237.0	15.3	119,088
5EXD-2	0.000	50.2	53.0	50.2	53.0	0.233	MT	119,088	199.8	233.0	22.6	119,088

Component Name	Tinit	Total Lifetime Wear (mils) Prd. [1]	Total Lifetime Wear (mils) Meas.	In-Service Component Wear(mils) Prd. [1]	In-Service Component Wear(mils) Meas.	In-Service Component Tmeas, Method, Time (in) [3]	[2]	(hrs) [3]	In-Service Component Thickness (mils) [4] Tp	Tm	Incremental Wear (mils) [5] PRWEAR	Time (hrs) Last Inspected
===>Grouped by Line:	**HD9-3-FWH25C to HTR DRN TK**											***Sorted By: Flow Order***
5EXD-6	0.285	58.3	38.0	58.3	38.0	0.247	MT	136,608	226.7	247.0	15.4	136,608
5EXD-7	0.280	58.2	35.0	58.2	35.0	0.245	MT	136,608	221.8	245.0	15.4	136,608
5EXD-8P	0.000	49.8	38.0	49.8	38.0	0.234	MT	136,608	200.2	234.0	13.2	136,608
5EXD-8	0.000	44.8	50.0	44.8	50.0	0.228	MT	106,128	205.2	228.0	28.1	106,128

Notes:
[1] Predictions are for the time of last inspection (last known meas. wear).
[2] GW = Tmeas is minimum thickness from Band, Blanket or Area Method of greatest wear.
MT = Tmeas is component minimum thickness.
PW = Tmeas is Tinit - predicted wear.
US = Tmeas is user specified.
[3] If no Tmeas has been determined from measured data, then Tmeas = Tinit and Time = current component installation time.
Tmeas is used to determine Predicted Thickness and Component Predicted Time to Tcrit.
[4] These two values are used for thickness plot.
Tp = Predicted thickness at Tmeas.
Tm = Last measured thickness (Tmeas).
[5] PRWEAR = Incremental wear from last Tmeas time to analysis ending period.

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).DB

Wear Rate Report

Pass 2 Analysis Include Measured Wear

Report Date/Time: 7/7/2010 9:54:36AM
AnalysisDate/Time: 6/11/2010 11:36:24AM

CHECWORKS SFA Version: 3.0 (build 105)
Duty Factor (Global) : 1.000

Run Name: FWH 26 DRNS DSCV
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 0.485

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***HD12-4-FWH26A CV to HTR DR TK***								***Sorted By: Average Wear Rate***		
6EX1D-N2	30	2.375	0.936	389.7	5.364	0.0	10.750	6.797	0.000	58.80	ARD
6EX1D-VALVE-LCV-1101	24	0.049	0.019	389.7	14.641	0.0	6.625	6.797	0.000	58.80	ARD
6EX1D-R2	18	0.006	0.002	389.7	14.641	0.0	6.625	6.797	0.000	58.80	ARD
6EX1D-R2 (D/S)	18	0.003	0.001	389.7	5.364	0.0	10.750	6.797	0.000	58.80	ARD
6EX1D-P2	68	0.003	0.001	389.7	5.364	0.0	10.750	6.797	0.000	58.80	ARD
===>Grouped by Line:	***HD12-5-FWH26B CV to HTR DR TK***								***Sorted By: Average Wear Rate***		
6EX2D-N2	30	2.375	0.936	389.7	5.364	0.0	10.750	6.797	0.000	58.80	ARD
6EX2D-VALVE-LCV-1102	24	0.049	0.019	389.7	14.641	0.0	6.625	6.797	0.000	58.80	ARD
6EX2D-R2	18	0.006	0.002	389.7	14.641	0.0	6.625	6.797	0.000	58.80	ARD
6EX2D-R2 (D/S)	18	0.003	0.001	389.7	5.364	0.0	10.750	6.797	0.000	58.80	ARD
6EX2D-P2	68	0.003	0.001	389.7	5.364	0.0	10.750	6.797	0.000	58.80	ARD
===>Grouped by Line:	***HD12-6-FWH26C CV to HTR DR TK***								***Sorted By: Average Wear Rate***		
6EX3D-N2	30	2.375	0.936	389.7	5.364	0.0	10.750	6.797	0.000	58.80	ARD
6EX3D-VALVE-LCV-1103	24	0.049	0.019	389.7	14.641	0.0	6.625	6.797	0.000	58.80	ARD
6EX3D-R2	18	0.006	0.002	389.7	14.641	0.0	6.625	6.797	0.000	58.80	ARD
6EX3D-R2 (D/S)	18	0.003	0.001	389.7	5.364	0.0	10.750	6.797	0.000	58.80	ARD
6EX3D-P2	68	0.003	0.001	389.7	5.364	0.0	10.750	6.797	0.000	58.80	ARD

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).DB

Wear Rate Report

Pass 2 Analysis Include Measured Wear

Report Date/Time: 7/7/2010 9:54:36AM
AnalysisDate/Time: 6/11/2010 11:36:24AM

CHECWORKS SFA Version: 3.0 (build 105)
Duty Factor (Global) : 1.000

Run Name: FWH 26 DRNS DSCV
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 0.485

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***HD12-4-FWH26A CV to HTR DR TK***									***Sorted By: Flow Order***	
6EX1D-VALVE-LCV-1101	24	0.049	0.019	389.7	14.641	0.0	6.625	6.797	0.000	58.80	ARD
6EX1D-R2	18	0.006	0.002	389.7	14.641	0.0	6.625	6.797	0.000	58.80	ARD
6EX1D-R2 (D/S)	18	0.003	0.001	389.7	5.364	0.0	10.750	6.797	0.000	58.80	ARD
6EX1D-P2	68	0.003	0.001	389.7	5.364	0.0	10.750	6.797	0.000	58.80	ARD
6EX1D-N2	30	2.375	0.936	389.7	5.364	0.0	10.750	6.797	0.000	58.80	ARD
===>Grouped by Line:	***HD12-5-FWH26B CV to HTR DR TK***									***Sorted By: Flow Order***	
6EX2D-VALVE-LCV-1102	24	0.049	0.019	389.7	14.641	0.0	6.625	6.797	0.000	58.80	ARD
6EX2D-R2	18	0.006	0.002	389.7	14.641	0.0	6.625	6.797	0.000	58.80	ARD
6EX2D-R2 (D/S)	18	0.003	0.001	389.7	5.364	0.0	10.750	6.797	0.000	58.80	ARD
6EX2D-P2	68	0.003	0.001	389.7	5.364	0.0	10.750	6.797	0.000	58.80	ARD
6EX2D-N2	30	2.375	0.936	389.7	5.364	0.0	10.750	6.797	0.000	58.80	ARD
===>Grouped by Line:	***HD12-6-FWH26C CV to HTR DR TK***									***Sorted By: Flow Order***	
6EX3D-VALVE-LCV-1103	24	0.049	0.019	389.7	14.641	0.0	6.625	6.797	0.000	58.80	ARD
6EX3D-R2	18	0.006	0.002	389.7	14.641	0.0	6.625	6.797	0.000	58.80	ARD
6EX3D-R2 (D/S)	18	0.003	0.001	389.7	5.364	0.0	10.750	6.797	0.000	58.80	ARD
6EX3D-P2	68	0.003	0.001	389.7	5.364	0.0	10.750	6.797	0.000	58.80	ARD
6EX3D-N2	30	2.375	0.936	389.7	5.364	0.0	10.750	6.797	0.000	58.80	ARD

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).DB

Service Life Report

Pass 2 Analysis Include Measured Wear

Report Date/Time: 7/7/2010 9:54:36AM
AnalysisDate/Time:

Run Name: FWH 26 DRNS DSCV
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 0.485

CHECWORKS SFA Version: 3.0 (build 105)
Duty Factor (Global) :1.000

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **HD12-4-FWH26A CV to HTR DR TK**					***Sorted By:Remaining Life***		
6EX1D-N2	0.000	0.299	0.159	0.159	1,306,821	No	243,721
6EX1D-VALVE-LCV-1101	0.000	0.279	0.105	0.105	78,403,424	No	243,721
6EX1D-R2 (D/S)	0.000	0.365	0.169	0.169	100,000,000	No	243,721
6EX1D-P2	0.000	0.365	0.169	0.169	100,000,000	No	243,721
6EX1D-R2	0.000	0.280	0.104	0.104	100,000,000	No	243,721
===>Grouped by Line: **HD12-5-FWH26B CV to HTR DR TK**					***Sorted By:Remaining Life***		
6EX2D-N2	0.000	0.369	0.159	0.159	1,962,191	Yes	243,721
6EX2D-VALVE-LCV-1102	0.000	0.279	0.105	0.105	78,403,424	No	243,721
6EX2D-R2 (D/S)	0.000	0.365	0.169	0.169	100,000,000	No	243,721
6EX2D-P2	0.000	0.365	0.169	0.169	100,000,000	No	243,721
6EX2D-R2	0.000	0.280	0.104	0.104	100,000,000	No	243,721
===>Grouped by Line: **HD12-6-FWH26C CV to HTR DR TK**					***Sorted By:Remaining Life***		
6EX3D-N2	0.000	0.299	0.159	0.159	1,306,821	No	243,721
6EX3D-VALVE-LCV-1103	0.000	0.279	0.105	0.105	78,403,424	No	243,721
6EX3D-P2	0.000	0.365	0.169	0.169	100,000,000	No	243,721
6EX3D-R2	0.000	0.280	0.104	0.104	100,000,000	No	243,721
6EX3D-R2 (D/S)	0.000	0.365	0.169	0.169	100,000,000	No	243,721

Note:
[1] Predictions are based on last Tmeas to analysis ending period.

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).DB

Service Life Report

Pass 2 Analysis Include Measured Wear

Report Date/Time: 7/7/2010 9:54:36AM
AnalysisDate/Time:

Run Name: FWH 26 DRNS DSCV
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 0.485

CHECWORKS SFA Version: 3.0 (build 105)
Duty Factor (Global) : 1.000

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **HD12-4-FWH26A CV to HTR DR TK**					***Sorted By:Flow Order***		
6EX1D-VALVE-LCV-1101	0.000	0.279	0.105	0.105	78,403,424	No	243,721
6EX1D-R2	0.000	0.280	0.104	0.104	100,000,000	No	243,721
6EX1D-R2 (D/S)	0.000	0.365	0.169	0.169	100,000,000	No	243,721
6EX1D-P2	0.000	0.365	0.169	0.169	100,000,000	No	243,721
6EX1D-N2	0.000	0.299	0.159	0.159	1,306,821	No	243,721
===>Grouped by Line: **HD12-5-FWH26B CV to HTR DR TK**					***Sorted By:Flow Order***		
6EX2D-VALVE-LCV-1102	0.000	0.279	0.105	0.105	78,403,424	No	243,721
6EX2D-R2	0.000	0.280	0.104	0.104	100,000,000	No	243,721
6EX2D-R2 (D/S)	0.000	0.365	0.169	0.169	100,000,000	No	243,721
6EX2D-P2	0.000	0.365	0.169	0.169	100,000,000	No	243,721
6EX2D-N2	0.000	0.369	0.159	0.159	1,962,191	Yes	243,721
===>Grouped by Line: **HD12-6-FWH26C CV to HTR DR TK**					***Sorted By:Flow Order***		
6EX3D-VALVE-LCV-1103	0.000	0.279	0.105	0.105	78,403,424	No	243,721
6EX3D-R2	0.000	0.280	0.104	0.104	100,000,000	No	243,721
6EX3D-R2 (D/S)	0.000	0.365	0.169	0.169	100,000,000	No	243,721
6EX3D-P2	0.000	0.365	0.169	0.169	100,000,000	No	243,721
6EX3D-N2	0.000	0.299	0.159	0.159	1,306,821	No	243,721

Note:
[1] Predictions are based on last Tmeas to analysis ending period.

1

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).DB

Wear Report

Pass 2 Analysis Include Measured Wear

Report Date/Time: 07-Jul-2010 9:54 am
AnalysisDate/Time: 07-Jul-2010 9:54 am

Run Name: FWH 26 DRNS DSCV
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 0.485

CHECWORKS SFA Version: 3.0 (build 105)
Duty Factor (Global) : 1.000

Component Name	Tinit	Total Lifetime Wear (mils) Prd. [1]	Meas.	In-Service Component Wear(mils) Prd. [1]	Meas.	In-Service Component Tmeas, Method, Time (in) [3]	[2]	(hrs) [3]	In-Service Component Thickness (mils) [4] Tp	Tm	Incremental Wear (mils) [5] PRWEAR	Time (hrs) Last Inspected
===>Grouped by Line:	**HD12-5-FWH26B CV to HTR DR TK**											***Sorted By: Flow Order***
6EX2D-N2	0.000	55.0	55.0	55.0	55.0	0.380	MT	149,573	310.0	380.0	11.1	149,573

Notes:
[1] Predictions are for the time of last inspection (last known meas. wear).
[2] GW = Tmeas is minimum thickness from Band, Blanket or Area Method of greatest wear.
MT = Tmeas is component minimum thickness.
PW = Tmeas is Tinit - predicted wear.
US = Tmeas is user specified.
[3] If no Tmeas has been determined from measured data, then Tmeas = Tinit and Time = current component installation time.
Tmeas is used to determine Predicted Thickness and Component Predicted Time to Tcrit.
[4] These two values are used for thickness plot.
Tp = Predicted thickness at Tmeas.
Tm = Last measured thickness (Tmeas).
[5] PRWEAR = Incremental wear from last Tmeas time to analysis ending period.

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).DB

Wear Rate Report

Pass 2 Analysis Include Measured Wear

Report Date/Time: 7/7/2010 9:54:36AM
AnalysisDate/Time: 6/11/2010 11:36:31AM

CHECWORKS SFA Version: 3.0 (build 105)
Duty Factor (Global) : 1.000

Run Name: FWH 26 DRNS USCV
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 0.664

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***HD12-1-FWH26A to CV***								***Sorted By: Average Wear Rate***		
6EXD-9N	31	6.381	2.515	389.7	9.519	0.0	10.750	6.797	0.000	58.80	ARD
6EXD-1-1R (D/S)	17	3.078	1.213	389.7	15.157	0.0	6.625	6.797	0.000	58.80	ARD
6EXD-1	2	3.043	1.199	389.7	5.429	0.0	10.750	6.797	0.000	58.80	ARD
6EXD-8	2	2.945	1.160	389.7	5.242	0.0	10.750	6.797	0.000	58.80	ARD
6EXD-7	2	2.945	1.160	389.7	5.242	0.0	10.750	6.797	0.000	58.80	ARD
6EXD-6	2	2.945	1.160	389.7	5.242	0.0	10.750	6.797	0.000	58.80	ARD
6EXD-9P US	61	2.149	0.847	389.7	5.242	0.0	10.750	6.797	0.000	58.80	ARD
6EXD-1-1R	17	2.067	0.814	389.7	5.462	0.0	10.750	6.797	0.000	58.80	ARD
6EXD-8P	52	1.990	0.784	389.7	5.242	0.0	10.750	6.797	0.000	58.80	ARD
6EXD-7P	52	1.990	0.784	389.7	5.242	0.0	10.750	6.797	0.000	58.80	ARD
6EXD-6P	52	1.990	0.784	389.7	5.242	0.0	10.750	6.797	0.000	58.80	ARD
6EXD-1P	52	1.990	0.784	389.7	5.242	0.0	10.750	6.797	0.000	58.80	ARD
===>Grouped by Line:	***HD12-2-FWH26B to CV***								***Sorted By: Average Wear Rate***		
6EXD-13N	31	3.980	1.568	389.7	5.242	0.0	10.750	6.797	0.000	58.80	ARD
6EXD-2	2	3.056	1.204	389.7	5.455	0.0	10.750	6.797	0.000	58.80	ARD
6EXD-2-1R (D/S)	17	3.036	1.197	389.7	14.827	0.0	6.625	6.797	0.000	58.80	ARD
6EXD-12	2	2.945	1.160	389.7	5.242	0.0	10.750	6.797	0.000	58.80	ARD
6EXD-11	2	2.945	1.160	389.7	5.242	0.0	10.750	6.797	0.000	58.80	ARD
6EXD-13P	61	2.149	0.847	389.7	5.242	0.0	10.750	6.797	0.000	58.80	ARD
6EXD-2-1R	17	2.064	0.813	389.7	5.451	0.0	10.750	6.797	0.000	58.80	ARD
6EXD-12P	52	1.990	0.784	389.7	5.242	0.0	10.750	6.797	0.000	58.80	ARD
6EXD-11P	52	1.990	0.784	389.7	5.242	0.0	10.750	6.797	0.000	58.80	ARD
6EXD-2P	52	1.990	0.784	389.7	5.242	0.0	10.750	6.797	0.000	58.80	ARD
===>Grouped by Line:	***HD12-3-FWH26C to CV***								***Sorted By: Average Wear Rate***		
6EXD-18N	31	3.980	1.568	389.7	5.242	0.0	10.750	6.797	0.000	58.80	ARD
6EXD-3-1R (D/S)	17	3.012	1.187	389.7	14.641	0.0	6.625	6.797	0.000	58.80	ARD
6EXD-18	2	2.945	1.160	389.7	5.242	0.0	10.750	6.797	0.000	58.80	ARD

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***HD12-3-FWH26C to CV***								***Sorted By: Average Wear Rate***		
6EXD-17	2	2.945	1.160	389.7	5.242	0.0	10.750	6.797	0.000	58.80	ARD
6EXD-16	2	2.945	1.160	389.7	5.242	0.0	10.750	6.797	0.000	58.80	ARD
6EXD-15	2	2.945	1.160	389.7	5.242	0.0	10.750	6.797	0.000	58.80	ARD
6EXD-3	2	2.945	1.160	389.7	5.242	0.0	10.750	6.797	0.000	58.80	ARD
6EXD-18P	61	2.149	0.847	389.7	5.242	0.0	10.750	6.797	0.000	58.80	ARD
6EXD-17P	52	1.990	0.784	389.7	5.242	0.0	10.750	6.797	0.000	58.80	ARD
6EXD-16P	52	1.990	0.784	389.7	5.242	0.0	10.750	6.797	0.000	58.80	ARD
6EXD-15P-1	52	1.990	0.784	389.7	5.242	0.0	10.750	6.797	0.000	58.80	ARD
6EXD-15P	52	1.990	0.784	389.7	5.242	0.0	10.750	6.797	0.000	58.80	ARD
6EXD-3P	52	1.990	0.784	389.7	5.242	0.0	10.750	6.797	0.000	58.80	ARD
6EXD-3-1R	17	1.990	0.784	389.7	5.242	0.0	10.750	6.797	0.000	58.80	ARD

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).DB

Wear Rate Report

Pass 2 Analysis Include Measured Wear

Report Date/Time: 7/7/2010 9:54:36AM
AnalysisDate/Time: 3/11/2010 11:36:31AM

CHECWORKS SFA Version: 3.0 (build 105)
Duty Factor (Global) : 1.000

Run Name: FWH 26 DRNS USCV
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 0.664

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***HD12-1-FWH26A to CV***									***Sorted By: Flow Order***	
6EXD-9N	31	6.381	2.515	389.7	9.519	0.0	10.750	6.797	0.000	58.80	ARD
6EXD-9P US	61	2.149	0.847	389.7	5.242	0.0	10.750	6.797	0.000	58.80	ARD
6EXD-8	2	2.945	1.160	389.7	5.242	0.0	10.750	6.797	0.000	58.80	ARD
6EXD-8P	52	1.990	0.784	389.7	5.242	0.0	10.750	6.797	0.000	58.80	ARD
6EXD-7	2	2.945	1.160	389.7	5.242	0.0	10.750	6.797	0.000	58.80	ARD
6EXD-7P	52	1.990	0.784	389.7	5.242	0.0	10.750	6.797	0.000	58.80	ARD
6EXD-6	2	2.945	1.160	389.7	5.242	0.0	10.750	6.797	0.000	58.80	ARD
6EXD-6P	52	1.990	0.784	389.7	5.242	0.0	10.750	6.797	0.000	58.80	ARD
6EXD-1	2	3.043	1.199	389.7	5.429	0.0	10.750	6.797	0.000	58.80	ARD
6EXD-1P	52	1.990	0.784	389.7	5.242	0.0	10.750	6.797	0.000	58.80	ARD
6EXD-1-1R	17	2.067	0.814	389.7	5.462	0.0	10.750	6.797	0.000	58.80	ARD
6EXD-1-1R (D/S)	17	3.078	1.213	389.7	15.157	0.0	6.625	6.797	0.000	58.80	ARD
===>Grouped by Line:	***HD12-2-FWH26B to CV***									***Sorted By: Flow Order***	
6EXD-13N	31	3.980	1.568	389.7	5.242	0.0	10.750	6.797	0.000	58.80	ARD
6EXD-13P	61	2.149	0.847	389.7	5.242	0.0	10.750	6.797	0.000	58.80	ARD
6EXD-12	2	2.945	1.160	389.7	5.242	0.0	10.750	6.797	0.000	58.80	ARD
6EXD-12P	52	1.990	0.784	389.7	5.242	0.0	10.750	6.797	0.000	58.80	ARD
6EXD-11	2	2.945	1.160	389.7	5.242	0.0	10.750	6.797	0.000	58.80	ARD
6EXD-11P	52	1.990	0.784	389.7	5.242	0.0	10.750	6.797	0.000	58.80	ARD
6EXD-2	2	3.056	1.204	389.7	5.455	0.0	10.750	6.797	0.000	58.80	ARD
6EXD-2P	52	1.990	0.784	389.7	5.242	0.0	10.750	6.797	0.000	58.80	ARD
6EXD-2-1R	17	2.064	0.813	389.7	5.451	0.0	10.750	6.797	0.000	58.80	ARD
6EXD-2-1R (D/S)	17	3.036	1.197	389.7	14.827	0.0	6.625	6.797	0.000	58.80	ARD
===>Grouped by Line:	***HD12-3-FWH26C to CV***									***Sorted By: Flow Order***	
6EXD-18N	31	3.980	1.568	389.7	5.242	0.0	10.750	6.797	0.000	58.80	ARD
6EXD-18P	61	2.149	0.847	389.7	5.242	0.0	10.750	6.797	0.000	58.80	ARD
6EXD-18	2	2.945	1.160	389.7	5.242	0.0	10.750	6.797	0.000	58.80	ARD

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***HD12-3-FWH26C to CV***									***Sorted By: Flow Order***	
6EXD-17P	52	1.990	0.784	389.7	5.242	0.0	10.750	6.797	0.000	58.80	ARD
6EXD-17	2	2.945	1.160	389.7	5.242	0.0	10.750	6.797	0.000	58.80	ARD
6EXD-16P	52	1.990	0.784	389.7	5.242	0.0	10.750	6.797	0.000	58.80	ARD
6EXD-16	2	2.945	1.160	389.7	5.242	0.0	10.750	6.797	0.000	58.80	ARD
6EXD-15P-1	52	1.990	0.784	389.7	5.242	0.0	10.750	6.797	0.000	58.80	ARD
6EXD-15	2	2.945	1.160	389.7	5.242	0.0	10.750	6.797	0.000	58.80	ARD
6EXD-15P	52	1.990	0.784	389.7	5.242	0.0	10.750	6.797	0.000	58.80	ARD
6EXD-3	2	2.945	1.160	389.7	5.242	0.0	10.750	6.797	0.000	58.80	ARD
6EXD-3P	52	1.990	0.784	389.7	5.242	0.0	10.750	6.797	0.000	58.80	ARD
6EXD-3-1R	17	1.990	0.784	389.7	5.242	0.0	10.750	6.797	0.000	58.80	ARD
6EXD-3-1R (D/S)	17	3.012	1.187	389.7	14.641	0.0	6.625	6.797	0.000	58.80	ARD

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).DB

Service Life Report

Pass 2 Analysis Include Measured Wear

Report Date/Time: 7/7/2010 9:54:36AM
AnalysisDate/Time:

Run Name: FWH 26 DRNS USCV
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 0.664

CHECWORKS SFA Version: 3.0 (build 105)
Duty Factor (Global) :1.000

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **HD12-1-FWH26A to CV**					***Sorted By:Remaining Life***		
6EXD-8	0.000	0.225	0.159	0.159	496,211	No	243,721
6EXD-7	0.000	0.225	0.159	0.159	496,211	No	243,721
6EXD-1	0.395	0.289	0.159	0.159	947,911	Yes	243,721
6EXD-1P	0.000	0.252	0.159	0.159	1,031,357	No	243,721
6EXD-7P	0.000	0.252	0.159	0.159	1,031,357	No	243,721
6EXD-8P	0.000	0.252	0.159	0.159	1,031,357	No	243,721
6EXD-9P US	0.000	0.271	0.159	0.159	1,153,916	Yes	243,721
6EXD-1-1R (D/S)	0.332	0.262	0.098	0.098	1,184,950	Yes	243,721
6EXD-6P	0.000	0.276	0.159	0.159	1,305,997	Yes	243,721
6EXD-6	0.000	0.369	0.159	0.159	1,586,279	Yes	243,721
6EXD-1-1R	0.410	0.346	0.159	0.159	2,009,292	Yes	243,721
6EXD-9N	1.614	1.522	0.159	0.159	4,745,741	No	243,721
===>Grouped by Line: **HD12-2-FWH26B to CV**					***Sorted By:Remaining Life***		
6EXD-13N	0.000	0.196	0.159	0.159	206,341	No	243,721
6EXD-12	0.000	0.225	0.159	0.159	496,211	No	243,721
6EXD-11	0.000	0.225	0.159	0.159	496,211	No	243,721
6EXD-2	0.407	0.280	0.159	0.159	878,229	Yes	243,721
6EXD-13P	0.000	0.247	0.159	0.159	909,132	No	243,721
6EXD-2-1R (D/S)	0.299	0.230	0.098	0.098	963,726	Yes	243,721
6EXD-12P	0.000	0.252	0.159	0.159	1,031,357	No	243,721
6EXD-11P	0.000	0.252	0.159	0.159	1,031,357	No	243,721
6EXD-2P	0.000	0.252	0.159	0.159	1,031,357	No	243,721
6EXD-2-1R	0.405	0.345	0.159	0.159	2,004,677	Yes	243,721
===>Grouped by Line: **HD12-3-FWH26C to CV**					***Sorted By:Remaining Life***		
6EXD-18N	0.000	0.196	0.159	0.159	206,341	No	243,721
6EXD-18	0.000	0.225	0.159	0.159	496,211	No	243,721
6EXD-17	0.000	0.225	0.159	0.159	496,211	No	243,721
6EXD-16	0.000	0.225	0.159	0.159	496,211	No	243,721

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **HD12-3-FWH26C to CV**					***Sorted By:Remaining Life***		
6EXD-3	0.000	0.225	0.159	0.159	496,211	No	243,721
6EXD-15	0.000	0.241	0.159	0.159	616,514	Yes	243,721
6EXD-3-1R (D/S)	0.000	0.196	0.098	0.098	723,215	No	243,721
6EXD-18P	0.000	0.247	0.159	0.159	909,132	No	243,721
6EXD-17P	0.000	0.252	0.159	0.159	1,031,357	No	243,721
6EXD-16P	0.000	0.252	0.159	0.159	1,031,357	No	243,721
6EXD-3P	0.000	0.252	0.159	0.159	1,031,357	No	243,721
6EXD-3-1R	0.000	0.252	0.159	0.159	1,031,357	No	243,721
6EXD-15P	0.000	0.264	0.159	0.159	1,170,686	Yes	243,721
6EXD-15P-1	0.000	0.274	0.159	0.159	1,282,430	Yes	243,721

Note:
[1] Predictions are based on last Tmeas to analysis ending period.

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).DB

Service Life Report

Pass 2 Analysis Include Measured Wear

Report Date/Time: 7/7/2010 9:54:36AM
AnalysisDate/Time:

Run Name: FWH 26 DRNS USCV
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 0.664

CHECWORKS SFA Version: 3.0 (build 105)
Duty Factor (Global) : 1.000

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **HD12-1-FWH26A to CV**					***Sorted By:Flow Order***		
6EXD-9N	1.614	1.522	0.159	0.159	4,745,741	No	243,721
6EXD-9P US	0.000	0.271	0.159	0.159	1,153,916	Yes	243,721
6EXD-8	0.000	0.225	0.159	0.159	496,211	No	243,721
6EXD-8P	0.000	0.252	0.159	0.159	1,031,357	No	243,721
6EXD-7	0.000	0.225	0.159	0.159	496,211	No	243,721
6EXD-7P	0.000	0.252	0.159	0.159	1,031,357	No	243,721
6EXD-6	0.000	0.369	0.159	0.159	1,586,279	Yes	243,721
6EXD-6P	0.000	0.276	0.159	0.159	1,305,997	Yes	243,721
6EXD-1	0.395	0.289	0.159	0.159	947,911	Yes	243,721
6EXD-1P	0.000	0.252	0.159	0.159	1,031,357	No	243,721
6EXD-1-1R	0.410	0.346	0.159	0.159	2,009,292	Yes	243,721
6EXD-1-1R (D/S)	0.332	0.262	0.098	0.098	1,184,950	Yes	243,721
===>Grouped by Line: **HD12-2-FWH26B to CV**					***Sorted By:Flow Order***		
6EXD-13N	0.000	0.196	0.159	0.159	206,341	No	243,721
6EXD-13P	0.000	0.247	0.159	0.159	909,132	No	243,721
6EXD-12	0.000	0.225	0.159	0.159	496,211	No	243,721
6EXD-12P	0.000	0.252	0.159	0.159	1,031,357	No	243,721
6EXD-11	0.000	0.225	0.159	0.159	496,211	No	243,721
6EXD-11P	0.000	0.252	0.159	0.159	1,031,357	No	243,721
6EXD-2	0.407	0.280	0.159	0.159	878,229	Yes	243,721
6EXD-2P	0.000	0.252	0.159	0.159	1,031,357	No	243,721
6EXD-2-1R	0.405	0.345	0.159	0.159	2,004,677	Yes	243,721
6EXD-2-1R (D/S)	0.299	0.230	0.098	0.098	963,726	Yes	243,721
===>Grouped by Line: **HD12-3-FWH26C to CV**					***Sorted By:Flow Order***		
6EXD-18N	0.000	0.196	0.159	0.159	206,341	No	243,721
6EXD-18P	0.000	0.247	0.159	0.159	909,132	No	243,721
6EXD-18	0.000	0.225	0.159	0.159	496,211	No	243,721
6EXD-17P	0.000	0.252	0.159	0.159	1,031,357	No	243,721

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **HD12-3-FWH26C to CV**					***Sorted By:Flow Order***		
6EXD-17	0.000	0.225	0.159	0.159	496,211	No	243,721
6EXD-16P	0.000	0.252	0.159	0.159	1,031,357	No	243,721
6EXD-16	0.000	0.225	0.159	0.159	496,211	No	243,721
6EXD-15P-1	0.000	0.274	0.159	0.159	1,282,430	Yes	243,721
6EXD-15	0.000	0.241	0.159	0.159	616,514	Yes	243,721
6EXD-15P	0.000	0.264	0.159	0.159	1,170,686	Yes	243,721
6EXD-3	0.000	0.225	0.159	0.159	496,211	No	243,721
6EXD-3P	0.000	0.252	0.159	0.159	1,031,357	No	243,721
6EXD-3-1R	0.000	0.252	0.159	0.159	1,031,357	No	243,721
6EXD-3-1R (D/S)	0.000	0.196	0.098	0.098	723,215	No	243,721

Note:
[1] Predictions are based on last Tmeas to analysis ending period.

2

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).DB

Wear Report

Pass 2 Analysis Include Measured Wear

Report Date/Time: 07-Jul-2010 9:54 am
AnalysisDate/Time: 07-Jul-2010 9:54 am

Run Name: FWH 26 DRNS USCV
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 0.664

CHECWORKS SFA Version: 3.0 (build 105)
Duty Factor (Global) : 1.000

Component Name	Tinit	Total Lifetime Wear (mils) Prd. [1]	Total Lifetime Wear (mils) Meas.	In-Service Component Wear(mils) Prd. [1]	In-Service Component Wear(mils) Meas.	In-Service Component Tmeas, Method, Time (in) [3]	[2]	(hrs) [3]	In-Service Component Thickness (mils) [4] Tp	Tm	Incremental Wear (mils) [5] PRWEAR	Time (hrs) Last Inspected
===>Grouped by Line:	**HD12-1-FWH26A to CV**										***Sorted By: Flow Order***	
6EXD-9P US	0.000	47.7	47.0	47.7	47.0	0.283	MT	136,608	259.3	283.0	12.1	136,608
6EXD-6	0.000	73.4	63.0	73.4	63.0	0.378	GW	181,477	233.6	378.0	8.6	181,477
6EXD-6P	0.000	49.6	57.0	49.6	57.0	0.282	GW	181,477	257.4	282.0	5.8	181,477
6EXD-1	0.395	77.7	138.0	77.7	138.0	0.296	MT	193,769	317.3	296.0	7.0	193,769
6EXD-1-1R	0.410	49.7	56.0	49.7	56.0	0.354		165,113	360.3	354.0	7.8	165,113
6EXD-1-1R (D/S)	0.332	73.9	58.0	73.9	58.0	0.274		165,113	258.1	274.0	11.7	165,113
===>Grouped by Line:	**HD12-2-FWH26B to CV**										***Sorted By: Flow Order***	
6EXD-2	0.407	59.1	77.0	59.1	77.0	0.306	MT	119,088	347.9	306.0	26.0	119,088
6EXD-2-1R	0.405	47.8	50.0	47.8	50.0	0.355	MT	149,573	357.2	355.0	9.6	149,573
6EXD-2-1R (D/S)	0.299	70.3	55.0	70.3	55.0	0.244	MT	149,573	228.7	244.0	14.2	149,573
===>Grouped by Line:	**HD12-3-FWH26C to CV**										***Sorted By: Flow Order***	
6EXD-15P-1	0.000	38.5	30.0	38.5	30.0	0.291	MT	119,088	268.5	291.0	16.9	119,088
6EXD-15	0.000	56.9	35.0	56.9	35.0	0.266	MT	119,088	250.1	266.0	25.0	119,088
6EXD-15P	0.000	38.5	39.0	38.5	39.0	0.281	MT	119,088	268.5	281.0	16.9	119,088

Notes:
[1] Predictions are for the time of last inspection (last known meas. wear).
[2] GW = Tmeas is minimum thickness from Band, Blanket or Area Method of greatest wear.
MT = Tmeas is component minimum thickness.
PW = Tmeas is Tinit - predicted wear.
US = Tmeas is user specified.
[3] If no Tmeas has been determined from measured data, then Tmeas = Tinit and Time = current component installation time.
Tmeas is used to determine Predicted Thickness and Component Predicted Time to Tcrit.
[4] These two values are used for thickness plot.
Tp = Predicted thickness at Tmeas.
Tm = Last measured thickness (Tmeas).
[5] PRWEAR = Incremental wear from last Tmeas time to analysis ending period.

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).DB

Wear Rate Report

Pass 2 Analysis Include Measured Wear

Report Date/Time: 7/7/2010 9:54:36AM
AnalysisDate/Time: 6/11/2010 11:36:36AM

CHECWORKS SFA Version: 3.0 (build 105)
Duty Factor (Global) : 1.000

Run Name: HD - FWH 21 TO COND
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 1.421

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***HD-FWH 21A Drain to Cond 23***								***Sorted By: Average Wear Rate***		
1HD-208-1N	31	5.133	2.376	100.0	9.141	0.0	8.625	7.048	0.000	13.04	HBD
1HD-208-Valve-LCV1124	24	5.133	2.376	100.0	9.141	0.0	8.625	7.048	0.000	13.04	HBD
1HD-208-1R	18	2.874	1.330	100.0	9.141	0.0	8.625	7.048	0.000	13.04	HBD
1HD-208-Valve-1EX-1-5	22	2.567	1.190	100.0	4.021	0.0	12.750	7.048	0.000	13.04	HBD
1HD-208-2N	30	2.053	0.952	100.0	4.021	0.0	12.750	7.048	0.000	13.04	HBD
1HD-208-1R (D/S)	18	1.540	0.714	100.0	4.021	0.0	12.750	7.048	0.000	13.04	HBD
1HD-208-1P	58	1.129	0.523	100.0	4.021	0.0	12.750	7.048	0.000	13.04	HBD
===>Grouped by Line:	***HD-FWH 21B Drain to Cond 22***								***Sorted By: Average Wear Rate***		
1HD-208-4N	31	5.133	2.376	100.0	9.141	0.0	8.625	7.048	0.000	13.04	HBD
1HD-208-Valve-LCV1125	24	5.133	2.376	100.0	9.141	0.0	8.625	7.048	0.000	13.04	HBD
1HD-208-4R	18	2.874	1.330	100.0	9.141	0.0	8.625	7.048	0.000	13.04	HBD
1HD-208-Valve-1EX-1-3	22	2.567	1.190	100.0	4.021	0.0	12.750	7.048	0.000	13.04	HBD
1HD-208-5N	30	2.053	0.952	100.0	4.021	0.0	12.750	7.048	0.000	13.04	HBD
1HD-208-4R (D/S)	18	1.540	0.714	100.0	4.021	0.0	12.750	7.048	0.000	13.04	HBD
1HD-208-4P	58	1.129	0.523	100.0	4.021	0.0	12.750	7.048	0.000	13.04	HBD
===>Grouped by Line:	***HD-FWH 21C Drain to Cond 21***								***Sorted By: Average Wear Rate***		
1HD-208-6N	31	5.133	2.376	100.0	9.141	0.0	8.625	7.048	0.000	13.04	HBD
1HD-208-Valve-LCV1126	24	5.133	2.376	100.0	9.141	0.0	8.625	7.048	0.000	13.04	HBD
1HD-208-6R	18	2.874	1.330	100.0	9.141	0.0	8.625	7.048	0.000	13.04	HBD
1HD-208-Valve-1EX-1-1	22	2.567	1.190	100.0	4.021	0.0	12.750	7.048	0.000	13.04	HBD
1HD-208-7N	30	2.053	0.952	100.0	4.021	0.0	12.750	7.048	0.000	13.04	HBD
1HD-208-6R (D/S)	18	1.540	0.714	100.0	4.021	0.0	12.750	7.048	0.000	13.04	HBD
1HD-208-6P	58	1.129	0.523	100.0	4.021	0.0	12.750	7.048	0.000	13.04	HBD

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).DB

Wear Rate Report

Pass 2 Analysis Include Measured Wear

Report Date/Time: 7/7/2010 9:54:36AM
AnalysisDate/Time: 6/11/2010 11:36:36AM

CHECWORKS SFA Version: 3.0 (build 105)
Duty Factor (Global) : 1.000

Run Name: HD - FWH 21 TO COND
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 1.421

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***HD-FWH 21A Drain to Cond 23***									***Sorted By: Flow Order***	
1HD-208-1N	31	5.133	2.376	100.0	9.141	0.0	8.625	7.048	0.000	13.04	HBD
1HD-208-Valve-LCV1124	24	5.133	2.376	100.0	9.141	0.0	8.625	7.048	0.000	13.04	HBD
1HD-208-1R	18	2.874	1.330	100.0	9.141	0.0	8.625	7.048	0.000	13.04	HBD
1HD-208-1R (D/S)	18	1.540	0.714	100.0	4.021	0.0	12.750	7.048	0.000	13.04	HBD
1HD-208-Valve-1EX-1-5	22	2.567	1.190	100.0	4.021	0.0	12.750	7.048	0.000	13.04	HBD
1HD-208-1P	58	1.129	0.523	100.0	4.021	0.0	12.750	7.048	0.000	13.04	HBD
1HD-208-2N	30	2.053	0.952	100.0	4.021	0.0	12.750	7.048	0.000	13.04	HBD
===>Grouped by Line:	***HD-FWH 21B Drain to Cond 22***									***Sorted By: Flow Order***	
1HD-208-4N	31	5.133	2.376	100.0	9.141	0.0	8.625	7.048	0.000	13.04	HBD
1HD-208-Valve-LCV1125	24	5.133	2.376	100.0	9.141	0.0	8.625	7.048	0.000	13.04	HBD
1HD-208-4R	18	2.874	1.330	100.0	9.141	0.0	8.625	7.048	0.000	13.04	HBD
1HD-208-4R (D/S)	18	1.540	0.714	100.0	4.021	0.0	12.750	7.048	0.000	13.04	HBD
1HD-208-Valve-1EX-1-3	22	2.567	1.190	100.0	4.021	0.0	12.750	7.048	0.000	13.04	HBD
1HD-208-4P	58	1.129	0.523	100.0	4.021	0.0	12.750	7.048	0.000	13.04	HBD
1HD-208-5N	30	2.053	0.952	100.0	4.021	0.0	12.750	7.048	0.000	13.04	HBD
===>Grouped by Line:	***HD-FWH 21C Drain to Cond 21***									***Sorted By: Flow Order***	
1HD-208-6N	31	5.133	2.376	100.0	9.141	0.0	8.625	7.048	0.000	13.04	HBD
1HD-208-Valve-LCV1126	24	5.133	2.376	100.0	9.141	0.0	8.625	7.048	0.000	13.04	HBD
1HD-208-6R	18	2.874	1.330	100.0	9.141	0.0	8.625	7.048	0.000	13.04	HBD
1HD-208-6R (D/S)	18	1.540	0.714	100.0	4.021	0.0	12.750	7.048	0.000	13.04	HBD
1HD-208-Valve-1EX-1-1	22	2.567	1.190	100.0	4.021	0.0	12.750	7.048	0.000	13.04	HBD
1HD-208-6P	58	1.129	0.523	100.0	4.021	0.0	12.750	7.048	0.000	13.04	HBD
1HD-208-7N	30	2.053	0.952	100.0	4.021	0.0	12.750	7.048	0.000	13.04	HBD

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).DB

Service Life Report

Pass 2 Analysis Include Measured Wear

Report Date/Time: 7/7/2010 9:54:36AM
AnalysisDate/Time:

Run Name: HD - FWH 21 TO COND
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 1.421

CHECWORKS SFA Version: 3.0 (build 105)
Duty Factor (Global) :1.000

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **HD-FWH 21A Drain to Cond 23**					***Sorted By:Remaining Life***		
1HD-208-Valve-LCV1124	0.000	0.107	0.015	0.015	338,550	No	243,721
1HD-208-1N	0.000	0.107	0.014	0.014	342,325	No	243,721
1HD-208-1R	0.000	0.170	0.014	0.014	1,025,031	No	243,721
1HD-208-Valve-1EX-1-5	0.000	0.179	0.023	0.023	1,147,532	No	243,721
1HD-208-2N	0.000	0.193	0.021	0.021	1,579,801	No	243,721
1HD-208-1R (D/S)	0.000	0.207	0.021	0.021	2,281,674	No	243,721
1HD-208-1P	0.000	0.219	0.021	0.021	3,302,580	No	243,721
===>Grouped by Line: **HD-FWH 21B Drain to Cond 22**					***Sorted By:Remaining Life***		
1HD-208-Valve-LCV1125	0.000	0.107	0.015	0.015	338,550	No	243,721
1HD-208-4N	0.000	0.107	0.014	0.014	342,325	No	243,721
1HD-208-4R	0.000	0.170	0.014	0.014	1,025,031	No	243,721
1HD-208-Valve-1EX-1-3	0.000	0.179	0.023	0.023	1,147,532	No	243,721
1HD-208-5N	0.000	0.193	0.021	0.021	1,579,801	No	243,721
1HD-208-4R (D/S)	0.000	0.207	0.021	0.021	2,281,674	No	243,721
1HD-208-4P	0.000	0.219	0.021	0.021	3,302,580	No	243,721
===>Grouped by Line: **HD-FWH 21C Drain to Cond 21**					***Sorted By:Remaining Life***		
1HD-208-Valve-LCV1126	0.000	0.107	0.015	0.015	338,550	No	243,721
1HD-208-6N	0.000	0.107	0.014	0.014	342,325	No	243,721
1HD-208-6R	0.000	0.170	0.014	0.014	1,025,031	No	243,721
1HD-208-Valve-1EX-1-1	0.000	0.179	0.023	0.023	1,147,532	No	243,721
1HD-208-7N	0.000	0.240	0.021	0.021	2,014,469	Yes	243,721
1HD-208-6R (D/S)	0.000	0.207	0.021	0.021	2,281,674	No	243,721
1HD-208-6P	0.000	0.234	0.021	0.021	3,559,867	Yes	243,721

Note:
[1] Predictions are based on last Tmeas to analysis ending period.

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).DB

Service Life Report

Pass 2 Analysis Include Measured Wear

Report Date/Time: 7/7/2010 9:54:36AM
AnalysisDate/Time:

Run Name: HD - FWH 21 TO COND
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 1.421

CHECWORKS SFA Version: 3.0 (build 105)
Duty Factor (Global) : 1.000

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **HD-FWH 21A Drain to Cond 23**					***Sorted By:Flow Order***		
1HD-208-1N	0.000	0.107	0.014	0.014	342,325	No	243,721
1HD-208-Valve-LCV1124	0.000	0.107	0.015	0.015	338,550	No	243,721
1HD-208-1R	0.000	0.170	0.014	0.014	1,025,031	No	243,721
1HD-208-1R (D/S)	0.000	0.207	0.021	0.021	2,281,674	No	243,721
1HD-208-Valve-1EX-1-5	0.000	0.179	0.023	0.023	1,147,532	No	243,721
1HD-208-1P	0.000	0.219	0.021	0.021	3,302,580	No	243,721
1HD-208-2N	0.000	0.193	0.021	0.021	1,579,801	No	243,721
===>Grouped by Line: **HD-FWH 21B Drain to Cond 22**					***Sorted By:Flow Order***		
1HD-208-4N	0.000	0.107	0.014	0.014	342,325	No	243,721
1HD-208-Valve-LCV1125	0.000	0.107	0.015	0.015	338,550	No	243,721
1HD-208-4R	0.000	0.170	0.014	0.014	1,025,031	No	243,721
1HD-208-4R (D/S)	0.000	0.207	0.021	0.021	2,281,674	No	243,721
1HD-208-Valve-1EX-1-3	0.000	0.179	0.023	0.023	1,147,532	No	243,721
1HD-208-4P	0.000	0.219	0.021	0.021	3,302,580	No	243,721
1HD-208-5N	0.000	0.193	0.021	0.021	1,579,801	No	243,721
===>Grouped by Line: **HD-FWH 21C Drain to Cond 21**					***Sorted By:Flow Order***		
1HD-208-6N	0.000	0.107	0.014	0.014	342,325	No	243,721
1HD-208-Valve-LCV1126	0.000	0.107	0.015	0.015	338,550	No	243,721
1HD-208-6R	0.000	0.170	0.014	0.014	1,025,031	No	243,721
1HD-208-6R (D/S)	0.000	0.207	0.021	0.021	2,281,674	No	243,721
1HD-208-Valve-1EX-1-1	0.000	0.179	0.023	0.023	1,147,532	No	243,721
1HD-208-6P	0.000	0.234	0.021	0.021	3,559,867	Yes	243,721
1HD-208-7N	0.000	0.240	0.021	0.021	2,014,469	Yes	243,721

Note:
[1] Predictions are based on last Tmeas to analysis ending period.

1

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).DB

Wear Report

Pass 2 Analysis Include Measured Wear

Report Date/Time: 07-Jul-2010 9:54 am
AnalysisDate/Time: 07-Jul-2010 9:54 am

Run Name: HD - FWH 21 TO COND
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 1.421

CHECWORKS SFA Version: 3.0 (build 105)
Duty Factor (Global) : 1.000

Component Name	Tinit	Total Lifetime Wear (mils) Prd. [1]	Total Lifetime Wear (mils) Meas.	In-Service Component Wear(mils) Prd. [1]	In-Service Component Wear(mils) Meas.	In-Service Component Tmeas, Method, Time (in) [3]	[2]	(hrs) [3]	In-Service Component Thickness (mils) [4] Tp	Tm	Incremental Wear (mils) [5] PRWEAR	Time (hrs) Last Inspected
===>Grouped by Line:	**HD-FWH 21C Drain to Cond 21**										***Sorted By: Flow Order***	
1HD-208-6P	0.000	30.4	36.0	30.4	36.0	0.235	MT	226,201	219.6	235.0	1.0	226,201
1HD-208-7N	0.000	55.2	45.0	55.2	45.0	0.242	MT	226,201	194.8	242.0	1.9	226,201

Notes:
[1] Predictions are for the time of last inspection (last known meas. wear).
[2] GW = Tmeas is minimum thickness from Band, Blanket or Area Method of greatest wear.
MT = Tmeas is component minimum thickness.
PW = Tmeas is Tinit - predicted wear.
US = Tmeas is user specified.
[3] If no Tmeas has been determined from measured data, then Tmeas = Tinit and Time = current component installation time.
Tmeas is used to determine Predicted Thickness and Component Predicted Time to Tcrit.
[4] These two values are used for thickness plot.
Tp = Predicted thickness at Tmeas.
Tm = Last measured thickness (Tmeas).
[5] PRWEAR = Incremental wear from last Tmeas time to analysis ending period.

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).DB

Wear Rate Report

Pass 2 Analysis Include Measured Wear

Report Date/Time: 7/7/2010 9:54:36AM
AnalysisDate/Time: 6/11/2010 11:36:41AM

CHECWORKS SFA Version: 3.0 (build 105)
Duty Factor (Global) : 1.000

Run Name: HD - FWH 22 TO FWH 21
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 1.000

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***HD-FWH 22A Drain to FWH 21A***								***Sorted By: Average Wear Rate***		
2EX-A-1N	31	1.852	0.891	169.4	2.794	0.0	12.750	7.048	0.000	13.04	HBD
===>Grouped by Line:	***HD-FWH 22B Drain to FWH 21B***								***Sorted By: Average Wear Rate***		
2EX-234-1N	31	3.974	1.912	169.4	6.351	0.0	8.625	7.048	0.000	13.04	HBD
2EX-234-Valve-2EX-1-1	22	3.974	1.912	169.4	6.351	0.0	8.625	7.048	0.000	13.04	HBD
2EX-234-Valve-LCV1122	25	3.974	1.912	169.4	6.351	0.0	8.625	7.048	0.000	13.04	HBD
2EX-234-31E	2	2.941	1.415	169.4	6.351	0.0	8.625	7.048	0.000	13.04	HBD
2EX-234-36R	18	2.225	1.070	169.4	6.351	0.0	8.625	7.048	0.000	13.04	HBD
2EX-234-Valve-2EX-7-1	22	1.852	0.891	169.4	2.794	0.0	12.750	7.048	0.000	13.04	HBD
2EX-234-5T	13	1.852	0.891	169.4	2.794	0.0	12.750	7.048	0.000	13.04	HBD
2EX-234-33P	58	1.749	0.841	169.4	6.351	0.0	8.625	7.048	0.000	13.04	HBD
2EX-234-3E	3	1.296	0.623	169.4	2.794	0.0	12.750	7.048	0.000	13.04	HBD
2EX-234-36R (D/S)	18	1.111	0.534	169.4	2.794	0.0	12.750	7.048	0.000	13.04	HBD
2EX-234-5T (BR/SE)	13	1.023	0.492	169.4	1.401	0.0	12.750	7.048	0.000	13.04	HBD
2EX-234-5T (D/S)	13	1.023	0.492	169.4	1.401	0.0	12.750	7.048	0.000	13.04	HBD
2EX-234-4P	53	0.926	0.445	169.4	2.794	0.0	12.750	7.048	0.000	13.04	HBD
2EX-234-6N	30	0.818	0.394	169.4	1.401	0.0	12.750	7.048	0.000	13.04	HBD
2EX-234-9N	30	0.818	0.394	169.4	1.401	0.0	12.750	7.048	0.000	13.04	HBD
2EX-234-3P	58	0.815	0.392	169.4	2.794	0.0	12.750	7.048	0.000	13.04	HBD
2EX-234-8E	2	0.757	0.364	169.4	1.401	0.0	12.750	7.048	0.000	13.04	HBD
2EX-234-9P	52	0.511	0.246	169.4	1.401	0.0	12.750	7.048	0.000	13.04	HBD
2EX-234-7P	63	0.409	0.197	169.4	1.401	0.0	12.750	7.048	0.000	13.04	HBD
2EX-234-6P	63	0.409	0.197	169.4	1.401	0.0	12.750	7.048	0.000	13.04	HBD
===>Grouped by Line:	***HD-FWH 22C Drain to FWH 21C***								***Sorted By: Average Wear Rate***		
2EX-C-45N	31	1.852	0.891	169.4	2.794	0.0	12.750	7.048	0.000	13.04	HBD

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).DB

Wear Rate Report

Pass 2 Analysis Include Measured Wear

Report Date/Time: 7/7/2010 9:54:36AM
AnalysisDate/Time: 6/11/2010 11:36:41AM

CHECWORKS SFA Version: 3.0 (build 105)
Duty Factor (Global) : 1.000

Run Name: HD - FWH 22 TO FWH 21
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 1.000

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***HD-FWH 22A Drain to FWH 21A***									***Sorted By: Flow Order***	
2EX-A-1N	31	1.852	0.891	169.4	2.794	0.0	12.750	7.048	0.000	13.04	HBD
===>Grouped by Line:	***HD-FWH 22B Drain to FWH 21B***									***Sorted By: Flow Order***	
2EX-234-1N	31	3.974	1.912	169.4	6.351	0.0	8.625	7.048	0.000	13.04	HBD
2EX-234-31E	2	2.941	1.415	169.4	6.351	0.0	8.625	7.048	0.000	13.04	HBD
2EX-234-Valve-2EX-1-1	22	3.974	1.912	169.4	6.351	0.0	8.625	7.048	0.000	13.04	HBD
2EX-234-33P	58	1.749	0.841	169.4	6.351	0.0	8.625	7.048	0.000	13.04	HBD
2EX-234-Valve-LCV1122	25	3.974	1.912	169.4	6.351	0.0	8.625	7.048	0.000	13.04	HBD
2EX-234-36R	18	2.225	1.070	169.4	6.351	0.0	8.625	7.048	0.000	13.04	HBD
2EX-234-36R (D/S)	18	1.111	0.534	169.4	2.794	0.0	12.750	7.048	0.000	13.04	HBD
2EX-234-Valve-2EX-7-1	22	1.852	0.891	169.4	2.794	0.0	12.750	7.048	0.000	13.04	HBD
2EX-234-3P	58	0.815	0.392	169.4	2.794	0.0	12.750	7.048	0.000	13.04	HBD
2EX-234-3E	3	1.296	0.623	169.4	2.794	0.0	12.750	7.048	0.000	13.04	HBD
2EX-234-4P	53	0.926	0.445	169.4	2.794	0.0	12.750	7.048	0.000	13.04	HBD
2EX-234-5T	13	1.852	0.891	169.4	2.794	0.0	12.750	7.048	0.000	13.04	HBD
2EX-234-5T (BR/SE)	13	1.023	0.492	169.4	1.401	0.0	12.750	7.048	0.000	13.04	HBD
2EX-234-6P	63	0.409	0.197	169.4	1.401	0.0	12.750	7.048	0.000	13.04	HBD
2EX-234-6N	30	0.818	0.394	169.4	1.401	0.0	12.750	7.048	0.000	13.04	HBD
2EX-234-5T (D/S)	13	1.023	0.492	169.4	1.401	0.0	12.750	7.048	0.000	13.04	HBD
2EX-234-7P	63	0.409	0.197	169.4	1.401	0.0	12.750	7.048	0.000	13.04	HBD
2EX-234-8E	2	0.757	0.364	169.4	1.401	0.0	12.750	7.048	0.000	13.04	HBD
2EX-234-9P	52	0.511	0.246	169.4	1.401	0.0	12.750	7.048	0.000	13.04	HBD
2EX-234-9N	30	0.818	0.394	169.4	1.401	0.0	12.750	7.048	0.000	13.04	HBD
===>Grouped by Line:	***HD-FWH 22C Drain to FWH 21C***									***Sorted By: Flow Order***	
2EX-C-45N	31	1.852	0.891	169.4	2.794	0.0	12.750	7.048	0.000	13.04	HBD

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).DB

Service Life Report

Pass 2 Analysis Include Measured Wear

Report Date/Time: 7/7/2010 9:54:36AM
AnalysisDate/Time:

Run Name: HD - FWH 22 TO FWH 21
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 1.000

CHECWORKS SFA Version: 3.0 (build 105)
Duty Factor (Global) :1.000

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **HD-FWH 22A Drain to FWH 21A**					***Sorted By:Remaining Life***		
2EX-A-1N	0.000	0.198	0.021	0.021	1,743,379	No	243,721
===>Grouped by Line: **HD-FWH 22B Drain to FWH 21B**					***Sorted By:Remaining Life***		
2EX-234-Valve-2EX-1-1	0.000	0.139	0.015	0.015	568,515	No	243,721
2EX-234-Valve-LCV1122	0.000	0.139	0.015	0.015	568,515	No	243,721
2EX-234-1N	0.000	0.139	0.014	0.014	573,207	No	243,721
2EX-234-31E	0.000	0.168	0.014	0.014	952,620	No	243,721
2EX-234-36R	0.000	0.188	0.014	0.014	1,421,674	No	243,721
2EX-234-Valve-2EX-7-1	0.000	0.198	0.023	0.023	1,728,492	No	243,721
2EX-234-5T	0.000	0.198	0.021	0.021	1,743,379	No	243,721
2EX-234-33P	0.000	0.201	0.014	0.014	1,947,583	No	243,721
2EX-234-3E	0.000	0.214	0.021	0.021	2,707,682	No	243,721
2EX-234-36R (D/S)	0.000	0.219	0.021	0.021	3,243,406	No	243,721
2EX-234-5T (D/S)	0.000	0.222	0.021	0.021	3,566,730	No	243,721
2EX-234-5T (BR/SE)	0.000	0.222	0.021	0.021	3,566,730	No	243,721
2EX-234-4P	0.000	0.224	0.021	0.021	3,993,419	No	243,721
2EX-234-9N	0.000	0.227	0.021	0.021	4,585,078	No	243,721
2EX-234-6N	0.000	0.227	0.021	0.021	4,585,078	No	243,721
2EX-234-3P	0.000	0.227	0.021	0.021	4,607,066	No	243,721
2EX-234-8E	0.000	0.229	0.021	0.021	4,997,921	No	243,721
2EX-234-9P	0.000	0.236	0.021	0.021	7,640,120	No	243,721
2EX-234-7P	0.000	0.239	0.021	0.021	9,676,815	No	243,721
2EX-234-6P	0.000	0.239	0.021	0.021	9,676,815	No	243,721
===>Grouped by Line: **HD-FWH 22C Drain to FWH 21C**					***Sorted By:Remaining Life***		
2EX-C-45N	0.000	0.198	0.021	0.021	1,743,379	No	243,721

Note:
[1] Predictions are based on last Tmeas to analysis ending period.

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).DB

Service Life Report

Pass 2 Analysis Include Measured Wear

Report Date/Time: 7/7/2010 9:54:36AM
AnalysisDate/Time:

Run Name: HD - FWH 22 TO FWH 21
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 1.000

CHECWORKS SFA Version: 3.0 (build 105)
Duty Factor (Global) : 1.000

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **HD-FWH 22A Drain to FWH 21A**					***Sorted By:Flow Order***		
2EX-A-1N	0.000	0.198	0.021	0.021	1,743,379	No	243,721
===>Grouped by Line: **HD-FWH 22B Drain to FWH 21B**					***Sorted By:Flow Order***		
2EX-234-1N	0.000	0.139	0.014	0.014	573,207	No	243,721
2EX-234-31E	0.000	0.168	0.014	0.014	952,620	No	243,721
2EX-234-Valve-2EX-1-1	0.000	0.139	0.015	0.015	568,515	No	243,721
2EX-234-33P	0.000	0.201	0.014	0.014	1,947,583	No	243,721
2EX-234-Valve-LCV1122	0.000	0.139	0.015	0.015	568,515	No	243,721
2EX-234-36R	0.000	0.188	0.014	0.014	1,421,674	No	243,721
2EX-234-36R (D/S)	0.000	0.219	0.021	0.021	3,243,406	No	243,721
2EX-234-Valve-2EX-7-1	0.000	0.198	0.023	0.023	1,728,492	No	243,721
2EX-234-3P	0.000	0.227	0.021	0.021	4,607,066	No	243,721
2EX-234-3E	0.000	0.214	0.021	0.021	2,707,682	No	243,721
2EX-234-4P	0.000	0.224	0.021	0.021	3,993,419	No	243,721
2EX-234-5T	0.000	0.198	0.021	0.021	1,743,379	No	243,721
2EX-234-5T (BR/SE)	0.000	0.222	0.021	0.021	3,566,730	No	243,721
2EX-234-6P	0.000	0.239	0.021	0.021	9,676,815	No	243,721
2EX-234-6N	0.000	0.227	0.021	0.021	4,585,078	No	243,721
2EX-234-5T (D/S)	0.000	0.222	0.021	0.021	3,566,730	No	243,721
2EX-234-7P	0.000	0.239	0.021	0.021	9,676,815	No	243,721
2EX-234-8E	0.000	0.229	0.021	0.021	4,997,921	No	243,721
2EX-234-9P	0.000	0.236	0.021	0.021	7,640,120	No	243,721
2EX-234-9N	0.000	0.227	0.021	0.021	4,585,078	No	243,721
===>Grouped by Line: **HD-FWH 22C Drain to FWH 21C**					***Sorted By:Flow Order***		
2EX-C-45N	0.000	0.198	0.021	0.021	1,743,379	No	243,721

Note:
[1] Predictions are based on last Tmeas to analysis ending period.

2

Wear Report

Company:
Plant:
Unit:
DB Name: IPEC2(v4).DB

Report Date/Time: 07-Jul-2010 9:54 am
AnalysisDate/Time: 07-Jul-2010 9:54 am

Run Name:
Ending Period:
Total Plant Operating Hours:
WRA Data Option:
Line Correction Factor:

CHECWORKS SFA Version:
Duty Factor (Global) :

Component Name	Tinit	Total Lifetime Wear (mils) Prd. [1]	Meas.	In-Service Component Wear(mils) Prd. [1]	Meas.	In-Service Component Tmeas, Method, Time (in) [3]	[2]	(hrs) [3]	In-Service Component Thickness (mils) [4] Tp	Tm	Incremental Wear (mils) [5] PRWEAR	Time (hrs) Last Inspected

===>Grouped by Line: ***Sorted By: Flow Order***

Notes:
[1] Predictions are for the time of last inspection (last known meas. wear).
[2] GW = Tmeas is minimum thickness from Band, Blanket or Area Method of greatest wear.
MT = Tmeas is component minimum thickness.
PW = Tmeas is Tinit - predicted wear.
US = Tmeas is user specified.
[3] If no Tmeas has been determined from measured data, then Tmeas = Tinit and Time = current component installation time.
Tmeas is used to determine Predicted Thickness and Component Predicted Time to Tcrit.
[4] These two values are used for thickness plot.
Tp = Predicted thickness at Tmeas.
Tm = Last measured thickness (Tmeas).
[5] PRWEAR = Incremental wear from last Tmeas time to analysis ending period.

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).DB

Wear Rate Report

Pass 2 Analysis Include Measured Wear

Report Date/Time: 7/7/2010 9:54:36AM
AnalysisDate/Time: 6/11/2010 11:36:51AM

CHECWORKS SFA Version: 3.0 (build 105)
Duty Factor (Global) : 1.000

Run Name: HTR DRN PMP DISCH
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 0.461

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***HD20-1-HDP21 to BFP SUCTION***								***Sorted By: Average Wear Rate***		
HD-VALVE-LCV-1127	24	12.762	4.267	365.0	28.023	0.0	8.625	6.831	0.000	74.97	HBD
HD-8N	31	7.845	2.623	365.0	12.928	0.0	12.750	6.831	0.000	74.97	HBD
HD-VALVE-HD-1	25	7.845	2.623	365.0	12.928	0.0	12.750	6.831	0.000	74.97	HBD
HD-VALVE-HD-2	22	7.845	2.623	365.0	12.928	0.0	12.750	6.831	0.000	74.97	HBD
HD-7	18	7.147	2.389	365.0	28.023	0.0	8.625	6.831	0.000	74.97	HBD
HD-3	2	5.805	1.941	365.0	12.928	0.0	12.750	6.831	0.000	74.97	HBD
HD-8P	58	5.775	1.931	365.0	29.301	0.0	8.625	6.831	0.000	74.97	HBD
HD-7 (D/S)	18	4.707	1.574	365.0	12.928	0.0	12.750	6.831	0.000	74.97	HBD
HD-3P	52	3.923	1.311	365.0	12.928	0.0	12.750	6.831	0.000	74.97	HBD
HD-3P-1	52	3.923	1.311	365.0	12.928	0.0	12.750	6.831	0.000	74.97	HBD
HD-5P US	9	1.996	0.687	365.0	12.928	0.0	12.750	6.831	0.000	74.97	HBD
HD-5P DS	9	1.996	0.687	365.0	12.928	0.0	12.750	6.831	0.000	74.97	HBD
===>Grouped by Line:	***HD20-2-HDP22 to BFP SUCTION***								***Sorted By: Average Wear Rate***		
HD-VALVE-LCV-1127A	24	12.762	4.267	365.0	28.023	0.0	8.625	6.831	0.000	74.97	HBD
HD-10N	31	7.845	2.623	365.0	12.928	0.0	12.750	6.831	0.000	74.97	HBD
HD-VALVE-HD-1-1	25	7.845	2.623	365.0	12.928	0.0	12.750	6.831	0.000	74.97	HBD
HD-VALVE-HD-2-1	22	7.845	2.623	365.0	12.928	0.0	12.750	6.831	0.000	74.97	HBD
HD-9	18	7.147	2.389	365.0	28.023	0.0	8.625	6.831	0.000	74.97	HBD
HD-4	2	5.805	1.941	365.0	12.928	0.0	12.750	6.831	0.000	74.97	HBD
HD-10P	58	5.615	1.877	365.0	28.023	0.0	8.625	6.831	0.000	74.97	HBD
HD-6 (D/S)	12	4.858	1.624	365.0	8.274	0.0	16.000	6.831	0.000	74.97	HBD
HD-6	12	4.858	1.624	365.0	8.274	0.0	16.000	6.831	0.000	74.97	HBD
HD-9 (D/S)	18	4.707	1.574	365.0	12.928	0.0	12.750	6.831	0.000	74.97	HBD
HD-4A	52	3.923	1.311	365.0	12.928	0.0	12.750	6.831	0.000	74.97	HBD
HD-4P	58	3.452	1.154	365.0	12.928	0.0	12.750	6.831	0.000	74.97	HBD
HD-5AP US	62	2.370	0.792	365.0	8.274	0.0	16.000	6.831	0.000	74.97	HBD
HD-5AP DS	62	2.370	0.792	365.0	8.274	0.0	16.000	6.831	0.000	74.97	HBD
HD-6P DS	9	1.996	0.687	365.0	12.928	0.0	12.750	6.831	0.000	74.97	HBD

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***HD20-3-HDP DIS T to BFP SUC***								***Sorted By: Average Wear Rate***		
HD-5 (D/S)	12	7.157	2.393	365.0	16.547	0.0	16.000	6.831	0.000	74.97	HBD
HD-11	2	6.459	2.159	365.0	16.547	0.0	16.000	6.831	0.000	74.97	HBD
HD-1	2	6.459	2.159	365.0	16.547	0.0	16.000	6.831	0.000	74.97	HBD
HD-2	2	6.459	2.159	365.0	16.547	0.0	16.000	6.831	0.000	74.97	HBD
HD-13	2	6.459	2.159	365.0	16.547	0.0	16.000	6.831	0.000	74.97	HBD
HD-14	2	6.459	2.159	365.0	16.547	0.0	16.000	6.831	0.000	74.97	HBD
HD-15	2	6.459	2.159	365.0	16.547	0.0	16.000	6.831	0.000	74.97	HBD
HD-16	2	6.459	2.159	365.0	16.547	0.0	16.000	6.831	0.000	74.97	HBD
HD-12	1	5.761	1.926	365.0	16.547	0.0	16.000	6.831	0.000	74.97	HBD
HD-5 (BR/SE)	12	5.335	1.783	365.0	12.928	0.0	12.750	6.831	0.000	74.97	HBD
HD-17 (D/S)	15	5.237	1.751	365.0	16.547	0.0	16.000	6.831	0.000	74.97	HBD
HD-17	15	5.237	1.751	365.0	16.547	0.0	16.000	6.831	0.000	74.97	HBD
HD-5	12	4.858	1.624	365.0	8.274	0.0	16.000	6.831	0.000	74.97	HBD
HD-2P US	52	4.364	1.459	365.0	16.547	0.0	16.000	6.831	0.000	74.97	HBD
HD-1P	52	4.364	1.459	365.0	16.547	0.0	16.000	6.831	0.000	74.97	HBD
HD-12P	52	4.364	1.459	365.0	16.547	0.0	16.000	6.831	0.000	74.97	HBD
HD-14P	52	4.364	1.459	365.0	16.547	0.0	16.000	6.831	0.000	74.97	HBD
HD-15P	52	4.364	1.459	365.0	16.547	0.0	16.000	6.831	0.000	74.97	HBD
HD-15P-1 DS	52	4.364	1.459	365.0	16.547	0.0	16.000	6.831	0.000	74.97	HBD
HD-16P US	52	4.364	1.459	365.0	16.547	0.0	16.000	6.831	0.000	74.97	HBD
HD-13P	51	3.841	1.284	365.0	16.547	0.0	16.000	6.831	0.000	74.97	HBD
HD-11P DS	62	3.491	1.167	365.0	16.547	0.0	16.000	6.831	0.000	74.97	HBD
HD-17P	65	3.491	1.167	365.0	16.547	0.0	16.000	6.831	0.000	74.97	HBD

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).DB

Wear Rate Report

Pass 2 Analysis Include Measured Wear

Report Date/Time: 7/7/2010 9:54:36AM
AnalysisDate/Time: 6/11/2010 11:36:51AM

CHECWORKS SFA Version: 3.0 (build 105)
Duty Factor (Global) : 1.000

Run Name: HTR DRN PMP DISCH
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 0.461

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***HD20-1-HDP21 to BFP SUCTION***									***Sorted By: Flow Order***	
HD-8N	31	7.845	2.623	365.0	12.928	0.0	12.750	6.831	0.000	74.97	HBD
HD-VALVE-HD-1	25	7.845	2.623	365.0	12.928	0.0	12.750	6.831	0.000	74.97	HBD
HD-8P	58	5.775	1.931	365.0	29.301	0.0	8.625	6.831	0.000	74.97	HBD
HD-VALVE-LCV-1127	24	12.762	4.267	365.0	28.023	0.0	8.625	6.831	0.000	74.97	HBD
HD-7	18	7.147	2.389	365.0	28.023	0.0	8.625	6.831	0.000	74.97	HBD
HD-7 (D/S)	18	4.707	1.574	365.0	12.928	0.0	12.750	6.831	0.000	74.97	HBD
HD-VALVE-HD-2	22	7.845	2.623	365.0	12.928	0.0	12.750	6.831	0.000	74.97	HBD
HD-3P	52	3.923	1.311	365.0	12.928	0.0	12.750	6.831	0.000	74.97	HBD
HD-3	2	5.805	1.941	365.0	12.928	0.0	12.750	6.831	0.000	74.97	HBD
HD-3P-1	52	3.923	1.311	365.0	12.928	0.0	12.750	6.831	0.000	74.97	HBD
HD-5P US	9	1.996	0.687	365.0	12.928	0.0	12.750	6.831	0.000	74.97	HBD
HD-5P DS	9	1.996	0.687	365.0	12.928	0.0	12.750	6.831	0.000	74.97	HBD
===>Grouped by Line:	***HD20-2-HDP22 to BFP SUCTION***									***Sorted By: Flow Order***	
HD-10N	31	7.845	2.623	365.0	12.928	0.0	12.750	6.831	0.000	74.97	HBD
HD-VALVE-HD-1-1	25	7.845	2.623	365.0	12.928	0.0	12.750	6.831	0.000	74.97	HBD
HD-10P	58	5.615	1.877	365.0	28.023	0.0	8.625	6.831	0.000	74.97	HBD
HD-VALVE-LCV-1127A	24	12.762	4.267	365.0	28.023	0.0	8.625	6.831	0.000	74.97	HBD
HD-9	18	7.147	2.389	365.0	28.023	0.0	8.625	6.831	0.000	74.97	HBD
HD-9 (D/S)	18	4.707	1.574	365.0	12.928	0.0	12.750	6.831	0.000	74.97	HBD
HD-VALVE-HD-2-1	22	7.845	2.623	365.0	12.928	0.0	12.750	6.831	0.000	74.97	HBD
HD-4P	58	3.452	1.154	365.0	12.928	0.0	12.750	6.831	0.000	74.97	HBD
HD-4	2	5.805	1.941	365.0	12.928	0.0	12.750	6.831	0.000	74.97	HBD
HD-4A	52	3.923	1.311	365.0	12.928	0.0	12.750	6.831	0.000	74.97	HBD
HD-6P DS	9	1.996	0.687	365.0	12.928	0.0	12.750	6.831	0.000	74.97	HBD
HD-6	12	4.858	1.624	365.0	8.274	0.0	16.000	6.831	0.000	74.97	HBD
HD-6 (D/S)	12	4.858	1.624	365.0	8.274	0.0	16.000	6.831	0.000	74.97	HBD
HD-5AP US	62	2.370	0.792	365.0	8.274	0.0	16.000	6.831	0.000	74.97	HBD

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***HD20-2-HDP22 to BFP SUCTION***									***Sorted By: Flow Order***	
HD-5AP DS	62	2.370	0.792	365.0	8.274	0.0	16.000	6.831	0.000	74.97	HBD
===>Grouped by Line:	***HD20-3-HDP DIS T to BFP SUC***									***Sorted By: Flow Order***	
HD-5 (BR/SE)	12	5.335	1.783	365.0	12.928	0.0	12.750	6.831	0.000	74.97	HBD
HD-5	12	4.858	1.624	365.0	8.274	0.0	16.000	6.831	0.000	74.97	HBD
HD-5 (D/S)	12	7.157	2.393	365.0	16.547	0.0	16.000	6.831	0.000	74.97	HBD
HD-11P DS	62	3.491	1.167	365.0	16.547	0.0	16.000	6.831	0.000	74.97	HBD
HD-11	2	6.459	2.159	365.0	16.547	0.0	16.000	6.831	0.000	74.97	HBD
HD-2P US	52	4.364	1.459	365.0	16.547	0.0	16.000	6.831	0.000	74.97	HBD
HD-2	2	6.459	2.159	365.0	16.547	0.0	16.000	6.831	0.000	74.97	HBD
HD-12P	52	4.364	1.459	365.0	16.547	0.0	16.000	6.831	0.000	74.97	HBD
HD-12	1	5.761	1.926	365.0	16.547	0.0	16.000	6.831	0.000	74.97	HBD
HD-13P	51	3.841	1.284	365.0	16.547	0.0	16.000	6.831	0.000	74.97	HBD
HD-13	2	6.459	2.159	365.0	16.547	0.0	16.000	6.831	0.000	74.97	HBD
HD-14P	52	4.364	1.459	365.0	16.547	0.0	16.000	6.831	0.000	74.97	HBD
HD-14	2	6.459	2.159	365.0	16.547	0.0	16.000	6.831	0.000	74.97	HBD
HD-15P	52	4.364	1.459	365.0	16.547	0.0	16.000	6.831	0.000	74.97	HBD
HD-15	2	6.459	2.159	365.0	16.547	0.0	16.000	6.831	0.000	74.97	HBD
HD-15P-1 DS	52	4.364	1.459	365.0	16.547	0.0	16.000	6.831	0.000	74.97	HBD
HD-16	2	6.459	2.159	365.0	16.547	0.0	16.000	6.831	0.000	74.97	HBD
HD-16P US	52	4.364	1.459	365.0	16.547	0.0	16.000	6.831	0.000	74.97	HBD
HD-17	15	5.237	1.751	365.0	16.547	0.0	16.000	6.831	0.000	74.97	HBD
HD-17 (D/S)	15	5.237	1.751	365.0	16.547	0.0	16.000	6.831	0.000	74.97	HBD
HD-17P	65	3.491	1.167	365.0	16.547	0.0	16.000	6.831	0.000	74.97	HBD
HD-1	2	6.459	2.159	365.0	16.547	0.0	16.000	6.831	0.000	74.97	HBD
HD-1P	52	4.364	1.459	365.0	16.547	0.0	16.000	6.831	0.000	74.97	HBD

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).DB

Service Life Report

Pass 2 Analysis Include Measured Wear

Report Date/Time: 7/7/2010 9:54:36AM
AnalysisDate/Time:

Run Name: HTR DRN PMP DISCH
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 0.461

CHECWORKS SFA Version: 3.0 (build 105)
Duty Factor (Global) :1.000

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **HD20-1-HDP21 to BFP SUCTION**					***Sorted By:Remaining Life***		
HD-VALVE-LCV-1127	0.000	-0.033	0.220	0.220	-196,555	No	243,721
HD-VALVE-HD-2	0.000	0.282	0.326	0.326	-112,198	No	243,721
HD-VALVE-HD-1	0.000	0.282	0.326	0.326	-112,198	No	243,721
HD-8N	0.000	0.282	0.304	0.304	-71,281	No	243,721
HD-3	0.000	0.338	0.304	0.304	154,167	No	243,721
HD-7	0.000	0.279	0.206	0.206	267,023	No	243,721
HD-3P-1	0.000	0.391	0.304	0.304	578,093	No	243,721
HD-8P	0.410	0.325	0.177	0.177	673,690	No	243,721
HD-7 (D/S)	0.000	0.454	0.304	0.304	832,323	No	243,721
HD-3P	0.000	0.486	0.304	0.304	1,216,659	Yes	243,721
HD-5P DS	0.000	0.446	0.304	0.304	1,802,557	Yes	243,721
HD-5P US	0.000	0.446	0.304	0.304	1,806,245	Yes	243,721
===>Grouped by Line: **HD20-2-HDP22 to BFP SUCTION**					***Sorted By:Remaining Life***		
HD-VALVE-LCV-1127A	0.000	-0.033	0.220	0.220	-196,555	No	243,721
HD-VALVE-HD-1-1	0.000	0.282	0.326	0.326	-112,198	No	243,721
HD-VALVE-HD-2-1	0.000	0.282	0.326	0.326	-112,198	No	243,721
HD-4	0.000	0.338	0.304	0.304	154,167	No	243,721
HD-9	0.000	0.261	0.206	0.206	203,561	Yes	243,721
HD-10P	0.000	0.303	0.206	0.206	454,396	No	243,721
HD-10N	0.000	0.475	0.304	0.304	569,574	No	243,721
HD-4P	0.000	0.404	0.304	0.304	756,334	No	243,721
HD-9 (D/S)	0.000	0.504	0.304	0.304	1,113,747	Yes	243,721
HD-6 (D/S)	0.000	0.604	0.382	0.382	1,197,874	No	243,721
HD-6	0.000	0.611	0.382	0.382	1,235,628	No	243,721
HD-4A	0.000	0.490	0.304	0.304	1,239,788	Yes	243,721
HD-5AP US	0.000	0.590	0.382	0.382	2,301,588	No	243,721
HD-5AP DS	0.000	0.590	0.382	0.382	2,301,588	No	243,721
HD-6P DS	0.000	0.494	0.304	0.304	2,424,304	Yes	243,721

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **HD20-3-HDP DIS T to BFP SUC**					***Sorted By:Remaining Life***		
HD-16	0.000	0.471	0.382	0.382	362,046	Yes	243,721
HD-2	0.000	0.476	0.382	0.382	382,928	No	243,721
HD-13	0.000	0.476	0.382	0.382	382,928	No	243,721
HD-14	0.000	0.476	0.382	0.382	382,928	No	243,721
HD-15	0.000	0.476	0.382	0.382	382,928	No	243,721
HD-12	0.000	0.496	0.382	0.382	517,709	No	243,721
HD-17	0.000	0.510	0.382	0.382	642,381	No	243,721
HD-17 (D/S)	0.000	0.510	0.382	0.382	642,381	No	243,721
HD-5	0.000	0.524	0.382	0.382	765,070	Yes	243,721
HD-5 (BR/SE)	0.000	0.473	0.304	0.304	830,615	Yes	243,721
HD-1	0.000	0.598	0.382	0.382	877,659	Yes	243,721
HD-5 (D/S)	0.000	0.631	0.382	0.382	912,719	Yes	243,721
HD-11	0.000	0.607	0.382	0.382	914,353	Yes	243,721
HD-12P	0.000	0.535	0.382	0.382	916,659	No	243,721
HD-14P	0.000	0.535	0.382	0.382	916,659	No	243,721
HD-15P	0.000	0.535	0.382	0.382	916,659	No	243,721
HD-13P	0.000	0.549	0.382	0.382	1,141,068	No	243,721
HD-15P-1 DS	0.000	0.578	0.382	0.382	1,176,499	Yes	243,721
HD-16P US	0.000	0.589	0.382	0.382	1,242,542	No	243,721
HD-1P	0.000	0.590	0.382	0.382	1,250,096	Yes	243,721
HD-17P	0.000	0.559	0.382	0.382	1,328,076	No	243,721
HD-2P US	0.000	0.608	0.382	0.382	1,359,972	Yes	243,721
HD-11P DS	0.000	0.639	0.382	0.382	1,930,492	Yes	243,721

Note:
[1] Predictions are based on last Tmeas to analysis ending period.

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).DB

Service Life Report

Pass 2 Analysis Include Measured Wear

Report Date/Time: 7/7/2010 9:54:36AM
AnalysisDate/Time:

Run Name: HTR DRN PMP DISCH
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 0.461

CHECWORKS SFA Version: 3.0 (build 105)
Duty Factor (Global) : 1.000

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **HD20-1-HDP21 to BFP SUCTION**					***Sorted By:Flow Order***		
HD-8N	0.000	0.282	0.304	0.304	-71,281	No	243,721
HD-VALVE-HD-1	0.000	0.282	0.326	0.326	-112,198	No	243,721
HD-8P	0.410	0.325	0.177	0.177	673,690	No	243,721
HD-VALVE-LCV-1127	0.000	-0.033	0.220	0.220	-196,555	No	243,721
HD-7	0.000	0.279	0.206	0.206	267,023	No	243,721
HD-7 (D/S)	0.000	0.454	0.304	0.304	832,323	No	243,721
HD-VALVE-HD-2	0.000	0.282	0.326	0.326	-112,198	No	243,721
HD-3P	0.000	0.486	0.304	0.304	1,216,659	Yes	243,721
HD-3	0.000	0.338	0.304	0.304	154,167	No	243,721
HD-3P-1	0.000	0.391	0.304	0.304	578,093	No	243,721
HD-5P US	0.000	0.446	0.304	0.304	1,806,245	Yes	243,721
HD-5P DS	0.000	0.446	0.304	0.304	1,802,557	Yes	243,721
===>Grouped by Line: **HD20-2-HDP22 to BFP SUCTION**					***Sorted By:Flow Order***		
HD-10N	0.000	0.475	0.304	0.304	569,574	No	243,721
HD-VALVE-HD-1-1	0.000	0.282	0.326	0.326	-112,198	No	243,721
HD-10P	0.000	0.303	0.206	0.206	454,396	No	243,721
HD-VALVE-LCV-1127A	0.000	-0.033	0.220	0.220	-196,555	No	243,721
HD-9	0.000	0.261	0.206	0.206	203,561	Yes	243,721
HD-9 (D/S)	0.000	0.504	0.304	0.304	1,113,747	Yes	243,721
HD-VALVE-HD-2-1	0.000	0.282	0.326	0.326	-112,198	No	243,721
HD-4P	0.000	0.404	0.304	0.304	756,334	No	243,721
HD-4	0.000	0.338	0.304	0.304	154,167	No	243,721
HD-4A	0.000	0.490	0.304	0.304	1,239,788	Yes	243,721
HD-6P DS	0.000	0.494	0.304	0.304	2,424,304	Yes	243,721
HD-6	0.000	0.611	0.382	0.382	1,235,628	No	243,721
HD-6 (D/S)	0.000	0.604	0.382	0.382	1,197,874	No	243,721
HD-5AP US	0.000	0.590	0.382	0.382	2,301,588	No	243,721
HD-5AP DS	0.000	0.590	0.382	0.382	2,301,588	No	243,721

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **HD20-3-HDP DIS T to BFP SUC**					***Sorted By:Flow Order***		
HD-5 (BR/SE)	0.000	0.473	0.304	0.304	830,615	Yes	243,721
HD-5	0.000	0.524	0.382	0.382	765,070	Yes	243,721
HD-5 (D/S)	0.000	0.631	0.382	0.382	912,719	Yes	243,721
HD-11P DS	0.000	0.639	0.382	0.382	1,930,492	Yes	243,721
HD-11	0.000	0.607	0.382	0.382	914,353	Yes	243,721
HD-2P US	0.000	0.608	0.382	0.382	1,359,972	Yes	243,721
HD-2	0.000	0.476	0.382	0.382	382,928	No	243,721
HD-12P	0.000	0.535	0.382	0.382	916,659	No	243,721
HD-12	0.000	0.496	0.382	0.382	517,709	No	243,721
HD-13P	0.000	0.549	0.382	0.382	1,141,068	No	243,721
HD-13	0.000	0.476	0.382	0.382	382,928	No	243,721
HD-14P	0.000	0.535	0.382	0.382	916,659	No	243,721
HD-14	0.000	0.476	0.382	0.382	382,928	No	243,721
HD-15P	0.000	0.535	0.382	0.382	916,659	No	243,721
HD-15	0.000	0.476	0.382	0.382	382,928	No	243,721
HD-15P-1 DS	0.000	0.578	0.382	0.382	1,176,499	Yes	243,721
HD-16	0.000	0.471	0.382	0.382	362,046	Yes	243,721
HD-16P US	0.000	0.589	0.382	0.382	1,242,542	No	243,721
HD-17	0.000	0.510	0.382	0.382	642,381	No	243,721
HD-17 (D/S)	0.000	0.510	0.382	0.382	642,381	No	243,721
HD-17P	0.000	0.559	0.382	0.382	1,328,076	No	243,721
HD-1	0.000	0.598	0.382	0.382	877,659	Yes	243,721
HD-1P	0.000	0.590	0.382	0.382	1,250,096	Yes	243,721

Note:
[1] Predictions are based on last Tmeas to analysis ending period.

2

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).DB

Wear Report

Pass 2 Analysis Include Measured Wear

Report Date/Time: 07-Jul-2010 9:54 am
AnalysisDate/Time: 07-Jul-2010 9:54 am

Run Name: HTR DRN PMP DISCH
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 0.461

CHECWORKS SFA Version: 3.0 (build 105)
Duty Factor (Global) : 1.000

Component Name	Tinit	Total Lifetime Wear (mils) Prd. [1]	Meas.	In-Service Component Wear(mils) Prd. [1]	Meas.	In-Service Component Tmeas, Method, Time (in) [3]	[2]	(hrs) [3]	In-Service Component Thickness (mils) [4] Tp	Tm	Incremental Wear (mils) [5] PRWEAR	Time (hrs) Last Inspected
===>Grouped by Line:	**HD20-1-HDP21 to BFP SUCTION**										***Sorted By: Flow Order***	
HD-3P	0.000	93.6	46.0	93.6	46.0	0.502	MT	149,573	406.4	502.0	15.5	149,573
HD-5P US	0.000	47.5	72.0	47.5	72.0	0.454	MT	149,573	452.5	454.0	8.0	149,573
HD-5P DS	0.000	42.2	55.0	42.2	55.0	0.459	MT	125,459	457.8	459.0	13.3	125,459
===>Grouped by Line:	**HD20-2-HDP22 to BFP SUCTION**										***Sorted By: Flow Order***	
HD-9	0.000	181.2	113.0	181.2	113.0	0.279	MT	181,477	140.8	279.0	17.6	181,477
HD-9 (D/S)	0.000	119.4	121.0	119.4	121.0	0.516	GW	181,477	380.6	516.0	11.6	181,477
HD-4A	0.000	104.1	48.0	104.1	48.0	0.495	MT	209,806	395.9	495.0	5.1	209,806
HD-6P DS	0.000	46.0	52.0	46.0	52.0	0.504	MT	136,608	454.0	504.0	9.6	136,608
===>Grouped by Line:	**HD20-3-HDP DIS T to BFP SUC**										***Sorted By: Flow Order***	
HD-5 (BR/SE)	0.000	144.9	33.0	144.9	33.0	0.477	MT	226,201	355.1	477.0	3.6	226,201
HD-5	0.000	131.9	153.0	131.9	153.0	0.527	MT	226,201	524.1	527.0	3.2	226,201
HD-5 (D/S)	0.000	194.3	50.0	194.3	50.0	0.636	MT	226,201	461.7	636.0	4.8	226,201
HD-11P DS	0.000	70.3	41.0	70.3	41.0	0.666	MT	119,088	585.7	666.0	26.9	119,088
HD-11	0.000	130.0	130.0	130.0	130.0	0.657	MT	119,088	526.0	657.0	49.7	119,088
HD-2P US	0.000	87.8	58.0	87.8	58.0	0.642	MT	119,088	568.2	642.0	33.6	119,088
HD-15P-1 DS	0.000	78.3	82.0	78.3	82.0	0.621	MT	106,128	577.7	621.0	43.1	106,128
HD-16	0.000	115.9	141.0	115.9	141.0	0.535	MT	106,128	540.1	535.0	63.9	106,128
HD-1	0.000	137.0	87.0	137.0	87.0	0.641	MT	125,459	519.0	641.0	42.8	125,459
HD-1P	0.000	92.5	95.0	92.5	95.0	0.619	MT	125,459	563.5	619.0	28.9	125,459

Notes:

[1] Predictions are for the time of last inspection (last known meas. wear).

[2] GW = Tmeas is minimum thickness from Band, Blanket or Area Method of greatest wear.
MT = Tmeas is component minimum thickness.
PW = Tmeas is Tinit - predicted wear.
US = Tmeas is user specified.

[3] If no Tmeas has been determined from measured data, then Tmeas = Tinit and Time = current component installation time.
Tmeas is used to determine Predicted Thickness and Component Predicted Time to Tcrit.

[4] These two values are used for thickness plot.
Tp = Predicted thickness at Tmeas.
Tm = Last measured thickness (Tmeas).

[5] PRWEAR = Incremental wear from last Tmeas time to analysis ending period.

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).DB

Wear Rate Report

Pass 2 Analysis Include Measured Wear

Report Date/Time: 7/7/2010 9:54:36AM
AnalysisDate/Time: 6/11/2010 11:36:55AM

CHECWORKS SFA Version: 3.0 (build 105)
Duty Factor (Global) : 1.000

Run Name: HTR DRN TANK DRN
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 0.554

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***HD19-1-HDT to HDP 21 SUCT***								***Sorted By: Average Wear Rate***		
5EX-VALVE-5EX-16	22	5.270	1.813	365.0	5.912	0.0	18.000	6.831	0.000	74.97	HBD
5EX-23N	30	4.216	1.450	365.0	5.912	0.0	18.000	6.831	0.000	74.97	HBD
5EX-22	3	3.773	1.298	365.0	6.057	0.0	18.000	6.831	0.000	74.97	HBD
5EX-21 (D/S)	16	3.362	1.157	365.0	6.097	0.0	18.000	6.831	0.000	74.97	HBD
5EX-21N	31	3.066	1.055	365.0	3.302	0.0	24.000	6.831	0.000	74.97	HBD
5EX-22P	53	2.690	0.925	365.0	6.045	0.0	18.000	6.831	0.000	74.97	HBD
5EX-23P-1	58	2.319	0.798	365.0	5.912	0.0	18.000	6.831	0.000	74.97	HBD
5EX-21P	61	1.656	0.570	365.0	3.302	0.0	24.000	6.831	0.000	74.97	HBD
5EX-21	16	1.548	0.533	365.0	3.337	0.0	24.000	6.831	0.000	74.97	HBD
===>Grouped by Line:	***HD19-2-HDT to HDP 22 SUCT***								***Sorted By: Average Wear Rate***		
5EX-VALVE-5EX-16-1	22	5.270	1.813	365.0	5.912	0.0	18.000	6.831	0.000	74.97	HBD
5EX-28N	30	4.216	1.450	365.0	5.912	0.0	18.000	6.831	0.000	74.97	HBD
5EX-26 (D/S)	16	3.346	1.151	365.0	6.064	0.0	18.000	6.831	0.000	74.97	HBD
5EX-26N	31	3.066	1.055	365.0	3.302	0.0	24.000	6.831	0.000	74.97	HBD
5EX-28P-1	58	2.319	0.798	365.0	5.912	0.0	18.000	6.831	0.000	74.97	HBD
5EX-27P	66	2.148	0.739	365.0	6.032	0.0	18.000	6.831	0.000	74.97	HBD
5EX-26P	61	1.656	0.570	365.0	3.302	0.0	24.000	6.831	0.000	74.97	HBD
5EX-26	16	1.545	0.531	365.0	3.329	0.0	24.000	6.831	0.000	74.97	HBD

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).DB

Wear Rate Report

Pass 2 Analysis Include Measured Wear

Report Date/Time: 7/7/2010 9:54:36AM
AnalysisDate/Time: 6/11/2010 11:36:55AM

CHECWORKS SFA Version: 3.0 (build 105)
Duty Factor (Global) : 1.000

Run Name: HTR DRN TANK DRN
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 0.554

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***HD19-1-HDT to HDP 21 SUCT***									***Sorted By: Flow Order***	
5EX-21N	31	3.066	1.055	365.0	3.302	0.0	24.000	6.831	0.000	74.97	HBD
5EX-21P	61	1.656	0.570	365.0	3.302	0.0	24.000	6.831	0.000	74.97	HBD
5EX-21	16	1.548	0.533	365.0	3.337	0.0	24.000	6.831	0.000	74.97	HBD
5EX-21 (D/S)	16	3.362	1.157	365.0	6.097	0.0	18.000	6.831	0.000	74.97	HBD
5EX-22	3	3.773	1.298	365.0	6.057	0.0	18.000	6.831	0.000	74.97	HBD
5EX-22P	53	2.690	0.925	365.0	6.045	0.0	18.000	6.831	0.000	74.97	HBD
5EX-VALVE-5EX-16	22	5.270	1.813	365.0	5.912	0.0	18.000	6.831	0.000	74.97	HBD
5EX-23P-1	58	2.319	0.798	365.0	5.912	0.0	18.000	6.831	0.000	74.97	HBD
5EX-23N	30	4.216	1.450	365.0	5.912	0.0	18.000	6.831	0.000	74.97	HBD
===>Grouped by Line:	***HD19-2-HDT to HDP 22 SUCT***									***Sorted By: Flow Order***	
5EX-26N	31	3.066	1.055	365.0	3.302	0.0	24.000	6.831	0.000	74.97	HBD
5EX-26P	61	1.656	0.570	365.0	3.302	0.0	24.000	6.831	0.000	74.97	HBD
5EX-26	16	1.545	0.531	365.0	3.329	0.0	24.000	6.831	0.000	74.97	HBD
5EX-26 (D/S)	16	3.346	1.151	365.0	6.064	0.0	18.000	6.831	0.000	74.97	HBD
5EX-27P	66	2.148	0.739	365.0	6.032	0.0	18.000	6.831	0.000	74.97	HBD
5EX-VALVE-5EX-16-1	22	5.270	1.813	365.0	5.912	0.0	18.000	6.831	0.000	74.97	HBD
5EX-28P-1	58	2.319	0.798	365.0	5.912	0.0	18.000	6.831	0.000	74.97	HBD
5EX-28N	30	4.216	1.450	365.0	5.912	0.0	18.000	6.831	0.000	74.97	HBD

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).DB

Service Life Report

Pass 2 Analysis Include Measured Wear

Report Date/Time: 7/7/2010 9:54:36AM
AnalysisDate/Time:

Run Name: HTR DRN TANK DRN
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 0.554

CHECWORKS SFA Version: 3.0 (build 105)
Duty Factor (Global) :1.000

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **HD19-1-HDT to HDP 21 SUCT**					***Sorted By:Remaining Life***		
5EX-VALVE-5EX-16	0.000	0.165	0.129	0.129	175,247	No	243,721
5EX-23N	0.000	0.195	0.121	0.121	447,858	No	243,721
5EX-21N	0.000	0.290	0.161	0.161	1,071,029	No	243,721
5EX-23P-1	0.000	0.247	0.141	0.141	1,167,779	No	243,721
5EX-22	0.417	0.319	0.121	0.121	1,337,346	Yes	243,721
5EX-21 (D/S)	0.445	0.373	0.121	0.121	1,911,071	Yes	243,721
5EX-22P	0.408	0.351	0.141	0.141	1,987,731	Yes	243,721
5EX-21P	0.000	0.329	0.188	0.188	2,164,620	No	243,721
5EX-21	0.436	0.387	0.161	0.161	3,721,461	Yes	243,721
===>Grouped by Line: **HD19-2-HDT to HDP 22 SUCT**					***Sorted By:Remaining Life***		
5EX-VALVE-5EX-16-1	0.000	0.165	0.129	0.129	175,247	No	243,721
5EX-28N	0.000	0.195	0.121	0.121	447,858	No	243,721
5EX-26N	0.000	0.290	0.161	0.161	1,071,029	No	243,721
5EX-26 (D/S)	0.422	0.305	0.121	0.121	1,404,132	No	243,721
5EX-28P-1	0.000	0.271	0.141	0.141	1,430,048	Yes	243,721
5EX-26P	0.000	0.338	0.188	0.188	2,306,466	No	243,721
5EX-27P	0.399	0.336	0.141	0.141	2,314,107	Yes	243,721
5EX-26	0.423	0.380	0.161	0.161	3,614,285	Yes	243,721

Note:
[1] Predictions are based on last Tmeas to analysis ending period.

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).DB

Service Life Report

Pass 2 Analysis Include Measured Wear

Report Date/Time: 7/7/2010 9:54:36AM
AnalysisDate/Time:

Run Name: HTR DRN TANK DRN
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 0.554

CHECWORKS SFA Version: 3.0 (build 105)
Duty Factor (Global) : 1.000

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **HD19-1-HDT to HDP 21 SUCT**					***Sorted By:Flow Order***		
5EX-21N	0.000	0.290	0.161	0.161	1,071,029	No	243,721
5EX-21P	0.000	0.329	0.188	0.188	2,164,620	No	243,721
5EX-21	0.436	0.387	0.161	0.161	3,721,461	Yes	243,721
5EX-21 (D/S)	0.445	0.373	0.121	0.121	1,911,071	Yes	243,721
5EX-22	0.417	0.319	0.121	0.121	1,337,346	Yes	243,721
5EX-22P	0.408	0.351	0.141	0.141	1,987,731	Yes	243,721
5EX-VALVE-5EX-16	0.000	0.165	0.129	0.129	175,247	No	243,721
5EX-23P-1	0.000	0.247	0.141	0.141	1,167,779	No	243,721
5EX-23N	0.000	0.195	0.121	0.121	447,858	No	243,721
===>Grouped by Line: **HD19-2-HDT to HDP 22 SUCT**					***Sorted By:Flow Order***		
5EX-26N	0.000	0.290	0.161	0.161	1,071,029	No	243,721
5EX-26P	0.000	0.338	0.188	0.188	2,306,466	No	243,721
5EX-26	0.423	0.380	0.161	0.161	3,614,285	Yes	243,721
5EX-26 (D/S)	0.422	0.305	0.121	0.121	1,404,132	No	243,721
5EX-27P	0.399	0.336	0.141	0.141	2,314,107	Yes	243,721
5EX-VALVE-5EX-16-1	0.000	0.165	0.129	0.129	175,247	No	243,721
5EX-28P-1	0.000	0.271	0.141	0.141	1,430,048	Yes	243,721
5EX-28N	0.000	0.195	0.121	0.121	447,858	No	243,721

Note:
[1] Predictions are based on last Tmeas to analysis ending period.

1

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).DB

Wear Report

Pass 2 Analysis Include Measured Wear

Report Date/Time: 07-Jul-2010 9:54 am
AnalysisDate/Time: 07-Jul-2010 9:54 am

Run Name: HTR DRN TANK DRN
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 0.554

CHECWORKS SFA Version: 3.0 (build 105)
Duty Factor (Global) : 1.000

Component Name	Tinit	Total Lifetime Wear (mils) Prd. [1]	Meas.	In-Service Component Wear(mils) Prd. [1]	Meas.	In-Service Component Tmeas, Method, Time (in) [3]	[2]	(hrs) [3]	In-Service Component Thickness (mils) [4] Tp	Tm	Incremental Wear (mils) [5] PRWEAR	Time (hrs) Last Inspected
===>Grouped by Line:	**HD19-1-HDT to HDP 21 SUCT**										***Sorted By: Flow Order***	
5EX-21	0.436	31.1	37.0	31.1	37.0	0.399	MT	119,088	404.9	399.0	12.0	119,088
5EX-21 (D/S)	0.445	67.5	46.0	67.5	46.0	0.399	MT	119,088	377.5	399.0	26.1	119,088
5EX-22	0.417	75.7	69.0	75.7	69.0	0.348	MT	119,088	341.3	348.0	29.3	119,088
5EX-22P	0.408	54.0	36.0	54.0	36.0	0.372	MT	119,088	354.0	372.0	20.9	119,088
===>Grouped by Line:	**HD19-2-HDT to HDP 22 SUCT**										***Sorted By: Flow Order***	
5EX-26	0.423	31.0	31.0	31.0	31.0	0.392	MT	119,088	392.0	392.0	12.0	119,088
5EX-27P	0.399	43.1	46.0	43.1	46.0	0.353	MT	119,088	355.9	353.0	16.7	119,088
5EX-28P-1	0.000	56.9	60.0	56.9	60.0	0.279	MT	165,113	255.1	279.0	7.6	165,113

Notes:
[1] Predictions are for the time of last inspection (last known meas. wear).
[2] GW = Tmeas is minimum thickness from Band, Blanket or Area Method of greatest wear.
MT = Tmeas is component minimum thickness.
PW = Tmeas is Tinit - predicted wear.
US = Tmeas is user specified.
[3] If no Tmeas has been determined from measured data, then Tmeas = Tinit and Time = current component installation time.
Tmeas is used to determine Predicted Thickness and Component Predicted Time to Tcrit.
[4] These two values are used for thickness plot.
Tp = Predicted thickness at Tmeas.
Tm = Last measured thickness (Tmeas).
[5] PRWEAR = Incremental wear from last Tmeas time to analysis ending period.

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).DB

Wear Rate Report

Pass 2 Analysis Include Measured Wear

Report Date/Time: 7/7/2010 9:54:36AM
AnalysisDate/Time: 6/11/2010 11:36:56AM

CHECWORKS SFA Version: 3.0 (build 105)

Duty Factor (Global) : 1.000

Run Name: MS - HP TURB TO MOPS
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 1.000

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***MS-HP Turbine to MPS A***								***Sorted By: Average Wear Rate***		
TEMP01	31	29.763	18.067	387.9	81.292	92.2	32.000	6.954	0.000	324.64	HBD
===>Grouped by Line:	***MS-HP Turbine to MPS B***								***Sorted By: Average Wear Rate***		
TEMP02	31	29.763	18.067	387.9	81.292	92.2	32.000	6.954	0.000	324.64	HBD
===>Grouped by Line:	***MS-HP Turbine to MPS C***								***Sorted By: Average Wear Rate***		
TEMP03	31	29.763	18.067	387.9	81.292	92.2	32.000	6.954	0.000	324.64	HBD
===>Grouped by Line:	***MS-HP Turbine to MPS D***								***Sorted By: Average Wear Rate***		
TEMP04	31	29.763	18.067	387.9	81.292	92.2	32.000	6.954	0.000	324.64	HBD

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).DB

Wear Rate Report

Pass 2 Analysis Include Measured Wear

Report Date/Time: 7/7/2010 9:54:36AM
AnalysisDate/Time: 6/11/2010 11:36:56AM

CHECWORKS SFA Version: 3.0 (build 105)
Duty Factor (Global) : 1.000

Run Name: MS - HP TURB TO MOPS
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 1.000

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***MS-HP Turbine to MPS A***									***Sorted By: Flow Order***	
TEMP01	31	29.763	18.067	387.9	81.292	92.2	32.000	6.954	0.000	324.64	HBD
===>Grouped by Line:	***MS-HP Turbine to MPS B***									***Sorted By: Flow Order***	
TEMP02	31	29.763	18.067	387.9	81.292	92.2	32.000	6.954	0.000	324.64	HBD
===>Grouped by Line:	***MS-HP Turbine to MPS C***									***Sorted By: Flow Order***	
TEMP03	31	29.763	18.067	387.9	81.292	92.2	32.000	6.954	0.000	324.64	HBD
===>Grouped by Line:	***MS-HP Turbine to MPS D***									***Sorted By: Flow Order***	
TEMP04	31	29.763	18.067	387.9	81.292	92.2	32.000	6.954	0.000	324.64	HBD

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).DB

Service Life Report

Pass 2 Analysis Include Measured Wear

Report Date/Time: 7/7/2010 9:54:36AM
AnalysisDate/Time:

Run Name: MS - HP TURB TO MOPS
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 1.000

CHECWORKS SFA Version: 3.0 (build 105)
Duty Factor (Global) :1.000

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **MS-HP Turbine to MPS A**					***Sorted By:Remaining Life***		
TEMP01	0.000	-0.453	0.265	0.265	-218,718	No	243,721
===>Grouped by Line: **MS-HP Turbine to MPS B**					***Sorted By:Remaining Life***		
TEMP02	0.000	-0.453	0.265	0.265	-218,718	No	243,721
===>Grouped by Line: **MS-HP Turbine to MPS C**					***Sorted By:Remaining Life***		
TEMP03	0.000	-0.453	0.265	0.265	-218,718	No	243,721
===>Grouped by Line: **MS-HP Turbine to MPS D**					***Sorted By:Remaining Life***		
TEMP04	0.000	-0.453	0.265	0.265	-218,718	No	243,721

Note:
[1] Predictions are based on last Tmeas to analysis ending period.

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).DB

Service Life Report

Pass 2 Analysis Include Measured Wear

Report Date/Time: 7/7/2010 9:54:36AM
AnalysisDate/Time:

Run Name: MS - HP TURB TO MOPS
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 1.000

CHECWORKS SFA Version: 3.0 (build 105)
Duty Factor (Global) : 1.000

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **MS-HP Turbine to MPS A**					***Sorted By:Flow Order***		
TEMP01	0.000	-0.453	0.265	0.265	-218,718	No	243,721
===>Grouped by Line: **MS-HP Turbine to MPS B**					***Sorted By:Flow Order***		
TEMP02	0.000	-0.453	0.265	0.265	-218,718	No	243,721
===>Grouped by Line: **MS-HP Turbine to MPS C**					***Sorted By:Flow Order***		
TEMP03	0.000	-0.453	0.265	0.265	-218,718	No	243,721
===>Grouped by Line: **MS-HP Turbine to MPS D**					***Sorted By:Flow Order***		
TEMP04	0.000	-0.453	0.265	0.265	-218,718	No	243,721

Note:
[1] Predictions are based on last Tmeas to analysis ending period.

1

Wear Report

Company:
Plant:
Unit:
DB Name: IPEC2(v4).DB

Report Date/Time: 07-Jul-2010 9:54 am
AnalysisDate/Time: 07-Jul-2010 9:54 am

Run Name:
Ending Period:
Total Plant Operating Hours:
WRA Data Option:
Line Correction Factor:

CHECWORKS SFA Version:
Duty Factor (Global) :

Component Name	Tinit	Total Lifetime Wear (mils) Prd. [1]	Total Lifetime Wear (mils) Meas.	In-Service Component Wear(mils) Prd. [1]	In-Service Component Wear(mils) Meas.	In-Service Component Tmeas, Method, Time (in) [3]	[2]	(hrs) [3]	In-Service Component Thickness (mils) [4] Tp	Tm	Incremental Wear (mils) [5] PRWEAR	Time (hrs) Last Inspected

===>Grouped by Line: ***Sorted By: Flow Order***

Notes:
[1] Predictions are for the time of last inspection (last known meas. wear).
[2] GW = Tmeas is minimum thickness from Band, Blanket or Area Method of greatest wear.
MT = Tmeas is component minimum thickness.
PW = Tmeas is Tinit - predicted wear.
US = Tmeas is user specified.
[3] If no Tmeas has been determined from measured data, then Tmeas = Tinit and Time = current component installation time.
Tmeas is used to determine Predicted Thickness and Component Predicted Time to Tcrit.
[4] These two values are used for thickness plot.
Tp = Predicted thickness at Tmeas.
Tm = Last measured thickness (Tmeas).
[5] PRWEAR = Incremental wear from last Tmeas time to analysis ending period.

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).DB

Wear Rate Report

Pass 2 Analysis Include Measured Wear

Report Date/Time: 7/7/2010 9:54:36AM
AnalysisDate/Time: 6/11/2010 11:38:10AM

CHECWORKS SFA Version: 3.0 (build 105)
Duty Factor (Global) : 1.000

Run Name: MSDT DRNS TO HDT
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 0.976

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***MSD33A-1-MSDT 21A to HDT***								***Sorted By: Average Wear Rate***		
1A-VALVE-5EX-29-1	25	6.801	1.403	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
1A-15N	30	6.010	1.240	384.5	3.991	0.0	6.625	6.959	0.000	117.60	ARD
1A-12N	31	4.082	0.842	384.5	2.069	0.0	8.625	6.959	0.000	117.60	ARD
1A-10	2	0.002	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
1A-1	2	0.002	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
1A-2	4	0.002	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
1A-3	2	0.002	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
1A-4	2	0.002	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
1A-5	2	0.002	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
1A-6	2	0.002	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
1A-7	2	0.002	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
1A-8	2	0.002	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
1A-9	2	0.002	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
1A-13	2	0.002	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
1A-15	2	0.002	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
1A-2P	54	0.002	0.001	384.5	3.693	0.0	6.625	6.959	0.000	117.60	ARD
1A-11 (D/S)	16	0.002	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
1A-10P	52	0.001	0.001	384.5	3.693	0.0	6.625	6.959	0.000	117.60	ARD
1A-3P	52	0.001	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
1A-4P	52	0.001	0.001	384.5	3.693	0.0	6.625	6.959	0.000	117.60	ARD
1A-5P	52	0.001	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
1A-6P	52	0.001	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
1A-7P	52	0.001	0.001	384.5	3.693	0.0	6.625	6.959	0.000	117.60	ARD
1A-8P	52	0.001	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
1A-9P	52	0.001	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
1A-13P	52	0.001	0.001	384.5	3.693	0.0	6.625	6.959	0.000	117.60	ARD
1A-11P	66	0.001	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
1A-12 (D/S)	15	0.001	0.000	384.5	2.069	0.0	8.625	6.959	0.000	117.60	ARD

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***MSD33A-1-MSDT 21A to HDT***								***Sorted By: Average Wear Rate***		
1A-12	15	0.001	0.000	384.5	2.069	0.0	8.625	6.959	0.000	117.60	ARD
1A-12P	61	0.001	0.000	384.5	2.096	0.0	8.625	6.959	0.000	117.60	ARD
1A-11	16	0.001	0.000	384.5	2.069	0.0	8.625	6.959	0.000	117.60	ARD
1A-12P-1	64	0.001	0.000	384.5	2.096	0.0	8.625	6.959	0.000	117.60	ARD
===>Grouped by Line:	***MSD34A-1-MSDT 22A to HDT***								***Sorted By: Average Wear Rate***		
2A-VALVE-5EX-29-2	25	6.801	1.403	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
2A-15N	30	5.441	1.122	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
2A-3N	31	4.082	0.842	384.5	2.069	0.0	8.625	6.959	0.000	117.60	ARD
2A-5	2	0.002	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
2A-1	2	0.002	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
2A-2	2	0.002	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
2A-7	2	0.002	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
2A-8	2	0.002	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
2A-9	2	0.002	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
2A-10	2	0.002	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
2A-12	2	0.002	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
2A-13	2	0.002	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
2A-15	2	0.002	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
2A-6	1	0.002	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
2A-4 (D/S)	16	0.002	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
2A-5P	52	0.001	0.001	384.5	3.693	0.0	6.625	6.959	0.000	117.60	ARD
2A-2P-1	52	0.001	0.001	384.5	3.693	0.0	6.625	6.959	0.000	117.60	ARD
2A-7P	52	0.001	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
2A-8P	52	0.001	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
2A-9P	52	0.001	0.001	384.5	3.693	0.0	6.625	6.959	0.000	117.60	ARD
2A-10P	52	0.001	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
2A-12P	52	0.001	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
2A-13P	52	0.001	0.001	384.5	3.693	0.0	6.625	6.959	0.000	117.60	ARD
2A-2P	58	0.001	0.001	384.5	3.693	0.0	6.625	6.959	0.000	117.60	ARD
2A-6P	51	0.001	0.001	384.5	3.693	0.0	6.625	6.959	0.000	117.60	ARD
2A-4P	66	0.001	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
2A-3 (D/S)	15	0.001	0.000	384.5	2.069	0.0	8.625	6.959	0.000	117.60	ARD
2A-3	15	0.001	0.000	384.5	2.069	0.0	8.625	6.959	0.000	117.60	ARD
2A-3P-1	61	0.001	0.000	384.5	2.096	0.0	8.625	6.959	0.000	117.60	ARD
2A-4	16	0.001	0.000	384.5	2.069	0.0	8.625	6.959	0.000	117.60	ARD
2A-3P	64	0.001	0.000	384.5	2.096	0.0	8.625	6.959	0.000	117.60	ARD

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***MSD35A-1-MSDT 23A to HDT***								***Sorted By: Average Wear Rate***		
3A-VALVE-5EX-29-3	25	6.801	1.403	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
3A-15N	30	5.441	1.122	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
3A-16N	31	4.082	0.842	384.5	2.069	0.0	8.625	6.959	0.000	117.60	ARD
3A-2	2	0.002	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
3A-3	4	0.002	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
3A-17	2	0.002	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
3A-18	2	0.002	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
3A-19	2	0.002	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
3A-20	2	0.002	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
3A-21	2	0.002	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
3A-13	2	0.002	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
3A-15	2	0.002	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
3A-3P	54	0.002	0.001	384.5	3.693	0.0	6.625	6.959	0.000	117.60	ARD
3A-1 (D/S)	16	0.002	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
3A-17P	52	0.001	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
3A-18P	52	0.001	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
3A-19P	52	0.001	0.001	384.5	3.693	0.0	6.625	6.959	0.000	117.60	ARD
3A-20P	52	0.001	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
3A-21P	52	0.001	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
3A-13P	52	0.001	0.001	384.5	3.693	0.0	6.625	6.959	0.000	117.60	ARD
3A-2P	58	0.001	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
3A-16 (D/S)	15	0.001	0.000	384.5	2.069	0.0	8.625	6.959	0.000	117.60	ARD
3A-16	15	0.001	0.000	384.5	2.069	0.0	8.625	6.959	0.000	117.60	ARD
3A-16P US	61	0.001	0.000	384.5	2.096	0.0	8.625	6.959	0.000	117.60	ARD
3A-1	16	0.001	0.000	384.5	2.069	0.0	8.625	6.959	0.000	117.60	ARD
3A-1P	64	0.001	0.000	384.5	2.096	0.0	8.625	6.959	0.000	117.60	ARD
===>Grouped by Line:	***MSD36A-1-MSDT 21B to HDT***								***Sorted By: Average Wear Rate***		
1B-VALVE-5EX-29-4	25	6.801	1.403	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
1B-15N	30	5.441	1.122	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
1B-3N	31	4.082	0.842	384.5	2.069	0.0	8.625	6.959	0.000	117.60	ARD
1B-1	2	0.001	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
1B-2	2	0.001	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
1B-6	2	0.001	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
1B-7	2	0.001	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
1B-8	2	0.001	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
1B-9	2	0.001	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***MSD36A-1-MSDT 21B to HDT***								***Sorted By: Average Wear Rate***		
1B-13	2	0.001	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
1B-15	2	0.001	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
1B-10	1	0.001	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
1B-11	1	0.001	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
1B-12	1	0.001	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
1B-14	1	0.001	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
1B-5R (D/S)	7	0.001	0.001	384.5	3.693	0.0	6.625	6.959	0.000	117.60	ARD
1B-5P	57	0.001	0.001	384.5	3.693	0.0	6.625	6.959	0.000	117.60	ARD
1B-6P	52	0.001	0.001	384.5	3.693	0.0	6.625	6.959	0.000	117.60	ARD
1B-7P	52	0.001	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
1B-7P-1	52	0.001	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
1B-8P	52	0.001	0.001	384.5	3.693	0.0	6.625	6.959	0.000	117.60	ARD
1B-9P	52	0.001	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
1B-13P	52	0.001	0.001	384.5	3.693	0.0	6.625	6.959	0.000	117.60	ARD
1B-15P	52	0.001	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
1B-3	2	0.001	0.001	384.5	2.069	0.0	8.625	6.959	0.000	117.60	ARD
1B-4	2	0.001	0.001	384.5	2.069	0.0	8.625	6.959	0.000	117.60	ARD
1B-2P	58	0.001	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
1B-10P US	51	0.001	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
1B-10P DS	51	0.001	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
1B-11P US	51	0.001	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
1B-11P DS	51	0.001	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
1B-12P US	51	0.001	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
1B-12P DS	51	0.001	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
1B-14P	51	0.001	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
1B-5R	7	0.001	0.001	384.5	2.096	0.0	8.625	6.959	0.000	117.60	ARD
1B-5 (D/S)	15	0.000	0.000	384.5	2.069	0.0	8.625	6.959	0.000	117.60	ARD
1B-5	15	0.000	0.000	384.5	2.069	0.0	8.625	6.959	0.000	117.60	ARD
1B-3P	61	0.000	0.000	384.5	2.096	0.0	8.625	6.959	0.000	117.60	ARD
1B-4P	52	0.000	0.000	384.5	2.069	0.0	8.625	6.959	0.000	117.60	ARD
===>Grouped by Line:	***MSD37A-1-MSDT 22B to HDT***								***Sorted By: Average Wear Rate***		
2B-VALVE-5EX-29-5	25	6.801	1.403	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
2B-15N	30	5.441	1.122	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
2B-1N	31	4.082	0.842	384.5	2.096	0.0	8.625	6.959	0.000	117.60	ARD
2B-3	4	0.001	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
2B-4	2	0.001	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***MSD37A-1-MSDT 22B to HDT***								***Sorted By: Average Wear Rate***		
2B-5	2	0.001	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
2B-6	2	0.001	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
2B-7	2	0.001	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
2B-8	2	0.001	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
2B-13	2	0.001	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
2B-15	2	0.001	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
2B-9	1	0.001	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
2B-10	1	0.001	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
2B-11	1	0.001	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
2B-12	1	0.001	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
2B-3P	54	0.001	0.001	384.5	3.693	0.0	6.625	6.959	0.000	117.60	ARD
2B-2 (D/S)	16	0.001	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
2B-5P	52	0.001	0.001	384.5	3.693	0.0	6.625	6.959	0.000	117.60	ARD
2B-6P	52	0.001	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
2B-7P US	52	0.001	0.001	384.5	3.693	0.0	6.625	6.959	0.000	117.60	ARD
2B-7P DS	52	0.001	0.001	384.5	3.693	0.0	6.625	6.959	0.000	117.60	ARD
2B-8P US	52	0.001	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
2B-8P DS	52	0.001	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
2B-13P	52	0.001	0.001	384.5	3.693	0.0	6.625	6.959	0.000	117.60	ARD
2B-15P	52	0.001	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
2B-4P	58	0.001	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
2B-9P US	51	0.001	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
2B-9P DS	51	0.001	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
2B-10P US	51	0.001	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
2B-10P DS	51	0.001	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
2B-11P	51	0.001	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
2B-12P US	51	0.001	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
2B-12P DS	51	0.001	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
2B-1 (D/S)	15	0.000	0.000	384.5	2.069	0.0	8.625	6.959	0.000	117.60	ARD
2B-1	15	0.000	0.000	384.5	2.069	0.0	8.625	6.959	0.000	117.60	ARD
2B-1P	61	0.000	0.000	384.5	2.096	0.0	8.625	6.959	0.000	117.60	ARD
2B-2	16	0.000	0.000	384.5	2.069	0.0	8.625	6.959	0.000	117.60	ARD
2B-2P	64	0.000	0.000	384.5	2.096	0.0	8.625	6.959	0.000	117.60	ARD
===>Grouped by Line:	***MSD38A-1-MSDT 23B to HDT***								***Sorted By: Average Wear Rate***		
3B-VALVE-5EX-29-6	25	6.801	1.403	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
3B-15N	30	5.441	1.122	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***MSD38A-1-MSDT 23B to HDT***								***Sorted By: Average Wear Rate***		
3B-3N	31	4.082	0.842	384.5	2.069	0.0	8.625	6.959	0.000	117.60	ARD
3B-2	2	0.002	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
3B-6	2	0.002	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
3B-9	2	0.002	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
3B-13	2	0.002	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
3B-15	2	0.002	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
3B-7	1	0.002	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
3B-10	1	0.002	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
3B-11	1	0.002	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
3B-12	1	0.002	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
3B-14	1	0.002	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
3B-4 (D/S)	16	0.002	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
3B-2P-1	52	0.001	0.001	384.5	3.693	0.0	6.625	6.959	0.000	117.60	ARD
3B-6P	52	0.001	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
3B-8P	52	0.001	0.001	384.5	3.693	0.0	6.625	6.959	0.000	117.60	ARD
3B-9P DS	52	0.001	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
3B-13P	52	0.001	0.001	384.5	3.693	0.0	6.625	6.959	0.000	117.60	ARD
3B-15P	52	0.001	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
3B-2P	58	0.001	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
3B-7P	51	0.001	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
3B-10P US	51	0.001	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
3B-10P DS	51	0.001	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
3B-11P US	51	0.001	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
3B-11P DS	51	0.001	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
3B-12P US	51	0.001	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
3B-14P	51	0.001	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
3B-5	4	0.001	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
3B-1	2	0.001	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
3B-8	2	0.001	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
3B-5P	54	0.001	0.001	384.5	3.693	0.0	6.625	6.959	0.000	117.60	ARD
3B-3 (D/S)	15	0.001	0.000	384.5	2.069	0.0	8.625	6.959	0.000	117.60	ARD
3B-3	15	0.001	0.000	384.5	2.069	0.0	8.625	6.959	0.000	117.60	ARD
3B-3P	61	0.001	0.000	384.5	2.096	0.0	8.625	6.959	0.000	117.60	ARD
3B-4	16	0.001	0.000	384.5	2.069	0.0	8.625	6.959	0.000	117.60	ARD
3B-4P	64	0.001	0.000	384.5	2.096	0.0	8.625	6.959	0.000	117.60	ARD

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).DB

Wear Rate Report

Pass 2 Analysis Include Measured Wear

Report Date/Time: 7/7/2010 9:54:36AM
AnalysisDate/Time: 6/11/2010 11:38:10AM

CHECWORKS SFA Version: 3.0 (build 105)
Duty Factor (Global) : 1.000

Run Name: MSDT DRNS TO HDT
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 0.976

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***MSD33A-1-MSDT 21A to HDT***									***Sorted By: Flow Order***	
1A-12N	31	4.082	0.842	384.5	2.069	0.0	8.625	6.959	0.000	117.60	ARD
1A-12P	61	0.001	0.000	384.5	2.096	0.0	8.625	6.959	0.000	117.60	ARD
1A-12	15	0.001	0.000	384.5	2.069	0.0	8.625	6.959	0.000	117.60	ARD
1A-12 (D/S)	15	0.001	0.000	384.5	2.069	0.0	8.625	6.959	0.000	117.60	ARD
1A-12P-1	64	0.001	0.000	384.5	2.096	0.0	8.625	6.959	0.000	117.60	ARD
1A-11	16	0.001	0.000	384.5	2.069	0.0	8.625	6.959	0.000	117.60	ARD
1A-11 (D/S)	16	0.002	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
1A-11P	66	0.001	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
1A-10	2	0.002	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
1A-10P	52	0.001	0.001	384.5	3.693	0.0	6.625	6.959	0.000	117.60	ARD
1A-1	2	0.002	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
1A-VALVE-5EX-29-1	25	6.801	1.403	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
1A-2	4	0.002	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
1A-2P	54	0.002	0.001	384.5	3.693	0.0	6.625	6.959	0.000	117.60	ARD
1A-3	2	0.002	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
1A-3P	52	0.001	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
1A-4	2	0.002	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
1A-4P	52	0.001	0.001	384.5	3.693	0.0	6.625	6.959	0.000	117.60	ARD
1A-5	2	0.002	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
1A-5P	52	0.001	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
1A-6	2	0.002	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
1A-6P	52	0.001	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
1A-7	2	0.002	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
1A-7P	52	0.001	0.001	384.5	3.693	0.0	6.625	6.959	0.000	117.60	ARD
1A-8	2	0.002	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
1A-8P	52	0.001	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
1A-9	2	0.002	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
1A-9P	52	0.001	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***MSD33A-1-MSDT 21A to HDT***									***Sorted By: Flow Order***	
1A-13	2	0.002	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
1A-13P	52	0.001	0.001	384.5	3.693	0.0	6.625	6.959	0.000	117.60	ARD
1A-15	2	0.002	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
1A-15N	30	6.010	1.240	384.5	3.991	0.0	6.625	6.959	0.000	117.60	ARD
===>Grouped by Line:	***MSD34A-1-MSDT 22A to HDT***									***Sorted By: Flow Order***	
2A-3N	31	4.082	0.842	384.5	2.069	0.0	8.625	6.959	0.000	117.60	ARD
2A-3P-1	61	0.001	0.000	384.5	2.096	0.0	8.625	6.959	0.000	117.60	ARD
2A-3	15	0.001	0.000	384.5	2.069	0.0	8.625	6.959	0.000	117.60	ARD
2A-3 (D/S)	15	0.001	0.000	384.5	2.069	0.0	8.625	6.959	0.000	117.60	ARD
2A-3P	64	0.001	0.000	384.5	2.096	0.0	8.625	6.959	0.000	117.60	ARD
2A-4	16	0.001	0.000	384.5	2.069	0.0	8.625	6.959	0.000	117.60	ARD
2A-4 (D/S)	16	0.002	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
2A-4P	66	0.001	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
2A-5	2	0.002	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
2A-5P	52	0.001	0.001	384.5	3.693	0.0	6.625	6.959	0.000	117.60	ARD
2A-1	2	0.002	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
2A-VALVE-5EX-29-2	25	6.801	1.403	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
2A-2P	58	0.001	0.001	384.5	3.693	0.0	6.625	6.959	0.000	117.60	ARD
2A-2	2	0.002	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
2A-2P-1	52	0.001	0.001	384.5	3.693	0.0	6.625	6.959	0.000	117.60	ARD
2A-6	1	0.002	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
2A-6P	51	0.001	0.001	384.5	3.693	0.0	6.625	6.959	0.000	117.60	ARD
2A-7	2	0.002	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
2A-7P	52	0.001	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
2A-8	2	0.002	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
2A-8P	52	0.001	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
2A-9	2	0.002	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
2A-9P	52	0.001	0.001	384.5	3.693	0.0	6.625	6.959	0.000	117.60	ARD
2A-10	2	0.002	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
2A-10P	52	0.001	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
2A-12	2	0.002	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
2A-12P	52	0.001	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
2A-13	2	0.002	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
2A-13P	52	0.001	0.001	384.5	3.693	0.0	6.625	6.959	0.000	117.60	ARD
2A-15	2	0.002	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
2A-15N	30	5.441	1.122	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***MSD35A-1-MSDT 23A to HDT***									***Sorted By: Flow Order***	
3A-16N	31	4.082	0.842	384.5	2.069	0.0	8.625	6.959	0.000	117.60	ARD
3A-16P US	61	0.001	0.000	384.5	2.096	0.0	8.625	6.959	0.000	117.60	ARD
3A-16	15	0.001	0.000	384.5	2.069	0.0	8.625	6.959	0.000	117.60	ARD
3A-16 (D/S)	15	0.001	0.000	384.5	2.069	0.0	8.625	6.959	0.000	117.60	ARD
3A-1P	64	0.001	0.000	384.5	2.096	0.0	8.625	6.959	0.000	117.60	ARD
3A-1	16	0.001	0.000	384.5	2.069	0.0	8.625	6.959	0.000	117.60	ARD
3A-1 (D/S)	16	0.002	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
3A-VALVE-5EX-29-3	25	6.801	1.403	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
3A-2P	58	0.001	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
3A-2	2	0.002	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
3A-3	4	0.002	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
3A-3P	54	0.002	0.001	384.5	3.693	0.0	6.625	6.959	0.000	117.60	ARD
3A-17	2	0.002	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
3A-17P	52	0.001	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
3A-18	2	0.002	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
3A-18P	52	0.001	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
3A-19	2	0.002	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
3A-19P	52	0.001	0.001	384.5	3.693	0.0	6.625	6.959	0.000	117.60	ARD
3A-20	2	0.002	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
3A-20P	52	0.001	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
3A-21	2	0.002	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
3A-21P	52	0.001	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
3A-13	2	0.002	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
3A-13P	52	0.001	0.001	384.5	3.693	0.0	6.625	6.959	0.000	117.60	ARD
3A-15	2	0.002	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
3A-15N	30	5.441	1.122	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
===>Grouped by Line:	***MSD36A-1-MSDT 21B to HDT***									***Sorted By: Flow Order***	
1B-3N	31	4.082	0.842	384.5	2.069	0.0	8.625	6.959	0.000	117.60	ARD
1B-3P	61	0.000	0.000	384.5	2.096	0.0	8.625	6.959	0.000	117.60	ARD
1B-3	2	0.001	0.001	384.5	2.069	0.0	8.625	6.959	0.000	117.60	ARD
1B-4P	52	0.000	0.000	384.5	2.069	0.0	8.625	6.959	0.000	117.60	ARD
1B-4	2	0.001	0.001	384.5	2.069	0.0	8.625	6.959	0.000	117.60	ARD
1B-5	15	0.000	0.000	384.5	2.069	0.0	8.625	6.959	0.000	117.60	ARD
1B-5 (D/S)	15	0.000	0.000	384.5	2.069	0.0	8.625	6.959	0.000	117.60	ARD
1B-5R	7	0.001	0.001	384.5	2.096	0.0	8.625	6.959	0.000	117.60	ARD
1B-5R (D/S)	7	0.001	0.001	384.5	3.693	0.0	6.625	6.959	0.000	117.60	ARD

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***MSD36A-1-MSDT 21B to HDT***									***Sorted By: Flow Order***	
1B-5P	57	0.001	0.001	384.5	3.693	0.0	6.625	6.959	0.000	117.60	ARD
1B-1	2	0.001	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
1B-VALVE-5EX-29-4	25	6.801	1.403	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
1B-2P	58	0.001	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
1B-2	2	0.001	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
1B-6P	52	0.001	0.001	384.5	3.693	0.0	6.625	6.959	0.000	117.60	ARD
1B-6	2	0.001	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
1B-7P	52	0.001	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
1B-7	2	0.001	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
1B-7P-1	52	0.001	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
1B-8	2	0.001	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
1B-8P	52	0.001	0.001	384.5	3.693	0.0	6.625	6.959	0.000	117.60	ARD
1B-9	2	0.001	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
1B-9P	52	0.001	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
1B-10	1	0.001	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
1B-10P US	51	0.001	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
1B-10P DS	51	0.001	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
1B-11	1	0.001	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
1B-11P US	51	0.001	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
1B-11P DS	51	0.001	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
1B-12	1	0.001	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
1B-12P US	51	0.001	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
1B-12P DS	51	0.001	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
1B-14	1	0.001	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
1B-14P	51	0.001	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
1B-13	2	0.001	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
1B-13P	52	0.001	0.001	384.5	3.693	0.0	6.625	6.959	0.000	117.60	ARD
1B-15	2	0.001	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
1B-15P	52	0.001	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
1B-15N	30	5.441	1.122	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
===>Grouped by Line:	***MSD37A-1-MSDT 22B to HDT***									***Sorted By: Flow Order***	
2B-1N	31	4.082	0.842	384.5	2.096	0.0	8.625	6.959	0.000	117.60	ARD
2B-1P	61	0.000	0.000	384.5	2.096	0.0	8.625	6.959	0.000	117.60	ARD
2B-1	15	0.000	0.000	384.5	2.069	0.0	8.625	6.959	0.000	117.60	ARD
2B-1 (D/S)	15	0.000	0.000	384.5	2.069	0.0	8.625	6.959	0.000	117.60	ARD
2B-2P	64	0.000	0.000	384.5	2.096	0.0	8.625	6.959	0.000	117.60	ARD

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***MSD37A-1-MSDT 22B to HDT***								***Sorted By: Flow Order***		
2B-2	16	0.000	0.000	384.5	2.069	0.0	8.625	6.959	0.000	117.60	ARD
2B-2 (D/S)	16	0.001	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
2B-3	4	0.001	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
2B-3P	54	0.001	0.001	384.5	3.693	0.0	6.625	6.959	0.000	117.60	ARD
2B-4	2	0.001	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
2B-VALVE-5EX-29-5	25	6.801	1.403	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
2B-4P	58	0.001	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
2B-5	2	0.001	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
2B-5P	52	0.001	0.001	384.5	3.693	0.0	6.625	6.959	0.000	117.60	ARD
2B-6	2	0.001	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
2B-6P	52	0.001	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
2B-7	2	0.001	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
2B-7P US	52	0.001	0.001	384.5	3.693	0.0	6.625	6.959	0.000	117.60	ARD
2B-7P DS	52	0.001	0.001	384.5	3.693	0.0	6.625	6.959	0.000	117.60	ARD
2B-8	2	0.001	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
2B-8P US	52	0.001	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
2B-8P DS	52	0.001	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
2B-9	1	0.001	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
2B-9P US	51	0.001	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
2B-9P DS	51	0.001	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
2B-10	1	0.001	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
2B-10P US	51	0.001	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
2B-10P DS	51	0.001	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
2B-11	1	0.001	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
2B-11P	51	0.001	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
2B-12	1	0.001	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
2B-12P US	51	0.001	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
2B-12P DS	51	0.001	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
2B-13	2	0.001	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
2B-13P	52	0.001	0.001	384.5	3.693	0.0	6.625	6.959	0.000	117.60	ARD
2B-15	2	0.001	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
2B-15P	52	0.001	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
2B-15N	30	5.441	1.122	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
===>Grouped by Line:	***MSD38A-1-MSDT 23B to HDT***								***Sorted By: Flow Order***		
3B-3N	31	4.082	0.842	384.5	2.069	0.0	8.625	6.959	0.000	117.60	ARD
3B-3P	61	0.001	0.000	384.5	2.096	0.0	8.625	6.959	0.000	117.60	ARD

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***MSD38A-1-MSDT 23B to HDT***									***Sorted By: Flow Order***	
3B-3	15	0.001	0.000	384.5	2.069	0.0	8.625	6.959	0.000	117.60	ARD
3B-3 (D/S)	15	0.001	0.000	384.5	2.069	0.0	8.625	6.959	0.000	117.60	ARD
3B-4P	64	0.001	0.000	384.5	2.096	0.0	8.625	6.959	0.000	117.60	ARD
3B-4	16	0.001	0.000	384.5	2.069	0.0	8.625	6.959	0.000	117.60	ARD
3B-4 (D/S)	16	0.002	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
3B-5	4	0.001	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
3B-5P	54	0.001	0.001	384.5	3.693	0.0	6.625	6.959	0.000	117.60	ARD
3B-1	2	0.001	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
3B-VALVE-5EX-29-6	25	6.801	1.403	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
3B-2P	58	0.001	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
3B-2	2	0.002	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
3B-2P-1	52	0.001	0.001	384.5	3.693	0.0	6.625	6.959	0.000	117.60	ARD
3B-6	2	0.002	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
3B-6P	52	0.001	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
3B-7	1	0.002	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
3B-7P	51	0.001	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
3B-8	2	0.001	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
3B-8P	52	0.001	0.001	384.5	3.693	0.0	6.625	6.959	0.000	117.60	ARD
3B-9	2	0.002	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
3B-9P DS	52	0.001	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
3B-10	1	0.002	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
3B-10P US	51	0.001	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
3B-10P DS	51	0.001	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
3B-11	1	0.002	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
3B-11P US	51	0.001	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
3B-11P DS	51	0.001	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
3B-12	1	0.002	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
3B-12P US	51	0.001	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
3B-14	1	0.002	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
3B-14P	51	0.001	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
3B-13	2	0.002	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
3B-13P	52	0.001	0.001	384.5	3.693	0.0	6.625	6.959	0.000	117.60	ARD
3B-15	2	0.002	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
3B-15P	52	0.001	0.001	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD
3B-15N	30	5.441	1.122	384.5	3.585	0.0	6.625	6.959	0.000	117.60	ARD

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).DB

Service Life Report

Pass 2 Analysis Include Measured Wear

Report Date/Time: 7/7/2010 9:54:36AM
AnalysisDate/Time:

Run Name: MSDT DRNS TO HDT
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 0.976

CHECWORKS SFA Version: 3.0 (build 105)
Duty Factor (Global) :1.000

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **MSD33A-1-MSDT 21A to HDT**					***Sorted By:Remaining Life***		
1A-VALVE-5EX-29-1	0.000	0.091	0.048	0.048	270,169	No	243,721
1A-12N	0.000	0.208	0.058	0.058	1,568,130	No	243,721
1A-15N	0.438	0.338	0.044	0.044	2,072,576	Yes	243,721
1A-10	0.000	0.280	0.044	0.044	100,000,000	No	124,633
1A-10P	0.000	0.280	0.052	0.052	100,000,000	No	124,633
1A-1	0.000	0.280	0.044	0.044	100,000,000	No	124,633
1A-2	0.000	0.280	0.044	0.044	100,000,000	No	124,633
1A-2P	0.000	0.280	0.052	0.052	100,000,000	No	124,633
1A-3	0.000	0.280	0.044	0.044	100,000,000	No	124,633
1A-3P	0.000	0.280	0.052	0.052	100,000,000	No	124,633
1A-4	0.000	0.280	0.044	0.044	100,000,000	No	124,633
1A-4P	0.000	0.280	0.052	0.052	100,000,000	No	124,633
1A-11P	0.000	0.280	0.052	0.052	100,000,000	No	124,633
1A-11 (D/S)	0.000	0.280	0.044	0.044	100,000,000	No	124,633
1A-11	0.000	0.322	0.058	0.058	100,000,000	No	124,633
1A-12P-1	0.000	0.322	0.068	0.068	100,000,000	No	124,633
1A-12	0.000	0.322	0.058	0.058	100,000,000	No	124,633
1A-5	0.000	0.280	0.044	0.044	100,000,000	No	124,633
1A-5P	0.000	0.280	0.052	0.052	100,000,000	No	124,633
1A-6	0.000	0.280	0.044	0.044	100,000,000	No	124,633
1A-6P	0.000	0.280	0.052	0.052	100,000,000	No	124,633
1A-7	0.000	0.280	0.044	0.044	100,000,000	No	124,633
1A-7P	0.000	0.280	0.052	0.052	100,000,000	No	124,633
1A-12P	0.000	0.409	0.068	0.068	100,000,000	No	124,633
1A-8	0.000	0.280	0.044	0.044	100,000,000	No	124,633
1A-8P	0.000	0.280	0.052	0.052	100,000,000	No	124,633
1A-9	0.000	0.280	0.044	0.044	100,000,000	No	124,633
1A-9P	0.000	0.280	0.052	0.052	100,000,000	No	124,633
1A-12 (D/S)	0.000	0.322	0.058	0.058	100,000,000	No	124,633
1A-13	0.000	0.280	0.044	0.044	100,000,000	No	124,633

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line:	**MSD33A-1-MSDT 21A to HDT**				***Sorted By:Remaining Life***		
1A-13P	0.000	0.280	0.052	0.052	100,000,000	No	124,633
1A-15	0.000	0.352	0.044	0.044	100,000,000	No	124,633
===>Grouped by Line:	**MSD34A-1-MSDT 22A to HDT**				***Sorted By:Remaining Life***		
2A-VALVE-5EX-29-2	0.000	0.091	0.048	0.048	270,169	No	243,721
2A-15N	0.000	0.129	0.044	0.044	657,753	No	243,721
2A-3N	0.000	0.208	0.058	0.058	1,568,130	No	243,721
2A-3P-1	0.000	0.322	0.058	0.058	100,000,000	No	124,633
2A-3	0.000	0.322	0.058	0.058	100,000,000	No	124,633
2A-3 (D/S)	0.000	0.322	0.058	0.058	100,000,000	No	124,633
2A-3P	0.000	0.322	0.058	0.058	100,000,000	No	124,633
2A-4	0.000	0.322	0.058	0.058	100,000,000	No	124,633
2A-4 (D/S)	0.000	0.280	0.044	0.044	100,000,000	No	124,633
2A-4P	0.000	0.280	0.044	0.044	100,000,000	No	124,633
2A-5	0.000	0.280	0.044	0.044	100,000,000	No	124,633
2A-5P	0.000	0.280	0.044	0.044	100,000,000	No	124,633
2A-1	0.000	0.280	0.044	0.044	100,000,000	No	124,633
2A-2P	0.000	0.280	0.044	0.044	100,000,000	No	124,633
2A-2	0.000	0.280	0.044	0.044	100,000,000	No	124,633
2A-2P-1	0.000	0.280	0.044	0.044	100,000,000	No	124,633
2A-6	0.000	0.280	0.044	0.044	100,000,000	No	124,633
2A-6P	0.000	0.280	0.044	0.044	100,000,000	No	124,633
2A-7	0.000	0.280	0.044	0.044	100,000,000	No	124,633
2A-7P	0.000	0.280	0.044	0.044	100,000,000	No	124,633
2A-8	0.000	0.280	0.044	0.044	100,000,000	No	124,633
2A-8P	0.000	0.280	0.044	0.044	100,000,000	No	124,633
2A-9	0.000	0.280	0.044	0.044	100,000,000	No	124,633
2A-9P	0.000	0.280	0.044	0.044	100,000,000	No	124,633
2A-10	0.000	0.280	0.044	0.044	100,000,000	No	124,633
2A-10P	0.000	0.280	0.044	0.044	100,000,000	No	124,633
2A-12	0.000	0.280	0.044	0.044	100,000,000	No	124,633
2A-12P	0.000	0.280	0.044	0.044	100,000,000	No	124,633
2A-13	0.000	0.280	0.044	0.044	100,000,000	No	124,633
2A-13P	0.000	0.280	0.044	0.044	100,000,000	No	124,633
2A-15	0.000	0.280	0.044	0.044	100,000,000	No	124,633
===>Grouped by Line:	**MSD35A-1-MSDT 23A to HDT**				***Sorted By:Remaining Life***		
3A-VALVE-5EX-29-3	0.000	0.091	0.044	0.044	289,849	No	243,721
3A-15N	0.000	0.129	0.044	0.044	657,753	No	243,721
3A-16N	0.000	0.691	0.058	0.058	6,589,279	No	243,721

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **MSD35A-1-MSDT 23A to HDT**					***Sorted By:Remaining Life***		
3A-16P US	0.000	0.428	0.058	0.058	100,000,000	No	124,633
3A-16	0.000	0.422	0.058	0.058	100,000,000	No	124,633
3A-16 (D/S)	0.000	0.422	0.058	0.058	100,000,000	No	124,633
3A-1P	0.000	0.423	0.068	0.068	100,000,000	No	124,633
3A-1	0.000	0.322	0.058	0.058	100,000,000	No	124,633
3A-1 (D/S)	0.000	0.280	0.044	0.044	100,000,000	No	124,633
3A-2P	0.000	0.280	0.044	0.044	100,000,000	No	124,633
3A-2	0.000	0.280	0.044	0.044	100,000,000	No	124,633
3A-3	0.000	0.280	0.044	0.044	100,000,000	No	124,633
3A-3P	0.000	0.280	0.044	0.044	100,000,000	No	124,633
3A-17	0.000	0.280	0.044	0.044	100,000,000	No	124,633
3A-17P	0.000	0.280	0.044	0.044	100,000,000	No	124,633
3A-18	0.000	0.280	0.044	0.044	100,000,000	No	124,633
3A-18P	0.000	0.280	0.044	0.044	100,000,000	No	124,633
3A-19	0.000	0.280	0.044	0.044	100,000,000	No	124,633
3A-19P	0.000	0.280	0.044	0.044	100,000,000	No	124,633
3A-20	0.000	0.280	0.044	0.044	100,000,000	No	124,633
3A-20P	0.000	0.280	0.044	0.044	100,000,000	No	124,633
3A-21	0.000	0.280	0.044	0.044	100,000,000	No	124,633
3A-21P	0.000	0.280	0.044	0.044	100,000,000	No	124,633
3A-13	0.000	0.280	0.044	0.044	100,000,000	No	124,633
3A-13P	0.000	0.280	0.044	0.044	100,000,000	No	124,633
3A-15	0.000	0.280	0.044	0.044	100,000,000	No	124,633
===>Grouped by Line: **MSD36A-1-MSDT 21B to HDT**					***Sorted By:Remaining Life***		
1B-VALVE-5EX-29-4	0.000	0.091	0.048	0.048	270,169	No	243,721
1B-15N	0.000	0.129	0.044	0.044	657,753	No	243,721
1B-3N	0.000	0.266	0.058	0.058	2,163,304	No	243,721
1B-3P	0.000	0.322	0.066	0.066	100,000,000	No	107,113
1B-3	0.000	0.322	0.066	0.066	100,000,000	No	107,113
1B-4P	0.000	0.322	0.066	0.066	100,000,000	No	107,113
1B-4	0.000	0.322	0.066	0.066	100,000,000	No	107,113
1B-5	0.000	0.322	0.066	0.066	100,000,000	No	107,113
1B-5 (D/S)	0.000	0.322	0.066	0.066	100,000,000	No	107,113
1B-5R	0.000	0.322	0.066	0.066	100,000,000	No	107,113
1B-5R (D/S)	0.000	0.280	0.051	0.051	100,000,000	No	107,113
1B-5P	0.000	0.280	0.051	0.051	100,000,000	No	107,113
1B-1	0.000	0.280	0.051	0.051	100,000,000	No	107,113
1B-2P	0.000	0.280	0.051	0.051	100,000,000	No	107,113

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **MSD36A-1-MSDT 21B to HDT**					***Sorted By:Remaining Life***		
1B-2	0.000	0.280	0.051	0.051	100,000,000	No	107,113
1B-6P	0.000	0.280	0.051	0.051	100,000,000	No	107,113
1B-6	0.000	0.280	0.051	0.051	100,000,000	No	107,113
1B-7P	0.000	0.280	0.051	0.051	100,000,000	No	107,113
1B-7	0.000	0.280	0.051	0.051	100,000,000	No	107,113
1B-7P-1	0.000	0.280	0.051	0.051	100,000,000	No	107,113
1B-8	0.000	0.280	0.051	0.051	100,000,000	No	107,113
1B-8P	0.000	0.280	0.051	0.051	100,000,000	No	107,113
1B-9	0.000	0.280	0.051	0.051	100,000,000	No	107,113
1B-9P	0.000	0.280	0.051	0.051	100,000,000	No	107,113
1B-10	0.000	0.280	0.051	0.051	100,000,000	No	107,113
1B-10P US	0.000	0.280	0.051	0.051	100,000,000	No	107,113
1B-10P DS	0.000	0.280	0.051	0.051	100,000,000	No	107,113
1B-11	0.000	0.280	0.051	0.051	100,000,000	No	107,113
1B-11P US	0.000	0.280	0.051	0.051	100,000,000	No	107,113
1B-11P DS	0.000	0.280	0.051	0.051	100,000,000	No	107,113
1B-12	0.000	0.280	0.051	0.051	100,000,000	No	107,113
1B-12P US	0.000	0.280	0.051	0.051	100,000,000	No	107,113
1B-12P DS	0.000	0.280	0.051	0.051	100,000,000	No	107,113
1B-14	0.000	0.280	0.051	0.051	100,000,000	No	107,113
1B-14P	0.000	0.280	0.051	0.051	100,000,000	No	107,113
1B-13	0.000	0.280	0.051	0.051	100,000,000	No	107,113
1B-13P	0.000	0.280	0.051	0.051	100,000,000	No	107,113
1B-15	0.000	0.280	0.051	0.051	100,000,000	No	107,113
1B-15P	0.000	0.280	0.051	0.051	100,000,000	No	107,113
===>Grouped by Line: **MSD37A-1-MSDT 22B to HDT**					***Sorted By:Remaining Life***		
2B-VALVE-5EX-29-5	0.000	0.091	0.048	0.048	270,169	No	243,721
2B-15N	0.000	0.129	0.044	0.044	657,753	No	243,721
2B-1N	0.000	0.286	0.058	0.058	2,371,444	No	243,721
2B-1P	0.000	0.322	0.066	0.066	100,000,000	No	107,113
2B-1	0.000	0.409	0.066	0.066	100,000,000	No	107,113
2B-1 (D/S)	0.000	0.438	0.066	0.066	100,000,000	No	107,113
2B-2P	0.000	0.322	0.066	0.066	100,000,000	No	107,113
2B-2	0.000	0.322	0.066	0.066	100,000,000	No	107,113
2B-2 (D/S)	0.000	0.280	0.051	0.051	100,000,000	No	107,113
2B-3	0.000	0.242	0.051	0.051	100,000,000	No	107,113
2B-3P	0.000	0.280	0.051	0.051	100,000,000	No	107,113
2B-4	0.000	0.280	0.051	0.051	100,000,000	No	107,113

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **MSD37A-1-MSDT 22B to HDT**					***Sorted By:Remaining Life***		
2B-4P	0.000	0.280	0.051	0.051	100,000,000	No	107,113
2B-5	0.000	0.280	0.051	0.051	100,000,000	No	107,113
2B-5P	0.000	0.280	0.051	0.051	100,000,000	No	107,113
2B-6	0.000	0.280	0.051	0.051	100,000,000	No	107,113
2B-6P	0.000	0.280	0.051	0.051	100,000,000	No	107,113
2B-7	0.000	0.280	0.051	0.051	100,000,000	No	107,113
2B-7P US	0.000	0.280	0.051	0.051	100,000,000	No	107,113
2B-7P DS	0.000	0.280	0.051	0.051	100,000,000	No	107,113
2B-8	0.000	0.280	0.051	0.051	100,000,000	No	107,113
2B-8P US	0.000	0.280	0.051	0.051	100,000,000	No	107,113
2B-8P DS	0.000	0.280	0.051	0.051	100,000,000	No	107,113
2B-9	0.000	0.280	0.051	0.051	100,000,000	No	107,113
2B-9P US	0.000	0.280	0.051	0.051	100,000,000	No	107,113
2B-9P DS	0.000	0.280	0.051	0.051	100,000,000	No	107,113
2B-10	0.000	0.280	0.051	0.051	100,000,000	No	107,113
2B-10P US	0.000	0.280	0.051	0.051	100,000,000	No	107,113
2B-10P DS	0.000	0.280	0.051	0.051	100,000,000	No	107,113
2B-11	0.000	0.280	0.051	0.051	100,000,000	No	107,113
2B-11P	0.000	0.280	0.051	0.051	100,000,000	No	107,113
2B-12	0.000	0.280	0.051	0.051	100,000,000	No	107,113
2B-12P US	0.000	0.280	0.051	0.051	100,000,000	No	107,113
2B-12P DS	0.000	0.280	0.051	0.051	100,000,000	No	107,113
2B-13	0.000	0.280	0.051	0.051	100,000,000	No	107,113
2B-13P	0.000	0.280	0.051	0.051	100,000,000	No	107,113
2B-15	0.000	0.280	0.051	0.051	100,000,000	No	107,113
2B-15P	0.000	0.280	0.051	0.051	100,000,000	No	107,113
===>Grouped by Line: **MSD38A-1-MSDT 23B to HDT**					***Sorted By:Remaining Life***		
3B-VALVE-5EX-29-6	0.000	0.091	0.048	0.048	270,169	No	243,721
3B-3N	0.000	0.208	0.058	0.058	1,568,130	No	243,721
3B-15N	0.000	0.288	0.044	0.044	1,900,661	No	243,721
3B-11	0.000	0.346	0.044	0.044	100,000,000	No	124,633
3B-11P US	0.000	0.347	0.052	0.052	100,000,000	No	124,633
3B-11P DS	0.000	0.349	0.052	0.052	100,000,000	No	124,633
3B-12	0.000	0.347	0.044	0.044	100,000,000	No	124,633
3B-12P US	0.000	0.347	0.052	0.052	100,000,000	No	124,633
3B-14	0.000	0.280	0.044	0.044	100,000,000	No	124,633
3B-14P	0.000	0.280	0.052	0.052	100,000,000	No	124,633
3B-13	0.000	0.280	0.044	0.044	100,000,000	No	124,633

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **MSD38A-1-MSDT 23B to HDT**					***Sorted By:Remaining Life***		
3B-13P	0.000	0.280	0.052	0.052	100,000,000	No	124,633
3B-15	0.000	0.280	0.044	0.044	100,000,000	No	124,633
3B-15P	0.000	0.349	0.052	0.052	100,000,000	No	124,633
3B-3P	0.000	0.322	0.068	0.068	100,000,000	No	124,633
3B-3	0.000	0.427	0.058	0.058	100,000,000	No	124,633
3B-3 (D/S)	0.000	0.429	0.058	0.058	100,000,000	No	124,633
3B-4P	0.000	0.428	0.068	0.068	100,000,000	No	124,633
3B-4	0.000	0.455	0.058	0.058	100,000,000	No	124,633
3B-4 (D/S)	0.000	0.280	0.044	0.044	100,000,000	No	124,633
3B-5	0.000	0.280	0.044	0.044	100,000,000	No	109,224
3B-5P	0.000	0.280	0.052	0.052	100,000,000	No	109,224
3B-1	0.000	0.280	0.044	0.044	100,000,000	No	109,224
3B-2P	0.000	0.280	0.052	0.052	100,000,000	No	124,633
3B-2	0.000	0.280	0.044	0.044	100,000,000	No	124,633
3B-2P-1	0.000	0.280	0.052	0.052	100,000,000	No	124,633
3B-6	0.000	0.280	0.044	0.044	100,000,000	No	124,633
3B-6P	0.000	0.280	0.052	0.052	100,000,000	No	124,633
3B-7	0.000	0.280	0.044	0.044	100,000,000	No	124,633
3B-7P	0.000	0.280	0.052	0.052	100,000,000	No	124,633
3B-8	0.000	0.280	0.044	0.044	100,000,000	No	109,224
3B-8P	0.000	0.280	0.052	0.052	100,000,000	No	124,633
3B-9	0.000	0.280	0.044	0.044	100,000,000	No	124,633
3B-9P DS	0.000	0.250	0.052	0.052	100,000,000	No	124,633
3B-10	0.000	0.183	0.044	0.044	100,000,000	No	124,633
3B-10P US	0.000	0.238	0.052	0.052	100,000,000	No	124,633
3B-10P DS	0.000	0.280	0.052	0.052	100,000,000	No	124,633

Note:
[1] Predictions are based on last Tmeas to analysis ending period.

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).DB

Service Life Report

Pass 2 Analysis Include Measured Wear

Report Date/Time: 7/7/2010 9:54:36AM
AnalysisDate/Time:

Run Name: MSDT DRNS TO HDT
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 0.976

CHECWORKS SFA Version: 3.0 (build 105)
Duty Factor (Global) : 1.000

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **MSD33A-1-MSDT 21A to HDT**					***Sorted By:Flow Order***		
1A-12N	0.000	0.208	0.058	0.058	1,568,130	No	243,721
1A-12P	0.000	0.409	0.068	0.068	100,000,000	No	124,633
1A-12	0.000	0.322	0.058	0.058	100,000,000	No	124,633
1A-12 (D/S)	0.000	0.322	0.058	0.058	100,000,000	No	124,633
1A-12P-1	0.000	0.322	0.068	0.068	100,000,000	No	124,633
1A-11	0.000	0.322	0.058	0.058	100,000,000	No	124,633
1A-11 (D/S)	0.000	0.280	0.044	0.044	100,000,000	No	124,633
1A-11P	0.000	0.280	0.052	0.052	100,000,000	No	124,633
1A-10	0.000	0.280	0.044	0.044	100,000,000	No	124,633
1A-10P	0.000	0.280	0.052	0.052	100,000,000	No	124,633
1A-1	0.000	0.280	0.044	0.044	100,000,000	No	124,633
1A-VALVE-5EX-29-1	0.000	0.091	0.048	0.048	270,169	No	243,721
1A-2	0.000	0.280	0.044	0.044	100,000,000	No	124,633
1A-2P	0.000	0.280	0.052	0.052	100,000,000	No	124,633
1A-3	0.000	0.280	0.044	0.044	100,000,000	No	124,633
1A-3P	0.000	0.280	0.052	0.052	100,000,000	No	124,633
1A-4	0.000	0.280	0.044	0.044	100,000,000	No	124,633
1A-4P	0.000	0.280	0.052	0.052	100,000,000	No	124,633
1A-5	0.000	0.280	0.044	0.044	100,000,000	No	124,633
1A-5P	0.000	0.280	0.052	0.052	100,000,000	No	124,633
1A-6	0.000	0.280	0.044	0.044	100,000,000	No	124,633
1A-6P	0.000	0.280	0.052	0.052	100,000,000	No	124,633
1A-7	0.000	0.280	0.044	0.044	100,000,000	No	124,633
1A-7P	0.000	0.280	0.052	0.052	100,000,000	No	124,633
1A-8	0.000	0.280	0.044	0.044	100,000,000	No	124,633
1A-8P	0.000	0.280	0.052	0.052	100,000,000	No	124,633
1A-9	0.000	0.280	0.044	0.044	100,000,000	No	124,633
1A-9P	0.000	0.280	0.052	0.052	100,000,000	No	124,633
1A-13	0.000	0.280	0.044	0.044	100,000,000	No	124,633
1A-13P	0.000	0.280	0.052	0.052	100,000,000	No	124,633

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line:	**MSD33A-1-MSDT 21A to HDT**				***Sorted By:Flow Order***		
1A-15	0.000	0.352	0.044	0.044	100,000,000	No	124,633
1A-15N	0.438	0.338	0.044	0.044	2,072,576	Yes	243,721
===>Grouped by Line:	**MSD34A-1-MSDT 22A to HDT**				***Sorted By:Flow Order***		
2A-3N	0.000	0.208	0.058	0.058	1,568,130	No	243,721
2A-3P-1	0.000	0.322	0.058	0.058	100,000,000	No	124,633
2A-3	0.000	0.322	0.058	0.058	100,000,000	No	124,633
2A-3 (D/S)	0.000	0.322	0.058	0.058	100,000,000	No	124,633
2A-3P	0.000	0.322	0.058	0.058	100,000,000	No	124,633
2A-4	0.000	0.322	0.058	0.058	100,000,000	No	124,633
2A-4 (D/S)	0.000	0.280	0.044	0.044	100,000,000	No	124,633
2A-4P	0.000	0.280	0.044	0.044	100,000,000	No	124,633
2A-5	0.000	0.280	0.044	0.044	100,000,000	No	124,633
2A-5P	0.000	0.280	0.044	0.044	100,000,000	No	124,633
2A-1	0.000	0.280	0.044	0.044	100,000,000	No	124,633
2A-VALVE-5EX-29-2	0.000	0.091	0.048	0.048	270,169	No	243,721
2A-2P	0.000	0.280	0.044	0.044	100,000,000	No	124,633
2A-2	0.000	0.280	0.044	0.044	100,000,000	No	124,633
2A-2P-1	0.000	0.280	0.044	0.044	100,000,000	No	124,633
2A-6	0.000	0.280	0.044	0.044	100,000,000	No	124,633
2A-6P	0.000	0.280	0.044	0.044	100,000,000	No	124,633
2A-7	0.000	0.280	0.044	0.044	100,000,000	No	124,633
2A-7P	0.000	0.280	0.044	0.044	100,000,000	No	124,633
2A-8	0.000	0.280	0.044	0.044	100,000,000	No	124,633
2A-8P	0.000	0.280	0.044	0.044	100,000,000	No	124,633
2A-9	0.000	0.280	0.044	0.044	100,000,000	No	124,633
2A-9P	0.000	0.280	0.044	0.044	100,000,000	No	124,633
2A-10	0.000	0.280	0.044	0.044	100,000,000	No	124,633
2A-10P	0.000	0.280	0.044	0.044	100,000,000	No	124,633
2A-12	0.000	0.280	0.044	0.044	100,000,000	No	124,633
2A-12P	0.000	0.280	0.044	0.044	100,000,000	No	124,633
2A-13	0.000	0.280	0.044	0.044	100,000,000	No	124,633
2A-13P	0.000	0.280	0.044	0.044	100,000,000	No	124,633
2A-15	0.000	0.280	0.044	0.044	100,000,000	No	124,633
2A-15N	0.000	0.129	0.044	0.044	657,753	No	243,721
===>Grouped by Line:	**MSD35A-1-MSDT 23A to HDT**				***Sorted By:Flow Order***		
3A-16N	0.000	0.691	0.058	0.058	6,589,279	No	243,721
3A-16P US	0.000	0.428	0.058	0.058	100,000,000	No	124,633

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **MSD35A-1-MSDT 23A to HDT**					***Sorted By:Flow Order***		
3A-16	0.000	0.422	0.058	0.058	100,000,000	No	124,633
3A-16 (D/S)	0.000	0.422	0.058	0.058	100,000,000	No	124,633
3A-1P	0.000	0.423	0.068	0.068	100,000,000	No	124,633
3A-1	0.000	0.322	0.058	0.058	100,000,000	No	124,633
3A-1 (D/S)	0.000	0.280	0.044	0.044	100,000,000	No	124,633
3A-VALVE-5EX-29-3	0.000	0.091	0.044	0.044	289,849	No	243,721
3A-2P	0.000	0.280	0.044	0.044	100,000,000	No	124,633
3A-2	0.000	0.280	0.044	0.044	100,000,000	No	124,633
3A-3	0.000	0.280	0.044	0.044	100,000,000	No	124,633
3A-3P	0.000	0.280	0.044	0.044	100,000,000	No	124,633
3A-17	0.000	0.280	0.044	0.044	100,000,000	No	124,633
3A-17P	0.000	0.280	0.044	0.044	100,000,000	No	124,633
3A-18	0.000	0.280	0.044	0.044	100,000,000	No	124,633
3A-18P	0.000	0.280	0.044	0.044	100,000,000	No	124,633
3A-19	0.000	0.280	0.044	0.044	100,000,000	No	124,633
3A-19P	0.000	0.280	0.044	0.044	100,000,000	No	124,633
3A-20	0.000	0.280	0.044	0.044	100,000,000	No	124,633
3A-20P	0.000	0.280	0.044	0.044	100,000,000	No	124,633
3A-21	0.000	0.280	0.044	0.044	100,000,000	No	124,633
3A-21P	0.000	0.280	0.044	0.044	100,000,000	No	124,633
3A-13	0.000	0.280	0.044	0.044	100,000,000	No	124,633
3A-13P	0.000	0.280	0.044	0.044	100,000,000	No	124,633
3A-15	0.000	0.280	0.044	0.044	100,000,000	No	124,633
3A-15N	0.000	0.129	0.044	0.044	657,753	No	243,721
===>Grouped by Line: **MSD36A-1-MSDT 21B to HDT**					***Sorted By:Flow Order***		
1B-3N	0.000	0.266	0.058	0.058	2,163,304	No	243,721
1B-3P	0.000	0.322	0.066	0.066	100,000,000	No	107,113
1B-3	0.000	0.322	0.066	0.066	100,000,000	No	107,113
1B-4P	0.000	0.322	0.066	0.066	100,000,000	No	107,113
1B-4	0.000	0.322	0.066	0.066	100,000,000	No	107,113
1B-5	0.000	0.322	0.066	0.066	100,000,000	No	107,113
1B-5 (D/S)	0.000	0.322	0.066	0.066	100,000,000	No	107,113
1B-5R	0.000	0.322	0.066	0.066	100,000,000	No	107,113
1B-5R (D/S)	0.000	0.280	0.051	0.051	100,000,000	No	107,113
1B-5P	0.000	0.280	0.051	0.051	100,000,000	No	107,113
1B-1	0.000	0.280	0.051	0.051	100,000,000	No	107,113
1B-VALVE-5EX-29-4	0.000	0.091	0.048	0.048	270,169	No	243,721
1B-2P	0.000	0.280	0.051	0.051	100,000,000	No	107,113

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **MSD36A-1-MSDT 21B to HDT**					***Sorted By:Flow Order***		
1B-2	0.000	0.280	0.051	0.051	100,000,000	No	107,113
1B-6P	0.000	0.280	0.051	0.051	100,000,000	No	107,113
1B-6	0.000	0.280	0.051	0.051	100,000,000	No	107,113
1B-7P	0.000	0.280	0.051	0.051	100,000,000	No	107,113
1B-7	0.000	0.280	0.051	0.051	100,000,000	No	107,113
1B-7P-1	0.000	0.280	0.051	0.051	100,000,000	No	107,113
1B-8	0.000	0.280	0.051	0.051	100,000,000	No	107,113
1B-8P	0.000	0.280	0.051	0.051	100,000,000	No	107,113
1B-9	0.000	0.280	0.051	0.051	100,000,000	No	107,113
1B-9P	0.000	0.280	0.051	0.051	100,000,000	No	107,113
1B-10	0.000	0.280	0.051	0.051	100,000,000	No	107,113
1B-10P US	0.000	0.280	0.051	0.051	100,000,000	No	107,113
1B-10P DS	0.000	0.280	0.051	0.051	100,000,000	No	107,113
1B-11	0.000	0.280	0.051	0.051	100,000,000	No	107,113
1B-11P US	0.000	0.280	0.051	0.051	100,000,000	No	107,113
1B-11P DS	0.000	0.280	0.051	0.051	100,000,000	No	107,113
1B-12	0.000	0.280	0.051	0.051	100,000,000	No	107,113
1B-12P US	0.000	0.280	0.051	0.051	100,000,000	No	107,113
1B-12P DS	0.000	0.280	0.051	0.051	100,000,000	No	107,113
1B-14	0.000	0.280	0.051	0.051	100,000,000	No	107,113
1B-14P	0.000	0.280	0.051	0.051	100,000,000	No	107,113
1B-13	0.000	0.280	0.051	0.051	100,000,000	No	107,113
1B-13P	0.000	0.280	0.051	0.051	100,000,000	No	107,113
1B-15	0.000	0.280	0.051	0.051	100,000,000	No	107,113
1B-15P	0.000	0.280	0.051	0.051	100,000,000	No	107,113
1B-15N	0.000	0.129	0.044	0.044	657,753	No	243,721
===>Grouped by Line: **MSD37A-1-MSDT 22B to HDT**					***Sorted By:Flow Order***		
2B-1N	0.000	0.286	0.058	0.058	2,371,444	No	243,721
2B-1P	0.000	0.322	0.066	0.066	100,000,000	No	107,113
2B-1	0.000	0.409	0.066	0.066	100,000,000	No	107,113
2B-1 (D/S)	0.000	0.438	0.066	0.066	100,000,000	No	107,113
2B-2P	0.000	0.322	0.066	0.066	100,000,000	No	107,113
2B-2	0.000	0.322	0.066	0.066	100,000,000	No	107,113
2B-2 (D/S)	0.000	0.280	0.051	0.051	100,000,000	No	107,113
2B-3	0.000	0.242	0.051	0.051	100,000,000	No	107,113
2B-3P	0.000	0.280	0.051	0.051	100,000,000	No	107,113
2B-4	0.000	0.280	0.051	0.051	100,000,000	No	107,113
2B-VALVE-5EX-29-5	0.000	0.091	0.048	0.048	270,169	No	243,721

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **MSD37A-1-MSDT 22B to HDT**					***Sorted By:Flow Order***		
2B-4P	0.000	0.280	0.051	0.051	100,000,000	No	107,113
2B-5	0.000	0.280	0.051	0.051	100,000,000	No	107,113
2B-5P	0.000	0.280	0.051	0.051	100,000,000	No	107,113
2B-6	0.000	0.280	0.051	0.051	100,000,000	No	107,113
2B-6P	0.000	0.280	0.051	0.051	100,000,000	No	107,113
2B-7	0.000	0.280	0.051	0.051	100,000,000	No	107,113
2B-7P US	0.000	0.280	0.051	0.051	100,000,000	No	107,113
2B-7P DS	0.000	0.280	0.051	0.051	100,000,000	No	107,113
2B-8	0.000	0.280	0.051	0.051	100,000,000	No	107,113
2B-8P US	0.000	0.280	0.051	0.051	100,000,000	No	107,113
2B-8P DS	0.000	0.280	0.051	0.051	100,000,000	No	107,113
2B-9	0.000	0.280	0.051	0.051	100,000,000	No	107,113
2B-9P US	0.000	0.280	0.051	0.051	100,000,000	No	107,113
2B-9P DS	0.000	0.280	0.051	0.051	100,000,000	No	107,113
2B-10	0.000	0.280	0.051	0.051	100,000,000	No	107,113
2B-10P US	0.000	0.280	0.051	0.051	100,000,000	No	107,113
2B-10P DS	0.000	0.280	0.051	0.051	100,000,000	No	107,113
2B-11	0.000	0.280	0.051	0.051	100,000,000	No	107,113
2B-11P	0.000	0.280	0.051	0.051	100,000,000	No	107,113
2B-12	0.000	0.280	0.051	0.051	100,000,000	No	107,113
2B-12P US	0.000	0.280	0.051	0.051	100,000,000	No	107,113
2B-12P DS	0.000	0.280	0.051	0.051	100,000,000	No	107,113
2B-13	0.000	0.280	0.051	0.051	100,000,000	No	107,113
2B-13P	0.000	0.280	0.051	0.051	100,000,000	No	107,113
2B-15	0.000	0.280	0.051	0.051	100,000,000	No	107,113
2B-15P	0.000	0.280	0.051	0.051	100,000,000	No	107,113
2B-15N	0.000	0.129	0.044	0.044	657,753	No	243,721
===>Grouped by Line: **MSD38A-1-MSDT 23B to HDT**					***Sorted By:Flow Order***		
3B-3N	0.000	0.208	0.058	0.058	1,568,130	No	243,721
3B-3P	0.000	0.322	0.068	0.068	100,000,000	No	124,633
3B-3	0.000	0.427	0.058	0.058	100,000,000	No	124,633
3B-3 (D/S)	0.000	0.429	0.058	0.058	100,000,000	No	124,633
3B-4P	0.000	0.428	0.068	0.068	100,000,000	No	124,633
3B-4	0.000	0.455	0.058	0.058	100,000,000	No	124,633
3B-4 (D/S)	0.000	0.280	0.044	0.044	100,000,000	No	124,633
3B-5	0.000	0.280	0.044	0.044	100,000,000	No	109,224
3B-5P	0.000	0.280	0.052	0.052	100,000,000	No	109,224
3B-1	0.000	0.280	0.044	0.044	100,000,000	No	109,224

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **MSD38A-1-MSDT 23B to HDT**					***Sorted By:Flow Order***		
3B-VALVE-5EX-29-6	0.000	0.091	0.048	0.048	270,169	No	243,721
3B-2P	0.000	0.280	0.052	0.052	100,000,000	No	124,633
3B-2	0.000	0.280	0.044	0.044	100,000,000	No	124,633
3B-2P-1	0.000	0.280	0.052	0.052	100,000,000	No	124,633
3B-6	0.000	0.280	0.044	0.044	100,000,000	No	124,633
3B-6P	0.000	0.280	0.052	0.052	100,000,000	No	124,633
3B-7	0.000	0.280	0.044	0.044	100,000,000	No	124,633
3B-7P	0.000	0.280	0.052	0.052	100,000,000	No	124,633
3B-8	0.000	0.280	0.044	0.044	100,000,000	No	109,224
3B-8P	0.000	0.280	0.052	0.052	100,000,000	No	124,633
3B-9	0.000	0.280	0.044	0.044	100,000,000	No	124,633
3B-9P DS	0.000	0.250	0.052	0.052	100,000,000	No	124,633
3B-10	0.000	0.183	0.044	0.044	100,000,000	No	124,633
3B-10P US	0.000	0.238	0.052	0.052	100,000,000	No	124,633
3B-10P DS	0.000	0.280	0.052	0.052	100,000,000	No	124,633
3B-11	0.000	0.346	0.044	0.044	100,000,000	No	124,633
3B-11P US	0.000	0.347	0.052	0.052	100,000,000	No	124,633
3B-11P DS	0.000	0.349	0.052	0.052	100,000,000	No	124,633
3B-12	0.000	0.347	0.044	0.044	100,000,000	No	124,633
3B-12P US	0.000	0.347	0.052	0.052	100,000,000	No	124,633
3B-14	0.000	0.280	0.044	0.044	100,000,000	No	124,633
3B-14P	0.000	0.280	0.052	0.052	100,000,000	No	124,633
3B-13	0.000	0.280	0.044	0.044	100,000,000	No	124,633
3B-13P	0.000	0.280	0.052	0.052	100,000,000	No	124,633
3B-15	0.000	0.280	0.044	0.044	100,000,000	No	124,633
3B-15P	0.000	0.349	0.052	0.052	100,000,000	No	124,633
3B-15N	0.000	0.288	0.044	0.044	1,900,661	No	243,721

Note:
[1] Predictions are based on last Tmeas to analysis ending period.

6

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).DB

Wear Report

Pass 2 Analysis Include Measured Wear

Report Date/Time: 07-Jul-2010 9:54 am
AnalysisDate/Time: 07-Jul-2010 9:54 am

Run Name: MSDT DRNS TO HDT
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 0.976

CHECWORKS SFA Version: 3.0 (build 105)
Duty Factor (Global) : 1.000

Component Name	Tinit	Total Lifetime Wear (mils) Prd. [1]	Total Lifetime Wear (mils) Meas.	In-Service Component Wear(mils) Prd. [1]	In-Service Component Wear(mils) Meas.	In-Service Component Tmeas, Method, Time (in) [3]	[2]	(hrs) [3]	In-Service Component Thickness (mils) [4] Tp	Tm	Incremental Wear (mils) [5] PRWEAR	Time (hrs) Last Inspected
===>Grouped by Line:	**MSD33A-1-MSDT 21A to HDT**										***Sorted By: Flow Order***	
1A-15N	0.438	153.9	87.0	153.9	87.0	0.351	MT	149,573	284.1	351.0	13.4	149,573
===>Grouped by Line:	**MSD36A-1-MSDT 21B to HDT**										***Sorted By: Flow Order***	
1B-4P	0.000	45.6	47.0	0.0	0.0	0.322	ER	136,608	322.0	322.0	0.0	0
1B-4	0.000	14.3	37.0	0.0	0.0	0.322	ER	136,608	322.0	322.0	0.0	0
1B-5R	0.000	64.8	109.0	0.0	0.0	0.322	ER	136,608	322.0	322.0	0.0	0
1B-5P	0.000	74.9	58.0	0.0	0.0	0.280	ER	136,608	280.0	280.0	0.0	0
1B-6P	0.000	76.4	86.0	0.0	0.0	0.280	ER	136,608	280.0	280.0	0.0	0
1B-9P	0.000	75.4	40.0	0.0	0.0	0.280	ER	136,608	280.0	280.0	0.0	0
1B-10	0.000	100.7	59.0	0.0	0.0	0.280	ER	136,608	280.0	280.0	0.0	0
1B-10P US	0.000	66.4	56.0	0.0	0.0	0.280	ER	136,608	280.0	280.0	0.0	0
1B-10P DS	0.000	66.1	44.0	0.0	0.0	0.280	ER	136,608	280.0	280.0	0.0	0
1B-11	0.000	100.0	73.0	0.0	0.0	0.280	ER	136,608	280.0	280.0	0.0	0
1B-11P US	0.000	66.5	58.0	0.0	0.0	0.280	ER	136,608	280.0	280.0	0.0	0
1B-11P DS	0.000	66.6	63.0	0.0	0.0	0.280	ER	136,608	280.0	280.0	0.0	0
1B-12	0.000	101.0	83.0	0.0	0.0	0.280	ER	136,608	280.0	280.0	0.0	0
1B-12P US	0.000	66.6	53.0	0.0	0.0	0.280	ER	136,608	280.0	280.0	0.0	0
1B-12P DS	0.000	67.2	71.0	0.0	0.0	0.280	ER	136,608	280.0	280.0	0.0	0
1B-14	0.000	103.0	103.0	0.0	0.0	0.280	ER	136,608	280.0	280.0	0.0	0
===>Grouped by Line:	**MSD37A-1-MSDT 22B to HDT**										***Sorted By: Flow Order***	
2B-1P	0.000	48.5	100.0	0.0	0.0	0.322	ER	136,608	322.0	322.0	0.0	0
2B-2	0.000	45.0	99.0	0.0	0.0	0.322	ER	136,608	322.0	322.0	0.0	0
2B-2 (D/S)	0.000	92.9	136.0	0.0	0.0	0.280	ER	136,608	280.0	280.0	0.0	0
2B-3	0.000	110.9	180.0	0.0	0.0	0.242	MT	226,201	280.0	242.0	0.0	0
2B-3P	0.000	95.9	63.0	0.0	0.0	0.280	ER	136,608	280.0	280.0	0.0	0
2B-4P	0.000	66.0	44.0	0.0	0.0	0.280	ER	136,608	280.0	280.0	0.0	0
2B-5P	0.000	74.9	78.0	0.0	0.0	0.280	ER	136,608	280.0	280.0	0.0	0

Component Name	Tinit	Total Lifetime Wear (mils) Prd. [1]	Total Lifetime Wear (mils) Meas.	In-Service Component Wear(mils) Prd. [1]	In-Service Component Wear(mils) Meas.	In-Service Component Tmeas, Method, Time (in) [3]	[2]	(hrs) [3]	In-Service Component Thickness (mils) [4] Tp	Tm	Incremental Wear (mils) [5] PRWEAR	Time (hrs) Last Inspected
===>Grouped by Line:	**MSD37A-1-MSDT 22B to HDT**											***Sorted By: Flow Order***
2B-7P DS	0.000	74.9	47.0	0.0	0.0	0.280	ER	136,608	280.0	280.0	0.0	0
2B-8	0.000	110.9	112.0	0.0	0.0	0.280	ER	136,608	280.0	280.0	0.0	0
2B-8P US	0.000	74.9	55.0	0.0	0.0	0.280	ER	136,608	280.0	280.0	0.0	0
2B-8P DS	0.000	74.9	66.0	0.0	0.0	0.280	ER	136,608	280.0	280.0	0.0	0
2B-9P US	0.000	66.0	70.0	0.0	0.0	0.280	ER	136,608	280.0	280.0	0.0	0
2B-9P DS	0.000	66.0	55.0	0.0	0.0	0.280	ER	136,608	280.0	280.0	0.0	0
2B-10P US	0.000	58.8	100.0	0.0	0.0	0.280	ER	136,608	280.0	280.0	0.0	0
2B-10P DS	0.000	66.0	96.0	0.0	0.0	0.280	ER	136,608	280.0	280.0	0.0	0
2B-11	0.000	88.2	128.0	0.0	0.0	0.280	ER	136,608	280.0	280.0	0.0	0
2B-11P	0.000	66.0	78.0	0.0	0.0	0.280	ER	136,608	280.0	280.0	0.0	0
2B-12	0.000	98.9	76.0	0.0	0.0	0.280	ER	136,608	280.0	280.0	0.0	0
2B-12P US	0.000	66.0	117.0	0.0	0.0	0.280	ER	136,608	280.0	280.0	0.0	0
2B-12P DS	0.000	66.0	106.0	0.0	0.0	0.280	ER	136,608	280.0	280.0	0.0	0
2B-13	0.000	110.9	83.0	0.0	0.0	0.280	ER	136,608	280.0	280.0	0.0	0
2B-13P	0.000	74.9	90.0	0.0	0.0	0.280	ER	136,608	280.0	280.0	0.0	0
2B-15	0.000	110.9	172.0	0.0	0.0	0.280	ER	136,608	280.0	280.0	0.0	0
2B-15P	0.000	74.9	72.0	0.0	0.0	0.280	ER	136,608	280.0	280.0	0.0	0

Notes:
[1] Predictions are for the time of last inspection (last known meas. wear).
[2] GW = Tmeas is minimum thickness from Band, Blanket or Area Method of greatest wear.
MT = Tmeas is component minimum thickness.
PW = Tmeas is Tinit - predicted wear.
US = Tmeas is user specified.
[3] If no Tmeas has been determined from measured data, then Tmeas = Tinit and Time = current component installation time.
Tmeas is used to determine Predicted Thickness and Component Predicted Time to Tcrit.
[4] These two values are used for thickness plot.
Tp = Predicted thickness at Tmeas.
Tm = Last measured thickness (Tmeas).
[5] PRWEAR = Incremental wear from last Tmeas time to analysis ending period.

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).DB

Wear Rate Report

Pass 2 Analysis Include Measured Wear

Report Date/Time: 7/7/2010 9:54:36AM
AnalysisDate/Time: 6/11/2010 11:38:52AM

CHECWORKS SFA Version: 3.0 (build 105)
Duty Factor (Global) : 1.000

Run Name: MSR SHELL DRAINS
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 2.699

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***MSD27-1-MS21A to MSDT 21A***								***Sorted By: Average Wear Rate***		
1A-16N	31	1.989	0.410	384.5	0.293	0.0	12.750	6.959	0.000	117.60	ARD
1A-16 (D/S)	12	1.631	0.336	384.5	0.293	0.0	12.750	6.959	0.000	117.60	ARD
1A-16 (BR/SE)	12	1.352	0.279	384.5	0.293	0.0	12.750	6.959	0.000	117.60	ARD
1A-16P-1	61	1.128	0.233	384.5	0.309	0.0	12.750	6.959	0.000	117.60	ARD
1A-16P	62	0.795	0.164	384.5	0.293	0.0	12.750	6.959	0.000	117.60	ARD
===>Grouped by Line:	***MSD27-2-MS21A to MSDT 21A***								***Sorted By: Average Wear Rate***		
1A-17N	31	1.989	0.410	384.5	0.293	0.0	12.750	6.959	0.000	117.60	ARD
1A-17P-1	61	1.074	0.221	384.5	0.293	0.0	12.750	6.959	0.000	117.60	ARD
===>Grouped by Line:	***MSD27-3-MS21A to MSDT 21A***								***Sorted By: Average Wear Rate***		
1A-19N	31	1.989	0.410	384.5	0.293	0.0	12.750	6.959	0.000	117.60	ARD
1A-19 (D/S)	12	1.631	0.336	384.5	0.293	0.0	12.750	6.959	0.000	117.60	ARD
1A-19 (BR/SE)	12	1.352	0.279	384.5	0.293	0.0	12.750	6.959	0.000	117.60	ARD
1A-19P-1	61	1.127	0.233	384.5	0.308	0.0	12.750	6.959	0.000	117.60	ARD
1A-19P	62	0.795	0.164	384.5	0.293	0.0	12.750	6.959	0.000	117.60	ARD
===>Grouped by Line:	***MSD27-4-MS21A to MSDT 21A***								***Sorted By: Average Wear Rate***		
1A-17 (D/S)	12	2.960	0.610	384.5	0.587	0.0	12.750	6.959	0.000	117.60	ARD
1A-17	12	1.710	0.353	384.5	0.308	0.0	12.750	6.959	0.000	117.60	ARD
1A-17 (BR/SE)	12	1.352	0.279	384.5	0.293	0.0	12.750	6.959	0.000	117.60	ARD
===>Grouped by Line:	***MSD27-5-MS21A to MSDT 21A***								***Sorted By: Average Wear Rate***		
1A-18 (BR/SE)	11	5.152	1.062	384.5	0.888	0.0	12.750	6.959	0.000	117.60	ARD
1A-VALVE-5EX-19L	25	5.089	1.050	384.5	0.876	0.0	12.750	6.959	0.000	117.60	ARD
1A-VALVE-5EX-19M	25	5.089	1.050	384.5	0.876	0.0	12.750	6.959	0.000	117.60	ARD
1A-20N	30	4.072	0.840	384.5	0.876	0.0	12.750	6.959	0.000	117.60	ARD
1A-20	2	3.981	0.821	384.5	0.930	0.0	12.750	6.959	0.000	117.60	ARD
1A-18	11	3.792	0.782	384.5	0.619	0.0	12.750	6.959	0.000	117.60	ARD
1A-20P	58	2.239	0.462	384.5	0.876	0.0	12.750	6.959	0.000	117.60	ARD
1A-20P-1	58	2.239	0.462	384.5	0.876	0.0	12.750	6.959	0.000	117.60	ARD

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***MSD27-5-MS21A to MSDT 21A***								***Sorted By: Average Wear Rate***		
1A-18P DS	62	2.044	0.422	384.5	0.880	0.0	12.750	6.959	0.000	117.60	ARD
1A-18P US	62	2.036	0.420	384.5	0.876	0.0	12.750	6.959	0.000	117.60	ARD
1A-18 (D/S)	11	1.989	0.410	384.5	0.293	0.0	12.750	6.959	0.000	117.60	ARD
===>Grouped by Line:	***MSD28-1-MS22A to MSDT 22A***								***Sorted By: Average Wear Rate***		
2A-16N	31	1.989	0.410	384.5	0.293	0.0	12.750	6.959	0.000	117.60	ARD
2A-16 (D/S)	12	1.631	0.336	384.5	0.293	0.0	12.750	6.959	0.000	117.60	ARD
2A-16 (BR/SE)	12	1.352	0.279	384.5	0.293	0.0	12.750	6.959	0.000	117.60	ARD
2A-16P-1	61	1.126	0.232	384.5	0.308	0.0	12.750	6.959	0.000	117.60	ARD
2A-16P	62	0.833	0.172	384.5	0.307	0.0	12.750	6.959	0.000	117.60	ARD
===>Grouped by Line:	***MSD28-2-MS22A to MSDT 22A***								***Sorted By: Average Wear Rate***		
2A-17N	31	1.989	0.410	384.5	0.293	0.0	12.750	6.959	0.000	117.60	ARD
2A-17P1	62	0.795	0.164	384.5	0.293	0.0	12.750	6.959	0.000	117.60	ARD
===>Grouped by Line:	***MSD28-3-MS22A to MSDT 22A***								***Sorted By: Average Wear Rate***		
2A-19N	31	1.989	0.410	384.5	0.293	0.0	12.750	6.959	0.000	117.60	ARD
2A-19 (D/S)	12	1.631	0.336	384.5	0.293	0.0	12.750	6.959	0.000	117.60	ARD
2A-19 (BR/SE)	12	1.352	0.279	384.5	0.293	0.0	12.750	6.959	0.000	117.60	ARD
2A-19P-1	61	1.074	0.221	384.5	0.293	0.0	12.750	6.959	0.000	117.60	ARD
2A-19P	62	0.795	0.164	384.5	0.293	0.0	12.750	6.959	0.000	117.60	ARD
===>Grouped by Line:	***MSD28-4-MS22A to MSDT 22A***								***Sorted By: Average Wear Rate***		
2A-17 (D/S)	12	2.960	0.610	384.5	0.587	0.0	12.750	6.959	0.000	117.60	ARD
2A-17	12	1.631	0.336	384.5	0.293	0.0	12.750	6.959	0.000	117.60	ARD
2A-17P	62	1.444	0.298	384.5	0.587	0.0	12.750	6.959	0.000	117.60	ARD
2A-17 (BR/SE)	12	1.352	0.279	384.5	0.293	0.0	12.750	6.959	0.000	117.60	ARD
===>Grouped by Line:	***MSD28-5-MS22A to MSDT 22A***								***Sorted By: Average Wear Rate***		
2A-18 (BR/SE)	11	5.089	1.050	384.5	0.876	0.0	12.750	6.959	0.000	117.60	ARD
2A-VALVE-5EX-19J	25	5.089	1.050	384.5	0.876	0.0	12.750	6.959	0.000	117.60	ARD
2A-VALVE-5EX-19K	25	5.089	1.050	384.5	0.876	0.0	12.750	6.959	0.000	117.60	ARD
2A-20N	30	4.072	0.840	384.5	0.876	0.0	12.750	6.959	0.000	117.60	ARD
2A-20	2	3.766	0.777	384.5	0.876	0.0	12.750	6.959	0.000	117.60	ARD
2A-18	11	3.610	0.744	384.5	0.587	0.0	12.750	6.959	0.000	117.60	ARD
2A-20P	58	2.239	0.462	384.5	0.876	0.0	12.750	6.959	0.000	117.60	ARD
2A-20P-1	58	2.239	0.462	384.5	0.876	0.0	12.750	6.959	0.000	117.60	ARD
2A-18P	62	2.036	0.420	384.5	0.876	0.0	12.750	6.959	0.000	117.60	ARD
2A-18 (D/S)	11	1.989	0.410	384.5	0.293	0.0	12.750	6.959	0.000	117.60	ARD
===>Grouped by Line:	***MSD29-1-MS23A to MSDT 23A***								***Sorted By: Average Wear Rate***		

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***MSD29-1-MS23A to MSDT 23A***								***Sorted By: Average Wear Rate***		
3A-16N	31	1.989	0.410	384.5	0.293	0.0	12.750	6.959	0.000	117.60	ARD
3A-16 (D/S)	12	1.631	0.336	384.5	0.293	0.0	12.750	6.959	0.000	117.60	ARD
3A-16 (BR/SE)	12	1.352	0.279	384.5	0.293	0.0	12.750	6.959	0.000	117.60	ARD
3A-16P-1	61	1.074	0.221	384.5	0.293	0.0	12.750	6.959	0.000	117.60	ARD
3A-16P	62	0.795	0.164	384.5	0.293	0.0	12.750	6.959	0.000	117.60	ARD
===>Grouped by Line:	***MSD29-2-MS23A to MSDT 23A***								***Sorted By: Average Wear Rate***		
3A-17N	31	1.989	0.410	384.5	0.293	0.0	12.750	6.959	0.000	117.60	ARD
3A-17P1	62	0.795	0.164	384.5	0.293	0.0	12.750	6.959	0.000	117.60	ARD
===>Grouped by Line:	***MSD29-3-MS23A to MSDT 23A***								***Sorted By: Average Wear Rate***		
3A-19N	31	1.989	0.410	384.5	0.293	0.0	12.750	6.959	0.000	117.60	ARD
3A-19 (D/S)	12	1.631	0.336	384.5	0.293	0.0	12.750	6.959	0.000	117.60	ARD
3A-19 (BR/SE)	12	1.352	0.279	384.5	0.293	0.0	12.750	6.959	0.000	117.60	ARD
3A-19P-1	61	1.074	0.221	384.5	0.293	0.0	12.750	6.959	0.000	117.60	ARD
3A-19P	62	0.795	0.164	384.5	0.293	0.0	12.750	6.959	0.000	117.60	ARD
===>Grouped by Line:	***MSD29-4-MS23A to MSDT 23A***								***Sorted By: Average Wear Rate***		
3A-17 (D/S)	12	2.960	0.610	384.5	0.587	0.0	12.750	6.959	0.000	117.60	ARD
3A-17P	61	1.949	0.402	384.5	0.587	0.0	12.750	6.959	0.000	117.60	ARD
3A-17	12	1.709	0.352	384.5	0.308	0.0	12.750	6.959	0.000	117.60	ARD
3A-17 (BR/SE)	12	1.352	0.279	384.5	0.293	0.0	12.750	6.959	0.000	117.60	ARD
===>Grouped by Line:	***MSD29-5-MS23A to MSDT 23A***								***Sorted By: Average Wear Rate***		
3A-18 (BR/SE)	11	5.089	1.050	384.5	0.876	0.0	12.750	6.959	0.000	117.60	ARD
3A-VALVE-5EX-19G	25	5.089	1.050	384.5	0.876	0.0	12.750	6.959	0.000	117.60	ARD
3A-VALVE-5EX-19H	25	5.089	1.050	384.5	0.876	0.0	12.750	6.959	0.000	117.60	ARD
3A-21N	30	4.072	0.840	384.5	0.876	0.0	12.750	6.959	0.000	117.60	ARD
3A-21	2	3.830	0.790	384.5	0.892	0.0	12.750	6.959	0.000	117.60	ARD
3A-18	11	3.772	0.778	384.5	0.615	0.0	12.750	6.959	0.000	117.60	ARD
3A-20	2	3.766	0.777	384.5	0.876	0.0	12.750	6.959	0.000	117.60	ARD
3A-21P	52	2.578	0.532	384.5	0.888	0.0	12.750	6.959	0.000	117.60	ARD
3A-20P-1 DS	58	2.259	0.466	384.5	0.884	0.0	12.750	6.959	0.000	117.60	ARD
3A-20P	58	2.239	0.462	384.5	0.876	0.0	12.750	6.959	0.000	117.60	ARD
3A-20P-1 US	58	2.239	0.462	384.5	0.876	0.0	12.750	6.959	0.000	117.60	ARD
3A-18P	62	2.036	0.420	384.5	0.876	0.0	12.750	6.959	0.000	117.60	ARD
3A-18 (D/S)	11	1.989	0.410	384.5	0.293	0.0	12.750	6.959	0.000	117.60	ARD
===>Grouped by Line:	***MSD30-1-MS21B to MSDT 21B***								***Sorted By: Average Wear Rate***		
1B-16N	31	1.989	0.410	384.5	0.293	0.0	12.750	6.959	0.000	117.60	ARD

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***MSD30-1-MS21B to MSDT 21B***								***Sorted By: Average Wear Rate***		
1B-16 (D/S)	12	1.631	0.336	384.5	0.293	0.0	12.750	6.959	0.000	117.60	ARD
1B-16 (BR/SE)	12	1.352	0.279	384.5	0.293	0.0	12.750	6.959	0.000	117.60	ARD
1B-16P-1	61	1.137	0.234	384.5	0.311	0.0	12.750	6.959	0.000	117.60	ARD
1B-16P	62	0.795	0.164	384.5	0.293	0.0	12.750	6.959	0.000	117.60	ARD
===>Grouped by Line:	***MSD30-2-MS21B to MSDT 21B***								***Sorted By: Average Wear Rate***		
1B-18N	31	1.989	0.410	384.5	0.293	0.0	12.750	6.959	0.000	117.60	ARD
1B-18P	61	1.074	0.221	384.5	0.293	0.0	12.750	6.959	0.000	117.60	ARD
===>Grouped by Line:	***MSD30-3-MS21B to MSDT 21B***								***Sorted By: Average Wear Rate***		
1B-19N	31	1.989	0.410	384.5	0.293	0.0	12.750	6.959	0.000	117.60	ARD
1B-19 (D/S)	12	1.631	0.336	384.5	0.293	0.0	12.750	6.959	0.000	117.60	ARD
1B-19 (BR/SE)	12	1.352	0.279	384.5	0.293	0.0	12.750	6.959	0.000	117.60	ARD
1B-19P-1	61	1.127	0.232	384.5	0.308	0.0	12.750	6.959	0.000	117.60	ARD
1B-19P	62	0.833	0.172	384.5	0.307	0.0	12.750	6.959	0.000	117.60	ARD
===>Grouped by Line:	***MSD30-4-MS21B to MSDT 21B***								***Sorted By: Average Wear Rate***		
1B-18 (D/S)	12	2.960	0.610	384.5	0.587	0.0	12.750	6.959	0.000	117.60	ARD
1B-18	12	1.706	0.352	384.5	0.307	0.0	12.750	6.959	0.000	117.60	ARD
1B-18 (BR/SE)	12	1.352	0.279	384.5	0.293	0.0	12.750	6.959	0.000	117.60	ARD
===>Grouped by Line:	***MSD30-5-MS21B to MSDT 21B***								***Sorted By: Average Wear Rate***		
1B-17 (BR/SE)	11	5.089	1.050	384.5	0.876	0.0	12.750	6.959	0.000	117.60	ARD
1B-VALVE-5EX-19	25	5.089	1.050	384.5	0.876	0.0	12.750	6.959	0.000	117.60	ARD
1B-VALVE-5EX-19F	25	5.089	1.050	384.5	0.876	0.0	12.750	6.959	0.000	117.60	ARD
1B-20N	30	4.072	0.840	384.5	0.876	0.0	12.750	6.959	0.000	117.60	ARD
1B-20	2	3.766	0.777	384.5	0.876	0.0	12.750	6.959	0.000	117.60	ARD
1B-17 (D/S)	11	3.610	0.744	384.5	0.587	0.0	12.750	6.959	0.000	117.60	ARD
1B-20P	58	2.239	0.462	384.5	0.876	0.0	12.750	6.959	0.000	117.60	ARD
1B-20P-1	58	2.239	0.462	384.5	0.876	0.0	12.750	6.959	0.000	117.60	ARD
1B-17	11	2.092	0.432	384.5	0.309	0.0	12.750	6.959	0.000	117.60	ARD
1B-17P	62	2.036	0.420	384.5	0.876	0.0	12.750	6.959	0.000	117.60	ARD
===>Grouped by Line:	***MSD31-1-MS22B to MSDT 22B***								***Sorted By: Average Wear Rate***		
2B-16N	31	1.989	0.410	384.5	0.293	0.0	12.750	6.959	0.000	117.60	ARD
2B-16 (D/S)	12	1.631	0.336	384.5	0.293	0.0	12.750	6.959	0.000	117.60	ARD
2B-16 (BR/SE)	12	1.352	0.279	384.5	0.293	0.0	12.750	6.959	0.000	117.60	ARD
2B-16P-1	61	1.129	0.233	384.5	0.309	0.0	12.750	6.959	0.000	117.60	ARD
2B-16P	62	0.795	0.164	384.5	0.293	0.0	12.750	6.959	0.000	117.60	ARD
===>Grouped by Line:	***MSD31-2-MS22B to MSDT 22B***								***Sorted By: Average Wear Rate***		

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***MSD31-2-MS22B to MSDT 22B***								***Sorted By: Average Wear Rate***		
2B-18N	31	1.989	0.410	384.5	0.293	0.0	12.750	6.959	0.000	117.60	ARD
2B-18P1	62	0.795	0.164	384.5	0.293	0.0	12.750	6.959	0.000	117.60	ARD
===>Grouped by Line:	***MSD31-3-MS22B to MSDT 22B***								***Sorted By: Average Wear Rate***		
2B-19N	31	1.989	0.410	384.5	0.293	0.0	12.750	6.959	0.000	117.60	ARD
2B-19 (D/S)	12	1.631	0.336	384.5	0.293	0.0	12.750	6.959	0.000	117.60	ARD
2B-19 (BR/SE)	12	1.352	0.279	384.5	0.293	0.0	12.750	6.959	0.000	117.60	ARD
2B-19P-1	61	1.131	0.233	384.5	0.309	0.0	12.750	6.959	0.000	117.60	ARD
2B-19P	62	0.795	0.164	384.5	0.293	0.0	12.750	6.959	0.000	117.60	ARD
===>Grouped by Line:	***MSD31-4-MS22B to MSDT 22B***								***Sorted By: Average Wear Rate***		
2B-18 (D/S)	12	2.960	0.610	384.5	0.587	0.0	12.750	6.959	0.000	117.60	ARD
2B-18P	61	1.949	0.402	384.5	0.587	0.0	12.750	6.959	0.000	117.60	ARD
2B-18	12	1.690	0.349	384.5	0.304	0.0	12.750	6.959	0.000	117.60	ARD
2B-18 (BR/SE)	12	1.352	0.279	384.5	0.293	0.0	12.750	6.959	0.000	117.60	ARD
===>Grouped by Line:	***MSD31-5-MS22B to MSDT 22B***								***Sorted By: Average Wear Rate***		
2B-17 (BR/SE)	11	5.089	1.050	384.5	0.876	0.0	12.750	6.959	0.000	117.60	ARD
2B-VALVE-5EX-19D	25	5.089	1.050	384.5	0.876	0.0	12.750	6.959	0.000	117.60	ARD
2B-VALVE-5EX-19E	25	5.089	1.050	384.5	0.876	0.0	12.750	6.959	0.000	117.60	ARD
2B-20N	30	4.072	0.840	384.5	0.876	0.0	12.750	6.959	0.000	117.60	ARD
2B-20	2	3.766	0.777	384.5	0.876	0.0	12.750	6.959	0.000	117.60	ARD
2B-17 (D/S)	11	3.610	0.744	384.5	0.587	0.0	12.750	6.959	0.000	117.60	ARD
2B-20P	58	2.239	0.462	384.5	0.876	0.0	12.750	6.959	0.000	117.60	ARD
2B-20P-1	58	2.239	0.462	384.5	0.876	0.0	12.750	6.959	0.000	117.60	ARD
2B-17	11	2.090	0.431	384.5	0.309	0.0	12.750	6.959	0.000	117.60	ARD
2B-17P	62	2.036	0.420	384.5	0.876	0.0	12.750	6.959	0.000	117.60	ARD
===>Grouped by Line:	***MSD32-1-MS23B to MSDT 23B***								***Sorted By: Average Wear Rate***		
3B-16N	31	1.989	0.410	384.5	0.293	0.0	12.750	6.959	0.000	117.60	ARD
3B-16 (D/S)	12	1.631	0.336	384.5	0.293	0.0	12.750	6.959	0.000	117.60	ARD
3B-16 (BR/SE)	12	1.352	0.279	384.5	0.293	0.0	12.750	6.959	0.000	117.60	ARD
3B-16P-1	61	1.074	0.221	384.5	0.293	0.0	12.750	6.959	0.000	117.60	ARD
3B-16P	62	0.795	0.164	384.5	0.293	0.0	12.750	6.959	0.000	117.60	ARD
===>Grouped by Line:	***MSD32-2-MS23B to MSDT 23B***								***Sorted By: Average Wear Rate***		
3B-18N	31	1.989	0.410	384.5	0.293	0.0	12.750	6.959	0.000	117.60	ARD
3B-18P1	62	0.795	0.164	384.5	0.293	0.0	12.750	6.959	0.000	117.60	ARD
===>Grouped by Line:	***MSD32-3-MS23B to MSDT 23B***								***Sorted By: Average Wear Rate***		
3B-19N	31	1.989	0.410	384.5	0.293	0.0	12.750	6.959	0.000	117.60	ARD

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***MSD32-3-MS23B to MSDT 23B***								***Sorted By: Average Wear Rate***		
3B-19 (D/S)	12	1.631	0.336	384.5	0.293	0.0	12.750	6.959	0.000	117.60	ARD
3B-19 (BR/SE)	12	1.352	0.279	384.5	0.293	0.0	12.750	6.959	0.000	117.60	ARD
3B-19P-1	61	1.074	0.221	384.5	0.293	0.0	12.750	6.959	0.000	117.60	ARD
3B-19P	62	0.795	0.164	384.5	0.293	0.0	12.750	6.959	0.000	117.60	ARD
===>Grouped by Line:	***MSD32-4-MS23B to MSDT 23B***								***Sorted By: Average Wear Rate***		
3B-18 (D/S)	12	2.960	0.610	384.5	0.587	0.0	12.750	6.959	0.000	117.60	ARD
3B-18P	61	1.949	0.402	384.5	0.587	0.0	12.750	6.959	0.000	117.60	ARD
3B-18	12	1.717	0.354	384.5	0.309	0.0	12.750	6.959	0.000	117.60	ARD
3B-18 (BR/SE)	12	1.352	0.279	384.5	0.293	0.0	12.750	6.959	0.000	117.60	ARD
===>Grouped by Line:	***MSD32-5-MS23B to MSDT 23B***								***Sorted By: Average Wear Rate***		
3B-17 (BR/SE)	11	5.089	1.050	384.5	0.876	0.0	12.750	6.959	0.000	117.60	ARD
3B-VALVE-5EX-19B	25	5.089	1.050	384.5	0.876	0.0	12.750	6.959	0.000	117.60	ARD
3B-VALVE-5EX-19C	25	5.089	1.050	384.5	0.876	0.0	12.750	6.959	0.000	117.60	ARD
3B-21N	30	4.072	0.840	384.5	0.876	0.0	12.750	6.959	0.000	117.60	ARD
3B-20	2	3.766	0.777	384.5	0.876	0.0	12.750	6.959	0.000	117.60	ARD
3B-21	2	3.766	0.777	384.5	0.876	0.0	12.750	6.959	0.000	117.60	ARD
3B-17 (D/S)	11	3.610	0.744	384.5	0.587	0.0	12.750	6.959	0.000	117.60	ARD
3B-21P	52	2.545	0.525	384.5	0.876	0.0	12.750	6.959	0.000	117.60	ARD
3B-20P	58	2.239	0.462	384.5	0.876	0.0	12.750	6.959	0.000	117.60	ARD
3B-20P-1	58	2.239	0.462	384.5	0.876	0.0	12.750	6.959	0.000	117.60	ARD
3B-17	11	2.107	0.434	384.5	0.311	0.0	12.750	6.959	0.000	117.60	ARD
3B-17P	62	2.036	0.420	384.5	0.876	0.0	12.750	6.959	0.000	117.60	ARD

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).DB

Wear Rate Report

Pass 2 Analysis Include Measured Wear

Report Date/Time: 7/7/2010 9:54:36AM
AnalysisDate/Time: 6/11/2010 11:38:52AM

CHECWORKS SFA Version: 3.0 (build 105)
Duty Factor (Global) : 1.000

Run Name: MSR SHELL DRAINS
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 2.699

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***MSD27-1-MS21A to MSDT 21A***									***Sorted By: Flow Order***	
1A-16N	31	1.989	0.410	384.5	0.293	0.0	12.750	6.959	0.000	117.60	ARD
1A-16P-1	61	1.128	0.233	384.5	0.309	0.0	12.750	6.959	0.000	117.60	ARD
1A-16 (BR/SE)	12	1.352	0.279	384.5	0.293	0.0	12.750	6.959	0.000	117.60	ARD
1A-16 (D/S)	12	1.631	0.336	384.5	0.293	0.0	12.750	6.959	0.000	117.60	ARD
1A-16P	62	0.795	0.164	384.5	0.293	0.0	12.750	6.959	0.000	117.60	ARD
===>Grouped by Line:	***MSD27-2-MS21A to MSDT 21A***									***Sorted By: Flow Order***	
1A-17N	31	1.989	0.410	384.5	0.293	0.0	12.750	6.959	0.000	117.60	ARD
1A-17P-1	61	1.074	0.221	384.5	0.293	0.0	12.750	6.959	0.000	117.60	ARD
===>Grouped by Line:	***MSD27-3-MS21A to MSDT 21A***									***Sorted By: Flow Order***	
1A-19N	31	1.989	0.410	384.5	0.293	0.0	12.750	6.959	0.000	117.60	ARD
1A-19P-1	61	1.127	0.233	384.5	0.308	0.0	12.750	6.959	0.000	117.60	ARD
1A-19 (BR/SE)	12	1.352	0.279	384.5	0.293	0.0	12.750	6.959	0.000	117.60	ARD
1A-19 (D/S)	12	1.631	0.336	384.5	0.293	0.0	12.750	6.959	0.000	117.60	ARD
1A-19P	62	0.795	0.164	384.5	0.293	0.0	12.750	6.959	0.000	117.60	ARD
===>Grouped by Line:	***MSD27-4-MS21A to MSDT 21A***									***Sorted By: Flow Order***	
1A-17	12	1.710	0.353	384.5	0.308	0.0	12.750	6.959	0.000	117.60	ARD
1A-17 (BR/SE)	12	1.352	0.279	384.5	0.293	0.0	12.750	6.959	0.000	117.60	ARD
1A-17 (D/S)	12	2.960	0.610	384.5	0.587	0.0	12.750	6.959	0.000	117.60	ARD
===>Grouped by Line:	***MSD27-5-MS21A to MSDT 21A***									***Sorted By: Flow Order***	
1A-18 (D/S)	11	1.989	0.410	384.5	0.293	0.0	12.750	6.959	0.000	117.60	ARD
1A-18	11	3.792	0.782	384.5	0.619	0.0	12.750	6.959	0.000	117.60	ARD
1A-18 (BR/SE)	11	5.152	1.062	384.5	0.888	0.0	12.750	6.959	0.000	117.60	ARD
1A-18P US	62	2.036	0.420	384.5	0.876	0.0	12.750	6.959	0.000	117.60	ARD
1A-18P DS	62	2.044	0.422	384.5	0.880	0.0	12.750	6.959	0.000	117.60	ARD
1A-20	2	3.981	0.821	384.5	0.930	0.0	12.750	6.959	0.000	117.60	ARD
1A-VALVE-5EX-19L	25	5.089	1.050	384.5	0.876	0.0	12.750	6.959	0.000	117.60	ARD
1A-20P	58	2.239	0.462	384.5	0.876	0.0	12.750	6.959	0.000	117.60	ARD

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***MSD27-5-MS21A to MSDT 21A***									***Sorted By: Flow Order***	
1A-VALVE-5EX-19M	25	5.089	1.050	384.5	0.876	0.0	12.750	6.959	0.000	117.60	ARD
1A-20P-1	58	2.239	0.462	384.5	0.876	0.0	12.750	6.959	0.000	117.60	ARD
1A-20N	30	4.072	0.840	384.5	0.876	0.0	12.750	6.959	0.000	117.60	ARD
===>Grouped by Line:	***MSD28-1-MS22A to MSDT 22A***									***Sorted By: Flow Order***	
2A-16N	31	1.989	0.410	384.5	0.293	0.0	12.750	6.959	0.000	117.60	ARD
2A-16P-1	61	1.126	0.232	384.5	0.308	0.0	12.750	6.959	0.000	117.60	ARD
2A-16 (BR/SE)	12	1.352	0.279	384.5	0.293	0.0	12.750	6.959	0.000	117.60	ARD
2A-16 (D/S)	12	1.631	0.336	384.5	0.293	0.0	12.750	6.959	0.000	117.60	ARD
2A-16P	62	0.833	0.172	384.5	0.307	0.0	12.750	6.959	0.000	117.60	ARD
===>Grouped by Line:	***MSD28-2-MS22A to MSDT 22A***									***Sorted By: Flow Order***	
2A-17N	31	1.989	0.410	384.5	0.293	0.0	12.750	6.959	0.000	117.60	ARD
2A-17P1	62	0.795	0.164	384.5	0.293	0.0	12.750	6.959	0.000	117.60	ARD
===>Grouped by Line:	***MSD28-3-MS22A to MSDT 22A***									***Sorted By: Flow Order***	
2A-19N	31	1.989	0.410	384.5	0.293	0.0	12.750	6.959	0.000	117.60	ARD
2A-19P-1	61	1.074	0.221	384.5	0.293	0.0	12.750	6.959	0.000	117.60	ARD
2A-19 (BR/SE)	12	1.352	0.279	384.5	0.293	0.0	12.750	6.959	0.000	117.60	ARD
2A-19 (D/S)	12	1.631	0.336	384.5	0.293	0.0	12.750	6.959	0.000	117.60	ARD
2A-19P	62	0.795	0.164	384.5	0.293	0.0	12.750	6.959	0.000	117.60	ARD
===>Grouped by Line:	***MSD28-4-MS22A to MSDT 22A***									***Sorted By: Flow Order***	
2A-17	12	1.631	0.336	384.5	0.293	0.0	12.750	6.959	0.000	117.60	ARD
2A-17 (BR/SE)	12	1.352	0.279	384.5	0.293	0.0	12.750	6.959	0.000	117.60	ARD
2A-17 (D/S)	12	2.960	0.610	384.5	0.587	0.0	12.750	6.959	0.000	117.60	ARD
2A-17P	62	1.444	0.298	384.5	0.587	0.0	12.750	6.959	0.000	117.60	ARD
===>Grouped by Line:	***MSD28-5-MS22A to MSDT 22A***									***Sorted By: Flow Order***	
2A-18 (D/S)	11	1.989	0.410	384.5	0.293	0.0	12.750	6.959	0.000	117.60	ARD
2A-18	11	3.610	0.744	384.5	0.587	0.0	12.750	6.959	0.000	117.60	ARD
2A-18 (BR/SE)	11	5.089	1.050	384.5	0.876	0.0	12.750	6.959	0.000	117.60	ARD
2A-18P	62	2.036	0.420	384.5	0.876	0.0	12.750	6.959	0.000	117.60	ARD
2A-20	2	3.766	0.777	384.5	0.876	0.0	12.750	6.959	0.000	117.60	ARD
2A-VALVE-5EX-19J	25	5.089	1.050	384.5	0.876	0.0	12.750	6.959	0.000	117.60	ARD
2A-20P	58	2.239	0.462	384.5	0.876	0.0	12.750	6.959	0.000	117.60	ARD
2A-VALVE-5EX-19K	25	5.089	1.050	384.5	0.876	0.0	12.750	6.959	0.000	117.60	ARD
2A-20P-1	58	2.239	0.462	384.5	0.876	0.0	12.750	6.959	0.000	117.60	ARD
2A-20N	30	4.072	0.840	384.5	0.876	0.0	12.750	6.959	0.000	117.60	ARD
===>Grouped by Line:	***MSD29-1-MS23A to MSDT 23A***									***Sorted By: Flow Order***	

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***MSD29-1-MS23A to MSDT 23A***									***Sorted By: Flow Order***	
3A-16N	31	1.989	0.410	384.5	0.293	0.0	12.750	6.959	0.000	117.60	ARD
3A-16P-1	61	1.074	0.221	384.5	0.293	0.0	12.750	6.959	0.000	117.60	ARD
3A-16 (BR/SE)	12	1.352	0.279	384.5	0.293	0.0	12.750	6.959	0.000	117.60	ARD
3A-16 (D/S)	12	1.631	0.336	384.5	0.293	0.0	12.750	6.959	0.000	117.60	ARD
3A-16P	62	0.795	0.164	384.5	0.293	0.0	12.750	6.959	0.000	117.60	ARD
===>Grouped by Line:	***MSD29-2-MS23A to MSDT 23A***									***Sorted By: Flow Order***	
3A-17N	31	1.989	0.410	384.5	0.293	0.0	12.750	6.959	0.000	117.60	ARD
3A-17P1	62	0.795	0.164	384.5	0.293	0.0	12.750	6.959	0.000	117.60	ARD
===>Grouped by Line:	***MSD29-3-MS23A to MSDT 23A***									***Sorted By: Flow Order***	
3A-19N	31	1.989	0.410	384.5	0.293	0.0	12.750	6.959	0.000	117.60	ARD
3A-19P-1	61	1.074	0.221	384.5	0.293	0.0	12.750	6.959	0.000	117.60	ARD
3A-19 (BR/SE)	12	1.352	0.279	384.5	0.293	0.0	12.750	6.959	0.000	117.60	ARD
3A-19 (D/S)	12	1.631	0.336	384.5	0.293	0.0	12.750	6.959	0.000	117.60	ARD
3A-19P	62	0.795	0.164	384.5	0.293	0.0	12.750	6.959	0.000	117.60	ARD
===>Grouped by Line:	***MSD29-4-MS23A to MSDT 23A***									***Sorted By: Flow Order***	
3A-17	12	1.709	0.352	384.5	0.308	0.0	12.750	6.959	0.000	117.60	ARD
3A-17 (BR/SE)	12	1.352	0.279	384.5	0.293	0.0	12.750	6.959	0.000	117.60	ARD
3A-17 (D/S)	12	2.960	0.610	384.5	0.587	0.0	12.750	6.959	0.000	117.60	ARD
3A-17P	61	1.949	0.402	384.5	0.587	0.0	12.750	6.959	0.000	117.60	ARD
===>Grouped by Line:	***MSD29-5-MS23A to MSDT 23A***									***Sorted By: Flow Order***	
3A-18 (D/S)	11	1.989	0.410	384.5	0.293	0.0	12.750	6.959	0.000	117.60	ARD
3A-18	11	3.772	0.778	384.5	0.615	0.0	12.750	6.959	0.000	117.60	ARD
3A-18 (BR/SE)	11	5.089	1.050	384.5	0.876	0.0	12.750	6.959	0.000	117.60	ARD
3A-18P	62	2.036	0.420	384.5	0.876	0.0	12.750	6.959	0.000	117.60	ARD
3A-20	2	3.766	0.777	384.5	0.876	0.0	12.750	6.959	0.000	117.60	ARD
3A-VALVE-5EX-19G	25	5.089	1.050	384.5	0.876	0.0	12.750	6.959	0.000	117.60	ARD
3A-20P	58	2.239	0.462	384.5	0.876	0.0	12.750	6.959	0.000	117.60	ARD
3A-VALVE-5EX-19H	25	5.089	1.050	384.5	0.876	0.0	12.750	6.959	0.000	117.60	ARD
3A-20P-1 US	58	2.239	0.462	384.5	0.876	0.0	12.750	6.959	0.000	117.60	ARD
3A-20P-1 DS	58	2.259	0.466	384.5	0.884	0.0	12.750	6.959	0.000	117.60	ARD
3A-21	2	3.830	0.790	384.5	0.892	0.0	12.750	6.959	0.000	117.60	ARD
3A-21P	52	2.578	0.532	384.5	0.888	0.0	12.750	6.959	0.000	117.60	ARD
3A-21N	30	4.072	0.840	384.5	0.876	0.0	12.750	6.959	0.000	117.60	ARD
===>Grouped by Line:	***MSD30-1-MS21B to MSDT 21B***									***Sorted By: Flow Order***	
1B-16N	31	1.989	0.410	384.5	0.293	0.0	12.750	6.959	0.000	117.60	ARD
1B-16P-1	61	1.137	0.234	384.5	0.311	0.0	12.750	6.959	0.000	117.60	ARD

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***MSD30-1-MS21B to MSDT 21B***									***Sorted By: Flow Order***	
1B-16 (BR/SE)	12	1.352	0.279	384.5	0.293	0.0	12.750	6.959	0.000	117.60	ARD
1B-16 (D/S)	12	1.631	0.336	384.5	0.293	0.0	12.750	6.959	0.000	117.60	ARD
1B-16P	62	0.795	0.164	384.5	0.293	0.0	12.750	6.959	0.000	117.60	ARD
===>Grouped by Line:	***MSD30-2-MS21B to MSDT 21B***									***Sorted By: Flow Order***	
1B-18N	31	1.989	0.410	384.5	0.293	0.0	12.750	6.959	0.000	117.60	ARD
1B-18P	61	1.074	0.221	384.5	0.293	0.0	12.750	6.959	0.000	117.60	ARD
===>Grouped by Line:	***MSD30-3-MS21B to MSDT 21B***									***Sorted By: Flow Order***	
1B-19N	31	1.989	0.410	384.5	0.293	0.0	12.750	6.959	0.000	117.60	ARD
1B-19P-1	61	1.127	0.232	384.5	0.308	0.0	12.750	6.959	0.000	117.60	ARD
1B-19 (BR/SE)	12	1.352	0.279	384.5	0.293	0.0	12.750	6.959	0.000	117.60	ARD
1B-19 (D/S)	12	1.631	0.336	384.5	0.293	0.0	12.750	6.959	0.000	117.60	ARD
1B-19P	62	0.833	0.172	384.5	0.307	0.0	12.750	6.959	0.000	117.60	ARD
===>Grouped by Line:	***MSD30-4-MS21B to MSDT 21B***									***Sorted By: Flow Order***	
1B-18 (BR/SE)	12	1.352	0.279	384.5	0.293	0.0	12.750	6.959	0.000	117.60	ARD
1B-18	12	1.706	0.352	384.5	0.307	0.0	12.750	6.959	0.000	117.60	ARD
1B-18 (D/S)	12	2.960	0.610	384.5	0.587	0.0	12.750	6.959	0.000	117.60	ARD
===>Grouped by Line:	***MSD30-5-MS21B to MSDT 21B***									***Sorted By: Flow Order***	
1B-17	11	2.092	0.432	384.5	0.309	0.0	12.750	6.959	0.000	117.60	ARD
1B-17 (D/S)	11	3.610	0.744	384.5	0.587	0.0	12.750	6.959	0.000	117.60	ARD
1B-17 (BR/SE)	11	5.089	1.050	384.5	0.876	0.0	12.750	6.959	0.000	117.60	ARD
1B-17P	62	2.036	0.420	384.5	0.876	0.0	12.750	6.959	0.000	117.60	ARD
1B-20	2	3.766	0.777	384.5	0.876	0.0	12.750	6.959	0.000	117.60	ARD
1B-VALVE-5EX-19	25	5.089	1.050	384.5	0.876	0.0	12.750	6.959	0.000	117.60	ARD
1B-20P	58	2.239	0.462	384.5	0.876	0.0	12.750	6.959	0.000	117.60	ARD
1B-VALVE-5EX-19F	25	5.089	1.050	384.5	0.876	0.0	12.750	6.959	0.000	117.60	ARD
1B-20P-1	58	2.239	0.462	384.5	0.876	0.0	12.750	6.959	0.000	117.60	ARD
1B-20N	30	4.072	0.840	384.5	0.876	0.0	12.750	6.959	0.000	117.60	ARD
===>Grouped by Line:	***MSD31-1-MS22B to MSDT 22B***									***Sorted By: Flow Order***	
2B-16N	31	1.989	0.410	384.5	0.293	0.0	12.750	6.959	0.000	117.60	ARD
2B-16P-1	61	1.129	0.233	384.5	0.309	0.0	12.750	6.959	0.000	117.60	ARD
2B-16 (BR/SE)	12	1.352	0.279	384.5	0.293	0.0	12.750	6.959	0.000	117.60	ARD
2B-16 (D/S)	12	1.631	0.336	384.5	0.293	0.0	12.750	6.959	0.000	117.60	ARD
2B-16P	62	0.795	0.164	384.5	0.293	0.0	12.750	6.959	0.000	117.60	ARD
===>Grouped by Line:	***MSD31-2-MS22B to MSDT 22B***									***Sorted By: Flow Order***	
2B-18N	31	1.989	0.410	384.5	0.293	0.0	12.750	6.959	0.000	117.60	ARD

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***MSD31-2-MS22B to MSDT 22B***									***Sorted By: Flow Order***	
2B-18P1	62	0.795	0.164	384.5	0.293	0.0	12.750	6.959	0.000	117.60	ARD
===>Grouped by Line:	***MSD31-3-MS22B to MSDT 22B***									***Sorted By: Flow Order***	
2B-19N	31	1.989	0.410	384.5	0.293	0.0	12.750	6.959	0.000	117.60	ARD
2B-19P-1	61	1.131	0.233	384.5	0.309	0.0	12.750	6.959	0.000	117.60	ARD
2B-19 (BR/SE)	12	1.352	0.279	384.5	0.293	0.0	12.750	6.959	0.000	117.60	ARD
2B-19 (D/S)	12	1.631	0.336	384.5	0.293	0.0	12.750	6.959	0.000	117.60	ARD
2B-19P	62	0.795	0.164	384.5	0.293	0.0	12.750	6.959	0.000	117.60	ARD
===>Grouped by Line:	***MSD31-4-MS22B to MSDT 22B***									***Sorted By: Flow Order***	
2B-18 (BR/SE)	12	1.352	0.279	384.5	0.293	0.0	12.750	6.959	0.000	117.60	ARD
2B-18	12	1.690	0.349	384.5	0.304	0.0	12.750	6.959	0.000	117.60	ARD
2B-18 (D/S)	12	2.960	0.610	384.5	0.587	0.0	12.750	6.959	0.000	117.60	ARD
2B-18P	61	1.949	0.402	384.5	0.587	0.0	12.750	6.959	0.000	117.60	ARD
===>Grouped by Line:	***MSD31-5-MS22B to MSDT 22B***									***Sorted By: Flow Order***	
2B-17	11	2.090	0.431	384.5	0.309	0.0	12.750	6.959	0.000	117.60	ARD
2B-17 (D/S)	11	3.610	0.744	384.5	0.587	0.0	12.750	6.959	0.000	117.60	ARD
2B-17 (BR/SE)	11	5.089	1.050	384.5	0.876	0.0	12.750	6.959	0.000	117.60	ARD
2B-17P	62	2.036	0.420	384.5	0.876	0.0	12.750	6.959	0.000	117.60	ARD
2B-20	2	3.766	0.777	384.5	0.876	0.0	12.750	6.959	0.000	117.60	ARD
2B-VALVE-5EX-19D	25	5.089	1.050	384.5	0.876	0.0	12.750	6.959	0.000	117.60	ARD
2B-20P	58	2.239	0.462	384.5	0.876	0.0	12.750	6.959	0.000	117.60	ARD
2B-VALVE-5EX-19E	25	5.089	1.050	384.5	0.876	0.0	12.750	6.959	0.000	117.60	ARD
2B-20P-1	58	2.239	0.462	384.5	0.876	0.0	12.750	6.959	0.000	117.60	ARD
2B-20N	30	4.072	0.840	384.5	0.876	0.0	12.750	6.959	0.000	117.60	ARD
===>Grouped by Line:	***MSD32-1-MS23B to MSDT 23B***									***Sorted By: Flow Order***	
3B-16N	31	1.989	0.410	384.5	0.293	0.0	12.750	6.959	0.000	117.60	ARD
3B-16P-1	61	1.074	0.221	384.5	0.293	0.0	12.750	6.959	0.000	117.60	ARD
3B-16 (BR/SE)	12	1.352	0.279	384.5	0.293	0.0	12.750	6.959	0.000	117.60	ARD
3B-16 (D/S)	12	1.631	0.336	384.5	0.293	0.0	12.750	6.959	0.000	117.60	ARD
3B-16P	62	0.795	0.164	384.5	0.293	0.0	12.750	6.959	0.000	117.60	ARD
===>Grouped by Line:	***MSD32-2-MS23B to MSDT 23B***									***Sorted By: Flow Order***	
3B-18N	31	1.989	0.410	384.5	0.293	0.0	12.750	6.959	0.000	117.60	ARD
3B-18P1	62	0.795	0.164	384.5	0.293	0.0	12.750	6.959	0.000	117.60	ARD
===>Grouped by Line:	***MSD32-3-MS23B to MSDT 23B***									***Sorted By: Flow Order***	
3B-19N	31	1.989	0.410	384.5	0.293	0.0	12.750	6.959	0.000	117.60	ARD
3B-19P-1	61	1.074	0.221	384.5	0.293	0.0	12.750	6.959	0.000	117.60	ARD

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***MSD32-3-MS23B to MSDT 23B***									***Sorted By: Flow Order***	
3B-19 (BR/SE)	12	1.352	0.279	384.5	0.293	0.0	12.750	6.959	0.000	117.60	ARD
3B-19 (D/S)	12	1.631	0.336	384.5	0.293	0.0	12.750	6.959	0.000	117.60	ARD
3B-19P	62	0.795	0.164	384.5	0.293	0.0	12.750	6.959	0.000	117.60	ARD
===>Grouped by Line:	***MSD32-4-MS23B to MSDT 23B***									***Sorted By: Flow Order***	
3B-18 (BR/SE)	12	1.352	0.279	384.5	0.293	0.0	12.750	6.959	0.000	117.60	ARD
3B-18	12	1.717	0.354	384.5	0.309	0.0	12.750	6.959	0.000	117.60	ARD
3B-18 (D/S)	12	2.960	0.610	384.5	0.587	0.0	12.750	6.959	0.000	117.60	ARD
3B-18P	61	1.949	0.402	384.5	0.587	0.0	12.750	6.959	0.000	117.60	ARD
===>Grouped by Line:	***MSD32-5-MS23B to MSDT 23B***									***Sorted By: Flow Order***	
3B-17	11	2.107	0.434	384.5	0.311	0.0	12.750	6.959	0.000	117.60	ARD
3B-17 (D/S)	11	3.610	0.744	384.5	0.587	0.0	12.750	6.959	0.000	117.60	ARD
3B-17 (BR/SE)	11	5.089	1.050	384.5	0.876	0.0	12.750	6.959	0.000	117.60	ARD
3B-17P	62	2.036	0.420	384.5	0.876	0.0	12.750	6.959	0.000	117.60	ARD
3B-20	2	3.766	0.777	384.5	0.876	0.0	12.750	6.959	0.000	117.60	ARD
3B-VALVE-5EX-19B	25	5.089	1.050	384.5	0.876	0.0	12.750	6.959	0.000	117.60	ARD
3B-20P	58	2.239	0.462	384.5	0.876	0.0	12.750	6.959	0.000	117.60	ARD
3B-VALVE-5EX-19C	25	5.089	1.050	384.5	0.876	0.0	12.750	6.959	0.000	117.60	ARD
3B-20P-1	58	2.239	0.462	384.5	0.876	0.0	12.750	6.959	0.000	117.60	ARD
3B-21	2	3.766	0.777	384.5	0.876	0.0	12.750	6.959	0.000	117.60	ARD
3B-21P	52	2.545	0.525	384.5	0.876	0.0	12.750	6.959	0.000	117.60	ARD
3B-21N	30	4.072	0.840	384.5	0.876	0.0	12.750	6.959	0.000	117.60	ARD

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).DB

Service Life Report

Pass 2 Analysis Include Measured Wear

Report Date/Time: 7/7/2010 9:54:36AM
AnalysisDate/Time:

Run Name: MSR SHELL DRAINS
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 2.699

CHECWORKS SFA Version: 3.0 (build 105)
Duty Factor (Global) :1.000

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **MSD27-1-MS21A to MSDT 21A**					***Sorted By:Remaining Life***		
1A-16N	0.000	0.195	0.085	0.085	2,334,008	No	243,721
1A-16 (BR/SE)	0.000	0.209	0.085	0.085	3,888,156	No	243,721
1A-16P	0.000	0.228	0.100	0.100	6,828,933	No	243,721
1A-16 (D/S)	0.000	0.361	0.085	0.085	7,167,524	No	243,721
1A-16P-1	0.410	0.371	0.100	0.100	10,222,651	Yes	243,721
===>Grouped by Line: **MSD27-2-MS21A to MSDT 21A**					***Sorted By:Remaining Life***		
1A-17N	0.000	0.195	0.085	0.085	2,334,008	No	243,721
1A-17P-1	0.000	0.220	0.100	0.100	4,752,085	No	243,721
===>Grouped by Line: **MSD27-3-MS21A to MSDT 21A**					***Sorted By:Remaining Life***		
1A-19N	0.000	0.195	0.085	0.085	2,334,008	No	243,721
1A-19 (BR/SE)	0.000	0.240	0.085	0.085	4,861,839	No	243,721
1A-19P	0.000	0.228	0.100	0.100	6,828,933	No	243,721
1A-19 (D/S)	0.000	0.364	0.085	0.085	7,245,663	No	243,721
1A-19P-1	0.408	0.372	0.100	0.100	10,266,856	No	243,721
===>Grouped by Line: **MSD27-4-MS21A to MSDT 21A**					***Sorted By:Remaining Life***		
1A-17 (D/S)	0.000	0.351	0.085	0.085	3,809,978	No	243,721
1A-17 (BR/SE)	0.000	0.217	0.085	0.085	4,139,429	No	243,721
1A-17	0.405	0.353	0.085	0.085	6,648,557	No	243,721
===>Grouped by Line: **MSD27-5-MS21A to MSDT 21A**					***Sorted By:Remaining Life***		
1A-VALVE-5EX-19L	0.000	0.108	0.091	0.091	141,431	No	243,721
1A-VALVE-5EX-19M	0.000	0.108	0.091	0.091	141,431	No	243,721
1A-18 (BR/SE)	0.290	0.225	0.085	0.085	1,150,020	No	243,721
1A-20N	0.000	0.265	0.085	0.085	1,877,092	No	243,721
1A-18P US	0.000	0.193	0.100	0.100	1,948,461	No	243,721
1A-20	0.430	0.270	0.085	0.085	1,967,789	Yes	243,721
1A-20P	0.000	0.222	0.100	0.100	2,316,010	Yes	243,721

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line:	**MSD27-5-MS21A to MSDT 21A**				***Sorted By:Remaining Life***		
1A-18P DS	0.263	0.220	0.100	0.100	2,490,451	Yes	243,721
1A-20P-1	0.000	0.234	0.100	0.100	2,543,624	Yes	243,721
1A-18	0.410	0.363	0.085	0.085	3,114,684	Yes	243,721
1A-18 (D/S)	0.000	0.368	0.085	0.085	6,039,883	Yes	243,721
===>Grouped by Line:	**MSD28-1-MS22A to MSDT 22A**				***Sorted By:Remaining Life***		
2A-16N	0.000	0.195	0.085	0.085	2,334,008	No	243,721
2A-16 (BR/SE)	0.000	0.240	0.085	0.085	4,854,186	No	243,721
2A-16 (D/S)	0.000	0.338	0.085	0.085	6,570,758	No	243,721
2A-16P-1	0.404	0.373	0.100	0.100	10,317,690	No	243,721
2A-16P	0.399	0.313	0.100	0.100	10,874,890	No	243,721
===>Grouped by Line:	**MSD28-2-MS22A to MSDT 22A**				***Sorted By:Remaining Life***		
2A-17N	0.000	0.195	0.085	0.085	2,334,008	No	243,721
2A-17P1	0.000	0.228	0.100	0.100	6,828,933	No	243,721
===>Grouped by Line:	**MSD28-3-MS22A to MSDT 22A**				***Sorted By:Remaining Life***		
2A-19N	0.000	0.195	0.085	0.085	2,334,008	No	243,721
2A-19 (D/S)	0.000	0.205	0.085	0.085	3,105,764	No	243,721
2A-19 (BR/SE)	0.000	0.212	0.085	0.085	3,988,491	No	243,721
2A-19P-1	0.000	0.220	0.100	0.100	4,752,085	No	243,721
2A-19P	0.000	0.228	0.100	0.100	6,828,933	No	243,721
===>Grouped by Line:	**MSD28-4-MS22A to MSDT 22A**				***Sorted By:Remaining Life***		
2A-17 (D/S)	0.000	0.168	0.085	0.085	1,180,459	No	243,721
2A-17	0.000	0.205	0.085	0.085	3,105,764	No	243,721
2A-17P	0.000	0.210	0.100	0.100	3,231,748	No	243,721
2A-17 (BR/SE)	0.000	0.212	0.085	0.085	3,988,491	No	243,721
===>Grouped by Line:	**MSD28-5-MS22A to MSDT 22A**				***Sorted By:Remaining Life***		
2A-VALVE-5EX-19J	0.000	0.108	0.091	0.091	141,431	No	243,721
2A-VALVE-5EX-19K	0.000	0.108	0.091	0.091	141,431	No	243,721
2A-18 (BR/SE)	0.000	0.108	0.085	0.085	192,043	No	243,721
2A-20	0.000	0.145	0.085	0.085	674,733	No	243,721
2A-18	0.000	0.150	0.085	0.085	755,258	No	243,721
2A-20N	0.000	0.252	0.085	0.085	1,741,472	No	243,721
2A-18P	0.000	0.193	0.100	0.100	1,948,461	No	243,721
2A-20P	0.000	0.215	0.100	0.100	2,183,236	Yes	243,721
2A-18 (D/S)	0.000	0.195	0.085	0.085	2,334,008	No	243,721
2A-20P-1	0.000	0.236	0.100	0.100	2,581,560	Yes	243,721

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line:	**MSD29-1-MS23A to MSDT 23A**				***Sorted By:Remaining Life***		
3A-16N	0.000	0.195	0.085	0.085	2,334,008	No	243,721
3A-16 (BR/SE)	0.000	0.212	0.085	0.085	3,988,491	No	243,721
3A-16P-1	0.000	0.220	0.100	0.100	4,752,085	No	243,721
3A-16 (D/S)	0.000	0.348	0.085	0.085	6,828,918	No	243,721
3A-16P	0.000	0.228	0.100	0.100	6,828,933	No	243,721
===>Grouped by Line:	**MSD29-2-MS23A to MSDT 23A**				***Sorted By:Remaining Life***		
3A-17N	0.000	0.195	0.085	0.085	2,334,008	No	243,721
3A-17P1	0.000	0.228	0.100	0.100	6,828,933	No	243,721
===>Grouped by Line:	**MSD29-3-MS23A to MSDT 23A**				***Sorted By:Remaining Life***		
3A-19N	0.000	0.195	0.085	0.085	2,334,008	No	243,721
3A-19 (BR/SE)	0.000	0.212	0.085	0.085	3,988,491	No	243,721
3A-19P-1	0.000	0.220	0.100	0.100	4,752,085	No	243,721
3A-19 (D/S)	0.000	0.343	0.085	0.085	6,698,685	No	243,721
3A-19P	0.000	0.228	0.100	0.100	6,828,933	No	243,721
===>Grouped by Line:	**MSD29-4-MS23A to MSDT 23A**				***Sorted By:Remaining Life***		
3A-17P	0.000	0.196	0.100	0.100	2,087,503	No	243,721
3A-17 (D/S)	0.000	0.344	0.100	0.100	3,500,233	No	243,721
3A-17 (BR/SE)	0.000	0.228	0.100	0.100	4,026,848	No	243,721
3A-17	0.402	0.349	0.100	0.100	6,193,047	No	243,721
===>Grouped by Line:	**MSD29-5-MS23A to MSDT 23A**				***Sorted By:Remaining Life***		
3A-VALVE-5EX-19G	0.000	0.108	0.091	0.091	141,431	No	243,721
3A-VALVE-5EX-19H	0.000	0.108	0.091	0.091	141,431	No	243,721
3A-20	0.000	0.145	0.085	0.085	674,733	No	243,721
3A-18 (BR/SE)	0.000	0.198	0.085	0.085	936,255	No	243,721
3A-21	0.305	0.217	0.085	0.085	1,462,657	Yes	243,721
3A-20P	0.000	0.188	0.100	0.100	1,663,895	No	243,721
3A-20P-1 US	0.000	0.188	0.100	0.100	1,663,895	No	243,721
3A-21N	0.000	0.260	0.085	0.085	1,818,036	No	243,721
3A-21P	0.292	0.213	0.100	0.100	1,870,081	Yes	243,721
3A-18P	0.000	0.193	0.100	0.100	1,948,461	No	243,721
3A-20P-1 DS	0.278	0.213	0.100	0.100	2,130,627	Yes	243,721
3A-18	0.393	0.328	0.085	0.085	2,734,304	No	243,721
3A-18 (D/S)	0.000	0.226	0.085	0.085	2,992,518	No	243,721
===>Grouped by Line:	**MSD30-1-MS21B to MSDT 21B**				***Sorted By:Remaining Life***		
1B-16N	0.000	0.195	0.085	0.085	2,334,008	No	243,721

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line:	**MSD30-1-MS21B to MSDT 21B**				***Sorted By:Remaining Life***		
1B-16 (BR/SE)	0.000	0.249	0.085	0.085	5,144,522	No	243,721
1B-16P	0.000	0.228	0.100	0.100	6,828,933	No	243,721
1B-16 (D/S)	0.000	0.355	0.085	0.085	7,011,244	No	243,721
1B-16P-1	0.435	0.393	0.100	0.100	10,963,094	Yes	243,721
===>Grouped by Line:	**MSD30-2-MS21B to MSDT 21B**				***Sorted By:Remaining Life***		
1B-18N	0.000	0.195	0.085	0.085	2,334,008	No	243,721
1B-18P	0.000	0.220	0.100	0.100	4,752,085	No	243,721
===>Grouped by Line:	**MSD30-3-MS21B to MSDT 21B**				***Sorted By:Remaining Life***		
1B-19N	0.000	0.195	0.085	0.085	2,334,008	No	243,721
1B-19 (BR/SE)	0.000	0.220	0.085	0.085	4,233,657	No	243,721
1B-19 (D/S)	0.000	0.348	0.085	0.085	6,828,918	No	243,721
1B-19P-1	0.407	0.371	0.100	0.100	10,232,445	No	243,721
1B-19P	0.398	0.356	0.100	0.100	13,072,275	Yes	243,721
===>Grouped by Line:	**MSD30-4-MS21B to MSDT 21B**				***Sorted By:Remaining Life***		
1B-18 (D/S)	0.000	0.345	0.085	0.085	3,723,875	No	243,721
1B-18 (BR/SE)	0.000	0.230	0.085	0.085	4,547,748	No	243,721
1B-18	0.396	0.347	0.085	0.085	6,518,478	No	243,721
===>Grouped by Line:	**MSD30-5-MS21B to MSDT 21B**				***Sorted By:Remaining Life***		
1B-VALVE-5EX-19	0.000	0.108	0.091	0.091	141,431	No	243,721
1B-VALVE-5EX-19F	0.000	0.108	0.091	0.091	141,431	No	243,721
1B-20N	0.000	0.137	0.085	0.085	535,495	No	243,721
1B-20	0.000	0.145	0.085	0.085	674,733	No	243,721
1B-17 (BR/SE)	0.000	0.211	0.085	0.085	1,044,751	No	243,721
1B-20P	0.000	0.188	0.100	0.100	1,663,895	No	243,721
1B-20P-1	0.000	0.188	0.100	0.100	1,663,895	No	243,721
1B-17P	0.000	0.193	0.100	0.100	1,948,461	No	243,721
1B-17 (D/S)	0.000	0.336	0.085	0.085	2,950,533	No	243,721
1B-17	0.415	0.352	0.085	0.085	5,410,308	No	243,721
===>Grouped by Line:	**MSD31-1-MS22B to MSDT 22B**				***Sorted By:Remaining Life***		
2B-16N	0.000	0.195	0.085	0.085	2,334,008	No	243,721
2B-16 (BR/SE)	0.000	0.255	0.085	0.085	5,332,977	No	243,721
2B-16P	0.000	0.228	0.100	0.100	6,828,933	No	243,721
2B-16 (D/S)	0.000	0.352	0.085	0.085	6,933,104	No	243,721
2B-16P-1	0.413	0.376	0.100	0.100	10,400,943	No	243,721

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line:	**MSD31-2-MS22B to MSDT 22B**				***Sorted By:Remaining Life***		
2B-18N	0.000	0.195	0.085	0.085	2,334,008	No	243,721
2B-18P1	0.000	0.228	0.100	0.100	6,828,933	No	243,721
===>Grouped by Line:	**MSD31-3-MS22B to MSDT 22B**				***Sorted By:Remaining Life***		
2B-19N	0.000	0.195	0.085	0.085	2,334,008	No	243,721
2B-19 (BR/SE)	0.000	0.227	0.100	0.100	3,995,439	No	243,721
2B-19 (D/S)	0.000	0.339	0.100	0.100	6,214,625	No	243,721
2B-19P	0.000	0.228	0.100	0.100	6,828,933	No	243,721
2B-19P-1	0.419	0.369	0.100	0.100	10,118,199	Yes	243,721
===>Grouped by Line:	**MSD31-4-MS22B to MSDT 22B**				***Sorted By:Remaining Life***		
2B-18P	0.000	0.196	0.100	0.100	2,087,503	No	243,721
2B-18 (D/S)	0.000	0.336	0.100	0.100	3,385,430	No	243,721
2B-18 (BR/SE)	0.000	0.212	0.100	0.100	3,530,409	No	243,721
2B-18	0.367	0.335	0.100	0.100	5,911,596	No	243,721
===>Grouped by Line:	**MSD31-5-MS22B to MSDT 22B**				***Sorted By:Remaining Life***		
2B-VALVE-5EX-19D	0.000	0.108	0.091	0.091	141,431	No	243,721
2B-VALVE-5EX-19E	0.000	0.108	0.091	0.091	141,431	No	243,721
2B-20N	0.000	0.137	0.085	0.085	535,495	No	243,721
2B-20	0.000	0.145	0.085	0.085	674,733	No	243,721
2B-17 (BR/SE)	0.000	0.199	0.100	0.100	822,882	No	243,721
2B-20P	0.000	0.188	0.100	0.100	1,663,895	No	243,721
2B-20P-1	0.000	0.188	0.100	0.100	1,663,895	No	243,721
2B-17P	0.000	0.193	0.100	0.100	1,948,461	No	243,721
2B-17 (D/S)	0.000	0.339	0.100	0.100	2,814,216	No	243,721
2B-17	0.411	0.349	0.100	0.100	5,059,954	No	243,721
===>Grouped by Line:	**MSD32-1-MS23B to MSDT 23B**				***Sorted By:Remaining Life***		
3B-16N	0.000	0.195	0.085	0.085	2,334,008	No	243,721
3B-16 (BR/SE)	0.000	0.236	0.085	0.085	4,736,203	No	243,721
3B-16P-1	0.000	0.220	0.100	0.100	4,752,085	No	243,721
3B-16 (D/S)	0.000	0.342	0.085	0.085	6,672,638	No	243,721
3B-16P	0.000	0.228	0.100	0.100	6,828,933	No	243,721
===>Grouped by Line:	**MSD32-2-MS23B to MSDT 23B**				***Sorted By:Remaining Life***		
3B-18N	0.000	0.195	0.085	0.085	2,334,008	No	243,721
3B-18P1	0.000	0.228	0.100	0.100	6,828,933	No	243,721
===>Grouped by Line:	**MSD32-3-MS23B to MSDT 23B**				***Sorted By:Remaining Life***		

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line:	**MSD32-3-MS23B to MSDT 23B**				***Sorted By:Remaining Life***		
3B-19N	0.000	0.195	0.085	0.085	2,334,008	No	243,721
3B-19P-1	0.000	0.220	0.100	0.100	4,752,085	No	243,721
3B-19 (BR/SE)	0.000	0.239	0.085	0.085	4,830,430	No	243,721
3B-19P	0.000	0.228	0.100	0.100	6,828,933	No	243,721
3B-19 (D/S)	0.000	0.361	0.085	0.085	7,167,524	No	243,721
===>Grouped by Line:	**MSD32-4-MS23B to MSDT 23B**				***Sorted By:Remaining Life***		
3B-18P	0.000	0.196	0.100	0.100	2,087,503	No	243,721
3B-18 (D/S)	0.000	0.357	0.085	0.085	3,896,081	No	243,721
3B-18 (BR/SE)	0.000	0.222	0.085	0.085	4,296,475	No	243,721
3B-18	0.417	0.362	0.085	0.085	6,845,475	No	243,721
===>Grouped by Line:	**MSD32-5-MS23B to MSDT 23B**				***Sorted By:Remaining Life***		
3B-VALVE-5EX-19B	0.000	0.108	0.091	0.091	141,431	No	243,721
3B-VALVE-5EX-19C	0.000	0.108	0.091	0.091	141,431	No	243,721
3B-21N	0.000	0.137	0.085	0.085	535,495	No	243,721
3B-21	0.000	0.145	0.085	0.085	674,733	No	243,721
3B-17 (BR/SE)	0.000	0.205	0.100	0.100	872,957	No	243,721
3B-21P	0.000	0.179	0.100	0.100	1,322,415	No	243,721
3B-20P	0.000	0.188	0.100	0.100	1,663,895	No	243,721
3B-20P-1	0.000	0.188	0.100	0.100	1,663,895	No	243,721
3B-17P	0.000	0.193	0.100	0.100	1,948,461	No	243,721
3B-17 (D/S)	0.000	0.345	0.100	0.100	2,884,820	No	243,721
3B-20	0.000	0.348	0.085	0.085	2,956,721	Yes	243,721
3B-17	0.437	0.349	0.100	0.100	5,017,015	No	243,721

Note:
[1] Predictions are based on last Tmeas to analysis ending period.

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).DB

Service Life Report

Pass 2 Analysis Include Measured Wear

Report Date/Time: 7/7/2010 9:54:36AM
AnalysisDate/Time:

Run Name: MSR SHELL DRAINS
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 2.699

CHECWORKS SFA Version: 3.0 (build 105)
Duty Factor (Global) : 1.000

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **MSD27-1-MS21A to MSDT 21A**					***Sorted By:Flow Order***		
1A-16N	0.000	0.195	0.085	0.085	2,334,008	No	243,721
1A-16P-1	0.410	0.371	0.100	0.100	10,222,651	Yes	243,721
1A-16 (BR/SE)	0.000	0.209	0.085	0.085	3,888,156	No	243,721
1A-16 (D/S)	0.000	0.361	0.085	0.085	7,167,524	No	243,721
1A-16P	0.000	0.228	0.100	0.100	6,828,933	No	243,721
===>Grouped by Line: **MSD27-2-MS21A to MSDT 21A**					***Sorted By:Flow Order***		
1A-17N	0.000	0.195	0.085	0.085	2,334,008	No	243,721
1A-17P-1	0.000	0.220	0.100	0.100	4,752,085	No	243,721
===>Grouped by Line: **MSD27-3-MS21A to MSDT 21A**					***Sorted By:Flow Order***		
1A-19N	0.000	0.195	0.085	0.085	2,334,008	No	243,721
1A-19P-1	0.408	0.372	0.100	0.100	10,266,856	No	243,721
1A-19 (BR/SE)	0.000	0.240	0.085	0.085	4,861,839	No	243,721
1A-19 (D/S)	0.000	0.364	0.085	0.085	7,245,663	No	243,721
1A-19P	0.000	0.228	0.100	0.100	6,828,933	No	243,721
===>Grouped by Line: **MSD27-4-MS21A to MSDT 21A**					***Sorted By:Flow Order***		
1A-17	0.405	0.353	0.085	0.085	6,648,557	No	243,721
1A-17 (BR/SE)	0.000	0.217	0.085	0.085	4,139,429	No	243,721
1A-17 (D/S)	0.000	0.351	0.085	0.085	3,809,978	No	243,721
===>Grouped by Line: **MSD27-5-MS21A to MSDT 21A**					***Sorted By:Flow Order***		
1A-18 (D/S)	0.000	0.368	0.085	0.085	6,039,883	Yes	243,721
1A-18	0.410	0.363	0.085	0.085	3,114,684	Yes	243,721
1A-18 (BR/SE)	0.290	0.225	0.085	0.085	1,150,020	No	243,721
1A-18P US	0.000	0.193	0.100	0.100	1,948,461	No	243,721
1A-18P DS	0.263	0.220	0.100	0.100	2,490,451	Yes	243,721
1A-20	0.430	0.270	0.085	0.085	1,967,789	Yes	243,721
1A-VALVE-5EX-19L	0.000	0.108	0.091	0.091	141,431	No	243,721

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line:	**MSD27-5-MS21A to MSDT 21A**				***Sorted By:Flow Order***		
1A-20P	0.000	0.222	0.100	0.100	2,316,010	Yes	243,721
1A-VALVE-5EX-19M	0.000	0.108	0.091	0.091	141,431	No	243,721
1A-20P-1	0.000	0.234	0.100	0.100	2,543,624	Yes	243,721
1A-20N	0.000	0.265	0.085	0.085	1,877,092	No	243,721
===>Grouped by Line:	**MSD28-1-MS22A to MSDT 22A**				***Sorted By:Flow Order***		
2A-16N	0.000	0.195	0.085	0.085	2,334,008	No	243,721
2A-16P-1	0.404	0.373	0.100	0.100	10,317,690	No	243,721
2A-16 (BR/SE)	0.000	0.240	0.085	0.085	4,854,186	No	243,721
2A-16 (D/S)	0.000	0.338	0.085	0.085	6,570,758	No	243,721
2A-16P	0.399	0.313	0.100	0.100	10,874,890	No	243,721
===>Grouped by Line:	**MSD28-2-MS22A to MSDT 22A**				***Sorted By:Flow Order***		
2A-17N	0.000	0.195	0.085	0.085	2,334,008	No	243,721
2A-17P1	0.000	0.228	0.100	0.100	6,828,933	No	243,721
===>Grouped by Line:	**MSD28-3-MS22A to MSDT 22A**				***Sorted By:Flow Order***		
2A-19N	0.000	0.195	0.085	0.085	2,334,008	No	243,721
2A-19P-1	0.000	0.220	0.100	0.100	4,752,085	No	243,721
2A-19 (BR/SE)	0.000	0.212	0.085	0.085	3,988,491	No	243,721
2A-19 (D/S)	0.000	0.205	0.085	0.085	3,105,764	No	243,721
2A-19P	0.000	0.228	0.100	0.100	6,828,933	No	243,721
===>Grouped by Line:	**MSD28-4-MS22A to MSDT 22A**				***Sorted By:Flow Order***		
2A-17	0.000	0.205	0.085	0.085	3,105,764	No	243,721
2A-17 (BR/SE)	0.000	0.212	0.085	0.085	3,988,491	No	243,721
2A-17 (D/S)	0.000	0.168	0.085	0.085	1,180,459	No	243,721
2A-17P	0.000	0.210	0.100	0.100	3,231,748	No	243,721
===>Grouped by Line:	**MSD28-5-MS22A to MSDT 22A**				***Sorted By:Flow Order***		
2A-18 (D/S)	0.000	0.195	0.085	0.085	2,334,008	No	243,721
2A-18	0.000	0.150	0.085	0.085	755,258	No	243,721
2A-18 (BR/SE)	0.000	0.108	0.085	0.085	192,043	No	243,721
2A-18P	0.000	0.193	0.100	0.100	1,948,461	No	243,721
2A-20	0.000	0.145	0.085	0.085	674,733	No	243,721
2A-VALVE-5EX-19J	0.000	0.108	0.091	0.091	141,431	No	243,721
2A-20P	0.000	0.215	0.100	0.100	2,183,236	Yes	243,721
2A-VALVE-5EX-19K	0.000	0.108	0.091	0.091	141,431	No	243,721
2A-20P-1	0.000	0.236	0.100	0.100	2,581,560	Yes	243,721
2A-20N	0.000	0.252	0.085	0.085	1,741,472	No	243,721

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line:	**MSD29-1-MS23A to MSDT 23A**				***Sorted By:Flow Order***		
3A-16N	0.000	0.195	0.085	0.085	2,334,008	No	243,721
3A-16P-1	0.000	0.220	0.100	0.100	4,752,085	No	243,721
3A-16 (BR/SE)	0.000	0.212	0.085	0.085	3,988,491	No	243,721
3A-16 (D/S)	0.000	0.348	0.085	0.085	6,828,918	No	243,721
3A-16P	0.000	0.228	0.100	0.100	6,828,933	No	243,721
===>Grouped by Line:	**MSD29-2-MS23A to MSDT 23A**				***Sorted By:Flow Order***		
3A-17N	0.000	0.195	0.085	0.085	2,334,008	No	243,721
3A-17P1	0.000	0.228	0.100	0.100	6,828,933	No	243,721
===>Grouped by Line:	**MSD29-3-MS23A to MSDT 23A**				***Sorted By:Flow Order***		
3A-19N	0.000	0.195	0.085	0.085	2,334,008	No	243,721
3A-19P-1	0.000	0.220	0.100	0.100	4,752,085	No	243,721
3A-19 (BR/SE)	0.000	0.212	0.085	0.085	3,988,491	No	243,721
3A-19 (D/S)	0.000	0.343	0.085	0.085	6,698,685	No	243,721
3A-19P	0.000	0.228	0.100	0.100	6,828,933	No	243,721
===>Grouped by Line:	**MSD29-4-MS23A to MSDT 23A**				***Sorted By:Flow Order***		
3A-17	0.402	0.349	0.100	0.100	6,193,047	No	243,721
3A-17 (BR/SE)	0.000	0.228	0.100	0.100	4,026,848	No	243,721
3A-17 (D/S)	0.000	0.344	0.100	0.100	3,500,233	No	243,721
3A-17P	0.000	0.196	0.100	0.100	2,087,503	No	243,721
===>Grouped by Line:	**MSD29-5-MS23A to MSDT 23A**				***Sorted By:Flow Order***		
3A-18 (D/S)	0.000	0.226	0.085	0.085	2,992,518	No	243,721
3A-18	0.393	0.328	0.085	0.085	2,734,304	No	243,721
3A-18 (BR/SE)	0.000	0.198	0.085	0.085	936,255	No	243,721
3A-18P	0.000	0.193	0.100	0.100	1,948,461	No	243,721
3A-20	0.000	0.145	0.085	0.085	674,733	No	243,721
3A-VALVE-5EX-19G	0.000	0.108	0.091	0.091	141,431	No	243,721
3A-20P	0.000	0.188	0.100	0.100	1,663,895	No	243,721
3A-VALVE-5EX-19H	0.000	0.108	0.091	0.091	141,431	No	243,721
3A-20P-1 US	0.000	0.188	0.100	0.100	1,663,895	No	243,721
3A-20P-1 DS	0.278	0.213	0.100	0.100	2,130,627	Yes	243,721
3A-21	0.305	0.217	0.085	0.085	1,462,657	Yes	243,721
3A-21P	0.292	0.213	0.100	0.100	1,870,081	Yes	243,721
3A-21N	0.000	0.260	0.085	0.085	1,818,036	No	243,721
===>Grouped by Line:	**MSD30-1-MS21B to MSDT 21B**				***Sorted By:Flow Order***		
1B-16N	0.000	0.195	0.085	0.085	2,334,008	No	243,721

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line:	**MSD30-1-MS21B to MSDT 21B**				***Sorted By:Flow Order***		
1B-16P-1	0.435	0.393	0.100	0.100	10,963,094	Yes	243,721
1B-16 (BR/SE)	0.000	0.249	0.085	0.085	5,144,522	No	243,721
1B-16 (D/S)	0.000	0.355	0.085	0.085	7,011,244	No	243,721
1B-16P	0.000	0.228	0.100	0.100	6,828,933	No	243,721
===>Grouped by Line:	**MSD30-2-MS21B to MSDT 21B**				***Sorted By:Flow Order***		
1B-18N	0.000	0.195	0.085	0.085	2,334,008	No	243,721
1B-18P	0.000	0.220	0.100	0.100	4,752,085	No	243,721
===>Grouped by Line:	**MSD30-3-MS21B to MSDT 21B**				***Sorted By:Flow Order***		
1B-19N	0.000	0.195	0.085	0.085	2,334,008	No	243,721
1B-19P-1	0.407	0.371	0.100	0.100	10,232,445	No	243,721
1B-19 (BR/SE)	0.000	0.220	0.085	0.085	4,233,657	No	243,721
1B-19 (D/S)	0.000	0.348	0.085	0.085	6,828,918	No	243,721
1B-19P	0.398	0.356	0.100	0.100	13,072,275	Yes	243,721
===>Grouped by Line:	**MSD30-4-MS21B to MSDT 21B**				***Sorted By:Flow Order***		
1B-18 (BR/SE)	0.000	0.230	0.085	0.085	4,547,748	No	243,721
1B-18	0.396	0.347	0.085	0.085	6,518,478	No	243,721
1B-18 (D/S)	0.000	0.345	0.085	0.085	3,723,875	No	243,721
===>Grouped by Line:	**MSD30-5-MS21B to MSDT 21B**				***Sorted By:Flow Order***		
1B-17	0.415	0.352	0.085	0.085	5,410,308	No	243,721
1B-17 (D/S)	0.000	0.336	0.085	0.085	2,950,533	No	243,721
1B-17 (BR/SE)	0.000	0.211	0.085	0.085	1,044,751	No	243,721
1B-17P	0.000	0.193	0.100	0.100	1,948,461	No	243,721
1B-20	0.000	0.145	0.085	0.085	674,733	No	243,721
1B-VALVE-5EX-19	0.000	0.108	0.091	0.091	141,431	No	243,721
1B-20P	0.000	0.188	0.100	0.100	1,663,895	No	243,721
1B-VALVE-5EX-19F	0.000	0.108	0.091	0.091	141,431	No	243,721
1B-20P-1	0.000	0.188	0.100	0.100	1,663,895	No	243,721
1B-20N	0.000	0.137	0.085	0.085	535,495	No	243,721
===>Grouped by Line:	**MSD31-1-MS22B to MSDT 22B**				***Sorted By:Flow Order***		
2B-16N	0.000	0.195	0.085	0.085	2,334,008	No	243,721
2B-16P-1	0.413	0.376	0.100	0.100	10,400,943	No	243,721
2B-16 (BR/SE)	0.000	0.255	0.085	0.085	5,332,977	No	243,721
2B-16 (D/S)	0.000	0.352	0.085	0.085	6,933,104	No	243,721
2B-16P	0.000	0.228	0.100	0.100	6,828,933	No	243,721

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line:	**MSD31-2-MS22B to MSDT 22B**				***Sorted By:Flow Order***		
2B-18N	0.000	0.195	0.085	0.085	2,334,008	No	243,721
2B-18P1	0.000	0.228	0.100	0.100	6,828,933	No	243,721
===>Grouped by Line:	**MSD31-3-MS22B to MSDT 22B**				***Sorted By:Flow Order***		
2B-19N	0.000	0.195	0.085	0.085	2,334,008	No	243,721
2B-19P-1	0.419	0.369	0.100	0.100	10,118,199	Yes	243,721
2B-19 (BR/SE)	0.000	0.227	0.100	0.100	3,995,439	No	243,721
2B-19 (D/S)	0.000	0.339	0.100	0.100	6,214,625	No	243,721
2B-19P	0.000	0.228	0.100	0.100	6,828,933	No	243,721
===>Grouped by Line:	**MSD31-4-MS22B to MSDT 22B**				***Sorted By:Flow Order***		
2B-18 (BR/SE)	0.000	0.212	0.100	0.100	3,530,409	No	243,721
2B-18	0.367	0.335	0.100	0.100	5,911,596	No	243,721
2B-18 (D/S)	0.000	0.336	0.100	0.100	3,385,430	No	243,721
2B-18P	0.000	0.196	0.100	0.100	2,087,503	No	243,721
===>Grouped by Line:	**MSD31-5-MS22B to MSDT 22B**				***Sorted By:Flow Order***		
2B-17	0.411	0.349	0.100	0.100	5,059,954	No	243,721
2B-17 (D/S)	0.000	0.339	0.100	0.100	2,814,216	No	243,721
2B-17 (BR/SE)	0.000	0.199	0.100	0.100	822,882	No	243,721
2B-17P	0.000	0.193	0.100	0.100	1,948,461	No	243,721
2B-20	0.000	0.145	0.085	0.085	674,733	No	243,721
2B-VALVE-5EX-19D	0.000	0.108	0.091	0.091	141,431	No	243,721
2B-20P	0.000	0.188	0.100	0.100	1,663,895	No	243,721
2B-VALVE-5EX-19E	0.000	0.108	0.091	0.091	141,431	No	243,721
2B-20P-1	0.000	0.188	0.100	0.100	1,663,895	No	243,721
2B-20N	0.000	0.137	0.085	0.085	535,495	No	243,721
===>Grouped by Line:	**MSD32-1-MS23B to MSDT 23B**				***Sorted By:Flow Order***		
3B-16N	0.000	0.195	0.085	0.085	2,334,008	No	243,721
3B-16P-1	0.000	0.220	0.100	0.100	4,752,085	No	243,721
3B-16 (BR/SE)	0.000	0.236	0.085	0.085	4,736,203	No	243,721
3B-16 (D/S)	0.000	0.342	0.085	0.085	6,672,638	No	243,721
3B-16P	0.000	0.228	0.100	0.100	6,828,933	No	243,721
===>Grouped by Line:	**MSD32-2-MS23B to MSDT 23B**				***Sorted By:Flow Order***		
3B-18N	0.000	0.195	0.085	0.085	2,334,008	No	243,721
3B-18P1	0.000	0.228	0.100	0.100	6,828,933	No	243,721
===>Grouped by Line:	**MSD32-3-MS23B to MSDT 23B**				***Sorted By:Flow Order***		

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **MSD32-3-MS23B to MSDT 23B**					***Sorted By:Flow Order***		
3B-19N	0.000	0.195	0.085	0.085	2,334,008	No	243,721
3B-19P-1	0.000	0.220	0.100	0.100	4,752,085	No	243,721
3B-19 (BR/SE)	0.000	0.239	0.085	0.085	4,830,430	No	243,721
3B-19 (D/S)	0.000	0.361	0.085	0.085	7,167,524	No	243,721
3B-19P	0.000	0.228	0.100	0.100	6,828,933	No	243,721
===>Grouped by Line: **MSD32-4-MS23B to MSDT 23B**					***Sorted By:Flow Order***		
3B-18 (BR/SE)	0.000	0.222	0.085	0.085	4,296,475	No	243,721
3B-18	0.417	0.362	0.085	0.085	6,845,475	No	243,721
3B-18 (D/S)	0.000	0.357	0.085	0.085	3,896,081	No	243,721
3B-18P	0.000	0.196	0.100	0.100	2,087,503	No	243,721
===>Grouped by Line: **MSD32-5-MS23B to MSDT 23B**					***Sorted By:Flow Order***		
3B-17	0.437	0.349	0.100	0.100	5,017,015	No	243,721
3B-17 (D/S)	0.000	0.345	0.100	0.100	2,884,820	No	243,721
3B-17 (BR/SE)	0.000	0.205	0.100	0.100	872,957	No	243,721
3B-17P	0.000	0.193	0.100	0.100	1,948,461	No	243,721
3B-20	0.000	0.348	0.085	0.085	2,956,721	Yes	243,721
3B-VALVE-5EX-19B	0.000	0.108	0.091	0.091	141,431	No	243,721
3B-20P	0.000	0.188	0.100	0.100	1,663,895	No	243,721
3B-VALVE-5EX-19C	0.000	0.108	0.091	0.091	141,431	No	243,721
3B-20P-1	0.000	0.188	0.100	0.100	1,663,895	No	243,721
3B-21	0.000	0.145	0.085	0.085	674,733	No	243,721
3B-21P	0.000	0.179	0.100	0.100	1,322,415	No	243,721
3B-21N	0.000	0.137	0.085	0.085	535,495	No	243,721

Note:
[1] Predictions are based on last Tmeas to analysis ending period.

6

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).DB

Wear Report

Pass 2 Analysis Include Measured Wear

Report Date/Time: 07-Jul-2010 9:54 am
AnalysisDate/Time: 07-Jul-2010 9:54 am

Run Name: MSR SHELL DRAINS
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 2.699

CHECWORKS SFA Version: 3.0 (build 105)
Duty Factor (Global) : 1.000

Component Name	Tinit	Total Lifetime Wear (mils) Prd. [1]	Total Lifetime Wear (mils) Meas.	In-Service Component Wear(mils) Prd. [1]	In-Service Component Wear(mils) Meas.	In-Service Component Tmeas, Method, Time (in) [3]	[2]	(hrs) [3]	In-Service Component Thickness (mils) [4] Tp	Tm	Incremental Wear (mils) [5] PRWEAR	Time (hrs) Last Inspected
===>Grouped by Line:	**MSD27-1-MS21A to MSDT 21A**										***Sorted By: Flow Order***	
1A-16P-1	0.410	24.9	32.0	24.9	32.0	0.378	MT	119,088	385.1	378.0	6.5	119,088
===>Grouped by Line:	**MSD27-5-MS21A to MSDT 21A**										***Sorted By: Flow Order***	
1A-18 (D/S)	0.000	54.5	47.0	54.5	47.0	0.369	MT	226,201	195.5	369.0	0.8	226,201
1A-18	0.410	103.9	50.0	103.9	50.0	0.365	MT	226,201	306.1	365.0	1.6	226,201
1A-18P DS	0.263	51.7	38.0	51.7	38.0	0.225	MT	136,608	211.3	225.0	5.2	136,608
1A-20	0.430	107.6	41.0	107.6	41.0	0.273	MT	209,806	322.4	273.0	3.2	209,806
1A-20P	0.000	3.7	36.0	3.7	36.0	0.223	MT	226,201	188.6	223.0	0.9	226,201
1A-20P-1	0.000	61.4	49.0	61.4	49.0	0.235	MT	226,201	188.6	235.0	0.9	226,201
===>Grouped by Line:	**MSD28-5-MS22A to MSDT 22A**										***Sorted By: Flow Order***	
2A-20P	0.000	61.4	84.0	61.4	84.0	0.216	MT	226,201	188.6	216.0	0.9	226,201
2A-20P-1	0.000	61.4	53.0	61.4	53.0	0.237	MT	226,201	188.6	237.0	0.9	226,201
===>Grouped by Line:	**MSD29-5-MS23A to MSDT 23A**										***Sorted By: Flow Order***	
3A-20P-1 DS	0.278	57.1	59.0	57.1	59.0	0.219	MT	136,608	220.9	219.0	5.7	136,608
3A-21	0.305	96.8	76.0	96.8	76.0	0.227		136,608	208.2	227.0	9.7	136,608
3A-21P	0.292	65.2	72.0	65.2	72.0	0.220		136,608	226.8	220.0	6.5	136,608
===>Grouped by Line:	**MSD30-1-MS21B to MSDT 21B**										***Sorted By: Flow Order***	
1B-16P-1	0.435	25.1	35.0	25.1	35.0	0.400	MT	119,088	409.9	400.0	6.6	119,088
===>Grouped by Line:	**MSD30-3-MS21B to MSDT 21B**										***Sorted By: Flow Order***	
1B-19P	0.398	16.4	35.0	16.4	35.0	0.363	MT	106,128	381.6	363.0	6.8	106,128
===>Grouped by Line:	**MSD31-3-MS22B to MSDT 22B**										***Sorted By: Flow Order***	
2B-19P-1	0.419	24.9	43.0	24.9	43.0	0.376	MT	119,088	394.1	376.0	6.5	119,088

Component Name	Tinit	Total Lifetime Wear (mils) Prd. [1]	Total Lifetime Wear (mils) Meas.	In-Service Component Wear(mils) Prd. [1]	In-Service Component Wear(mils) Meas.	In-Service Component Tmeas, Method, Time (in) [3]	[2]	(hrs) [3]	In-Service Component Thickness (mils) [4] Tp	Tm	Incremental Wear (mils) [5] PRWEAR	Time (hrs) Last Inspected
===>Grouped by Line:	**MSD32-5-MS23B to MSDT 23B**											***Sorted By: Flow Order***
3B-20	0.000	100.3	97.0	100.3	97.0	0.352	GW	193,769	149.7	352.0	4.4	193,769

Notes:
[1] Predictions are for the time of last inspection (last known meas. wear).
[2] GW = Tmeas is minimum thickness from Band, Blanket or Area Method of greatest wear.
MT = Tmeas is component minimum thickness.
PW = Tmeas is Tinit - predicted wear.
US = Tmeas is user specified.
[3] If no Tmeas has been determined from measured data, then Tmeas = Tinit and Time = current component installation time.
Tmeas is used to determine Predicted Thickness and Component Predicted Time to Tcrit.
[4] These two values are used for thickness plot.
Tp = Predicted thickness at Tmeas.
Tm = Last measured thickness (Tmeas).
[5] PRWEAR = Incremental wear from last Tmeas time to analysis ending period.

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).DB

Wear Rate Report

Pass 2 Analysis Include Measured Wear

Report Date/Time: 7/7/2010 9:54:36AM
AnalysisDate/Time: 6/11/2010 11:38:55AM

CHECWORKS SFA Version: 3.0 (build 105)
Duty Factor (Global) : 1.000

Run Name: PD - MPS TO SEP TNK
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 1.000

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***PD-MPS A to Separating Tk A***								***Sorted By: Average Wear Rate***		
TEMP07	31	17.401	10.285	387.9	17.603	92.2	20.000	6.954	0.000	324.64	HBD
===>Grouped by Line:	***PD-MPS B to Separating Tk A***								***Sorted By: Average Wear Rate***		
TEMP08	31	17.401	10.285	387.9	17.603	92.2	20.000	6.954	0.000	324.64	HBD
===>Grouped by Line:	***PD-MPS C to Separating Tk B***								***Sorted By: Average Wear Rate***		
TEMP09	31	17.401	10.285	387.9	17.603	92.2	20.000	6.954	0.000	324.64	HBD
===>Grouped by Line:	***PD-MPS D to Separating Tk B***								***Sorted By: Average Wear Rate***		
TEMP10	31	17.401	10.285	387.9	17.603	92.2	20.000	6.954	0.000	324.64	HBD

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).DB

Wear Rate Report

Pass 2 Analysis Include Measured Wear

Report Date/Time: 7/7/2010 9:54:36AM
AnalysisDate/Time: 6/11/2010 11:38:55AM

CHECWORKS SFA Version: 3.0 (build 105)
Duty Factor (Global) : 1.000

Run Name: PD - MPS TO SEP TNK
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 1.000

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***PD-MPS A to Separating Tk A***									***Sorted By: Flow Order***	
TEMP07	31	17.401	10.285	387.9	17.603	92.2	20.000	6.954	0.000	324.64	HBD
===>Grouped by Line:	***PD-MPS B to Separating Tk A***									***Sorted By: Flow Order***	
TEMP08	31	17.401	10.285	387.9	17.603	92.2	20.000	6.954	0.000	324.64	HBD
===>Grouped by Line:	***PD-MPS C to Separating Tk B***									***Sorted By: Flow Order***	
TEMP09	31	17.401	10.285	387.9	17.603	92.2	20.000	6.954	0.000	324.64	HBD
===>Grouped by Line:	***PD-MPS D to Separating Tk B***									***Sorted By: Flow Order***	
TEMP10	31	17.401	10.285	387.9	17.603	92.2	20.000	6.954	0.000	324.64	HBD

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).DB

Service Life Report

Pass 2 Analysis Include Measured Wear

Report Date/Time: 7/7/2010 9:54:36AM
AnalysisDate/Time:

Run Name: PD - MPS TO SEP TNK
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 1.000

CHECWORKS SFA Version: 3.0 (build 105)
Duty Factor (Global) :1.000

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **PD-MPS A to Separating Tk A**					***Sorted By:Remaining Life***		
TEMP07	0.000	-0.109	0.166	0.166	-162,782	No	243,721
===>Grouped by Line: **PD-MPS B to Separating Tk A**					***Sorted By:Remaining Life***		
TEMP08	0.000	-0.109	0.166	0.166	-162,782	No	243,721
===>Grouped by Line: **PD-MPS C to Separating Tk B**					***Sorted By:Remaining Life***		
TEMP09	0.000	-0.109	0.166	0.166	-162,782	No	243,721
===>Grouped by Line: **PD-MPS D to Separating Tk B**					***Sorted By:Remaining Life***		
TEMP10	0.000	-0.109	0.166	0.166	-162,782	No	243,721

Note:
[1] Predictions are based on last Tmeas to analysis ending period.

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).DB

Service Life Report

Pass 2 Analysis Include Measured Wear

Report Date/Time: 7/7/2010 9:54:36AM
AnalysisDate/Time:

Run Name: PD - MPS TO SEP TNK
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 1.000

CHECWORKS SFA Version: 3.0 (build 105)
Duty Factor (Global) : 1.000

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **PD-MPS A to Separating Tk A**					***Sorted By:Flow Order***		
TEMP07	0.000	-0.109	0.166	0.166	-162,782	No	243,721
===>Grouped by Line: **PD-MPS B to Separating Tk A**					***Sorted By:Flow Order***		
TEMP08	0.000	-0.109	0.166	0.166	-162,782	No	243,721
===>Grouped by Line: **PD-MPS C to Separating Tk B**					***Sorted By:Flow Order***		
TEMP09	0.000	-0.109	0.166	0.166	-162,782	No	243,721
===>Grouped by Line: **PD-MPS D to Separating Tk B**					***Sorted By:Flow Order***		
TEMP10	0.000	-0.109	0.166	0.166	-162,782	No	243,721

Note:
[1] Predictions are based on last Tmeas to analysis ending period.

1

Wear Report

Company:
Plant:
Unit:
DB Name: IPEC2(v4).DB

Report Date/Time: 07-Jul-2010 9:54 am
AnalysisDate/Time: 07-Jul-2010 9:54 am

Run Name:
Ending Period:
Total Plant Operating Hours:
WRA Data Option:
Line Correction Factor:

CHECWORKS SFA Version:
Duty Factor (Global) :

Component Name	Tinit	Total Lifetime Wear (mils) Prd. [1]	Total Lifetime Wear (mils) Meas.	In-Service Component Wear(mils) Prd. [1]	In-Service Component Wear(mils) Meas.	In-Service Component Tmeas, Method, Time (in) [3]	[2]	(hrs) [3]	In-Service Component Thickness (mils) [4] Tp	Tm	Incremental Wear (mils) [5] PRWEAR	Time (hrs) Last Inspected

===>Grouped by Line: ***Sorted By: Flow Order***

Notes:
[1] Predictions are for the time of last inspection (last known meas. wear).
[2] GW = Tmeas is minimum thickness from Band, Blanket or Area Method of greatest wear.
MT = Tmeas is component minimum thickness.
PW = Tmeas is Tinit - predicted wear.
US = Tmeas is user specified.
[3] If no Tmeas has been determined from measured data, then Tmeas = Tinit and Time = current component installation time.
Tmeas is used to determine Predicted Thickness and Component Predicted Time to Tcrit.
[4] These two values are used for thickness plot.
Tp = Predicted thickness at Tmeas.
Tm = Last measured thickness (Tmeas).
[5] PRWEAR = Incremental wear from last Tmeas time to analysis ending period.

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).DB

Wear Rate Report

Pass 2 Analysis Include Measured Wear

Report Date/Time: 7/7/2010 9:54:36AM
AnalysisDate/Time: 6/11/2010 11:39:09AM

CHECWORKS SFA Version: 3.0 (build 105)
Duty Factor (Global) : 1.000

Run Name: RHTR DRN TK 21A USCV
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 1.033

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***MSD45A-1-RHDT21A to CV***								***Sorted By: Average Wear Rate***		
MS-1A11N	31	5.054	1.710	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A24FE	6	5.054	1.710	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A11	2	3.740	1.265	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A12	2	3.740	1.265	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A28	2	3.740	1.265	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A13	2	3.740	1.265	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A29	2	3.740	1.265	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A14	2	3.740	1.265	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A30	2	3.740	1.265	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A15	2	3.740	1.265	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A16	2	3.740	1.265	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A17	4	3.740	1.265	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A20	3	3.538	1.197	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A30R-1 (D/S)	17	3.391	1.184	495.9	15.767	3.3	4.500	6.403	0.000	60.39	HBD
MS-1A26	1	3.336	1.128	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A27	1	3.336	1.128	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A14A	1	3.336	1.128	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A18	1	3.336	1.128	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A19	1	3.336	1.128	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A21	1	3.336	1.128	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A17P US	54	3.235	1.094	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A17P DS	54	3.235	1.094	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A25 (D/S)	15	3.033	1.026	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A25	15	3.033	1.026	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A21R	18	2.830	0.957	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A11P-1	61	2.729	0.923	495.9	10.806	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A11P US	52	2.527	0.855	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A11P DS	52	2.527	0.855	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***MSD45A-1-RHDT21A to CV***								***Sorted By: Average Wear Rate***		
MS-1A12P US	52	2.527	0.855	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A12P DS	52	2.527	0.855	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A28P US	52	2.527	0.855	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A28P DS	52	2.527	0.855	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A13P US	52	2.527	0.855	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A29P US	52	2.527	0.855	495.9	10.806	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A13P DS	52	2.527	0.855	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A29P DS	52	2.527	0.855	495.9	10.806	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A14P US	52	2.527	0.855	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A14AP	52	2.527	0.855	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A30P-1	52	2.527	0.855	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A30R-1	17	2.527	0.855	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A14P DS	52	2.527	0.855	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A15P US	52	2.527	0.855	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A15P DS	52	2.527	0.855	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A16P	52	2.527	0.855	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A20P	53	2.527	0.855	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A26P	51	2.224	0.752	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A27P	51	2.224	0.752	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A18P	51	2.224	0.752	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A21P US	51	2.224	0.752	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A21P DS	51	2.224	0.752	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A22	2	2.221	0.751	495.9	3.910	3.3	8.625	6.403	0.000	60.39	HBD
MS-1A23	2	2.221	0.751	495.9	3.910	3.3	8.625	6.403	0.000	60.39	HBD
MS-1A24	4	2.221	0.751	495.9	3.910	3.3	8.625	6.403	0.000	60.39	HBD
MS-1A25P	65	2.022	0.684	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A24P-1	67	2.022	0.684	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A24P DS	54	1.920	0.650	495.9	3.910	3.3	8.625	6.403	0.000	60.39	HBD
MS-1A24R (D/S)	17	1.820	0.615	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A21R (D/S)	18	1.800	0.609	495.9	3.910	3.3	8.625	6.403	0.000	60.39	HBD
MS-1A21P-1	68	1.500	0.508	495.9	3.910	3.3	8.625	6.403	0.000	60.39	HBD
MS-1A22P US	52	1.500	0.508	495.9	3.910	3.3	8.625	6.403	0.000	60.39	HBD
MS-1A22P DS	52	1.500	0.508	495.9	3.910	3.3	8.625	6.403	0.000	60.39	HBD
MS-1A22P-1	52	1.500	0.508	495.9	3.910	3.3	8.625	6.403	0.000	60.39	HBD
MS-1A24R	17	1.500	0.508	495.9	3.910	3.3	8.625	6.403	0.000	60.39	HBD
MS-1A25P-1	56	1.029	0.348	495.9	7.053	3.3	6.625	6.403	0.000	60.39	HBD

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).DB

Wear Rate Report

Pass 2 Analysis Include Measured Wear

Report Date/Time: 7/7/2010 9:54:36AM
AnalysisDate/Time: 6/11/2010 11:39:09AM

CHECWORKS SFA Version: 3.0 (build 105)
Duty Factor (Global) : 1.000

Run Name: RHTR DRN TK 21A USCV
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 1.033

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***MSD45A-1-RHDT21A to CV***									***Sorted By: Flow Order***	
MS-1A11N	31	5.054	1.710	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A11P-1	61	2.729	0.923	495.9	10.806	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A11	2	3.740	1.265	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A11P US	52	2.527	0.855	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A11P DS	52	2.527	0.855	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A12	2	3.740	1.265	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A12P US	52	2.527	0.855	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A12P DS	52	2.527	0.855	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A13	2	3.740	1.265	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A13P US	52	2.527	0.855	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A13P DS	52	2.527	0.855	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A14	2	3.740	1.265	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A14P US	52	2.527	0.855	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A14AP	52	2.527	0.855	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A14P DS	52	2.527	0.855	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A14A	1	3.336	1.128	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A15	2	3.740	1.265	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A15P US	52	2.527	0.855	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A15P DS	52	2.527	0.855	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A16	2	3.740	1.265	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A16P	52	2.527	0.855	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A17	4	3.740	1.265	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A17P US	54	3.235	1.094	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A17P DS	54	3.235	1.094	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A18	1	3.336	1.128	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A18P	51	2.224	0.752	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A19	1	3.336	1.128	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***MSD45A-1-RHDT21A to CV***									***Sorted By: Flow Order***	
MS-1A20	3	3.538	1.197	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A20P	53	2.527	0.855	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A21	1	3.336	1.128	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A21P US	51	2.224	0.752	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A21P DS	51	2.224	0.752	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A21R	18	2.830	0.957	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A21R (D/S)	18	1.800	0.609	495.9	3.910	3.3	8.625	6.403	0.000	60.39	HBD
MS-1A21P-1	68	1.500	0.508	495.9	3.910	3.3	8.625	6.403	0.000	60.39	HBD
MS-1A22	2	2.221	0.751	495.9	3.910	3.3	8.625	6.403	0.000	60.39	HBD
MS-1A22P US	52	1.500	0.508	495.9	3.910	3.3	8.625	6.403	0.000	60.39	HBD
MS-1A22P DS	52	1.500	0.508	495.9	3.910	3.3	8.625	6.403	0.000	60.39	HBD
MS-1A22P-1	52	1.500	0.508	495.9	3.910	3.3	8.625	6.403	0.000	60.39	HBD
MS-1A23	2	2.221	0.751	495.9	3.910	3.3	8.625	6.403	0.000	60.39	HBD
MS-1A24	4	2.221	0.751	495.9	3.910	3.3	8.625	6.403	0.000	60.39	HBD
MS-1A24P DS	54	1.920	0.650	495.9	3.910	3.3	8.625	6.403	0.000	60.39	HBD
MS-1A24R	17	1.500	0.508	495.9	3.910	3.3	8.625	6.403	0.000	60.39	HBD
MS-1A24R (D/S)	17	1.820	0.615	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A24P-1	67	2.022	0.684	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A24FE	6	5.054	1.710	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A25P-1	56	1.029	0.348	495.9	7.053	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A25	15	3.033	1.026	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A25 (D/S)	15	3.033	1.026	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A25P	65	2.022	0.684	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A26	1	3.336	1.128	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A26P	51	2.224	0.752	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A27	1	3.336	1.128	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A27P	51	2.224	0.752	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A28	2	3.740	1.265	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A28P US	52	2.527	0.855	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A28P DS	52	2.527	0.855	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A29	2	3.740	1.265	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A29P US	52	2.527	0.855	495.9	10.806	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A29P DS	52	2.527	0.855	495.9	10.806	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A30	2	3.740	1.265	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A30P-1	52	2.527	0.855	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A30R-1	17	2.527	0.855	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***MSD45A-1-RHDT21A to CV***									***Sorted By: Flow Order***	
MS-1A30R-1 (D/S)	17	3.391	1.184	495.9	15.767	3.3	4.500	6.403	0.000	60.39	HBD

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).DB

Service Life Report

Pass 2 Analysis Include Measured Wear

Report Date/Time: 7/7/2010 9:54:36AM
AnalysisDate/Time:

Run Name: RHTR DRN TK 21A USCV
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 1.033

CHECWORKS SFA Version: 3.0 (build 105)
Duty Factor (Global) :1.000

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **MSD45A-1-RHDT21A to CV**					***Sorted By:Remaining Life***		
MS-1A11N	0.000	0.291	0.233	0.233	299,790	No	243,721
MS-1A24FE	0.000	0.337	0.233	0.233	535,487	No	243,721
MS-1A30R-1	0.000	0.295	0.233	0.233	633,524	No	243,721
MS-1A15	0.000	0.348	0.233	0.233	796,766	Yes	243,721
MS-1A14A	0.000	0.340	0.233	0.233	833,178	Yes	243,721
MS-1A12	0.000	0.358	0.233	0.233	866,008	Yes	243,721
MS-1A30	0.000	0.370	0.233	0.233	949,097	Yes	243,721
MS-1A17	0.000	0.370	0.233	0.233	949,097	Yes	243,721
MS-1A30R-1 (D/S)	0.000	0.288	0.158	0.158	956,762	No	243,721
MS-1A11	0.000	0.376	0.233	0.233	990,642	Yes	243,721
MS-1A28	0.000	0.377	0.233	0.233	997,566	Yes	243,721
MS-1A14	0.000	0.377	0.233	0.233	997,566	Yes	243,721
MS-1A19	0.000	0.363	0.233	0.233	1,011,736	Yes	243,721
MS-1A16	0.000	0.381	0.233	0.233	1,025,262	Yes	243,721
MS-1A21	0.000	0.375	0.233	0.233	1,104,897	Yes	243,721
MS-1A29	0.000	0.393	0.233	0.233	1,112,190	Yes	243,721
MS-1A13	0.000	0.394	0.233	0.233	1,115,276	Yes	243,721
MS-1A17P US	0.000	0.374	0.233	0.233	1,129,917	Yes	243,721
MS-1A20	0.000	0.389	0.233	0.233	1,139,662	Yes	243,721
MS-1A17P DS	0.000	0.378	0.233	0.233	1,161,942	Yes	243,721
MS-1A27	0.000	0.387	0.233	0.233	1,198,058	Yes	243,721
MS-1A18	0.000	0.393	0.233	0.233	1,244,638	Yes	243,721
MS-1A26	0.000	0.401	0.233	0.233	1,306,745	Yes	243,721
MS-1A11P US	0.000	0.361	0.233	0.233	1,309,872	Yes	243,721
MS-1A11P DS	0.000	0.365	0.233	0.233	1,350,862	Yes	243,721
MS-1A12P DS	0.000	0.374	0.233	0.233	1,441,668	Yes	243,721
MS-1A28P US	0.000	0.374	0.233	0.233	1,443,091	Yes	243,721
MS-1A16P	0.000	0.375	0.233	0.233	1,459,064	Yes	243,721
MS-1A12P US	0.000	0.377	0.233	0.233	1,472,411	Yes	243,721
MS-1A11P-1	0.000	0.388	0.233	0.233	1,472,595	Yes	243,721

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **MSD45A-1-RHDT21A to CV**					***Sorted By:Remaining Life***		
MS-1A13P DS	0.000	0.379	0.233	0.233	1,494,330	Yes	243,721
MS-1A13P US	0.000	0.384	0.233	0.233	1,545,568	Yes	243,721
MS-1A14P US	0.000	0.387	0.233	0.233	1,576,311	Yes	243,721
MS-1A21P US	0.000	0.369	0.233	0.233	1,586,746	Yes	243,721
MS-1A30P-1	0.000	0.389	0.233	0.233	1,596,807	Yes	243,721
MS-1A14P DS	0.000	0.389	0.233	0.233	1,596,807	Yes	243,721
MS-1A26P	0.000	0.370	0.233	0.233	1,598,391	No	243,721
MS-1A14AP	0.000	0.390	0.233	0.233	1,607,054	Yes	243,721
MS-1A20P	0.000	0.391	0.233	0.233	1,617,302	Yes	243,721
MS-1A15P US	0.000	0.395	0.233	0.233	1,658,293	Yes	243,721
MS-1A15P DS	0.000	0.398	0.233	0.233	1,689,036	Yes	243,721
MS-1A28P DS	0.000	0.400	0.233	0.233	1,708,108	Yes	243,721
MS-1A23	0.000	0.450	0.303	0.303	1,714,279	Yes	243,721
MS-1A29P US	0.000	0.402	0.233	0.233	1,728,603	Yes	243,721
MS-1A21P DS	0.000	0.382	0.233	0.233	1,738,132	Yes	243,721
MS-1A18P	0.000	0.382	0.233	0.233	1,738,132	Yes	243,721
MS-1A29P DS	0.000	0.406	0.233	0.233	1,771,018	Yes	243,721
MS-1A27P	0.000	0.387	0.233	0.233	1,796,357	Yes	243,721
MS-1A24	0.000	0.458	0.303	0.303	1,807,582	Yes	243,721
MS-1A24P-1	0.000	0.383	0.233	0.233	1,919,951	Yes	243,721
MS-1A21R	0.000	0.444	0.233	0.233	1,934,102	No	243,721
MS-1A25P	0.000	0.387	0.233	0.233	1,971,189	Yes	243,721
MS-1A25	0.000	0.469	0.233	0.233	2,016,763	No	243,721
MS-1A25 (D/S)	0.000	0.473	0.233	0.233	2,050,922	No	243,721
MS-1A22	0.000	0.480	0.303	0.303	2,064,165	Yes	243,721
MS-1A24P DS	0.000	0.457	0.303	0.303	2,068,601	Yes	243,721
MS-1A21R (D/S)	0.000	0.458	0.303	0.303	2,220,384	No	243,721
MS-1A22P US	0.000	0.459	0.303	0.303	2,688,831	Yes	243,721
MS-1A22P DS	0.000	0.460	0.303	0.303	2,706,092	Yes	243,721
MS-1A21P-1	0.000	0.466	0.303	0.303	2,809,658	Yes	243,721
MS-1A22P-1	0.000	0.468	0.303	0.303	2,844,180	Yes	243,721
MS-1A24R	0.000	0.479	0.303	0.303	3,034,051	No	243,721
MS-1A24R (D/S)	0.000	0.476	0.233	0.233	3,465,834	No	243,721
MS-1A25P-1	0.000	0.396	0.233	0.233	4,097,215	Yes	243,721

Note:
[1] Predictions are based on last Tmeas to analysis ending period.

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).DB

Service Life Report

Pass 2 Analysis Include Measured Wear

Report Date/Time: 7/7/2010 9:54:36AM
AnalysisDate/Time:

Run Name: RHTR DRN TK 21A USCV
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 1.033

CHECWORKS SFA Version: 3.0 (build 105)
Duty Factor (Global) : 1.000

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **MSD45A-1-RHDT21A to CV**					***Sorted By:Flow Order***		
MS-1A11N	0.000	0.291	0.233	0.233	299,790	No	243,721
MS-1A11P-1	0.000	0.388	0.233	0.233	1,472,595	Yes	243,721
MS-1A11	0.000	0.376	0.233	0.233	990,642	Yes	243,721
MS-1A11P US	0.000	0.361	0.233	0.233	1,309,872	Yes	243,721
MS-1A11P DS	0.000	0.365	0.233	0.233	1,350,862	Yes	243,721
MS-1A12	0.000	0.358	0.233	0.233	866,008	Yes	243,721
MS-1A12P US	0.000	0.377	0.233	0.233	1,472,411	Yes	243,721
MS-1A12P DS	0.000	0.374	0.233	0.233	1,441,668	Yes	243,721
MS-1A13	0.000	0.394	0.233	0.233	1,115,276	Yes	243,721
MS-1A13P US	0.000	0.384	0.233	0.233	1,545,568	Yes	243,721
MS-1A13P DS	0.000	0.379	0.233	0.233	1,494,330	Yes	243,721
MS-1A14	0.000	0.377	0.233	0.233	997,566	Yes	243,721
MS-1A14P US	0.000	0.387	0.233	0.233	1,576,311	Yes	243,721
MS-1A14AP	0.000	0.390	0.233	0.233	1,607,054	Yes	243,721
MS-1A14P DS	0.000	0.389	0.233	0.233	1,596,807	Yes	243,721
MS-1A14A	0.000	0.340	0.233	0.233	833,178	Yes	243,721
MS-1A15	0.000	0.348	0.233	0.233	796,766	Yes	243,721
MS-1A15P US	0.000	0.395	0.233	0.233	1,658,293	Yes	243,721
MS-1A15P DS	0.000	0.398	0.233	0.233	1,689,036	Yes	243,721
MS-1A16	0.000	0.381	0.233	0.233	1,025,262	Yes	243,721
MS-1A16P	0.000	0.375	0.233	0.233	1,459,064	Yes	243,721
MS-1A17	0.000	0.370	0.233	0.233	949,097	Yes	243,721
MS-1A17P US	0.000	0.374	0.233	0.233	1,129,917	Yes	243,721
MS-1A17P DS	0.000	0.378	0.233	0.233	1,161,942	Yes	243,721
MS-1A18	0.000	0.393	0.233	0.233	1,244,638	Yes	243,721
MS-1A18P	0.000	0.382	0.233	0.233	1,738,132	Yes	243,721
MS-1A19	0.000	0.363	0.233	0.233	1,011,736	Yes	243,721
MS-1A20	0.000	0.389	0.233	0.233	1,139,662	Yes	243,721
MS-1A20P	0.000	0.391	0.233	0.233	1,617,302	Yes	243,721
MS-1A21	0.000	0.375	0.233	0.233	1,104,897	Yes	243,721

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **MSD45A-1-RHDT21A to CV**					***Sorted By:Flow Order***		
MS-1A21P US	0.000	0.369	0.233	0.233	1,586,746	Yes	243,721
MS-1A21P DS	0.000	0.382	0.233	0.233	1,738,132	Yes	243,721
MS-1A21R	0.000	0.444	0.233	0.233	1,934,102	No	243,721
MS-1A21R (D/S)	0.000	0.458	0.303	0.303	2,220,384	No	243,721
MS-1A21P-1	0.000	0.466	0.303	0.303	2,809,658	Yes	243,721
MS-1A22	0.000	0.480	0.303	0.303	2,064,165	Yes	243,721
MS-1A22P US	0.000	0.459	0.303	0.303	2,688,831	Yes	243,721
MS-1A22P DS	0.000	0.460	0.303	0.303	2,706,092	Yes	243,721
MS-1A22P-1	0.000	0.468	0.303	0.303	2,844,180	Yes	243,721
MS-1A23	0.000	0.450	0.303	0.303	1,714,279	Yes	243,721
MS-1A24	0.000	0.458	0.303	0.303	1,807,582	Yes	243,721
MS-1A24P DS	0.000	0.457	0.303	0.303	2,068,601	Yes	243,721
MS-1A24R	0.000	0.479	0.303	0.303	3,034,051	No	243,721
MS-1A24R (D/S)	0.000	0.476	0.233	0.233	3,465,834	No	243,721
MS-1A24P-1	0.000	0.383	0.233	0.233	1,919,951	Yes	243,721
MS-1A24FE	0.000	0.337	0.233	0.233	535,487	No	243,721
MS-1A25P-1	0.000	0.396	0.233	0.233	4,097,215	Yes	243,721
MS-1A25	0.000	0.469	0.233	0.233	2,016,763	No	243,721
MS-1A25 (D/S)	0.000	0.473	0.233	0.233	2,050,922	No	243,721
MS-1A25P	0.000	0.387	0.233	0.233	1,971,189	Yes	243,721
MS-1A26	0.000	0.401	0.233	0.233	1,306,745	Yes	243,721
MS-1A26P	0.000	0.370	0.233	0.233	1,598,391	No	243,721
MS-1A27	0.000	0.387	0.233	0.233	1,198,058	Yes	243,721
MS-1A27P	0.000	0.387	0.233	0.233	1,796,357	Yes	243,721
MS-1A28	0.000	0.377	0.233	0.233	997,566	Yes	243,721
MS-1A28P US	0.000	0.374	0.233	0.233	1,443,091	Yes	243,721
MS-1A28P DS	0.000	0.400	0.233	0.233	1,708,108	Yes	243,721
MS-1A29	0.000	0.393	0.233	0.233	1,112,190	Yes	243,721
MS-1A29P US	0.000	0.402	0.233	0.233	1,728,603	Yes	243,721
MS-1A29P DS	0.000	0.406	0.233	0.233	1,771,018	Yes	243,721
MS-1A30	0.000	0.370	0.233	0.233	949,097	Yes	243,721
MS-1A30P-1	0.000	0.389	0.233	0.233	1,596,807	Yes	243,721
MS-1A30R-1	0.000	0.295	0.233	0.233	633,524	No	243,721
MS-1A30R-1 (D/S)	0.000	0.288	0.158	0.158	956,762	No	243,721

Note:
[1] Predictions are based on last Tmeas to analysis ending period.

2

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).DB

Wear Report

Pass 2 Analysis Include Measured Wear

Report Date/Time: 07-Jul-2010 9:54 am
AnalysisDate/Time: 07-Jul-2010 9:54 am

Run Name: RHTR DRN TK 21A USCV
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 1.033

CHECWORKS SFA Version: 3.0 (build 105)
Duty Factor (Global) : 1.000

Component Name	Tinit	Total Lifetime Wear (mils) Prd. [1]	Total Lifetime Wear (mils) Meas.	In-Service Component Wear(mils) Prd. [1]	In-Service Component Wear(mils) Meas.	In-Service Component Tmeas, Method, Time (in) [3]	[2]	(hrs) [3]	In-Service Component Thickness (mils) [4] Tp	Tm	Incremental Wear (mils) [5] PRWEAR	Time (hrs) Last Inspected
===>Grouped by Line:	**MSD45A-1-RHDT21A to CV**											***Sorted By: Flow Order***
MS-1A11P-1	0.000	54.0	48.0	54.0	48.0	0.410	MT	119,088	378.0	410.0	21.9	119,088
MS-1A11	0.000	74.0	56.0	74.0	56.0	0.406	MT	119,088	358.0	406.0	30.1	119,088
MS-1A11P US	0.000	50.0	68.0	50.0	68.0	0.381	MT	119,088	382.0	381.0	20.3	119,088
MS-1A11P DS	0.000	50.0	77.0	50.0	77.0	0.385	MT	119,088	382.0	385.0	20.3	119,088
MS-1A12	0.000	74.0	82.0	74.0	82.0	0.388	MT	119,088	358.0	388.0	30.1	119,088
MS-1A12P US	0.000	61.9	80.0	61.9	80.0	0.385	MT	165,113	370.1	385.0	8.5	165,113
MS-1A12P DS	0.000	61.9	66.0	61.9	66.0	0.382	MT	165,113	370.1	382.0	8.5	165,113
MS-1A13	0.000	74.0	58.0	74.0	58.0	0.424	MT	119,088	358.0	424.0	30.1	119,088
MS-1A13P US	0.000	50.0	65.0	50.0	65.0	0.404	MT	119,088	382.0	404.0	20.3	119,088
MS-1A13P DS	0.000	50.0	54.0	50.0	54.0	0.399	MT	119,088	382.0	399.0	20.3	119,088
MS-1A14	0.000	74.0	58.0	74.0	58.0	0.407	MT	119,088	358.0	407.0	30.1	119,088
MS-1A14P US	0.000	50.0	36.0	50.0	36.0	0.407	MT	119,088	382.0	407.0	20.3	119,088
MS-1A14AP	0.000	50.0	27.0	50.0	27.0	0.410	MT	119,088	382.0	410.0	20.3	119,088
MS-1A14P DS	0.000	50.0	31.0	50.0	31.0	0.409	MT	119,088	382.0	409.0	20.3	119,088
MS-1A14A	0.000	66.0	63.0	66.0	63.0	0.367	MT	119,088	366.0	367.0	26.8	119,088
MS-1A15	0.000	74.0	81.0	74.0	81.0	0.378	MT	119,088	358.0	378.0	30.1	119,088
MS-1A15P US	0.000	50.0	42.0	50.0	42.0	0.415	MT	119,088	382.0	415.0	20.3	119,088
MS-1A15P DS	0.000	50.0	34.0	50.0	34.0	0.418	MT	119,088	382.0	418.0	20.3	119,088
MS-1A16	0.000	74.0	38.0	74.0	38.0	0.411	MT	119,088	358.0	411.0	30.1	119,088
MS-1A16P	0.000	44.6	63.0	44.6	63.0	0.401	MT	106,128	387.4	401.0	25.8	106,128
MS-1A17	0.000	74.0	60.0	74.0	60.0	0.400	MT	119,088	358.0	400.0	30.1	119,088
MS-1A17P US	0.000	64.0	51.0	64.0	51.0	0.400	MT	119,088	368.0	400.0	26.0	119,088
MS-1A17P DS	0.000	64.0	51.0	64.0	51.0	0.404	MT	119,088	368.0	404.0	26.0	119,088
MS-1A18	0.000	66.0	35.0	66.0	35.0	0.420	MT	119,088	366.0	420.0	26.8	119,088
MS-1A18P	0.000	44.0	74.0	44.0	74.0	0.400	MT	119,088	388.0	400.0	17.9	119,088
MS-1A19	0.000	66.0	44.0	66.0	44.0	0.390	MT	119,088	366.0	390.0	26.8	119,088
MS-1A20	0.000	70.0	32.0	70.0	32.0	0.417	MT	119,088	362.0	417.0	28.4	119,088
MS-1A20P	0.000	50.0	48.0	50.0	48.0	0.411	MT	119,088	382.0	411.0	20.3	119,088

Component Name	Tinit	Total Lifetime Wear (mils) Prd. [1]	Meas.	In-Service Component Wear(mils) Prd. [1]	Meas.	In-Service Component Tmeas, Method, Time (in) [3]	[2]	(hrs) [3]	In-Service Component Thickness (mils) [4] Tp	Tm	Incremental Wear (mils) [5] PRWEAR	Time (hrs) Last Inspected
===>Grouped by Line:	**MSD45A-1-RHDT21A to CV**											***Sorted By: Flow Order***
MS-1A21	0.000	66.0	60.0	66.0	60.0	0.402	MT	119,088	366.0	402.0	26.8	119,088
MS-1A21P US	0.000	44.0	98.0	44.0	98.0	0.387	MT	119,088	388.0	387.0	17.9	119,088
MS-1A21P DS	0.000	44.0	72.0	44.0	72.0	0.400	MT	119,088	388.0	400.0	17.9	119,088
MS-1A21P-1	0.000	29.7	65.0	29.7	65.0	0.478	MT	119,088	470.3	478.0	12.1	119,088
MS-1A22	0.000	43.9	49.0	43.9	49.0	0.498	MT	119,088	456.1	498.0	17.8	119,088
MS-1A22P US	0.000	29.7	56.0	29.7	56.0	0.471	MT	119,088	470.3	471.0	12.1	119,088
MS-1A22P DS	0.000	29.7	70.0	29.7	70.0	0.472	MT	119,088	470.3	472.0	12.1	119,088
MS-1A22P-1	0.000	29.7	29.0	29.7	29.0	0.480	MT	119,088	470.3	480.0	12.1	119,088
MS-1A23	0.000	43.9	46.0	43.9	46.0	0.468	MT	119,088	456.1	468.0	17.8	119,088
MS-1A24	0.000	43.9	64.0	43.9	64.0	0.476	MT	119,088	456.1	476.0	17.8	119,088
MS-1A24P DS	0.000	38.0	48.0	38.0	48.0	0.472	MT	119,088	462.0	472.0	15.4	119,088
MS-1A24P-1	0.000	40.0	76.0	40.0	76.0	0.399	MT	119,088	392.0	399.0	16.2	119,088
MS-1A25P-1	0.000	20.4	56.0	20.4	56.0	0.404	MT	119,088	411.6	404.0	8.3	119,088
MS-1A25P	0.000	40.0	56.0	40.0	56.0	0.403	MT	119,088	392.0	403.0	16.2	119,088
MS-1A26	0.000	66.0	43.0	66.0	43.0	0.428	MT	119,088	366.0	428.0	26.8	119,088
MS-1A27	0.000	66.0	82.0	66.0	82.0	0.414	MT	119,088	366.0	414.0	26.8	119,088
MS-1A27P	0.000	44.0	48.0	44.0	48.0	0.405	MT	119,088	388.0	405.0	17.9	119,088
MS-1A28	0.000	74.0	64.0	74.0	64.0	0.407	MT	119,088	358.0	407.0	30.1	119,088
MS-1A28P US	0.000	50.0	79.0	50.0	79.0	0.394	MT	119,088	382.0	394.0	20.3	119,088
MS-1A28P DS	0.000	61.9	62.0	61.9	62.0	0.408		165,113	370.1	408.0	8.5	165,113
MS-1A29	0.000	91.6	59.0	91.6	59.0	0.406	MT	165,113	340.4	406.0	12.5	165,113
MS-1A29P US	0.000	61.9	61.0	61.9	61.0	0.410		165,113	370.1	410.0	8.5	165,113
MS-1A29P DS	0.000	50.0	33.0	50.0	33.0	0.426	MT	119,088	382.0	426.0	20.3	119,088
MS-1A30	0.000	74.0	53.0	74.0	53.0	0.400	MT	119,088	358.0	400.0	30.1	119,088
MS-1A30P-1	0.000	50.0	50.0	50.0	50.0	0.409	MT	119,088	382.0	409.0	20.3	119,088

Notes:
[1] Predictions are for the time of last inspection (last known meas. wear).
[2] GW = Tmeas is minimum thickness from Band, Blanket or Area Method of greatest wear.
MT = Tmeas is component minimum thickness.
PW = Tmeas is Tinit - predicted wear.
US = Tmeas is user specified.
[3] If no Tmeas has been determined from measured data, then Tmeas = Tinit and Time = current component installation time.
Tmeas is used to determine Predicted Thickness and Component Predicted Time to Tcrit.
[4] These two values are used for thickness plot.
Tp = Predicted thickness at Tmeas.
Tm = Last measured thickness (Tmeas).
[5] PRWEAR = Incremental wear from last Tmeas time to analysis ending period.

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).DB

Wear Rate Report

Pass 2 Analysis Include Measured Wear

Report Date/Time: 7/7/2010 9:54:36AM
AnalysisDate/Time: 6/11/2010 11:39:23AM

CHECWORKS SFA Version: 3.0 (build 105)
Duty Factor (Global) : 1.000

Run Name: RHTR DRN TK 21B USCV
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 0.840

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***MSD48A-1-RHDT21B to CV***								***Sorted By: Average Wear Rate***		
MS-1B11N	31	4.108	1.390	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1B14FE	6	4.108	1.390	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1B25	4	3.040	1.028	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1B11	2	3.040	1.028	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1B26	2	3.040	1.028	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1B12	2	3.040	1.028	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1B27	2	3.040	1.028	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1B14	2	3.040	1.028	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1B28	2	3.040	1.028	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1B29	2	3.040	1.028	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1B30	2	3.040	1.028	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1B15	2	3.040	1.028	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1B16	2	3.040	1.028	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1B32	2	3.040	1.028	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1B18	2	3.040	1.028	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1B33	2	3.040	1.028	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1B19	2	3.040	1.028	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1B20	2	3.040	1.028	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1B33R (D/S)	17	2.756	0.963	495.9	15.767	3.3	4.500	6.403	0.000	60.39	HBD
MS-1B13	1	2.712	0.917	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1B31	1	2.712	0.917	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1B17	1	2.712	0.917	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1B25P	54	2.629	0.889	495.9	7.569	3.3	6.625	6.403	0.000	60.39	HBD
MS-1B24 (D/S)	15	2.465	0.834	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1B24	15	2.465	0.834	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1B20R	18	2.301	0.778	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1B11P-1	61	2.219	0.750	495.9	10.806	3.3	6.625	6.403	0.000	60.39	HBD
MS-1B11P	52	2.054	0.695	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***MSD48A-1-RHDT21B to CV***								***Sorted By: Average Wear Rate***		
MS-1B12P	52	2.054	0.695	495.9	10.806	3.3	6.625	6.403	0.000	60.39	HBD
MS-1B27P-1	52	2.054	0.695	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1B27P	52	2.054	0.695	495.9	10.806	3.3	6.625	6.403	0.000	60.39	HBD
MS-1B28P	52	2.054	0.695	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1B14P	52	2.054	0.695	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1B29P	52	2.054	0.695	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1B15P	52	2.054	0.695	495.9	10.806	3.3	6.625	6.403	0.000	60.39	HBD
MS-1B30P	52	2.054	0.695	495.9	10.806	3.3	6.625	6.403	0.000	60.39	HBD
MS-1B16P	52	2.054	0.695	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1B32P US	52	2.054	0.695	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1B18P DS	52	2.054	0.695	495.9	8.745	3.3	6.625	6.403	0.000	60.39	HBD
MS-1B32P DS	52	2.054	0.695	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1B19P US	52	2.054	0.695	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1B33P	52	2.054	0.695	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1B33R	17	2.054	0.695	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1B13P	51	1.808	0.611	495.9	10.806	3.3	6.625	6.403	0.000	60.39	HBD
MS-1B31P US	51	1.808	0.611	495.9	10.806	3.3	6.625	6.403	0.000	60.39	HBD
MS-1B31P DS	51	1.808	0.611	495.9	10.806	3.3	6.625	6.403	0.000	60.39	HBD
MS-1B17P	51	1.808	0.611	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1B21	2	1.805	0.611	495.9	3.910	3.3	8.625	6.403	0.000	60.39	HBD
MS-1B22	4	1.805	0.611	495.9	3.910	3.3	8.625	6.403	0.000	60.39	HBD
MS-1B23	2	1.805	0.611	495.9	3.910	3.3	8.625	6.403	0.000	60.39	HBD
MS-1B24P US	65	1.643	0.556	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1B22P	54	1.561	0.528	495.9	3.910	3.3	8.625	6.403	0.000	60.39	HBD
MS-1B23R (D/S)	17	1.479	0.500	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1B20R (D/S)	18	1.464	0.495	495.9	3.910	3.3	8.625	6.403	0.000	60.39	HBD
MS-1B20P-1	52	1.220	0.413	495.9	3.910	3.3	8.625	6.403	0.000	60.39	HBD
MS-1B20P	68	1.220	0.413	495.9	3.910	3.3	8.625	6.403	0.000	60.39	HBD
MS-1B23P	52	1.220	0.413	495.9	3.910	3.3	8.625	6.403	0.000	60.39	HBD
MS-1B23R	17	1.220	0.413	495.9	3.910	3.3	8.625	6.403	0.000	60.39	HBD
MS-1B14P-1 US	56	0.822	0.278	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).DB

Wear Rate Report

Pass 2 Analysis Include Measured Wear

Report Date/Time: 7/7/2010 9:54:36AM
AnalysisDate/Time: 6/11/2010 11:39:23AM

CHECWORKS SFA Version: 3.0 (build 105)
Duty Factor (Global) : 1.000

Run Name: RHTR DRN TK 21B USCV
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 0.840

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***MSD48A-1-RHDT21B to CV***									***Sorted By: Flow Order***	
MS-1B11N	31	4.108	1.390	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1B11P-1	61	2.219	0.750	495.9	10.806	3.3	6.625	6.403	0.000	60.39	HBD
MS-1B11	2	3.040	1.028	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1B11P	52	2.054	0.695	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1B12	2	3.040	1.028	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1B12P	52	2.054	0.695	495.9	10.806	3.3	6.625	6.403	0.000	60.39	HBD
MS-1B13	1	2.712	0.917	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1B13P	51	1.808	0.611	495.9	10.806	3.3	6.625	6.403	0.000	60.39	HBD
MS-1B14	2	3.040	1.028	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1B14P	52	2.054	0.695	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1B14FE	6	4.108	1.390	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1B14P-1 US	56	0.822	0.278	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1B15	2	3.040	1.028	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1B15P	52	2.054	0.695	495.9	10.806	3.3	6.625	6.403	0.000	60.39	HBD
MS-1B16	2	3.040	1.028	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1B16P	52	2.054	0.695	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1B17	1	2.712	0.917	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1B17P	51	1.808	0.611	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1B18	2	3.040	1.028	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1B18P DS	52	2.054	0.695	495.9	8.745	3.3	6.625	6.403	0.000	60.39	HBD
MS-1B19	2	3.040	1.028	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1B19P US	52	2.054	0.695	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1B20	2	3.040	1.028	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1B20P-1	52	1.220	0.413	495.9	3.910	3.3	8.625	6.403	0.000	60.39	HBD
MS-1B20R	18	2.301	0.778	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1B20R (D/S)	18	1.464	0.495	495.9	3.910	3.3	8.625	6.403	0.000	60.39	HBD
MS-1B20P	68	1.220	0.413	495.9	3.910	3.3	8.625	6.403	0.000	60.39	HBD
MS-1B21	2	1.805	0.611	495.9	3.910	3.3	8.625	6.403	0.000	60.39	HBD

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***MSD48A-1-RHDT21B to CV***									***Sorted By: Flow Order***	
MS-1B22	4	1.805	0.611	495.9	3.910	3.3	8.625	6.403	0.000	60.39	HBD
MS-1B22P	54	1.561	0.528	495.9	3.910	3.3	8.625	6.403	0.000	60.39	HBD
MS-1B23	2	1.805	0.611	495.9	3.910	3.3	8.625	6.403	0.000	60.39	HBD
MS-1B23P	52	1.220	0.413	495.9	3.910	3.3	8.625	6.403	0.000	60.39	HBD
MS-1B23R	17	1.220	0.413	495.9	3.910	3.3	8.625	6.403	0.000	60.39	HBD
MS-1B23R (D/S)	17	1.479	0.500	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1B24	15	2.465	0.834	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1B24 (D/S)	15	2.465	0.834	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1B24P US	65	1.643	0.556	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1B25	4	3.040	1.028	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1B25P	54	2.629	0.889	495.9	7.569	3.3	6.625	6.403	0.000	60.39	HBD
MS-1B26	2	3.040	1.028	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1B27P-1	52	2.054	0.695	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1B27	2	3.040	1.028	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1B27P	52	2.054	0.695	495.9	10.806	3.3	6.625	6.403	0.000	60.39	HBD
MS-1B28	2	3.040	1.028	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1B28P	52	2.054	0.695	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1B29	2	3.040	1.028	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1B29P	52	2.054	0.695	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1B30	2	3.040	1.028	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1B30P	52	2.054	0.695	495.9	10.806	3.3	6.625	6.403	0.000	60.39	HBD
MS-1B31	1	2.712	0.917	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1B31P US	51	1.808	0.611	495.9	10.806	3.3	6.625	6.403	0.000	60.39	HBD
MS-1B31P DS	51	1.808	0.611	495.9	10.806	3.3	6.625	6.403	0.000	60.39	HBD
MS-1B32	2	3.040	1.028	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1B32P US	52	2.054	0.695	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1B32P DS	52	2.054	0.695	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1B33	2	3.040	1.028	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1B33P	52	2.054	0.695	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1B33R	17	2.054	0.695	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1B33R (D/S)	17	2.756	0.963	495.9	15.767	3.3	4.500	6.403	0.000	60.39	HBD

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).DB

Service Life Report

Pass 2 Analysis Include Measured Wear

Report Date/Time: 7/7/2010 9:54:36AM
AnalysisDate/Time:

Run Name: RHTR DRN TK 21B USCV
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 0.840

CHECWORKS SFA Version: 3.0 (build 105)
Duty Factor (Global) :1.000

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **MSD48A-1-RHDT21B to CV**					***Sorted By:Remaining Life***		
MS-1B11N	0.000	0.318	0.233	0.233	534,714	No	243,721
MS-1B14FE	0.000	0.318	0.233	0.233	534,714	No	243,721
MS-1B15	0.000	0.347	0.233	0.233	975,748	No	243,721
MS-1B16	0.000	0.347	0.233	0.233	975,748	No	243,721
MS-1B18	0.000	0.347	0.233	0.233	975,748	No	243,721
MS-1B20	0.000	0.347	0.233	0.233	975,748	No	243,721
MS-1B27	0.000	0.347	0.233	0.233	975,748	No	243,721
MS-1B28	0.000	0.347	0.233	0.233	975,748	No	243,721
MS-1B29	0.000	0.347	0.233	0.233	975,748	No	243,721
MS-1B30	0.000	0.347	0.233	0.233	975,748	No	243,721
MS-1B14	0.000	0.347	0.233	0.233	975,748	No	243,721
MS-1B19	0.000	0.357	0.233	0.233	1,060,563	Yes	243,721
MS-1B33	0.000	0.361	0.233	0.233	1,095,005	Yes	243,721
MS-1B32	0.000	0.364	0.233	0.233	1,120,560	Yes	243,721
MS-1B25	0.000	0.368	0.233	0.233	1,151,266	Yes	243,721
MS-1B17	0.000	0.357	0.233	0.233	1,181,359	No	243,721
MS-1B31	0.000	0.357	0.233	0.233	1,181,359	No	243,721
MS-1B13	0.000	0.357	0.233	0.233	1,181,359	No	243,721
MS-1B12	0.000	0.374	0.233	0.233	1,198,509	Yes	243,721
MS-1B26	0.000	0.391	0.233	0.233	1,347,194	Yes	243,721
MS-1B11	0.000	0.395	0.233	0.233	1,377,394	Yes	243,721
MS-1B33R (D/S)	0.000	0.325	0.158	0.158	1,514,948	Yes	243,721
MS-1B20R	0.000	0.368	0.233	0.233	1,520,984	No	243,721
MS-1B11P	0.000	0.359	0.233	0.233	1,596,350	Yes	243,721
MS-1B25P	0.000	0.397	0.233	0.233	1,620,435	Yes	243,721
MS-1B15P	0.000	0.375	0.233	0.233	1,789,966	No	243,721
MS-1B16P	0.000	0.375	0.233	0.233	1,789,966	No	243,721
MS-1B27P	0.000	0.375	0.233	0.233	1,789,966	No	243,721
MS-1B28P	0.000	0.375	0.233	0.233	1,789,966	No	243,721
MS-1B29P	0.000	0.375	0.233	0.233	1,789,966	No	243,721

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **MSD48A-1-RHDT21B to CV**					***Sorted By:Remaining Life***		
MS-1B30P	0.000	0.375	0.233	0.233	1,789,966	No	243,721
MS-1B14P	0.000	0.375	0.233	0.233	1,789,966	No	243,721
MS-1B11P-1	0.000	0.388	0.233	0.233	1,812,882	Yes	243,721
MS-1B32P US	0.000	0.387	0.233	0.233	1,949,089	Yes	243,721
MS-1B33P	0.000	0.388	0.233	0.233	1,961,696	Yes	243,721
MS-1B12P	0.000	0.390	0.233	0.233	1,987,172	Yes	243,721
MS-1B19P US	0.000	0.395	0.233	0.233	2,049,919	Yes	243,721
MS-1B32P DS	0.000	0.396	0.233	0.233	2,062,553	Yes	243,721
MS-1B21	0.000	0.450	0.303	0.303	2,103,662	No	243,721
MS-1B23	0.000	0.450	0.303	0.303	2,103,662	No	243,721
MS-1B27P-1	0.000	0.401	0.233	0.233	2,123,590	Yes	243,721
MS-1B17P	0.000	0.382	0.233	0.233	2,132,308	No	243,721
MS-1B31P US	0.000	0.382	0.233	0.233	2,132,308	No	243,721
MS-1B13P	0.000	0.382	0.233	0.233	2,132,308	No	243,721
MS-1B18P DS	0.000	0.414	0.233	0.233	2,289,454	Yes	243,721
MS-1B24 (D/S)	0.000	0.456	0.233	0.233	2,341,672	No	243,721
MS-1B31P DS	0.000	0.400	0.233	0.233	2,390,569	No	243,721
MS-1B24	0.000	0.469	0.233	0.233	2,478,250	No	243,721
MS-1B22	0.000	0.479	0.303	0.303	2,517,241	Yes	243,721
MS-1B22P	0.000	0.464	0.303	0.303	2,669,766	Yes	243,721
MS-1B33R	0.000	0.446	0.233	0.233	2,692,911	No	243,721
MS-1B24P US	0.000	0.408	0.233	0.233	2,752,106	Yes	243,721
MS-1B20R (D/S)	0.000	0.459	0.303	0.303	2,762,642	No	243,721
MS-1B23R	0.000	0.454	0.303	0.303	3,207,195	No	243,721
MS-1B20P-1	0.000	0.466	0.303	0.303	3,459,279	No	243,721
MS-1B20P	0.000	0.466	0.303	0.303	3,459,279	No	243,721
MS-1B23P	0.000	0.466	0.303	0.303	3,459,279	No	243,721
MS-1B23R (D/S)	0.000	0.466	0.233	0.233	4,084,115	No	243,721
MS-1B14P-1 US	0.000	0.406	0.233	0.233	5,450,096	No	243,721

Note:
[1] Predictions are based on last Tmeas to analysis ending period.

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).DB

Service Life Report

Pass 2 Analysis Include Measured Wear

Report Date/Time: 7/7/2010 9:54:36AM
AnalysisDate/Time:

Run Name: RHTR DRN TK 21B USCV
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 0.840

CHECWORKS SFA Version: 3.0 (build 105)
Duty Factor (Global) : 1.000

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **MSD48A-1-RHDT21B to CV**					***Sorted By:Flow Order***		
MS-1B11N	0.000	0.318	0.233	0.233	534,714	No	243,721
MS-1B11P-1	0.000	0.388	0.233	0.233	1,812,882	Yes	243,721
MS-1B11	0.000	0.395	0.233	0.233	1,377,394	Yes	243,721
MS-1B11P	0.000	0.359	0.233	0.233	1,596,350	Yes	243,721
MS-1B12	0.000	0.374	0.233	0.233	1,198,509	Yes	243,721
MS-1B12P	0.000	0.390	0.233	0.233	1,987,172	Yes	243,721
MS-1B13	0.000	0.357	0.233	0.233	1,181,359	No	243,721
MS-1B13P	0.000	0.382	0.233	0.233	2,132,308	No	243,721
MS-1B14	0.000	0.347	0.233	0.233	975,748	No	243,721
MS-1B14P	0.000	0.375	0.233	0.233	1,789,966	No	243,721
MS-1B14FE	0.000	0.318	0.233	0.233	534,714	No	243,721
MS-1B14P-1 US	0.000	0.406	0.233	0.233	5,450,096	No	243,721
MS-1B15	0.000	0.347	0.233	0.233	975,748	No	243,721
MS-1B15P	0.000	0.375	0.233	0.233	1,789,966	No	243,721
MS-1B16	0.000	0.347	0.233	0.233	975,748	No	243,721
MS-1B16P	0.000	0.375	0.233	0.233	1,789,966	No	243,721
MS-1B17	0.000	0.357	0.233	0.233	1,181,359	No	243,721
MS-1B17P	0.000	0.382	0.233	0.233	2,132,308	No	243,721
MS-1B18	0.000	0.347	0.233	0.233	975,748	No	243,721
MS-1B18P DS	0.000	0.414	0.233	0.233	2,289,454	Yes	243,721
MS-1B19	0.000	0.357	0.233	0.233	1,060,563	Yes	243,721
MS-1B19P US	0.000	0.395	0.233	0.233	2,049,919	Yes	243,721
MS-1B20	0.000	0.347	0.233	0.233	975,748	No	243,721
MS-1B20P-1	0.000	0.466	0.303	0.303	3,459,279	No	243,721
MS-1B20R	0.000	0.368	0.233	0.233	1,520,984	No	243,721
MS-1B20R (D/S)	0.000	0.459	0.303	0.303	2,762,642	No	243,721
MS-1B20P	0.000	0.466	0.303	0.303	3,459,279	No	243,721
MS-1B21	0.000	0.450	0.303	0.303	2,103,662	No	243,721
MS-1B22	0.000	0.479	0.303	0.303	2,517,241	Yes	243,721
MS-1B22P	0.000	0.464	0.303	0.303	2,669,766	Yes	243,721

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **MSD48A-1-RHDT21B to CV**					***Sorted By:Flow Order***		
MS-1B23	0.000	0.450	0.303	0.303	2,103,662	No	243,721
MS-1B23P	0.000	0.466	0.303	0.303	3,459,279	No	243,721
MS-1B23R	0.000	0.454	0.303	0.303	3,207,195	No	243,721
MS-1B23R (D/S)	0.000	0.466	0.233	0.233	4,084,115	No	243,721
MS-1B24	0.000	0.469	0.233	0.233	2,478,250	No	243,721
MS-1B24 (D/S)	0.000	0.456	0.233	0.233	2,341,672	No	243,721
MS-1B24P US	0.000	0.408	0.233	0.233	2,752,106	Yes	243,721
MS-1B25	0.000	0.368	0.233	0.233	1,151,266	Yes	243,721
MS-1B25P	0.000	0.397	0.233	0.233	1,620,435	Yes	243,721
MS-1B26	0.000	0.391	0.233	0.233	1,347,194	Yes	243,721
MS-1B27P-1	0.000	0.401	0.233	0.233	2,123,590	Yes	243,721
MS-1B27	0.000	0.347	0.233	0.233	975,748	No	243,721
MS-1B27P	0.000	0.375	0.233	0.233	1,789,966	No	243,721
MS-1B28	0.000	0.347	0.233	0.233	975,748	No	243,721
MS-1B28P	0.000	0.375	0.233	0.233	1,789,966	No	243,721
MS-1B29	0.000	0.347	0.233	0.233	975,748	No	243,721
MS-1B29P	0.000	0.375	0.233	0.233	1,789,966	No	243,721
MS-1B30	0.000	0.347	0.233	0.233	975,748	No	243,721
MS-1B30P	0.000	0.375	0.233	0.233	1,789,966	No	243,721
MS-1B31	0.000	0.357	0.233	0.233	1,181,359	No	243,721
MS-1B31P US	0.000	0.382	0.233	0.233	2,132,308	No	243,721
MS-1B31P DS	0.000	0.400	0.233	0.233	2,390,569	No	243,721
MS-1B32	0.000	0.364	0.233	0.233	1,120,560	Yes	243,721
MS-1B32P US	0.000	0.387	0.233	0.233	1,949,089	Yes	243,721
MS-1B32P DS	0.000	0.396	0.233	0.233	2,062,553	Yes	243,721
MS-1B33	0.000	0.361	0.233	0.233	1,095,005	Yes	243,721
MS-1B33P	0.000	0.388	0.233	0.233	1,961,696	Yes	243,721
MS-1B33R	0.000	0.446	0.233	0.233	2,692,911	No	243,721
MS-1B33R (D/S)	0.000	0.325	0.158	0.158	1,514,948	Yes	243,721

Note:
[1] Predictions are based on last Tmeas to analysis ending period.

2

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).DB

Wear Report

Pass 2 Analysis Include Measured Wear

Report Date/Time: 07-Jul-2010 9:54 am
AnalysisDate/Time: 07-Jul-2010 9:54 am

Run Name: RHTR DRN TK 21B USCV
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 0.840

CHECWORKS SFA Version: 3.0 (build 105)
Duty Factor (Global) : 1.000

Component Name	Tinit	Total Lifetime Wear (mils) Prd. [1]	Total Lifetime Wear (mils) Meas.	In-Service Component Wear(mils) Prd. [1]	In-Service Component Wear(mils) Meas.	In-Service Component Tmeas, Method, Time (in) [3]	[2]	(hrs) [3]	In-Service Component Thickness (mils) [4] Tp	Tm	Incremental Wear (mils) [5] PRWEAR	Time (hrs) Last Inspected
===>Grouped by Line:	**MSD48A-1-RHDT21B to CV**											***Sorted By: Flow Order***
MS-1B11P-1	0.000	43.9	70.0	43.9	70.0	0.406	MT	119,088	388.1	406.0	17.8	119,088
MS-1B11	0.000	60.2	55.0	60.2	55.0	0.419	MT	119,088	371.8	419.0	24.4	119,088
MS-1B11P	0.000	40.6	78.0	40.6	78.0	0.376	MT	119,088	391.4	376.0	16.5	119,088
MS-1B12	0.000	60.2	58.0	60.2	58.0	0.398	MT	119,088	371.8	398.0	24.4	119,088
MS-1B12P	0.000	40.6	49.0	40.6	49.0	0.407	MT	119,088	391.4	407.0	16.5	119,088
MS-1B18P DS	0.000	48.6	45.0	48.6	45.0	0.423	MT	149,573	383.4	423.0	8.5	149,573
MS-1B19	0.000	72.0	71.0	72.0	71.0	0.370	MT	149,573	360.0	370.0	12.6	149,573
MS-1B19P US	0.000	48.6	51.0	48.6	51.0	0.404	MT	149,573	383.4	404.0	8.5	149,573
MS-1B22	0.000	31.8	34.0	31.8	34.0	0.497	MT	106,128	468.2	497.0	18.4	106,128
MS-1B22P	0.000	27.5	63.0	27.5	63.0	0.480	MT	106,128	472.5	480.0	15.9	106,128
MS-1B24P US	0.000	40.2	50.0	40.2	50.0	0.413	MT	165,113	391.8	413.0	5.5	165,113
MS-1B25	0.000	53.6	52.0	53.6	52.0	0.399	MT	106,128	378.4	399.0	31.0	106,128
MS-1B25P	0.000	66.5	62.0	66.5	62.0	0.404	GW	181,477	365.5	404.0	6.6	181,477
MS-1B26	0.000	80.6	62.5	80.6	62.5	0.395	MT	209,806	351.4	395.0	4.0	209,806
MS-1B27P-1	0.000	54.5	51.0	54.5	51.0	0.404	MT	209,806	377.5	404.0	2.7	209,806
MS-1B32	0.000	69.0	69.0	69.0	69.0	0.380	MT	136,608	363.0	380.0	15.6	136,608
MS-1B32P US	0.000	46.6	32.0	46.6	32.0	0.398	MT	136,608	385.4	398.0	10.5	136,608
MS-1B32P DS	0.000	46.6	31.0	46.6	31.0	0.407	MT	136,608	385.4	407.0	10.5	136,608
MS-1B33	0.000	69.0	71.0	69.0	71.0	0.377	MT	136,608	363.0	377.0	15.6	136,608
MS-1B33P	0.000	46.6	52.0	46.6	52.0	0.399	MT	136,608	385.4	399.0	10.5	136,608
MS-1B33R (D/S)	0.000	62.4	82.0	62.4	82.0	0.339	MT	136,608	274.6	339.0	14.3	136,608

Notes:

[1] Predictions are for the time of last inspection (last known meas. wear).

[2] GW = Tmeas is minimum thickness from Band, Blanket or Area Method of greatest wear.
MT = Tmeas is component minimum thickness.
PW = Tmeas is Tinit - predicted wear.
US = Tmeas is user specified.

[3] If no Tmeas has been determined from measured data, then Tmeas = Tinit and Time = current component installation time.
Tmeas is used to determine Predicted Thickness and Component Predicted Time to Tcrit.

[4] These two values are used for thickness plot.
Tp = Predicted thickness at Tmeas.
Tm = Last measured thickness (Tmeas).

[5] PRWEAR = Incremental wear from last Tmeas time to analysis ending period.

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).DB

Wear Rate Report

Pass 2 Analysis Include Measured Wear

Report Date/Time: 7/7/2010 9:54:36AM
AnalysisDate/Time: 6/11/2010 11:39:35AM

CHECWORKS SFA Version: 3.0 (build 105)
Duty Factor (Global) : 1.000

Run Name: RHTR DRN TK 22A USCV
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 1.531

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***MSD46A-1-RHDT22A to CV***								***Sorted By: Average Wear Rate***		
MS-2A11N	31	7.492	2.534	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2A15FE	6	7.492	2.534	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2A11	2	5.544	1.875	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2A12	2	5.544	1.875	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2A13	2	5.544	1.875	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2A14	2	5.544	1.875	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2A15	2	5.544	1.875	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2A22	4	5.544	1.875	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2A23	2	5.544	1.875	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2A23R (D/S)	17	5.026	1.756	495.9	15.767	3.3	4.500	6.403	0.000	60.39	HBD
MS-2A22P US	54	4.795	1.622	495.9	10.806	3.3	6.625	6.403	0.000	60.39	HBD
MS-2A22P DS	54	4.795	1.622	495.9	10.806	3.3	6.625	6.403	0.000	60.39	HBD
MS-2A15R-1	18	4.196	1.419	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2A15R-3	18	4.196	1.419	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2A11P-1	61	4.046	1.368	495.9	10.806	3.3	6.625	6.403	0.000	60.39	HBD
MS-2A11P US	52	3.746	1.267	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2A11P DS	52	3.746	1.267	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2A12P US	52	3.746	1.267	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2A12P DS	52	3.746	1.267	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2A13P	52	3.746	1.267	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2A14P	52	3.746	1.267	495.9	10.806	3.3	6.625	6.403	0.000	60.39	HBD
MS-2A23P-1	52	3.746	1.267	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2A23R	17	3.746	1.267	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2A16	2	3.291	1.113	495.9	3.910	3.3	8.625	6.403	0.000	60.39	HBD
MS-2A17	2	3.291	1.113	495.9	3.910	3.3	8.625	6.403	0.000	60.39	HBD
MS-2A18	2	3.291	1.113	495.9	3.910	3.3	8.625	6.403	0.000	60.39	HBD
MS-2A19	2	3.291	1.113	495.9	3.910	3.3	8.625	6.403	0.000	60.39	HBD
MS-2A20	2	3.291	1.113	495.9	3.910	3.3	8.625	6.403	0.000	60.39	HBD

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***MSD46A-1-RHDT22A to CV***								***Sorted By: Average Wear Rate***		
MS-2A21	2	3.291	1.113	495.9	3.910	3.3	8.625	6.403	0.000	60.39	HBD
MS-2A15P-2	67	2.997	1.014	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2A15R-2 (D/S)	17	2.697	0.912	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2A21R (D/S)	17	2.697	0.912	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2A15P-5 (D/S)	15	2.669	0.903	495.9	3.910	3.3	8.625	6.403	0.000	60.39	HBD
MS-2A15R-1 (D/S)	18	2.669	0.903	495.9	3.910	3.3	8.625	6.403	0.000	60.39	HBD
MS-2A15R-3 (D/S)	18	2.669	0.903	495.9	3.910	3.3	8.625	6.403	0.000	60.39	HBD
MS-2A15P-5	15	2.669	0.903	495.9	3.910	3.3	8.625	6.403	0.000	60.39	HBD
MS-2A21P DS	52	2.291	0.775	495.9	4.039	3.3	8.625	6.403	0.000	60.39	HBD
MS-2A16P	52	2.224	0.752	495.9	4.917	3.3	8.625	6.403	0.000	60.39	HBD
MS-2A17P US	52	2.224	0.752	495.9	3.910	3.3	8.625	6.403	0.000	60.39	HBD
MS-2A17P DS	52	2.224	0.752	495.9	3.910	3.3	8.625	6.403	0.000	60.39	HBD
MS-2A18P US	52	2.224	0.752	495.9	3.910	3.3	8.625	6.403	0.000	60.39	HBD
MS-2A18P DS	52	2.224	0.752	495.9	3.910	3.3	8.625	6.403	0.000	60.39	HBD
MS-2A19P US	52	2.224	0.752	495.9	3.910	3.3	8.625	6.403	0.000	60.39	HBD
MS-2A19P DS	52	2.224	0.752	495.9	3.910	3.3	8.625	6.403	0.000	60.39	HBD
MS-2A15P-1	68	2.224	0.752	495.9	3.910	3.3	8.625	6.403	0.000	60.39	HBD
MS-2A20P	52	2.224	0.752	495.9	10.736	3.3	8.625	6.403	0.000	60.39	HBD
MS-2A15R-2	17	2.224	0.752	495.9	3.910	3.3	8.625	6.403	0.000	60.39	HBD
MS-2A21P US	52	2.224	0.752	495.9	3.910	3.3	8.625	6.403	0.000	60.39	HBD
MS-2A21R	17	2.224	0.752	495.9	3.910	3.3	8.625	6.403	0.000	60.39	HBD
MS-2A15P-4	68	2.224	0.752	495.9	3.910	3.3	8.625	6.403	0.000	60.39	HBD
MS-2A15P-6	65	1.779	0.602	495.9	3.910	3.3	8.625	6.403	0.000	60.39	HBD
MS-2A15P-3	56	1.535	0.519	495.9	7.098	3.3	6.625	6.403	0.000	60.39	HBD

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).DB

Wear Rate Report

Pass 2 Analysis Include Measured Wear

Report Date/Time: 7/7/2010 9:54:36AM
AnalysisDate/Time: 6/11/2010 11:39:35AM

CHECWORKS SFA Version: 3.0 (build 105)
Duty Factor (Global) : 1.000

Run Name: RHTR DRN TK 22A USCV
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 1.531

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***MSD46A-1-RHDT22A to CV***									***Sorted By: Flow Order***	
MS-2A11N	31	7.492	2.534	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2A11P-1	61	4.046	1.368	495.9	10.806	3.3	6.625	6.403	0.000	60.39	HBD
MS-2A11	2	5.544	1.875	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2A11P US	52	3.746	1.267	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2A11P DS	52	3.746	1.267	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2A12	2	5.544	1.875	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2A12P US	52	3.746	1.267	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2A12P DS	52	3.746	1.267	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2A13	2	5.544	1.875	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2A13P	52	3.746	1.267	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2A14	2	5.544	1.875	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2A14P	52	3.746	1.267	495.9	10.806	3.3	6.625	6.403	0.000	60.39	HBD
MS-2A15	2	5.544	1.875	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2A15R-1	18	4.196	1.419	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2A15R-1 (D/S)	18	2.669	0.903	495.9	3.910	3.3	8.625	6.403	0.000	60.39	HBD
MS-2A15P-1	68	2.224	0.752	495.9	3.910	3.3	8.625	6.403	0.000	60.39	HBD
MS-2A15R-2	17	2.224	0.752	495.9	3.910	3.3	8.625	6.403	0.000	60.39	HBD
MS-2A15R-2 (D/S)	17	2.697	0.912	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2A15P-2	67	2.997	1.014	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2A15FE	6	7.492	2.534	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2A15P-3	56	1.535	0.519	495.9	7.098	3.3	6.625	6.403	0.000	60.39	HBD
MS-2A15R-3	18	4.196	1.419	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2A15R-3 (D/S)	18	2.669	0.903	495.9	3.910	3.3	8.625	6.403	0.000	60.39	HBD
MS-2A15P-4	68	2.224	0.752	495.9	3.910	3.3	8.625	6.403	0.000	60.39	HBD
MS-2A15P-5	15	2.669	0.903	495.9	3.910	3.3	8.625	6.403	0.000	60.39	HBD
MS-2A15P-5 (D/S)	15	2.669	0.903	495.9	3.910	3.3	8.625	6.403	0.000	60.39	HBD
MS-2A15P-6	65	1.779	0.602	495.9	3.910	3.3	8.625	6.403	0.000	60.39	HBD
MS-2A16	2	3.291	1.113	495.9	3.910	3.3	8.625	6.403	0.000	60.39	HBD

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***MSD46A-1-RHDT22A to CV***									***Sorted By: Flow Order***	
MS-2A16P	52	2.224	0.752	495.9	4.917	3.3	8.625	6.403	0.000	60.39	HBD
MS-2A17	2	3.291	1.113	495.9	3.910	3.3	8.625	6.403	0.000	60.39	HBD
MS-2A17P US	52	2.224	0.752	495.9	3.910	3.3	8.625	6.403	0.000	60.39	HBD
MS-2A17P DS	52	2.224	0.752	495.9	3.910	3.3	8.625	6.403	0.000	60.39	HBD
MS-2A18	2	3.291	1.113	495.9	3.910	3.3	8.625	6.403	0.000	60.39	HBD
MS-2A18P US	52	2.224	0.752	495.9	3.910	3.3	8.625	6.403	0.000	60.39	HBD
MS-2A18P DS	52	2.224	0.752	495.9	3.910	3.3	8.625	6.403	0.000	60.39	HBD
MS-2A19	2	3.291	1.113	495.9	3.910	3.3	8.625	6.403	0.000	60.39	HBD
MS-2A19P US	52	2.224	0.752	495.9	3.910	3.3	8.625	6.403	0.000	60.39	HBD
MS-2A19P DS	52	2.224	0.752	495.9	3.910	3.3	8.625	6.403	0.000	60.39	HBD
MS-2A20	2	3.291	1.113	495.9	3.910	3.3	8.625	6.403	0.000	60.39	HBD
MS-2A20P	52	2.224	0.752	495.9	10.736	3.3	8.625	6.403	0.000	60.39	HBD
MS-2A21	2	3.291	1.113	495.9	3.910	3.3	8.625	6.403	0.000	60.39	HBD
MS-2A21P US	52	2.224	0.752	495.9	3.910	3.3	8.625	6.403	0.000	60.39	HBD
MS-2A21P DS	52	2.291	0.775	495.9	4.039	3.3	8.625	6.403	0.000	60.39	HBD
MS-2A21R	17	2.224	0.752	495.9	3.910	3.3	8.625	6.403	0.000	60.39	HBD
MS-2A21R (D/S)	17	2.697	0.912	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2A22	4	5.544	1.875	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2A22P US	54	4.795	1.622	495.9	10.806	3.3	6.625	6.403	0.000	60.39	HBD
MS-2A22P DS	54	4.795	1.622	495.9	10.806	3.3	6.625	6.403	0.000	60.39	HBD
MS-2A23	2	5.544	1.875	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2A23P-1	52	3.746	1.267	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2A23R	17	3.746	1.267	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2A23R (D/S)	17	5.026	1.756	495.9	15.767	3.3	4.500	6.403	0.000	60.39	HBD

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).DB

Service Life Report

Pass 2 Analysis Include Measured Wear

Report Date/Time: 7/7/2010 9:54:36AM
AnalysisDate/Time:

Run Name: RHTR DRN TK 22A USCV
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 1.531

CHECWORKS SFA Version: 3.0 (build 105)
Duty Factor (Global) :1.000

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **MSD46A-1-RHDT22A to CV**					***Sorted By:Remaining Life***		
MS-2A15FE	0.000	0.358	0.233	0.233	431,814	No	243,721
MS-2A11	0.000	0.343	0.233	0.233	516,528	Yes	243,721
MS-2A11N	0.000	0.395	0.233	0.233	561,394	No	243,721
MS-2A13	0.000	0.357	0.233	0.233	581,036	Yes	243,721
MS-2A22	0.000	0.357	0.233	0.233	581,926	Yes	243,721
MS-2A23	0.000	0.357	0.233	0.233	581,926	Yes	243,721
MS-2A12	0.000	0.364	0.233	0.233	614,626	Yes	243,721
MS-2A15	0.000	0.367	0.233	0.233	628,640	Yes	243,721
MS-2A22P DS	0.000	0.361	0.233	0.233	694,574	Yes	243,721
MS-2A22P US	0.000	0.362	0.233	0.233	699,975	Yes	243,721
MS-2A23R	0.000	0.342	0.233	0.233	753,757	No	243,721
MS-2A14	0.000	0.400	0.233	0.233	781,903	Yes	243,721
MS-2A16	0.000	0.410	0.303	0.303	837,027	Yes	243,721
MS-2A12P DS	0.000	0.356	0.233	0.233	850,548	Yes	243,721
MS-2A23R (D/S)	0.000	0.331	0.158	0.158	863,805	No	243,721
MS-2A12P US	0.000	0.363	0.233	0.233	898,943	Yes	243,721
MS-2A13P	0.000	0.364	0.233	0.233	905,856	Yes	243,721
MS-2A23P-1	0.000	0.372	0.233	0.233	961,165	Yes	243,721
MS-2A11P US	0.000	0.377	0.233	0.233	995,733	Yes	243,721
MS-2A11P DS	0.000	0.377	0.233	0.233	995,733	Yes	243,721
MS-2A11P-1	0.000	0.399	0.233	0.233	1,063,791	Yes	243,721
MS-2A21	0.000	0.444	0.303	0.303	1,104,550	No	243,721
MS-2A19	0.000	0.448	0.303	0.303	1,136,023	Yes	243,721
MS-2A15R-1	0.000	0.424	0.233	0.233	1,181,561	No	243,721
MS-2A14P	0.000	0.407	0.233	0.233	1,207,108	Yes	243,721
MS-2A17	0.000	0.465	0.303	0.303	1,269,784	Yes	243,721
MS-2A15R-3	0.000	0.440	0.233	0.233	1,280,326	No	243,721
MS-2A18	0.000	0.471	0.303	0.303	1,316,994	Yes	243,721
MS-2A20	0.000	0.472	0.303	0.303	1,324,863	Yes	243,721
MS-2A15P-2	0.000	0.395	0.233	0.233	1,400,409	Yes	243,721

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **MSD46A-1-RHDT22A to CV**					***Sorted By:Remaining Life***		
MS-2A15R-2	0.000	0.440	0.303	0.303	1,594,906	No	243,721
MS-2A18P DS	0.000	0.442	0.303	0.303	1,618,197	Yes	243,721
MS-2A15P-1	0.000	0.449	0.303	0.303	1,699,712	Yes	243,721
MS-2A19P DS	0.000	0.450	0.303	0.303	1,711,357	Yes	243,721
MS-2A17P US	0.000	0.450	0.303	0.303	1,711,357	Yes	243,721
MS-2A20P	0.000	0.451	0.303	0.303	1,723,003	Yes	243,721
MS-2A15P-4	0.000	0.451	0.303	0.303	1,723,003	Yes	243,721
MS-2A18P US	0.000	0.455	0.303	0.303	1,769,583	Yes	243,721
MS-2A15R-3 (D/S)	0.000	0.489	0.303	0.303	1,799,018	No	243,721
MS-2A19P US	0.000	0.458	0.303	0.303	1,804,519	Yes	243,721
MS-2A15R-1 (D/S)	0.000	0.490	0.303	0.303	1,808,722	No	243,721
MS-2A17P DS	0.000	0.460	0.303	0.303	1,827,808	Yes	243,721
MS-2A21P DS	0.560	0.467	0.303	0.303	1,847,761	Yes	243,721
MS-2A16P	0.000	0.463	0.303	0.303	1,862,744	Yes	243,721
MS-2A21P US	0.000	0.465	0.303	0.303	1,886,034	Yes	243,721
MS-2A15R-2 (D/S)	0.000	0.436	0.233	0.233	1,953,624	No	243,721
MS-2A15P-6	0.000	0.439	0.303	0.303	1,972,889	Yes	243,721
MS-2A21R (D/S)	0.000	0.465	0.233	0.233	2,232,088	No	243,721
MS-2A21R	0.000	0.495	0.303	0.303	2,235,388	No	243,721
MS-2A15P-3	0.000	0.399	0.233	0.233	2,797,547	Yes	243,721
MS-2A15P-5 (D/S)	0.000	0.670	0.303	0.303	3,555,489	No	243,721
MS-2A15P-5	0.000	0.670	0.303	0.303	3,555,489	No	243,721

Note:
[1] Predictions are based on last Tmeas to analysis ending period.

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).DB

Service Life Report

Pass 2 Analysis Include Measured Wear

Report Date/Time: 7/7/2010 9:54:36AM
AnalysisDate/Time:

Run Name: RHTR DRN TK 22A USCV
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 1.531

CHECWORKS SFA Version: 3.0 (build 105)
Duty Factor (Global) : 1.000

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **MSD46A-1-RHDT22A to CV**					***Sorted By:Flow Order***		
MS-2A11N	0.000	0.395	0.233	0.233	561,394	No	243,721
MS-2A11P-1	0.000	0.399	0.233	0.233	1,063,791	Yes	243,721
MS-2A11	0.000	0.343	0.233	0.233	516,528	Yes	243,721
MS-2A11P US	0.000	0.377	0.233	0.233	995,733	Yes	243,721
MS-2A11P DS	0.000	0.377	0.233	0.233	995,733	Yes	243,721
MS-2A12	0.000	0.364	0.233	0.233	614,626	Yes	243,721
MS-2A12P US	0.000	0.363	0.233	0.233	898,943	Yes	243,721
MS-2A12P DS	0.000	0.356	0.233	0.233	850,548	Yes	243,721
MS-2A13	0.000	0.357	0.233	0.233	581,036	Yes	243,721
MS-2A13P	0.000	0.364	0.233	0.233	905,856	Yes	243,721
MS-2A14	0.000	0.400	0.233	0.233	781,903	Yes	243,721
MS-2A14P	0.000	0.407	0.233	0.233	1,207,108	Yes	243,721
MS-2A15	0.000	0.367	0.233	0.233	628,640	Yes	243,721
MS-2A15R-1	0.000	0.424	0.233	0.233	1,181,561	No	243,721
MS-2A15R-1 (D/S)	0.000	0.490	0.303	0.303	1,808,722	No	243,721
MS-2A15P-1	0.000	0.449	0.303	0.303	1,699,712	Yes	243,721
MS-2A15R-2	0.000	0.440	0.303	0.303	1,594,906	No	243,721
MS-2A15R-2 (D/S)	0.000	0.436	0.233	0.233	1,953,624	No	243,721
MS-2A15P-2	0.000	0.395	0.233	0.233	1,400,409	Yes	243,721
MS-2A15FE	0.000	0.358	0.233	0.233	431,814	No	243,721
MS-2A15P-3	0.000	0.399	0.233	0.233	2,797,547	Yes	243,721
MS-2A15R-3	0.000	0.440	0.233	0.233	1,280,326	No	243,721
MS-2A15R-3 (D/S)	0.000	0.489	0.303	0.303	1,799,018	No	243,721
MS-2A15P-4	0.000	0.451	0.303	0.303	1,723,003	Yes	243,721
MS-2A15P-5	0.000	0.670	0.303	0.303	3,555,489	No	243,721
MS-2A15P-5 (D/S)	0.000	0.670	0.303	0.303	3,555,489	No	243,721
MS-2A15P-6	0.000	0.439	0.303	0.303	1,972,889	Yes	243,721
MS-2A16	0.000	0.410	0.303	0.303	837,027	Yes	243,721
MS-2A16P	0.000	0.463	0.303	0.303	1,862,744	Yes	243,721
MS-2A17	0.000	0.465	0.303	0.303	1,269,784	Yes	243,721

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **MSD46A-1-RHDT22A to CV**					***Sorted By:Flow Order***		
MS-2A17P US	0.000	0.450	0.303	0.303	1,711,357	Yes	243,721
MS-2A17P DS	0.000	0.460	0.303	0.303	1,827,808	Yes	243,721
MS-2A18	0.000	0.471	0.303	0.303	1,316,994	Yes	243,721
MS-2A18P US	0.000	0.455	0.303	0.303	1,769,583	Yes	243,721
MS-2A18P DS	0.000	0.442	0.303	0.303	1,618,197	Yes	243,721
MS-2A19	0.000	0.448	0.303	0.303	1,136,023	Yes	243,721
MS-2A19P US	0.000	0.458	0.303	0.303	1,804,519	Yes	243,721
MS-2A19P DS	0.000	0.450	0.303	0.303	1,711,357	Yes	243,721
MS-2A20	0.000	0.472	0.303	0.303	1,324,863	Yes	243,721
MS-2A20P	0.000	0.451	0.303	0.303	1,723,003	Yes	243,721
MS-2A21	0.000	0.444	0.303	0.303	1,104,550	No	243,721
MS-2A21P US	0.000	0.465	0.303	0.303	1,886,034	Yes	243,721
MS-2A21P DS	0.560	0.467	0.303	0.303	1,847,761	Yes	243,721
MS-2A21R	0.000	0.495	0.303	0.303	2,235,388	No	243,721
MS-2A21R (D/S)	0.000	0.465	0.233	0.233	2,232,088	No	243,721
MS-2A22	0.000	0.357	0.233	0.233	581,926	Yes	243,721
MS-2A22P US	0.000	0.362	0.233	0.233	699,975	Yes	243,721
MS-2A22P DS	0.000	0.361	0.233	0.233	694,574	Yes	243,721
MS-2A23	0.000	0.357	0.233	0.233	581,926	Yes	243,721
MS-2A23P-1	0.000	0.372	0.233	0.233	961,165	Yes	243,721
MS-2A23R	0.000	0.342	0.233	0.233	753,757	No	243,721
MS-2A23R (D/S)	0.000	0.331	0.158	0.158	863,805	No	243,721

Note:
[1] Predictions are based on last Tmeas to analysis ending period.

2

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).DB

Wear Report

Pass 2 Analysis Include Measured Wear

Report Date/Time: 07-Jul-2010 9:54 am
AnalysisDate/Time: 07-Jul-2010 9:54 am

Run Name: RHTR DRN TK 22A USCV
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 1.531

CHECWORKS SFA Version: 3.0 (build 105)
Duty Factor (Global) : 1.000

Component Name	Tinit	Total Lifetime Wear (mils) Prd. [1]	Meas.	In-Service Component Wear(mils) Prd. [1]	Meas.	In-Service Component Tmeas, Method, Time (in) [3]	[2]	(hrs) [3]	In-Service Component Thickness (mils) [4] Tp	Tm	Incremental Wear (mils) [5] PRWEAR	Time (hrs) Last Inspected
===>Grouped by Line:	**MSD46A-1-RHDT22A to CV**											***Sorted By: Flow Order***
MS-2A11P-1	0.000	104.6	57.0	104.6	57.0	0.407	GW	193,769	327.4	407.0	8.0	193,769
MS-2A11	0.000	109.7	81.0	109.7	81.0	0.388	MT	119,088	322.3	388.0	44.6	119,088
MS-2A11P US	0.000	74.1	58.0	74.1	58.0	0.407	MT	119,088	357.9	407.0	30.1	119,088
MS-2A11P DS	0.000	74.1	78.0	74.1	78.0	0.407	MT	119,088	357.9	407.0	30.1	119,088
MS-2A12	0.000	109.7	46.0	109.7	46.0	0.409	MT	119,088	322.3	409.0	44.6	119,088
MS-2A12P US	0.000	74.1	106.0	74.1	106.0	0.393	MT	119,088	357.9	393.0	30.1	119,088
MS-2A12P DS	0.000	74.1	62.0	74.1	62.0	0.386	MT	119,088	357.9	386.0	30.1	119,088
MS-2A13	0.000	11.9	77.0	11.9	77.0	0.361	MT	226,201	281.5	361.0	3.8	119,088
MS-2A13P	0.000	74.1	48.0	74.1	48.0	0.394	MT	119,088	357.9	394.0	30.1	119,088
MS-2A14	0.000	52.7	31.0	52.7	31.0	0.404	MT	226,201	281.5	404.0	3.8	226,201
MS-2A14P	0.000	8.1	36.0	8.1	36.0	0.410	MT	226,201	330.3	410.0	2.5	119,088
MS-2A15	0.000	109.7	53.0	109.7	53.0	0.412	MT	119,088	322.3	412.0	44.6	119,088
MS-2A15P-1	0.000	44.0	66.0	44.0	66.0	0.467	MT	119,088	456.0	467.0	17.9	119,088
MS-2A15P-2	0.000	59.3	46.0	59.3	46.0	0.419	MT	119,088	372.7	419.0	24.1	119,088
MS-2A15P-3	0.000	30.4	58.0	30.4	58.0	0.411	MT	119,088	401.6	411.0	12.3	119,088
MS-2A15P-4	0.000	44.0	64.0	44.0	64.0	0.469	MT	119,088	456.0	469.0	17.9	119,088
MS-2A15P-6	0.000	35.2	46.0	35.2	46.0	0.453	MT	119,088	464.8	453.0	14.3	119,088
MS-2A16	0.000	65.1	67.0	65.1	67.0	0.436	MT	119,088	434.9	436.0	26.5	119,088
MS-2A16P	0.000	44.0	50.0	44.0	50.0	0.481	MT	119,088	456.0	481.0	17.9	119,088
MS-2A17	0.000	65.1	61.0	65.1	61.0	0.491	MT	119,088	434.9	491.0	26.5	119,088
MS-2A17P US	0.000	44.0	58.0	44.0	58.0	0.468	MT	119,088	456.0	468.0	17.9	119,088
MS-2A17P DS	0.000	44.0	35.0	44.0	35.0	0.478	MT	119,088	456.0	478.0	17.9	119,088
MS-2A18	0.000	65.1	57.0	65.1	57.0	0.497	MT	119,088	434.9	497.0	26.5	119,088
MS-2A18P US	0.000	44.0	39.0	44.0	39.0	0.473	MT	119,088	456.0	473.0	17.9	119,088
MS-2A18P DS	0.000	44.0	56.0	44.0	56.0	0.460	MT	119,088	456.0	460.0	17.9	119,088
MS-2A19	0.000	65.1	78.0	65.1	78.0	0.474	MT	119,088	434.9	474.0	26.5	119,088
MS-2A19P US	0.000	44.0	44.0	44.0	44.0	0.476	MT	119,088	456.0	476.0	17.9	119,088
MS-2A19P DS	0.000	44.0	60.0	44.0	60.0	0.468	MT	119,088	456.0	468.0	17.9	119,088

Component Name	Tinit	Total Lifetime Wear (mils) Prd. [1]	Total Lifetime Wear (mils) Meas.	In-Service Component Wear(mils) Prd. [1]	In-Service Component Wear(mils) Meas.	In-Service Component Tmeas, Method, Time (in) [3]	[2]	(hrs) [3]	In-Service Component Thickness (mils) [4] Tp	Tm	Incremental Wear (mils) [5] PRWEAR	Time (hrs) Last Inspected
===>Grouped by Line:	**MSD46A-1-RHDT22A to CV**										***Sorted By: Flow Order***	
MS-2A20	0.000	65.1	80.0	65.1	80.0	0.498	MT	119,088	434.9	498.0	26.5	119,088
MS-2A20P	0.000	44.0	44.0	44.0	44.0	0.469	MT	119,088	456.0	469.0	17.9	119,088
MS-2A21P US	0.000	44.0	56.0	44.0	56.0	0.483	MT	119,088	456.0	483.0	17.9	119,088
MS-2A21P DS	0.560	45.3	75.0	45.3	75.0	0.485	MT	119,088	514.7	485.0	18.4	119,088
MS-2A22	0.000	109.7	50.0	109.7	50.0	0.402	MT	119,088	322.3	402.0	44.6	119,088
MS-2A22P US	0.000	94.9	71.0	94.9	71.0	0.401	MT	119,088	337.1	401.0	38.5	119,088
MS-2A22P DS	0.000	94.9	52.0	94.9	52.0	0.400	MT	119,088	337.1	400.0	38.5	119,088
MS-2A23	0.000	109.7	41.0	109.7	41.0	0.402	MT	119,088	322.3	402.0	44.6	119,088
MS-2A23P-1	0.000	74.1	44.0	74.1	44.0	0.402	MT	119,088	357.9	402.0	30.1	119,088

Notes:
[1] Predictions are for the time of last inspection (last known meas. wear).
[2] GW = Tmeas is minimum thickness from Band, Blanket or Area Method of greatest wear.
MT = Tmeas is component minimum thickness.
PW = Tmeas is Tinit - predicted wear.
US = Tmeas is user specified.
[3] If no Tmeas has been determined from measured data, then Tmeas = Tinit and Time = current component installation time.
Tmeas is used to determine Predicted Thickness and Component Predicted Time to Tcrit.
[4] These two values are used for thickness plot.
Tp = Predicted thickness at Tmeas.
Tm = Last measured thickness (Tmeas).
[5] PRWEAR = Incremental wear from last Tmeas time to analysis ending period.

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).DB

Wear Rate Report

Pass 2 Analysis Include Measured Wear

Report Date/Time: 7/7/2010 9:54:36AM
AnalysisDate/Time: 6/11/2010 11:39:47AM

CHECWORKS SFA Version: 3.0 (build 105)
Duty Factor (Global) : 1.000

Run Name: RHTR DRN TK 22B USCV
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 1.135

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***MSD49A-1-RHDT22B to CV***								***Sorted By: Average Wear Rate***		
MS-2B11N	31	5.553	1.878	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B17FE	6	5.553	1.878	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B11	2	4.109	1.390	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B12	2	4.109	1.390	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B13	2	4.109	1.390	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B14	2	4.109	1.390	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B15	2	4.109	1.390	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B16	1	3.665	1.240	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B17	1	3.665	1.240	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B17R-1	18	3.110	1.052	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B18R	18	3.110	1.052	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B11P-1	61	2.999	1.014	495.9	10.806	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B11P	52	2.777	0.939	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B12P	52	2.777	0.939	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B13P	52	2.777	0.939	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B14P	52	2.777	0.939	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B15P	52	2.777	0.939	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B16P	51	2.443	0.826	495.9	10.806	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B17P-3	51	2.443	0.826	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B17P-1 US	67	2.221	0.751	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B17R-2 (D/S)	17	1.999	0.676	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B18	2	1.601	0.542	495.9	2.450	3.3	10.750	6.403	0.000	60.39	HBD
MS-2B20	2	1.601	0.542	495.9	2.450	3.3	10.750	6.403	0.000	60.39	HBD
MS-2B21	2	1.601	0.542	495.9	2.450	3.3	10.750	6.403	0.000	60.39	HBD
MS-2B19	1	1.428	0.483	495.9	2.450	3.3	10.750	6.403	0.000	60.39	HBD
MS-2B17R-1 (D/S)	18	1.298	0.439	495.9	2.450	3.3	10.750	6.403	0.000	60.39	HBD
MS-2B18R (D/S)	18	1.298	0.439	495.9	2.450	3.3	10.750	6.403	0.000	60.39	HBD
MS-2B17P-2 DS	56	1.111	0.376	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***MSD49A-1-RHDT22B to CV***								***Sorted By: Average Wear Rate***		
MS-2B17P DS	68	1.100	0.372	495.9	2.495	3.3	10.750	6.403	0.000	60.39	HBD
MS-2B17R-2	17	1.082	0.366	495.9	2.450	3.3	10.750	6.403	0.000	60.39	HBD
MS-2B18P-1 US	68	1.082	0.366	495.9	2.450	3.3	10.750	6.403	0.000	60.39	HBD
MS-2B18P	52	1.082	0.366	495.9	2.450	3.3	10.750	6.403	0.000	60.39	HBD
MS-2B20P	52	1.082	0.366	495.9	9.664	3.3	10.750	6.403	0.000	60.39	HBD
MS-2B21P US	52	1.082	0.366	495.9	2.450	3.3	10.750	6.403	0.000	60.39	HBD
MS-2B19P	51	0.952	0.322	495.9	2.450	3.3	10.750	6.403	0.000	60.39	HBD
MS-2B22	2	0.542	0.542	495.9	2.450	3.3	10.750	6.403	0.000	60.39	HBD
MS-TEMP-02E	2	0.542	0.542	495.9	2.450	3.3	10.750	6.403	0.000	60.39	HBD
MS-TEMP-05E	2	0.542	0.542	495.9	2.450	3.3	10.750	6.403	0.000	60.39	HBD
MS-TEMP-07E	2	0.542	0.542	495.9	2.450	3.3	10.750	6.403	0.000	60.39	HBD
MS-2B21P DS	52	0.366	0.366	495.9	2.450	3.3	10.750	6.403	0.000	60.39	HBD
MS-TEMP-01P	52	0.366	0.366	495.9	9.664	3.3	10.750	6.403	0.000	60.39	HBD
MS-TEMP-03P	52	0.366	0.366	495.9	2.450	3.3	10.750	6.403	0.000	60.39	HBD
MS-TEMP-04P	52	0.366	0.366	495.9	2.450	3.3	10.750	6.403	0.000	60.39	HBD
MS-TEMP-06P	52	0.366	0.366	495.9	3.053	3.3	10.750	6.403	0.000	60.39	HBD
MS-TEMP-08P	52	0.366	0.366	495.9	2.450	3.3	10.750	6.403	0.000	60.39	HBD

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).DB

Wear Rate Report

Pass 2 Analysis Include Measured Wear

Report Date/Time: 7/7/2010 9:54:36AM
AnalysisDate/Time: 6/11/2010 11:39:47AM

CHECWORKS SFA Version: 3.0 (build 105)
Duty Factor (Global) : 1.000

Run Name: RHTR DRN TK 22B USCV
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 1.135

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***MSD49A-1-RHDT22B to CV***									***Sorted By: Flow Order***	
MS-2B11N	31	5.553	1.878	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B11P-1	61	2.999	1.014	495.9	10.806	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B11	2	4.109	1.390	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B11P	52	2.777	0.939	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B12	2	4.109	1.390	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B12P	52	2.777	0.939	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B13	2	4.109	1.390	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B13P	52	2.777	0.939	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B14	2	4.109	1.390	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B14P	52	2.777	0.939	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B15	2	4.109	1.390	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B15P	52	2.777	0.939	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B16	1	3.665	1.240	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B16P	51	2.443	0.826	495.9	10.806	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B17	1	3.665	1.240	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B17P-3	51	2.443	0.826	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B17R-1	18	3.110	1.052	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B17R-1 (D/S)	18	1.298	0.439	495.9	2.450	3.3	10.750	6.403	0.000	60.39	HBD
MS-2B17P DS	68	1.100	0.372	495.9	2.495	3.3	10.750	6.403	0.000	60.39	HBD
MS-2B17R-2	17	1.082	0.366	495.9	2.450	3.3	10.750	6.403	0.000	60.39	HBD
MS-2B17R-2 (D/S)	17	1.999	0.676	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B17P-1 US	67	2.221	0.751	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B17FE	6	5.553	1.878	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B17P-2 DS	56	1.111	0.376	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B18R	18	3.110	1.052	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B18R (D/S)	18	1.298	0.439	495.9	2.450	3.3	10.750	6.403	0.000	60.39	HBD
MS-2B18P-1 US	68	1.082	0.366	495.9	2.450	3.3	10.750	6.403	0.000	60.39	HBD
MS-2B18	2	1.601	0.542	495.9	2.450	3.3	10.750	6.403	0.000	60.39	HBD

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***MSD49A-1-RHDT22B to CV***									***Sorted By: Flow Order***	
MS-2B18P	52	1.082	0.366	495.9	2.450	3.3	10.750	6.403	0.000	60.39	HBD
MS-2B19	1	1.428	0.483	495.9	2.450	3.3	10.750	6.403	0.000	60.39	HBD
MS-2B19P	51	0.952	0.322	495.9	2.450	3.3	10.750	6.403	0.000	60.39	HBD
MS-2B20	2	1.601	0.542	495.9	2.450	3.3	10.750	6.403	0.000	60.39	HBD
MS-2B20P	52	1.082	0.366	495.9	9.664	3.3	10.750	6.403	0.000	60.39	HBD
MS-2B21	2	1.601	0.542	495.9	2.450	3.3	10.750	6.403	0.000	60.39	HBD
MS-2B21P US	52	1.082	0.366	495.9	2.450	3.3	10.750	6.403	0.000	60.39	HBD
MS-2B21P DS	52	0.366	0.366	495.9	2.450	3.3	10.750	6.403	0.000	60.39	HBD
MS-2B22	2	0.542	0.542	495.9	2.450	3.3	10.750	6.403	0.000	60.39	HBD
MS-TEMP-01P	52	0.366	0.366	495.9	9.664	3.3	10.750	6.403	0.000	60.39	HBD
MS-TEMP-02E	2	0.542	0.542	495.9	2.450	3.3	10.750	6.403	0.000	60.39	HBD
MS-TEMP-03P	52	0.366	0.366	495.9	2.450	3.3	10.750	6.403	0.000	60.39	HBD
MS-TEMP-04P	52	0.366	0.366	495.9	2.450	3.3	10.750	6.403	0.000	60.39	HBD
MS-TEMP-05E	2	0.542	0.542	495.9	2.450	3.3	10.750	6.403	0.000	60.39	HBD
MS-TEMP-06P	52	0.366	0.366	495.9	3.053	3.3	10.750	6.403	0.000	60.39	HBD
MS-TEMP-07E	2	0.542	0.542	495.9	2.450	3.3	10.750	6.403	0.000	60.39	HBD
MS-TEMP-08P	52	0.366	0.366	495.9	2.450	3.3	10.750	6.403	0.000	60.39	HBD

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).DB

Service Life Report

Pass 2 Analysis Include Measured Wear

Report Date/Time: 7/7/2010 9:54:36AM
AnalysisDate/Time:

Run Name: RHTR DRN TK 22B USCV
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 1.135

CHECWORKS SFA Version: 3.0 (build 105)
Duty Factor (Global) :1.000

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **MSD49A-1-RHDT22B to CV**					***Sorted By:Remaining Life***		
MS-2B17FE	0.000	0.277	0.233	0.233	208,137	No	243,721
MS-2B14	0.000	0.318	0.233	0.233	534,429	No	243,721
MS-2B11N	0.000	0.390	0.233	0.233	731,536	Yes	243,721
MS-2B17	0.000	0.342	0.233	0.233	767,754	Yes	243,721
MS-2B15	0.000	0.373	0.233	0.233	881,047	Yes	243,721
MS-2B17R-1	0.000	0.345	0.233	0.233	937,811	No	243,721
MS-2B16	0.000	0.370	0.233	0.233	970,406	Yes	243,721
MS-2B11	0.000	0.394	0.233	0.233	1,016,873	Yes	243,721
MS-2B12	0.000	0.402	0.233	0.233	1,063,499	Yes	243,721
MS-2B13	0.000	0.404	0.233	0.233	1,078,005	Yes	243,721
MS-2B14P	0.000	0.364	0.233	0.233	1,223,279	Yes	243,721
MS-2B15P	0.000	0.366	0.233	0.233	1,241,933	Yes	243,721
MS-2B11P-1	0.000	0.378	0.233	0.233	1,254,042	Yes	243,721
MS-2B12P	0.000	0.367	0.233	0.233	1,254,480	Yes	243,721
MS-2B11P	0.000	0.380	0.233	0.233	1,372,513	Yes	243,721
MS-2B13P	0.000	0.381	0.233	0.233	1,382,801	Yes	243,721
MS-2B16P	0.000	0.378	0.233	0.233	1,536,161	Yes	243,721
MS-2B21	0.000	0.476	0.378	0.378	1,585,638	Yes	243,721
MS-2B17P-3	0.000	0.389	0.233	0.233	1,658,546	Yes	243,721
MS-2B17P-1 US	0.000	0.387	0.233	0.233	1,792,512	Yes	243,721
MS-2B20	0.000	0.549	0.378	0.378	2,775,049	No	243,721
MS-2B19	0.000	0.554	0.378	0.378	3,198,757	No	243,721
MS-2B18	0.000	0.586	0.378	0.378	3,363,804	Yes	243,721
MS-2B22	0.000	0.593	0.378	0.378	3,478,068	No	17,520
MS-TEMP-02E	0.000	0.593	0.378	0.378	3,478,068	No	17,520
MS-TEMP-05E	0.000	0.593	0.378	0.378	3,478,068	No	17,520
MS-TEMP-07E	0.000	0.593	0.378	0.378	3,478,068	No	17,520
MS-2B17R-1 (D/S)	0.000	0.558	0.378	0.378	3,590,686	No	243,721
MS-2B17P DS	0.636	0.544	0.378	0.378	3,920,459	Yes	243,721
MS-2B17R-2 (D/S)	0.000	0.539	0.233	0.233	3,962,549	No	243,721

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **MSD49A-1-RHDT22B to CV**					***Sorted By:Remaining Life***		
MS-2B18R (D/S)	0.000	0.580	0.378	0.378	4,040,896	No	243,721
MS-2B17P-2 DS	0.000	0.407	0.233	0.233	4,067,566	Yes	243,721
MS-2B20P	0.000	0.564	0.378	0.378	4,452,931	No	243,721
MS-2B21P US	0.000	0.564	0.378	0.378	4,452,931	No	243,721
MS-2B18P	0.000	0.564	0.378	0.378	4,452,931	No	243,721
MS-2B18P-1 US	0.000	0.569	0.378	0.378	4,572,031	Yes	243,721
MS-2B18R	0.000	0.831	0.233	0.233	4,980,203	No	243,721
MS-2B21P DS	0.000	0.593	0.378	0.378	5,155,950	No	17,520
MS-TEMP-01P	0.000	0.593	0.378	0.378	5,155,950	No	17,520
MS-TEMP-03P	0.000	0.593	0.378	0.378	5,155,950	No	17,520
MS-TEMP-04P	0.000	0.593	0.378	0.378	5,155,950	No	17,520
MS-TEMP-06P	0.000	0.593	0.378	0.378	5,155,950	No	17,520
MS-TEMP-08P	0.000	0.593	0.378	0.378	5,155,950	No	17,520
MS-2B19P	0.000	0.568	0.378	0.378	5,158,404	No	243,721
MS-2B17R-2	0.000	0.607	0.378	0.378	5,495,474	No	243,721

Note:
[1] Predictions are based on last Tmeas to analysis ending period.

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).DB

Service Life Report

Pass 2 Analysis Include Measured Wear

Report Date/Time: 7/7/2010 9:54:36AM
AnalysisDate/Time:

Run Name: RHTR DRN TK 22B USCV
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 1.135

CHECWORKS SFA Version: 3.0 (build 105)
Duty Factor (Global) : 1.000

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **MSD49A-1-RHDT22B to CV**					***Sorted By:Flow Order***		
MS-2B11N	0.000	0.390	0.233	0.233	731,536	Yes	243,721
MS-2B11P-1	0.000	0.378	0.233	0.233	1,254,042	Yes	243,721
MS-2B11	0.000	0.394	0.233	0.233	1,016,873	Yes	243,721
MS-2B11P	0.000	0.380	0.233	0.233	1,372,513	Yes	243,721
MS-2B12	0.000	0.402	0.233	0.233	1,063,499	Yes	243,721
MS-2B12P	0.000	0.367	0.233	0.233	1,254,480	Yes	243,721
MS-2B13	0.000	0.404	0.233	0.233	1,078,005	Yes	243,721
MS-2B13P	0.000	0.381	0.233	0.233	1,382,801	Yes	243,721
MS-2B14	0.000	0.318	0.233	0.233	534,429	No	243,721
MS-2B14P	0.000	0.364	0.233	0.233	1,223,279	Yes	243,721
MS-2B15	0.000	0.373	0.233	0.233	881,047	Yes	243,721
MS-2B15P	0.000	0.366	0.233	0.233	1,241,933	Yes	243,721
MS-2B16	0.000	0.370	0.233	0.233	970,406	Yes	243,721
MS-2B16P	0.000	0.378	0.233	0.233	1,536,161	Yes	243,721
MS-2B17	0.000	0.342	0.233	0.233	767,754	Yes	243,721
MS-2B17P-3	0.000	0.389	0.233	0.233	1,658,546	Yes	243,721
MS-2B17R-1	0.000	0.345	0.233	0.233	937,811	No	243,721
MS-2B17R-1 (D/S)	0.000	0.558	0.378	0.378	3,590,686	No	243,721
MS-2B17P DS	0.636	0.544	0.378	0.378	3,920,459	Yes	243,721
MS-2B17R-2	0.000	0.607	0.378	0.378	5,495,474	No	243,721
MS-2B17R-2 (D/S)	0.000	0.539	0.233	0.233	3,962,549	No	243,721
MS-2B17P-1 US	0.000	0.387	0.233	0.233	1,792,512	Yes	243,721
MS-2B17FE	0.000	0.277	0.233	0.233	208,137	No	243,721
MS-2B17P-2 DS	0.000	0.407	0.233	0.233	4,067,566	Yes	243,721
MS-2B18R	0.000	0.831	0.233	0.233	4,980,203	No	243,721
MS-2B18R (D/S)	0.000	0.580	0.378	0.378	4,040,896	No	243,721
MS-2B18P-1 US	0.000	0.569	0.378	0.378	4,572,031	Yes	243,721
MS-2B18	0.000	0.586	0.378	0.378	3,363,804	Yes	243,721
MS-2B18P	0.000	0.564	0.378	0.378	4,452,931	No	243,721
MS-2B19	0.000	0.554	0.378	0.378	3,198,757	No	243,721

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **MSD49A-1-RHDT22B to CV**					***Sorted By:Flow Order***		
MS-2B19P	0.000	0.568	0.378	0.378	5,158,404	No	243,721
MS-2B20	0.000	0.549	0.378	0.378	2,775,049	No	243,721
MS-2B20P	0.000	0.564	0.378	0.378	4,452,931	No	243,721
MS-2B21	0.000	0.476	0.378	0.378	1,585,638	Yes	243,721
MS-2B21P US	0.000	0.564	0.378	0.378	4,452,931	No	243,721
MS-2B21P DS	0.000	0.593	0.378	0.378	5,155,950	No	17,520
MS-2B22	0.000	0.593	0.378	0.378	3,478,068	No	17,520
MS-TEMP-01P	0.000	0.593	0.378	0.378	5,155,950	No	17,520
MS-TEMP-02E	0.000	0.593	0.378	0.378	3,478,068	No	17,520
MS-TEMP-03P	0.000	0.593	0.378	0.378	5,155,950	No	17,520
MS-TEMP-04P	0.000	0.593	0.378	0.378	5,155,950	No	17,520
MS-TEMP-05E	0.000	0.593	0.378	0.378	3,478,068	No	17,520
MS-TEMP-06P	0.000	0.593	0.378	0.378	5,155,950	No	17,520
MS-TEMP-07E	0.000	0.593	0.378	0.378	3,478,068	No	17,520
MS-TEMP-08P	0.000	0.593	0.378	0.378	5,155,950	No	17,520

Note:
[1] Predictions are based on last Tmeas to analysis ending period.

2

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).DB

Wear Report

Pass 2 Analysis Include Measured Wear

Report Date/Time: 07-Jul-2010 9:54 am
AnalysisDate/Time: 07-Jul-2010 9:54 am

Run Name: RHTR DRN TK 22B USCV
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 1.135

CHECWORKS SFA Version: 3.0 (build 105)
Duty Factor (Global) : 1.000

Component Name	Tinit	Total Lifetime Wear (mils) Prd. [1]	Total Lifetime Wear (mils) Meas.	In-Service Component Wear(mils) Prd. [1]	In-Service Component Wear(mils) Meas.	In-Service Component Tmeas, Method, Time (in) [3]	[2]	(hrs) [3]	In-Service Component Thickness (mils) [4] Tp	Tm	Incremental Wear (mils) [5] PRWEAR	Time (hrs) Last Inspected
===>Grouped by Line:	**MSD49A-1-RHDT22B to CV**											***Sorted By: Flow Order***
MS-2B11N	0.000	147.2	60.0	147.2	60.0	0.397	MT	209,806	284.8	397.0	7.3	209,806
MS-2B11P-1	0.000	79.5	50.0	79.5	50.0	0.382	MT	209,806	352.5	382.0	3.9	209,806
MS-2B11	0.000	111.6	110.0	111.6	110.0	0.397	MT	226,201	320.4	397.0	2.8	226,201
MS-2B11P	0.000	70.3	45.0	70.3	45.0	0.387	MT	181,477	361.7	387.0	7.0	181,477
MS-2B12	0.000	109.0	51.0	109.0	51.0	0.407	MT	209,806	323.0	407.0	5.4	209,806
MS-2B12P	0.000	73.6	102.0	73.6	102.0	0.371	MT	209,806	358.4	371.0	3.6	209,806
MS-2B13	0.000	106.3	68.0	106.3	68.0	0.412	GW	193,769	325.7	412.0	8.1	193,769
MS-2B13P	0.000	75.4	91.0	75.4	91.0	0.383	MT	226,201	356.6	383.0	1.9	226,201
MS-2B14P	0.000	70.3	92.0	70.3	92.0	0.371	GW	181,477	361.7	371.0	7.0	181,477
MS-2B15	0.000	104.0	104.0	104.0	104.0	0.383	GW	181,477	328.0	383.0	10.3	181,477
MS-2B15P	0.000	70.3	119.0	70.3	119.0	0.373	GW	181,477	361.7	373.0	7.0	181,477
MS-2B16	0.000	97.2	86.0	97.2	86.0	0.375	MT	209,806	334.8	375.0	4.8	209,806
MS-2B16P	0.000	64.8	59.0	64.8	59.0	0.381	MT	209,806	367.2	381.0	3.2	209,806
MS-2B17	0.000	99.5	87.0	99.5	87.0	0.344	MT	226,201	332.5	344.0	2.5	226,201
MS-2B17P-3	0.000	66.3	43.0	66.3	43.0	0.391	MT	226,201	365.7	391.0	1.7	226,201
MS-2B17P DS	0.636	25.0	86.0	25.0	86.0	0.550	MT	136,608	611.0	550.0	5.6	136,608
MS-2B17P-1 US	0.000	50.4	81.0	50.4	81.0	0.398	MT	136,608	381.6	398.0	11.4	136,608
MS-2B17P-2 DS	0.000	25.2	54.0	25.2	54.0	0.413	MT	136,608	406.8	413.0	5.7	136,608
MS-2B18P-1 US	0.000	28.0	90.0	28.0	90.0	0.571	GW	193,769	566.0	571.0	2.1	193,769
MS-2B18	0.000	41.4	108.0	41.4	108.0	0.589	GW	193,769	552.6	589.0	3.1	193,769
MS-2B21	0.000	42.5	165.0	42.5	165.0	0.478	MT	209,806	551.5	478.0	2.1	209,806

Notes:

[1] Predictions are for the time of last inspection (last known meas. wear).

[2] GW = Tmeas is minimum thickness from Band, Blanket or Area Method of greatest wear.
MT = Tmeas is component minimum thickness.
PW = Tmeas is Tinit - predicted wear.
US = Tmeas is user specified.

[3] If no Tmeas has been determined from measured data, then Tmeas = Tinit and Time = current component installation time.
Tmeas is used to determine Predicted Thickness and Component Predicted Time to Tcrit.

[4] These two values are used for thickness plot.
Tp = Predicted thickness at Tmeas.
Tm = Last measured thickness (Tmeas).

[5] PRWEAR = Incremental wear from last Tmeas time to analysis ending period.

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).DB

Wear Rate Report

Pass 2 Analysis Include Measured Wear

Report Date/Time: 7/7/2010 9:54:36AM
AnalysisDate/Time: 6/11/2010 11:39:56AM

CHECWORKS SFA Version: 3.0 (build 105)
Duty Factor (Global) : 1.000

Run Name: RHTR DRN TK 23A USCV
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 1.033

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***MSD47-1-RHDT23A to CV***								***Sorted By: Average Wear Rate***		
MS-3A23R (D/S)	7	6.028	2.106	495.9	15.767	3.3	4.500	6.403	0.000	60.39	HBD
MS-3A11N	31	5.054	1.710	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3A16FE	6	5.054	1.710	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3A20	2	3.740	1.265	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3A21	4	3.740	1.265	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3A13	2	3.740	1.265	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3A22	2	3.740	1.265	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3A23	2	3.740	1.265	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3A15	2	3.740	1.265	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3A16	2	3.740	1.265	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3A23R	7	3.538	1.197	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3A11	1	3.336	1.128	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3A12	1	3.336	1.128	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3A14	1	3.336	1.128	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3A19R (D/S)	7	3.235	1.094	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3A17R	18	2.830	0.957	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3A11P	61	2.729	0.923	495.9	10.806	3.3	6.625	6.403	0.000	60.39	HBD
MS-3A19P US	57	2.527	0.855	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3A19P DS	57	2.527	0.855	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3A21P US	52	2.527	0.855	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3A21P DS	52	2.527	0.855	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3A14P	52	2.527	0.855	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3A22P	52	2.527	0.855	495.9	10.806	3.3	6.625	6.403	0.000	60.39	HBD
MS-3A15P	52	2.527	0.855	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3A16P	52	2.527	0.855	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3A12P	51	2.224	0.752	495.9	10.806	3.3	6.625	6.403	0.000	60.39	HBD
MS-3A13P	51	2.224	0.752	495.9	10.806	3.3	6.625	6.403	0.000	60.39	HBD
MS-3A15P-1 US	51	2.224	0.752	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***MSD47-1-RHDT23A to CV***								***Sorted By: Average Wear Rate***		
MS-3A15P-1 DS	51	2.224	0.752	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3A17	4	2.221	0.751	495.9	3.910	3.3	8.625	6.403	0.000	60.39	HBD
MS-3A18	2	2.221	0.751	495.9	3.910	3.3	8.625	6.403	0.000	60.39	HBD
MS-3A19R	7	2.101	0.711	495.9	3.910	3.3	8.625	6.403	0.000	60.39	HBD
MS-3A17P	54	1.920	0.650	495.9	3.910	3.3	8.625	6.403	0.000	60.39	HBD
MS-3A19 (D/S)	15	1.800	0.609	495.9	3.910	3.3	8.625	6.403	0.000	60.39	HBD
MS-3A17R (D/S)	18	1.800	0.609	495.9	3.910	3.3	8.625	6.403	0.000	60.39	HBD
MS-3A19	15	1.800	0.609	495.9	3.910	3.3	8.625	6.403	0.000	60.39	HBD
MS-3A18P	52	1.500	0.508	495.9	3.910	3.3	8.625	6.403	0.000	60.39	HBD
MS-3A17P-1	56	1.011	0.342	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).DB

Wear Rate Report

Pass 2 Analysis Include Measured Wear

Report Date/Time: 7/7/2010 9:54:36AM
AnalysisDate/Time: 6/11/2010 11:39:56AM

CHECWORKS SFA Version: 3.0 (build 105)
Duty Factor (Global) : 1.000

Run Name: RHTR DRN TK 23A USCV
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 1.033

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***MSD47-1-RHDT23A to CV***									***Sorted By: Flow Order***	
MS-3A11N	31	5.054	1.710	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3A11P	61	2.729	0.923	495.9	10.806	3.3	6.625	6.403	0.000	60.39	HBD
MS-3A11	1	3.336	1.128	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3A12P	51	2.224	0.752	495.9	10.806	3.3	6.625	6.403	0.000	60.39	HBD
MS-3A12	1	3.336	1.128	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3A13P	51	2.224	0.752	495.9	10.806	3.3	6.625	6.403	0.000	60.39	HBD
MS-3A13	2	3.740	1.265	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3A14P	52	2.527	0.855	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3A14	1	3.336	1.128	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3A15P-1 US	51	2.224	0.752	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3A15P-1 DS	51	2.224	0.752	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3A15	2	3.740	1.265	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3A15P	52	2.527	0.855	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3A16	2	3.740	1.265	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3A16P	52	2.527	0.855	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3A16FE	6	5.054	1.710	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3A17P-1	56	1.011	0.342	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3A17R	18	2.830	0.957	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3A17R (D/S)	18	1.800	0.609	495.9	3.910	3.3	8.625	6.403	0.000	60.39	HBD
MS-3A17	4	2.221	0.751	495.9	3.910	3.3	8.625	6.403	0.000	60.39	HBD
MS-3A17P	54	1.920	0.650	495.9	3.910	3.3	8.625	6.403	0.000	60.39	HBD
MS-3A18	2	2.221	0.751	495.9	3.910	3.3	8.625	6.403	0.000	60.39	HBD
MS-3A18P	52	1.500	0.508	495.9	3.910	3.3	8.625	6.403	0.000	60.39	HBD
MS-3A19	15	1.800	0.609	495.9	3.910	3.3	8.625	6.403	0.000	60.39	HBD
MS-3A19 (D/S)	15	1.800	0.609	495.9	3.910	3.3	8.625	6.403	0.000	60.39	HBD
MS-3A19R	7	2.101	0.711	495.9	3.910	3.3	8.625	6.403	0.000	60.39	HBD
MS-3A19R (D/S)	7	3.235	1.094	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3A19P US	57	2.527	0.855	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***MSD47-1-RHDT23A to CV***									***Sorted By: Flow Order***	
MS-3A19P DS	57	2.527	0.855	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3A20	2	3.740	1.265	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3A21	4	3.740	1.265	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3A21P US	52	2.527	0.855	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3A21P DS	52	2.527	0.855	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3A22	2	3.740	1.265	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3A22P	52	2.527	0.855	495.9	10.806	3.3	6.625	6.403	0.000	60.39	HBD
MS-3A23	2	3.740	1.265	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3A23R	7	3.538	1.197	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3A23R (D/S)	7	6.028	2.106	495.9	15.767	3.3	4.500	6.403	0.000	60.39	HBD

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).DB

Service Life Report

Pass 2 Analysis Include Measured Wear

Report Date/Time: 7/7/2010 9:54:36AM
AnalysisDate/Time:

Run Name: RHTR DRN TK 23A USCV
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 1.033

CHECWORKS SFA Version: 3.0 (build 105)
Duty Factor (Global) :1.000

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **MSD47-1-RHDT23A to CV**					***Sorted By:Remaining Life***		
MS-3A16FE	0.000	0.291	0.233	0.233	299,791	No	243,721
MS-3A11N	0.000	0.291	0.233	0.233	299,791	No	243,721
MS-3A22	0.000	0.328	0.233	0.233	658,285	No	243,721
MS-3A23	0.000	0.328	0.233	0.233	658,285	No	243,721
MS-3A23R (D/S)	0.000	0.322	0.158	0.158	679,517	Yes	243,721
MS-3A12	0.000	0.339	0.233	0.233	825,415	No	243,721
MS-3A11	0.000	0.339	0.233	0.233	825,415	No	243,721
MS-3A19R (D/S)	0.000	0.342	0.233	0.233	873,726	No	243,721
MS-3A21	0.000	0.363	0.233	0.233	899,845	Yes	243,721
MS-3A14	0.000	0.352	0.233	0.233	926,339	Yes	243,721
MS-3A16	0.000	0.367	0.233	0.233	928,325	Yes	243,721
MS-3A20	0.000	0.368	0.233	0.233	934,465	Yes	243,721
MS-3A13	0.000	0.372	0.233	0.233	962,946	Yes	243,721
MS-3A15	0.000	0.379	0.233	0.233	1,011,415	Yes	243,721
MS-3A17R	0.000	0.353	0.233	0.233	1,101,478	No	243,721
MS-3A23R	0.000	0.387	0.233	0.233	1,130,434	Yes	243,721
MS-3A11P	0.000	0.356	0.233	0.233	1,168,960	No	243,721
MS-3A19P US	0.000	0.362	0.233	0.233	1,320,120	No	243,721
MS-3A21P DS	0.000	0.362	0.233	0.233	1,320,120	No	243,721
MS-3A22P	0.000	0.362	0.233	0.233	1,320,120	No	243,721
MS-3A14P	0.000	0.374	0.233	0.233	1,443,092	Yes	243,721
MS-3A21P US	0.000	0.384	0.233	0.233	1,549,217	Yes	243,721
MS-3A18	0.000	0.438	0.303	0.303	1,575,107	No	243,721
MS-3A17	0.000	0.438	0.303	0.303	1,575,107	No	243,721
MS-3A15P	0.000	0.388	0.233	0.233	1,586,560	Yes	243,721
MS-3A19P DS	0.000	0.388	0.233	0.233	1,590,207	Yes	243,721
MS-3A12P	0.000	0.370	0.233	0.233	1,598,392	No	243,721
MS-3A16P	0.000	0.393	0.233	0.233	1,637,798	Yes	243,721
MS-3A19R	0.000	0.442	0.303	0.303	1,706,287	No	243,721
MS-3A13P	0.000	0.383	0.233	0.233	1,749,778	Yes	243,721

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **MSD47-1-RHDT23A to CV**					***Sorted By:Remaining Life***		
MS-3A15P-1 US	0.000	0.388	0.233	0.233	1,808,004	Yes	243,721
MS-3A17P	0.000	0.447	0.303	0.303	1,933,802	No	243,721
MS-3A15P-1 DS	0.000	0.406	0.233	0.233	2,017,616	Yes	243,721
MS-3A19 (D/S)	0.000	0.450	0.303	0.303	2,110,758	No	243,721
MS-3A19	0.000	0.450	0.303	0.303	2,110,758	No	243,721
MS-3A17R (D/S)	0.000	0.450	0.303	0.303	2,110,758	No	243,721
MS-3A18P	0.000	0.458	0.303	0.303	2,677,018	No	243,721
MS-3A17P-1	0.000	0.410	0.233	0.233	4,538,343	Yes	243,721

Note:
[1] Predictions are based on last Tmeas to analysis ending period.

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).DB

Service Life Report

Pass 2 Analysis Include Measured Wear

Report Date/Time: 7/7/2010 9:54:36AM
AnalysisDate/Time:

Run Name: RHTR DRN TK 23A USCV
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 1.033

CHECWORKS SFA Version: 3.0 (build 105)
Duty Factor (Global) : 1.000

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **MSD47-1-RHDT23A to CV**					***Sorted By:Flow Order***		
MS-3A11N	0.000	0.291	0.233	0.233	299,791	No	243,721
MS-3A11P	0.000	0.356	0.233	0.233	1,168,960	No	243,721
MS-3A11	0.000	0.339	0.233	0.233	825,415	No	243,721
MS-3A12P	0.000	0.370	0.233	0.233	1,598,392	No	243,721
MS-3A12	0.000	0.339	0.233	0.233	825,415	No	243,721
MS-3A13P	0.000	0.383	0.233	0.233	1,749,778	Yes	243,721
MS-3A13	0.000	0.372	0.233	0.233	962,946	Yes	243,721
MS-3A14P	0.000	0.374	0.233	0.233	1,443,092	Yes	243,721
MS-3A14	0.000	0.352	0.233	0.233	926,339	Yes	243,721
MS-3A15P-1 US	0.000	0.388	0.233	0.233	1,808,004	Yes	243,721
MS-3A15P-1 DS	0.000	0.406	0.233	0.233	2,017,616	Yes	243,721
MS-3A15	0.000	0.379	0.233	0.233	1,011,415	Yes	243,721
MS-3A15P	0.000	0.388	0.233	0.233	1,586,560	Yes	243,721
MS-3A16	0.000	0.367	0.233	0.233	928,325	Yes	243,721
MS-3A16P	0.000	0.393	0.233	0.233	1,637,798	Yes	243,721
MS-3A16FE	0.000	0.291	0.233	0.233	299,791	No	243,721
MS-3A17P-1	0.000	0.410	0.233	0.233	4,538,343	Yes	243,721
MS-3A17R	0.000	0.353	0.233	0.233	1,101,478	No	243,721
MS-3A17R (D/S)	0.000	0.450	0.303	0.303	2,110,758	No	243,721
MS-3A17	0.000	0.438	0.303	0.303	1,575,107	No	243,721
MS-3A17P	0.000	0.447	0.303	0.303	1,933,802	No	243,721
MS-3A18	0.000	0.438	0.303	0.303	1,575,107	No	243,721
MS-3A18P	0.000	0.458	0.303	0.303	2,677,018	No	243,721
MS-3A19	0.000	0.450	0.303	0.303	2,110,758	No	243,721
MS-3A19 (D/S)	0.000	0.450	0.303	0.303	2,110,758	No	243,721
MS-3A19R	0.000	0.442	0.303	0.303	1,706,287	No	243,721
MS-3A19R (D/S)	0.000	0.342	0.233	0.233	873,726	No	243,721
MS-3A19P US	0.000	0.362	0.233	0.233	1,320,120	No	243,721
MS-3A19P DS	0.000	0.388	0.233	0.233	1,590,207	Yes	243,721
MS-3A20	0.000	0.368	0.233	0.233	934,465	Yes	243,721

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **MSD47-1-RHDT23A to CV**					***Sorted By:Flow Order***		
MS-3A21	0.000	0.363	0.233	0.233	899,845	Yes	243,721
MS-3A21P US	0.000	0.384	0.233	0.233	1,549,217	Yes	243,721
MS-3A21P DS	0.000	0.362	0.233	0.233	1,320,120	No	243,721
MS-3A22	0.000	0.328	0.233	0.233	658,285	No	243,721
MS-3A22P	0.000	0.362	0.233	0.233	1,320,120	No	243,721
MS-3A23	0.000	0.328	0.233	0.233	658,285	No	243,721
MS-3A23R	0.000	0.387	0.233	0.233	1,130,434	Yes	243,721
MS-3A23R (D/S)	0.000	0.322	0.158	0.158	679,517	Yes	243,721

Note:
[1] Predictions are based on last Tmeas to analysis ending period.

2

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).DB

Wear Report

Pass 2 Analysis Include Measured Wear

Report Date/Time: 07-Jul-2010 9:54 am
AnalysisDate/Time: 07-Jul-2010 9:54 am

Run Name: RHTR DRN TK 23A USCV
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 1.033

CHECWORKS SFA Version: 3.0 (build 105)
Duty Factor (Global) : 1.000

Component Name	Tinit	Total Lifetime Wear (mils) Prd. [1]	Total Lifetime Wear (mils) Meas.	In-Service Component Wear(mils) Prd. [1]	In-Service Component Wear(mils) Meas.	In-Service Component Tmeas, Method, Time (in) [3]	[2]	(hrs) [3]	In-Service Component Thickness (mils) [4] Tp	Tm	Incremental Wear (mils) [5] PRWEAR	Time (hrs) Last Inspected
===>Grouped by Line:	**MSD47-1-RHDT23A to CV**											***Sorted By: Flow Order***
MS-3A13P	0.000	44.0	56.0	44.0	56.0	0.401	MT	119,088	388.0	401.0	17.9	119,088
MS-3A13	0.000	74.0	84.0	74.0	84.0	0.402	MT	119,088	358.0	402.0	30.1	119,088
MS-3A14P	0.000	50.0	54.0	50.0	54.0	0.394	MT	119,088	382.0	394.0	20.3	119,088
MS-3A14	0.000	66.0	95.0	66.0	95.0	0.379	MT	119,088	366.0	379.0	26.8	119,088
MS-3A15P-1 US	0.000	44.0	70.0	44.0	70.0	0.406	MT	119,088	388.0	406.0	17.9	119,088
MS-3A15P-1 DS	0.000	44.0	52.0	44.0	52.0	0.424	MT	119,088	388.0	424.0	17.9	119,088
MS-3A15	0.000	74.0	56.0	74.0	56.0	0.409	MT	119,088	358.0	409.0	30.1	119,088
MS-3A15P	0.000	50.0	50.0	50.0	50.0	0.408	MT	119,088	382.0	408.0	20.3	119,088
MS-3A16	0.000	74.0	64.0	74.0	64.0	0.397	MT	119,088	358.0	397.0	30.1	119,088
MS-3A16P	0.000	50.0	67.0	50.0	67.0	0.413	MT	119,088	382.0	413.0	20.3	119,088
MS-3A17P-1	0.000	26.1	72.0	26.1	72.0	0.412	GW	193,769	405.9	412.0	2.0	193,769
MS-3A19P DS	0.000	57.4	56.0	57.4	56.0	0.401	MT	136,608	374.6	401.0	13.0	136,608
MS-3A20	0.000	84.9	68.0	84.9	68.0	0.387	MT	136,608	347.1	387.0	19.2	136,608
MS-3A21	0.000	84.9	74.0	84.9	74.0	0.382	MT	136,608	347.1	382.0	19.2	136,608
MS-3A21P US	0.000	57.4	49.0	57.4	49.0	0.397	MT	136,608	374.6	397.0	13.0	136,608
MS-3A23R	0.000	83.7	67.0	83.7	67.0	0.402	MT	149,573	348.3	402.0	14.7	149,573
MS-3A23R (D/S)	0.000	142.2	128.0	142.2	128.0	0.347	MT	149,573	194.8	347.0	25.5	149,573

Notes:
[1] Predictions are for the time of last inspection (last known meas. wear).
[2] GW = Tmeas is minimum thickness from Band, Blanket or Area Method of greatest wear.
MT = Tmeas is component minimum thickness.
PW = Tmeas is Tinit - predicted wear.
US = Tmeas is user specified.
[3] If no Tmeas has been determined from measured data, then Tmeas = Tinit and Time = current component installation time.
Tmeas is used to determine Predicted Thickness and Component Predicted Time to Tcrit.
[4] These two values are used for thickness plot.
Tp = Predicted thickness at Tmeas.
Tm = Last measured thickness (Tmeas).
[5] PRWEAR = Incremental wear from last Tmeas time to analysis ending period.

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).DB

Wear Rate Report

Pass 2 Analysis Include Measured Wear

Report Date/Time: 7/7/2010 9:54:36AM
AnalysisDate/Time: 6/11/2010 11:40:13AM

CHECWORKS SFA Version: 3.0 (build 105)
Duty Factor (Global) : 1.000

Run Name: RHTR DRN TK 23B USCV
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 1.025

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***MSD50A-1-RHDT23B to CV***								***Sorted By: Average Wear Rate***		
MS-3B11N	31	5.015	1.696	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3B21FE	6	5.015	1.696	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3B34 (D/S)	12	4.112	1.391	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3B34	12	4.112	1.391	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3B19	2	3.772	1.276	495.9	7.038	3.3	6.625	6.403	0.000	60.39	HBD
MS-3B35	2	3.711	1.255	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3B12	2	3.711	1.255	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3B36	2	3.711	1.255	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3B37	2	3.711	1.255	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3B13	2	3.711	1.255	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3B38	2	3.711	1.255	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3B14	4	3.711	1.255	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3B15	2	3.711	1.255	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3B39	2	3.711	1.255	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3B16	4	3.711	1.255	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3B40	4	3.711	1.255	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3B17	2	3.711	1.255	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3B18	2	3.711	1.255	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3B20	4	3.711	1.255	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3B21	2	3.711	1.255	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3B22	2	3.711	1.255	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3B23	2	3.711	1.255	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3B31	2	3.711	1.255	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3B30	2	3.711	1.255	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3B31	2	3.711	1.255	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3B32	2	3.711	1.255	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3B33	2	3.711	1.255	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3B42R (D/S)	17	3.364	1.175	495.9	15.767	3.3	4.500	6.403	0.000	60.39	HBD

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***MSD50A-1-RHDT23B to CV***								***Sorted By: Average Wear Rate***		
MS-3B11	1	3.310	1.119	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3B24	1	3.310	1.119	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3B14P	54	3.209	1.086	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3B16P	54	3.209	1.086	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3B20P US	54	3.209	1.086	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3B40R	18	2.808	0.950	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3B11P-1	61	2.708	0.916	495.9	10.806	3.3	6.625	6.403	0.000	60.39	HBD
MS-3B35P	52	2.507	0.848	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3B36P	52	2.507	0.848	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3B12P	52	2.507	0.848	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3B37P	52	2.507	0.848	495.9	10.806	3.3	6.625	6.403	0.000	60.39	HBD
MS-3B13P	52	2.507	0.848	495.9	10.806	3.3	6.625	6.403	0.000	60.39	HBD
MS-3B38P US	52	2.507	0.848	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3B38P DS	52	2.507	0.848	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3B17P	52	2.507	0.848	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3B18P DS	52	2.507	0.848	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3B21P	52	2.507	0.848	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3B22P US	52	2.507	0.848	495.9	10.806	3.3	6.625	6.403	0.000	60.39	HBD
MS-3B22P DS	52	2.507	0.848	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3B23P US	52	2.507	0.848	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3B31P	52	2.507	0.848	495.9	8.745	3.3	6.625	6.403	0.000	60.39	HBD
MS-3B30P	52	2.507	0.848	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3B31P	52	2.507	0.848	495.9	8.745	3.3	6.625	6.403	0.000	60.39	HBD
MS-3B32P	52	2.507	0.848	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3B33P	52	2.507	0.848	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3B11P	51	2.206	0.746	495.9	10.806	3.3	6.625	6.403	0.000	60.39	HBD
MS-3B24P US	51	2.206	0.746	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3B24P DS	51	2.206	0.746	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3B41	2	2.203	0.745	495.9	3.910	3.3	8.625	6.403	0.000	60.39	HBD
MS-3B42	2	2.203	0.745	495.9	3.910	3.3	8.625	6.403	0.000	60.39	HBD
MS-3B34P	62	2.006	0.678	495.9	8.745	3.3	6.625	6.403	0.000	60.39	HBD
MS-3B40R (D/S)	18	1.786	0.604	495.9	3.910	3.3	8.625	6.403	0.000	60.39	HBD
MS-3B25	2	1.565	1.263	495.9	6.959	3.3	6.625	6.403	0.000	60.39	HBD
MS-3B26	2	1.556	1.255	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3B27	2	1.556	1.255	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3B28	2	1.556	1.255	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3B29	2	1.556	1.255	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***MSD50A-1-RHDT23B to CV***								***Sorted By: Average Wear Rate***		
MS-3B30	2	1.556	1.255	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3B40P	68	1.489	0.504	495.9	3.910	3.3	8.625	6.403	0.000	60.39	HBD
MS-3B41P US	52	1.489	0.504	495.9	10.736	3.3	8.625	6.403	0.000	60.39	HBD
MS-3B41P DS	52	1.489	0.504	495.9	10.736	3.3	8.625	6.403	0.000	60.39	HBD
MS-3B42P US	52	1.489	0.504	495.9	3.910	3.3	8.625	6.403	0.000	60.39	HBD
MS-3B42P DS	52	1.489	0.504	495.9	3.910	3.3	8.625	6.403	0.000	60.39	HBD
MS-3B42R	17	1.489	0.504	495.9	3.910	3.3	8.625	6.403	0.000	60.39	HBD
MS-3B26P US	52	1.051	0.848	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3B27P	52	1.051	0.848	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3B28P	52	1.051	0.848	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3B29P	52	1.051	0.848	495.9	8.745	3.3	6.625	6.403	0.000	60.39	HBD
MS-3B30P	52	1.051	0.848	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3B21P-1	56	1.012	0.342	495.9	6.983	3.3	6.625	6.403	0.000	60.39	HBD
MS-3B25P	51	0.928	0.749	495.9	6.939	3.3	6.625	6.403	0.000	60.39	HBD

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).DB

Wear Rate Report

Pass 2 Analysis Include Measured Wear

Report Date/Time: 7/7/2010 9:54:36AM
AnalysisDate/Time: 6/11/2010 11:40:13AM

CHECWORKS SFA Version: 3.0 (build 105)
Duty Factor (Global) : 1.000

Run Name: RHTR DRN TK 23B USCV
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 1.025

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***MSD50A-1-RHDT23B to CV***									***Sorted By: Flow Order***	
MS-3B11N	31	5.015	1.696	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3B11P-1	61	2.708	0.916	495.9	10.806	3.3	6.625	6.403	0.000	60.39	HBD
MS-3B11	1	3.310	1.119	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3B11P	51	2.206	0.746	495.9	10.806	3.3	6.625	6.403	0.000	60.39	HBD
MS-3B12	2	3.711	1.255	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3B12P	52	2.507	0.848	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3B13	2	3.711	1.255	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3B13P	52	2.507	0.848	495.9	10.806	3.3	6.625	6.403	0.000	60.39	HBD
MS-3B14	4	3.711	1.255	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3B14P	54	3.209	1.086	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3B15	2	3.711	1.255	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3B16	4	3.711	1.255	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3B16P	54	3.209	1.086	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3B17	2	3.711	1.255	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3B17P	52	2.507	0.848	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3B18	2	3.711	1.255	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3B18P DS	52	2.507	0.848	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3B19	2	3.772	1.276	495.9	7.038	3.3	6.625	6.403	0.000	60.39	HBD
MS-3B20	4	3.711	1.255	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3B20P US	54	3.209	1.086	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3B21	2	3.711	1.255	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3B21P	52	2.507	0.848	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3B21FE	6	5.015	1.696	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3B21P-1	56	1.012	0.342	495.9	6.983	3.3	6.625	6.403	0.000	60.39	HBD
MS-3B22	2	3.711	1.255	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3B22P US	52	2.507	0.848	495.9	10.806	3.3	6.625	6.403	0.000	60.39	HBD
MS-3B22P DS	52	2.507	0.848	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3B23	2	3.711	1.255	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***MSD50A-1-RHDT23B to CV***									***Sorted By: Flow Order***	
MS-3B23P US	52	2.507	0.848	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3B24	1	3.310	1.119	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3B24P US	51	2.206	0.746	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3B24P DS	51	2.206	0.746	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3B25	2	1.565	1.263	495.9	6.959	3.3	6.625	6.403	0.000	60.39	HBD
MS-3B25P	51	0.928	0.749	495.9	6.939	3.3	6.625	6.403	0.000	60.39	HBD
MS-3B26	2	1.556	1.255	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3B26P US	52	1.051	0.848	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3B27	2	1.556	1.255	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3B27P	52	1.051	0.848	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3B28	2	1.556	1.255	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3B28P	52	1.051	0.848	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3B29	2	1.556	1.255	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3B29P	52	1.051	0.848	495.9	8.745	3.3	6.625	6.403	0.000	60.39	HBD
MS-3B30	2	1.556	1.255	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3B30P	52	1.051	0.848	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3B31	2	3.711	1.255	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3B31P	52	2.507	0.848	495.9	8.745	3.3	6.625	6.403	0.000	60.39	HBD
MS-3B30	2	3.711	1.255	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3B30P	52	2.507	0.848	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3B31	2	3.711	1.255	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3B31P	52	2.507	0.848	495.9	8.745	3.3	6.625	6.403	0.000	60.39	HBD
MS-3B32	2	3.711	1.255	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3B32P	52	2.507	0.848	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3B33	2	3.711	1.255	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3B33P	52	2.507	0.848	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3B34	12	4.112	1.391	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3B34 (D/S)	12	4.112	1.391	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3B34P	62	2.006	0.678	495.9	8.745	3.3	6.625	6.403	0.000	60.39	HBD
MS-3B35	2	3.711	1.255	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3B35P	52	2.507	0.848	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3B36	2	3.711	1.255	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3B36P	52	2.507	0.848	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3B37	2	3.711	1.255	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3B37P	52	2.507	0.848	495.9	10.806	3.3	6.625	6.403	0.000	60.39	HBD
MS-3B38	2	3.711	1.255	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***MSD50A-1-RHDT23B to CV***									***Sorted By: Flow Order***	
MS-3B38P US	52	2.507	0.848	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3B38P DS	52	2.507	0.848	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3B39	2	3.711	1.255	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3B40	4	3.711	1.255	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3B40R	18	2.808	0.950	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3B40R (D/S)	18	1.786	0.604	495.9	3.910	3.3	8.625	6.403	0.000	60.39	HBD
MS-3B40P	68	1.489	0.504	495.9	3.910	3.3	8.625	6.403	0.000	60.39	HBD
MS-3B41	2	2.203	0.745	495.9	3.910	3.3	8.625	6.403	0.000	60.39	HBD
MS-3B41P US	52	1.489	0.504	495.9	10.736	3.3	8.625	6.403	0.000	60.39	HBD
MS-3B41P DS	52	1.489	0.504	495.9	10.736	3.3	8.625	6.403	0.000	60.39	HBD
MS-3B42	2	2.203	0.745	495.9	3.910	3.3	8.625	6.403	0.000	60.39	HBD
MS-3B42P US	52	1.489	0.504	495.9	3.910	3.3	8.625	6.403	0.000	60.39	HBD
MS-3B42P DS	52	1.489	0.504	495.9	3.910	3.3	8.625	6.403	0.000	60.39	HBD
MS-3B42R	17	1.489	0.504	495.9	3.910	3.3	8.625	6.403	0.000	60.39	HBD
MS-3B42R (D/S)	17	3.364	1.175	495.9	15.767	3.3	4.500	6.403	0.000	60.39	HBD

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).DB

Service Life Report

Pass 2 Analysis Include Measured Wear

Report Date/Time: 7/7/2010 9:54:36AM
AnalysisDate/Time:

Run Name: RHTR DRN TK 23B USCV
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 1.025

CHECWORKS SFA Version: 3.0 (build 105)
Duty Factor (Global) :1.000

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **MSD50A-1-RHDT23B to CV**					***Sorted By:Remaining Life***		
MS-3B21FE	0.000	0.292	0.233	0.233	307,880	No	243,721
MS-3B11N	0.000	0.292	0.233	0.233	307,880	No	243,721
MS-3B31	0.000	0.316	0.233	0.233	581,406	Yes	243,721
MS-3B42R (D/S)	0.000	0.243	0.158	0.158	635,375	No	243,721
MS-3B12	0.000	0.329	0.233	0.233	669,216	No	243,721
MS-3B17	0.000	0.329	0.233	0.233	669,216	No	243,721
MS-3B18	0.000	0.329	0.233	0.233	669,216	No	243,721
MS-3B31	0.000	0.329	0.233	0.233	669,216	No	243,721
MS-3B32	0.000	0.329	0.233	0.233	669,216	No	243,721
MS-3B33	0.000	0.329	0.233	0.233	669,216	No	243,721
MS-3B35	0.000	0.329	0.233	0.233	669,216	No	243,721
MS-3B36	0.000	0.329	0.233	0.233	669,216	No	243,721
MS-3B37	0.000	0.329	0.233	0.233	669,216	No	243,721
MS-3B38	0.000	0.329	0.233	0.233	669,216	No	243,721
MS-3B15	0.000	0.329	0.233	0.233	669,216	No	243,721
MS-3B13	0.000	0.329	0.233	0.233	669,216	No	243,721
MS-3B16	0.000	0.329	0.233	0.233	669,216	No	243,721
MS-3B21	0.000	0.329	0.233	0.233	669,216	No	243,721
MS-3B34 (D/S)	0.000	0.350	0.233	0.233	737,406	No	243,721
MS-3B22	0.000	0.343	0.233	0.233	769,910	Yes	243,721
MS-3B11	0.000	0.340	0.233	0.233	837,672	No	243,721
MS-3B24	0.000	0.340	0.233	0.233	837,672	No	243,721
MS-3B16P	0.000	0.343	0.233	0.233	886,366	No	243,721
MS-3B20	0.000	0.364	0.233	0.233	912,281	Yes	243,721
MS-3B23	0.000	0.368	0.233	0.233	942,926	Yes	243,721
MS-3B30	0.000	0.373	0.233	0.233	979,210	Yes	243,721
MS-3B25	0.441	0.377	0.233	0.233	1,000,849	Yes	107,113
MS-3B39	0.000	0.383	0.233	0.233	1,047,612	Yes	243,721
MS-3B40	0.000	0.383	0.233	0.233	1,047,612	Yes	243,721
MS-3B14	0.000	0.391	0.233	0.233	1,104,596	Yes	243,721

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **MSD50A-1-RHDT23B to CV**					***Sorted By:Remaining Life***		
MS-3B19	0.457	0.398	0.233	0.233	1,136,216	Yes	243,721
MS-3B11P-1	0.000	0.357	0.233	0.233	1,183,941	No	243,721
MS-3B14P	0.000	0.381	0.233	0.233	1,197,519	Yes	243,721
MS-3B34	0.000	0.427	0.233	0.233	1,222,363	No	243,721
MS-3B27	0.000	0.413	0.233	0.233	1,256,982	No	107,113
MS-3B28	0.000	0.413	0.233	0.233	1,256,982	No	107,113
MS-3B29	0.000	0.413	0.233	0.233	1,256,982	No	107,113
MS-3B30	0.000	0.413	0.233	0.233	1,256,982	No	107,113
MS-3B20P US	0.000	0.391	0.233	0.233	1,273,373	Yes	243,721
MS-3B26	0.000	0.415	0.233	0.233	1,274,529	Yes	107,113
MS-3B12P	0.000	0.362	0.233	0.233	1,336,299	No	243,721
MS-3B21P	0.000	0.362	0.233	0.233	1,336,299	No	243,721
MS-3B17P	0.000	0.362	0.233	0.233	1,336,299	No	243,721
MS-3B31P	0.000	0.362	0.233	0.233	1,336,299	No	243,721
MS-3B32P	0.000	0.362	0.233	0.233	1,336,299	No	243,721
MS-3B35P	0.000	0.362	0.233	0.233	1,336,299	No	243,721
MS-3B36P	0.000	0.362	0.233	0.233	1,336,299	No	243,721
MS-3B37P	0.000	0.362	0.233	0.233	1,336,299	No	243,721
MS-3B38P US	0.000	0.362	0.233	0.233	1,336,299	No	243,721
MS-3B33P	0.000	0.374	0.233	0.233	1,456,184	Yes	243,721
MS-3B22P DS	0.000	0.374	0.233	0.233	1,459,262	Yes	243,721
MS-3B13P	0.000	0.378	0.233	0.233	1,502,213	Yes	243,721
MS-3B31P	0.000	0.383	0.233	0.233	1,549,144	Yes	243,721
MS-3B30P	0.000	0.385	0.233	0.233	1,569,802	Yes	243,721
MS-3B41	0.000	0.439	0.303	0.303	1,593,307	No	243,721
MS-3B11P	0.000	0.371	0.233	0.233	1,616,777	No	243,721
MS-3B24P US	0.000	0.371	0.233	0.233	1,616,777	No	243,721
MS-3B18P DS	0.000	0.391	0.233	0.233	1,629,054	Yes	243,721
MS-3B38P DS	0.000	0.392	0.233	0.233	1,645,183	Yes	243,721
MS-3B26P US	0.000	0.393	0.233	0.233	1,657,147	Yes	107,113
MS-3B22P US	0.000	0.402	0.233	0.233	1,744,041	Yes	243,721
MS-3B34P	0.000	0.376	0.233	0.233	1,850,508	No	243,721
MS-3B25P	0.437	0.393	0.233	0.233	1,878,573	Yes	107,113
MS-3B23P US	0.000	0.415	0.233	0.233	1,882,749	Yes	243,721
MS-3B27P	0.000	0.419	0.233	0.233	1,924,065	No	107,113
MS-3B28P	0.000	0.419	0.233	0.233	1,924,065	No	107,113
MS-3B29P	0.000	0.419	0.233	0.233	1,924,065	No	107,113
MS-3B30P	0.000	0.419	0.233	0.233	1,924,065	No	107,113
MS-3B24P DS	0.000	0.401	0.233	0.233	1,969,012	Yes	243,721

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **MSD50A-1-RHDT23B to CV**					***Sorted By:Remaining Life***		
MS-3B42	0.000	0.476	0.303	0.303	2,028,254	Yes	243,721
MS-3B40R	0.000	0.455	0.233	0.233	2,044,913	Yes	243,721
MS-3B40R (D/S)	0.000	0.471	0.303	0.303	2,431,006	Yes	243,721
MS-3B40P	0.000	0.459	0.303	0.303	2,703,954	No	243,721
MS-3B41P US	0.000	0.459	0.303	0.303	2,703,954	No	243,721
MS-3B42P DS	0.000	0.459	0.303	0.303	2,703,954	No	243,721
MS-3B42R	0.000	0.459	0.303	0.303	2,703,954	No	243,721
MS-3B42P US	0.000	0.462	0.303	0.303	2,769,784	Yes	243,721
MS-3B41P DS	0.000	0.468	0.303	0.303	2,874,171	Yes	243,721
MS-3B21P-1	0.000	0.395	0.233	0.233	4,140,877	No	243,721

Note:
[1] Predictions are based on last Tmeas to analysis ending period.

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).DB

Service Life Report

Pass 2 Analysis Include Measured Wear

Report Date/Time: 7/7/2010 9:54:36AM
AnalysisDate/Time:

Run Name: RHTR DRN TK 23B USCV
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 1.025

CHECWORKS SFA Version: 3.0 (build 105)
Duty Factor (Global) : 1.000

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **MSD50A-1-RHDT23B to CV**					***Sorted By:Flow Order***		
MS-3B11N	0.000	0.292	0.233	0.233	307,880	No	243,721
MS-3B11P-1	0.000	0.357	0.233	0.233	1,183,941	No	243,721
MS-3B11	0.000	0.340	0.233	0.233	837,672	No	243,721
MS-3B11P	0.000	0.371	0.233	0.233	1,616,777	No	243,721
MS-3B12	0.000	0.329	0.233	0.233	669,216	No	243,721
MS-3B12P	0.000	0.362	0.233	0.233	1,336,299	No	243,721
MS-3B13	0.000	0.329	0.233	0.233	669,216	No	243,721
MS-3B13P	0.000	0.378	0.233	0.233	1,502,213	Yes	243,721
MS-3B14	0.000	0.391	0.233	0.233	1,104,596	Yes	243,721
MS-3B14P	0.000	0.381	0.233	0.233	1,197,519	Yes	243,721
MS-3B15	0.000	0.329	0.233	0.233	669,216	No	243,721
MS-3B16	0.000	0.329	0.233	0.233	669,216	No	243,721
MS-3B16P	0.000	0.343	0.233	0.233	886,366	No	243,721
MS-3B17	0.000	0.329	0.233	0.233	669,216	No	243,721
MS-3B17P	0.000	0.362	0.233	0.233	1,336,299	No	243,721
MS-3B18	0.000	0.329	0.233	0.233	669,216	No	243,721
MS-3B18P DS	0.000	0.391	0.233	0.233	1,629,054	Yes	243,721
MS-3B19	0.457	0.398	0.233	0.233	1,136,216	Yes	243,721
MS-3B20	0.000	0.364	0.233	0.233	912,281	Yes	243,721
MS-3B20P US	0.000	0.391	0.233	0.233	1,273,373	Yes	243,721
MS-3B21	0.000	0.329	0.233	0.233	669,216	No	243,721
MS-3B21P	0.000	0.362	0.233	0.233	1,336,299	No	243,721
MS-3B21FE	0.000	0.292	0.233	0.233	307,880	No	243,721
MS-3B21P-1	0.000	0.395	0.233	0.233	4,140,877	No	243,721
MS-3B22	0.000	0.343	0.233	0.233	769,910	Yes	243,721
MS-3B22P US	0.000	0.402	0.233	0.233	1,744,041	Yes	243,721
MS-3B22P DS	0.000	0.374	0.233	0.233	1,459,262	Yes	243,721
MS-3B23	0.000	0.368	0.233	0.233	942,926	Yes	243,721
MS-3B23P US	0.000	0.415	0.233	0.233	1,882,749	Yes	243,721
MS-3B24	0.000	0.340	0.233	0.233	837,672	No	243,721

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **MSD50A-1-RHDT23B to CV**					***Sorted By:Flow Order***		
MS-3B24P US	0.000	0.371	0.233	0.233	1,616,777	No	243,721
MS-3B24P DS	0.000	0.401	0.233	0.233	1,969,012	Yes	243,721
MS-3B25	0.441	0.377	0.233	0.233	1,000,849	Yes	107,113
MS-3B25P	0.437	0.393	0.233	0.233	1,878,573	Yes	107,113
MS-3B26	0.000	0.415	0.233	0.233	1,274,529	Yes	107,113
MS-3B26P US	0.000	0.393	0.233	0.233	1,657,147	Yes	107,113
MS-3B27	0.000	0.413	0.233	0.233	1,256,982	No	107,113
MS-3B27P	0.000	0.419	0.233	0.233	1,924,065	No	107,113
MS-3B28	0.000	0.413	0.233	0.233	1,256,982	No	107,113
MS-3B28P	0.000	0.419	0.233	0.233	1,924,065	No	107,113
MS-3B29	0.000	0.413	0.233	0.233	1,256,982	No	107,113
MS-3B29P	0.000	0.419	0.233	0.233	1,924,065	No	107,113
MS-3B30	0.000	0.413	0.233	0.233	1,256,982	No	107,113
MS-3B30P	0.000	0.419	0.233	0.233	1,924,065	No	107,113
MS-3B31	0.000	0.329	0.233	0.233	669,216	No	243,721
MS-3B31P	0.000	0.362	0.233	0.233	1,336,299	No	243,721
MS-3B30	0.000	0.373	0.233	0.233	979,210	Yes	243,721
MS-3B30P	0.000	0.385	0.233	0.233	1,569,802	Yes	243,721
MS-3B31	0.000	0.316	0.233	0.233	581,406	Yes	243,721
MS-3B31P	0.000	0.383	0.233	0.233	1,549,144	Yes	243,721
MS-3B32	0.000	0.329	0.233	0.233	669,216	No	243,721
MS-3B32P	0.000	0.362	0.233	0.233	1,336,299	No	243,721
MS-3B33	0.000	0.329	0.233	0.233	669,216	No	243,721
MS-3B33P	0.000	0.374	0.233	0.233	1,456,184	Yes	243,721
MS-3B34	0.000	0.427	0.233	0.233	1,222,363	No	243,721
MS-3B34 (D/S)	0.000	0.350	0.233	0.233	737,406	No	243,721
MS-3B34P	0.000	0.376	0.233	0.233	1,850,508	No	243,721
MS-3B35	0.000	0.329	0.233	0.233	669,216	No	243,721
MS-3B35P	0.000	0.362	0.233	0.233	1,336,299	No	243,721
MS-3B36	0.000	0.329	0.233	0.233	669,216	No	243,721
MS-3B36P	0.000	0.362	0.233	0.233	1,336,299	No	243,721
MS-3B37	0.000	0.329	0.233	0.233	669,216	No	243,721
MS-3B37P	0.000	0.362	0.233	0.233	1,336,299	No	243,721
MS-3B38	0.000	0.329	0.233	0.233	669,216	No	243,721
MS-3B38P US	0.000	0.362	0.233	0.233	1,336,299	No	243,721
MS-3B38P DS	0.000	0.392	0.233	0.233	1,645,183	Yes	243,721
MS-3B39	0.000	0.383	0.233	0.233	1,047,612	Yes	243,721
MS-3B40	0.000	0.383	0.233	0.233	1,047,612	Yes	243,721
MS-3B40R	0.000	0.455	0.233	0.233	2,044,913	Yes	243,721

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **MSD50A-1-RHDT23B to CV**					***Sorted By:Flow Order***		
MS-3B40R (D/S)	0.000	0.471	0.303	0.303	2,431,006	Yes	243,721
MS-3B40P	0.000	0.459	0.303	0.303	2,703,954	No	243,721
MS-3B41	0.000	0.439	0.303	0.303	1,593,307	No	243,721
MS-3B41P US	0.000	0.459	0.303	0.303	2,703,954	No	243,721
MS-3B41P DS	0.000	0.468	0.303	0.303	2,874,171	Yes	243,721
MS-3B42	0.000	0.476	0.303	0.303	2,028,254	Yes	243,721
MS-3B42P US	0.000	0.462	0.303	0.303	2,769,784	Yes	243,721
MS-3B42P DS	0.000	0.459	0.303	0.303	2,703,954	No	243,721
MS-3B42R	0.000	0.459	0.303	0.303	2,703,954	No	243,721
MS-3B42R (D/S)	0.000	0.243	0.158	0.158	635,375	No	243,721

Note:
[1] Predictions are based on last Tmeas to analysis ending period.

3

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).DB

Wear Report

Pass 2 Analysis Include Measured Wear

Report Date/Time: 07-Jul-2010 9:54 am
AnalysisDate/Time: 07-Jul-2010 9:54 am

Run Name: RHTR DRN TK 23B USCV
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 1.025

CHECWORKS SFA Version: 3.0 (build 105)
Duty Factor (Global) : 1.000

Component Name	Tinit	Total Lifetime Wear (mils) Prd. [1]	Total Lifetime Wear (mils) Meas.	In-Service Component Wear(mils) Prd. [1]	In-Service Component Wear(mils) Meas.	In-Service Component Tmeas, Method, Time (in) [3]	[2]	(hrs) [3]	In-Service Component Thickness (mils) [4] Tp	Tm	Incremental Wear (mils) [5] PRWEAR	Time (hrs) Last Inspected
===>Grouped by Line:	**MSD50A-1-RHDT23B to CV**											***Sorted By: Flow Order***
MS-3B13P	0.000	29.1	43.0	29.1	43.0	0.380	MT	226,201	363.9	380.0	1.7	226,201
MS-3B14	0.000	98.4	95.0	98.4	95.0	0.396	MT	209,806	333.6	396.0	4.9	209,806
MS-3B14P	0.000	78.6	51.0	78.6	51.0	0.392	MT	165,113	353.4	392.0	10.7	165,113
MS-3B18P DS	0.000	59.3	44.0	59.3	44.0	0.401	MT	149,573	372.7	401.0	10.4	149,573
MS-3B19	0.457	89.3	43.0	89.3	43.0	0.414	MT	149,573	367.7	414.0	15.7	149,573
MS-3B20	0.000	87.8	76.0	87.8	76.0	0.379	MT	149,573	344.2	379.0	15.4	149,573
MS-3B20P US	0.000	76.0	59.0	76.0	59.0	0.404	MT	149,573	356.0	404.0	13.3	149,573
MS-3B22	0.000	65.4	72.0	65.4	72.0	0.381	MT	106,128	366.6	381.0	37.8	106,128
MS-3B22P US	0.000	44.2	79.0	44.2	79.0	0.405	MT	209,806	365.5	405.0	3.3	106,128
MS-3B22P DS	0.000	56.9	51.0	56.9	51.0	0.387	MT	136,608	375.1	387.0	12.9	136,608
MS-3B23	0.000	84.2	50.0	84.2	50.0	0.387	MT	136,608	347.8	387.0	19.0	136,608
MS-3B23P US	0.000	56.9	51.0	56.9	51.0	0.428	MT	136,608	375.1	428.0	12.9	136,608
MS-3B24P DS	0.000	54.0	69.0	54.0	69.0	0.408	MT	165,113	378.0	408.0	7.4	165,113
MS-3B25	0.441	90.8	154.5	14.2	118.5	0.382	MT	209,806	426.8	382.0	4.9	209,806
MS-3B25P	0.437	5.8	38.0	5.8	38.0	0.399	GW	181,477	431.2	399.0	5.6	181,477
MS-3B26	0.000	87.9	225.0	9.7	101.0	0.418	MT	226,201	415.5	418.0	2.5	181,477
MS-3B26P US	0.000	62.9	76.0	11.2	42.0	0.395	MT	226,201	420.8	395.0	1.7	226,201
MS-3B29P	0.000	49.6	51.0	0.0	0.0	0.432	ER	136,608	432.0	432.0	12.9	0
MS-3B30	0.000	73.4	49.0	73.4	49.0	0.403	MT	119,088	358.6	403.0	29.8	119,088
MS-3B30P	0.000	49.6	46.0	49.6	46.0	0.405	MT	119,088	382.4	405.0	20.2	119,088
MS-3B31	0.000	73.4	84.0	73.4	84.0	0.346	MT	119,088	358.6	346.0	29.8	119,088
MS-3B31P	0.000	49.6	54.0	49.6	54.0	0.403	MT	119,088	382.4	403.0	20.2	119,088
MS-3B33P	0.000	49.6	42.0	49.6	42.0	0.394	MT	119,088	382.4	394.0	20.2	119,088
MS-3B38P DS	0.000	56.9	37.0	56.9	37.0	0.405	MT	136,608	375.1	405.0	12.9	136,608
MS-3B39	0.000	84.2	64.0	84.2	64.0	0.402	MT	136,608	347.8	402.0	19.0	136,608
MS-3B40	0.000	84.2	51.0	84.2	51.0	0.402		136,608	347.8	402.0	19.0	136,608
MS-3B40R	0.000	63.7	65.0	63.7	65.0	0.469	MT	136,608	368.3	469.0	14.4	136,608
MS-3B40R (D/S)	0.000	40.5	44.0	40.5	44.0	0.480	MT	136,608	459.5	480.0	9.2	136,608

Component Name	Tinit	Total Lifetime Wear (mils) Prd. [1]	Total Lifetime Wear (mils) Meas.	In-Service Component Wear(mils) Prd. [1]	In-Service Component Wear(mils) Meas.	In-Service Component Tmeas, Method, Time (in) [3]	[2]	(hrs) [3]	In-Service Component Thickness (mils) [4] Tp	Tm	Incremental Wear (mils) [5] PRWEAR	Time (hrs) Last Inspected
===>Grouped by Line:	**MSD50A-1-RHDT23B to CV**											***Sorted By: Flow Order***
MS-3B41P DS	0.000	33.8	49.0	33.8	49.0	0.476	MT	136,608	466.2	476.0	7.6	136,608
MS-3B42	0.000	50.0	50.0	50.0	50.0	0.487	MT	136,608	450.0	487.0	11.3	136,608
MS-3B42P US	0.000	33.8	44.0	33.8	44.0	0.470	MT	136,608	466.2	470.0	7.6	136,608

Notes:
[1] Predictions are for the time of last inspection (last known meas. wear).
[2] GW = Tmeas is minimum thickness from Band, Blanket or Area Method of greatest wear.
MT = Tmeas is component minimum thickness.
PW = Tmeas is Tinit - predicted wear.
US = Tmeas is user specified.
[3] If no Tmeas has been determined from measured data, then Tmeas = Tinit and Time = current component installation time.
Tmeas is used to determine Predicted Thickness and Component Predicted Time to Tcrit.
[4] These two values are used for thickness plot.
Tp = Predicted thickness at Tmeas.
Tm = Last measured thickness (Tmeas).
[5] PRWEAR = Incremental wear from last Tmeas time to analysis ending period.

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).DB

Wear Rate Report

Pass 2 Analysis Include Measured Wear

Report Date/Time: 7/7/2010 9:54:36AM
AnalysisDate/Time: 6/11/2010 11:40:48AM

CHECWORKS SFA Version: 3.0 (build 105)
Duty Factor (Global) : 1.000

Run Name: RHTR DTK A DRN DSCV
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 1.102

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***MSD45B-1-RHDT21A CV to FWH26***								***Sorted By: Average Wear Rate***		
MS-1A-VALVE-LCV-1104	24	10.043	3.508	495.9	15.767	3.3	4.500	6.403	0.000	60.39	HBD
MS-1A30R2	18	0.001	0.001	495.9	15.767	3.3	4.500	6.403	0.000	60.39	HBD
MS-1A31	2	0.001	0.001	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A32	1	0.001	0.001	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A30R2 (D/S)	18	0.001	0.001	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A30P2	68	0.001	0.000	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A31P	52	0.001	0.000	495.9	10.806	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A32P	51	0.001	0.000	495.9	10.806	3.3	6.625	6.403	0.000	60.39	HBD
===>Grouped by Line:	***MSD45C-1-RHDT A HDR to FWH26***								***Sorted By: Average Wear Rate***		
MS-1A34T1 (BR/SE)	12	3.665	1.240	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A34T1 (D/S)	12	1.722	0.583	495.9	2.450	3.3	10.750	6.403	0.000	60.39	HBD
MS-1A34P1	62	0.840	0.284	495.9	2.450	3.3	10.750	6.403	0.000	60.39	HBD
===>Grouped by Line:	***MSD45C-2-RHDT A HDR to FWH26***								***Sorted By: Average Wear Rate***		
MS-1A34T2 (BR/SE)	12	3.665	1.240	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A34T2 (D/S)	12	3.118	1.055	495.9	4.965	3.3	10.750	6.403	0.000	60.39	HBD
MS-1A35	1	2.509	0.849	495.9	4.965	3.3	10.750	6.403	0.000	60.39	HBD
MS-1A34T2	12	1.722	0.583	495.9	2.450	3.3	10.750	6.403	0.000	60.39	HBD
MS-1A34P2	62	1.521	0.514	495.9	4.965	3.3	10.750	6.403	0.000	60.39	HBD
===>Grouped by Line:	***MSD45C-3-RHDT A HDR to FWH26***								***Sorted By: Average Wear Rate***		
MS-1A35T (D/S)	12	4.422	1.496	495.9	7.499	3.3	10.750	6.403	0.000	60.39	HBD
MS-1A36	3	3.775	1.277	495.9	7.499	3.3	10.750	6.403	0.000	60.39	HBD
MS-1A35T (BR/SE)	12	3.665	1.240	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A37	1	3.559	1.204	495.9	7.499	3.3	10.750	6.403	0.000	60.39	HBD
MS-1A38	1	3.559	1.204	495.9	7.499	3.3	10.750	6.403	0.000	60.39	HBD
MS-1A39	1	3.559	1.204	495.9	7.499	3.3	10.750	6.403	0.000	60.39	HBD
MS-1A40	1	3.559	1.204	495.9	7.499	3.3	10.750	6.403	0.000	60.39	HBD
MS-1A35T	12	3.118	1.055	495.9	4.965	3.3	10.750	6.403	0.000	60.39	HBD

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***MSD45C-3-RHDT A HDR to FWH26***								***Sorted By: Average Wear Rate***		
MS-1A36P US	51	2.373	0.803	495.9	7.499	3.3	10.750	6.403	0.000	60.39	HBD
MS-1A36P DS	51	2.373	0.803	495.9	7.499	3.3	10.750	6.403	0.000	60.39	HBD
MS-1A37P US	51	2.373	0.803	495.9	7.499	3.3	10.750	6.403	0.000	60.39	HBD
MS-1A37P DS	51	2.373	0.803	495.9	7.499	3.3	10.750	6.403	0.000	60.39	HBD
MS-1A38P	51	2.373	0.803	495.9	7.499	3.3	10.750	6.403	0.000	60.39	HBD
MS-1A39P	51	2.373	0.803	495.9	8.204	3.3	10.750	6.403	0.000	60.39	HBD
MS-1A40P	51	2.373	0.803	495.9	7.499	3.3	10.750	6.403	0.000	60.39	HBD
MS-1A41	14	0.001	0.001	495.9	7.499	3.3	10.750	6.403	0.000	60.39	HBD
MS-1A41 (D/S)	14	0.001	0.001	495.9	4.965	3.3	10.750	6.403	0.000	60.39	HBD
MS-1A41 (BR/SE)	14	0.001	0.001	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
===>Grouped by Line:	***MSD45C-4-RHDT A HDR to FWH26C***								***Sorted By: Average Wear Rate***		
MS-1A-VALVE-MS-14-2	22	5.389	1.823	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A66 (D/S)	12	4.419	1.495	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A66	12	4.419	1.495	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A67R	18	3.018	1.021	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A67N	30	2.560	0.866	495.9	3.910	3.3	8.625	6.403	0.000	60.39	HBD
MS-1A66P US	58	2.371	0.802	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A66P DS	58	2.371	0.802	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A67 (D/S)	12	2.285	1.495	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A67	12	2.285	1.495	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A67P-1	62	2.156	0.729	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A67P US	62	2.156	0.729	495.9	8.745	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A67P DS	62	2.156	0.729	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A67R (D/S)	18	1.920	0.649	495.9	3.910	3.3	8.625	6.403	0.000	60.39	HBD
MS-1A63	2	0.001	0.001	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A64	2	0.001	0.001	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A65	2	0.001	0.001	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A64P US	52	0.001	0.000	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A64P DS	52	0.001	0.000	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A65P US	52	0.001	0.000	495.9	8.745	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A65P DS	52	0.001	0.000	495.9	8.745	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A63P US	64	0.000	0.000	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A63P DS	64	0.000	0.000	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
===>Grouped by Line:	***MSD45C-5-RHDT A HDR to FWH26***								***Sorted By: Average Wear Rate***		
MS-1A68	14	6.372	2.155	495.9	7.870	3.3	8.625	6.403	0.000	60.39	HBD
MS-1A42	1	3.823	1.293	495.9	7.870	3.3	8.625	6.403	0.000	60.39	HBD

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***MSD45C-5-RHDT A HDR to FWH26***								***Sorted By: Average Wear Rate***		
MS-1A43	1	3.823	1.293	495.9	7.870	3.3	8.625	6.403	0.000	60.39	HBD
MS-1A44	1	3.823	1.293	495.9	7.870	3.3	8.625	6.403	0.000	60.39	HBD
MS-1A45	1	3.823	1.293	495.9	7.870	3.3	8.625	6.403	0.000	60.39	HBD
MS-1A68 (BR/SE)	14	3.773	1.276	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A41R (D/S)	7	3.707	1.254	495.9	7.870	3.3	8.625	6.403	0.000	60.39	HBD
MS-1A68 (D/S)	14	3.520	1.191	495.9	3.910	3.3	8.625	6.403	0.000	60.39	HBD
MS-1A41P-1 US	57	2.896	0.980	495.9	7.870	3.3	8.625	6.403	0.000	60.39	HBD
MS-1A41P-1 DS	57	2.896	0.980	495.9	7.870	3.3	8.625	6.403	0.000	60.39	HBD
MS-1A41R	7	2.661	0.900	495.9	4.965	3.3	10.750	6.403	0.000	60.39	HBD
MS-1A42P US	51	2.549	0.862	495.9	15.283	3.3	8.625	6.403	0.000	60.39	HBD
MS-1A42P DS	51	2.549	0.862	495.9	15.283	3.3	8.625	6.403	0.000	60.39	HBD
MS-1A43P US	51	2.549	0.862	495.9	7.870	3.3	8.625	6.403	0.000	60.39	HBD
MS-1A43P DS	51	2.549	0.862	495.9	7.870	3.3	8.625	6.403	0.000	60.39	HBD
MS-1A44P US	51	2.549	0.862	495.9	7.870	3.3	8.625	6.403	0.000	60.39	HBD
MS-1A44P DS	51	2.549	0.862	495.9	9.952	3.3	8.625	6.403	0.000	60.39	HBD
MS-1A45P US	51	2.549	0.862	495.9	7.870	3.3	8.625	6.403	0.000	60.39	HBD
===>Grouped by Line:	***MSD45D-1-RHDT A HDR to FWH26B***								***Sorted By: Average Wear Rate***		
MS-1A-VALVE-MS-14-1	22	5.389	1.823	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A61 (D/S)	12	4.419	1.495	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A62 (D/S)	12	4.419	1.495	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A62	12	4.419	1.495	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A61	12	4.419	1.495	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A55	4	3.988	1.349	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A56	2	3.988	1.349	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A57	4	3.988	1.349	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A58	2	3.988	1.349	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A59	2	3.988	1.349	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A60	2	3.988	1.349	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A55P	54	3.449	1.167	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A57P	54	3.449	1.167	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A57P DS	54	3.449	1.167	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A62R	18	3.018	1.021	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A58P	52	2.695	0.911	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A59P US	52	2.695	0.911	495.9	8.745	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A59P DS	52	2.695	0.911	495.9	8.745	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A62N	30	2.560	0.866	495.9	3.910	3.3	8.625	6.403	0.000	60.39	HBD

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***MSD45D-1-RHDT A HDR to FWH26B***								***Sorted By: Average Wear Rate***		
MS-1A60P US	58	2.371	0.802	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A60P DS	58	2.371	0.802	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A68P	64	2.156	0.729	495.9	8.745	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A61P US	62	2.156	0.729	495.9	8.745	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A61P-1	62	2.156	0.729	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A61P DS	62	2.156	0.729	495.9	8.745	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A62R (D/S)	18	1.920	0.649	495.9	3.910	3.3	8.625	6.403	0.000	60.39	HBD
===>Grouped by Line:	***MSD45D-2-RHDT A HDR to FWH26A***								***Sorted By: Average Wear Rate***		
MS-1A-VALVE-MS-14	22	5.389	1.823	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A54 (D/S)	12	4.419	1.495	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A53 (D/S)	12	4.419	1.495	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A54	12	4.419	1.495	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A53	12	4.419	1.495	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A46	2	3.988	1.349	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A47	4	3.988	1.349	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A48	2	3.988	1.349	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A49	4	3.988	1.349	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A50	2	3.988	1.349	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A51	2	3.988	1.349	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A52	2	3.988	1.349	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A45R (D/S)	7	3.449	1.167	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A47P US	54	3.449	1.167	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A47P DS	54	3.449	1.167	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A49P US	54	3.449	1.167	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A49P DS	54	3.449	1.167	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A54R	18	3.018	1.021	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A46P	52	2.695	0.911	495.9	8.745	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A50P	52	2.695	0.911	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A51P US	52	2.695	0.911	495.9	8.745	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A51P DS	52	2.695	0.911	495.9	8.745	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A54N	30	2.560	0.866	495.9	3.910	3.3	8.625	6.403	0.000	60.39	HBD
MS-1A52P US	58	2.371	0.802	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A52P DS	58	2.371	0.802	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A45R	7	2.240	0.758	495.9	3.910	3.3	8.625	6.403	0.000	60.39	HBD
MS-1A53P US	62	2.156	0.729	495.9	8.745	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A53P-1	62	2.156	0.729	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***MSD45D-2-RHDT A HDR to FWH26A***								***Sorted By: Average Wear Rate***		
MS-1A53P DS	62	2.156	0.729	495.9	8.745	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A45P-1 US	67	2.156	0.729	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A45P-1 DS	67	2.156	0.729	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A54R (D/S)	18	1.920	0.649	495.9	3.910	3.3	8.625	6.403	0.000	60.39	HBD
===>Grouped by Line:	***MSD46A-2-RHDT22A CV to FWH26***								***Sorted By: Average Wear Rate***		
MS-2A-VALVE-LCV-1104A	24	16.140	5.638	495.9	33.594	3.3	3.500	6.403	0.000	60.39	HBD
MS-2A24R	18	0.001	0.001	495.9	15.767	3.3	4.500	6.403	0.000	60.39	HBD
MS-2A24	2	0.001	0.001	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2A25	1	0.001	0.001	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2A24R (D/S)	18	0.001	0.001	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2A23P	68	0.001	0.000	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2A24P	52	0.001	0.000	495.9	10.806	3.3	6.625	6.403	0.000	60.39	HBD
MS-2A25P	51	0.001	0.000	495.9	10.806	3.3	6.625	6.403	0.000	60.39	HBD
===>Grouped by Line:	***MSD47-2-RHDT23A CV to FWH26***								***Sorted By: Average Wear Rate***		
MS-3A-VALVE-LCV-1104B	24	10.043	3.508	495.9	15.767	3.3	4.500	6.403	0.000	60.39	HBD
MS-3A24R	18	0.001	0.001	495.9	15.767	3.3	4.500	6.403	0.000	60.39	HBD
MS-3A24	2	0.001	0.001	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3A25	1	0.001	0.001	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3A24R (D/S)	18	0.001	0.001	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3A23P	68	0.001	0.000	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3A24P	52	0.001	0.000	495.9	10.806	3.3	6.625	6.403	0.000	60.39	HBD
MS-3A25P	51	0.001	0.000	495.9	10.806	3.3	6.625	6.403	0.000	60.39	HBD

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).DB

Wear Rate Report

Pass 2 Analysis Include Measured Wear

Report Date/Time: 7/7/2010 9:54:36AM
AnalysisDate/Time: 6/11/2010 11:40:48AM

CHECWORKS SFA Version: 3.0 (build 105)
Duty Factor (Global) : 1.000

Run Name: RHTR DTK A DRN DSCV
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 1.102

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***MSD45B-1-RHDT21A CV to FWH26***									***Sorted By: Flow Order***	
MS-1A-VALVE-LCV-1104	24	10.043	3.508	495.9	15.767	3.3	4.500	6.403	0.000	60.39	HBD
MS-1A30R2	18	0.001	0.001	495.9	15.767	3.3	4.500	6.403	0.000	60.39	HBD
MS-1A30R2 (D/S)	18	0.001	0.001	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A30P2	68	0.001	0.000	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A31	2	0.001	0.001	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A31P	52	0.001	0.000	495.9	10.806	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A32	1	0.001	0.001	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A32P	51	0.001	0.000	495.9	10.806	3.3	6.625	6.403	0.000	60.39	HBD
===>Grouped by Line:	***MSD45C-1-RHDT A HDR to FWH26***									***Sorted By: Flow Order***	
MS-1A34T1 (D/S)	12	1.722	0.583	495.9	2.450	3.3	10.750	6.403	0.000	60.39	HBD
MS-1A34P1	62	0.840	0.284	495.9	2.450	3.3	10.750	6.403	0.000	60.39	HBD
MS-1A34T1 (BR/SE)	12	3.665	1.240	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
===>Grouped by Line:	***MSD45C-2-RHDT A HDR to FWH26***									***Sorted By: Flow Order***	
MS-1A34T2	12	1.722	0.583	495.9	2.450	3.3	10.750	6.403	0.000	60.39	HBD
MS-1A34T2 (D/S)	12	3.118	1.055	495.9	4.965	3.3	10.750	6.403	0.000	60.39	HBD
MS-1A34P2	62	1.521	0.514	495.9	4.965	3.3	10.750	6.403	0.000	60.39	HBD
MS-1A35	1	2.509	0.849	495.9	4.965	3.3	10.750	6.403	0.000	60.39	HBD
MS-1A34T2 (BR/SE)	12	3.665	1.240	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
===>Grouped by Line:	***MSD45C-3-RHDT A HDR to FWH26***									***Sorted By: Flow Order***	
MS-1A35T (BR/SE)	12	3.665	1.240	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A35T	12	3.118	1.055	495.9	4.965	3.3	10.750	6.403	0.000	60.39	HBD
MS-1A35T (D/S)	12	4.422	1.496	495.9	7.499	3.3	10.750	6.403	0.000	60.39	HBD
MS-1A36	3	3.775	1.277	495.9	7.499	3.3	10.750	6.403	0.000	60.39	HBD
MS-1A36P US	51	2.373	0.803	495.9	7.499	3.3	10.750	6.403	0.000	60.39	HBD
MS-1A36P DS	51	2.373	0.803	495.9	7.499	3.3	10.750	6.403	0.000	60.39	HBD
MS-1A37	1	3.559	1.204	495.9	7.499	3.3	10.750	6.403	0.000	60.39	HBD
MS-1A37P US	51	2.373	0.803	495.9	7.499	3.3	10.750	6.403	0.000	60.39	HBD

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***MSD45C-3-RHDT A HDR to FWH26***								***Sorted By: Flow Order***		
MS-1A37P DS	51	2.373	0.803	495.9	7.499	3.3	10.750	6.403	0.000	60.39	HBD
MS-1A38	1	3.559	1.204	495.9	7.499	3.3	10.750	6.403	0.000	60.39	HBD
MS-1A38P	51	2.373	0.803	495.9	7.499	3.3	10.750	6.403	0.000	60.39	HBD
MS-1A39	1	3.559	1.204	495.9	7.499	3.3	10.750	6.403	0.000	60.39	HBD
MS-1A39P	51	2.373	0.803	495.9	8.204	3.3	10.750	6.403	0.000	60.39	HBD
MS-1A40	1	3.559	1.204	495.9	7.499	3.3	10.750	6.403	0.000	60.39	HBD
MS-1A40P	51	2.373	0.803	495.9	7.499	3.3	10.750	6.403	0.000	60.39	HBD
MS-1A41	14	0.001	0.001	495.9	7.499	3.3	10.750	6.403	0.000	60.39	HBD
MS-1A41 (BR/SE)	14	0.001	0.001	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A41 (D/S)	14	0.001	0.001	495.9	4.965	3.3	10.750	6.403	0.000	60.39	HBD
===>Grouped by Line:	***MSD45C-4-RHDT A HDR to FWH26C***								***Sorted By: Flow Order***		
MS-1A63P US	64	0.000	0.000	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A63P DS	64	0.000	0.000	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A63	2	0.001	0.001	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A64P US	52	0.001	0.000	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A64P DS	52	0.001	0.000	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A64	2	0.001	0.001	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A65P US	52	0.001	0.000	495.9	8.745	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A65P DS	52	0.001	0.000	495.9	8.745	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A65	2	0.001	0.001	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A-VALVE-MS-14-2	22	5.389	1.823	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A66P US	58	2.371	0.802	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A66P DS	58	2.371	0.802	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A66	12	4.419	1.495	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A66 (D/S)	12	4.419	1.495	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A67P US	62	2.156	0.729	495.9	8.745	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A67P DS	62	2.156	0.729	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A67	12	2.285	1.495	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A67 (D/S)	12	2.285	1.495	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A67P-1	62	2.156	0.729	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A67R	18	3.018	1.021	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A67R (D/S)	18	1.920	0.649	495.9	3.910	3.3	8.625	6.403	0.000	60.39	HBD
MS-1A67N	30	2.560	0.866	495.9	3.910	3.3	8.625	6.403	0.000	60.39	HBD
===>Grouped by Line:	***MSD45C-5-RHDT A HDR to FWH26***								***Sorted By: Flow Order***		
MS-1A41R	7	2.661	0.900	495.9	4.965	3.3	10.750	6.403	0.000	60.39	HBD
MS-1A41R (D/S)	7	3.707	1.254	495.9	7.870	3.3	8.625	6.403	0.000	60.39	HBD

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***MSD45C-5-RHDT A HDR to FWH26***									***Sorted By: Flow Order***	
MS-1A41P-1 US	57	2.896	0.980	495.9	7.870	3.3	8.625	6.403	0.000	60.39	HBD
MS-1A41P-1 DS	57	2.896	0.980	495.9	7.870	3.3	8.625	6.403	0.000	60.39	HBD
MS-1A42	1	3.823	1.293	495.9	7.870	3.3	8.625	6.403	0.000	60.39	HBD
MS-1A42P US	51	2.549	0.862	495.9	15.283	3.3	8.625	6.403	0.000	60.39	HBD
MS-1A42P DS	51	2.549	0.862	495.9	15.283	3.3	8.625	6.403	0.000	60.39	HBD
MS-1A43	1	3.823	1.293	495.9	7.870	3.3	8.625	6.403	0.000	60.39	HBD
MS-1A43P US	51	2.549	0.862	495.9	7.870	3.3	8.625	6.403	0.000	60.39	HBD
MS-1A43P DS	51	2.549	0.862	495.9	7.870	3.3	8.625	6.403	0.000	60.39	HBD
MS-1A44	1	3.823	1.293	495.9	7.870	3.3	8.625	6.403	0.000	60.39	HBD
MS-1A44P US	51	2.549	0.862	495.9	7.870	3.3	8.625	6.403	0.000	60.39	HBD
MS-1A44P DS	51	2.549	0.862	495.9	9.952	3.3	8.625	6.403	0.000	60.39	HBD
MS-1A45	1	3.823	1.293	495.9	7.870	3.3	8.625	6.403	0.000	60.39	HBD
MS-1A45P US	51	2.549	0.862	495.9	7.870	3.3	8.625	6.403	0.000	60.39	HBD
MS-1A68	14	6.372	2.155	495.9	7.870	3.3	8.625	6.403	0.000	60.39	HBD
MS-1A68 (BR/SE)	14	3.773	1.276	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A68 (D/S)	14	3.520	1.191	495.9	3.910	3.3	8.625	6.403	0.000	60.39	HBD
===>Grouped by Line:	***MSD45D-1-RHDT A HDR to FWH26B***									***Sorted By: Flow Order***	
MS-1A68P	64	2.156	0.729	495.9	8.745	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A55	4	3.988	1.349	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A55P	54	3.449	1.167	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A56	2	3.988	1.349	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A57	4	3.988	1.349	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A57P	54	3.449	1.167	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A57P DS	54	3.449	1.167	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A58	2	3.988	1.349	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A58P	52	2.695	0.911	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A59	2	3.988	1.349	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A59P US	52	2.695	0.911	495.9	8.745	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A59P DS	52	2.695	0.911	495.9	8.745	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A60	2	3.988	1.349	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A-VALVE-MS-14-1	22	5.389	1.823	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A60P US	58	2.371	0.802	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A60P DS	58	2.371	0.802	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A61	12	4.419	1.495	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A61 (D/S)	12	4.419	1.495	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A61P US	62	2.156	0.729	495.9	8.745	3.3	6.625	6.403	0.000	60.39	HBD

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***MSD45D-1-RHDT A HDR to FWH26B***								***Sorted By: Flow Order***		
MS-1A61P DS	62	2.156	0.729	495.9	8.745	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A62	12	4.419	1.495	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A62 (D/S)	12	4.419	1.495	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A61P-1	62	2.156	0.729	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A62R	18	3.018	1.021	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A62R (D/S)	18	1.920	0.649	495.9	3.910	3.3	8.625	6.403	0.000	60.39	HBD
MS-1A62N	30	2.560	0.866	495.9	3.910	3.3	8.625	6.403	0.000	60.39	HBD
===>Grouped by Line:	***MSD45D-2-RHDT A HDR to FWH26A***								***Sorted By: Flow Order***		
MS-1A45R	7	2.240	0.758	495.9	3.910	3.3	8.625	6.403	0.000	60.39	HBD
MS-1A45R (D/S)	7	3.449	1.167	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A45P-1 US	67	2.156	0.729	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A45P-1 DS	67	2.156	0.729	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A46	2	3.988	1.349	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A46P	52	2.695	0.911	495.9	8.745	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A47	4	3.988	1.349	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A47P US	54	3.449	1.167	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A47P DS	54	3.449	1.167	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A48	2	3.988	1.349	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A49	4	3.988	1.349	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A49P US	54	3.449	1.167	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A49P DS	54	3.449	1.167	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A50	2	3.988	1.349	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A50P	52	2.695	0.911	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A51	2	3.988	1.349	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A51P US	52	2.695	0.911	495.9	8.745	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A51P DS	52	2.695	0.911	495.9	8.745	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A52	2	3.988	1.349	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A-VALVE-MS-14	22	5.389	1.823	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A52P US	58	2.371	0.802	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A52P DS	58	2.371	0.802	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A53	12	4.419	1.495	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A53 (D/S)	12	4.419	1.495	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A53P US	62	2.156	0.729	495.9	8.745	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A53P DS	62	2.156	0.729	495.9	8.745	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A54	12	4.419	1.495	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A54 (D/S)	12	4.419	1.495	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***MSD45D-2-RHDT A HDR to FWH26A***								***Sorted By: Flow Order***		
MS-1A53P-1	62	2.156	0.729	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A54R	18	3.018	1.021	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A54R (D/S)	18	1.920	0.649	495.9	3.910	3.3	8.625	6.403	0.000	60.39	HBD
MS-1A54N	30	2.560	0.866	495.9	3.910	3.3	8.625	6.403	0.000	60.39	HBD
===>Grouped by Line:	***MSD46A-2-RHDT22A CV to FWH26***								***Sorted By: Flow Order***		
MS-2A-VALVE-LCV-1104A	24	16.140	5.638	495.9	33.594	3.3	3.500	6.403	0.000	60.39	HBD
MS-2A24R	18	0.001	0.001	495.9	15.767	3.3	4.500	6.403	0.000	60.39	HBD
MS-2A24R (D/S)	18	0.001	0.001	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2A23P	68	0.001	0.000	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2A24	2	0.001	0.001	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2A24P	52	0.001	0.000	495.9	10.806	3.3	6.625	6.403	0.000	60.39	HBD
MS-2A25	1	0.001	0.001	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2A25P	51	0.001	0.000	495.9	10.806	3.3	6.625	6.403	0.000	60.39	HBD
===>Grouped by Line:	***MSD47-2-RHDT23A CV to FWH26***								***Sorted By: Flow Order***		
MS-3A-VALVE-LCV-1104B	24	10.043	3.508	495.9	15.767	3.3	4.500	6.403	0.000	60.39	HBD
MS-3A24R	18	0.001	0.001	495.9	15.767	3.3	4.500	6.403	0.000	60.39	HBD
MS-3A24R (D/S)	18	0.001	0.001	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3A23P	68	0.001	0.000	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3A24	2	0.001	0.001	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3A24P	52	0.001	0.000	495.9	10.806	3.3	6.625	6.403	0.000	60.39	HBD
MS-3A25	1	0.001	0.001	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3A25P	51	0.001	0.000	495.9	10.806	3.3	6.625	6.403	0.000	60.39	HBD

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).DB

Service Life Report

Pass 2 Analysis Include Measured Wear

Report Date/Time: 7/7/2010 9:54:36AM
AnalysisDate/Time:

Run Name: RHTR DTK A DRN DSCV
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 1.102

CHECWORKS SFA Version: 3.0 (build 105)
Duty Factor (Global) :1.000

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **MSD45B-1-RHDT21A CV to FWH26**					***Sorted By:Remaining Life***		
MS-1A-VALVE-LCV-1104	0.000	0.058	0.169	0.169	-142,790	No	243,721
MS-1A30P2	0.000	0.432	0.206	0.206	100,000,000	No	107,113
MS-1A32	0.000	0.432	0.215	0.215	100,000,000	No	107,113
MS-1A32P	0.000	0.432	0.206	0.206	100,000,000	No	107,113
MS-1A31P	0.000	0.432	0.206	0.206	100,000,000	No	107,113
MS-1A31	0.000	0.432	0.215	0.215	100,000,000	No	107,113
MS-1A30R2 (D/S)	0.000	0.432	0.215	0.215	100,000,000	No	107,113
MS-1A30R2	0.000	0.337	0.146	0.146	100,000,000	No	107,113
===>Grouped by Line: **MSD45C-1-RHDT A HDR to FWH26**					***Sorted By:Remaining Life***		
MS-1A34T1 (BR/SE)	0.000	0.330	0.233	0.233	686,680	No	243,721
MS-1A34T1 (D/S)	0.000	0.546	0.378	0.378	2,529,919	No	243,721
MS-1A34P1	0.000	0.571	0.378	0.378	5,942,900	No	243,721
===>Grouped by Line: **MSD45C-2-RHDT A HDR to FWH26**					***Sorted By:Remaining Life***		
MS-1A35	0.000	0.549	0.378	0.378	1,761,926	Yes	243,721
MS-1A34T2 (D/S)	0.000	0.591	0.378	0.378	1,769,473	Yes	243,721
MS-1A34T2	0.000	0.582	0.378	0.378	3,064,191	Yes	243,721
MS-1A34P2	0.000	0.611	0.378	0.378	3,961,738	Yes	243,721
MS-1A34T2 (BR/SE)	0.000	1.618	0.233	0.233	9,786,891	No	243,721
===>Grouped by Line: **MSD45C-3-RHDT A HDR to FWH26**					***Sorted By:Remaining Life***		
MS-1A36	0.000	0.495	0.378	0.378	805,805	Yes	243,721
MS-1A38	0.000	0.498	0.378	0.378	876,625	Yes	243,721
MS-1A39	0.000	0.533	0.378	0.378	1,131,676	Yes	243,721
MS-1A35T (D/S)	0.000	0.574	0.378	0.378	1,146,505	Yes	243,721
MS-1A37	0.000	0.560	0.378	0.378	1,323,475	Yes	243,721
MS-1A40	0.000	0.560	0.378	0.378	1,328,131	Yes	243,721
MS-1A38P	0.000	0.528	0.378	0.378	1,638,459	No	243,721
MS-1A35T	0.000	0.586	0.378	0.378	1,729,420	Yes	243,721

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line:	**MSD45C-3-RHDT A HDR to FWH26**				***Sorted By:Remaining Life***		
MS-1A39P	0.000	0.556	0.378	0.378	1,943,475	Yes	243,721
MS-1A40P	0.000	0.569	0.378	0.378	2,084,341	Yes	243,721
MS-1A36P US	0.000	0.569	0.378	0.378	2,087,699	Yes	243,721
MS-1A36P DS	0.000	0.570	0.378	0.378	2,095,255	Yes	243,721
MS-1A37P US	0.000	0.582	0.378	0.378	2,226,225	Yes	243,721
MS-1A37P DS	0.000	0.598	0.378	0.378	2,401,870	Yes	243,721
MS-1A35T (BR/SE)	0.000	1.562	0.233	0.233	9,391,022	No	243,721
MS-1A41	0.000	0.594	0.349	0.349	100,000,000	No	107,113
MS-1A41 (BR/SE)	0.000	0.432	0.215	0.215	100,000,000	No	107,113
MS-1A41 (D/S)	0.000	0.594	0.349	0.349	100,000,000	No	107,113
===>Grouped by Line:	**MSD45C-4-RHDT A HDR to FWH26C**				***Sorted By:Remaining Life***		
MS-1A-VALVE-MS-14-2	0.000	0.282	0.249	0.249	158,844	No	243,721
MS-1A66 (D/S)	0.000	0.260	0.233	0.233	159,931	No	243,721
MS-1A66P DS	0.000	0.253	0.233	0.233	224,803	Yes	243,721
MS-1A66	0.000	0.273	0.233	0.233	236,114	No	243,721
MS-1A67P-1	0.000	0.339	0.233	0.233	1,272,513	Yes	243,721
MS-1A67R	0.000	0.400	0.233	0.233	1,438,141	Yes	243,721
MS-1A67 (D/S)	0.000	0.497	0.233	0.233	1,549,173	No	118,262
MS-1A67	0.000	0.500	0.233	0.233	1,566,754	No	118,262
MS-1A66P US	0.000	0.383	0.233	0.233	1,641,277	Yes	243,721
MS-1A67P US	0.000	0.370	0.233	0.233	1,641,935	Yes	243,721
MS-1A67P DS	0.000	0.372	0.233	0.233	1,668,956	Yes	243,721
MS-1A67R (D/S)	0.000	0.451	0.303	0.303	1,994,632	Yes	243,721
MS-1A67N	0.000	2.841	0.303	0.303	25,680,444	No	243,721
MS-1A64P US	0.000	0.432	0.206	0.206	100,000,000	No	107,113
MS-1A64P DS	0.000	0.432	0.206	0.206	100,000,000	No	107,113
MS-1A64	0.000	0.432	0.215	0.215	100,000,000	No	107,113
MS-1A65P US	0.000	0.432	0.206	0.206	100,000,000	No	107,113
MS-1A65P DS	0.000	0.432	0.206	0.206	100,000,000	No	107,113
MS-1A65	0.000	0.432	0.215	0.215	100,000,000	No	107,113
MS-1A63P US	0.000	0.432	0.206	0.206	100,000,000	No	107,113
MS-1A63P DS	0.000	0.432	0.206	0.206	100,000,000	No	107,113
MS-1A63	0.000	0.432	0.215	0.215	100,000,000	No	107,113
===>Grouped by Line:	**MSD45C-5-RHDT A HDR to FWH26**				***Sorted By:Remaining Life***		
MS-1A68	0.000	0.437	0.303	0.303	545,888	Yes	243,721
MS-1A42	0.000	0.425	0.303	0.303	828,036	Yes	243,721
MS-1A45P US	0.000	0.400	0.303	0.303	983,281	Yes	243,721
MS-1A45	0.000	0.451	0.303	0.303	1,004,165	Yes	243,721

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **MSD45C-5-RHDT A HDR to FWH26**					***Sorted By:Remaining Life***		
MS-1A68 (BR/SE)	0.000	0.393	0.233	0.233	1,096,419	Yes	243,721
MS-1A44	0.000	0.465	0.303	0.303	1,099,004	Yes	243,721
MS-1A41R (D/S)	0.000	0.472	0.303	0.303	1,179,412	No	243,721
MS-1A43	0.000	0.483	0.303	0.303	1,220,939	Yes	243,721
MS-1A68 (D/S)	0.000	0.478	0.303	0.303	1,287,059	Yes	243,721
MS-1A41P-1 DS	0.000	0.450	0.303	0.303	1,314,334	Yes	243,721
MS-1A41P-1 US	0.000	0.452	0.303	0.303	1,332,218	No	243,721
MS-1A42P US	0.000	0.444	0.303	0.303	1,430,376	Yes	243,721
MS-1A44P US	0.000	0.445	0.303	0.303	1,440,538	Yes	243,721
MS-1A44P DS	0.000	0.448	0.303	0.303	1,471,022	Yes	243,721
MS-1A42P DS	0.000	0.450	0.303	0.303	1,491,344	Yes	243,721
MS-1A41R	0.000	0.536	0.378	0.378	1,542,331	No	243,721
MS-1A43P US	0.000	0.465	0.303	0.303	1,643,763	No	243,721
MS-1A43P DS	0.000	0.482	0.303	0.303	1,816,505	Yes	243,721
===>Grouped by Line: **MSD45D-1-RHDT A HDR to FWH26B**					***Sorted By:Remaining Life***		
MS-1A-VALVE-MS-14-1	0.000	0.282	0.249	0.249	158,844	No	243,721
MS-1A57P DS	0.000	0.336	0.233	0.233	774,632	No	243,721
MS-1A55	0.000	0.364	0.233	0.233	851,192	Yes	243,721
MS-1A57P	0.000	0.349	0.233	0.233	874,055	Yes	243,721
MS-1A60	0.000	0.380	0.233	0.233	952,548	Yes	243,721
MS-1A56	0.000	0.381	0.233	0.233	961,585	Yes	243,721
MS-1A58	0.000	0.383	0.233	0.233	974,573	Yes	243,721
MS-1A59	0.000	0.386	0.233	0.233	992,962	Yes	243,721
MS-1A57	0.000	0.388	0.233	0.233	1,007,041	Yes	243,721
MS-1A55P	0.000	0.378	0.233	0.233	1,091,798	Yes	243,721
MS-1A62N	0.000	0.429	0.303	0.303	1,270,946	No	243,721
MS-1A59P US	0.000	0.381	0.233	0.233	1,428,199	Yes	243,721
MS-1A59P DS	0.000	0.382	0.233	0.233	1,435,059	Yes	243,721
MS-1A58P	0.000	0.386	0.233	0.233	1,471,616	Yes	243,721
MS-1A61 (D/S)	0.000	0.495	0.233	0.233	1,538,167	No	243,721
MS-1A60P DS	0.000	0.377	0.233	0.233	1,572,405	Yes	243,721
MS-1A62R	0.000	0.418	0.233	0.233	1,588,091	No	243,721
MS-1A61P DS	0.000	0.372	0.233	0.233	1,671,734	No	243,721
MS-1A60P US	0.000	0.389	0.233	0.233	1,706,805	Yes	243,721
MS-1A61	0.000	0.532	0.233	0.233	1,754,994	No	243,721
MS-1A68P	0.000	0.382	0.233	0.233	1,790,977	Yes	243,721
MS-1A61P US	0.000	0.387	0.233	0.233	1,851,044	Yes	243,721
MS-1A61P-1	0.000	0.387	0.233	0.233	1,851,128	Yes	243,721

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line:	**MSD45D-1-RHDT A HDR to FWH26B**				***Sorted By:Remaining Life***		
MS-1A62 (D/S)	0.000	0.552	0.233	0.233	1,871,111	No	243,721
MS-1A62	0.000	0.590	0.233	0.233	2,093,798	No	243,721
MS-1A62R (D/S)	0.000	0.470	0.303	0.303	2,245,239	No	243,721
===>Grouped by Line:	**MSD45D-2-RHDT A HDR to FWH26A**				***Sorted By:Remaining Life***		
MS-1A-VALVE-MS-14	0.000	0.282	0.249	0.249	158,844	No	243,721
MS-1A49	0.000	0.336	0.233	0.233	666,823	Yes	243,721
MS-1A49P DS	0.000	0.336	0.233	0.233	774,632	No	243,721
MS-1A50	0.000	0.364	0.233	0.233	851,192	Yes	243,721
MS-1A48	0.000	0.372	0.233	0.233	900,598	Yes	243,721
MS-1A51	0.000	0.380	0.233	0.233	955,092	Yes	243,721
MS-1A49P US	0.000	0.362	0.233	0.233	971,961	Yes	243,721
MS-1A52	0.000	0.383	0.233	0.233	972,029	Yes	243,721
MS-1A46	0.000	0.396	0.233	0.233	1,056,448	Yes	243,721
MS-1A47P US	0.000	0.379	0.233	0.233	1,099,604	No	243,721
MS-1A47	0.000	0.405	0.233	0.233	1,114,891	Yes	243,721
MS-1A47P DS	0.000	0.383	0.233	0.233	1,129,637	Yes	243,721
MS-1A54N	0.000	0.429	0.303	0.303	1,270,946	No	243,721
MS-1A50P	0.000	0.367	0.233	0.233	1,292,403	Yes	243,721
MS-1A51P US	0.000	0.370	0.233	0.233	1,321,235	Yes	243,721
MS-1A52P US	0.000	0.366	0.233	0.233	1,454,255	No	243,721
MS-1A51P DS	0.000	0.384	0.233	0.233	1,454,280	Yes	243,721
MS-1A46P	0.000	0.385	0.233	0.233	1,463,891	Yes	243,721
MS-1A53 (D/S)	0.000	0.492	0.233	0.233	1,520,586	No	243,721
MS-1A53	0.000	0.515	0.233	0.233	1,655,371	No	243,721
MS-1A54 (D/S)	0.000	0.518	0.233	0.233	1,671,864	No	243,721
MS-1A54	0.000	0.520	0.233	0.233	1,683,584	No	243,721
MS-1A54R	0.000	0.431	0.233	0.233	1,699,644	No	243,721
MS-1A45P-1 US	0.000	0.378	0.233	0.233	1,742,923	Yes	243,721
MS-1A53P DS	0.000	0.379	0.233	0.233	1,755,021	Yes	243,721
MS-1A53P-1	0.000	0.381	0.233	0.233	1,779,047	Yes	243,721
MS-1A45P-1 DS	0.000	0.382	0.233	0.233	1,790,977	Yes	243,721
MS-1A53P US	0.000	0.387	0.233	0.233	1,851,044	Yes	243,721
MS-1A52P DS	0.000	0.403	0.233	0.233	1,856,358	No	243,721
MS-1A45R	0.000	0.472	0.303	0.303	1,946,639	No	243,721
MS-1A45R (D/S)	0.000	0.508	0.233	0.233	2,068,186	No	243,721
MS-1A54R (D/S)	0.000	0.473	0.303	0.303	2,285,709	No	243,721
===>Grouped by Line:	**MSD46A-2-RHDT22A CV to FWH26**				***Sorted By:Remaining Life***		
MS-2A-VALVE-LCV-1104A	0.000	-0.011	0.132	0.132	-129,069	No	243,721

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **MSD46A-2-RHDT22A CV to FWH26**					***Sorted By:Remaining Life***		
MS-2A24R	0.000	0.337	0.146	0.146	100,000,000	No	107,113
MS-2A24R (D/S)	0.000	0.432	0.215	0.215	100,000,000	No	107,113
MS-2A23P	0.000	0.432	0.206	0.206	100,000,000	No	107,113
MS-2A24	0.000	0.432	0.215	0.215	100,000,000	No	107,113
MS-2A24P	0.000	0.432	0.206	0.206	100,000,000	No	107,113
MS-2A25	0.000	0.432	0.215	0.215	100,000,000	No	107,113
MS-2A25P	0.000	0.432	0.206	0.206	100,000,000	No	107,113
===>Grouped by Line: **MSD47-2-RHDT23A CV to FWH26**					***Sorted By:Remaining Life***		
MS-3A-VALVE-LCV-1104B	0.000	0.058	0.169	0.169	-142,790	No	243,721
MS-3A24R	0.000	0.337	0.146	0.146	100,000,000	No	107,113
MS-3A24R (D/S)	0.000	0.432	0.215	0.215	100,000,000	No	107,113
MS-3A23P	0.000	0.432	0.206	0.206	100,000,000	No	107,113
MS-3A24	0.000	0.432	0.215	0.215	100,000,000	No	107,113
MS-3A24P	0.000	0.432	0.206	0.206	100,000,000	No	107,113
MS-3A25	0.000	0.432	0.215	0.215	100,000,000	No	107,113
MS-3A25P	0.000	0.432	0.206	0.206	100,000,000	No	107,113

Note:
[1] Predictions are based on last Tmeas to analysis ending period.

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).DB

Service Life Report

Pass 2 Analysis Include Measured Wear

Report Date/Time: 7/7/2010 9:54:36AM
AnalysisDate/Time:

Run Name: RHTR DTK A DRN DSCV
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 1.102

CHECWORKS SFA Version: 3.0 (build 105)
Duty Factor (Global) : 1.000

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **MSD45B-1-RHDT21A CV to FWH26**					***Sorted By:Flow Order***		
MS-1A-VALVE-LCV-1104	0.000	0.058	0.169	0.169	-142,790	No	243,721
MS-1A30R2	0.000	0.337	0.146	0.146	100,000,000	No	107,113
MS-1A30R2 (D/S)	0.000	0.432	0.215	0.215	100,000,000	No	107,113
MS-1A30P2	0.000	0.432	0.206	0.206	100,000,000	No	107,113
MS-1A31	0.000	0.432	0.215	0.215	100,000,000	No	107,113
MS-1A31P	0.000	0.432	0.206	0.206	100,000,000	No	107,113
MS-1A32	0.000	0.432	0.215	0.215	100,000,000	No	107,113
MS-1A32P	0.000	0.432	0.206	0.206	100,000,000	No	107,113
===>Grouped by Line: **MSD45C-1-RHDT A HDR to FWH26**					***Sorted By:Flow Order***		
MS-1A34T1 (D/S)	0.000	0.546	0.378	0.378	2,529,919	No	243,721
MS-1A34P1	0.000	0.571	0.378	0.378	5,942,900	No	243,721
MS-1A34T1 (BR/SE)	0.000	0.330	0.233	0.233	686,680	No	243,721
===>Grouped by Line: **MSD45C-2-RHDT A HDR to FWH26**					***Sorted By:Flow Order***		
MS-1A34T2	0.000	0.582	0.378	0.378	3,064,191	Yes	243,721
MS-1A34T2 (D/S)	0.000	0.591	0.378	0.378	1,769,473	Yes	243,721
MS-1A34P2	0.000	0.611	0.378	0.378	3,961,738	Yes	243,721
MS-1A35	0.000	0.549	0.378	0.378	1,761,926	Yes	243,721
MS-1A34T2 (BR/SE)	0.000	1.618	0.233	0.233	9,786,891	No	243,721
===>Grouped by Line: **MSD45C-3-RHDT A HDR to FWH26**					***Sorted By:Flow Order***		
MS-1A35T (BR/SE)	0.000	1.562	0.233	0.233	9,391,022	No	243,721
MS-1A35T	0.000	0.586	0.378	0.378	1,729,420	Yes	243,721
MS-1A35T (D/S)	0.000	0.574	0.378	0.378	1,146,505	Yes	243,721
MS-1A36	0.000	0.495	0.378	0.378	805,805	Yes	243,721
MS-1A36P US	0.000	0.569	0.378	0.378	2,087,699	Yes	243,721
MS-1A36P DS	0.000	0.570	0.378	0.378	2,095,255	Yes	243,721
MS-1A37	0.000	0.560	0.378	0.378	1,323,475	Yes	243,721
MS-1A37P US	0.000	0.582	0.378	0.378	2,226,225	Yes	243,721

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line:	**MSD45C-3-RHDT A HDR to FWH26**				***Sorted By:Flow Order***		
MS-1A37P DS	0.000	0.598	0.378	0.378	2,401,870	Yes	243,721
MS-1A38	0.000	0.498	0.378	0.378	876,625	Yes	243,721
MS-1A38P	0.000	0.528	0.378	0.378	1,638,459	No	243,721
MS-1A39	0.000	0.533	0.378	0.378	1,131,676	Yes	243,721
MS-1A39P	0.000	0.556	0.378	0.378	1,943,475	Yes	243,721
MS-1A40	0.000	0.560	0.378	0.378	1,328,131	Yes	243,721
MS-1A40P	0.000	0.569	0.378	0.378	2,084,341	Yes	243,721
MS-1A41	0.000	0.594	0.349	0.349	100,000,000	No	107,113
MS-1A41 (BR/SE)	0.000	0.432	0.215	0.215	100,000,000	No	107,113
MS-1A41 (D/S)	0.000	0.594	0.349	0.349	100,000,000	No	107,113
===>Grouped by Line:	**MSD45C-4-RHDT A HDR to FWH26C**				***Sorted By:Flow Order***		
MS-1A63P US	0.000	0.432	0.206	0.206	100,000,000	No	107,113
MS-1A63P DS	0.000	0.432	0.206	0.206	100,000,000	No	107,113
MS-1A63	0.000	0.432	0.215	0.215	100,000,000	No	107,113
MS-1A64P US	0.000	0.432	0.206	0.206	100,000,000	No	107,113
MS-1A64P DS	0.000	0.432	0.206	0.206	100,000,000	No	107,113
MS-1A64	0.000	0.432	0.215	0.215	100,000,000	No	107,113
MS-1A65P US	0.000	0.432	0.206	0.206	100,000,000	No	107,113
MS-1A65P DS	0.000	0.432	0.206	0.206	100,000,000	No	107,113
MS-1A65	0.000	0.432	0.215	0.215	100,000,000	No	107,113
MS-1A-VALVE-MS-14-2	0.000	0.282	0.249	0.249	158,844	No	243,721
MS-1A66P US	0.000	0.383	0.233	0.233	1,641,277	Yes	243,721
MS-1A66P DS	0.000	0.253	0.233	0.233	224,803	Yes	243,721
MS-1A66	0.000	0.273	0.233	0.233	236,114	No	243,721
MS-1A66 (D/S)	0.000	0.260	0.233	0.233	159,931	No	243,721
MS-1A67P US	0.000	0.370	0.233	0.233	1,641,935	Yes	243,721
MS-1A67P DS	0.000	0.372	0.233	0.233	1,668,956	Yes	243,721
MS-1A67	0.000	0.500	0.233	0.233	1,566,754	No	118,262
MS-1A67 (D/S)	0.000	0.497	0.233	0.233	1,549,173	No	118,262
MS-1A67P-1	0.000	0.339	0.233	0.233	1,272,513	Yes	243,721
MS-1A67R	0.000	0.400	0.233	0.233	1,438,141	Yes	243,721
MS-1A67R (D/S)	0.000	0.451	0.303	0.303	1,994,632	Yes	243,721
MS-1A67N	0.000	2.841	0.303	0.303	25,680,444	No	243,721
===>Grouped by Line:	**MSD45C-5-RHDT A HDR to FWH26**				***Sorted By:Flow Order***		
MS-1A41R	0.000	0.536	0.378	0.378	1,542,331	No	243,721
MS-1A41R (D/S)	0.000	0.472	0.303	0.303	1,179,412	No	243,721
MS-1A41P-1 US	0.000	0.452	0.303	0.303	1,332,218	No	243,721

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **MSD45C-5-RHDT A HDR to FWH26**					***Sorted By:Flow Order***		
MS-1A41P-1 DS	0.000	0.450	0.303	0.303	1,314,334	Yes	243,721
MS-1A42	0.000	0.425	0.303	0.303	828,036	Yes	243,721
MS-1A42P US	0.000	0.444	0.303	0.303	1,430,376	Yes	243,721
MS-1A42P DS	0.000	0.450	0.303	0.303	1,491,344	Yes	243,721
MS-1A43	0.000	0.483	0.303	0.303	1,220,939	Yes	243,721
MS-1A43P US	0.000	0.465	0.303	0.303	1,643,763	No	243,721
MS-1A43P DS	0.000	0.482	0.303	0.303	1,816,505	Yes	243,721
MS-1A44	0.000	0.465	0.303	0.303	1,099,004	Yes	243,721
MS-1A44P US	0.000	0.445	0.303	0.303	1,440,538	Yes	243,721
MS-1A44P DS	0.000	0.448	0.303	0.303	1,471,022	Yes	243,721
MS-1A45	0.000	0.451	0.303	0.303	1,004,165	Yes	243,721
MS-1A45P US	0.000	0.400	0.303	0.303	983,281	Yes	243,721
MS-1A68	0.000	0.437	0.303	0.303	545,888	Yes	243,721
MS-1A68 (BR/SE)	0.000	0.393	0.233	0.233	1,096,419	Yes	243,721
MS-1A68 (D/S)	0.000	0.478	0.303	0.303	1,287,059	Yes	243,721
===>Grouped by Line: **MSD45D-1-RHDT A HDR to FWH26B**					***Sorted By:Flow Order***		
MS-1A68P	0.000	0.382	0.233	0.233	1,790,977	Yes	243,721
MS-1A55	0.000	0.364	0.233	0.233	851,192	Yes	243,721
MS-1A55P	0.000	0.378	0.233	0.233	1,091,798	Yes	243,721
MS-1A56	0.000	0.381	0.233	0.233	961,585	Yes	243,721
MS-1A57	0.000	0.388	0.233	0.233	1,007,041	Yes	243,721
MS-1A57P	0.000	0.349	0.233	0.233	874,055	Yes	243,721
MS-1A57P DS	0.000	0.336	0.233	0.233	774,632	No	243,721
MS-1A58	0.000	0.383	0.233	0.233	974,573	Yes	243,721
MS-1A58P	0.000	0.386	0.233	0.233	1,471,616	Yes	243,721
MS-1A59	0.000	0.386	0.233	0.233	992,962	Yes	243,721
MS-1A59P US	0.000	0.381	0.233	0.233	1,428,199	Yes	243,721
MS-1A59P DS	0.000	0.382	0.233	0.233	1,435,059	Yes	243,721
MS-1A60	0.000	0.380	0.233	0.233	952,548	Yes	243,721
MS-1A-VALVE-MS-14-1	0.000	0.282	0.249	0.249	158,844	No	243,721
MS-1A60P US	0.000	0.389	0.233	0.233	1,706,805	Yes	243,721
MS-1A60P DS	0.000	0.377	0.233	0.233	1,572,405	Yes	243,721
MS-1A61	0.000	0.532	0.233	0.233	1,754,994	No	243,721
MS-1A61 (D/S)	0.000	0.495	0.233	0.233	1,538,167	No	243,721
MS-1A61P US	0.000	0.387	0.233	0.233	1,851,044	Yes	243,721
MS-1A61P DS	0.000	0.372	0.233	0.233	1,671,734	No	243,721
MS-1A62	0.000	0.590	0.233	0.233	2,093,798	No	243,721
MS-1A62 (D/S)	0.000	0.552	0.233	0.233	1,871,111	No	243,721

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **MSD45D-1-RHDT A HDR to FWH26B**					***Sorted By:Flow Order***		
MS-1A61P-1	0.000	0.387	0.233	0.233	1,851,128	Yes	243,721
MS-1A62R	0.000	0.418	0.233	0.233	1,588,091	No	243,721
MS-1A62R (D/S)	0.000	0.470	0.303	0.303	2,245,239	No	243,721
MS-1A62N	0.000	0.429	0.303	0.303	1,270,946	No	243,721
===>Grouped by Line: **MSD45D-2-RHDT A HDR to FWH26A**					***Sorted By:Flow Order***		
MS-1A45R	0.000	0.472	0.303	0.303	1,946,639	No	243,721
MS-1A45R (D/S)	0.000	0.508	0.233	0.233	2,068,186	No	243,721
MS-1A45P-1 US	0.000	0.378	0.233	0.233	1,742,923	Yes	243,721
MS-1A45P-1 DS	0.000	0.382	0.233	0.233	1,790,977	Yes	243,721
MS-1A46	0.000	0.396	0.233	0.233	1,056,448	Yes	243,721
MS-1A46P	0.000	0.385	0.233	0.233	1,463,891	Yes	243,721
MS-1A47	0.000	0.405	0.233	0.233	1,114,891	Yes	243,721
MS-1A47P US	0.000	0.379	0.233	0.233	1,099,604	No	243,721
MS-1A47P DS	0.000	0.383	0.233	0.233	1,129,637	Yes	243,721
MS-1A48	0.000	0.372	0.233	0.233	900,598	Yes	243,721
MS-1A49	0.000	0.336	0.233	0.233	666,823	Yes	243,721
MS-1A49P US	0.000	0.362	0.233	0.233	971,961	Yes	243,721
MS-1A49P DS	0.000	0.336	0.233	0.233	774,632	No	243,721
MS-1A50	0.000	0.364	0.233	0.233	851,192	Yes	243,721
MS-1A50P	0.000	0.367	0.233	0.233	1,292,403	Yes	243,721
MS-1A51	0.000	0.380	0.233	0.233	955,092	Yes	243,721
MS-1A51P US	0.000	0.370	0.233	0.233	1,321,235	Yes	243,721
MS-1A51P DS	0.000	0.384	0.233	0.233	1,454,280	Yes	243,721
MS-1A52	0.000	0.383	0.233	0.233	972,029	Yes	243,721
MS-1A-VALVE-MS-14	0.000	0.282	0.249	0.249	158,844	No	243,721
MS-1A52P US	0.000	0.366	0.233	0.233	1,454,255	No	243,721
MS-1A52P DS	0.000	0.403	0.233	0.233	1,856,358	No	243,721
MS-1A53	0.000	0.515	0.233	0.233	1,655,371	No	243,721
MS-1A53 (D/S)	0.000	0.492	0.233	0.233	1,520,586	No	243,721
MS-1A53P US	0.000	0.387	0.233	0.233	1,851,044	Yes	243,721
MS-1A53P DS	0.000	0.379	0.233	0.233	1,755,021	Yes	243,721
MS-1A54	0.000	0.520	0.233	0.233	1,683,584	No	243,721
MS-1A54 (D/S)	0.000	0.518	0.233	0.233	1,671,864	No	243,721
MS-1A53P-1	0.000	0.381	0.233	0.233	1,779,047	Yes	243,721
MS-1A54R	0.000	0.431	0.233	0.233	1,699,644	No	243,721
MS-1A54R (D/S)	0.000	0.473	0.303	0.303	2,285,709	No	243,721
MS-1A54N	0.000	0.429	0.303	0.303	1,270,946	No	243,721

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **MSD46A-2-RHDT22A CV to FWH26**					***Sorted By:Flow Order***		
MS-2A-VALVE-LCV-1104A	0.000	-0.011	0.132	0.132	-129,069	No	243,721
MS-2A24R	0.000	0.337	0.146	0.146	100,000,000	No	107,113
MS-2A24R (D/S)	0.000	0.432	0.215	0.215	100,000,000	No	107,113
MS-2A23P	0.000	0.432	0.206	0.206	100,000,000	No	107,113
MS-2A24	0.000	0.432	0.215	0.215	100,000,000	No	107,113
MS-2A24P	0.000	0.432	0.206	0.206	100,000,000	No	107,113
MS-2A25	0.000	0.432	0.215	0.215	100,000,000	No	107,113
MS-2A25P	0.000	0.432	0.206	0.206	100,000,000	No	107,113
===>Grouped by Line: **MSD47-2-RHDT23A CV to FWH26**					***Sorted By:Flow Order***		
MS-3A-VALVE-LCV-1104B	0.000	0.058	0.169	0.169	-142,790	No	243,721
MS-3A24R	0.000	0.337	0.146	0.146	100,000,000	No	107,113
MS-3A24R (D/S)	0.000	0.432	0.215	0.215	100,000,000	No	107,113
MS-3A23P	0.000	0.432	0.206	0.206	100,000,000	No	107,113
MS-3A24	0.000	0.432	0.215	0.215	100,000,000	No	107,113
MS-3A24P	0.000	0.432	0.206	0.206	100,000,000	No	107,113
MS-3A25	0.000	0.432	0.215	0.215	100,000,000	No	107,113
MS-3A25P	0.000	0.432	0.206	0.206	100,000,000	No	107,113

Note:
[1] Predictions are based on last Tmeas to analysis ending period.

5

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).DB

Wear Report

Pass 2 Analysis Include Measured Wear

Report Date/Time: 07-Jul-2010 9:54 am
AnalysisDate/Time: 07-Jul-2010 9:54 am

Run Name: RHTR DTK A DRN DSCV
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 1.102

CHECWORKS SFA Version: 3.0 (build 105)
Duty Factor (Global) : 1.000

Component Name	Tinit	Total Lifetime Wear (mils) Prd. [1]	Total Lifetime Wear (mils) Meas.	In-Service Component Wear(mils) Prd. [1]	In-Service Component Wear(mils) Meas.	In-Service Component Tmeas, Method, Time (in) [3]	[2]	(hrs) [3]	In-Service Component Thickness (mils) [4] Tp	Tm	Incremental Wear (mils) [5] PRWEAR	Time (hrs) Last Inspected
===>Grouped by Line:	**MSD45B-1-RHDT21A CV to FWH26**										***Sorted By: Flow Order***	
MS-1A30P2	0.000	53.3	51.0	0.0	0.0	0.432	ER	136,608	432.0	432.0	0.0	0
MS-1A31	0.000	81.4	109.0	0.0	0.0	0.432	ER	136,608	432.0	432.0	0.0	0
MS-1A31P	0.000	53.4	59.0	0.0	0.0	0.432	ER	136,608	432.0	432.0	0.0	0
MS-1A32	0.000	70.2	125.0	0.0	0.0	0.432	ER	136,608	432.0	432.0	0.0	0
MS-1A32P	0.000	47.3	45.0	0.0	0.0	0.432	ER	136,608	432.0	432.0	0.0	0
===>Grouped by Line:	**MSD45C-2-RHDT A HDR to FWH26**										***Sorted By: Flow Order***	
MS-1A34T2	0.000	44.5	92.0	44.5	92.0	0.585	GW	193,769	549.5	585.0	3.4	193,769
MS-1A34T2 (D/S)	0.000	80.6	72.0	80.6	72.0	0.597	GW	193,769	513.4	597.0	6.1	193,769
MS-1A34P2	0.000	26.8	62.0	26.8	62.0	0.626	MT	106,128	567.2	626.0	15.5	106,128
MS-1A35	0.000	59.4	80.0	59.4	80.0	0.559	MT	149,573	534.6	559.0	10.4	149,573
===>Grouped by Line:	**MSD45C-3-RHDT A HDR to FWH26**										***Sorted By: Flow Order***	
MS-1A35T	0.000	73.8	76.0	73.8	76.0	0.599	MT	149,573	520.2	599.0	13.0	149,573
MS-1A35T (D/S)	0.000	104.7	70.0	104.7	70.0	0.592	MT	149,573	489.3	592.0	18.4	149,573
MS-1A36	0.000	89.3	126.0	89.3	126.0	0.511	MT	149,573	504.7	511.0	15.7	149,573
MS-1A36P US	0.000	56.2	87.0	56.2	87.0	0.579	MT	149,573	537.8	579.0	9.9	149,573
MS-1A36P DS	0.000	53.9	82.0	53.9	82.0	0.582		136,608	540.1	582.0	12.2	136,608
MS-1A37	0.000	80.8	54.0	80.8	54.0	0.578	MT	136,608	513.2	578.0	18.2	136,608
MS-1A37P US	0.000	53.9	63.0	53.9	63.0	0.594	MT	136,608	540.1	594.0	12.2	136,608
MS-1A37P DS	0.000	46.9	87.0	46.9	87.0	0.617	MT	119,088	547.1	617.0	19.1	119,088
MS-1A38	0.000	94.4	125.5	94.4	125.5	0.503	MT	209,806	499.6	503.0	4.7	209,806
MS-1A39	0.000	70.4	71.0	70.4	71.0	0.562	MT	119,088	523.6	562.0	28.6	119,088
MS-1A39P	0.000	46.9	86.0	46.9	86.0	0.575	MT	119,088	547.1	575.0	19.1	119,088
MS-1A40	0.000	70.4	47.0	70.4	47.0	0.589	MT	119,088	523.6	589.0	28.6	119,088
MS-1A40P	0.000	53.9	68.0	53.9	68.0	0.581	MT	136,608	540.1	581.0	12.2	136,608
===>Grouped by Line:	**MSD45C-4-RHDT A HDR to FWH26C**										***Sorted By: Flow Order***	

Component Name	Tinit	Total Lifetime Wear (mils) Prd. [1]	Total Lifetime Wear (mils) Meas.	In-Service Component Wear(mils) Prd. [1]	In-Service Component Wear(mils) Meas.	In-Service Component Tmeas, Method, Time (in) [3]	[2]	(hrs) [3]	In-Service Component Thickness (mils) [4] Tp	Tm	Incremental Wear (mils) [5] PRWEAR	Time (hrs) Last Inspected
===>Grouped by Line:	**MSD45C-4-RHDT A HDR to FWH26C**										***Sorted By: Flow Order***	
MS-1A63P US	0.000	49.7	71.0	0.0	0.0	0.432	ER	136,608	432.0	432.0	0.0	0
MS-1A63P DS	0.000	49.7	69.0	0.0	0.0	0.432	ER	136,608	432.0	432.0	0.0	0
MS-1A63	0.000	11.6	18.0	0.0	0.0	0.432	ER	136,608	432.0	432.0	0.0	0
MS-1A64P US	0.000	61.2	52.0	0.0	0.0	0.432	ER	136,608	432.0	432.0	0.0	0
MS-1A64P DS	0.000	61.2	61.0	0.0	0.0	0.432	ER	136,608	432.0	432.0	0.0	0
MS-1A64	0.000	92.8	74.0	0.0	0.0	0.432	ER	136,608	432.0	432.0	0.0	0
MS-1A65P US	0.000	61.2	47.0	0.0	0.0	0.432	ER	136,608	432.0	432.0	0.0	0
MS-1A65P DS	0.000	61.2	46.0	0.0	0.0	0.432	ER	136,608	432.0	432.0	0.0	0
MS-1A65	0.000	90.5	191.0	0.0	0.0	0.432	ER	136,608	432.0	432.0	0.0	0
MS-1A66P US	0.000	56.1	42.0	56.1	42.0	0.393	MT	149,573	375.9	393.0	9.9	149,573
MS-1A66P DS	0.000	49.4	76.0	49.4	76.0	0.270	MT	125,459	382.6	270.0	16.5	125,459
MS-1A67P US	0.000	13.6	83.0	13.6	83.0	0.371	MT	226,201	373.5	371.0	1.5	226,201
MS-1A67P DS	0.000	52.8	154.0	52.8	154.0	0.379		165,113	379.2	379.0	7.2	165,113
MS-1A67P-1	0.000	52.8	97.0	52.8	97.0	0.346		165,113	379.2	346.0	7.2	165,113
MS-1A67R	0.000	71.4	66.0	71.4	66.0	0.413	MT	149,573	360.6	413.0	12.5	149,573
MS-1A67R (D/S)	0.000	45.4	51.0	45.4	51.0	0.459	MT	149,573	454.6	459.0	8.0	149,573
===>Grouped by Line:	**MSD45C-5-RHDT A HDR to FWH26**										***Sorted By: Flow Order***	
MS-1A41P-1 DS	0.000	65.7	52.0	65.7	52.0	0.465		136,608	434.3	465.0	14.8	136,608
MS-1A42	0.000	86.8	54.0	86.8	54.0	0.445	MT	136,608	413.2	445.0	19.6	136,608
MS-1A42P US	0.000	57.8	54.0	57.8	54.0	0.457	MT	136,608	442.2	457.0	13.1	136,608
MS-1A42P DS	0.000	57.8	39.0	57.8	39.0	0.463	MT	136,608	442.2	463.0	13.1	136,608
MS-1A43	0.000	86.8	53.0	86.8	53.0	0.503	MT	136,608	413.2	503.0	19.6	136,608
MS-1A43P DS	0.000	57.8	30.0	57.8	30.0	0.495	MT	136,608	442.2	495.0	13.1	136,608
MS-1A44	0.000	86.8	61.0	86.8	61.0	0.485	MT	136,608	413.2	485.0	19.6	136,608
MS-1A44P US	0.000	57.8	41.0	57.8	41.0	0.458	MT	136,608	442.2	458.0	13.1	136,608
MS-1A44P DS	0.000	57.8	68.0	57.8	68.0	0.461	MT	136,608	442.2	461.0	13.1	136,608
MS-1A45	0.000	86.8	81.0	86.8	81.0	0.471	MT	136,608	413.2	471.0	19.6	136,608
MS-1A45P US	0.000	57.8	86.0	57.8	86.0	0.413	MT	136,608	442.2	413.0	13.1	136,608
MS-1A68	0.000	164.7	85.0	164.7	85.0	0.450	GW	193,769	335.3	450.0	12.5	193,769
MS-1A68 (BR/SE)	0.000	97.5	54.0	97.5	54.0	0.400	GW	193,769	334.5	400.0	7.4	193,769
MS-1A68 (D/S)	0.000	91.0	51.0	91.0	51.0	0.485	GW	193,769	409.0	485.0	6.9	193,769
===>Grouped by Line:	**MSD45D-1-RHDT A HDR to FWH26B**										***Sorted By: Flow Order***	
MS-1A68P	0.000	48.9	53.5	48.9	53.5	0.393	MT	136,608	383.1	393.0	11.1	136,608
MS-1A55	0.000	78.9	79.0	78.9	79.0	0.396	MT	119,088	353.1	396.0	32.1	119,088
MS-1A55P	0.000	68.2	43.0	68.2	43.0	0.406	MT	119,088	363.8	406.0	27.7	119,088
MS-1A56	0.000	78.9	103.0	78.9	103.0	0.413	MT	119,088	353.1	413.0	32.1	119,088
MS-1A57	0.000	78.9	100.0	78.9	100.0	0.420	MT	119,088	353.1	420.0	32.1	119,088

Component Name	Tinit	Total Lifetime Wear (mils) Prd. [1]	Total Lifetime Wear (mils) Meas.	In-Service Component Wear(mils) Prd. [1]	In-Service Component Wear(mils) Meas.	In-Service Component Tmeas, Method, Time (in) [3]	[2]	(hrs) [3]	In-Service Component Thickness (mils) [4] Tp	Tm	Incremental Wear (mils) [5] PRWEAR	Time (hrs) Last Inspected
===>Grouped by Line:	**MSD45D-1-RHDT A HDR to FWH26B**										***Sorted By: Flow Order***	
MS-1A57P	0.000	68.2	71.0	68.2	71.0	0.377	MT	119,088	363.8	377.0	27.7	119,088
MS-1A58	0.000	78.9	62.0	78.9	62.0	0.415	MT	119,088	353.1	415.0	32.1	119,088
MS-1A58P	0.000	66.0	108.0	66.0	108.0	0.395	MT	165,113	366.0	395.0	9.0	165,113
MS-1A59	0.000	105.7	102.5	105.7	102.5	0.391	MT	209,806	326.3	391.0	5.2	209,806
MS-1A59P US	0.000	71.4	53.0	71.4	53.0	0.385	MT	209,806	360.6	385.0	3.5	209,806
MS-1A59P DS	0.000	61.2	45.0	61.2	45.0	0.396	MT	136,608	370.8	396.0	13.8	136,608
MS-1A60	0.000	90.5	56.0	90.5	56.0	0.400		136,608	341.5	400.0	20.4	136,608
MS-1A60P US	0.000	56.1	41.0	56.1	41.0	0.399	MT	149,573	375.9	399.0	9.9	149,573
MS-1A60P DS	0.000	53.8	47.0	53.8	47.0	0.389	MT	136,608	378.2	389.0	12.2	136,608
MS-1A61P US	0.000	48.9	49.0	48.9	49.0	0.398	MT	136,608	383.1	398.0	11.1	136,608
MS-1A61P-1	0.000	44.9	30.0	44.9	30.0	0.402	MT	125,459	387.1	402.0	15.0	125,459
===>Grouped by Line:	**MSD45D-2-RHDT A HDR to FWH26A**										***Sorted By: Flow Order***	
MS-1A45P-1 US	0.000	48.9	47.0	48.9	47.0	0.389	MT	136,608	383.1	389.0	11.1	136,608
MS-1A45P-1 DS	0.000	48.9	58.0	48.9	58.0	0.393	MT	136,608	383.1	393.0	11.1	136,608
MS-1A46	0.000	90.5	33.0	90.5	33.0	0.416	MT	136,608	341.5	416.0	20.4	136,608
MS-1A46P	0.000	61.2	33.0	61.2	33.0	0.399	MT	136,608	370.8	399.0	13.8	136,608
MS-1A47	0.000	90.5	54.0	90.5	54.0	0.425	MT	136,608	341.5	425.0	20.4	136,608
MS-1A47P DS	0.000	78.3	31.0	78.3	31.0	0.401	MT	136,608	353.7	401.0	17.7	136,608
MS-1A48	0.000	90.5	73.0	90.5	73.0	0.392	MT	136,608	341.5	392.0	20.4	136,608
MS-1A49	0.000	90.5	86.0	90.5	86.0	0.356	MT	136,608	341.5	356.0	20.4	136,608
MS-1A49P US	0.000	78.3	67.0	78.3	67.0	0.380	MT	136,608	353.7	380.0	17.7	136,608
MS-1A50	0.000	78.9	80.0	78.9	80.0	0.396	MT	119,088	353.1	396.0	32.1	119,088
MS-1A50P	0.000	53.3	56.0	53.3	56.0	0.389	MT	119,088	378.7	389.0	21.7	119,088
MS-1A51	0.000	78.9	75.0	78.9	75.0	0.412	MT	119,088	353.1	412.0	32.1	119,088
MS-1A51P US	0.000	53.3	67.0	53.3	67.0	0.392	MT	119,088	378.7	392.0	21.7	119,088
MS-1A51P DS	0.000	61.2	49.0	61.2	49.0	0.398	MT	136,608	370.8	398.0	13.8	136,608
MS-1A52	0.000	90.5	80.0	90.5	80.0	0.403		136,608	341.5	403.0	20.4	136,608
MS-1A53P US	0.000	48.9	50.0	48.9	50.0	0.398	MT	136,608	383.1	398.0	11.1	136,608
MS-1A53P DS	0.000	44.9	75.0	44.9	75.0	0.394	MT	125,459	387.1	394.0	15.0	125,459
MS-1A53P-1	0.000	44.9	55.0	44.9	55.0	0.396	MT	125,459	387.1	396.0	15.0	125,459
===>Grouped by Line:	**MSD46A-2-RHDT22A CV to FWH26**										***Sorted By: Flow Order***	
MS-2A23P	0.000	53.6	32.0	0.0	0.0	0.432	ER	136,608	432.0	432.0	0.0	0
MS-2A24	0.000	82.1	134.0	0.0	0.0	0.432	ER	136,608	432.0	432.0	0.0	0
MS-2A24P	0.000	52.1	52.0	0.0	0.0	0.432	ER	136,608	432.0	432.0	0.0	0
MS-2A25	0.000	72.0	126.0	0.0	0.0	0.432	ER	136,608	432.0	432.0	0.0	0
MS-2A25P	0.000	47.2	160.0	0.0	0.0	0.432	ER	136,608	432.0	432.0	0.0	0

Component Name	Tinit	Total Lifetime Wear (mils) Prd. [1]	Total Lifetime Wear (mils) Meas.	In-Service Component Wear(mils) Prd. [1]	In-Service Component Wear(mils) Meas.	In-Service Component Tmeas, Method, Time (in) [3]	[2]	(hrs) [3]	In-Service Component Thickness (mils) [4] Tp	Tm	Incremental Wear (mils) [5] PRWEAR	Time (hrs) Last Inspected
===>Grouped by Line:	**MSD47-2-RHDT23A CV to FWH26**											***Sorted By: Flow Order***
MS-3A23P	0.000	53.6	74.0	0.0	0.0	0.432	ER	136,608	432.0	432.0	0.0	0
MS-3A24	0.000	84.2	115.0	0.0	0.0	0.432	ER	136,608	432.0	432.0	0.0	0
MS-3A24P	0.000	55.3	117.0	0.0	0.0	0.432	ER	136,608	432.0	432.0	0.0	0
MS-3A25	0.000	70.2	44.0	0.0	0.0	0.432	ER	136,608	432.0	432.0	0.0	0
MS-3A25P	0.000	46.9	111.0	0.0	0.0	0.432	ER	136,608	432.0	432.0	0.0	0

Notes:
[1] Predictions are for the time of last inspection (last known meas. wear).
[2] GW = Tmeas is minimum thickness from Band, Blanket or Area Method of greatest wear.
MT = Tmeas is component minimum thickness.
PW = Tmeas is Tinit - predicted wear.
US = Tmeas is user specified.
[3] If no Tmeas has been determined from measured data, then Tmeas = Tinit and Time = current component installation time.
Tmeas is used to determine Predicted Thickness and Component Predicted Time to Tcrit.
[4] These two values are used for thickness plot.
Tp = Predicted thickness at Tmeas.
Tm = Last measured thickness (Tmeas).
[5] PRWEAR = Incremental wear from last Tmeas time to analysis ending period.

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).DB

Wear Rate Report

Pass 2 Analysis Include Measured Wear

Report Date/Time: 7/7/2010 9:54:36AM
AnalysisDate/Time: 6/11/2010 11:41:13AM

CHECWORKS SFA Version: 3.0 (build 105)
Duty Factor (Global) : 1.000

Run Name: RHTR DTK B DRN DSCV
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 1.179

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***MSD48B-1-RHDT21B CV to FWH26***								***Sorted By: Average Wear Rate***		
MS-1B-VALVE-LCV-1105	24	10.745	3.754	495.9	15.767	3.3	4.500	6.403	0.000	60.39	HBD
MS-1B35	1	3.806	1.287	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1B34P US	52	2.883	0.975	495.9	10.806	3.3	6.625	6.403	0.000	60.39	HBD
MS-1B34P DS	52	2.883	0.975	495.9	10.806	3.3	6.625	6.403	0.000	60.39	HBD
MS-1B35P	51	2.537	0.858	495.9	10.806	3.3	6.625	6.403	0.000	60.39	HBD
MS-1B34R	18	0.001	0.001	495.9	15.767	3.3	4.500	6.403	0.000	60.39	HBD
MS-1B34	2	0.001	0.001	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1B34R (D/S)	18	0.001	0.001	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1B33P-1	68	0.001	0.000	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
===>Grouped by Line:	***MSD48B-2-RHDT B HDR to FWH26***								***Sorted By: Average Wear Rate***		
MS-1B36 (D/S)	12	5.082	1.719	495.9	7.870	3.3	8.625	6.403	0.000	60.39	HBD
MS-1B37	2	4.586	1.551	495.9	7.870	3.3	8.625	6.403	0.000	60.39	HBD
MS-1B38	1	4.090	1.384	495.9	7.870	3.3	8.625	6.403	0.000	60.39	HBD
MS-1B39	1	4.090	1.384	495.9	7.870	3.3	8.625	6.403	0.000	60.39	HBD
MS-1B36 (BR/SE)	12	3.921	1.326	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1B37P	52	3.099	1.048	495.9	7.870	3.3	8.625	6.403	0.000	60.39	HBD
MS-1B36	12	2.807	0.950	495.9	3.910	3.3	8.625	6.403	0.000	60.39	HBD
MS-1B38P	51	2.727	0.922	495.9	7.870	3.3	8.625	6.403	0.000	60.39	HBD
MS-1B39P	51	2.727	0.922	495.9	7.870	3.3	8.625	6.403	0.000	60.39	HBD
MS-1B36P US	62	2.479	0.839	495.9	15.283	3.3	8.625	6.403	0.000	60.39	HBD
MS-1B36P DS	62	2.479	0.839	495.9	15.283	3.3	8.625	6.403	0.000	60.39	HBD
===>Grouped by Line:	***MSD49C-1-RHDT B HDR to FWH26***								***Sorted By: Average Wear Rate***		
MS-2B34 (D/S)	12	4.732	1.600	495.9	7.499	3.3	10.750	6.403	0.000	60.39	HBD
MS-2B34 (BR/SE)	12	4.214	1.426	495.9	7.870	3.3	8.625	6.403	0.000	60.39	HBD
MS-2B36P US	54	3.693	1.249	495.9	7.499	3.3	10.750	6.403	0.000	60.39	HBD
MS-2B36P DS	54	3.693	1.249	495.9	7.499	3.3	10.750	6.403	0.000	60.39	HBD
MS-2B63	14	2.661	2.147	495.9	7.499	3.3	10.750	6.403	0.000	60.39	HBD

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***MSD49C-1-RHDT B HDR to FWH26***								***Sorted By: Average Wear Rate***		
MS-2B63 (D/S)	14	1.876	1.514	495.9	4.965	3.3	10.750	6.403	0.000	60.39	HBD
MS-2B63 (BR/SE)	14	1.692	1.365	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B35	2	0.006	0.006	495.9	7.499	3.3	10.750	6.403	0.000	60.39	HBD
MS-2B36	4	0.006	0.006	495.9	7.499	3.3	10.750	6.403	0.000	60.39	HBD
MS-2B35P	52	0.004	0.004	495.9	9.471	3.3	10.750	6.403	0.000	60.39	HBD
MS-2B33P	62	0.003	0.003	495.9	7.499	3.3	10.750	6.403	0.000	60.39	HBD
===>Grouped by Line:	***MSD49C-2-RHDT B HDR to FWH26C***								***Sorted By: Average Wear Rate***		
MS-2B-VALVE-MS-15-2	22	5.766	1.950	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B54 (D/S)	12	4.728	1.599	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B55 (D/S)	12	4.728	1.599	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B55	12	4.728	1.599	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B54	12	4.728	1.599	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B51	2	4.267	1.443	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B52	4	4.267	1.443	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B50P US	54	3.690	1.248	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B52P US	54	3.690	1.248	495.9	8.745	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B52P DS	54	3.690	1.248	495.9	8.745	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B55R	18	3.229	1.092	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B53P US	58	2.537	0.858	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B53P DS	58	2.537	0.858	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B55P	62	2.307	0.780	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B54P	62	2.307	0.780	495.9	8.745	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B55R (D/S)	18	2.054	0.695	495.9	3.910	3.3	8.625	6.403	0.000	60.39	HBD
MS-2B50	4	1.789	1.443	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B63P	64	0.967	0.780	495.9	8.745	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B53	2	0.001	0.001	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
===>Grouped by Line:	***MSD49C-3-RHDT B HDR***								***Sorted By: Average Wear Rate***		
MS-2B64	14	4.475	1.514	495.9	4.965	3.3	10.750	6.403	0.000	60.39	HBD
MS-2B64 (BR/SE)	14	4.036	1.365	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B64 (D/S)	14	2.472	0.836	495.9	2.450	3.3	10.750	6.403	0.000	60.39	HBD
MS-2B63P-1 US	64	1.627	0.550	495.9	4.965	3.3	10.750	6.403	0.000	60.39	HBD
===>Grouped by Line:	***MSD49C-4-RHDT B HDR to FWH26B***								***Sorted By: Average Wear Rate***		
MS-2B-VALVE-MS-15-1	22	5.766	1.950	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B49 (D/S)	12	4.728	1.599	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B49	12	4.728	1.599	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B44	4	4.267	1.443	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***MSD49C-4-RHDT B HDR to FWH26B***								***Sorted By: Average Wear Rate***		
MS-2B45	2	4.267	1.443	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B46	2	4.267	1.443	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B47	2	4.267	1.443	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B44P US	54	3.690	1.248	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B49R	18	3.229	1.092	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B45P US	52	2.883	0.975	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B45P DS	52	2.883	0.975	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B46P US	52	2.883	0.975	495.9	8.745	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B46P DS	52	2.883	0.975	495.9	8.745	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B49N	30	2.739	0.926	495.9	3.910	3.3	8.625	6.403	0.000	60.39	HBD
MS-2B47P US	58	2.537	0.858	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B47P DS	58	2.537	0.858	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B64P	64	2.307	0.780	495.9	8.745	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B49P	62	2.307	0.780	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B48P US	62	2.307	0.780	495.9	8.745	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B48P DS	62	2.307	0.780	495.9	8.745	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B49R (D/S)	18	2.054	0.695	495.9	3.910	3.3	8.625	6.403	0.000	60.39	HBD
===>Grouped by Line:	***MSD49C-5-RHDT B HDR to FWH26A***								***Sorted By: Average Wear Rate***		
MS-2B-VALVE-MS-15	22	5.766	1.950	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B42 (D/S)	12	4.728	1.599	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B43 (D/S)	12	4.728	1.599	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B43	12	4.728	1.599	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B42	12	4.728	1.599	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B43N	30	4.613	1.560	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B37	2	4.267	1.443	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B38	4	4.267	1.443	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B39	2	4.267	1.443	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B40	2	4.267	1.443	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B41	2	4.267	1.443	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B64R (D/S)	7	3.690	1.248	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B38P	54	3.690	1.248	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B64P-1 US	57	2.883	0.975	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B37P	52	2.883	0.975	495.9	8.745	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B39P	52	2.883	0.975	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B40P US	52	2.883	0.975	495.9	8.745	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B40P DS	52	2.883	0.975	495.9	8.745	3.3	6.625	6.403	0.000	60.39	HBD

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***MSD49C-5-RHDT B HDR to FWH26A***								***Sorted By: Average Wear Rate***		
MS-2B41P	58	2.537	0.858	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B43P	62	2.307	0.780	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B42P US	62	2.307	0.780	495.9	8.745	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B42P DS	62	2.307	0.780	495.9	8.745	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B64R	7	1.573	0.532	495.9	2.450	3.3	10.750	6.403	0.000	60.39	HBD
MS-2B43R	18	1.354	1.092	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B43R (D/S)	18	0.861	0.695	495.9	3.910	3.3	8.625	6.403	0.000	60.39	HBD
===>Grouped by Line:	***MSD50C-1-RHDT23B CV to FWH26***								***Sorted By: Average Wear Rate***		
MS-3B-VALVE-LCV-1105B	24	10.745	3.754	495.9	15.767	3.3	4.500	6.403	0.000	60.39	HBD
MS-3B43P US	54	2.191	0.741	495.9	10.736	3.3	8.625	6.403	0.000	60.39	HBD
MS-3B43R	18	0.001	0.001	495.9	15.767	3.3	4.500	6.403	0.000	60.39	HBD
MS-3B43	4	0.001	0.000	495.9	3.910	3.3	8.625	6.403	0.000	60.39	HBD
MS-3B43R (D/S)	18	0.001	0.000	495.9	3.910	3.3	8.625	6.403	0.000	60.39	HBD

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).DB

Wear Rate Report

Pass 2 Analysis Include Measured Wear

Report Date/Time: 7/7/2010 9:54:36AM
AnalysisDate/Time: 6/11/2010 11:41:13AM

CHECWORKS SFA Version: 3.0 (build 105)
Duty Factor (Global) : 1.000

Run Name: RHTR DTK B DRN DSCV
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 1.179

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***MSD48B-1-RHDT21B CV to FWH26***									***Sorted By: Flow Order***	
MS-1B-VALVE-LCV-1105	24	10.745	3.754	495.9	15.767	3.3	4.500	6.403	0.000	60.39	HBD
MS-1B34R	18	0.001	0.001	495.9	15.767	3.3	4.500	6.403	0.000	60.39	HBD
MS-1B34R (D/S)	18	0.001	0.001	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1B33P-1	68	0.001	0.000	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1B34	2	0.001	0.001	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1B34P US	52	2.883	0.975	495.9	10.806	3.3	6.625	6.403	0.000	60.39	HBD
MS-1B34P DS	52	2.883	0.975	495.9	10.806	3.3	6.625	6.403	0.000	60.39	HBD
MS-1B35	1	3.806	1.287	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1B35P	51	2.537	0.858	495.9	10.806	3.3	6.625	6.403	0.000	60.39	HBD
===>Grouped by Line:	***MSD48B-2-RHDT B HDR to FWH26***									***Sorted By: Flow Order***	
MS-1B36 (BR/SE)	12	3.921	1.326	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1B36 (D/S)	12	5.082	1.719	495.9	7.870	3.3	8.625	6.403	0.000	60.39	HBD
MS-1B36P US	62	2.479	0.839	495.9	15.283	3.3	8.625	6.403	0.000	60.39	HBD
MS-1B36P DS	62	2.479	0.839	495.9	15.283	3.3	8.625	6.403	0.000	60.39	HBD
MS-1B37	2	4.586	1.551	495.9	7.870	3.3	8.625	6.403	0.000	60.39	HBD
MS-1B37P	52	3.099	1.048	495.9	7.870	3.3	8.625	6.403	0.000	60.39	HBD
MS-1B38	1	4.090	1.384	495.9	7.870	3.3	8.625	6.403	0.000	60.39	HBD
MS-1B38P	51	2.727	0.922	495.9	7.870	3.3	8.625	6.403	0.000	60.39	HBD
MS-1B39	1	4.090	1.384	495.9	7.870	3.3	8.625	6.403	0.000	60.39	HBD
MS-1B39P	51	2.727	0.922	495.9	7.870	3.3	8.625	6.403	0.000	60.39	HBD
MS-1B36	12	2.807	0.950	495.9	3.910	3.3	8.625	6.403	0.000	60.39	HBD
===>Grouped by Line:	***MSD49C-1-RHDT B HDR to FWH26***									***Sorted By: Flow Order***	
MS-2B34 (BR/SE)	12	4.214	1.426	495.9	7.870	3.3	8.625	6.403	0.000	60.39	HBD
MS-2B34 (D/S)	12	4.732	1.600	495.9	7.499	3.3	10.750	6.403	0.000	60.39	HBD
MS-2B33P	62	0.003	0.003	495.9	7.499	3.3	10.750	6.403	0.000	60.39	HBD
MS-2B35	2	0.006	0.006	495.9	7.499	3.3	10.750	6.403	0.000	60.39	HBD
MS-2B35P	52	0.004	0.004	495.9	9.471	3.3	10.750	6.403	0.000	60.39	HBD

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***MSD49C-1-RHDT B HDR to FWH26***								***Sorted By: Flow Order***		
MS-2B36	4	0.006	0.006	495.9	7.499	3.3	10.750	6.403	0.000	60.39	HBD
MS-2B36P US	54	3.693	1.249	495.9	7.499	3.3	10.750	6.403	0.000	60.39	HBD
MS-2B36P DS	54	3.693	1.249	495.9	7.499	3.3	10.750	6.403	0.000	60.39	HBD
MS-2B63	14	2.661	2.147	495.9	7.499	3.3	10.750	6.403	0.000	60.39	HBD
MS-2B63 (BR/SE)	14	1.692	1.365	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B63 (D/S)	14	1.876	1.514	495.9	4.965	3.3	10.750	6.403	0.000	60.39	HBD
===>Grouped by Line:	***MSD49C-2-RHDT B HDR to FWH26C***								***Sorted By: Flow Order***		
MS-2B63P	64	0.967	0.780	495.9	8.745	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B50	4	1.789	1.443	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B50P US	54	3.690	1.248	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B51	2	4.267	1.443	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B52	4	4.267	1.443	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B52P US	54	3.690	1.248	495.9	8.745	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B52P DS	54	3.690	1.248	495.9	8.745	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B53	2	0.001	0.001	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B-VALVE-MS-15-2	22	5.766	1.950	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B53P US	58	2.537	0.858	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B53P DS	58	2.537	0.858	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B54	12	4.728	1.599	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B54 (D/S)	12	4.728	1.599	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B54P	62	2.307	0.780	495.9	8.745	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B55	12	4.728	1.599	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B55 (D/S)	12	4.728	1.599	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B55P	62	2.307	0.780	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B55R	18	3.229	1.092	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B55R (D/S)	18	2.054	0.695	495.9	3.910	3.3	8.625	6.403	0.000	60.39	HBD
===>Grouped by Line:	***MSD49C-3-RHDT B HDR***								***Sorted By: Flow Order***		
MS-2B63P-1 US	64	1.627	0.550	495.9	4.965	3.3	10.750	6.403	0.000	60.39	HBD
MS-2B64	14	4.475	1.514	495.9	4.965	3.3	10.750	6.403	0.000	60.39	HBD
MS-2B64 (BR/SE)	14	4.036	1.365	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B64 (D/S)	14	2.472	0.836	495.9	2.450	3.3	10.750	6.403	0.000	60.39	HBD
===>Grouped by Line:	***MSD49C-4-RHDT B HDR to FWH26B***								***Sorted By: Flow Order***		
MS-2B64P	64	2.307	0.780	495.9	8.745	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B44	4	4.267	1.443	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B44P US	54	3.690	1.248	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B45	2	4.267	1.443	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***MSD49C-4-RHDT B HDR to FWH26B***									***Sorted By: Flow Order***	
MS-2B45P US	52	2.883	0.975	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B45P DS	52	2.883	0.975	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B46	2	4.267	1.443	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B46P US	52	2.883	0.975	495.9	8.745	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B46P DS	52	2.883	0.975	495.9	8.745	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B47	2	4.267	1.443	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B-VALVE-MS-15-1	22	5.766	1.950	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B47P US	58	2.537	0.858	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B47P DS	58	2.537	0.858	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B48P US	62	2.307	0.780	495.9	8.745	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B48P DS	62	2.307	0.780	495.9	8.745	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B49	12	4.728	1.599	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B49 (D/S)	12	4.728	1.599	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B49P	62	2.307	0.780	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B49R	18	3.229	1.092	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B49R (D/S)	18	2.054	0.695	495.9	3.910	3.3	8.625	6.403	0.000	60.39	HBD
MS-2B49N	30	2.739	0.926	495.9	3.910	3.3	8.625	6.403	0.000	60.39	HBD
===>Grouped by Line:	***MSD49C-5-RHDT B HDR to FWH26A***									***Sorted By: Flow Order***	
MS-2B64R	7	1.573	0.532	495.9	2.450	3.3	10.750	6.403	0.000	60.39	HBD
MS-2B64R (D/S)	7	3.690	1.248	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B64P-1 US	57	2.883	0.975	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B37	2	4.267	1.443	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B37P	52	2.883	0.975	495.9	8.745	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B38	4	4.267	1.443	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B38P	54	3.690	1.248	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B39	2	4.267	1.443	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B39P	52	2.883	0.975	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B40	2	4.267	1.443	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B40P US	52	2.883	0.975	495.9	8.745	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B40P DS	52	2.883	0.975	495.9	8.745	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B41	2	4.267	1.443	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B-VALVE-MS-15	22	5.766	1.950	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B41P	58	2.537	0.858	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B42	12	4.728	1.599	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B42 (D/S)	12	4.728	1.599	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B42P US	62	2.307	0.780	495.9	8.745	3.3	6.625	6.403	0.000	60.39	HBD

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***MSD49C-5-RHDT B HDR to FWH26A***									***Sorted By: Flow Order***	
MS-2B42P DS	62	2.307	0.780	495.9	8.745	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B43	12	4.728	1.599	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B43 (D/S)	12	4.728	1.599	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B43P	62	2.307	0.780	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B43R	18	1.354	1.092	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B43R (D/S)	18	0.861	0.695	495.9	3.910	3.3	8.625	6.403	0.000	60.39	HBD
MS-2B43N	30	4.613	1.560	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
===>Grouped by Line:	***MSD50C-1-RHDT23B CV to FWH26***									***Sorted By: Flow Order***	
MS-3B-VALVE-LCV-1105B	24	10.745	3.754	495.9	15.767	3.3	4.500	6.403	0.000	60.39	HBD
MS-3B43R	18	0.001	0.001	495.9	15.767	3.3	4.500	6.403	0.000	60.39	HBD
MS-3B43R (D/S)	18	0.001	0.000	495.9	3.910	3.3	8.625	6.403	0.000	60.39	HBD
MS-3B43	4	0.001	0.000	495.9	3.910	3.3	8.625	6.403	0.000	60.39	HBD
MS-3B43P US	54	2.191	0.741	495.9	10.736	3.3	8.625	6.403	0.000	60.39	HBD

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).DB

Service Life Report

Pass 2 Analysis Include Measured Wear

Report Date/Time: 7/7/2010 9:54:36AM
AnalysisDate/Time:

Run Name: RHTR DTK B DRN DSCV
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 1.179

CHECWORKS SFA Version: 3.0 (build 105)
Duty Factor (Global) :1.000

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **MSD48B-1-RHDT21B CV to FWH26**					***Sorted By:Remaining Life***		
MS-1B-VALVE-LCV-1105	0.000	0.038	0.169	0.169	-149,388	No	243,721
MS-1B35	0.000	0.309	0.233	0.233	520,975	Yes	243,721
MS-1B34P US	0.000	0.386	0.233	0.233	1,375,720	Yes	243,721
MS-1B34P DS	0.000	0.391	0.233	0.233	1,419,336	Yes	243,721
MS-1B35P	0.000	0.390	0.233	0.233	1,606,906	Yes	243,721
MS-1B34R	0.000	0.337	0.146	0.146	100,000,000	No	107,113
MS-1B33P-1	0.000	0.432	0.206	0.206	100,000,000	No	107,113
MS-1B34	0.000	0.432	0.215	0.215	100,000,000	No	107,113
MS-1B34R (D/S)	0.000	0.432	0.215	0.215	100,000,000	No	107,113
===>Grouped by Line: **MSD48B-2-RHDT B HDR to FWH26**					***Sorted By:Remaining Life***		
MS-1B39	0.000	0.368	0.303	0.303	408,684	Yes	243,721
MS-1B36 (D/S)	0.000	0.423	0.303	0.303	608,286	No	243,721
MS-1B37	0.000	0.435	0.303	0.303	744,408	Yes	243,721
MS-1B38	0.000	0.473	0.303	0.303	1,078,144	Yes	243,721
MS-1B37P	0.000	0.452	0.303	0.303	1,246,982	Yes	243,721
MS-1B36	0.000	0.445	0.303	0.303	1,312,265	No	243,721
MS-1B36P US	0.000	0.431	0.303	0.303	1,335,731	No	243,721
MS-1B36P DS	0.000	0.437	0.303	0.303	1,394,978	Yes	243,721
MS-1B38P	0.000	0.460	0.303	0.303	1,489,641	Yes	243,721
MS-1B39P	0.000	0.469	0.303	0.303	1,576,292	Yes	243,721
MS-1B36 (BR/SE)	0.000	0.818	0.233	0.233	3,862,250	No	243,721
===>Grouped by Line: **MSD49C-1-RHDT B HDR to FWH26**					***Sorted By:Remaining Life***		
MS-2B63	0.000	0.561	0.378	0.378	749,142	No	107,113
MS-2B36P DS	0.000	0.491	0.378	0.378	795,253	No	243,721
MS-2B34 (D/S)	0.000	0.547	0.378	0.378	925,685	No	243,721
MS-2B63 (D/S)	0.000	0.571	0.378	0.378	1,118,174	No	107,113
MS-2B63 (BR/SE)	0.000	0.411	0.233	0.233	1,144,877	No	107,113
MS-2B36P US	0.000	0.550	0.378	0.378	1,204,771	Yes	243,721

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line:	**MSD49C-1-RHDT B HDR to FWH26**				***Sorted By:Remaining Life***		
MS-2B34 (BR/SE)	0.000	1.442	0.303	0.303	6,995,747	No	243,721
MS-2B36	0.000	0.594	0.378	0.378	100,000,000	No	62,244
MS-2B33P	0.000	0.594	0.378	0.378	100,000,000	No	62,244
MS-2B35	0.000	0.594	0.378	0.378	100,000,000	No	62,244
MS-2B35P	0.000	0.594	0.378	0.378	100,000,000	No	62,244
===>Grouped by Line:	**MSD49C-2-RHDT B HDR to FWH26C**				***Sorted By:Remaining Life***		
MS-2B-VALVE-MS-15-2	0.000	0.272	0.249	0.249	101,358	No	243,721
MS-2B52	0.000	0.328	0.233	0.233	578,075	Yes	243,721
MS-2B55R	0.000	0.331	0.233	0.233	786,081	Yes	243,721
MS-2B52P US	0.000	0.369	0.233	0.233	951,839	Yes	243,721
MS-2B52P DS	0.000	0.369	0.233	0.233	955,884	Yes	243,721
MS-2B53P DS	0.000	0.331	0.233	0.233	996,735	Yes	243,721
MS-2B51	0.000	0.398	0.233	0.233	1,002,984	Yes	243,721
MS-2B50	0.000	0.400	0.233	0.233	1,016,873	Yes	107,113
MS-2B50P US	0.000	0.383	0.233	0.233	1,051,175	Yes	243,721
MS-2B55P	0.000	0.328	0.233	0.233	1,070,419	Yes	243,721
MS-2B53P US	0.000	0.381	0.233	0.233	1,516,744	Yes	243,721
MS-2B54	0.000	0.526	0.233	0.233	1,606,554	Yes	243,721
MS-2B54 (D/S)	0.000	0.536	0.233	0.233	1,661,325	Yes	243,721
MS-2B54P	0.000	0.398	0.233	0.233	1,857,351	Yes	243,721
MS-2B55	0.000	0.603	0.233	0.233	2,027,873	Yes	243,721
MS-2B63P	0.000	0.415	0.233	0.233	2,048,229	No	107,113
MS-2B55 (D/S)	0.000	0.607	0.233	0.233	2,049,781	Yes	243,721
MS-2B55R (D/S)	0.000	0.483	0.303	0.303	2,265,317	Yes	243,721
MS-2B53	0.000	0.432	0.215	0.215	100,000,000	No	107,113
===>Grouped by Line:	**MSD49C-3-RHDT B HDR**				***Sorted By:Remaining Life***		
MS-2B64 (BR/SE)	0.000	0.360	0.233	0.233	816,103	Yes	243,721
MS-2B64	0.000	0.577	0.378	0.378	1,153,726	Yes	243,721
MS-2B64 (D/S)	0.000	0.571	0.378	0.378	2,025,151	Yes	243,721
MS-2B63P-1 US	0.000	0.549	0.378	0.378	2,719,566	No	243,721
===>Grouped by Line:	**MSD49C-4-RHDT B HDR to FWH26B**				***Sorted By:Remaining Life***		
MS-2B-VALVE-MS-15-1	0.000	0.272	0.249	0.249	101,358	No	243,721
MS-2B47	0.000	0.336	0.233	0.233	626,691	Yes	243,721
MS-2B46	0.000	0.376	0.233	0.233	869,461	Yes	243,721
MS-2B45	0.000	0.378	0.233	0.233	881,599	Yes	243,721
MS-2B44P US	0.000	0.362	0.233	0.233	906,761	Yes	243,721
MS-2B46P DS	0.000	0.339	0.233	0.233	955,304	Yes	243,721

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line:	**MSD49C-4-RHDT B HDR to FWH26B**				***Sorted By:Remaining Life***		
MS-2B49N	0.000	0.424	0.303	0.303	1,140,760	No	243,721
MS-2B44	0.000	0.422	0.233	0.233	1,148,645	Yes	243,721
MS-2B46P US	0.000	0.365	0.233	0.233	1,188,848	Yes	243,721
MS-2B47P US	0.000	0.361	0.233	0.233	1,312,086	No	243,721
MS-2B49 (D/S)	0.000	0.486	0.233	0.233	1,385,119	No	243,721
MS-2B45P US	0.000	0.389	0.233	0.233	1,404,428	Yes	243,721
MS-2B64P	0.000	0.358	0.233	0.233	1,406,973	Yes	243,721
MS-2B45P DS	0.000	0.392	0.233	0.233	1,431,375	Yes	243,721
MS-2B47P DS	0.000	0.377	0.233	0.233	1,471,143	Yes	243,721
MS-2B49P	0.000	0.372	0.233	0.233	1,564,166	Yes	243,721
MS-2B48P DS	0.000	0.374	0.233	0.233	1,586,622	Yes	243,721
MS-2B49	0.000	0.526	0.233	0.233	1,604,203	No	243,721
MS-2B49R	0.000	0.448	0.233	0.233	1,728,951	No	243,721
MS-2B48P US	0.000	0.390	0.233	0.233	1,766,272	Yes	243,721
MS-2B49R (D/S)	0.000	0.489	0.303	0.303	2,348,959	No	243,721
===>Grouped by Line:	**MSD49C-5-RHDT B HDR to FWH26A**				***Sorted By:Remaining Life***		
MS-2B-VALVE-MS-15	0.000	0.272	0.249	0.249	101,358	No	243,721
MS-2B43N	0.000	0.304	0.233	0.233	397,405	No	243,721
MS-2B37	0.000	0.313	0.233	0.233	488,049	No	243,721
MS-2B38	0.000	0.313	0.233	0.233	488,049	No	243,721
MS-2B39	0.000	0.313	0.233	0.233	488,049	No	243,721
MS-2B40	0.000	0.313	0.233	0.233	488,049	No	243,721
MS-2B38P	0.000	0.329	0.233	0.233	676,891	No	243,721
MS-2B43 (D/S)	0.000	0.415	0.233	0.233	996,243	No	243,721
MS-2B41	0.000	0.405	0.233	0.233	1,045,468	Yes	243,721
MS-2B37P	0.000	0.352	0.233	0.233	1,068,171	No	243,721
MS-2B39P	0.000	0.352	0.233	0.233	1,068,171	No	243,721
MS-2B40P US	0.000	0.352	0.233	0.233	1,068,171	No	243,721
MS-2B64P-1 US	0.000	0.366	0.233	0.233	1,197,831	Yes	243,721
MS-2B40P DS	0.000	0.385	0.233	0.233	1,368,498	Yes	243,721
MS-2B43	0.000	0.486	0.233	0.233	1,385,119	No	243,721
MS-2B43R	0.000	0.415	0.233	0.233	1,464,289	No	107,113
MS-2B41P	0.000	0.379	0.233	0.233	1,493,111	Yes	243,721
MS-2B43P	0.000	0.372	0.233	0.233	1,564,166	Yes	243,721
MS-2B42 (D/S)	0.000	0.522	0.233	0.233	1,582,528	Yes	243,721
MS-2B64R (D/S)	0.000	0.466	0.233	0.233	1,636,587	Yes	243,721
MS-2B42	0.000	0.534	0.233	0.233	1,648,254	Yes	243,721
MS-2B42P US	0.000	0.381	0.233	0.233	1,668,813	Yes	243,721

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line:	**MSD49C-5-RHDT B HDR to FWH26A**				***Sorted By:Remaining Life***		
MS-2B42P DS	0.000	0.395	0.233	0.233	1,822,412	Yes	243,721
MS-2B43R (D/S)	0.000	0.489	0.303	0.303	2,348,959	No	107,113
MS-2B64R	0.000	0.581	0.378	0.378	3,343,669	Yes	243,721
===>Grouped by Line:	**MSD50C-1-RHDT23B CV to FWH26**				***Sorted By:Remaining Life***		
MS-3B-VALVE-LCV-1105B	0.000	0.038	0.169	0.169	-149,388	No	243,721
MS-3B43P US	0.000	0.376	0.303	0.303	866,721	Yes	243,721
MS-3B43R	0.000	0.337	0.146	0.146	100,000,000	No	107,113
MS-3B43R (D/S)	0.000	0.500	0.280	0.280	100,000,000	No	107,113
MS-3B43	0.000	0.500	0.280	0.280	100,000,000	No	107,113

Note:
[1] Predictions are based on last Tmeas to analysis ending period.

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).DB

Service Life Report

Pass 2 Analysis Include Measured Wear

Report Date/Time: 7/7/2010 9:54:36AM
AnalysisDate/Time:

Run Name: RHTR DTK B DRN DSCV
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 1.179

CHECWORKS SFA Version: 3.0 (build 105)
Duty Factor (Global) : 1.000

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **MSD48B-1-RHDT21B CV to FWH26**					***Sorted By:Flow Order***		
MS-1B-VALVE-LCV-1105	0.000	0.038	0.169	0.169	-149,388	No	243,721
MS-1B34R	0.000	0.337	0.146	0.146	100,000,000	No	107,113
MS-1B34R (D/S)	0.000	0.432	0.215	0.215	100,000,000	No	107,113
MS-1B33P-1	0.000	0.432	0.206	0.206	100,000,000	No	107,113
MS-1B34	0.000	0.432	0.215	0.215	100,000,000	No	107,113
MS-1B34P US	0.000	0.386	0.233	0.233	1,375,720	Yes	243,721
MS-1B34P DS	0.000	0.391	0.233	0.233	1,419,336	Yes	243,721
MS-1B35	0.000	0.309	0.233	0.233	520,975	Yes	243,721
MS-1B35P	0.000	0.390	0.233	0.233	1,606,906	Yes	243,721
===>Grouped by Line: **MSD48B-2-RHDT B HDR to FWH26**					***Sorted By:Flow Order***		
MS-1B36 (BR/SE)	0.000	0.818	0.233	0.233	3,862,250	No	243,721
MS-1B36 (D/S)	0.000	0.423	0.303	0.303	608,286	No	243,721
MS-1B36P US	0.000	0.431	0.303	0.303	1,335,731	No	243,721
MS-1B36P DS	0.000	0.437	0.303	0.303	1,394,978	Yes	243,721
MS-1B37	0.000	0.435	0.303	0.303	744,408	Yes	243,721
MS-1B37P	0.000	0.452	0.303	0.303	1,246,982	Yes	243,721
MS-1B38	0.000	0.473	0.303	0.303	1,078,144	Yes	243,721
MS-1B38P	0.000	0.460	0.303	0.303	1,489,641	Yes	243,721
MS-1B39	0.000	0.368	0.303	0.303	408,684	Yes	243,721
MS-1B39P	0.000	0.469	0.303	0.303	1,576,292	Yes	243,721
MS-1B36	0.000	0.445	0.303	0.303	1,312,265	No	243,721
===>Grouped by Line: **MSD49C-1-RHDT B HDR to FWH26**					***Sorted By:Flow Order***		
MS-2B34 (BR/SE)	0.000	1.442	0.303	0.303	6,995,747	No	243,721
MS-2B34 (D/S)	0.000	0.547	0.378	0.378	925,685	No	243,721
MS-2B33P	0.000	0.594	0.378	0.378	100,000,000	No	62,244
MS-2B35	0.000	0.594	0.378	0.378	100,000,000	No	62,244
MS-2B35P	0.000	0.594	0.378	0.378	100,000,000	No	62,244
MS-2B36	0.000	0.594	0.378	0.378	100,000,000	No	62,244

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line:	**MSD49C-1-RHDT B HDR to FWH26**				***Sorted By:Flow Order***		
MS-2B36P US	0.000	0.550	0.378	0.378	1,204,771	Yes	243,721
MS-2B36P DS	0.000	0.491	0.378	0.378	795,253	No	243,721
MS-2B63	0.000	0.561	0.378	0.378	749,142	No	107,113
MS-2B63 (BR/SE)	0.000	0.411	0.233	0.233	1,144,877	No	107,113
MS-2B63 (D/S)	0.000	0.571	0.378	0.378	1,118,174	No	107,113
===>Grouped by Line:	**MSD49C-2-RHDT B HDR to FWH26C**				***Sorted By:Flow Order***		
MS-2B63P	0.000	0.415	0.233	0.233	2,048,229	No	107,113
MS-2B50	0.000	0.400	0.233	0.233	1,016,873	Yes	107,113
MS-2B50P US	0.000	0.383	0.233	0.233	1,051,175	Yes	243,721
MS-2B51	0.000	0.398	0.233	0.233	1,002,984	Yes	243,721
MS-2B52	0.000	0.328	0.233	0.233	578,075	Yes	243,721
MS-2B52P US	0.000	0.369	0.233	0.233	951,839	Yes	243,721
MS-2B52P DS	0.000	0.369	0.233	0.233	955,884	Yes	243,721
MS-2B53	0.000	0.432	0.215	0.215	100,000,000	No	107,113
MS-2B-VALVE-MS-15-2	0.000	0.272	0.249	0.249	101,358	No	243,721
MS-2B53P US	0.000	0.381	0.233	0.233	1,516,744	Yes	243,721
MS-2B53P DS	0.000	0.331	0.233	0.233	996,735	Yes	243,721
MS-2B54	0.000	0.526	0.233	0.233	1,606,554	Yes	243,721
MS-2B54 (D/S)	0.000	0.536	0.233	0.233	1,661,325	Yes	243,721
MS-2B54P	0.000	0.398	0.233	0.233	1,857,351	Yes	243,721
MS-2B55	0.000	0.603	0.233	0.233	2,027,873	Yes	243,721
MS-2B55 (D/S)	0.000	0.607	0.233	0.233	2,049,781	Yes	243,721
MS-2B55P	0.000	0.328	0.233	0.233	1,070,419	Yes	243,721
MS-2B55R	0.000	0.331	0.233	0.233	786,081	Yes	243,721
MS-2B55R (D/S)	0.000	0.483	0.303	0.303	2,265,317	Yes	243,721
===>Grouped by Line:	**MSD49C-3-RHDT B HDR**				***Sorted By:Flow Order***		
MS-2B63P-1 US	0.000	0.549	0.378	0.378	2,719,566	No	243,721
MS-2B64	0.000	0.577	0.378	0.378	1,153,726	Yes	243,721
MS-2B64 (BR/SE)	0.000	0.360	0.233	0.233	816,103	Yes	243,721
MS-2B64 (D/S)	0.000	0.571	0.378	0.378	2,025,151	Yes	243,721
===>Grouped by Line:	**MSD49C-4-RHDT B HDR to FWH26B**				***Sorted By:Flow Order***		
MS-2B64P	0.000	0.358	0.233	0.233	1,406,973	Yes	243,721
MS-2B44	0.000	0.422	0.233	0.233	1,148,645	Yes	243,721
MS-2B44P US	0.000	0.362	0.233	0.233	906,761	Yes	243,721
MS-2B45	0.000	0.378	0.233	0.233	881,599	Yes	243,721
MS-2B45P US	0.000	0.389	0.233	0.233	1,404,428	Yes	243,721
MS-2B45P DS	0.000	0.392	0.233	0.233	1,431,375	Yes	243,721

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **MSD49C-4-RHDT B HDR to FWH26B**					***Sorted By:Flow Order***		
MS-2B46	0.000	0.376	0.233	0.233	869,461	Yes	243,721
MS-2B46P US	0.000	0.365	0.233	0.233	1,188,848	Yes	243,721
MS-2B46P DS	0.000	0.339	0.233	0.233	955,304	Yes	243,721
MS-2B47	0.000	0.336	0.233	0.233	626,691	Yes	243,721
MS-2B-VALVE-MS-15-1	0.000	0.272	0.249	0.249	101,358	No	243,721
MS-2B47P US	0.000	0.361	0.233	0.233	1,312,086	No	243,721
MS-2B47P DS	0.000	0.377	0.233	0.233	1,471,143	Yes	243,721
MS-2B48P US	0.000	0.390	0.233	0.233	1,766,272	Yes	243,721
MS-2B48P DS	0.000	0.374	0.233	0.233	1,586,622	Yes	243,721
MS-2B49	0.000	0.526	0.233	0.233	1,604,203	No	243,721
MS-2B49 (D/S)	0.000	0.486	0.233	0.233	1,385,119	No	243,721
MS-2B49P	0.000	0.372	0.233	0.233	1,564,166	Yes	243,721
MS-2B49R	0.000	0.448	0.233	0.233	1,728,951	No	243,721
MS-2B49R (D/S)	0.000	0.489	0.303	0.303	2,348,959	No	243,721
MS-2B49N	0.000	0.424	0.303	0.303	1,140,760	No	243,721
===>Grouped by Line: **MSD49C-5-RHDT B HDR to FWH26A**					***Sorted By:Flow Order***		
MS-2B64R	0.000	0.581	0.378	0.378	3,343,669	Yes	243,721
MS-2B64R (D/S)	0.000	0.466	0.233	0.233	1,636,587	Yes	243,721
MS-2B64P-1 US	0.000	0.366	0.233	0.233	1,197,831	Yes	243,721
MS-2B37	0.000	0.313	0.233	0.233	488,049	No	243,721
MS-2B37P	0.000	0.352	0.233	0.233	1,068,171	No	243,721
MS-2B38	0.000	0.313	0.233	0.233	488,049	No	243,721
MS-2B38P	0.000	0.329	0.233	0.233	676,891	No	243,721
MS-2B39	0.000	0.313	0.233	0.233	488,049	No	243,721
MS-2B39P	0.000	0.352	0.233	0.233	1,068,171	No	243,721
MS-2B40	0.000	0.313	0.233	0.233	488,049	No	243,721
MS-2B40P US	0.000	0.352	0.233	0.233	1,068,171	No	243,721
MS-2B40P DS	0.000	0.385	0.233	0.233	1,368,498	Yes	243,721
MS-2B41	0.000	0.405	0.233	0.233	1,045,468	Yes	243,721
MS-2B-VALVE-MS-15	0.000	0.272	0.249	0.249	101,358	No	243,721
MS-2B41P	0.000	0.379	0.233	0.233	1,493,111	Yes	243,721
MS-2B42	0.000	0.534	0.233	0.233	1,648,254	Yes	243,721
MS-2B42 (D/S)	0.000	0.522	0.233	0.233	1,582,528	Yes	243,721
MS-2B42P US	0.000	0.381	0.233	0.233	1,668,813	Yes	243,721
MS-2B42P DS	0.000	0.395	0.233	0.233	1,822,412	Yes	243,721
MS-2B43	0.000	0.486	0.233	0.233	1,385,119	No	243,721
MS-2B43 (D/S)	0.000	0.415	0.233	0.233	996,243	No	243,721
MS-2B43P	0.000	0.372	0.233	0.233	1,564,166	Yes	243,721

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **MSD49C-5-RHDT B HDR to FWH26A**					***Sorted By:Flow Order***		
MS-2B43R	0.000	0.415	0.233	0.233	1,464,289	No	107,113
MS-2B43R (D/S)	0.000	0.489	0.303	0.303	2,348,959	No	107,113
MS-2B43N	0.000	0.304	0.233	0.233	397,405	No	243,721
===>Grouped by Line: **MSD50C-1-RHDT23B CV to FWH26**					***Sorted By:Flow Order***		
MS-3B-VALVE-LCV-1105B	0.000	0.038	0.169	0.169	-149,388	No	243,721
MS-3B43R	0.000	0.337	0.146	0.146	100,000,000	No	107,113
MS-3B43R (D/S)	0.000	0.500	0.280	0.280	100,000,000	No	107,113
MS-3B43	0.000	0.500	0.280	0.280	100,000,000	No	107,113
MS-3B43P US	0.000	0.376	0.303	0.303	866,721	Yes	243,721

Note:
[1] Predictions are based on last Tmeas to analysis ending period.

4

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).DB

Wear Report

Pass 2 Analysis Include Measured Wear

Report Date/Time: 07-Jul-2010 9:54 am
AnalysisDate/Time: 07-Jul-2010 9:54 am

Run Name: RHTR DTK B DRN DSCV
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 1.179

CHECWORKS SFA Version: 3.0 (build 105)
Duty Factor (Global) : 1.000

Component Name	Tinit	Total Lifetime Wear (mils) Prd. [1]	Total Lifetime Wear (mils) Meas.	In-Service Component Wear(mils) Prd. [1]	In-Service Component Wear(mils) Meas.	In-Service Component Tmeas, Method, Time (in) [3]	[2]	(hrs) [3]	In-Service Component Thickness (mils) [4] Tp	Tm	Incremental Wear (mils) [5] PRWEAR	Time (hrs) Last Inspected
===>Grouped by Line:	**MSD48B-1-RHDT21B CV to FWH26**										***Sorted By: Flow Order***	
MS-1B33P-1	0.000	57.0	58.0	0.0	0.0	0.432	ER	136,608	432.0	432.0	0.0	0
MS-1B34	0.000	84.4	72.0	0.0	0.0	0.432	ER	136,608	432.0	432.0	0.0	0
MS-1B34P US	0.000	68.2	59.0	68.2	59.0	0.398	MT	149,573	363.8	398.0	12.0	149,573
MS-1B34P DS	0.000	60.1	54.0	60.1	54.0	0.411	MT	125,459	371.9	411.0	20.1	125,459
MS-1B35	0.000	103.3	119.5	103.3	119.5	0.312	MT	226,201	328.7	312.0	2.6	226,201
MS-1B35P	0.000	52.9	42.0	52.9	42.0	0.408	MT	125,459	379.1	408.0	17.7	125,459
===>Grouped by Line:	**MSD48B-2-RHDT B HDR to FWH26**										***Sorted By: Flow Order***	
MS-1B36P DS	0.000	51.7	46.0	51.7	46.0	0.454	MT	125,459	448.3	454.0	17.3	125,459
MS-1B37	0.000	95.6	78.0	95.6	78.0	0.467	MT	125,459	404.4	467.0	32.0	125,459
MS-1B37P	0.000	64.6	59.0	64.6	59.0	0.474	MT	125,459	435.4	474.0	21.6	125,459
MS-1B38	0.000	85.3	60.0	85.3	60.0	0.502	MT	125,459	414.7	502.0	28.5	125,459
MS-1B38P	0.000	61.9	42.0	61.9	42.0	0.474	MT	136,608	438.1	474.0	14.0	136,608
MS-1B39	0.000	103.5	121.0	103.5	121.0	0.378	GW	181,477	396.5	378.0	10.3	181,477
MS-1B39P	0.000	69.0	50.0	69.0	50.0	0.476	GW	181,477	431.0	476.0	6.9	181,477
===>Grouped by Line:	**MSD49C-1-RHDT B HDR to FWH26**										***Sorted By: Flow Order***	
MS-2B33P	0.000	48.1	54.0	0.0	0.0	0.594	ER	181,477	594.0	594.0	0.0	0
MS-2B35	0.000	89.0	129.0	0.0	0.0	0.594	ER	181,477	594.0	594.0	0.0	0
MS-2B35P	0.000	68.3	53.0	0.0	0.0	0.594	ER	181,477	594.0	594.0	0.0	0
MS-2B36	0.000	104.5	278.0	0.0	0.0	0.594	ER	181,477	594.0	594.0	0.0	0
MS-2B36P US	0.000	90.4	56.0	90.4	56.0	0.562		165,113	503.6	562.0	12.3	165,113
===>Grouped by Line:	**MSD49C-2-RHDT B HDR to FWH26C**										***Sorted By: Flow Order***	
MS-2B63P	0.000	52.3	231.0	0.0	0.0	0.423	MT	165,113	427.9	423.0	7.7	0
MS-2B50	0.000	16.3	111.0	16.3	111.0	0.406	MT	209,806	415.7	406.0	5.6	209,806
MS-2B50P US	0.000	90.3	57.0	90.3	57.0	0.395	MT	165,113	341.7	395.0	12.3	165,113
MS-2B51	0.000	96.8	38.0	96.8	38.0	0.420	MT	136,608	335.2	420.0	21.9	136,608

Component Name	Tinit	Total Lifetime Wear (mils) Prd. [1]	Total Lifetime Wear (mils) Meas.	In-Service Component Wear(mils) Prd. [1]	In-Service Component Wear(mils) Meas.	In-Service Component Tmeas, Method, Time (in) [3]	[2]	(hrs) [3]	In-Service Component Thickness (mils) [4] Tp	Tm	Incremental Wear (mils) [5] PRWEAR	Time (hrs) Last Inspected
===>Grouped by Line:	**MSD49C-2-RHDT B HDR to FWH26C**										***Sorted By: Flow Order***	
MS-2B52	0.000	13.2	74.0	13.2	74.0	0.331	MT	226,201	316.2	331.0	2.9	226,201
MS-2B52P US	0.000	1.6	122.0	1.6	122.0	0.371	MT	226,201	331.8	371.0	2.5	165,113
MS-2B52P DS	0.000	83.8	44.0	83.8	44.0	0.388	MT	136,608	348.2	388.0	18.9	136,608
MS-2B53	0.000	96.8	253.0	0.0	0.0	0.432	ER	136,608	432.0	432.0	0.0	0
MS-2B53P US	0.000	60.1	64.0	60.1	64.0	0.392	MT	149,573	371.9	392.0	10.5	149,573
MS-2B53P DS	0.000	62.1	123.0	62.1	123.0	0.339		165,113	369.9	339.0	8.5	165,113
MS-2B54	0.000	115.7	161.0	115.7	161.0	0.542		165,113	316.3	542.0	15.8	165,113
MS-2B54 (D/S)	0.000	115.7	117.0	115.7	117.0	0.552		165,113	316.3	552.0	15.8	165,113
MS-2B54P	0.000	56.5	47.0	56.5	47.0	0.406		165,113	375.5	406.0	7.7	165,113
MS-2B55	0.000	119.7	81.0	119.7	81.0	0.615	GW	181,477	312.3	615.0	11.9	181,477
MS-2B55 (D/S)	0.000	119.7	79.0	119.7	79.0	0.619	GW	181,477	312.3	619.0	11.9	181,477
MS-2B55P	0.000	58.4	100.0	58.4	100.0	0.334	GW	181,477	373.6	334.0	5.8	181,477
MS-2B55R	0.000	81.7	163.0	81.7	163.0	0.339	MT	181,477	350.3	339.0	8.1	181,477
MS-2B55R (D/S)	0.000	52.0	82.0	52.0	82.0	0.488	GW	181,477	448.0	488.0	5.2	181,477
===>Grouped by Line:	**MSD49C-3-RHDT B HDR**										***Sorted By: Flow Order***	
MS-2B64	0.000	115.7	39.0	115.7	39.0	0.586	GW	193,769	478.3	586.0	8.8	193,769
MS-2B64 (BR/SE)	0.000	104.4	64.0	104.4	64.0	0.368	GW	193,769	327.6	368.0	7.9	193,769
MS-2B64 (D/S)	0.000	63.9	56.0	63.9	56.0	0.576	GW	193,769	530.1	576.0	4.9	193,769
===>Grouped by Line:	**MSD49C-4-RHDT B HDR to FWH26B**										***Sorted By: Flow Order***	
MS-2B64P	0.000	52.3	61.0	52.3	61.0	0.370	MT	136,608	379.7	370.0	11.8	136,608
MS-2B44	0.000	96.8	79.0	96.8	79.0	0.444	MT	136,608	335.2	444.0	21.9	136,608
MS-2B44P US	0.000	83.8	51.0	83.8	51.0	0.381	MT	136,608	348.2	381.0	18.9	136,608
MS-2B45	0.000	96.8	54.0	96.8	54.0	0.400	MT	136,608	335.2	400.0	21.9	136,608
MS-2B45P US	0.000	65.4	62.0	65.4	62.0	0.404	MT	136,608	366.6	404.0	14.8	136,608
MS-2B45P DS	0.000	65.4	44.0	65.4	44.0	0.407	MT	136,608	366.6	407.0	14.8	136,608
MS-2B46	0.000	96.8	112.0	96.8	112.0	0.398	MT	136,608	335.2	398.0	21.9	136,608
MS-2B46P US	0.000	65.4	74.0	65.4	74.0	0.380	MT	136,608	366.6	380.0	14.8	136,608
MS-2B46P DS	0.000	65.4	82.0	65.4	82.0	0.354	MT	136,608	366.6	354.0	14.8	136,608
MS-2B47	0.000	96.8	98.0	96.8	98.0	0.358	MT	136,608	335.2	358.0	21.9	136,608
MS-2B47P DS	0.000	57.6	69.0	57.6	69.0	0.390	MT	136,608	374.4	390.0	13.0	136,608
MS-2B48P US	0.000	52.3	37.0	52.3	37.0	0.402	MT	136,608	379.7	402.0	11.8	136,608
MS-2B48P DS	0.000	52.3	66.0	52.3	66.0	0.386	MT	136,608	379.7	386.0	11.8	136,608
MS-2B49P	0.000	52.3	44.0	52.3	44.0	0.384	MT	136,608	379.7	384.0	11.8	136,608
===>Grouped by Line:	**MSD49C-5-RHDT B HDR to FWH26A**										***Sorted By: Flow Order***	
MS-2B64R	0.000	35.7	40.0	35.7	40.0	0.589	MT	136,608	558.3	589.0	8.1	136,608

Component Name	Tinit	Total Lifetime Wear (mils) Prd. [1]	Total Lifetime Wear (mils) Meas.	In-Service Component Wear(mils) Prd. [1]	In-Service Component Wear(mils) Meas.	In-Service Component Tmeas, Method, Time (in) [3]	[2]	(hrs) [3]	In-Service Component Thickness (mils) [4] Tp	Tm	Incremental Wear (mils) [5] PRWEAR	Time (hrs) Last Inspected
===>Grouped by Line:	**MSD49C-5-RHDT B HDR to FWH26A**										***Sorted By: Flow Order***	
MS-2B64R (D/S)	0.000	83.8	117.0	83.8	117.0	0.485	MT	136,608	348.2	485.0	18.9	136,608
MS-2B64P-1 US	0.000	65.4	51.0	65.4	51.0	0.381	MT	136,608	366.6	381.0	14.8	136,608
MS-2B40P DS	0.000	65.4	52.0	65.4	52.0	0.400	MT	136,608	366.6	400.0	14.8	136,608
MS-2B41	0.000	96.8	45.0	96.8	45.0	0.427	MT	136,608	335.2	427.0	21.9	136,608
MS-2B41P	0.000	44.7	50.0	44.7	50.0	0.405	MT	106,128	387.3	405.0	25.9	106,128
MS-2B42	0.000	128.4	181.0	128.4	181.0	0.537	MT	226,201	303.6	537.0	3.2	226,201
MS-2B42 (D/S)	0.000	125.4	124.0	125.4	124.0	0.525	MT	226,201	303.6	525.0	3.2	209,806
MS-2B42P US	0.000	40.7	61.0	40.7	61.0	0.405	MT	106,128	391.3	405.0	23.5	106,128
MS-2B42P DS	0.000	52.3	37.0	52.3	37.0	0.407	MT	136,608	379.7	407.0	11.8	136,608
MS-2B43P	0.000	52.3	112.0	52.3	112.0	0.384	MT	136,608	379.7	384.0	11.8	136,608
===>Grouped by Line:	**MSD50C-1-RHDT23B CV to FWH26**										***Sorted By: Flow Order***	
MS-3B43	0.000	50.1	110.0	0.0	0.0	0.500	ER	136,608	500.0	500.0	0.0	0
MS-3B43P US	0.000	55.4	128.0	55.4	128.0	0.382	GW	181,477	444.6	382.0	5.5	181,477

Notes:
[1] Predictions are for the time of last inspection (last known meas. wear).
[2] GW = Tmeas is minimum thickness from Band, Blanket or Area Method of greatest wear.
MT = Tmeas is component minimum thickness.
PW = Tmeas is Tinit - predicted wear.
US = Tmeas is user specified.
[3] If no Tmeas has been determined from measured data, then Tmeas = Tinit and Time = current component installation time.
Tmeas is used to determine Predicted Thickness and Component Predicted Time to Tcrit.
[4] These two values are used for thickness plot.
Tp = Predicted thickness at Tmeas.
Tm = Last measured thickness (Tmeas).
[5] PRWEAR = Incremental wear from last Tmeas time to analysis ending period.

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).DB

Wear Rate Report

Pass 2 Analysis Include Measured Wear

Report Date/Time: 7/7/2010 9:54:36AM
AnalysisDate/Time: 6/11/2010 11:41:18AM

CHECWORKS SFA Version: 3.0 (build 105)

Duty Factor (Global) : 1.000

Run Name: RHTR TO RHTR DRN TK
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 0.806

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***MSD39-1-RHTR 21A to RHDT 21A***								***Sorted By: Average Wear Rate***		
MS-1AN	31	3.945	1.334	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1AN-1	30	3.156	1.067	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A0P	61	2.130	0.721	495.9	10.806	3.3	6.625	6.403	0.000	60.39	HBD
===>Grouped by Line:	***MSD40-1-RHTR 22A to RHDT 22A***								***Sorted By: Average Wear Rate***		
MS-2AN	31	3.945	1.334	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2AN-1	30	3.156	1.067	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2A0P	61	2.130	0.721	495.9	10.806	3.3	6.625	6.403	0.000	60.39	HBD
===>Grouped by Line:	***MSD41-1-RHTR 23A to RHDT 23A***								***Sorted By: Average Wear Rate***		
MS-3AN	31	3.945	1.334	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3AN-1	30	3.156	1.067	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3A0P	61	2.130	0.721	495.9	10.806	3.3	6.625	6.403	0.000	60.39	HBD
===>Grouped by Line:	***MSD42-1-RHTR 21B to RHDT 21B***								***Sorted By: Average Wear Rate***		
MS-1BN	31	3.945	1.334	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1BN-1	30	3.156	1.067	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1B0P	61	2.130	0.721	495.9	10.806	3.3	6.625	6.403	0.000	60.39	HBD
===>Grouped by Line:	***MSD43-1-RHTR 22B to RHDT 22B***								***Sorted By: Average Wear Rate***		
MS-2BN	31	3.945	1.334	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2BN-1	30	3.156	1.067	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B0P	61	2.130	0.721	495.9	10.806	3.3	6.625	6.403	0.000	60.39	HBD
===>Grouped by Line:	***MSD44-1-RHTR 23B to RHDT 23B***								***Sorted By: Average Wear Rate***		
MS-3BN	31	3.945	1.334	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3BN-1	30	3.156	1.067	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3B0P	61	2.130	0.721	495.9	10.806	3.3	6.625	6.403	0.000	60.39	HBD

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).DB

Wear Rate Report

Pass 2 Analysis Include Measured Wear

Report Date/Time: 7/7/2010 9:54:36AM
AnalysisDate/Time: 6/11/2010 11:41:18AM

CHECWORKS SFA Version: 3.0 (build 105)
Duty Factor (Global) : 1.000

Run Name: RHTR TO RHTR DRN TK
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 0.806

Component Name	Geom Code	Average Wear Rate (mils/yr)	Current Wear Rate (mils/yr)	Temp (F)	Velocity (ft/s)	Quality (%)	OD (in)	Hot pH	Oxygen (ppb)	Hydrazine (ppb)	Input Source
===>Grouped by Line:	***MSD39-1-RHTR 21A to RHDT 21A***									***Sorted By: Flow Order***	
MS-1AN	31	3.945	1.334	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1A0P	61	2.130	0.721	495.9	10.806	3.3	6.625	6.403	0.000	60.39	HBD
MS-1AN-1	30	3.156	1.067	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
===>Grouped by Line:	***MSD40-1-RHTR 22A to RHDT 22A***									***Sorted By: Flow Order***	
MS-2AN	31	3.945	1.334	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2A0P	61	2.130	0.721	495.9	10.806	3.3	6.625	6.403	0.000	60.39	HBD
MS-2AN-1	30	3.156	1.067	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
===>Grouped by Line:	***MSD41-1-RHTR 23A to RHDT 23A***									***Sorted By: Flow Order***	
MS-3AN	31	3.945	1.334	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3A0P	61	2.130	0.721	495.9	10.806	3.3	6.625	6.403	0.000	60.39	HBD
MS-3AN-1	30	3.156	1.067	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
===>Grouped by Line:	***MSD42-1-RHTR 21B to RHDT 21B***									***Sorted By: Flow Order***	
MS-1BN	31	3.945	1.334	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-1B0P	61	2.130	0.721	495.9	10.806	3.3	6.625	6.403	0.000	60.39	HBD
MS-1BN-1	30	3.156	1.067	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
===>Grouped by Line:	***MSD43-1-RHTR 22B to RHDT 22B***									***Sorted By: Flow Order***	
MS-2BN	31	3.945	1.334	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-2B0P	61	2.130	0.721	495.9	10.806	3.3	6.625	6.403	0.000	60.39	HBD
MS-2BN-1	30	3.156	1.067	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
===>Grouped by Line:	***MSD44-1-RHTR 23B to RHDT 23B***									***Sorted By: Flow Order***	
MS-3BN	31	3.945	1.334	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD
MS-3B0P	61	2.130	0.721	495.9	10.806	3.3	6.625	6.403	0.000	60.39	HBD
MS-3BN-1	30	3.156	1.067	495.9	6.915	3.3	6.625	6.403	0.000	60.39	HBD

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).DB

Service Life Report

Pass 2 Analysis Include Measured Wear

Report Date/Time: 7/7/2010 9:54:36AM
AnalysisDate/Time:

Run Name: RHTR TO RHTR DRN TK
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 0.806

CHECWORKS SFA Version: 3.0 (build 105)
Duty Factor (Global) :1.000

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **MSD39-1-RHTR 21A to RHDT 21A**					***Sorted By:Remaining Life***		
MS-1AN	0.000	0.384	0.233	0.233	995,249	No	243,721
MS-1AN-1	0.000	0.398	0.233	0.233	1,354,896	Yes	243,721
MS-1A0P	0.000	0.396	0.233	0.233	1,984,863	Yes	243,721
===>Grouped by Line: **MSD40-1-RHTR 22A to RHDT 22A**					***Sorted By:Remaining Life***		
MS-2AN-1	0.000	0.349	0.233	0.233	951,321	Yes	243,721
MS-2A0P	0.000	0.387	0.233	0.233	1,871,541	Yes	243,721
MS-2AN	0.000	0.775	0.233	0.233	3,560,647	Yes	243,721
===>Grouped by Line: **MSD41-1-RHTR 23A to RHDT 23A**					***Sorted By:Remaining Life***		
MS-3AN-1	0.000	0.344	0.233	0.233	913,573	No	243,721
MS-3A0P	0.000	0.379	0.233	0.233	1,775,070	Yes	243,721
MS-3AN	0.000	0.804	0.233	0.233	3,748,168	No	243,721
===>Grouped by Line: **MSD42-1-RHTR 21B to RHDT 21B**					***Sorted By:Remaining Life***		
MS-1BN	0.000	0.408	0.233	0.233	1,147,184	No	243,721
MS-1BN-1	0.000	0.389	0.233	0.233	1,280,342	Yes	243,721
MS-1B0P	0.000	0.387	0.233	0.233	1,875,661	Yes	243,721
===>Grouped by Line: **MSD43-1-RHTR 22B to RHDT 22B**					***Sorted By:Remaining Life***		
MS-2BN-1	0.000	0.344	0.233	0.233	913,573	No	243,721
MS-2B0P	0.000	0.372	0.233	0.233	1,689,969	Yes	243,721
MS-2BN	0.000	0.735	0.233	0.233	3,295,190	No	243,721
===>Grouped by Line: **MSD44-1-RHTR 23B to RHDT 23B**					***Sorted By:Remaining Life***		
MS-3BN	0.000	0.322	0.233	0.233	586,751	No	243,721
MS-3BN-1	0.000	0.344	0.233	0.233	913,573	No	243,721
MS-3B0P	0.000	0.373	0.233	0.233	1,700,368	No	243,721

Note:
[1] Predictions are based on last Tmeas to analysis ending period.

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).DB

Service Life Report

Pass 2 Analysis Include Measured Wear

Report Date/Time: 7/7/2010 9:54:36AM
AnalysisDate/Time:

Run Name: RHTR TO RHTR DRN TK
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 0.806

CHECWORKS SFA Version: 3.0 (build 105)
Duty Factor (Global) : 1.000

Component Name	Thickness (in) Init.	Pred.[1]	Thoop	Tcrit	Component Predicted [1] Time to Tcrit (hrs)	Inspected	Comp. Actual Service Time (hrs)
===>Grouped by Line: **MSD39-1-RHTR 21A to RHDT 21A**					***Sorted By:Flow Order***		
MS-1AN	0.000	0.384	0.233	0.233	995,249	No	243,721
MS-1A0P	0.000	0.396	0.233	0.233	1,984,863	Yes	243,721
MS-1AN-1	0.000	0.398	0.233	0.233	1,354,896	Yes	243,721
===>Grouped by Line: **MSD40-1-RHTR 22A to RHDT 22A**					***Sorted By:Flow Order***		
MS-2AN	0.000	0.775	0.233	0.233	3,560,647	Yes	243,721
MS-2A0P	0.000	0.387	0.233	0.233	1,871,541	Yes	243,721
MS-2AN-1	0.000	0.349	0.233	0.233	951,321	Yes	243,721
===>Grouped by Line: **MSD41-1-RHTR 23A to RHDT 23A**					***Sorted By:Flow Order***		
MS-3AN	0.000	0.804	0.233	0.233	3,748,168	No	243,721
MS-3A0P	0.000	0.379	0.233	0.233	1,775,070	Yes	243,721
MS-3AN-1	0.000	0.344	0.233	0.233	913,573	No	243,721
===>Grouped by Line: **MSD42-1-RHTR 21B to RHDT 21B**					***Sorted By:Flow Order***		
MS-1BN	0.000	0.408	0.233	0.233	1,147,184	No	243,721
MS-1B0P	0.000	0.387	0.233	0.233	1,875,661	Yes	243,721
MS-1BN-1	0.000	0.389	0.233	0.233	1,280,342	Yes	243,721
===>Grouped by Line: **MSD43-1-RHTR 22B to RHDT 22B**					***Sorted By:Flow Order***		
MS-2BN	0.000	0.735	0.233	0.233	3,295,190	No	243,721
MS-2B0P	0.000	0.372	0.233	0.233	1,689,969	Yes	243,721
MS-2BN-1	0.000	0.344	0.233	0.233	913,573	No	243,721
===>Grouped by Line: **MSD44-1-RHTR 23B to RHDT 23B**					***Sorted By:Flow Order***		
MS-3BN	0.000	0.322	0.233	0.233	586,751	No	243,721
MS-3B0P	0.000	0.373	0.233	0.233	1,700,368	No	243,721
MS-3BN-1	0.000	0.344	0.233	0.233	913,573	No	243,721

Note:
[1] Predictions are based on last Tmeas to analysis ending period.

2

Company: ENTERGY NUCLEAR NORTHEAST
Plant: INDIAN POINT
Unit: 2
DB Name: IPEC2(v4).DB

Wear Report

Pass 2 Analysis Include Measured Wear

Report Date/Time: 07-Jul-2010 9:54 am
AnalysisDate/Time: 07-Jul-2010 9:54 am

Run Name: RHTR TO RHTR DRN TK
Ending Period: REFUEL 20
Total Plant Operating Hours: 243,721
WRA Data Option: NFA->ARD->HBD->COMP
Line Correction Factor: 0.806

CHECWORKS SFA Version: 3.0 (build 105)
Duty Factor (Global) : 1.000

Component Name	Tinit	Total Lifetime Wear (mils) Prd. [1]	Total Lifetime Wear (mils) Meas.	In-Service Component Wear(mils) Prd. [1]	In-Service Component Wear(mils) Meas.	In-Service Component Tmeas, Method, Time (in) [3]	[2]	(hrs) [3]	In-Service Component Thickness (mils) [4] Tp	Tm	Incremental Wear (mils) [5] PRWEAR	Time (hrs) Last Inspected
===>Grouped by Line:	**MSD39-1-RHTR 21A to RHDT 21A**										***Sorted By: Flow Order***	
MS-1A0P	0.000	44.4	37.0	44.4	37.0	0.411	MT	125,459	387.6	411.0	14.9	125,459
MS-1AN-1	0.000	65.8	34.0	65.8	34.0	0.420	MT	125,459	366.2	420.0	22.0	125,459
===>Grouped by Line:	**MSD40-1-RHTR 22A to RHDT 22A**										***Sorted By: Flow Order***	
MS-2AN	0.000	102.0	102.0	102.0	102.0	0.783	GW	193,769	330.0	783.0	7.8	193,769
MS-2A0P	0.000	55.1	59.0	55.1	59.0	0.391	GW	193,769	376.9	391.0	4.2	193,769
MS-2AN-1	0.000	81.6	125.0	81.6	125.0	0.355	GW	193,769	350.4	355.0	6.2	193,769
===>Grouped by Line:	**MSD41-1-RHTR 23A to RHDT 23A**										***Sorted By: Flow Order***	
MS-3A0P	0.000	52.1	81.0	52.1	81.0	0.386	MT	165,113	379.9	386.0	7.1	165,113
===>Grouped by Line:	**MSD42-1-RHTR 21B to RHDT 21B**										***Sorted By: Flow Order***	
MS-1B0P	0.000	50.4	41.0	50.4	41.0	0.396	MT	149,573	381.6	396.0	8.8	149,573
MS-1BN-1	0.000	74.7	39.0	74.7	39.0	0.402	MT	149,573	357.3	402.0	13.1	149,573
===>Grouped by Line:	**MSD43-1-RHTR 22B to RHDT 22B**										***Sorted By: Flow Order***	
MS-2B0P	0.000	52.1	89.0	52.1	89.0	0.379		165,113	379.9	379.0	7.1	165,113

Notes:

[1] Predictions are for the time of last inspection (last known meas. wear).

[2] GW = Tmeas is minimum thickness from Band, Blanket or Area Method of greatest wear.
MT = Tmeas is component minimum thickness.
PW = Tmeas is Tinit - predicted wear.
US = Tmeas is user specified.

[3] If no Tmeas has been determined from measured data, then Tmeas = Tinit and Time = current component installation time.
Tmeas is used to determine Predicted Thickness and Component Predicted Time to Tcrit.

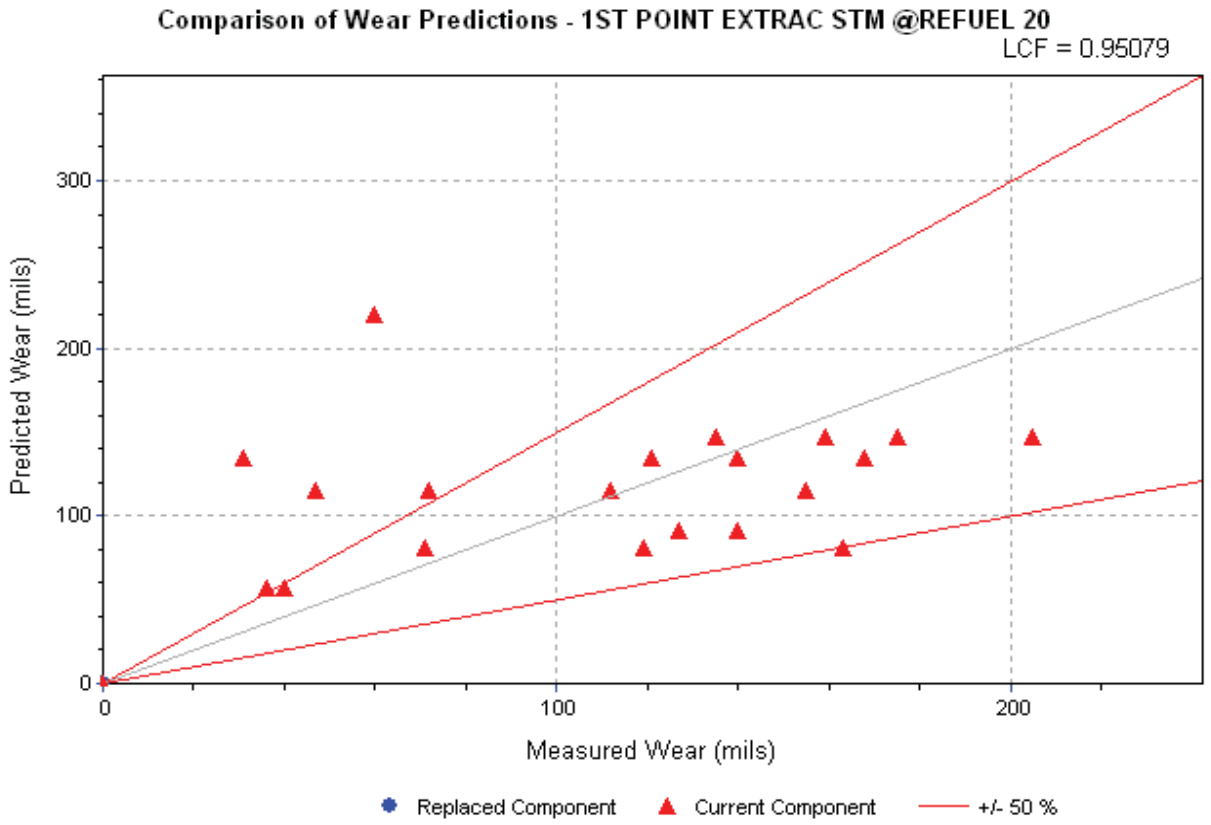
[4] These two values are used for thickness plot.
Tp = Predicted thickness at Tmeas.
Tm = Last measured thickness (Tmeas).

[5] PRWEAR = Incremental wear from last Tmeas time to analysis ending period.

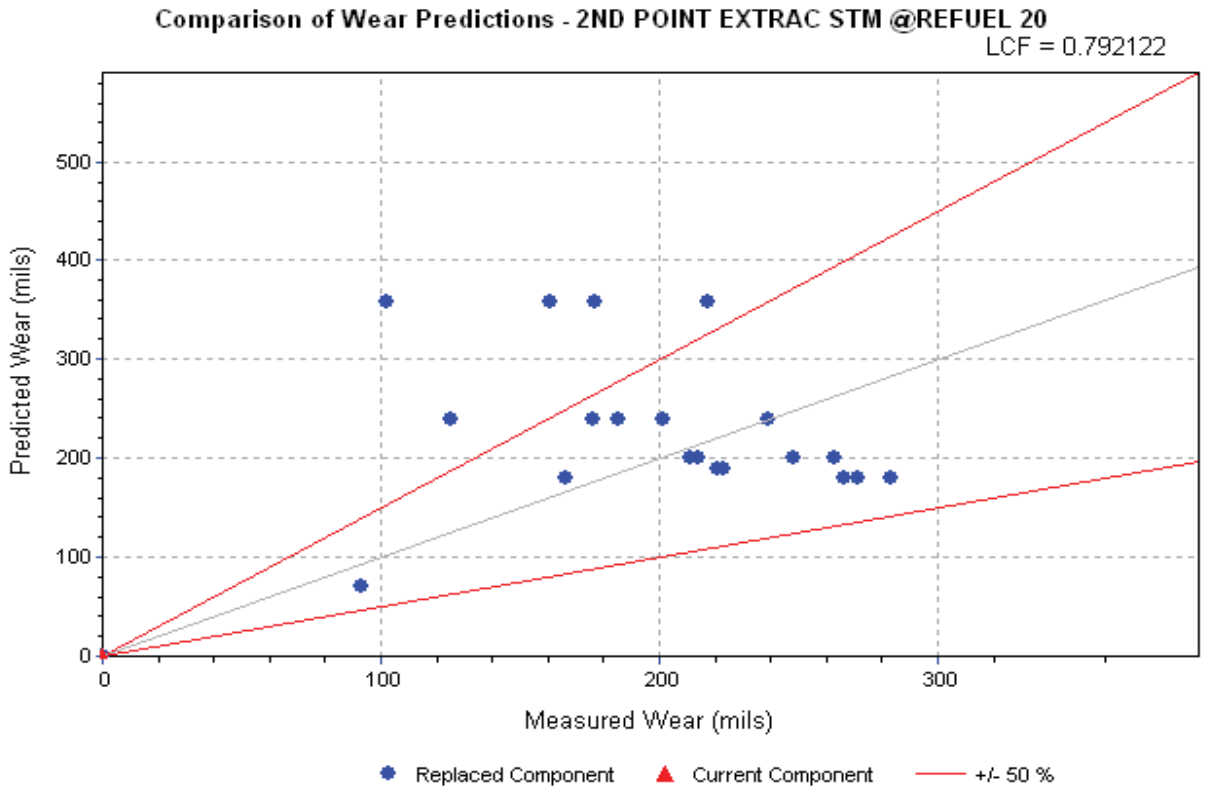
Appendix J

Wear Plots (with LCF values)

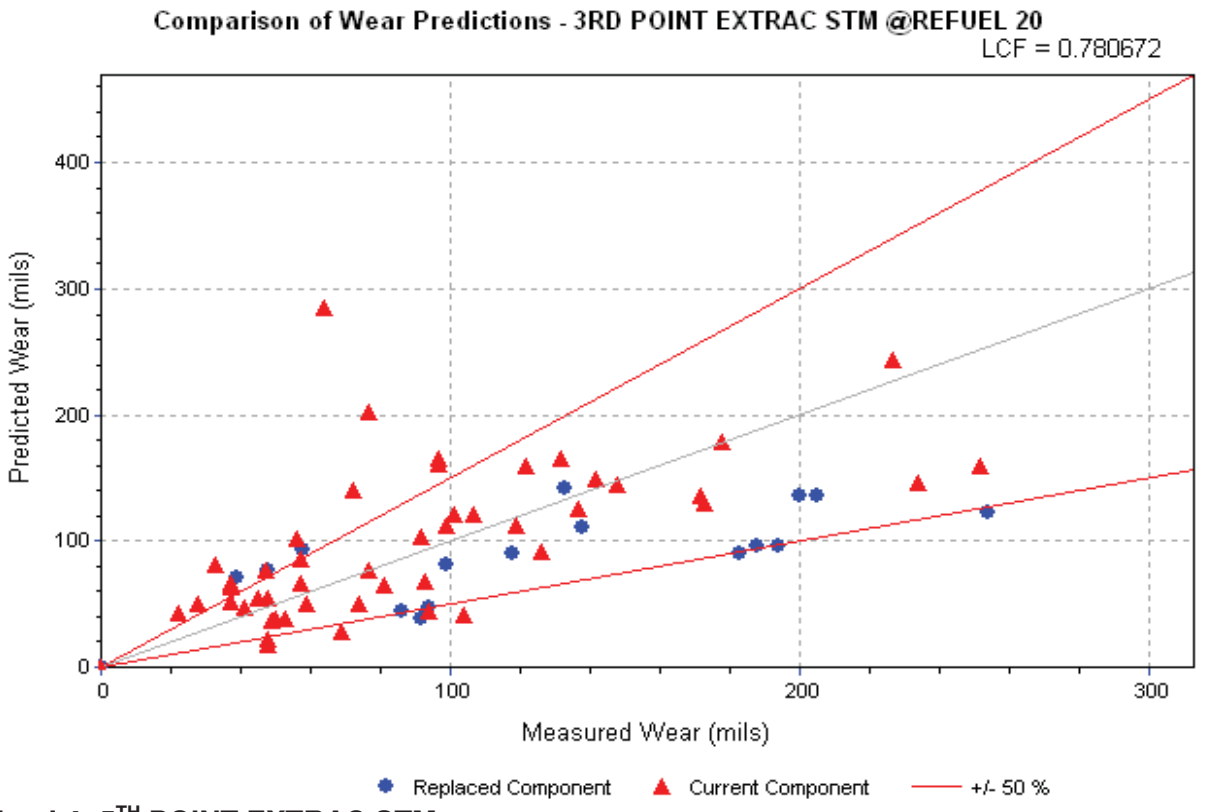
Plot J.1: 1ST POINT EXTRAC STM



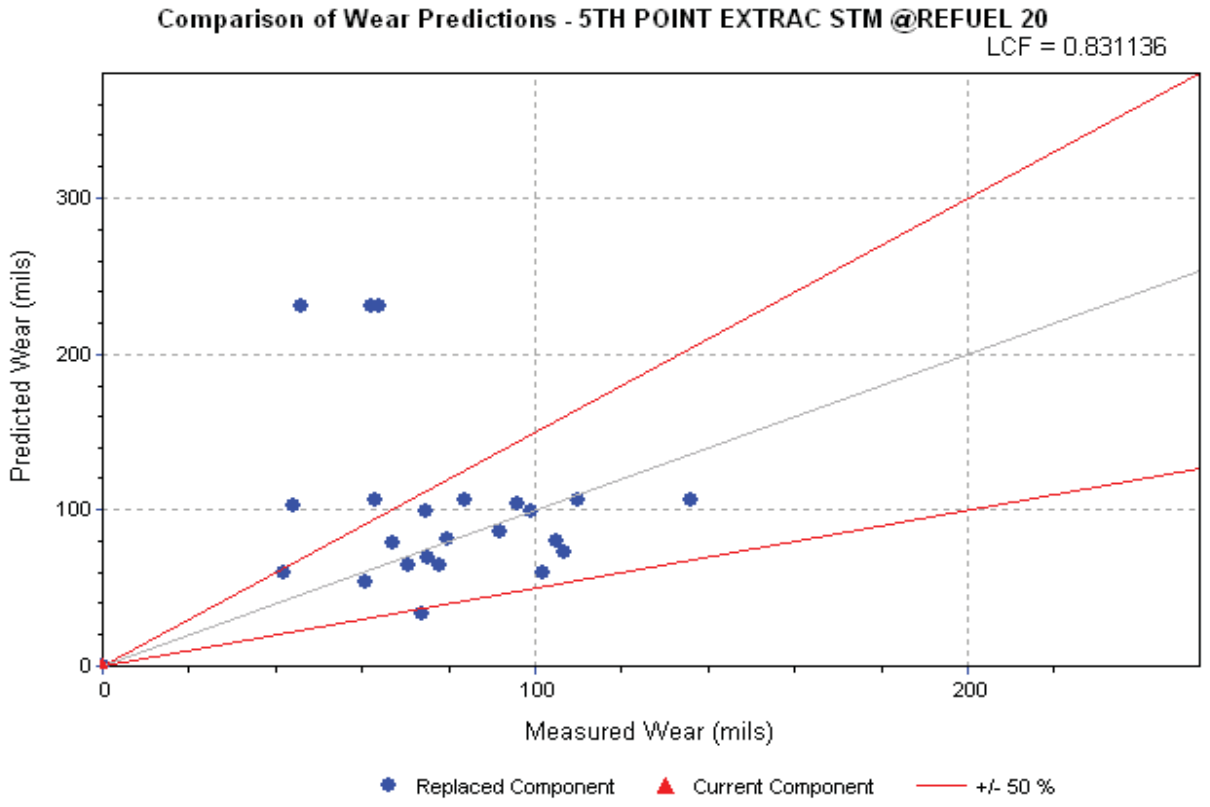
Plot J.2: 2ND POINT EXTRAC STM



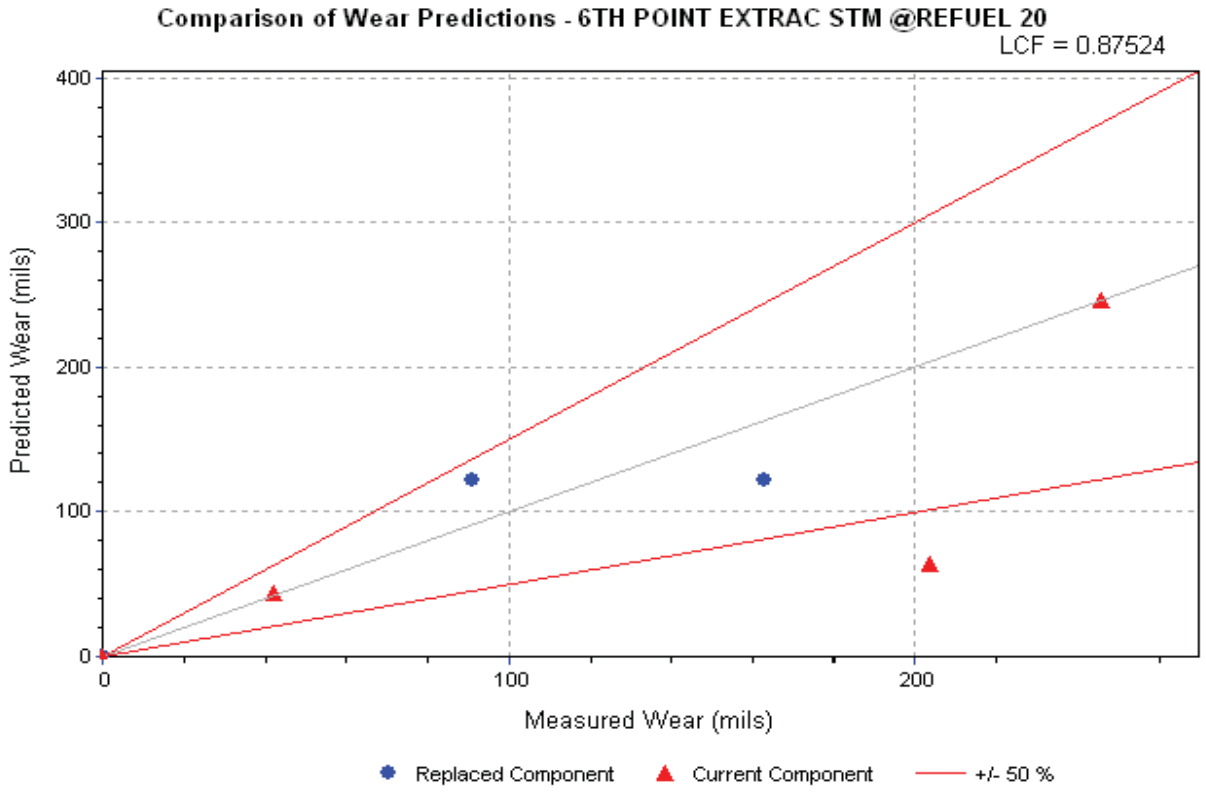
Plot J.3: 3RD POINT EXTRAC STM



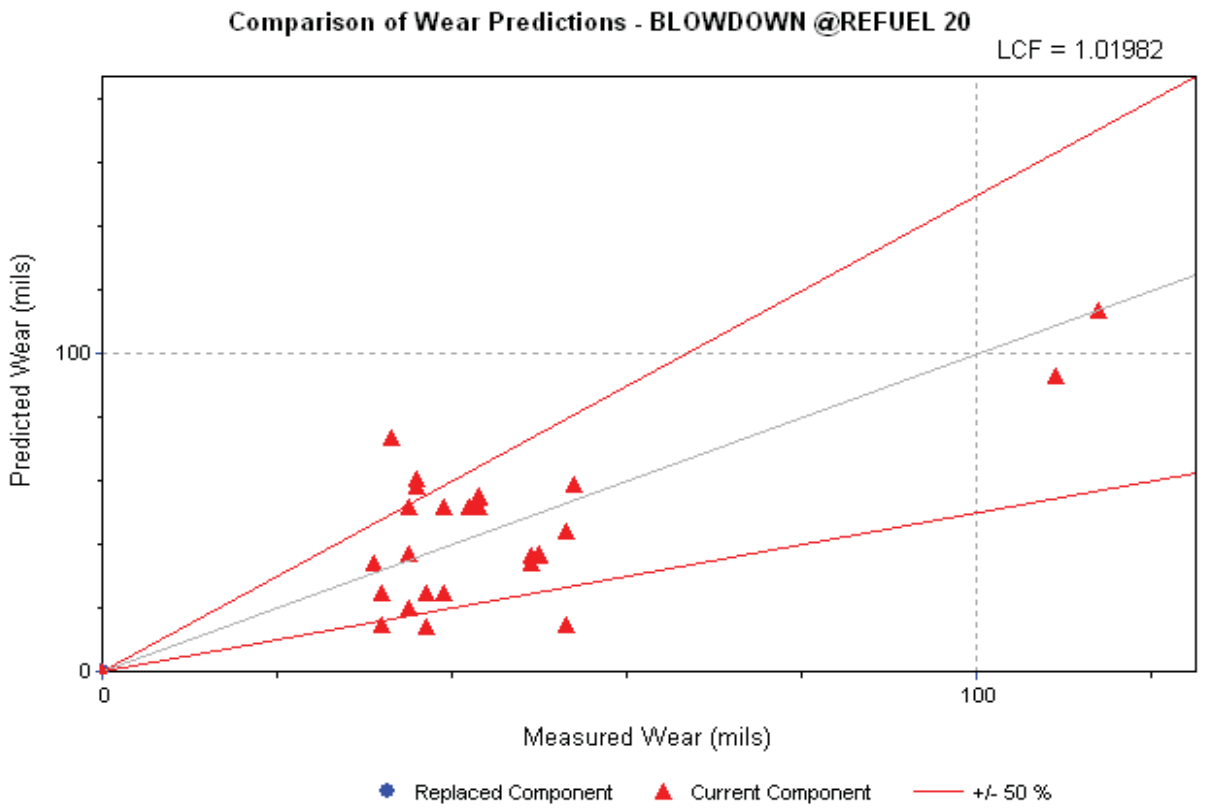
Plot J.4: 5TH POINT EXTRAC STM



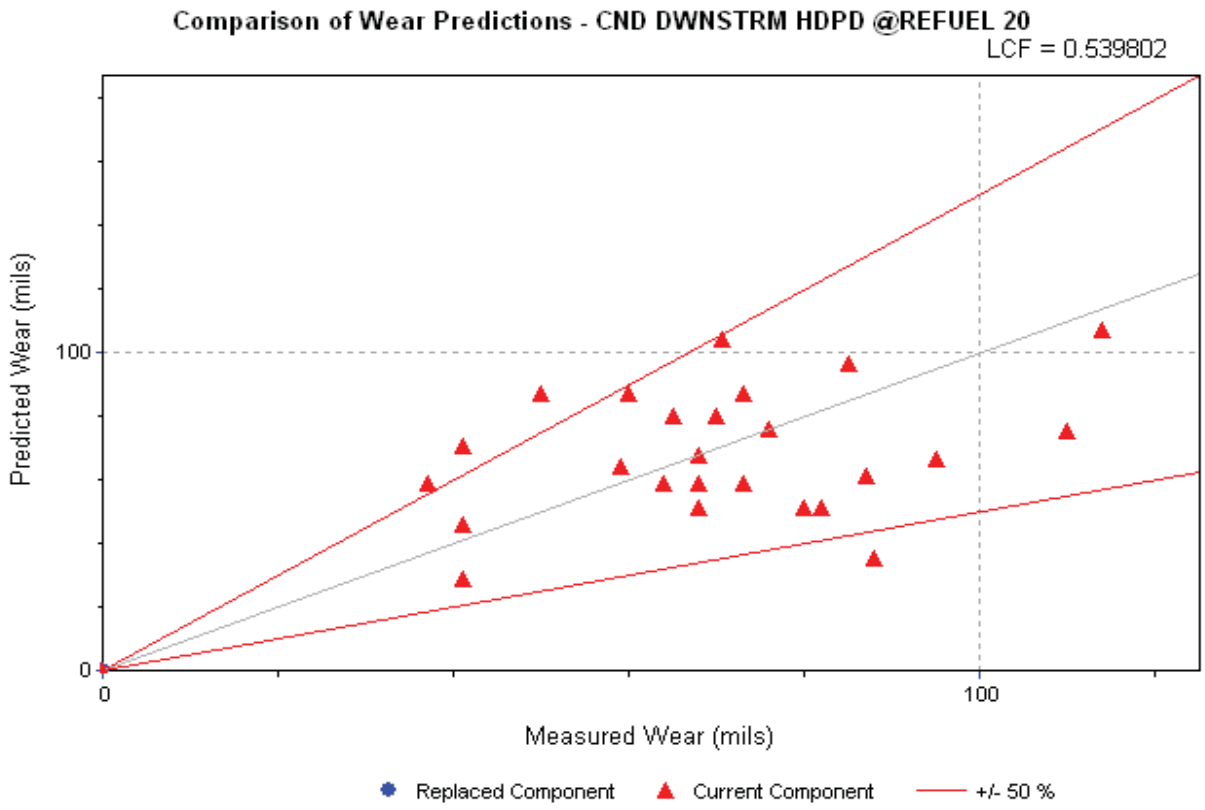
Plot J.5: 6TH POINT EXTRAC STM



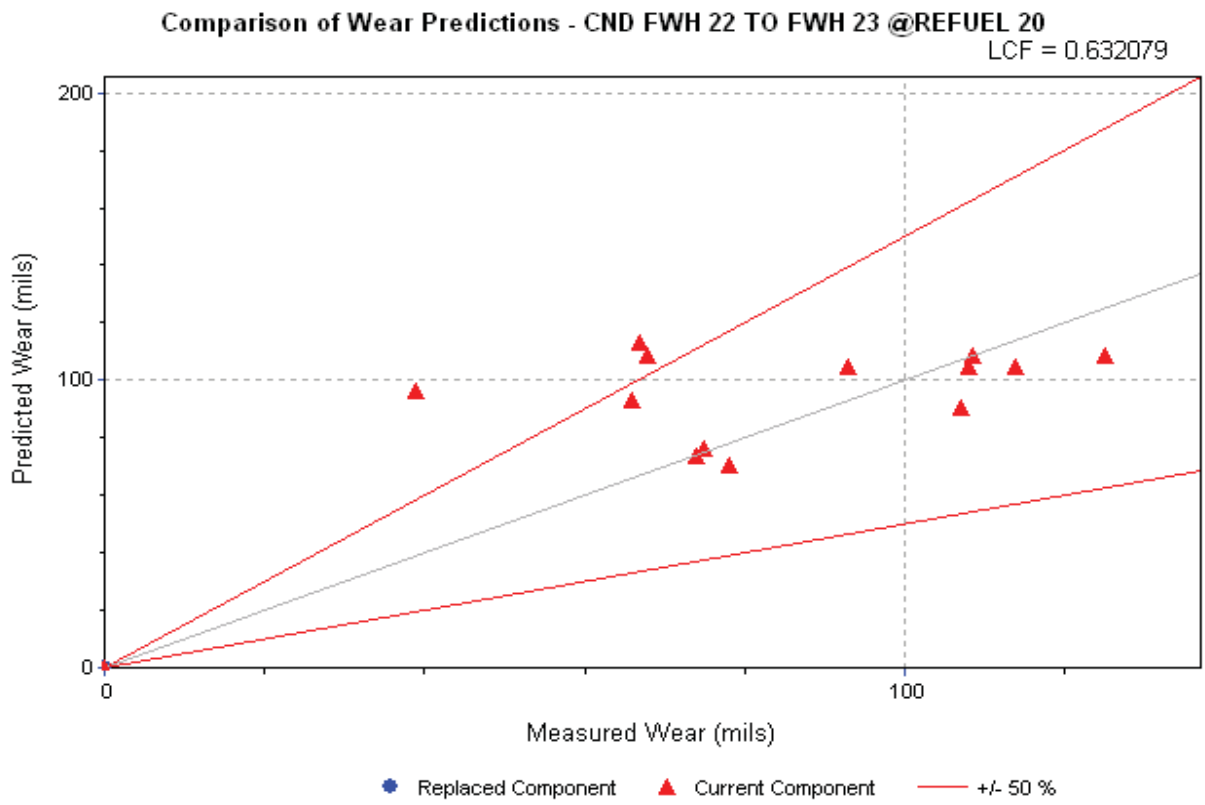
Plot J.6: BLOWDOWN



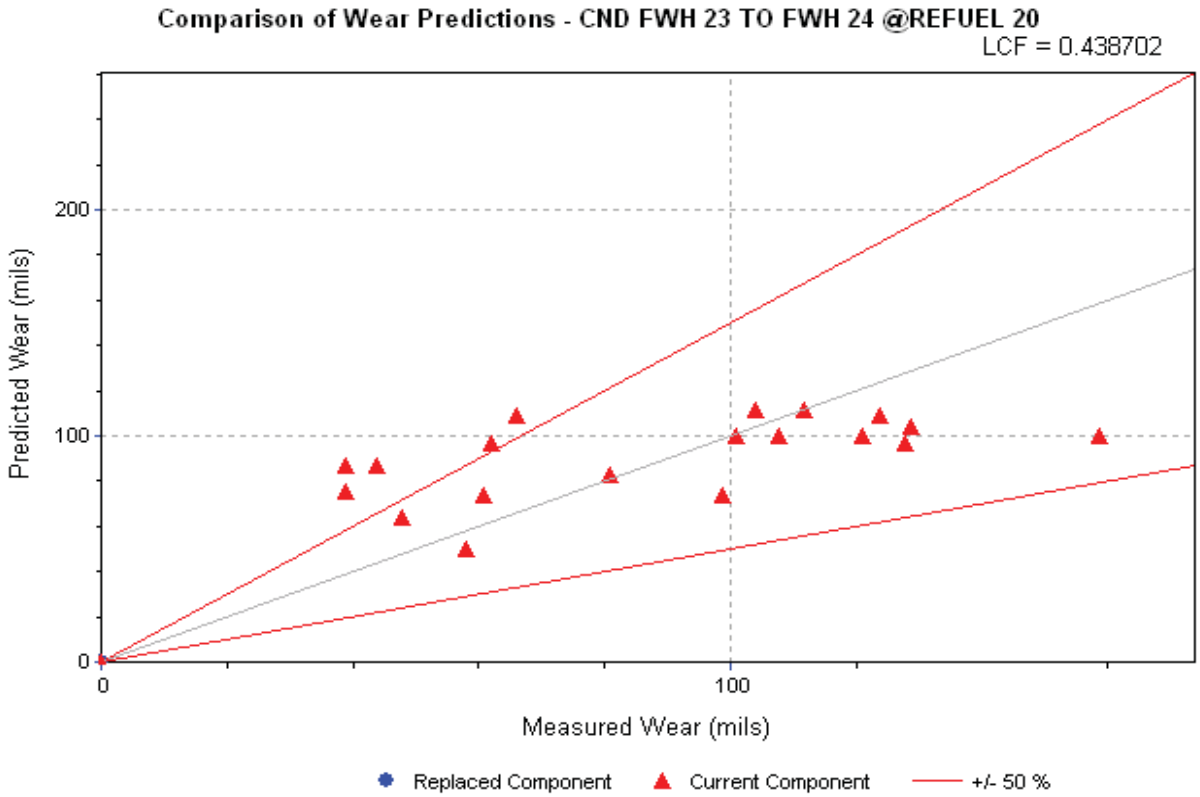
Plot J.7: CND DWNSTRM HDPD



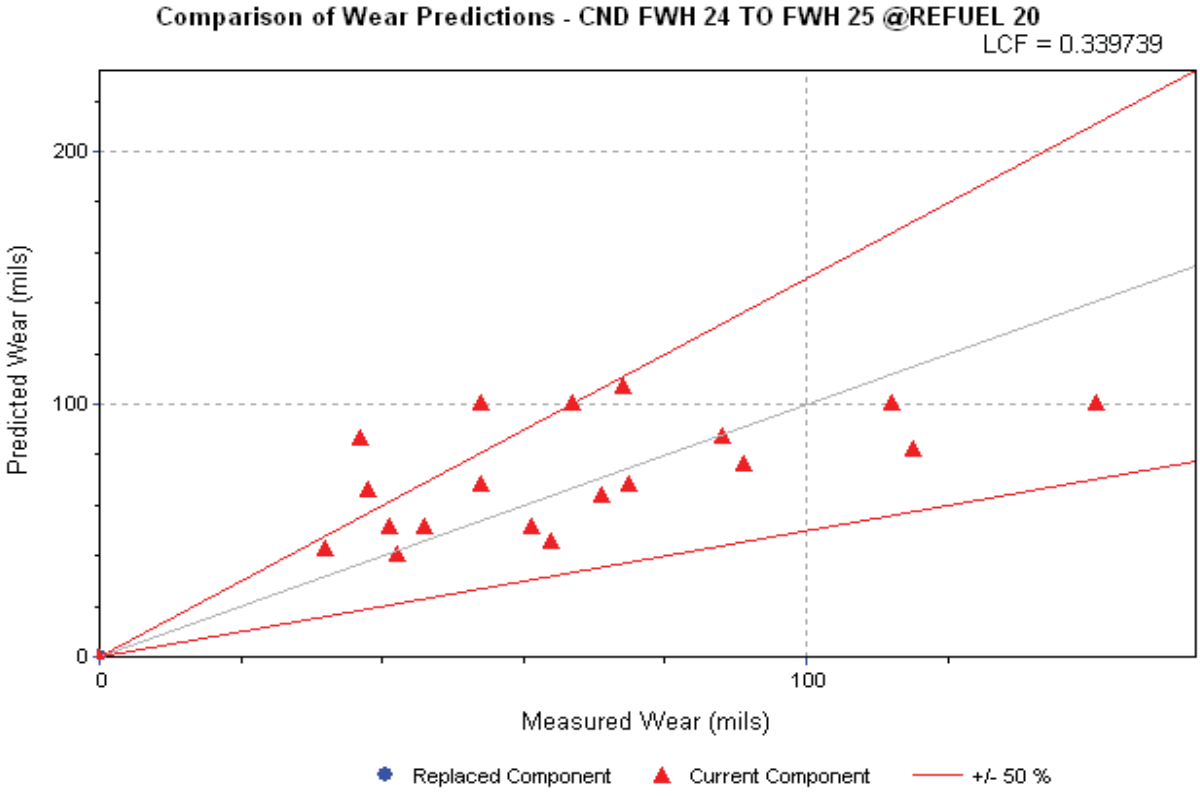
Plot J.8: CND FWH 22 TO FWH 23



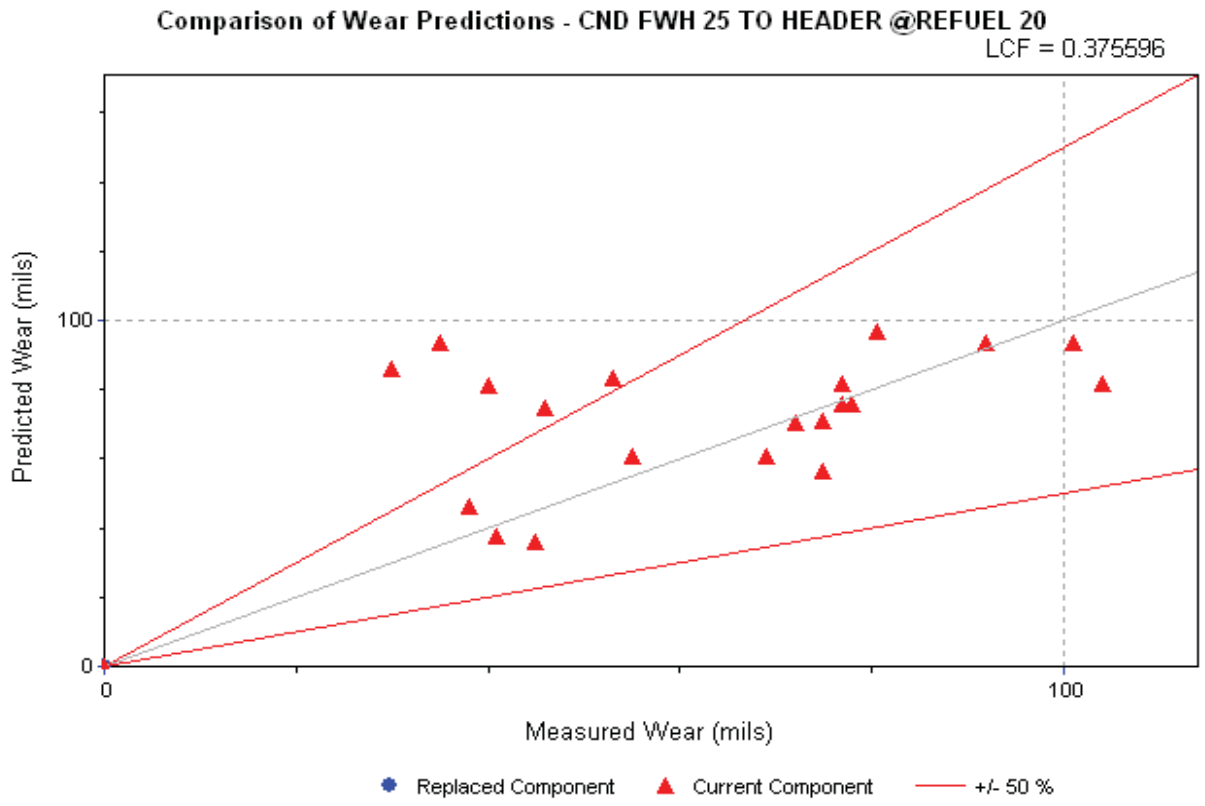
Plot J.9: CND FWH 23 TO FWH 24



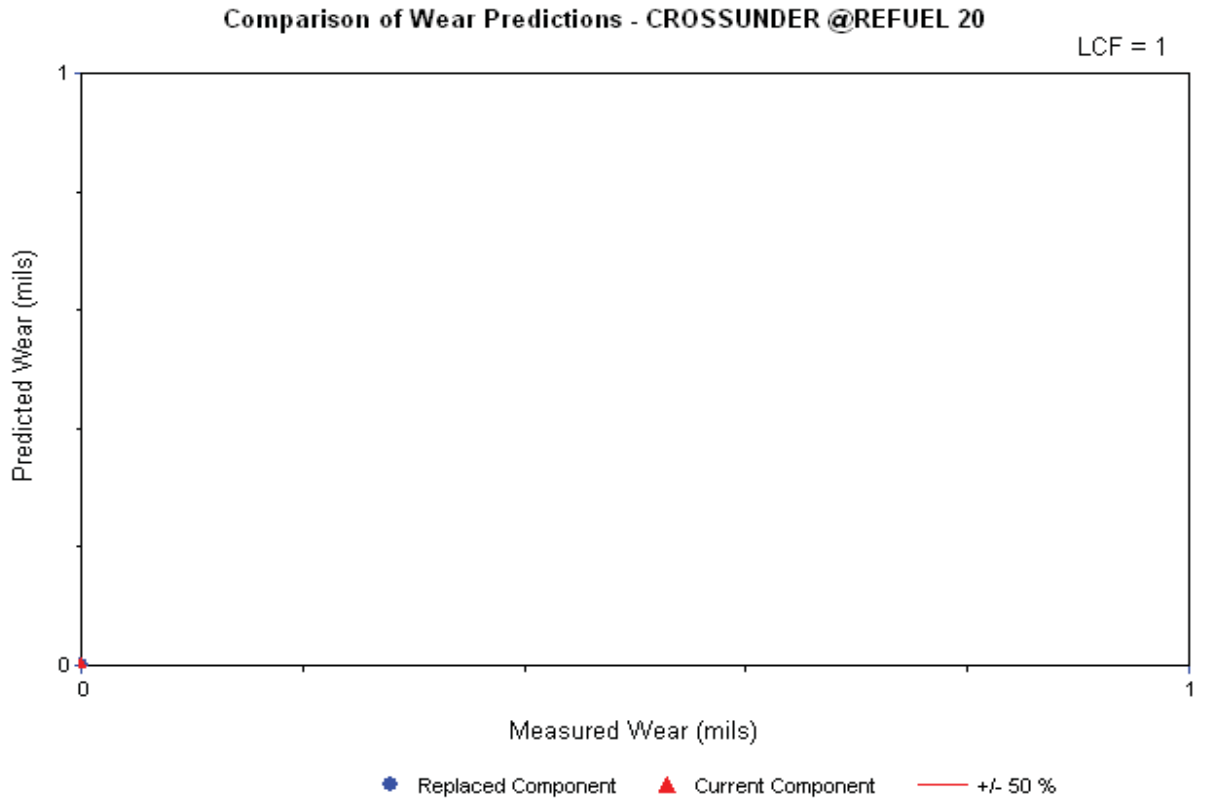
Plot J.10: CND FWH 24 TO FWH 25



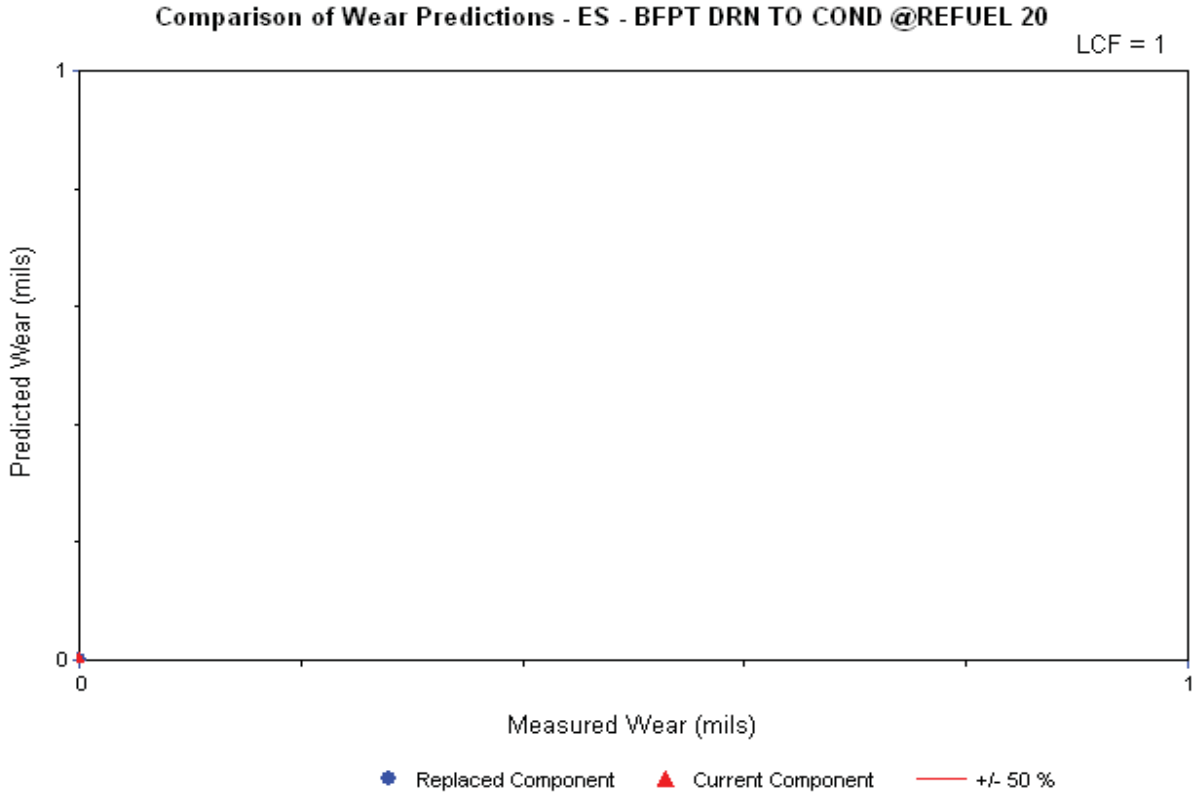
Plot J.11: CND FWH 25 TO HEADER



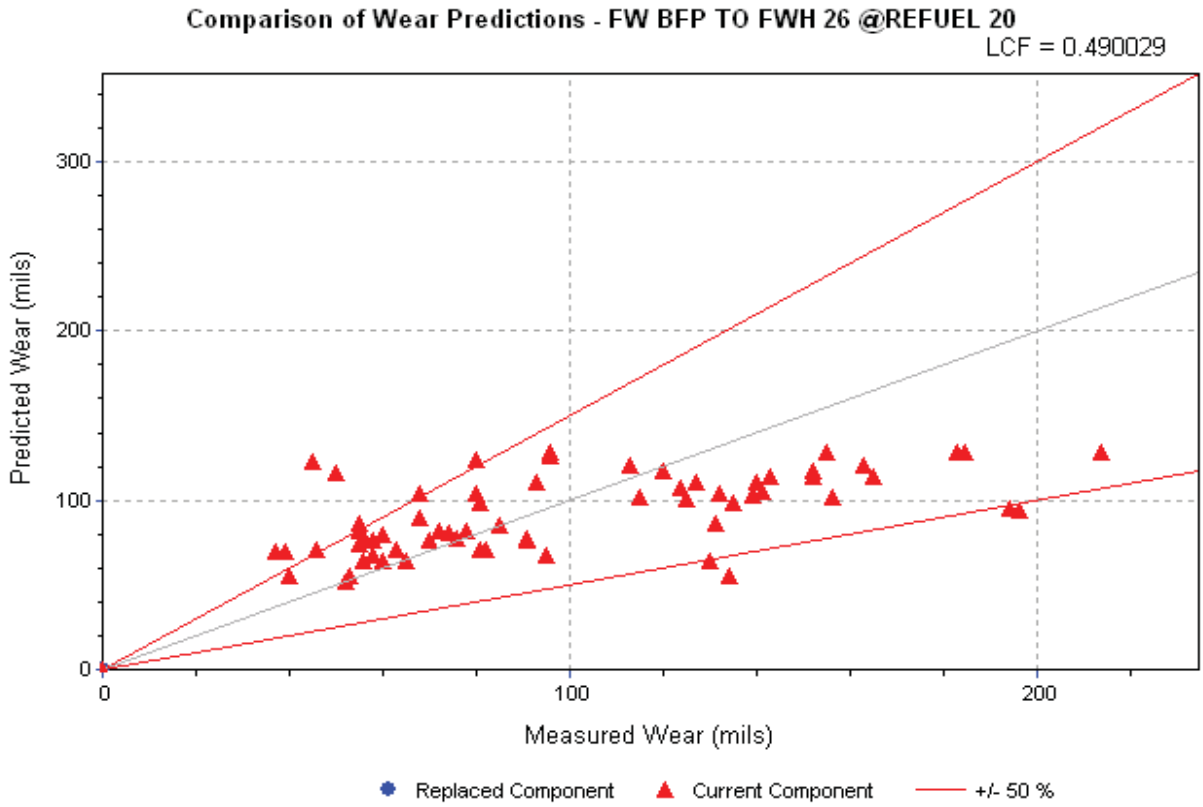
Plot J.12: CROSSUNDER



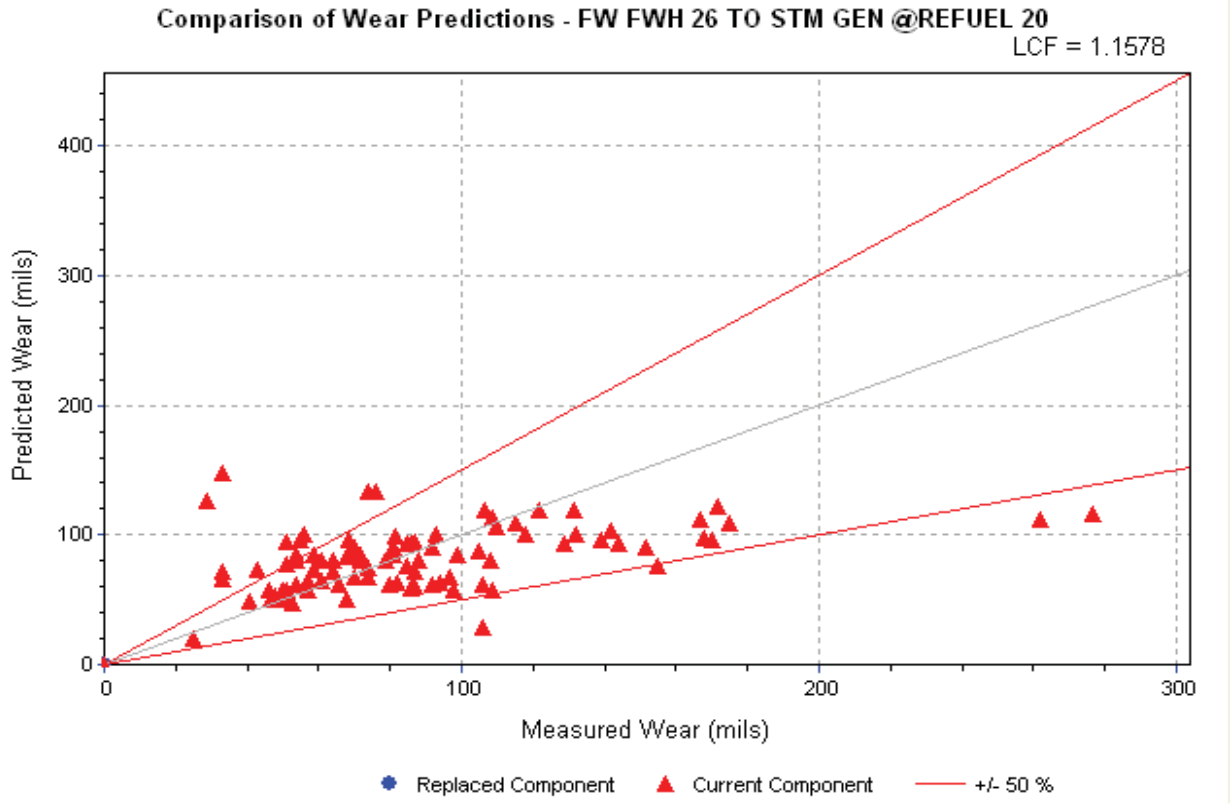
Plot J.13: ES – BFPT DRN TO COND



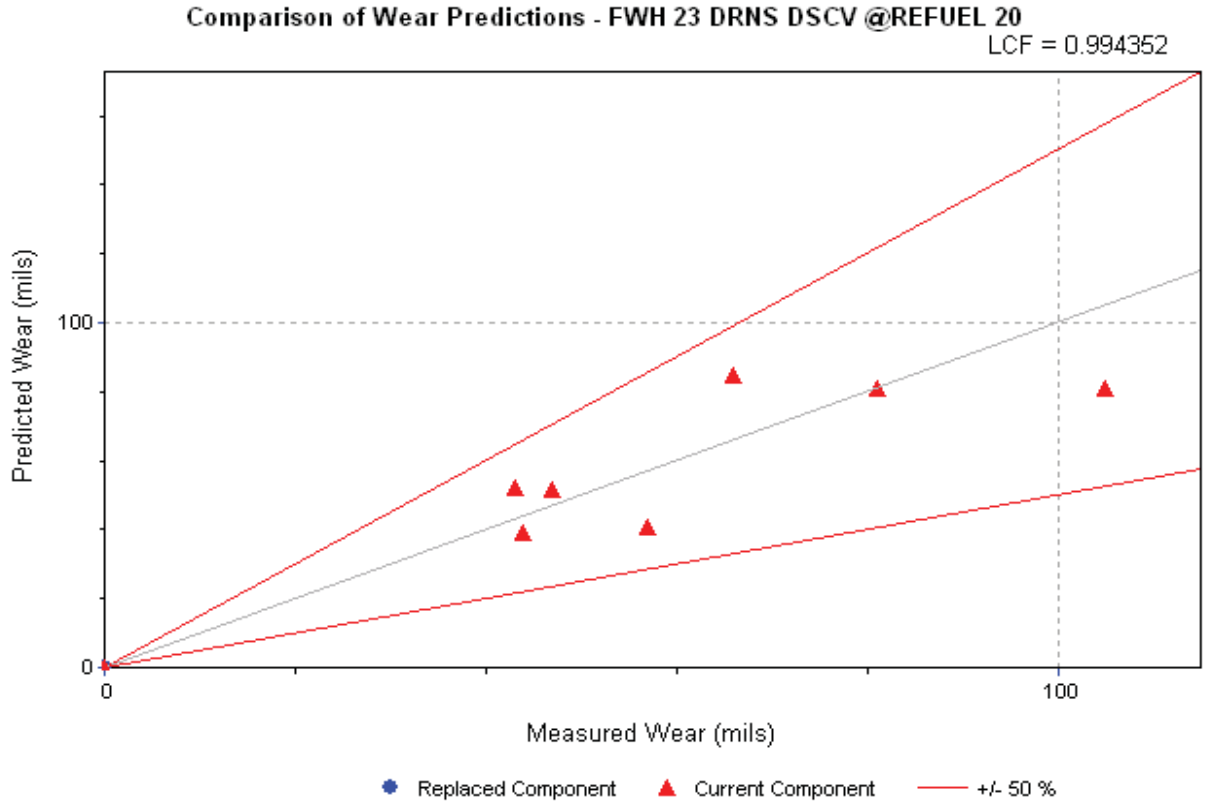
Plot J.14: FW BFP TO FWH 26



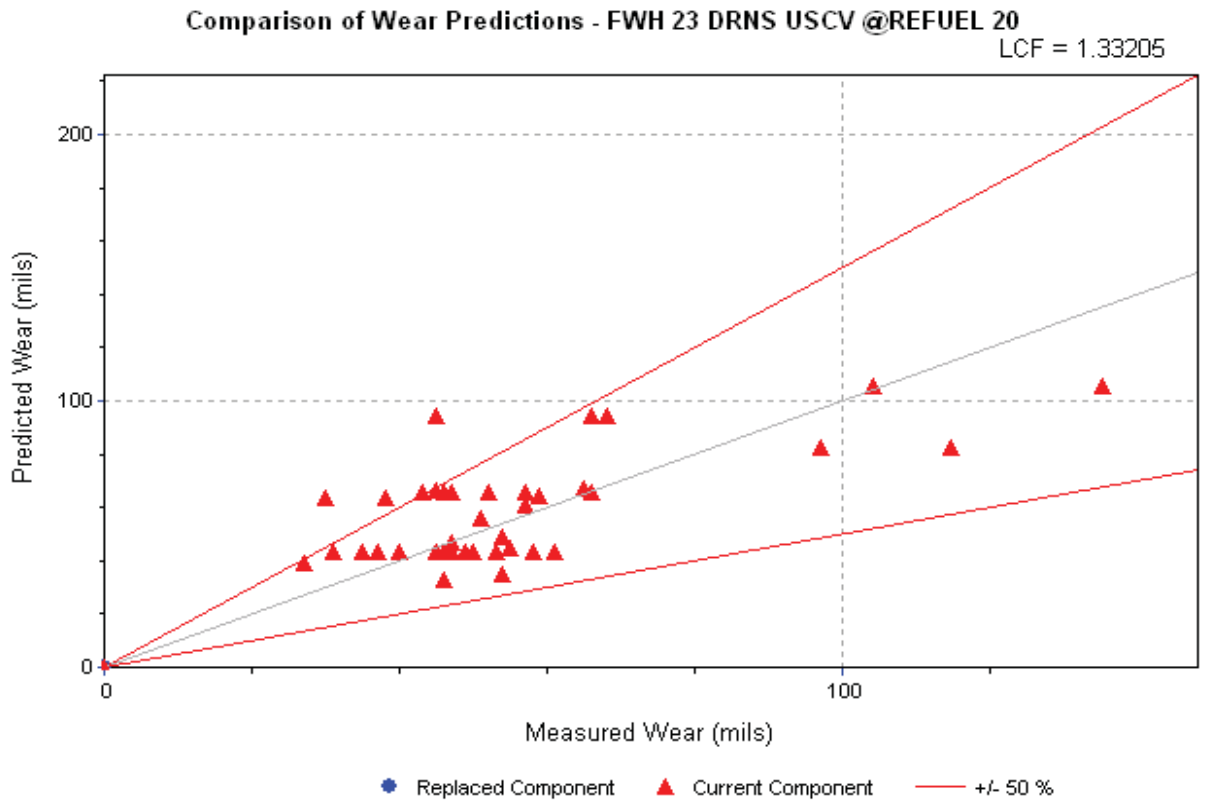
Plot J.15: FW FWH 26 TO STM GEN



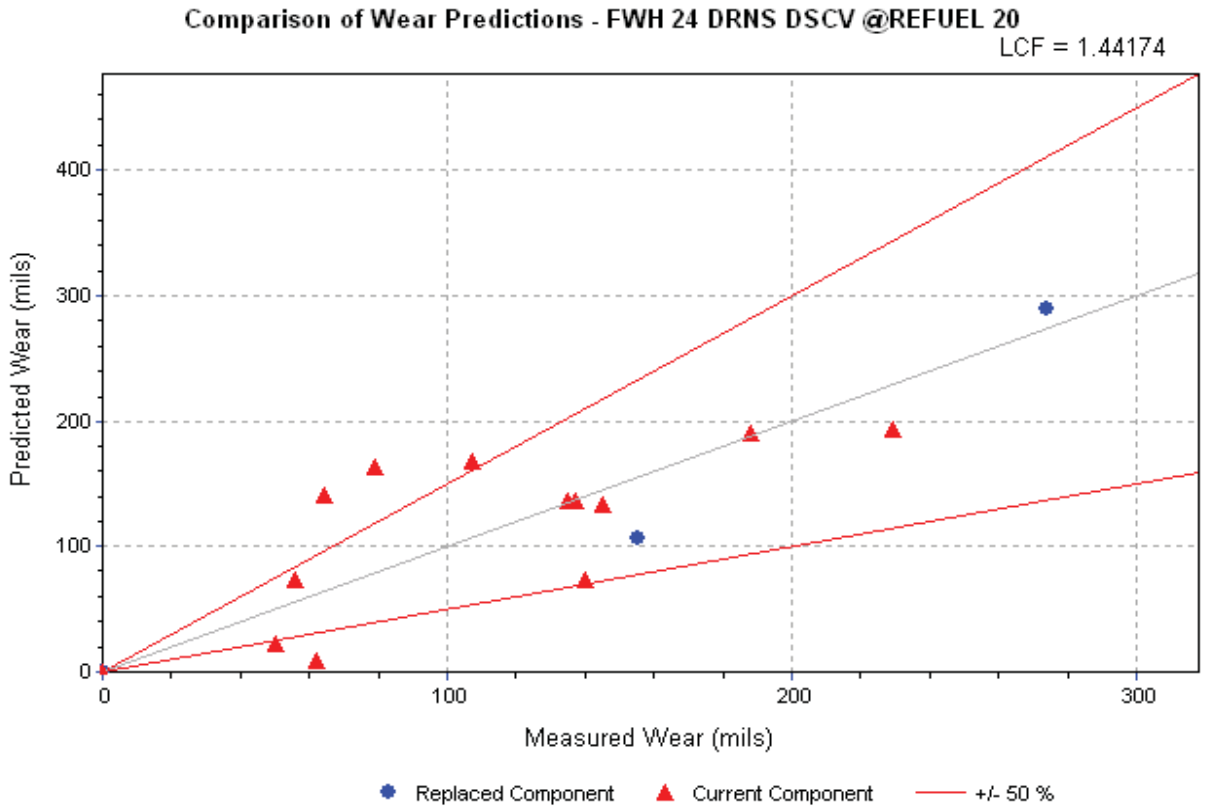
Plot J.16: FWH 23 DRNS DSCV



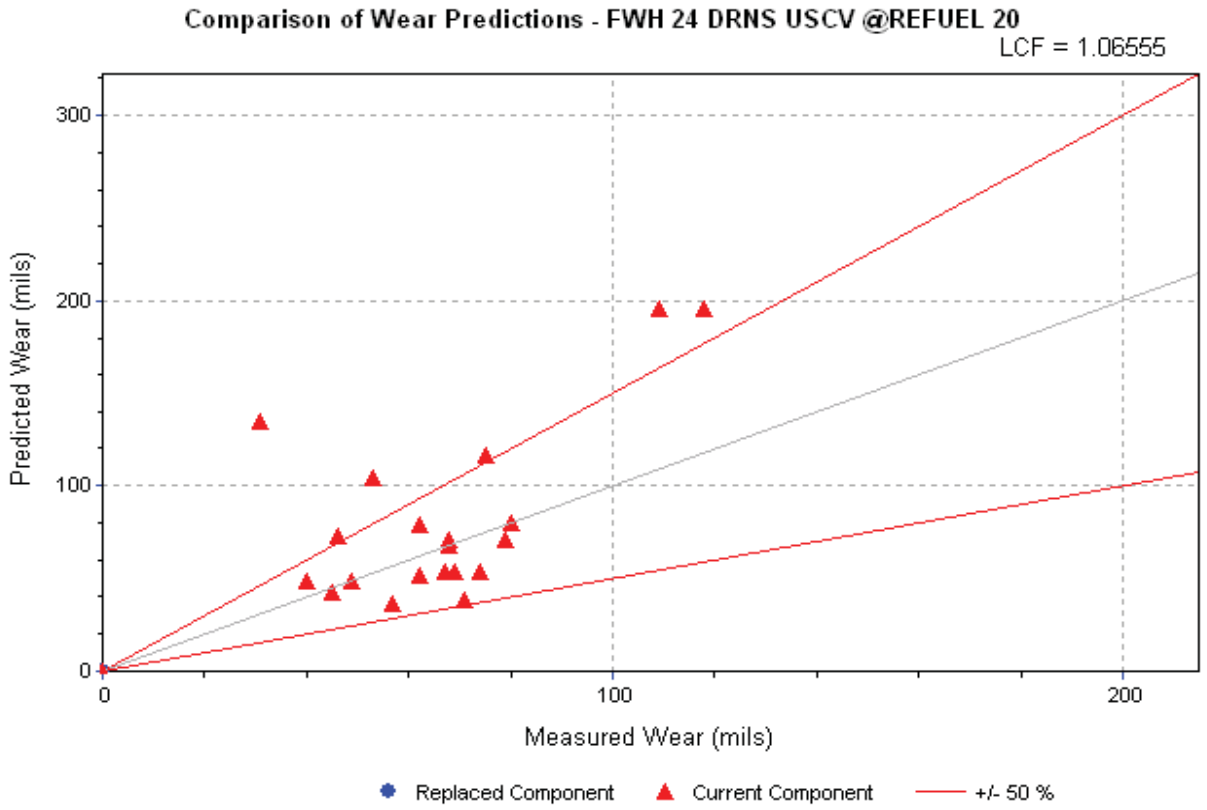
Plot J.17: FWH 23 DRNS USCV



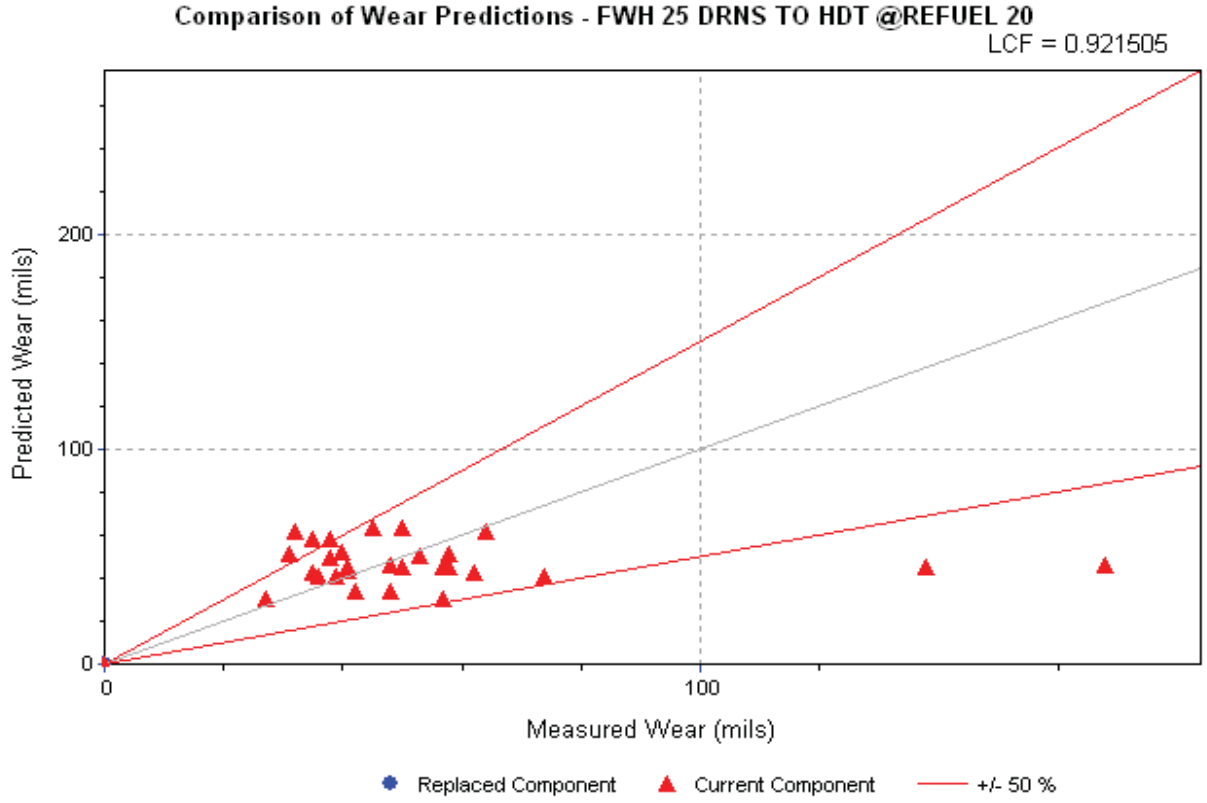
Plot J.18: FWH 24 DRNS DSCV



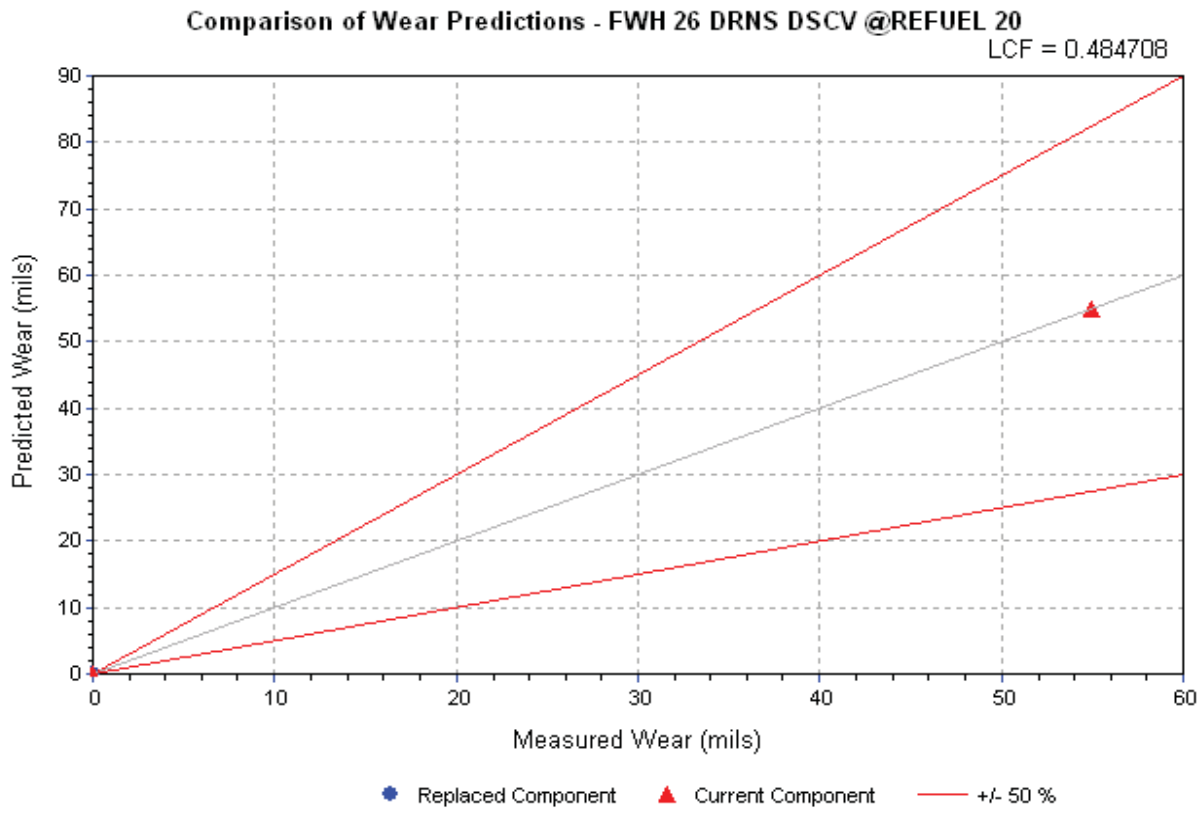
Plot J.19: FWH 24 DRNS USCV



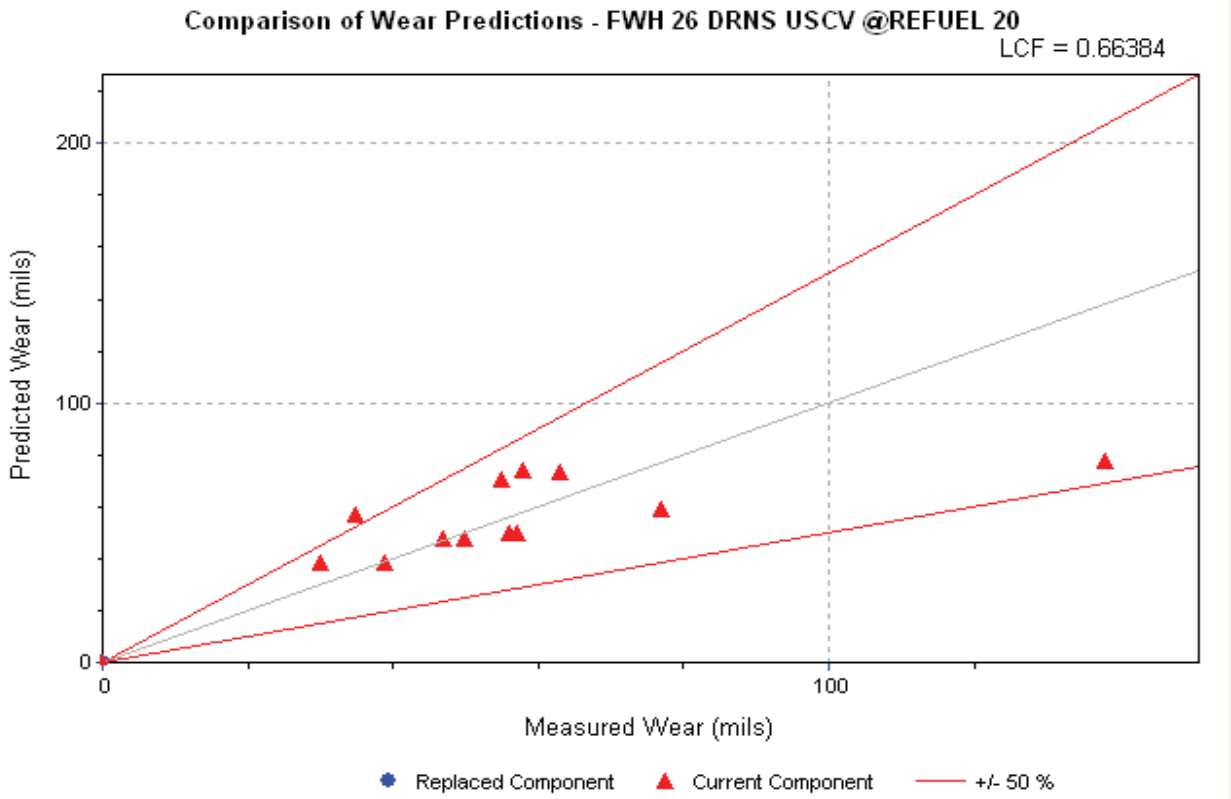
Plot J.20: FWH 25 DRNS TO HDT



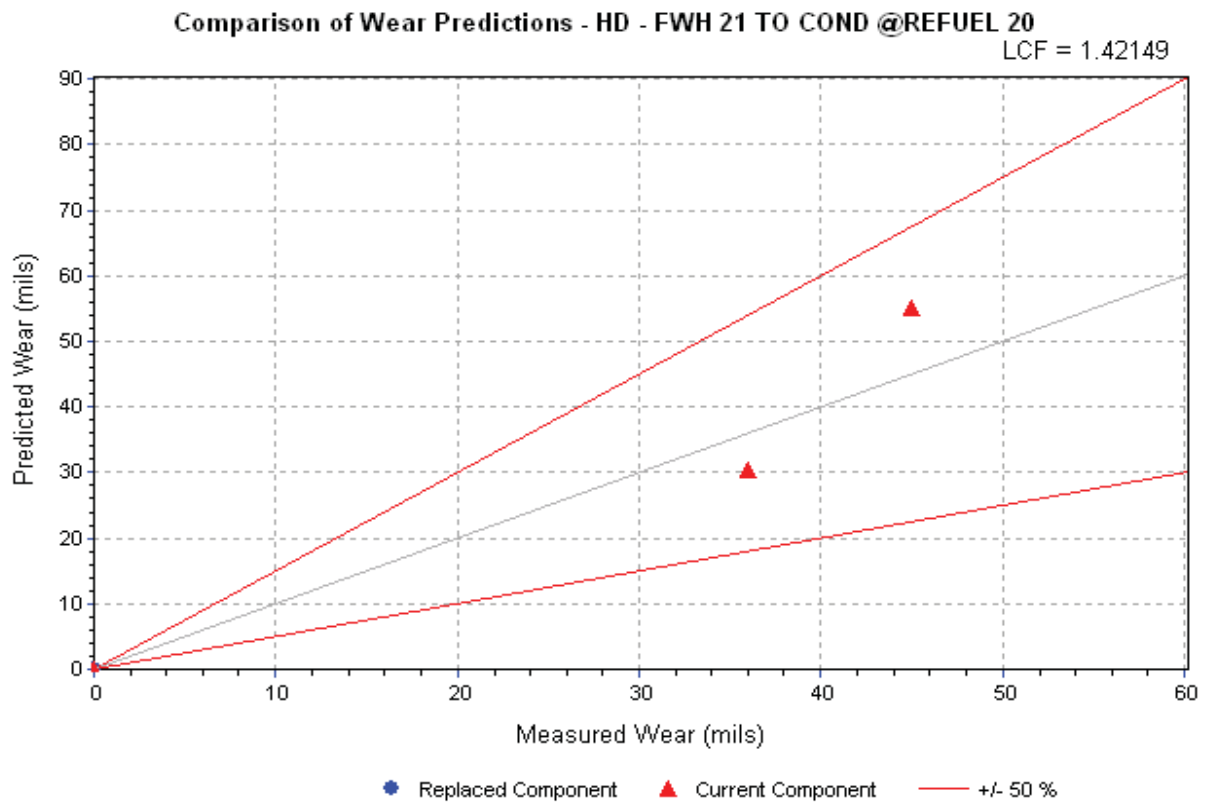
Plot J.21: FWH 26 DRNS DSCV



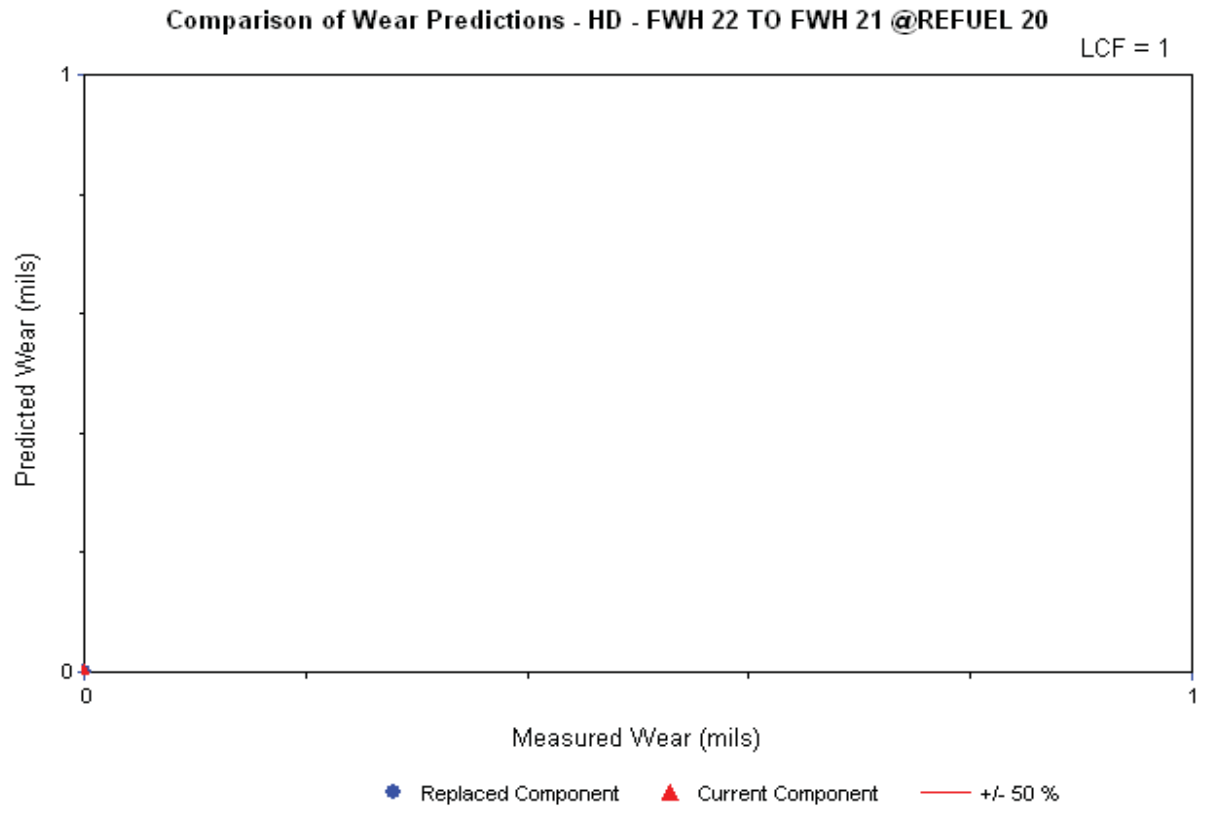
Plot J.22: FWH 26 DRNS USCV



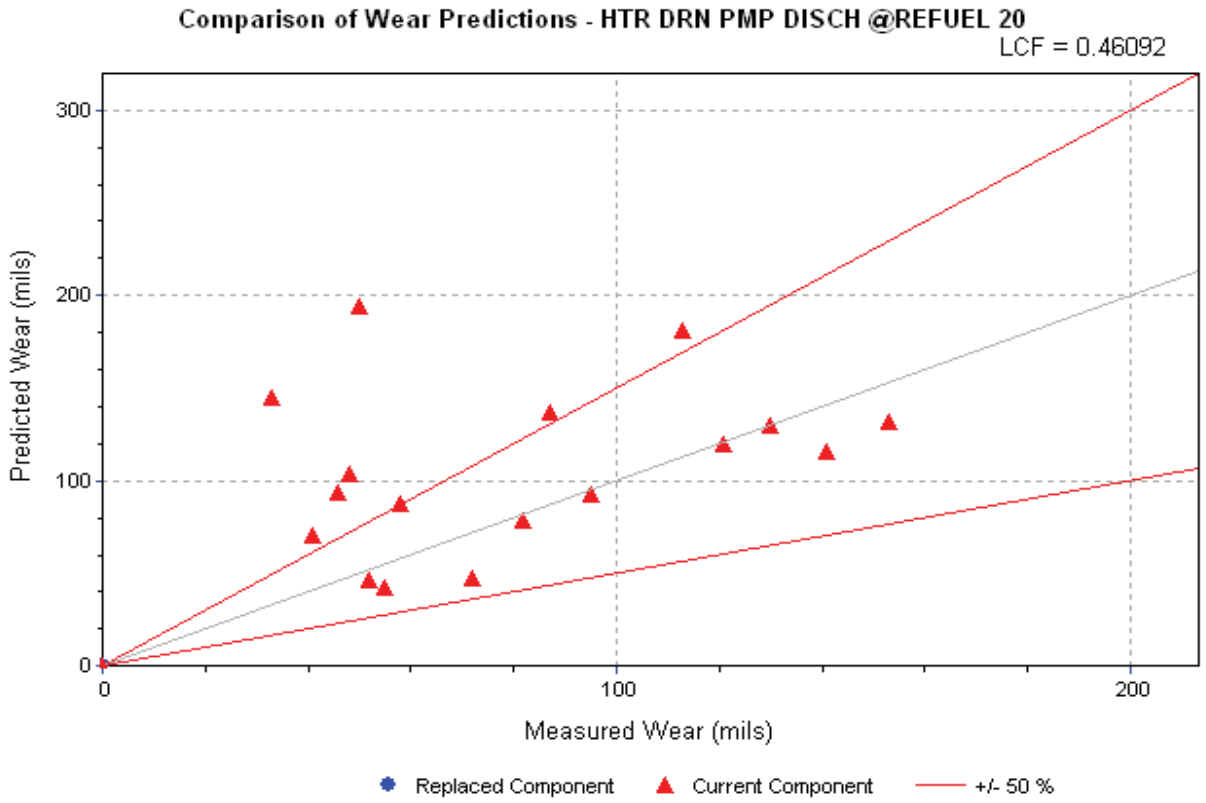
Plot J.23: HD – FWH 21 TO COND



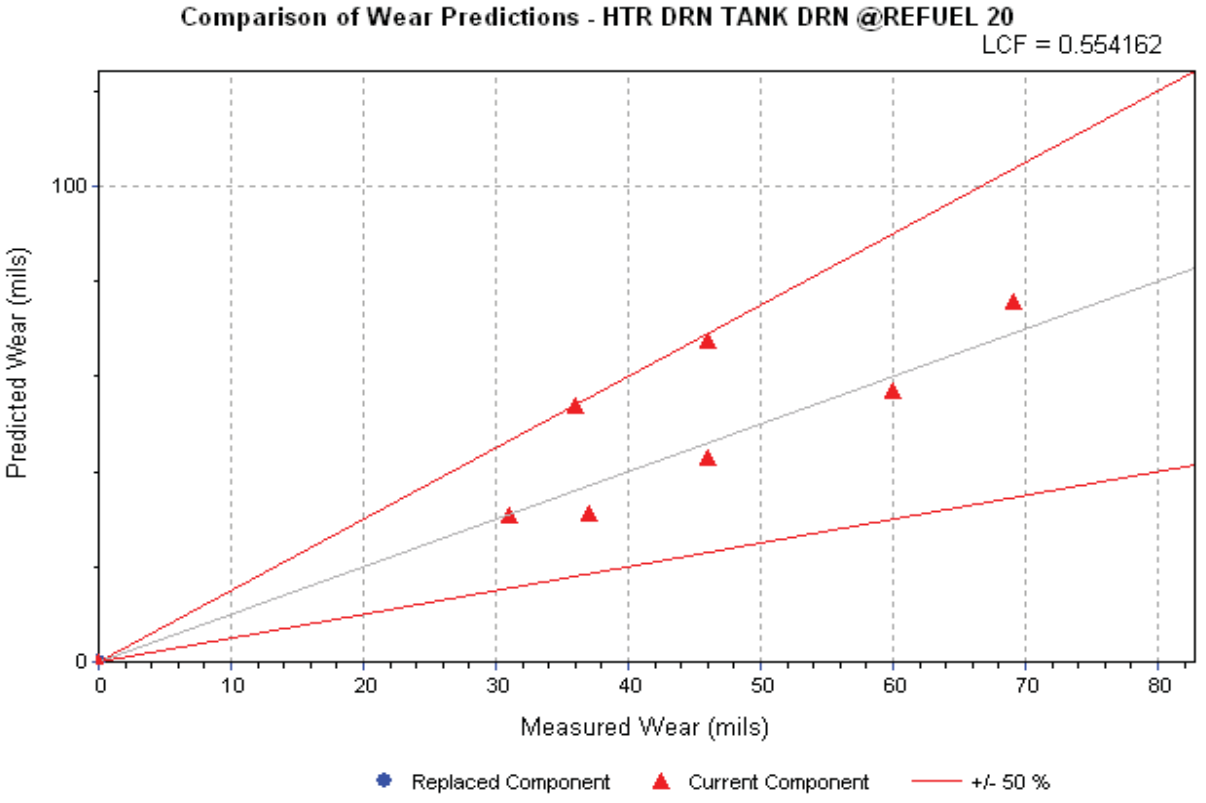
Plot J.24: HD – FWH 22 TO FWH 21



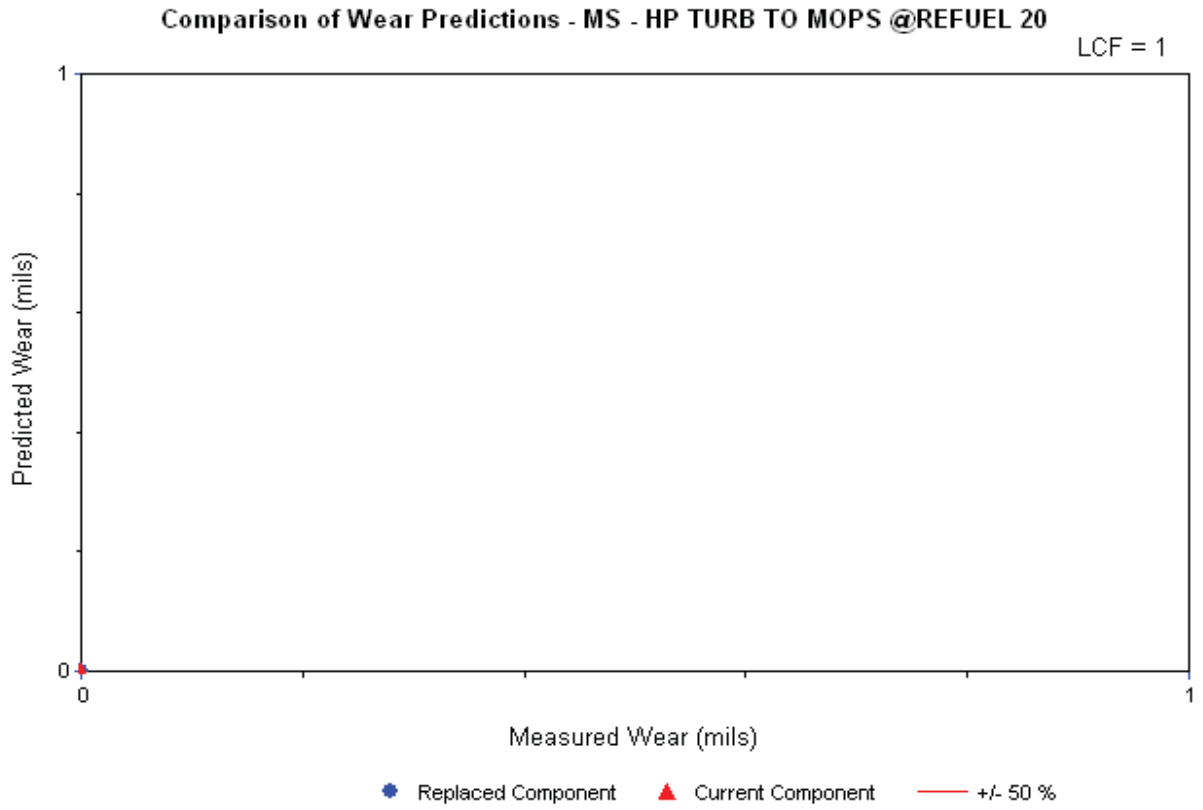
Plot J.25: HTR DRN PMP DISCH



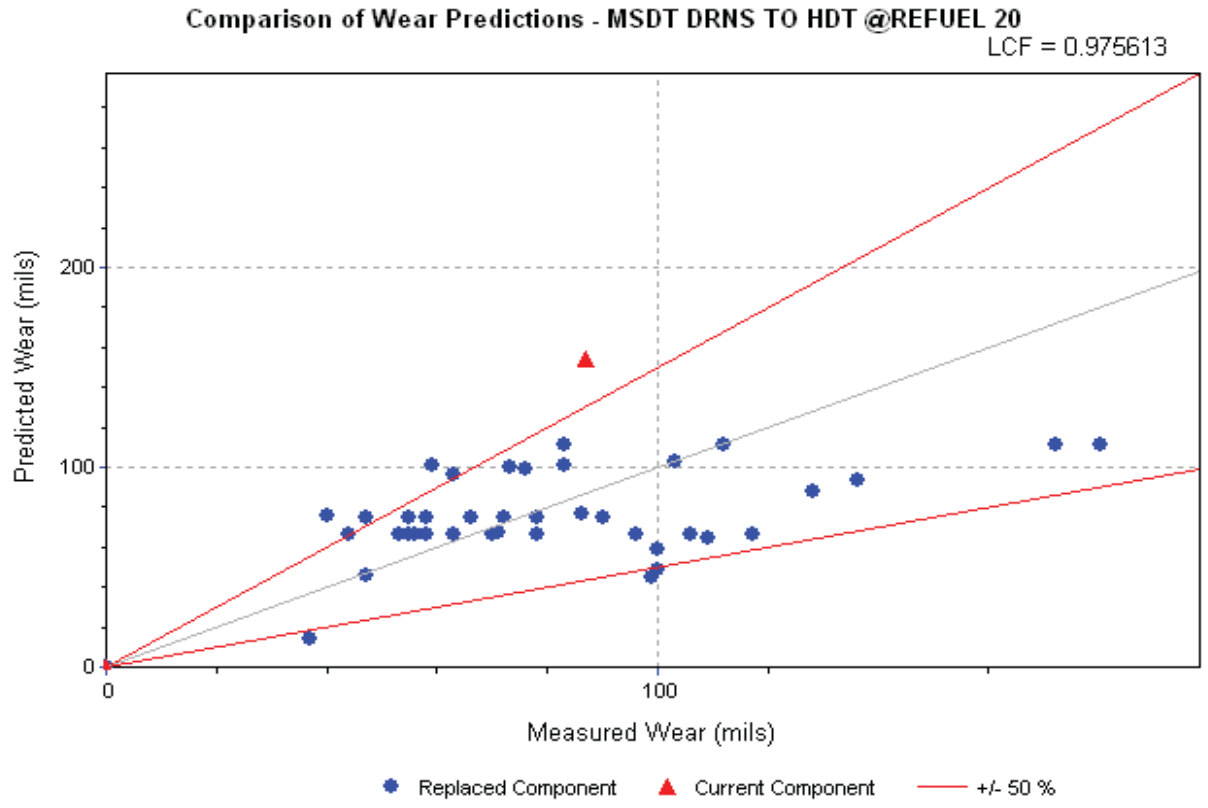
Plot J.26: HTR DRN TANK DRN



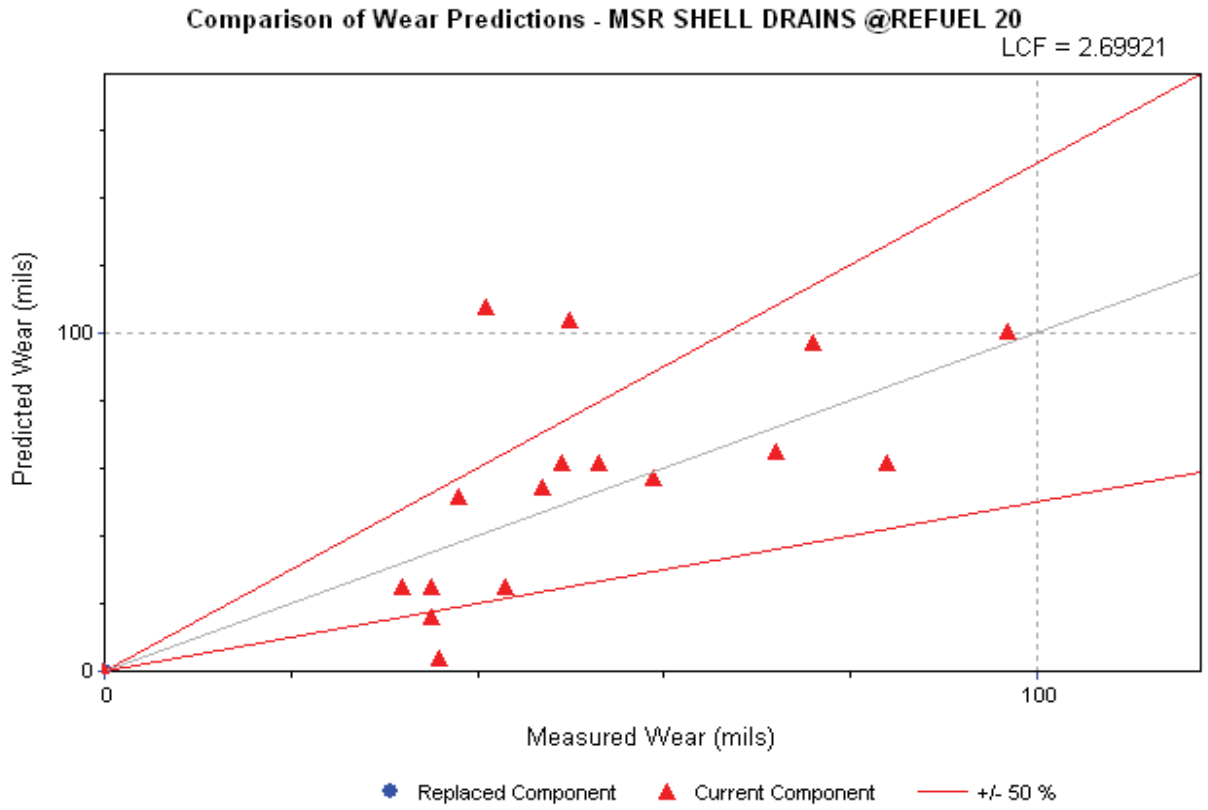
Plot J.27: MS – HP TURB TO MOPS



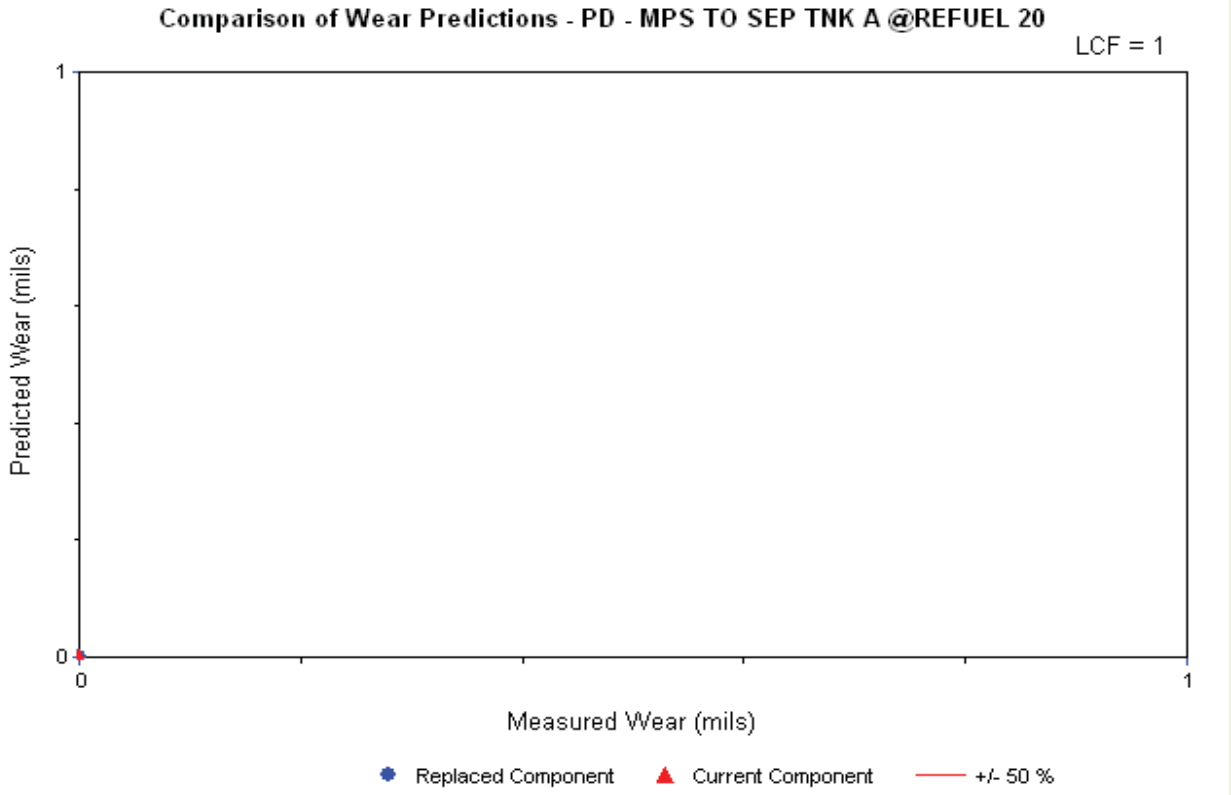
Plot J.28: MSDT DRNS TO HDT



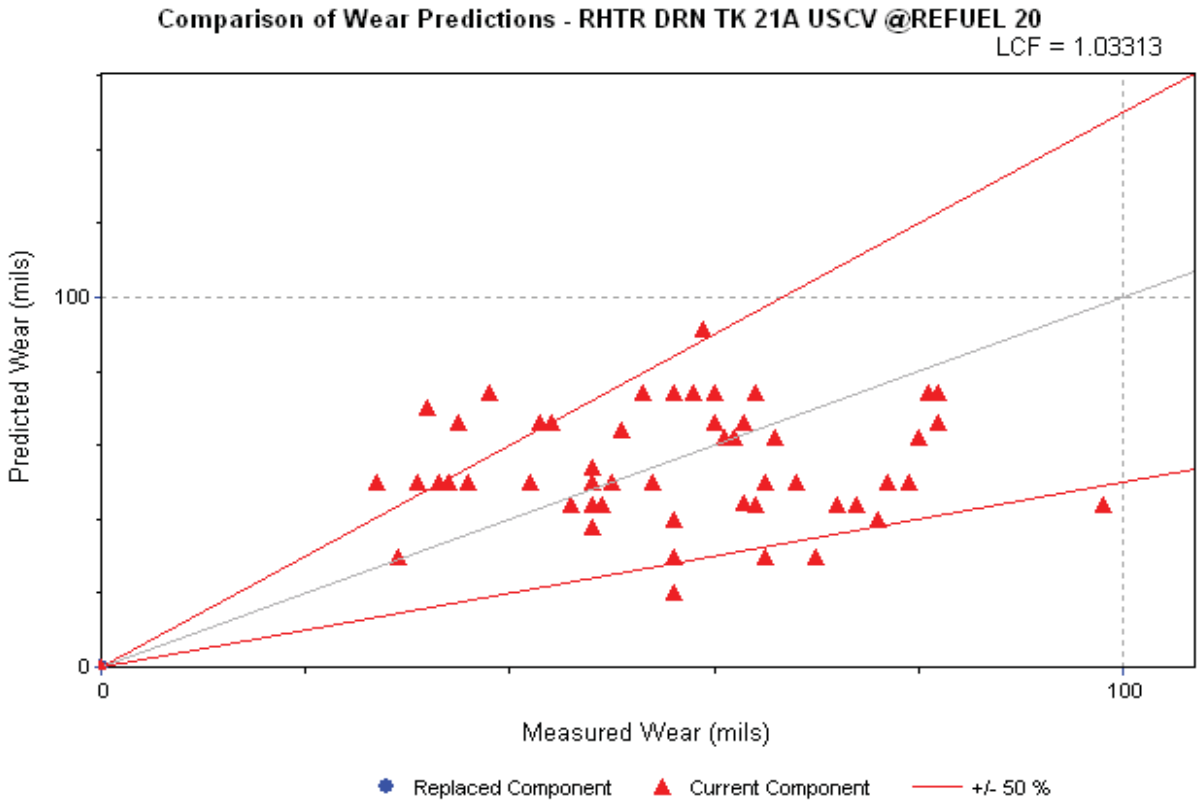
Plot J.29: MSR SHELL DRAINS



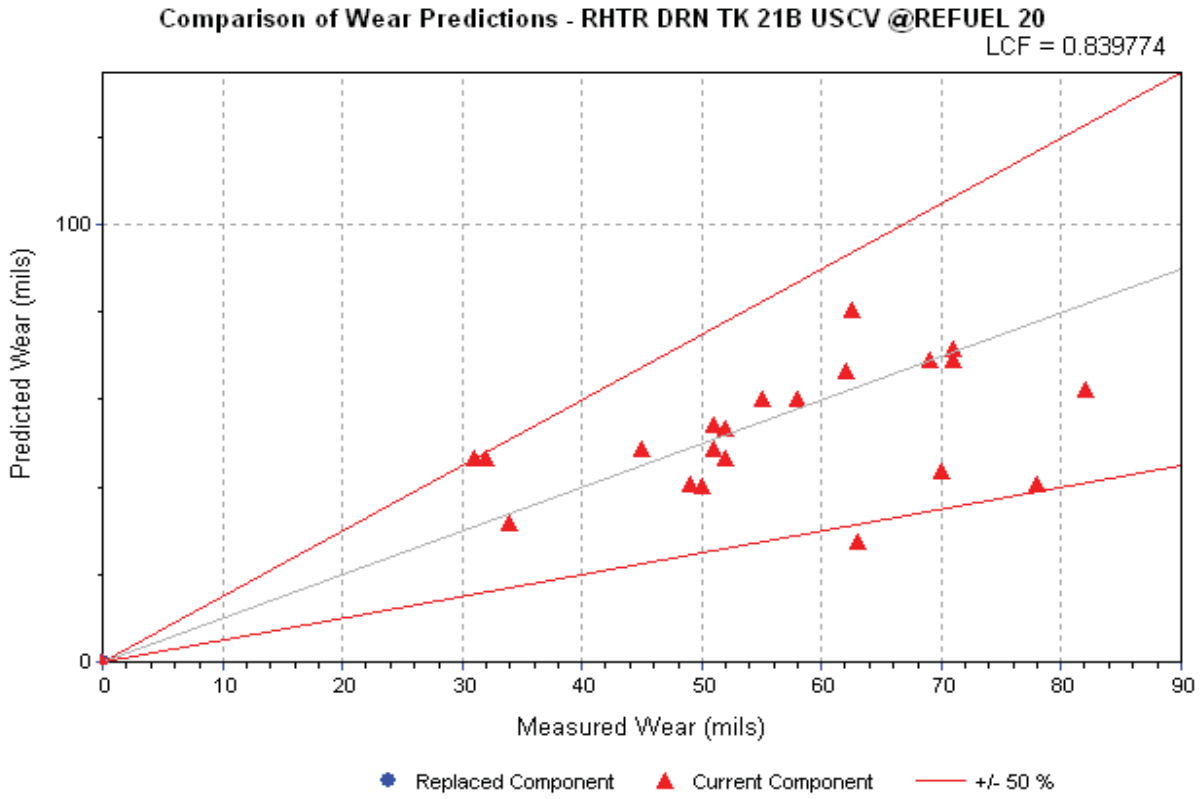
Plot J.30: PD – MPS TO SEP TNK A



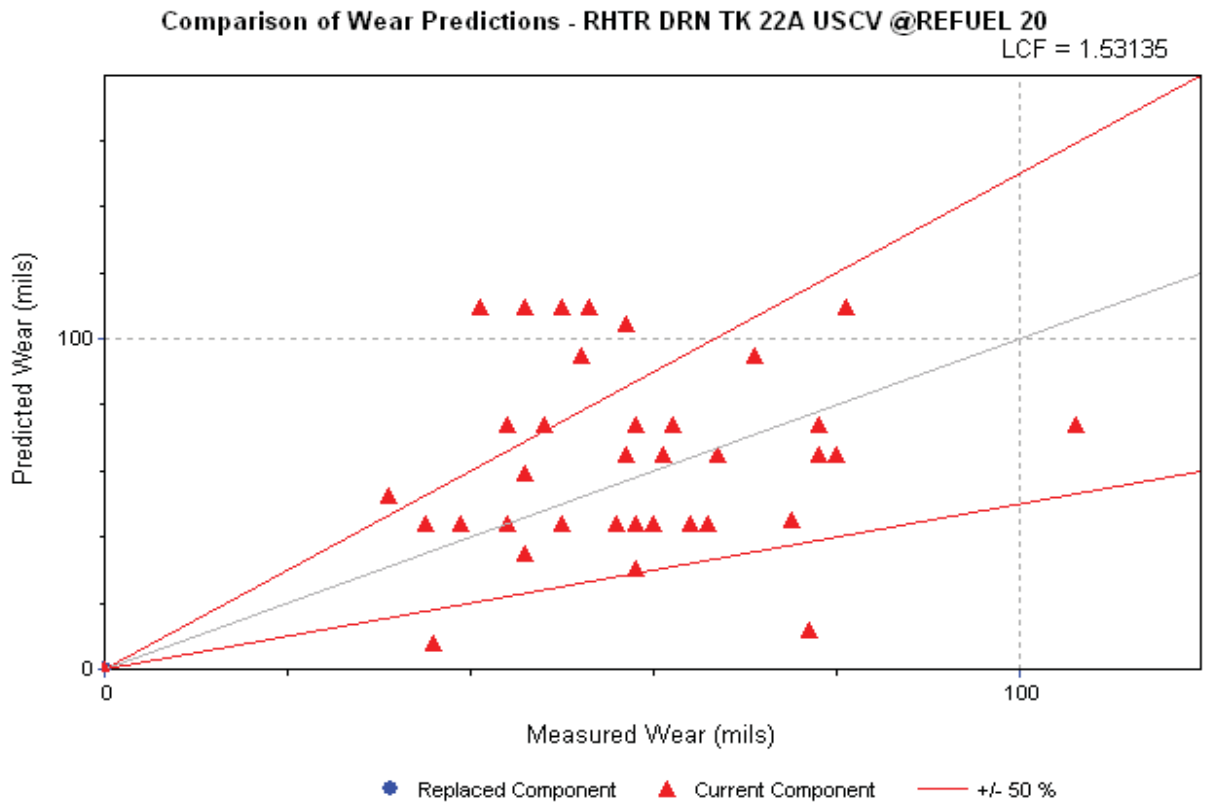
Plot J.31: RHTR DRN TK 21A USCV



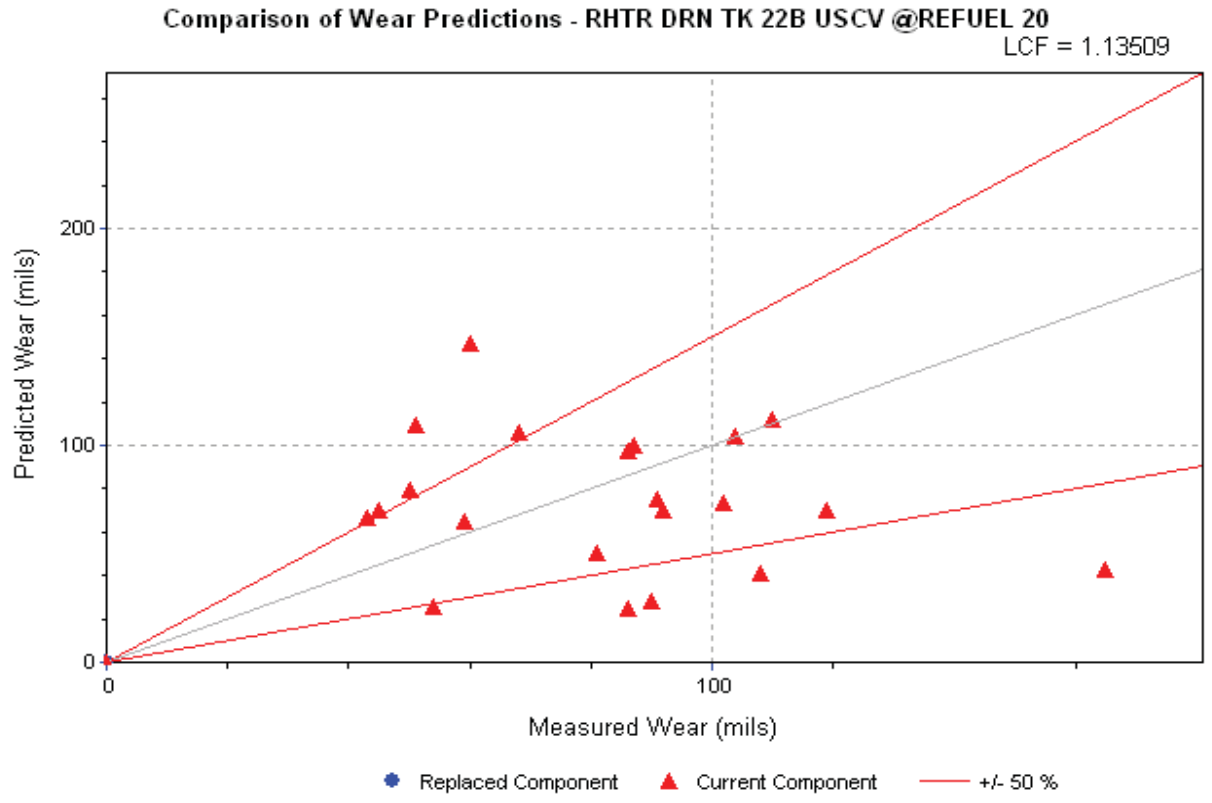
Plot J.32: RHTR DRN TK 21B USCV



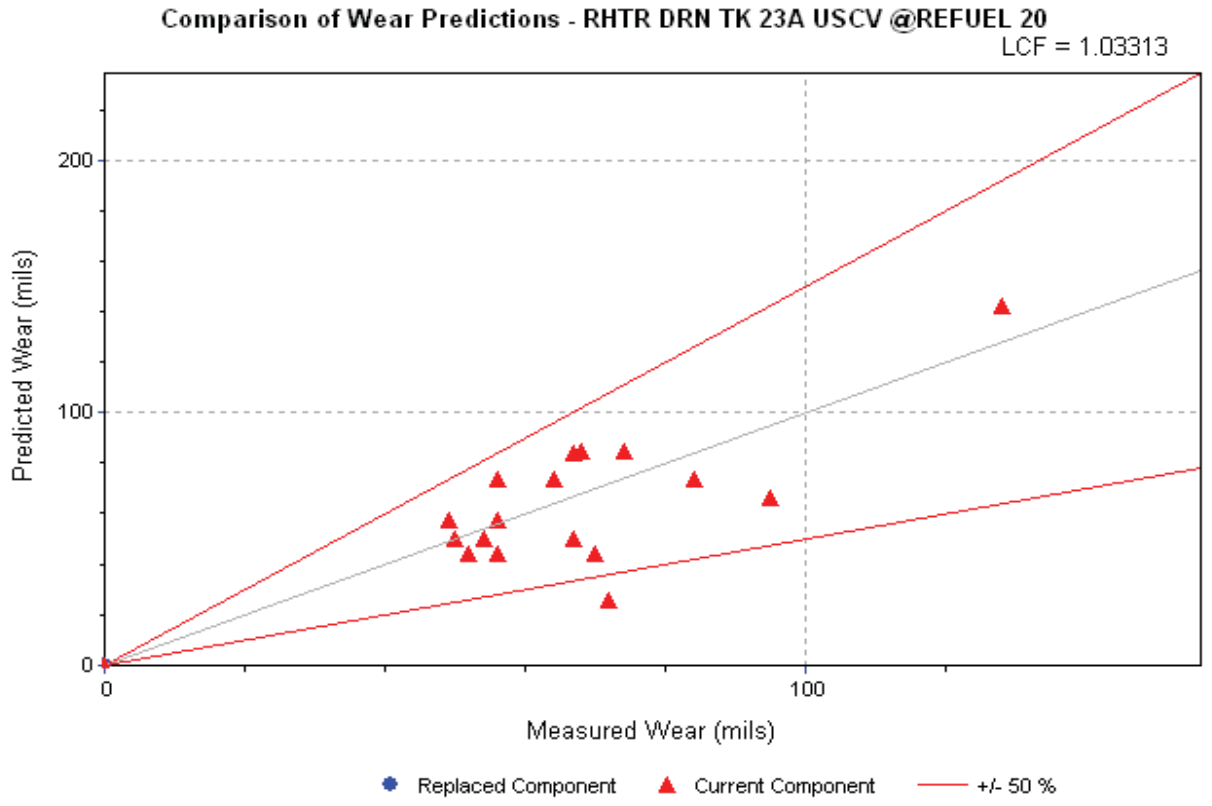
Plot J.33: RHTR DRN TK 22A USCV



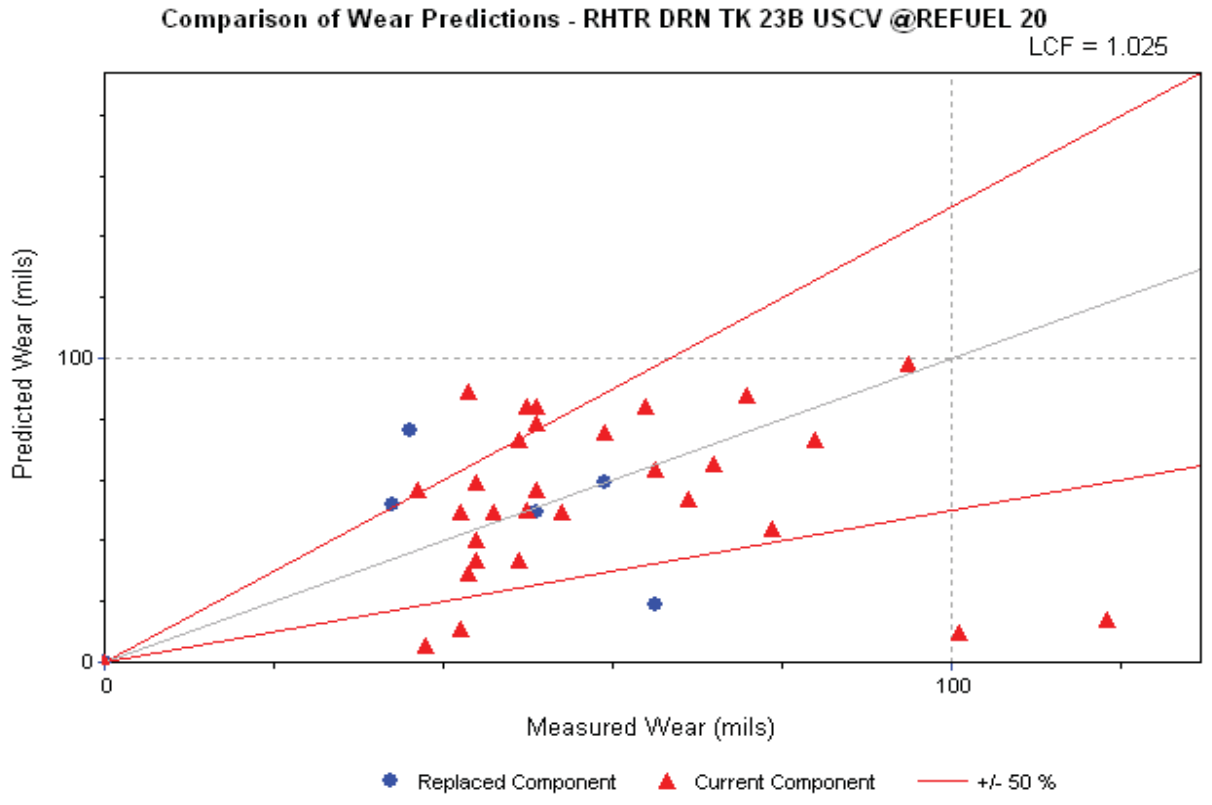
Plot J.34: RHTR DRN TK 22B USCV



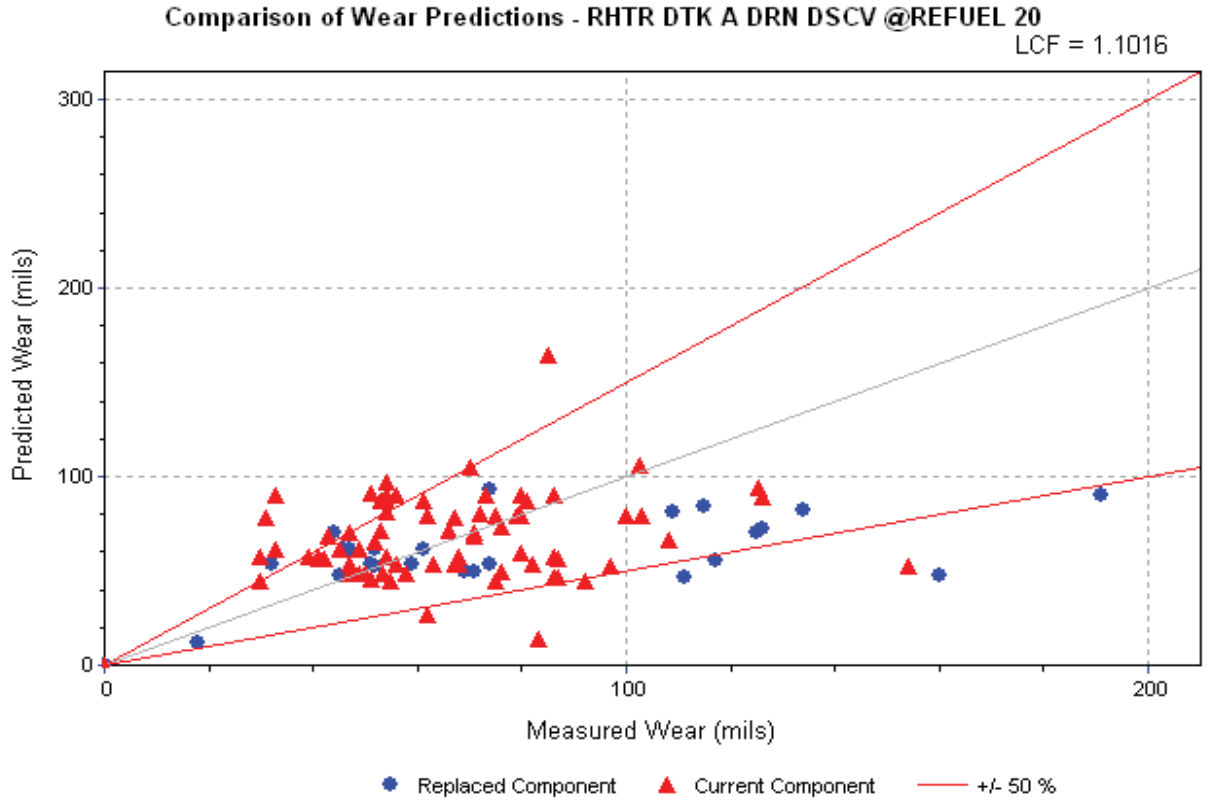
Plot J.35: RHTR DRN TK 23A USCV



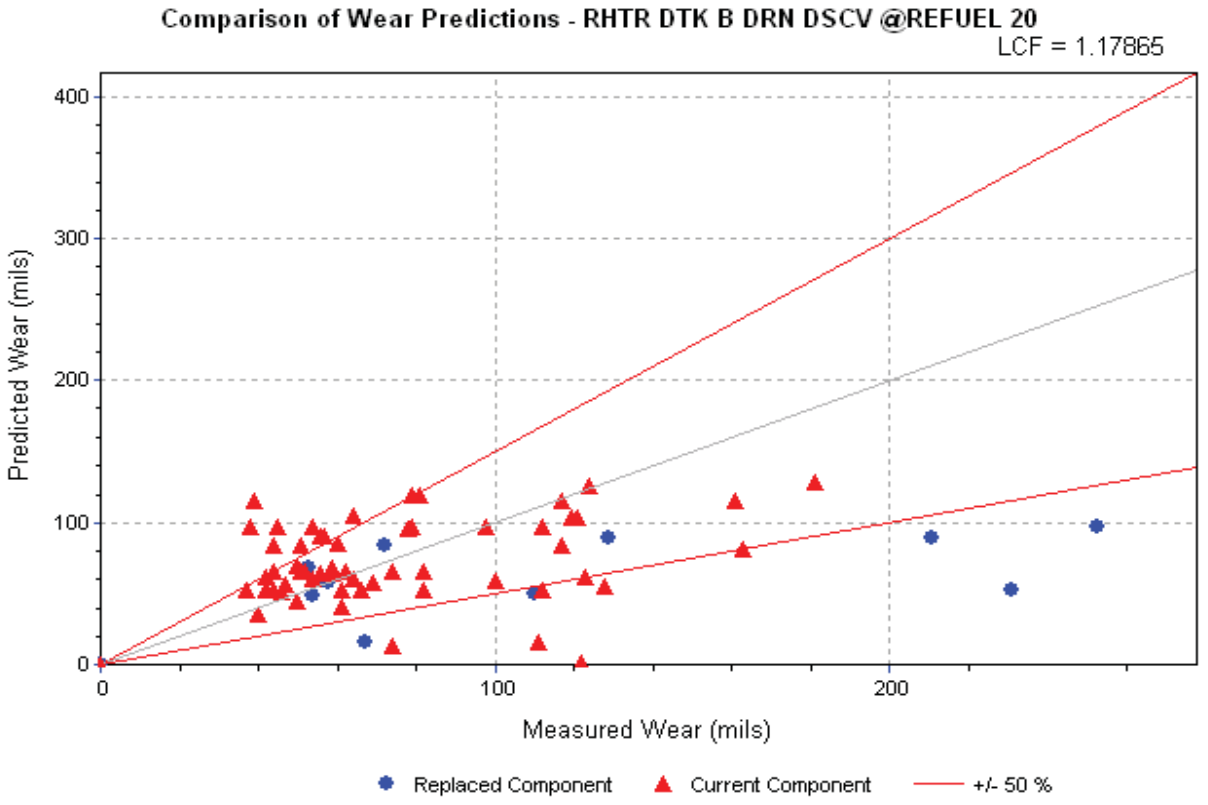
Plot J.36: RHTR DRN TK 23B USCV



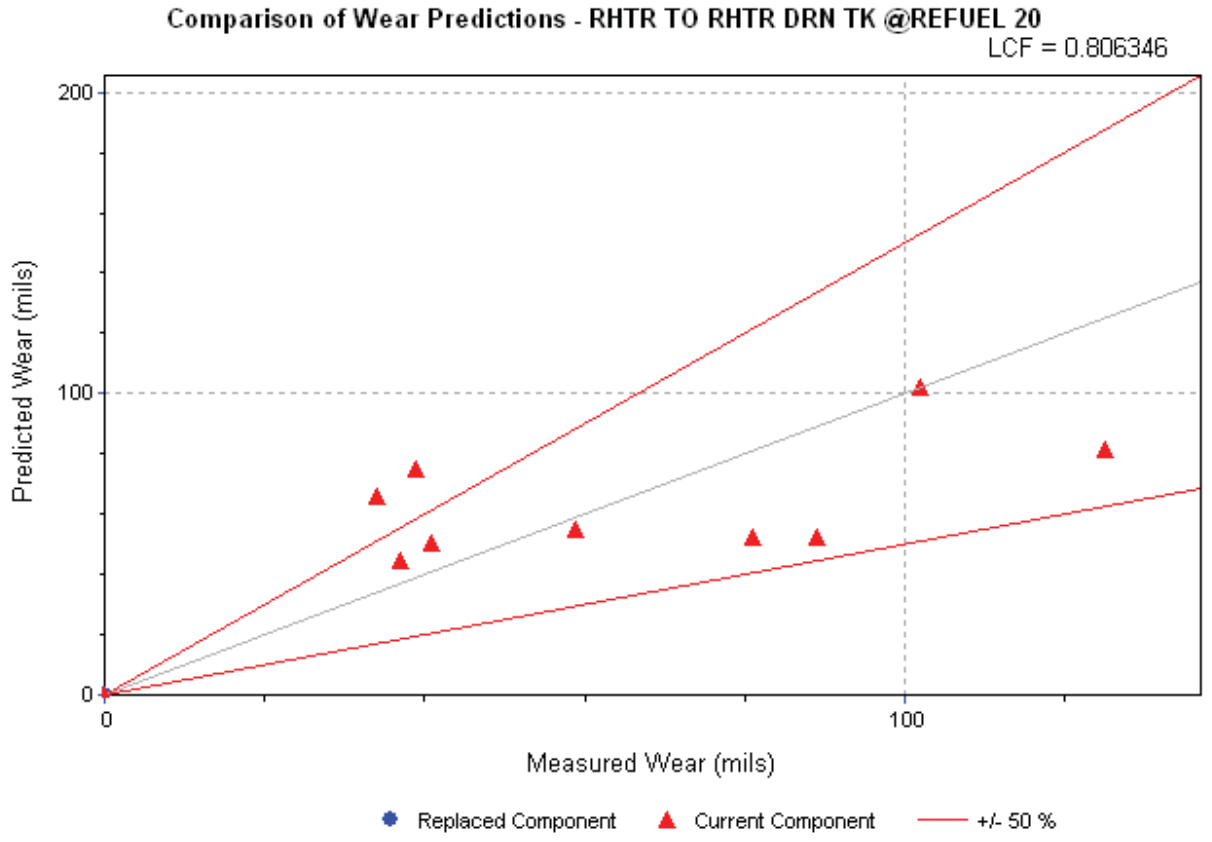
Plot J.37: RHTR DTK A DRN DSCV



Plot J.38: RHTR DTK B DRN DSCV



Plot J.39: RHTR TO RHTR DRN TK



Appendix K

Components with Negative Time to Tcrit

WRA Run Name	Line Name	Component Name[2]	Time to Tcrit (hrs)	Explanation
3RD POINT EXTRAC STM	ES1-1-3RDPT ES to FWH 23A	3EXA-18N	-69765	Further evaluation of this nozzle is required to determine the validity of the CHECWORKS prediction.
3RD POINT EXTRAC STM	ES1-2-3RDPT ES to FWH 23A	3EXA-22N	-69765	Further evaluation of this nozzle is required to determine the validity of the CHECWORKS prediction.
3RD POINT EXTRAC STM	ES1-3-3RDPT ES to FWH 23A	3EXA-14	-69438	Further evaluation of this tee is required to determine the validity of the CHECWORKS prediction.
3RD POINT EXTRAC STM	ES2-2-3RDPT ES to FWH 23B	3EXB-18N	-69765	Further evaluation of this nozzle is required to determine the validity of the CHECWORKS prediction.
3RD POINT EXTRAC STM	ES2-3-3RDPT ES to FWH 23B	3EXB-10	-69438	Further evaluation of this tee is required to determine the validity of the CHECWORKS prediction.
3RD POINT EXTRAC STM	ES3-1-3RDPT ES to FWH 23C	3EXC-18N	-69765	Further evaluation of this nozzle is required to determine the validity of the CHECWORKS prediction.
5TH POINT EXTRAC STM	ES7-1-5THPT ES to FWH 25ABC	5EX-VALVE-5EX-1	-189641	The downstream component was replaced. Measurements on the new component will not reflect wear on the valve since the valve has a longer life. See Note 1.
5TH POINT EXTRAC STM	ES7-1-5THPT ES to FWH 25ABC	5EX-VALVE-5EX-3	-183716	The downstream component was replaced. Measurements on the new component will not reflect wear on the valve since the valve has a longer life. See Note 1.
5TH POINT EXTRAC STM	ES7-1-5THPT ES to FWH 25ABC	5EX-VALVE-5EX-4	-183716	The downstream component was replaced. Measurements on the new component will not reflect wear on the valve since the valve has a longer life. See Note 1.

WRA Run Name	Line Name	Component Name[2]	Time to Tcrit (hrs)	Explanation
5TH POINT EXTRAC STM	ES7-2-5THPT ESHDR to FWH 25C	5EX-VALVE 5EX-5-2	-163436	The downstream component was replaced. Measurements on the new component will not reflect wear on the valve since the valve has a longer life. See Note 1.
5TH POINT EXTRAC STM	ES7-4-5THPT ESHDR to FWH 25B	5EX-VALVE 5EX-5-1	-163436	The downstream component was replaced. Measurements on the new component will not reflect wear on the valve since the valve has a longer life. See Note 1.
5TH POINT EXTRAC STM	ES7-5-5THPT ESHDR to FWH 25A	5EX-VALVE 5EX-5	-163436	The downstream component was replaced. Measurements on the new component will not reflect wear on the valve since the valve has a longer life. See Note 1.
6TH POINT EXTRAC STM	ES8-3-6THPT ESHDR to FWH 26	6EX-VALVE-6EX-1	-193058	The downstream component was replaced. Measurements on the new component will not reflect wear on the valve since the valve has a longer life. See Note 1.
6TH POINT EXTRAC STM	ES8-3-6THPT ESHDR to FWH 26	6EX-VALVE-6EX-3	-196875	The downstream component was replaced. Measurements on the new component will not reflect wear on the valve since the valve has a longer life. See Note 1.
6TH POINT EXTRAC STM	ES8-3-6THPT ESHDR to FWH 26	6EX-VALVE-6EX-4	-196875	The downstream component was replaced. Measurements on the new component will not reflect wear on the valve since the valve has a longer life. See Note 1.
6TH POINT EXTRAC STM	ES8-4-6THPT ESHDR to FWH 26C	6EX-VALVE-6EX-5-2	-175478	The downstream component was replaced. Measurements on the new component will not reflect wear on the valve since the valve has a longer life. See Note 1.
6TH POINT EXTRAC STM	ES8-6-6THPT ESHDR to FWH 26B	6EX-VALVE-6EX-5-1	-175478	The downstream component was replaced. Measurements on the new component will not reflect wear on the valve since the valve has a longer life. See Note 1.

WRA Run Name	Line Name	Component Name[2]	Time to Tcrit (hrs)	Explanation
6TH POINT EXTRAC STM	ES8-7-6THPT ESHDR to FWH 26A	6EX-VALVE-6EX-5	-175478	The downstream component was replaced. Measurements on the new component will not reflect wear on the valve since the valve has a longer life. See Note 1.
BLOWDOWN	SG51-1-CONT PEN to SGBFTK	MS46-VALVE-HCV-5046	-112432	The downstream component has been inspected and does not have significant wear. Industry experience shows that wear on the downstream extension closely reflects wear on the valve. The negative time to Tcrit cannot be eliminated because an inspection cannot be performed directly on the valve. See Note 1.
BLOWDOWN	SG51-1-CONT PEN to SGBFTK	MS46-VALVE-MS-131-A	-112432	The downstream component of this valve has not been inspected, but shows a high remaining service life. See Note 1.
BLOWDOWN	SG51-1-CONT PEN to SGBFTK	MS46-Valve-MS-71-A	-196586	The downstream component of this valve has not been inspected, but shows a high remaining service life. See Note 1.
BLOWDOWN	SG51-1-CONT PEN to SGBFTK	MS46-VALVE-PCV-1214	-95109	The downstream component of this valve has not been inspected, but shows a high remaining service life. See Note 1.
BLOWDOWN	SG51-1-CONT PEN to SGBFTK	MS46-VALVE-PCV-1214A	-95109	The downstream component of this valve has not been inspected, but shows a high remaining service life. See Note 1.
BLOWDOWN	SG52-1-CONT PEN to SGBFTK	MS45-VALVE-HCV-5047	-112432	The downstream component has been inspected and does not have significant wear. Industry experience shows that wear on the downstream extension closely reflects wear on the valve. The negative time to Tcrit cannot be eliminated because an inspection cannot be performed directly on the valve. See Note 1.

WRA Run Name	Line Name	Component Name[2]	Time to Tcrit (hrs)	Explanation
BLOWDOWN	SG52-1-CONT PEN to SGBFTK	MS45-VALVE-MS-131-B	-112432	The downstream component of this valve has not been inspected, but shows a high remaining service life. See Note 1.
BLOWDOWN	SG52-1-CONT PEN to SGBFTK	MS45-VALVE-MS-71-B	-196586	The downstream component of this valve has not been inspected, but shows a high remaining service life. See Note 1.
BLOWDOWN	SG52-1-CONT PEN to SGBFTK	MS45-VALVE-PCV-1215	-95109	The downstream component of this valve has not been inspected, but shows a high remaining service life. See Note 1.
BLOWDOWN	SG52-1-CONT PEN to SGBFTK	MS45-VALVE-PCV-1215A	-95109	The downstream component of this valve has not been inspected, but shows a high remaining service life. See Note 1.
BLOWDOWN	SG53-1-CONT PEN to SGBFTK	MS47-VALVE-HCV-5048	-112432	The downstream component of this valve has not been inspected, but shows a high remaining service life. See Note 1.
BLOWDOWN	SG53-1-CONT PEN to SGBFTK	MS47-VALVE-MS-131C	-112432	The downstream component has been inspected and does not have significant wear. Industry experience shows that wear on the downstream extension closely reflects wear on the valve. The negative time to Tcrit cannot be eliminated because an inspection cannot be performed directly on the valve. See Note 1.
BLOWDOWN	SG53-1-CONT PEN to SGBFTK	MS47-VALVE-MS-71C	-196586	The downstream component of this valve has not been inspected, but shows a high remaining service life. See Note 1.
BLOWDOWN	SG53-1-CONT PEN to SGBFTK	MS47-VALVE-PCV-1216	-95109	The downstream component of this valve has not been inspected, but shows a high remaining service life. See Note 1.
BLOWDOWN	SG53-1-CONT PEN to SGBFTK	MS47-VALVE-PCV-1216A	-95109	The downstream component of this valve has not been inspected, but shows a high remaining service life. See Note 1.

WRA Run Name	Line Name	Component Name[2]	Time to Tcrit (hrs)	Explanation
BLOWDOWN	SG54-1-CONT PEN to SGBFTK	MS48-VALVE-HCV-5049	-112432	The downstream component of this valve has not been inspected, but shows a high remaining service life. See Note 1.
BLOWDOWN	SG54-1-CONT PEN to SGBFTK	MS48-VALVE-MS-131D	-112432	The downstream component of this valve has not been inspected, but shows a high remaining service life. See Note 1.
BLOWDOWN	SG54-1-CONT PEN to SGBFTK	MS48-VALVE-MS-71D	-196586	The downstream component of this valve has not been inspected, but shows a high remaining service life. See Note 1.
BLOWDOWN	SG54-1-CONT PEN to SGBFTK	MS48-VALVE-PCV-1217	-95109	The downstream component of this valve has not been inspected, but shows a high remaining service life. See Note 1.
BLOWDOWN	SG54-1-CONT PEN to SGBFTK	MS48-VALVE-PCV-1217A	-95109	The downstream component of this valve has not been inspected, but shows a high remaining service life. See Note 1.
CND DWNSTRM HDPD	CD83-2-HDR to BFP21	CD-VALVE-CD-21	-68477	The downstream component of this valve has not been inspected, but shows a high remaining service life. See Note 1.
CND DWNSTRM HDPD	CD83-3-HDR to BFP22	CD-76FE	-90158	The downstream extension has been inspected and does not have significant wear. Industry experience shows that wear on the downstream extension closely reflects wear on the orifice. The negative time to Tcrit cannot be eliminated because an inspection cannot be performed directly on the orifice.
CND DWNSTRM HDPD	CD83-3-HDR to BFP22	CD-VALVE-CD-21-1	-68477	The downstream component has been inspected and does not have significant wear. See Note 1.
CND FWH 22 TO FWH 23	CD80A-1-FWH 22A to HEADER	CD-VALVE-CD-8	-116498	The downstream component has been inspected and does not have significant wear. See Note 1.

WRA Run Name	Line Name	Component Name[2]	Time to Tcrit (hrs)	Explanation
CND FWH 22 TO FWH 23	CD80A-2-FWH 22B to HEADER	CD-VALVE-CD-8-1	-116498	The downstream component of this valve has not been inspected, but shows a high remaining service life. See Note 1.
CND FWH 22 TO FWH 23	CD80A-3-FWH 22C to HEADER	CD-113N	-74327	Further evaluation of this nozzle is required to determine the validity of the CHECWORKS prediction.
CND FWH 22 TO FWH 23	CD80A-3-FWH 22C to HEADER	CD-VALVE-CD-8-2	-116498	The downstream component of this valve has not been inspected, but shows a high remaining service life. See Note 1.
CND FWH 22 TO FWH 23	CD80A-5-FWH 22 to FWH 23 HEAD	CD-VALVE-CD-1110	-119564	The downstream component of this valve has not been inspected, but shows a high remaining service life. See Note 1.
CND FWH 22 TO FWH 23	CD80A-7-HEADER to FWH 23A	CD-VALVE-CD-16	-74544	The downstream component of this valve has not been inspected, but shows a high remaining service life. See Note 1.
CND FWH 22 TO FWH 23	CD80A-8-HEADER to FWH 23B	CD-VALVE-CD-16-1	-74544	The downstream component of this valve has not been inspected, but shows a high remaining service life. See Note 1.
CND FWH 22 TO FWH 23	CD80A-9-HEADER to FWH 23C	CD-VALVE-CD-16-2	-74544	The downstream component has been inspected and does not have significant wear. See Note 1.
CND FWH 23 TO FWH 24	CD80-1-FWH 23A to FWH 24A	CD-41N	-6108	Further evaluation of this nozzle is required to determine the validity of the CHECWORKS prediction.
CND FWH 25 TO HEADER	CD82-1-FWH 25A to HDR	CD-VALVE-CD-18	-84784	The downstream component of this valve has not been inspected, but shows a high remaining service life. See Note 1.
CND FWH 25 TO HEADER	CD82-2-FWH 25B to HDR	CD-VALVE-CD-18-1	-84784	The downstream component has been inspected and does not have significant wear. See Note 1.
CND FWH 25 TO HEADER	CD82-3-FWH 25C to HDR	CD-VALVE-CD-18-2	-84784	The downstream component of this valve has not been inspected, but shows a high remaining service life. See Note 1.

WRA Run Name	Line Name	Component Name[2]	Time to Tcrit (hrs)	Explanation
FW BFP TO FWH 26	FW71-1-BFP21 DISCH to HDR	BFD VALVE-BFD-1	-206603	The downstream component has been inspected and does not have significant wear. See Note 1.
FW BFP TO FWH 26	FW71-1-BFP21 DISCH to HDR	BFD VALVE-BFD-2-21	-206423	The downstream component has been inspected and does not have significant wear. See Note 1.
FW BFP TO FWH 26	FW72-1-BFP22 DISCH to HDR	**BFD-15**	-101874	Further evaluation of this elbow is required to determine the validity of the CHECWORKS prediction.
FW BFP TO FWH 26	FW72-1-BFP22 DISCH to HDR	**BFD-18**	-101874	Further evaluation of this elbow is required to determine the validity of the CHECWORKS prediction.
FW BFP TO FWH 26	FW72-1-BFP22 DISCH to HDR	**BFD-19**	-101874	Further evaluation of this elbow is required to determine the validity of the CHECWORKS prediction.
FW BFP TO FWH 26	FW72-1-BFP22 DISCH to HDR	**BFD-20**	-101874	Further evaluation of this elbow is required to determine the validity of the CHECWORKS prediction.
FW BFP TO FWH 26	FW72-1-BFP22 DISCH to HDR	BFD-VALVE-BFD-1-1	-206603	The downstream component of this valve has not been inspected, but shows a high remaining service life. See Note 1.
FW BFP TO FWH 26	FW72-1-BFP22 DISCH to HDR	BFD-VALVE-BFD-2-22	-206423	The downstream component of this valve has not been inspected, but shows a high remaining service life. See Note 1.
FW BFP TO FWH 26	FW73-1-BFPHDR to FWH26ABC	**BFD-24**	-145112	Further evaluation of this elbow is required to determine the validity of the CHECWORKS prediction.
FW BFP TO FWH 26	FW73-1-BFPHDR to FWH26ABC	**BFD-27**	-145112	Further evaluation of this elbow is required to determine the validity of the CHECWORKS prediction.

WRA Run Name	Line Name	Component Name[2]	Time to Tcrit (hrs)	Explanation
FW BFP TO FWH 26	FW73-1-BFPHDR to FWH26ABC	BFD-27P	-84991	The downstream end of this pipe has been inspected as the upstream extension of BFD-28, but this does not cover enough of the pipe to characterize any wear. Further evaluation of this pipe is required to determine the validity of the CHECWORKS prediction.
FW BFP TO FWH 26	FW73-1-BFPHDR to FWH26ABC	BFD-29P	-84991	Further evaluation of this pipe is required to determine the validity of the CHECWORKS prediction.
FW BFP TO FWH 26	FW73-1-BFPHDR to FWH26ABC	BFD-32P	-84991	Further evaluation of this pipe is required to determine the validity of the CHECWORKS prediction.
FW BFP TO FWH 26	FW73-3-BFPHDR to FWH26C	BFD-41	-67734	Further evaluation of this elbow is required to determine the validity of the CHECWORKS prediction.
FW BFP TO FWH 26	FW73-3-BFPHDR to FWH26C	BFD-VALVE-BFD-3-2	-191886	The downstream component of this valve has not been inspected, but shows a high remaining service life. See Note 1.
FW BFP TO FWH 26	FW73-5-BFPHDR to FWH26B	BFD-37	-67734	Further evaluation of this elbow is required to determine the validity of the CHECWORKS prediction.
FW BFP TO FWH 26	FW73-5-BFPHDR to FWH26B	BFD-VALVE-BFD-3-1	-191886	The downstream component of this valve has not been inspected, but shows a high remaining service life. See Note 1.
FW BFP TO FWH 26	FW73-6-BFPHDR to FWH26A	BFD-36N	-98935	This component has been inspected. Future inspections should be governed by the analysis of the current inspection data.
FW BFP TO FWH 26	FW73-6-BFPHDR to FWH26A	BFD-VALVE-BFD-3	-191886	The downstream component of this valve has not been inspected, but shows a high remaining service life. See Note 1.

WRA Run Name	Line Name	Component Name[2]	Time to Tcrit (hrs)	Explanation
FW FWH 26 TO STM GEN	FW74-1-FWH26A to DISHDR	BFD-55N	-135548	Further evaluation of this nozzle is required to determine the validity of the CHECWORKS prediction.
FW FWH 26 TO STM GEN	FW74-1-FWH26A to DISHDR	BFD-VALVE-BFD-4	-193829	The downstream component has been inspected and does not have significant wear. See Note 1.
FW FWH 26 TO STM GEN	FW74-2-FWH26B to DISHDR	BFD-51N	-135548	Further evaluation of this nozzle is required to determine the validity of the CHECWORKS prediction.
FW FWH 26 TO STM GEN	FW74-2-FWH26B to DISHDR	BFD-54	-79402	Further evaluation of this elbow is required to determine the validity of the CHECWORKS prediction.
FW FWH 26 TO STM GEN	FW74-2-FWH26B to DISHDR	BFD-VALVE-BFD-4-1	-193829	The downstream component has been inspected and does not have significant wear. See Note 1.
FW FWH 26 TO STM GEN	FW74-4-FWH26C to DISHDR	BFD-47N	-135548	Further evaluation of this nozzle is required to determine the validity of the CHECWORKS prediction.
FW FWH 26 TO STM GEN	FW74-4-FWH26C to DISHDR	BFD-49	-79402	Further evaluation of this elbow is required to determine the validity of the CHECWORKS prediction.
FW FWH 26 TO STM GEN	FW74-4-FWH26C to DISHDR	BFD-50	-79402	Further evaluation of this elbow is required to determine the validity of the CHECWORKS prediction.
FW FWH 26 TO STM GEN	FW74-4-FWH26C to DISHDR	BFD-VALVE-BFD-4-2	-193829	The downstream component of this valve has not been inspected, but shows a high remaining service life. See Note 1.
FW FWH 26 TO STM GEN	FW74-5-FWH26 to DISHDR	BFD-62	-148808	Further evaluation of this elbow is required to determine the validity of the CHECWORKS prediction.
FW FWH 26 TO STM GEN	FW74-5-FWH26 to DISHDR	BFD-62P US	-97615	Further evaluation of this pipe is required to determine the validity of the CHECWORKS prediction.

WRA Run Name	Line Name	Component Name[2]	Time to Tcrit (hrs)	Explanation
FW FWH 26 TO STM GEN	FW75-1-DISHDR to SG21	BFD-VALVE-BFD-5	-185157	The downstream component has been inspected and does not have significant wear. See Note 1.
FW FWH 26 TO STM GEN	FW75-1-DISHDR to SG21	BFD-VALVE-BFD-6	-191922	The downstream component is another valve. Measured wear in on the downstream valve will not be an accurate prediction of wear in this valve. See Note 1.
FW FWH 26 TO STM GEN	FW75-1-DISHDR to SG21	BFD-VALVE-BFD-7	-191918	The downstream component of this valve has not been inspected, but shows a high remaining service life. See Note 1.
FW FWH 26 TO STM GEN	FW75-1-DISHDR to SG21	BFD-VALVE-FCV-417	-185157	The downstream component has been inspected and does not have significant wear. See Note 1.
FW FWH 26 TO STM GEN	FW76-1-DISHDR to SG22	BFD-VALVE-BFD-5-1	-185157	The downstream component of this valve has not been inspected, but shows a high remaining service life. See Note 1.
FW FWH 26 TO STM GEN	FW76-1-DISHDR to SG22	BFD-VALVE-BFD-6-1	-191922	The downstream component is another valve. Measured wear in on the downstream valve will not be an accurate prediction of wear in this valve. See Note 1.
FW FWH 26 TO STM GEN	FW76-1-DISHDR to SG22	BFD-VALVE-BFD-7-1	-191918	The downstream component of this valve has not been inspected, but shows a high remaining service life. See Note 1.
FW FWH 26 TO STM GEN	FW76-1-DISHDR to SG22	BFD-VALVE-FCV-427	-185157	The downstream component has been inspected and does not have significant wear. See Note 1.
FW FWH 26 TO STM GEN	FW77-1-DISHDR to SG24	BFD-106	-172282	This component has been inspected. Future inspections should be governed on the analysis of the current inspection data.
FW FWH 26 TO STM GEN	FW77-1-DISHDR to SG24	BFD-VALVE-BFD-5-3	-185157	The downstream component of this valve has not been inspected, but shows a high remaining service life. See Note 1.

WRA Run Name	Line Name	Component Name[2]	Time to Tcrit (hrs)	Explanation
FW FWH 26 TO STM GEN	FW77-1-DISHDR to SG24	BFD-VALVE-BFD-6-3	-191922	The downstream component is another valve. Measured wear in on the downstream valve will not be an accurate prediction of wear in this valve. See Note 1.
FW FWH 26 TO STM GEN	FW77-1-DISHDR to SG24	BFD-VALVE-BFD-7-3	-191918	The downstream component has been inspected and does not have significant wear. See Note 1.
FW FWH 26 TO STM GEN	FW77-1-DISHDR to SG24	BFD-VALVE-FCV-447	-185157	The downstream component has been inspected and does not have significant wear. See Note 1.
FW FWH 26 TO STM GEN	FW78-1-DISHDR to SG23	BFD-VALVE-BFD-5-2	-185157	The downstream component of this valve has not been inspected, but shows a high remaining service life. See Note 1.
FW FWH 26 TO STM GEN	FW78-1-DISHDR to SG23	BFD-VALVE-BFD-6-2	-191922	The downstream component is another valve. Measured wear in on the downstream valve will not be an accurate prediction of wear in this valve. See Note 1.
FW FWH 26 TO STM GEN	FW78-1-DISHDR to SG23	BFD-VALVE-BFD-7-2	-191918	The downstream component has been inspected and does not have significant wear. See Note 1.
FW FWH 26 TO STM GEN	FW78-1-DISHDR to SG23	BFD-VALVE-FCV-437	-185157	The downstream component has been inspected and does not have significant wear. See Note 1.
FWH 24 DRNS DSCV	HD21A-2-FWH24A CV to FWH23A	4EXD-VALVE- LCV-1115	-187152	The downstream component has been replaced since the last inspection. Measured wear on the downstream component will not be an accurate estimate of wear on the valve. See Note 1.
FWH 24 DRNS DSCV	HD22A-2-FWH24B CV to FWH23B	4EXD-VALVE-LCV-1116	-187152	The downstream component has been inspected and does not have significant wear. See Note 1.

WRA Run Name	Line Name	Component Name[2]	Time to Tcrit (hrs)	Explanation
FWH 24 DRNS DSCV	HD23A-2-FWH24C CV to FWH23C	4EXD-VALVE-LCV-1117	-187152	The downstream component has been inspected and does not have significant wear. See Note 1.
FWH 24 DRNS USCV	HD21A-1-FWH24A to CV	4EXD-VALVE-4EX-8	-127706	The downstream component has been inspected and does not have significant wear. See Note 1.
FWH 24 DRNS USCV	HD22A-1-FWH24B to CV	4EXD-VALVE-4EX-8-1	-127706	The downstream component has been inspected and does not have significant wear. See Note 1.
FWH 24 DRNS USCV	HD23A-1-FWH24C to CV	**4EXD-60P**	-72796	Further evaluation of this pipe is required to determine the validity of the CHECWORKS prediction.
FWH 24 DRNS USCV	HD23A-1-FWH24C to CV	4EXD-VALVE-4EX-8-2	-127706	The downstream component has been inspected and does not have significant wear. See Note 1.
HTR DRN PMP DISCH	HD20-1-HDP21 to BFP SUCTION	**HD-8N**	-71281	Further evaluation of this nozzle is required to determine the validity of the CHECWORKS prediction.
HTR DRN PMP DISCH	HD20-1-HDP21 to BFP SUCTION	HD-VALVE-HD-1	-112198	The downstream component has been inspected and does not have significant wear. See Note 1.
HTR DRN PMP DISCH	HD20-1-HDP21 to BFP SUCTION	HD-VALVE-HD-2	-112198	The downstream component has been inspected and does not have significant wear. See Note 1.
HTR DRN PMP DISCH	HD20-1-HDP21 to BFP SUCTION	HD-VALVE-LCV-1127	-196555	The downstream component has been inspected and does not have significant wear. See Note 1.
HTR DRN PMP DISCH	HD20-2-HDP22 to BFP SUCTION	HD-VALVE-HD-1-1	-112198	The downstream component has been inspected and does not have significant wear. See Note 1.
HTR DRN PMP DISCH	HD20-2-HDP22 to BFP SUCTION	HD-VALVE-HD-2-1	-112198	The downstream component of this valve has not been inspected, but shows a high remaining service life. See Note 1.

WRA Run Name	Line Name	Component Name[2]	Time to Tcrit (hrs)	Explanation
HTR DRN PMP DISCH	HD20-2-HDP22 to BFP SUCTION	HD-VALVE-LCV-1127A	-196555	The downstream component has been inspected and does not have significant wear. See Note 1.
MS - HP TURB TO MOPS	MS-HP Turbine to MPS A	TEMP01	-218718	This is a temporary component. This line was recently reclassified from Susceptible Non-Modeled to Modeled. CHECWORKS predictions will be inaccurate until the line is properly modeled and until inspections are used to calibrate the WRA run.
MS - HP TURB TO MOPS	MS-HP Turbine to MPS B	TEMP02	-218718	This is a temporary component. This line was recently reclassified from Susceptible Non-Modeled to Modeled. CHECWORKS predictions will be inaccurate until the line is properly modeled and until inspections are used to calibrate the WRA run.
MS - HP TURB TO MOPS	MS-HP Turbine to MPS C	TEMP03	-218718	This is a temporary component. This line was recently reclassified from Susceptible Non-Modeled to Modeled. CHECWORKS predictions will be inaccurate until the line is properly modeled and until inspections are used to calibrate the WRA run.
MS - HP TURB TO MOPS	MS-HP Turbine to MPS D	TEMP04	-218718	This is a temporary component. This line was recently reclassified from Susceptible Non-Modeled to Modeled. CHECWORKS predictions will be inaccurate until the line is properly modeled and until inspections are used to calibrate the WRA run.
PD - MPS TO SEP TNK A	PD-MPS A to Separating Tk A	TEMP07	-162782	This is a temporary component. This line was recently reclassified from Susceptible Non-Modeled to Modeled. CHECWORKS predictions will be inaccurate until the line is properly modeled and until inspections are used to calibrate the WRA run.

WRA Run Name	Line Name	Component Name[2]	Time to Tcrit (hrs)	Explanation
PD - MPS TO SEP TNK A	PD-MPS B to Separating Tk A	TEMP08	-162782	This is a temporary component. This line was recently reclassified from Susceptible Non-Modeled to Modeled. CHECWORKS predictions will be inaccurate until the line is properly modeled and until inspections are used to calibrate the WRA run.
PD - MPS TO SEP TNK A	PD-MPS C to Separating Tk B	TEMP09	-162782	This is a temporary component. This line was recently reclassified from Susceptible Non-Modeled to Modeled. CHECWORKS predictions will be inaccurate until the line is properly modeled and until inspections are used to calibrate the WRA run.
PD - MPS TO SEP TNK A	PD-MPS D to Separating Tk B	TEMP10	-162782	This is a temporary component. This line was recently reclassified from Susceptible Non-Modeled to Modeled. CHECWORKS predictions will be inaccurate until the line is properly modeled and until inspections are used to calibrate the WRA run.
RHTR DTK A DRN DSCV	MSD45B-1-RHDT21A CV to FWH26	MS-1A-VALVE-LCV-1104	-142790	The downstream component has been replaced with FAC-resistant material since the last inspection. Measured wear on the downstream component will not be an accurate estimate of wear on the valve. See Note 1.
RHTR DTK A DRN DSCV	MSD46A-2-RHDT22A CV to FWH26	MS-2A-VALVE-LCV-1104A	-129069	The downstream component has been replaced with FAC-resistant material since the last inspection. Measured wear on the downstream component will not be an accurate estimate of wear on the valve. See Note 1.

WRA Run Name	Line Name	Component Name[2]	Time to Tcrit (hrs)	Explanation
RHTR DTK A DRN DSCV	MSD47-2-RHDT23A CV to FWH26	MS-3A-VALVE-LCV-1104B	-142790	The downstream component has been replaced with FAC-resistant material since the last inspection. Measured wear on the downstream component will not be an accurate estimate of wear on the valve. See Note 1.
RHTR DTK B DRN DSCV	MSD48B-1-RHDT21B CV to FWH26	MS-1B-VALVE-LCV-1105	-149388	The downstream component has been replaced with FAC-resistant material since the last inspection. Measured wear on the downstream component will not be an accurate estimate of wear on the valve. See Note 1.
RHTR DTK B DRN DSCV	MSD50C-1-RHDT23B CV to FWH26	MS-3B-VALVE-LCV-1105B	-149388	The downstream component has been replaced with FAC-resistant material since the last inspection. Measured wear on the downstream component will not be an accurate estimate of wear on the valve. See Note 1.

Note 1: UT examination on valves is a best effort exam due to the valve's contour or unparallel surface causing the information gathered to be unreliable or erroneous; as a consequence, inspections on valves are performed under the preventive maintenance (PM) program or the corrective action program. The piping downstream of the valve can be inspected and used to get an indication of the amount of relative wear in the valve. Since there is no UT or measured wear data in CHECWORKS for predicting valve service life, the result will often show a negative service life.

Note 2: Component names in bold, red in the table require FAC Program evaluation.

Attachment A

Referenced Correspondence and Communications

Reference 7.8.1

Email from Harry Hartjen (IPEC) to Mike Aplington (CSI), dated 8/8/2006, regarding replacements during 2R17, CSI Doc. No. 071703.

Mike:

The two (2) extraction steam lines to the 22C feedwater heater is being replaced with chrome moly P22. Attached is a drawing showing the components making up these lines. Replacement date will be the last day of the outage

In addition, I have attached the marked up sketches showing the other additions to the model; 21, 22, 23 and 24 extraction lines in the condenser anf the feedwater tees upstream of the feedwater reg valves.

Harry G. Hartjen
Engineering Code Programs
Entergy Nuclear - Indian Point Energy Center
Phone: 914-271-7239
hhartje@entergy.com

From: Mike Aplington [mailto:maplington@csitechnologies.com]
Sent: Tuesday, August 08, 2006 2:19 PM
To: Hartjen, Harry G
Subject: Replacement Questions

Harry,

I have a few questions regarding 2R17 replacements. I am assuming that the line to LP FWH 22C was the only thing replaced, and that this information has not yet been entered into the CW model.

1) Were all three components (outlet nozzle, 45 deg elbow, inlet nozzle) in this line replaced?

2) What material were they replaced with?

3) On what date were they replaced? Can we assume the last day of the outage?

Thanks.

Mike Aplington

Reference 7.8.2

Email from Ian Mew (IPEC) to Brian Trudeau (CSI) regarding IP2 Cycle 18 operating time, 5/21/2008, CSI Doc. No. 0705.101.13.

IP2 CYCLE 18

Initial Criticality (Date & Time) =	May 19,2006 @ 0240 hours
Initial Sync. (Date & Time) =	May 19,2006 @ 1836 hours
Turbine Shutdown (Date & Time) =	March 23,2008 @ 2216 hours
Reactor Shutdown (Date & Time) =	March 23,2008 @ 2216 hours
Gross Generation (MWhrs.) =	16,786,307
Net Generation (MWhrs.) =	16,239,871
Reactor Criticality (Hours) =	16,137.79
Turbine Sync. (Hours) =	16,036.56
Turbine Availability (Percent) =	99.12
Capacity Factor MDC(Percent) =	100.60
Gross Heat Rate (Btu/GMWhrs.) =	7,930
Net Heat Rate (Btu/NMWhrs.) =	8,197
Total Cycle Period (Hours) (from Initial Sync.) =	16,179.67
CYCLE EFPD's =	663.130

From: Brian Trudeau [mailto:btrudeau@csitechnologies.com]
Sent: Monday, May 12, 2008 1:12 PM
To: Mew, Ian

Cc: Daniel Poe; David Windhorst; Robert M. Aleksick
Subject: Status of Indian Point SFA Reports

Ian,

Per our discussion today, you have possession of the most recent model predictions for Unit 3 in the SFA Pass 2 report that was issued for use on Nov 14, 2007. For Unit 2, you will have this information following completion of the planned Pass 2 project (contract is currently in final approval stage at IPEC). CSI won't send any Pass 2 reports at this time as the Unit 3 model is already up to date and the Unit 2 model is planned for update in the near future.

As you requested, here is the input data we need for a Pass 2. As part of project there will be a formal input request for this data and more detail given. This should give you sufficient information to start.

- Chemistry Data (see attached spreadsheet for example of what Harry sent last time)
- Plant period (online hours, start/end dates for last outage and cycle)
- Replacements from last outage (material, size, components, etc.)
- UT Inspection reports/grid sketches (hardcopy or electronic)
- Electronic UT text files
- Outage summary report (or similar if exists) – typically good source for inspection scope and replacements
- Current U2 SFA Model
- Copy of current FAC Manager database

I look forward to hearing from you about the IPEC Unit 2 SFA model update project.
Thank you,

Brian L. Trudeau
Engineering Supervisor
CSI Technologies, Inc.
(847) 836-3000 ext. 717

Reference 7.8.3

Email from Ian Mew (IPEC) to Ryan Doremus (CSI) regarding IP2 Cycle 19 operating time, 5/25/2010, CSI Doc. No. 0705.107.09.

As requested

Ian D. Mew

IPEC FAC Engineer

Phone 914-827-7741

From: Macina, Ronald
Sent: Tuesday, May 25, 2010 2:56 PM
To: Mew, Ian
Subject: 2C19 Service Hours (Hours Turbine on-Line)

Ian,
As requested:

2C19 had 16,535.58 Period Hours
and 16,395.07 Service Hours or a cycle availability factor of 99.15%.

Thanks,
Ron