07-55-91

DETAILED CONTROL ROOM DESIGN REVIEW
FINAL SUMMARY REPORT
PROGRAM IMPLEMENTATION
VOLUME 1

For:

Nine Mile Point Unit 2

Submitted by:

Niagara Mohawk Power Corporation

September 1985

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NIAGARA MOHAWK

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September 16, 1985
(NMP2L 0488)

Mr. Walter Butler, Chief
Licensing Branch No. 2
U.S. Nuclear Regulatory Commission
Washington, DC 20555

Dear Mr. Butler:

Re: Nine Mile Point Unit 2
Docket No. 50-410

Enclosed for your information are ten copies of the Detailed Control Room Design Review Final Summary Program Implementation Report. This report is provided to close safety evaluation report confirmatory item No. 18.

Very truly yours,

CVMangan

C. V. Mangan
Senior Vice President

NLR/rla
Enclosure
0941G

xc: R. A. Gramm, NRC Resident Inspector
Project File (2)

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1.0 OBJECTIVES AND BACKGROUND

Niagara Mohawk Power Corporation (NMPC) initiated a control room review program for the Nine Mile Point Unit 2 (NMP-2) power station in response to NUREG-0737 Supplement 1 and earlier guidance, which requires that all licensees and applicants for operating licenses (OL) conduct a Detailed Control Room Design Review (DCRDR) to identify and correct design deficiencies. NUREG-0700, "Guidelines for Control Room Design Review", issued in September, 1981, provides human engineering guidelines to assist each licensee and applicant in performing a detailed control room review. The NMPC program emphasizes determination of the adequacy of information available to the operator to effectively mitigate emergency conditions. The review program is also designed to correct human factors problems and to improve controls and displays determined to be discrepant from good human factors practices. The DCRDR process, as suggested by NUREG-0700, is divided into four major activities: planning; review; assessment and implementation; and reporting. This report reflects the human engineering processes developed to address the DCRDR requirements.

1.1 Reporting Requirements for the DCRDR

NUREG 0737 Supplement 1 requires the submittal of a Program Plan containing the following major elements: (1) a qualified multidisciplinary review team; (2) use of function and task analysis; (3) control room inventory comparison; (4) control

room survey; (5) Human Engineering Observation (HEO) assessment; and (6) verification of design improvements.

The Program Plan, which describes how each of the requirements listed above would be (or had been) accomplished, was submitted to the Nuclear Regulatory Commission (NRC) in June, 1984.

1.2 Summary of Supplement 1 Human Factors Activities to be Performed

The adequacy of the control room was reviewed to determine whether it could provide the system status information, control capabilities, feedback and performance aids necessary for personnel to accomplish their functions and tasks effectively. In addition, characteristics outside the scope of the NRC's DCRDR requirements for the existing control room's instrumentation, controls, other equipment and physical arrangements were identified that either add to or detract from operator performance. Six review processes were used to analyze the man/machine interface within the control room: (1) operating experience review (historical document review and operator survey); (2) system review, function review and task analysis; (3) control room inventory; (4) control room checklist supplement; (5) verification of task performance capabilities; and (6) validation of control room functions.

The first three are foundation processes in which frames of reference and benchmarks for discrepancy identification were established. The last three are investigative processes in which the benchmarks were applied and HEOs identified. Activities performed during these two groups of processes are explained below:

1. Foundation Processes. Industry-wide reviews of Licensee Event Reports (LERs) for similarly designed General Electric-5 (GE-5) plants were analyzed. Since

these reports have generic applicability, they were used to identify conditions which affect the probability for operator error and the safe operation of the generating station. In addition, operating personnel completed questionnaires and were interviewed to obtain feedback based on previous operating experience. The procedures used in the Historical Document Review and the Control Room Operator Survey are described in Chapters 4.0 and 5.0, respectively.

A control room inventory was conducted on a system-by-system basis to identify all instrumentation, controls, and equipment within the control room. This information was compared to the requirements identified through the analysis of operator tasks. The methodology performed during the inventory phase is described in Chapter 6.0.

A systems review and function allocation review was conducted. Operator task lists were prepared and used during the task analysis and validation of the control room capabilities. These analyses established the information flow and control requirements between the operator and the control boards. A summary of the approach is included in Chapter 7.0.

2. Investigative Processes. Using the foundation processes as a basis, the investigative processes provided the appropriate information necessary to determine the adequacy of the control room from a human engineering perspective. Deficiencies were identified and documented during this part of the review. An explanation of the control room checklist survey is contained in Chapter 8.0. This step was followed by a verification of task performance capabilities which included: (1) availability and adequacy of the instrumentation and controls, and

(2) efficient interface between the operator and the control board. A summary of verification is explained in Chapter 9.0.

Subject to the verification process, a validation of the control room functions, was conducted. This procedure determined whether the functions allocated to the operating crew could be accomplished within the structure of the defined emergency operating procedures and the design of the existing control room. Validation is described in Chapter 10.0.

1.3 Assessment, Implementation and Scheduling

Upon completion of the Supplemental Review Processes, an examination of the HEOs was conducted by the Human Factors Engineering Review Team, described in Chapter 11.0. This review served to identify the significance of each of the HEOs, as well as to provide the review team with an opportunity for determining corrective actions, where appropriate. A schedule was also developed that will implement the human engineering resolutions.

1.4 Summary Report

This report is submitted at the conclusion of the NMP-2 DCRDR. The report: (1) summarizes the overall review process; (2) describes the identified HEOs; (3) describes human engineering improvements implemented during the course of this and previous reviews; (4) identifies any proposed improvements and their schedules for implementation; and (5) discusses integration of DCRDR activities with other NUREG-0737 Supplemental Requirements.

1.5 References

Additional information concerning objectives and background for the DCRDR can be found in the following document:

Nine Mile Point Nuclear Station - Unit 2. Program Plan Report Detailed Control Room Design Review. Lycoming, New York. June, 1984.

1.6 Summary of Past NMP-2 Human Factors-Related Activities

Historically, Niagara Mohawk has had a strong interest in human factors. This was developed over several years of experience in the design of fossil plants. In the 1960s, human factors was actively applied to our Nine Mile Point Unit 1 Nuclear Plant.

Since conceptual design, the Unit 2 control room was reviewed from a human factors perspective. In the late 1970s, System Engineers and Operators reviewed full-size mock-ups prior to the fabrication of the panels. In 1982, a preliminary human factors review was conducted using methodology developed by the Control Room Improvements Committee of the BWR Owners' Group (BWROG). A review team comprised of Operations and Engineering personnel from three utilities performed the evaluation, with the assistance of a human factors specialist and representatives from the General Electric Company.

The scope of this preliminary review was defined so as to be commensurate with the manufacturing status of the control panels, concentrating primarily upon panel design, instrumentation, hardware and annunciators. Because the panels were staged in the factory at the time of the survey, it was not possible to evaluate some sections of the BWR Owners' Group Control Room Survey Checklists.

Each panel was compared to a set of design criteria in checklist form developed from recognized human factors standards. These checklists provided detailed guidelines for panel layout, panel design, instrumentation, hardware and annunciators. In addition, task analyses of the BWROG Emergency Procedure Guidelines were developed and used to evaluate the adequacy of control room instrumentation.

A preliminary prioritization of potential enhancements was also included in the form of Evaluation Products. These products have been derived from two numerical rating factors, one indicating the degree to which the panel under consideration complies with the checklist criterion, the second representing the relative likelihood that noncompliance with that item could cause or contribute to operator error. The products of the two factors are then categorized as follows:

- 9-12 - Modifications are recommended
- 8 - Modification should be strongly considered
- 6 - Modification should be considered
- 4 - Modifications may be beneficial in some cases

Final recommendations for improvements were determined by Niagara Mohawk in an item-by-item review of these concerns as part of an integrated approach to control room upgrades. The review included an analysis of the safety significance and frequency of use of the components and systems involved, the consequences of operator retraining required by the change and the engineering practicalities of instituting the change. Input was obtained from operations, engineering, training and human factors specialists.

As a direct result of this review, major human factors modifications were incorporated in the panels. In addition to improved demarcation and enhancements, some 391 devices were

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relocated, 762 labels were added and/or revised and 168 spare devices were removed from the panels.

With this strong history of human factors involvement and the comprehensive NUREG-0700 Program recently conducted, we are confident that the Nine Mile Unit 2 control room meets the demand for safe, reliable plant operations.

2.0 MANAGEMENT AND STAFFING

The purpose of the DCRDR was to identify and correct those features in the control room environment which could potentially detract from the safe and efficient operation of the facility. The DCRDR activities were implemented by experienced operations, nuclear systems, and human factors engineering personnel.

2.1 Utility Management Responsibilities

Management responsibilities included the following:

1. Analysis of objectives and constraints
2. Commitment of resources
3. Selection of review team personnel
4. Assurance that the review team functions in accordance with all procedures, directives, and commitments applicable to the work being performed by the review team
5. Integration of the DCRDR with other projects involving human factors concerns
6. Interface among the review team and vendors, consultants, and state and federal agencies

Management responsibilities also included definition of responsibilities of utility and contractor personnel associated with the review.

Upon completion of the DCRDR, the review team prepared a comprehensive report which listed all discrepancies found, recommendations for their correction, and appropriate supporting data including the prepared schedule for implementation. Justifications for HEOs with safety significance to be left uncorrected or partially corrected were also included. The report was then presented to management for review and subsequent submittal to the NRC.

2.2 DCRDR Organization

The DCRDR organization was structured as shown in Figure 2-1. The review team leader reported directly to the management team and coordinated the overall review team effort. The Stone & Webster engineer, General Electric engineer, and operating personnel provided support for the human factors engineers (consultant) performing the review team activities (survey, interviews, verification, report writing, etc.). The consultant provided a human factors specialist to direct the day-to-day activities of the human factors engineers. He reported to the team leader for overall coordination.

The team leader was responsible for presenting the recommended changes, task completion reports, and final report to the management team for their review. He also was responsible for providing the recommended changes and final report to the executive team for their approval.

An additional independent Human Factors Group is on contract with Niagara Mohawk on an as-needed basis. This group provided additional perspectives and guidance on various stages of the DCRDR, particularly in assessment planning. It is expected that this group will continue to provide services on an ad hoc basis for the remainder of the DCRDR.

EXECUTIVE TEAM

Vice President, T. E. Lempges Nuclear Generation	APPROVE: Recommended Changes Final Report
NMP-2 Project Director D. L. Quamme	

MANAGEMENT TEAM*

Manager, Nuclear Licensing (A. F. Zallnick/N. Rademacher)	REVIEW: (PRELIMINARY AND FINAL) Recommended Changes Task Completion Reports Final
Manager, Project Engineering (J. P. Thomas/D. L. Pike) Superintendent Operations (R. B. Abbott) Assistant Project Engineer-SWEC (A. Lattie/E. Hubner) Human Factors-ARD (R. Shannon) Superintendent Training (K. Zollitsch/G. Weimer)	

REVIEW TEAM**

Team Leader/Project Engineer (A.G. Vierling) Human Factors Engineers-ARD (D. Taylor) BOP Systems Engineer Coordinator - SWEC (P. Buttacovoli) NSSS Systems Engineer Coordinator - GE (D. Rennels) Station Operations Coordinator (R. Gayne) Training Department Coordinator (M. Dooley) Licensing Coordinator (N. Rademacher) SPDS Coordinator-SWEC (M. I. Schneider) EOP Coordinator (M. Colomb)	Develop and/or Perform: Program Plan Survey Inventory Task Analysis Verification Validation Assessment and Improvement Recommended Changes Task Completion Report Final Report

*Team Members or Designee
**Participation on an as-need basis

Figure 2-1. Organization Chart

2.3 Review Team Qualifications

Resumes for each member of the review and management teams are contained in Appendix A. Job descriptions of selected members of the review team, who interacted on a continual basis, are outlined below:

1. Review Team Leader. The review team had the review team leader as its key person. This individual provided the administrative and technical direction for the project and had responsibility for the project. Access to information, facilities, and individuals providing useful or necessary input to the team was coordinated by the review team leader. Because of his detailed knowledge of NMP-2 systems and methods, this individual provided a cohesive force for the various NMPC department personnel and vendor organizations involved with this project. Plant operations personnel provided input to the review team through contact with the review team leader.

2. Human Factors Engineer. The human factors engineer worked closely with the review team throughout each phase of the control room review and shared with the team the human factors technical leadership of the entire DCRDR project.

3. BOP Systems Engineer Coordinator - SWEC. This individual assisted in the identification of BOP system design goals and functions and served as the review team expert on the factors affecting system design decisions. During the assessment phase, which extended over a 12-week period and covered several BOP systems, this coordinator attended the daily assessment meetings and interfaced directly with the Stone

and Webster system engineers on an as-needed basis. He was provided management support and authorization to assure priority and timely response.

4. NSSS Systems Engineer Coordinator - GE. The responsibility of this engineer was to assist in the identification of NSSS design goals and functions and to serve as the review team expert on the factors affecting NSSS design decisions.

5. Station Operations Coordinator. This individual assisted in identifying operator tasks and served as the review team expert on the operational constraints for manipulations of plant systems. He provided the necessary operations support for the various DCRDR activities by assigning and scheduling subject matter experts (reactor operators) when they were needed.

6. Training Department Coordinator. Provided support for the validation effort, made recommendations as to possible training fixes and improvements, and set up a vehicle to identify new HEOs. This vehicle is in the form of a log book in the training simulator, where operators, during training, may identify an HEO and have it submitted to Project Engineering for evaluation.

7. Licensing Coordinator. Integrated technical and scheduling concerns with the overall NMP-2 commitment.

8. SPDS Coordinator - SWEC. This position was especially useful due to the number of systems covered by the SPDS system. The coordinator provided technical input based on the integration of the various responsible parties.

9. Emergency Operating Coordinator. Provided technical expertise relative to the development of the EOPs. Integrated Task Analysis and HEO assessment with the requirements of the EOPs.

2.4 Team Responsibilities and Orientation

The review team had the full support of the management. In addition, they were given access to (1) all pertinent records including system descriptions, logic and flow diagrams, drawings and procedures, (2) necessary headquarters facilities (office services, communications, and computer services), and (3) appropriate areas of the plant through badging.

Each individual of the review team had to contribute an in-depth knowledge of specific topics to the team. It was important, however, that the review team was able to conduct the DCRDR from a common basis of understanding. Therefore, each member had to undergo an orientation program designed to provide a certain base level of knowledge, particularly of human factors and to acquaint each team member with the other disciplines represented on the team.

The orientation was presented by the NMPC Team Leader/Project Engineer (A. Vierling), ARD Human Factors Engineers (D. Taylor and R. Shannon), and ARD Vice President (R. Kershner). The topics covered during the orientation program and the approximate time spent on each are as follows:

- <u>Supplement I to NUREG-0737</u>. Provided an introduction to the DCRDR process and goals. A background of the systems analysis approach to be employed in the human factors engneering evaluation of the control room was discussed (15 minutes).

- Historical Review. Described documentation to be researched and the value and type of information to be obtained (15 minutes).

- Operator Survey. Described the questionnaire to be used and how the data is incorporated into DCRDR (15 minutes).

- Inventory/Task Analysis/Verification. Each of these procedures and methodologies were discussed as well as their relation to one another (45 minutes).

- Validation. The walk-through and talk-through procedures and video tape analysis were discussed (15 minutes).

- Checklist Survey. NUREG-0700 was discussed as the foundation of the checklist. Each section of the checklist and the areas of the control room covered were reviewed (15 minutes).

- HEDs/Assessment/Implementation. The process of writing HEDs, the assessment of their severity and the implementation of proposed changes was briefly discussed (30 minutes).

The orientation was attended by the following persons:

N. Rademacher	NMPC/Licensing
G. Weimer	NMPC/Training
R.B. Abbott	NMPC/Operations
A.G. Vierling	NMPC/Team Leader
E.M. Davis	NMPC/Operations
B. Tesoriero	NMPC/Operations
F. Conway	NMPC/Operations

F. Kane	NMPC/Operations
T. Bloom	G.E. Startup
D.F. Helms	G.E. Startup
A. Hwu	G.E. Startup
E. Hubner	SWEC/Management Team
D. Pike	NMPC/Management Team
M. Schneider	SWEC/SPDS Coordinator
R. Gayne	NMPC/Operations Coordinator
B. Wambsgan	NMPC Operations
T.E. Lempeges	NMPC Executive Team
P. Buttacavoli	SWEC BOP Systems Coordinator

3.0 DOCUMENTATION AND DOCUMENT CONTROL

This section describes the documentation system (input/output documents), and documentation management/control procedures which NMPC used to support the NMP-2 DCRDR.

From the beginning of the review, the team had at its disposal the following reference documents: System lists, system descriptions, piping and instrumentation drawings, control room floor plan, panel layout drawings, list of acronyms, abbreviations, samples of computer printouts, procedures (emergency, off-normal and operating), guidelines for procedural development, other human factors/control room studies.

As additional documents were acquired or written, they were added to the library.

3.1 Output Documentation

To facilitate systematizing and recording Control Room Design Reviews, a series of standard forms was developed. The following forms were used and they appear in their entirety in the Appendices of this report: Control Room Human Engineering Observation Record, Historical Report Problem Analysis Report, Sound Survey Record, Lighting Survey - Illuminance Record, Lighting Survey - Luminance and Reflectance Record, Humidity/Temperature Record, Air Velocity Survey Record, Control Room Design Review Operator Survey, Inventory Form, and Task Analysis Data Collection Form.

3.2 Document Control

NMPC recognized that at Unit 2, a data collection/analysis effort, such as that inherent in a DCRDR, could generate volumes of paperwork which need to be managed properly. Therefore, NMPC implemented a database management system (DBMS) to collect, update, analyze and provide the information necessary to fulfill the requirements of DCRDRs on a dedicated computer. Implementation of the DBMS minimized the number of manual transformation steps required in the data collection/analysis effort. Furthermore, it afforded the DCRDR team the capability of real-time data analysis. Through the use of the DBMS parameters, any number or combination of data points was accessed and analyzed on an as-needed basis.

3.3 Database Management System

The DBMS was implemented on a VAX 11/730 using INFO/INFO-TEXT. It consists of a master program with memory storage devices to hold the data extracted from various source documents. Because manual handling of data is largely eliminated after data is entered into the system, the DBMS greatly reduced duplication of efforts, document loss and errors resulting from unnecessary handling of data.

After the DBMS was implemented, a series of data files and records was created using information derived from the various source documents. Each source document contained specific forms, charts, schedules, etc., required for the DCRDR and each constituted a single data file. Data files, in turn, comprised individual records which represent the specific parameters contained in the file forms, charts, etc. The file then served as a model of the document from which it was created, as well as an area to store data records. The source documents included those reports and forms listed previously in this

chapter. To avoid file damage or unauthorized data manipulation, access to the DBMS was restricted by limiting user training and by issuing passwords to a limited number of users.

One especially pertinent use of the DBMS was in determining the cumulative effect of HEOs. After all HEOs had been identified, a computer sort was generated which produced a listing of HEOs by type of fix. This listing was reviewed and the cumulative effect of HEOs were assessed.

4.0 HISTORICAL DOCUMENT REVIEW

4.1 Introduction

In the nuclear power industry, human error can combine with improper design features and lead to unacceptable consequences. Fortunately in the industry, instances of past human performance error and equipment/design arrangement problems are documented in plant and industry records and can be used as a database for recommending design improvements. This document presents the approach that was used to access archival information and identify areas of potential human performance problems at NMP-2 as well as the results based on this review and analysis.

Specifically described in this document are the approaches that were used to: (1) identify, collect and select historical reports for review; (2) review and analyze the reports; and (3) document and report the results of the review and analysis. The review and analysis were conducted by a Human Factors Specialist (HFS) from ARD Corporation and a Subject Matter Expert (SME) from the DCRDR team.

4.2 Identifying, Collecting and Selecting Historical Reports

NMPC has a convenient industry-wide source of historical reports - the Licensee Event Report (LER). Since NMP-2 does not have an operating history, no in-house reports were reviewed. Similar plants (LaSalle-1, LaSalle-2, Limerick-1, Susquehanna-2, WNP-2) were included in the review.

Reports that met one or more of the above criteria were retained for further analysis.

4.3 Report Review and Analysis

For every report that cleared the initial screening, a Problem Analysis Report (PAR) was compiled. The two-page PAR, shown in Appendix B, was used to record the following information: investigators' names, station and unit, event date, report type and number, operating status of plant, circumstances and events leading to the problem, nature of the problem, steps taken to correct or alleviate the problem, outcome, corrective measures undertaken, and human performance problems associated with the event.

With the assistance of the SME, the HFS reviewed each report to determine whether the event was applicable to NMP-2. In the cases where the systems or equipment were different at NMP-2, the report was not considered applicable. For each event determined applicable to NMP-2, the second page of the PAR was completed. The information completed at this time included: (1) areas in which the event is applicable to NMP-2; (2) corrective actions taken at the plant under review; (3) unresolved discrepancies (if any); and (4) HEO number (where applicable).

4.4 Result Documentation and Reporting

The PAR constitutes the primary document for this aspect of the DCRDR process and contains pertinent information from the analyzed report. In addition, when the recommendations generated entailed panel alterations, panel enhancements, training revisions or additions, operating procedure modifications and/or administrative procedure modifications, the apparent fundamental problem and its recommended corrective

LER information is stored in an NRC computerized database and includes all Reportable Occurrences (ROs) to the NRC. Licensees are required to submit these reports to comply with federal regulations. The database is set up to provide ease in obtaining information regarding the incidents.

Since all LERs are submitted to the Institute for Nuclear Power Operations (INPO), an LER sort was obtained from the INPO database. The request was limited to reports of those events related to personnel error which occurred in GE-5 plants over the past five years (January, 1979-September, 1984).

ARD Corporation, with the assistance of NMP-2 plant personnel, obtained copies of the applicable LERs. These reports were then sorted by data and possible applicability. Copies of those events which involve control room operator, procedural and/or control board equipment failure, and errors attributed to design arrangement errors were retained for further review.

All reports were screened to determine if they described and documented a control room problem meeting the following criteria:

1. Equipment referenced (valve/pump controls, displays, indicators, etc.) must be in the physical confines of the control room.

2. Procedure steps referenced must be accomplished within the physical confines of the control room.

3. Personnel error referenced must have occurred in the control room on equipment in the control room, or entailed a deviation from procedures that should be accomplished in the control room.

action were recorded, by the HFS, as an HEO on an HEO form (Appendix B). The event and task relevant to the HEO were noted in the description of the discrepancy.

In addition to maintaining the PARs and HEOs, the HFS responsible for this aspect of the DCRDR maintained the historical review notebook. This notebook is a working document which was started at the beginning of the Historical Report Review process and contains:

1. An index of Problem Status Reports (PSRs) that were reviewed

2. A copy of all completed HEOs identified during the review

3. A copy of all reports concerning Human Factors problems in the control room which were reviewed and analyzed

4. Additional information collected in the review and used in the analysis (e.g., previous review by station, cover letters transmitting LER)

5. The final PAR for each document reviewed

Additionally, the PSRs are included in the historical review notebook as an index (with applicable page numbers) for all reports included in the notebook.

4.5 Results of the Analysis

The LER sort resulted in a listing of 253 reports. After the initial review, a total of 12 reports, which were related to both human factors and the control room, as defined by the criteria listed previously, were retained. From these 12 reports, six were considered not to be applicable to NMP-2. After removing these six reports from the review process, six

reports remained, with two of these events having been corrected at NMP-2. Therefore, four HEOs were identified regarding a problem derived from an LER which could potentially occur at NMP-2. A summary of the results of each sort is shown in Table 4.1. In addition, all of the Human Factors/Control Room documents are included in the historical review notebook.

Table 4.1 Summary of Results of Sorts

Document Status	Number of Documents
Not Applicable to Human Factors and/or Control Room	241
Not Applicable to NMP-2	6
Problem Corrected at NMP-2	2
HEO Written	4
Total	253

The following four HEOs were identified as being pertinent to NMP-2 operations:

(a) HEO 283 - During the historical review, it was found that at the Susquehanna Station, the controls for the outside air makeup damper were placed in the 100% closed position instead of the 100% open position during surveillance testing. This caused "B" train of standby gas treatment system trip shortly after starting (LER 83-089/03).

(b) HEO 284 - It was found during the historical review that at LaSalle Station, a Suppression Pool chart recorder was turned off during paper changing. It was later discovered not to be printing (LER 83-068/03).

(c) HEO 285 - During the historical review, it was found that at Susquehanna Station, channel gains were inadvertently adjusted during startup testing. "D" average power range monitor was made inoperable (LER 83-009/03).

(d) HEO 286 - During the historical review, it was found that during startup tests at LaSalle station, the displayed heating rate was one-half actual valve due to an error in the computer program which calculated heatup rate for CRT displays. The operator failed to note the discrepancy from other control room indications (LER 82-073/03).

4.6 <u>References</u>

Additional information concerning the Historical Document Review can be found in the following document:

Advanced Resource Development Corporation. <u>Historical Document Review Summary of Results for Nine Mile Point-2</u>. Columbia, MD. July 1985.

5.0 CONTROL ROOM OPERATOR SURVEY

5.1 Objective and Approach

The objective of the operator survey is to obtain special, pertinent knowledge that operating personnel possess regarding control room system features which they have experienced and/or observed in the course of preparing for operations or during operations themselves. As one of the foundation processes of the DCRDR, the operator survey is intended to provide information that will guide the HFSs during subsequent investigative phases of the DCRDR (i.e., the checklist survey, task analysis, verification and validation processes). Aside from this primary function, the survey also provides an avenue for plant management to gather general information about the plant operators' perceptions and opinions of control room design and procedures. The respondents were encouraged to identify both positive and negative features of the control room. The negative items were, as appropriate, considered in later stages of the DCRDR, either presented as general reference information for NMP-2's consideration, or written as HEOs. The positive items, also presented for reference, suggest control room features that should not be compromised in the course of correcting other HEOs. These items will be used by the review team as guidance for corrective actions, since they illustrate aspects of the control room design that the operators believe are particularly effective.

An effort was made to present all comments and suggestions made by the operators, even though not all of the negative comments were determined to be valid HEOs. The determination as to which problems qualified as HEOs was based in part on an understanding of the principles of human factors engineering and in part on information collected from operations personnel during the follow-up interviews. It should be emphasized that there are many of the operator comments and suggestions presented herein that will prove useful to NMP-2 management, in addition to those that resulted in HEOs.

Although emphasis was placed on emergency-related design features during the control room review, the operators were encouraged to consider all modes of plant operations in formulating their responses.

It was expected that the findings reported here would, to some extent, overlap with those resulting from other phases of the DCRDR. This redundancy serves as one indication of the extent of identified problems. Another indication of problem severity is the number of operators who mentioned a particular problem. Nevertheless, a strength of the operator survey was that it gave individual operators the opportunity to apply their unique backgrounds and experiences to the control room review process. Therefore, the possible importance of concerns that were voiced by only one or two respondents was not overlooked.

5.2 Construction of the Self-Administered Questionnaire

The self-administered questionnaire was structured to address the following areas which are those suggested in NUREG-0700: Workspace Layout and Environment, Panel Design, Annunciator Warning System, Communications, Computer-Generated Information, Maintenance Procedures, Operating Procedures, Staffing and Job Design, and Training. A draft questionnaire was prepared by the HFS. NMP-2 members of the review team reviewed this draft

and provided suggestions which were incorporated in the final version of the questionnaire. The resulting questionnaire, with accompanying explanatory materials, was then distributed to the operators. A copy of the distribution packet is shown in Appendix C.

Each question in the first nine topic areas was posed in a multiple-choice format to encourage the response of operators who might not have been inclined to provide written comments for each item. In addition, open-ended questions for each item encouraged the operators to describe in detail the specifics upon which their multiple-choice responses were based. The operators were frequently reminded to consider all modes of plant operation, including start-up, hot standby, full power, reduced power and abnormal or emergency operating conditions. Opinions regarding both positive and negative design features of the control room were solicited. Each respondent was also asked to fill out a separate sheet detailing his background, level of experience, and current status at NMP-2.

5.3 Distribution and Analysis of the Self-Administered Questionnaire

These questionnaires were distributed to forty-seven operators, based on a list prepared by NMPC. The participants included all licensed operating personnel as well as training personnel in NMP-2. The operators were given several weeks to fill out the self-administered questionnaire and to return it by mail to the HFS in self-addressed, stamped envelopes provided by the HFS. Confidentiality was assured by assigning each outgoing questionnaire a number. The list of potential respondents and corresponding numbers were kept in confidence by HFS personnel. In all, twenty-four operators or fifty-one percent of the operators to whom the self-administered questionnaire was distributed, contributed to the Operator Survey. The

demographics of these individuals are summarized in Table 5.1. The respondents reflect a representative sample in terms of operating experience and positions of personnel at NMP-2. In addition to their commercial nuclear experience, most of these people had been involved in the Navy nuclear program prior to joining the commercial nuclear industry.

Table 5.1 Average Population Demographics and Statistics

	N	Height	Age	Nuclear Oper Exp	Yrs CR Oper Exp	Yrs RO	Yrs SO
SRO License NMP-1	8	70.1	38.2	15.25	5.9	4.7	6
RO License NMP-1	11	70.7	30.7	6.9	2.0	2.7	0
SRO Cert GE BWR	2	68.5	38.5	6.25	4.25	2.25	2.25
Training	3	72.3	29.7	10.3	9.3	0	0

The HFS logged the twenty-four questionnaires that were returned, and tallied the demographic information and multiple-choice responses. Written responses were compiled for each question and then summarized. Responses which addressed the same issue were collapsed into a summary statement of the concern, with an associated count of the frequency with which that concern had been mentioned. In the few instances in which a concern was addressed by different respondents under different questionnaire items, the responses were cross-indexed and the HEO was summarized under the question which was most appropriate for that response. Ambiguities in the written comments were noted. In addition, the multiple-choice responses and the written comments were examined with an eye towards areas of particular concern to the operators and the extent to which a consensus emerged on each item.

The multiple choices were structured such that the first alternative (a) represented a positive statement (no problems, excellent), the second (b) represented slight problems (only 1 or 2 problem areas, adequate), the third (c) represented significant problems (several problem areas), and the fourth (d) represented the most negative choice (many problem areas). In general, the multiple-choice responses reflected a positive view of the control room design by the operators. In all questions, the most frequent response to each question was an (a) or (b). There were, of course, differing amounts of spread (reflecting degree of consensus) to the responses; however, on all questions, more than 50% of the responses fell in the (a) and (b) choices. Despite these overall positive findings, it should be noted that a few negative features were identified under most questions. Furthermore, the most negative responses were distributed over the operators, and therefore cannot be attributed to the opinions of a few.

5.4 Follow-up Interviews

The HFS conducted on-site interviews with twenty of the twenty-four operators who completed the survey. These interviewees included Operations Supervisors, Shift Supervisors, Operators, Trainees and Engineers. Each interview lasted approximately one hour. Confidentiality of operators' responses was maintained both during the interview process and in the notes taken by the HFS during the interviews. The objectives of the follow-up interviews were as follows: (1) to clarify ambiguities in an individual's written responses to the self-administered questionnaire, (2) to gather additional details (e.g., system or component information) pertaining to that individual's responses, and (3) to examine the extent to which operators agreed or disagreed with their colleagues' questionnaires. Thus, there were a few issues that were discussed with all interviewees and some that varied from one individual to the next, depending on each person's written responses on the self-administered questionnaire.

5.5 Integration of Interview Data with Self-Administered Questionnaire Responses

The information compiled previously from the self-administered questionnaires was enhanced, based on notes taken by the interviewer during the follow-up interviews. Ambiguities noted previously were resolved and, where appropriate, specifics such as system or component names were added. The tables of issues which had been stated previously were then updated. Finally, for each issue of concern, a recommended action for the review team was determined. These were classified into the following categories:

1. Problems that were sufficiently well-defined and valid, from a human factors perspective, were written as HEOs.

2. Problems that had already been written as HEOs were noted as such.

3. Operator-suggested changes, which would have violated sound human factors engineering practices, were noted separately.

4. Comments of a more general nature, which expressed valid concerns outside the scope of the DCRDR, were noted for management's reference.

5.6 Documentation for Future Reference

The data gathered during the Operator Survey are being maintained by the HFS in a form that will provide the review team with reference material. The HEOs were entered into the computerized DBMS and were presented to the review team. The tables of comments and cross-reference suggestions for

corrective actions were entered into a Wang text processing system. These software files can be searched by keyword, question number, or code for follow-up action. Back-up documentation that includes the respondent number and question on which each response was made has also been maintained. Therefore, if additional follow-up information is desired by the review team, the data summarized in these tables can be related back to the original questionnaire responses, while maintaining confidentiality.

5.7 References

Additional information concerning the Control Room Operator Survey can be found in the following document:

Advanced Resource Development Corporation. Report on CRDR Operator Survey for Niagara Mohawk Power Corporation, Nine Mile Point Unit 2, Columbia, MD: January 1985.

6.0 CONTROL ROOM INVENTORY

6.1 Objective and Approach

The objective of the control room inventory for NMP-2 was to establish a reference set of data which identified all instrumentation and controls in the main operating area of the control room, for comparison with the equipment requirements identified during the task analysis. All displays, controls, controllers, annunciators and other equipment on the front and some back panels in the control room were included in this inventory. Based on the guidance of NUREG-0700, HFSs from ARD Corporation completed the inventory of NMP-2. Because the inventory was performed during the time that some control room equipment was still being installed, the approach taken was to base the inventory on the Stone and Webster arrangement drawings, and to confirm and gather additional information about each component by direct observation in the control room.

ARD used Stone and Webster arrangement drawings for their inventory. These drawings reflect an Engineering Design Base of January 1985 with hardware implementation expected to be completed in late 1985. These drawings are also used as design configuration control for control room panel changes submitted to General Electric. From these SWEC arrangements and other SWEC drawings, GE generates production drawings (i.e., connection diagrams, elementaries, assembly drawings, etc.) which are used to implement hardware changes. This design process and

subsequent hardware implementation is covered by 10CFR50 Appendix B and include proper drawings and as-built verification. In addition to this, ARD performed an on-site confirmation as described in Section 6.3.4. As a final check, ARD will perform an additional inventory analysis of the completed control room. This analysis will provide a discrepancy list of the components reviewed in the DCRDR from the final configuration, including any additions to the design base.

Each piece of equipment on the control boards was identified by a unique code which was developed to meet the specific needs of the DCRDR project. This code served to identify the section of the specific control panel in which each piece of equipment was located, as well as equipment components that were functionally related. Then the relevant physical characteristics of each piece of equipment, as they appeared from the front of the control panels, were coded. The characteristics noted were those which would determine, from a human factors standpoint, any usefulness of the equipment to the operators in monitoring and controlling the plant.

The data were stored in the computerized DBMS developed by ARD for NMPC's DCRDR. The data were then used to support the DCRDR verification process, whereby it was determined the extent to which suitable equipment was available in the control room to allow the plant operators to effectively perform emergency operating procedures. Having the inventory data stored in the DBMS along with the equipment requirements derived from the task analysis, allowed an automated comparison of the two to be accomplished.

6.2 Panels Inventoried

All equipment on the following panels was inventoried:

P601 -- Reactor Core Cooling Control Board

P602 -- RWCU and Recirculation Control Board

P603 -- Reactor Control Board
P851 -- Steam and Water Systems and Turbine/Generator Control Board
P852 -- Electrical Control Board
P870 -- HVAC Division 1 Control Panel
P871 -- HVAC Division 2 Control Panel
P873 -- Drywell Cooling and Primary Containment Purge Division 1 Control Panel
P875 -- Primary Containment Purge Division 2 Control Panel

6.3 Procedural Steps

The following steps summarize the approach taken in performing the inventory:

1. Stone and Webster arrangement drawings reflecting a January 1985 design base were obtained. These prints included label information and Stone & Webster tag numbers for each component on the control boards.

2. A grid matrix was superimposed on each corrected print to provide a code that would uniquely identify the approximate location of each piece of equipment on the boards. The unique identifier derived from the matrix was termed an Equipment Identification (EID) Number.

   In tailoring this grid to particular control panel drawings, the placement of the cell boundaries was adapted to follow the natural grouping of equipment on the panels as much as possible. The cells for each panel were then numbered with an X value (abscissa) that identified the horizontal position (left to right) of a given cell across the panel with a Y value (ordinate) that identified the vertical position (top to bottom) of that cell down the panel. When the drawing for a particular panel spanned more than one print, the X values were continued from the first print onto the second.

The components within each cell of the grid matrix were numbered sequentially from left to right and top to bottom, starting with the number "1" in each cell. Control switches and their associated indicator lights were, at this level of analysis, considered as one component, as were recorders with multiple pens or points, controllers with multiple indicator or control functions, and vendor panels (e.g., the Turbine Control Panel).

The EID was then derived from the marked up drawings. It consisted of the panel number, X then Y grid coordinates, and sequential number. (Example: 601-6-5-12 or, panel 601, X coordinate "6", Y coordinate "5", sector sequential number "12".) For annunciators, the EID consisted of control panel number (in which each window box was mounted), annunciator panel number (i.e., window box number), and row and column in the window box.

There was a sub-identification number (Sub-ID) scheme used to designate components that were functionally related. For example, given a control switch and its associated indicator lights, the control switch was given an EID to show location on the boards. The indicator lights were given the same EID to show functional relationship, but, in addition, each indicator was given a unique Sub-ID number. The Sub-ID numbers were assigned starting with "1" for a given component and increasing sequentially as the related indicator lights for that component were observed from left to right, top to bottom. The control switch was assigned a Sub-ID of 000. Sub-numbers were also used to distinguish among points on multi-point recorders, different control and display components on a controller, and different components on a vendor-supplied panel inset.

3. The inventory was accomplished panel by panel. The information that was coded into the DBMS from the prints included, for each component, EID and Sub-ID, label, tag number, and whether it was a control or display. For annunciators, the extracted information consisted of EID and label. As each piece of equipment was inventoried, it was checked off on the appropriate print.

4. A print-out of these data was obtained for each panel. An on-site confirmation of this inventory information was then performed, based on direct observation in the control room. This on-site data gathering served several purposes. First, it served as a check on the accuracy with which the information had been extracted from the prints. When an apparent discrepancy was noted between the information extracted from the prints and the component observed on the control boards, the first action was to check the prints to be sure that the information had been extracted accurately.

   Second, the systematic observation of the boards allowed the identification of actual discrepancies between the as-built prints and control boards. These discrepancies might have been due to errors in the prints, errors in the installation of equipment, or simply the fact that the as-built equipment had not yet been installed.

   Third, the on-site segment of the inventory was used to code additional information about each component that was not available from the front panel elevation drawings. The Inventory Form (Appendix D) was used when significant information about a component had to

be coded. Otherwise, the information shown on this form was added to the print-out from the DBMS, which had been formatted to prompt the HFS for the appropriate additional information.

5. The on-site inventory was completed by HFSs, with input as needed by NMP Operations and Engineering. The data fields were filled in with numerical codes. By utilizing these codes, data entry into the computerized DBMS was facilitated and consistency in terminology was assured.

6. The unique numbers by which annunciators were identified were derived from the position of each annunciator tile in a window box. The columns of tiles in a given window box were numbered sequentially from left to right. The rows of tiles in a given window box were lettered sequentially from top to bottom, starting with A. Thus, each tile was uniquely identified by the combination of panel number, row letter and column number. For annunciators, the following information was entered on the inventory form: equipment name (the label engraved on the tile), and panel location (number of the entire window box of annunciator tiles, and number of the column and letter of the row in which the tile was located).

7. The information that had been entered on the DMBS print-outs and Inventory Forms by the HFSs in the control room was typed by data entry personnel into the computerized data base management system. Two files were created: one for annunciators, and one for displays and controls.

6.4 Coding of Inventory Form

The following paragraphs explain the type of data that was entered on the Inventory Form:

1. The LABEL name was taken verbatim from the control panel. Whether the label was permanent or not (e.g., dyno tape, Kroy lettering, etc.) was noted under the Label Type column.

2. The SUB-NAME was used for legends on indicating lights, names of points on multi-point recorders, names of pens for dual-pen or multi-pen recorders, or labels for components that were sub-numbered. Detailed information about each piece of equipment (i.e., that which had been assigned a sequence or sub-number) was then entered with reference to the lists of codes. Some fields were appropriate for displays and others were appropriate for controls. Also, there could be multiple entries in some fields in the detailed record of information about a given piece of equipment. The DBMS was structured to accommodate these possibilities.

3. The COLOR field was used for several purposes: to identify the color of indicating lights, targets on breaker controls, or pens on multi-pen recorders.

4. The TYPE OF DISPLAY field referred to anything that measures (e.g., meters, gauges) or presents information other than a label name or a switch position. There could be only one type of display per detail record. Instruments that had more than one scale or point would have had these coded in separate sub-numbered records.

5. WHAT MEASURED referred to the parameter(s) being displayed on one physical scale or continuum. In data collection, this was assumed or inferred from the display in question. For instance, if the units were "gallons per minute", flow was postulated to be the WHAT MEASURED. If more than one scale existed on an instrument (e.g., dual-pen recorder), each scale was inventoried on a separate detail record (and appropriately subnumbered).

6. The UNITS field related directly to WHAT MEASURED, but was taken directly from the scale shown on the display.

7. The RANGE of a meter or gauge was directly observable from the instrument. Any one instrument could have more than one range. Any change in the "DIVISIONS" on the meter indicated a new range. Some scales had multipliers generally increasing the range by a factor of 10 (e.g., x10; x100; x1000; x10E3). Some meters conveyed this multiplier as part of the UNITS (e.g., gpm x 100). This was one case in which the boards were not copied verbatim. The multiplier was always assumed to be associated with the RANGE.

8. The DIVISIONS of the meter or gauge were directly observable from the instrument. DIVISIONS were always derived; they were defined as the absolute value of the smallest gradation on the scale to be read. Any one instrument could have several different divisions. Whenever there was a change in the number of minor scale marks between the major scale marks, a change in divisions was indicated. For ease of coding, divisions were assumed to have no multiplier. Scales could have ranges with multipliers but it was only necessary to code multipliers for ranges.

9. TYPE OF SWITCH referred to any control including controllers. Shape was the most important characteristic in determining the value coded here. Examples would be a J-handle valve control or a pushbutton test or a keylock selector control switch. There was only one type of switch per detail line in the inventory.

10. WHAT CONTROLLED refers to the type of equipment being controlled. For example, valve, pump, circuit breaker, fan, etc., would be coded in this column.

11. VALVE CONTROL referred to specific types of switches -- those that control valves. This field was used to delineate whether or not a valve was seal-in (valve travels full open or closed) or throttleable (valve is able to be stopped in a midposition of travel). For this parameter, there were only four possible variables -- throttle open, throttle closed, seal-in open, seal-in closed. If a switch is throttle open but has an as-is function (see SWITCH ACTION) the valve will travel full open without any further operator action, therefore having seal-in <u>features</u>. On the inventory, it was documented as both throttle open <u>and</u> seal-in open.

12. SWITCH ACTION referred to what a control switch will do after it has been repositioned. It stays where it is put (as-is) or it returns to its mid-position (spring return). It is possible that one switch is both as-is and spring return (e.g., a pump control that is able to be locked "off" but normally is spring return).

13. SWITCH POSITION was the verbatim position labels taken from the escutcheon plate of a control. Pushbuttons were assumed not to have switch positions based soley on their action. All other controls were assumed to have more than one switch position. The inventory form was designed to handle this contingency on one detail record.

14. The UNID was the Stone & Webster tag number. Entering the UNID for a component allowed it to be cross-referenced.

6.5 References

Additional information concerning Control Room Inventory can be found in the following document:

Advanced Resource Development Corporation. Summary of DCRDR Phases for Nine Mile Point Unit 2. Columbia, MD. June 1985.

7.0 FUNCTION AND TASK ANALYSES

7.1 Function Analysis

Operator task identification and analysis entailed the identification and documentation of tasks for emergency events. A draft of the Plant Specific Boiling Water Reactor Owner's Group (BWROG) Emergency Procedure Guidelines (EPGs) was used to identify the operator tasks to be analyzed. The BWR EPGs consist of four guidelines and seven contingencies which are designed to (1) maintain Reactor Pressure Vessel (RPV) inventory, (2) maintain the integration of primary and secondary containments through adequate heat rejection, and (3) minimize and control radioactivity release to the environment. The operator is directed into these guidelines by the occurrence of easily recognizable conditions, which are normally accompanied by alarms. The guidelines are designed such that if incorrect actions are taken, the error is quickly recognized and corrective measures can be implemented. This is accomplished by focusing the operator's attention on those plant process parameters affected by the action taken. Incorrect actions may result in further degradation of plant conditions and, as a consequence, the guidelines direct the operator to take further corrective actions.

The EPGs provided a functional analysis that identified generic information and control needs. The plant-specific EPGs used during the task analysis provided detailed information on operator response during transients and accidents. All steps and contingencies represented in the EPGs were analyzed,

resulting in a list of plant-specific tasks for the accomplishment of all branches of the guidelines. Appendix E lists the tasks that were derived from the EOPs. Niagara Mohawk procedures N2-EOP-1, N2-EOP-2, N2-EOP-3, and N2-EOP-4 explain the transition from generic to specific EOPs. This translation is considered outside the context of the DCRDR and this summary report; however, these procedures are included in Appendix F for information purposes.

The task description form was the link between the EPG transient analyses and the DCRDR task analysis effort. A task description form was completed for each section of the EPG identifying: operator functions to be accomplished, operator tasks associated with operator functions, corresponding procedure step numbers of identified tasks, unique task numbers for future analysis, and common task elements.

The Task Description Form (Appendix G) was utilized for this phase of the effort. Task elements identified to be common to more than one procedure were not recorded twice. For example, if an action step involved observing Reactor Pressure Vessel Pressure less than 1000 PSIG, then the characteristics of the pressure instrument needed to accomplish the task were recorded. If this same task element were to be accomplished in a subsequent step, the task number of the original element would be recorded on the Task Analysis Form. Thus, availability and suitability was assessed for all tasks, but the data recording, entry and analysis was simplified.

7.2 Task Analysis

For each task identified in the Task Description Form, a Task Analysis Form (Appendix G) was completed by an HFS working with NMP-2 reactor operators and senior reactor operators outside the control room. The purpose of the Task Analysis Form is to identify the information and control needs for task performance

and provide a template of operator activities in the task for use in validation efforts. A single task was generally comprised of several subtasks or action steps. Characteristics of the information and control needs for performing each action step within the task were recorded on the Task Analysis Form. The information collected to describe the control needs for operator tasks included:

1. Equipment - The name of the plant equipment involved in the control action, noting the required type of control equipment (e.g., pump, isolation valve, governor valve, etc.)

2. Position - The control position name which corresponds to the escutcheon label (e.g., ON, RUN, CLOSED, AUTO)

3. Mode - The required mode of control for the task action (i.e., discrete or continuous)

4. SR - The need for a spring-return device for the control action

5. Pull-to-Lock - The need for a Pull-to-Lock function for the control action

6. Key - The need for a key-lock function for the control action

7. Cover - The need to protect the control function from inadvertent actuation

8. CSL - The need for a control status light as a feedback indication to the operator that the control action was initiated or established

9. Flag - The need for a flag or target to indicate that the device was automatically operated

10. Indicator - The need for a separate indicator for feedback or control actuation

11. ID - A unique identifier derived from the panel location of the control

The information needs for the operator task were described in terms of the following categories of characteristics:

1. Equipment - The name of the plant equipment involved in the feedback, noting the parameter measured (status, flow, pressure)

2. Level - The level of information (i.e., state, value, or trend) needed to suit the nature of the information need

3. State - The state of the parameter which is pertinent to the task accomplishment (e.g., less than 500 psig, At Low Level Limit, Lit, etc.)

4. Units - The units needed for the parameter display in order to accomplish the task without the need for conversion

5. Range - The range of parameter values required for the accomplishment of the particular task under investigation

6. Divisions - The required precision of the parameter value display, in terms of the smallest scale division

7. ID - A unique identifier derived from the panel location of the indicator

A separate column entitled "OTHER PERFORMANCE REQUIREMENTS" was provided for description of operator activities other than control and display actions.

Data collection efforts took place at the Nine Mile Point Training Center during January, 1985. At no time did the task analysis team members go into the control room in order to establish a context for information and control needs. The avoidance of the control room during the documentation of control needs was one method employed to ensure the independence of the needs data collection from the characteristics of the instrumentation and controls in the control room. Instructions to the operators also emphasized that the information and control needs and their characteristics should be based upon the task definitions and not upon the existing control room equipment. The effort successfully determined the appropriate operator tasks for accomplishment of the EPG guideline steps and the operator information and control needs to perform those tasks.

The Task Analysis data were entered into a data base constituting a specification of operator needs to accomplish the operator functions. This specification was used as a foundation reference point to verify the availability and suitability of control room instrumentation, to provide a context within which to survey the control room, and to provide a base of understanding on which to assess HEOs.

Based on guidance from the Nuclear Regulatory Commission Audit Team during the March, 1985 in-progress audit of the Nine Mile Point Unit 2 DCRDR, a review of the completed task analysis forms and task descriptions was conducted to identify tasks or

task action steps which branched to non-EOP procedures. The objective of the review was to ensure that all information and control needs necessary to place the plant into a safe shutdown condition (hot standby), including those needs contained in normal, abnormal, or other types of procedures and documents referenced out of the plant specific EOPs were included in the NMP-2 task analysis documentation. The review was conducted in April, 1985 and resulted in additions to several tasks. These new information and control needs were added to the original listings for their respective tasks. A final verification of availability and suitability, as described in Section 9, was conducted based on the revised task needs.

7.3 Future Revision of Control Room Requirements

Niagara Mohawk Administrative Procedure, APN-2, will be revised to require that all new or revised Emergency Operating Procedures be reviewed for impact to the System and Function Task Analysis. This review will be in accordance with guidance provided in the Human Factors manual. For those revisions impacting the SFTA and revising operator information and control needs, the reviewer will notify Niagara Mohawk's Nuclear Engineering Department of the new hardware requirements. Additional changes can be incorporated as part of the open ended follow up solution package described in Volume II of this Summary Report.

7.4 References

Additional information concerning functional and task analysis can be found in the following documents:

Advanced Resource Development Corporation. Summary of DCRDR Phases for Nine Mile Point Unit 2. Columbia, MD. June 1985.

Nine Mile Point Nuclear Station Unit 2. Emergency Operating Procedure No. N2-EOP-1. Emergency Operating Procedure Development.

Nine Mile Point Nuclear Station Unit 2. Emergency Operating Procedure No. N2-EOP-2. Emergency Operating Procedure Verification.

Nine Mile Point Nuclear Station Unit 2. Emergency Operating Procedure No. N2-EOP-3. Emergency Operating Procedure Validation.

Nine Mile Point Nuclear Station Unit 2. Emergency Operating Procedure No. N2-EOP-4. Emergency Operating Procedure Writers Guide.

8.0 CONTROL ROOM CHECKLIST SURVEY

8.1 Procedural Steps

The human factors engineering survey used a checklist based on that illustrated in Section 6 of NUREG-0700. This survey considered the extent to which equipment and the environment in the control room and the remote shutdown panel is designed to accommodate basic human characteristics such as physical size and perceptual-motor capabilities. A comparison of instrument and control features to the human engineering guidelines was conducted using the data generated from the task analysis and from visual observation. HFSs, in concert with experienced utility personnel knowledgeable of plant systems and control room instruments and equipment, and operations personnel observed and measured control room features.

Instrumentation, controls and other equipment items were examined for human engineering acceptability as components, without reference to their specific uses in task performance. Discrepancies were based on design incompatibility with human perceptual, motor, psychological or size characteristics. Examples included controls too closely spaced for easy manipulation, meters with markings too small to be distinguishable at a practical distance and displays too high to be read. Environmental conditions will be surveyed at a later date when the control room is more complete.

The guidelines in the checklist include principles or explanatory statements followed by specific categorical or numeric statements. The procedure is to observe or measure, as required, and check compliance with each categorical or numerical statement. The review team members who conducted the checklist survey placed a check in the "No" box to indicate noncompliance. "Yes" was checked only if there was total compliance (i.e., only if every instance of the item was fully consistent with provisions of the checklist). If there was any instance of noncompliance, the "No" box was checked and a reference made as to where noncompliance occurred.

8.2 Human Factors Engineering Checklist

The Human Factors Engineering guidelines were examined for the nine topic areas listed below:

1. Control Room Workspace addresses the general layout, availability and accessibility of operating equipment and materials; the anthropometric suitability of work stations; availability and accessibility of emergency equipment; and environmental factors.

2. Communications addresses auditory communications equipment used in the control room. Communications is a specialized topic to be treated relatively independently, on a control room-wide basis. Individual work stations are to be considered only incidentally.

3. Annunciator Warning System addresses overall concerns such as alarm parameter selection and set points, first-out alarms and prioritization; and design features of the auditory alert, visual alarm and operator response subsystems.

4. <u>Controls</u> addresses principles of selection, protection, and designs and specifications for different types of controls.

5. <u>Displays</u> addresses principles of displays including information to be displayed, usability of displayed values, readability, printing, markings and coding. Guidelines are also given as to design characteristics of particular types of displays including meters, light indicators, graphic recorders and counters.

6. <u>Labels and Location Aids</u> addresses labeling, location, content and lettering; use of temporary labels; and use of location aids such as demarcation, color and mimics.

7. <u>Process Computer</u> addresses software security and characteristics (dialogue/command language, prompting, structuring); procedures and other aids to computer use; keyboard arrangement, function controls and other controls; computer response time; and design characteristics of displays and printers/printer messages.

8. <u>Panel Layout</u> addresses allocation of controls and displays to preferred panel areas; groupings of controls and displays; spacing, demarcation and color shading to enhance recognizability of individual components and of groupings; ordering of components within groupings; layout consistency within and among panels; and strings, clusters or matrices of similar components.

9. <u>Control-Display Integration</u> addresses relative positioning of single control and display pairs and

multiple controls and displays; function and sequence-of-use relationships; movement relationship; and other aspects of compatibility of controls and displays which are used together.

The Human Factors Engineering checklist was conducted in the NMP-2 control room during the months of January and February, 1985. In response to the NRC audit team comments after the in-process audit of March, 1985, a re-survey of the NMP-2 control room using the Human Factors Engineering checklist was conducted in April and May, 1985. The second survey was needed because of the incompleteness of the control room during the first survey. As a result of the re-survey, 11 new HEOs were generated as well as numerous equipment additions to existing "generic" HEOs. The remote shutdown panel was included in the second survey and accounted for 28 HEOs added to the database. Checklist items that could not be surveyed due to the incomplete nature of the control room are listed in Appendix K.

8.3 Environmental Measurement Procedures

Environmental measures of the control room have not been taken because construction is still in progress. This data is planned to be collected in October, 1985. The paragraphs below outline the procedures to be used:

1. Sound Survey Procedures. Using a control room layout drawing, the HFS will select and mark the locations where sound measurements will be taken. Measurements will be taken at each operator position that requires verbal communication and/or auditory discrimination of a signal. The meter will be located 5 ft. above the floor at positions where the operator stands and 4 ft. above the floor at seated positions. Measurement positions will include the operator's desk and work station (or points near the center of each panel or console).

Measurement will include ambient noise levels (where ambient noise is defined as background control room noise without the contribution of alarms, printers or communications equipment), annunciator alarm levels (work station annunciator and any other annunciators that must be heard at that work station) under both ambient and high-level noise conditions (e.g., with printers, other alarms and signals), telephones and other communication equipment, evacuation signals and other alarms. Integrated "A" weighted db(A) measurements will be taken for all of the above positions. The appropriate form is located in Appendix H.

2. Lighting Survey Procedures. Using a control room layout drawing, the HFS will select and mark the location where the illumination measurements will be taken. Full AC ambient and DC emergency readings will be taken in front of each front panel and in the center of the control room at each operator workstation.

In order to determine the luminance and reflectance ratios, the following procedures will be followed: (1) cover object with "perfect reflector" pad, being careful not to block light; (2) take luminance reading pad and record reading; (3) remove reflector pad; (4) take luminance reading of object and record reading. At each panel, the following measurements will be taken using these procedures: reflectance pad on panel, panel background (where reflectance pad was placed), meter faces (with and without glare), and other display faces (with and without glare). The appropriate forms are located in Appendix H.

Control room lighting is provided by an interleafed network of normal, emergency, and essential lighting. The percentage of lighting in the control room is 50% normal, 20% division 1, 20% division 2 and 10% essential lighting. The essential lighting system is backed up by the normal nonsafety-related UPS. In the event of loss of all normal power, divisional power, and UPS failure; eight hour battery packs are also provided in the control room.

Remote shutdown room lighting is powered 50% from division 1 source and 50% from division 2. Four eight hour battery backs; two for 2CES*405G, the other two for panel 2CES*405Y, are provided in the remote shutdown room in the event of loss of both division 1 and division 2 emergency lighting system.

If circumstances require manning the remote shutdown panel, the operator will leave the control room via the hallway on the southside of 306 control building, walk towards one stairway in the southwest part of the control building, descend to elevation 261 and travel east to the remote shutdown room. Eight hour battery pack lighting on approximately 20 ft. centers are provided in the hallways and stairtower between these two points.

3. Humidity/Temperature Procedures. To measure humidity and temperature, meters will be set-up in an area where they will not be disturbed. Readings will be taken at floor level and at 6 ft. above floor level every hour for a 24-hour period. The HFS will record the time, and the temperature and humidity values for both levels. The appropriate form is located in Appendix H.

4. Air Velocity Survey Procedures. Using a control room layout drawing, locations will be selected and marked where air velocity readings will be taken. Measurements will be taken at principal operator work stations at an elevation of 6 ft. for standing positions, and at 4 ft. for sitting positions. The appropriate form is located in Appendix H.

8.4 References

The following publication was used during this phase of the DCRDR:

U.S. Nuclear Regulatory Commission. Guidelines for Control Room Design Reviews (NUREG-0700). Washington, D.C.: September, 1981.

9.0 VERIFICATION OF TASK PERFORMANCE CAPABILITIES

9.1 Objective and Approach

The objectives of the task verification process is to assure that operator tasks can be performed in the existing control room with minimum potential for human error. The methodology and evaluation criteria devised for the verification process were based upon guidance provided in NUREG-0700 Sections 3.7 and 6.0. This process was completed in two steps. The first step verified the presence (or absence) of instruments and equipment that provides the information and control capabilities necessary to implement each task. The second step determined whether the man-machine interfaces in the control room are effectively designed to support task accomplishment.

To ensure that every task has the necessary equipment and each equipment item performs a necessary task/function, a comparison of the inventory list with information from the task analysis was conducted. In addition to verifying the availability of control room equipment, a verification of human engineering suitability was conducted to identify interface problems that may affect task performance but may not be evident when the control room equipment is examined. Personnel knowledgeable in plant systems, human factors engineering and operations participated in the verification process.

Because the inventory was organized into three component types, there were separate verifications performed for controls,

indicators and annunciators. In addition, there were also verifications performed for back panels and other control room equipment whose characteristics were omitted or not fully described in the NMP-2 inventory data base. Where the inventory and task analysis data bases were compatible, the verification process was automated (i.e., a computerized matching of corresponding data fields was performed).

For both the automated and manual verification checks, the mechanics were the same: for each information, control, and characteristic need identified in the task analysis, corresponding control room equipment and characteristics were verified to be available and suitable. If a need was found to be either unavailable or unsuitable, an HEO was generated to further investigate a potential discrepancy.

9.2 The Verification of Control Capability

For controls, including control functions on process controllers, the verification process was a simple matching of the appropriate data fields. In this process, the following verification checks were performed:

1. Availability - If the needed control did not have a corresponding control in the inventory, an availability mismatch message appeared in the verification printout.

2. Control Mode/Control Type - If the control type from the inventory was not suitable for the specified discrete or continuous control capability (e.g., rotary selector switch for discrete control vs. continuous rotary switch for continuous control), then a control mode/control type mismatch message appeared in the verification printout.

3. Control Mode/Valve Action - If the valve action from the inventory (e.g., throttleable vs. seal in) was not suitable for the specified discrete or continuous control capability, a control mode/valve action mismatch message appeared in the verification.

4. Discrete Control Setting - If the needed control position did not have a corresponding position match in the inventory, a discrete control setting mismatch appeared in the verification printout.

5. Spring-Return - If the control need specified a spring-return characteristic, the corresponding control inventory characteristics were checked for a spring-return feature. If a match was not found, the spring-return mismatch message appeared in the verification printout.

6. Pull-to-Lock - If the control need specified a pull-to-lock characteristic, the corresponding control inventory characteristics were checked for a pull-to-lock feature. If a match was not found, the pull-to-lock mismatch message appeared in the verification printout.

7. Key - If the control need specified a key characteristic, the corresponding control inventory characteristics were checked for a key feature. If a match was not found, the key mismatch message appeared in the verification printout.

8. Cover - If the control need specified a cover characteristic, the corresponding control inventory characteristics were checked for a cover feature. If a match was not found, the control status light mismatch message appeared in the verification printout.

9. Control Status Light - If the control need specified a control status light as needed feedback information, the corresponding control inventory characteristics were checked for a matching light color. If a match was not found, the control status light mismatch message appeared in the verification printout.

10. Flag - If the control need specified a flag or target as needed feedback information, the corresponding control inventory characteristics were checked for a matching flag color. If a match was not found, the flag mismatch message appeared in the verification printout.

11. Backlit - If the control need specified a backlit message as needed feedback information, the corresponding control inventory characteristics were checked for a matching backlit color. If a match was not found, the backlit message appeared in the verification printout.

12. Unavailable Feedback - If the control need did not specify either a CSL, flag, backlit, or indicator feedback on the analysis form, an unavailable feedback message appeared on the verification printout.

9.3 Verification of Information Capability

For information needs which were represented by control room hardware other than CRT displays (e.g., indicators), the verification process was a matching of appropriate data fields. Indicators which were identified as subcomponents of controllers were included in this verification check.

For the indicator verification, the following verification checks were performed:

1. Availability - If the needed display did not have a corresponding display in the inventory, an availability mismatch message appeared in the verification printout.

2. Display Type - If the type of display (e.g., meter, recorder, etc.) from the inventory was not suitable for the specified level of information need (e.g., state, value or trend), a type mismatch message appeared in the verification printout.

3. Units - If the specified units of display, as determined in the task analysis, did not match the units of the corresponding indicator, a units mismatch message appeared in the verification printout.

4. Range - If the specified range of parameter display as determined in the task analysis was not encompassed by the range of the corresponding indicator, a range mismatch message appeared in the verification printout.

5. Divisions - If the divisions of the corresponding indicator did not match or exceed the specified division or precision of parameter display, as determined in the task analysis, a divisions mismatch message appeared in the verification printout.

6. Status Light - If the indicator need specified a status light as needed feedback information, the corresponding indicator inventory characteristics were checked for a matching light color. If a match was not found, a status light mismatch message appeared in the

verification printout. The legend message of a legend status light was printed on the verification printout, and a manual verification of the content was performed.

7. Collective Range Suitability - For each parameter, a collective range consisting of the lowest "low range" and the highest "high range" recorded for the parameter in the task analysis database was calculated. If this collective parameter range did not represent 80% of the corresponding indicator range from the inventory, then a collective range suitability HEO was generated. This check was a manual comparison of the task analysis collective range with the inventory indicator range.

9.4 Verification of Annunciator Capability

The verification of annunciator availability was performed as part of the computerized verification program. If an annunciator need was identified in the task analysis, a corresponding tile in the inventory should have been identified, or an annunciator availability mismatch message appeared in the verification printout. Annunciator suitability was verified by analyzing the legend content to meet the required need.

9.5 Verification of Other Equipment Capability

When a need was identified in the task analysis data base and a corresponding ID number was not available (as in the case of back panel equipment) or present in the inventory listing, an unavailability message appeared in the verification printout. This generated an HEO which required a manual verification of the availability of control room equipment to supply the need and the suitability of the equipment's characteristics to meet the identified needs of the task.

9.6 References

Additional information concerning Verification of Task Performance Capabilities can be found in the following document:

Advanced Resource Development Corporation. Summary of DCRDR Phases for Nine Mile Point Unit 2. Columbia, MD. June 1985.

10.0 VALIDATION OF CONTROL ROOM FUNCTIONS

10.1 Objective and Approach

The objective of the validation review was to determine if the functions allocated to the control room operating crew can be accomplished effectively within the structure of the established emergency procedures and the design of the control room as it exists.

The NMP-2 validation used two techniques: control room walk-throughs and talk-throughs. Five scenarios were selected for the walk-through; these events were videotaped in the NMP-2 simulator and analyzed at ARD in Columbia. The talk-through technique analyzed tasks identified in the task analysis phase of the CRDR at the control panels in the NMP-2 control room.

10.2 Validation Criteria

Twenty-three performance criteria were used during the analysis of the walk-through videotaping and during the talk-through. These items can be divided into five groups of control criteria (items 1 to 7), display criteria (items 8 to 12), control/display relationship criteria (items 13 to 16), procedure criteria (items 17 and 18), and task performance criteria (items 19 to 23). These criteria items are listed below:

1. Availability - Controls needed to perform critical emergency tasks are available in the control room without the operator leaving the primary operating area.

2. <u>Usability</u> - Each control is easily adjusted with the required level of precision.

3. <u>Type</u> - Each control is the type normally expected by the operator.

4. <u>Inadvertent Actuation</u> - Control actuation does not result in inadvertent actuation of an adjacent control.

5. <u>Redundancy</u> - Duplication of controls does not occur unless there is a specified reason.

6. <u>Simultaneous Actuation</u> - The requirement that simultaneous actuation of adjacent controls is performed.

7. <u>Feedback</u> - For each control action, there is positive feedback that the action was initiated.

8. <u>Unavailable Information</u> - Information needed to perform critical emergency tasks is available in the control room without the operator leaving the primary operating area.

9. <u>Obscured</u> - Controls and displays are located so that displays are not obscured during task performance.

10. <u>Suitability</u> - Information is presented in the form needed by the operator (i.e., appropriate units, range, and divisions).

11. <u>Related Displays Location</u> - When information from two or more displays must be compared, the displays are located in close proximity to one another.

12. <u>Redundancy</u> - Redundancy of information is minimized.

13. Control/Display Location - A visual display monitored during control manipulation is located close enough to the operator to allow easy reading without parallax.

14. Lag Time - There is no lag time between system condition change and display indication.

15. Task Grouping - Controls and displays used to accomplish a task sequence are logically grouped in a common panel area.

16. Minimize Operator Movements - Panel elements are assigned to work stations to minimize operator movements.

17. Consistent Nomenclature - Nomenclature used in the procedure is consistent with the terminology used in the control room labeling and the vernacular of the operators.

18. Sequence - The sequence of an operator's actions in response to the initiating event is the same as that outlined in the procedure. This sequence accomplishes the stated purpose of the procedure.

19. Leave Primary Area - Operators do not have to leave the primary operating area when continuous monitoring of instruments is critical.

20. Appropriate Manning/Task Assignments - Control room manning and task assignments ensure complete and timely coverage of controls, displays and other equipment during the event.

21. Excessive Workload - Operators can cope with the variety and time sequence of the tasks needed to be accomplished in the mitigation of the event.

22. <u>Obstructions to Traffic Flow</u> - Operators are able to access any work station without having to overcome obstacles such as tripping hazards, poorly positioned file cabinets, storage racks, maintenance equipment, or other trip hazards.

23. <u>Minimize Operator Movements</u> - The layout of the control room is efficient in that operator movements are minimized in carrying out tasks and in transitioning between related tasks.

10.3. Event Selection

Events for the DCRDR validation walk-throughs were selected based on the extent to which the event-based procedures exercised the four major sections of the EPGs and encompassed the tasks identified in the task analysis effort. Based on this criterion, the following events were selected for the walk-through validation:

1. <u>Loss of Cooling Accident (LOCA) - Large Break</u> - A large line break inside the drywell.

2. <u>Anticipated Transient Without a Scram (ATWS)</u> - A low reactor water level signal fails to produce a scram.

3. <u>Stuck Open Relief Valve (SORV)</u> - An inadvertent opening of a safety relief valve causes pool temperature to increase, generator load to decrease, and other effects.

4. <u>Loss of Feedwater Pumps</u> - Loss of feedwater pumps causes a rapid decrease in reactor water level.

5. <u>Loss of Coolant Accident (LOCA) - Small Break</u> - A small, high-energy leak inside the drywell causes drywell pressure and temperature to increase.

10.4 Control Room Walk-Through Procedures

Control room walk-throughs were performed at the NMP-2 simulator March 16, 1985, according to the following procedural steps:

1. The validation coordinator selected the event for validation and obtained the appropriate procedures. A trained operating crew consisting of two reactor operators, an assistant shift supervisor (STA), and a shift supervisor reviewed the procedures for the event selected.

2. Two cameras and recorders were used to document the event simulation walk-through. The cameras were positioned at a distance from the work stations to ensure an unobstructed view of each station.

3. The validation coordinator and the human factors specialist assembled and briefed the participating control room personnel on the purpose and specific objectives of the event simulation and on the walk-through procedure. Initial conditions, symptoms, entry conditions and any assumptions about the operating situation were specified to the operators during the briefing.

4. To facilitate the simulation fidelity, other members of the validation team remained in the background to take observational notes. Procedures were available to the operating crew for reference but procedural steps were not called out. During the event simulation, a voice-over narration by an SME was recorded on the video tape. The narration conveyed what was transpiring and what the operator(s) performed and why. Specifically, the narrator

recorded the following information during the event simulation: actions operators were taking, direction of action movement, display/indicator to which the operators refer, to identify the system response to actions taken, and system response to actions taken.

5. At a cue from the validation coordinator, the event terminated. The video tape operators, at that point, removed the tape from the recorder and logged in: the event taped, the date of taping, the time of taping, any unusual circumstances surrounding the taping, and the counter reading from the video tape recorder.

6. The HFS who conducted the validation processes viewed the video tape and evaluated the operator performance versus the control board/control room design criteria, specified earlier.

10.5 Control Room Procedures

Although walk-throughs provided a real-time validation of operator tasks, this procedure did not cover all of the tasks described in the task analysis data base. In addition, control/display relationships and other layout criteria were difficult to analyze in real time. To fully validate operator functions in the NMP-2 control room, control room talk-throughs were performed for all tasks identified in the NMP-2 task analysis effort. An SME demonstrated to the HFS the operator actions and equipment responses for the reviewed tasks. Talk-throughs were conducted in the NMP-2 control room during the month of March.

The talk-throughs examined the operator actions in response to the event, starting with the initiating cue(s) and including each immediate and subsequent operator action. Specific plant

equipment and operator decisions involved in each task were identified as the SME described the actions from the applicable control panel work station. The goal of the talk-through was to assess, using the validation criteria, the availability and suitability of control room equipment and layout to support the operator's needs in performing emergency tasks.

During the talk-throughs, questions were raised by the HFS concerning the operator needs and equipment characteristics. In addition, the HFS evaluated the operator performance versus the control board/control room design criteria described in Section 10.2 for each action of the task under consideration. The Validation Review Worksheet (Appendix I) was used to record evaluation observations.

10.6 Validation Results

The comments recorded on the Validation Review Worksheets were cross-checked against the HEOs documented in previous review processes of the DCRDR. A comment not previously addressed by existing HEOs represented a new observation and was reported as such. From this review, new HEOs were identified for NMPC consideration during the Assessment Phase of the DCRDR.

10.7 References

Additional information concerning Validation of Control Room Functions can be found in the following document:

Advanced Resource Development Corporation. Summary of DCRDR Phases for Nine Mile Point Unit 2. Columbia, MD. June 1985.

11.0 ASSESSMENT, IMPLEMENTATION AND SCHEDULING

11.1 Purpose

In theory, each HEO identified in the review process is a deviation from human engineering criteria which could be eliminated by some form of design or task modification. However, the number and extent of modifications that can be implemented are limited for reasons of economic feasibility, practicality, and worth. Therefore, a process is required which identifies HEOs worth considering for correction. The assessment and improvement process meets this requirement by assessing the importance or significance of given HEOs (which identifies HEDs or significant HEOs); identifying the appropriate method of correction for HEDs; and assuring the proper implementation of either procedural changes, training and/or design corrections for HEDs. Where possible, corrections will be verified and validated using the review techniques employed in Chapters 9.0 and 10.0.

The result of this process was the selection of HEDs from the set of HEOs, a set of recommended design corrections, and an implementation schedule for their corrections. In summary, the assessment and improvement process provides an organized approach to identifying necessary design changes to the control room on a rational, consistent and thorough basis. The attendance record of the personnel performing the assessment is presented in Appendix J.

11.2 Process

Figure 11-1 outlines the procedural steps in the assessment and improvement process. The first step (categorization) was accomplished with Review Team members assembled in one room. Each HEO was reviewed, discussed and assigned a category and level per the process outlined in Section 11.3. In cases where team members chose different categories and levels for a particular HEO, the Team Leader assigned the highest category and level (lowest numerical value) of those chosen. After the package of HEO's was assigned a category and level, they were revisited to determine significance and to select a correction method as described in Sections 11.4 and 11.5, respectively. The complete HEO/HED package, including categorization, significance and recommended corrective methods was then presented by the Team Leader to the Management Team for their review.

The Management Team reviewed all HEDs/HEOs and assigned an implementation schedule to all items requiring a fix. This package, including the implementation schedules, were then submitted by the Team Leader to the Executive Team for their approval. Once the Executive Team approval was received, all HEDs requiring fixes were sent to the responsible parties. Training fixes went to the NMPC Training Department. Procedural changes went to NMPC Operations or Engineering Departments, and design fixes went to Stone and Webster Engineering along with Solution Packages described in Volume 2 of this report. The final corrective packages will then be verified and validated as described in Section 11.7.

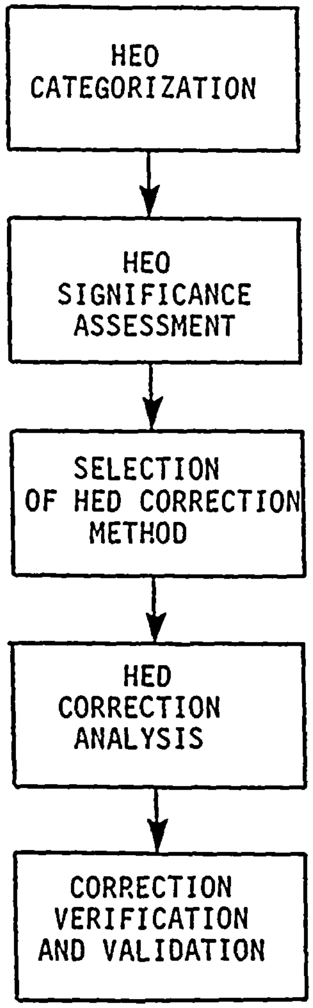


Figure 11-1. Procedural Steps in the Assessment and Improvement Process

11.3 HEO Categorization

The purpose of this step of the assessment and improvement process was to place HEOs in detailed categories and category levels. HEOs were categorized systematically so that HED identification and decisions to correct HEDs fully, partially, or not to correct them was made rationally.

The HEO categorization procedure distinguished among HEOs on the basis of risk (probability) of operator error and error importance (severity of consequences). This process is outlined in Figure 11-2, which depicts the logical steps in determining HEO categories and levels. These four categories of risk and five category levels of adverse effects are defined as follows:

1. Category 1 are HEOs Associated with Documented Errors in Similar Plants Included in the Operating Experience Review. Includes HEOs which were known to have previously caused or contributed to an operating error as documented in an LER or other historical record, or as established by the interview (or questionnaire) responses of operating personnel. Since NMP-2 has no operating history, this information was obtained from selected similar plants and correlated with NMP-2 design characteristics.

2. Category 2 are HEOs Associated with Potential Errors. Contains all HEOs which were assessed and determined to increase the potential for causing or contributing to a human error.

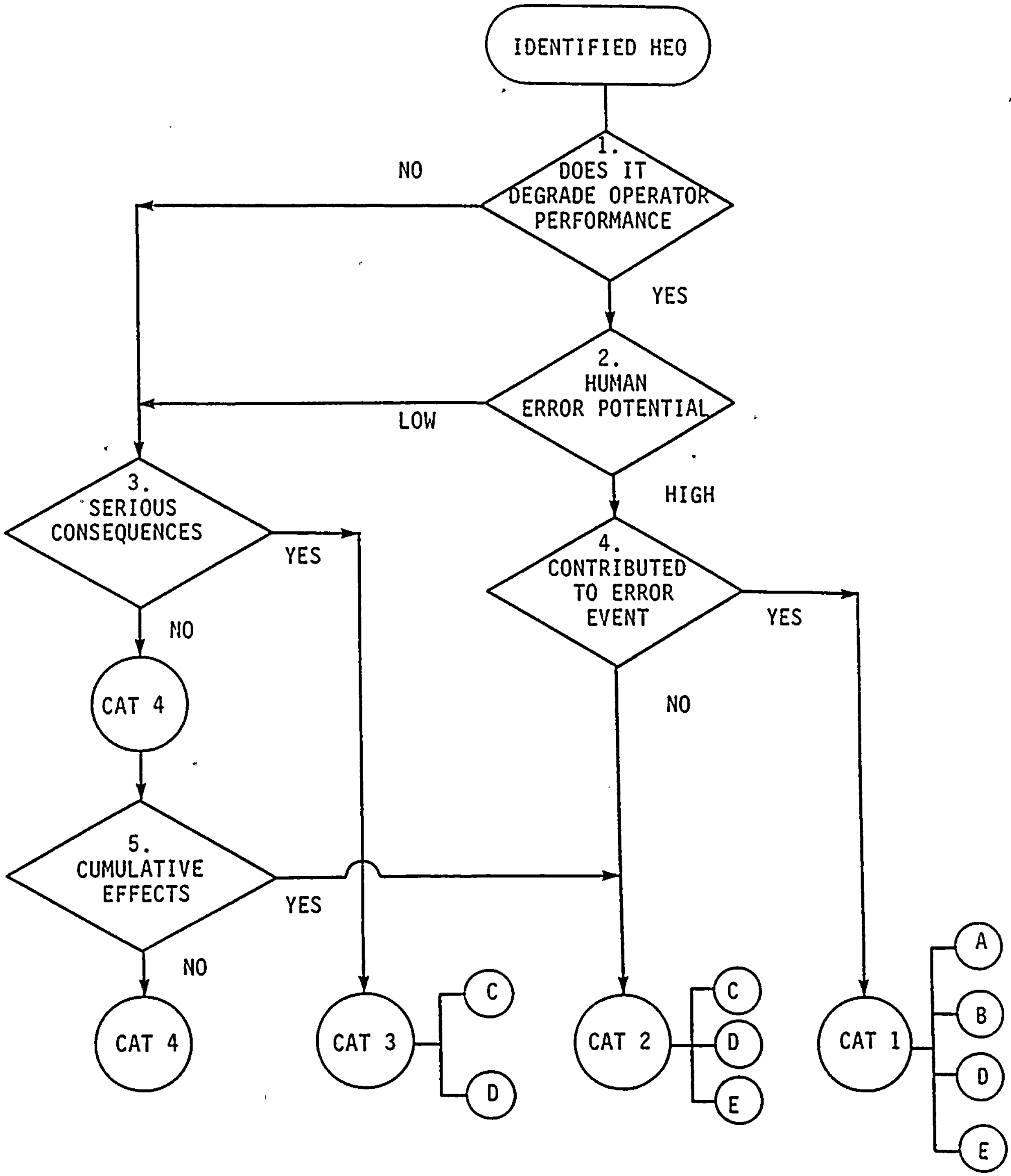


Figure 11-2. HEO Categorization Process

3. <u>Category 3 are HEOs Associated with Low Probability Errors of Serious Consequence</u>. Depicts all HEOs that were associated with low probability errors of serious consequence. HEOs in this category were those associated with errors which were intolerable because of their possible adverse consequences.

4. <u>Category 4 are HEOs not Associated with Errors</u>. Includes any HEOs that were evaluated and determined neither to increase the potential for causing or contributing to a human error, nor to have adverse safety consequences. In addition, HEOs associated with the SPDS were considered category four. This is consistent with NMPC's functional use of the non-safety related SPDS. Its purpose is to enhance control room personnel's capability to diagnose and assess transient or accident conditions. The SPDS will not be used to respond in accordance with Emergency Operating Procedures. The functional criteria for the SPDS includes on-line trending and bar chart information for the control room, Technical Support Center (TSC) and Emergency Operating Facility (EOF) displays.

5. <u>Level A</u>. Those HEOs for which the related documented error (in similar plants) was associated with a safety-related function, and resulted in an unsafe operation.

6. <u>Level B</u>. Those HEOs for which the related documented error (in similar plants) was associated with a safety-related function, and resulted in violation of a technical specification.

7. <u>Level C</u>. Those HEOs for which the related potential error was associated with a safety-related function, and could result in an unsafe operation or the

violation of a technical specification. As identified by the NRC during their review of the program plan, Category 1 cannot be associated with Level C in the assessment phase. By definition, Category 1 is HEOs associated with documented errors in similar plants included in the Operating Experience Review. Level C on the other hand covers potentially unsafe operation or technical specification violation. The appropriate levels for Category 1 are Level A and B which are for documented unsafe operations or technical specification violations. Level D and E can be associated with either documented or potential errors.

8. Level D. Those HEOs for which the related potential error was associated with a nonsafety-related function, but resulted or could have resulted in a plant outage or significant financial loss.

9. Level E. Those HEOs for which the related potential error was associated with either a safety-related function or a nonsafety-related function, but could not result in unsafe operation, the violation of a technical specification, a plant outage, or a significant financial loss.

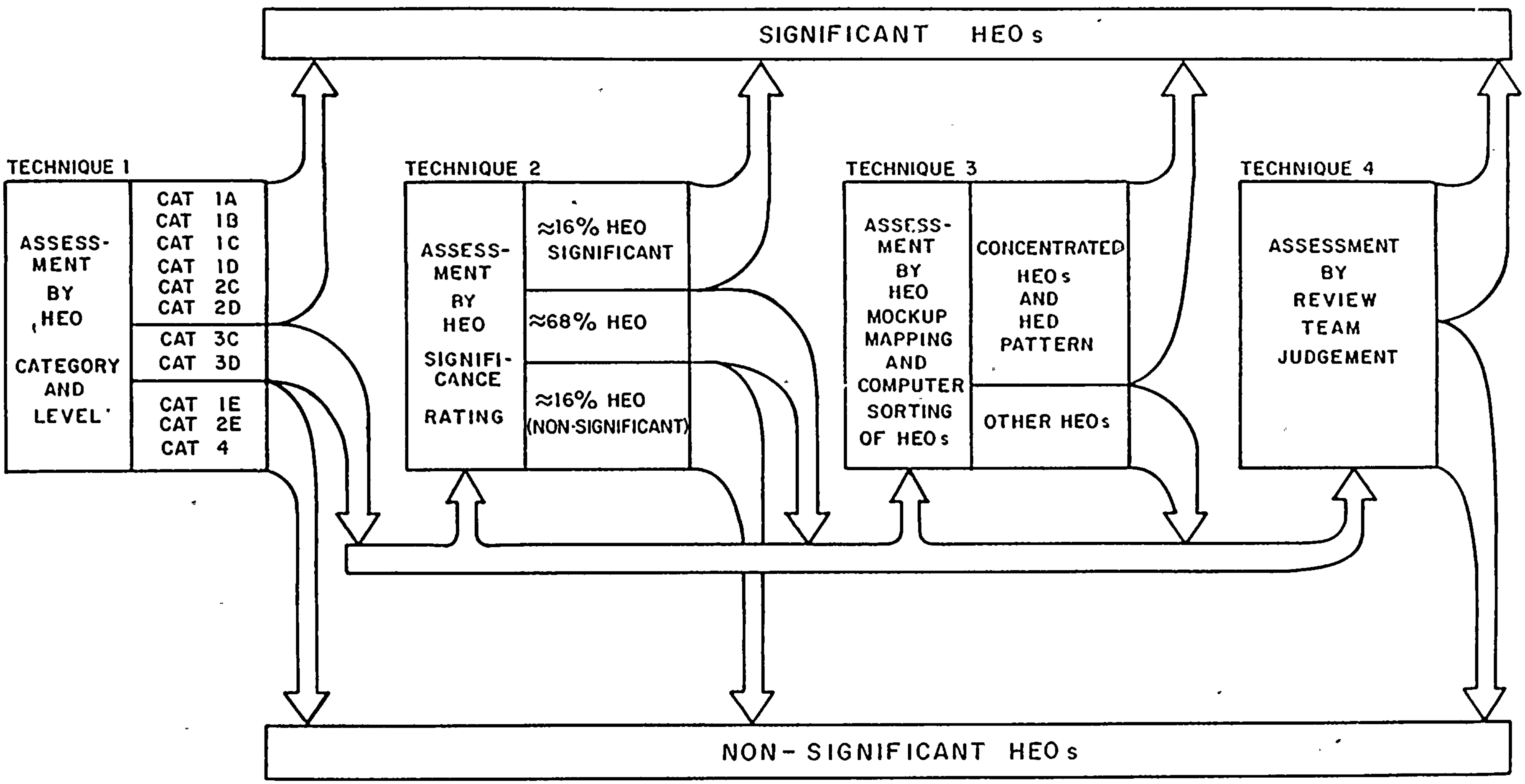
11.4 HEO Significance Assessment

The purpose of this step was to determine which HEOs among those identified during the review process were significant and should be defined as HEDs. An HED represents a potential source of operator error with significant plant operation consequences -- safety-related and nonsafety-related. The term significant has two applications. It is applied to HEOs which have the potential to compromise plant safety, and to HEOs which affect plant operability/availability in a manner unacceptable to management. Accordingly, all HEOs involving

plant safety and selected nonsafety-related HEOs of concern to management were considered significant. Significant HEOs (i.e., HEDs) were analyzed for correction while non-significant HEOs were not considered necessary to be corrected. For Nine Mile Point Unit 2, all HEOs that were designated 1A, 1B, 1D, 2C and 2D were judged to be significant HEOs (HEDs). All Category 3 HEOs were further assessed using Techniques 2, 3 or 4 described below.

Before an individual, nonsafety-related HEO was discounted as non-significant, a second stage of assessment was performed in which the interrelationships or cumulative effects of nonsignificant HEOs were studied to identify any unacceptable safety- or nonsafety-related effects on plant operation. If unacceptable effects were identified, the HEOs originally classified as nonsignificant were redefined as significant, defined as HEDs, and were analyzed for correction.

Techniques were developed to aid the assessment of HEO significance and are depicted in Figure 11-3. Four techniques were outlined in the Program Plan Report Detailed Control Room Design Review for Nine Mile Point Unit 2. The categorization phase included Technique 1 (assessment by category and level). At a minimum, the significance assessment should have included one of Techniques 2, 3 or 4. These three techniques were developed as tools to assist the Review Team in assessing Category 3 HEOs. Typically, category 3 HEOs are more difficult to assess since they fall in the middle range of significance as determined in Technique 1. The Review Team Leader made a conscientious decision to perform the significance assessment using Technique 4 (assessment by Review Team judgment). If Review Team consensus was difficult to obtain, Techniques 2 or 3 could have been employed (assessment by HEO significance rating, or assessment by HEO mockup mapping and computer sorting of HEOs). However, this situation never arose.



NOTES:

1. TECHNIQUE 1. USED FOR ALL HEOs
   TECHNIQUES 2,3,4 USED AS REQUIRED
2. SIGNIFICANT HEOs = HEDs

FIGURE 11-3
SIGNIFICANCE ASSESSMENT
DECISION PROCESS

Technique 4 proved to be successful with team concurrence on all 145 of the Category 3 HEOs. One hundred twenty six of these HEOs were judged to be significant. The remaining 19 were dispositioned as non-significant; and therefore, did not require a fix.

11.5 Selection of Correction Method

The purpose of this step was to choose the appropriate method of correcting a given HED and did not apply to nonsignificant HEOs. Two methods to correct an HED were defined to account for the range in HED type and extent. One method was termed enhancement and applied to HEDs which could be satisfactorily corrected by simple surface treatment techniques or administrative charges. The other method, for HEDs which could not be satisfactorily corrected by enhancement, was correction by means of a separate design effort.

Enhancement corrections were distinguished from design corrections by the physical nature of the correction and the scope of analysis and design effort required to develop them. Corrections, such as labeling changes, array demarcation, changing chart recorder paper, or modifying a procedure, are clear cut and require limited analysis. Recommendations for enhancement corrections were developed by the review team. Other corrections such as a major panel redesign were approached as a separate design project requiring significant resources not allocated to the DCRDR. In such a case, the review team prepared design objectives and a scope of work for the design effort. At the completion of major design changes, verification and validation will be conducted using the methods described in Chapters 9.0 and 10.0.

11.6 HED Correction Analysis

The approaches to HEO correction by enhancement and by design improvements are described in the following paragraphs of this section. In both cases, analyses were weighted towards using the judgment of the review team members in developing design recommendations.

Development of enhancements proceeded soon after the design improvement approach selection, since an enhancement typically provides a significant improvement quickly and at low cost. In some cases, the enhancement will be implemented as an interim improvement while a long-term design solution will be developed. In this way, a requirement to provide a near-term solution as well as an integrated control room design in the long-term would be resolved. It may be necessary to reiterate the enhancement design, verification, and validation cycle before reaching a final design recommendation. The final design recommendation may comprise a complete or partial correction of the given HEO. A decision not to correct an HEO will be a possible product of the analysis process. Recommendation for either partial correction or no correction will be justified and documented. The basis of justification will be benefit/cost or other appropriate analyses.

Design corrections, by definition, are corrections which are developed through planned design efforts, and extensive human factors studies. These solution packages have been contracted in order to correct the problems isolated by the DCRDR. These studies are outlined in Volume 2 of this report. The review team's responsibilities were, therefore, limited to producing preliminary conceptual design recommendations. The specificity of a recommendation varied with the type and extent of the HEO. A recommendation specified what design correction is

needed, why it is needed, and how to accomplish the correction. The recommendation included problem description, design objectives, and proposed correction description.

Recommendations were based on preliminary design analyses performed by the review team. Analyses included alternative solution identification, comparison, and selection for the case of a simple, isolated HEO. The product of preliminary analysis was a preliminary conceptual level design requiring further design analyses and engineering.

11.7 Correction Verification and Validation

Recommendations for improvement were supported by documents produced throughout the assessment process. This information was useful in establishing the implementation priority of design recommendations or in justifying a decision not to implement the recommendations. Verification and validation of the final results of design efforts initiated after the completion of the DCRDR will be conducted. The approach that will be used to verify and validate the design corrections is described in Chapters 9.0 and 10.0.

12.0 COORDINATION WITH OTHER NUREG-0737 SUPPLEMENT 1 INITIATIVES

Niagara Mohawk Power Corporation has a coordinated program to address each of the to NUREG-0737 Supplement 1 initiatives. This program is headed by NMPC Project Engineering which provides the necessary coordination and support to ensure that a systematic approach is adopted for the inclusion of each of the recommended design changes resulting from these activities. This integrated approach is intended to optimize the interface within the control room network.

Integration was effected in the early stages of the DCRDR. All responsible parties for the Supplement 1 initiatives were involved in the identification, categorization, assessment and recommendation of solutions in the DCRDR. Regulatory Guide 1.97 based instrument displays were incorporated into the hardware prior to commencing the DCRDR. Functions and tasks were analyzed to determine informational and control needs and identify operator tasks during emergency operations. This analysis was used to verify the completeness of the Emergency Operating Procedures. A key DCRDR participant was the lead author of the Nine Mile Point-Unit Two Plant-Specific Emergency Procedure Guidelines, and the Emergency Operating Procedures.

Similarly, the training department was involved at both the Review Team and Management Team levels to assure proper retraining and upgrading of procedures to reflect the physical

changes made in the control room. The SPDS System Engineer was also a team member who coordinated SPDS design information to DCRDR concerns.

Corrective action modifications resulting from the DCRDR will be evaluated for their effects on the Supplement 1 initiatives. Existing NMPC, General Electric, and Stone and Webster design modification procedures will be used and each engineering work product will be tied to the initiating HEO. In addition, future design changes will be guided and reviewed in accordance with the Nine Mile Point Unit 2 Human Factors Design Manual. This review will be incorporated as a requirement in the Niagara Mohawk Engineering Procedures.

App A

2

Vol. I

Contin

APPENDIX A

RESUMES OF KEY PERSONNEL

Name: Douglas L. Pike

TITLE: Assistant Project Engineering Manager - Systems

AFFILIATION: Niagara Mohawk Power Corporation

EDUCATION: 1959 - 1963

Potsdam Central High School - Potsdam, New York -
Majors in Math, Science, and Language (French) - Regents Diploma

1963 - 1967

Clarkson College of Technology - Potsdam, New York -
Graduated with a Bachelor of Science in Electrical Engineering

LICENSE: Reactor Operators License - Nine Mile Point Unit 1
Engineer in Training - New York State

EXPERIENCE: 8/67 - 12/73

Assistant to Plant Superintendent
Niagara Mohawk Power Corporation
Nine Mile Point Nuclear Station

a) Aug. 1967 to Feb. 1969 - Under direct supervision of Instrument & Control Supervisor, responsible for the formulation and writing of instrumentation calibration procedures, the coordination of plant instrumentation turnover from construction forces, participation with headquarters instrument and control design engineering in resolving design problems uncovered during installation and initial calibration of instruments and direct supervision of instrument and control technicians during the start-up phase of plant operations.

b) March, 1969 to Aug. 1970 - Under direct supervision of the Reactor Analyst, responsible for the performance and analysis of plant start-up transient testing as one of four assigned start-up and test engineers. This program required the use of special testing equipment and the performance of detailed engineering and design calculations such as thermal efficiency, shielding and reactor core physics calculations. Following the testing program, responsible for performing and analyzing tests concerned with the aspects of an operating reactor core such as in core detector calibrations, reactor heat balances, control rod worth calculations, and the determination of start-up and shutdown control rod patterns.

EXPERIENCE:
(Continued)

c) Sept. 1970 to Sept. 1971 - Under the direct supervision of the Radiation Protection Supervisor, responsible for all radwaste activities. This included indirect supervision of plant operators performing radwaste activities, the monitoring and analysis of radwaste processing equipment and flow paths, and the development of recommendations for revised or new designs in mechanical, electrical and instrument and control equipment to improve radwaste handling operations. Other responsibilities included the supervision and performance of laboratory chemical analysis of reactor coolant to detect leaking fuel pins.

d) Oct. 1971 to Dec. 1973 - Under the general supervision of the Operating Supervisor, responsible for the preliminary design review of all electrical and mechanical systems for the James A. Fitzpatrick Nuclear Power Plant. As a result of this review, recommendations for changes in plant design were made to the Operating Supervisor for consideration by the Architect-Engineer (Stone & Webster). Directly particpated with the Stone & Webster engineers in the development of instrument and control logic which pictorally describes the function of the control circuits for plant equipment. Was directly responsible for the assigning the supervision of operating personnel in writing plant preoperational test procedures.

<u>1/74 - 6/74</u>

Assistant to the Superintendent for Operations
Niagara Mohawk Power Corporation
James A. Fitzpatrick Nuclear Power Plant

Responsible for the supervision of plant operations during the initial testing phase of plant start-up. Duties included the direct supervision of 26 plant operators and assisting the plant superintendent in the planning of start-up activities. Indirectly responsible for the review of all plant pre-operational test procedures, special procedures, start-up testing procedures and operating procedures and making recommendations for changes thereto. Other duties included coordination of daily work activities between construction and operating forces and assisting the plant superintendent in determining, in coordination with the Architect-Engineer, any design changes required based on results of plant systems testing.

EXPERIENCE: (Continued)

7/74 - 8/77

Assistant to the General Superintendent of Nuclear Generation
Niagara Mohawk Power Corporation
Nine Mile Point Nuclear Station

Responsible for special projects of a technical nature as assigned by the General Superintendent. Among the projects assigned, were the coordination, review and implementation of JAF Operator Surveillance Test Program, the development of various procedures for local leak rate testing and the acceptance testing of new plant systems, the development and review of the NMP Operator Surveillance Test Program, and the coordination and management of all refuel floor activities during the 1975 JAF Outage. Other responsibilities included the design review of all mechanical and electrical systems for NMP Unit #2, the writing of reports required by the NRC and the documentation of Site Operation Review Committee meeting minutes as Secretary to the Committee.

9/77 - 9/79

Technial Assistant to the General Superintendent of Nuclear Generation
Niagara Mohawk Power Corporation
Nine Mile Point Nuclear Station

Responsibilities and Authority included:

a) Performance of investigations and evaluations of a technical nature concerning the design, construction and operation of nuclear stations.

b) Review reports of regulatory agencies; prepare and present reports of technical nature to the Site Operations Review Committee; prepare technical reports in response to inquiries of regulatory agencies.

c) Prepare new or revise existing procedures, consistent with regulatory requirements and Company standards, including pre-operational test procedures.

d) Review submissions to regulatory agencies concerning licensing, serving as a liasion with the Engineering Department in their preparation.

e) Provide supervision of critical path activities during refueling outages.

f) Insure compliance with existing work standards and safety requirements for the benefit and protection of employees, customers, and the public.

EXPERIENCE:
(Continued)

Major responsibilities in this position included the operational design review of all Nine Mile Point #2 Mechanical and Electrical Systems and the participation in design review meetings with Stone & Webster engineers, including the review of various FSAR sections. Also, responsible for technical input for Technical Specification preparation and providing technical support to the Nine Mile Point #2 Operating Department for the preparation of plant procedures. Responsible also for coordination between Site Operations Group and Project Management Group in matters relating to Unit #2.

10/79 - 8/82

Project Engineer - Nuclear Generation Projects
Niagara Mohawk Power Corporation

Under the general direction of the Manager of Engineering - Nuclear Generation Projects, responsible for the following related to the engineering of the Nine Mile Point Nuclear Station Unit #2:

a) The coordination, within Niagara Mohawk, of the review of all plant mechanical and electrical systems as designed by the architect-engineer (Stone & Webster). Personally responsible for the detailed review of specifications, engineering claculations and engineering drawings associated with plant design and making recommendations for changes to systems design.

b) Responsible for the performance of economic evaluations of cost estimates made by the architect-engineer and technical and cost-benefit evaluations for recommended changes to plant design submitted by the architect-engineer.

c) Responsible for review of architect-engineer design as it applies to the ability to be licensed by the Nuclear Regulatory Commission. This includes review of all systems design and licensing documents. As assigned by the Engineering Manager, responsible for following specific licensing problems and making recommendations for their resolution.

d) In general, the performance of technical and economic studies and evaluations as assigned by the Manager of Engineering.

EXPERIENCE:
(Continued)

9/82 - 12/82

Lead Electrical Engineer - Nine Mile Point Unit 2 Project
Niagara Mohawk Power Corporation

Under the general direction of the Manager of Project Engineering, responsible for the supervision of project activities associated with the following:

a) Conceptual design review of plant systems and changes thereto.

b) Detailed review of all project electrical design and procurement functions.

c) Detailed review of all project instrument and control design and procurement.

d) Detailed review of all project equipment qualification.

e) Coordination of project engineering with operational and start-up and test organizations.

1/83 - Present

Assistant Manager Nine Mile Point Unit 2 Project Engineering - Systems
Niagara Mohawk Power Corporation

Under the general direction of the Manager of Project Engineering, responsible for the management and direction of the following activities:

a) Conceptual design review of plant systems and changes thereto.

b) Detailed review of all project instrument and control design and procurement.

c) Coordination of the project engineering interface with the nuclear steam supply vendor.

d) Project engineering administration and reports.

e) Coordination and review of project engineering matters related to security.

EXPERIENCE:
(Continued)

f) Coordination and review of project engineering matters related to fire protection.

g) Review of all project equipment qualification.

h) Coordination of project engineering with operational and start-up testing organizations.

PROFESSIONAL ACTIVITIES:

Member - Nine Mile Point Unit 2 ALARA Review Committee

Member - Technical Review Committee - General Electric Equipment Qualification Program

Resume

May 1983

Name: Richard B. Abbott

Address:

..ducation: High School: Jamesville-DeWitt

Major: Math/Science
Graduated - June 1967

Clarkson College of Technology
Potsdam, New York

Degree: Bachelor of Science
Mechanical Engineering
May 1971

Military Branch: U.S. Army (Reserve)
Infantry/Drill Sgt.
7/71 - 2/72 Active

Job Experience:

Niagara Mohawk Power Corporation

Date of Hire: 6/14/71

Job Experience: (Cont.)

11/1/81 - 12/31/82 Supervisor Operations-Nuclear-9 Mile Point #2

Direction of Operations Department activities for design reviews, procedure generation, licensing (FSAR) document reviews. Department staffing, promotion, normal department head administrative functions. Interface with contractor organizations, NMPC project organizations, site Nuclear Generation departments for design, construction, testing activities of 9 Mile Point #2.

10/1/79 - 11/1/81 Supervisor Operations-Nuclear-9 Mile Point #1

Direction of the Operations Department in all activities related to the safe and efficient operation of the 9 Mile Point #1 Nuclear Station. Perform all administrative duties normally associated with the department head position.

6/1/76 - 10/1/79 Superintendent Maintenance-Nuclear

Direction of Maintenance Department activities related to the mechanical and electrical maintenance of the 9 Mile Point #1 and James A. FitzPatrick Nuclear Stations. Perform all administrative duties normally associated with the department head position.

5/75 - 6/1/76 Assistant Maintenance Supervisor

Supervision of Maintenance activities at 9 Mile Point #1, Unit 1 and James A. FitzPatrick Nuclear Power Plant.

2/72 - 5/75 Assistant to the General Superintendent Nuclear Generation

Supervision of operation and maintenance activities of Radioactive Waste Disposal System at 9 Mile Point #1.

General engineering, supervision of maintenance related activities at 9 Mile Point #1.

Supervision of pre-operational testing activities at James A. FitzPatrick Nuclear Power Plant.

Start-Up test engineer for Start-Up Test Program at James A. FitzPatrick Nuclear Power Plant

Supervision of Maintenance activities at 9 Mile Point #1 and James A. FitzPatrick Nuclear Power Plant.

Job Experience: (Cont.)

1/1/83 - Present: Station Superintendent - 9 Mile Point #2

Direction of the Operations Department and Test Group for the formulation and implementation of a preoperational and startup testing program. Interface with contractor organizations, Nuclear Construction, Nuclear Generation and Nuclear Licensing departments for design, construction, licensing and testing of 9MP#2. Ensure adequate staffing and training for station personnel. Responsible for the Startup and Test budget and control thereof.

Past Experience:

Hold current Senior Reactor Operator License at 9 Mile Point Nuclear Station #1 (since May, 1976)

EDWARD J. HUBNER

EDUCATION

Princeton University - Bachelor of Science, Electrical Engineering - 1974
Northeastern University - Courses in control theory and transformer and motor design.

LICENSES AND REGISTRATIONS

Engineer-in-Training - Massachusetts
Professional Engineer - Pennsylvania

EXPERIENCE SUMMARY

Mr. Hubner has over 10 years of experience in the engineering industry. Currently, as Assistant Superintendent of Engineering, he is responsible for the overall management and technical direction of Multiple Discipline Engineering and Design efforts for Niagara Mohawk Power Corporation's Nine Mile Point Nuclear Station Project.

Since joining Stone and Webster Engineering Corporation in 1971 as an Engineering Aide in the Control Division, he has been a member of four project teams. He has been assigned as Lead Control Engineer and Principal Control Systems Engineer to an 1000-MW BWR plant project, as an Instrument Applications Engineer to 938-MW PWR plant projects, and as an Instrument Test Engineer to an 856-MW PWR plant Project.

In addition to his project-related duties, he has taken part in the SWEC training program for new engineers, lecturing on instrument application and Control Systems Engineering topics.

PROFESSIONAL AFFILIATIONS

Instrument Society of America - Senior Member, South Jersey Section, Secretary 1979-1980, President 1980-1981.

DETAILED EXPERIENCE RECORD

STONE & WEBSTER ENGINEERING CORPORATION
Oswego, NY; Cherry Hill, NJ; Boston, MA; and Shippingport, PA
(June 1971 - Present)

Appointments:

Assistant Superintendent of Engineering - October 1984
Senior control Engineer - September 1983
Lead Control Engineer - June 1980
Principal Control Systems Engineer - May 1979
Principal Instrument Applications Engineer - April 1978
PGCC Coordinator - January 1978
Instrument Applications Engineer - March 1976
Career Development Engineer - June 1974
Engineering Aide - June 1971

Nine Mile Point Nuclear Station - Unit #2
Niagara Mohawk Power Corporation
(March 1976 - Present)

As ASSISTANT SUPERINTENDENT of ENGINEERING (9/84 - present) assigned to the Nine Mile Point - Unit #2 jobsite, responsible for management of the structural, electrical, I&C, start-up support, and licensing disciplines assigned to the Site Engineering Group. Accountable for budget and schedule for those disciplines under his management control. Responsible for those multi-discipline tasks as assigned by the Superintendent of Engineering.

As LEAD CONTROL ENGINEER (9/81 - 9/84) responsible for all Control Systems activities on this Project, including those previously associated with PGCC. Also performs budget and schedule monitoring, establishment of technical direction, personnel supervision, and client interface.

As LEAD CONTROL ENGINEER (6/80 - 9/81) responsible for the coordination and direction of all technical activities associated with the design and fabrication of the Nine Mile Point Power Generation Control Complex (PGCC). PGCC is a two-floor prefabricated and cabled modular control room consisting of over 100 control panels. Included in his duties were schedule development and monitoring, manpower loading, technical direction, and interface with the prime supplier of this prefabricated comlex. Also, was actively involved in commercial contract negotiations which were successfully completed for this multi-million dollar complex.

As PRINCIPAL CONTROL SYSTEMS ENGINEER (5/79 - 6/80) responsible for all control systems engineering activities on the Project. Reviewed and approved all control system design documents such as logic diagrams, loop diagrams, elementary diagrams, HVAC P&IDs, control panel layouts and Bills of Material, and FSAR section. Participated in all system design reviews, both balance of plant and nuclear steam supply systems with the client. Additionally, responsible for all scheduling associated with these activities.

As PRINCIPAL INSTRUMENT APPLICATIONS ENGINEER (4/78 - 5/79) responsible for directing and coordinating the instrumentation design, procurement, and installation activities on the Project. This included manpower scheduling and assisting in the Project planning effort for all instrumentation-related activities.

As PGCC COORDINATOR (1/78 - 4/78) responsible for a modularized control room complex, called the power generation and control complex. With this concept, a design basis for the balance-of-plant equipment was defined by SWEC and given to the supplier. Functioned as the liaison during the initial design phase of the supplier. During this period, divided time equally between the SWEC offices and supplier's office.

As INSTRUMENT APPLICATIONS ENGINEER (3/76 - 1/78) responsible for the design and procurement of instrumentation systems; preparation of logic diagrams for process systems; P&IDs for HVAC systems; preparation of instrument loop diagrams; preparation of bid specifications, bid comparisons, and subsequent vendor recommendations t the client; and review of equipment drawings for technical acceptance.

North Anna Nuclear Power Station - Units 3 and 4
Virginia Electric Power Corporation
(June 1975 - March 1976)

Duties similar to those listed above.

Beaver Valley Power Station - Unit 4
Duquesne Light Company
(October 1974 - June 1975)

As INSTRUMENT TEST ENGINEER (10/74 - 6/75) assignment took place during the completion of construction through the "hot functional" testing of the plant. Responsibilities included installation, calibration, and testing of instrumentation as well as system troubleshooting when necessary.

As CAREER DEVELOPMENT ENGINEER (6/74 -10/74) assigned to the Control Division Logic Group and prepared standard system guidelines t be used by projects.

James A.FitzPatrick Nuclear Station
Power Authority of the State of New York
(June 1973 - September 1973)

As ENGINEERING AIDE in the Electrical Control Group, responsible for the review, revision, and verification of both General Electric and Stone and Webster electrical control diagrams.

North Anna Nuclear Station - Units 3 and 4
Virginia Electric and Power Company
(June 1972 - June 1973)

As ENGINEERING AIDE prepared electrical control diagrams for supply breakers, motors, and valve control. Also, responsible for development of the initial main control board layout for this Project.

Beaver Valley Nuclear Power Station - Unit #1
Duquesne Light Company
(June 1971 - September 1971)

As ENGINEERING AIDE responsible for reviewing and revising electrical control diagrams for the Beaver Valley switchyard.

RICHARD H. SHANNON
Manager, Automation Services Group
Senior Engineer

- Human Factors Engineering
- Anthropometrics/Biomechanics
- Job/Task Analysis
- Human Performance Assessment
- Work Measurement
- Systems Analysis
- Experimental Design
- Human Error Analysis

Dr. Shannon is a Senior Engineer providing industrial engineering and research support in human performance measurement. His experience spans a wide range of human factors activities and areas of application, both military and industrial. Dr. Shannon has participated in many studies on the effects of stressful environments upon human performance (cold, heat, chemical warfare, acceleration, vibration, flight). He has recently developed a battery of 31 cognitive and psychomotor tests with fifteen alternative forms in order to observe the effects of the environment using a repeated measures design. He has conducted studies on manual materials handling and the proper biomechanical techniques for handling loads. Dr. Shannon has also worked with numerous existing and emerging naval aircraft and ship systems as a human factors and systems safety engineer.

Presently Dr. Shannon is Project Director for the CRDR at the Louisiana Power and Light Company's Waterford-3 station. This position requires that he coordinate and participate in the various phases of inventory review, task analysis, operator experience review, checklist survey, verification and validation. He has also assisted Combustion Engineering in the development of a generic task analysis and instrument/control requirements for the C-E Owner's Group.

PREVIOUS EXPERIENCE

- 1982 to 1984 Naval Medical Research Institute, Bethesda, Maryland
  Head, Performance Physiology Branch

Coordinated a multi-disciplinary program on the effects of cold, heat and chemical warfare on human performance under field and laboratory conditions. Relative to these duties, Dr. Shannon developed a cognitive/psychomotor battery of 31 tests with normative baselines (each test measuring a specific construct and containing 15 alternative forms); and the construction of a human performance laboratory containing various psychomotor apparatus tests, work physiology equipment, evoked-potential computer, a programmable environmental chamber, and a network system of computers for behavioral testing.

- 1979 to 1982 Naval Biodynamics Laboratory, New Orleans, Louisiana
  Head, Human Performance Sciences Department; Chief, Task and Workload Division

Coordinated the activities of personnel in the design, scheduling and conduct of experiments involving human performance under normal and stressful conditions (acceleration, vibration). Performed task analyses of U.S. Navy jobs and work stations for the purpose of establishing synthetic validity for a selected battery of performance tests. Designed a human performance laboratory which included an automated test battery and six APPLE computers in a network system.

- 1979 and 1983 to 1984 University of Southern California, Los Angeles, California, and Golden Gate University, San Francisco, California Lecturer, Human Factors and Safety Science Departments of USC and Public Administration Department of GGU.

Taught ten graduate courses in research methodology, statistics, experimental design, human factors engineering and system safety engineering as a part of the educational extension programs of these two universities in Virginia.

- 1977 to 1979 Naval Safety Center, Norfolk, Virginia
  Human Factors Engineer, Systems Safety Engineer

Major areas of effort were to monitor human engineering and system safety efforts on the F18, LAMPS, AV8, OA4M aircraft through plant visits, conferences, program and mock-up/lighting reviews, statistical analyses of mishap reports, functional studies of maintenance and pilot duties, and evaluations of aircraft design deficiencies.

- 1975 to 1977 Texas Tech University, Lubbock, Texas
  Doctoral Candidate, Psychology and Industrial Engineering Departments

Emphasis of educational program was upon human factors engineering, biomechanics, human performance, safety, statistics, work measurement and analysis, motion analysis and modeling.

- 1971 to 1975 Naval Aerospace Medical Research Laboratory, Pensacola, Florida
  Research Psychologist

Developed pilot and flight officer task analyses in all major aircraft in the Navy inventory. Additional areas of concern were flight student attritions, statistical models for pilot prediction and performance assessment, aircrew human error, instructor reliability and bias, student selection and training, and aircrew safety.

- 1969 to 1971 Fleet Air Wings, U.S. Atlantic Fleet, Norfolk, Virginia
  Research Psychologist

Research of Patrol aircrewmen included personnel fatigue, crew coordination/utilization, human engineering of work stations, performance assessment, maintenance and pilot human errors, and flight safety. In addition, studies into maintenance procedures, organizational climate, aircrew human error, and pilot training within fighter squadrons were conducted.

EDUCATION

Ph.D., Industrial Engineering, Experimental Psychology, Texas Tech University, Lubbock, Texas, 1978.

M.Ed., Industrial Psychology, Springfield College, Springfield, Massachusetts, 1969.

B.S., General Engineering, Naval Science, U.S. Naval Academy, Annapolis, Maryland, 1961.

PROFESSIONAL AFFILIATIONS

Human Factors Society
American Institute of Industrial Engineers (Senior Member)

MILITARY SERVICE

1957 to 1961	Midshipman, U.S. Naval Academy, Annapolis, Maryland
1961 to 1963	Flight Training, Pensacola, Florida
1963 to 1966	Naval Aviator, Plane Commander in S2E Aircraft (received Air Medal), VS-29, San Diego, California
1966 to 1968	Flight Instructor, VT-1, Pensacola, Florida
1969 to 1984	Research Psychologist, U.S. Navy

RESUME OF: Gary Weimer DATE: 7/19/85 DATE OF BIRTH: 3/17/85

SOCIAL SECURITY #: DATE OF HIRE: 12/21/83

ation

H. School: Gowanda Central School Address: Gowanda, New York 14070

Date of Graduation: June 1971 Major: Art

College: Mohegan Community College Number of Years: 2

Major: General Studies Degree/Date of Grad: Associate in Arts

Special Training/Education/Courses:

Six month course on electronic circuit operation and design analysis.

Certifications/Licenses: Senior Reactor Operator (SRO) SOP-10345

Additional Skills/Attributes: Trained in Electronic/Electrical maintenance and repair, Quality Assurance Inspection and Human Relations/resources.

Military Record

Branch of Service: Navy Dates: Oct 5, 1971 – Dec 19, 1983

Special Courses/Training: Qualified Engineering officer of the Watch (EOOW), Engineering Watch Supervisor (EWS), Reactor Operator (RO), Instructor.

Niagara Mohawk Employment

From: 12/21/83 To: Present Job Title: Assistant Training Supervisor - Nuclear

Duties: Training program development and implementation

From: To: Job Title:

Duties:

From: To: Job Title:

Duties:

From: To: Job Title:

Duties:

From: To: Job Title:

Duties:

Previous Employers:

From: 10/5/71 To: 12/19/83 Name of Company: US Navy

Duties: Operate manage personnel, maintain records for and implement training on PWR plants.

From: To: Name of Company:

Duties:

From: To: Name of Company:

Duties:

From: To: Name of Company:

Duties:

Additional Information (Use extra sheet of paper if necessary)

ARTHUR G. VIERLING

Graduated from Clarkson College with BSME in 1974. Joined Niagara Mohawk Power Corporation as a Mechanical Design Engineer in June 1974. Offers experience in a variety of engineering functions, ranging from design and testing to project work.

Project Engineer (April 1983 to Present)

Employed at Nine Mile Point Unit #2 as Field Project Engineer. Provided technical direction for the installation and modification of the Unit #2 Control Room. Acted as the primary technical interface to the NRC, NMPC QA and NMPC Contract Administration, for Control Room concerns.

Test Engineer (October 1981 to March 1983)

Employed at General Electric's test facility in San Jose, California as a Control Room Equipment Test Engineer. Responsibilities included development of test plans/procedures for inter and intra panel component testing. Additional responsibilities included monitoring the manufacturing facilities for a compliance to cost estimates, schedule, contractual agreements and technical specifications.

Nuclear Staff Engineer (November 1979 to September 1981)

As Nuclear Staff Engineer my major undertakings were the installation of an ATWS (Anticipated Transient Without Scram) System and the TMI (Three Mile Island) modifications to Nine Mile Point Unit #1. Responsibilities included development of system specification and overall project coordination with final review of system design and hardware procurements. Additional responsibilities included supervision of engineers (multiple discipline) and cost and schedule compliance. Was a member of the BWROG Subcommittee on Control Room Improvement. Performed NUREG-0700 Review on Brown's Ferry Units #1 and #2, as well as WSPPS Unit #2.

Instrumentation and Control Engineer (November 1977 to November 1979)

Employed in corporate engineering as a Fossil - Nuclear I&C Engineer. Projects included modification to fossil boiler combustion control systems, installation of EPA Air-Water Monitoring and Reactor Protection System upgrading at Nine Mile Point Unit #1. Responsibilities included design, procurement and acceptance criteria of control equipment, review of vendor drawings and specifications, and supervision of designers and drafting technicians for installation drawings.

Quality Control Operations Engineer (June 1976 to November 1977)

Employed at Nine Mile Point Nuclear Plant #1 as a Quality Control Engineer. Responsibilities included procedural compliance to the installation, operation and refueling outages. Daily activities included review and approval of procurement specifications and receipt inspection testing. Was certified as a Level II Non-Destructive Tester in accordance with ASNT TC1A and as a Level II Test Engineer in accordance with ANSI N 45.2.6.

Mechanical Design Engineer (June 1974 to June 1976)

Employed in corporate engineering as a Mechanical Design Engineer. Projects included the design, procurement and construction of high pressure gas control regulating stations. Daily responsibilities include the design, procurement and construction of piping systems, control valve selection remote metering and control systems. Supervised designers and drafting technicians for installation drawings and provided field technical assistance during construction.

Arthur G. Vierling

SPECIAL TRAINING

Type of Training	Year Taken	Duration	Administered By
Metallurgy of Welding and Joining	1975	1 wk seminar	Metals Engineering Institute
Electric Utility Systems and Practices	1977		Niagara Mohawk/ General Electric
IRD Vibration Analysis	1978	2 day seminar	IRD Mechanalysis, Inc.
Control Systems Engineering	1979	2 wk course	Foxboro
Microprocessor Technology	1982	40 hrs class time	General Electric

DATE 6/84

RESUME

NAME: RALPH WILLIAM GAYNE

DATE OF BIRTH: 7-18-37

SOCIAL SECURITY

ADDRESS:

DATE OF HIRE: 1-23-56

JOB TITLE: ASSIST. SUPERVISOR OPERATIONS

DEPARTMENT: OPERATIONS

EDUCATION:

Gouverneur Central High School
Gouverneur, New York
Graduated - 1955

Canton ATC. Canton, New York
Part-time
Electrical I, II, III - 1956

I.C.S. Course
Industrial Electronics - 1957

Niagara Mohawk Sponsored Training
Nine Mile Point Nuclear Station
1967-1968 (2 months)

Covering: Reactor Physics, Radiation Protection, Math, Chemistry, Electricity, Heat Transfer, and time on Minneapolis Honeywell Simulator

NMPC Fire School
1968 - 1 week

General Physics Basic Introduction Course
January - March 1972

G.E. BWR Technology Course
April 1972 - 4 weeks

G.E. BWR Technology Course
May 1973 - 2 weeks

G.E. Simulator Training
Morris, Illinois
November 1972 - 1 week

General Physics Corporation Training Course
March-April 1974
100 hours

Ro JAF

BUTTACAVOLI, PETER

ENGINEER
CONTROL SYSTEMS
DIVISION

EDUCATION

Brooklyn Technical High School - Courses in Mechanical Engineering
Pratt Institute - Courses in Mechanical Engineering
Stone & Webster Engineering Corporation - Courses in Management Concepts and Principles

EXPERIENCE SUMMARY

Mr. Buttacavoli has 25 years of experience in the design of power plants and industrial and chemical process industries. Currently, as Principal Engineer for Niagara Mohawk Power Corporation's Nine Mile Point Nuclear Station - Unit 2 PGCC, his primary responsibilities are the control and evaluation of system requirements affecting the main control room and relay room. He is also responsible for the Human Factors Engineering criteria for functional and operational organization of these areas.

Since joining Stone & Webster Engineering Corporation in 1974, he has also functioned as Division Staff Human Factors Squad Leader for all projects. Prior to this he had been assigned to two nuclear power plant projects as Control Design Squad Leader and Group Leader. He was previously assigned as Control Design Group Leader for an industrial plant gas-to-oil conversion. Special assignments included participation in the task force studying approaches and applications of implementing human factors engineering in control room design.

Prior to joining Stone & Webster, Mr. Buttacavoli was a Senior Designer with 15 years of experience in the engineering, design, and production of computerized industrial batch control systems, military launching and tracking systems, and high-speed, automated, industrial production facilities. He was also a Designer for 3 years on fossil plant projects.

PROFESSIONAL AFFILIATIONS

Human Factors Society - Member

Name: RALPH W. GAYNE

EMPLOYMENT: Positions held with Niagara Mohawk:

Position: Assitant Supervisor Operations

Duties: Assists the Supervisor Operations, analyzes operating data, formulates and updates operating procedures and operating orders, schedules work activities to ensure 24 hr, 365 day coverage, and also, maintains NRC Senior Reactor Operator license.

1978 to 1981

Position: Station Shift Supervisor

Duties: Writing pre-operational tests, Operating Procedures, Special Procedures and performing design reviews on plant systems for Nine Mile Point Unit #2, writing major portion of Section 13 and 14 of the FSAR for Unit #2. Acted as the Turbine Building coordinator during the Unit #1 refuel outage, 1979 and participated in the testing of pipe restraints for NMP-#1 during the outage. SRO, Unit 1 July 198[illegible]

1976 to 1978

Position: Station Shift Supervisor, James A. Fitzpatrick Nuclear Power Plant

Duties: As senior man on shift, functions include direction of shift activities, assurance that the plant is operated safely and within the license and technical specifications and that plant operations are conducted in accordance with approved procedures. Obtained SRO License.

1972 to 1976

Position: Shift Operating Foreman, James A. Fitzpatrick Nuclear Power Plant

Duties: As SOF, in charge of the operation of the Control Room. From this position, the SOF is able to control the starting and stopping of all major pieces of equipment and the control of the reactor and turbine. Other duties included the directing and training of operators of lower grade.

1967 to 1972

Position: Nuclear Operator "E", Nine Mile Point Unit #1

Duties: As an NOE, responsible for the care and operation of all plant equipment, including the main turbo-generator unit and reactor unit. Also to direct the operation of auxiliary equipment by operators of lower grade. Included duties of the rescue and fire brigade. Obtained RO License.

1964 to 1967

Position: Travelling Operator "B" - Gouverneur

Duties: Responsible for a large area and more complicated auto equipment. Responsible for distribution of power to major industry in the area.

EDUCATION CONT.: General Physics Corporation
SRO License Preparation
1976 - 320 hours

TVA BWR Simulator
Soddy-Daisy, Tennessee
1977 - 3 Days

TVA BWR Simulator
Soddy-Daisy, Tennessee
1978 - 3 Days

General Physics Corp
SRO License Preparation
1980 - 320 hours SRO [illegible] I

Name: Ralph W. Gayne

EMPLOYMENT: (cont'd)

1961 to 1964	Position: Travelling Operator "A" - Star Lake Duties: Responsible for the auto-operation of the Hydro Units in the area, also for the distribution of power to substations.
1957 to 1961	Position: Switchboard Operator "A" - South Edwards Duties: Responsible on a shift for the generators at a Hydro Station, loading and unloading of the units, and synchronizing to the system. Doing light maintenance to the units and maintaining the plant in a clean and orderly condition. Responsible for the breakers and switchyard and for mark-ups to the equipment.
1956 to 1957	Position: Switchboard Operator "A" - Malone Duties: Same as above
1956	Position: Janitor Duties: General janitorial duties.

Name: Ralph W. Gaine

EMPLOYMENT: (cont'd)

(Please list chronologically past experience in present job related categories. Professional or Volunteer basis). (i.e., Volunteer Fire Companies, etc..)

RESUME

NAME: Donald C. Rennels

RENT TITLE: Principal Engineer, Systems Application Engineering

NUCLEAR EXPERIENCE: 17 years

EDUCATION: BSME, University of California, Berkeley

ADVANCED TRAINING: Registered Professional Engineer, California & Minnesota
3 yr Work Rotation Program
Various Management/Project Leadership/Technical Courses
Kepner Tregoe

EXPERIENCE:

- o General Electric Company - 14 years
  - System Engineer
    - Hydraulic design and test of feedwater spargers and overhead core spray spargers. Performance analysis of ring core spray spargers. Investigate vessel internal cracking problems. Investigate plant operation anomalies. Developed transient model of control rod drive scram discharge system. Prepared performance specifications and hydraulic analysis models for main steam and feedwater systems. Prepared hydraulic analysis models for flow measuring devices and jet pumps. Prepared "Hydraulic Analysis Procedures For BWR Piping Systems".
  - Work Rotation Program
    - Emergency Core Cooling System Analysis - Performed special transient studies and evaluated low pressure core injection loop selection logic.
    - Operating Plant Engineering - Evaluated plant performance and safety at increased core flow. Supported feedwater nozzle repair programs.
    - Plant Equipment Design - Evaluated hydraulic and structural performance of valves. Analysed relief valve discharge line transients.
- o Lawrence Livermore Laboratory - 3 years
  - Project Engineer
    - Designed and tested nuclear weapons. Directed the development of fabrication and assembly techniques at the production agency.
- o Hughes Aircraft Company - 2 years
  - Group Suvervisor, Space Simulation Laboratory
    - Designed vibration and shock test equipment, vacuum and cryogenic systems, and satellite spin/tilt test fixtures.
- o Aerojet General Corporation - 6 years
  - Project Engineer, Liquid Rocket Engine Test Area
    - Designed concrete and steel structures, pressure vessels, piping systems and thrust measurement systems.

DONALD F. TAYLOR
Manager, Energy Systems Group
Senior Engineer

- Human Factors Engineering
- Industrial Engineering
- Information Presentation Techniques
- Procedures Enhancement
- Nuclear Engineering
- Training
- Experimental Design
- Workspace Layout
- Statistical Analysis

Mr. Taylor has been active in human factors for a period of twelve years. He has applied experience in mechanical and fluids engineering as well as in nuclear maintenance and operations. As Manager of Energy Systems Group in the Applied Systems Technology Division, Mr. Taylor has served as project manager to a number of the ARD nuclear programs.

Mr. Taylor has extensive experience in the design, evaluation, and enhancement of the man-machine interface in process control applications. He developed human factors guidelines for the design of nuclear power plants (Electric Power Reseach Institute Guide NP-1637); prepared emergency procedures for the Duke Power Company; and developed maintenance procedures and documentation at Duke Power. He has participated in all phases of Control Room Design Reviews (CRDRs), including over 75 interviews with licensed nuclear operators and surveys of 15 control rooms.

- Nine Mile Point Unit 1 Detailed Control Room Design Review - Served as Project Director responsible for the planning and coordination of all project tasks. Conducted Operator Interview and Control Room Survey efforts. Established methods and procedures to identify and analyze operator tasks based upon the plant specific BWROG EPGs. Established methods and procedures and conducted the verification of suitability and availability of information and control needs to accomplish operator task. Designed and conducted efforts to validate that emergency task can be effectively accomplished by the operating crew in the NMP-1 control room. Directed a review of the proposed Safety Parameter Safety System and a survey of the Technical Support Center and Emergency Offsite Facility. Developed methodology and procedures for the NMP-1 Assessment Phase and conducted the assessment of HEDs. Developed conceptual solutions to significant discrepancies and designed and established a Human Factors Manual providing guidance and criteria for the implementation of control room enhancements. Developed detailed solutions for the implementation of control room enhancements including establishment of system and subsystem demarcation lines, mimicing of system flows, system, subsystem, and component labeling packages, replacement of meter scales, and color coding of meter scales. Designed and conducted efforts to verify that enhancements effectly resolve discrepancies but do no introduce new HEDs.

- Ginna Control Room Design Review - Served as Project Director responsible for planning and coordination of all project tasks. Established methodology and procedure for utilizing the Westinghouse generic ERGs to identify operator tasks for accomplishing critical safety functions. Directed and conducted the Control Room Survey effort including the environmental measures of control room lighting, noise, humidity, temperature, and air velocity. Established methodology and procedures for

the Ginna DCRDR Validation of control room functions conducted in coordination with the Ginna EOP development program. Directed and evaluation of the Ginna SPDS in response to NUREG 0737, Supplement 1, requirements. Peformed a human engineering review of panel modification drawings and characteristics for equipment installed in response to Reg. Guide 1.97. Currently conducting the Ginna Assessment Phase.

- Nine Mile Point Unit 2 Detailed Control Room Design Review - Served as Project Director responsible for the planning and coordination of all project tasks. Directed a survey of control room instrumentation and controls, an inventory of control room equipment and a review of historical documents for BWR plants. Directed a review of the Safety Parameter Display System the Technical Support Center, and the Emergency Offsite Facility. Revised methodology and procedures for identifying operator tasks and establishing the information and control needs to execute the emergency operating procedures. Conducted the comparison of the information and control needs to the control room inventory to establish availability and suitability of control room equipment. Established methodology and procedures for the walk-through/talk-through validation of control room functions. Conducted the talk-through validation task effort. Currently conducting the assessment of NMP-2 HEDs.

- Arkansas Power & Light Control Room Design Review - Task Leader for the identification of operator functions and analysis of emergency task for ANO-1. Working with ANO-1 operators, identified information and control needs for executing task objectives. Conducted a review of NUREG-0700 criteria and basis documents to establish the ANO survey checklist. Determined the applicability of the Section 6 design criteria to the ANO-1 control room and researched the basis documentation for the appropriateness of specific criteria values to the nuclear power plant control room application. Conducted the ANO-1 Control Room Survey effort to identify discrepancies to appropriate design criteria.

- Marble Hill Control Room Design Review - Task Leader for the operator interviews and checklist efforts. Conducted over 25 interviews with Marble Hill training and operations personnel. Analyzed results to identify potential human engineeing discrepancies, and prepared the Operator Interview Task Report. Using the Westinghouse Emergency Response Guidelines (ERGs) as a baseline, identified the operator functions and tasks needed to accomplish the emergency response objectives. Working with Marble Hill subject matter experts, identified the information and control needs to perform emergency tasks comprising the Westinghouse ERGs.

PREVIOUS EXPERIENCE

- 1982 to 1983 BioTechnology, Incorporated, Falls Church, Virginia
  Senior Program Analyst

Served as project director for the Duke Power control room review human factors support effort. Principal in an operating experience review for the Duke Power control room review and established checklist criteria and methodology for the control room survey effort. Principle investigator in a project conducted for Duke Power to prepare a guide for the development of maintenance

procedures. Prepared and conducted training seminars for Duke Power procedure writers and engineers to enhance their technical writing skills.

- 1980 to 1982 Essex Corporation, Alexandria, Virginia
  Human Factors Branch Manager

Responsible for the planning and coordination of projects with private utilities to enhance control room operations in nuclear power applications. Designed survey checklists and data forms for evaluation of control room environment, equipment design, and facility design and layout. Developed a methodology for the review of plant system functions and analysis of operator tasks. Designed and conducted an experiment using the Duke Power control room training simulators to evaluate the effectiveness of three candidate emergency procedure formats. Principle author of a writer's guide for emergency procedures prepared for the nuclear stations at Duke Power.

- 1978 to 1980 U.S. Coast Guard, Washington, DC
  Industrial Engineer

Technical expert and staff advisor to the Office of Research and Development on matters of industrial engineering, human factors, and operations research. Primary projects were in the areas of product design and safety, crew station design, and crew performance. Directed efforts to establish an index of life saving capability for personal flotation devices. Planned and organized research to assess the effects of wave motions on crew performance and designed a ship test program to establish criteria for fatigue standards on Coast Guard 41-foot and 44-foot search and rescue crafts.

- 1974 to 1978 Norfolk Naval Shipyard, Portsmouth, Virginia
  Nuclear Engineer

Successfully completed 1,500 hours of course work and formal instruction in the operation and maintenance of the S5W submarine reactor plant. Qualified by NAVSEA on the Naval Reactor Exam as a Reactor Plant Shift Test Engineer and advanced to the highest grade level of nuclear engineer. Prepared technical instructions and specifications for the repair and maintenance of the mechanical and fluids systems of the Westinghouse reactor plant.

- 1972 to 1974 Virginia Polytechnic Institute and State University, Blacksburg, Virginia
  Research Assistant

Assisted in research projects specializing in eye movements and visual search. Established an experimental setup to collect eye position data at a sample rate of 1,000-per-second and developed computer models of search behavior to extract eye movement parameters.

EDUCATION

M.S., Industrial Engineering and Operations Research (Human Factors), Virginia Polytechnic Institute and State University, Blacksburg, Virginia, 1975

EDUCATION (continued)

B.S., Industrial Engineering and Operations Research, Virginia Polytechnic Institute and State University, Blacksburg, Virginia, 1972

PROFESSIONAL AFFILIATIONS

Human Factors Society
American Institute of Industrial Engineers

September 1985

CONFIDENTIAL RESUME

NAME: Mark Allen Dooley

PERSONAL: Age: 31
Date of Birth: 2-25-54
Married; Good Health

EDUCATION: Licenses - RO NMP Unit 1
SRO NMP Unit 1
Currently undergoing Training
for SRO NMP Unit II

Rochester Institute of Technology
June 1982 - Sept. 1984

Remsen Central School
Remsen, New York
Graduate, 1972

U.S. Navy

Machinist Mate "A" School
Great Lakes, Illinois
1972

Machinists Mate "B" School
Great Lakes, Illinois
1972

Nuclear Power School
Bainbridge, Maryland
1973

Nuclear Training Power Unit
West Milton, New York
1974

Other Military Schools
Jan. 1975 - Sept. 1976

EMPLOYMENT/
EXPERIENCE: Niagara Mohawk Power Corporation
Syracuse, New York

9-83 to Present

Position: Training Supervisor NMP-2

Duties: Responsible for the development and implementation of Training and Retraining programs for licensed and non-licensed personnel at Nine Mile Point Nuclear Station Unit-2. This includes initial Cold License Training and INPO Accreditation. The Training Supervisor is also responsible for the documentation and testing records for site personnel.

11-81 to 9-83

Position: Assistant Training Supervisor (Nuclear)

Duties: Assist in the development and implementation of training and retraining programs conducted for licensed personnel at the Nine Mile Point Nuclear Site; prepare lesson plans, conduct classes, prepare and administer annual operator examinations; develop and present general interest and special classes; maintain documented training and testing records. Develop and conduct training sessions for non-licensed personnel at the site including semi-annual steam and mechanical fundamental classes.

1-81 to 11-81

Position: Nuclear Auxiliary Operator E

Duties: Under general supervision on a shift in a Nuclear Station to perform any of the duties of Auxiliary Operators of lower grade and to assist in their training; and at times, as required, to be responsible for the operation of the reactor turbo-generator unit and related equipment from the Control Room.

3-80 to 1-81

Position: Nuclear Auxiliary Operator C

Duties: Under direct supervision on a shift in a Nuclear Station to be responsible for the operational care of main turbo-generator and reactor units; to operate or direct the operation of the highest types of auxiliary equipment; to execute safe and effective mark-ups on equipment within the station and to assist in the detailed training of Auxiliary Operators of lower grade.

12-78 to 3-80

Position: Auxiliary Operator B

Duties: As an AOB, under direct supervision on shift, to be responsible for the operation and care of various types of complicated auxiliary equipment and be responsible for the safe handling of waste products and other equipment associated with turbo-generator or boiler units and with casual supervision to start and stop such equipment.

EMPLOYMENT
CONTINUED:

U.S. Navy
Naval Nuclear Power Training Unit S3G Prototype

10-77 to 12-78

Position: Mechanical Operator Staff Instructor

Duties: Helped in training of assigned students in system knowledge and operational concepts of the S3G Prototype. Directed personnel in both corrective and preventive maintenance associated with all mechanical systems. Responsible for major repairs to service and Control Air Systems. Chosen for Advance Qualifications. Assigned the task of self-motivated training in the area of Engineering Watch Supervisor and Engineering Officer of the Watch.

8-74 to 10-78

U.S.S. James K. Polk (SSBN645)
Fleet Ballistics Missile Submarine

Qualified as Engine Room Supervisor of the Mechanical Division. Assisted in maintenance required to keep the submarine operationally ready. Assigned as Training Petty Officer for the Mechanical Division. During this time I reorganized the training system to a more efficient program. I was responsible for the testing, upgrading and qualification of qualified and unqualified personnel. Assigned as Diesel Expert at which time I was responsible for the trend analysis, preventive maintenance and a complete overhaul of the diesel engine. I received a Squadron Accommodation for this task. Assigned as Nuclear Administrative Petty Officer for the Mechanical Division. I was responsible for maintaining all Technical Manuals up to date.

6-73 to 8-74

U.S.S. Simon Lake AS19
Submarine Tender

Assigned to the Radiological Control division. Qualified as Radiological Control Supervisor.

3-73 to 6-74

Naval Nuclear Power School & Prototype
Bainbridge, Maryland

Completed six months of college level courses, covering all aspects as Reactor Core Construction, operation theory, and related chemistry control. This was followed by six months of training at the D1G Prototype at the Knolls Atomic Power Laboratory, West Milton, New York. The qualification program included theoretical routine maintenance and casualty aspects of reactor and propulsion plant operation.

1-73 to 3-73

U.S.S. Yosemite AD19

Assigned to Evaporator Division of the Engineering Department. Responsible for the maintenance and operation of two triple-effect evaporators.

PERSONAL RESUME

Norman L. Rademacher

Education:

Undergraduate-B.S. Marine Nuclear Science May 1974, from the State University of New York Maritime College

Postgraduate-Courses taken:
Environmental Law
Marine Propulsion Plants
Effects of Nuclear Weapons
Power Systems Analysis
Advanced Math

Licenses:

Federal License, Third Assistant Engineer Unlimited Horsepower, any Ocean, Steam and Motor

Experience:

July 1985 to Present - Lead Support Programs Engineer - Responsible for the development and maintenance of programmatic engineering effort including conceptual programs to enhance the Engineering Department.

July 1979 to July 1985 - Nuclear Design Coordinator responsible for Unit 2 design-related licensing matters, direct control of the licensing effort with the NRC, and responsible for Testimony at ACRS and other regulatory hearings.

August 1976 to June 1979 - Staff Nuclear Engineer for Nine Mile Point Unit 2. Responsible for the nuclear licensing, including nuclear licensing coordination and nuclear engineering efforts for a large nuclear generating facilities.

November 1975 to July 1975 - Concurrent with the above, Licensing Coordinator for Nine Mile Point Unit 2 (1000 MWe BWR), including responsibility for coordination of all Unit 2 licensing matters.

September and October 1975 - Nuclear Engineer responsible for refueling at Nine Mile Point Unit 1 (610 MWe). Supervised refueling operations and coordination effort during the Fall 1975 outage.

February 1975 to September 1975 - Nine Mile Point Unit 1 Licensing Coordinator directly responsible to the Lead Nuclear Engineer for the licensing and nuclear engineering effort for Unit 1, including industrial security.

September 1974 to February 1975 - Junior Generation Engineer responsible to the Supervisor of Generation and Licensing for nuclear licensing and engineering activities.

June 1974 to September 1974 - Reported to the Vice President Research and Development for the study and development of Empire State Power Resources Inc., a seven company utility holding corporation to provide electric power to New York State. In addition, performed nuclear licensing and engineering activities as a Junior Generation Engineer.

RECEIVED VIA TELECOPIER
DATE 7/22/85
TIME 10:55
NINE MILE POINT UNIT 2

October 1984

SCHNEIDER, MARC I.

ENGINEER
CONTROL SYSTEMS DIVISION

EDUCATION

Rutgers University - Bachelor of Electrical Engineering - 1968
University of Massachusetts - Postgraduate courses in Electrical Engineering - 1970
Monmouth College - Master of Electrical Engineering - 1975
New Jersey Institute of Technology - Postgraduate courses in Computer Science and Electrical Engineering - 1978
Rutgers University - Postgraduate courses in Business - 1980
I.S.A. - Course in Fossil Plant Instrumentation - 1981
Drexel University - Postgraduate courses in Electrical Engineering - Power

LICENSES AND REGISTRATIONS

Engineer-in-Training

EXPERIENCE SUMMARY

Mr. Schneider has 12 years of experience in the engineering industry. Currently, as Computer Applications Engineer, he is responsible for the emergency response facilities/liquid radwaste control computer system.

Since joining Stone & Webster Engineering Corporation in 1980, he has been assigned to an 1100-MW boiling water reactor plant project as Computer Applications Engineer.

Prior to joining Stone & Webster Engineering Corporation, Mr. Schneider was a Digital and Computer System Design Engineer for RCA, and a Communications System Engineer for Booz-Allen Applied Research and the Israel Electric Corporation.

PROFESSIONAL AFFILIATIONS

Instrument Society of America - Member

DETAILED EXPERIENCE RECORD
SCHNEIDER, MARC I. 81825

STONE & WEBSTER ENGINEERING CORPORATION, CHERRY HILL, NJ (Nov 1980 - Present)

Appointments:

Computer Applications Engineer - Nov 1980

Nine Mile Point Nuclear Station - Unit 2, Niagara Mohawk Power Corporation (Jan 1981 - Present)

As COMPUTER APPLICATIONS ENGINEER for the Control Division Staff (Nov 1980 - Present), responsible for main plant computer, liquid radwaste control system, digital radiation monitoring system, and emergency response facilities data system. For the main plant computer, identified and defined data information to be supplied to the computer vendor and identified deficiencies in software performance requirements and documentation of these requirements. For the liquid radwaste control system, wrote bid specifications and issued competitive bids. For the digital radiation monitoring system, wrote bid specifications. For the emergency response facilities data system, develops preliminary requirements, evaluates GE quotes, identifies potential vendors, and develops implementation schedule. For the ERF/LWC computer system, wrote bid specifications issued for competitive bids, evaluated bids, selected vendor, wrote purchase specification, provided engineering and first level management interface with Honeywell, PMSD, the vendor, to include a 6-week factory acceptance test. Currently responsible for providing continuing engineering and first level management functions to support installation and startup of the computer, including the site acceptance testing.

As COMPUTER APPLICATIONS ENGINEER for the Computer Applications Staff (Nov 1980 - Dec 1980), studied NRC emergency response facilities system requirements.

RCA GOVERNMENT COMMUNICATIONS SYSTEMS, CAMDEN, NJ (July 1978 - Nov 1980)

As DIGITAL DESIGN ENGINEER for the Technical Staff, investigated approaches and developed hardware and firmware for the X.25 communications controller of a GA 220 TELEX concentrator. Developed video controller and keyboard communications interface modules for GA 220 microprocessor-based TELEX operator's console, wrote electrical engineering portion of a proposal to build video terminals for the government, provided field engineering support during installation of 4,000-line TELEX concentrator, and wrote the performance specification for 16,000-line TELEX switch utilizing AMD 2901 bit slice microprocessors and GA minicomputers.

RCA GLOBAL COMMUNICATIONS INCORPORATED, NEW YORK CITY, NY (Feb 1975 - July 1978)

As ADMINISTRATOR for the Quality Assurance Group (Jan - July 1978), performed technical evaluation of accuracy and applicability of system reporting procedures, developed new procedures where appropriate, and

defined quality assurance functions in a new computerized circuit management system.

As DESIGN ENGINEER for the Technical Staff (Feb 1975 - Jan 1978), assisted in the development of the system performance specification, bid specification, and configuration design for a microprocessor-based leased channel controller utilizing COSMAC 1802; participated in bid evaluation, system design, and implementation of an autovon trunk microprocessor-based monitor; wrote software for the monitor microprocessor COSMAC 1802; participated in system and software design for microprocessor-based test point monitor utilizing an INTEL 8080; wrote data base requirements for computerized circuit management system and system specification; and designed system for Nodal alarm monitor.

BOOZ-ALLEN APPLIED RESEARCH, NEW SHREWSBURY, NJ (April 1973 - Feb 1975)

As COMMUNICATIONS SYSTEM ENGINEER, participated in formulating candidate systems evaluation of each design and development of final design for a tactical mobile subscriber telephone system, participated in the development of an interface standardization proposal for peripheral devices purchased by the U.S. government for military communications systems, and developed the network control data requirements for a family of small computerized switchboards including formats, data message lengths, memory requirements, and data transfer techniques.

ISRAEL ELECTRIC COMPANY, HAIFA, ISRAEL (Feb - Nov 1972)

As TELECOMMUNICATIONS SYSTEMS ENGINEER, designed a new leg of powerline carrier network utilizing multichannel, speech plus, communications equipment, and integrated it into the existing program. Participated in site selection and preparation for new microwave communications link of company-owned telephone system.

June 1983

CONFIDENTIAL RESUME

NAME: Michael James Colomb

PERSONAL: Age: 33
Date of Birth: 6/25/50
Married; Good health

EDUCATION: St. Anthony of Padua High School
Syracuse, New York
Graduated 1968 - Regents Diploma

Onondaga Community College
Syracuse, New York
Graduated 1970 - A.A.S. in Electrical Technology

General Physics Basic Introduction Course
January - March 1972 - 8 weeks

Covering: Math, Physics, Engineering, Chemistry, Health Physics, Nuclear Instrumentation.

General Electric BWR Technology Course
April 1972 - 4 weeks

Covering: General BWR Technology, Specifics on JAFNPP Systems.

Niagara Mohawk System Course
June 1972 - 2 weeks

General Electric BWR Technology Course
May 1973 - 2 weeks

Niagara Mohawk Fire School
June 1974 - 3 days

General Physics Training Program
December 1974 thru March 1975 - 80 hrs.

General Physics License Preparation Course
April - May 1975 - 4 weeks

TVA BWR Simulator Training
January 1977 - 3 days

TVA BWR Simulator Training
May 1978 - 3 days

EMPLOYMENT:	Niagara Mohawk Power Corporation Syracuse, NY	
June 1981 to Present	Position: Duties:	Station Shift Supervisor Writing pre-op, operating, and special procedures for NMP#2 and reviewing Design Reviews for NMP#2 systems. Supervise operating personnel and assist in their training for licensing.
1979 to 1981	Position: Duties:	Chief Shift Operator Writing pre-operational tests, operating and special procedures, and surveillance tests for Nine Mile Point Unit 2. During the 1979 Nine Mile Point Unit 1 refueling outage, supervised installation and testing of several plant modifications.
1976 to 1979	Position: Duties:	Chief Shift Operator, JAFNPP Responsible for operation of Control Room. Provided supervision and training for all lower grade operators. Participated in all phases of plant operation, start-up and shutdown. Performed and directed surveillance tests on all plant safety systems.
1975 to 1976	Position: Duties:	Nuclear Operator "E", JAFNPP As Senior "In Plant" Operator, responsible for care and operation of all plant equipment including the Main Turbine Generator, all plant auxiliary systems and reactor safety systems. Participated in all phases of plant start-up, shutdown and operation, including surveillance testing. Participated in all phases of refueling operations. Obtained R.O. License June, 1975.
1972 to 1975	Position: Duties:	Nuclear Operator "C", JAFNPP Participated in all phases of pre-operational testing and initial plant start-up testing program. Responsible for initial equipment "run-ins", system flushing operations and system turnover for operations.
1971 to 1972	Position: Duties:	Nuclear Operator "C", NMPNPP As Auxiliary Operator on Shift, obtained experience operating all plant auxiliary systems from outside the Control Room. Participated in all phases of refueling operations, and "sipping" procedures.
1970 to 1971	Position: Duties:	Gas Mechanic "B", NMPC, Oswego, NY During this period was promoted from Gas Mechanic Helper to Gas Mechanic "A" to position above. Responsibilities were to operate various machinery associated with construction, maintenance and repair of natural gas lines and services. Also worked in the maintenance crew during a refueling outage at Nine Mile Point Unit 1 during this period.

ARD Corporation

ROBERT L. KERSHNER
Vice President, Applied Systems Technology Division
Principal Human Factors Engineer

- Human Factors Engineering
- System Analysis
- Experimental Design
- Anthropometrics
- Statistical Analysis
- Control Room Reviews
- Training
- General Systems Theory

As Vice President of the Applied Systems Technology Division, Mr. Kershner is responsible for the coordination and review of all human engineering, applied behavioral research, human factors and industrial engineering projects for ARD Corporation. Mr. Kershner has been active in providing professional services for over ten years. In the private sector of the industry, he has conducted Government-sponsored research as well as held professional positions within the Federal Government.

Mr. Kershner's specialty is the application of general systems theory to the design, analysis and improvement of complex systems, applying human factors engineering principles to process control design. Mr. Kershner has managed ARD's control room review support to the Arkansas Power & Light Company's Arkansas Nuclear One station, Public Service Indiana's Marble Hill station and the Commonwealth Edison Company's Dresden, Byron and Braidwood nuclear generating stations. In addition, he supervised Safety Parameter Display System development for the Virginia Electric and Power Company. Mr. Kershner has developed Control Room Design Review program plans for several major utilities including Commonwealth Edison, Virginia Electric and Power, Arkansas Power & Light, and Public Service Indiana. He was instrumental in the design and development of the ARD Performance Measurement System for the validation of Emergency Operating Procedures and the evaluation of control room equipment modifications.

PREVIOUS EXPERIENCE

- 1980 to 1981 Andrulis Research Corporation, Bethesda, Maryland
  Director, Human Factors Engineering Division

Responsible for corporate human engineering and social science research projects. Provided technical direction of research and development, test and evaluation studies in: human factors engineering; military systems design, analysis and improvement; and personnel profiles. Completed a variety of projects for the U.S. Army Human Engineering Laboratory, including Human Factors Engineering Recommendations in the System Development Process, a profile of the enlisted infantryman, a critical review of Infantry Systems Testing, the effects of CB clothing and equipment on soldier performance, and a critical review of Night Vision Systems (Infrared and Light Intensification).

- 1978 to 1980 National Bureau of Standards (NBS) - Consumer Sciences Division, Gaithersburg, Maryland
  Engineering Research Psychologist, Project Leader

Provided human factors engineering research and analysis support to other federal agencies and to NBS-sponsored programs. Areas of involvement included analysis of driver navigation aids; research on operator visual search patterns and determination of the efficacy of establishing a standard

ergonomic reference data system. Developed a set of human engineering guidelines for energy consumption displays.

- 1977 to 1978 Biotechnology, Incorporated, Falls Church, Virginia
  Research Associate

Provided human factors engineering support to projects in the Personnel Performance and Transportation Programs. Conducted an evaluation of a new format for information presentation to time critical materials for the U.S. Navy and investigated an U.S. Air Force-sponsored project to test and evaluate low-fidelity simulation aids for intermediate-level avionics training.

- 1976 to 1977 Federal Highway Administration - Analysis and Experimental Division, McLean, Virginia
  Assistant Research Psychologist

Responsible for conducting all phases of human engineering research, in particular, driver performance studies in support of the Federal Highway Administration's research programs related to traffic management and motorist information systems.

- 1975 to 1977 Cybernetics Research Institute, Washington, DC
  Assistant Research Psychologist

Responsible for the psychological research conducted at the institute contracted through the Bureau of Education for the Handicapped. Assisted in the development and evaluation of selected vibrotactile codes as an alternative communication system for the deaf and/or blind.

EDUCATION

M.A., Human Factors Psychology, The Catholic University of America, Washington, DC, 1977

B.A., Applied Psychology, cum laude, University of Baltimore, Baltimore, Maryland, 1975

Certificate, Industrial Safety, Health and Environment - Department of Engineering, University of Wisconsin, Madison, Wisconsin, 1979

PROFESSIONAL AFFILIATIONS

Human Factors Society (National & Potomac Chapter)
American Nuclear Society
Psi Chi (Psychology Honorary)

MILITARY SERVICE

U.S. Army Paratroops, 1968 to 1970

ARD Corporation

VINCENT J. FORTUNATO III
Staff Engineer
Human Factors Psychologist

- Human Factors Engineering
- Psychophysiology
- Human Performance Assessment
- Human Electrophysiology in Operational Settings
- Display Technology
- Experimental Design
- Statistical Analyses
- Man-Computer Interfacing

As a staff engineer, Mr. Fortunato provides human factors support to a variety of ARD clients, both research and consulting. His research activities include NASA-funded projects involving psychophysiological measures of workload, and the generation of computer graphic displays.

His support of ARD's nuclear clients has included human factors reviews of computer graphic display systems at Nine Mile Point Unit 2, Rochester's Ginna station, Commonwealth Edison's Quad Cities and Dresden plants, and Lousiana Power and Light's Waterford 3 station. He has also reviewed graphic displays of radiation/meteorological data for Virginia Electric Power Company and Commonwealth Edison. His support of ARD's nuclear clients has also included control room I&C inventories at Niagara Mohawk's Nine Mile Point Unit 2 and Rochester Gas and Electric's Ginna stations, and has also supported CRDR reviews for Commonwealth Edison.

PREVIOUS EXPERIENCE

- 1984-1985 KLD Associates, Huntington Station, New York
  Research Scientist

Project manager responsible for conducting driver performance studies under contract to the Federal Highway Administration. Duties included day-to-day office management, employee training, subject testing, data collection and data analysis.

- 1983-1984 Extensis Medical Center, Roslyn, New York
  Biofeedback Consultant

Initiated and developed all facets of biofeedback therapy, from conception to inception, as an integral part of an existing medical practice. Responsibilities included development of effective clinical procedures, purchasing of computer/physiology equipment, and the treatment of patients, which included real-time display of computer graphics and user computer interfacing.

- 1980-1983 State University of New York, Binghamton, New York
  Supervisor of Research, Psychophysiology Laboratory

Responsible for direction, coordination, and supervison of all research projects involving psychophysiology measurements and autonomic control using computer assisted biofeedback techniques. Duties included subject testing, data collection and analysis, computer program design, and preparation of drafts for publication, as well as supervision of lab assistants. Also collaborated with computer specialists to design and program CRT graphic displays of electrophysiology.

- 1980-1982 State University of New York, Binghamton, New York
  Instructor

Responsible for development of curricula for several psychology courses including Introduction to Psychology, Psychology of Learning, Learning Laboratory, Motivation Laboratory, Sensation and Perception, Perception Laboratory, and Social Psychology

- 1979-1979 Gerontology Research Center NIH/NIA, Baltimore, Maryland
  Psychology Intern/Technician, Lab of Behavioral Sciences

Collaborated with doctors at NIH/NIA in the design and implementation of research projects involving cardiovascular control hypertension, athletic ability and other psychophysiology projects. Responsibilities included subject testing, data collection and analysis, and preparation of drafts for publication.

EDUCATION

M.A., Experimental Psychology, State University of New York, Binghamton, New York, 1982.

B.S., Psychology, State University College, Oswego, New York, 1979.

PROFESSIONAL AFFILIATIONS

Human Factors Society
Biofeedback Society of America
Biofeedback Certification Institute of America
Psi Chi (Psychology Honorary)

E. RALPH DUSEK
Manager, Special Projects
Senior Scientist

- o Human Factors Engineering
- o Man-machine Compatibility Evaluation
- o Training and Simulation
- o Anthropometrics
- o Personnel Selection
- o Job Proficiency Measurement

Dr. Dusek has over 30 years of experience in applied experimental psychology and human factors engineering. During that period he held a succession of responsible positions, all involving applied research. In addition, he has extensive management experience in directing the activities of in-house personnel and contractors conducting work for which he was responsible.

Dr. Dusek has conducted studies on the effects of extreme environments on man-machine compatibility. His work in this area has been applied to the design of clothing, equipment and workplaces. Dr. Dusek was responsible for early military studies on performance-based training, testing and on-the-job training, as well realistic unit training techniques. Dr. Dusek's work with performance-based testing has been directed toward qualifying or verifying individual's job proficiency for holding a specific level position. He has also had wide experience with design of tests for selecting and classifying enlisted and officer personnel for assignment to specific positions.

During the past year, Dr. Dusek has participated in human factors evaluations in nuclear plant control room design reviews. He has been responsible for the operating personnel surveys and reports at Niagara-Mohawk's Nine Mile Point 2, Louisiana Power and Light's Waterford 3, Rochester Gas and Electric's Ginna plant, and Commonwealth Edison's Dresden, Quad Cities, and LaSalle plants. He participated in task analyses at Arkansas Power and Light's Arkansas Nuclear One, Unit 2. He has also written Human Factors Manuals for use in future modifications of the Nine Mile Point Unit 1 and Unit 2 and Ginna Station control rooms.

PREVIOUS EXPERIENCE

o 1982 to 83 American Psychological Association, Washington, DC
Administrative Officer for Scientific Affairs

Responsible for promoting the science of psychology and recognition of psychology's scientific achievements. Responsible for stimulating and monitoring research support for the behavioral sciences available from Government agencies and major foundations, and supporting development and dissemination of standards for psychological and educational tests, assessments and the ethics of animal and human experimentation. Senior editor of APA's Guide to Research Support, Washington, DC, 1984.

o 1971 to 81 U.S. Army Research Institute, Alexandria, Virginia
Director, Personnel and Training Research Laboratory

Responsible for planning, directing and managing an Army-wide research program in training, industrial and organizational psychology. Areas included new

techniques and methods for skill training in schools and units, extension training, leadership and organizational development training, training aids and simulation, selection and classification of officer and enlisted personnel, career development, job proficiency testing and program evaluation.

- 1965 to 71 U.S. Army Institute of Environmental Medicine, Natick, Massachusetts
  Director, Behavioral Sciences Laboratory

Planned and directed a research program on the effects of cold, heat, high altitude and work effort on human performance. Research involved altitude and temperature chambers and field maneuvers in extreme environments. Initiated project which resulted in Army doctrine for maneuvering troops at high terrestrial altitudes.

- 1957 to 64 U.S. Army Natick Laboratories, Natick, Massachusetts
  Head of Engineering Psychology Laboratory

Planned and directed a research program on the effects of protective clothing (climatic, ballistic, chemical) and personal equipment, materials handling and aerial delivery equipment on human performance. Research also involved obtaining anthropometric data on large numbers of soldiers for use in design of Army equipment and conducting consumer preference research on Army-developed clothing and food products. Initiated project for determining safety and ventilation requirements for missile fuel handler's impermeable uniforms for handling toxic chemicals.

- 1953 to 57 U.S. Army Natick Laboratories, Natick, Massachusetts
  Research Psychologist

Conducted research on visual perception and on psychophysiological responses and performance of men exposed to extreme temperatures. Responsible for early research defining effects of ambient temperature and skin temperatures on manual dexterity.

- 1951 to 53 University of Arkansas, Fayetteville, Arkansas
  Assistant Professor of Psychology

Taught undergraduate and graduate courses in experimental psychology, statistics and experimental design.

EDUCATION

Ph.D., Experimental Psychology, Statistics, State University of Iowa, Iowa City, Iowa, 1951

M.A., Experimental Psychology, Statistics, State University of Iowa, Iowa City, Iowa, 1949

B.A., Psychology, Mathematics, University of Missouri, Columbia, Missouri, 1947

Resident Student and Graduate, Industrial College of the Armed Forces, Ft. McNair, Washington, DC, 1965 -

EDUCATION (continued)

Graduate, Senior Executive Institute, Charlottesville, Virginia, 1974

Certificate, Army Human Factors Engineering Course, Natick, Massachusetts, 1960

PROFESSIONAL AFFILIATIONS

Human Factors Society (National and Potomac Chapter); Fellow
American Psychological Association
    Society of Applied Experimental and Engineering Psychology; Fellow
    Division of Military Psychology; Fellow
Society of Applied Learning Technology
Inter-University Seminar on Armed Forces and Society; Fellow
Psi Chi (Psychology Honorary)
Sigma Xi (Scientific Research Honorary)
Consulting Editor, Journal of Applied Psychology

MILITARY SERVICE

1943 to 1946 U.S. Army Air Corps

1981   U.S. Army, Meritorious Civilian Service Award

ARD Corporation

ROBERT KLEIN
Staff Engineer
Human Factors Psychologist

- Human Factors Engineering
- Systems Analysis
- Display Technology
- Human Performance Assessment
- Systems Safety
- Statistical Analysis

Mr. Klein has been involved with human engineering in the design and evaluation of complex control and display systems for over four years. He prepared an overall assessment of cruise missile weapon control system hardware and software components, reporting on human factors engineering, operability, maintainability, safety, and nuclear security. He was the human factors member of a multidiscipline maintainability demonstration team to verify system compliance with Navy maintenance standards. He participated in experimental design, execution, and analysis on Coast Guard and DOD related projects. Mr. Klein's experience in military applications of process control and integrated display systems is now utilized in support of nuclear power plant control room design reviews. As a Staff Engineer in ARD's Human Factors Technology Group, he has participated in the inventory, checklist, validation, and task analysis phases of the Detailed Control Room Design Review for the Arkansas Nuclear One, Ginna, Quad Cities, LaSalle, and Nine Mile Point (Units 1 and 2) stations. He has also worked on the development of a Human Factors Manual for Future Design Change at Nine Mile Point Unit 1 and is currently managing preparation of control room enhancement packages at Nine Mile Point Unit 1 and Unit 2.

PREVIOUS EXPERIENCE

- 1982 to 1984 Vitro Corporation, Silver Spring, Maryland
  Human Factors Engineer

Performed analysis of Tomahawk cruise missile weapons control system man/machine interface. Performed anthropometric observation and evaluation of hardware onboard Navy destroyer to ensure compliance with military standards. Made design recommendations to enhance system operability, maintainability, and safety. Reviewed system software to ensure adequate control and display information is provided to system operators. Participated in maintainability demonstrations to verify safe and efficient system and equipment maintenance and to satisfy Navy maintainability requirements.

- 1979 to 1981 Bendix Field Engineering Corporation, Columbia, Maryland
  Technical Writer and Editor

Wrote and prepared documentation for NASA Spaceflight Tracking and Data Network. Wrote occupational safety manual for NAVELEX.

- 1976 to 1977 Hughes Aircraft Company, Culver City, California
  Human Factors Engineer

Designed and conducted target detection experiments to determine relative merits of several radar image enhancement techniques. Performed computer data analysis, wrote detailed recommendations, and reported findings at science staff meetings.

- 1977 Franklin Institute Research Laboratories, Philadelphia, Pennsylvania
  Human Factors Engineer

Initiated a project of photometric research for night safety of small boats, which was sponsored by the U.S. Coast Guard. Developed experimental design and built effective apparatus to measure low level glare thresholds.

EDUCATION

M.S., Industrial Psychology, California State University at Long Beach, Long Beach, California, 1978

B.S., Psychology, St. Joseph's College, Philadelphia, Pennsylvania, 1973

PROFESSIONAL AFFILIATIONS

Human Factors Society

ARD Corporation

D. KENT BARNES II
Staff Engineer
Human Factors Engineer

- Human Factors Engineering
- Nuclear Engineering
- Computer Applications
- Control Room Design Reviews
- Probabilistic Risk Assessment
- Task Analysis

Mr. Barnes brings a nuclear engineering background to ARD's CRDR efforts. He has performed task analysis, checklist survey, operator experience survey, historical document review, and verification at several nuclear stations including Arkansas Nuclear One Unit 1 and Unit 2, Nine Mile Point Unit 1 and Unit 2, Waterford 3, and Ginna Station. He also participated in the development of a generic task analysis methodology for Combustion Engineering, to be used by the C-E Owners Group. Mr. Barnes is currently participating in the NRC audit of Arkansas Nuclear One Unit 1 and Unit 2, and the HED Assessment Process for Unit 2. He is also directing a study of annunciator relocation and rewording for Nine Mile Point Unit 2.

Mr. Barnes past Human Factors experience includes a Control Room Design Review for the University of Missouri's 10MW Research Reactor. This review was based on NUREG-0700 and included Operator Survey, Inventory Collection, Document Review, and Human Engineering Deficiency Assessment. Mr. Barnes' background includes a knowledge of Probabilistic Risk Assessment, with an emphasis on Fault Tree Analysis. He has also worked with several PRA computer codes used for evaluating fault trees. Mr. Barnes nuclear background includes a knowledge of computer applications for nuclear power systems. This includes knowledge of large nuclear computer codes such as CITATION, COBRA, and the AMPX-II system.

PREVIOUS EXPERIENCE

- 1984 University of Missouri, Columbia, Missouri
  Graduate Research Assistant

Performed a Control Room Design Review for the 10MW Research Reactor. This project was based on NUREG-0700, and the results are to be used for a study of a possible power upgrade for the reactor. Review included Operator Survey, Inventory, Document Review, and Assessment.

- 1983 University of Missouri, Rolla, Missouri
  Student Assistant

Helped design a Positron Annihilation Experiment while working at the university's 200KW Training Reactor. This experiment was to be used to determine fatigue in metals.

Programmed an Apple IIe microcomputer. This project involved setting the computer to interact with an electronic measuring device, in order to study radiation damage and dose rates for reactor pressure vessels.

APPENDIX C

CONTROL ROOM DESIGN REVIEW
OPERATOR SURVEY

App. C

HUMAN ENGINEERING DISCREPANCY (HED) FORM

Plant (5A): ________________ Unit (1N): ________

Originator (3A): ________ Date (MM/DD/YYYY): ____________ No (4N): ________

Description: ____

____

____

____

____

____

Comments: ____

____

____

____

____

____

Source (1N)	Reference Information (40A)
____	________________________
____	________________________
____	________________________
____	________________________

Panel ID# (10A):	Equipment No. (10A):	Equipment Name (40A):	Other (5A):

/4396h

Nine Mile Point-2
Historical Document Review

PROBLEM ANALYSIS REPORT (PAR) .(Continued)

Applicable to Plant Under Review? Yes __________ No __________
(If no, end form here.)

In Which Areas: ____

____

____

Corrective Actions Taken: ____________________________________

____

____

Unresolved Discrepancies: ____________________________________
(If none, end form here.)

____

____

HEO Number: __________

Nine Mile Point-2

Historical Document Review

PROBLEM ANALYSIS REPORT (PAR)

Name of Investigator(s): ______________________________

Report Type and Number: ______________________________

Station: ______________________________ Unit: __________

Event Date: ____________________ Operating Status: __________

Circumstances and Events Leading to the Problem: __________

____

____

Nature of the Problem: ______________________________

____

____

Steps Taken to Correct or Alleviate the Problem __________

____

____

Outcome: ____

____

____

Corrective Measures Undertaken: ________________________

____

____

Human Performance Problems Associated With Event: __________

____

____

APPENDIX B

PROBLEM ANALYSIS REPORT FORM
AND
HUMAN ENGINEERING OBSERVATION FORM

FC 5.1

June 1983

CONFIDENTIAL RESUME

NAME:	Eric Lyle Townsend	PHONE:	
PERSONAL:	Age: 34 Date of Birth: 11-25-49 Married - 4 dependents Health: Excellent	Height: Weight:	5'8" 170

EDUCATION: Phoenix Central High School - Phoenix, New York
Graduated: 1967 Regent's Diploma

S.U.N.Y. College of Forestry at Syracuse University
1 year Fall 1967 - Summer 1968

U.S. Navy Schools -

March 1969 - June 1969:	Machinist Mate "A" School
Jan 1970 - April 1971:	Navy Nuclear Power School, Bainbridge, Maryland; Prototype S3G Training, West Milton, New York; Engineering Lab. Technical School, S3G, West Milton, New York.
May 1971 -	Submarine School, New London, Conn.
June 1971 - March 1973:	USS Tecumseh SSBN628 (G) attended and instructed Engineering Department off-crew training.
June 1973 - Sept 1978:	Formal and informal training at James A. FitzPatrick Nuclear Power Plant ending in R.O. License in December 1976. Attended BWR Simulator in Morris, Illinois, for certification and Simulator at Chattanooga, Tenn. for Requal. Participated in formal requal program after obtaining R.O. License.

FC5.1

November 1983

CONFIDENTIAL RESUME

NAME:	Barbara S. Tesoriero	PHONE:	Home: Work:

PERSONAL:	Date of Birth: 10/6/52 Date of Hire: 10/22/79
EDUCATION:	Whitesboro Central High School Whitesboro, NY Diploma - June 1970 State University College at Oswego Oswego, NY 13126 Major - Sociology 3 years, no degree
EMPLOYMENT:	Niagara Mohawk Power Corporation, Nine Mile Point Nuclear Station
8/82 to Present	Position - Nuclear Operator "C" Duties - Under direct supervision on a shift in a Nuclear Station to be responsible for the operational care of main turbo-generator and reactor units; to operate or direct the operation of the highest types of auxiliary equipement; to execute safe and effective mark-ups on equipment within the station and to assist in the detailed training of Auxiliary Operators of lower grade.
12/81 to 8/82	Position - Auxiliary Operator "B" Duties - Under direct supervision on a shift, to be responsible for the operational care of various types of complicated auxiliary equipment associated with one or more main turbo-generator or boiler units and with only casual supervision to start and stop such equipment under normal and emergency situations.
10/79 to 12/81	Position - Armed Guard Duties - Security Access and control.
	PASNY - J. A. Fitzpatrick Nuclear Power Plant
1975	Position - Guard Duties - Monitoring individuals for security access.

App. B

EDUCATION
CONTINUED:

General Physics Corp. License Training Course
Oct. 1980 - Feb. 1981
520 hours
Obtained NRC Reactor Operator License

TVA BWR Simulator
Soddy-Daisy, Tenn.
7 Days - Jan 1981
Hot License Certification Program

GE BWR Simulator
Morris, Ill
3 Day Requal Program
Sept. 1981

EMPLOYMENT:

Niagara Mohawk Power Corp.
Syracuse, NY

December 1982 to Present

Position: Station Shift Supervisor

Duties: Writing pre-op, operating and special procedures for Nine Mile Point #2 and reviewing design reviews for Nine Mile Point #2 systems. Supervise operating personnel and assist in their training for licensing.

Sept 1981 to Present

Position: Chief Shift Operator

Duties: Under general supervision, on a shift, to direct and perform the work of, and to assist in the training of all personnel engaged in the operation of major steam-electric generating units, including electrical and mechanical equipment, auxiliaries, controls and associated transmission facilities.

1978 to Sept 1981

Position: Nuclear Auxiliary Operator "E"

Duties: Writing pre-operational tests, operating procedures, special procedures and performing design reviews on plant systems for Nine Mile Point Unit #2.

MILITARY SERVICE: (Cont.)

U.S.S. Nautilus (SSN-571)
August 1978 - November 1979

"M" Division, Machinist Mate 2nd Class,(SS), New London, Conn.

Responsible for maintenance and operation of Reactor plant and steam plant machinery.

U.S.S. Vulcan (AR-5)
March 1977 - June 1977

"A" Division
Temporary duty

MILITARY SCHOOLS:

Machinist Mate "A" School - Jan - March 1977

Navy Nuclear Power School
Orlando, Fla. June 1977 - Jan 1978

Nuclear Power Prototype Training (S3G)
Ballston Spa, NY Feb 1978 - Aug 1978
Machinist Mate 3rd Class (Student)

Basic Submarine School
New London, Conn. 2 wks. 1978

High Press. Air Compressor School
New London, Conn. 2 wks.

Gage Calibration School
New London, Conn. 1 wk.

Air Conditioning School
Charleston, S.C. 2 wks.

FCS.1

November 1983

RESUME

NAME: Robert.L. Spooner

PHONE: Home:
Work:

PERSONAL: Date of Birth: January 29, 1958
Date of Hire: November 15, 1982

EDUCATION: West Genesee Sr. High
Camillus, NY 13031
Diploma - June 1976

EMPLOYMENT: Niagara Mohawk Power Corporation
Nine Mile Point Nuclear Station

11/82 to Present

Position - Auxiliary Operator "B"

Duties - Under direct supervision on a shift, to be responsible for the operational care of various types of complicated auxiliary equipment associated with one or more main turbo-generator or boiler units and with only casual supervision to start and stop such equipment under normal and emergency situations.

MILITARY SERVICE:

U.S. NAVY

U.S.S. Boston (SSN-703)
November 1979 - October 1982

"M" Division, Machinist Mate 1st Class (SS), New London, Conn.

Responsible for maintenance and operation of propulsion plant machinery spaces and equipment. Reactor plant and steam plant maintenance and operation.

Qualified Engineroom Supervisor (ERS) from October 1980 - October 1982.

Gary D. Sanford

SHIFT TEST ENGINEER

The Shift Test Engineer is in charge of all reactor plant operations and the overall reactor plant test program on his shift and is responsible for its progress. His primary responsibility is to ensure the safe operation of the reactor plant which he does by assuring all operations are performed in accordance with approved procedures and expected plant responses are obtained as indicated by instrumentation or reports with watchstanders. Where in his judgement the plant responces are not appropriate, he must evaluate the parameter, determine the cause(s) and take appropriate action to assure plant and personnel saftey.

The Shift Test Engineer position requires an in depth knowledge of the theory of design and operation of pressurized water reactor plants including reactor theory (reactor physics, materials, thermal and hydraulic design principles), chemistry, corrosion, basic nuclear physics as it applies to radiation and radiological control, operation of electrical instrumentation and control equipment and systems, design and operational theory of fluid system equipment, nuclear plant saftey, overall plant operation theory and casualty procedures. This knowledge is verified prior to attaining qualification via oral and written examinations administered and witnessed by the Department of Energy. Periodic written and oral examinations are administered by the shipyard to ascertain adequate retention of knowledge and understanding of new or revised procedures.

The Shift Test Engineer is the single shipyard authority for determining that all necessary preparations are complete and provides final approval for commencement of the evolution. He directs the evolution, controlling all associated personnel, and reviews all data for completeness and acceptability. This includes all requests for work on systems (electrical and mechanical) which may have an effect on the reactor.

LEAD PLANNER

The Lead Planner is responsible for directing and participating in engineering work related to developement of test documentation to be used for conduct of complex integrated reactor and propulsion plant testing and operation. The work assigned is broad in scope requiring considerable independent judgement. In carrying out assignments the engineer is responsible for: (1) extensive coordination with related groups and reactor plant contractors; (2) integration of many different requirements within complex plant condition and sequencing constraints, and; (3) technical direction and work review for assigned engineers and technicians.

Name: GARY SANFORD

EMPLOYMENT: (cont'd)

(Please list chronologically past experience in present job related categories. Professional or Volunteer basis). (i.e., Volunteer Fire Companies, etc..)

COMPANY NAME: MARE ISLAND NAVAL SHIPYARD

JUNE 1977 TO JAN 1979

NUCLEAR QUALITY ASSURANCE ENGINEER: PERFORMED INSPECTIONS AND/OR TESTS OF MECHANICAL, PIPING AND STRUCTURAL SYSTEMS, COMPONENT PARTS, OR SUB-ASSEMBLIES RELATED TO NAVAL NUCLEAR PROPULSION PLANTS. ENSURE COMPLIANCE WITH SPECIFICATIONS, INSTRUCTIONS AND REGULATORY CRITERIA. PERFORM SYSTEM PRETEST INSPECTIONS AND PREPARE DOCUMENTATION TO ALLOW FINAL SYSTEM CERTIFICATION FOR REACTOR MECHANICAL, PIPING, AND STRUCTURAL SYSTEMS PRIOR TO REACTOR CRITICALITY AND POWER OPERATIONS. ASSIST DISCIPLINE ENGINEERS IN TROUBLE ANALYSIS OF APPROPRIATE SYSTEMS. VERIFICATION AND CERTIFICATION OF PIPING, MECHANICAL AND STRUCTURAL SYSTEMS IN ASSOCIATION WITH REACTOR REFUELINGS (SSN SEAWOLF). REVIEW OF NUCLEAR ENGINEERING INSTRUCTIONS AND PROCEDURES FOR COMPLIANCE TO REGULATORY CRITERIA.

ATTAINED CERTIFICATION I.A.W. NAVSHIPS 250-1500-1 TO PERFORM CERTIFICATION OF PIPING WELDS BY PERFORMANCE OF LIQUID PENETRANT AND VISUAL TESTING TECHNIQUES.

Resume: Page 4

Name: GARY SANFORD

EMPLOYMENT: (cont'd)

PAST EMPLOYERS: (Please list chronologically, with most recent position first. Use additional paper if necessary.)

COMPANY'S NAME: PUGET SOUND NAVAL SHIPYARD (PSNS)

DATES/POSITION: JANUARY 1979 TO JANUARY 1984

DUTIES: SHIFT TEST ENGINEER: (SEE ATTACHED SHEET FOR JOB REQUIREMENTS AND DUTIES) QUALIFIED OCTOBER 1981 FOR C1W TYPE NAVAL NUCLEAR PROPULSION PLANTS AND SUBSEQUENTLY PARTICIPATED IN THE OVERHAUL OF THE USS LONGBEACH INCLUDING THE PREFILL, COLD OPERATIONS, HOT OPERATIONS, CRITICALITY AND POWER RANGE TESTING PHASES OF THE OVERHAUL.

CROSS QUALIFIED TO D2G TYPE REACTOR PLANTS IN MARCH 1983 AND PARTICIPATED IN THE ARRIVAL PHASE PREPLANNING

FROM MARCH 1983 TO SEPTEMBER 1983 AS A LEAD PLANNING ENGINEER (SEE ATTACHED SHEET) UPON USS BAINBRIDGE ARRIVAL AT PSNS REASSUMED DUTIES AS A SENIOR SHIFT TEST ENGINEER FOR USS BAINBRIDGE TO JANUARY 1984.

FROM JANUARY 1979 TO OCTOBER 1981 WAS AN ASSISTANT SHIFT TEST ENGINEER IN TRAINING FOR SHIFT TEST ENGINEER QUALIFICATION AND PARTICIPATED IN THE OVERHAUL OF THE USS ENTERPRISE (A2W) USS CAVALLA (S5W) AND USS WILLIAM H. BATES (S5W) INCLUDING ARRIVAL, PLANT COOLDOWN, PREFILL, COLD OPERATIONS, HOT OPERATIONS, CRITICALITY AND POWER RANGE TESTING.

Name: GARY SANFORD

EMPLOYMENT: Positions held with Niagara Mohawk:

Present Position: ASSISTANT STATION SHIFT SUPERVISOR

Start Date: 2/6/84

Duties: SHIFT TECHNICAL ADVISOR, ASSIST THE STATION SHIFT SUPERVISOR IN THE SAFE OPERATION OF NINE MILE PT. UNIT #II

Previous Position: NO PREVIOUS POSITIONS WITH NM HELD.

Start Date:

Duties:

Next Previous:

Start Date:

Duties:

Next Previous:

Start Date:

Duties:

PLEASE LIST ALL POSITIONS HELD WITH NIAGARA MOHAWK - USE ADDITIONAL PAPER IF NECESSARY

Resume: Page 2

Name: GARY SANFORD

MILITARY SERVICE (BRANCH)

Please list in detail all military experience including Base or Ship Station, inclusive dates (month and year) and position held at each place. Itemize all training (i.e. Nuc. Pwr School, Machinist Mate, etc) and location of training and length of course.

UNITED STATES AIR FORCE

ENLISTED - OCTOBER 1968

ATTENDED AIR TRAFFIC CONTROL OPERATOR SCHOOL AT KEESLER AFB MISSISSIPPI NOVEMBER 1968 TO FEBRUARY 1969, HONOR GRADUATE. PERFORMED OJT AT FAIRCHILD AFB WHICH RESULTED IN ATTAINING FEDERAL AVIATION ADMINISTRATION CERTIFICATION AS A CONTROL TOWER OPERATOR. TRANSFERED TO PLEIKU AFB, PLEIKU, REPUBLIC OF VIET NAM JUNE 1970 ATTAINED USAF CERTIFICATION AS AN AIR TRAFFIC REGULATION CENTER (ATRC) OPERATOR. TRANSFERED TO SAN TRA AIR STATION AT DANANG (RVN) SEPTEMBER 1970 AND ATTAINED USAF CERTIFICATION AS AN ATRC OPERATOR. TRANSFERED TO HOLLOMAN AFB, ALAMOGORDO, NEW MEXICO, JUNE 1971 ATTAINED FAA CERTIFICATION AS A CONTROL TOWER OPERATOR, AND ALSO AS A PRECISION APPROACH RADAR OPERATOR.

HONORABLE DISCHARGE - SEPTEMBER 1972

DATE 3/1/84

RESUME

NAME: GARY DEAN SANFORD

DATE OF BIRTH: 8/30/50

ADDRESS:

DATE OF HIRE: 2/6/84

JOB TITLE: ASSISTANT STATION SHIFT SUPERVISOR

DEPARTMENT: OPERATIONS UNIT #II

EDUCATION:

High School (Name) KNAPPA H.S.

Address KNAPPA, OREGON

Date of Graduation MAY 29, 1968

College (Name) OREGON STATE UNIVERSITY

Address CORVALLIS, OREGON

Number of Years 3

Major NUCLEAR ENGINEERING

Degree/Date of Grad. B.S. IN NE. / JUNE 1977

Other Education:

CLATSOP COMMUNITY COLLEGE

ASTORIA, OREGON

ATTENDED 2 YEARS, ENGINEERING [illegible]

Name: R. J. REYNOLDS

EMPLOYMENT: (cont'd)

PAST EMPLOYERS: (Please list chronologically, with most recent position first. Use additional paper if necessary.)

COMPANY'S NAME: LABORERS LOCAL 214/ P.KIGUITT, WALSH,

DATES/POSITION: GROVES, J+K BOILER, BOULEY, COOPER/ 1976-81

DUTIES: CONCRETE CREW, CLEANUP, ROCK DRILLER, CARPENTER HELPER, MASON TENDER

MEXICO ACAD. & CENT SCHOOL DIST./ 1975-76

PERMANENT SUBSTITUTE TEACHER/

UNDER CONTRACT TO SCHOOL DIST TO REPLACE ABSENT TEACHERS IN GRADES K-12.

TRI LIONS TAVERN 1972-75 BARTENDER

BUTLER SYSTEMS 1974 TRUCK DRIVER SUPERVISE 1-3 LABORERS

ANTHONY'S WAREHOUSE 1970-71 REST. MGR.

SCHEDULE EMPLOYEES - ORDER STOCK.

SUPERVISE BAR & RESTURANT IN ALL PHASES OF OPERATION.

Name: R.J. REYNOLDS

EMPLOYMENT: Positions held with Niagara Mohawk:

Present Position: N.A.OC.

Start Date: FEB 13, 1984

Duties: ASSIST IN OPERATION OF NUC PLANT

MARK UPS

Previous Position: A.O.B.

Start Date: AUG 83

Duties: ASSIST IN OPERATION OF NUC PLANT

Next Previous: NUC ARMED GUARD

Start Date: MAY 18, 1981

Duties: Prevent nuclear sabotage.

Next Previous:

Start Date:

Duties:

PLEASE LIST ALL POSITIONS HELD WITH NIAGARA MOHAWK - USE ADDITIONAL PAPER IF NECESSARY

Resume: Page 2

Name: R. J. REYNOLDS

MILITARY SERVICE (BRANCH)

Please list in detail all military experience including Base or Ship Station, inclusive dates (month and year) and position held at each place. Itemize all training (i.e. Nuc. Pwr School, Machinist Mate, etc) and location of training and length of course.

1968 - 74 U.S. ARMY RESERVE CO. D 479th EN BN

DISC APR. 74 E-6 SQUAD LEADER

1975 - 83 SAME UNIT - PLATOON SGT 2yr; OPERATIONS & TNG

SGT. - 7yrs PROMOTED TO SFC E7 1982

ADVANCED COMBAT ENGINEER CORRESPONDENCE COURSE 81-82 140 cal hrs.

1983 - TRANSFER TO CONTROL (IRR) FEB 83

R. Reynolds

DATE 2-10-84

RESUME

NAME: RICHARD J. REYNOLDS

DATE OF BIRTH: 2-26-49

ADDRESS: ___ DATE OF HIRE: 5-18-81

JOB TITLE: NUC. AUX. OP. C DEPARTMENT: OPERATIONS: UNIT 2

EDUCATION: High School (Name) Oswego High School

Address OSWEGO, NY.

Date of Graduation JUNE 1967

College (Name) S.U.C. OSWEGO

Address OSWEGO

Number of Years 2

Major ELEMENTARY EDUCATION (PSYCHOLOGY)

Degree/Date of Grad. B.S. MAY 1975

Other Education: AUBURN COMM. COLLEGE

2 yrs

A.A. in GEN. EDUCATION 1970

MILITARY SCHOOLS:

U.S. Navy Basic Training
RTC Orlando, Fla.
9/76 - 11/76

Basic Electricity and Electronics School
NTC Orlando, Fla.
11/76 - 1/77

Electronics Technician "A" School
NTC Orlando, Fla.
10/77 - 4/78

Naval Nuclear Prototype (S3G)
NPTU Balston Spa, NY
4/78 - 11/78

1.C 5.1

November 1983

RESUME

NAME:	David Allan Rathbun	PHONE:	Home: Work:

PERSONAL: Date of Birth: June 29, 1958
Date of Hire: October 4, 1982

EDUCATION: Honeoye Central School
Honeoye, NY
Diploma - June 1976

EMPLOYMENT: Niagara Mohawk Power Corporation
Nine Mile Point Nuclear Station

10/82 to Present

Position: Auxiliary Operator "B"

Duties: Under direct supervision on a shift, to be responsible for the operational care of various types of complicated auxiliary equipment associated with one or more main turbo-generator or boiler units, and with only casual supervision to start & stop such equipment under normal and emergency situations.

MILITARY EXPERIENCE:

US NAVY

U.S.S. Dyess (ETN-3)
6/77 - 10/77

Test Equipment Petty Officer

Inventoried all test equipment. Assigned to OE Division and signed in and out such equipment to other divisions. Also maintained and repaired communications equipment.

U.S.S. Mississippi (ET3)

Assigned to work center RC02 in Reactor Control Division (with exception to statement below). Maintained, repaired and operated Reactor Control Equipment and Reactor Instrumentation equipment. Qualified Reactor Operator.

From Sept. 1981 - March 1982; assigned to Technical Publications Library (TPL) for maintenance and repair of Reactor Plant and Steam Plant Manuals and all Tech. Manuals of required equipment maintained by the engineering department. Also at this time, assigned duties as Supply Petty Officer for TPL and Training Division.

MILITARY SCHOOLS:

Machinist Mate "A" School
Great Lakes, Ill. 1/77 - 3/77

Navy Nuclear Power School
Orlando, Fla. 7/77 - 1/78

Nuclear Prototype Training
Ballston Spa, NY 2/78 - 8/78

Other schools while aboard U.S.S. Groton:

Machine Tool Operator - 3 weeks
Secondary Chemist - 1 week
Drug & Alcohol Prevention - 2 weeks
8K & 2K Distilling Plants - 2 weeks
Hi Press. Air Compressor - 1 week

:C. 3./

November 1983

RESUME

NAME: Jay Lawrence

PHONE: Home:
Work:

PERSONAL: Date of Birth: Januray 8, 1958
Date of Hire: October 15, 1982

EDUCATION: Alfred-Almond Central School
Almond, NY 14804
Diploma - June 1976

EMPLOYMENT: Niagara Mohawk Power Corporation
Nine Mile Point Nuclear Station

11/82 to Present

Position: Auxiliary Operator "B"

Duties: Under direct supervision on a shift, to be responsible for the operational care of various types of complicated auxiliary equipment associated with one or more main turbo-generator or boiler units and with only casual supervision to start and stop such equipment under normal and emergency situations.

MILITARY EXPERIENCE:

US NAVY
10/76 - 10/82

U.S.S. Austin
3/77 - 7/77
On the job training

U.S.S. Groton (SSN-694)
9/78 - 10-82

Duties: Operations, maintenance, secondary chemist, QA Inspector, QA paperwork, Reactor Plant preventive maintenance and machinery history Petty Officer, fuel oil and water king, ships machinist, weight handling Petty Officer.

1 April 1983 to September 1983 — Attended Reactor Operator Licensing Training for Nine Mile Point Nuclear Station - Unit 1 Which included detailed training in Nine Mile Point Nuclear Station Unit 1 system designs and operation (normal and Abnormal), and Station emergency procedures. Also received training in Reactor theory, thermodynamics, basic mechanical and electrical theory, Boiling Water Reactor Thermodynamics, Boiling Water Reactor Chemistry and Corrosion Control.

18 October 1983 — Received Reactor Operator License for Nine Mile Point Nuclear Station - Unit 1

March 1984 to Present — Advanced to the position of Nuclear Auxiliary Operator E

Duties.

The Nuclear Auxiliary Operator E on shift provides operational attendance to the plant equipment. He shall perform all evolutions with the concurrence of or at the direction of the Chief Shift Operator. In addition, as required, he is responsible for the operation of the main turbine generator unit and related equipment from the control room and performs switching in the switchyard. He shall hold an NRC Reactor Operator License. When acting for the Chief Shift Operator, as principal reactor operator, he shall assume the shutdown and safe operation authority and responsibilities outlined for the Chief Shift Operator. `e shall at all times perform his duties in accordance .h approved procedures unless immediate and unforseen action is required to ensure the safety of the reactor, the station personnel and the general public.

March 1978 to Jan. 1980	U.S.S. Nimitz (CVN-68) Duties: Responsible for the preventive & corrective maintenance of pumps, valves, heat exchangers & piping systems of various nuclear & non-nuclear propulsion plant systems. Qualified for various watch stations, responsible for the control & safe operation of various pumps, valves & heat exchangers of the Reactor Plant.
July 1977 to January 1978	U.S. Naval Nuclear Powered Training Unit Ballston Spa, NY S3G Prototype, 26 Weeks Trained in the basic mechanical operation of S3G Prototype included actual hands on experience, training in reactor theory and electrical theory of this prototype. Became a qualified radiation worker.
January 1977 to July 1977	U.S. Naval Nuclear Power School Orlando, FL Reactor Theory, 24 Weeks Courses in Reactor Theory, Heat Transfer and Fluid Flow, various Mechanical and Electrical Theory, Chemistry and Corrosion Control of Pressurized Water Reactors. Also courses in Radiological Theory and Controls.
September 1976 to November 1976	Mechinist Mate "A" School Great Lakes, IL Basic theory and operation of Naval Steam Propulsion Plants. Including theory and operation of pumps, valves, heat exchangers, turbines, and generators

EMPLOYMENT: Niagara Mohawk Power Corporation, Syracuse NY.

	Nine Mile Point Nuclear Station
7/26/82 to March 19[illegible]	Position: Aux. Oper. "B" Duties: Under direct supervision on a shift, to be responsible for the operational care of various types of complicated auxiliary equipment associated with one or more main turbo-generator or boiler units and with only casual supervision to start and stop such equipment under normal and emergency situations.

MAY 1984

CONFIDENTIAL RESUME

NAME: Daniel M. Holt

Job Title: Nuclear Auxiliary Operator E
Department: Operations Unit II
Date of Hire: 7/26/82

EDUCATION: Utica Free Academy
Utica, NY
Graduated - June 1976

MILITARY EXPERIENCE: U.S. Navy (1976 - 1982)

SCHOOLS: Machinest Mate "A" School
Great Lakes, IL
Sept. 1976 - Nov. 1976
2 months

Navy Nuclear Power School
Orlando, FL
Jan. 1977 - July 1977
6 months

S3G Prototype Training
Ballston Spa, NY
July 1977 - Jan. 1978
6 months

(Other) Education — Niagara Mohawk Power Corporation
Reactor Operator Licensing Training Course
(Nine Mile Point Nuclear Station Unit 1
taught by the General Physics Corporation)
Oswego New York
April 1983 September 1983
22 weeks.

Jan 1980 to June 1982 — U.S.S. Carl Vinson (CVN-70)

Duties: Assigned to the Pre-commissioning unit of the U.S.S. Carl Vinson, equipped with an A4W/A1G Reactor Plant. Responsible for supervising preventive & corrective maintenance & operation of various nuclear & non-nuclear propulsion plant systems. Qualified various subordinate watch stations. In November, 1980, qualified senior in-rate watch station, Chief Reactor Watch; a supervisory watch responsible for supervising the operation of various mechanical systems and support systems of the reactor plant. Involved in various reactor plant testing during the

1-C 3.1

November 1983

RESUME

NAME: James Graff

PHONE: Home:
Work:

PERSONAL: Date of Birth: April 15, 1958
Date of Hire: September 27, 1982

EDUCATION: Cardinal Mooney High School
Greece NY
Diploma - June 1976

EMPLOYMENT: Niagara Mohawk Power Corporation
Nine Mile Point Nuclear Station

9/82 to Present

Position: Auxiliary Operator "B"

Duties: Under direct supervision on a shift, to be responsible for the operational care of various types of complicated auxiliary equipment associated with one or more main turbo-generator or boiler units and with only casual supervision to start and stop such equipment under normal and emergency situations.

MILITARY EXPERIENCE

US NAVY
9/76 - 9/82

U.S.S. Arkansas (CGN-41)
6/79 - 8/82

Second Class Elect. Technician

Qualified Reactor Operator, shutdown reactor operator and reactor technician on D2G reactor.

MILITARY SCHOOLS:

Basic Electricity & Electronics School
Great Lakes, Ill. 1/77 - 3/77

Electronics Tech. "A" School
Great Lakes, Ill. 3/77 - 8/77

Navy Nuclear Power School
Orlando, Fla. 6/78 - 12/78

Nuclear Prototype Training 1/79 - 6/79

MILITARY SCHOOLS:

Petroleums, Oils and Lubricants Course - Feb. 1973 - 1 wk

Boiler water/Feedwater Test and Treatment Certification - Jan. 1981 - 1 wk

MILITARY EXPERIENCE (Cont.)

1977 - 1979: SHORE INTERMEDIATE MAINTENANCE ACTIVITY
LITTLE CREEK, VA

Title: Boiler Repair Specialist and Automatic Boiler Control Systems Repair Specialist.

Concurrently accorded responsibilities as a Quality Assurance Inspector and Safety Coordinator.

1977: SHORE INTERMEDIATE MAINTENANCE ACTIVITY
CHARLESTON, SC

Title: Boiler Repair Specialist

U.S.S. Sierra (AD-18)
1976 - 1977

Boiler Repair Engineering Specialist

U.S.S. Hoist (ARS-40)
1975 - 1976

Stability Coordinator and Boiler Operator responsible for providing expertise relative to technical functions related to the towing of the USS BELKNAP (CG-26).

U.S.S. BELKNAP (CG-26)
1974 - 1975

Fireroom Maintenanceman responsible for upkeep, maintenance, and overhaul of gate and globe valves, pumps and auxiliary steam turbines.

MILITARY SCHOOLS:

Maintenance and Material Management School - May 1982 - 1 wk

Gauge and Thermometer Calibration School - April 1979 - 1 wk

Boiler Technician Class "A" (Basics) School - Feb. - April 1972 - 12 wks

Boiler Technician Class "B" (Advanced) School - June - Oct. 1974 - 18 wks

General Regulator Automatic Combustion and Boiler Water Level Control Systems Maintenanceman - March - April 1977 - 6 wks

FC 5.1

November 1983

RESUME

NAME: Steven J. Davis

PHONE: Home:
Work:

PERSONAL: Date of Birth: March 31, 1952
Date of Hire: January 3, 1983

EDUCATION: Lawrenceville High School
Lawrenceville, Ill
Diploma - June 1970

EMPLOYMENT: Niagara Mohawk Power Corporation
Nine Mile Point Nuclear Station

1/83 to Present

Position: Auxiliary Operator "B"

Duties: Under direct supervision on a shift, to be responsible fir the operational care of various types of complicated auxiliary equipment associated with one or more main turbo-generator or boiler units and with only casual supervision to start and stop such equipment under normal and emergency situations.

MILITARY EXPERIENCE:

US NAVY
1974 - 1982

U.S.S. Josephus Daniels (CG-27)
1981 - 1982

Division Officer

Leading Division Chief Petty Officer with direct responsibilities for a staff of engineering specialists. Provide techincal training (formal, on-the-job, practical) to subordinates relative to engineering operations, theories and techniques requiring empathy, objectivity, tact, poise and excellence in interpersonal relationships.

Designated and certified ENGINEER OFFICER OF THE WATCH.

U.S.S. King (DDG-41)
1979 - 1981

Workcenter Supervisor

Assisted, supervised and performed diverse technical functions, to include the maintenance, repair and calibration of sophisticated automatic boiler control systems.

MILITARY EXPERIENCE:

Four years active service U.S. Navy
November 1, 1973 - October 31, 1977

Served over 3 years on board the USS Compass Island (AG-153), a navigational research ship, from July 1974 to EAOS. Also served as Test Equipment Petty Officer, and was a qualified Supervisor in the ships Combat Information Center.

Classified as ET-1501, Basic Electronics Maintenance Man, concentrating in Radar (AN/SPS-10) and Decca Pathfinder Radar. Honorable discharge as ETR-2.

MILITARY SCHOOLS:

Communications and Counselor School - 1974

Basic Electricity and Electronics School - Jan - July 1974

ET "A" Phase A1 School - 1974

AN/SRC-20 Omega Receiving Set Maintenance School - 1975

Loran A Maintenance School - 1976

/'C 5./

November 1983

CONFIDENTIAL RESUME

NAME: Eugene M. Davis

PERSONAL: Date of Birth: August 7, 1955
Date of Hire: June 21, 1982

EDUCATION: Edwards Central School
Edwards, NY
Diploma - June 1973

State University College
Potsdam, NY
Major: Sociology
Degree: B.A. - May 1981

EMPLOYMENT:

Niagara Mohawk Power Corporation
Nine Mile Point Nuclear Station

6/82 to Present

Position - Auxiliary Operator "B"

Duties - Under direct supervision on a shift, to be responsible for the operational care of various types of complicated auxiliary equipment assoicated with one or more main turbo-generator or boiler units and with only casual supervision to start and stop such equipment under normal and emergency situations.

Carroll's C-Mart (Convenience Store)
December 1981 - March 1982

Position - Cashier

Duties - Maintained daily store report of business, nightly cash-up and deposits.

1977 to 1978	<u>Position</u>: Chief Shift Operator at JAFNPP <u>Duties</u>: As C.S.O. in charge of the operation of the Control Room. Starting and stopping of all major pieces of equipment and the control of the Rx and the Turbine. Also directing and training of operators of a lower grade.
1976 to 1977	<u>Position</u>: Nuclear Operator "E" at JAFNPP <u>Duties</u>: As an N.O.E., responsible for the care and operation of all plant equipment, including the Main Turbo-generator unit and Reactor unit. Also to direct the operation of auxiliary equipment by Operators of a lower grade. Included duties of the rescue and fire brigade.
1972 to 1976	<u>Position</u>: Nuclear Operator "C" at JAFNPP <u>Duties</u>: The operation or supervision of the operation of the highest types of auxiliary equipment, the execution of safe and effective markups on equipment within the station, and the assistance in the detailed training of operators of a lower grade.
1971 to 1972	<u>Position</u>: Nuclear Operator "B" at JAFNPP & NMPNPP <u>Duties</u>: Responsible for operational care of various types of complicated auxiliary equipment associated with the main turbo-generator unit with only causal supervision to start and stop such equipment under normal and emergency conditions.
1971	<u>Position</u>: Meter Tester "A" 7th North Street, Syracuse,N.Y. <u>Duties</u>: Worked in Meter & Test Department and responsible for repair and test of single phase watt-hour meters.

Service: U.S.M.C.
Active duty - Oct. 1966 - Oct. 1968

September, 1980 FC 5.1

CONFIDENTIAL RESUME

NAME: Franklin L. Conaway, Jr.

PERSONAL: AGE: 33 Height: 5' 11"
Date of Birth: 9/2/47 Weight: 172 lbs.
Married; Good health

EDUCATION: Oswego High School
Oswego, New York
Graduated - 1966

Canton ATC, Canton, N.Y.
Full Time
1 Year Certificate degree in Electrical Construction and Maintenance

General Physics Basic Introduction Course
Jan. - March 1972

G.E. BWR Technology Course
April 1972 - 4 weeks

G.E. BWR Technology Course
May 1973 - 2 weeks

G.E. Simulator Training, Morris, Ill.
November 1972 - 1 week

General Physics Corp. Training Course (Rx. License)
1976 - 320 hrs.

G.E. Simulator Certification, Morris, Ill.
March 1976 - Certification attesting to the applicants ability for manipulating the controls safely

Obtained Reactor Operator License for James A. Fitzpatrick Nuclear Power Plant in May, 1976.
TVA Simulator Soddy - Daisy, Tenn. - Oct. 1978
Requalified at JAFNPP - May, 1978

EMPLOYMENT: Niagara Mohawk Power Corp.
Syracuse, New York

1978 to Present

Position: Chief Shift Operator

Duties: Assisting in the writing of pre-operational tests, operating procedures, special procedures and performing si reviews on plant systems for Nine Mile Point Unit #2. Worked as a Maintenance Helper during the refuel outage of 1979 in which I helped reassemble the Reactor internals and Reactor head.

0052961

Name: M. CONWAY

NIAGARA MOHAWK TRAINING:

CONTROL ROOM TRAINING @ NINE MILE POINT NUCLEAR STATION UNIT I - 12 WEEKS 1983

GENERAL PHYSICS REACTOR OPERATOR HOT LICENSE CLASS - 21 WEEKS 1983-1984

GENERAL ELECTRIC REACTOR OPERATOR SIMULATOR CERTIFICATION - 14 DAYS 1983

N.R.C. REACTOR OPERATOR HOT LICENSE ISSUED FOR NINE MILE POINT NUCLEAR STATION UNIT I - 21 MARCH 1984 - LICENSE # OP-10146

Name: *M. Conway*

EMPLOYMENT: Positions held with Niagara Mohawk:

Present Position: AUXILIARY OPERATOR B

Start Date: *15 November 1982*

Duties: Under direct supervision, on a shift, to be responsible for the operational care of various types of complicated auxiliary equipment associated with one or more main turbo-generator or boiler units and with only casual supervision to start and stop such equipment under normal or emergency conditions.

MILITARY SCHOOLS:

Griscom Russell Steam Evaporator Plant Replacement Technician - 4 days - 1981

Submarine Low Pressure Vapor Compressor Distilling Unit - 3 days - 1981

Boiler Water Chemistry - 4 days - 1981

Fairbanks Morse Diesel Engine Maintenance - 11 days - 1980

Diesel Engine Operator - 4 days - 1980

Propulsion Shaft Components Combined Maintenance - 4 days - 1980

175-ton R-114 Air Conditioning Plant - 11 days 1979

Nuclear Power Plant Operator - 45 weeks - 1978

Naval Nuclear Power School - 40 weeks - 1977

Machinist's Mate "A" School - 12 weeks - 1977

13 June 1984

RESUME

NAME: Michael S. Conway

PERSONAL: Date of Birth: January 7, 1958
Date of Hire: November 15, 1982

EDUCATION: Hamilton Central High School
Hamilton, NY
Diploma - 1976

MILITARY EXPERIENCE:

US NAVY
1976 - 1982

U.S.S. Holland (AS-32)
5/82 - 9/82

Safety Inspector/Leading Petty Officer

Ensure shipboard safety during a drydock overhaul period. Perform inspections and report any discrepancies. Coordinate Fire-watch program for shipboard welder and brazers. Set up training program for division personnel.

U.S.S. John Calhoun (SSBN-630)
3/79 - 5/82

Nuclear Machinist's Mate 2nd Class

Qualified senior watchstations for steaming and shutdown conditions of the reactor plant. As Engineroom Supervisor, coordinated and monitored watchstanders for the reactor and steam plants during normal and casualty operation, directly responsible for engineroom operations. As Shutdown Roving Watch, monitored shutdown plant conditions and maintained the plant in stable condition. Also served as Secondary Plant Chemist, involving analysis of boiler and feedwater, chemical computations and additions to prevent corrosion. Additional duties as Machinery Division Calibration Coordinator, Nuclear Cosal Coordinator, Diesel Engine Expert and Fuel, Oil and Water Coordinator.

0310T

Name: M CHURILLA

EMPLOYMENT: (cont'd)

(Please list chronologically past experience in present job related categories. Professional or Volunteer basis). (i.e., Volunteer Fire Companies, etc..)

USN 8 years

Name: MCHURILLA

EMPLOYMENT: (cont'd)

PAST EMPLOYERS: (Please list chronologically, with most recent position first. Use additional paper if necessary.)

COMPANY'S NAME US NAVY

DATES/POSITION JULY 74 - JULY 82

DUTIES NUCLEAR OPERATOR, ENGINE ROOM Supervisor, ENGINEERING WATCH Super. NUCLEAR REPAIR COORDINATOR

STUDENT

Name: ______________________

EMPLOYMENT: Positions held with Niagara Mohawk:

Present Position: NUCLEAR OPERATOR E

Start Date: JAN 84

Duties: CONTROL ROOM OPERATOR

Previous Position: AUXILLARY OPERATOR B

Start Date: AUG 82

Duties: LEARNING THE PLANT

Next Previous: USN

Start Date:

Duties:

Next Previous:

Start Date:

Duties:

PLEASE LIST ALL POSITIONS HELD WITH NIAGARA MOHAWK - USE ADDITIONAL PAPER IF NECESSARY

Name: M. CHURILLA

MILITARY SERVICE (BRANCH)

Please list in detail all military experience including Base or Ship Station, inclusive dates (month and year) and position held at each place. Itemize all training (i.e. Nuc. Pwr School, Machinist Mate, etc) and location of training and length of course.

US NAVY 8 YEARS

SEPT 74 MACHINIST MATE A SCHOOL

GREAT LAKES ILL, (STUDENT)

JAN 75 NAVY NUCLEAR PROPULSION SCHOOL

BAINBRIDGE, MARYLAND (STUDENT)

AUG 75 NUCLEAR POWER TRAINING UNIT

WINDSOR LOCKS CONN. (STUDENT GRAD.)

APRIL 76 USS SPADEFISH (SSN 668)

NORFOLK VA (DUTY) ENGINE ROOM SUPER.

ENGINEERING WATCH SUPER.

APRIL 81 USS YELLOWSTONE (AD 41)

NORFOLK VA. (DUTY) NUCLEAR REPAIR COORDINATOR

IN CHARGE OF PLANNING NUCLEAR RELATED

PROPULSION PLANT REPAIRS + MODIFICATIONS.

DATE 15 May 84

RESUME

NAME: Mi Churilla

DATE OF BIRTH: 5 AUG 56

ADDRESS.

DATE OF HIRE: 15 AUG 1982

JOB TITLE: NUCLEAR OPERATOR E

DEPARTMENT: OPERATIONS

EDUCATION: High School (Name) ST MARY'S-RYKEN H.S.

Address LEONARDTOWN MARYLAND

Date of Graduation MAY 7, 1974

College (Name) NA

Address

Number of Years

Major

Degree/Date of Grad.

Other Education: US NAVY NUCLEAR PROPULSION TRAINING UNIT BAINBRIDGE MD. + WINDSOR LOCKS CONN.

AIRCONDITIONING + REFRIGERATION + Lithium Bromide A/C systems school

MILITARY SCHOOLS

Basic Electricity and Electronics School
Orlando, Fla. July - Aug. 1977

Advanced Elect. and Electronics School
Great Lakes, Ill. Aug. - Sept. 1977

Electricians Mate "A" School
Great Lakes, Ill. Sept. - Dec. 1977

Pre-Nuclear Power School
Orlando, Fla. Jan. - Feb. 1978

Nuclear Prototype Training
West Milton, NY Aug. 1978 - Feb. 1979

F.C. 5.1

November 1983

RESUME

NAME: Michael Carson

PHONE: Home:
Work:

PERSONAL: Date of Birth: October 6, 1957
Date of Hire: October 18, 1982

EDUCATION: Dumont High School
Dumont, NJ 07628
Diploma - June 1975

William Paterson College
Wayne, NJ
Major - Mathematics
No Degree

EMPLOYMENT: Niagara Mohawk Power Corporation
Nine Mile Point Nuclear Station

10/82 to Present

Position: Auxiliary Operator "B"

Duties: Under direct supervision on a shift, to be responsible for the operational care of various types of complicated auxiliary equipment associated with one or more main turbo-generator or boiler units and with only casual supervision to start and stop such equipment under normal and emergency situations.

MILITARY EXPERIENCE:

US NAVY
1977-1982

U.S.S. Arkansas (CGN-41)
8/78 - 2/79 Pre-commissioning Unit

10/80 - 6/82

Electrician, assigned to maintenance and repair of electrical equipment of #1 Engineroom and reactor plant. Operation of #1 and #2 Reactor plants.

EMPLOYMENT
CONT'D:

1975 to 1977 U.S. Navy, S3G Prototype, West Milton, New York

Duties: Six months as a student qualifying on S3G nuclear prototype. Remainder of time spent as staff instructor. Duties included instructing and supervising enlisted and officer nuclear power trainees in operation, maintenance and systems of S3G nuclear prototype. Also assigned to insulation repair, removal and installation team, and main coolant pump removal team during reactor refueling maintenance period.

1974 to 1975 U.S. Navy: Enlisted Janury 1, 1974

Duties: 8 weeks recruit training Orlando, Fla., 4 weeks machinist's mate "A" school, Great Lakes, Illinois, 6 months assigned to U.S.S. Mitscher, DDG-35, M-Division, and November 1975 through May 1975, Navy Nuclear Power School, Bainbridge, Maryland.

EDUCATION CONTINUED:

Boiler Water/Feedwater Test & Treatment School
(Caustic Soda)
April 1979

Air Conditioning & Refrigeration School
December 1980

Damage Control and Fire Fighting Team Training School
August 1981

GE BWR Simulator
Morris, Ill.
Introduction to Integrated Plant Operation Program
5 days November 1982

EMPLOYMENT:

Niagara Mohawk Power Corp.
Syracuse, New York

Nine Mile Point Unit #2
Lycoming, New York

1982 to Present

Position: Auxiliary Operator B

Duties: Assigned to Unit #1 for training, under direct supervision on a shift to be responsible for the operational care of various types of auxiliary equipment associated with one or more main turbo-generator or boiler units and with only casual supervision to start and stop such equipment under normal and emergency situations.

1980 to 1982

U. S. Navy, U.S.S. Brumby FF-1044 Auxiliary Division - Work Center Supervisor

Duties: Operation and maintenance of ship's refrigeration and air conditioning units, steering units, and, diesel generator units. Assisted in quality control for engineering department during major overhaul period in Bath Ironworks Shipyard, Bath, Maine. Discharged Janury 4, 1982.

1977 to 1980

U.S. Navy, U.S.S. Valdez FF-1096 - Auxiliary Machinery Room Supervisor

Duties: Operation and maintenance of high pressure (1200 PSIG) steam driven turbine generators, hydraulic fin stabilizing units, high and low pressure compressed air systems and air drying systems, supervision of assigned personnel, in performance of routine and corrective maintenance, routine and casualty operations of equipment. Also supervision of assigned personnel and quality control during major overhaul period in Bethlehem Steel Shipyard, Boston, Mass.

February 1983

CONFIDENTIAL RESUME

NAME: Robert W. Bullock PHONE:

9

PERSONAL: Age 31
Date of Birth: September 5, 1951
Married; Good Health

Height: 5'6"
Weight: 145

EDUCATION: East High School
Rochester, New York
Regents Diploma - 1969

Paul Smith's College
Paul Smith's, New York
1969-1970

Monroe Community College
Rochester, New York
A.S. in Liberal Arts - 1973

Navy Schools:

Machinist Mate Class A School
April 1974

Navy Nuclear Power School
(18 Weeks) May - 1975
Subjects Including:

- Math
- Physics
- Metallurgy
- Special Training (Turbine Theory, etc.)
- Thermodynamics
- Reactor Principles
- Health Physics/Rad. Controls
- Reactor Plant Technology
- Chemistry

Navy Nuclear Power Prototype, Dec. 1975
Reactor Prototype Training - S3G site
West Milton, N. Y.
Training and qualification as a mechanical operator on an operating PWR.

3-M Managers School
December 1978

3-M Coordinator School
March 1979

Propulsion Plant Management School
March 1979

Name: ROBERT BERGENSTO.

EMPLOYMENT: (cont'd)

(Please list chronologically past experience in present job related categories. Professional or Volunteer basis). (i.e., Volunteer Fire Companies, etc..)

ATTEN. NIAGARA MOHAWK NRC LICENSE CLASS 4/83-10/83

RECIEVED NRC LICENSE #10073

Name: ROBERT BERGENSTOCK

EMPLOYMENT: (cont'd)

PAST EMPLOYERS: (Please list chronologically, with most recent position first. Use additional paper if necessary.)

COMPANY'S NAME US NAVY

DATES/POSITION 5/74 - 9/82

DUTIES QUALIFIED EWS FOR 2 YRS.
LEADING PETTY OFFICER FOR
NUMBER TWO ENGINE ROOM.

IN CHARGE OF APPROXIMATELY 25
MEN, RESPONSIBLE FOR THE
MAINTENANCE & REPAIR OF ALL
EQUIPMENT ASSOC. WITH #2 REACTOR
AND ENGINE ROOM.

Name: ROBERT BERGENSTOCK

EMPLOYMENT: Positions held with Niagara Mohawk:

Present Position: NOE

Start Date: 4/84

Duties: PROVIDE OPERATIONAL CARE of EQUIPMENT

Previous Position: AOB

Start Date: 9/82

Duties: UNDER DIRECT SUPERVISION, BE RESPONSIBLE FOR OPERATIONAL CARE OF COMPLICATED AUX. EQUIPMENT.

Next Previous:

Start Date:

Duties:

Next Previous:

Start Date:

Duties:

PLEASE LIST ALL POSITIONS HELD WITH NIAGARA MOHAWK - USE ADDITIONAL PAPER IF NECESSARY

Name: ROBERT BERGENSTOCK

MILITARY SERVICE (BRANCH)

Please list in detail all military experience including Base or Ship Station, inclusive dates (month and year) and position held at each place. Itemize all training (i.e. Nuc. Pwr School, Machinist Mate, etc) and location of training and length of course.

2/82 SHIPBOARD WATER TREATMENT CHLORINATION/BROMINATION

USS VIRGINIA

5/79 - 7/79 AIR CONDITIONING & REFRIG

NORFOLK, VA.

9/75 - 3/76 NUCLEAR POWER PROTOTYPE

S3G, BALSTON SPA, N.Y.

1/75 - 8/75 NAVAL NUCLEAR POWER SCHOOL

BAINBRIDGE, MD.

9/1/74 - 10/2/74 MACHINIST MATE CLASS "A"

GREAT LAKES, ILL.

DATE 5/10/84

RESUME

NAME: ROBERT BERGENSTOCK

DATE OF BIRTH: 11/29/52

DATE OF HIRE: 9/7/82

JOB TITLE: NOE

DEPARTMENT: OPERATIONS

EDUCATION: High School (Name) AUBURN, HIGH

Address AUBURN, N.Y.

Date of Graduation 6/71

College (Name)

Address

Number of Years

Major

Degree/Date of Grad.

Other Education:

RK EXPERIENCE

tie with first position held. Include military service and work with other companies.

Dates From (mo/yr) To (mo/yr)	Position Level	GE Component, or Other Company and Location / Immediate Manager(s)	POSITION TITLE & DESCRIPTION Underline position title; then describe responsibilities and achievements or significant contributions. Indicate products, type of operation and industries involved. Show function or subfunction. If managerial position, show number and types of employees supervised.
			<u>SENIOR ENGINEER</u> (Continued) As Operations Superintendent during La Salle 1 and 2 startup test programs and La Salle 2 preoperational test program, assumed responsibility for the direction of 10 startup engineers. In addition to the above assumed a more active role in the startup test program i.e., performing startup test scheduling, resolving startup test related problems, reviewing startup test reports and directing shift superintendents. Acted as Operations Manager for about three months. Provided direction and support to San Jose engineers while on site visits to resolve problems. Coordinated La Salle 1 and 2 activity with the lead STD&A Engineer.

(If more room is needed, use Form GMMD-2A)

[redacted] (last) (first) (initial)

WORK EXPERIENCE

Begin with first position held. Include military service and work with other companies.

Dates From (mo/yr) To (mo/yr)	Position Level	GE Component, or Other Company and Location / Immediate Manager(s)	POSITION TITLE & DESCRIPTION Underline position title; then describe responsibilities and achievements or significant contributions. Indicate products, type of operation and industries involved. Show field or activity or subfunction. If managerial position, show number and type of employees supervised.
'80-11/80	8	GE/NEBG Startup Operations Tulsa Training Center MGR: J.J. Sheehan/L.C. Tabke	ENGINEER: Completed BWR/6 SRO Certification on the Perry plant simulator. Performed technical writing of lesson plans for Vermont Yankee STA Training Course.
LEVEL DATE /80	9		
/80-1/83	9	GE/NEBO Startup Operations La Salle Site MGR: S.S. Duink/J.E. Ellis	ENGINEER: Provided technical direction for the completion of preop testing on Unit 1 for RWCU (G33), MSIV-LCS (E32), ADS/SRV (B21C) and Emergency Power Redundance Testing. Assumed responsibility for SBLC (C41) after transfer of original cognizant system engineer. Completed SRO Certification of La Salle Unit 1 (BWR/5). Performed on shift technical direction during startup testing from fuel load to Test Condition 3 on La Salle Unit 1. Provided technical direction for preop testing on Unit 2 for HPCS (E22), PCIS (B2[illegible]), Remote Shutdown (C61), RCIC (E51), RR (B33) and Unit 2 flushing.
83-Present	9/10		SENIOR ENGINEER: As Day Shift Supervisor during La Salle 1 startup test program, provided direction to 5 startup engineers including preparation of daily startup reports and standing orders to shift superintendents. Interfaced with the customer, and the project office to resolve reactor plant operating equipment problems. Provides direction for 8 startup engineers during La Salle 2 preoperational test program in reviewing preop test procedures, making recommendations to the customer, preparing reports, [illegible], [illegible]. Acted as Operations Superintendent for [illegible] one month. Prepared monthly reports on La Salle 2 preop test status.
LEVEL DATE 83	10		

(If more space is needed, use Form [illegible])

Douglas (first) E (initial)

...E

...en held. Include military service and work with other companies.

...sition Level	GE Component, or Other Company and Location / Immediate Manager(s)	POSITION TITLE & DESCRIPTION — Underline position title; then describe responsibilities and achievements or significant contributions. Indicate products, type of operation and industries involved. Show field or activity or subfunction. If managerial position, show number and types of employees supervised.
	Financial Computer Center of Eastern NY, Schenectady, NY	<u>OPERATOR</u>: Demand deposit accounting and payroll processing via computer and associated peripherals for several area banks.
	Scotia-Glenville Central Schoo MGR: George Bunt	<u>MAINTENANCE</u>: Cleaning, painting and repair of schools during summer.
	1st Nat'l Bank of Scotia MGR: Cal Welch	<u>RECONCILER</u>: Balancing daily DDA transactions and general ledger prior to input into comput...
	St. Claire's Hosp-Sch'dy NY MGR: Mary Lou Guerierra	<u>ORDERLY, TECHNICIAN</u>: Floating orderly and O.R. Technician.
...UI 2	US Navy-Officer Candidate School, Newport, RI	<u>STUDENT</u>
ENS	Nuclear Power School Mare Island, Vallejo, CA	<u>STUDENT</u>
ENS	Submarine Officer Basic Course Idaho Falls, ID	<u>STUDENT S1W Prototype</u>
ENS	Submarine Officer Basic Course Groton, CT	<u>STUDENT</u>
ENS/LT	USS DACE (SSN607) FPO San Francisco CDR R.S. Fitch/CDR R.L. Tinda	<u>OFFICER</u>: Qualified Officer of the Deck, Command Duty Officer, Engineering Officer of the Watch, Engineering Duty Officer, Diving Officer of the Watch. Served as Electrical Officer, Interior Communications Officer, Damage Control Assistant/Auxiliary Division Officer, Communication Officer, CMS Custodian, Crypto Officer, Controlled Medicinals Officer, Quality Assurance Assistant, Ship's Diving Officer, Calibration Coordinator, Alteration Co-ordinator, Sound Silencing Officer. Supervised 12-24 people.

NAME He'hns (last) Douglas (first) F. (initial) GE SERVICE 7/14/80 mo/day/yr

Photograph 2" x 2"

CITIZENSHIP ☒ U.S. ☐ other specify

EDUCATION (High School, Trade School, Business School, College, University, etc.)

School & Location	Curriculum or Major	Dates Attended	Degree
tia Glenville HS	College Prep	9/68-8/71	Regents Diploma(11 of 350:Honor
on College	Chemistry	9/71-8/75	BS Chemistry (Cum laude)
al Nuc.Power-Vallejo,CA	Navy Nuc. Engineering	5/76-10/76	Graduated
al Prototype Trg. Unit aho Falls, Idaho	Navy Nuc. Engineering	11/76-5/77	Graduated

MAJOR GE PROGRAMS & TRAINING (Show formal training programs; i.e., BTC-FMP, Test Program, MTP-MMP, etc., and courses such as "A," "B," or "C" engineering courses, Adv. Marketing Mgmt. Seminar (AMMS), Management Development Course (MDC), General Management Course (GMC), etc. Also show dates)

BWR6 Tulsa Training Center GE SRO Certification (Perry)	11/80
Kepner Tregoe.	12/80
BWR6 Tulsa Training Center Refresher Training	4/81
La Salle Site GE SRO Certification	6/81
La Salle Site GE SRO Certification	8/83

NORS, AWARDS, PATENTS, PROFESSIONAL LICENSES, PUBLICATIONS, etc. (Describe and show dates)

mber of Sigma Xi Research Society, Private Pilot

OTHER PROFICIENCIES (Describe any special skills, aptitudes, or accomplishments)

bmarine Officer, EOOW/EDO S1W, S5W propulsion plants

[redacted]

NAME EYU (last) ALBERT (first) J.T. (initial) SOCIAL SECURITY NO. [illegible]

WORK EXPERIENCE

Begin with first position held. Include military service and work with other companies.

Dates From (mo/yr) To (mo/yr)	Position Level	[redacted] Component, or Other Company and Location / Immediate Manager(s)	POSITION TITLE & DESCRIPTION Underline position title; then describe responsibilities and achievements or significant contributions. Indicate products, type of operation and industries involved. Show field or section or subfunction. If managerial position, show number and types of employees supervised.
7/79-7/82	[redacted]	Getsco, Taiwan Kuosheng Site C. D. Shadinger	Startup Engineer - Reviewed various flushing and hydro procedures. Wrote pre-op procedures - Nuclear Boiler, Main Steam and Reactor Recirculation. Participated integrated system flush and vessel hydro activitie K.S.I. Test Director for Reactor Recirculation System K.S.I. Certified GE SRO, Kuosheng. Shift Superintendent during initial fuel loading, heatup and power test program thru warranty run for K.S.I. Test Director for Primary Containment Isolation System K.S.II. Shift Superintendent during initial fuel loading and day shift supervisor for K.S.II.
7/82-1/83	[redacted]	Getsco, Taiwan Kuosheng Site C. D. Shadinger	Operating Superintendent K.S.II - Supervised 8 startup engineers for K.S.II power ascension test. Participated daily startup progress, planning and trouble-shoot until full power operation.
?/83-present	[redacted]	GE STO, Hanford-2 L. B. Biddlecome	Operations Superintendent WNP-2 - Supervised 2 startup engineers for WNP-2 tech. spec. related surveillance test procedures preparation and review. Participated in WNP-2 operating committee for operation and surveillance procedures approval discussion. Supervised [illegible] customer engineers for the annunciator test procedures writing. Certified GE SRO Hanford-2. Supervised 4 STO engineers during the initial fuel loading and power ascension test program.

NAME HWU (last) ALBERT (first) J.T. (initial) SOCIAL SECURITY N

WORK EXPERIENCE

Begin with first position held. Include military service and work with other companies.

Dates From (mo/yr) To (mo/yr)	Position Level	Component, or Other Company and Location / Immediate Manager(s)	POSITION TITLE & DESCRIPTION Underline position title; then describe responsibilities and achievements or significant contributions. Indicate ... type of operation and industries involved. Show ... or subfunction. If managerial position, show number ... of employees supervised.
10/74-8/75		GE STO, Brunswick C. R. Dietz	Startup Engineer - Participated pre-op test, initial fuel loading and subsequent heatup and power tests up to 75 per-cent power. Obtained GE SRO certification in Brunswick.
9/75-7/79	[redacted]	Getsco, Chin-Shan C. D. Shadinger	Startup Engineer - Wrote integrated system flush for Chin-Shan I. Wrote pre-op procedures for HPCI, Reactor Recirculation and SRM. Wrote various tech. spec. related surveillance procedures. Participated early phase system tests and equipment initial runs. Involved in total system flush and construction vessel hydro activities. Test director for HPCI and Reactor Recirculation system (Chin-Shan I). GE Certified SRO. Chin-Shan. Shift Supervisor during initial fuel loading, heatup and power testing thru warranty run of Chin-Shan I. Test Director for RHR, ECCS integrated test, Chin-Shan II. Shift Superintendent for Chin-Shan II during initial fuel loading, heatup and power test thru warranty run.

NAME HWU (last) ALBERT (first) L.T. (initial) SOCIAL SECURITY NO. ____ - ____

WORK EXPERIENCE

Begin with first position held. Include military service and work with other companies.

Dates From (mo/yr) To (mo/yr)	Position Level	[redacted] Component, or Other Company and Location / Immediate Manager(s)	POSITION TITLE & DESCRIPTION — Underline position title; then describe responsibilities, achievements or significant contributions. Include type of operation and industries involved. Show [illegible] or subfunction. If managerial position, show number and types of employees supervised.
7/69-7/70		Chinese Air Force 1st AMA C. S. Lu	Second Lieutenant - involved in aircraft hydraulic components repair, overhaul and test, supervised 10 technicians.
7/70-12/73		Institute of Nuclear Energy Research Taoyuan, Taiwan W. C. Fang	
7/70-10/70		Same as Above	Attended Taipei language center for English proficiency.
10/70-10/71		Same as above	On-job training in NRX reactor (30[illegible]) AECL Chalk River, Ontario, Canada, Certified reactor operator and shift supervisor at NRX.
10/71-12/73		Same as above	Worked at Taiwan research reactor ([illegible]). Wrote operation and surveillance procedure. Participated in preop phase, first fuel loading and test programs. Shift supervisor in charge, responsible for safe operation of the reactor.
01/74-10/74		Getsco, Taiwan E. R. Kilsby	Startup Engineer - BWR training course at San Jose. Chin-Shan Technology Course, Joliet, Ill. BWRTC, Morris, Ill.

the development of a computer graphic representation of maximum reach based on anthropometric data. Responsible for coordinating all data collection for the project.

- 1981 to 1982 Epidemiology Department, University of Michigan, Ann Arbor, Michigan
  Research Assistant

Assisted in designing questionnaire, pre-testing questions, phone interviewing, home interviewing, coding, and analysis of a project on the lifestyle and health of senior citizens in Southfield, Michigan.

- 1980 to 1981 University of Michigan, Flint, Michigan
  Teaching Assistant

Taught lab for graduate class in work measurement. Prepared and set-up materials for lab. Graded lab reports. Tutored students in Time Study, MTM, and Work Sampling.

- 1980 Economics Laboratory, Incorporated, St. Paul, Minnesota
  Industrial Engineer Intern

Developed direct labor cost estimates for existing as well as new products. Established elemental times for receiving, mixing, packaging, fork trucking, and changeover activities for the five chemical plants. Updated documentation and standards in the computer's direct labor file. Conducted MTM studies on new procedures. Developed graphs on monthly direct labor comparisons.

EDUCATION

M.S.E., Industrial Engineering (Occupational Safety and Health), NIOSH Graduate Traineeship, University of Michigan, Ann Arbor, Michigan, 1982

B.S.E., Industrial Engineering (Human Factors), University of Michigan, Ann Arbor, Michigan, 1981

PROFESSIONAL AFFILIATIONS

Human Factors Society
American Nuclear Society
American Institute of Industrial Engineers (Ergonomic and Utility Divisions)
Society of Women Engineers
Alpha Pi Mu (Industrial Engineering Honorary)

CYNTHIA F. WEISS
Project Engineer
Human Factors Engineer

- Industrial Engineering
- Human Factors Engineering
- Human Performance
- Occupational Safety and Health
- Statistical Analysis
- Anthropometrics
- Epidemiology
- Facility Planning

As a project engineer in the Human Factors Technology Group, Ms. Weiss provides human factors engineering support to a variety of ARD programs. Ms. Weiss is presently providing Detailed Control Room Design Review (DCRDR) support to the Arkansas Power & Light Company's Arkansas Nuclear One generating station and the Louisiana Power and Light Waterford-3 where she has coordinated the Historical Document review and checklist survey phases of the review.

Ms. Weiss' expertise in the control room is in the design and retrofit of annunciator systems. She has performed annunciator reviews for several nuclear stations and has published and presented a paper on this subject. In addition, she has designed workstations for control room operators to ensure that computers, hardcopy records, and spare parts were easily accessible, and performed environmental evaluations on light, ventilation, and auditory design to numerous stations. Ms. Weiss currently is involved in productivity studies for manufacturing as well as office environments, mathematical models for process control variables, facility planning techniques (office layout) and automation technology research projects for ARD's commercial and Government clients.

PREVIOUS EXPERIENCE

- 1982 Michigan Bell, Southfield, Michigan
  Master's Thesis

Observed visual display terminal (VDT) operators and supervisors in a telephone company office. Identified the psychophysical stresses of the operators attributed to their interactions with VDTs. Developed, administered, and analyzed questionnaires with respect to these stresses. Recommended redesign of jobs and supervisors' function as well as alternative office layouts. Recommendations were based on questionnaire and interview results as well as an in-depth literature search in an attempt to reduce stress and improve productivity.

- 1979 to 1982 Center for Ergonomics, University of Michigan, Ann Arbor, Michigan
  Research Assistant

Responsible for entering job and task data from four industrial plants into a computerized biomechanical model. Edited existing computer files and updated records of tasks which exceeded OSHA standards for manual lifting. Directed driving simulator project involving correlating the scores of a road test with scores on a simulator for both healthy and handicapped subjects. Responsible for coordinating all data collection for the project. Assisted in analysis of data and summarizing the results. Directed maximum reach project involving

the relationships between various components of the ERP to both behavioral measures and assumed underlying cognitive processes. Duties included data collection and analysis, computer programming and preparaton of drafts for publication.

- 1978 to 1980 Towson State University, Towson, Maryland
  Graduate Assistant, Department of Psychology

Provided small group and individualized instruction in statistics and experimental design. Assisted in the instruction of a seminar in statistics and programming in BASIC and FORTRAN.

- 1978 to 1979 Towson State University, Towson, Maryland
  Graduate Assistant to Dean of Division of Continuing Studies

Developed, administered and reported results of survey instruments designed to assess student and faculty opinion relative to curriculum issues.

EDUCATION

M.A., Experimental Psychology, Towson State University, Baltimore, Maryland, 1982

B.A., Psychology, University of Maryland Baltimore County, Baltimore, Maryland, 1977

PROFESSIONAL AFFILIATIONS

Society for Psychophysiological Research
American Association for the Advancement of Science
Sigma Xi

ARD Corporation

ROBERT C. MUNSON
Project Engineer
Human Factors Psychologist

- o Human Factors Engineering
- o Computer Graphics
- o Control Room Reviews
- o Computer Software Design
- o Psychophysiology
- o Psychometric Applications
- o Statistical Analysis
- o Experimental Design

Mr. Munson provides human factors support, to both nuclear and non-nuclear clients, primarily in the areas of computer graphic display systems. He is currently Project Manager in support of the Virginia Electric and Power Company' Emergency Response Facilities system development efforts. This effort involves the design and review of both CRT displays and the hardware and console systems on which the displays will be implemented. Mr. Munson has performed numerous SPDS reviews (including those at Nine Mile Point Units 1 and 2 and Ginna), as well as a large number of NUREG-0700 (Section 7) reviews of process computers in the context of ARD's DCRDR project work. He also provided support to Gould's System Simulation Division in the preparation of a proposal to the FAA to redesign the Air Traffic Control System. Mr. Munson's efforts for this proposal were concentrated in the areas of hardware design (both console design and computer display technology), maintenance, and CRT display design.

Mr. Munson also has a strong background in Experimental Psychology and User-System Interface (USI) design. He is currently Principal Investigator of a NASA-funded Phase I SBIR project entitled "Polar Graphics for Rapid Assessment of Multivariate Information" and is Co-Investigator of a NASA-funded Phase II SBIR project entitled "Brain Wave Measures of Workload in the Advanced Cockpit". Mr Munson is well-acquainted with current concepts in display technology and has implemented a variety of computer systems for such applications as real-time data acquisition, data base management, and color graphics displays.

EXPERIENCE

- o 1982 to 1983 General Physics Corporation, Columbia, Maryland
  Staff Scientist, Human Factors Engineering

Participated in CRDRs at Zimmer, Susquehanna and Salem nuclear generating stations. Provided human engineering support for resolution of human engineering discrepancies to Shoreham station. Performed a human factors assessment of the layout design of the Technical Support Center at Salem station. Assisted in the development and implementation of an entry-level selection test for technicians for the Intermountain Power Project. Administered selection tests to reactor operator trainee candidates at the Vermont Yankee and Perry stations.

- o 1979 to 1982 University of Maryland School of Medicine, Baltimore, Maryland
  Research Fellow, Department of Physiology

Conducted experiments which focused on the measurement of event-related brain potentials (ERPs), recorded from the scalp of humans, during subjects' performance of psychophysical tasks. Subsequent data analyses investigated

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Developed statistical techniques (principal components analyses, discriminant analysis, and cross-correlation analyses) for evoked potential data. Designed, programmed and documented a comprehensive, general-purpose computer program for quantifying peak amplitudes and latencies of evoked potentials. Made extensive use of SPSS, BMDP and ALICE data analysis packages. Contributed to the development of grant and contract support for research.

- 1971 to 1975 Carnegie-Mellon University - Psychology Department, Pittsburgh, Pennsylvania
  Graduate Research Assistant

During graduate course-work in experimental psychology, was responsible for research projects in human visual perception and animal memory processes. Developed a lab facility for recording human-evoked potentials. Designed and programmed software for real-time data acquisition and data management and used SPSS for statistical analyses.

EDUCATION

Ph.D., Experimental Psychology, NIMH Graduate Traineeship, Carnegie-Mellon University, Pittsburgh, Pennsylvania, 1981

M.S., Experimental Psychology, Carnegie-Mellon University, Pittsburgh, Pennsylvania, 1972

B.S., Biology-Psychology, Bucknell University, Lewisburg, Pennsylvania, 1971

PROFESSIONAL AFFILIATIONS

Human Factors Society
American Psychological Association
American Association for the Advancement of Science
Society for Psychophysiological Research
Psi Chi (Psychology Honorary)
Phi Sigma (Biology Honorary)

ARD Corporation

RICHARD L. HORST
Manager, Applied Behavioral Research Group
Senior Engineer

- Human Factors Engineering
- Multivariate Statistics
- Cognitive Information-Processing
- Computer-based Data Acquisition Systems
- Display Technology and Computer Graphics
- Human Performance Assessment
- Human Electrophysiology in Operational Settings
- Teleoperation, 3-D Viewing

As a senior engineer, Dr. Horst provides human factors engineering support to a variety of ARD's corporate and power industry clients. He is also responsible for a number of the company's research and development efforts. His human factors support has included the task-level management of the Control Room Design Review at Public Service Indiana's Marble Hill station; a task analysis at Commonwealth Edison's Byron station to define the parameters for the Safety Parameter Display System; an evaluation of lighting and alternative louvers for the Byron control room; operator surveys at Marble Hill, Arkansas Power and Light's Arkansas Nuclear One and Niagara Mohawk's Nine Mile Point stations; an assessment of operator performance using Emergency Operating Procedures at Virginia Electric and Power Company's Surry station control room simulator; an analysis of graphics hardware and software needs for the Virginia Electric and Power Company Emergency Response Facilities; a review of the SPDS and plant computer graphics for Louisiana Power and Light's Waterford 3 station; and an evaluation of several CRT graphics systems being marketed for process control applications. Dr. Horst's background in experimental psychology and neuroscience is currently being utilized through his direction of ARD's research projects in robotics, 3-D viewing systems, and biocybernetics.

PREVIOUS EXPERIENCE

- 1980 to 1982 University of Maryland Medical School - Applied Neuroscience Laboratory, Baltimore, Maryland
  Research Faculty and Project Coordinator

Responsible for managing the day-to-day operations of a research lab studying electrophysiological, psychometric and nutritional indices of human development. Supervised and trained lab personnel. Coordinated installation and maintenance of computer hardware and software. Conducted research on neurometric measures of normal development and the feasibility of their use for assessing learning disabilities. Adapted and implemented a computerized system for recording EEG and evoked potentials in a hospital ICU. Participated in the clinical electrophysiological assessment of neurology and neurosurgery patients. Designed and programmed software for data management and analysis. Developed grant support for research.

- 1975 to 1979 University of Illinois, Champaign-Urbana, Illinois
  Research Assistant, Cognitive Psychophysiology Laboratory

While doing dissertation research, participated in a group studying electrophysiological measures of human performance with applications to human engineering. Responsible for laboratory studies of visual information-processing, auditory signal detection, and computer-assisted instruction.

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EDUCATION

B.S., Nuclear Engineering, University of Missouri-Rolla, Rolla, Missouri, 1983

Certificate, Engineer in Training

PROFESSIONAL AFFILIATIONS

Human Factors Society
American Nuclear Society
Order of the Engineer

Control Room Design Review Operator Survey

The Nuclear Regulatory Commission is requiring that a detailed human factors review of every nuclear power plant control room be performed. Part of the guidance document published to support these reviews, NUREG-0700, suggests the use of your training and operating experience to help the review team identify potential operator/control board interface problems.

Niagara Mohawk Power Corporation (NMPC) and the management of the Nine Mile Point Unit 2 (NMP-2) station support the spirit of the NRC's directives. As a result, we are asking for you to support and assist in the program by completing the attached questionnaire. For this program, the company's goal is to improve the operating crew's capability to recognize, control and manage plant abnormal and emergency conditions.

The questionnaire contains 42 questions that cover ten general topic areas dealing with different aspects of control room design as well as the job duties and tasks to be performed by the operating crew. The questions deal with "problem" areas as well as good or beneficial features associated with the control room. Each question involves a multiple choice response based on your judgements and opinions. In addition, you will be asked to provide specific examples of the positive or negative aspects of the control room on which you based your multiple choice responses.

In completing the questionnaire please read each question carefully, circle the item in the multiple choice that best reflects your view, and provide additional information as appropriate. In preparing your answers, consider the questions from the perspective of all the various modes of plant operation, e.g., startup, hot stand-by, full power, and reduced power, in addition to possible abnormal or emergency operating conditions. Give detailed answers so that someone not as familiar with the area as you are will be able to understand exactly what you mean.

Please answer all the questions. Your responses are important to the success of this review. Use additional paper if necessary and attach it to this questionnaire. If you do use additional paper, please be sure to match your answer to the appropriate question. If you feel that we have left anything out or failed to cover an area in which you have a concern, please tell us by attaching comments to the questionnaire. If you are unable to answer a particular question, please indicate this in the space provided for your response.

We want to benefit from your training and past experience. For example, you may be familiar with design of a NMP-2 system or component from your previous experience at another power plant. If the question applies to that equipment, you should base your answers on specific incidents involving the operation of the equipment where it affected operator performance or plant safety and availability. Another way your experience can be helpful is in identifying

potential problems or, alternatively, effective design features which you have experienced from a previous job situation and which you feel may apply to the NMP-2 design. This interface between past experience and training and the anticipated operating procedures for the current plant should be the basis for your answers to the questions.

In asking for your support in this program we feel it is important for you to know what we will do with your answers. As the questionnaires are returned, ARD Corporation personnel will summarize your answers on a question-by-question basis and compile results for each question. The team conducting the control room design review will then be informed of each problem area identified, so that they can pay special attention to it during the remainder of the review process. As problems are verified, they will be documented more formally. Positive aspects of the control room will also be noted, so that in correcting any problems that arise, these positive features will not be compromised.

Although the NRC may eventually be told of the problems you help identify, we want to assure you that your answers and comments on this questionnaire will be kept strictly confidential. You should mail your completed questionnaire directly to ARD using the self-addressed stamped envelope that is attached. Your answers will be summarized so that your exact words do not appear and your name will be dissociated from your answers. You may be contacted for a follow-up interview by ARD personnel, to clarify any ambiguities in your written responses or to gather additional information. However, the information you provide at that time will likewise be summarized and treated confidential. Your answers will in no way affect your career, standing, or promotions within NMPC. Therefore, in answering the questionnaire, be as open, honest and straightforward as you can.

In addition to completing the questionnaire, we would like you to supply us with additional background information requested on the following page. It will help us to integrate your responses with other information we must collect as part of this project. However, this background information will not be associated with your responses when they are reported to NMPC or to the NRC.

When you have completed the questionnaire, place it in the envelope provided, seal the envelope, and drop it in the mail. Thank you very much for your cooperation and assistance.

Please Return To: ARD Corporation
5457 Twin Knolls Road
Columbia, MD 21045
Attn.: Ralph Dusek

- Name: ______________________________
- Present Position: ______________________________________
- Nuclear Operating Experience: ________________________ years
- Control Board Operating Experience: ___________________ years
- Held a Reactor Operator (RO) License: _________________ years
- Held a Senior Reactor Operator (SRO) License: __________ years
- Age: _________________
- Sex: _________________
- Height: ______________

A. <u>Workspace Layout and Environment</u>

A.1. Based on your personal background, training and experience, do you know of any additional controls needed in the control room? Your response should consider the controls needed to respond to potential emergency or abnormal situations in addition to the various modes of normal operations.

a. None
b. 1 or 2
c. Several
d. Many

Please identify any needed controls and your reasons for wanting them.

Also identify any systems in which the controls are particularly well designed, i.e. you would not like to see them changed.

A.2 From your past experience and training do you believe any of the controls that are presently in the control room are unnecessary? That is, are there controls that will not be used in any mode of plant operation?

a. None
b. 1 or 2
c. Several
d. Many

Please identify any extraneous controls.

A.3. Based on your operating system training and experience are additional indicators (i.e. meters, status lights, chart recorders) needed in the control room? Your response should consider the indicators needed to respond to potential emergency or abnormal situations in addition to the various modes of normal operations.

a. None
b. 1 or 2
c. Several
d. Many

Please identify the needed displays and your reasons for wanting them.

Also identify any systems in which the indicators are particularly well designed, i.e. you would not like to see them changed.

A.4. Based on your operating system training and experience are any of the indicators that are presently in the control room unnecessary? That is, are there indicators that will not be used in any mode of plant operation?

a. None
b. 1 or 2
c. Several
d. Many

Please identify any extraneous indicators.

A.5. Based on your training and experience with such plants how would you characterize the capability for direct voice communication between personnel in the main control room? Conditions that might impede direct voice communications could include high background noise, physical barriers, or distance between workstations. Remember to consider all modes of operation, including potential abnormal or emergency conditions.

a. Excellent
b. Adequate
c. Some problem areas
d. Many problem areas

Please identify any problem areas.

A.6. Operator's ability to move around the control room in an unobstructed manner is:

a. Excellent
b. Adequate
c. Some obstructions
d. Many obstructions

Please identify any obstacle(s) in the main control room which interfere with movement.

B. Panel Design

B.1. Automatic control operations allow the operator to attend to other instrumentation and intervene only when the automated system malfunctions. Manual control operations typically demand more attention but allow more flexibility, as the operator can tailor his response to the situation at hand. Based on your operating system training and experience are there any control device(s) which should be operated manually instead of automatically or vice versa?

a. None
b. 1 or 2
c. Several
d. Many

Please identify any such inappropriate controls and reasons why they should be reconfigured.

B.2. Throttleable valves typically require the operator to remain at a given workstation for a period of time, operating a particular control. Based on your operating system training and experience are there any throttleable valve(s) that would unnecessarily restrict your time to respond should an emergency situation occur?

a. None
b. 1 or 2
c. Several
d. Many

Please identify any throttleable valves that could pose a problem in emergency conditions.

Also, identify any throttleable valves that pose problems under other modes of operation, e.g. start-up or shut-down.

B.3. From your operating system training and experience are there any system(s) in which controls or indicators are not placed in functional groups?

a. None
b. 1 or 2
c. Several
d. Many

Please identify any systems in which instrumentation is not functionally grouped.

Also, identify systems in which functional grouping is particularly effective (i.e. that you would not like to see changed).

B.4. The layout of the control equipment on the panels is:

a. Excellént
b. Adequate
c. Some problem areas
d. Many problem areas

Describe any aspects of the layout of control board equipment that should be improved to allow operators to perform more effectively.

Also, describe any areas of the control board where the layout of equipment is particularly conducive to effective operations.

B.5. Are there areas on the main control boards where your use of a control is hindered or the control may be accidentally activated because of the position, shape, labeling or relationship to the controls?

a. None

b. 1 or 2

c. Several

d. Many

Please identify any such problem areas.

B.6. Are there any controls that are hard to reach or indicators that are difficult to read? Remember to consider all modes of plant operation, including possible abnormal or emergency operations.

a. None

b. 1 or 2

c. Several

d. Many

Please identify any such inaccessible instrumentation.

B.7. Are there any control(s) or indicators on back panels that should be on front panels, or vice-versa? In formulating your response, please consider the accessibility of instrumentation that you need under all modes of plant operations.

a. None
b. 1 or 2
c. Several
d. Many

Please identify any controls or indicators that should be moved to a front panel, and explain your reasoning.

Please identify any controls or indicators that should be moved to a back panel, and explain your reasoning.

B.8. Are there any system(s) in the control room which you feel are difficult or confusing to operate?

a. None
b. 1 or 2
c. Several
d. Many

Describe any systems that are difficult to operate.

Also, describe any systems that are particulary well-designed for ease of operation (i.e. that you would not like to see changed).

C. <u>Annunciator System</u>

C.1. Are there any areas in the control room where background noise levels are likely to interfere with annunciator auditory signals? Remember to consider all possible plant conditions and modes of operation.

a. None
b. 1 or 2
c. Several
d. Many

Please identify any areas in which it may be difficult to distinguish auditory alarms, and the plant conditions in which the problem occurs.

C.2. Have you experienced or can you conceive of situations in which the annunciator warning system may be ineffective in helping, or might actually hinder, operators response to a system problem?

a. None
b. 1 or 2
c. Several
d. Many

Please describe any such potential incidents or situations.

C.3. Are there any alarm windows that have an inappropriate setpoint; that is, those that may give the operator either too much or too little time in which to respond to a plant problem? Please consider all modes of plant operation.

a. None
b. 1 or 2
c. Several
d. Many

Please identify windows that may allow too little time and the setpoint(s) that would be more appropriate.

C.4. Are there alarms with multiple inputs for which there are no devices (e.g. printers) from which the operator can determine the cause of the alarm?

a. None
b. 1 or 2
c. Several
d. Many

Please identify any multiple input alarms that should be split into single inputs.

C.5. Are there any single input alarms (e.g. "nuisance alarms") that could be eliminated or combined into multiple input alarms?

a. None
b. 1 or 2
c. Several
d. Many

Please identify any single input alarms that could be eliminated or integrated into multiple input alarms.

C.6. Are there any alarm windows in the main control room with engravings that are confusing or difficult to understand?

a. None
b. 1 or 2
c. Several
d. Many

Please identify any confusing alarm engravings and explain why they are difficult to understand.

D. Communications

D.1. Are there any auditory signal(s) presented in the control room, other than annunciator alarms, which are confusing?

a. None
b. 1 or 2
c. Several
d. Many

Please identify any such auditory signals and the reason for the confusion.

D.2. Are there area(s) in the control room where messages presented over the paging system cannot be heard clearly?

a. None
b. 1 or 2
c. Several
d. Many

Please identify any such problem areas.

D.3. Given present plant communication systems and procedures for their use, is it likely that the use of communication systems by non-operating personnel could interfere with control room use of the system?

a. No problems
b. 1 or 2 systems vulnerable
c. Several systems vulnerable
d. Major problems with system design or procedures

Please describe any such potential problems.

From your experience at other plants, can you suggest design features which would reduce or eliminate potential communication problems.

E. <u>Computer-Generated Information</u> (e.g. SPDS, CAPS, 8600, CEAC, CPC, SPINGS, GERMS, TAMDEM)

E.1. Is there any information or calculation not presently provided on a computer-generated display that would be more useful if it were available in that form? Please consider both information that should be made available on one or the other CRT, as well as information that is presently available on one CRT but which should be available on another. Consider all modes of plant operation, including possible abnormal or emergency conditions.

a. None
b. 1 or 2 kinds of information
c. Several kinds of information
d. Many kinds of information

Please describe any additional computer information that should be made available. Identify the relevant computer.

Also, describe aspects of the computer-generated information that you find particularly useful. Identify the relevant computer.

E.2. Is there any information presently available on CRTs that would be more useful if it were presented in another form? Consider information that could be deleted from all computer-generated displays as well as information that should still be presented by the computers but in a more effective format.

a. None
b. 1 or 2
c. Several
d. Many

Please explain and suggest a better way for presenting such information other than on a CRT. Identify the relevant computer.

E.3. Do you know of any words or symbols used on the computer displays that are difficult to understand or interpret?

a. None
b. 1 or 2
c. Several
d. Many

What words or symbols would be more accurate or easier to use? Identify the relevant computer.

E.4. Are there any CRTs located in the control room which are difficult to use because of their placement in the room? Please consider all modes of plant operations, including possible abnormal or emergency conditions.

a. None
b. 1 or 2
c. Several
d. Many

Please explain and suggest alternative placements.

E.5. Is any of the information presented on the computer printer not useful to control room operations? Particularly consider the information demands of emergency and abnormal operations.

a. None
b. 1 or 2
c. Several
d. Many

Please identify any extraneous information.

Also identify any aspect of the hardcopy printouts that you may find particularly useful and would not want to see changed.

E.6. Are there any computer system procedures which are difficult to understand?

a. None
b. 1 or 2
c. Several
d. Many

Please identify any such procedures and the relevant computer.

F. <u>Maintenance Procedures</u>

F.1. Are there any maintenance procedures that could contribute to an operational problem? That is, assuming that preventive and corrective maintenance is performed "by the book," are there problem areas that could adversely affect operations, particularly during emergency conditions?

a. None
b. 1 or 2
c. Several
d. Many

Please describe any such problems.

Also, describe aspects of maintenance activities that may be particularly effective from the standpoint of control room personnel.

F.2. How would you characterize current procedures and availability of supplies for replacing equipment such as fuses, bulbs, ink, chart paper, etc.?

a. Excellent
b. Adequate
c. Some problems
d. Major problems

Please describe aspects of these procedures that are particularly effective.

Please describe aspects of these procedures that may be particularly ineffective.

G. Procedures

G.1. Are there any procedure(s) which are unclear or difficult to use? Please consider all modes of plant operation including possible abnormal or emergency conditions.

a. None
b. 1 or 2
c. Several
d. Many

Please identify any particular effective procedures.

Please identify any particular ineffective procedures.

G.2. Are there any operator aids, such as tables/checklists/ status boards etc. which could be redesigned to improve their usefulness?

a. None
b. 1 or 2
c. Several
d. Many

Please identify any such materials and suggest how they should be redesigned.

Also, describe operator aids that you find particularly useful.

G.3. Are there any manual log(s) that you feel will be difficult to update or maintain?

a. None
b. 1 or 2
c. Several
d. Many

Please identify the troublesome logs and suggest how they could be improved.

G.4. Are there any mathematical calculation(s) that are time consuming and/or difficult to perform?

a. None
b. 1 or 2
c. Several
d. Many

Please describe the calculations that are troublesome.

H. <u>Staffing and Job Design</u>

H.1. Based on your training and experience are there any job duties which are presently performed by others in which you feel control room personnel should be more directly involved, or vice versa? Please consider all modes of plant operation including abnormal or emergency conditions.

a. None
b. 1 or 2
c. Several
d. Many

Please describe any such duties that should be reallocated and specify who should perform them.

H.2. Are there any recurring distractions, in the form of unnecessary personnel, traffic, etc., that could interfere with your duties?

a. None
b. 1 or 2
c. Several
d. Many

Please describe any such sources of distraction and how they can be avoided.

H.3. Does the proposed shift turnover process appear to be workable?

a. Excellent
b. Adequate
c. Some problems
d. Significant problems

If there are problems, suggest how they can be improved.

H.4. Have you experienced or can you conceive of situations in which the operating crew staffing structure could adversely affect control room operations? Consider all modes of plant operation, including potential abnormal and emergency conditions.

a. None
b. 1 or 2
c. Several
d. Many

Please describe any such incidents or potential situations and suggest how they could be improved.

Also, describe plant conditions or potential conditions for which the present staffing seem particularly appropriate.

I. Training

I.1. Are there any potential emergency situation(s) for which you feel you have not received enough training?

a. None
b. 1 or 2
c. Several
d. Many

Please describe any emergency situations that you think should receive more emphasis.

Also, describe aspects of your emergency training that you think has been particularly effective.

J. Operator Aids

J.1. How much knowledge do you have of the Nine Mile Point Unit 2 SPDS design and operation?

a. No knowledge
b. Little knowledge
c. Some knowledge
d. Full knowledge

What could be done to improve your familiarity with SPDS design and operation?

J.2. What parameters, inputs, operator aids, or other information would assist you in performing operations during the following conditions?

Start up/Shutdown

Normal Operations

Abnormal Operations

App. D.

APPENDIX D

INVENTORY FORM

UTILITY ______ NFS ______

PLANT ______ DATE ______

SYSTEM DESIGNATOR ______

PAGE ____ OF ____

INVENTORY

EQUIPMENT ID NUMBER	LABEL NAME	DISPLAYS											CONTROLS				
		COLOR	TYPE OF DISPLAY	WHAT MEASURED	UNITS	LOW RANGE	EXP	HIGH RANGE	EXP	DIV	EXP	[illegible]	TYPE OF SWITCH	WHAT CONTROLLED	VALVE CONTROL	SWITCH ACTION	NAMES OF SWITCH POSITIONS
CP 0 2 2 5																	
SUB NUMBER · LABEL TYPE																	
SUB NAME																	
UNID																	
CP 0 2 2 5																	
SUB NUMBER · LABEL TYPE																	
SUB NAME																	
UNID																	
CP 0 2 2 5																	
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SUB NAME																	
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CP 0 2 2 5																	
SUB NUMBER · LABEL TYPE																	
SUB NAME																	
UNID																	

App. E

APPENDIX E

TASK ANALYSIS TASKS

NMP - 2
Task Analysis' Tasks by E.P.N.

Procedure #: 001 RC RPV CONTROL GUIDELINE

E.P.G #	Task #	Task Title	
RC-1	000001	IDENTIFY RPV WATER LEVEL < 159.3 IN.	
	000002	IDENTIFY RPV PRESS > 1037 PSI	
	000003	IDENTIFY DRYWELL PRESS > 1.68 PSI	
	000004	IDENTIFY A CONDITION REQUIRING MSIV	ISOLATION
	000005	IDENTIFY A CONDITION REQUIRING REACTOR	SCRAM
	000006	OBSERVE REACTOR POWER > 4%	
	000007	DETERMINE REACTOR POWER CANNOT BE	DETERMINED
	000008	VERIFY REACTOR SCRAM	
	000009	INITIATE REACTOR SCRAM	

NMP - 2
Task Analysis' Tasks by E.P.N.

Procedure #: 002 RC/L MONITOR AND CONTROL RPV WATER LEVEL

E.P.G #	Task #	Task Title
RC/L-1	000001	OBSERVE AUTO SYSTEM ISOLATIONS
	000002	MANUALLY ISOLATE SYSTEMS
	000003	OBSERVE ECCS INITIATION
	000004	MANUALLY INITIATE ECCS
	000005	DETERMINE BORON INJECTION IS REQUIRED
	000006	DETERMINE RPV LEVEL CANNOT BE DETERMINED
	000007	DETERMINE RPV FLOODING IS REQUIRED
RC/L-2	000008	CONTROL RPV LEVEL USING CONDENSATE/FEEDWATER SYSTEM
	000009	CONTROL RPV LEVEL USING CRD SYSTEM
	000010	CONTROL RPV LEVEL USING RCIC SYSTEM
	000011	CONTROL RPV LEVEL USING HPCS SYSTEM
	000012	CONTROL RPV LEVEL USING LCPS SYSTEM
	000013	CONTROL RPV LEVEL USING LPCI SYSTEM
	000014	OBSERVE RPV LEVEL LESS THAN OR EQUAL TO 159.3 IN.
	000015	OBSERVE RPV LEVEL GREATER THAN OR EQUAL TO -14 IN.
	000016	OBSERVE ADS TIMER HAS INITIATED
	000017	RESET ADS TIMER
	000018	OBSERVE RPV LEVEL < -14 IN
	000019	DETERMINE IF ALTERNATE SHUTDOWN COOLING IS REQUIRED

NMP - 2
Task Analysis' Tasks by E.P.N.

Procedure #: 003 RC/P MONITOR AND CONTROL RPV PRESSURE

E.P.G #	Task #	Task Title	
RC/P-1	000001	DETERMINE IF RPV DEPRESSURIZATION IS	REQUIRED
	000002	DEPRESSURIZE THE RPV USING MAIN TURBINE	BYPASS VALVES
	000003	DETERMINE IF RPV FLOODING IS REQUIRED	
	000004	OBSERVE LESS THAN 7 SRVS OPEN	
	000005	DETERMINE IF ANY SRV IS CYCLING	
	000006	MANUALLY OPEN SRVS UNTIL RPV PRESS IS	< 940 PSI
	000007	DETERMINE SUPPRESSION POOL TEMP CANNOT	BE MAINTAINED BELOW HEAT CAPACITY TEMP LIMIT
	000008	DETERMINE SUPRESSION POOL LEVEL CANNOT	BE MAINTAINED BELOW LOAD LIMIT
	000009	DETERMINE STEAM COOLING IS REQUIRED	
	000010	DETERMINE IF BORON INJECTION IS REQUIRED	
	000011	DETERMINE IF MAIN CONDENSOR IS AVAILABLE	
	000012	OBSERVE NO GROSS FUEL FAILURE CONDITION	
	000013	OBSERVE NO STEAM LINE BREAK CONDITION	
	000014	OPEN MSIVS	
RC/P-2	000015	CONTROL RPV-PRESS USING MAIN TURBINE	BYPASS VALVE
	000016	CONTROL RPV PRESS USING	SRVS
	000017	CONTROL RPV PRESS USING	RCIC
	000018	CONTROL RPV PRESS USING	RWCU
	000019	CONTROL RPV PRESS USING	MAIN STEAM LINE DRAINS
RC/P-3	000020	OBSERVE SRV PNEUMATIC SUPPLY IS	UNAVAILABLE
	000021	VERIFY REACTOR SHUTDOWN	
	000022	VERIFY RODS INSERTED TO POSITION 00	
	000023	OBSERVE SLC TANK LEVEL LESS THAN OR	EQUAL TO 1850 GAL.
	000024	DETERMINE THAT NO BORON HAS BEEN	INJECTED
	000025	DEPRESSURIZE THE RPV	
	000026	MAINTAIN COOLDOWN RATE < 100 DEG/F/HR	
RC/P-4	000027	OBSERVE RHR SHUTDOWN COOLING INTERLOCKS	CLEAR
	000028	INITIATE RHR SHUTDOWN COOLING MODE	
	000029	DETERMINE RHR SHUTDOWN COOLING MODE	CANNOT BE ESTABLISHED
	000030	DETERMINE RPV COOLDOWN REQUIRED	
	000031	CONTINUE COOLDOWN ESTABLISHED IN	DEPRESSURIZATION
	000032	DETERMINE RPV COOLDOWN REQUIRED	
	000033	DETERMINE COOLDOWN CANNOT BE ESTABLISHED	
	000034	OBSERVE ALL RODS INSERTED TO POSITION 00	

NMP - 2
Task Analysis' Tasks by E.P.N.

.rocedure #: 004 RC/Q MONITOR AND CONTROL REACTOR POWER

E.P.G #	Task #	Task Title		
RC/Q-1	000001	OBSERVE ALL RODS INSERTED		
	000002	TERMINATE BORON INJECTION		
	000003	VERIFY REACTOR SHUTDOWN		
	000004	DETERMINE THAT NO BORON HAS BEEN	INJECTED	
	000005	PLACE REACTOR MODE SWITCH IN SHUTDOWN		
RC/Q-2	000006	DETERMINE MAIN TURBINE GENERATOR IS ON	LINE	
	000007	OBSERVE MSIVS OPEN		
	000008	INITIATE FLOW RUNBACK TO MINIMUM		
RC/Q-3	000009	OBSERVE REACTOR POWER > 4%		
	000010	DETERMINE REACTOR POWER CANNOT BE	DETERMINED	
	000011	TRIP RECIRCULATION PUMPS		
RC/Q-4	000012	DETERMINE REACTOR CANNOT BE SHUTDOWN	BEFORE SUPPRESSSION POOL TEMP = 111 DEG	OF F.
	000013	INJECT BORON USING SLC		OF F.
	000014	PREVENT AUTO INITIATION OF ADS		OF F.
	000015	DETERMINE BORON CANNOT BE INJECTED USING	SLC	
	000016	INJECT BORON USING CRD		
	000017	INJECT BORON USING HPCS		
	000018	INJECT BORON USING RWCU		
	000019	INJECT BORON USING FEEDWATER		
	000020	INJECT BORON USING HPCI		
	000021	INJECT BORON USING RCIC		
	000022	INJECT BORON USING HYDRO PUMP		
RC/Q-4.1	000023	DETERMINE BORON IS NOT BEING INJECTED	USING RWCU	
	000024	CONFIRM AUTO ISOLATION OF RWCU		
	000025	MANUALLY ISOLATE RWCU		
RC/Q-4.2	000026	OBSERVE SLC TANK LEVEL LESS THAN OR	EQUAL TO 1850 GPM	
RC/Q-5.1	000027	DETERMINE ANY SCRAM VLV IS NOT OPEN		
	000028	REMOVE FUSES FOR RPS SCRAM SOLENOIDS		
	000029	CLOSE SCRAM HEADER SUPPLY VLV		
	000030	OPEN SCRAM AIR HEADER VENT VALVE		
	000031	OBSERVE CONTROL RODS NOT MOVING INWARD		
	000032	REPLACE FUSES FOR RPS SCRAM SOLENOIDS		
	000033	CLOSE AIR HEADER VENT VLV		
	000034	OPEN SCRAM AIR HEADER SUPPLY VLV		
RC/Q-5.2	000035	RESET REACTOR SCRAM		
	000036	OBSERVE REACTOR SCRAM CANNOT BE RESET		
	000037	START CRD PUMPS		
	000038	CLOSE HCU ACCUMULATOR CHARGING WATER	HEADER VALVE	
	000039	MANUALLY INSERT CONTROL RODS		
	000040	DETERMINE REACTOR SCRAM CAN BE RESET		
	000041	RESET REACTOR SCRAM		
	000042	OPEN HCU ACCUMULATOR CHARGING WATER	HEADER VALVE	
RC/Q-5.3	000043	OBSERVE SCRAM DISCHARGE VOLUME VENT AND	DRAIN VLVS OPEN	

NMP - 2
Task Analysis' Tasks by E.P.N.

Procedure #: 004 RC/Q MONITOR AND CONTROL REACTOR POWER

E.P.G #	Task #	>------- Task Title -------	
RC/Q-5.3	000044	INITIATE A MANUAL REACTOR SCRAM	
	000045	OBSERVE CONTROL RODS MOVING INWARD	
	000046	RESET REACTOR SCRAM	
	000047	OBSERVE REACTOR SCRAM CANNOT BE RESET	
	000048	OPEN SCRAM DISCHARGE VOLUME VENT AND	DRAIN VALVES
RC/Q-5.4	000049	OPEN SCRAM TEST SWITCHES FOR CONTROL	RODS
	000050	OBSERVE A CONTROL ROD NOT MOVING	INWARD
	000051	CLOSE SCRAM TEST SWITCHES FOR CONTROL	RODS
RC/Q-5.5	000052	RESET REACTOR SCRAM	
	000053	OBSERVE REACTOR SCRAM CANNOT BE RESET	
	000054	START CRD PUMPS	
	000055	CLOSE HCU ACCUMULATOR CHARGING WATER	HEADER VALVE
RC/Q-5.6	000056	MANUALLY INSERT CONTROL RODS	
	000057	OBSERVE CONTROL ROD NOT MOVING INWARD	
	000058	DIRECT EFFLUENT FROM CRD WITHDRAW LINE	VENT VALVE TO RADWASTE DRAIN
	000059	OPEN CRD WITH DRAW LINE VENT VALVE	
	000060	OBSERVE CONTROL ROD NOT MOVING INWARD	
	000061	CLOSE CRD WITHDRAW LINE VENT VALVE	

NMP - 2
Task Analysis' Tasks by E.P.N.

.rocedure #: 005 SP PRIMARY CONTAINMENT CONTROL

E.P.G #	Task #	Task Title
	000001	OBSERVE SUPPRESSION POOL TEMP > 95 DEG/F
	000002	OBSERVE DRYWELL TEMP > 135 DEG/F
	000003	OBSERVE CONTAINMENT TEMP > 90 DEG/F
	000004	OBSERVE DRYWELL PRESS > 1.68 PSI
	000005	OBSERVE SUPPRESSION POOL LEVEL > EL. 201 FT
	000006	OBSERVE SUPPRESSION POOL LEVEL > EL. 199.5 FT

NMP - 2
Task Analysis' Tasks by E.P.N.

Procedure #: 006 SP/T MONITOR AND CONTROL SUPPRESSION POOL TEMP

E.P.G #	Task #	Task Title		
SP.T-1	000001	CLOSE ALL SORVS		
	000002	DETERMINE IF SRV CANNOT BE CLOSED	WITHIN 2 MIN	
	000003	INITIATE REACTOR SCRAM		
SP/T-2	000004	OBSERVE SUPPRESSION POOL TEMP > 95 DEG/F		
	000005	OPERATE AVAILABLE SUPPRESSION POOL	COOLING	
SP/T-3	000006	OBSERVE SUPPRESSION POOL TEMP LESS THAN	OR EQUAL TO 110 DEG/F	
	000007	INITIATE REACTOR SCRAM		
SP/T-4	000008	DETERMINE IF SUPPRESSION POOL TEMP	CANNOT BE MAINTAINED BELOW HEAT CAPACITY	TEMP LIMIT
	000009	MAINTAIN RPV PRESSURE BELOW LIMIT		TEMP LIMIT
	000010	DETERMINE RPV PRESS CANNOT BE MAINTAINED	BELOW HEAT CAPACITY TEMP LIMIT	

NMP - 2

Task Analysis' Tasks by E.P.N.

Procedure #: 007 DW/T MONITOR AND CONTROL DRYWELL TEMP

E.P.G #	Task #	Task Title		
DW/T-1	000001	OBSERVE DRYWELL TEMP > 135 DEG/F		
	000002	OPERATE AVAILABLE DRYWELL COOLING		
DW/T-2	000003	OBSERVE DRYWELL TEMP GREATER THAN OR	EQUAL TO RPV SAT TEMP	
DW/T-3	000004	OBSERVE DRYWELL TEMP GREATER THAN OR	EQUAL TO 340 DEG/F	
	000005	OBSERVE SUPPRESSION CHAMBER TEMP AND	DRYWELL PRESS < DRYWELL SPRAY INITIATION	PRESS LIMIT
	000006	SHUTDOWN RECIRC PUMPS		PRESS LIMIT
	000007	SHUTDOWN DRYWELL COOLING FANS		PRESS LIMIT
	000008	INITIATE DRYWELL SPRAYS		PRESS LIMIT
	000009	THROTTLE DRYWELL SPRAY FLOW < 720 GPM		PRESS LIMIT
	000010	OBSERVE DRYWELL TEMP > 340 DEG/F		PRESS LIMIT

NMP - 2
Task Analysis' Tasks by E.P.N.

Procedure #: 008 CN/T MONITOR AND CONTROL CONTAINMENT TEMP

E.P.G #	Task #	Task Title
CN/T-1	000001	OBSERVE CONTAINMENT TEMP > 90 DEG/F
	000002	OPERATE AVAILABLE CONTAINMENT COOLING
CN/T-2	000003	OBSERVE CONTAINMENT TEMP > 185 DEG/F
	000004	OBSERVE SUPPRESSION CHAMBER PRESS > 1.7 PSI
	000005	INITIATE SUPPRESSION POOL SPRAYS
CN/T-3	000006	OBSERVE CONTAINMENT TEMP > 185 DEG/F
CN/T-4	000007	OBSERVE CONTAINMENT TEMP GE RPV SAT TEMP

NMP - 2
Task Analysis' Tasks by E.P.N.

Procedure #: 009 PC/P MONITOR AND CONTROL PRIMARY CONTAINMENT PRESS

E.P.G #	Task #	Task Title		
PC/P-1	000001	OPERATE THE CONTAINMENT PRESS CONTROL	SYSTEM	
	000002	OBSERVE TEMP FOR SBGT SUCTION < 212	DEG/F	
	000003	OPERATE SBGT		
PC/P-2	000004	OBSERVE SUPPRESSION CHAMBER PRESS	< 17.4 PSI	
	000004	OBSERVE SUPPRESSION CHAMBER PRESS	< 17.4 PSI BUT > 1.7 PSI	
	000005	OBSERVE SUPPRESSION POOL WATER LVL	< 24 FT	
	000006	INITIATE SUPPRESSION POOL SPRAYS		
PC/P-3	000007	OBSERVE SUPPRESSION CHAMBER PRESS	> 17.4 PSI	
	000008	OBSERVE SUPPRESSION CHAMBER TEMP AND	DRYWELL PRESS < DRYWELL SPRAY INITIATION	PRESS LIMIT
	000009	SHUTDOWN RECIRC PUMPS		PRESS LIMIT
	000010	SHUTDOWN DRYWELL COOLING FANS		
	000011	INITIATE DRYWELL SPRAYS		
	000012	THROTTLE DRYWELL SPRAY FLOW < 720 GPM		
PC/P-4	000013	OBSERVE SUPPRESSION CHAMBER PRESS	CANNOT BE MAINTAINED BELOW PRESSURE	SUPPRESSION PRESSURE
PC/P-5	000014	OBSERVE SUPPRESSION CHAMBER PRESS	CANNOT BE MAINTAINED BELOW PRIMARY	CONTAINMENT DESIGN PRESS
PC/P-6	000015	OBSERVE SUPPRESSION CHAMBER PRESS	CANNOT BE MAINTAINED BELOW CONTAINMENT	PRESS LIMIT
	000016	OBSERVE SUPPRESSION POOL WATER LVL	<24 FT 6 IN	
	000017	INITIATE SUPPRESSION POOL SPRAYS		
	000018	OBSERVE SUPPRESSION CHAMBER TEMP AND	DRYWELL PRESS < DRYWELL SPRAY INITIATION	PRESS LIMIT
	000019	SHUTDOWN RECIRC PUMPS		PRESS LIMIT
	000020	SHUTDOWN DRYWELL COOLING FANS		PRESS LIMIT
	000021	INITIATE DRYWELL SPRAYS		PRESS LIMIT
	000022	THROTTLE DRYWELL SPRAY FLOW < 720 GPM		PRESS LIMIT
PC/P-7	000023	OBSERVE SUPPRESSION CHAMBER PRESS	GREATER THAN OR EQUAL TO PRIMARY	CONTAINMENT PRESS LIMIT
	000024	VENT PRIMARY CONTAINMENT		CONTAINMENT PRESS LIMIT

NMP - 2
Task Analysis' Tasks by E.P.N.

Procedure #: 010 SP/L MONITOR AND CONTROL SUPPRESSION POOL WATER LEVEL

E.P.G #	Task #	Task Title		
SP/L-1	000001	MAINTAIN SUPPRESSION POOL WATER LEVEL	BETWEEN 12 FT 6 IN AND 12 FT 2 IN	
	000002	OBSERVE SPMS HAS INITIATED		
	000003	MAINTAIN SUPPRESSION POOL WTR LVL	BETWEEN 23 FT 9 IN AND 19 FT 11 IN	
	000004	OBSERVE SUPPRESSION POOL WTR LVL CANNOT	BE MAINTAINED > 12 FT 2 IN	
	000005	OBSERVE SUPPRESSION POOL WTR LVL CANNOT	BE MAINTAINED < 12 FT 6 IN (NO SPMS)	
	000006	OBSERVE SUPPRESSION POOL WTR LVL CANNOT	BE MAINTAINED < 23 FT 9 IN (W/SPMS)	
SP/L-2	000007	MAINTAIN SUPPRESSION POOL WTR LVL > HEAT	CAPACITY LEVEL LIMIT	
SP/L-3.1	000008	MAINTAIN SUPPRESSION POOL WTR LVL <	SUPPRESSION POOL LOAD LIMIT	
	000009	DETERMINE SUPPRESSION POOL WTR LVL	CANNOT BE MAINTAINED BELOW LOAD LIMIT	
	000010	MAINTIAN RPV PRESS < SUPPRESSION POOL	LOAD LIMIT	
	000011	DETERMINE RPV CANNOT BE MAINTAINED <	LOAD LIMIT	
	000012	DETERMINE ADEQUATE CORE COOLING	AVAILABLE	
	000013	TERMINATE RPV INJECTION FROM EXTERNAL	SOURCES EXCEPT BORON AND CRD SYS	
SP/L-3.2	000014	OBSERVE SUPPRESSION POOL WTR LVL GREATER	THAN OR EQUAL TO 17 FT 2 IN	
	000015	DETERMINE ADEQUATE CORE COOLING	AVAILABLE	
	000016	TERMINATE RPV INJECTION FROM EXTERNAL	SOURCES EXCEPT BORON AND CRD SYS	
	000017	OBSERVE SUPPRESSION POOL WTR LVL = 17 FT 2 IN		
	000018	OBSERVE SUPPRESSION CHAMBER TEMP AND	DRYWELL PRESS < DRYWELL SPRAY INITIATION	PRESS LIMIT
	000019	SHUTDOWN RECIRC PUMPS		PRESS LIMIT
	000020	SHUTDOWN DRYWELL COOLING FANS		PRESS LIMIT
	000021	INITIATE DRYWELL SPRAYS		PRESS LIMIT
	000022	THROTTLE DRYWELL SPRAY FLOW < 720 GPM		PRESS LIMIT
	000023	OBSERVE SUPPRESSION POOL WTR LVL > 17 FT 2 IN		
	000024	OPERATE DRYWELL SPRAYS		
	000025	THROTTLE DRYWELL SPRAY FLOW < 720 GPM		
	000026	OBSERVE PRIMARY CONTAINMENT WTR LVL		
	000027	TERMINATE RPV INJECTION FROM ALL	EXTERNAL SOURCES	

NMP - 2
Task Analysis' Tasks by E.P.N.

Procedure #: 011 SC SECONDARY CONTAINMENT CONTROL GUIDELINE

E.P.G #	Task #	Task Title		
SC	000001	OBSERVE DIFFERENTIAL PRESSURE RX BLDG	TO OUTSIDE GREATER THAN OR EQUAL TO 0	IN. OF WATER
	000002	OBSERVE ANY AREA TEMP > MAX NORMAL	OPERATING	
	000003	OBSERVE A HVAC COOLER DIFFERENTIAL TEMP	> MAX NORMAL	
	000004	OBSERVE RX BLDG HVAC EXHAUST RAD LEVEL	> MAX NORMAL	
	000005	OBSERVE AN AREA RAD LVL > MAX NORMAL		
	000006	OBSERVE RX FLOOR DRAIN SUMP LVL > MAX	NORMAL	
	000007	OBSERVE AREA WTR LVL > MAX NORMAL		
	000008	OBSERVE ANY RX BLDG HIGH RADIATION ALARM		

NMP - 2
Task Analysis' Tasks by E.P.N.

Procedure #: 012 SC/T MONITOR AND CONTROL SECONDARY CONTAINMENT TEMPS

E.P.G #	Task #	Task Title
SC/T-1	000001	OBSERVE RX BLDG HVAC EXHAUST RAD LVL > RX BLDG HVAC ISOLATION STPT
	000002	MANUALLY INITIATE RX BLDG HVAC ISOLATION
	000003	MANUALLY INITIATE SBGT
	000004	OBSERVE RX BLDG HVAC ISOLATION
	000005	OBSERVE RX BLDG HVAC EXHAUST RAD LVL < RX BLDG HVAC ISOLATION SETPT
	000006	OPERATE RX BLDG HVAC
	000007	OPERATE AVAILABLE COOLERS
	000008	OBSERVE RX BLDG HVAC EXHAUST RAD LEVEL < RX BLDG HVAC ISOLATION
	000009	OPERATE RX BLDG HVAC
	000010	OBSERVE ANY AREA TEMP > MAX NORMAL
	000011	ISOLATE SYS DISCHARGING INTO AFFECTED AREA EXCEPT SYS FOR SHUTDOWN CORE COOLING OR FIRE SUPPRESSION
	000012	OBSERVE A PRIMARY SYS DISCHARGING INTO AN AREA
	000013	OBSERVE AFFECTED AREA TEMP < MAX NORMAL
	000014	OBSERVE PRIMARY SYS DISCHARGING INTO AN AREA
	000015	OBSERVE AFFECTED AREA TEMP > MAX NORMAL

rocedure #: 013 SC/R MONITOR AND CONTROL SECONDARY RADIATION LVLS

E.P.G #	Task #	Task Title		
SC/R-1	000001	OBSERVE ANY AREA RADIATION MONITOR >	HIGH ALARM SETPT	
	000002	ISOLATE ALL SYSTEMS DISCHARGE INTO	AFFECTED AREA EXCEPT FOR SHUTDOWN	CORE COOLING OR FIRE SUPPRESSI
SC/R-2	000003	OBSERVE A PRIMARY SYS DISCHARGING INTO	AN AREA	
	000004	OBSERVE AFFECTED AREA RAD LVL LESS THAN	OR EQUAL TO MAX NORMAL	
SC/R-3	000005	OBSERVE A PRIMARY SYS DISCHARGING INTO	AN AREA	
	000006	OBSERVE AFFECTED AREA RAD LVL GREATER	THAN OR EQUAL TO MAX NORMAL	

NMP - 2
Task Analysis' Tasks by E.P.N.

Procedure #: 014 SC/L MONITOR AND CONTROL SECONDARY CONTAINMENT WATER LEVEL

E.P.G #	Task #	Task Title		
SC/L-1	000001	OBSERVE ANY FLOOR DRAIN SUMP > HIGH-HIGH	LVL SETPT	
	000002	OPERATE AVAILABLE SUMP PUMPS FOR	AFFECTED AREA	
	000003	OBSERVE ANU FLOOR DRAIN SUMP CANNOT	BE MAINTAINED < HIGH-HIGH LVL SETPT	
	000004	ISOLATE ALL SYS DISCHARGE INTO SUMP AREA	EXCEPT FOR SHUTDOWN CORE COOLING OR	FIRE SUPPRESSION
SC/L-2	000005	OBSERVE A PRIMARY SYS DISCHARGING IN AN	AREA	
	000006	OBSERVE AFFECTED FLOOR DRAIN SUMP	< HIGH-HIGH LEVEL SETPT	
SC/L-3	000007	OBSERVE A PRIMARY SYS DISCHARGING INTO	AN AREA	
	000008	OBSERVE AFFECTED FLOOR DRAIN SUMP	GREATER THAN OR EQUAL TO HIGH-HIGH SETPT	

NMP - 2
Task Analysis' Tasks by E.P.N.

.ocedure #: 015 RR RADIOACTIVITY RELEASE CONTROL GUIDELINE

E.P.G #	Task #	Task Title		
RR-1	000001	OBSERVE OFFSITE RADIOACTIVITY RELEASE	RATE GREATER THAN OR EQUAL TO ALRERT	RATE
	000002	ISOLATE ALL PRIM SYS DISCH INTO AREAS	OUTSIDE PRIM AND SECOND CNTMTS EXCEPT	SHUTDOWN: CORE COOLING: FIRE S
RR-2	000003	OBSERVE OFFSITE RADIOACTIVITY RELEASE	RATE APPROACHES OR EXCEEDS GENERAL	EMERGENCY RATE
	000004	OBSERVE A PRIMARY SYS DISCHARGING INTO	AN AREA OUTSIDE PRIMARY AND SECONDARY	CONTAINMENTS

NHP - 2
Task Analysis' Tasks by E.P.N.

Procedure #: 016 CONTINGENCY 1: LEVEL RESTORATION

E.P.G #	Task #	Task Title		
C1-1	000001	DETERMINE BORON INJECTION IS REQUIRED		
	000002	DETERMINE RPV WTR LVL CANNOT BE	DETERMINED	
	000003	DETERMINE RPV FLOODING IS REQUIRED		
C1-2	000004	CONTROL RPV LVL USING CONDENSATE SYS		
	000005	CONTROL RPV LVL USING HPCS		
	000006	CONTROL RPV LVL USING LPCI		
	000007	CONTROL RPV LVL USING LPCS		
	000008	LINEUP RHR SERVICE WTR CROSSTIE		
	000009	LINEUP FIRE SYS		
	000010	LINEUP ECCS KEEPFUL SYSTEMS		
	000011	LINEUP SLC (TEST TANK)		
	000012	LINEUP SLC (BORON TANK)		
C1-3	000013	OBSERVE RPV PRESS HIGH (GREATER THAN OR	EQUAL TO 425 PSIG)	
	000014	OBSERVE RPV PRESS INTERMEDIATE (GREATER	THAN OR EQUAL TO 100 PSIG)	
	000015	OBSERVE RPV PRESS LOW (< 100 PSIG)		
	000016	OBSERVE RPV LVL INCREASING		
	000017	OBSERVE RPV LVL DECREASING		
	000018	OBSERVE RPV WTR LVL TREND REVERSE		
	000019	OBSERVE RPV WTR LVL < 17.8 IN		
	000020	OBSERVE RPV PRESS CHANGE REGION WITHIN	GRAPHIC AID	
	000021	PREVENT AUTOMATIC INITIATION OF ADS		
C1-4	000022	DETERMINE HPCI AND RCIC ARE NOT	AVAILABLE	
	000023	OBSERVE RPV PRESS INCREASING		
	000024	OBSERVE RPV PRESS DECREASING		
	000025	DETERMINE HPCI AND RCIC ARE NOT	AVAILABLE	
	000026	OBSERVE RPV PRESS NOT INCREASING		
	000027	OBSERVE RPV WTR LVL GREATER THAN OR	EQUAL TO 159.3 IN	
C1-5	000028	OBSERVE RPV PRESS INCREASING		
	000029	OBSERVE RPV PRESS DECREASING OR CONSTANT		
C1-6	000030	OBSERVE RCIC NOT OPERATING		
	000031	START RCIC		
	000032	OBSERVE NO INJECTION SUBSYSTEM LINED UP		
	000033	OBSERVE AT LEAST ONE PUMP RUNNING IN	INJECTION SUBSYSTEM	
	000034	START PUMPS IN ALTERNATE SUBSYSTEMS	LINED UP FOR INJECTION	
	000035	OBSERVE RPV WTR LVL LESS THAN OR EQUAL	TO -14 IN	
	000036	OBSERVE NO SYSTEM SUBSYSTEM OR	ALTERNATE SUBSYSTEM LINED UP FOR	INJECTION
	000037	OBSERVE AT LEAST 1 PUMP RUNNING IN SYS	SUBSYS OR ALTERNATE SUBSYS LINED UP FOR	INJECTION
	000038	OBSERVE RPV WTR LVL INCREASING		INJECTION
	000039	OBSERVE RPV PRESS < 100 PSIG		INJECTION
C1-7	000040	DETERMINE HPCI AND RCIC NOT AVAILABLE		INJECTION
	000041	START PUMPS IN ALTERNATE INJECTION	SUBSYS LINED UP FOR INJECTION	
	000042	OBSERVE RPV PRESS INCREASING		
	000043	OBSERVE RPV PRESS INCREASING		
	000044	OBSERVE RPV WTR LVL LE -14 IN		

NMP - 2
Task Analysis' Tasks by E.P.N.

.rocedure #: 017 CONTINGENCY 2: EMERGENCY RPV DEPRESSURIZATION

E.P.G #	Task #	Task Title		
C2-1	000001	DETERMINE BORON INJECTION IS REQUIRED		
	000002	DETERMINE ALL INJECTION INTO THE RPV	EXCEPT FOR BORON AND CRD HAS BEEN	TERMINATED
	000003	DETERMINE BORON INJECTION IS NOT	REQUIRED	
C2-1.2	000004	OBSERVE SUPPRESSION POOL WTR LVL <	190 FT	
	000005	OPEN ADS VLVS		
	000006	OBSERVE ANY ADS VLVS CANNOT BE OPENED		
	000007	OPEN SRVS		
C2-1.3	000008	OBSERVE < 3 SRVS OPEN		
	000009	OBSERVE RPV PRESS GREATER THAN OR EQUAL	TO 50 PSIG	
	000010	DEPRESSURIZE THE RPV USING	MAIN CONDENSER	
	000011	DEPRESSURIZE THE RPV USING	RHR (STEAM CONDENSING)	
	000012	DEPRESSURIZE THE RPV USING	MS LINE DRAINS	
	000013	DEPRESSURIZE THE RPV USING	RCIC STEAM LINE	
	000014	DEPRESSURIZE THE RPV USING	HPCI STEAM LINE	
	000015	HEAD VENT		
	000015	DEPRESSURIZE THE RPV USING	HEAD VENT	
	000016	HEAD VENT		
C2-1.3	000016	DEPRESSURIZE THE RPV USING	IC TUBE SIDE VENT	
C2-2	000017	DETERMINE IF RPV FLOODING IS REQUIRED		

NMP - 2
Task Analysis' Tasks by E.P.N.

Procedure #: 018 CONTINGENCY 3: STEAM COOLING

E.P.G #	Task #	Task Title	
C3-1	000001	DETERMINE RPV DEPRESSURIZATION IS	REQUIRED
	000002	DETERMINE ANY INJECTION SYS SUBSYS OR	ALTERNATE IS LINED UP FOR INJECTION
	000003	OBSERVE AT LEAST 1 PUMP RUNNING IN SYS	SUBSYS OR ALTERNATE SUBSYS LINED UP FOR INJECTION
	000004	OBSERVE RPV WTR LVL LESS THAN OR EQUAL	TO -67.5 IN
	000005	DETERMINE RPV WTR LVL CANNOT BE	DETERMINED
	000006	OPEN SRV	
	000007	OBSERVE RPV PRESS LESS THAN OR EQUAL TO	700 PSIG

NMP - 2
Task Analysis' Tasks by E.P.N.

rocedure #: 019 CONTINGENCY 4: CORE COOLING WITHOUT LVL RESTORATION

E.P.G #	Task #	Task Title		
C4-1	000001	OPEN ALL ADS VLVS		
	000002	OBSERVE ANY ADS VLV CANNOT BE OPENED		
	000003	OPEN SRVS		
C4-2	000004	OPERATE HPCS WITH SUCTION FROM	SUPPRESSION POOL	
	000005	OPERATE LPCS WITH SUCTION FROM	SUPPRESSION POOL	
	000006	DETERMINE ONE CORE SPRAY SUBSYS	OPERATIONAL WITH SUCTION FROM	SUPPRESSION POOL
	000007	OBSERVE RPV PRESS LESS THAN 289 PSIG		
	000008	TERMINATE RPV INJECTION FROM SOURCES	EXTERNAL TO PRIMARY CONTAINMENT	
C4-3	000009	OBSERVE RPV LVL GREATER THAN OR EQUAL TO -14 IN		

NMP - 2
Task Analysis' Tasks by E.P.N.

Procedure #: 020 CONTINGENCY 5: ALTERNATE SHUTDOWN COOLING

E.P.G #	Task #	Task Title
C5-1	000001	INITIATE SUPPRESSION POOL COOLING
C5-2	000002	CLOSE THE RPV HEAD VENTS
	000003	CLOSE MSIVS
	000004	CLOSE MAIN STEAM LINE DRAIN VLVS
	000005	CLOSE RCIC ISOLATION VLVS
C5-3	000006	OPEN SRV
C5-4	000007	CONTROL RPV WTR LVL TO ESTABLISH FLOW PATH THROUGH SRV BACK TO SUPPRESSION POOL
C5-5	000008	START LPCS PUMP WITH SUCTION FROM SUPPRESSION POOL
C5-5-	000009	START LPCI PUMP WITH SUCTION FROM SUPPRESSION POOL
C5-6	000010	THROTTLE LPCS INJECTION TO MAX
	000011	THROTTLE LPCI INJECTION TO MAX
C5-6.1	000012	OBSERVE RPV PRESS DOES NOT STABILIZE AT 161 PSIG > SUPPRESSION CHAMBER PRESS
	000013	START LPCS PUMP
	000014	START LPCI PUMP
C5-6.2	000015	OBSERVE RPV PRESS DOES NOT STABILIZE < 230 PSIG
	000016	OPEN SRV
C5-6.3	000017	OBSERVE COOL DOWN RATE > 100 DEG/F/HR
	000018	THROTTLE LPCS TO ESTABLISH COOLDOWN RATE < 100 DEG/F/HR
	000019	THROTTLE LPCI TO ESTABLISH COOLDOWN RATE < 100 DEG/F/HR
C5-7	000020	CONTROL SUPPRESSION POOL TEMP TO MAINTAIN RPV TEMP > 70 DEG/F

NMP - 2

Task Analysis' Tasks by E.P.N.

Procedure #: 021 CONTINGENCY 6: RPV FLOODING

E.P.G #	Task #	Task Title		
C6-1	000001	OBSERVE SRVS OPEN		
	000002	OPEN SRVS		
	000003	DETERMINE HPCS AVAILABLE FOR INJECTION		
	000004	DETERMINE MOTOR DRIVEN FEEDWATER PUMP	AVAILABLE FOR INJECTION	
	000005	CLOSE MSIVS		
	000006	CLOSE MAIN STEAM LINE DRAIN VLVS		
	000007	CLOSE RCIC/RHR STEAM CONDENSING	ISOLATION VLVS	
C6-2	000008	OBSERVE ANY CONTROL ROD NOT INSERTED	BEYOND 00	
C6-2.1	000009	TERMINATE ALL RPV INJECTION EXCEPT FOR	BORON AND CRD SYS	
	000010	OBSERVE RPV PRESS < MIN ALTERNATE	FLOODING PRESS	
	000011	DETERMINE < 2 SRVS CAN BE OPENED		
	000012	DETERMINE RPV WTR LVL CANNOT BE	DETERMINED	
	000013	DETERMINE RPV FLOODING IS NOT REQUIRED		
C6-2.2	000014	SLOWLY INCREASE INJECTION INTO RPV SYS	USING FEEDWATER PUMPS	
	000015	SLOWLY INCREASE INJECTION INTO RPV SYS	USING CONDENSATE BOOSTER PUMPS	
	000016	SLOWLY INCREASE INJECTION INTO RPV SYS	CONDENSATE PUMPS	
	000017	SLOWLY INCREASE INJECTION INTO RPV SYS	CRD	
	000018	OBSERVE 2 SRVS OPEN		
	000019	OBSERVE RPV PRESS > MIN ALTERNATE	FLOODING PRESS	
	000020	SLOWLY INCREASE INJECTION IN RPV USING	HPCS	
	000021	SLOWLY INCREASE INJECTION IN RPV USING	LPCS	
	000022	SLOWLY INCREASE INJECTION IN RPV USING	LPCI/RHR	
	000023	SLOWLY INCREASE INJECTION INTO RPV USING	SERVICE WTR TO RHR	
	000024	SLOWLY INCREASE INJECTION INTO RPV USING	FIRE SYS	
	000025	SLOWLY INCREASE INJECTION INTO RPV USING	ECCS KEEP-FULL	
C6-2.3	000026	THROTTLE FEEDWATER TO MAINTAIN 2 SRVS	OPEN AND RPV PRESS < MIN ALT FLOODING	PRESS
	000027	THROTTLE CONDENSATE TO MAINTAIN 2 SRVS	OPEN AND RPV PRESS < MIN ALT FLOODING	PRESS
	000028	THROTTLE CRD TO MAINTAIN 2 SRVS	OPEN AND RPV PRESS < MIN ALT FLOODING	PRESS
	000029	THROTTLE HPCS TO MAINTAIN 2 SRVS	OPEN AND RPV PRESS < MIN ALT FLOODING	PRESS
	000030	THROTTLE LPCS TO MAINTAIN 2 SRVS	OPEN AND RPV PRESS < MIN ALT FLOODING	PRESS
	000031	THROTTLE LPCI/RHR TO MAINTAIN 2 SRVS	OPEN AND RPV PRESS < MIN ALT FLOODING	PRESS
	000032	THROTTLE SERVICE WTR TO RHR TO MAINTAIN	2 SRVS OPEN AND RPV PRESS < MIN ALT	FLOODING PRESS
	000033	THROTTLE FIRE SYS TO MAINTAIN 2 SRVS	OPEN AND RPV PRESS < MIN ALT FLOODING	PRESS
	000034	THROTTLE ECCS KEEPFULL TO MAINTAIN 2 SRV	OPEN AND RPV PRESS < MIN ALT FLOODING	PRESS
C6-2.4	000035	OBSERVE ALL CONTROL RODS INSERTED BEYOND	POSITION 00	
	000036	VERIFY REACTOR SHUTDOWN		
	000037	DETERMINE NO BORON HAS BEEN INJECTED		
C6-3	000038	DETERMINE RPV LVL CANNOT BE DETERMINED		
C6-3.1	000039	SLOWLY INCREASE RPV INJECTION USING	HPCS	
	000040	SLOWLY INCREASE RPV INJECTION USING	FEEDWATER PUMPS	
	000041	SLOWLY INCREASE RPV INJECTION USING	LPCS	
	000042	SLOWLY INCREASE RPV INJECTION USING	LPCI	
	000043	SLOWLY INCREASE RPV INJECTION USING	CONDENSATE BOOSTER PUMPS	
	000044	SLOWLY INCREASE RPV INJECTION USING	CONDENSATE PUMPS	

NMP - 2
Task Analysis' Tasks by E.P.N.

Procedure #: 021 CONTINGENCY 6: RPV FLOODING

E.P.G #	Task #	>---------- Task Title ----------	----------	----------
C6-3.1	000045	SLOWLY INCREASE RPV INJECTION USING	CRD	
	000046	SLOWLY INCREASE RPV INJECTION USING	SERVICE WATER TO RHR	
	000047	SLOWLY INCREASE RPV INJECTION USING	FIRE SYS	
	000048	SLOWLY INCREASE RPV INJECTION USING	ECCS KEEPFULL	
	000049	SLOWLY INCREASE RPV INJECTION USING	SLC TEST TANK	
	000050	SLOWLY INCREASE RPV INJECTION USING	SLC BORON TANK	
C6-3.2	000051	OBSERVE 3 SRVS OPEN		
	000052	OBSERVE RPV PRESS GREATER THAN OR EQUAL	TO 80 PSIG ABOVE SUPPRESSION CHAMBER	PRESS
	000053	THROTTLE HPCS TO MAINTAIN 3 SRVS OPEN	AND RPV PRESS GREATER THAN OR EQUAL TO	80 PSIG ABOVE SUPPRESSION CHAM
	000054	THROTTLE FEEDWATER TO MAINTAIN 3 SRVS	OPEN AND RPV PRESS GREATER THAN OR EQUAL	TO 80 PSIG ABOVE SUPPRESS CHAM
	000055	THROTTLE LPCS TO MAINTAIN 3 SRVS OPEN	AND RPV PRESS GREATER THAN OR EQUAL TO	80 PSIG ABOVE SUPPRESSION CHAM
	000056	THROTTLE LPCI TO MAINTAIN 3 SRVS OPEN	AND RPV PRESS GREATER THAN OR EQUAL TO	80 PSIG ABOVE SUPPRESSION CHAM
	000057	THROTTLE CONDENSATE TO MAINTAIN 3 SRVS	OPEN AND RPV PRESS GE 80 PSIG ABOVE	SUPPRESSION CHAMBER PRESS
	000058	THROTTLE CRD TO MAINTAIN 3 SRVS OPEN AND	RPV PRESS GE 80 PSIG ABOVE SUPPRESSION	CHAMBER PRESS
	000059	THROTTLE SERVICE WTR TO RHR TO MAINTAIN	3 SRVS OPEN AND RPV PRESS GE 80 PSIG	ABOVE SUPPRESSION CHAMBER PRES
	000060	THROTTLE FIRE SYS TO MAINTAIN 3 SRVS	OPEN AND RPV PRESS GE 80 PSIG ABOVE	SUPPRESSION CHAMBER PRESS
	000061	THROTTLE ECCS KEEPFULL TO MAINTAIN 3 SRV	OPEN AND RPV PRESS GE 80 PSIG ABOVE	SUPPRESSION CHAMBER PRESS
	000062	THROTTLE SLC TEST TANK TO MAINTAIN 3 SRV	OPEN AND RPV PRESS GE 80 PSIG ABOVE	SUPPRESSION CHAMBER PRESS
	000063	THROTTLE SLC BORON TEST TANK TO MAINTAIN	3 SRVS OPEN AND RPV PRESS GE 80 PSIG	ABOVE SUPPRESSION CHAM[illegible]RES
C6-4	000064	DETERMINE RPV WTR LVL CAN BE DETERMINED		ABOVE SUPPRESSION CHAMBER PRES
	000065	INREASE RPV INJECTION USING	HPCS	
	000066	INREASE RPV INJECTION USING	FEEDWATER PUMPS	
	000067	INREASE RPV INJECTION USING	LPCS	
	000068	INREASE RPV INJECTION USING	LPCI	
	000069	INREASE RPV INJECTION USING	CONDENSATE PUMPS	
	000070	INREASE RPV INJECTION USING	CONDENSATE BOOSTER PUMPS	
	000071	INREASE RPV INJECTION USING	CRD	
	000072	INREASE RPV INJECTION USING	RHR SERVICE WTR TIE	
	000073	INREASE RPV INJECTION USING	FIRE SYS	
	000074	INREASE RPV INJECTION USING	ECCS KEEPFULL	
	000075	INREASE RPV INJECTION USING	SLC TEST TANK	
	000076	INREASE RPV INJECTION USING	SLC BORON TANK	
C6-5	000077	DETERMINE RPV WTR LVL CANNOT BE	DETERMINED	
C6-5.1	000078	FILL RPV LVL INST REFERENCE COLUMNS		
C6-5.2	000079	OBSERVE DRYWELL TEMP < 212 DEG/F		
	000080	DETERMINE RPV WTR LVL CAN BE DETERMINED		
C6-5.3	000081	DETERMINE RPV IS FILLED		
	000082	OBSERVE RPV PRESS GE 80 PSIG ABOVE	SUPPRESSION CHAMBER PRESS	
	000083	TERMINATE RPV INJECTION		
	000084	REDUCE RPV LVL		
C6-5.4	000085	DETERMINE RPV WTR LVL INDICATION NOT	RESTORED WITHIN MAX CORE RECOVERY TIME	LIMIT
C6-6	000086	OBSERVE SUPPRESSION CHAMBER PRESS IS	MAINTAINED BELOW PRIMARY CONTAINMENT	DESIGN PRESS

NMP - 2

Task Analysis' Tasks by E.P.N.

.rocedure #: 022 CONTINGENCY 7: LEVEL/POWER CONTROL

E.P.G #	Task #	Task Title
C7-1	000001	DETERMINE RPV FLOODING IS REQUIRED
	000002	DETERMINE RPV WTR LVL CANNOT BE DETERMINED
	000003	CONTROL INJECTION TO RPV TO MAINTAIN RX POWER > 8% BUT LOW AS PRACTICABLE
	000004	DETERMINE RX POWER CANNOT BE DETERMINED
	000005	OBSERVE RX POWER CANNOT BE MAINTAINED GE 8%
	000006	OBSERVE REACTOR POWER > 3%
	000007	DETERMINE REACTOR POWER CANNOT BE DETERMINED
	000008	OBSERVE SUPPRESSION POOL TEMP > 111 DEG OF F
	000009	OBSERVE ANY SRV OPEN
	000010	OBSERVE DRYWELL PRESS > 1.68 PSIG
	000011	TERMINATE INJECTION INTO RPV EXCEPT BORON AND CRD
	000012	OBSERVE RPV WTR LVL GE -14 IN
	000013	OBSERVE RX POWER < 4%
	000014	OBSERVE ALL SRVS REMAIN CLOSED
	000015	OBSERVE DRYWELL PRESS < 1.68 PSIG
C7-2	000016	DETERMINE EMERGENCY RPV DEPRESSURIZATION IS REQUIRED
	000017	OBSERVE RX POWER > 4%
	000018	DETERMINE RX POWER CANNOT BE DETERMINED
	000019	OBSERVE RPV WTR LVL GE -14 IN
	000020	OBSERVE SUPPRESSION POOL TEMP > 111 DEG OF F
	000021	OBSERVE ANY SRV OPEN
	000022	OBSERVE DRYWELL PRESS > 1.68 PSIG
	000023	CONTROL RPV WTR LVL BETWEEN 159.3 AND 202.3 IN USING CONDENSATE/FEEDWATER
	000024	CONTROL RPV WTR LVL BETWEEN 159.3 AND 202.3 IN USING CRD
	000025	CONTROL RPV WTR LVL BETWEEN 159.3 AND 202.3 IN USING RCIC
	000026	OBSERVE RPV WTR LVL CANNOT BE MAINTAINED BETWEEN 159.3 AND 202.3 IN
	000027	CONTROL RPV WTR LVL > -14 IN
C7-2.1	000028	TERMINATE RPV INJECTION EXCEPT FOR BORON AND CRD SYS
	000029	OBSERVE RPV PRESS < MIN ALT RPV FLOODING PRESS
	000030	OBSERVE 2 OR MORE SRVS OPEN
	000031	CONTROL PRESS AT MIN ALT FLOODING PRESS
	000032	OBSERVE <2 SRVS CAN BE OPENED
C7-2.2	000033	CONTROL RPV WTR LVL > -14 IN USING CONDENSATE/FEEDWATER
	000034	CONTROL RPV WTR LVL > -14 IN USING CR
	000035	CONTROL RPV WTR LVL > -14 IN USING RCIC
	000036	OBSERVE RPV WTR LVL < -14 IN
	000037	CONTROL RPV WTR LVL > -14 IN USING HPCL
	000038	CONTROL RPV WTR LVL > -14 IN USING LPCS
	000039	CONTROL RPV WTR LVL > -14 IN USING LPCI
	000040	CONTROL RPV WTR LVL > -14 IN USING FIRE SYS
	000041	CONTROL RPV WTR LVL > -14 IN USING ECCS KEEPFULL
	000042	CONTROL RPV WTR LVL > -14 IN USING SERVICE WTR TO RHR
C7-3	000043	OBSERVE RX POWER INCREASE
	000044	OBSERVE SLC TANK LVL LE 2950 GAL
	000045	OBSERVE ALL CONTROL RODS INSERTED BEYOND 00
	000046	CONTROL RPV WTR LVL BETWEEN 159.3 AND 202.3 IN
	000047	OBSERVE RPV WTR LVL < 159.3 IN

NMP - 2
Task Analysis' Tasks by E.P.N.

Procedure #: 022 CONTINGENCY 7: LEVEL/POWER CONTROL

E.P.G #	Task #	Task Title	
C7-3	000048	CONTROL RPV WTR LVL > -14 IN	
	000049	OBSERVE RPV WTR LVL < -14 IN	
	000050	DETERMINE IF ALT SHUTDOWN COOLING	REQUIRED

App. F.

APPENDIX F

GENERIC TO SPECIFIC TASK EOPs

NINE MILE POINT NUCLEAR STATION UNIT #2

EMERGENCY OPERATING PROCEDURE

PROCEDURE NO. N2-EOP-1

EMERGENCY OPERATING PROCEDURE DEVELOPMENT

		DATE AND INITIALS		
APPROVALS	SIGNATURES	REVISION 0	REVISION 1	REVISION 2
Supervisor Operations	Ralph W. Fayne	RWF 2/12/85		
Station Superintendent	R B Abbott	RBA 2/12/85		

Summary of Pages

NIAGARA MOHAWK POWER CORPORATION

THIS PROCEDURE NOT TO BE USED
AFTER INITIAL FUEL LOAD.

COPY

Table of Contents

1.0 Introduction

1.1 Purpose

The purpose of this procedure is to provide guidance for the development of Emergency Operating Procedures for Nine Mile Point Unit 2.

1.2 Scope

This procedure applies to the initial development of EOPs and revisions. This process involves development of a Plant Specific Technical Guideline and Emergency Operating Procedures.

2.0 References

2.1 Nine Mile Point Unit 2 FSAR

2.2 Emergency Operating Procedures Implementation Guideline (INPO 82-016, Rev. 1)

2.3 Response to Supplement 1 to NUREG 9737, Item 7.2b, page 15

3.0 Definitions

3.1 Emergency Procedure Guideline (EPG)

This is a generic document, developed by the BWR Owners Group (BWROG), on which the Plant Specific Technical Guideline is based.

3.2 Plant Specific Technical Guideline (PSTG)

This is the document on which the Emergency Operating Procedures is based. It is developed by incorporating plant specific information into the EPG.

3.3 Emergency Operating Procedures

This document provides operation actions necessary to mitigate the consequences of transients and accidents.

3.4 Nine Mile Point Unit 2 EOP Writers Guide

This document provides instructions to the EOP Writers concerning format and content of the Emergency Operating Procedures.

3.5 Verification

This is the evaluation performed to verify technical accuracy of the PSTG, and the technical accuracy and written correctness of the EOPs.

3.6 Validation

This is the process which provides assurance that the EOPs can be used successfully in emergency situations.

4.0 Responsibilities

4.1 Station Superintendent

The Station Superintendent shall have the overall responsibility for development of EOPs.

4.2 Operations Supervisor

The Operations Supervisor shall assign the responsibility of EOP development to EOP Writers.

4.3 EOP Writers

EOP Writers shall develop Emergency Operating Procedures in accordance with this procedure.

5.0 Plant Specific Technical Guideline (PSTG)

A PSTG will be developed by the EOP Writers using the latest revision of the General Electric Boiling Water Reactor Owners Group Emergency Procedure Guideline for which a Safety Evaluation Report (SER) has been issued by the NRC. The EOP writers will obtain and review the following plant specific technical information (EOP source documents) as required to develop the PSTG:

1. EPGS; with Appendices A, B and C,
2. Nine Mile Point Unit 2 FSAR,
3. Operating Procedures,
4. Technical Specification,
5. Plant-specific drawings which form the data base for testing and operation of the plant,
6. Engineering approved vendor documents.

The EOP writers will review the EPG step-by-step, adding specific information where required, and making deletions where required. Additions and deletions will be documented, along with justifications, on an EPG Change Form (EOP-FORM1).

The EPG-PSTG, applicable EPG Change Forms and calculation procedures shall be considered the PSTG package.

6.0 Emergency Operating Procedures

The EOP writers will follow the PSTG step-by-step and, using the Nine Mile Point Unit 2 EOP Writer's Guide (N2-EOP-4), develop a set of Emergency Operating Procedures. Differences between the PSTG steps and EOP steps will be documented, with justification, on Step Documentation forms (EOP-FORM 2). All Step Documentation forms will be submitted with the EOPs for verification.

Additions to Operating Procedures will be made as required to assure adequate support of the EOPs.

The EOPs shall be verified in accordance with the EOP Verification Procedure (N2-EOP-2).

The EOPs shall be validated in accordance with the EOP Validation Procedure (N2-EOP-3).

7.0 EOP Training Guide

Concurrent with the development of the Plant-Specific Guideline and EOPs, a Training Guide will be developed. The Training Guide will contain the following:

- GE BWR Owner's Group Generic Emergency Procedure Guideline.
- The Plant-Specific Technical Guideline (including Addition/Deletion Forms).
- The Step Documentation forms.
- The EOPs.
- A step-by-step breakdown of the technical bases for the EOP decisions and operator actions.
- The calculational procedures and references for data used in developing EOPs.

Using the Training Guide, the Training Department, assisted by the EOP Writing Team where required, can develop lesson plans for the Training Program.

8.0 Documentation

The following will provide documentation of the EOP development process:

1. Generic EPG,
2. PSTG package,
3. PSTG Verification Package (see EOP Verification Procedure N2-EOP-2),
4. EOP Verification Package (see EOP Verification Procedure N2-EOP-2),
5. Step Documentation forms,
6. EOP Validation Package (see EOP Validation procedure N2-EOP-3).

The above shall be maintained as part of the Permanent Plant file.

EPG CHANGE FORM EOP-FORM 1

GENERIC
EPG STEP:

DESCRIPTION OF CHANGE:

JUSTIFICATION:

EOP WRITER:________________ DATE:______

STEP DOCUMENTATION

EOP-FORM 2
EOP No._____Rev. No.____

EOP STEP:

NMP II
PSTG STEP:

JUSTIFICATION OF DIFFERENCES:

EOP WRITER:__________________DATE:_______

NINE MILE POINT NUCLEAR STATION UNIT #2

EMERGENCY OPERATING PROCEDURE

PROCEDURE NO. N2-EOP-2

EMERGENCY OPERATING PROCEDURE VERIFICATION

		DATE AND INITIALS		
APPROVALS	SIGNATURES	REVISION 0	REVISION 1	REVISION 2
Supervisor Operations	Ralph W. Gayne	RWG 2/12/85		
Station Superintendent	RB Abbott	RBA 2/12/85		

Summary of Pages

Revision 0 (Effective 2/12/85)

Pages	Date
i, 1-9	February, 1985

NIAGARA MOHAWK POWER CORPORATION

THIS PROCEDURE NOT TO BE USED
AFTER INITIAL FUEL LOAD.

1.0 Introduction

1.1 Purpose

The purpose of this procedure is to provide guidance for the process of verification of the Plant Specific Technical Guideline (PSTG) and the Emergency Operating Procedures (EOPs) at Nine Mile Point Unit 2.

1.2 Scope

This procedure will describe and direct the verification process. The verification process is meant to ensure the technical accuracy of the Plant Specific Technical Guideline and the EOPs, and the correct implementation of the Writer's Guide in the EOPs. This procedure applies to the initial PSTG and EOPs, and revisions.

2.0 References

2.1 Emergency Operating Procedure Verification Guideline (INPO 83-C04)

2.2 Nine Mile Point Unit 2 EOP Writer's Guide

2.3 Nine Mile Point Unit 2 FSAR

3.0 Definitions

3.1 Emergency Procedure Guideline (EPG)

This is a generic document, developed by the BWR Owners Group, on which the Plant Specific Technical Guideline is based.

3.2 Plant Specific Technical Guideline (PSTG)

This is the document on which the Emergency Operating Procedures is based. It is developed by incorporating plant specifics into the EPG.

3.3 Emergency Operating Procedures

This document provides operator actions necessary to mitigate the consequences of transients and accidents.

3.4 Nine Mile Point Unit 2 EOP Writer's Guide

This document provides instructions to the EOP Writers concerning format and content of the Emergency Operating Procedures.

3.5 Verification

This is the evaluation performed to technical accuracy of the PSTG, and the technical accuracy and written correctness of the EOPs.

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4.0 Responsibilities

4.1 Station Superintendent

The Station Superintendent shall have the overall responsibility for the development of EOPs. The Station Superintendent shall assign the responsibility for EOP verification.

4.2 Operations Supervisor

The Operations Supervisor shall determine the requirement for, and scope of, verification and approve verification resolutions. The Operations Supervisor shall assign the responsibility of EOP writing.

4.3 EOP Writers

EOP Writers shall normally be members of the plant operating department designated by the Operations Supervisor. Writers shall have the responsibility of resolving any discrepancies disclosed during the verification process.

5.0 Plant Specific Technical Guideline Verification

5.1 Verification Requirements

The Plant Specific Technical Guideline will be verified using the following criteria:

1. Generic Emergency Procedure Guidelines have been properly implemented.
2. Plant specific numbers are correct.
3. Calculational procedures are correct.

5.2 Verification Process

Steps, cautions and notes will be verified using the criteria listed in Section 5.1. A PSTG Verification Form will be prepared each time a verification is performed in order to document the process. EOP-FORM 3 is the PSTG Verification Form. The following information will be included:

1. PSTG revision being verified.
2. The applicable Generic Emergency Procedure Guideline revision number.
3. Start date.
4. Scope of verification (specific steps or "all").
5. Source documents used.
6. Name of person(s) performing verification.
7. A list of discrepancies including step, caution or calculation number, and discrepancy sheet number.
8. Discrepancy Form numbers applicable (entered upon approval of resolutions).
9. Signature of approval of verification process.
10. Date of approval.

Part I of a PSTG Discrepancy Form (EOP-FORM 4) will be completed by the person(s) performing the verification for each discrepancy. The following information will be included:

1. Discrepancy Form number.
2. Step/caution/calculation number.
3. Description of discrepancy.
4. Signature of the person who identified the discrepancy.
5. Date.

Note: When more than one person is responsible for verification, one person should assign discrepancy numbers.

The Discrepancy Form number will consist of two parts. The first part will be the revision number of the PSTG being reviewed. The second number will be the sequential number assigned to the discrepancy. For example, the first discrepancy of the revision "0" PSTG would be numbered: Number 0 - 1 .

The person(s) performing the evaluation will be provided with the applicable revision of the Generic Emergency Procedure Guideline, EPG Change Forms, the PSTG and calculational procedures (PSTG Package). The person(s) performing the verification shall independently review any source documents required to verify the technical accuracy of the PSTG.

All PSTG Discrepancy Forms will be attached to the PSTG Verification Form. This will be the PSTG Verification Package.

When the review process is complete, the Verification Package (Verification Form and Discrepancy sheets) and PSTG Package will be returned to the Operations Supervisor for resolution.

5.3 Resolution

When the PSTG Package and Verification Package are returned to the Operations Supervisor, he will assign the responsibility of resolution. Assigned personnel are EOP Writers (see Section 3.3). The EOP Writers will resolve each discrepancy and complete Part II of each Discrepancy Form, entering the following information:

1. Description of resolution.
2. Signature.
3. Date.

5.4 Review/Approval

The completed Verification Package will then be returned to the Operations Supervisor for review and approval. The Operations Supervisor, after reviewing the Verification Package, will return it to the EOP Writers if a resolution is found to be unsatisfactory, or approve it by completing the Verification Form with the applicable discrepancy sheet numbers, signature and date.

6.0 Emergency Operating Procedure Verification

6.1 Verification Requirements

The EOPs shall be verified using the following criteria:

1. The PSTG has been properly implemented.
2. The EOPs have been written in accordance with the EOP Writer's Guide.
3. The information required in the EOPs is available to the operator in the control room.
4. The parameter values required by the EOPs are consistent with the available control room indications.
5. The controls and indications required to perform tasks called for in the EOPs are available to the control room operator.
6. The nomenclature used in the EOPs is consistent with that used in the control room and plant.
7. The language and level of information is compatible with the qualifications, training and experience of a licensed operator.
8. Differences between the PSTG and the EOP are properly justified (Step Documentation Forms).

6.2 Verification Process

Each step, caution, graph and note will be verified using the criteria listed in Section 6.1. As many EOP Verification Forms (EOP-FORM 5) as required will be completed for each EOP verified to document the process. The following information will be included:

1. EOP number.
2. PSTG revision number.
3. EOP revision number.
4. Start date.
5. Scope of verification (specific steps or "all").
6. Name of person(s) performing verification and initials.
7. A list of all steps verified with either initials indicating acceptance, or a Discrepancy Form number indicating a discrepancy.
8. Sheet number (if more than one form is required).
9. Discrepancy Form numbers - entered upon approval of resolutions.
10. Signature of approval of the verification process.
11. Date of approval.

Notes, cautions and graphs will be verified as part of the step to which they apply.

Part I of an EOP Verification Discrepancy Form (EOP-FORM 6) will be completed by the person performing the verification for each step not in compliance with the Section 6.1 criteria. The following information will be included:

1. EOP being verified.
2. Discrepancy Form number.
3. The EOP step number.
4. A description of the discrepancy.
5. Signature of the person identifying the discrepancy
6. Date.

Note: When more than one person is responsible for verification, one person should be responsible for assigning discrepancy numbers.

The Discrepancy Form number will consist of two parts. The first is the revision number of the EOP being verified. The second is the sequential number assigned to the discrepancy. For example, the first discrepancy in revision "0" of EOP-RL would be number: Number 0 - 1 .

The person(s) assigned the responsibility of EOP verification will be provided with the following material:

1. The EOP(s) to be verified
2. The PSTG
3. The EOP Writer's Guide
4. Step Documentation forms.

The person(s) responsible for the verification will review these documents, any other source material required and the control room to assure that the Section 6.1 criteria is met for each EOP step.

All EOP Verification Discrepancy Forms will be attached to the EOP Verification Form, this will be the EOP Verification Package.

Upon completion of the review by the person(s) responsible for verification, the Verification Package, PSTG and Step Documentation Forms will be returned to the Operations Supervisor.

6.3 Resolution

The Verification Package is returned to the Operations Supervisor. The Operations Supervisor will assign the responsibility of resolution. Assigned personnel are EOP Writers (see Section 3.3). The EOP Writers will resolve each discrepancy and complete Part II of the Discrepancy Forms, entering the following information:

1. A description of the resolution
2. Signature
3. Date.

6.4 Review/Approval

The completed EOP Verification Package is returned to the Operations Supervisor for review and approval. The Operations Supervisor, after reviewing the package, will return it to the EOP Writers if a resolution is found to be unsatisfactory, or approve it by completing the Verification Form. Completion of the form requires entering the applicable Discrepancy Sheet numbers, signature and date.

7.0 Documentation

The PSTG Verification Package and the EOP Verification Package provide documentation of the verification process.

Plant Specific Technical Guideline
VERIFICATION FORM

EOP-FORM 3

PSTG Rev. No.:__________ Scope of Verification:____________________

EPG Rev. No.:__________ Person(s) Performing Verification:__________

Start Date:__________

Source Documents:

PSTG: Step, Caution, Calculation#	Discrepancy Form #	PSTG: Step, Caution, Calculation#	Discrepancy Form #	PSTG: Step, Caution, Calculation#	Discrepancy Form #

Discrepancy Form No.:__________ to __________ Resolved satisfactorily:__________

Signature of Operations Supervisor:____________________ Date:________

PSTG

EOP-FORM 4

DISCREPANCY FORM
Number:________

Part I to be completed by persone performing verification)

PSTG Step/Caution/Calculation Number:____________________________

Description of Discrepancy:

Signature:______________________________ Date:________________

Part II: (to be completed by EOP Writer)

Description of Resolution:

Signature:______________________________ Date:________________

EOP VERIFICATION FORM EOP-FORM 5

EOP ______ Rev.____

PSTG Rev. No.:________ Scope of Verification:______________________________

Start Date:__________ Person(s) Performing Verification:__________/__________
Name Initials
__________/__________
Name Initials
__________/__________
Name Initials

Sheet No.:__________

Step No.	Sect. 5.1 Criteria Met (Initials)	Discrepancy Number	Step No.	Sect. 5.1 Criteria Met (Initials)	Discrepancy Number	Step No.	Sect. 5.1 Criteria Met (Initials)	Discrepanc Number

Discrepancy Form No.:__________to__________ Resolved satisfactorily:__________

ature of Operations Supervisor:______________________________ Date:______

EOP VERIFICATION DISCREPANCY FORM

EOP-FORM 6

Part I (to be completed by person performing the verification)

EOP Step Number:______________

Description of Discrepancy:

Signature:_________________________________ Date:____________________

Part II: (to be completed by EOP Writer)

Description of Resolution:

EOP Writer:

Signature:_________________________________ Date:____________________

NINE MILE POINT NUCLEAR STATION UNIT #2

EMERGENCY OPERATING PROCEDURE

PROCEDURE NO. N2-EOP-3

EMERGENCY OPERATING PROCEDURE VALIDATION

DATE AND INITIALS

APPROVALS	SIGNATURES	REVISION 0	REVISION 1	REVISION 2
Supervisor Operations	Ralph W Gayne	RWG 2/12/85		
Station Superintendent	RB Abbott	RBA 2/12/85		

Summary of Pages

Revision 0 (Effective 2/12/85)

Pages	Date
i, 1-12	February, 1985

NIAGARA MOHAWK POWER CORPORATION

THIS PROCEDURE NOT TO BE USED
AFTER INITIAL FUEL LOAD.

Table of Contents

1.0 Introduction

1.1 Purpose

The purpose of this procedure is to provide guidance for the process of validation of the Emergency Operating Procedures at Nine Mile Point Unit 2.

1.2 Scope

This procedure will describe and direct the validation process. Validation provides assurance that the Emergency Operating Procedures are accurate, sound and usable. This procedure applies to the initial Emergency Operating Procedures and revisions.

2.0 References

2.1 Emergency Operating Procedures Validation Guideline (INPO 83-006)

2.2 Nine Mile Point Unit 2 FSAR

3.0 Definitions

3.1 Emergency Operating Procedure (EOP)

A plant procedure which provides the operator actions necessary to mitigate the consequences of transients and accidents.

3.2 Validation

A process which ensures that EOPs can be used succesfully in emergency situations.

3.3 Support Procedures

Procedures (other EOPs, Operating Procedures) required to supplement the use of an EOP.

3.4 Scenario

An event or sequency of events developed to test an EOP, or a specific section of an EOP.

3.5 Table-Top Validation

A discussion method of checking EOPs using specific criteria.

3.6 Walk-Through Validation

A simulated response to a scenario done in the plant control room.

3.7 Simulator Validation

A response to a real time simulated scenario done on a plant reference simulator.

4.0 Responsibility

4.1 Station Superintendent

The Station Superintendent shall have the overall responsibility for the development of Emergency Operating procedures.

4.2 Operations Supervisor

The Operations Supervisor shall determine the requirement for, the scope of, and method (or methods) of, validation, and approve validation resolutions.

The Operations Supervisor shall assign the responsibility of EOP writing. The Operations Supervisor shall assign the responsibility of validation.

4.3 Reviewers

Persons performing the validation shall be referred to as reviewers. They shall complete the process as directed by this procedure.

4.4 EOP Writers

EOP writers shall normally be members of the plant operation department designated by the Operations Supervisor. EOP writers shall have the responsibility of resolution of discrepancies disclosed during the validation process.

5.0 Emergency Operating Procedure Validation

5.1 Validation Requirements

The Emergency Operating Procedures will be validated using specific criteria. The applicability of the criteria is dependent on the method. Each validation method will use the acceptance criteria as presented in Table 1. The validation methods are:

1. Table-Top,
2. Walk-through,
3. Simulator.

5.2 Validation Process

The validation process will be initiated by the Operations Supervisor (see Section 4.2). The Operations Supervisor will

complete Part I of the Validation form (EOP-FORM 7). The following information will be included:

1. EOP Title,
2. EOP Number,
3. EOP Revision,
4. Scope of Validation (specific steps or "All),
5. Method(s) to be used,
6. Names of reviewer(s),
7. Signature of the operations supervisor,
8. Date.

An EOP Assessment Form (EOP-FORM 8) shall be filled out by a reviewer for each method of assessment utilized. The following information will be included:

1. EOP Number,
2. EOP Title,
3. EOP Revision,
4. Assessment method,
5. Name of reviewer(s),
6. Date,
7. Names of Operations personnel involved,
8. Position held by operator, license held by operator (enter "None" if not licensed),
9. Check-off for completion of step-by-step discussion (Table-Top method only),
10. Description of scenario(s) (a brief description of scenario(s) used to test the procedure).

Part I of a Validation Discrepancy Form (EOP-FORM 9) shall be filled out by the reviewer for each discrepancy disclosed during assessment. The following information will be included:

1. Assessment method,
2. Discrepancy number (a sequential number will be assigned to each discrepancy disclosed during a specific method of assessment),
3. EOP Number,
4. EOP Revision,
5. Description of discrepancy (the description should include sufficient detail to properly define problem, and suggested resolution(s) resulting from discussion with Operations personnel),
6. Signature of Reviewer,
7. Date.

Validation Discrepancy Forms should be attached to the applicable EOP Assessment Form.

The reviewer or reviewers will be responsible for the preparation and assessment phases of the validation. The preparation and assessment for each method is described in the following sections.

5.2.1 Table-Top Method

Preparation for the table-top method for validation involves the following:

1. Selection of operating personnel to participate (minimum of 3, SRO or RO),
2. Obtaining copies of the EOP to be validated,
3. Obtaining any support procedures which might be required during discussion,
4. Reviewing EOP and acceptance criteria with Operations personnel.

An EOP Assessment Form shall be completed by the reviewer.

The assessment should involve a step-by-step discussion of the procedure, talk-through of possible scenarios involving use of the procedures, and documentation of discrepancies. Possible resolution of discrepancies should be discussed.

The step-by-step discussion should involve identification of the operator tasks required for each step. The discussion of possible scenarios may be done during or after the step-by-step discussion. The reviewer may specify equipment failures as required to test the procedures. Discussion of possible discrepancies should involve causes and resolutions. All discrepancies should be documented on a Validation Discrepancy Form (EOP-FORM 9).

5.2.2 Walk-Through Method

Preparation for the walk-through method of validation involves the following:

1. Selection of operating personnel to participate. The number and qualifications of people used to staff the control room should be consistent with the staffing in an actual situation. Others can be involved for comment and discussion.
2. Obtaining copies of the EOP to be validated.
3. Assuring availability of support procedures in the control room
4. Reviewing the EOP and acceptance criteria with the operations personnel.
5. Preparation of scenario(s) to be used for assessment of procedures.
6. Arranging use of the control room with the operations supervisor.

An EOP Assessment Form should be completed.

The walk-through should involve a simulated response to symptoms or conditions specified in the scenario. The walk-through can be interupted for discussion of tasks and possible discrepancies; however, an attempt should be made to maintain the continuity of the exercise.

At the conclusion of each scenario exercise, discrepancies should be identified, discussed and documented on a Validation Discrepancy Form (EOP-FORM 9).

The number of different scenarios required is that necessary to test the procedure being verified, branches from the procedure and references to other procedures.

5.2.3 Simulator Method

Preparation for the simulator method includes the following:

1. Selection of operations personnel to participate. The number and qualifications of people used to staff the simulator should be consistent with the staffing in an actual situation. Others can be involved for comment and discussion.
2. Obtaining copies of the EOP to be verified.
3. Obtaining any support procedures required.
4. Reviewing the EOP and acceptance criteria with the operations personnel.
5. Preparation of scenario(s) to be used for assessment of procedures.
6. Reserving simulator time with the Nine Mile Point Training Department.

An EOP Assessment Form should be completed by the reviewer.

The simulator assessment should involve real time response to the scenario(s) developed to validate the EOP. The reviewer should present initial plant conditions to the operations personnel prior to each exercise.

The exercise (response to a simulated incident) should run without interuption until completion, or as long as required to complete the assessment. Notes can be taken by the reviewer and non-participating operations personnel concerning possible procedure discrepancies. At the conclusion of each exercise, the possible discrepancies should be discussed. Discussion should include possible causes and resolutions, and differences between the simulator and plant equipment which would affect the response. Discrepancies should be documented on a Validation Discrepancy Form.

The number and type of scenarios is dependent on the procedure being validated, and should be sufficient to test the EOP, branches to other procedures and references to other procedures.

5.3 Resolution

Upon completion of the required assessments, Part II of the EOP Validation Form shall be completed by a reviewer. The EOP Assessment Form/Validation Discrepancy Form group(s) should be attached to the EOP Validation Form. This shall be the EOP Validation Package. The Validation Package is then returned to the operations supervisor.

The operations supervisor will assign the responsibility of resolution to EOP writers. The EOP writers will resolve all discrepancies and complete Part II of each Validation Discrepancy Form. The following

information shall be included:

1. Description of the resolution,
2. Signature,
3. Date.

When resolutions are completed, the EOP Validation Package is returned to the operations supervisor for review and approval. After reviewing the package, the operations supervisor will return the Validation Package to the EOP writers if any resolution is unsatisfactory, or complete Part III of the EOP Validation Form (with his signature and date) denoting approval of the Validation process.

6. Documentation

The EOP Validation package shall provide documentation of the Validation process.

TABLE 1

EVALUATION CRITERIA

Legend:

x - applicable to the validation method

o - not applicable to the validation method

T-T - table-top validation method

W-T - walk-through validation method

S - simulator validation method

T-T	W-T	S	
x	x	x	1. There is sufficient information to perform the specified actions.
x	x	x	2. The labeling, abbreviations, and locations as provided in the EOP are sufficient to enable the operator to find the needed equipment.
x	x	x	3. The EOP is not missing information needed to manage the emergency condition.
x	x	x	4. The contingency actions are sufficient to address the symptoms.
x	x	x	5. The titles and number are sufficiently descriptive to enable the operation to find referenced and branched procedures.
x	x	x	6. The EOP is easy to interpret and follow.
x	x	x	7. The figures and tables are easy to read with accuracy.

T-T	W-T	S	
x	x	x	8. The values on figures and charts can be easily determined.
x	x	x	9. Caution and note statements are readily understandable.
x	x	x	10. The actions specified in the procedure can be performed in the designated sequence.
x	x	x	11. All systems or components which could be utilized for given symptoms are used.
o	x	x	12. The information from the plant instrumentation can be obtained, as specified by the EOP.
o	o	x	13. The plant symptoms specified by the EOP are adequate to enable the operator to select the applicable EOP.
o	o	x	14. The EOP entry conditions are appropriate for the plant parameters displayed to the operator.
o	o	x	16. The plant responses agree with the EOP basis.
o	x	x	17. The instrument readings and tolerances stated in the EOP are consistent with the instrument values displayed on the instruments.
o	x	o	18. The instrument readings and tolerances specified by the EOP for remotely located instruments are accurate.
o	x	x	19. If time intervals are specified, the procedure action steps can be performed on the plant within or at the designated time intervals.
x	x	x	20. The procedure action steps can be performed by the operation shift.
x	x	x	21. The operating shift can follow the designated action step sequences.

T-T	W-T	S	
x	x	x	22. Procedure branches can be entered at the correct point.
x	x	x	23. EOP exit points are specified adequately.
x	x	x	24. Adequate support procedures are available.

EOP-FORM 7

EOP VALIDATION FORM

Part I (to be completed by Operations Supervisor)

EOP Title: ______________________________

EOP Number: ____________________ EOP Revision: __________

Scope of Validation: ______________________________

Validation Method(s): ______________________________

Reviewer(s): ____________________ ____________________

____________________ ____________________

Signature: ______________________________ Date: __________

Part II (to be completed by reviewer)

Table-Top Validation Assessment complete -

Number of discrepancies: ______ Signature: ______________ Date: ______

Walk-Through Validation Assessment complete -

Number of discrepancies: ______ Signature: ______________ Date: ______

Simulator Validation Assessment complete -

Number of discrepancies: ______ Signature: ______________ Date: ______

Part III (to be completed by Operations Supervisor)

This validation package has been reviewed. All discrepancies have been resolved satisfactorily.

Signature: ______________________________ Date: __________

EOP ASSESSMENT FORM   EOP-FORM 8

EOP Number: ____________ EOP Title: ______________________________

EOP Revision: ____________ Assessment Method: ____________ Date: ______

Reviewer(s): ______________________ ______________________

Operations Personnel:

Name	Position	License

Step-by-Step discussion completed: ____ (Check if done, Table-Top Method only)

Description of Scenario(s):

VALIDATION DISCREPANCY FORM

Part I (to be completed by reviewer)

Assessment Method:________________ Discrepancy No.________________

EOP Number:________________ EOP Revision:________________

Description of Discrepancy:

Signature:________________________ Date:____________

Part II (to be completed by EOP writer)

Description of Resolution:

Signature:________________________ Date:____________

NINE MILE POINT NUCLEAR STATION UNIT 2

EMERGENCY OPERATING PROCEDURES

PROCEDURE NO. N2-EOP-4

EMERGENCY OPERATING PROCEDURE WRITERS GUIDE

APPROVALS	SIGNATURES	DATE AND INITIALS REVISION 0	REVISION 1	REVISION 2
Supervisor Operations	Ralph W. Hayne	RWH 2/12/85		
Station Superintendent	RB Abbott	RBA 2/12/85		

Summary of Pages

Revision 0 (Effective 2/12/85)

Pages	Date
i-ii, 1-23	February, 1985

NIAGARA MOHAWK POWER CORPORATION

THIS PROCEDURE NOT TO BE
USED AFTER INITIAL FUEL LOAD

N2-EOP-4

EMERGENCY OPERATING PROCEDURE WRITERS GUIDE

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EMERGENCY OPERATING PROCEDURE WRITERS GUIDE

TABLE OF CONTENTS

EMERGENCY OPERATING PROCEDURE WRITERS GUIDE

1.0 PURPOSE

The purpose of this document is to provide administrative and technical guidance on the preparation of Emergency Operating Procedures (EOPs).

2.0 SCOPE

This procedure applies to the writing and revision of all Emergency Operating Procedures, in both text and flow chart format.

3.0 REFERENCES

3.1 INPO 82-017

3.2 NUREG 0899

3.3 ANS 3.2 1982 - Section 5.2

4.0 EOP DESIGNATION AND NUMBERING

EOPs are procedures that govern the plant operation during emergency conditions and specify operator actions to be taken to return the plant to a stable condition.

Each plant procedure shall be uniquely identified. This identification permits easy administration of the process of procedure preparation, review, revision, distribution, and operator use.

4.1 Title Page

Every EOP shall have a Title Page (see Figure 1). The primary purposes of this Title Page are (1) to identify the procedure and (2) to identify the authorized revision. To identify the procedure, a descriptive title is to be used that also designates the scope. This page is not numbered.

The Title Page shall contain the following information (see Figure 1):

1) The name of the company.

2) The name of the unit or station.

3) The title and number of the procedure.

4.1 (Cont)

4) A tabulation of titles and names of all persons approving the procedure or revision with provision for entering signatures and dates of approval.

5) Approval of a revision as indicated by date and initials under the revision numbers of a previously signed title page.

6) A summary of pages with a listing of all pages, figures and attachments included in the approved revision.

4.2 Procedure Designation

Emergency Operating Procedures shall be designated EOP.

4.3 Procedure Numbering

A specific procedure descriptive Alphabetic or Alphanumeric designator will follow the procedure type designator.

Example N2-EOP-RL

-------Procedure Description Designator

-------Procedure Type Designator

-------Applicable Unit

4.4 Revision Numbering and Designation

Two digits following the abbreviation "Rev" will be used to designate the revision number of the emergency operating procedure.

Example Rev 01

-------Revision Number

-------Abbreviation

To identify the most recent revision to the text of an EOP, a change bar located in the right margin alongside the text change will be used.

4.5 Page Identification and Numbering

Each page of the procedure will be identified by (1) the procedure designator, (2) Page number specified as "Page ____of____, 3) The revision number, and 4) The revision date.

The procedure designator and the page number will be within the bottom margin at the right margin. The revision number and date will be within the bottom margin at the left margin (see Figure 2).

5.0 PROCEDURE FORMAT

5.1 Procedure Organization

The procedure organization will be as follows:

1) The Title Page (See Section 4.1).

2) ENTRY CONDITIONS Page - EOPs which require entry conditions will contain an ENTRY CONDITIONS Page. It will be Page 1 of the procedure. It will contain the procedure title, the entry conditions, and a list of the EOPs which must be concurrently executed (See Figure 2).

3) PROCEDURE - The procedure will contain the instruction and action guidance for the operator.

5.2 Operator Action Format

A combination of single and dual column format will be used. Dual column format is used when operator action is contingent on a specific decision, based on interpretation of parameters and conditions. The left column will contain the instructions for the decision process. The right column will contain the contingent actions. A single column will be utilized when the decision/action format is not applicable (See Figure 3).

Each page shall have the title centered in the top margin and enclosed in dashed lines (Figure 3).

5.3 Procedure Step Numbering

Letters and Arabic numerals will be used for numbering sections and subsections in the following format. The first level section numbers will be preceded by the specific procedure designator.

RL 1.	First-Level Section Number
RL 2.	First-Level Section Number
2.1	Second-Level Section Number
2.1.1	(Subsection)
2.2	Second-Level Section Number
2.2.1	(Subsection)
RL 3.	First-Level Section Number

Parallel construction between columns for each section and subsection will be sued where applicable. (See Figure 3). The action step contingent on the decision (two column format) will be numbered with the same number as the decision step from which it is entered.

6.0 WRITING INSTRUCTIONAL STEPS

6.1 Instruction Step Length and Content

Instruction steps will be concise and precise. Conciseness denotes brevity; preciseness means exactly defined. Thus, instruction should be short and exact. General rules to be used in meeting these objectives are as follows:

1) Instruction steps should deal with only one idea.

2) Short, simple sentences or phrases should be used in preference to long, compound, or complex sentences.

3) Complex evolutions should be described in a series of steps, with each step made as simple as practicable.

4) Operator actions should be specifically stated. This includes identification of exactly what is to be done.

5) For instructional steps that involve an action verb relating to three or more objects, the objects will be listed with space provided for operator checkoff: i.e., RL 2. Close valves:
   2.1 MOV-1
   2.2 MOV-2
   2.3 MOV-3

6) Limits should be expressed quantitatively whenever possible (refer to Subsection 7.5).

6.1 (Cont.)

7) Identification of components and parts should be precise.

8. Instruction content should be written to communicate to the user. (Terminology consistent with that used during normal day-to-day operations).

9. Expected results of routine tasks need not be stated.

10. Avoid using time to initiate operator actions. Operator actions should be related to plant parameters.

11. When anticipated system response may adversely affect instrument indications, describe the conditions that will likely introduce instrument error.

6.1.1 Dual Column Format - Instruction Column

The left-hand column of the dual-column format will contain the decisions based on parameters or equipment availability on which actions are contingent. The following rules are established for this column, in addition to the general rules above.

1) Expected indications should be presented in this column.

2) Information necessary for a decision shall be readily available to the operator.

6.1.2 Dual Column Format - Actions Column

Contingency actions will be presented in the right-hand column of the dual-column format. Contingency actions are operator actions that should be taken in the event a stated condition, event, or parameter does not represent or achieve the expected result. The need for contingency action occurs as a result of verification, observation, confirmation and monitoring.

An action statement which evokes an override statement (See Section 6.1.4) in one or more procedures shall be capitalized. For example:

THEN EMERGENCY DEPRESSURIZATION IS REQUIRED.

Contingency actions will be specified for each circumstance in which the expected results or actions might not be achieved. The contingency actions should identify, as appropriate, directions to override automatic controls and to initiate manually what is normally automatically initiated.

6.1.3 Single Column Format - When operator actions are not contingent on a decision a single column format will be used.

6.1.4 Override Statement

An override statement contains a condition or set of conditions which requires an operator to discontinue a set of instructions/actions and enter or concurrently execute a different set. An override statement will typically start with "IF while executing the following steps . . ."

These statements require the operator to be cognizant of the possible existence of the override conditions while executing procedure instructions/actions.

As an aid to the operator colored lines will be used in the left margin to indicate possible override condition. The line will start at a bracket at the left side of the override condition, and extent (from page to page if required) to all steps effected. Because more than one override statement might be involved, the line will be different colors, the left-most being the first encountered.

6.2 Use of Logic Terms

The logic terms AND, OR, NOT, IF, IF NOT, BEFORE, WHEN, and THEN are often necessary to describe precisely a set of conditions or sequence of actions. When logic statements are used, logic terms will be capitalized and underlined so that all the conditions are clear to the operator.

Use logic terms as follows:

1) When attention should be called to combinations of conditions, the word AND shall be placed between the description of each condition.

2) The word OR shall be used when calling attention to alternative conditions or combinations of conditions. The use of the word OR shall always be in the inclusive sense. To specify the exclusive "OR," the following may be used: "either A OR B but not both."

3) When action steps are contingent upon certain conditions or combinations of conditions (dual column), the step shall begin with the word IF or WHEN or BEFORE followed by a description of the condition or conditions. IF is used for a possible condition. WHEN is used for an expected condition. BEFORE is used to imply that the condition must be anticipated.

4) At any point in a logic statement where actions are contingent on a decision completed at that point, the use of an arrow ( ) will indicate a possible shift to action(s) in the right column. The associated action step will be the same number as, and directly adjacent to the final instruction step. It will be a THEN statement.

6.2 (Cont.)

5) In an instruction step which involves a decision based on multiple logic statements, logic words (AND, OR) will be within the text of a single logic statement, and between sections of text (logic statements) which need to be addressed separately to make the decision. IF, WHEN, BEFORE may precede each logic statement if required for clarification. For example:

RL1. IF Reactor Water Level is >0 in. AND Reactor Pressure is < 150 psig,

OR

IF Drywell Pressure is < 1 psig,

6) Use of IF NOT should be limited to those cases in which the operator must respond to the second to two possible conditions. IF should be used to specify the first condition.

7) THEN shall be used at the beginning of an action step to instruct the operator to execute the step as the result on a decision.

6.3 Use of Cautionary Information and Notes

Cautionary information can be considered in two fundamental categories: those that apply to the entire procedure and those that apply to a portion or a specific step of the procedure. Those that apply to the entire procedure are called "PRECAUTIONS" and are covered in operator training. Those that apply to a portion of a procedure are called "CAUTIONS" and are placed immediately before the procedural steps to which they apply.

Cautions shall be indented approximately 1/2 inch on both sides of the text and shall be boxed as shown in the Example CAUTION (Figure 3). This placement of cautions helps ensure that the procedure user observes the caution before performing the step. It should be used to denote a potential hazard to equipment or personnel associated with or consequent to the subsequent step. Two blank lines should be used between cautions and text. Cautions should not be located between second level steps.

If additional information other than cautions is necessary to support an action instruction, a NOTE should be used. A NOTE should present information only, not instructions, and should be located the same as a Caution, but no boxed.

6.4 Calculations

Mathematical calculations should be avoided in EOPs. If a value has to be determined in order to perform a procedural step, a chart or graph should be used whenever possible.

6.5 Use of Underlining

Underlining will be used for emphasis of logic terms and the word CAUTION.

6.6 Branching to Other Procedures of Steps

To minimize potential operator confusion, branching will be sued when the operator is to leave one procedure or step and use another procedure or step. Use the key words "Go To" for a branch within a procedure, and "Enter" for a branch to another procedure. Where branching is intended to require concurrent procedure performance, the action statement will define that clearly. For example: "Enter EOP RL and execute concurrently with this procedure".

6.7 Component Identification

With respect to identification of components, the following rules are to be followed:

1) Equipment, controls, and displays will be identified in operator language (common usage) terms. These terms will be precise.

2) When the engraved names and numbers on panel placards and alarm windows are specifically the item of concern in the procedure, the engraving should be quoted verbatim.

3) The names of plant systems are emphasized by initial capitalization. Acronyms may be used. All letters will be capitalized in an acronym.

4) If the component is seldom used or it is felt that the component would be difficult to find, location information should be given in parentheses following the identification. It should, however, be realized that component location is normally a function of on-the-job familiarization and specific EOP training.

6.8 Level of Detail

Too much detail in EOPs should be avoided in the interest of being able to effectively execute the instructions in a timely manner. The level of detail required is the detail that a newly trained and licenses operator would desire during an emergency condition.

To assist in determining the level of EOP detail, the following general rules apply.

1) For control circuitry that executes an entire function upon actuation of the control switch, the action verb appropriate to the component suffices without further amplification of how to manipulate the control device; for example, "Shut SERVICE WATER PUMP E DISCHARGE VALVE (SWP-MOV71E)". Recommended action verbs are as follows:

   a. For power-driven rotating equipment, use Start, Stop.

   b. For valves, use Open, Shut, Throttle Open, Throttle Shut, Throttle.

   c. For power distribution breakers, use Synchronize (if applicable), Close, Trip.

2) Standard practices for observing for abnormal results need not be prescribed within procedural steps. For example, observation of noise, vibration, erratic flow, or discharge pressure need not be specified by steps that start pumps.

3) For control switch positional placement, the verb "Place" should be used, along with the engraved name of the desired position.

6.9 Printed Operator Aids

When information is presented using graphs and tables, these aids must be self-explanatory, legible, and readable under the expected conditions of use and within the reading precision of the operator. A referenced graph or table should be placed on the page opposite the page opposite the test, when possible. Unacceptable regions of graphs will be shaded to and the operator in identifying above limit valves.

Capitalization should be used for references to tables and for graph titles. Title boxes for graphs should be conspicuous. Attachments should be sequentially numbered (if used), by type (FIGURE, TABLE) in separate series.

7.0 MECHANICS OF STYLE

7.1 Spelling

Spelling should be consistent with modern usage, and consistent throughout the EOPs.

7.2 Hyphenation

Hyphens are used between elements of a compound word when usage calls for it. The following rules should be followed for hyphenation.

1) When doubt exists, the compound word should be restructured to avoid hyphenation. Hyphenation shall not be used to show a range (100-200). Some wording will be used instead. For example: "from 100 to 200".

2) Hyphens should be used in the following circumstances:

   a. in compound numerals from twenty-one to ninety-nine; example: one hundred thirty-four

   b. in fractions; examples: one-half, two-thirds

   c. in compounds with "self"; examples: self-contained, self-lubricated

   d. when the last letter of the first word is the same vowel as the first letter of the second word--as an alternative, two words may be used; example: fire-escape or fire escape

   e. when misleading or awkward consonants would result by joining the words; example: bell-like

   f. to avoid confusion with another word; examples: re-cover to prevent confusion with recover, pre-position to avoid confusion with preposition

   g. when a letter is linked with a noun; examples: X-ray, O-ring, U-bolt, I-beam

   h. to separate chemical elements and their atomic weight; examples: Uranium-235, U-235

7.3 Punctuation

Punctuation should be used only as necessary to aid reading and prevent misunderstanding. Word order should be selected to require a minimum of punctuation. Punctuation should be in accordance with the following rules.

7.3.1 Brackets

Do not use brackets.

7.3.2 Colon

Use a colon to indicate that a list of items is to follow, for example: Restore cooling flow as follows:

7.3.3 Comma

Use a comma after conditional phrases for clarity and ease of reading. Example: WHEN level decreases to 10 inches, (THEN start pump . . .).

7.3.4 Parentheses

Parentheses shall be used to indicate: 1) alternative items in a procedure, 2) amplifying instruction, or 3) alternate equipment numbers.

7.3.5 Period

Use a period at the end of complete sentences and for indicating the decimal place in numbers.

7.4 Vocabulary

Words used in procedures should convey precise understanding to the trained person. The following rules apply.

1) Use simple words. Simple words are usually short words of few syllables. Simple words are generally common words.

2) Use common usage if it make the procedure easier to understand.

3) Use words that are concrete rather than vague, specific rather than general, familiar rather than formal, precise rather than blanket.

4) Define key words that may be understood in more than one sense.

5) Verbs with specific meaning should be used. Acceptable examples are listed in Table 1.

6) Equipment status should be denoted as follows:

   a. Operable/operability--These words mean that a system, subsystem, train, component, or device is capable of performing its specified function(s) in the intended manner. Implicit in this definition is the assumption that all necessary attendant instrumentation, controls, normal and emergency electrical power sources, cooling or seal water, lubrication or other auxiliary equipment required for the system, subsystem, train, component, or device to perform its function(s) are also capable of performing related support function(s).

7.4 (Cont.)

6) Equipment status should be denoted as follows: (Cont.)

b. Operating--This word means that a system, subsystem, train, component, or device is in operation and is performing its specified function(s), and that mark-ups or other conditions do not prevent it from maintaining that service.

c. Available--This word means that a system, subsystem, train, component, or device is operable and can be used as desired; however, it need not be operating.

7.5 Numercial Values

The use of numerical values should be consistent with the following rules:

1) Arabic numerals should be used.

2) Units of measure should be given for numerical values that represent observed data or calculated results. A slanted line should be used instead of "per"; examples: ft/sec, lbs/hr.

3) For numbers between zero and unity, the decimal point should be preceded by a zero; for example: 0.1.

4) The number of significant digits should be equal to the number of significant digits available from the display and the reading precision of the operator.

5) Acceptance values should be specified in such a way that addition and subtraction by the user is avoided if possible. This can generally be done by stating acceptance values as limits. Examples: 510° maximum, 300 psig minimum, 580° to 600°F. For calibration points, statement of the midpoint and its lower and upper limits for each data cell would accomplish the same purpose; for example, 10 milliamperes (9.5 to 10.5). Avoid using $\pm$.

6) Engineering units should always be specified for numerical values of process variables. They should be the same as those used on the control room displays, for example: psig, gpm, #/hr., °F.

7.6 Abbreviations, Letter Symbols, and Acronyms

Abbreviations may be used where necessary to save time and space, and when their meaning is unquestionably clear to the intended reader. The full meaning of the abbreviation should be covered in EOP specific training. Consistency should be maintained throughout the procedure.

7.6 Capitalization of abbreviations should be uniform. The period should be omitted in abbreviations except in cases where the omission would result in confusion.

Letter symbols may be used to represent operations, quantities, elements, relations, and qualities.

An acronym is a type of symbol formed by the initial letter or letters of each of the successive parts or major parts of a compound term. Acronyms may be used if they are defined or commonly used.

Symbols may be used to define relative magniture ($<$, $>$, $\leq$, $\geq$, $=$).

Abbreviations, symbols, and acronyms should not be overused. Their use should be for the benefit of the reader. They can be beneficial by saving reading time, ensuring clarity when space is limited, and communicating mathematic ideas. See Table 2 for a listing of examples of acceptable abbreviations.

8.0 TYPING FORMAT

8.1 General Typing Instructions

For emergency operating procedures, the following generaT requirements are to be followed.

1) Paper size should be 8-1/2 x 11 inches.

2) Method and type of print should be consistent throughout.

8.2 Margins

The page margins shall be:

Top - 1 inch
Bottom - 1 inch
Right - 1 inch
Left - 1 1/4 inches

8.3 Spacing

The procedure will be double spaced. One blank line will be left between the following:

1) Steps.

2) Logic Words and Steps.

8.3 (Cont.)

Two blank lines will be left between the following:

1) Cautions and Steps.

2) Title and Procedure.

3) Entry Conditions.

8.4 Check-Off Boxes

Check-Off Boxes will be directly after the applicable step. Their dimensions will be approximately the size of a typing line on each side.

8.5 Continuations

When a step is continued from page to page, the continuation will be noted: "RL4 (Continued)". Continuations should be avoided where possible.

8.6 Division of Words

Division of words should be avoided. Words shall not be divided between pages.

8.7 Use of Foldout Pages

When used, a foldout page is treated as a single page. It should follow the same format as a standard page except the width is different. The page should be folded so that a small margin exists between the fold and the right-hand edge of standard pages. This will reduce wear of the fold.

8.8 Use of Oversized Pages

Oversize pages should not be used. They should be reorganized or reduced to a standard page. If this cannot be done, a foldout page should be used.

8.9 Use of Reduced Pages

Reduced pages should be avoided whenever possible. Final size of reduced pages should be standard page size. Reduced pages should be readable.

9.0 FLOW CHARTS

Flow charts will be developed as an aid to the operator in utilization of the EOP's. The flow charts will provide the same guidance to the operator as the written procedures. Flow charts may be used independent of, or in conjunction with written procedures. This section provides guidelines for writing Emergency Operating Procedure Flowcharts from existing EOP's.

9.1 Symbols

Symbols to be used in flowchart writing are shown below:

CAUTIONS

CONTINGENT ACTIONS
INFORMATION
ACTIONS
ENTRY CONDITIONS

DECISION
MAKING
STEPS

These symbols may be enlarged as required to hold a sizable amount of information.

Cautions will be positioned adjacent to the applicable step.

9.2 General Instructions

In general, the procedure should start in the upper left corner of the page, beginning with an underlined heading to include title and EOP number. Immediately below the heading, a box labeled entry conditions should start the sequence of steps. Contingency EOPs (or any EOP entered from other procedures which has no entry conditions) will begin directly with a title and steps. Each step will be labeled with the corresponding text step number to the left of each step.

The format will in general have a flowpath of down and to the right of the page. Where more than one step or sequence of steps is to be performed at one time (branching occurs), the words "concurrently or concurrently enter" will help minmize confusion. Where branching takes place and a connecting line would make the flow chart cumbersome, the line will end with an arrow and directions. For example:

Then ——— Enter
EOP-C1

All entry points will be conspicuous. Arrows will indicate direction of flow. A sample section of a flowchart is provided on Figure 4.

Table 1. Action Verbs

Verb	Application
Allow	To permit a stated condition to be achieved prior to proceeding, for example, "allow discharge pressure to stabilize".
Assure	Make certain that a specified state or condition is established and will be maintained.
Bypassing	Temporarily disabling the functioning or an automatic protection feature.
Close	To change the physical position of a mechanical device so that it permits passage of electrical current, for example, "Close disconnect switch YUC-MDS20".
Complete	To accomplish specified procedural requirements, for example, "complete steps 7 through 9 of Section III".
Concurrently Execute	Carry out the required actions of more than one procedure or section simultaneously.
Defeating	Permanently disabling the logic or function of a system so as to prevent it from operating; generally indicates more than just the positioning of a bypass switch.
Enter	Branch to another procedure.
Establish	To make arrangement for a stated condition, for example, "establish communication with control room".
Go to	Branch to another section of a procedure.
Initiate	Operate readily available system controls as necessary to cause the identified action or function to occur.
Inspect	To measure, observe, or evaluate a feature or characteristic for comparison with specified limits; method of inspection should be included, for example, "visually inspect for leaks".
Maintain below (or above)	Take the action necessary to prevent the value of the parameter from rising above (or decreasing below) the identified limit, action level or range.
Open	To change the physical position of a mechanical device, such as valve or door to the unobstructed position that permits access or flow, for example, "open valve SWP-MOV71E".
Place	Refers to the repositioning of a switch or another control device.

Table 1. Action Verbs (Cont.)

Verb	Application
Prevent	Take whatever action is necessary to preclude the stated action, occurrence, etc. Where not otherwise qualified or prohibited, this includes jumpering, (or opening) contacts in the control logic of system components, deenergizing equipment, overriding automatic signals, etc.
Record	To document specified condition or characteristic, for example, "record discharge pressure".
Restore	Action necessary to return the value of a plant parameter or the status of plant equipment to the specified state or condition.
Secure	To terminate the operation of a system or subsystem.
Shut	To change the physical position of a mechanical device so that it prevents physical access or flow. For example: "Close SWP-MOV17E".
Stable	Defines the ability to maintain the value of a parameter within acceptable or specified limits.
Start	To initiate the operation of an electric or mechanical device directly or by remote control, for example, "start . . . pump"
Stop	To terminate operation, for example, "stop . . . pump"
Throttle	To operate a valve in an intermediate position to obtain a certain flow rate, for example, "throttle valve CHM-V201C to . . ."
Trip	To manually activate a semi-automatic feature, fro example, "trip breaker . . ."
Vent	To permit a gas or liquid confined under pressure to escape at a vent, for example, "vent . . . pump"
Verify	To observe an expected condition or characteristic, for example, "verify discharge pressure is stable"

TABLE 2

ABBREVIATIONS/ACRONYMS

ADS	-	Automatic Depressurization System
APRM	-	Average Power Range Monitor
CRD	-	Control Rod Drive
ECCS	-	Emergency Core Cooling System
HCU	-	Hydraulic Control Unit
HPCS	-	High Pressure Core Spray
HVAC	-	Heating, Ventilating and Air Conditioning
LCO	-	Limiting Condition for Operation
LOCA	-	Loss of Coolant Accident
LPCI	-	Low Pressure Coolant Injection
LPCS	-	Low Pressure Core Spray
MSIV	-	Main Steamline Isolation Valve
NDTT	-	Nil-Ductility Transition Temperature
NPSH	-	Net Positive Suction Head
RCIC	-	Reactor Core Isolation Cooling
RHR	-	Residual Heat Removal
RPS	-	Reactor Protection System
RPV	-	Reactor Pressure Vessel
RSCS	-	Rod Sequence Control System
RWCU	-	Reactor Water Cleanup
SBGT	-	Standby Gas Treatment

TABLE 2 (Cont.)

ABBREVIATIONS/ACRONYMS

SBLC	-	Standby liquid Control
SORV	-	Stuck Open Relief Valve
SRV	-	Safety Relief Valve
IAW	-	In accordance with
in	-	Inch, inches
ft	-	feet, foot
CDR	-	Cool Down Rate
Sec	-	Second, Seconds
mr	-	Millirem
RX	-	Reactor
Ci	-	Curie
lb	-	Pounds
	-	less than
|	-	greater than
^{o}F	-	degrees Fahrenheit
hr	-	hour
%	-	percent
PSIG	-	pounds per inch^2 gage
GPM	-	gallons per minute

NINE MILE POINT NUCLEAR STATION

EMERGENCY OPERATING PROCEDURES

PROCEDURE NO. ________

________ (TITLE) ________

APPROVALS	SIGNATURES	DATE AND INITIALS REVISION 0	REVISION 1	REVISION 2
Supervisor Operations	________	________	________	________
Station Superintendent	________	________	________	________

Summary of Pages

Revision 0 (Effective ________)

Page	Date

NIAGARA MOHAWK POWER CORPORATION

THIS PROCEDURE NOT TO BE
USED AFTER
SUBJECT TO PERIODIC REVIEW.

FIGURE 1 - TYPICAL TITLE PAGE

TITLE: Reactivity Control

ENTRY CONDITIONS:

1. Reactor water level < 12 inches.

2. Reactor pressure > 1045 psig.

3. Drywell pressure > 1.68 psig.

4. An MSIV isolation

5. A condition which requires a scram, and reactor power > 3% or cannot be determined.

Concurrently Execute:

EOP-RL RPV Level Control

EOP-RP RPV Pressure Control

EOP-RQ RPV Reactivity Control

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FIGURE 2 EXAMPLE ENTRY CONDITONS PAGE

1" margin

TITLE: Reactivity Control

CAUTION
Defeating RSCS Interlocks may be required to accomplish this step.

RQ17. Rapidly insert control rods manually until the reactor scram can be reset. ☐

RQ18. Reset the reactor scram. ☐

RQ19. Open charging water header isolation valve C12-F034. ☐

INSTRUCTIONS	ACTIONS
RQ20. IF the scram discharge volume vent and drain valves are open. → ☐	RQ20. THEN initiate a manual reactor scram. ☐
RQ21. IF the control rods moved inward. → ☐	RQ21. THEN go to RQ13. ☐

1 1/4" margin

1" margin

RQ22. Reset the reactor scram. ☐

1" margin

FIGURE 3 EXAMPLE FORMAT

RADIOACTIVITY RELEASE CONTROL EOP-RR

ENTRY CONDTIONS

1. Offsite radioactivity release rate above 3Ci/Sec

Isolate all primary systems that are discharging into areas outside the primary and secondary containments except systems required to assure adequate core cooling or shutdown the reactor

RR-1

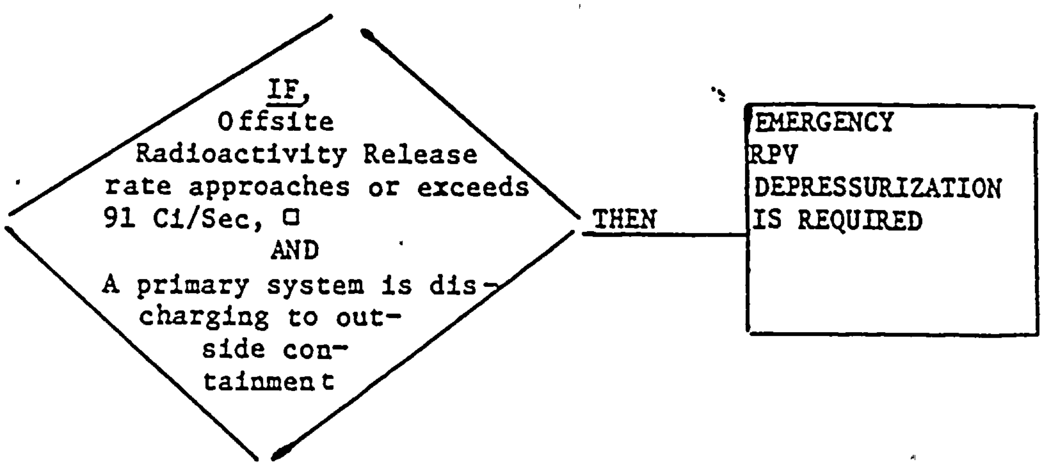

FIGURE 4 SAMPLE FLOWCHART FORMAT

App. G

APPENDIX G

TASK ANALYSIS FORMS

Task Description Form

Proc # ____________________ Proc Title ________________

Proc Step #	Task #	Task Title	Common To

TASK ANALYSIS DATA COLLECTION FORM   NMP   NMP 2   PAGE _____ OF _____

PROCEDURE:

TASK NUMBER:

DUPLICATE TASK:

ALTERNATE TASK:

ACTION STEP	EQUIPMENT NAME	CONTROL										INDICATOR									ID		LEGEND/OTHER PERFORMANCE REQUIREMENT
		POSITION	MODE					CSL	FLAG			STATE	UNITS	LOWER RANGE	EXP	UPPER RANGE	EXP	DIV	EXP		TYPE	NUMBER	

CODE
0-NO
1-YES

MODE
D-DISCRETE
C-CONTINUOUS

CSL/FLAG
01-AMBER 04-GREEN 09-WHITE 12-GRAY
02-BLACK 05-ORANGE 10-YELLOW 13-BEIGE
03-BLUE 07-RED 11-CLEAR 14-BROWN

LEVEL
S-STATE
V-VALUE
T-TREND

ID TYPE
I-INDICATOR
C-CONTROL
A-ANNUNCIATOR
O-OTHER PERFORMANCE REQUIREMENTS
N-NOT AVAILABLE

App. H

APPENDIX H

ENVIRONMENTAL MEASUREMENT FORMS

SOUND SURVEY RECORD

Plant: ____________ Date: ________ Time: ________ Sheet # ____ of ____

Measurements made by: ____________________

Equipment/Instrument used: ____________________

Serial #: ____________ Calibration date: ____________

Operator Work Station	db(A)	Octave Band Center Frequency					Remarks
		250	500	1K	2K	4K	

LIGHTING SURVEY ILLUMINANCE RECORD

Plant: ______________________________ Date: ____________ Time: _________

Measurements made by: _____________________________________ Sheet # ___ of ___

Equipment/Instrument used: ____

Serial #: ____________________________ Calibration date: __________________

Location Ref. No.	Panel I.D. No.	Full AC Ambient	Full Emergency	Other Conditions (Specify)

LIGHTING SURVEY - LUMINANCE AND REFLECTANCE RECORD

Plant: ______________________ Date: __________ Time: __________

Measurements made by: ______________________________ Sheet # ____ of ____

Equipment/Instrument used: ____

Serial #: ______________________ Calibration date: ______________

Location Ref. No.	Panel # and Surfaces	Record					Calculations				
		Panel		Meter/Display			Luminance Ratio of Display: Panel		Reflectance Ratio		
		Reflect. Pad	Panel Back-ground	Reflect. Pad	Surface w/Glare	Surface w/o Glare	w/Glare	w/o Glare	Panel: Pad	Meter/Display: Pad	
										w/Glare	w/o Glare

HUMIDITY/TEMPERATURE RECORD

Plant: ______________________ Date: ____________ Time: __________

Measurements made by: ______________________________ Sheet # ____ of ____

Equipment/Instrument used: ______________________________

Serial #: ______________________ Calibration date: ______________

Time	Height	Temperature	Humidity	Remarks
	Floor			
	6 ft.			
	Floor			
	6 ft.			
	Floor			
	6 ft.			
	Floor			
	6 ft.			
	Floor			
	6 ft.			
	Floor			
	6 ft.			
	Floor			
	6 ft.			
	Floor			
	6 ft.			
	Floor			
	6 ft.			
	Floor			
	6 ft.			

AIR VELOCITY SURVEY RECORD

Plant: ______________________ Date: __________ Time: __________

Measurements made by: ______________________ Sheet # ____ of ____

Equipment/Instrument used: ______________________

Serial #: ______________________ Calibration date: __________

Location	6 ft.	4 ft.

App. I

APPENDIX I

VALIDATION REVIEW WORKSHEET

OBSERVATIONS FROM VALIDATION

WALK-THROUGHS (WT) AND TALK-THROUGHS (TT)

Task or

Procedure: ____________________ ____

Number Title

TT	WT	Proc Step	Tape Elapsed Time	Criteria Topic	Observation Description

App. I.

APPENDIX J

ASSESSMENT ATTENDANCE RECORD

NINE MILE TWO DCRDR ASSESSMENT ATTENDANCE RECORD

Name	Co.	Title	DATE: 4/23 SUBJECT: Cat & Level	4/24 Cat & Level	4/25 Cat & Level	4/26 Cat & Level
Albert Hwu	GE	Sys. Engineer	7	6	-	4
Doug Helms	GE	Sys. Engineer	3	-	-	-
Pete Buttacavoli	SWEC	Sys. Coord.	7	7	3	4
Don Taylor	ARD	Human Factors	7	7	3	4
Art Vierling	NMPC	Team Leader	7	7	3	4
Barb Tesoriero	NMPC	CSO Operations	4 1/2	7	3	4
Mark Davis	NMPC	D Operations	4 1/2	7	3	4
Frank Conoway	NMPC	CSO Operations	-	6	-	4
Eric Townsend	NMPC	SSS Operations	-	2	-	-

Week Two

Name	Co.	Title	DATE: 4/30 SUBJECT: Cat & Level	5/1 Cat & Level	5/2 Fix/ No fix	5/3 Fix/ No Fix
Art Vierling	NMPC	Engineering	6	5	5	5
Frank Conoway	NMPC	Ops Unit II	7	7	7	5
Steve Davis		Ops Unit II	7	7	7	5
Jim Graff		Ops Unit II	7	7	4	0
Bob Spooner		Ops Unit II	7	7	7	5
Dan Holt		Ops Unit II	7	7	7	5
Pete Buttacavoli	SWEC		6	7	7	4
Albert Hwu	GE		6	7	7	5
Don Taylor	ARD		7	7	7	-

Week Three

Name	Co.	Title	DATE: 5/6 SUBJECT: Fix/ No Fix	5/7 Recommen-dation	5/8 Recommen-dation	5/26 Recommen-dation
Jay Lawrence	NMPC	Operations	5	7	7	7
Don Rennels	GE	Systems	7	7	7	7
Frank Conaway	NMPC	Operations Unit II	5	5	-	-
David Rathbon	NMPC	Operations Unit II	5	7	7	7
Dick Shannon	ARD		3	7	7	7
Pete Buttacavoli	SWEC	Systems	7	7	7	7
Art Vierling	NMPC	Engineering	6	4	4	6
Steve Davis	NMPC	Operations Unit II	-	2	-	-
Don Kent	NMPC	Startup & Test II	-	2	0	-

Week Four

Name	Co.	Title	DATE: 5/13 SUBJECT: Recommen-dation	5/14 Cat & Level	5/15 Cat & No fix	5/16 Fix/ No Fix
Art Vierling	NMPC	Engineering	6	6	5	6
Bob Bulluck	NMPC	Ops II	7	7	6	-
Gary Sanford	NMPC	Ops II (ASSS)	4	-	-	-
M.J. Colomb	NMPC/SSS		4	5	6	4
Don Rennels	GE	Systems	7	7	5	7
Mike Carson	NMPC	Ops II	7	7	6	7
Pete Buttacavoli	SWEC	CHOC	-	7	6	7
Kent Barnes	ARD		-	7	6	7
Mike Conway	NMPC	Ops II				6

(0590E)

NINE MILE TWO DCRDR ASSESSMENT ATTENDANCE RECORD

Name	Dept./Co.	6/4/85	6/5/85	6/6/85	6/7/85
A. Vierling	Eng.	5	7	7	7
S. Davis	Ops 2	-	7	7	4
D. Holt	Ops 2	5	7	7	7
L. Barnes	ARD	5	7	-	-
P. Buttacavoli	SWEC	5	7	7	-
J. Graff	Ops 2	4 1/2	6 1/2	5	4
A. Hwu	GE	1	-	-	-
B. Spooner	Ops 2	4 1/2	6 1/2	5	4
D. Mahaffy	ARD	-	-	7	7
D. Horst	ARD	-	-	7	7

Name	Dept./Co.	6/11/85	6/12/85	6/13/85	6/14/85
A. Vierling	NMPC Eng.	7	7	7	7
B. Klein	ARD	7	7	-	-
D. Rathbun	NMPC Ops II	6	7	7	-
K. Barnes	ARD	7	7	7	-
P. Buttacavoli	SWEC	7	7	7	-
M. Powell	NMPC Ops II	6	7	7	7
J. Lawrence	Ops	6	7	7	7

Name	Dept./Co.	7/9/85
A. Vierling	Eng.	7
R. Bergenstock	Ops 2	7
M. Churilla	Ops 2	7
D. Richards	Ops 2	7
R. Shannon	ARD	7

App. K

APPENDIX K

INCOMPLETE CHECKLIST ITEMS

INCOMPLETE CHECKLIST ITEMS

The following checklist items from NUREG-0700, Section 6 have not been completed due to the construction state of the NMP-2 Control Room. Many of these items are environmental and communications measures that can not be surveyed until the control room is in an operable condition. These items are expected to be completed by December 1985.

6.1.1.3.2
6.1.1.3.c
6.1.1.3.g
6.1.1.4.a-d
6.1.1.7
6.1.2.4.a-c
6.1.2.7.a-d
6.1.2.8.a-g
6.1.3.1.d
6.1.4.1.a-g
6.1.4.2.a,b,d,e
6.1.4.3.a-b
6.1.5.1.a-b
6.1.5.2.a-b
6.1.5.3.a-h
6.1.5.4.a-c
6.1.5.5.a-e
6.1.5.6.a-b
6.1.5.7.a-c

6.2.1.2.b.7-8
6.2.1.3.a-e
6.2.1.4.b.2
6.2.1.4.d
6.2.1.5.a-c
6.2.1.6.a.2
6.2.1.6.c
6.2.1.6.e.1
6.2.1.7.a-b
6.2.1.8.a-c
6.2.2.1.a-c
6.2.2.2.a-c
6.2.2.3.a-e
6.2.2.4.a-b
6.2.2.5.a-b
6.2.2.6.a-c
6.2.2.7.a-c

6.3.1.2.a
6.3.2.1.a,c,d,f
6.3.2.2.a
6.3.3.2.e
6.3.3.4.a
6.3.4.1.d.2

6.4.1.1.a.2
6.4.1.1.b.1-3
6.4.1.1.e.2,3
6.4.1.2.a
6.4.3.3.b.4
6.4.4.5.f

6.5.1.2.f
6.5.4.1.a,e,k
6.5.4.2.a
6.5.4.2.b.2,3
6.5.5.2.a-c

6.6.2.4.a
6.6.3.3.c

6.9.1.1.c.3
6.9.3.1.c
6.9.3.2.a,c,d

Vol. 2

3

DETAILED CONTROL ROOM DESIGN REVIEW
FINAL SUMMARY REPORT
PROGRAM IMPLEMENTATION
VOLUME 2

For

Nine Mile Point Unit 2

Submitted by

Niagara Mohawk Power Corporation

September 1985

4446n

TABLE OF CONTENTS

1.0 INTRODUCTION

Niagara Mohawk Power Corporation (NMPC) had a Detailed Control Room Design Review (DCRDR) performed on its Nine Mile Point Unit 2 plant (NMP-2). The purpose was to identify and correct design deficiencies in order to lower the probability of human error and to effectively mitigate emergency conditions. The following review processes were used to analyze the man/machine interface with the control room: historical document review, operator survey, inventory, task analysis, verification, checklist and validation. Because of these processes, potential Human Engineering Observations (HEOs) were identified. These potential HEOs were reviewed and assessed for their impact on plant safety, plant operability and NRC guidelines. Significant HEOs were designated Human Engineering Deficiencies (HEDs). Appropriate corrective actions for each HED then were determined and a schedule was developed for the implementation of these corrective actions.

2.0 RESULTS

The Appendices contain the completed Human Engineering Forms for the DCRDR at Nine Mile Point Unit 2. There are 443 Human Engineering Observations which can be divided into 200 HEDs or Fix items, and 191 No Fix and 52 Invalid HEOs. Table 2-1 lists the number of Fix and No Fix Observations by primary reference source. The main source of items (191 HEOs) came from the checklist. A further division of the Fix and No Fix HEOs by assessment category and level can be observed in Table 2-2.

Appendices A through K contain the Human Engineering Deficiencies by type of fix. These HEDs are not sorted by number. Appendix L functions as a cross-index for the HEDs. This section depicts each of the corrective actions in HED numerical order and gives the Appendix page number where the write-up can be found. Appendix M contains the Invalid and No Fix HEOs, which are sorted by number. Below are listed the fix categories and their HEDs:

Table 2-1

Number of Fix and No Fix Observations by Primary Reference Source

Reference Source	Fix	No Fix
Historical Survey	4	0
Operator Survey	58	37
Checklist	94	97
Verification	33	47
Validation	11	10
Total	200	191

Table 2-2

Number of Fix and No Fix Observations by Assessment Category and Level

Category/Level	Fix	No Fix
1A	1	0
1B	3	0
1D	0	0
1E	0	0
2C	63	1
2D	7	0
2E	0	0
3C	41	10
3D	85	10
4	0	170
Total	200	191

1. <u>Add components (28 HEDs in Appendix A)</u>.

    1. Add meters: 122, 211, 212, 126, 128, 130, 219, 931, 131, 958, 143, 220, 232, 942, 950

    2. Add annunciators: 133, 235.03, 309, 970, 972

    3. Add controls: 37.01, 37.03, 112, 165

    4. Add displays: 949, 993

    5. Add monitoring equipment: 225, 946

2. <u>Modify/Replace/Remove Components (22 HEDs in Appendix B)</u>.

    1. Modify/replace/remove controls: 238, 239, 69, 121, 72, 164, 184

    2. Modify/remove annunciators: 58, 154

    3. Establish maintenance procedures: 66, 108, 52, 54, 57

    4. Provide easy access to fuses: 282, 292.01, 292.02

    5. Establish/maintain an expendable inventory: 35, 203.01, 36, 106

    6. Modify displays: 287

3. <u>Relocate Components (6 HEDs in Appendix C)</u>.

    1. Relocate displays/controls: 291

    2. Rearrange/relocate meters: 83.02

3. Relocate CRT: 125

4. Rearrange/relocate annunciators: 150, 152, 155

4. Label Displays/Controls (50 HEDs in Appendix D).

   1. Ensure labels describe function: 39.02, 51, 96, 97, 256, 260, 266, 280, 157, 63, 107, 208, 169, 215, 95, 240, 171

   2. Standardize wording of labels: 3, 8, 138, 166, 199, 262, 76, 261, 917, 924, 907, 933, 936, 947, 290

   3. Utilize hierarchical labeling and demarcation of components: 83.13, 268, 185, 77, 257, 100

   4. Increase readability of labels: 64, 103, 163, 175, 99, 101, 91, 237, 274, 74.03

   5. Establish procedure for cleaning labels: 275

   6. Ensure label security: 93

5. Label Annunciators (6 HEDs in Appendix E).

   1. Ensure tiles describe function: 156, 188, 194

   2. Utilize coordinate location designation: 55

   3. Standardize wording of tiles: 193

   4. Permanently engrave tiles: 60

6. Modify Meter/Recorder Faces (26 HEDs in Appendix F).

   1. Change scale: 102.01, 88.02, 241, 243, 926, 928, 979, 901, 911, 912, 914, 919, 994, 922, 174, 941, 952, 978, 984, 207

   2. Change units: 216, 932, 916

   3. Ensure secure labeling: 233, 234

   4. Place tick mark on scale: 982

7. Utilize/Modify Mimics (8 HEDs in Appendix G).

   1. Mimic system flow: 182, 259

   2. Label mimic components: 98, 183, 269

   3. Utilize/standardize color coding: 206, 270, 271

8. Initiate Computer Modifications (17 HEDs in Appendix H).

   1. Alter CRT viewing angle: 31, 32, 33, 200

   2. Provide CRT message with large processing times: 10, 11

   3. Modify program to divide information: 23, 281

   4. Increase readability of information: 13, 14, 15, 198, 311, 312, 192.02

   5. Provide explicit commands for computer usage: 5

   6. Remove enable button: 202

9. <u>Utilize Color Coding on Displays/Controls (11 HEDs in Appendix I)</u>.

   1. Utilize shading to identify function: 61, 142, 226.01, 288, 904, 151, 153, 160

   2. Utilize zone banding: 104, 137

   3. Standardize color coding conventions: 277

10. <u>Operator Training and Operational Procedures Development/Usage: (19 HEDs in Appendix J)</u>.

   1. Operator training: 47, 79.01, 37.02, 53, 59, 187, 79.03, 159, 195, 170, 186

   2. Facilitate document usage: 40, 248, 204, 205

   3. Develop operational procedures: 283, 285, 284, 286

11. <u>Modify Communications Systems (7 HEDs in Appendix K)</u>.

   1. Increase transmission capability: 44, 46, 146

   2. Establish priority for emergency messages: 42, 48, 196

   3. Develop procedure for periodic testing: 41

3.0 SUMMARY OF CORRECTIVE ACTION STUDIES

The purpose of the below listed studies is to satisfactorily complete the corrective actions which have resulted from the findings of the DCRDR. These studies have either been completed or are presently being performed. These studies are:

1. Center Desk Study. Analyze operator information needs and tasks associated with the center desk area in the control room; and provide specific guidance for the Human Engineering Observations (HEOs) identified in the DCRDR relating to the center desk area.

2. Annunciator Study. Review the location and wording of each annunciator on the main control panels, prepare a data base to be used for comparison of labeling words and abbreviations, and respond appropriately to the Human Engineering Observations from the DCRDR relating to annunciators.

3. Inventory Discrepancy Study. Perform an inventory analysis of the completed control room; and provide a discrepancy list of the components reviewed in the DCRDR from the data base drawings and those that were additions that had not been reviewed.

4. Zone Banding Study. Determine the meters which should be banded and their appropriate color limits, and provide guidance to the Human Engineering Deficiencies resulting from the DCRDR relating to meters.

5. Labeling Study. Review all labels in the control room and remote shutdown panel including component labels and computer displays. Recommendations to fix labels will include wordiness, abbreviations, function, hierarchical level, placement, legend and pushbutton light discrimination and demarcation. The solution package will identify location, size, color, printing, letter and line separation, and stroke width. Mimic labeling and color coding of the panels will also be studied. This "follow-up" package will be responsive to those Human Engineering Deficiencies relating to labels and mimics.

6. Follow-Up to Solution Packages. Verify that the results of the solution packages of Annunciator, Labeling, Zone Banding and Center Desk studies were properly implemented. As each of the follow on studies are implemented, the appropriate sections of the checklist are surveyed to ensure that existing discrepancies have been resolved and that no new problems have been created. Evaluate the results from the Inventory Discrepancies study, determine as to any potential Human Engineering Observations, and provide a solution package for each individual fix. Conduct additional analyses of the DRMS and GEMS, the SPDS interface with the ERF, and color coding of CRT displays.

7. Human Factors Design Manual. Human factors reference data is consolidated from NUREG-0700 and MIL-STD-1472C. This manual is to be used by the Nuclear Engineering Department to ensure the implementation of sound human factors principles in all control room modifications. Information contained includes control room layout and organization, work

station design, labeling, mimics and demarcation lines, annunciators, color banding, and scale markings. Codes and conventions for the use of color and switch types are established and listed specifically for the NMP-2 control room. A list of standard abbreviations and acronyms for NMP-2 is provided.

App. A

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07-~~170~~ 54-91

8-13-91

Plant computer alarm printouts (before & after)

make 1 copy for walt Jensen

08-12-91

235534	GMHAC07	STTR CLG WTR TK VENT H2	HIGH			
235538	GMHAC07	STTR CLG WTR TK VENT H2	NORMAL			
235554	GMHAC07	STTR CLG WTR TK VENT H2	HIGH			
235558	GMHAC07	STTR CLG WTR TK VENT H2	NORMAL			
235749	HVRBC26	RX HEAD CAVITY EVAC FLTR	TRBL			
235749	HVRBC25	HVRS TRBL 2CES-IPNL101	TRBL			
235749	HVGBC02	RB VENT/GLYCOL SYSTEM	TRBL			
235750	HVRBC26	RX HEAD CAVITY EVAC FLTR	NORMAL			
235750	HVRBC25	HVRS TRBL 2CES-IPNL101	NORMAL			
235750	HVGBC02	RB VENT/GLYCOL SYSTEM	NORMAL			
235757	GMHAC07	STTR CLG WTR TK VENT H2	HIGH			
235818	GMHAC07	STTR CLG WTR TK VENT H2	NORMAL			
235900	HVCMA04	RELAY ROOM HMDT MT8B	OK	49.31	50.00	%RH
235920	CCPPA01	RBCLCW PMP DIS HDR PRESS	OK	39.74	40.00	PSIG
235935	CCPPA01	RBCLCW PMP DIS HDR PRESS	HI	40.10	40.00	PSIG
000010	DFTBC30	TB FLR DRN SYSTEM	TRBL			
000016	NSSQB10H	HOURLY AVG CTP (P4)	HI	3323.31	3323.00	MW
000155	ASSFA01	AIR EJCTR A INL STM FLO	*LO	1.59	12.50	KLBS/H
000200	ASSFA01	AIR EJCTR A INL STM FLO	*LO	0.00	12.50	KLBS/H
000515	HVCMA04	RELAY ROOM HMDT MT8B	HI	50.06	50.00	%RH
000727	GMHAC07	STTR CLG WTR TK VENT H2	HIGH			
000735	GMHAC07	STTR CLG WTR TK VENT H2	NORMAL			
000804	WTSBC03	2WTS-IPNL327 SYS TRBL	TRBL			
000804	MWSBC03	DEMIN WTR STOR+XFER SYS	TRBL			
000806	WTSBC03	2WTS-IPNL327 SYS TRBL	ALMCLR			
000805	MWSBC03	DEMIN WTR STOR+XFER SYS	NORMAL			
000846	GMHAC07	STTR CLG WTR TK VENT H2	HIGH			
000857	GMHAC07	STTR CLG WTR TK VENT H2	NORMAL			
000915	CCPPA01	RBCLCW PMP DIS HDR PRESS	OK	39.82	40.00	PSIG
000920	CCPPA01	RBCLCW PMP DIS HDR PRESS	HI	40.14	40.00	PSIG
001112	GMHAC07	STTR CLG WTR TK VENT H2	HIGH			
001126	GMHAC07	STTR CLG WTR TK VENT H2	NORMAL			
001215	CCPPA01	RBCLCW PMP DIS HDR PRESS	*HI	40.74	40.00	PSIG
001225	WTSBC03	2WTS-IPNL327 SYS TRBL	TRBL			
001225	MWSBC03	DEMIN WTR STOR+XFER SYS	TRBL			
001227	WTSBC03	2WTS-IPNL327 SYS TRBL	ALMCLR			
001227	MWSBC03	DEMIN WTR STOR+XFER SYS	NORMAL			
001553	GMHAC07	STTR CLG WTR TK VENT H2	HIGH			
001554	GMHAC07	STTR CLG WTR TK VENT H2	NORMAL			
001730	HVCMA04	RELAY ROOM HMDT MT8B	OK	49.37	50.00	%RH
001955	GMHAC07	STTR CLG WTR TK VENT H2	HIGH			
001956	GMHAC07	STTR CLG WTR TK VENT H2	NORMAL			
002011	SFCBC07	SFP CLEANUP SYS IPNL141	TRBL			
002013	SFCBC07	SFP CLEANUP SYS IPNL141	ALMCLR			
002259	GMHAC07	STTR CLG WTR TK VENT H2	HIGH			
002304	GMHAC07	STTR CLG WTR TK VENT H2	NORMAL			
002321	SFCBC10	SFP CASK HANDLING SYS	TRBL			
002322	SFCBC10	SFP CASK HANDLING SYS	ALMCLR			
002324	SFCBC10	SFP CASK HANDLING SYS	TRBL			
002327	SFCBC10	SFP CASK HANDLING SYS	ALMCLR			
002435	HVCMA04	RELAY ROOM HMDT MT8B	HI	50.19	50.00	%RH
002457	GMHAC07	STTR CLG WTR TK VENT H2	HIGH			
002501	GMHAC07	STTR CLG WTR TK VENT H2	NORMAL			
002700	GMHAC07	STTR CLG WTR TK VENT H2	HIGH			
002708	GMHAC07	STTR CLG WTR TK VENT H2	NORMAL			
002724	GMHAC07	STTR CLG WTR TK VENT H2	HIGH			

002724	EGSPC03	EDG1 ENG JACKET WTR PR	LOW
002724	EGSPC01	EDG1 ENG LUBE OIL PRESS	LOW
002724	EGSPC17	EDG1 CRANKCASE PRESS	HIGH
002724	EGSPC13	EDG1 RCVR TK2A AIR PRESS	LOW
002724	EGSPC11	EDG1 RCVR TK1A AIR PRESS	LOW
002724	EGSPC09	EDG1 ENG FLTRS DIFF PR	OPEN
002724	EGSTC03	EDG1 ENG JKT WTR TEMP	ABNORM
002724	EGSTC01	EDG1 ENG LUBE OIL TEMP	ABNORM
002724	EGSUC03	EDG1 ENG SEQ INCOMPLETE	ALARM
002724	EGSUC23	EDG1 ENG JKT WTR TMP	HIGH
002724	EGSUC21	EDG1 MN+CONN ROD BRG TMP	HIGH
002724	EGSUC19	EDG1 TURBO LUBE OIL PR	LOW
002724	EGSUC17	EDG1 ENG LUBE OIL PRESS	LOW
002724	EGSUC11	EDG1 VOLT CONTROLLED OC	ALARM
002724	EGSUC09	EDG1 POT XFMER FUSE	ALARM
002724	EGSUC25	EDG1 ENG LUBE OIL TEMP	HIGH
002724	EGSPC26	EDG1 JKT WTR CIRC PMP PR	LOW
002724	EGABC04	STBY DG1 CPRSRS TRBL	ALARM
002724	EGPEC05	EDG1 OVERVOLTAGE	OVRVOLT
002724	EGPUC09	EDG1 BU PROT LKO RLY 1	TRIPPED
002724	EGPUC05	EDG1 DIFF PROT LKO RLY	TRIPPED
002724	EGPIC09	EDG1 FLD GRD FAULT	FAULT
002724	EGPUC13	EDG1 GRD OVERCURRENT	FAULT
002724	EGPUC11	EDG1 OVERSPEED TRIP	TRIPPED
002724	EGPNC01	EDG 2EGS*EG1 VIBRATION	HIGH
002724	EGSBC05	EDG1 CONT MAINT POS/INOP	ALARM
002724	EGSBC03	EDG1 GEN PANEL DC PWR	FAIL
002724	EGPBC23	EDG1 MAINT MODE	ALARM
002724	EGSLC05	EDG1 DAY TK LVL OFF NORM	ALARM
002724	EGSLC03	EDG1 ENG JKT WTR LVL	LOW
002727	EGSPC07	EDG1 ENG FUEL OIL PMP PR	NORMAL
002727	EGSPC03	EDG1 ENG JACKET WTR PR	NORMAL
002727	EGSPC01	EDG1 ENG LUBE OIL PRESS	NORMAL
002727	EGSPC17	EDG1 CRANKCASE PRESS	NORMAL
002727	EGSPC15	EDG1 START AIR PR L/TRBL	ALMCLR
002727	EGSPC13	EDG1 RCVR TK2A AIR PRESS	NORMAL
002727	EGSPC11	EDG1 RCVR TK1A AIR PRESS	NORMAL
002727	EGSPC09	EDG1 ENG FLTRS DIFF PR	NORMAL
002727	EGSTC03	EDG1 ENG JKT WTR TEMP	ALMCLR
002727	EGSTC01	EDG1 ENG LUBE OIL TEMP	ALMCLR
002727	EGSUC03	EDG1 ENG SEQ INCOMPLETE	ALMCLR
002727	EGSUC23	EDG1 ENG JKT WTR TMP	ALMCLR
002727	EGSUC21	EDG1 MN+CONN ROD BRG TMP	ALMCLR
002727	EGSUC19	EDG1 TURBO LUBE OIL PR	ALMCLR
002727	EGSUC17	EDG1 ENG LUBE OIL PRESS	ALMCLR
002727	EGSUC11	EDG1 VOLT CONTROLLED OC	ALMCLR
002727	EGSUC09	EDG1 POT XFMER FUSE	ALMCLR
002727	EGSUC25	EDG1 ENG LUBE OIL TEMP	ALMCLR
002727	EGSPC26	EDG1 JKT WTR CIRC PMP PR	NORMAL
002727	EGABC04	STBY DG1 CPRSRS TRBL	ALMCLR
002727	EGPEC05	EDG1 OVERVOLTAGE	NORMAL
002727	EGPUC09	EDG1 BU PROT LKO RLY 1	ALMCLR
002727	EGPUC05	EDG1 DIFF PROT LKO RLY	ALMCLR
002727	EGPIC09	EDG1 FLD GRD FAULT	ALMCLR
002727	EGPUC13	EDG1 GRD OVERCURRENT	ALMCLR

002727	EGPUC11	EDG1 OVERSPEED TRIP	ALMCLR
002727	EGPNC01	EDG 2EGS*EG1 VIBRATION	NORMAL

002733	GMHAC07	STTR CLG WTR TK VENT H2	NORMAL
002837	GMHAC07	STTR CLG WTR TK VENT H2	HIGH
002841	GMHAC07	STTR CLG WTR TK VENT H2	NORMAL
002900	HVGBC01	TB VENT/GLYCOL SYSTEM	TRBL
002900	HVTBC06	TB VENT SYS TRBL	ALARM
002902	HVGBC01	TB VENT/GLYCOL SYSTEM	NORMAL
002902	HVTBC06	TB VENT SYS TRBL	ALMCLR
002942	EGSPC07	EDG1 ENG FUEL OIL PMP PR	LOW
002942	EGSPC03	EDG1 ENG JACKET WTR PR	LOW
002942	EGSPC01	EDG1 ENG LUBE OIL PRESS	LOW
002942	EGSPC17	EDG1 CRANKCASE PRESS	HIGH
002942	EGSPC15	EDG1 START AIR PR L/TRBL	ALARM
002942	EGSPC13	EDG1 RCVR TK2A AIR PRESS	LOW
002942	EGSPC11	EDG1 RCVR TK1A AIR PRESS	LOW
002942	EGSPC09	EDG1 ENG FLTRS DIFF PR	OPEN
002942	EGSTC03	EDG1 ENG JKT WTR TEMP	ABNORM
002942	EGSTC01	EDG1 ENG LUBE OIL TEMP	ABNORM
002942	EGSUC03	EDG1 ENG SEQ INCOMPLETE	ALARM
002942	EGSUC23	EDG1 ENG JKT WTR TMP	HIGH
002942	EGSUC21	EDG1 MN+CONN ROD BRG TMP	HIGH
002942	EGSUC19	EDG1 TURBO LUBE OIL PR	LOW
002942	EGSUC17	EDG1 ENG LUBE OIL PRESS	LOW
002942	EGSUC11	EDG1 VOLT CONTROLLED OC	ALARM
002942	EGSUC09	EDG1 POT XFMER FUSE	ALARM
002942	EGSUC25	EDG1 ENG LUBE OIL TEMP	HIGH
002942	EGSPC26	EDG1 JKT WTR CIRC PMP PR	LOW
002942	EGABC04	STBY DG1 CPRSRS TRBL	ALARM
002942	EGPEC05	EDG1 OVERVOLTAGE	OVRVOLT
002942	EGPUC09	EDG1 BU PROT LKO RLY 1	TRIPPED
002942	EGPUC05	EDG1 DIFF PROT LKO RLY	TRIPPED
002942	EGPIC09	EDG1 FLD GRD FAULT	FAULT
002942	EGPUC13	EDG1 GRD OVERCURRENT	FAULT
002942	EGPUC11	EDG1 OVERSPEED TRIP	TRIPPED
002942	EGPNC01	EDG 2EGS*EG1 VIBRATION	HIGH
002942	EGSBC05	EDG1 CONT MAINT POS/INOP	ALARM
002942	EGSBC03	EDG1 GEN PANEL DC PWR	FAIL
002942	EGPBC23	EDG1 MAINT MODE	ALARM
002942	EGSLC05	EDG1 DAY TK LVL OFF NORM	ALARM
002942	EGSLC03	EDG1 ENG JKT WTR LVL	LOW
002942	HVYTC14	ELEC BAY AREA VENT SYS	TRBL
002943	HVYTC14	ELEC BAY AREA VENT SYS	NORMAL
002945	EGSPC07	EDG1 ENG FUEL OIL PMP PR	NORMAL
002945	EGSPC03	EDG1 ENG JACKET WTR PR	NORMAL
002945	EGSPC01	EDG1 ENG LUBE OIL PRESS	NORMAL
002945	EGSPC17	EDG1 CRANKCASE PRESS	NORMAL
002945	EGSPC15	EDG1 START AIR PR L/TRBL	ALMCLR
002945	EGSPC13	EDG1 RCVR TK2A AIR PRESS	NORMAL
002945	EGSPC11	EDG1 RCVR TK1A AIR PRESS	NORMAL
002945	EGSPC09	EDG1 ENG FLTRS DIFF PR	NORMAL

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002945	EGSTC03	EDG1 ENG JKT WTR TEMP	ALMCLR
002945	EGSTC01	EDG1 ENG LUBE OIL TEMP	ALMCLR
002945	EGSUC03	EDG1 ENG SEQ INCOMPLETE	ALMCLR
002945	EGSUC23	EDG1 ENG JKT WTR TMP	ALMCLR
002945	EGSUC21	EDG1 MN+CONN ROD BRG TMP	ALMCLR
002945	EGSUC19	EDG1 TURBO LUBE OIL PR	ALMCLR
002945	EGSUC17	EDG1 ENG LUBE OIL PRESS	ALMCLR

002945	EGPUC09	EDG1 BU PROT LKO RLY	ALMCLR		
002945	EGPUC05	EDG1 DIFF PROT LKO RLY	ALMCLR		
002945	EGPIC09	EDG1 FLD GRD FAULT	ALMCLR		
002945	EGPUC13	EDG1 GRD OVERCURRENT	ALMCLR		
002945	EGPUC11	EDG1 OVERSPEED TRIP	ALMCLR		
002945	EGPNC01	EDG 2EGS*EG1 VIBRATION	NORMAL		
002945	EGSBC05	EDG1 CONT MAINT POS/INOP	ALMCLR		
002945	EGSBC03	EDG1 GEN PANEL DC PWR	NORMAL		
002945	EGPBC23	EDG1 MAINT MODE	ALMCLR		
002945	EGSLC05	EDG1 DAY TK LVL OFF NORM	ALMCLR		
002945	EGSLC03	EDG1 ENG JKT WTR LVL	ALMCLR		
003017	SWTBC07	SWT SYSTEM TROUBLE	ALMCLR		
003028	GMHAC07	STTR CLG WTR TK VENT H2	HIGH		
003035	GMHAC07	STTR CLG WTR TK VENT H2	NORMAL		
003329	GMHAC07	STTR CLG WTR TK VENT H2	HIGH		
003338	GMHAC07	STTR CLG WTR TK VENT H2	NORMAL		
003520	CSHBC13	EDG2 TROUBLE	ALARM		
003522	CSHBC13	EDG2 TROUBLE	ALMCLR		
003535	GMHAC07	STTR CLG WTR TK VENT H2	HIGH		
003541	GMHAC07	STTR CLG WTR TK VENT H2	NORMAL		
003628	GMHAC07	STTR CLG WTR TK VENT H2	HIGH		
003642	GMHAC07	STTR CLG WTR TK VENT H2	NORMAL		
003651	HVYBC16	SCREENWELL BLDG VENT SYS	TRBL		
003653	HVYBC16	SCREENWELL BLDG VENT SYS	ALMCLR		
003745	GMHAC07	STTR CLG WTR TK VENT H2	HIGH		
003751	GMHAC07	STTR CLG WTR TK VENT H2	NORMAL		
003935	HVCMA04	RELAY ROOM HMDT MT8B	OK	48.81	50.00 *RH
004222	RMSRC76	PROCESS AIR RADN MON ACT	ALARM		
004230	RMSRC76	PROCESS AIR RADN MON ACT	NORMAL		
004430	HVCMA04	RELAY ROOM HMDT MT8B	HI	50.31	50.00 *RH
004545	EGSPC14	EDG3 RCVR TK2B AIR PRESS	NORMAL		
004547	EGSPC08	EDG3 ENG FUEL OIL PMP PR	LOW		
004547	EGSPC06	EDG3 CIRC PP LUBE OIL PR	LOW		
004547	EGSPC04	EDG3 ENG JACKET WTR PR	LOW		
004547	EGSPC02	EDG3 ENG LUBE OIL PRESS	LOW		
004547	EGSPC18	EDG3 CRANKCASE PRESS	HIGH		
004547	EGSPC16	EDG3 START AIR PR L/TRBL	ALARM		
004547	EGSPC14	EDG3 RCVR TK2B AIR PRESS	LOW		
004547	EGSPC10	EDG3 ENG FLTRS DIFF PR	HIGH		
004547	EGSTC04	EDG3 ENG JKT WTR TEMP	ABNORM		
004547	EGSTC02	EDG3 ENG LUBE OIL TEMP	ABNORM		
004547	EGSUC04	EDG3 ENG SEQ INCOMPLETE	ALMCLR		
004547	EGSUC22	EDG3 MN+CONN ROD BRG TMP	HIGH		

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004547	EGSUC20	EDG3 TURBO LUBE OIL PR	LOW
004547	EGSUC18	EDG3 ENG LUBE OIL PRESS	LOW
004547	EGSUC12	EDG3 VOLT CONTROLLED OC	TRIPPED
004547	EGSUC26	EDG3 ENG LUBE OIL TEMP	HIGH
004547	EGPEC06	EDG3 OVERVOLTAGE	OVRVOLT
004547	EGPUC10	EDG3 BU PROT LKO RLY	TRIPPED
004547	EGPUC07	EDG3 DIFF PROT LKO RLY	TRIPPED
004547	EGPIC10	EDG3 FLD GRD FAULT	FAULT
004547	EGPUC14	EDG3 GRD OVERCURRENT	FAULT
004547	EGPUC12	EDG3 OVERSPEED TRIP	TRIPPED
004547	EGSBC06	EDG3 CONT MAINT POS/INOP	ALARM
004547	EGSBC04	EDG3 GEN PANEL DC PWR	FAIL
004547	EGPBC24	EDG3 MAINT MODE	ALARM

004558	EGSPC06	EDG3 CIRC PP LUBE OIL PR	NORMAL			
004558	EGSPC04	EDG3 ENG JACKET WTR PR	NORMAL			
004558	EGSPC02	EDG3 ENG LUBE OIL PRESS	NORMAL			
004558	EGSPC18	EDG3 CRANKCASE PRESS	NORMAL			
004558	EGSPC16	EDG3 START AIR PR L/TRBL	ALMCLR			
004558	EGSPC14	EDG3 RCVR TK2B AIR PRESS	NORMAL			
004558	EGSPC12	EDG3 RCVR TK1B AIR PRESS	NORMAL			
004558	EGSPC10	EDG3 ENG FLTRS DIFF PR	NORMAL			
004558	EGSTC04	EDG3 ENG JKT WTR TEMP	ALMCLR			
004558	EGSTC02	EDG3 ENG LUBE OIL TEMP	ALMCLR			
004558	EGSUC04	EDG3 ENG SEQ INCOMPLETE	TRIPPED			
004558	EGSUC02	EDG3 TURBO THRUST BRG	ALMCLR			
004558	EGSUC22	EDG3 MN+CONN ROD BRG TMP	ALMCLR			
004558	EGSUC20	EDG3 TURBO LUBE OIL PR	ALMCLR			
004558	EGSUC18	EDG3 ENG LUBE OIL PRESS	ALMCLR			
004558	EGSUC12	EDG3 VOLT CONTROLLED OC	ALMCLR			
004558	EGSUC26	EDG3 ENG LUBE OIL TEMP	ALMCLR			
004558	EGPEC06	EDG3 OVERVOLTAGE	NORMAL			
004558	EGPUC10	EDG3 BU PROT LKO RLY	ALMCLR			
004558	EGPUC07	EDG3 DIFF PROT LKO RLY	ALMCLR			
004558	EGPIC10	EDG3 FLD GRD FAULT	ALMCLR			
004558	EGPUC14	EDG3 GRD OVERCURRENT	ALMCLR			
004558	EGPUC12	EDG3 OVERSPEED TRIP	ALMCLR			
004558	EGSBC06	EDG3 CONT MAINT POS/INOP	ALMCLR			
004558	EGSBC04	EDG3 GEN PANEL DC PWR	NORMAL			
004558	EGPBC24	EDG3 MAINT MODE	ALMCLR			
004558	EGSLC06	EDG3 DAY TK LVL OFF NORM	ALMCLR			
004558	EGSLC04	EDG3 ENG JKT WTR LVL	ALMCLR			
004558	EGSLC02	EGD3 CRANKCASE LVL	NORMAL			
005111	DFTBC30	TB FLR DRN SYSTEM	ALMCLR			
005434	DFTBC30	TB FLR DRN SYSTEM	TRBL			
005830	HVCMA04	RELAY ROOM HMDT MT8B	OK	48.87	50.00	%RH
010430	HVCMA04	RELAY ROOM HMDT MT8B	HI	50.44	50.00	%RH
010624	GMHAC07	STTR CLG WTR TK VENT H2	HIGH			
010634	GMHAC07	STTR CLG WTR TK VENT H2	NORMAL			
010728	GMHAC07	STTR CLG WTR TK VENT H2	HIGH			
010729	GMHAC07	STTR CLG WTR TK VENT H2	NORMAL			
011121	ABFBC04	AUX BLR SYS 2CES-IPNL508	TRBL			

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011121	HVIBC01	AUX BLR RM VENT SYS	TRBL			
011123	GMHAC07	STTR CLG WTR TK VENT H2	HIGH			
011124	ABFBC04	AUX BLR SYS 2CES-IPNL508	NORMAL			
011124	HVIBC01	AUX BLR RM VENT SYS	NORMAL			
011126	GMHAC07	STTR CLG WTR TK VENT H2	NORMAL			
011254	GMHAC07	STTR CLG WTR TK VENT H2	HIGH			
011258	GMHAC07	STTR CLG WTR TK VENT H2	NORMAL			
011800	HVCMA04	RELAY ROOM HMDT MT8B	OK	48.94	50.00	%RH
012310	CNDBC01	2CND-IPNL287 SYS TROUBLE	TRBL			
012321	CNDBC01	2CND-IPNL287 SYS TROUBLE	ALMCLR			
012345	GMHAC07	STTR CLG WTR TK VENT H2	HIGH			
012347	GMHAC07	STTR CLG WTR TK VENT H2	NORMAL			
012415	HVCMA04	RELAY ROOM HMDT MT8B	HI	50.44	50.00	%RH
012422	GMHAC07	STTR CLG WTR TK VENT H2	HIGH			
012438	GMHAC07	STTR CLG WTR TK VENT H2	NORMAL			
012814	OFGTC28	DRYER DRY1A OUTLET TEMP	HIGH			
013013	RMSRC91	MN STK LOSS OF CMPTR PWR	ALARM			
013016	RMSRC91	MN STK LOSS OF CMPTR PWR	NORMAL			

013545	CNDBC01	2CND-IPNL287 SYS TROUBLE	TRBL			
013547	CNDBC01	2CND-IPNL287 SYS TROUBLE	ALMCLR			
013550	GMHAC07	STTR CLG WTR TK VENT H2	HIGH			
013551	CNDBC01	2CND-IPNL287 SYS TROUBLE	TRBL			
013552	GMHAC07	STTR CLG WTR TK VENT H2	NORMAL			
013552	CNDBC01	2CND-IPNL287 SYS TROUBLE	ALMCLR			
013554	CNDBC01	2CND-IPNL287 SYS TROUBLE	TRBL			
013557	CNDBC01	2CND-IPNL287 SYS TROUBLE	ALMCLR			
013558	CNDBC01	2CND-IPNL287 SYS TROUBLE	TRBL			
013559	CNDBC01	2CND-IPNL287 SYS TROUBLE	ALMCLR			
013600	CNDBC01	2CND-IPNL287 SYS TROUBLE	TRBL			
013608	CNDBC01	2CND-IPNL287 SYS TROUBLE	ALMCLR			
013609	RMSRC91	MN STK LOSS OF CMPTR PWR	ALARM			
013610	RMSRC91	MN STK LOSS OF CMPTR PWR	NORMAL			
013655	HVCMA04	RELAY ROOM HMDT MT8B	OK	49.00	50.00	%RH
013941	RMSRC91	MN STK LOSS OF CMPTR PWR	ALARM			
013946	RMSRC91	MN STK LOSS OF CMPTR PWR	NORMAL			
014031	GMHAC07	STTR CLG WTR TK VENT H2	HIGH			
014034	GMHAC07	STTR CLG WTR TK VENT H2	NORMAL			
014306	GMHAC07	STTR CLG WTR TK VENT H2	HIGH			
014310	GMHAC07	STTR CLG WTR TK VENT H2	NORMAL			
014310	HVCMA04	RELAY ROOM HMDT MT8B	HI	50.50	50.00	%RH
014311	CNSFA01	CND XFR PUMP HDR FLOW	OK	309.56	300.00	GPM
014756	GMHAC07	STTR CLG WTR TK VENT H2	HIGH			
014800	GMHAC07	STTR CLG WTR TK VENT H2	NORMAL			
014903	CNDBC01	2CND-IPNL287 SYS TROUBLE	TRBL			
014904	CNDBC01	2CND-IPNL287 SYS TROUBLE	ALMCLR			
014911	CNSFA01	CND XFR PUMP HDR FLOW	LO	298.93	300.00	GPM
014912	CNDBC01	2CND-IPNL287 SYS TROUBLE	TRBL			
014913	CNDBC01	2CND-IPNL287 SYS TROUBLE	ALMCLR			
014915	CNDBC01	2CND-IPNL287 SYS TROUBLE	TRBL			
014917	CNDBC01	2CND-IPNL287 SYS TROUBLE	ALMCLR			

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015004	DFTBC30	TB FLR DRN SYSTEM	ALMCLR			
015158	DSMZC01	2DSM-TK4A HI WTR LV78A	CLOSED			
015325	SSTCA18	CNST DEMIN IB EFFL COND	OK	0.00	0.20	MMHO/C
015444	CNDBC01	2CND-IPNL287 SYS TROUBLE	TRBL			
015445	CNDBC01	2CND-IPNL287 SYS TROUBLE	ALMCLR			
015448	CNDBC01	2CND-IPNL287 SYS TROUBLE	TRBL			
015515	HVCMA04	RELAY ROOM HMDT MT8B	OK	49.00	50.00	%RH
015612	GMHAC07	STTR CLG WTR TK VENT H2	HIGH			
015624	GMHAC07	STTR CLG WTR TK VENT H2	NORMAL			
015625	CNDBC01	2CND-IPNL287 SYS TROUBLE	ALMCLR			
015731	HDLTA12	3PT HTR DCL3C DR OUT TMP	OK	136.14	137.00	DEG F
015928	RMSRC07	MN STK LOSS OF SMPL FLO	NORMAL			
020011	NSSQB10H	HOURLY AVG CTP (P4)	OK	3322.88	3323.00	MW
020103	OFGTC28	DRYER DRY1A OUTLET TEMP	NORMAL			
020225	HVCMA04	RELAY ROOM HMDT MT8B	HI	50.50	50.00	%RH
020234	RHSBC20	RHR PUMP 1A STATUS	RUN			
020235	RHSBC23	RHR LOOP A PMP DISCH PR	HIGH			
020322	RHSBC26	RHR A INJECTION FLOW	NORMAL			
020427	IHSBC01	SPDS PARAMETER ALARM	TRBL			
020444	IHSBC01	SPDS PARAMETER ALARM	NORMAL			
020540	CNDBC01	2CND-IPNL287 SYS TROUBLE	TRBL			
020545	CNDBC01	2CND-IPNL287 SYS TROUBLE	ALMCLR			
020600	OFGTC28	DRYER DRY1A OUTLET TEMP	HIGH			
020613	GMHAC07	STTR CLG WTR TK VENT H2	HIGH			

021046	CNSFA01	CND XFR PUMP HDR FLOW	LO	299.34	300.00	GPM
021250	CMSTC06	DIV2 SUPP CHAMBER TEMP	NORMAL			
021307	CNDBC01	2CND-IPNL287 SYS TROUBLE	TRBL			
021310	CNDBC01	2CND-IPNL287 SYS TROUBLE	ALMCLR			
021349	GMHAC07	STTR CLG WTR TK VENT H2	HIGH			
021350	GMHAC07	STTR CLG WTR TK VENT H2	NORMAL			
021352	DERXC07	RB EQPT DRN TK2A-2B LK	HIGH			
021359	DERXC07	RB EQPT DRN TK2A-2B LK	NORMAL			
021407	GMHAC07	STTR CLG WTR TK VENT H2	HIGH			
021418	CMSTC13	SUPP POOL WTR TMP TE56A	HIGH			
021420	GMHAC07	STTR CLG WTR TK VENT H2	NORMAL			
021425	HVCMA04	RELAY ROOM HMDT MT8B	OK	49.00	50.00	%RH
021432	CMSTC23	SUPP POOL WTR TMP TE56B	HIGH			
021717	DFTBC30	TB FLR DRN SYSTEM	TRBL			
021734	CNDBC01	2CND-IPNL287 SYS TROUBLE	TRBL			
021737	CNDBC01	2CND-IPNL287 SYS TROUBLE	ALMCLR			
021943	CNDBC01	2CND-IPNL287 SYS TROUBLE	TRBL			
022000	CNDBC01	2CND-IPNL287 SYS TROUBLE	ALMCLR			
022005	CNDBC01	2CND-IPNL287 SYS TROUBLE	TRBL			
022013	CNDBC01	2CND-IPNL287 SYS TROUBLE	ALMCLR			
022135	HVCMA04	RELAY ROOM HMDT MT8B	HI	50.50	50.00	%RH
022150	CWSAA02	BLWDN WTR CHLORINE RESID	SLO	-0.25L	*******	PPM
022232	CMSTC05	DIV1 SUPP CHAMBER TEMP	NORMAL			
022347	GMHAC07	STTR CLG WTR TK VENT H2	HIGH			
022348	GMHAC07	STTR CLG WTR TK VENT H2	NORMAL			
022418	CNDBC01	2CND-IPNL287 SYS TROUBLE	TRBL			
022423	CNDBC01	2CND-IPNL287 SYS TROUBLE	ALMCLR			

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022646	GMHAC07	STTR CLG WTR TK VENT H2	HIGH			
022654	GMHAC07	STTR CLG WTR TK VENT H2	NORMAL			
022804	GMHAC07	STTR CLG WTR TK VENT H2	HIGH			
022810	GMHAC07	STTR CLG WTR TK VENT H2	NORMAL			
022819	GMHAC07	STTR CLG WTR TK VENT H2	HIGH			
022857	CMSTC23	SUPP POOL WTR TMP TE56B	NORMAL			
022932	CMSTC13	SUPP POOL WTR TMP TE56A	NORMAL			
023100	WTABC01	ACID CHEM FEED SYS TRBL	TRBL			
023103	WTABC01	ACID CHEM FEED SYS TRBL	ALMCLR			
023322	HVHBC04	VENT HOT WTR HTG SYS	TRBL			
023322	HVHBC03	HOT WTR HTG PMPS P1A,P1B	TRBL			
023324	HVHBC04	VENT HOT WTR HTG SYS	NORMAL			
023324	HVHBC03	HOT WTR HTG PMPS P1A,P1B	NORMAL			
023345	HVCMA04	RELAY ROOM HMDT MT8B	OK	49.00	50.00	%RH
024055	HVCMA04	RELAY ROOM HMDT MT8B	HI	50.50	50.00	%RH
024347	RHSBC26	RHR A INJECTION FLOW	LOW			
024408	RHSBC20	RHR PUMP 1A STATUS	STOP			
024409	RHSBC23	RHR LOOP A PMP DISCH PR	NORMAL			
024409	ADSBC11	ADS A LPCS/RHR A PERMIS	ALMCLR			
024619	CNDBC01	2CND-IPNL287 SYS TROUBLE	TRBL			
024620	CNDBC01	2CND-IPNL287 SYS TROUBLE	ALMCLR			
025046	CMSTC21	SUPP POOL WTR TMP TE54B	NORMAL			
025128	CMSTC11	SUPP POOL WTR TMP TE54A	NORMAL			
025215	HVCMA04	RELAY ROOM HMDT MT8B	OK	49.06	50.00	%RH
025329	HVCMA01	CONTROL ROOM HMDT MT21A	*HI	70.69	50.00	%RH
030035	HVCMA04	RELAY ROOM HMDT MT8B	HI	50.56	50.00	%RH
030058	HDLLC40	2PT HTR DCL2A WTR LVL	HIGH			
030103	HDLLC40	2PT HTR DCL2A WTR LVL	NORMAL			
030941	DERFA01	DW EQPT DR PMPS 3A+3B FL	HI	99.92	95.00	GPM

031526	SWPBC18	SW-FV54A-HYD UNT ACC PR	NORMAL			
031527	CNDBC01	2CND-IPNL287 SYS TROUBLE	TRBL			
031546	CNDBC01	2CND-IPNL287 SYS TROUBLE	ALMCLR			
031611	CNMPA09	CNST BSTR PMP SUC HDR PR	LO	118.80	127.00	PSIG
031616	CNMPA09	CNST BSTR PMP SUC HDR PR	OK	130.80	127.00	PSIG
031939	IASPA04	ADS HEADER B PRESS	*HI	194.17	180.00	PSIG
032035	HVCMA04	RELAY ROOM HMDT MT8B	HI	50.56	50.00	%RH
032625	OFGTC30	DRYER DRY1C OUTLET TEMP	HIGH			
032625	OFGTC29	DRYER DRY1B OUTLET TEMP	HIGH			
032630	OFGTC30	DRYER DRY1C OUTLET TEMP	NORMAL			
032630	OFGTC29	DRYER DRY1B OUTLET TEMP	NORMAL			
032720	OFGTC28	DRYER DRY1A OUTLET TEMP	HIGH			
032921	HDLLC40	2PT HTR DCL2A WTR LVL	HIGH			
032923	HDLLC40	2PT HTR DCL2A WTR LVL	NORMAL			
032938	OFGTC28	DRYER DRY1A OUTLET TEMP	NORMAL			
033110	HVCMA04	RELAY ROOM HMDT MT8B	OK	49.06	50.00	%RH
033308	OFGTC32	REFRIGERATOR REF-1B MOT	OVERLD			
033312	OFGTC35	REFRIGERATOR REF-2B MOT	OVERLD			
033617	DERLA01	DW EQUIP DRN TANK LEVEL	OK	14.30	12.00	%
033637	OFGTC32	REFRIGERATOR REF-1B MOT	NORMAL			
033641	OFGTC35	REFRIGERATOR REF-2B MOT	NORMAL			
034045	HVCMA04	RELAY ROOM HMDT MT8B	HI	50.56	50.00	%RH

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034624	OFGTC28	DRYER DRY1A OUTLET TEMP	HIGH			
034948	OFGTC28	DRYER DRY1A OUTLET TEMP	NORMAL			
035040	HVCMA04	RELAY ROOM HMDT MT8B	OK	49.06	50.00	%RH
040000	HVCMA04	RELAY ROOM HMDT MT8B	HI	50.62	50.00	%RH
040535	OFGTC28	DRYER DRY1A OUTLET TEMP	HIGH			
040910	HVCMA04	RELAY ROOM HMDT MT8B	OK	49.12	50.00	%RH
040942	OFGTC28	DRYER DRY1A OUTLET TEMP	NORMAL			
041442	DFTBC30	TB FLR DRN SYSTEM	ALMCLR			
041530	OFGTC28	DRYER DRY1A OUTLET TEMP	HIGH			
041633	CNSLA02	CND DRAW OFF TK1B LEVEL	*HIL*******L*******			FT WG
041745	OFGTC28	DRYER DRY1A OUTLET TEMP	NORMAL			
041940	HVCMA04	RELAY ROOM HMDT MT8B	HI	50.69	50.00	%RH
042453	OFGTC28	DRYER DRY1A OUTLET TEMP	HIGH			
042820	HVCMA04	RELAY ROOM HMDT MT8B	OK	49.19	50.00	%RH
042911	OFGTC28	DRYER DRY1A OUTLET TEMP	NORMAL			
043323	HDLLC40	2PT HTR DCL2A WTR LVL	HIGH			
043324	HDLLC40	2PT HTR DCL2A WTR LVL	NORMAL			
043437	OFGTC28	DRYER DRY1A OUTLET TEMP	HIGH			
043621	DFTBC30	TB FLR DRN SYSTEM	TRBL			
043729	OFGTC28	DRYER DRY1A OUTLET TEMP	NORMAL			
043805	HVCMA04	RELAY ROOM HMDT MT8B	HI	50.00	50.00	%RH
044029	RHSBC14	RHR C SYS INOP	INOP			
044031	RHSBC13	RHR B SYS	INOP			
044416	OFGTC28	DRYER DRY1A OUTLET TEMP	HIGH			
044710	HVCMA04	RELAY ROOM HMDT MT8B	OK	49.25	50.00	%RH
044837	OFGTC28	DRYER DRY1A OUTLET TEMP	NORMAL			
045421	OFGTC28	DRYER DRY1A OUTLET TEMP	HIGH			
045713	OFGTC28	DRYER DRY1A OUTLET TEMP	NORMAL			
045735	HVCMA04	RELAY ROOM HMDT MT8B	HI	50.12	50.00	%RH
045943	RHSTC37	RHR HX 1B BYP MOV8B MOT	OVERLD			
045944	SWTBC07	SWT SYSTEM TROUBLE	TRBL			
050016	RHSTC47	RHR P1C SP SUC MOV1C MOT	OVERLD			
050051	RHSTC39	RHR B MIN FLOW MOV4B MOT	OVERLD			
050114	RHSTC48	RHR C SP CLG FV38C MOT	OVERLD			
050343	OFGTC28	DRYER DRY1A OUTLET TEMP	HIGH			

051056	OFGTC28	DRYER DRY1A OUTLET TEMP	HIGH			
051257	CMSTC06	DIV2 SUPP CHAMBER TEMP	HIGH			
051713	GMHAC07	STTR CLG WTR TK VENT H2	NORMAL			
051718	OFGTC28	DRYER DRY1A OUTLET TEMP	NORMAL			
051750	HVCMA04	RELAY ROOM HMDT MT8B	HI	50.19	50.00	%RH
051910	GMHAC07	STTR CLG WTR TK VENT H2	HIGH			
051917	GMHAC07	STTR CLG WTR TK VENT H2	NORMAL			
052000	GMHAC07	STTR CLG WTR TK VENT H2	HIGH			
052003	GMHAC07	STTR CLG WTR TK VENT H2	NORMAL			
052048	GMHAC07	STTR CLG WTR TK VENT H2	HIGH			
052058	GMHAC07	STTR CLG WTR TK VENT H2	NORMAL			
052202	GMHAC07	STTR CLG WTR TK VENT H2	HIGH			
052206	GMHAC07	STTR CLG WTR TK VENT H2	NORMAL			
052248	GMHAC07	STTR CLG WTR TK VENT H2	HIGH			
052257	OFGTC28	DRYER DRY1A OUTLET TEMP	HIGH			
052303	GMHAC07	STTR CLG WTR TK VENT H2	NORMAL			
052324	GMHAC07	STTR CLG WTR TK VENT H2	HIGH			
052325	GMHAC07	STTR CLG WTR TK VENT H2	NORMAL			
052726	GMHAC07	STTR CLG WTR TK VENT H2	HIGH			

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052729	GMHAC07	STTR CLG WTR TK VENT H2	NORMAL			
052805	OFGTC28	DRYER DRY1A OUTLET TEMP	NORMAL			
052825	HVCMA04	RELAY ROOM HMDT MT8B	OK	48.69	50.00	%RH
053054	OFGTC28	DRYER DRY1A OUTLET TEMP	HIGH			
053211	GMHAC07	STTR CLG WTR TK VENT H2	HIGH			
053218	GMHAC07	STTR CLG WTR TK VENT H2	NORMAL			
053435	DFTBC30	TB FLR DRN SYSTEM	ALMCLR			
053645	OFGTC28	DRYER DRY1A OUTLET TEMP	NORMAL			
053755	HVCMA04	RELAY ROOM HMDT MT8B	HI	50.31	50.00	%RH
054255	OFGTC28	DRYER DRY1A OUTLET TEMP	HIGH			
054300	DERXC07	RB EQPT DRN TK2A-2B LK	HIGH			
054338	DERXC07	RB EQPT DRN TK2A-2B LK	NORMAL			
054653	GMHAC07	STTR CLG WTR TK VENT H2	HIGH			
054658	GMHAC07	STTR CLG WTR TK VENT H2	NORMAL			
054732	CMSTC05	DIV1 SUPP CHAMBER TEMP	HIGH			
054755	HVCMA04	RELAY ROOM HMDT MT8B	OK	48.81	50.00	%RH
054800	OFGTC28	DRYER DRY1A OUTLET TEMP	NORMAL			
071119	CNDFC49	2CND-DEMIN1D FLOW	NORMAL			
071119	CNDBC01	2CND-IPNL287 SYS TROUBLE	ALMCLR			
071122	OFGFC08	CONDENSER 1B OUTLET FLOW	ALMCLR			
071123	CNDFC49	2CND-DEMIN1D FLOW	LOW			
071123	CNDBC01	2CND-IPNL287 SYS TROUBLE	TRBL			
071124	OFGFC08	CONDENSER 1B OUTLET FLOW	L/L			
071127	OFGFC08	CONDENSER 1B OUTLET FLOW	ALMCLR			
071127	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
071128	OFGFC08	CONDENSER 1B OUTLET FLOW	L/L			
071129	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
071130	CNDFC49	2CND-DEMIN1D FLOW	NORMAL			
071130	CNDBC01	2CND-IPNL287 SYS TROUBLE	ALMCLR			
071134	OFGFC08	CONDENSER 1B OUTLET FLOW	ALMCLR			
071135	OFGFC08	CONDENSER 1B OUTLET FLOW	L/L			
071136	RDSUC07	RPS B1 DIS VOL HI LVL TR	ALMCLR			
071136	RDSUC05	RPS A1 DIS VOL HI LVL TR	ALMCLR			
071138	OFGFC08	CONDENSER 1B OUTLET FLOW	ALMCLR			
071139	OFGFC08	CONDENSER 1B OUTLET FLOW	L/L			
071142	FWSTA03	6PT HTR 2FWS-E6C INL TMP	*LO	248.63	284.00	DEG F
071142	OFGFC08	CONDENSER 1B OUTLET FLOW	ALMCLR			

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071327 OFGFC08  CONDENSER 1B OUTLET FLOW L/L
071327 DERFA01  DW EQPT DR PMPS 3A+3B FL LO    38.99    45.00 GPM
071330 OFGFC08  CONDENSER 1B OUTLET FLOW ALMCLR
071331 CNDFC49  2CND-DEMIN1D FLOW        NORMAL
071331 OFGFC08  CONDENSER 1B OUTLET FLOW L/L
071331 CNDBC01  2CND-IPNL287 SYS TROUBLE ALMCLR
071332 DERFA01  DW EQPT DR PMPS 3A+3B FL *LO    3.54    45.00 GPM

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071333 OFGFC08  CONDENSER 1B OUTLET FLOW ALMCLR
071335 OFGFC08  CONDENSER 1B OUTLET FLOW L/L
071337 OFGFC08  CONDENSER 1B OUTLET FLOW ALMCLR
071337 HVKBC09  DIV1 CB CHILLED WTR SYS  INOP
071338 HVKBC09  DIV1 CB CHILLED WTR SYS  NORMAL
071339 OFGFC08  CONDENSER 1B OUTLET FLOW L/L
071341 OFGFC08  CONDENSER 1B OUTLET FLOW ALMCLR
071343 OFGFC08  CONDENSER 1B OUTLET FLOW L/L
071345 OFGFC08  CONDENSER 1B OUTLET FLOW ALMCLR
071346 OFGFC08  CONDENSER 1B OUTLET FLOW L/L
071349 OFGFC08  CONDENSER 1B OUTLET FLOW ALMCLR
071351 OFGFC08  CONDENSER 1B OUTLET FLOW L/L
071357 OFGFC08  CONDENSER 1B OUTLET FLOW ALMCLR
071358 OFGFC08  CONDENSER 1B OUTLET FLOW L/L
071401 OFGFC08  CONDENSER 1B OUTLET FLOW ALMCLR
071402 OFGFC08  CONDENSER 1B OUTLET FLOW L/L
071405 OFGFC08  CONDENSER 1B OUTLET FLOW ALMCLR
071406 OFGFC08  CONDENSER 1B OUTLET FLOW L/L
071409 OFGFC08  CONDENSER 1B OUTLET FLOW ALMCLR
071410 OFGFC08  CONDENSER 1B OUTLET FLOW L/L
071410 HVKBC09  DIV1 CB CHILLED WTR SYS  INOP
071411 HVKBC09  DIV1 CB CHILLED WTR SYS  NORMAL
071412 OFGFC08  CONDENSER 1B OUTLET FLOW ALMCLR
071413 HVKBC09  DIV1 CB CHILLED WTR SYS  INOP
071414 OFGFC08  CONDENSER 1B OUTLET FLOW L/L
071414 HVKBC09  DIV1 CB CHILLED WTR SYS  NORMAL
071416 HVKBC09  DIV1 CB CHILLED WTR SYS  INOP
071417 OFGFC08  CONDENSER 1B OUTLET FLOW ALMCLR
071417 HVKBC09  DIV1 CB CHILLED WTR SYS  NORMAL
071417 DFRFA01  DW FLR DR PMPS 1A+1B FLO LO    32.56    45.00 GPM
071418 OFGFC08  CONDENSER 1B OUTLET FLOW L/L
071421 OFGFC08  CONDENSER 1B OUTLET FLOW ALMCLR
071421 DRSTC12  DW UC1B DISCH AIR TEMP   LOW
071422 OFGFC08  CONDENSER 1B OUTLET FLOW L/L
071422 DFRFA01  DW FLR DR PMPS 1A+1B FLO *LO    3.16    45.00 GPM
071425 OFGFC08  CONDENSER 1B OUTLET FLOW ALMCLR
071426 OFGFC08  CONDENSER 1B OUTLET FLOW L/L
071427 OFGFC08  CONDENSER 1B OUTLET FLOW ALMCLR
071428 OFGFC08  CONDENSER 1B OUTLET FLOW L/L
071428 DFRLA01  DW FLR DRN TANK LEVEL    LO    11.80    12.00 %
071432 OFGFC08  CONDENSER 1B OUTLET FLOW ALMCLR
071433 OFGFC08  CONDENSER 1B OUTLET FLOW L/L
071442 FWSTA06  6PT HTR 2FWS-E6C OUT TMP *LO  258.63   324.00 DEG F
071445 CNDFC49  2CND-DEMIN1D FLOW        LOW
071445 CNDBC01  2CND-IPNL287 SYS TROUBLE TRBL
071447 CNDFC49  2CND-DEMIN1D FLOW        NORMAL
071447 HVKBC09  DIV1 CB CHILLED WTR SYS  INOP
071447 CNDBC01  2CND-IPNL287 SYS TROUBLE ALMCLR
071449 HVKBC09  DIV1 CB CHILLED WTR SYS  NORMAL
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071213	OFGFC08	CONDENSER 1B OUTLET FLOW	L/L	
071214	CNDFC49	2CND-DEMIN1D FLOW	NORMAL	
071214	CNDBC01	2CND-IPNL287 SYS TROUBLE	ALMCLR	
071219	RDSLC102	SDV NOT DRAINED B	NORMAL	
071219	OFGFC08	CONDENSER 1B OUTLET FLOW	ALMCLR	
071219	GMHAC05	INSIDE GEN LAG NORTH H2	NORMAL	
071219	RDSBC17	SDV LEVEL HIGH	NORMAL	
071220	OFGFC08	CONDENSER 1B OUTLET FLOW	L/L	
071224	OFGFC08	CONDENSER 1B OUTLET FLOW	ALMCLR	
071225	OFGFC08	CONDENSER 1B OUTLET FLOW	L/L	
071227	CNDBC01	2CND-IPNL287 SYS TROUBLE	TRBL	
071228	CNDFC49	2CND-DEMIN1D FLOW	LOW	

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071228	OFGFC08	CONDENSER 1B OUTLET FLOW	ALMCLR	
071229	OFGFC08	CONDENSER 1B OUTLET FLOW	L/L	
071232	OFGFC08	CONDENSER 1B OUTLET FLOW	ALMCLR	
071233	OFGFC08	CONDENSER 1B OUTLET FLOW	L/L	
071236	OFGFC08	CONDENSER 1B OUTLET FLOW	ALMCLR	
071237	OFGFC08	CONDENSER 1B OUTLET FLOW	L/L	
071240	OFGFC08	CONDENSER 1B OUTLET FLOW	ALMCLR	
071241	OFGFC08	CONDENSER 1B OUTLET FLOW	L/L	
071244	CNDFC49	2CND-DEMIN1D FLOW	NORMAL	
071244	OFGFC08	CONDENSER 1B OUTLET FLOW	ALMCLR	
071244	CNDBC01	2CND-IPNL287 SYS TROUBLE	ALMCLR	
071245	OFGFC08	CONDENSER 1B OUTLET FLOW	L/L	
071246	CNMPA05	RX FD WTR PMP 1A SUCT PR	*LO	93.00 230.00 PSIG
071249	CNDFC49	2CND-DEMIN1D FLOW	LOW	
071249	CNDBC01	2CND-IPNL287 SYS TROUBLE	TRBL	
071251	OFGFC08	CONDENSER 1B OUTLET FLOW	ALMCLR	
071252	GMHAC05	INSIDE GEN LAG NORTH H2	HIGH	
071253	OFGFC08	CONDENSER 1B OUTLET FLOW	L/L	
071254	CNDFC49	2CND-DEMIN1D FLOW	NORMAL	
071254	CNDBC01	2CND-IPNL287 SYS TROUBLE	ALMCLR	
071255	CNDFC49	2CND-DEMIN1D FLOW	LOW	
071255	OFGFC08	CONDENSER 1B OUTLET FLOW	ALMCLR	
071255	CNDBC01	2CND-IPNL287 SYS TROUBLE	TRBL	
071256	OFGFC08	CONDENSER 1B OUTLET FLOW	L/L	
071259	OFGFC08	CONDENSER 1B OUTLET FLOW	ALMCLR	
071300	OFGFC08	CONDENSER 1B OUTLET FLOW	L/L	
071302	CNDFC49	2CND-DEMIN1D FLOW	NORMAL	
071302	CNDBC01	2CND-IPNL287 SYS TROUBLE	ALMCLR	
071303	OFGFC08	CONDENSER 1B OUTLET FLOW	ALMCLR	
071304	OFGFC08	CONDENSER 1B OUTLET FLOW	L/L	
071307	OFGFC08	CONDENSER 1B OUTLET FLOW	ALMCLR	
071308	OFGFC08	CONDENSER 1B OUTLET FLOW	L/L	
071310	OFGFC08	CONDENSER 1B OUTLET FLOW	ALMCLR	
071311	OFGFC08	CONDENSER 1B OUTLET FLOW	L/L	
071313	DERLA01	DW EQUIP DRN TANK LEVEL	LO	10.85 12.00 %
071314	CNDFC49	2CND-DEMIN1D FLOW	LOW	
071314	OFGFC08	CONDENSER 1B OUTLET FLOW	ALMCLR	
071314	CNDBC01	2CND-IPNL287 SYS TROUBLE	TRBL	
071315	OFGFC08	CONDENSER 1B OUTLET FLOW	L/L	
071315	FWSTA48	FEED WATER FINAL TEMP	*LO	291.84 324.00 DEG F
071317	CNDFC49	2CND-DEMIN1D FLOW	NORMAL	
071317	CNDBC01	2CND-IPNL287 SYS TROUBLE	ALMCLR	
071318	OFGFC08	CONDENSER 1B OUTLET FLOW	ALMCLR	
071319	CNDFC49	2CND-DEMIN1D FLOW	LOW	
[illegible]				

071500 HVRTA01 RB VENT SUPPLY AIR TEMP *HIL*******L******* DEG F

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071501 OFGFC08 CONDENSER 1B OUTLET FLOW ALMCLR
071502 OFGFC08 CONDENSER 1B OUTLET FLOW L/L
071506 GMHAC05 INSIDE GEN LAG NORTH H2 NORMAL
071509 OFGFC08 CONDENSER 1B OUTLET FLOW ALMCLR
071511 OFGFC08 CONDENSER 1B OUTLET FLOW L/L
071512 GMHAC05 INSIDE GEN LAG NORTH H2 HIGH
071514 GMHAC05 INSIDE GEN LAG NORTH H2 NORMAL
071516 GMHAC05 INSIDE GEN LAG NORTH H2 HIGH
071522 OFGFC08 CONDENSER 1B OUTLET FLOW ALMCLR
071523 OFGFC08 CONDENSER 1B OUTLET FLOW L/L
071525 OFGFC08 CONDENSER 1B OUTLET FLOW ALMCLR
071526 OFGFC08 CONDENSER 1B OUTLET FLOW L/L
071529 OFGFC08 CONDENSER 1B OUTLET FLOW ALMCLR
071530 OFGFC08 CONDENSER 1B OUTLET FLOW L/L
071534 OFGFC08 CONDENSER 1B OUTLET FLOW ALMCLR
071535 OFGFC08 CONDENSER 1B OUTLET FLOW L/L
071538 OFGFC08 CONDENSER 1B OUTLET FLOW ALMCLR
071539 OFGFC08 CONDENSER 1B OUTLET FLOW L/L
071541 OFGFC08 CONDENSER 1B OUTLET FLOW ALMCLR
071542 OFGFC08 CONDENSER 1B OUTLET FLOW L/L
071545 OFGFC08 CONDENSER 1B OUTLET FLOW ALMCLR
071547 OFGFC08 CONDENSER 1B OUTLET FLOW L/L
071549 OFGFC08 CONDENSER 1B OUTLET FLOW ALMCLR
071550 OFGFC08 CONDENSER 1B OUTLET FLOW L/L
071553 OFGFC08 CONDENSER 1B OUTLET FLOW ALMCLR
071554 OFGFC08 CONDENSER 1B OUTLET FLOW L/L
071557 OFGFC08 CONDENSER 1B OUTLET FLOW ALMCLR
071558 CNDFC49 2CND-DEMIN1D FLOW   LOW
071558 OFGFC08 CONDENSER 1B OUTLET FLOW L/L
071559 CNDFC49 2CND-DEMIN1D FLOW   NORMAL
071600 HDLLC10 5 PT HTR 2E5A WTR LEVEL NORMAL
071604 OFGFC08 CONDENSER 1B OUTLET FLOW ALMCLR
071605 OFGFC08 CONDENSER 1B OUTLET FLOW L/L
071606 CNDFC49 2CND-DEMIN1D FLOW   LOW
071606 CNDBC01 2CND-IPNL287 SYS TROUBLE TRBL
071613 OFGFC08 CONDENSER 1B OUTLET FLOW ALMCLR
071614 OFGFC08 CONDENSER 1B OUTLET FLOW L/L
071616 OFGFC08 CONDENSER 1B OUTLET FLOW ALMCLR
071617 OFGFC08 CONDENSER 1B OUTLET FLOW L/L
071619 DRSTC12 DW UC1B DISCH AIR TEMP   NORMAL
071620 CNDFC49 2CND-DEMIN1D FLOW   NORMAL
071620 OFGFC08 CONDENSER 1B OUTLET FLOW ALMCLR
071620 CNDBC01 2CND-IPNL287 SYS TROUBLE ALMCLR
071621 OFGFC08 CONDENSER 1B OUTLET FLOW L/L
071627 OFGFC08 CONDENSER 1B OUTLET FLOW ALMCLR
071628 OFGFC08 CONDENSER 1B OUTLET FLOW L/L
071632 OFGFC08 CONDENSER 1B OUTLET FLOW ALMCLR
071634 OFGFC08 CONDENSER 1B OUTLET FLOW L/L
071635 RCSBC07 RCS FCV A HYDR INOP   ALMCLR
071637 OFGFC08 CONDENSER 1B OUTLET FLOW ALMCLR
071638 OFGFC08 CONDENSER 1B OUTLET FLOW L/L
071640 OFGFC08 CONDENSER 1B OUTLET FLOW ALMCLR
071641 OFGFC08 CONDENSER 1B OUTLET FLOW L/L
071642 HDLTA06 4PT HTR 2CNM-E4C DRN TMP *LO 188.75 245.00 DEG F
071643 OFGFC08 CONDENSER 1B OUTLET FLOW ALMCLR

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071647	OFGFC08	CONDENSER 1B OUTLET FLOW	ALMCLR			
071648	OFGFC08	CONDENSER 1B OUTLET FLOW	L/L			
071651	OFGFC08	CONDENSER 1B OUTLET FLOW	ALMCLR			
071652	OFGFC08	CONDENSER 1B OUTLET FLOW	L/L			
071655	OFGFC08	CONDENSER 1B OUTLET FLOW	ALMCLR			
071655	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
071656	OFGFC08	CONDENSER 1B OUTLET FLOW	L/L			
071656	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
071659	OFGFC08	CONDENSER 1B OUTLET FLOW	ALMCLR			
071700	OFGFC08	CONDENSER 1B OUTLET FLOW	L/L			
071707	OFGFC08	CONDENSER 1B OUTLET FLOW	ALMCLR			
071708	OFGFC08	CONDENSER 1B OUTLET FLOW	L/L			
071712	FWSTA03	6PT HTR 2FWG-E6C INL TMP	*LO	236.55	284.00	DEG F
071715	OFGFC08	CONDENSER 1B OUTLET FLOW	ALMCLR			
071716	OFGFC08	CONDENSER 1B OUTLET FLOW	L/L			
071718	OFGFC08	CONDENSER 1B OUTLET FLOW	ALMCLR			
071720	OFGFC08	CONDENSER 1B OUTLET FLOW	L/L			
071722	RCSBC10	RCS FCV B BU HYDR INOP	ALMCLR			
071722	RCSBC09	RCS FCV A BU HYDR INOP	ALMCLR			
071725	CNDFC49	2CND-DEMIN1D FLOW	LOW			
071725	CNDBC01	2CND-IPNL287 SYS TROUBLE	TRBL			
071730	OFGFC08	CONDENSER 1B OUTLET FLOW	ALMCLR			
071731	OFGFC08	CONDENSER 1B OUTLET FLOW	L/L			
071733	CNDFC49	2CND-DEMIN1D FLOW	NORMAL			
071733	CNDBC01	2CND-IPNL287 SYS TROUBLE	ALMCLR			
071734	GTSPA01	RB IN/OUT D/P PDT5A	OK	-0.48	-0.50	IN WG
071740	OFGFC08	CONDENSER 1B OUTLET FLOW	ALMCLR			
071741	OFGFC08	CONDENSER 1B OUTLET FLOW	L/L			
071742	HDLTA05	4PT HTR 2CNM-E4B DRN TMP	*LO	199.62	245.00	DEG F
071744	OFGFC08	CONDENSER 1B OUTLET FLOW	ALMCLR			
071745	OFGFC08	CONDENSER 1B OUTLET FLOW	L/L			
071745	FWSTA48	FEED WATER FINAL TEMP	*LO	280.94	324.00	DEG F
071749	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
071749	GTSPA01	RB IN/OUT D/P PDT5A	LO	-0.51	-0.50	IN WG
071750	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
071756	OFGFC08	CONDENSER 1B OUTLET FLOW	ALMCLR			
071757	OFGFC08	CONDENSER 1B OUTLET FLOW	L/L			
071759	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
071800	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
071802	OFGFC08	CONDENSER 1B OUTLET FLOW	ALMCLR			
071804	OFGFC08	CONDENSER 1B OUTLET FLOW	L/L			
071804	RPSBC16	RPS B2 SDV HI LVL BYP	ALMCLR			
071805	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
071806	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
071806	RPSBC15	RPS B1 SDV HI LVL BYP	ALMCLR			
071807	OFGFC08	CONDENSER 1B OUTLET FLOW	ALMCLR			
071807	RPSBC14	RPS A2 SDV HI LVL BYP	ALMCLR			
071808	RPSBC13	RPS A1 SDV HI LVL BYP	ALMCLR			
071809	OFGFC08	CONDENSER 1B OUTLET FLOW	L/L			
071810	OFGFC08	CONDENSER 1B OUTLET FLOW	ALMCLR			
071811	OFGFC08	CONDENSER 1B OUTLET FLOW	L/L			
071814	OFGFC08	CONDENSER 1B OUTLET FLOW	ALMCLR			
071815	OFGFC08	CONDENSER 1B OUTLET FLOW	L/L			
071818	OFGFC08	CONDENSER 1B OUTLET FLOW	ALMCLR			
071820	OFGFC08	CONDENSER 1B OUTLET FLOW	L/L			
071822	OFGFC08	CONDENSER 1B OUTLET FLOW	ALMCLR			

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071823	OFGFC08	CONDENSER 1B OUTLET FLOW	L/L			
071825	OFGFC08	CONDENSER 1B OUTLET FLOW	ALMCLR			
071826	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
071827	OFGFC08	CONDENSER 1B OUTLET FLOW	L/L			
071827	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
071831	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
071832	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
071834	OFGFC08	CONDENSER 1B OUTLET FLOW	ALMCLR			
071836	OFGFC08	CONDENSER 1B OUTLET FLOW	L/L			
071839	OFGFC08	CONDENSER 1B OUTLET FLOW	ALMCLR			
071840	OFGFC08	CONDENSER 1B OUTLET FLOW	L/L			
071842	OFGFC08	CONDENSER 1B OUTLET FLOW	ALMCLR			
071842	FWSTA06	6PT HTR 2FWS-E6C OUT TMP	*LO	248.91	324.00	DEG F
071842	HDHTA03	6PT HTR E6C DR TEMP	*LO	244.98	284.00	DEG F
071842	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
071843	OFGFC08	CONDENSER 1B OUTLET FLOW	L/L			
071843	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
071845	OFGFC08	CONDENSER 1B OUTLET FLOW	ALMCLR			
071846	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
071847	OFGFC08	CONDENSER 1B OUTLET FLOW	L/L			
071847	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
071848	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
071849	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
071850	OFGFC08	CONDENSER 1B OUTLET FLOW	ALMCLR			
071851	OFGFC08	CONDENSER 1B OUTLET FLOW	L/L			
071853	OFGFC08	CONDENSER 1B OUTLET FLOW	ALMCLR			
071854	OFGFC08	CONDENSER 1B OUTLET FLOW	L/L			
071901	RRSUC127	D1 RRCS POTENTIAL ATWS	ALMCLR			
071901	RRSUC123	DIV1 RRCS LFMG XFER	RESET			
071901	RRSUC117	D1 RRCS RECIRC PMP TRIP	RESET			
071901	RRSBC03	DIV1 RRCS POTENTIAL ATWS	ALMCLR			
071901	RRSBC07	DIV1 RRCS TROUBLE	ALMCLR			
071901	RRSUC01	DIV1 RRCS RECIRC PMP TR	RESET			
071902	RRSUC128	D2 RRCS POTENTIAL ATWS	ALMCLR			
071902	RRSUC124	DIV2 RRCS LFMG XFER	RESET			
071902	RRSUC118	D2 RRCS RECIRC PMP TRIP	RESET			
071902	OFGFC08	CONDENSER 1B OUTLET FLOW	ALMCLR			
071902	RCSUC17	RCS P1A TR LFMG START	NOAVLB			
071902	RCSUC22	RCS P1B TR LFMG START	NOAVLB			
071902	RRSBC04	DIV2 RRCS POTENTIAL ATWS	ALMCLR			
071902	RRSUC02	DIV2 RRCS RECIRC PMP TR	RESET			
071902	RRSBC08	DIV2 RRCS TROUBLE	ALMCLR			
071903	OFGFC08	CONDENSER 1B OUTLET FLOW	L/L			
071905	OFGFC08	CONDENSER 1B OUTLET FLOW	ALMCLR			
071906	OFGFC08	CONDENSER 1B OUTLET FLOW	L/L			
071909	OFGFC08	CONDENSER 1B OUTLET FLOW	ALMCLR			
071910	OFGFC08	CONDENSER 1B OUTLET FLOW	L/L			
071917	OFGFC08	CONDENSER 1B OUTLET FLOW	ALMCLR			
071918	OFGFC08	CONDENSER 1B OUTLET FLOW	L/L			
071922	OFGFC08	CONDENSER 1B OUTLET FLOW	ALMCLR			
071923	OFGFC08	CONDENSER 1B OUTLET FLOW	L/L			
071926	OFGFC08	CONDENSER 1B OUTLET FLOW	ALMCLR			
071927	OFGFC08	CONDENSER 1B OUTLET FLOW	L/L			
071928	OFGFC08	CONDENSER 1B OUTLET FLOW	ALMCLR			
071930	OFGFC08	CONDENSER 1B OUTLET FLOW	L/L			
071933	OFGFC08	CONDENSER 1B OUTLET FLOW	ALMCLR			

071948	SSRBC01	RX PLANT SMPL IPNL145	NORMAL			
071949	OFGFC08	CONDENSER 1B OUTLET FLOW	L/L			
071952	HVGMA04	RELAY ROOM HMDT MT8B	OK	49.25	50.00	%RH
071957	OFGFC08	CONDENSER 1B OUTLET FLOW	ALMCLR			
071958	OFGFC08	CONDENSER 1B OUTLET FLOW	L/L			
071959	OFGFC08	CONDENSER 1B OUTLET FLOW	ALMCLR			
072000	OFGFC08	CONDENSER 1B OUTLET FLOW	L/L			
072000	CNMFA06A	RX FEED PMP B SUC FL	LO	1.0	3.2	MLBS/H
072000	CNMFA07A	RX FEED PMP C SUC FL	LO	0.7	3.2	MLBS/H
072002	OFGFC08	CONDENSER 1B OUTLET FLOW	ALMCLR			
072002	CNMTA55A	HTR 2A FW TEMP IN	OK	102.5	156.2	DEG F
072002	CNMTA56A	HTR 2B FW TEMP IN	OK	105.8	156.2	DEG F
072002	CNMTA57A	HTR 2C FW TEMP IN	OK	103.5	156.2	DEG F
072002	CNMTA58A	HTR 3A FW TEMP IN	OK	112.4	210.2	DEG F
072002	CNMTA59A	HTR 3B FW TEMP IN	OK	117.5	210.2	DEG F
072002	CNMTA60A	HTR 3C FW TEMP IN	OK	118.1	210.2	DEG F
072002	CNMTA62A	HTR 4B FW TEMP IN	OK	149.4	273.2	DEG F
072002	CNMTA63A	HTR 4C FW TEMP IN	OK	127.1	273.2	DEG F
072002	CNMTA64A	HTR 4A FW TEMP OUT	OK	172.6	300.2	DEG F
	BOP CALCS NOT DONE UNTIL TIME UPDATED					
072002	CNMTA65A	HTR 4B FW TEMP OUT	OK	178.6	300.2	DEG F
072002	CNMTA66A	HTR 4C FW TEMP OUT	OK	154.0	300.2	DEG F
072002	CNMTA67A	HTR 5A FW TEMP IN	OK	188.8	300.2	DEG F
072002	CNMTA68A	HTR 5B FW TEMP IN	OK	179.7	300.2	DEG F
072002	CNMTA69A	HTR 5C FW TEMP IN	OK	158.0	300.2	DEG F
072002	CNMTA70A	HTR 5A FW TEMP OUT	OK	185.7	340.7	DEG F
072002	CNMTA71A	HTR 5B FW TEMP OUT	OK	189.7	340.7	DEG F
072002	CNMTA72A	HTR 5C FW TEMP OUT	OK	173.5	340.7	DEG F
072003	CRSPA09A	MOIST SEP A INLET PRESS	LO	3.5	17.8	PSIG
072003	CRSPA10A	MOIST SEP B INLET PRESS	LO	2.2	17.8	PSIG
072003	OFGFC08	CONDENSER 1B OUTLET FLOW	L/L			
072003	ESSPA01A	HTR 6A PRESS	LO	7.9	41.5	PSIA
072003	ESSPA02A	HTR 6B PRESS	LO	3.9	41.5	PSIA
072003	ESSPA03A	HTR 6C PRESS	LO	3.5	41.5	PSIA
072003	ESSPA04A	HTR 3A PRESS	LO	3.7	9.0	PSIA
072003	ESSPA05A	HTR 3B PRESS	LO	5.6	9.0	PSIA
072003	ESSPA06A	HTR 3C PRESS	LO	3.5	9.0	PSIA
072003	ESSPA07A	HTR 4A PRESS	LO	9.4	14.0	PSIA
072003	ESSPA08A	HTR 4B PRESS	LO	10.0	14.0	PSIA
072003	ESSPA09A	HTR 4C PRESS	LO	3.4	14.0	PSIA
072003	ESSPA10A	HTR 5A PRESS	LO	5.5	28.5	PSIA
072003	ESSPA11A	HTR 5B PRESS	LO	2.4	28.5	PSIA
072003	ESSPA12A	HTR 5C PRESS	LO	6.8	28.5	PSIA
072003	ESSPA18A	HTR 2A PRESS	LO	4.7	6.5	PSIA
072003	ESSPA19A	HTR 2B PRESS	LO	3.0	6.5	PSIA
072003	ESSPA20A	HTR 2C PRESS	LO	3.6	6.5	PSIA
072003	FWSTA02A	HTR 6B FW TEMP IN	OK	279.7	340.7	DEG F
072003	FWSTA03A	HTR 6C FW TEMP IN	OK	247.0	340.7	DEG F
072003	FWSTA04A	HTR 6A FW TEMP OUT	OK	386.0	408.2	DEG F
072003	FWSTA05A	HTR 6B FW TEMP OUT	OK	318.8	408.2	DEG F
072003	FWSTA06A	HTR 6C FW TEMP OUT	OK	265.8	408.2	DEG F

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072004	HRSPA05A	MOIST SEP A OUTLET PRESS	LO	2.9	17.2	PSIA
072004	HRSPA08A	MOIST SEP B OUTLET PRESS	LO	2.9	17.2	PSIA
072004	MSSTA13A	MAIN STEAM TEMP	*HI	494.6	450.0	DEG F
072004	SPGEA01A	GENERATOR VOLTAGE	LO	-6.0	21.0	KV

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072004 TMITA04A RHTR A STM T OUT,LINE 1  OK     439.4    450.0 DEG F
072004 TMITA05A 0RHTR B STM T OUT,LINE 2 OK     427.3    450.0 DEG F
072004 TMITA06A 0RHTR A STM T OUT,LINE 2 OK     425.7    450.0 DEG F
072004 TMITA07A RHTR B STM T OUT,LINE 3  OK     427.1    450.0 DEG F
072004 TMITA08A RHTR A STM T OUT,LINE 3  OK     422.6    450.0 DEG F
072006 OFGFC08  CONDENSER 1B OUTLET FLOW ALMCLR
072007 OFGFC08  CONDENSER 1B OUTLET FLOW L/L
072009 OFGFC08  CONDENSER 1B OUTLET FLOW ALMCLR
072010 OFGFC08  CONDENSER 1B OUTLET FLOW L/L
072011 CNDFC49  2CND-DEMIN1D FLOW        LOW
072011 CNDBC01  2CND-IPNL287 SYS TROUBLE TRBL
072014 CNDFC49  2CND-DEMIN1D FLOW        NORMAL
072014 DRSTC12  DW UC1B DISCH AIR TEMP   LOW
072014 CNDBC01  2CND-IPNL287 SYS TROUBLE ALMCLR
072017 OFGFC08  CONDENSER 1B OUTLET FLOW ALMCLR
072018 OFGFC08  CONDENSER 1B OUTLET FLOW L/L
072021 OFGFC08  CONDENSER 1B OUTLET FLOW ALMCLR
072023 OFGFC08  CONDENSER 1B OUTLET FLOW L/L
072025 OFGFC08  CONDENSER 1B OUTLET FLOW ALMCLR
072026 OFGFC08  CONDENSER 1B OUTLET FLOW L/L
072026 HVKBC09  DIV1 CB CHILLED WTR SYS  INOP
072026 TMGBC04  TRNGR NOT OPERATING      ALARM
072027 HVKBC09  DIV1 CB CHILLED WTR SYS  NORMAL
072029 OFGFC08  CONDENSER 1B OUTLET FLOW ALMCLR
072031 OFGFC08  CONDENSER 1B OUTLET FLOW L/L
072033 OFGTC28  DRYER DRY1A OUTLET TEMP  HIGH
072034 HVKBC09  DIV1 CB CHILLED WTR SYS  INOP
072035 HVKBC09  DIV1 CB CHILLED WTR SYS  NORMAL
072037 CNDFC49  2CND-DEMIN1D FLOW        LOW
072037 OFGFC08  CONDENSER 1B OUTLET FLOW ALMCLR
072037 CNDBC01  2CND-IPNL287 SYS TROUBLE TRBL
072037 ESSTA17  5 PT HTR E5B EXTR ST TMP *LO  266.95   280.00 DEG F
072038 OFGFC08  CONDENSER 1B OUTLET FLOW L/L
072047 OFGFC08  CONDENSER 1B OUTLET FLOW ALMCLR
072048 OFGFC08  CONDENSER 1B OUTLET FLOW L/L
072050 CNDFC49  2CND-DEMIN1D FLOW        NORMAL
072050 OFGFC08  CONDENSER 1B OUTLET FLOW ALMCLR
072050 CNDBC01  2CND-IPNL287 SYS TROUBLE ALMCLR
072051 OFGFC08  CONDENSER 1B OUTLET FLOW L/L
072054 OFGFC08  CONDENSER 1B OUTLET FLOW ALMCLR
072055 OFGFC08  CONDENSER 1B OUTLET FLOW L/L
072056 ASSPA03  CLN STM RCBLR STM PRESS  *LO    60.71    70.00 PSIG
072057 OFGFC08  CONDENSER 1B OUTLET FLOW ALMCLR
072058 OFGFC08  CONDENSER 1B OUTLET FLOW L/L
072100 FWSTA48  FEED WATER FINAL TEMP    *LO  270.48   324.00 DEG F
072104 OFGFC08  CONDENSER 1B OUTLET FLOW ALMCLR
072105 OFGFC08  CONDENSER 1B OUTLET FLOW L/L
072105 GMHAC05  INSIDE GEN LAG NORTH H2  NORMAL
072107 CNDFC49  2CND-DEMIN1D FLOW        LOW

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072107 OFGFC08  CONDENSER 1B OUTLET FLOW ALMCLR
072107 CNDBC01  2CND-IPNL287 SYS TROUBLE TRBL
072108 CNDFC49  2CND-DEMIN1D FLOW        NORMAL
072108 OFGFC08  CONDENSER 1B OUTLET FLOW L/L
072108 CNDBC01  2CND-IPNL287 SYS TROUBLE ALMCLR
072110 OFGFC08  CONDENSER 1B OUTLET FLOW ALMCLR
072112 OFGFC08  CONDENSER 1B OUTLET FLOW L/L
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072118 OFGFC08 CONDENSER 1B OUTLET FLOW L/L
072120 OFGFC08 CONDENSER 1B OUTLET FLOW ALMCLR
072121 OFGFC08 CONDENSER 1B OUTLET FLOW L/L
072121 ASSPA03 CLN STM RCBLR STM PRESS *LO 57.56 70.00 PSIG
072123 OFGFC08 CONDENSER 1B OUTLET FLOW ALMCLR
072124 OFGFC08 CONDENSER 1B OUTLET FLOW L/L
072129 GMHAC05 INSIDE GEN LAG NORTH H2 HIGH
072130 OFGFC08 CONDENSER 1B OUTLET FLOW ALMCLR
072130 TMGBC04 TRNGR NOT OPERATING IN OPER
072131 OFGFC08 CONDENSER 1B OUTLET FLOW L/L
072133 OFGFC08 CONDENSER 1B OUTLET FLOW ALMCLR
072134 OFGFC08 CONDENSER 1B OUTLET FLOW L/L
072135 TMLPC07 LIFT PUMP P6A DISCH PR LOW
072143 TMLPC07 LIFT PUMP P6A DISCH PR NORMAL
072147 OFGFC08 CONDENSER 1B OUTLET FLOW ALMCLR
072148 OFGFC08 CONDENSER 1B OUTLET FLOW L/L
072151 ASSPA03 CLN STM RCBLR STM PRESS *LO 54.71 70.00 PSIG
072152 GMHAC05 INSIDE GEN LAG NORTH H2 NORMAL
072154 OFGFC08 CONDENSER 1B OUTLET FLOW ALMCLR
072155 OFGFC08 CONDENSER 1B OUTLET FLOW L/L
072156 HDLLC12 5 PT HTR E5C WTR LEVEL NORMAL
072157 OFGFC08 CONDENSER 1B OUTLET FLOW ALMCLR
072157 GMHAC05 INSIDE GEN LAG NORTH H2 HIGH
072158 OFGFC08 CONDENSER 1B OUTLET FLOW L/L
072200 OFGFC08 CONDENSER 1B OUTLET FLOW ALMCLR
072201 OFGFC08 CONDENSER 1B OUTLET FLOW L/L
072207 OFGFC08 CONDENSER 1B OUTLET FLOW ALMCLR
072208 OFGFC08 CONDENSER 1B OUTLET FLOW L/L
072212 DRSTC12 DW UC1B DISCH AIR TEMP NORMAL
072214 OFGFC08 CONDENSER 1B OUTLET FLOW ALMCLR
072214 DSRPA01 SCAVENGING STEAM HDR PR *LO 144.54 250.00 PSIG
072215 OFGFC08 CONDENSER 1B OUTLET FLOW L/L
072217 OFGFC08 CONDENSER 1B OUTLET FLOW ALMCLR
072219 OFGFC08 CONDENSER 1B OUTLET FLOW L/L
072221 OFGFC08 CONDENSER 1B OUTLET FLOW ALMCLR
072222 OFGFC08 CONDENSER 1B OUTLET FLOW L/L
072223 HVKBC09 DIV1 CB CHILLED WTR SYS INOP
072224 HVKBC09 DIV1 CB CHILLED WTR SYS NORMAL
072227 OFGFC08 CONDENSER 1B OUTLET FLOW ALMCLR
072228 OFGFC08 CONDENSER 1B OUTLET FLOW L/L
072229 FWSLA101 REACTOR WATER LEVEL LO 130.15 159.29 INCHES
072230 OFGFC08 CONDENSER 1B OUTLET FLOW ALMCLR
072231 ASSPA03 CLN STM RCBLR STM PRESS *LO 51.34 70.00 PSIG
072232 OFGFC08 CONDENSER 1B OUTLET FLOW L/L
072234 OFGFC08 CONDENSER 1B OUTLET FLOW ALMCLR
072235 OFGFC08 CONDENSER 1B OUTLET FLOW L/L

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072235 ESSTA16 5 PT HTR E5A EXTR ST TMP *LO 254.40 280.00 DEG F
072237 OFGFC08 CONDENSER 1B OUTLET FLOW ALMCLR
072238 OFGFC08 CONDENSER 1B OUTLET FLOW L/L
072238 RCSUC25 RCS P1A BRKR 4A AUTO TR ALMCLR
072240 OFGFC08 CONDENSER 1B OUTLET FLOW ALMCLR
072240 RCSUC24 RCS P1A BRKR 3A AUTO TR ALMCLR
072242 OFGFC08 CONDENSER 1B OUTLET FLOW L/L
072243 HVKBC09 DIV1 CB CHILLED WTR SYS INOP
072244 OFGFC08 CONDENSER 1B OUTLET FLOW ALMCLR
072244 HVKBC09 DIV1 CB CHILLED WTR SYS NORMAL
072245 OFGFC08 CONDENSER 1B [illegible]

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072252 HVKBC09  DIV1 CB CHILLED WTR SYS  NORMAL
072254 OFGFC08  CONDENSER 1B OUTLET FLOW ALMCLR
072255 OFGFC08  CONDENSER 1B OUTLET FLOW L/L
072257 OFGFC08  CONDENSER 1B OUTLET FLOW ALMCLR
072257 ASSPC06  CLN STM REBLR INL STM PR H/L
072258 OFGFC08  CONDENSER 1B OUTLET FLOW L/L
072301 OFGFC08  CONDENSER 1B OUTLET FLOW ALMCLR
072302 OFGFC08  CONDENSER 1B OUTLET FLOW L/L
072304 OFGFC08  CONDENSER 1B OUTLET FLOW ALMCLR
072305 OFGFC08  CONDENSER 1B OUTLET FLOW L/L
072311 OFGFC08  CONDENSER 1B OUTLET FLOW ALMCLR
072311 ASSPA03  CLN STM RCBLR STM PRESS  *LO   48.25   70.00 PSIG
072311 FWSTA03  6PT HTR 2FWS-E6C INL TMP *LO  225.05  284.00 DEG F
072312 FWSTA06  6PT HTR 2FWS-E6C OUT TMP *LO  238.80  324.00 DEG F
072312 HDHTA02  5PT HTR E5B DR TEMP      *LO  257.92  284.00 DEG F
072312 OFGFC08  CONDENSER 1B OUTLET FLOW L/L
072314 OFGFC08  CONDENSER 1B OUTLET FLOW ALMCLR
072315 OFGFC08  CONDENSER 1B OUTLET FLOW L/L
072316 ASSPA03  CLN STM RCBLR STM PRESS  *LO   52.42   70.00 PSIG
072317 ASSPC06  CLN STM REBLR INL STM PR NORMAL
072318 OFGFC08  CONDENSER 1B OUTLET FLOW ALMCLR
072319 OFGFC08  CONDENSER 1B OUTLET FLOW L/L
072320 CNMTA10  CND P1A MOT STTR PH1 TMP HI   250.20  250.00 DEG F
072321 OFGFC08  CONDENSER 1B OUTLET FLOW ALMCLR
072321 ASSPA03  CLN STM RCBLR STM PRESS  *LO   57.15   70.00 PSIG
072322 OFGFC08  CONDENSER 1B OUTLET FLOW L/L
072325 OFGFC08  CONDENSER 1B OUTLET FLOW ALMCLR
072326 OFGFC08  CONDENSER 1B OUTLET FLOW L/L
072326 ASSPA03  CLN STM RCBLR STM PRESS  *LO   58.20   70.00 PSIG
072328 OFGFC08  CONDENSER 1B OUTLET FLOW ALMCLR
072329 OFGFC08  CONDENSER 1B OUTLET FLOW L/L
072330 HVRTA01  RB VENT SUPPLY AIR TEMP  *HIL*******L******* DEG F
072331 OFGFC08  CONDENSER 1B OUTLET FLOW ALMCLR
072331 NSSXA101 FEEDWATER TURBITITY       OK    101.53L******* *
072333 OFGFC08  CONDENSER 1B OUTLET FLOW L/L
072335 OFGFC08  CONDENSER 1B OUTLET FLOW ALMCLR
072336 OFGFC08  CONDENSER 1B OUTLET FLOW L/L
072338 OFGFC08  CONDENSER 1B OUTLET FLOW ALMCLR
072339 OFGFC08  CONDENSER 1B OUTLET FLOW L/L
072341 ASSPA03  CLN STM RCBLR STM PRESS  *LO   51.27   70.00 PSIG

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072342 OFGFC08  CONDENSER 1B OUTLET FLOW ALMCLR
072343 OFGFC08  CONDENSER 1B OUTLET FLOW L/L
072345 OFGFC08  CONDENSER 1B OUTLET FLOW ALMCLR
072346 OFGFC08  CONDENSER 1B OUTLET FLOW L/L
072348 OFGFC08  CONDENSER 1B OUTLET FLOW ALMCLR
072349 OFGFC08  CONDENSER 1B OUTLET FLOW L/L
072352 OFGFC08  CONDENSER 1B OUTLET FLOW ALMCLR
072353 OFGFC08  CONDENSER 1B OUTLET FLOW L/L
072355 OFGFC08  CONDENSER 1B OUTLET FLOW ALMCLR
072356 OFGFC08  CONDENSER 1B OUTLET FLOW L/L
072358 OFGFC08  CONDENSER 1B OUTLET FLOW ALMCLR
072359 DSRPA02  SCAV STEAM LINE A PRESS  *LO   38.94  250.00 PSIG
072400 OFGFC08  CONDENSER 1B OUTLET FLOW L/L
072400 HDLLC27  3 PT HTR E3C WTR LEVEL   NORMAL
072401 ASSPA03  CLN STM RCBLR STM PRESS  *LO   64.20   70.00 PSIG
072402 OFGFC08  CONDENSER 1B OUTLET FLOW ALMCLR
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072408 CNDBC01  2CND-IPNL287 SYS TROUBLE TRBL
072409 OFGFC08  CONDENSER 1B OUTLET FLOW ALMCLR
072409 DRSTC12  DW UCIB DISCH AIR TEMP   LOW
072410 CNDFC49  2CND-DEMIN1D FLOW        NORMAL
072410 OFGFC08  CONDENSER 1B OUTLET FLOW L/L
072410 CNDBC01  2CND-IPNL287 SYS TROUBLE ALMCLR
072412 OFGFC08  CONDENSER 1B OUTLET FLOW ALMCLR
072413 OFGFC08  CONDENSER 1B OUTLET FLOW L/L
072415 OFGFC08  CONDENSER 1B OUTLET FLOW ALMCLR
072416 OFGFC08  CONDENSER 1B OUTLET FLOW L/L
072418 OFGFC08  CONDENSER 1B OUTLET FLOW ALMCLR
072419 CNDFC49  2CND-DEMIN1D FLOW        LOW
072419 CNDBC01  2CND-IPNL287 SYS TROUBLE TRBL
072420 OFGFC08  CONDENSER 1B OUTLET FLOW L/L
072422 OFGFC08  CONDENSER 1B OUTLET FLOW ALMCLR
072423 OFGFC08  CONDENSER 1B OUTLET FLOW L/L
072425 OFGFC08  CONDENSER 1B OUTLET FLOW ALMCLR
072426 CNDFC49  2CND-DEMIN1D FLOW        NORMAL
072426 OFGFC08  CONDENSER 1B OUTLET FLOW L/L
072426 CNDBC01  2CND-IPNL287 SYS TROUBLE ALMCLR
072426 ASSPA03  CLN STM RCBLR STM PRESS  *LO   67.27   70.00 PSIG
072427 RCSBC41  RCS FLUX ESTIMATOR       NORMAL
072428 OFGFC08  CONDENSER 1B OUTLET FLOW ALMCLR
072429 OFGFC08  CONDENSER 1B OUTLET FLOW L/L
072431 OFGFC08  CONDENSER 1B OUTLET FLOW ALMCLR
072433 OFGFC08  CONDENSER 1B OUTLET FLOW L/L
072435 OFGFC08  CONDENSER 1B OUTLET FLOW ALMCLR
072436 OFGFC08  CONDENSER 1B OUTLET FLOW L/L
072438 OFGFC08  CONDENSER 1B OUTLET FLOW ALMCLR
072439 OFGFC08  CONDENSER 1B OUTLET FLOW L/L
072442 OFGFC08  CONDENSER 1B OUTLET FLOW ALMCLR
072443 OFGFC08  CONDENSER 1B OUTLET FLOW L/L
072445 OFGFC08  CONDENSER 1B OUTLET FLOW ALMCLR
072445 HVKBC09  DIV1 CB CHILLED WTR SYS  INOP
072446 OFGFC08  CONDENSER 1B OUTLET FLOW L/L

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072446 HVKBC09  DIV1 CB CHILLED WTR SYS  NORMAL
072448 OFGFC08  CONDENSER 1B OUTLET FLOW ALMCLR
072449 OFGFC08  CONDENSER 1B OUTLET FLOW L/L
072452 OFGFC08  CONDENSER 1B OUTLET FLOW ALMCLR
072453 OFGFC08  CONDENSER 1B OUTLET FLOW L/L
072455 OFGFC08  CONDENSER 1B OUTLET FLOW ALMCLR
072456 OFGFC08  CONDENSER 1B OUTLET FLOW L/L
072458 OFGFC08  CONDENSER 1B OUTLET FLOW ALMCLR
072500 OFGFC08  CONDENSER 1B OUTLET FLOW L/L
072501 OFGFC08  CONDENSER 1B OUTLET FLOW ALMCLR
072503 OFGFC08  CONDENSER 1B OUTLET FLOW L/L
072512 OFGFC08  CONDENSER 1B OUTLET FLOW ALMCLR
072512 GMHAC05  INSIDE GEN LAG NORTH H2  NORMAL
072512 HVCBC19  CMPTR RM A/C ACU4A       TRBL
072513 GMHAC05  INSIDE GEN LAG NORTH H2  HIGH
072514 OFGFC08  CONDENSER 1B OUTLET FLOW L/L
072514 HVCBC19  CMPTR RM A/C ACU4A       NORMAL
072515 OFGFC08  CONDENSER 1B OUTLET FLOW ALMCLR
072515 HVKBC09  DIV1 CB CHILLED WTR SYS  INOP
072515 FWSTA48  FEED WATER FINAL TEMP    *LO  250.18  324.00 DEG F
072516 HVKBC09  DIV1 CB CHILLED WTR SYS  NORMAL
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~~072524 OFGFC08 CONDENSER 1B OUTLET FLOW L/L~~
072525 OFGFC08 CONDENSER 1B OUTLET FLOW ALMCLR
072527 OFGFC08 CONDENSER 1B OUTLET FLOW L/L
~~072528 OFGFC08 CONDENSER 1B OUTLET FLOW ALMCLR~~
072530 OFGFC08 CONDENSER 1B OUTLET FLOW L/L
072532 OFGFC08 CONDENSER 1B OUTLET FLOW ALMCLR
~~072533 OFGFC08 CONDENSER 1B OUTLET FLOW L/L~~
072536 OFGFC08 CONDENSER 1B OUTLET FLOW ALMCLR
072537 OFGFC08 CONDENSER 1B OUTLET FLOW L/L
~~072539 OFGFC08~~ CONDENSER 1B OUTLET FLOW ALMCLR
072540 OFGFC08 CONDENSER 1B OUTLET FLOW L/L
072542 OFGFC08 CONDENSER 1B OUTLET FLOW ALMCLR
~~072542 HDLTA11 3PT HTR DCL3B DR OUT TMP~~ LO 98.93 99.00 DEG F
072543 OFGFC08 CONDENSER 1B OUTLET FLOW L/L
072543 MSSTA09 MAIN STEAM LINE B TEMP OK 476.20 486.00 DEG F
~~072549 OFGFC08~~ CONDENSER 1B OUTLET FLOW ALMCLR
072550 OFGFC08 CONDENSER 1B OUTLET FLOW L/L
072552 OFGFC08 CONDENSER 1B OUTLET FLOW ALMCLR
072553 OFGFC08 CONDENSER 1B OUTLET FLOW L/L
072556 CNDFC49 2CND-DEMIN1D FLOW LOW
072556 OFGFC08 CONDENSER 1B OUTLET FLOW ALMCLR
072556 CNDBC01 2CND-IPNL287 SYS TROUBLE TRBL
072557 OFGFC08 CONDENSER 1B OUTLET FLOW L/L
072558 CNDFC49 2CND-DEMIN1D FLOW NORMAL
~~072558 CNDBC01 2CND-IPNL287 SYS TROUBLE~~ ALMCLR
072602 CNDFC49 2CND-DEMIN1D FLOW LOW
072602 OFGFC08 CONDENSER 1B OUTLET FLOW ALMCLR
~~072602 CNDBC01 2CND-IPNL287 SYS~~ TROUBLE TRBL
072604 OFGFC08 CONDENSER 1B OUTLET FLOW L/L
072606 CNDFC49 2CND-DEMIN1D FLOW NORMAL
~~072606 OFGFC08 CONDENSER 1B~~ OUTLET FLOW ALMCLR
072606 ARCLC01 CNSR AIR REM TK SP1A LVL HIGH

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~~072606 CNDBC01 2CND-IPNL287 SYS~~ TROUBLE ALMCLR
072607 OFGFC08 CONDENSER 1B OUTLET FLOW L/L
072607 DRSTC12 DW UC1B DISCH AIR TEMP NORMAL
~~072609 CNDFC49 2CND-DEMIN1D FLOW~~ LOW
072609 OFGFC08 CONDENSER 1B OUTLET FLOW ALMCLR
072609 CNDBC01 2CND-IPNL287 SYS TROUBLE TRBL
~~072610 OFGFC08 CONDENSER 1B~~ OUTLET FLOW L/L
072612 OFGFC08 CONDENSER 1B OUTLET FLOW ALMCLR
072613 OFGFC08 CONDENSER 1B OUTLET FLOW L/L
~~072615 CNDFC49 2CND-DEMIN1D~~ FLOW NORMAL
072615 CNDBC01 2CND-IPNL287 SYS TROUBLE ALMCLR
072616 OFGFC08 CONDENSER 1B OUTLET FLOW ALMCLR
~~072617 OFGFC08 CONDENSER 1B~~ OUTLET FLOW L/L
072619 OFGFC08 CONDENSER 1B OUTLET FLOW ALMCLR
072620 OFGFC08 CONDENSER 1B OUTLET FLOW L/L
~~072622 OFGFC08~~ CONDENSER 1B OUTLET FLOW ALMCLR
072623 OFGFC08 CONDENSER 1B OUTLET FLOW L/L
072625 OFGFC08 CONDENSER 1B OUTLET FLOW ALMCLR
~~072627 OFGFC08 CONDENSER 1B~~ OUTLET FLOW L/L
072629 OFGFC08 CONDENSER 1B OUTLET FLOW ALMCLR
072630 OFGFC08 CONDENSER 1B OUTLET FLOW L/L
~~072632 OFGFC08~~ CONDENSER 1B OUTLET FLOW ALMCLR
072632 HDLLC11 5 PT HTR E5B WTR LEVEL NORMAL
072633 OFGFC08 CONDENSER 1B OUTLET FLOW L/L
~~072634 HVKBC69~~ DIV1 CR CHILLED WTR SYS [illegible]

072635 OFGFC08 CONDENSER 1B OUTLET FLOW ALMCLR
~~072635 HVKBC09 DIV1-CB-CHILLED WTR SYS~~ NORMAL
072636 OFGFC08 CONDENSER 1B OUTLET FLOW L/L
072636 ESSTA02 6 PT HTR E6B EXTR ST TMP *LO 295.10 325.00 DEG F
~~072639 OFGFC08 CONDENSER 1B OUTLET FLOW~~ ALMCLR
072640 OFGFC08 CONDENSER 1B OUTLET FLOW L/L
072642 OFGFC08 CONDENSER 1B OUTLET FLOW ALMCLR
~~072643 OFGFC08 CONDENSER 1B~~ OUTLET FLOW L/L
072645 OFGFC08 CONDENSER 1B OUTLET FLOW ALMCLR
072646 OFGTC39 OFFGAS INLET TEMP HIGH
~~072647 OFGFC08 CONDENSER 1B OUTLET FLOW L/L~~
072648 OFGTC39 OFFGAS INLET TEMP NORMAL
072649 OFGFC08 CONDENSER 1B OUTLET FLOW ALMCLR
~~072650 OFGFC08~~ CONDENSER 1B OUTLET FLOW L/L
072651 OFGFC08 CONDENSER 1B OUTLET FLOW ALMCLR
072653 OFGFC08 CONDENSER 1B OUTLET FLOW L/L
072653 OFGTC39 OFFGAS INLET TEMP HIGH
-072654 TMGBC04 TRNGR NOT OPERATING ALARM
072659 OFGFC08 CONDENSER 1B OUTLET FLOW ALMCLR
072700 OFGFC08 CONDENSER 1B OUTLET FLOW L/L
072702 OFGFC08 CONDENSER 1B OUTLET FLOW ALMCLR
072703 OFGFC08 CONDENSER 1B OUTLET FLOW L/L
~~072708 OFGFC08 CONDENSER 1B OUTLET FLOW ALMCLR~~
072708 GMHAC05 INSIDE GEN LAG NORTH H2 NORMAL
072709 OFGFC08 CONDENSER 1B OUTLET FLOW L/L
~~072712 OFGFC08~~ CONDENSER 1B OUTLET FLOW ALMCLR
072713 OFGFC08 CONDENSER 1B OUTLET FLOW L/L
072715 OFGFC08 CONDENSER 1B OUTLET FLOW ALMCLR
~~072717 OFGFC08 CONDENSER 1B OUTLET FLOW~~ L/L
072718 OFGFC08 CONDENSER 1B OUTLET FLOW ALMCLR

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~~072719 OFGFC08 CONDENSER 1B OUTLET FLOW~~ L/L
072722 OFGFC08 CONDENSER 1B OUTLET FLOW ALMCLR
072723 OFGFC08 CONDENSER 1B OUTLET FLOW L/L
~~072725 OFGFC08 CONDENSER 1B OUTLET FLOW~~ ALMCLR
072725 OFGTC39 OFFGAS INLET TEMP NORMAL
072726 OFGFC08 CONDENSER 1B OUTLET FLOW L/L
~~072726 OFGTC39 OFFGAS INLET TEMP~~ HIGH
072728 OFGFC08 CONDENSER 1B OUTLET FLOW ALMCLR
072730 OFGFC08 CONDENSER 1B OUTLET FLOW L/L
~~072731 OFGFC08 CONDENSER 1B OUTLET FLOW~~ ALMCLR
072732 OFGFC08 CONDENSER 1B OUTLET FLOW L/L
072735 OFGFC08 CONDENSER 1B OUTLET FLOW ALMCLR
~~072736 OFGFC08 CONDENSER 1B OUTLET FLOW~~ L/L
072736 ASSPA03 CLN STM RCBLR STM PRESS LO 69.75 70.00 PSIG
072739 OFGFC08 CONDENSER 1B OUTLET FLOW ALMCLR
~~072739 GMHAC05 INSIDE GEN LAG NORTH H2~~ HIGH
072739 TMGBC04 TRNGR NOT OPERATING IN OPER
072740 OFGFC08 CONDENSER 1B OUTLET FLOW L/L
~~072742 HDLTA07 3PT HTR 2CNM-E3A DRN TMP~~ *LO 118.39 167.00 DEG F
072742 OFGFC08 CONDENSER 1B OUTLET FLOW ALMCLR
072743 OFGFC08 CONDENSER 1B OUTLET FLOW L/L
~~072745 OFGFC08 CONDENSER~~ 1B OUTLET FLOW ALMCLR
072745 TMLPC07 LIFT PUMP P6A DISCH PR LOW
072747 OFGFC08 CONDENSER 1B OUTLET FLOW L/L
~~072749 OFGFC08 CONDENSER 1B OUTLET FLOW~~ ALMCLR
072750 OFGFC08 CONDENSER 1B OUTLET FLOW L/L
072752 OFGFC08 CONDENSER 1B OUTLET FLOW ALM

072756 OFGFC08 CONDENSER 1B OUTLET FLOW ALMCLR
~~072757 OFGFC08 CONDENSER 1B OUTLET FLOW L/L~~
072759 OFGFC08 CONDENSER 1B OUTLET FLOW ALMCLR
072800 OFGFC08 CONDENSER 1B OUTLET FLOW L/L
~~072802 OFGFC08 CONDENSER 1B OUTLET FLOW ALMCLR~~
072804 OFGFC08 CONDENSER 1B OUTLET FLOW L/L
072805 DRSTC12 DW UC1B DISCH AIR TEMP LOW
~~072806 OFGFC08 CONDENSER 1B OUTLET FLOW ALMCLR~~
072807 OFGFC08 CONDENSER 1B OUTLET FLOW L/L
072809 OFGFC08 CONDENSER 1B OUTLET FLOW ALMCLR
~~072810 OFGFC08~~ CONDENSER 1B OUTLET FLOW L/L
072812 OFGFC08 CONDENSER 1B OUTLET FLOW ALMCLR
072812 HDLTA03 3PT HTR 2CNM-E3B DRN TMP *LO 118.39 157.00 DEG F
072813 OFGFC08 CONDENSER 1B OUTLET FLOW L/L
072818 OFGFC03 CONDENSER 1B OUTLET FLOW ALMCLR
072818 CMSAC02 D2 PRIMARY CNMT H2 CONC HIGH
072820 OFGFC08 CONDENSER 1B OUTLET FLOW L/L
072822 OFGFC08 CONDENSER 1B OUTLET FLOW ALMCLR
072823 OFGFC08 CONDENSER 1B OUTLET FLOW L/L
~~072825 OFGFC08 CONDENSER 1B OUTLET FLOW ALMCLR~~
072826 OFGFC08 CONDENSER 1B OUTLET FLOW L/L
072826 HVKBC09 DIV1 CB CHILLED WTR SYS INOP
~~072827 HVKBC09 DIV1 CB CHILLED WTR SYS NORMAL~~
072828 HVKBC09 DIV1 CB CHILLED WTR SYS INOP
072828 CMSAC02 D2 PRIMARY CNMT H2 CONC NORMAL
~~072829 HVKBC09 DIV1 CB CHILLED WTR SYS NORMAL~~
072830 HVKBC09 DIV1 CB CHILLED WTR SYS INOP

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~~072830 ROD 14-31 NO DATA AT LEAST 1 NOTCH~~
072831 HVKBC09 DIV1 CB CHILLED WTR SYS NORMAL
072832 OFGFC08 CONDENSER 1B OUTLET FLOW ALMCLR
~~072832 ROD 14-31 25 TO 0~~
072833 OFGFC08 CONDENSER 1B OUTLET FLOW L/L
072835 OFGFC08 CONDENSER 1B OUTLET FLOW ALMCLR
~~072835 HVKBC09 DIV1 CB CHILLED WTR SYS INOP~~
072836 OFGFC08 CONDENSER 1B OUTLET FLOW L/L
072836 HVKBC09 DIV1 CB CHILLED WTR SYS NORMAL
~~072838 OFGFC08~~ CONDENSER 1B OUTLET FLOW ALMCLR
072839 OFGFC08 CONDENSER 1B OUTLET FLOW L/L
072842 OFGFC08 CONDENSER 1B OUTLET FLOW ALMCLR
~~072842 FWSTA06 6PT HTR 2FWS-E6C OUT TMP~~ *LO 227.85 324.00 DEG F
072843 OFGFC08 CONDENSER 1B OUTLET FLOW L/L
072845 OFGFC08 CONDENSER 1B OUTLET FLOW ALMCLR
~~072846 OFGFC08~~ CONDENSER 1B OUTLET FLOW L/L
072846 ASSPA03 CLN STM RCBLR STM PRESS *LO 66.67 76.00 PSIG
072847 HVKBC09 DIV1 CB CHILLED WTR SYS INOP
~~072848 OFGFC08 CONDENSER 1B OUTLET FLOW ALMCLR~~
072848 HVKBC09 DIV1 CB CHILLED WTR SYS NORMAL
072850 OFGFC08 CONDENSER 1B OUTLET FLOW L/L
~~072851 OFGFC08 CONDENSER 1B OUTLET FLOW ALMCLR~~
072853 OFGFC08 CONDENSER 1B OUTLET FLOW L/L
072859 ARCLC01 CNSR AIR REM TK SP1A LVL NORMAL
~~072900 FWSTA48 FEED WATER FINAL TEMP~~ *LO 249.76 324.00 DEG F
072901 OFGFC08 CONDENSER 1B OUTLET FLOW ALMCLR
072902 OFGFC08 CONDENSER 1B OUTLET FLOW L/L
~~072905 OFGFC08 CONDENSER 1B OUTLET FLOW ALMCLR~~
072906 OFGFC08 CONDENSER 1B OUTLET FLOW L/L

072910 OFGFC08 CONDENSER 1B OUTLET FLOW L/L
072910 ARCLC02 CNSR AIR REM TK SP1B LVL NORMAL
072911 ARCLC02 CNSR AIR REM TK SP1B LVL HIGH
072912 FWSTA03 6PT HTR 2FWS-E6C INL TMP *LO 214.27   284.00 DEG F
072915 CMSAC04 D2 PRIMARY CNMT O2 CONC HIGH
072918 OFGFC08 CONDENSER 1B OUTLET FLOW ALMCLR
072919 OFGFC08 CONDENSER 1B OUTLET FLOW L/L
072921 OFGFC08 CONDENSER 1B OUTLET FLOW ALMCLR
072921 ARCLC02 CNSR AIR REM TK SP1B LVL NORMAL
072922 OFGFC08 CONDENSER 1B OUTLET FLOW L/L
072925 OFGFC08 CONDENSER 1B OUTLET FLOW ALMCLR
072926 OFGFC08 CONDENSER 1B OUTLET FLOW L/L
072927 GMHAC05 INSIDE GEN LAG NORTH H2 NORMAL
072928 OFGFC08 CONDENSER 1B OUTLET FLOW ALMCLR
072929 OFGFC08 CONDENSER 1B OUTLET FLOW L/L
072930 GMHAC05 INSIDE GEN LAG NORTH H2 HIGH
072931 OFGFC08 CONDENSER 1B OUTLET FLOW ALMCLR
072932 OFGFC08 CONDENSER 1B OUTLET FLOW L/L
072935 OFGFC08 CONDENSER 1B OUTLET FLOW ALMCLR
072936 OFGFC08 CONDENSER 1B OUTLET FLOW L/L
072938 OFGFC08 CONDENSER 1B OUTLET FLOW ALMCLR
072939 OFGFC08 CONDENSER 1B OUTLET FLOW L/L
072940 TMGBC04 TRNGR NOT OPERATING   IN OPER
072941 OFGFC08 CONDENSER 1B OUTLET FLOW ALMCLR
072941 HVKBC09 DIV1 CB CHILLED WTR SYS INOP

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072942 OFGFC08 CONDENSER 1B OUTLET FLOW L/L
072942 HVKBC09 DIV1 CB CHILLED WTR SYS NORMAL
072945 OFGFC08 CONDENSER 1B OUTLET FLOW ALMCLR
072945 TMLPC07 LIFT PUMP P6A DISCH PR   LOW
072946 OFGFC08 CONDENSER 1B OUTLET FLOW L/L
072948 OFGFC08 CONDENSER 1B OUTLET FLOW ALMCLR
072949 OFGFC08 CONDENSER 1B OUTLET FLOW L/L
072950 GMHAC05 INSIDE GEN LAG NORTH H2 NORMAL
072951 OFGFC08 CONDENSER 1B OUTLET FLOW ALMCLR
072952 OFGFC08 CONDENSER 1B OUTLET FLOW L/L
072954 OFGFC08 CONDENSER 1B OUTLET FLOW ALMCLR
072954 TMLPC07 LIFT PUMP P6A DISCH PR   NORMAL
072956 OFGFC08 CONDENSER 1B OUTLET FLOW L/L
072956 GMHAC05 INSIDE GEN LAG NORTH H2 HIGH
072957 OFGFC08 CONDENSER 1B OUTLET FLOW ALMCLR
072959 OFGFC08 CONDENSER 1B OUTLET FLOW L/L
073001 OFGFC08 CONDENSER 1B OUTLET FLOW ALMCLR
073002 OFGFC08 CONDENSER 1B OUTLET FLOW L/L
073002 ESSPA07A HTR 4A PRESS   *LO   8.9   14.0 PSIA
073002 ESSPA08A HTR 4B PRESS   *LO   9.1   14.0 PSIA
073002 ESSPA09A HTR 4C PRESS   *LO   2.9   14.0 PSIA
073003 SPGEA01A GENERATOR VOLTAGE   *LO   -7.5   21.0 KV
073003 DRSTC12 DW UC1B DISCH AIR TEMP   NORMAL
073004 OFGFC08 CONDENSER 1B OUTLET FLOW ALMCLR
073005 OFGFC08 CONDENSER 1B OUTLET FLOW L/L
073008 OFGFC08 CONDENSER 1B OUTLET FLOW ALMCLR
073009 OFGFC08 CONDENSER 1B OUTLET FLOW L/L
073010 OFGFC08 CONDENSER 1B OUTLET FLOW ALMCLR
073011 OFGFC08 CONDENSER 1B OUTLET FLOW L/L
073012 HDLTA02 5PT HTR 2CNM-E5B DRN TMP *LO 210.78   246.00 DEG F
073014 OFGFC08 CONDENSER 1B OUTLET FLOW ALMCLR
073014 GMHAC05 INSIDE GEN LAG NORTH H2 NORMAL

073021 CNDBC01 2CND-IPNL287 SYS TROUBLE TRBL
073022 OFGFC08 CONDENSER 1B OUTLET FLOW L/L
~~073023 CNDFC49 2CND-DEMIN1D FLOW NORMAL~~
073023 CNDBC01 2CND-IPNL287 SYS TROUBLE ALMCLR
073024 OFGFC08 CONDENSER 1B OUTLET FLOW ALMCLR
073024 HVKBC09 DIV1 CB CHILLED WTR SYS INOP
073025 CNDFC49 2CND-DEMIN1D FLOW LOW
073025 OFGFC08 CONDENSER 1B OUTLET FLOW L/L
073025 HVKBC09 DIV1 CB CHILLED WTR SYS NORMAL
073025 CNDBC01 2CND-IPNL287 SYS TROUBLE TRBL
073027 OFGFC08 CONDENSER 1B OUTLET FLOW ALMCLR
~~073028 OFGFC08 CONDENSER 1B OUTLET FLOW L/L~~
073031 OFGFC08 CONDENSER 1B OUTLET FLOW ALMCLR
073032 OFGFC08 CONDENSER 1B OUTLET FLOW L/L
~~073032 GMHAC05 INSIDE GEN LAG NORTH H2 HIGH~~
073033 CNDFC49 2CND-DEMIN1D FLOW NORMAL
073033 CNDBC01 2CND-IPNL287 SYS TROUBLE ALMCLR
~~073034 OFGFC08 CONDENSER 1B OUTLET FLOW ALMCLR~~
073035 CNDFC49 2CND-DEMIN1D FLOW LOW

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~~073035 OFGFC08 CONDENSER 1B OUTLET FLOW L/L~~
073035 CNDBC01 2CND-IPNL287 SYS TROUBLE TRBL
073037 OFGFC08 CONDENSER 1B OUTLET FLOW ALMCLR
~~073039 OFGFC08 CONDENSER 1B OUTLET FLOW L/L~~
073042 CNDFC49 2CND-DEMIN1D FLOW NORMAL
073042 CNDBC01 2CND-IPNL287 SYS TROUBLE ALMCLR
~~073045 OFGFC08 CONDENSER 1B OUTLET FLOW ALMCLR~~
073046 OFGFC08 CONDENSER 1B OUTLET FLOW L/L
073052 OFGFC08 CONDENSER 1B OUTLET FLOW ALMCLR
~~073053 OFGFC08 CONDENSER 1B OUTLET FLOW L/L~~
073053 HVKBC09 DIV1 CB CHILLED WTR SYS INOP
073054 HVKBC09 DIV1 CB CHILLED WTR SYS NORMAL
~~073058 OFGFC08 CONDENSER 1B OUTLET FLOW ALMCLR~~
073058 FWSPA05 REACTOR INLET PRES PT40B *LO 558.24 875.00 PSIG
073059 OFGFC08 CONDENSER 1B OUTLET FLOW L/L
~~073101 OFGFC08 CONDENSER 1B OUTLET FLOW ALMCLR~~
073102 OFGFC08 CONDENSER 1B OUTLET FLOW L/L
073104 OFGFC08 CONDENSER 1B OUTLET FLOW ALMCLR
~~073105 OFGFC08 CONDENSER 1B OUTLET FLOW L/L~~
073108 OFGFC08 CONDENSER 1B OUTLET FLOW ALMCLR
073109 OFGFC08 CONDENSER 1B OUTLET FLOW L/L
~~073111 ASSPA03 CLN STM RCBLR STM PRESS *LO 63.71 70.00 PSIG~~
073112 GMHAC05 INSIDE GEN LAG NORTH H2 NORMAL
073114 OFGFC08 CONDENSER 1B OUTLET FLOW ALMCLR
~~073115 OFGFC08 CONDENSER 1B OUTLET FLOW L/L~~
073117 OFGFC08 CONDENSER 1B OUTLET FLOW ALMCLR
073117 TMGBC04 TRNGR NOT OPERATING ALARM
~~073118 OFGFC08 CONDENSER 1B OUTLET FLOW L/L~~
073120 OFGFC08 CONDENSER 1B OUTLET FLOW ALMCLR
073121 OFGFC08 CONDENSER 1B OUTLET FLOW L/L
~~073122 RCSBC06 RCS FCV B MTN INH1B ALMCLR~~
073124 OFGFC08 CONDENSER 1B OUTLET FLOW ALMCLR
073124 RCSBC05 RCS FCV A MTN INH1B ALMCLR
~~073125 OFGFC08 CONDENSER 1B OUTLET FLOW L/L~~
073130 OFGFC08 CONDENSER 1B OUTLET FLOW ALMCLR
073131 ISCUC02 RPS A2 RX WTR LVL LO TR ALMCLR
~~073131 ISCUC04 RPS B2 RX WTR LVL LO TR ALMCLR~~

073133 ADSBC16 ADS LGC B RX WTR LVL LO ALMCLR
073134 FWSLA101 REACTOR WATER LEVEL OK 161.86 159.29 INCHES
073135 ISCUC01 RPS A1 RX WTR LVL LO TR ALMCLR
073137 OFGFC08 CONDENSER 1B OUTLET FLOW ALMCLR
073138 OFGFC08 CONDENSER 1B OUTLET FLOW L/L
073140 OFGFC08 CONDENSER 1B OUTLET FLOW ALMCLR
073141 OFGFC08 CONDENSER 1B OUTLET FLOW L/L
073143 HVKBC09 DIV1 CB CHILLED WTR SYS INOP
073144 HVKBC09 DIV1 CB CHILLED WTR SYS NORMAL
073147 OFGFC08 CONDENSER 1B OUTLET FLOW ALMCLR
073148 OFGFC08 CONDENSER 1B OUTLET FLOW L/L
073150 OFGFC08 CONDENSER 1B OUTLET FLOW ALMCLR
073151 OFGFC08 CONDENSER 1B OUTLET FLOW L/L
073152 ESSPA10 2 PT HTR E2B SHELL PRESS *LO 2.8 7.3 PSIA
073153 HDLLC12 5 PT HTR E5C WTR LEVEL HIGH

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073157 OFGFC08 CONDENSER 1B OUTLET FLOW ALMCLR
073158 OFGFC08 CONDENSER 1B OUTLET FLOW L/L
073200 GMHAC05 INSIDE GEN LAG NORTH H2 HIGH
073200 DRSTC12 DW UC1B DISCH AIR TEMP LOW
073204 GMHAC05 INSIDE GEN LAG NORTH H2 NORMAL
073207 OFGFC08 CONDENSER 1B OUTLET FLOW ALMCLR
073208 OFGFC08 CONDENSER 1B OUTLET FLOW L/L
073209 OFGFC08 CONDENSER 1B OUTLET FLOW ALMCLR
073211 OFGFC08 CONDENSER 1B OUTLET FLOW L/L
073213 OFGFC08 CONDENSER 1B OUTLET FLOW ALMCLR
073214 OFGFC08 CONDENSER 1B OUTLET FLOW L/L
073216 ROD 14-31 -1 TO 0
073220 OFGFC08 CONDENSER 1B OUTLET FLOW ALMCLR
073221 OFGFC08 CONDENSER 1B OUTLET FLOW L/L
073223 OFGFC08 CONDENSER 1B OUTLET FLOW ALMCLR
073224 OFGFC08 CONDENSER 1B OUTLET FLOW L/L
073227 OFGFC08 CONDENSER 1B OUTLET FLOW ALMCLR
073228 OFGFC08 CONDENSER 1B OUTLET FLOW L/L
073230 OFGFC08 CONDENSER 1B OUTLET FLOW ALMCLR
073231 OFGFC08 CONDENSER 1B OUTLET FLOW L/L
073233 OFGFC08 CONDENSER 1B OUTLET FLOW ALMCLR
073234 OFGFC08 CONDENSER 1B OUTLET FLOW L/L
073235 GMHAC05 INSIDE GEN LAG NORTH H2 HIGH
073237 OFGFC08 CONDENSER 1B OUTLET FLOW ALMCLR
073238 OFGFC08 CONDENSER 1B OUTLET FLOW L/L
073241 OFGFC08 CONDENSER 1B OUTLET FLOW ALMCLR
073242 OFGFC08 CONDENSER 1B OUTLET FLOW L/L
073242 FWSTA02 6PT HTR 2FWS-E6B INL TMP *LO 272.03 284.00 DEG F
073243 OFGFC08 CONDENSER 1B OUTLET FLOW ALMCLR
073243 RCSUC15 RCS RX LO LVL INTLK A NOAVLB
073244 OFGFC08 CONDENSER 1B OUTLET FLOW L/L
073247 OFGFC08 CONDENSER 1B OUTLET FLOW ALMCLR
073248 OFGFC08 CONDENSER 1B OUTLET FLOW L/L
073250 OFGFC08 CONDENSER 1B OUTLET FLOW ALMCLR
073251 OFGFC08 CONDENSER 1B OUTLET FLOW L/L
073251 ASSPC01 AIR EJCTR INL STM HDR PR H/L
073251 ROD 14-31 -1 TO 0
073256 OFGFC08 CONDENSER 1B OUTLET FLOW ALMCLR
073256 ASSPA01 CNSR AIR RMVL STM PRESS HI 133.50 133.00 PSIG
073257 OFGFC08 CONDENSER 1B OUTLET FLOW L/L
073300 OFGFC08 CONDENSER 1B OUTLET FLOW ALMCLR

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073307 OFGFC08  CONDENSER 1B OUTLET FLOW L/L
073308 HVKBC09  DIV1 CB CHILLED WTR SYS  INOP
073309 OFGFC08  CONDENSER 1B OUTLET FLOW ALMCLR
073310 HVKBC09  DIV1 CB CHILLED WTR SYS  NORMAL
073311 OFGFC08  CONDENSER 1B OUTLET FLOW L/L
073311 NNSBC02  SRM SHORT PERIOD         ALARM
073311 ASSPA01  CNSR AIR RMVL STM PRESS  *HI  136.05   133.00 PSIG
073312 OFGFC08  CONDENSER 1B OUTLET FLOW ALMCLR
073312 FWSTA05  6PT HTR 2FWS-ECB OUT TMP *LO  343.29   324.00 DEG F
073313 OFGFC08  CONDENSER 1B OUTLET FLOW L/L

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073313 NNSBC02  SRM SHORT PERIOD         ALMCLR
073314 HVKBC09  DIV1 CB CHILLED WTR SYS  INOP
073315 OFGFC08  CONDENSER 1B OUTLET FLOW ALMCLR
073315 HVKBC09  DIV1 CB CHILLED WTR SYS  NORMAL
073315  ROD 14-31   -1 TO   0
073316 ASSPA01  CNSR AIR RMVL STM PRESS  *HI  137.40   133.00 PSIG
073317 OFGFC08  CONDENSER 1B OUTLET FLOW L/L
073318 TMAPC02  CNSR VAC (2TMA-PS2B)     NORMAL
073318 OFGFC08  CONDENSER 1B OUTLET FLOW ALMCLR
073321 ASSPA01  CNSR AIR RMVL STM PRESS  *HI  138.11   133.00 PSIG
073324 OFGPA01  OFFGAS SYS INLET PRESS   HI    19.92    16.70 PSIA
073325 OFGFC08  CONDENSER 1B OUTLET FLOW L/L
073326 ASSPA01  CNSR AIR RMVL STM PRESS  *HI  141.67   133.00 PSIG
073327 OFGFC08  CONDENSER 1B OUTLET FLOW ALMCLR
073328 OFGFC08  CONDENSER 1B OUTLET FLOW L/L
073331 OFGFC08  CONDENSER 1B OUTLET FLOW ALMCLR
073331  ROD 14-31   -1 TO   0
073331 ASSFA02  AIR EJCTR B INL STM FLO  *LO    5.38    12.50 KLBS/H
073332 OFGFC08  CONDENSER 1B OUTLET FLOW L/L
073333 OFGFC08  CONDENSER 1B OUTLET FLOW ALMCLR
073335 OFGFC08  CONDENSER 1B OUTLET FLOW L/L
073336 OFGFC08  CONDENSER 1B OUTLET FLOW ALMCLR
073336 ASSPA01  CNSR AIR RMVL STM PRESS  *HI  138.19   133.00 PSIG
073336 OFGPA01  OFFGAS SYS INLET PRESS   *HI   18.46    16.70 PSIA
073337 OFGPA01  OFFGAS SYS INLET PRESS   *HI   17.92    16.70 PSIA
073339 CNDFC49  2CND-DEMIN1D FLOW        LOW
073339 CNDBC01  2CND-IPNL287 SYS TROUBLE TRBL
073339 OFGPA01  OFFGAS SYS INLET PRESS   *HI   17.14    16.70 PSIA
073339 OFGPA01  OFFGAS SYS INLET PRESS   OK    16.26    16.70 PSIA
073340 OFGPC06  OFFGAS SYS INLET PRESS   NORMAL
073341 ASSFA02  AIR EJCTR B INL STM FLO  *LO    3.35    12.50 KLBS/H
073345 OFGPA01  OFFGAS SYS INLET PRESS   LO    10.75    11.00 PSIA
073346 CNDFC49  2CND-DEMIN1D FLOW        NORMAL
073346 CNDBC01  2CND-IPNL287 SYS TROUBLE ALMCLR
073346 ASSPA01  CNSR AIR RMVL STM PRESS  *HI  135.00   133.00 PSIG
073348 OFGPA01  OFFGAS SYS INLET PRESS   *LO   10.27    11.00 PSIA
073349 CNDFC49  2CND-DEMIN1D FLOW        LOW
073349 CNDBC01  2CND-IPNL287 SYS TROUBLE TRBL
073351 OFGFC08  CONDENSER 1B OUTLET FLOW L/L
073351 OFGTC39  OFFGAS INLET TEMP        NORMAL
073353 CNDFC49  2CND-DEMIN1D FLOW        NORMAL
073353 CNDBC01  2CND-IPNL287 SYS TROUBLE ALMCLR
073356 CNDFC49  2CND-DEMIN1D FLOW        LOW
073356 CNDBC01  2CND-IPNL287 SYS TROUBLE TRBL
073358 CNDFC49  2CND-DEMIN1D FLOW        NORMAL
073358 CNDBC01  2CND-IPNL287 SYS TROUBLE ALMCLR
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073426	ASSPA01	CNSR AIR RMVL STM PRESS	*HI	136.57	133.00	PSIG
073428	ARCLC04	CNSR AIR REM TK SP1B LVL	LOW			
073431	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
073431	ASSPA01	CNSR AIR RMVL STM PRESS	*HI	134.02	133.00	PSIG

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073432	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
073436	ASSPA01	CNSR AIR RMVL STM PRESS	OK	132.41	133.00	PSIG
073439	ESSTA18	5 PT HTR E5C EXTR ST TMP	*LO	267.37	280.00	DEG F
073441	ASSFA02	AIR EJCTR B INL STM FLO	*LO	1.21	12.50	KLBS/H
073441	ASSPA01	CNSR AIR RMVL STM PRESS	HI	135.11	133.00	PSIG
073442	OFGFC08	CONDENSER 1B OUTLET FLOW	ALMCLR			
073442	FWSTA06	6PT HTR 2FWS-E6C OUT TMP	*LO	217.91	324.00	DEG F
073445	OFGFC08	CONDENSER 1B OUTLET FLOW	L/L			
073446	ASSFA02	AIR EJCTR B INL STM FLO	*LO	6.49	12.50	KLBS/H
073446	ASSPA01	CNSR AIR RMVL STM PRESS	*HI	140.96	133.00	PSIG
073451	ASSFA02	AIR EJCTR B INL STM FLO	*LO	2.74	12.50	KLBS/H
073456	ASSFA02	AIR EJCTR B INL STM FLO	*LO	0.00	12.50	KLBS/H
073456	ASSPA01	CNSR AIR RMVL STM PRESS	*HI	135.45	133.00	PSIG
073502	ASSPA01	CNSR AIR RMVL STM PRESS	*HI	133.16	133.00	PSIG
073502	OFGFA01	OFFGAS SYS FLOW TO STACK	LO	7.46	15.00	SCFM
073506	ASSPA01	CNSR AIR RMVL STM PRESS	OK	131.66	133.00	PSIG
073506	CNMPA06	RX FD WTR PMP1B SUCT PR	*LO	116.40	236.00	PSIG
073512	HDHTA01	6PT HTR E6A DR TEMP	LO	283.91	284.00	DEG F
073514	GMHAC05	INSIDE GEN LAG NORTH H2	NORMAL			
073522	ROD 14-31	-1 TO 0				
073524	CRSPA10	REHTR B COLD REHT PRESS	*LO	1.65	140.00	PSIA
073530	FWSTA48	FEED WATER FINAL TEMP	*LO	238.66	324.00	DEG F
073533	CRSPA06	2MSS-E1B SHL PR PT1B	*LO	4.81	140.00	PSIA
073540	GMHAC05	INSIDE GEN LAG NORTH H2	HIGH			
073540	DSMTA02	MSTR SEP DR TK4B DR TEMP	*LO	138.48	300.00	DEG F
073543	GMHAC05	INSIDE GEN LAG NORTH H2	NORMAL			
073544	GMHAC05	INSIDE GEN LAG NORTH H2	HIGH			
073549	GMHAC05	INSIDE GEN LAG NORTH H2	NORMAL			
073554	OFGFA01	OFFGAS SYS FLOW TO STACK	SLO	-27.62	15.00	SCFM
073556	GMHAC05	INSIDE GEN LAG NORTH H2	HIGH			
073617	ARCLC04	CNSR AIR REM TK SP1B LVL	NORMAL			
073622	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
073623	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
073629	RCSUC20	RCS RX LO LVL INTLK B	NOAVLB			
073630	HVRTA01	RB VENT SUPPLY AIR TEMP	OK	L*******L*******		DEG F
073641	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
073642	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
073643	MSSTA11	MAIN STEAM LINE D TEMP	OK	476.20	486.00	DEG F
073651	GMHAC05	INSIDE GEN LAG NORTH H2	NORMAL			
073742	CCPBC09	RBCLCW P2A/B AUTO START	STOP			
073751	TMAPC03	CNSR VAC (2TMA-PS2C)	NORMAL			
073754	OFGTA01	OFFGAS SYSTEM INLET TEMP	OK	281.56	285.00	DEG F
073808	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
073810	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
073810	DSMTA01	MSTR SEP DR TK4A DR TEMP	*LO	138.89	300.00	DEG F
073813	ICSBC04	RCIC SYS	INOP			
073817	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
073818	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
073836	ASSPA02	OFFGAS PREHTR ST HDR PR	LO	80.78	81.00	PSIG
073843	MSSTA10	MAIN STEAM LINE C TEMP	OK	476.05	486.00	DEG F
073845	ASSPC03	OFFGAS PREHTR STM HDR PR	H/L			
073851	ASSPA02	OFFGAS PREHTR ST HDR PR	*LO	74.85	81.00	PSIG

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073922	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
073923	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
073924	GMHAC05	INSIDE GEN LAG NORTH H2	HIGH			
073941	ASSPA02	OFFGAS PREHTR ST HDR PR	*LO	59.00	81.00	PSIG
073950	CNMTA10	CND P1A MOT STTR PH1 TMP	OK	244.72	250.00	DEG F
073952	HVCMA04	RELAY ROOM HMDT MT8B	OK	49.31	50.00	%RH
073954	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
073955	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
073958	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
074000	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
074001	ASSPA02	OFFGAS PREHTR ST HDR PR	*LO	53.95	81.00	PSIG
074002	ESSPA07A	HTR 4A PRESS	*LO	8.2	14.0	PSIA
074002	ESSPA08A	HTR 4B PRESS	*LO	8.4	14.0	PSIA
074002	HRSPA05A	MOIST SEP A OUTLET PRESS	*LO	2.6	17.2	PSIA
074002	HRSPA08A	MOIST SEP B OUTLET PRESS	*LO	2.7	17.2	PSIA
074003	MSSTA13A	MAIN STEAM TEMP	*HI	486.8	450.0	DEG F
074003	SPGEA01A	GENERATOR VOLTAGE	*LO	-5.3	21.0	KV
074005	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
074006	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
074012	ESSPA20	2 PT HTR E2C SHELL PRESS	*LO	2.9	7.3	PSIA
074021	ASSPA02	OFFGAS PREHTR ST HDR PR	*LO	49.75	81.00	PSIG
074040	ICSBC04	RCIC SYS	ALMCLR			
074042	HDLTA06	4PT HTR 2CNM-E4C DRN TMP	*LO	177.49	245.00	DEG F
074051	ASSPA02	OFFGAS PREHTR ST HDR PR	*LO	43.90	81.00	PSIG
074058	DFRLA01	DW FLR DRN TANK LEVEL	OK	14.20	12.00	%
074102	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
074103	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
074107	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
074108	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
074111	FWSTA03	5PT HTR 2FWS-E5C INL TMP	*LO	202.69	284.00	DEG F
074112	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
074114	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
074121	ASSPA02	OFFGAS PREHTR ST HDR PR	*LO	39.20	81.00	PSIG
074121	ASSPA03	CLN STM REBLR STM PRESS	*LO	67.12	70.00	PSIG
074123	ESSPA18	2 PT HTR E2A SHELL PRESS	*LO	4.0	7.3	PSIA
074142	HDLTA04	4PT HTR 2CNM-E4A DRN TMP	*LO	210.92	245.00	DEG F
074159	DSRPA01	SCAVENGING STEAM HDR PR	*LO	126.70	250.00	PSIG
074206	ASSPA02	OFFGAS PREHTR ST HDR PR	*LO	33.75	81.00	PSIG
074208	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
074209	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
074212	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
074212	HDLTA05	4PT HTR 2CNM-E4B DRN TMP	*LO	188.89	245.00	DEG F
074213	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
074219	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
074220	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
074224	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
074225	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
074227	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
074231	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
074236	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
074237	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
074243	DERLA01	DW EQUIP DRN TANK LEVEL	OK	14.22	12.00	%
074247	ESSPA16	1 PT HTR E1B SHELL PRESS	LO	2.0	2.0	PSIA
074256	ASSPA02	OFFGAS PREHTR ST HDR PR	*LO	28.45	81.00	PSIG
074300	FWSTA48	FEED WATER FINAL TEMP	*LO	227.85	324.00	DEG F
074301	ASSPA01	CNSR AIR RMVL STM PRESS	HI	135.37	133.00	PSIG

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074306	ASSPA01	CNSR AIR RMVL STM PRESS	*HI	137.25	133.00	PSIG
074308	ABMPA01	AUX BLR DEAR INL PRESS	LO	2.45	2.50	PSIG
074316	ASSPA01	CNSR AIR RMVL STM PRESS	OK	132.07	133.00	PSIG
074321	ASSPA01	CNSR AIR RMVL STM PRESS	HI	134.14	133.00	PSIG
074326	ASSPA01	CNSR AIR RMVL STM PRESS	*HI	135.15	133.00	PSIG
074346	ASSPA01	CNSR AIR RMVL STM PRESS	ADC	134.44	133.00	PSIG
074346	ASSPA02	OFFGAS PREHTR ST HDR PR	*LO	23.65	81.00	PSIG
074353	FWSPA04	REACTOR INLET PRES PT40A	*LO	521.95	875.00	PSIG
074354	MSSLC03	MSL C LO PT DRN LVL	HIGH			
074409	ARCLC01	CNSR AIR REM TK SP1A LVL	HIGH			
074412	HDLTA01	5PT HTR 2CNM-E5A DRN TMP	*LO	187.36	246.00	DEG F
074426	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
074427	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
074428	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
074429	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
074431	VBAEC03	DIV 1 UPS2A SYS TROUBLE	ALMCLR			
074431	ASSPA03	CLN STM RCBLR STM PRESS	*LO	61.39	70.00	PSIG
074436	ASSPA03	CLN STM RCBLR STM PRESS	*LO	60.67	70.00	PSIG
074437	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
074438	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
074439	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
074441	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
074442	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
074443	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
074444	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
074444	CMSPA01	DW LOOP A PRESS EL 293FT	*LO	-0.12L	*******	PSIG
074445	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
074451	ASSPA02	OFFGAS PREHTR ST HDR PR	*LO	18.60	81.00	PSIG
074501	ASSPA03	CLN STM RCBLR STM PRESS	*LO	57.97	70.00	PSIG
074512	FWSTA06	6PT HTR 2FWS-E6C OUT TMP	*LO	206.73	324.00	DEG F
074516	ASSPA01	CNSR AIR RMVL STM PRESS	HI	148.84	133.00	PSIG
074521	ASSPA03	CLN STM RCBLR STM PRESS	*LO	62.47	70.00	PSIG
074523	FWSPA05	REACTOR INLET PRES PT40B	*LO	524.70	875.00	PSIG
074528	ABMPA02	AUX BLR STM HDR PRESS	LO	117.77	120.00	PSIG
074534	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
074534	FWSLC01	REACTOR WTR LEVEL HI/LO	ALMCLR			
074535	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
074541	ASSPA01	CNSR AIR RMVL STM PRESS	*HI	145.42	133.00	PSIG
074541	ASSPA03	CLN STM RCBLR STM PRESS	*LO	64.46	70.00	PSIG
074556	ASSPA01	CNSR AIR RMVL STM PRESS	*HI	144.19	133.00	PSIG
074616	ASSPA01	CNSR AIR RMVL STM PRESS	*HI	142.46	133.00	PSIG
074626	ABDBC02	AUX BLR SYS 2CES-IPNL507	TRBL			
074629	ABDBC02	AUX BLR SYS 2CES-IPNL507	NORMAL			
074631	ASSPA02	OFFGAS PREHTR ST HDR PR	*LO	12.50	81.00	PSIG
074650	ABDBC02	AUX BLR SYS 2CES-IPNL507	TRBL			
074653	CNALC01	CLN ST RBLR DT 1A LS9A	HIGH			
074654	ABDBC02	AUX BLR SYS 2CES-IPNL507	NORMAL			
074700	FWSTA48	FEED WATER FINAL TEMP	*LO	217.77	324.00	DEG F
074701	ARCLC04	CNSR AIR REM TK SP1B LVL	LOW			
074701	ASSPA03	CLN STM RCBLR STM PRESS	*LO	60.52	70.00	PSIG
074703	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL			
074710	DSMTA02	MSTR SEP DR TK4B DR TEMP	*LO	131.87	300.00	DEG F
074712	FWSTA03	6PT HTR 2FWS-E6C INL TMP	*LO	191.12	284.00	DEG F
074727	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
074728	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
074729	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			

074730	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
074735	ESSTA16	5 PT HTR E5A EXTR ST TMP	*LO	242.02	280.00	DEG F
074737	ESSTA17	5 PT HTR E5B EXTR ST TMP	*LO	254.54	280.00	DEG F
~~074741~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~INOP~~			
074741	ASSPA03	CLN STM RCBLR STM PRESS	*LO	57.75	70.00	PSIG
074742	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
~~074748~~	~~HRGPA01~~	~~INL PRESS TO LP TURB T2A~~	~~*LO~~	~~2.46~~	~~100.00~~	~~PSIA~~
074757	OFGPA01	OFFGAS SYS INLET PRESS	LO	10.98	11.00	PSIA
074801	ASSPA01	CNSR AIR RMVL STM PRESS	*HI	140.40	133.00	PSIG
~~074802~~	~~OFGPA01~~	~~OFFGAS SYS INLET PRESS~~	~~*LO~~	~~10.40~~	~~11.00~~	~~PSIA~~
074805	OFGPA01	OFFGAS SYS INLET PRESS	*LO	7.50	11.00	PSIA
074808	OFGPA01	OFFGAS SYS INLET PRESS	SLO	7.50	11.00	PSIA
~~074812~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~INOP~~			
074813	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
074816	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
~~074818~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~NORMAL~~			
074821	ASSPA02	OFFGAS PREHTR ST HDR PR	*LO	7.75	81.00	PSIG
074833	CRSPA04	2MSS-E1A SHL PR PT2A	*LO	1.78	140.00	PSIA
~~074838~~	~~CNALC01~~	~~CLN ST RBLR DT 1A LS9A~~	~~HIGH~~			
074839	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
074841	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
~~074842~~	~~HDLTA03~~	~~5PT HTR 2CNM-E5C DRN TMP~~	~~*LO~~	~~187.50~~	~~246.00~~	~~DEG F~~
074844	ARCLC04	CNSR AIR REM TK SP1B LVL	NORMAL			
074848	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL			
~~074850~~	~~RHGTC33~~	~~RHR SDC B BYP MOV67B MOT~~	~~OVERLD~~			
074852	IHSBC02	SPDS COMPUTER ALARM	NORMAL			
074856	ASSPA03	CLN STM RCBLR STM PRESS	*LO	54.75	70.00	PSIG
~~074858~~	~~CRSPA02~~	~~2MSS-E1A SHL PR PT1A~~	~~*LO~~	~~1.56~~	~~140.00~~	~~PSIA~~
074906	CNMPA01	CNSR 2CNM-CND1A VACUUM	LO	2.48	2.50	PSIA
074906	CNMPA02	CNSR 2CNM-CND1B VACUUM	LO	2.48	2.50	PSIA
~~074913~~	~~HRGPA02~~	~~INL PRESS TO LP TURB T2B~~	~~*LO~~	~~2.21~~	~~100.00~~	~~PSIA~~
074917	OFGFC08	CONDENSER 1B OUTLET FLOW	ALMCLR			
074922	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
~~074923~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~NORMAL~~			
074929	ESSTA07	2 PT HTR E2A SHELL TEMP	*LO	104.13	165.00	DEG F
074940	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
~~074940~~	~~DGMTA01~~	~~MSTR SEP DR TK4A DR TEMP~~	~~*LO~~	~~131.59~~	~~300.00~~	~~DEG F~~
074941	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
074942	ESSPA16	1 PT HTR E1B SHELL PRESS	*LO	1.7	2.0	PSIA
~~074947~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~INOP~~			
074948	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
074952	OFGTC28	DRYER DRY1A OUTLET TEMP	NORMAL			
074953	OFGTC30	DRYER DRY1C OUTLET TEMP	NORMAL			
074959	RMSRC89	DRMS COMPUTER SYSTEM	NORMAL			
074959	DSRPA02	SCAV STEAM LINE A PRESS	*LO	24.42	250.00	PSIG
075002	ESSPA07A	HTR 4A PRESS	*LO	7.5	14.0	PSIA
075002	ESSPA08A	HTR 4B PRESS	*LO	7.8	14.0	PSIA
075002	ESSPA09A	HTR 4C PRESS	*LO	2.5	14.0	PSIA
075004	SPGEA01A	GENERATOR VOLTAGE	*LO	0.0	21.0	KV
075011	ASSPA01	CNSR AIR RMVL STM PRESS	*HI	139.39	133.00	PSIG
075011	CNMPA03	CNSR 2CNM-CND1C VACUUM	LO	2.46	2.50	PSIA
075022	ESSPA15	1 PT HTR E1A SHELL PRESS	LO	1.99	2.00	PSIA
075025	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
075026	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
075036	CNALC01	CLN ST RBLR DT 1A LS9A	HIGH			
075046	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL			

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075048	CSHLC02	HPCS REACTOR WTR LEVEL	HIGH

075114	CMSTC19	SUPP POOL WTR TMP TE52B	NORMAL			
~~075127~~	~~GMCTC05~~	~~GEN CLG WTR TO WDG TEMP~~	~~TRBL~~			
075129	GTSPA01	RB IN/OUT D/P PDT5A	OK	-0.50	-0.50	IN WG
075134	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
~~075135~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~NORMAL~~			
075136	ASSPA03	CLN STM RCBLR STM PRESS	*LO	51.75	70.00	PSIG
075136	CNMPA01	CNSR 2CNM-CND1A VACUUM	*LO	2.29	2.50	PSIA
~~075136~~	~~CNMPA02~~	~~CNSR 2CNM-CND1B VACUUM~~	~~*LO~~	~~2.29~~	~~2.50~~	~~PSIA~~
075142	FWSTA06	6PT HTR 2FWS-E6C OUT TMP	*LO	196.13	324.00	DEG F
075153	IHSBC01	SPDS PARAMETER ALARM	TRBL			
~~075211~~	~~IHSBC01~~	~~SPDS PARAMETER ALARM~~	~~NORMAL~~			
075222	ESSPA19	2 PT HTR E2B SHELL PRESS	*LO	1.7	7.3	PSIA
075223	CSHLC02	HPCS REACTOR WTR LEVEL	NORMAL			
~~075226~~	~~CNALC01~~	~~CLN ST RBLR DT 1A LS9A~~	~~HIGH~~			
075231	ASSPA01	CNSR AIR RMVL STM PRESS	*HI	137.44	133.00	PSIG
075237	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL			
~~075242~~	~~HDHTA02~~	~~6PT HTR E6B DR TEMP~~	~~*LO~~	~~244.98~~	~~284.00~~	~~DEG F~~
075249	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
075250	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
~~075255~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~INOP~~			
075256	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
075256	ASSPA02	OFFGAS PREHTR ST HDR PR	*LO	2.55	81.00	PSIG
~~075256~~	~~CNMPA03~~	~~CNSR 2CNM-CND1C VACUUM~~	~~*LO~~	~~2.28~~	~~2.50~~	~~PSIA~~
075303	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
075304	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
~~075318~~	~~HVRTC54~~	~~DIFF TEMP RB EXH AIR/SW~~	~~LOW~~			
075340	DSMTA02	MSTR SEP DR TK4B DR TEMP	*LO	124.99	300.00	DEG F
075342	HDHTA03	6PT HTR E6C DR TEMP	*LO	231.77	284.00	DEG F
~~075346~~	~~CNALC01~~	~~CLN ST RBLR DT 1A LS9A~~	~~HIGH~~			
075356	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL			
075359	HCSTA04	HCS RBNR 1B BLWR INL TMP	LO	100.00	100.00	DEG F
~~075404~~	~~GTSPA01~~	~~RB IN/OUT D/P PDT5A~~	~~LO~~	~~-0.52~~	~~-0.50~~	~~IN WG~~
075414	RHSTC33	RHR SDC B BYP MOV67B MOT	NORMAL			
075429	OFGPC09	VAC PMP 2OFG-P1A INL PR	NORMAL			
~~075430~~	~~OFGPC09~~	~~VAC PMP 2OFG-P1A INL PR~~	~~HIGH~~			
075432	OFGPC10	VAC PMP 2OFG-P1B INL PR	NORMAL			
075442	ESSPA17	1 PT HTR E1C SHELL PRESS	LO	1.99	2.00	PSIA
075444	OFGPC09	VAC PMP 2OFG-P1A INL PR	NORMAL			
075447	ESSPA16	1 PT HTR E1B SHELL PRESS	*LO	1.4	2.0	PSIA
075449	RCSBC42	RCS FCV B PART CL/RFP TR	CLOSED			
075451	RCSBC40	RCS FCV A PART CL/RFP TR	CLOSED			
075505	CNALC01	CLN ST RBLR DT 1A LS9A	HIGH			
075506	CMSAC04	D2 PRIMARY CNMT O2 CONC	NORMAL			
~~075506~~	~~CNMPA02~~	~~CNSR 2CNM-CND1B VACUUM~~	~~*LO~~	~~2.07~~	~~2.50~~	~~PSIA~~
075511	CNMPA01	CNSR 2CNM-CND1A VACUUM	*LO	2.07	2.50	PSIA
075516	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL			
~~075523~~	~~TMITA08~~	~~PIPE UPSTR 2HRS-SV5C TMP~~	~~LO~~	~~399.82~~	~~400.00~~	~~DEG F~~
075540	DSMTA01	MSTR SEP DR TK4A DR TEMP	*LO	124.58	306.00	DEG F
075542	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
~~075543~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~NORMAL~~			
075546	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			

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~~075547~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~NORMAL~~			
075552	ESSPA15	1 PT HTR E1A SHELL PRESS	*LO	1.68	2.00	PSIA
075619	CNALC01	CLN ST RBLR DT 1A LS9A	HIGH			
~~075626~~	~~ASSPA01~~	~~CNSR AIR RMVL STM PRESS~~	~~*HI~~	~~133.69~~	~~133.00~~	~~PSIG~~
075630	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL			

~~075646~~	~~ASSPA01~~	~~CNSR AIR RMVL STM PRESS~~	~~*LO~~	~~51.64~~	~~117.00~~	~~PSIG~~
075651	ASSPA01	CNSR AIR RMVL STM PRESS	*LO	38.59	117.00	PSIG
075656	ASSPA01	CNSR AIR RMVL STM PRESS	*LO	28.12	117.00	PSIG
~~075658~~	~~CRSPA09~~	~~REHTR A COLD REHT PRESS~~	~~*LO~~	~~1.91~~	~~146.00~~	~~PSIA~~
075701	NSSXA101	FEEDWATER TURBITITY	ADC	101.91L*******	*	
075701	ASSPA01	CNSR AIR RMVL STM PRESS	*LO	19.72	117.00	PSIG
~~075704~~	~~HDLPG01~~	~~4PT HTR DR P1A SUCT PR~~	~~LOW~~			
075706	ASSPA01	CNSR AIR RMVL STM PRESS	*LO	13.39	117.00	PSIG
075711	ASSPA01	CNSR AIR RMVL STM PRESS	*LO	8.36	117.00	PSIG
~~075715~~	~~ARGLG04~~	~~CNSR AIR REM TK SP1B LVL~~	~~LOW~~			
075716	ASSPA01	CNSR AIR RMVL STM PRESS	*LO	4.05	117.00	PSIG
075721	ASSPA01	CNSR AIR RMVL STM PRESS	*LO	0.56	117.00	PSIG
~~075725~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~INOP~~			
075726	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
075726	ASSPA01	CNSR AIR RMVL STM PRESS	*LO	0.00	117.00	PSIG
~~075730~~	~~CNALC01~~	~~CLN ST RBLR DT 1A LS9A~~	~~HIGH~~			
075735	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
075736	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
~~075738~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~INOP~~			
075739	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
075741	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL			
~~075806~~	~~CNMPA01~~	~~CNSR 2CNM-CND1A VACUUM~~	~~*LO~~	~~1.89~~	~~2.50~~	~~PSIA~~
075806	CNMPA02	CNSR 2CNM-CND1B VACUUM	*LO	1.89	2.50	PSIA
075809	EXSUC01	GEN REG TRIP TO DC CONT	ALMCLR			
~~075812~~	~~HDLTA21~~	~~2PT HTR DCL2C DISCH TEMP~~	~~OK~~	~~127.19~~	~~128.00~~	~~DEG F~~
075815	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
075816	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
~~075828~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~INOP~~			
075829	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
075846	CNALC01	CLN ST RBLR DT 1A LS9A	HIGH			
~~075849~~	~~ARGLG04~~	~~CNSR AIR REM TK SP1B LVL~~	~~NORMAL~~			
075854	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
075855	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
075857	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL			
075858	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
075859	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
075916	MSSPA06	TURB FIRST STAGE PT103	*LO	2.90	30.00	PSIA
075917	ESSPA05	3 PT HTR E3B EXTR STM PR	*LO	3.87	24.00	PSIA
075924	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
075925	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
075930	ESSTA05	1 PT HTR E1B SHELL TEMP	LO	118.95	119.00	DEG F
075934	GTSPA01	RB IN/OUT D/P PDT5A	OK	-0.50	-0.50	IN WG
075939	HDLLC12	5 PT HTR E5C WTR LEVEL	NORMAL			
075957	CNALC01	CLN ST RBLR DT 1A LS9A	HIGH			
075959	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
080000	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
080002	ESSPA07A	HTR 4A PRESS	*LO	7.0	14.0	PSIA

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080002	ESSPA08A	HTR 4B PRESS	*LO	7.5	14.0	PSIA
080002	ESSPA19A	HTR 2B PRESS	*LO	1.6	6.5	PSIA
080008	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL			
080008	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
080009	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
080010	DSMTA02	MSTR SEP DR TK4B DR TEMP	*LO	117.57	300.00	DEG F
080016	NSSQB10H	HOURLY AVG CTP (P4)	LO	0.00L*******		MW
080016	WCSFB01B	CLEAN UP LOOPS FLOW	OK		0.250	MLBS/H
080021	CNMPA03	CNSR 2CNM-CND1C VACUUM	*LO	1.85	2.50	PSIA

080053	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
080101	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
080102	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
080103	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
080104	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
080112	CNALC01	CLN ST RBLR DT 1A LS9A	HIGH			
080122	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL			
080130	FWSTA48	FEED WATER FINAL TEMP	*LO	207.29	324.00	DEG F
080132	HVCMA04	RELAY ROOM HMDT MT8B	OK	48.69	50.00	%RH
080132	ESSPA16	1 PT HTR E1B SHELL PRESS	*LO	1.1	2.0	PSIA
080135	DSRPA01	SCAVENGING STEAM HDR PR	*LO	114.18	250.00	PSIG
080137	ESSPA15	1 PT HTR E1A SHELL PRESS	*LO	1.39	2.00	PSIA
080141	DSMTA01	MSTR SEP DR TK4A DR TEMP	*LO	117.84	300.00	DEG F
080149	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
080150	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
080155	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
080156	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
080159	HDLLA02	FDW 2CNM-E4B WTR LEVEL	*HI	37.62	25.00	IN WG
080205	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
080206	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
080224	TMITA06	PIPE UPSTR 2HRS-SV5B TMP	LO	399.95	400.00	DEG F
080226	CNALC01	CLN ST RBLR DT 1A LS9A	HIGH			
080236	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL			
080251	CNMPA01	CNSR 2CNM-CND1A VACUUM	*LO	1.69	2.50	PSIA
080251	CNMPA02	CNSR 2CNM-CND1B VACUUM	*LO	1.69	2.50	PSIA
080312	FWSTA06	6PT HTR 2FWS-E6C OUT TMP	*LO	185.55	324.00	DEG F
080320	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
080321	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
080327	ESSPA20	2 PT HTR E2C SHELL PRESS	*LO	1.7	7.3	PSIA
080335	CNALC01	CLN ST RBLR DT 1A LS9A	HIGH			
080335	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
080336	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
080336	ESSTA02	6 PT HTR E6B EXTR ST TMP	*LO	280.66	325.00	DEG F
080342	FWSTA03	6PT HTR 2FWS-E6C INL TMP	*LO	179.16	284.00	DEG F
080342	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
080343	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
080345	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL			
080359	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
080400	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
080427	CNSFA01	CND XFR PUMP HDR FLOW	OK	311.84	300.00	GPM
080437	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
080438	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
080442	ESSPA18	2 PT HTR E2A SHELL PRESS	*LO	2.8	7.3	PSIA
080444	GTSPA01	RB IN/OUT D/P PDT5A	LO	-0.52	-0.50	IN WG

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080446	CNALC01	CLN ST RBLR DT 1A LS9A	HIGH			
080457	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL			
080508	EGSPC14	EDG3 RCVR TK2B AIR PRESS	NORMAL			
080512	HDHTA01	6PT HTR E6A DR TEMP	*LO	270.91	284.00	DEG F
080512	HDLTA18	2PT HTR DR TK2C DR TEMP	*LO	104.95	201.00	DEG F
080515	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
080516	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
080518	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
080519	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
080519	GTSPA01	RB IN/OUT D/P PDT5A	OK	-0.49	-0.50	IN WG
080536	CNMPA03	CNSR 2CNM-CND1C VACUUM	*LO	1.67	2.50	PSIA
080539	ESSTA18	5 PT HTR E5C EXTR ST TMP	*LO	254.40	280.00	DEG F

080603	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
080604	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL			
080624	GTSPA01	RB IN/OUT D/P PDT5A	LO	-0.52	-0.50	IN WG
080626	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
080628	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
080642	DFRXC11	RB FLR SMP 2A-2H LK RATE	HIGH			
080656	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
080657	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
080709	CNALC01	CLN ST RBLR DT 1A LS9A	HIGH			
080709	GTSPA01	RB IN/OUT D/P PDT5A	OK	-0.49	-0.50	IN WG
080720	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL			
080723	DFTBC30	TB FLR DRN SYSTEM	ALMCLR			
080723	DFRXC11	RB FLR SMP 2A-2H LK RATE	NORMAL			
080736	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
080738	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
080739	ABDBC01	AUX BLR SYS 2CES-IPNL506	TRBL			
080741	ABDBC01	AUX BLR SYS 2CES-IPNL506	NORMAL			
080742	HDLTA04	4PT HTR 2CNM-E4A DRN TMP	*LO	200.04	245.00	DEG F
080742	HDLTA06	4PT HTR 2CNM-E4C DRN TMP	*LO	166.12	245.00	DEG F
080753	MSSTA05	TURB BYP PSV89C OUT TEMP	*HI	354.91	280.00	DEG F
080757	AROLC01	CNSR AIR REM TK SP1A LVL	NORMAL			
080807	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
080808	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
080810	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
080811	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
080820	CNALC01	CLN ST RBLR DT 1A LS9A	HIGH			
080823	TMITA07	PIPE UPSTR 2HRS-SV6C TMP	LO	399.89	400.00	DEG F
080824	TMITA05	PIPE UPSTR 2HRS-SV6B TMP	LO	399.89	400.00	DEG F
080831	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL			
080832	ESSTA08	2 PT HTR E2B SHELL TEMP	*LO	111.66	165.00	DEG F
080832	NMSBC02	SRM SHORT PERIOD	ALARM			
080835	NMSBC02	SRM SHORT PERIOD	ALMCLR			
080837	GMHAC05	INSIDE GEN LAG NORTH H2	NORMAL			
080853	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
080853	HRSPA03	INL PRESS TO LP TURB T2C	*LO	2.34	100.00	PSIA
080854	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
080855	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
080856	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
080925	CNALC01	CLN ST RBLR DT 1A LS9A	HIGH			
080929	GMHAC05	INSIDE GEN LAG NORTH H2	HIGH			

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080932	ESSTA06	1 PT HTR E1C SHELL TEMP	LO	118.95	119.00	DEG F
080935	ESSTA16	5 PT HTR E5A EXTR ST TMP	*LO	229.11	280.00	DEG F
080936	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL			
080940	DSMTA02	MSTR SEP DR TK4B DR TEMP	*LO	110.71	300.00	DEG F
080942	HDLTA05	4PT HTR 2CNM-E4B DRN TMP	*LO	177.63	245.00	DEG F
080942	HDLTA14	1PT HTR E1B DRAIN TEMP	LO	118.95	119.00	DEG F
080951	CWSAC02	CLG TWR BLOW-DOWN WTR PH	HIGH			
080951	CWSAC01	CLG TWR BLOW-DOWN WTR PH	LOW			
080952	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
080953	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
081000	CWSAC02	CLG TWR BLOW-DOWN WTR PH	NORMAL			
081000	CWSAC01	CLG TWR BLOW-DOWN WTR PH	NORMAL			
081002	ESSPA04A	HTR 3A PRESS	*LO	2.0	9.0	PSIA
081002	ESSPA06A	HTR 3C PRESS	*LO	2.0	9.0	PSIA
081002	ESSPA07A	HTR 4A PRESS	*LO	6.4	14.0	PSIA
081002	ESSPA08A	HTR 4B PRESS	*LO	6.9	14.0	PSIA

081046	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL			
081047	CNSFA01	CND XFR PUMP HDR FLOW	LO	294.77	300.00	GPM
~~081049~~	~~CECTA02~~	~~T/C REF C91-P617~~	~~OK~~	~~68.00~~	~~68.00~~	~~DEG F~~ ?
081058	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
081059	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
~~081103~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~INOP~~			
081104	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
081104	CECTA02	T/C REF C91-P617	LO	67.98	68.00	DEG F ?
~~081106~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~INOP~~			
081107	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
081111	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
~~081112~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~NORMAL~~			
081133	TMITA13	TURB EXH HOOD C TEMP	LO	99.95	100.00	DEG F
081136	CNMPA01	CNSR 2CNM-CND1A VACUUM	*LO	1.47	2.50	PSIA
~~081136~~	~~CNMPA02~~	~~CNSR 2CNM-CND1B VACUUM~~	~~*LO~~	~~1.47~~	~~2.50~~	~~PSIA~~
081140	CNALC01	CLN ST RBLR DT 1A LS9A	HIGH			
081140	DSMTA01	MSTR SEP DR TK4A DR TEMP	*LO	110.98	300.00	DEG F
~~081142~~	~~ESSTA13~~	~~4 PT HTR E4A EXTR ST TMP~~	~~LO~~	~~333.67~~	~~334.00~~	~~DEG F~~
081143	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
081144	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
081150	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL			
081204	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
081205	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
081212	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
081213	ARCLC04	CNSR AIR REM TK SP1B LVL	LOW			
081213	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
~~081241~~	~~HVNBC01~~	~~VENT CHL WTR SYS IPNL135~~	~~ALMCLR~~			
081241	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
081242	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
~~081244~~	~~CNALC01~~	~~CLN ST RBLR DT 1A LS9A~~	~~HIGH~~			
081255	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL			
081302	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
~~081303~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~NORMAL~~			
081328	CRSPA03	2MSS-E1A SHL PR PT3A	*LO	1.65	140.00	PSIA

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~~081329~~	~~ARCLC04~~	~~CNSR AIR REM TK SP1B LVL~~	~~NORMAL~~			
081334	FWSPA04	REACTOR INLET PRES PT40A	*LO	482.34	875.00	PSIG
081341	CNMPA03	CNSR 2CNM-CND1C VACUUM	*LO	1.50	2.50	PSIA
~~081342~~	~~HDLTA07~~	3PT HTR 2CNM-E3A DRN TMP	*LO	110.16	167.00	DEG F
081348	CNALC01	CLN ST RBLR DT 1A LS9A	HIGH			
081359	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL			
~~081401~~	~~ASSPA03~~	~~CLN STM RCBLR STM PRESS~~	~~*LO~~	~~55.42~~	~~70.00~~	~~PSIG~~
081412	HDLTA16	2PT HTR DR TK2A DR TEMP	*LO	100.98	201.00	DEG F
081412	HDLTA02	5PT HTR 2CNM-E5B DRN TMP	*LO	199.20	246.00	DEG F
~~081437~~	~~ESSPA15~~	~~1 PT HTR E1A SHELL PRESS~~	~~*LO~~	~~1.09~~	~~2.00~~	~~PSIA~~
081440	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
081441	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
~~081442~~	~~ESSPA16~~	~~1 PT HTR E1B SHELL PRESS~~	~~*LO~~	~~0.8~~	~~2.0~~	~~PSIA~~
081443	ESSTA14	4 PT HTR E4B EXTR ST TMP	LO	333.67	334.00	DEG F
081453	CNALC01	CLN ST RBLR DT 1A LS9A	HIGH			
~~081504~~	~~CNALC01~~	~~CLN ST RBLR DT 1A LS9A~~	~~NORMAL~~			
081506	SWTBC07	SWT SYSTEM TROUBLE	ALMCLR			
081525	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
~~081526~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~NORMAL~~			
081546	TMGBC04	TRNGR NOT OPERATING	IN OPER			
081547	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
~~081548~~	~~HVKBC09~~	DIV1 CB CHILLED WTR SYS	NORMAL			

081602	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
081603	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
081604	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
081607	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL			
081608	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
081609	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
081610	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
081611	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
081623	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
081624	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
081628	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
081628	ESSTA04	1 PT HTR E1A SHELL TEMP	*LO	113.45	119.00	DEG F
081629	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
081630	FWSTA48	FEED WATER FINAL TEMP	*LO	196.27	324.00	DEG F
081631	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
081632	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
081657	CNALC01	CLN ST RBLR DT 1A LS9A	HIGH			
081708	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL			
081736	ASSPA03	CLN STM RCBLR STM PRESS	*LO	58.35	70.00	PSIG
081742	HDLTA09	3PT HTR 2CNM-E3C DRN TMP	*LO	142.62	167.00	DEG F
081744	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
081746	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
081749	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
081750	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
081755	CNALC01	CLN ST RBLR DT 1A LS9A	HIGH			
081806	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL			
081817	ARCLC01	CNSR AIR REM TK SP1A LVL	HIGH			
081818	FWSPA05	REACTOR INLET PRES PT40B	*LO	485.09	875.00	PSIG
081856	CNALC01	CLN ST RBLR DT 1A LS9A	HIGH			
081903	TMITA12	TURB EXH HOOD B TEMP	LO	99.85	100.00	DEG F

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081903	ABMPA01	AUX BLR DEAR INL PRESS	OK	2.59	2.50	PSIG
081906	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL			
081909	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
081910	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
081912	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
081913	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
081942	HDLTA14	1PT HTR E1B DRAIN TEMP	*LO	113.45	119.00	DEG F
081948	ABMPA01	AUX BLR DEAR INL PRESS	LO	2.41	2.50	PSIG
081954	CNALC01	CLN ST RBLR DT 1A LS9A	HIGH			
082000	CNMPA01A	CONDENSER A PRESSURE	LO	1.4	1.5	PSIA
082000	CNMPA02A	CONDENSER B PRESSURE	LO	1.4	1.5	PSIG
082000	CNMPA03A	CONDENSER C PRESSURE	LO	1.5	1.5	PSIA
082001	ESSPA20A	HTR 2C PRESS	*LO	1.5	6.5	PSIA
082004	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL			
082034	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
082036	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
082037	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
082037	TMGBC04	TRNGR NOT OPERATING	ALARM			
082038	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
082046	HVCMA04	RELAY ROOM HMDT MT8B	OK	48.69	50.00	%RH
082056	CNALC01	CLN ST RBLR DT 1A LS9A	HIGH			
082106	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL			
082109	ADSBC27	DIV2 ADS AUTO INIT DISAB	OFF			
082112	ADSBC26	DIV1 ADS AUTO INIT DISAB	OFF			
082112	HDLTA08	3PT HTR 2CNM-E3B DRN TMP	*LO	110.30	167.00	DEG F
082133	ESSTA09	2 PT HTR E2C SHELL TEMP	*LO	111.55	135.00	DEG F

082213	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
~~082214~~	~~CNALC01~~	~~CLN ST RBLR DT 1A LS9A~~	~~HIGH~~			
082214	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
082223	MSSTA06	TURB BYP PSV89D OUT TEMP	*HI	354.86	280.00	DEG F
~~082224~~	~~CNALC01~~	~~CLN ST RBLR DT 1A LS9A~~	~~NORMAL~~			
082233	TMITA11	TURB EXH HOOD A TEMP	LO	99.90	100.00	DEG F
082311	CNMPA01	CNSR 2CNM-CND1A VACUUM	*LO	1.30	2.50	PSIA
~~082316~~	~~CNMPA02~~	~~CNSR 2CNM-CND1B VACUUM~~	*LO	1.29	2.50	PSIA
082321	ASSPA03	CLN STM RCBLR STM PRESS	*LO	51.79	70.00	PSIG
082329	DSRPA01	SCAVENGING STEAM HDR PR	*LO	99.66	250.00	PSIG
082350	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
082351	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
082355	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
082356	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
082358	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
082359	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
~~082410~~	~~DSMTA02~~	~~MSTR SEP DR TK4B DR TEMP~~	~~*LO~~	103.99	300.00	DEG F
082420	CNALC01	CLN ST RBLR DT 1A LS9A	HIGH			
082427	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
~~082428~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	NORMAL			
082431	TMGBC04	TRNGR NOT OPERATING	IN OPER			
082433	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL			
~~082436~~	~~TMLPC07~~	~~LIFT PUMP P6A DISCH PR~~	~~LOW~~			
082445	TMLPC07	LIFT PUMP P6A DISCH PR	NORMAL			

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~~082455~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	INOP			
082456	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
082457	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
~~082458~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	NORMAL			
082525	NMSBC02	SRM SHORT PERIOD	ALARM			
082527	NMSBC02	SRM SHORT PERIOD	ALMCLR			
~~082532~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	INOP			
082533	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
082601	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
~~082602~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	NORMAL			
082602	TMGBC04	TRNGR NOT OPERATING	ALARM			
082626	CNALC01	CLN ST RBLR DT 1A LS9A	HIGH			
~~082636~~	~~CNALC01~~	~~CLN ST RBLR DT 1A LS9A~~	NORMAL			
082657	CNSFA01	CND XFR PUMP HDR FLOW	OK	309.48	300.00	GPM
082712	HDHTA02	6PT HTR E6B DR TEMP	*LO	231.91	284.00	DEG F
~~082717~~	~~ESSPA19~~	~~2 PT HTR E2B SHELL PRESS~~	*LO	0.7	7.3	PSIA
082724	TMITA03	PIPE UPSTR 2HRS-SV6A TMP	LO	399.90	400.00	DEG F
082733	CNALC01	CLN ST RBLR DT 1A LS9A	HIGH			
~~082743~~	~~CNALC01~~	~~CLN ST RBLR DT 1A LS9A~~	NORMAL			
082819	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
082820	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
~~082829~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	INOP			
082830	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
082835	CNALC01	CLN ST RBLR DT 1A LS9A	HIGH			
~~082843~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	INOP			
082844	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
082845	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL			
~~082908~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	INOP			
082909	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
082912	FWSTA03	6PT HTR 2FWS-E6C INL TMP	*LO	167.92	284.00	DEG F
~~082923~~	~~MSSTA04~~	~~TURB BYP PSV89B OUT TEMP~~	*HI	354.96	280.00	DEG F
082926	HVCMA04	RELAY ROOM HMDT MT8B	HI	50.25	50.00	%RH

082939	CNALC01	CLN ST RBLR DT 1A LS9A	HIGH			
082939	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
082940	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
082940	DSMTA01	MSTR SEP DR TK4A DR TEMP	*LO	103.99	300.00	DEG F
082940	ESSTA10	3 PT HTR E3A EXTR ST TMP	LO	255.95	256.00	DEG F
082950	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL			
083002	ESSPA07A	HTR 4A PRESS	*LO	5.8	14.0	PSIA
083002	ESSPA08A	HTR 4B PRESS	*LO	6.3	14.0	PSIA
083002	ESSPA15A	HTR 1A PRESS	LO	1.0	1.0	PSIA
083003	MSSTA13A	MAIN STEAM TEMP	*HI	472.0	450.0	DEG F
083007	CMSAC03	D1 PRIMARY CNMT O2 CONC	HIGH			
083012	FWSTA06	6PT HTR 2FWS-E6C OUT TMP	*LO	175.27	324.00	DEG F
083015	CMSAA02	CONTAINMENT OXYGEN	HI	L*******L*******		%O2
083016	ARCLC04	CNSR AIR REM TK SP1B LVL	LOW			
083019	CMSAC03	D1 PRIMARY CNMT O2 CONC	NORMAL			
083023	CMSBC05	DIV1 CONTMT ATM MONITOR	INOP			
083030	CMSAA02	CONTAINMENT OXYGEN	OK	L*******L*******		%O2
083031	CMSAC01	D1 PRIMARY CNMT H2 CONC	HIGH			
083036	RCSFC05	RCS P1A SEAL STAGING FLO	LOW			
083042	HDLTA14	1PT HTR E1B DRAIN TEMP	*LO	107.83	119.00	DEG F
083044	CNALC01	CLN ST RBLR DT 1A LS9A	HIGH			

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083054	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL			
083056	CMSAA01	CONTAINMENT HYDROGEN	HI	L*******L*******		%H2
083104	CMSAC03	D1 PRIMARY CNMT O2 CONC	HIGH			
083111	ASSPA03	CLN STM RCBLR STM PRESS	*LO	55.05	70.00	PSIG
083115	CMSAA02	CONTAINMENT OXYGEN	HI	L*******L*******		%O2
083134	ARCLC04	CNSR AIR REM TK SP1B LVL	NORMAL			
083142	CMSBC06	DIV2 CONTMT ATM MONITOR	INOP			
083144	CNALC01	CLN ST RBLR DT 1A LS9A	HIGH			
083154	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL			
083158	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
083159	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
083202	CECTA01	T/C REF C91-P616	LO	67.95	68.00	DEG F
083209	CMSAC04	D2 PRIMARY CNMT O2 CONC	HIGH			
083217	CNSFA01	CND XFR PUMP HDR FLOW	LO	295.72	300.00	GPM
083230	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
083231	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
083242	CNALC01	CLN ST RBLR DT 1A LS9A	HIGH			
083245	FWSTA48	FEED WATER FINAL TEMP	*LO	186.11	324.00	DEG F
083246	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
083247	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
083253	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL			
083259	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
083300	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
083302	OFGTA01	OFFGAS SYSTEM INLET TEMP	LO	198.59	200.00	DEG F
083308	IHSBC01	SPDS PARAMETER ALARM	TRBL			
083323	IHSBC01	SPDS PARAMETER ALARM	NORMAL			
083323	TMITA08	PIPE UPSTR 2HRS-SV5C TMP	*LO	383.87	400.00	DEG F
083325	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
083326	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
083344	CNALC01	CLN ST RBLR DT 1A LS9A	HIGH			
083345	ESSTA15	4 PT HTR E4C EXTR ST TMP	LO	333.96	334.00	DEG F
083353	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
083354	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
083355	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL			
083412	HDHTA03	6PT HTR E6C DR TEMP	*LO	218.89	284.00	DEG F

083447	CMSBC05	DIV1 CONTMT ATM MONITOR	ALMCLR			
083452	CMSAC03	D1 PRIMARY CNMT O2 CONC	HIGH			
083454	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL			
083456	CMSAA01	CONTAINMENT HYDROGEN	*HIL*******L*******			*H2
083500	CMSAA02	CONTAINMENT OXYGEN	HI L*******L*******			*O2
083501	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
083502	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
083507	CMSAC01	D1 PRIMARY CNMT H2 CONC	NORMAL			
~~083513~~	~~HDLLC10~~	~~5 PT HTR E5A WTR LEVEL~~	~~HIGH~~			
083513	CMSAC02	D2 PRIMARY CNMT H2 CONC	HIGH			
083514	CMSAC04	D2 PRIMARY CNMT O2 CONC	NORMAL			
~~083516~~	~~HDLLC10~~	~~5 PT HTR E5A WTR LEVEL~~	~~NORMAL~~			
083523	HDLLC10	5 PT HTR E5A WTR LEVEL	HIGH			
083525	HDLLC10	5 PT HTR E5A WTR LEVEL	NORMAL			
~~083526~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~INOP~~			
083526	ASSPA03	CLN STM RCBLR STM PRESS	*LO	58.39	70.00	PSIG

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~~083526~~	~~CMSAA01~~	~~CONTAINMENT HYDROGEN~~	OK L*******L*******			*H2
083527	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
083528	CMSBC06	DIV2 CONTMT ATM MONITOR	ALMCLR			
~~083529~~	~~CMSAC03~~	~~D1 PRIMARY CNMT O2 CONC~~	~~NORMAL~~			
083530	CMSAA02	CONTAINMENT OXYGEN	OK L*******L*******			*O2
083532	CMSAC02	D2 PRIMARY CNMT H2 CONC	NORMAL			
~~083533~~	~~HDLLC10~~	~~5 PT HTR E5A WTR LEVEL~~	~~HIGH~~			
083534	DSRPA02	SCAV STEAM LINE A PRESS	*LO	9.90	250.00	PSIG
083535	HDLLC10	5 PT HTR E5A WTR LEVEL	NORMAL			
~~083535~~	~~ESSTA16~~	~~5 PT HTR E5A EXTR ST TMP~~	~~*LO~~	~~216.79~~	~~280.00~~	~~DEG F~~
083542	CNALC01	CLN ST RBLR DT 1A LS9A	HIGH			
083543	ABMPA01	AUX BLR DEAR INL PRESS	OK	2.59	2.50	PSIG
~~083553~~	~~CNALC01~~	~~CLN ST RBLR DT 1A LS9A~~	~~NORMAL~~			
083558	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
083559	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
~~083612~~	~~CMSAC04~~	~~D2 PRIMARY CNMT O2 CONC~~	~~HIGH~~			
083612	HDLTA15	1PT HTR E1C DRAIN TEMP	*LO	102.90	119.00	DEG F
083628	HDLLC11	5 PT HTR E5B WTR LEVEL	NORMAL			
~~083634~~	~~HDLLC11~~	~~5 PT HTR E5B WTR LEVEL~~	~~HIGH~~			
083636	ESSTA02	6 PT HTR E6B EXTR ST TMP	*LO	265.96	325.00	DEG F
083637	HDLLC11	5 PT HTR E5B WTR LEVEL	NORMAL			
~~083642~~	~~HDLLC11~~	~~5 PT HTR E5B WTR LEVEL~~	~~HIGH~~			
083643	CNALC01	CLN ST RBLR DT 1A LS9A	HIGH			
083646	HDLLC11	5 PT HTR E5B WTR LEVEL	NORMAL			
~~083652~~	~~HDLLC11~~	~~5 PT HTR E5B WTR LEVEL~~	~~HIGH~~			
083653	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL			
083656	HDLLC11	5 PT HTR E5B WTR LEVEL	NORMAL			
~~083702~~	~~HDLLC11~~	~~5 PT HTR E5B WTR LEVEL~~	~~HIGH~~			
083706	HDLLC11	5 PT HTR E5B WTR LEVEL	NORMAL			
083710	CMSAC04	D2 PRIMARY CNMT O2 CONC	NORMAL			
~~083712~~	~~HDLLC11~~	~~5 PT HTR E5B WTR LEVEL~~	~~HIGH~~			
083716	HDLLC11	5 PT HTR E5B WTR LEVEL	NORMAL			
083724	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
~~083725~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~NORMAL~~			
083727	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
083728	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
~~083749~~	~~CNALC01~~	~~CLN ST RBLR DT 1A LS9A~~	~~HIGH~~			
083755	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
083756	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
~~083759~~	~~CNALC01~~	~~CLN ST RBLR DT 1A LS9A~~	~~NORMAL~~			

083910 CNALC01 CLN ST RBLR DT 1A LS9A NORMAL
083919 HVKBC09 DIV1 CB CHILLED WTR SYS INOP
083920 HVKBC09 DIV1 CB CHILLED WTR SYS NORMAL
083921 HVKBC09 DIV1 CB CHILLED WTR SYS INOP
083922 HVKBC09 DIV1 CB CHILLED WTR SYS NORMAL
083923 HVKBC09 DIV1 CB CHILLED WTR SYS INOP
083924 HVKBC09 DIV1 CB CHILLED WTR SYS NORMAL
083942 HVCMA04 RELAY ROOM HMDT MT8B OK 48.75 50.00 %RH
083942 HDLTA17 2PT HTR DR TK2B DR TEMP *LO 104.95 201.00 DEG F
083945 TMGBC04 TRNGR NOT OPERATING IN OPER
083950 TMLPC07 LIFT PUMP P6A DISCH PR LOW
083951 TMLPC12 LIFT PUMP P6F DISCH PR LOW
083959 TMLPC12 LIFT PUMP P6F DISCH PR NORMAL

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083959 TMLPC07 LIFT PUMP P6A DISCH PR NORMAL
084001 ESSPA08A HTR 4B PRESS *LO 5.9 14.0 PSIA
084003 CNALC01 CLN ST RBLR DT 1A LS9A HIGH
084013 CNALC01 CLN ST RBLR DT 1A LS9A NORMAL
084021 HVKBC09 DIV1 CB CHILLED WTR SYS INOP
084023 HVKBC09 DIV1 CB CHILLED WTR SYS NORMAL
084023 HDLLC10 5 PT HTR E5A WTR LEVEL HIGH
084042 HDHTA01 6PT HTR E6A DR TEMP *LO 257.78 284.00 DEG F
084105 CNALC01 CLN ST RBLR DT 1A LS9A HIGH
084112 HDLTA06 4PT HTR 2CNM-E4C DRN TMP *LO 155.32 245.00 DEG F
084116 CNALC01 CLN ST RBLR DT 1A LS9A NORMAL
084142 HDLTA05 4PT HTR 2CNM-E4B DRN TMP *LO 166.54 245.00 DEG F
084148 FWSPA04 REACTOR INLET PRES PT40A *LO 442.75 875.00 PSIG
084154 TMGBC04 TRNGR NOT OPERATING ALARM
084201 HVKBC09 DIV1 CB CHILLED WTR SYS INOP
084202 HVKBC09 DIV1 CB CHILLED WTR SYS NORMAL
084204 CNALC01 CLN ST RBLR DT 1A LS9A HIGH
084207 HVKBC09 DIV1 CB CHILLED WTR SYS INOP
084208 HVKBC09 DIV1 CB CHILLED WTR SYS NORMAL
084214 CNALC01 CLN ST RBLR DT 1A LS9A NORMAL
084233 HVKBC09 DIV1 CB CHILLED WTR SYS INOP
084234 HVKBC09 DIV1 CB CHILLED WTR SYS NORMAL
084255 TMGBC04 TRNGR NOT OPERATING IN OPER
084300 TMLPC07 LIFT PUMP P6A DISCH PR LOW
084304 CNALC01 CLN ST RBLR DT 1A LS9A HIGH
084305 HVKBC09 DIV1 CB CHILLED WTR SYS INOP
084306 HVKBC09 DIV1 CB CHILLED WTR SYS NORMAL
084308 TMLPC07 LIFT PUMP P6A DISCH PR NORMAL
084309 HVKBC09 DIV1 CB CHILLED WTR SYS INOP
084310 HVKBC09 DIV1 CB CHILLED WTR SYS NORMAL
084312 HVKBC09 DIV1 CB CHILLED WTR SYS INOP
084313 HVKBC09 DIV1 CB CHILLED WTR SYS NORMAL
084315 CNALC01 CLN ST RBLR DT 1A LS9A NORMAL
084324 TMITA06 PIPE UPSTR 2HRS-SV5B TMP *LO 383.82 400.00 DEG F
084354 TMITA04 PIPE UPSTR 2HRS-SV5A TMP LO 399.91 400.00 DEG F
084400 HDLPC02 4PT HTR DR P1B SUCT PR LOW
084402 HVKBC09 DIV1 CB CHILLED WTR SYS INOP
084404 CNALC01 CLN ST RBLR DT 1A LS9A HIGH
084404 HVKBC09 DIV1 CB CHILLED WTR SYS NORMAL
084407 HVKBC09 DIV1 CB CHILLED WTR SYS INOP
084408 HVKBC09 DIV1 CB CHILLED WTR SYS NORMAL
084411 HVKBC09 DIV1 CB CHILLED WTR SYS INOP
084412 HVKBC09 DIV1 CB CHILLED WTR SYS NORMAL

084503	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
084504	CNALC01	CLN ST RBLR DT 1A LS9A	HIGH			
~~084504~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	NORMAL			
084514	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL			
084517	CNSFA01	CND XFR PUMP HDR FLOW	OK	311.84	300.00	GPM
~~084540~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	INOP			
084541	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			

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~~084544~~	~~DFTBC30~~	~~TB FLR DRN SYSTEM~~	TRBL			
084551	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
084552	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
~~084554~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	INOP			
084555	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
084604	CNALC01	CLN ST RBLR DT 1A LS9A	HIGH			
~~084614~~	~~CNALC01~~	~~CLN ST RBLR DT 1A LS9A~~	NORMAL			
084630	NMSBC02	SRM SHORT PERIOD	ALARM			
084631	NMSBC02	SRM SHORT PERIOD	ALMCLR			
~~084644~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	INOP			
084645	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
084647	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
~~084648~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~NORMAL~~			
084705	CNALC01	CLN ST RBLR DT 1A LS9A	HIGH			
084715	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL			
~~084718~~	~~FWSPA05~~	~~REACTOR INLET PRES PT40B~~	*LO	445.50	875.00	PSIG
084733	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
084734	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
~~084735~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	INOP			
084736	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
084753	MSSTA07	TURB BYP PSV89E OUT TEMP	*HI	354.84	280.00	DEG F
~~084807~~	~~CNALC01~~	~~CLN ST RBLR DT 1A LS9A~~	HIGH			
084815	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
084816	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
~~084818~~	~~CNALC01~~	~~CLN ST RBLR DT 1A LS9A~~	NORMAL			
084819	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
084820	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
~~084821~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	INOP			
084822	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
084831	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
~~084832~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	NORMAL			
084856	HVCMA04	RELAY ROOM HMDT MT8B	HI	50.25	50.00	*RH
084908	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
~~084909~~	~~CNALC01~~	~~CLN ST RBLR DT 1A LS9A~~	HIGH			
084909	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
084910	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
~~084911~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	NORMAL			
084913	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
084914	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
~~084918~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	INOP			
084919	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
084920	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL			
084941	RHSBC14	RHR C SYS INOP	ALMCLR			
084942	ESSTA13	4 PT HTR E4A EXTR ST TMP	*LO	321.98	334.00	DEG F
084952	NMSBC02	SRM SHORT PERIOD	ALARM			
084954	NMSBC02	SRM SHORT PERIOD	ALMCLR			
085002	CNMPA03	CNSR 2CNM-CNDIC VACUUM	*LO	1.28	2.56	PSIA
085002	ESSPA07A	HTR 4A PRESS	*LO	5.4	14.0	PSIA
085004	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			

085024	TMITA05	PIPE UPSTR 2HRS-SV6B TMP	*LO	383.79	400.00	DEG F
085026	NMSBC02	SRM SHORT PERIOD	ALMCLR			

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085059	DSRPA01	SCAVENGING STEAM HDR PR	*LO	83.82	250.00	PSIG
085101	TMGBC04	TRNGR NOT OPERATING	IN OPER			
085113	CNALC01	CLN ST RBLR DT 1A LS9A	HIGH			
085124	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL			
085132	CNSFA01	CND XFR PUMP HDR FLOW	LO	295.24	300.00	GPM
085143	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
085144	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
085145	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
085147	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
085148	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
085149	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
085206	NMSBC02	SRM SHORT PERIOD	ALARM			
085207	NMSBC02	SRM SHORT PERIOD	ALMCLR			
085216	CNALC01	CLN ST RBLR DT 1A LS9A	HIGH			
085219	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
085220	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
085223	TMITA07	PIPE UPSTR 2HRS-SV6C TMP	*LO	383.80	400.00	DEG F
085226	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL			
085234	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
085235	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
085239	TMGBC04	TRNGR NOT OPERATING	ALARM			
085241	ASSPA03	CLN STM RCBLR STM PRESS	*LO	64.09	70.00	PSIG
085249	GMHAC05	INSIDE GEN LAG NORTH H2	NORMAL			
085250	GMHAC05	INSIDE GEN LAG NORTH H2	HIGH			
085307	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
085308	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
085311	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
085312	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
085313	HDLTA03	5PT HTR 2CNM-E5C DRN TMP	*LO	175.69	246.00	DEG F
085317	CNALC01	CLN ST RBLR DT 1A LS9A	HIGH			
085328	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL			
085343	ABFBC04	AUX BLR SYS 2CES-IPNL508	TRBL			
085343	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
085344	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
085346	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
085347	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
085351	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
085352	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
085415	FWSTA48	FEED WATER FINAL TEMP	*LO	175.55	324.00	DEG F
085423	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
085424	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
085425	CNALC01	CLN ST RBLR DT 1A LS9A	HIGH			
085425	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
085426	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
085432	ESSTA06	1 PT HTR E1C SHELL TEMP	*LO	113.45	119.00	DEG F
085436	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL			
085452	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
085453	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
085522	ABFBC04	AUX BLR SYS 2CES-IPNL508	NORMAL			
085523	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
085524	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
085528	CNALC01	CLN ST RBLR DT 1A LS9A	HIGH			
085528	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
085530	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			

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085536	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
085537	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
085539	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL			
085543	ESSTA14	4 PT HTR E4B EXTR ST TMP	*LO	321.84	334.00	DEG F
085549	SWPBC18	SW FV54A HYD UNT ACC PR	LOW			
085602	CNSBC03	CNST XFR P1A/B A/START	START			
085602	CNSPC01	CND XFR PMP DIS HDR PR	LOW			
085603	CNSPC01	CND XFR PMP DIS HDR PR	NORMAL			
085617	CNSFA01	CND XFR PUMP HDR FLOW	OK	311.32	300.00	GPM
085621	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
085622	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
085628	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
085630	CNALC01	CLN ST RBLR DT 1A LS9A	HIGH			
085630	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
085640	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL			
085646	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
085647	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
085651	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
085652	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
085712	FWSTA06	6PT HTR 2FWS-E6C OUT TMP	*LO	164.87	324.00	DEG F
085715	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
085716	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
085722	CNMPA07	RX FD WTR PMP 1C SUCT PR	*LO	136.00	230.00	PSIG
085725	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
085726	CNALC01	CLN ST RBLR DT 1A LS9A	HIGH			
085726	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
085729	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
085730	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
085732	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
085733	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
085735	CNSFC01	CNST XFR PMP DIS DEM FLO	LOW			
085737	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL			
085738	FWSPA03	RX FEED WTR P1C DISCH PR	*LO	127.60	930.00	PSIG
085742	HDLTA02	5PT HTR 2CNM-E5B DRN TMP	*LO	187.50	246.00	DEG F
085747	TMGBC04	TRNGR NOT OPERATING	IN OPER			
085751	TMGBC04	TRNGR NOT OPERATING	ALARM			
085752	NMSBC02	SRM SHORT PERIOD	ALARM			
085754	NMSBC02	SRM SHORT PERIOD	ALMCLR			
085819	ARCLC04	CNSR AIR REM TK SP1B LVL	LOW			
085828	CNALC01	CLN ST RBLR DT 1A LS9A	HIGH			
085828	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
085829	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
085836	HVCMA04	RELAY ROOM HMDT MT8B	OK	48.81	50.00	*RH
085838	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL			
085900	TMGBC04	TRNGR NOT OPERATING	IN OPER			
085907	TMGBC04	TRNGR NOT OPERATING	ALARM			
085917	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
085918	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
085919	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
085920	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
085932	ARCLC04	CNSR AIR REM TK SP1B LVL	NORMAL			
085932	CNSFA01	CND XFR PUMP HDR FLOW	LO	295.51	300.00	GPM
085933	CNALC01	CLN ST RBLR DT 1A LS9A	HIGH			
085937	ESSTA17	5 PT HTR E5B EXTR ST TMP	*LO	229.25	280.00	DEG F
085942	TMGBC04	TRNGR NOT OPERATING	IN OPER			
085943	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL			

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085952	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
085953	TMGBC04	TRNGR NOT OPERATING	ALARM			
085954	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
090002	ESSPA08A	HTR 4B PRESS	*LO	5.3	14.0	PSIA
090002	MSSTA13A	MAIN STEAM TEMP	*HI	464.1	450.0	DEG F
090012	WCSQB01B	CLEAN UP LOOP HEAT LOSS	BAD14701440		38.00	MBTU/H
090029	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
090030	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
090032	CNALC01	CLN ST RBLR DT 1A LS9A	HIGH			
090042	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
090043	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL			
090043	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
090045	TMGBC04	TRNGR NOT OPERATING	IN OPER			
090100	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
090100	VBBTC06	UPS1C ON BATT PWR	ALARM			
090101	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
090101	TMGBC04	TRNGR NOT OPERATING	ALARM			
090104	OFGTA01	OFFGAS SYSTEM INLET TEMP	*LO	181.72	200.00	DEG F
090106	VBBTC06	UPS1C ON BATT PWR	ALMCLR			
090122	MSSTA03	TURB BYP PSV89A OUT TEMP	*HI	356.27	280.00	DEG F
090129	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
090130	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
090136	CNALC01	CLN ST RBLR DT 1A LS9A	HIGH			
090147	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL			
090148	SWPBC18	SW FV54A HYD UNT ACC PR	NORMAL			
090159	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
090200	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
090215	TMGBC04	TRNGR NOT OPERATING	IN OPER			
090240	CNALC01	CLN ST RBLR DT 1A LS9A	HIGH			
090242	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
090243	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
090250	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL			
090312	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
090313	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
090315	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
090317	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
090321	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
090322	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
090343	CNALC01	CLN ST RBLR DT 1A LS9A	HIGH			
090353	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL			
090446	CNALC01	CLN ST RBLR DT 1A LS9A	HIGH			
090448	CNSFC01	CNST XFR PMP DIS DEM FLO	NORMAL			
090457	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL			
090516	ASSPA03	CLN STM RCBLR STM PRESS	*LO	67.27	70.00	PSIG
090528	ESSTA04	1 PT HTR E1A SHELL TEMP	*LO	107.97	119.06	DEG F
090534	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
090537	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
090547	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
090548	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
090550	CNALC01	CLN ST RBLR DT 1A LS9A	HIGH			
090557	CNMPA07	RX FD WTR PMP 1C SUCT PR	*LO	115.00	230.00	PSIG
090558	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
090559	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
090600	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL			
090607	ABFBC04	AUX BLR SYS 2CES-IPNL508	TRBL			
090607	CNSFA01	CND XFR PUMP HDR FLOW	OK	312.04	300.00	GPM

090624	TMGBC04	TRNGR NOT OPERATING	ALARM			
090625	ABFBC04	AUX BLR SYS 2CES-IPNL508	NORMAL			
090630	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
090631	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
090640	SWPPA28	D2 SW DIS TO CWS/LAKE PR	*LO	2.74	7.00	PSIG
090642	HDHTA02	6PT HTR E6B DR TEMP	*LO	218.89	284.00	DEG F
090642	HDLTA04	4PT HTR 2CNM-E4A DRN TMP	*LO	177.49	245.00	DEG F
090652	CNALC01	CLN ST RBLR DT 1A LS9A	HIGH			
090659	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
090701	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
090702	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL			
090703	ABFBC04	AUX BLR SYS 2CES-IPNL508	TRBL			
090709	ABFBC04	AUX BLR SYS 2CES-IPNL508	NORMAL			
090712	HDLTA09	3PT HTR 2CNM-E3C DRN TMP	*LO	134.48	167.00	DEG F
090730	ABFBC04	AUX BLR SYS 2CES-IPNL508	TRBL			
090738	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
090739	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
090752	ABFBC04	AUX BLR SYS 2CES-IPNL508	NORMAL			
090756	CNALC01	CLN ST RBLR DT 1A LS9A	HIGH			
090805	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
090806	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL			
090806	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
090812	FWSTA03	6PT HTR 2FWS-E6C INL TMP	*LO	156.29	284.00	DEG F
090821	DFTBC30	TB FLR DRN SYSTEM	ALMCLR			
090822	VBBTC08	UPS1D ON BATT PWR	ALARM			
090830	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
090830	ESSTA05	1 PT HTR E1B SHELL TEMP	*LO	107.97	119.00	DEG F
090831	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
090835	VBBTC08	UPS1D ON BATT PWR	ALMCLR			
090838	FWSPA04	REACTOR INLET PRES PT40A	*LO	403.14	875.00	PSIG
090842	HVCMA04	RELAY ROOM HMDT MT8B	HI	50.37	50.00	%RH
090858	CNALC01	CLN ST RBLR DT 1A LS9A	HIGH			
090906	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
090907	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
090908	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL			
090930	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
090931	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
090956	CNALC01	CLN ST RBLR DT 1A LS9A	HIGH			
091006	CSHLC02	HPCS REACTOR WTR LEVEL	HIGH			
091007	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL			
091009	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
091010	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
091053	ABMPA01	AUX BLR DEAR INL PRESS	LO	2.44	2.50	PSIG
091054	CNALC01	CLN ST RBLR DT 1A LS9A	HIGH			
091056	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
091058	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
091104	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL			
091123	FWSPA05	REACTOR INLET PRES PT40B	*LO	405.89	875.00	PSIG
091130	CNSFC01	CNST XFR PMP DIS DEM FLO	LOW			
091138	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
091140	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
091147	NMSBC02	SRM SHORT PERIOD	ALARM			
091149	NMSBC02	SRM SHORT PERIOD	ALMCLR			
091155	CNALC01	CLN ST RBLR DT 1A LS9A	HIGH			
091158	CSHLC02	HPCS REACTOR WTR LEVEL	NORMAL			

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091205	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL

091245	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
091246	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
091250	NMSBC02	SRM SHORT PERIOD	ALARM			
091251	CNALC01	CLN ST RBLR DT 1A LS9A	HIGH			
091252	NMSBC02	SRM SHORT PERIOD	ALMCLR			
091254	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
091255	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
091300	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
091301	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL			
091301	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
091303	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
091305	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
091316	CECTA101	T/C REF CH2 C91-P613	LO	67.98	68.00	DEG F
091321	CECTA101	T/C REF CH2 C91-P613	OK	68.00	68.00	DEG F
091326	CECTA101	T/C REF CH2 C91-P613	LO	67.98	68.00	DEG F
091331	CECTA101	T/C REF CH2 C91-P613	OK	68.00	68.00	DEG F
091335	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
091336	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
091336	CECTA101	T/C REF CH2 C91-P613	LO	67.98	68.00	DEG F
091351	CNALC01	CLN ST RBLR DT 1A LS9A	HIGH			
091401	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL			
091404	SWPPA27	D1 SW DIS TO CWS/LAKE PR	*LO	3.80	9.50	PSIG
091420	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
091421	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
091424	TMITA03	PIPE UPSTR 2HRS-SV6A TMP	*LO	383.87	400.00	DEG F
091427	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
091428	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
091430	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
091432	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
091452	CNALC01	CLN ST RBLR DT 1A LS9A	HIGH			
091503	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL			
091512	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
091514	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
091517	VBBTC07	UPS1D SYSTEM TROUBLE	ALMCLR			
091518	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
091519	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
091604	CNALC01	CLN ST RBLR DT 1A LS9A	HIGH			
091608	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
091609	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
091613	ABMPA01	AUX BLR DEAR INL PRESS	OK	2.58	2.50	PSIG
091615	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL			
091623	CSHLC02	HPCS REACTOR WTR LEVEL	HIGH			
091629	OFGTA01	OFFGAS SYSTEM INLET TEMP	*LO	174.22	200.00	DEG F
091634	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
091635	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
091656	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
091657	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
091711	CNALC01	CLN ST RBLR DT 1A LS9A	HIGH			
091712	HDLTA05	4PT HTR 2CNM-E4B DRN TMP	*LO	155.32	245.00	DEG F
091715	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
091717	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
091718	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			

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091719	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
091721	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL			
091726	HVCMA04	RELAY ROOM HMDT MT8B	OK	48.87	50.00	*RH
091730	EGSPG14	EDG3 RCVR TK2B AIR PRESS	LOW			

091924	CNALC01	CLN ST RBLR DT 1A LS9A	HIGH			
091934	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL			
091935	ESSTA16	5 PT HTR E5A EXTR ST TMP	*LO	204.36	280.00	DEG F
091937	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
091938	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
092001	ESSPA07A	HTR 4A PRESS	*LO	4.9	14.0	PSIA
092001	ESSPA08A	HTR 4B PRESS	*LO	4.8	14.0	PSIA
092001	MSSTA13A	MAIN STEAM TEMP	*HI	456.7	450.0	DEG F
092006	HDLLG11	5 PT HTR E5B WTR LEVEL	HIGH			
092008	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
092009	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
092029	DSRPA01	SCAVENGING STEAM HDR PR	*LO	69.30	250.00	PSIG
092031	CNALC01	CLN ST RBLR DT 1A LS9A	HIGH			
092035	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
092036	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
092042	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL			
092042	HDHTA01	6PT HTR E6A DR TEMP	*LO	244.98	284.00	DEG F
092055	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
092056	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
092123	TMITA08	PIPE UPSTR 2HRS-SV5C TMP	*LO	367.97	400.00	DEG F
092138	CNALC01	CLN ST RBLR DT 1A LS9A	HIGH			
092138	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
092139	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
092142	HDLTA06	4PT HTR 2CNM-E4C DRN TMP	*LO	144.13	245.00	DEG F
092148	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL			
092159	VBBTC12	UPS1B ON BATT PWR	ALARM			
092212	HDHTA03	6PT HTR E6C DR TEMP	*LO	205.89	284.00	DEG F
092212	VBBTC12	UPS1B ON BATT PWR	ALMCLR			
092221	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
092222	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
092234	FWSPA04	REACTOR INLET PRES PT40A	*LO	370.14	875.00	PSIG
092245	ESSTA15	4 PT HTR E4C EXTR ST TMP	*LO	321.84	334.00	DEG F
092247	CNALC01	CLN ST RBLR DT 1A LS9A	HIGH			
092251	NMSBC02	SRM SHORT PERIOD	ALARM			
092254	NMSBC02	SRM SHORT PERIOD	ALMCLR			
092258	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL			
092302	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
092303	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
092329	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
092330	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
092338	ESSTA03	6 PT HTR E6C EXTR ST TMP	OK	429.13	472.00	DEG F
092352	CNALC01	CLN ST RBLR DT 1A LS9A	HIGH			
092400	FWSTA48	FEED WATER FINAL TEMP	*LO	164.87	324.00	DEG F
092403	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL			
092410	NMSBC02	SRM SHORT PERIOD	ALARM			
092411	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			

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092412	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
092415	NMSBC02	SRM SHORT PERIOD	ALMCLR			
092419	NMSBC02	SRM SHORT PERIOD	ALARM			
092424	NMSBC02	SRM SHORT PERIOD	ALMCLR			
092435	NMSBC02	SRM SHORT PERIOD	ALARM			
092438	ESSTA03	6 PT HTR E6C EXTR ST TMP	LO	323.83	325.00	DEG F
092445	NMSBC02	SRM SHORT PERIOD	ALMCLR			
092454	NMSBC02	SRM SHORT PERIOD	ALARM			
092456	CNSFC01	CNST XFR PMP DIS DEM FLO	NORMAL			
092456	NMSBC02	SRM SHORT PERIOD	ALMCLR			

092509	NMSBC02	SRM SHORT PERIOD	ALARM			
092515	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
092516	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
092519	NMSBC02	SRM SHORT PERIOD	ALMCLR			
092535	CCPZC02	RBCLCW HX BYP TV108	ALMCLR			
092536	CCPPA01	RBCLCW PMP DIS HDR PRESS	*HI	41.26	40.00	PSIG
092537	ESSTA17	5 PT HTR E5B EXTR ST TMP	*LO	216.52	280.00	DEG F
092538	NMSBC02	SRM SHORT PERIOD	ALARM			
092538	ESSTA03	6 PT HTR E6C EXTR ST TMP	HI	623.23	472.00	DEG F
092540	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
092540	NMSBC02	SRM SHORT PERIOD	ALMCLR			
092540	ESSTA10	3 PT HTR E3A EXTR ST TMP	*LO	246.24	256.00	DEG F
092541	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
092546	NMSBC02	SRM SHORT PERIOD	ALARM			
092546	CCPPA01	RBCLCW PMP DIS HDR PRESS	*HI	40.70	40.00	PSIG
092548	NMSBC02	SRM SHORT PERIOD	ALMCLR			
092549	CCPFC01	RBCLCW TO RWCU FLO	HIGH			
092550	CCPFC01	RBCLCW TO RWCU FLO	NORMAL			
092558	CCPTA16	RBCLC HX DISCH TEMP	*LO	76.52	80.00	DEG F
092559	NMSBC02	SRM SHORT PERIOD	ALARM			
092601	CCPPA01	RBCLCW PMP DIS HDR PRESS	OK	39.80	40.00	PSIG
092603	TMGBC04	TRNGR NOT OPERATING	IN OPER			
092604	CNALC01	CLN ST RBLR DT 1A LS9A	HIGH			
092604	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
092606	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
092607	NMSBC02	SRM SHORT PERIOD	ALMCLR			
092613	NMSBC02	SRM SHORT PERIOD	ALARM			
092613	CCPTA16	RBCLC HX DISCH TEMP	*LO	77.73	80.00	DEG F
092615	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL			
092615	NMSBC02	SRM SHORT PERIOD	ALMCLR			
092622	GMHAC05	INSIDE GEN LAG NORTH H2	NORMAL			
092622	NMSBC02	SRM SHORT PERIOD	ALARM			
092622	CNSFA01	CND XFR PUMP HDR FLOW	OK	309.61	300.00	GPM
092623	GMHAC05	INSIDE GEN LAG NORTH H2	HIGH			
092623	NMSBC02	SRM SHORT PERIOD	ALMCLR			
092624	GMHAC05	INSIDE GEN LAG NORTH H2	NORMAL			
092625	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
092626	GMHAC05	INSIDE GEN LAG NORTH H2	HIGH			
092626	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
092628	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
092628	CCPTA16	RBCLC HX DISCH TEMP	*LO	78.41	80.00	DEG F
092629	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			

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092631	NMSBC02	SRM SHORT PERIOD	ALARM			
092633	NMSBC02	SRM SHORT PERIOD	ALMCLR			
092637	GMHAC05	INSIDE GEN LAG NORTH H2	NORMAL			
092638	ESSTA03	6 PT HTR E6C EXTR ST TMP	OK	420.43	472.00	DEG F
092644	GMHAC05	INSIDE GEN LAG NORTH H2	HIGH			
092645	GMHAC05	INSIDE GEN LAG NORTH H2	NORMAL			
092646	GMHAC05	INSIDE GEN LAG NORTH H2	HIGH			
092648	GMHAC05	INSIDE GEN LAG NORTH H2	NORMAL			
092651	NMSBC02	SRM SHORT PERIOD	ALARM			
092652	GMHAC05	INSIDE GEN LAG NORTH H2	HIGH			
092653	GMHAC05	INSIDE GEN LAG NORTH H2	NORMAL			
092654	NMSBC02	SRM SHORT PERIOD	ALMCLR			
092655	GMHAC05	INSIDE GEN LAG NORTH H2	HIGH			
092656	GMHAC05	INSIDE GEN LAG NORTH H2	NORMAL			

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092707 NMSBC02  SRM SHORT PERIOD            ALMCLR
092708 GMHAC05  INSIDE GEN LAG NORTH H2     NORMAL
092711 CNALC01  CLN ST RBLR DT 1A LS9A      HIGH
092717 HVKBC09  DIV1 CB CHILLED WTR SYS     INOP
092718 HVKBC09  DIV1 CB CHILLED WTR SYS     NORMAL
092722 CNALC01  CLN ST RBLR DT 1A LS9A      NORMAL
092730 NMSBC02  SRM SHORT PERIOD            ALARM
092732 HVCMA04  RELAY ROOM HMDT MT8B        HI     50.37    50.00 %RH
092735 NMSBC02  SRM SHORT PERIOD            ALMCLR
092738 ESSTA03  6 PT HTR E6C EXTR ST TMP    LO    301.63   325.00 DEG F
092743 ARCLC04  CNSR AIR REM TK SP1B LVL    LOW
092744 HVKBC09  DIV1 CB CHILLED WTR SYS     INOP
092745 HVKBC09  DIV1 CB CHILLED WTR SYS     NORMAL
092746 HVKBC09  DIV1 CB CHILLED WTR SYS     INOP
092746 NMSBC02  SRM SHORT PERIOD            ALARM
092747 HVKBC09  DIV1 CB CHILLED WTR SYS     NORMAL
092748 NMSBC02  SRM SHORT PERIOD            ALMCLR
092753 GMHAC05  INSIDE GEN LAG NORTH H2     HIGH
092758 CCPTA16  RBCLC HX DISCH TEMP         *LO    79.14    80.00 DEG F
092801 NMSBC02  SRM SHORT PERIOD            ALARM
092806 NMSBC02  SRM SHORT PERIOD            ALMCLR
092809 SWPPC28  D2 SW DIS TO CWS/LAKE PR    NORMAL
092810 SWPPA28  D2 SW DIS TO CWS/LAKE PR    OK     22.46     7.06 PSIG
092813 NMSBC02  SRM SHORT PERIOD            ALARM
092814 NMSBC02  SRM SHORT PERIOD            ALMCLR
092815 CNALC01  CLN ST RBLR DT 1A LS9A      HIGH
092817 HVKBC09  DIV1 CB CHILLED WTR SYS     INOP
092818 HVKBC09  DIV1 CB CHILLED WTR SYS     NORMAL
092821 HVKBC09  DIV1 CB CHILLED WTR SYS     INOP
092822 HVKBC09  DIV1 CB CHILLED WTR SYS     NORMAL
092823 GMHAC05  INSIDE GEN LAG NORTH H2     NORMAL
092824 GMHAC05  INSIDE GEN LAG NORTH H2     HIGH
092825 CNALC01  CLN ST RBLR DT 1A LS9A      NORMAL
092826 GMHAC05  INSIDE GEN LAG NORTH H2     NORMAL
092827 GMHAC05  INSIDE GEN LAG NORTH H2     HIGH
092828 NMSBC02  SRM SHORT PERIOD            ALARM
092830 NMSBC02  SRM SHORT PERIOD            ALMCLR
092832 GMHAC05  INSIDE GEN LAG NORTH H2     NORMAL

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092838 GMHAC05  INSIDE GEN LAG NORTH H2     HIGH
092838 ESSTA03  6 PT HTR E6C EXTR ST TMP    *LO   272.46   325.00 DEG F
092842 GMHAC05  INSIDE GEN LAG NORTH H2     NORMAL
092842 VBBTC11  UPS1B SYSTEM TROUBLE        ALMCLR
092843 GMHAC05  INSIDE GEN LAG NORTH H2     HIGH
092854 GMHAC05  INSIDE GEN LAG NORTH H2     NORMAL
092856 ARCLC04  CNSR AIR REM TK SP1B LVL    NORMAL
092856 GMHAC05  INSIDE GEN LAG NORTH H2     HIGH
092857 GMHAC05  INSIDE GEN LAG NORTH H2     NORMAL
092858 FWSPA05  REACTOR INLET PRES PT40B    *LO   365.30   875.00 PSIG
092859 VBBTC11  UPS1B SYSTEM TROUBLE        ALARM
092900 GMHAC05  INSIDE GEN LAG NORTH H2     HIGH
092902 HVKBC09  DIV1 CB CHILLED WTR SYS     INOP
092904 HVKBC09  DIV1 CB CHILLED WTR SYS     NORMAL
092905 GMHAC05  INSIDE GEN LAG NORTH H2     NORMAL
092906 GMHAC05  INSIDE GEN LAG NORTH H2     HIGH
092913 CCPTA16  RBCLC HX DISCH TEMP         OK     80.28    80.00 DEG F
092918 GMHAC05  INSIDE GEN LAG NORTH H2     NORMAL
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092932 CNALC01  CLN ST RBLR DT 1A LS9A  NORMAL
092935 GMHAC05  INSIDE GEN LAG NORTH H2  HIGH
092935 NMSBC02  SRM SHORT PERIOD         ALARM
092937 NMSBC02  SRM SHORT PERIOD         ALMCLR
092938 GMHAC05  INSIDE GEN LAG NORTH H2  NORMAL
092939 ESSTA18  5 PT HTR E5C EXTR ST TMP *LO  229.53  280.00 DEG F
092940 GMHAC05  INSIDE GEN LAG NORTH H2  HIGH
092941 GMHAC05  INSIDE GEN LAG NORTH H2  NORMAL
092950 GMHAC05  INSIDE GEN LAG NORTH H2  HIGH
092954 GMHAC05  INSIDE GEN LAG NORTH H2  NORMAL
092955 GMHAC05  INSIDE GEN LAG NORTH H2  HIGH
092957 GMHAC05  INSIDE GEN LAG NORTH H2  NORMAL
092958 GMHAC05  INSIDE GEN LAG NORTH H2  HIGH
093001 GMHAC05  INSIDE GEN LAG NORTH H2  NORMAL
093002 GMHAC05  INSIDE GEN LAG NORTH H2  HIGH
093003 GMHAC05  INSIDE GEN LAG NORTH H2  NORMAL
093012 FWSTA06  6PT HTR 2FWS E6C OUT TMP *LO  154.36  324.00 DEG F
093022 HVKBC09  DIV1 CB CHILLED WTR SYS  INOP
093023 HVKBC09  DIV1 CB CHILLED WTR SYS  NORMAL
093023 MSSTA06  TURB BYP PSV89D OUT TEMP *HI  329.87  280.00 DEG F
093024 GMHAC05  INSIDE GEN LAG NORTH H2  HIGH
093025 GMHAC05  INSIDE GEN LAG NORTH H2  NORMAL
093026 GMHAC05  INSIDE GEN LAG NORTH H2  HIGH
093027 CNALC01  CLN ST RBLR DT 1A LS9A   HIGH
093027 HVKBC09  DIV1 CB CHILLED WTR SYS  INOP
093028 NMSBC02  SRM SHORT PERIOD         ALARM
093029 HVKBC09  DIV1 CB CHILLED WTR SYS  NORMAL
093031 NMSBC02  SRM SHORT PERIOD         ALMCLR
093033 GMHAC05  INSIDE GEN LAG NORTH H2  NORMAL
093034 GMHAC05  INSIDE GEN LAG NORTH H2  HIGH
093037 GMHAC05  INSIDE GEN LAG NORTH H2  NORMAL
093037 CNALC01  CLN ST RBLR DT 1A LS9A   NORMAL
093055 CNSFC01  CNST XFR PMP DIS DEM FLO LOW

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093100 GMHAC05  INSIDE GEN LAG NORTH H2  HIGH
093101 GMHAC05  INSIDE GEN LAG NORTH H2  NORMAL
093104 GMHAC05  INSIDE GEN LAG NORTH H2  HIGH
093105 GMHAC05  INSIDE GEN LAG NORTH H2  NORMAL
093108 GMHAC05  INSIDE GEN LAG NORTH H2  HIGH
093109 GMHAC05  INSIDE GEN LAG NORTH H2  NORMAL
093112 GMHAC05  INSIDE GEN LAG NORTH H2  HIGH
093113 GMHAC05  INSIDE GEN LAG NORTH H2  NORMAL
093114 GMHAC05  INSIDE GEN LAG NORTH H2  HIGH
093114 HVKBC09  DIV1 CB CHILLED WTR SYS  INOP
093115 GMHAC05  INSIDE GEN LAG NORTH H2  NORMAL
093115 HVKBC09  DIV1 CB CHILLED WTR SYS  NORMAL
093121 HVKBC09  DIV1 CB CHILLED WTR SYS  INOP
093122 HVKBC09  DIV1 CB CHILLED WTR SYS  NORMAL
093123 GMHAC05  INSIDE GEN LAG NORTH H2  HIGH
093129 GMHAC05  INSIDE GEN LAG NORTH H2  NORMAL
093131 GMHAC05  INSIDE GEN LAG NORTH H2  HIGH
093131 CNALC01  CLN ST RBLR DT 1A LS9A   HIGH
093132 GMHAC05  INSIDE GEN LAG NORTH H2  NORMAL
093139 GMHAC05  INSIDE GEN LAG NORTH H2  HIGH
093140 DRSTC12  DW UC1B DISCH AIR TEMP   NORMAL
093142 ESSTA13  4 PT HTR E4A EXTR ST TMP *LO  309.88  334.00 DEG F
093142 CNALC01  CLN ST RBLR DT 1A LS9A   NORMAL
093143 CNSBC03  CNST XFR P1A/B A/START   STOP
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093150	GMHAC05	INSIDE GEN LAG NORTH H2	HIGH			
093151	GMHAC05	INSIDE GEN LAG NORTH H2	NORMAL			
093155	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
093156	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
093157	GNSFA01	GND XFR PUMP HDR FLOW	LO	297.72	300.00	GPM
093200	GMHAC05	INSIDE GEN LAG NORTH H2	HIGH			
093201	GMHAC05	INSIDE GEN LAG NORTH H2	NORMAL			
093206	VBBTO12	UPS1B ON BATT PWR	ALARM			
093207	GMHAC05	INSIDE GEN LAG NORTH H2	HIGH			
093208	TMGBC04	TRNGR NOT OPERATING	ALARM			
093211	VBBTO12	UPS1B ON BATT PWR	ALMCLR			
093238	GMHAC05	INSIDE GEN LAG NORTH H2	NORMAL			
093238	CNALC01	CLN ST RBLR DT 1A LS9A	HIGH			
093244	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
093245	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
093247	GMHAC05	INSIDE GEN LAG NORTH H2	HIGH			
093247	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
093248	GMHAC05	INSIDE GEN LAG NORTH H2	NORMAL			
093248	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
093249	GMHAC05	INSIDE GEN LAG NORTH H2	HIGH			
093249	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL			
093256	GMHAC05	INSIDE GEN LAG NORTH H2	NORMAL			
093312	HDLTA02	5PT HTR 2CNM-E5B DRN TMP	*LO	175.69	246.00	DEG F
093317	GMHAC05	INSIDE GEN LAG NORTH H2	HIGH			
093318	GMHAC05	INSIDE GEN LAG NORTH H2	NORMAL			
093319	GMHAC05	INSIDE GEN LAG NORTH H2	HIGH			
093320	GMHAC05	INSIDE GEN LAG NORTH H2	NORMAL			
093341	CNALC01	CLN ST RBLR DT 1A LS9A	HIGH			
093350	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
093351	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL			

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093351	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
093355	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
093356	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
093414	GMHAC05	INSIDE GEN LAG NORTH H2	HIGH			
093415	GMHAC05	INSIDE GEN LAG NORTH H2	NORMAL			
093424	TMITA06	PIPE UPSTR 2HRS-SV5B TMP	*LO	367.89	400.00	DEG F
093424	TMITA04	PIPE UPSTR 2HRS-SV5A TMP	*LO	383.89	400.00	DEG F
093429	DRSTC11	DW UC1A DISCH AIR TEMP	NORMAL			
093448	CNALC01	CLN ST RBLR DT 1A LS9A	HIGH			
093452	DRSTC13	DW UC1C DISCH AIR TEMP	NORMAL			
093454	MSSTA04	TURB BYP PSV89B OUT TEMP	*HI	329.81	280.00	DEG F
093458	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL			
093458	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
093459	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
093526	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
093527	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
093538	ESSTA03	6 PT HTR E6C EXTR ST TMP	ADC	269.35	472.06	DEG F
093550	DRSTC14	DW UC1D DISCH AIR TEMP	NORMAL			
093552	CNALC01	CLN ST RBLR DT 1A LS9A	HIGH			
093553	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
093554	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
093602	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL			
093616	HVCMA04	RELAY ROOM HMDT MT8B	OK	48.87	50.00	%RH
093618	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
093619	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
093638	ESSTA03	6 PT HTR E6C EXTR ST TMP	LO	311.87	325.00	DEG F
093642	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			

093711	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
093713	CNDFC49	2CND-DEMIN1D FLOW	LOW			
~~093713~~	~~CNDBC01~~	~~2CND-IPNL287 SYS TROUBLE~~	~~TRBL~~			
093714	CNDFC49	2CND-DEMIN1D FLOW	NORMAL			
093714	CNDBC01	2CND-IPNL287 SYS TROUBLE	ALMCLR			
~~093725~~	~~ICSBC04~~	~~RCIC SYS~~	~~INOP~~			
093725	ICSTC07	2ICS*MOV126 MOT	OVERLD			
093738	ESSTA03	6 PT HTR E6C EXTR ST TMP	*LO	307.60	325.00	DEG F
~~093748~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~INOP~~			
093749	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
093810	CNALC01	CLN ST RBLR DT 1A LS9A	HIGH			
093820	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL			
093822	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
093823	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
093838	ESSTA03	6 PT HTR E6C EXTR ST TMP	ADC	307.60	472.00	DEG F
093842	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
093843	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
~~093846~~	~~ASSPA03~~	~~CLN STM RCBLR STM PRESS~~	~~OK~~	~~70.95~~	~~70.00~~	~~PSIG~~
093852	EGSPC14	EDG3 RCVR TK2B AIR PRESS	NORMAL			
093859	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
~~093900~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~NORMAL~~			
093900	WTSAA01	2WTS-TK1 RECIRC WTR PH	LO	4.95	6.50	PH
093911	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
~~093912~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~NORMAL~~			
093916	CNALC01	CLN ST RBLR DT 1A LS9A	HIGH			

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~~093924~~	~~OFGTA01~~	~~OFFGAS SYSTEM INLET TEMP~~	~~*LO~~	~~164.84~~	~~200.00~~	~~DEG F~~
093927	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL			
093930	WTSAA01	2WTS-TK1 RECIRC WTR PH	*LO	6.08	6.50	PH
~~093932~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~INOP~~			
093933	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
093943	ESSTA14	4 PT HTR E4B EXTR ST TMP	*LO	309.88	334.00	DEG F
~~094000~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~INOP~~			
094000	WTSAA01	2WTS-TK1 RECIRC WTR PH	*LO	1.27	6.50	PH
094001	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
~~094002~~	~~ESSPA08A~~	~~HTR 4B PRESS~~	~~*LO~~	~~4.5~~	~~14.0~~	~~PSIA~~
094003	MSSTA13A	MAIN STEAM TEMP	OK	449.7	450.0	DEG F
094006	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
~~094007~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~NORMAL~~			
094012	FWSTA03	6PT HTR 2FWS-E6C INL TMP	*LO	144.69	284.00	DEG F
094026	CNALC01	CLN ST RBLR DT 1A LS9A	HIGH			
~~094029~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~INOP~~			
094030	WTSAA01	2WTS-TK1 RECIRC WTR PH	*LO	6.20	6.50	PH
094031	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
~~094037~~	~~CNALC01~~	~~CLN ST RBLR DT 1A LS9A~~	~~NORMAL~~			
094055	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
094056	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
~~094100~~	~~WTSAA01~~	~~2WTS-TK1 RECIRC WTR PH~~	~~*LO~~	~~3.98~~	~~6.50~~	~~PH~~
094109	CMSPA01	DW LOOP A PRESS EL 293FT	OK	0.66L*******		PSIG
094118	FWSPA04	REACTOR INLET PRES PT40A	*LO	330.55	875.00	PSIG
~~094120~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~INOP~~			
094121	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
094130	WTSAA01	2WTS-TK1 RECIRC WTR PH	*LO	1.33	6.50	PH
~~094132~~	~~CNALC01~~	~~CLN ST RBLR DT 1A LS9A~~	~~HIGH~~			
094142	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL			
094147	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
~~094148~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~NORMAL~~			

094200	WTSAA01	2WTS-TK1 RECIRC WTR PH	*LO	3.86	6.50	PH
094223	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
094224	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
094230	WTSAA01	2WTS-TK1 RECIRC WTR PH	OK	8.21	6.50	PH
094239	CNALC01	CLN ST RBLR DT 1A LS9A	HIGH			
094249	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL			
094255	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
094256	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
094303	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
094304	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
094306	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
094308	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
094309	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
094310	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
094311	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
094312	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
094323	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
094324	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
094340	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
094341	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
094343	CNALC01	CLN ST RBLR DT 1A LS9A	HIGH			
094353	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL			
094353	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
094354	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			

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094355	ABDBC01	AUX BLR SYS 2CES-IPNL506	TRBL			
094356	CNSBC03	CNST XFR P1A/B A/START	START			
094356	CNSPC01	CND XFR PMP DIS HDR PR	LOW			
094357	CNSPC01	CND XFR PMP DIS HDR PR	NORMAL			
094400	ABDBC01	AUX BLR SYS 2CES-IPNL506	NORMAL			
094407	CNSFA01	CND XFR PUMP HDR FLOW	OK	328.37	300.00	GPM
094411	RHSBC24	RHR LOOP B PMP DISCH PR	HIGH			
094411	ADSBC12	ADS B RHR B/RHR C PERMIS	ALARM			
094427	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
094429	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
094446	CNALC01	CLN ST RBLR DT 1A LS9A	HIGH			
094457	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL			
094459	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
094501	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
094503	CSHLC01	HPCS REACTOR WTR LEVEL	HIGH			
094504	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
094505	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
094511	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
094512	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
094512	HDLLC12	5 PT HTR E5C WTR LEVEL	HIGH			
094523	NMSBC02	SRM SHORT PERIOD	ALARM			
094526	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
094526	NMSBC02	SRM SHORT PERIOD	ALMCLR			
094527	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
094538	ESSTA03	6 PT HTR E6C EXTR ST TMP	OK	331.82	472.00	DEG F
094547	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
094548	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
094551	CNALC01	CLN ST RBLR DT 1A LS9A	HIGH			
094601	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL			
094606	CCSZC02	TBCLCW HX BYP TV104	FULL OP			
094616	HVCMA04	RELAY ROOM HMDT MT8B	HI	50.44	50.00	%RH
094633	CSHLC01	HPCS REACTOR WTR LEVEL	NORMAL			

094649	CNALC01	CLN ST RBLR DT 1A LS9A	HIGH			
094659	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL			
094723	TMITA07	PIPE UPSTR 2HRS-SV6C TMP	*LO	367.95	400.00	DEG F
094733	FWSPA05	REACTOR INLET PRES PT40B	*LO	326.70	875.00	PSIG
094738	ESSTA03	6 PT HTR E6C EXTR ST TMP	*LO	278.39	325.00	DEG F
094750	CNALC01	CLN ST RBLR DT 1A LS9A	HIGH			
094800	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL			
094800	WTSAA01	2WTS-TK1 RECIRC WTR PH	LO	4.02	6.50	PH
094802	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
094803	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
094805	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
094806	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
094813	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
094814	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
094814	NMSBC02	SRM SHORT PERIOD	ALARM			
094815	NMSBC02	SRM SHORT PERIOD	ALMCLR			
094830	WTSAA01	2WTS-TK1 RECIRC WTR PH	OK	8.15	6.50	PH
094838	ESSTA03	6 PT HTR E6C EXTR ST TMP	*LO	261.73	325.00	DEG F
094847	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			

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094848	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
094852	CNALC01	CLN ST RBLR DT 1A LS9A	HIGH			
094902	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL			
094931	NMSBC02	SRM SHORT PERIOD	ALARM			
094932	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
094932	NMSBC02	SRM SHORT PERIOD	ALMCLR			
094934	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
094935	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
094936	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
094953	CNALC01	CLN ST RBLR DT 1A LS9A	HIGH			
095003	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL			
095018	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
095019	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
095020	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
095021	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
095037	ESSTA17	5 PT HTR E5B EXTR ST TMP	*LO	203.94	280.00	DEG F
095038	ESSTA03	6 PT HTR E6C EXTR ST TMP	*LO	241.46	325.00	DEG F
095053	CSHLC01	HPCS REACTOR WTR LEVEL	HIGH			
095055	CNALC01	CLN ST RBLR DT 1A LS9A	HIGH			
095059	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
095100	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
095105	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL			
095122	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
095123	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
095142	HDHTA02	6PT HTR E6B DR TEMP	*LO	205.89	264.00	DEG F
095143	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
095144	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
095146	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
095147	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
095200	CNALC01	CLN ST RBLR DT 1A LS9A	HIGH			
095210	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL			
095223	FWSPA03	RX FEED WTR P1C DISCH PR	*LO	94.60	930.00	PSIG
095238	ESSTA03	6 PT HTR E6C EXTR ST TMP	*LO	235.28	325.00	DEG F
095301	CNALC01	CLN ST RBLR DT 1A LS9A	HIGH			
095311	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL			
095315	FWSTA48	FEED WATER FINAL TEMP	*LO	154.36	324.00	DEG F
095326	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			

095410	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
095412	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL			
095435	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
095436	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
095441	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
095442	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
095442	HDLTA09	3PT HTR 2CNM-E3C DRN TMP	*LO	126.50	167.00	DEG F
095455	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
095456	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
095500	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
095501	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
095508	CNALC01	CLN ST RBLR DT 1A LS9A	HIGH			
095518	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL			
095522	HVCMA04	RELAY ROOM HMDT MTSB	OK	48.94	50.00	%RH
095524	GTSPA01	RB IN/OUT D/P PDT5A	OK	-0.49	-0.50	IN WG

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095538	ESSTA03	6 PT HTR E6C EXTR ST TMP	*LO	213.72	325.00	DEG F
095559	DSRPA01	SCAVENGING STEAM HDR PR	*LO	54.78	250.00	PSIG
095612	CNALC01	CLN ST RBLR DT 1A LS9A	HIGH			
095613	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
095614	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
095622	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL			
095622	OFGTA01	OFFGAS SYSTEM INLET TEMP	*LO	157.34	200.00	DEG F
095643	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
095644	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
095644	MSSTA13	MN STEAM INL HDR TEMP	OK	440.85	450.00	DEG F
095651	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
095652	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
095707	CWSAC02	CLG TWR BLOW-DOWN WTR PH	HIGH			
095707	CWSAC01	CLG TWR BLOW-DOWN WTR PH	LOW			
095712	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
095713	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
095717	CWSAC02	CLG TWR BLOW-DOWN WTR PH	NORMAL			
095717	CWSAC01	CLG TWR BLOW-DOWN WTR PH	NORMAL			
095717	CNALC01	CLN ST RBLR DT 1A LS9A	HIGH			
095728	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL			
095746	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
095747	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
095757	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
095758	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
095812	HDLTA07	3PT HTR 2CNM-E3A DRN TMP	*LO	102.08	167.00	DEG F
095819	GTSPA01	RB IN/OUT D/P PDT5A	LO	-0.51	-0.50	IN WG
095823	MSSTA07	TURB BYP PSV89E OUT TEMP	*HI	329.85	280.00	DEG F
095826	CNALC01	CLN ST RBLR DT 1A LS9A	HIGH			
095836	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL			
095842	FWSTA06	6PT HTR 2FWS-E6C OUT TMP	*LO	143.72	324.00	DEG F
095842	HDLTA04	4PT HTR 2CNM-E4A DRN TMP	*LO	166.54	245.00	DEG F
095854	GTSPA01	RB IN/OUT D/P PDT5A	OK	-0.48	-0.50	IN WG
095858	CNSFC01	CNST XFR PMP DIS DEM FLO	LOW			
095905	RHSBC08	RHR-B INJ-VLV24B PERMIS	ALARM			
095906	RHSPC01	RHR SHUT DN CLG HDR PR	HIGH			
095910	ARCLC04	CNSR AIR REM TK SP1B LVL	LOW			
095916	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
095917	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
095918	RHSPC01	RHR SHUT DN CLG HDR PR	NORMAL			
095920	RHSBC08	RHR-B INJ-VLV24B PERMIS	ALMCLR			
095929	CNSFC01	CNST XFR PMP DIS DEM FLO	NORMAL			

100001	FWSTA01A	HTR 6A FW TEMP IN	OK	323.5	340.7	DEG F
100010	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
~~100011~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~NORMAL~~			
100015	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
100016	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
~~100021~~	~~ARCLC04~~	~~CNSR AIR REM TK SP1B LVL~~	~~NORMAL~~			
100037	CNALC01	CLN ST RBLR DT 1A LS9A	HIGH			
100042	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
~~100043~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~NORMAL~~			
100044	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			

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~~100045~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~NORMAL~~			
100047	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL			
100057	CSLBC02	DIV1 LPCS SYSTEM	INOP			
~~100057~~	~~CSLBC13~~	~~LPCS LINE BREAK~~	~~ALARM~~			
100058	CSLBC02	DIV1 LPCS SYSTEM	ALMCLR			
100058	CSLBC13	LPCS LINE BREAK	ALMCLR			
~~100100~~	~~CSLBC02~~	~~DIV1 LPCS SYSTEM~~	~~INOP~~			
100100	CSLBC13	LPCS LINE BREAK	ALARM			
100100	WTSAA01	2WTS-TK1 RECIRC WTR PH	LO	5.81	6.50	PH
~~100101~~	~~CSLBC02~~	~~DIV1 LPCS SYSTEM~~	~~ALMCLR~~			
100101	CSLBC13	LPCS LINE BREAK	ALMCLR			
100104	CSLBC02	DIV1 LPCS SYSTEM	INOP			
~~100104~~	~~CSLBC13~~	~~LPCS LINE BREAK~~	~~ALARM~~			
100105	CSLBC02	DIV1 LPCS SYSTEM	ALMCLR			
100105	CSLBC13	LPCS LINE BREAK	ALMCLR			
~~100106~~	~~CSLBC13~~	~~LPCS LINE BREAK~~	~~ALARM~~			
100107	CSLBC13	LPCS LINE BREAK	ALMCLR			
100115	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
~~100116~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~NORMAL~~			
100117	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
100118	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
~~100120~~	~~CSLBC02~~	~~DIV1 LPCS SYSTEM~~	~~INOP~~			
100120	CSLBC13	LPCS LINE BREAK	ALARM			
100121	CSLBC02	DIV1 LPCS SYSTEM	ALMCLR			
~~100121~~	~~CSLBC13~~	~~LPCS LINE BREAK~~	~~ALMCLR~~			
100130	WTSAA01	2WTS-TK1 RECIRC WTR PH	*LO	1.52	6.50	PH
100141	CNALC01	CLN ST RBLR DT 1A LS9A	HIGH			
~~100148~~	~~CSLBC02~~	~~DIV1 LPCS SYSTEM~~	~~INOP~~			
100148	CSLBC13	LPCS LINE BREAK	ALARM			
100149	CSLBC02	DIV1 LPCS SYSTEM	ALMCLR			
~~100149~~	~~CSLBC13~~	~~LPCS LINE BREAK~~	~~ALMCLR~~			
100151	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL			
100200	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
~~100200~~	~~WTSAA01~~	~~2WTS-TK1 RECIRC WTR PH~~	OK	8.00	6.50	PH
100201	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
100213	CSLBC02	DIV1 LPCS SYSTEM	INOP			
~~100213~~	~~CSLBC13~~	~~LPCS LINE BREAK~~	~~ALARM~~			
100214	CSLBC02	DIV1 LPCS SYSTEM	ALMCLR			
100214	CSLBC13	LPCS LINE BREAK	ALMCLR			
~~100214~~	~~GTSPA01~~	~~RB IN/OUT D/P PDT5A~~	LO	-0.50	-0.50	IN WG
100219	GTSPA01	RB IN/OUT D/P PDT5A	OK	-0.48	-0.50	IN WG
100221	CSLBC13	LPCS LINE BREAK	ALARM			
100222	CSLBC13	LPCS LINE BREAK	ALMCLR			
100230	WTSAA01	2WTS-TK1 RECIRC WTR PH	LO	4.67	6.50	PH
100248	CNALC01	CLN ST RBLR DT 1A LS9A	HIGH			
100255	CSLBC13	LPCS LINE BREAK	ALARM			

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100258 CSLBC02  DIV1 LPCS SYSTEM         ALMCLR
100258 CSLBC13  LPCS LINE BREAK          ALMCLR
100259 CNALC01  CLN ST RBLR DT 1A LS9A   NORMAL
100259 HVKBC09  DIV1 CB CHILLED WTR SYS  INOP
100300 HVKBC09  DIV1 CB CHILLED WTR SYS  NORMAL

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100300 WTSAA01  2WTS-TK1 RECIRC WTR PH   *LO     1.33     6.50 PH
100310 CSLBC02  DIV1 LPCS SYSTEM         INOP
100311 CSLBC13  LPCS LINE BREAK          ALARM
100318 CSLBC02  DIV1 LPCS SYSTEM         ALMCLR
100318 CSLBC13  LPCS LINE BREAK          ALMCLR
100319 CSLBC02  DIV1 LPCS SYSTEM         INOP
100319 CSLBC13  LPCS LINE BREAK          ALARM
100324 HVKBC09  DIV1 CB CHILLED WTR SYS  INOP
100325 HVKBC09  DIV1 CB CHILLED WTR SYS  NORMAL
100330 WTSAA01  2WTS-TK1 RECIRC WTR PH   OK      8.08     6.50 PH
100331 CSLBC02  DIV1 LPCS SYSTEM         ALMCLR
100332 CSLBC02  DIV1 LPCS SYSTEM         INOP
100342 HVKBC09  DIV1 CB CHILLED WTR SYS  INOP
100343 HVKBC09  DIV1 CB CHILLED WTR SYS  NORMAL
100344 CSLBC02  DIV1 LPCS SYSTEM         ALMCLR
100344 CSLBC13  LPCS LINE BREAK          ALMCLR
100345 CSLBC02  DIV1 LPCS SYSTEM         INOP
100345 CSLBC13  LPCS LINE BREAK          ALARM
100353 CNALC01  CLN ST RBLR DT 1A LS9A   HIGH
100354 HVKBC09  DIV1 CB CHILLED WTR SYS  INOP
100355 HVKBC09  DIV1 CB CHILLED WTR SYS  NORMAL
100404 CNALC01  CLN ST RBLR DT 1A LS9A   NORMAL
100412 HVKBC09  DIV1 CB CHILLED WTR SYS  INOP
100413 HVKBC09  DIV1 CB CHILLED WTR SYS  NORMAL
100430 HVKBC09  DIV1 CB CHILLED WTR SYS  INOP
100431 HVKBC09  DIV1 CB CHILLED WTR SYS  NORMAL
100432 HVKBC09  DIV1 CB CHILLED WTR SYS  INOP
100434 HVKBC09  DIV1 CB CHILLED WTR SYS  NORMAL
100440 IASPA04  ADS HEADER B PRESS       *HI   193.72   186.00 PSIG
100448 HVKBC09  DIV1 CB CHILLED WTR SYS  INOP
100449 HVKBC09  DIV1 CB CHILLED WTR SYS  NORMAL
100456 HVCMA04  RELAY ROOM HMDT MT8B     HI     50.50    50.00 %RH
100502 HVKBC09  DIV1 CB CHILLED WTR SYS  INOP
100503 CNALC01  CLN ST RBLR DT 1A LS9A   HIGH
100503 HVKBC09  DIV1 CB CHILLED WTR SYS  NORMAL
100514 CNALC01  CLN ST RBLR DT 1A LS9A   NORMAL
100532 CWSAA02  BLWDN WTR CHLORINE RESID SLO     0.05L******* PPM
100534 HVKBC09  DIV1 CB CHILLED WTR SYS  INOP
100534 ESSTA09  2 PT HTR E2C SHELL TEMP  *LO   104.13   165.00 DEG F
100535 HVKBC09  DIV1 CB CHILLED WTR SYS  NORMAL
100536 HVKBC09  DIV1 CB CHILLED WTR SYS  INOP
100537 HVKBC09  DIV1 CB CHILLED WTR SYS  NORMAL
100549 HVKBC09  DIV1 CB CHILLED WTR SYS  INOP
100550 HVKBC09  DIV1 CB CHILLED WTR SYS  NORMAL
100602 NMSBC02  SRM SHORT PERIOD         ALARM
100603 NMSBC02  SRM SHORT PERIOD         ALMCLR
100607 HVKBC09  DIV1 CB CHILLED WTR SYS  INOP
100608 HVKBC09  DIV1 CB CHILLED WTR SYS  NORMAL
100614 RHSBC08  RHR B INJ VLV24B PERMIS  ALARM
100615 NMSBC02  SRM SHORT PERIOD         ALARM
100616 NMSBC02  SRM SHORT PERIOD         ALMCLR
100617 CNALC01  CLN ST RBLR DT 1A LS9A   HIGH
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~~100643~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~INOP~~			
100644	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			

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~~100711~~	~~CNSFC01~~	~~CNST XFR PMP DIS DEM FLO~~	~~LOW~~			
100722	CNALC01	CLN ST RBLR DT 1A LS9A	HIGH			
100725	NMSBC02	SRM SHORT PERIOD	ALARM			
~~100728~~	~~FWSPA05~~	~~REACTOR INLET PRES PT40B~~	~~*LO~~	~~287.09~~	~~875.00~~	~~PSIG~~
100729	NMSBC02	SRM SHORT PERIOD	ALMCLR			
100732	ESSTA08	2 PT HTR E2B SHELL TEMP	*LO	104.13	165.00	DEG F
~~100733~~	~~CNALC01~~	~~CLN ST RBLR DT 1A LS9A~~	~~NORMAL~~			
100742	FWSTA03	6PT HTR 2FWS-E6C INL TMP	*LO	133.11	284.00	DEG F
100746	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
~~100747~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~NORMAL~~			
100748	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
100749	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
~~100750~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	~~ALARM~~			
100751	NMSBC02	SRM SHORT PERIOD	ALMCLR			
100752	RHSPC01	RHR SHUT DN CLG HDR PR	HIGH			
~~100805~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~INOP~~			
100806	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
100812	HDHTA01	5PT HTR E5A DR TEMP	*LO	231.91	284.00	DEG F
~~100824~~	~~CNALC01~~	~~CLN ST RBLR DT 1A LS9A~~	~~HIGH~~			
100824	TMITA03	PIPE UPSTR 2HRS-SV6A TMP	*LO	367.95	400.00	DEG F
100835	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL			
~~100837~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~INOP~~			
100838	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
100839	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
~~100839~~	~~ESSTA18~~	~~5 PT HTR E5C EXTR ST TMP~~	~~*LO~~	~~216.93~~	~~280.00~~	~~DEG F~~
100840	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
100841	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
~~100842~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~NORMAL~~			
100843	RHSPC09	RHR PMP 1B SUCT PRESS	ABNORM			
100911	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
~~100912~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~NORMAL~~			
100916	DFTBC30	TB FLR DRN SYSTEM	TRBL			
100927	CNSFA01	CND XFR PUMP HDR FLOW	LO	295.38	300.00	GPM
~~100933~~	~~CNALC01~~	~~CLN ST RBLR DT 1A LS9A~~	~~HIGH~~			
100944	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL			
100957	NMSBC02	SRM SHORT PERIOD	ALARM			
~~100958~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	~~ALMCLR~~			
101023	NMSBC02	SRM SHORT PERIOD	ALARM			
101025	NMSBC02	SRM SHORT PERIOD	ALMCLR			
~~101026~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	~~ALARM~~			
101027	RHSBC07	RHR A INJ VLV24A PERMIS	ALARM			
101028	RHSBC07	RHR A INJ VLV24A PERMIS	ALMCLR			
101029	NMSBC02	SRM SHORT PERIOD	ALMCLR			
101038	CNALC01	CLN ST RBLR DT 1A LS9A	HIGH			
101042	HDLTA01	5PT HTR 2CNM-E5A DRN TMP	*LO	164.04	246.00	DEG F
101042	HDLTA03	5PT HTR 2CNM-E5C DRN TMP	*LO	164.04	246.00	DEG F
101043	NMSBC02	SRM SHORT PERIOD	ALARM			
101045	NMSBC02	SRM SHORT PERIOD	ALMCLR			
~~101046~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	~~ALARM~~			
101048	NMSBC02	SRM SHORT PERIOD	ALMCLR			
101049	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL			
~~101057~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	~~ALARM~~			
101059	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
101059	NMSBC02	SRM SHORT PERIOD	ALMCLR			

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101142	NMSBC02	SRM SHORT PERIOD	ALMCLR			
101144	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
101145	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
101148	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
101149	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
101150	CNALC01	CLN ST RBLR DT 1A LS9A	HIGH			
101159	VBBTC02	UPS1G ON BATT PWR	ALARM			
101200	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL			
101206	VBBTC02	UPS1G ON BATT PWR	ALMCLR			
101213	NMSBC02	SRM SHORT PERIOD	ALARM			
101214	NMSBC02	SRM SHORT PERIOD	ALMCLR			
101218	NMSBC02	SRM SHORT PERIOD	ALARM			
101219	NMSBC02	SRM SHORT PERIOD	ALMCLR			
101222	NMSBC02	SRM SHORT PERIOD	ALARM			
101225	NMSBC02	SRM SHORT PERIOD	ALMCLR			
101236	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
101237	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
101240	NMSBC02	SRM SHORT PERIOD	ALARM			
101241	NMSBC02	SRM SHORT PERIOD	ALMCLR			
101242	ESSTA11	3 PT HTR E3B EXTR ST TMP	LO	255.95	256.00	DEG F
101243	RHSBC07	RHR A INJ VLV24A PERMIS	ALARM			
101244	RHSBC07	RHR A INJ VLV24A PERMIS	ALMCLR			
101253	NMSBC02	SRM SHORT PERIOD	ALARM			
101256	CNALC01	CLN ST RBLR DT 1A LS9A	HIGH			
101257	NMSBC02	SRM SHORT PERIOD	ALMCLR			
101306	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL			
101313	OFGTA01	OFFGAS SYSTEM INLET TEMP	*LO	88.35	200.00	DEG F
101321	NMSBC02	SRM SHORT PERIOD	ALARM			
101325	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
101325	NMSBC02	SRM SHORT PERIOD	ALMCLR			
101326	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
101338	NMSBC02	SRM SHORT PERIOD	ALARM			
101340	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
101340	NMSBC02	SRM SHORT PERIOD	ALMCLR			
101341	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
101343	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
101345	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
101349	RHSPC09	RHR PMP 1B SUCT PRESS	NORMAL			
101350	NMSBC02	SRM SHORT PERIOD	ALARM			
101351	NMSBC02	SRM SHORT PERIOD	ALMCLR			
101402	CNALC01	CLN ST RBLR DT 1A LS9A	HIGH			
101405	RHSBC07	RHR A INJ VLV24A PERMIS	ALARM			
101406	RHSBC07	RHR A INJ VLV24A PERMIS	ALMCLR			
101413	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL			
101422	HVCMA04	RELAY ROOM HMDT MT8B	OK	49.06	56.00	%RH
101423	RHSBC07	RHR A INJ VLV24A PERMIS	ALARM			
101424	RHSBC07	RHR A INJ VLV24A PERMIS	ALMCLR			
101426	NMSBC02	SRM SHORT PERIOD	ALARM			
101427	NMSBC02	SRM SHORT PERIOD	ALMCLR			
101427	RHSBC07	RHR A INJ VLV24A PERMIS	ALARM			
101429	RHSBC07	RHR A INJ VLV24A PERMIS	ALMCLR			
101435	RHSBC07	RHR A INJ VLV24A PERMIS	ALARM			
101436	RHSBC07	RHR A INJ VLV24A PERMIS	ALMCLR			
101441	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
101442	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
101451	RHSBC07	RHR A INJ VLV24A PERMIS	ALARM			

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~~101452~~	~~RHSBC07~~	~~RHR A INJ VLV24A PERMIS~~	~~ALMCLR~~			
101453	MSSTA05	TURB BYP PSV89C OUT TEMP	*HI	304.92	280.00	DEG F
101457	NMSBC02	SRM SHORT PERIOD	ALARM			
~~101501~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	~~ALMCLR~~			
101503	RHSBC07	RHR A INJ VLV24A PERMIS	ALARM			
101504	RHSBC07	RHR A INJ VLV24A PERMIS	ALMCLR			
~~101508~~	~~CNALC01~~	~~CLN ST RBLR DT 1A LS9A~~	~~HIGH~~			
101513	RHSBC07	RHR A INJ VLV24A PERMIS	ALARM			
101514	RHSBC07	RHR A INJ VLV24A PERMIS	ALMCLR			
~~101516~~	~~RHSBC07~~	~~RHR A INJ VLV24A PERMIS~~	~~ALARM~~			
101517	RHSBC07	RHR A INJ VLV24A PERMIS	ALMCLR			
101518	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL			
~~101520~~	~~RHSBC07~~	~~RHR A INJ VLV24A PERMIS~~	~~ALARM~~			
101521	RHSBC07	RHR A INJ VLV24A PERMIS	ALMCLR			
101527	RHSBC07	RHR A INJ VLV24A PERMIS	ALARM			
~~101528~~	~~RHSBC07~~	~~RHR A INJ VLV24A PERMIS~~	~~ALMCLR~~			
101536	NMSBC02	SRM SHORT PERIOD	ALARM			
101537	NMSBC02	SRM SHORT PERIOD	ALMCLR			
~~101554~~	~~RHSBC07~~	~~RHR A INJ VLV24A PERMIS~~	~~ALARM~~			
101555	RHSBC07	RHR A INJ VLV24A PERMIS	ALMCLR			
101602	VBBTC02	UPS1G ON BATT PWR	ALARM			
~~101603~~	~~VBBTC02~~	~~UPS1G ON BATT PWR~~	~~ALMCLR~~			
101606	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
101607	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
~~101608~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~INOP~~			
101609	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
101610	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
~~101611~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~NORMAL~~			
101611	RHSBC07	RHR A INJ VLV24A PERMIS	ALARM			
101612	NMSBC02	SRM SHORT PERIOD	ALARM			
~~101612~~	~~RHSBC07~~	~~RHR A INJ VLV24A PERMIS~~	~~ALMCLR~~			
101614	CNALC01	CLN ST RBLR DT 1A LS9A	HIGH			
101614	GTSPA01	RB IN/OUT D/P PDT5A	LO	-0.52	-0.50	IN WG
~~101615~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	~~ALMCLR~~			
101616	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
101617	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
~~101623~~	~~TMITA08~~	~~PIPE UPSTR 2HRS SV5C TMP~~	~~*LO~~	~~351.91~~	~~400.00~~	~~DEG F~~
101624	GTSPA01	RB IN/OUT D/P PDT5A	OK	-0.48	-0.50	IN WG
101625	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL			
~~101626~~	~~RHSBC07~~	~~RHR A INJ VLV24A PERMIS~~	~~ALARM~~			
101627	RHSBC07	RHR A INJ VLV24A PERMIS	ALMCLR			
101628	ESSTA04	1 PT HTR E1A SHELL TEMP	*LO	102.48	119.00	DEG F
101629	GTSPA01	RB IN/OUT D/P PDT5A	LO	-0.51	-0.50	IN WG
101630	RHSBC07	RHR A INJ VLV24A PERMIS	ALARM			
101631	RHSBC07	RHR A INJ VLV24A PERMIS	ALMCLR			
101633	RHSBC07	RHR A INJ VLV24A PERMIS	ALARM			
101634	RHSBC07	RHR A INJ VLV24A PERMIS	ALMCLR			
101645	RHSBC07	RHR A INJ VLV24A PERMIS	ALARM			
~~101646~~	~~RHSBC07~~	~~RHR A INJ VLV24A PERMIS~~	~~ALMCLR.~~			
101653	RHSBC07	RHR A INJ VLV24A PERMIS	ALARM			
101655	RHSBC07	RHR A INJ VLV24A PERMIS	ALMCLR			
~~101700~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~INOP~~			
101700	WTSAA01	2WTS-TK1 RECIRC WTR PH	LO	1.77	6.50	PH
101701	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
~~101706~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~INOP~~			
101707	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			

101710	NMSBC02	SRM SHORT PERIOD	ALARM			
101712	NMSBC02	SRM SHORT PERIOD	ALMCLR			
101714	RHSBC07	RHR A INJ VLV24A PERMIS	ALARM			
101716	RHSBC07	RHR A INJ VLV24A PERMIS	ALMCLR			
101718	RHSBC07	RHR A INJ VLV24A PERMIS	ALARM			
101719	RHSBC07	RHR A INJ VLV24A PERMIS	ALMCLR			
101720	NMSBC02	SRM SHORT PERIOD	ALARM			
101720	RHSBC07	RHR A INJ VLV24A PERMIS	ALARM			
101721	RHSBC07	RHR A INJ VLV24A PERMIS	ALMCLR			
101722	NMSBC02	SRM SHORT PERIOD	ALMCLR			
101723	RHSBC07	RHR A INJ VLV24A PERMIS	ALARM			
101724	RHSBC07	RHR A INJ VLV24A PERMIS	ALMCLR			
101727	ESSPA08	4 PT HTR E4B EXTR STM PR	*LO	3.78	38.00	PSIA
101728	CNALC01	CLN ST RBLR DT 1A LS9A	HIGH			
101728	NMSBC02	SRM SHORT PERIOD	ALARM			
101729	NMSBC02	SRM SHORT PERIOD	ALMCLR			
101730	RHSBC07	RHR A INJ VLV24A PERMIS	ALARM			
101730	WTSAA01	2WTS-TK1 RECIRC WTR PH	*LO	4.81	6.50	PH
101732	RHSBC07	RHR A INJ VLV24A PERMIS	ALMCLR			
101737	RHSBC07	RHR A INJ VLV24A PERMIS	ALARM			
101738	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL			
101738	RHSBC07	RHR A INJ VLV24A PERMIS	ALMCLR			
101739	RHSBC07	RHR A INJ VLV24A PERMIS	ALARM			
101740	RHSBC07	RHR A INJ VLV24A PERMIS	ALMCLR			
101741	RHSBC07	RHR A INJ VLV24A PERMIS	ALARM			
101742	ESSTA13	4 PT HTR E4A EXTR ST TMP	*LO	297.95	334.00	DEG F
101742	RHSBC07	RHR A INJ VLV24A PERMIS	ALMCLR			
101745	ESSTA15	4 PT HTR E4C EXTR ST TMP	*LO	309.88	334.00	DEG F
101749	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
101749	GTSPA01	RB IN/OUT D/P PDT5A	OK	-0.49	-0.50	IN WG
101751	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
101752	RHSBC07	RHR A INJ VLV24A PERMIS	ALARM			
101753	RHSBC07	RHR A INJ VLV24A PERMIS	ALMCLR			
101759	VBBTC02	UPS1G ON BATT PWR	ALARM			
101800	WTSAA01	2WTS-TK1 RECIRC WTR PH	*LO	1.65	6.50	PH
101804	GTSPA01	RB IN/OUT D/P PDT5A	LO	-0.51	-0.50	IN WG
101805	RHSBC07	RHR A INJ VLV24A PERMIS	ALARM			
101806	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
101806	VBBTC02	UPS1G ON BATT PWR	ALMCLR			
101806	RHSBC07	RHR A INJ VLV24A PERMIS	ALMCLR			
101807	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
101808	RHSBC07	RHR A INJ VLV24A PERMIS	ALARM			
101809	RHSBC07	RHR A INJ VLV24A PERMIS	ALMCLR			
101811	RHSBC07	RHR A INJ VLV24A PERMIS	ALARM			
101812	HDLTA02	5PT HTR 2CNM-E5B DRN TMP	*LO	164.04	246.66	DEG F
101813	RHSBC07	RHR A INJ VLV24A PERMIS	ALMCLR			
101816	RHSBC07	RHR A INJ VLV24A PERMIS	ALARM			
101818	RHSBC07	RHR A INJ VLV24A PERMIS	ALMCLR			
101823	RHSBC07	RHR A INJ VLV24A PERMIS	ALARM			
101824	RHSBC07	RHR A INJ VLV24A PERMIS	ALMCLR			
101828	RHSBC07	RHR A INJ VLV24A PERMIS	ALARM			
101829	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
101829	RHSBC07	RHR A INJ VLV24A PERMIS	ALMCLR			
101830	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
101830	RHSBC07	RHR A INJ VLV24A PERMIS	ALARM			
101830	WTSAA01	2WTS-TK1 RECIRC WTR PH	*LO	4.80	6.50	PH

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101834	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
101834	RHSBC07	RHR A INJ VLV24A PERMIS	ALARM			
101835	RHSBC07	RHR A INJ VLV24A PERMIS	ALMCLR			
101836	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
101837	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
101841	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL			
101841	RHSBC07	RHR A INJ VLV24A PERMIS	ALARM			
101843	RHSBC07	RHR A INJ VLV24A PERMIS	ALMCLR			
101845	RHSBC07	RHR A INJ VLV24A PERMIS	ALARM			
101846	RHSBC07	RHR A INJ VLV24A PERMIS	ALMCLR			
101847	NMSBC02	SRM SHORT PERIOD	ALARM			
101849	NMSBC02	SRM SHORT PERIOD	ALMCLR			
101859	NMSBC02	SRM SHORT PERIOD	ALARM			
101900	WTSAA01	2WTS-TK1 RECIRC WTR PH	*LO	1.27	6.56	PH
101901	NMSBC02	SRM SHORT PERIOD	ALMCLR			
101904	RHSBC07	RHR A INJ VLV24A PERMIS	ALARM			
101904	GTSPA01	RB IN/OUT D/P PDT5A	OK	-0.48	-0.50	IN WG
101906	CNSFC01	CNST XFR PMP DIS DEM FLO	NORMAL			
101906	RHSBC07	RHR A INJ VLV24A PERMIS	ALMCLR			
101911	RHSBC07	RHR A INJ VLV24A PERMIS	ALARM			
101915	RHSBC07	RHR A INJ VLV24A PERMIS	ALMCLR			
101917	RHSBC07	RHR A INJ VLV24A PERMIS	ALARM			
101919	NMSBC02	SRM SHORT PERIOD	ALARM			
101919	RHSBC07	RHR A INJ VLV24A PERMIS	ALMCLR			
101919	GTSPA01	RB IN/OUT D/P PDT5A	LO	-0.52	-0.50	IN WG
101921	RHSBC07	RHR A INJ VLV24A PERMIS	ALARM			
101922	NMSBC02	SRM SHORT PERIOD	ALMCLR			
101922	RHSBC07	RHR A INJ VLV24A PERMIS	ALMCLR			
101925	RHSBC07	RHR A INJ VLV24A PERMIS	ALARM			
101926	RHSBC07	RHR A INJ VLV24A PERMIS	ALMCLR			
101928	RHSBC07	RHR A INJ VLV24A PERMIS	ALARM			
101929	RHSBC07	RHR A INJ VLV24A PERMIS	ALMCLR			
101930	RHSBC07	RHR A INJ VLV24A PERMIS	ALARM			
101932	RHSBC07	RHR A INJ VLV24A PERMIS	ALMCLR			
101934	CNALC01	CLN ST RBLR DT 1A LS9A	HIGH			
101938	RHSBC07	RHR A INJ VLV24A PERMIS	ALARM			
101939	RHSBC07	RHR A INJ VLV24A PERMIS	ALMCLR			
101940	RHSBC07	RHR A INJ VLV24A PERMIS	ALARM			
101941	RHSBC07	RHR A INJ VLV24A PERMIS	ALMCLR			
101944	NMSBC02	SRM SHORT PERIOD	ALARM			
101945	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL			
101945	NMSBC02	SRM SHORT PERIOD	ALMCLR			
101947	RHSBC07	RHR A INJ VLV24A PERMIS	ALARM			
101948	RHSBC07	RHR A INJ VLV24A PERMIS	ALMCLR			
101950	RHSBC07	RHR A INJ VLV24A PERMIS	ALARM			
101952	RHSBC07	RHR A INJ VLV24A PERMIS	ALMCLR			
101953	RHSBC07	RHR A INJ VLV24A PERMIS	ALARM			
101954	RHSBC07	RHR A INJ VLV24A PERMIS	ALMCLR			
101957	RHSBC07	RHR A INJ VLV24A PERMIS	ALARM			
101958	RHSBC07	RHR A INJ VLV24A PERMIS	ALMCLR			
101959	RHSBC07	RHR A INJ VLV24A PERMIS	ALARM			
102000	WTSAA01	2WTS-TK1 RECIRC WTR PH	*LO	5.43	6.56	PH
102001	RHSBC07	RHR A INJ VLV24A PERMIS	ALMCLR			

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102002	RHSBC07	RHR A INJ VLV24A PERMIS	ALARM
102003	RHSBC07	RHR A INJ VLV24A PERMIS	ALMCLR
102004	RHSBC07	RHR A INJ VLV24A PERMIS	ALARM

~~102012~~	~~RHSBC07~~	~~RHR A INJ VLV24A PERMIS~~	~~ALMCLR~~			
102013	RHSBC07	RHR A INJ VLV24A PERMIS	ALARM			
102015	RHSBC07	RHR A INJ VLV24A PERMIS	ALMCLR			
~~102016~~	~~RHSBC07~~	~~RHR A INJ VLV24A PERMIS~~	ALARM			
102018	VBDTC01	UPS1G SYS TROUBLE	ALMCLR			
102018	RHSBC07	RHR A INJ VLV24A PERMIS	ALMCLR			
~~102019~~	~~RHSBC07~~	~~RHR A INJ VLV24A PERMIS~~	ALARM			
102020	RHSBC07	RHR A INJ VLV24A PERMIS	ALMCLR			
102025	RHSBC07	RHR A INJ VLV24A PERMIS	ALARM			
~~102026~~	~~RHSBC07~~	~~RHR A INJ VLV24A PERMIS~~	ALMCLR			
102030	RHSBC07	RHR A INJ VLV24A PERMIS	ALARM			
102030	WTSAA01	2WTS-TK1 RECIRC WTR PH	*LO	1.27	6.50	PH
~~102031~~	~~RHSBC07~~	~~RHR A INJ VLV24A PERMIS~~	ALMCLR			
102032	RHSBC07	RHR A INJ VLV24A PERMIS	ALARM			
102032	CNSFA01	CND XFR PUMP HDR FLOW	OK	312.24	300.00	GPM
~~102036~~	~~RHSBC07~~	~~RHR A INJ VLV24A PERMIS~~	ALMCLR			
102037	RHSBC07	RHR A INJ VLV24A PERMIS	ALARM			
102038	RHSBC07	RHR A INJ VLV24A PERMIS	ALMCLR			
~~102043~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~INOP~~			
102043	RHSBC07	RHR A INJ VLV24A PERMIS	ALARM			
102044	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
~~102044~~	~~RHSBC07~~	~~RHR A INJ VLV24A PERMIS~~	ALMCLR			
102045	CNALC01	CLN ST RBLR DT 1A LS9A	HIGH			
102045	RHSBC07	RHR A INJ VLV24A PERMIS	ALARM			
~~102046~~	~~RHSBC07~~	~~RHR A INJ VLV24A PERMIS~~	~~ALMCLR~~			
102047	RHSBC07	RHR A INJ VLV24A PERMIS	ALARM			
102049	RHSBC07	RHR A INJ VLV24A PERMIS	ALMCLR			
~~102050~~	~~RHSBC07~~	~~RHR A INJ VLV24A PERMIS~~	ALARM			
102051	RHSBC07	RHR A INJ VLV24A PERMIS	ALMCLR			
102055	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL			
~~102059~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~INOP~~			
102059	RHSBC07	RHR A INJ VLV24A PERMIS	ALARM			
102059	GTSPA01	RB IN/OUT D/P PDT5A	OK	-0.47	-0.50	IN WG
~~102100~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	NORMAL			
102100	RHSBC07	RHR A INJ VLV24A PERMIS	ALMCLR			
102100	WTSAA01	2WTS-TK1 RECIRC WTR PH	OK	8.01	6.50	PH
102102	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
102102	RHSBC07	RHR A INJ VLV24A PERMIS	ALARM			
102103	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
102103	RHSBC07	RHR A INJ VLV24A PERMIS	ALMCLR			
102105	RHSBC07	RHR A INJ VLV24A PERMIS	ALARM			
102106	RHSBC07	RHR A INJ VLV24A PERMIS	ALMCLR			
~~102107~~	~~RHSBC07~~	~~RHR A INJ VLV24A PERMIS~~	ALARM			
102109	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
102109	RHSBC07	RHR A INJ VLV24A PERMIS	ALMCLR			
~~102110~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	NORMAL			
102110	RHSBC07	RHR A INJ VLV24A PERMIS	ALARM			
102113	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
~~102114~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	NORMAL			
102120	RHSBC07	RHR A INJ VLV24A PERMIS	ALMCLR			

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~~102121~~	~~RHSBC07~~	~~RHR A INJ~~ VLV24A PERMIS	ALARM
102123	RHSBC07	RHR A INJ VLV24A PERMIS	ALMCLR
102125	RHSBC07	RHR A INJ VLV24A PERMIS	ALARM
~~102126~~	~~RHSBC07~~	~~RHR A INJ VLV24A PERMIS~~	ALMCLR
102128	RHSBC07	RHR A INJ VLV24A PERMIS	ALARM
102129	RHSBC07	RHR A INJ VLV24A PERMIS	ALMCLR
102130	RHSBC07	RHR A INJ VLV24A PERMIS	ALARM

102131	RHSBC07	RHR A INJ VLV24A PERMIS	ALMCLR			
~~102132~~	~~RHSBC07~~	~~RHR A INJ VLV24A PERMIS~~	~~ALARM~~			
102134	RHSBC07	RHR A INJ VLV24A PERMIS	ALMCLR			
102135	RHSBC07	RHR A INJ VLV24A PERMIS	ALARM			
~~102139~~	~~RHSBC07~~	~~RHR A INJ VLV24A PERMIS~~	~~ALMCLR~~			
102140	RHSBC07	RHR A INJ VLV24A PERMIS	ALARM			
102141	RHSBC07	RHR A INJ VLV24A PERMIS	ALMCLR			
~~102142~~	~~RHSBC07~~	~~RHR A INJ VLV24A PERMIS~~	~~ALARM~~			
102143	DFTBC30	TB FLR DRN SYSTEM	ALMCLR			
102143	RHSBC07	RHR A INJ VLV24A PERMIS	ALMCLR			
~~102147~~	~~RHSBC07~~	~~RHR A INJ VLV24A PERMIS~~	~~ALARM~~			
102150	CNALC01	CLN ST RBLR DT 1A LS9A	HIGH			
102151	RHSBC07	RHR A INJ VLV24A PERMIS	ALMCLR			
~~102152~~	~~RHSBC07~~	~~RHR A INJ VLV24A PERMIS~~	~~ALARM~~			
102157	RHSBC07	RHR A INJ VLV24A PERMIS	ALMCLR			
102158	RHSBC07	RHR A INJ VLV24A PERMIS	ALARM			
~~102159~~	~~RHSBC07~~	~~RHR A INJ VLV24A PERMIS~~	~~ALMCLR~~			
102200	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL			
102200	RHSBC07	RHR A INJ VLV24A PERMIS	ALARM			
~~102200~~	~~FWSTA48~~	~~FEED WATER FINAL TEMP~~	~~*LO~~	~~143.59~~	~~324.00~~	~~DEG F~~
102200	WTSAA01	2WTS-TK1 RECIRC WTR PH	OK	7.31	6.50	PH
102202	RHSBC07	RHR A INJ VLV24A PERMIS	ALMCLR			
~~102203~~	~~RHSBC07~~	~~RHR A INJ VLV24A PERMIS~~	~~ALARM~~			
102204	RHSBC07	RHR A INJ VLV24A PERMIS	ALMCLR			
102207	RHSBC07	RHR A INJ VLV24A PERMIS	ALARM			
~~102208~~	~~RHSBC07~~	~~RHR A INJ VLV24A PERMIS~~	~~ALMCLR~~			
102209	RHSBC07	RHR A INJ VLV24A PERMIS	ALARM			
102210	RHSBC07	RHR A INJ VLV24A PERMIS	ALMCLR			
~~102212~~	~~RHSBC07~~	~~RHR A INJ VLV24A PERMIS~~	~~ALARM~~			
102220	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
102222	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
~~102222~~	~~RHSBC07~~	~~RHR A INJ VLV24A PERMIS~~	~~ALMCLR~~			
102223	RHSBC07	RHR A INJ VLV24A PERMIS	ALARM			
102227	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
102227	RHSBC07	RHR A INJ VLV24A PERMIS	ALMCLR			
102228	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
102229	RHSBC07	RHR A INJ VLV24A PERMIS	ALARM			
102230	WTSAA01	2WTS-TK1 RECIRC WTR PH	LO	5.49	6.50	PH
102232	RHSBC07	RHR A INJ VLV24A PERMIS	ALMCLR			
102233	RHSBC07	RHR A INJ VLV24A PERMIS	ALARM			
~~102234~~	~~FWSPA04~~	~~REACTOR INLET PRES PT40A~~	~~*LO~~	~~251.35~~	~~875.00~~	~~PSIG~~
102235	RHSBC07	RHR A INJ VLV24A PERMIS	ALMCLR			
102236	RHSBC07	RHR A INJ VLV24A PERMIS	ALARM			
~~102237~~	~~RHSBC07~~	~~RHR A INJ VLV24A PERMIS~~	~~ALMCLR~~			
102237	ESSTA17	5 PT HTR E5B EXTR ST TMP	*LO	191.54	286.00	DEG F
102238	RHSBC07	RHR A INJ VLV24A PERMIS	ALARM			
~~102239~~	~~RHSBC07~~	~~RHR A INJ VLV24A PERMIS~~	~~ALMCLR~~			
102240	RHSBC07	RHR A INJ VLV24A PERMIS	ALARM			

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~~102241~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~INOP~~
102242	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL
102243	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP
~~102244~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~NORMAL~~
102250	RHSBC07	RHR A INJ VLV24A PERMIS	ALMCLR
102251	RHSBC07	RHR A INJ VLV24A PERMIS	ALARM
~~102252~~	~~CNALC01~~	~~CLN ST RBLR DT 1A LS9A~~	~~HIGH~~
102258	RHSBC07	RHR A INJ VLV24A PERMIS	ALMCLR

102306	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
102307	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
102309	RDSBC11	ROD DRIVE ACC TROUBLE	ALMCLR			
102311	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
102312	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
102313	NMSBC02	SRM SHORT PERIOD	ALARM			
102313	RHSBC07	RHR A INJ VLV24A PERMIS	ALMCLR			
102314	NMSBC02	SRM SHORT PERIOD	ALMCLR			
102314	RHSBC07	RHR A INJ VLV24A PERMIS	ALARM			
102315	RHSBC07	RHR A INJ VLV24A PERMIS	ALMCLR			
102316	RHSBC07	RHR A INJ VLV24A PERMIS	ALARM			
102319	RHSBC07	RHR A INJ VLV24A PERMIS	ALMCLR			
102320	RHSBC07	RHR A INJ VLV24A PERMIS	ALARM			
102326	NMSBC02	SRM SHORT PERIOD	ALARM			
102329	NMSBC02	SRM SHORT PERIOD	ALMCLR			
102329	RHSBC07	RHR A INJ VLV24A PERMIS	ALMCLR			
102330	RHSBC07	RHR A INJ VLV24A PERMIS	ALARM			
102332	RHSBC07	RHR A INJ VLV24A PERMIS	ALMCLR			
102333	RHSBC07	RHR A INJ VLV24A PERMIS	ALARM			
102338	NMSBC02	SRM SHORT PERIOD	ALARM			
102344	NMSBC02	SRM SHORT PERIOD	ALMCLR			
102357	CNALC01	CLN ST RBLR DT 1A LS9A	HIGH			
102406	NMSBC02	SRM SHORT PERIOD	ALARM			
102407	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL			
102407	NMSBC02	SRM SHORT PERIOD	ALMCLR			
102434	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
102434	GSNBC01	PRI CONTMT N2 PURGE TEMP	TRBL			
102435	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
102446	HVCMA04	RELAY ROOM HMDT MT8B	HI	50.56	50.00	%RH
102500	NMSBC02	SRM SHORT PERIOD	ALARM			
102500	WTSAA01	2WTS-TK1 RECIRC WTR PH	LO	5.27	6.50	PH
102502	NMSBC02	SRM SHORT PERIOD	ALMCLR			
102505	CNALC01	CLN ST RBLR DT 1A LS9A	HIGH			
102515	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL			
102527	CNSFC01	CNST XFR PMP DIS DEM FLO	LOW			
102530	ESSTA05	1 PT HTR E1B SHELL TEMP	+LO	102.48	119.00	DEG F
102530	WTSAA01	2WTS-TK1 RECIRC WTR PH	OK	8.19	6.50	PH
102538	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
102541	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
102543	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
102544	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
102548	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
102549	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
102604	NMSBC02	SRM SHORT PERIOD	ALARM			

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102606	NMSBC02	SRM SHORT PERIOD	ALMCLR			
102612	HDLTA05	4PT HTR 2CNM-E4B DRN TMP	+LO	144.13	245.00	DEG F
102614	CNALC01	CLN ST RBLR DT 1A LS9A	HIGH			
102617	NMSBC02	SRM SHORT PERIOD	ALARM			
102619	NMSBC02	SRM SHORT PERIOD	ALMCLR			
102624	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL			
102632	CNSFA01	CND XFR PUMP HDR FLOW	LO	295.93	300.00	GPM
102640	NMSBC02	SRM SHORT PERIOD	ALARM			
102642	NMSBC02	SRM SHORT PERIOD	ALMCLR			
102648	FWSPA05	REACTOR INLET PRES PT40B	+LO	254.10	875.00	PSIG
102704	GTSPA01	RB IN/OUT D/P PDT5A	LO	-0.52	-0.50	IN WG
102706	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
102707	HVKBC09	[illegible]	[illegible]			

102719	GTSPA01	RB IN/OUT D/P PDT5A	OK	-0.50	-0.50	IN WG
102723	CNALC01	CLN ST RBLR DT 1A LS9A	HIGH			
102724	NMSBC02	SRM SHORT PERIOD	ALARM			
102725	NMSBC02	SRM SHORT PERIOD	ALMCLR			
102733	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL			
102734	GTSPA01	RB IN/OUT D/P PDT5A	LO	-0.52	-0.50	IN WG
102739	GTSPA01	RB IN/OUT D/P PDT5A	OK	-0.49	-0.50	IN WG
102742	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
102743	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
102744	GTSPA01	RB IN/OUT D/P PDT5A	LO	-0.52	-0.50	IN WG
102758	NMSBC02	SRM SHORT PERIOD	ALARM			
102808	NMSBC02	SRM SHORT PERIOD	ALMCLR			
102812	NMSBC02	SRM SHORT PERIOD	ALARM			
102814	NMSBC02	SRM SHORT PERIOD	ALMCLR			
102828	NMSBC02	SRM SHORT PERIOD	ALARM			
102829	CNALC01	CLN ST RBLR DT 1A LS9A	HIGH			
102834	NMSBC02	SRM SHORT PERIOD	ALMCLR			
102839	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL			
102843	ESSTA14	4 PT HTR E4B EXTR ST TMP	*LO	297.80	334.00	DEG F
102844	ABDBC01	AUX BLR SYS 2CES-IPNL506	TRBL			
102849	ABDBC01	AUX BLR SYS 2CES-IPNL506	NORMAL			
102903	NMSBC02	SRM SHORT PERIOD	ALARM			
102910	NMSBC02	SRM SHORT PERIOD	ALMCLR			
102929	GTSPA01	RB IN/OUT D/P PDT5A	OK	-0.49	-0.50	IN WG
102937	CNALC01	CLN ST RBLR DT 1A LS9A	HIGH			
102942	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
102944	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
102945	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
102946	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
102948	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL			
102954	TMITA04	PIPE UPSTR 2HRS-SV5A TMP	*LO	367.99	400.00	DEG F
103002	ESSPA08A	HTR 4B PRESS	*LO	3.8	14.0	PSIA
103007	NMSBC02	SRM SHORT PERIOD	ALARM			
103008	NMSBC02	SRM SHORT PERIOD	ALMCLR			
103019	NMSBC02	SRM SHORT PERIOD	ALARM			
103020	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
103021	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
103023	NMSBC02	SRM SHORT PERIOD	ALMCLR			
103045	NMSBC02	SRM SHORT PERIOD	ALARM			
103046	CNALC01	CLN ST RBLR DT 1A LS9A	HIGH			
103049	NMSBC02	SRM SHORT PERIOD	ALMCLR			
103057	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL			

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103110	NMSBC02	SRM SHORT PERIOD	ALARM			
103111	NMSBC02	SRM SHORT PERIOD	ALMCLR			
103118	OFGTA01	OFFGAS SYSTEM INLET TEMP	SLO	88.35	200.00	DEG F
103156	NMSBC02	SRM SHORT PERIOD	ALARM			
103159	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
103200	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
103202	CNALC01	CLN ST RBLR DT 1A LS9A	HIGH			
103209	NMSBC02	SRM SHORT PERIOD	ALMCLR			
103212	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL			
103218	NMSBC02	SRM SHORT PERIOD	ALARM			
103222	NMSBC02	SRM SHORT PERIOD	ALMCLR			
103224	TMITA06	PIPE UPSTR 2HRS-SV5B TMP	*LO	351.91	400.00	DEG F
103237	NMSBC02	SRM SHORT PERIOD	ALARM			
103238	NMSBC02	SRM SHORT PERIOD	ALMCLR			
103243	NMSBC02	SRM SHORT PERIOD	ALARM			

~~103255~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~INOP~~			
103256	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
103258	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
~~103300~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~NORMAL~~			
103315	CNALC01	CLN ST RBLR DT 1A LS9A	HIGH			
103325	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL			
~~103342~~	~~CNMPA07~~	~~RX FD WTR PMP 1C SUCT PR~~	~~*LO~~	~~91.00~~	~~230.00~~	~~PSIG~~
103402	HVCMA04	RELAY ROOM HMDT MT8B	OK	49.06	50.00	%RH
103416	NMSBC02	SRM SHORT PERIOD	ALARM			
~~103419~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~INOP~~			
103421	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
103426	CNALC01	CLN ST RBLR DT 1A LS9A	HIGH			
~~103426~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	~~ALMCLR~~			
103434	GTSPA01	RB IN/OUT D/P PDT5A	LO	-0.52	-0.50	IN WG
103436	ESSTA16	5 PT HTR E5A EXTR ST TMP	*LO	191.68	286.00	DEG F
~~103437~~	~~CNALC01~~	~~CLN ST RBLR DT 1A LS9A~~	~~NORMAL~~			
103449	NMSBC02	SRM SHORT PERIOD	ALARM			
103451	NMSBC02	SRM SHORT PERIOD	ALMCLR			
~~103450~~	~~GTSPA01~~	~~RB IN/OUT D/P PDT5A~~	~~OK~~	~~-0.47~~	~~-0.50~~	~~IN WG~~
103514	NMSBC02	SRM SHORT PERIOD	ALARM			
103515	NMSBC02	SRM SHORT PERIOD	ALMCLR			
~~103515~~	~~GTSPA02~~	~~RB IN/OUT D/P PDT5B~~	~~OK~~	~~-0.37~~	~~-0.40~~	~~IN WG~~
103515	HVRPA01	RX BLDG DIFF PRESS	OK	-0.354	-0.400	IN WG
103521	RDSBC11	ROD DRIVE ACC TROUBLE	ALARM			
103522	NMSBC02	SRM SHORT PERIOD	ALARM			
103530	NMSBC02	SRM SHORT PERIOD	ALMCLR			
103532	CNALC01	CLN ST RBLR DT 1A LS9A	HIGH			
103537	RDSBC11	ROD DRIVE ACC TROUBLE	ALMCLR			
103539	NMSBC02	SRM SHORT PERIOD	ALARM			
103540	ESSTA10	3 PT HTR E3A EXTR ST TMP	*LO	236.55	256.00	DEG F
~~103543~~	~~CNALC01~~	~~CLN ST RBLR DT 1A LS9A~~	~~NORMAL~~			
103543	NMSBC02	SRM SHORT PERIOD	ALMCLR			
103545	GTSPA02	RB IN/OUT D/P PDT5B	LO	-0.41	-0.40	IN WG
~~103549~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~INOP~~			
103550	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
103554	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
~~103555~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~NORMAL~~			
103557	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			

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~~103558~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~NORMAL~~			
103604	NMSBC02	SRM SHORT PERIOD	ALARM			
103605	HVRPA01	RX BLDG DIFF PRESS	LO	-0.404	-0.400	IN WG
~~103606~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	~~ALMCLR~~			
103625	HVRBC25	HVRS TRBL 2CES-IPNL101	TRBL			
103640	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
~~103641~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~NORMAL~~			
103641	NMSBC02	SRM SHORT PERIOD	ALARM			
103644	NMSBC02	SRM SHORT PERIOD	ALMCLR			
~~103645~~	~~CNALC01~~	~~CLN ST RBLR DT 1A LS9A~~	~~HIGH~~			
103656	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL			
103723	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
~~103724~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~NORMAL~~			
103733	CNSFC01	CNST XFR PMP DIS DEM FLO	NORMAL			
103743	NMSBC02	SRM SHORT PERIOD	ALARM			
~~103745~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	~~ALMCLR~~			
103752	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
103753	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			

103812	NMSBC02	SRM SHORT PERIOD	ALMCLR			
103817	RHSPC01	RHR SHUT DN CLG HDR PR	NORMAL			
103818	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
~~103819~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~NORMAL~~			
103819	NMSBC02	SRM SHORT PERIOD	ALARM			
103820	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
~~103821~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~NORMAL~~			
103821	NMSBC02	SRM SHORT PERIOD	ALMCLR			
103827	NMSBC02	SRM SHORT PERIOD	ALARM			
~~103828~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	~~ALMCLR~~			
103849	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
103850	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
~~103857~~	~~CNSPA01~~	~~CND XFR PUMP HDR FLOW~~	~~OK~~	~~311.79~~	~~300.00~~	~~GPM~~
103902	CWSAA02	BLWDN WTR CHLORINE RESID	OK	-0.25L*******		PPM
103906	NMSBC02	SRM SHORT PERIOD	ALARM			
~~103908~~	~~CNALC01~~	~~CLN ST RBLR DT 1A LS9A~~	~~HIGH~~			
103908	NMSBC02	SRM SHORT PERIOD	ALMCLR			
103918	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL			
~~103927~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~INOP~~			
103929	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
103942	FWSTA03	6PT HTR 2FWS-E6C INL TMP	*LO	121.55	284.00	DEG F
103957	ARCLC04	CNSR AIR REM TK SP1B LVL	LOW			
103959	GTSPA01	RB IN/OUT D/P PDT5A	LO	-0.51	-0.50	IN WG
104002	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
104004	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
104024	CNALC01	CLN ST RBLR DT 1A LS9A	HIGH			
104035	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL			
~~104037~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~INOP~~			
104038	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
104049	GTSPA01	RB IN/OUT D/P PDT5A	OK	-0.48	-0.50	IN WG
~~104054~~	~~GTSPA01~~	~~RB IN/OUT D/P PDT5A~~	~~LO~~	~~-0.51~~	~~-0.50~~	~~IN WG~~
104109	GTSPA01	RB IN/OUT D/P PDT5A	OK	-0.49	-0.50	IN WG
104110	ARCLC04	CNSR AIR REM TK SP1B LVL	NORMAL			
~~104122~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	~~ALARM~~			
104123	NMSBC02	SRM SHORT PERIOD	ALMCLR			

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~~104126~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~INOP~~			
104127	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
104138	ESSTA03	6 PT HTR E6C EXTR ST TMP	*LO	192.51	325.00	DEG F
~~104140~~	~~CNALC01~~	~~CLN ST RBLR DT 1A LS9A~~	~~HIGH~~			
104151	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL			
104154	TMITA05	PIPE UPSTR 2HRS-SV6B TMP	*LO	351.67	400.00	DEG F
~~104158~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~INOP~~			
104159	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
104202	NMSBC02	SRM SHORT PERIOD	ALARM			
~~104203~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	~~ALMCLR~~			
104229	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
104230	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
~~104234~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	~~ALARM~~			
104237	NMSBC02	SRM SHORT PERIOD	ALMCLR			
104246	CNALC01	CLN ST RBLR DT 1A LS9A	HIGH			
~~104246~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	~~ALARM~~			
104250	NMSBC02	SRM SHORT PERIOD	ALMCLR			
104257	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL			
~~104300~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	~~ALARM~~			
104302	NMSBC02	SRM SHORT PERIOD	ALMCLR			
104303	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
104304	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			

104310	NMSBC02	SRM SHORT PERIOD	ALARM			
104313	NMSBC02	SRM SHORT PERIOD	ALMCLR			
104318	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
104319	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
104321	NMSBC02	SRM SHORT PERIOD	ALARM			
104323	NMSBC02	SRM SHORT PERIOD	ALMCLR			
104336	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
104337	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
104342	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
104342	NMSBC02	SRM SHORT PERIOD	ALARM			
104344	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
104347	NMSBC02	SRM SHORT PERIOD	ALMCLR			
104401	CNALC01	CLN ST RBLR DT 1A LS9A	HIGH			
104403	FWSPA04	REACTOR INLET PRES PT40A	*LO	211.75	875.00	PSIG
104412	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL			
104415	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
104416	CNSFC01	CNST XFR PMP DIS DEM FLO	LOW			
104416	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
104416	HVCMA04	RELAY ROOM HMDT MT8B	HI	50.62	50.00	%RH
104420	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
104421	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
104432	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
104433	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
104442	HDHTA02	6PT HTR E6B DR TEMP	*LO	192.93	284.00	DEG F
104445	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
104446	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
104446	NMSBC02	SRM SHORT PERIOD	ALARM			
104449	NMSBC02	SRM SHORT PERIOD	ALMCLR			
104500	WTSAA01	2WTS-TK1 RECIRC WTR PH	LO	5.45	6.50	PH
104508	CNALC01	CLN ST RBLR DT 1A LS9A	HIGH			
104519	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL			
104522	CNSFA01	CND XFR PUMP HDR FLOW	LO	298.01	300.00	GPM

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104525	NMSBC02	SRM SHORT PERIOD	ALARM			
104529	DSRPA01	SCAVENGING STEAM HDR PR	*LO	38.94	250.00	PSIG
104530	NMSBC02	SRM SHORT PERIOD	ALMCLR			
104531	WTSAA01	2WTS-TK1 RECIRC WTR PH	OK	8.08	6.50	PH
104600	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
104600	WTSAA01	2WTS-TK1 RECIRC WTR PH	LO	5.38	6.50	PH
104601	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
104618	CNALC01	CLN ST RBLR DT 1A LS9A	HIGH			
104626	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
104627	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
104629	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL			
104630	WTSAA01	2WTS-TK1 RECIRC WTR PH	*LO	4.68	6.50	PH
104700	WTSAA01	2WTS-TK1 RECIRC WTR PH	*LO	5.56	6.50	PH
104721	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
104722	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
104723	MSSTA04	TURB-BYP PSV89B OUT TEMP	*HI	304.96	280.00	DEG F
104730	WTSAA01	2WTS-TK1 RECIRC WTR PH	OK	7.39	6.50	PH
104732	CNALC01	CLN ST RBLR DT 1A LS9A	HIGH			
104743	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL			
104748	RMSRC86	TB/MN STACK RADN MON ACT	ALARM			
104757	RMSRC86	TB/MN STACK RADN MON ACT	NORMAL			
104830	FWSTA48	FEED WATER FINAL TEMP	*LO	132.97	324.00	DEG F
104839	GTSPA01	RB IN/OUT D/P PDT5A	LO	-6.52	-0.56	IN WG
104842	CNALC01	CLN ST RBLR DT 1A LS9A	HIGH			

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104854	GTSPA01	RB IN/OUT D/P PDT5A	OK	-0.50	-0.50	IN WG
104858	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
104859	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
104900	WTSAA01	2WTS-TK1 RECIRC WTR PH	LO	5.84	6.50	PH
104904	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
104905	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
104913	ABDBC01	AUX BLR SYS 2CES-IPNL506	TRBL			
104920	ABDBC01	AUX BLR SYS 2CES-IPNL506	NORMAL			
104923	MSSTA06	TURB BYP PSV89D OUT TEMP	*HI	304.77	280.00	DEG F
104926	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
104928	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
104930	WTSAA01	2WTS-TK1 RECIRC WTR PH	OK	7.44	6.50	PH
104934	FWSPA05	REACTOR INLET PRES PT40B	*LO	214.50	875.00	PSIG
104954	CNALC01	CLN ST RBLR DT 1A LS9A	HIGH			
105000	WTSAA01	2WTS-TK1 RECIRC WTR PH	LO	5.05	6.50	PH
105000	FWSPA04A	FW PRESS LOOP A	LO	213.7	220.0	PSIG
105003	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
105004	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
105005	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL			
105006	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
105007	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
105030	WTSAA01	2WTS-TK1 RECIRC WTR PH	*LO	4.25	6.50	PH
105040	NMSBC02	SRM SHORT PERIOD	ALARM			
105041	NMSBC02	SRM SHORT PERIOD	ALMCLR			
105057	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
105058	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
105100	WTSAA01	2WTS-TK1 RECIRC WTR PH	OK	8.17	6.50	PH
105102	DETCA01	TB DRN SYS DISCH COND	HI	78.96	50.00	MMHO/C
105103	CNALC01	CLN ST RBLR DT 1A LS9A	HIGH			
105114	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL			

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105130	WTSAA01	2WTS-TK1 RECIRC WTR PH	LO	4.02	6.50	PH
105144	NMSBC02	SRM SHORT PERIOD	ALARM			
105146	NMSBC02	SRM SHORT PERIOD	ALMCLR			
105200	WTSAA01	2WTS-TK1 RECIRC WTR PH	OK	8.20	6.50	PH
105202	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
105202	DETCA01	TB DRN SYS DISCH COND	*HI	95.10	50.00	MMHO/C
105203	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
105204	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
105205	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
105210	NMSBC02	SRM SHORT PERIOD	ALARM			
105212	NMSBC02	SRM SHORT PERIOD	ALMCLR			
105213	NMSBC02	SRM SHORT PERIOD	ALARM			
105215	CNALC01	CLN ST RBLR DT 1A LS9A	HIGH			
105215	NMSBC02	SRM SHORT PERIOD	ALMCLR			
105226	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL			
105231	NMSBC02	SRM SHORT PERIOD	ALARM			
105234	NMSBC02	SRM SHORT PERIOD	ALMCLR			
105239	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
105240	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
105246	VBBTC05	UPS1C SYSTEM TROUBLE	ALMCLR			
105302	DETCA01	TB DRN SYS DISCH COND	*HI	61.37	50.00	MMHO/C
105317	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
105318	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
105322	HVCMA04	RELAY ROOM HMDT MT8B	OK	49.12	50.00	*RH
105329	CNALC01	CLN ST RBLR DT 1A LS9A	HIGH			
105332	NMSBC02	SRM SHORT PERIOD	ALARM			

105346	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
105351	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
~~105352~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~NORMAL~~			
105400	WTSAA01	2WTS-TK1 RECIRC WTR PH	LO	6.40	6.50	PH
105402	DETCA01	TB DRN SYS DISCH COND	OK	12.52	50.00	MMHO/C
~~105405~~	~~WCSPC09~~	~~RWCU DISCH PRESS~~	~~H/L~~			
105408	WCSPC09	RWCU DISCH PRESS	ALMCLR			
105426	NMSBC02	SRM SHORT PERIOD	ALARM			
~~105427~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	~~ALMCLR~~			
105430	WTSAA01	2WTS-TK1 RECIRC WTR PH	*LO	4.17	6.50	PH
105442	CNALC01	CLN ST RBLR DT 1A LS9A	HIGH			
105442	FWSTA02	6PT HTR 2FWS-E6B INL TMP	*LO	260.74	284.00	DEG F
105453	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL			
105500	WTSAA01	2WTS-TK1 RECIRC WTR PH	OK	8.21	6.50	PH
105545	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
105546	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
105556	CNALC01	CLN ST RBLR DT 1A LS9A	HIGH			
~~105559~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~INOP~~			
105600	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
105603	LDSBC08	RWCU DIFF FLO TMR B BYP	INOP			
~~105603~~	~~LDSBC07~~	~~RWCU DIFF FLO TMR A BYP~~	~~ALARM~~			
105606	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
105607	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL			
~~105607~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~NORMAL~~			
105629	ESSTA07	2 PT HTR E2A SHELL TEMP	*LO	96.47	165.00	DEG F

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~~105636~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~INOP~~			
105637	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
105639	CNSFC01	CNST XFR PMP DIS DEM FLO	NORMAL			
~~105644~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~INOP~~			
105645	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
105645	LDSFC02	RWCU DIFF FLOW RPS D2	HIGH			
~~105645~~	~~LDSBC08~~	~~RWCU DIFF FLO TMR B BYP~~	~~ALMCLR~~			
105646	NS4BC13	D2 NSSS GP 7 ISO SIG	ALARM			
105647	WCSUC02	RWCU PMP 1B AUTO TRIP	TRIPPED			
~~105648~~	~~LDSFC01~~	~~RWCU DIFF FLOW RPS D1~~	~~HIGH~~			
105648	LDSBC07	RWCU DIFF FLO TMR A BYP	ALMCLR			
105648	NS4BC04	D1 NSSS GP 6 ISO SIG	ALARM			
~~105649~~	~~LDSFC01~~	~~RWCU DIFF FLOW RPS D1~~	~~NORMAL~~			
105650	LDSFC02	RWCU DIFF FLOW RPS D2	NORMAL			
105703	WCSUC02	RWCU PMP 1B AUTO TRIP	CLOSED			
~~105705~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	~~ALARM~~			
105706	NMSBC02	SRM SHORT PERIOD	ALMCLR			
105712	CNALC01	CLN ST RBLR DT 1A LS9A	HIGH			
~~105714~~	~~CMSPA01~~	~~DW LOOP A PRESS EL 293FT~~	~~LO~~	~~-0.00L~~	~~*******~~	~~PSIG~~
105723	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL			
105728	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
~~105729~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~NORMAL~~			
105730	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
105731	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
~~105742~~	~~FWSTA02~~	~~6PT HTR 2FWS-E6B INL TMP~~	~~*LO~~	~~246.38~~	~~284.00~~	~~DEG F~~
105742	FWSTA06	6PT HTR 2FWS-E6C OUT TMP	*LO	122.24	324.00	DEG F
105752	CNSFA01	CND XFR PUMP HDR FLOW	OK	312.67	300.00	GPM
~~105804~~	~~CMSPA01~~	~~DW LOOP A PRESS EL 293FT~~	~~OK~~	~~0.00L~~	~~*******~~	~~PSIG~~
105809	CMSPA01	DW LOOP A PRESS EL 293FT	LO	-0.00L	*******	PSIG
105810	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
~~105811~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~NORMAL~~			

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~~105836~~	~~CNALC01~~	~~CLN ST RBLR DT 1A LS9A~~	~~NORMAL~~		
105842	NMSBC02	SRM SHORT PERIOD	ALARM		
105843	NMSBC02	SRM SHORT PERIOD	ALMCLR		
~~105852~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	~~ALARM~~		
105854	NMSBC02	SRM SHORT PERIOD	ALMCLR		
105859	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP		
105900	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL		
105923	NMSBC02	SRM SHORT PERIOD	ALARM		
105926	NMSBC02	SRM SHORT PERIOD	ALMCLR		
105938	CNALC01	CLN ST RBLR DT 1A LS9A	HIGH		
105938	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP		
105939	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL		
~~105940~~	~~CNALC01~~	~~CLN ST RBLR DT 1A LS9A~~	~~NORMAL~~		
110001	FWSPA04A	FW PRESS LOOP A	*LO	200.5	220.0 PSIG
110001	FWSPA05A	FW PRESS LOOP B	LO	210.2	220.0 PSIG
~~110013~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	~~ALARM~~		
110014	NMSBC02	SRM SHORT PERIOD	ALMCLR		
110034	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP		
~~110035~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~NORMAL~~		
110043	NMSBC02	SRM SHORT PERIOD	ALARM		

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~~110044~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	~~ALMCLR~~		
110047	NMSBC02	SRM SHORT PERIOD	ALARM		
110048	NMSBC02	SRM SHORT PERIOD	ALMCLR		
~~110056~~	~~CNALC01~~	~~CLN ST RBLR DT 1A LS9A~~	~~HIGH~~		
110107	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL		
110107	NMSBC02	SRM SHORT PERIOD	ALARM		
~~110109~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	~~ALMCLR~~		
110110	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP		
110111	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL		
~~110117~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~INOP~~		
110118	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL		
110119	NMSBC02	SRM SHORT PERIOD	ALARM		
~~110121~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	~~ALMCLR~~		
110132	NMSBC02	SRM SHORT PERIOD	ALARM		
110141	NMSBC02	SRM SHORT PERIOD	ALMCLR		
~~110142~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	~~ALARM~~		
110142	HDHTA01	6PT HTR E6A DR TEMP	*LO	218.89	284.06 DEG F
110144	NMSBC02	SRM SHORT PERIOD	ALMCLR		
~~110153~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	~~ALARM~~		
110154	NMSBC02	SRM SHORT PERIOD	ALMCLR		
110212	CNALC01	CLN ST RBLR DT 1A LS9A	HIGH		
~~110223~~	~~CNALC01~~	~~CLN ST RBLR DT 1A LS9A~~	~~NORMAL~~		
110233	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP		
110235	NMSBC02	SRM SHORT PERIOD	ALARM		
~~110236~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~NORMAL~~		
110237	NMSBC02	SRM SHORT PERIOD	ALMCLR		
110238	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP		
~~110238~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	~~ALARM~~		
110239	NMSBC02	SRM SHORT PERIOD	ALMCLR		
110240	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL		
~~110308~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	~~ALARM~~		
110309	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP		
110309	NMSBC02	SRM SHORT PERIOD	ALMCLR		
~~110310~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~NORMAL~~		
110313	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP		
110314	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL		

~~110326~~	~~CNSFC01~~	~~CNST-XFR-PMP-DIS DEM FLO~~	~~LOW~~			
110330	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL			
110340	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
110341	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
110342	HVCMA04	RELAY ROOM HMDT MT8B	HI	50.69	50.00	%RH
110343	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
110344	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
110349	NMSBC02	SRM SHORT PERIOD	ALARM			
110351	NMSBC02	SRM SHORT PERIOD	ALMCLR			
~~110405~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~INOP~~			
110406	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
110412	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
~~110412~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	~~ALARM~~			
110413	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
110415	NMSBC02	SRM SHORT PERIOD	ALMCLR			
~~110424~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	~~ALARM~~			
110425	NMSBC02	SRM SHORT PERIOD	ALMCLR			

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~~110432~~	~~CNALC01~~	~~CLN ST RBLR DT 1A LS9A~~	~~HIGH~~			
110432	CNSFA01	CND XFR PUMP HDR FLOW	LO	296.33	300.00	GPM
110437	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
~~110438~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~NORMAL~~			
110443	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL			
110444	GTSPA01	RB IN/OUT D/P PDT5A	LO	-0.51	-0.50	IN WG
~~110500~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~INOP~~			
110501	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
110507	NMSBC02	SRM SHORT PERIOD	ALARM			
~~110509~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	~~ALMCLR~~			
110524	NMSBC02	SRM SHORT PERIOD	ALARM			
110526	NMSBC02	SRM SHORT PERIOD	ALMCLR			
~~110534~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	~~ALARM~~			
110535	NMSBC02	SRM SHORT PERIOD	ALMCLR			
110540	CNALC01	CLN ST RBLR DT 1A LS9A	HIGH			
~~110542~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~INOP~~			
110542	NMSBC02	SRM SHORT PERIOD	ALARM			
110543	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
~~110543~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	~~ALMCLR~~			
110550	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL			
110600	WTSAA01	2WTS-TK1 RECIRC WTR PH	LO	5.90	6.50	PH
~~110605~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~INOP~~			
110607	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
110619	NMSBC02	SRM SHORT PERIOD	ALARM			
~~110619~~	~~GTSPA01~~	~~RB IN/OUT D/P PDT5A~~	~~OK~~	~~-0.46~~	~~-0.50~~	~~IN WG~~
110622	NMSBC02	SRM SHORT PERIOD	ALMCLR			
110627	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
~~110628~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~NORMAL~~			
110630	WTSAA01	2WTS-TK1 RECIRC WTR PH	OK	8.17	6.50	PH
110634	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
~~110635~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~NORMAL~~			
110637	NMSBC02	SRM SHORT PERIOD	ALARM			
110638	NMSBC02	SRM SHORT PERIOD	ALMCLR			
~~110640~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	~~ALARM~~			
110643	NMSBC02	SRM SHORT PERIOD	ALMCLR			
110648	CNALC01	CLN ST RBLR DT 1A LS9A	HIGH			
~~110657~~	~~CNALC12~~	~~DHTG HX 2HVH-E1B-LS2B~~	~~NORMAL~~			
110658	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL			
110659	GTSPA01	RB IN/OUT D/P PDT5A	LO	-0.50	-0.50	IN WG

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110712 NMSBC02  SRM SHORT PERIOD          ALARM
110713 NMSBC02  SRM SHORT PERIOD          ALMCLR
110717 NMSBC02  SRM SHORT PERIOD          ALARM
110718 NMSBC02  SRM SHORT PERIOD          ALMCLR
110730 WTSAA01  2WTS-TK1 RECIRC WTR PH    *LO     3.82     6.50 PH
110739 ESSTA18  5 PT HTR E5C EXTR ST TMP  *LO   204.36   280.00 DEG F
110742 ESSTA13  4 PT HTR E4A EXTR ST TMP  *LO   285.75   334.00 DEG F
110747 NMSBC02  SRM SHORT PERIOD          ALARM
110749 NMSBC02  SRM SHORT PERIOD          ALMCLR
110754 TMITA03  PIPE UPSTR 2HRS-SV6A TMP  *LO   351.93   400.00 DEG F
110757 CNALC01  CLN ST RBLR DT 1A LS9A    HIGH
110759 NMSBC02  SRM SHORT PERIOD          ALARM
110800 WTSAA01  2WTS-TK1 RECIRC WTR PH    *LO     1.57     6.50 PH
110803 NMSBC02  SRM SHORT PERIOD          ALMCLR

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110807 CNALC01  CLN ST RBLR DT 1A LS9A    NORMAL
110807 HVKBC09  DIV1 CB CHILLED WTR SYS   INOP
110809 HVKBC09  DIV1 CB CHILLED WTR SYS   NORMAL
110820 NMSBC02  SRM SHORT PERIOD          ALARM
110824 NMSBC02  SRM SHORT PERIOD          ALMCLR
110829 GTSPA01  RB IN/OUT D/P PDT5A       OK     -0.48    -0.50 IN WG
110830 WTSAA01  2WTS-TK1 RECIRC WTR PH    *LO     4.32     6.50 PH
110845 ESSTA15  4 PT HTR E4C EXTR ST TMP  *LO   297.80   334.00 DEG F
110848 NMSBC02  SRM SHORT PERIOD          ALARM
110851 NMSBC02  SRM SHORT PERIOD          ALMCLR
110859 GTSPA01  RB IN/OUT D/P PDT5A       LO     -0.51    -0.50 IN WG
110900 CNALC01  CLN ST RBLR DT 1A LS9A    HIGH
110908 WTSAA01  2WTS-TK1 RECIRC WTR PH    *LO     5.30     6.50 PH
110910 CNALC01  CLN ST RBLR DT 1A LS9A    NORMAL
110925 NMSBC02  SRM SHORT PERIOD          ALARM
110928 NMSBC02  SRM SHORT PERIOD          ALMCLR
110930 WTSAA01  2WTS-TK1 RECIRC WTR PH    *LO     1.28     6.50 PH
110936 HVKBC09  DIV1 CB CHILLED WTR SYS   INOP
110937 HVKBC09  DIV1 CB CHILLED WTR SYS   NORMAL
110953 NMSBC02  SRM SHORT PERIOD          ALARM
110955 NMSBC02  SRM SHORT PERIOD          ALMCLR
111000 WTSAA01  2WTS-TK1 RECIRC WTR PH    *LO     5.07     6.50 PH
111001 FWSPA04A FW PRESS LOOP A           *LO    190.3    220.0 PSIG
111001 FWSPA05A FW PRESS LOOP B           *LO    199.6    220.0 PSIG
111010 HVKBC09  DIV1 CB CHILLED WTR SYS   INOP
111011 CNALC01  CLN ST RBLR DT 1A LS9A    HIGH
111012 HVKBC09  DIV1 CB CHILLED WTR SYS   NORMAL
111014 HVKBC09  DIV1 CB CHILLED WTR SYS   INOP
111015 HVKBC09  DIV1 CB CHILLED WTR SYS   NORMAL
111021 CNALC01  CLN ST RBLR DT 1A LS9A    NORMAL
111030 WTSAA01  2WTS-TK1 RECIRC WTR PH    *LO     2.20     6.50 PH
111049 HVKBC09  DIV1 CB CHILLED WTR SYS   INOP
111050 HVKBC09  DIV1 CB CHILLED WTR SYS   NORMAL
111100 NMSBC02  SRM SHORT PERIOD          ALARM
111100 WTSAA01  2WTS-TK1 RECIRC WTR PH    *LO     1.26     6.50 PH
111103 NMSBC02  SRM SHORT PERIOD          ALMCLR
111113 NMSBC02  SRM SHORT PERIOD          ALARM
111114 NMSBC02  SRM SHORT PERIOD          ALMCLR
111118 CNALC01  CLN ST RBLR DT 1A LS9A    HIGH
111119 GTSPA01  RB IN/OUT D/P PDT5A       OK     -0.48    -0.50 IN WG
111125 HVKBC09  DIV1 CB CHILLED WTR SYS   INOP
111126 HVKBC09  DIV1 CB CHILLED WTR SYS   NORMAL
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111134	GTSPA01	RB IN/OUT D/P PDT5A	LO	-0.51	-0.50	IN WG
111146	NMSBC02	SRM SHORT PERIOD	ALARM			
111148	NMSBC02	SRM SHORT PERIOD	ALMCLR			
~~111149~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	ALARM			
111151	NMSBC02	SRM SHORT PERIOD	ALMCLR			
111200	WTSAA01	2WTS-TK1 RECIRC WTR PH	*LO	4.72	6.50	PH
~~111202~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	ALARM			
111206	NMSBC02	SRM SHORT PERIOD	ALMCLR			
111207	NMSBC02	SRM SHORT PERIOD	ALARM			
~~111208~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	ALMCLR			
111211	NMSBC02	SRM SHORT PERIOD	ALARM			

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~~111213~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	ALMCLR			
111214	GTSPA01	RB IN/OUT D/P PDT5A	OK	-0.47	-0.50	IN WG
111224	CNALC01	CLN ST RBLR DT 1A LS9A	HIGH			
~~111230~~	~~WTSAA01~~	~~2WTS-TK1 RECIRC WTR PH~~	*LO	3.47	6.50	PH
111231	NMSBC02	SRM SHORT PERIOD	ALARM			
111234	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL			
~~111234~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	ALMCLR			
111234	GTSPA01	RB IN/OUT D/P PDT5A	LO	-0.50	-0.50	IN WG
111243	NMSBC02	SRM SHORT PERIOD	ALARM			
~~111244~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	ALMCLR			
111253	NMSBC02	SRM SHORT PERIOD	ALARM			
111256	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
~~111257~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	NORMAL			
111257	NMSBC02	SRM SHORT PERIOD	ALMCLR			
111258	NMSBC02	SRM SHORT PERIOD	ALARM			
~~111300~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	ALMCLR			
111300	WTSAA01	2WTS-TK1 RECIRC WTR PH	*LO	4.51	6.50	PH
111304	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
~~111304~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	ALARM			
111305	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
111307	NMSBC02	SRM SHORT PERIOD	ALMCLR			
~~111322~~	~~HVCMA04~~	RELAY-ROOM HMDT MT8B	OK	49.19	50.00	*RH
111328	NMSBC02	SRM SHORT PERIOD	ALARM			
111329	NMSBC02	SRM SHORT PERIOD	ALMCLR			
~~111330~~	~~WTSAA01~~	~~2WTS-TK1 RECIRC WTR PH~~	*LO	5.12	6.50	PH
111333	CNALC01	CLN ST RBLR DT 1A LS9A	HIGH			
111344	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL			
~~111345~~	~~HVKBC09~~	~~DIV1 CB CHILLED~~ WTR SYS	INOP			
111346	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
111357	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
~~111358~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	NORMAL			
111359	GTSPA01	RB IN/OUT D/P PDT5A	OK	-0.47	-0.50	IN WG
111400	WTSAA01	2WTS-TK1 RECIRC WTR PH	OK	8.06	6.50	PH
~~111404~~	~~GTSPA01~~	~~RB IN/OUT D/P PDT5A~~	LO	-0.51	-0.50	IN WG
111430	NMSBC02	SRM SHORT PERIOD	ALARM			
111432	NMSBC02	SRM SHORT PERIOD	ALMCLR			
~~111434~~	~~GTSPA01~~	~~RB IN/OUT D/P PDT5A~~	OK	-0.48	-0.50	IN WG
111443	CNALC01	CLN ST RBLR DT 1A LS9A	HIGH			
111454	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL			
~~111504~~	~~GTSPA01~~	~~RB IN/OUT D/P PDT5A~~	LO	-0.51	-0.50	IN WG
111506	GMHAC07	STTR CLG WTR TK VENT H2	HIGH			
111508	GMHAC07	STTR CLG WTR TK VENT H2	NORMAL			
111518	GMHAC07	STTR CLG WTR TK VENT H2	HIGH			
111522	GMHAC07	STTR CLG WTR TK VENT H2	NORMAL			
111522	NMSBC02	SRM SHORT PERIOD	ALARM			

111544	GTSPA01	RB IN/OUT D/P PDT5A	OK	-0.48	-0.50	IN WG
111545	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
111546	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
111549	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
111551	CNALC01	CLN ST RBLR DT 1A LS9A	HIGH			
111551	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
111601	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL			

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111604	ABDBC01	AUX BLR SYS 2CES-IPNL506	TRBL			
111608	ABDBC01	AUX BLR SYS 2CES-IPNL506	NORMAL			
111613	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
111614	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
111626	GMHAC07	STTR CLG WTR TK VENT H2	HIGH			
111632	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
111633	GMHAC07	STTR CLG WTR TK VENT H2	NORMAL			
111633	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
111640	NMSBC02	SRM SHORT PERIOD	ALARM			
111642	ESSTA11	3 PT HTR E3B EXTR ST TMP	*LO	246.24	256.00	DEG F
111643	NMSBC02	SRM SHORT PERIOD	ALMCLR			
111646	ARCLC04	CNSR AIR REM TK SP1B LVL	NORMAL			
111653	MSSTA07	TURB BYP PSV89E OUT TEMP	*HI	304.96	280.00	DEG F
111654	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
111655	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
111706	CNALC01	CLN ST RBLR DT 1A LS9A	HIGH			
111717	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL			
111717	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
111718	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
111726	NMSBC02	SRM SHORT PERIOD	ALARM			
111727	NMSBC02	SRM SHORT PERIOD	ALMCLR			
111732	ESSTA06	1 PT HTR E1C SHELL TEMP	*LO	102.48	119.00	DEG F
111738	HVNBC01	VENT CHL WTR SYS IPNL135	TRBL			
111747	GMHAC07	STTR CLG WTR TK VENT H2	HIGH			
111749	NMSBC02	SRM SHORT PERIOD	ALARM			
111750	NMSBC02	SRM SHORT PERIOD	ALMCLR			
111752	GMHAC07	STTR CLG WTR TK VENT H2	NORMAL			
111823	CNALC01	CLN ST RBLR DT 1A LS9A	HIGH			
111825	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
111826	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
111830	CSLBC02	DIV1 LPCS SYSTEM	ALMCLR			
111830	CSLBC13	LPCS LINE BREAK	ALMCLR			
111834	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL			
111852	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
111853	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
111919	CNSFC01	CNST XFR PMP DIS DEM FLO	NORMAL			
111923	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
111924	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
111939	CNALC01	CLN ST RBLR DT 1A LS9A	HIGH			
111943	ESSTA14	4 PT HTR E4B EXTR ST TMP	*LO	285.89	334.00	DEG F
111949	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL			
111951	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
111952	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
111952	NMSBC02	SRM SHORT PERIOD	ALARM			
111954	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
111954	NMSBC02	SRM SHORT PERIOD	ALMCLR			
111955	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
111957	WCSPC09	RWCU DISCH PRESS	H/L			
112001	FWSPA04A	FW PRESS LOOP A	*LO	184.7	220.6	PSIG

112051	CNALC01	CLN ST RBLR DT 1A LS9A	HIGH			

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~~112055~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	INOP			
112056	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
112057	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
~~112059~~	~~HVKBC09~~	DIV1 CB CHILLED WTR SYS	NORMAL			
112102	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL			
112104	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
~~112105~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	NORMAL			
112112	NMSBC02	SRM SHORT PERIOD	ALARM			
112114	NMSBC02	SRM SHORT PERIOD	ALMCLR			
~~112116~~	GMHAC07	STTR CLG WTR TK VENT H2	HIGH			
112120	GMHAC07	STTR CLG WTR TK VENT H2	NORMAL			
112126	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
~~112127~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~NORMAL~~			
112135	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
112136	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
~~112139~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	INOP			
112140	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
112153	TMITA08	PIPE UPSTR 2HRS-SV5C TMP	*LO	336.00	400.00	DEG F
~~112201~~	~~CNALC01~~	~~CLN ST RBLR DT 1A LS9A~~	HIGH			
112211	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL			
112211	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
~~112212~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	NORMAL			
112218	ABHPA01	AUX BLR DEAR INL PRESS	LO	2.45	2.56	PSIG
112225	NMSBC02	SRM SHORT PERIOD	ALARM			
~~112228~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	ALMCLR			
112247	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
112249	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
~~112252~~	~~HVGMA04~~	~~RELAY ROOM HMDT MT8B~~	HI	50.00	50.00	*RH
112315	CNALC01	CLN ST RBLR DT 1A LS9A	HIGH			
112317	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
~~112319~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	NORMAL			
112326	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL			
112329	GMHAC07	STTR CLG WTR TK VENT H2	HIGH			
~~112331~~	~~GMHAC07~~	~~STTR CLG WTR TK VENT H2~~	NORMAL			
112332	NMSBC02	SRM SHORT PERIOD	ALARM			
112333	NMSBC02	SRM SHORT PERIOD	ALMCLR			
~~112334~~	~~GMGTA17~~	~~ALTNTR CLR AIR OUTL TEMP~~	*HI	102.47	99.56	DEG F
112348	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
112349	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
~~112356~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	INOP			
112357	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
112359	GMHAC07	STTR CLG WTR TK VENT H2	HIGH			
112410	GMHAC07	STTR CLG WTR TK VENT H2	NORMAL			
112413	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
112414	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
112422	GMHAC07	STTR CLG WTR TK VENT H2	HIGH			
112422	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
112423	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
~~112426~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	INOP			
112427	GMHAC07	STTR CLG WTR TK VENT H2	NORMAL			
112427	CNALC01	CLN ST RBLR DT 1A LS9A	HIGH			
~~112427~~	~~HVKBC09~~	~~DIV1 CB CHILLED~~ WTR SYS	NORMAL			
112437	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL			
112442	HDLTA02	5PT HTR 2CNM-E5B DRN TMP	*LO	152.28	246.00	DEG F
~~112503~~	~~HVKBC09~~	~~DIV1 CB CHILLED~~ WTR SYS	INOP			

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112505 HVKBC09  DIV1 CB CHILLED WTR SYS  INOP
112506 HVKBC09  DIV1 CB CHILLED WTR SYS  NORMAL
112509 NMSBC02  SRM SHORT PERIOD         ALARM
112511 NMSBC02  SRM SHORT PERIOD         ALMCLR
112521 HVKBC09  DIV1 CB CHILLED WTR SYS  INOP
112522 HVKBC09  DIV1 CB CHILLED WTR SYS  NORMAL
112523 HVKBC09  DIV1 CB CHILLED WTR SYS  INOP
112524 HVKBC09  DIV1 CB CHILLED WTR SYS  NORMAL
112525 CNSFC01  CNST XFR PMP DIS DEM FLO LOW
112538 CNALC01  CLN ST RBLR DT 1A LS9A   HIGH
112549 CNALC01  CLN ST RBLR DT 1A LS9A   NORMAL
112549 TMGBC04  TRNGR NOT OPERATING      IN OPER
112558 TMGBC04  TRNGR NOT OPERATING      ALARM
112619 GTSPA01  RB IN/OUT D/P PDT5A      LO    -0.52    -0.50 IN WG
112620 HVKBC09  DIV1 CB CHILLED WTR SYS  INOP
112621 HVKBC09  DIV1 CB CHILLED WTR SYS  NORMAL
112622 NMSBC02  SRM SHORT PERIOD         ALARM
112623 NMSBC02  SRM SHORT PERIOD         ALMCLR
112629 GTSPA01  RB IN/OUT D/P PDT5A      OK    -0.48    -0.50 IN WG
112632 CNSFA01  CND XFR PUMP HDR FLOW    LO   299.06   300.00 GPM
112634 GTSPA01  RB IN/OUT D/P PDT5A      LO    -0.51    -0.50 IN WG
112644 CCSZC02  TBCLCW HX BYP TV104      ALMCLR
112648 CNALC01  CLN ST RBLR DT 1A LS9A   HIGH
112649 RHSBC09  RHR C INJ VLV24C PERMIS  ALARM
112658 NMSBC02  SRM SHORT PERIOD         ALARM
112659 CNALC01  CLN ST RBLR DT 1A LS9A   NORMAL
112659 NMSBC02  SRM SHORT PERIOD         ALMCLR
112714 HVKBC09  DIV1 CB CHILLED WTR SYS  INOP
112715 HVKBC09  DIV1 CB CHILLED WTR SYS  NORMAL
112718 HVKBC09  DIV1 CB CHILLED WTR SYS  INOP
112719 HVKBC09  DIV1 CB CHILLED WTR SYS  NORMAL
112735 TMGBC04  TRNGR NOT OPERATING      IN OPER
112742 HVKBC09  DIV1 CB CHILLED WTR SYS  INOP
112743 HVKBC09  DIV1 CB CHILLED WTR SYS  NORMAL
112745 NSSTA104 RX FW FLOW B INLET TEMP  ADC  136.16L******* DEG F
112754 GTSPA01  RB IN/OUT D/P PDT5A      OK    -0.49    -0.50 IN WG
112758 CNALC01  CLN ST RBLR DT 1A LS9A   HIGH
112804 GTSPA01  RB IN/OUT D/P PDT5A      LO    -0.52    -0.50 IN WG
112808 CNALC01  CLN ST RBLR DT 1A LS9A   NORMAL
112812 HVKBC09  DIV1 CB CHILLED WTR SYS  INOP
112813 HVKBC09  DIV1 CB CHILLED WTR SYS  NORMAL
112814 HVKBC09  DIV1 CB CHILLED WTR SYS  INOP
112815 HVKBC09  DIV1 CB CHILLED WTR SYS  NORMAL
112822 NMSBC02  SRM SHORT PERIOD         ALARM
112823 NMSBC02  SRM SHORT PERIOD         ALMCLR
112828 NMSBC02  SRM SHORT PERIOD         ALARM
112829 NMSBC02  SRM SHORT PERIOD         ALMCLR
112836 HVKBC09  DIV1 CB CHILLED WTR SYS  INOP
112837 HVKBC09  DIV1 CB CHILLED WTR SYS  NORMAL
112838 HVKBC09  DIV1 CB CHILLED WTR SYS  INOP
112839 HVKBC09  DIV1 CB CHILLED WTR SYS  NORMAL
112842 HDHTA03  6PT HTR ESC DR TEMP      *LO  179.99   284.00 DEG F
112903 HVKBC09  DIV1 CB CHILLED WTR SYS  INOP
112904 HVKBC09  DIV1 CB CHILLED WTR SYS  NORMAL
112907 CNALC01  CLN ST RBLR DT 1A LS9A   HIGH
112914 NSSTA103 RX FW FLOW B INLET TEMP  ADC  136.16L******* DEG F
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~~112918~~	~~CNALC01~~	~~CLN ST RBLR DT 1A LS9A~~	~~NORMAL~~			
112920	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
112921	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
~~112928~~	~~RMSRC08~~	~~RB/RWB VENT GAS COUNT~~	~~NORMAL~~			
112928	RMSRC11	RB/RWB LOSS OF SMPL FLO	NORMAL			
112930	WTSAA01	2WTS-TK1 RECIRC WTR PH	LO	5.72	6.50	PH
~~112939~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~INOP~~			
112940	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
112947	NMSBC02	SRM SHORT PERIOD	ALARM			
~~112948~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	~~ALMCLR~~			
112948	NSSTA103	RX FW FLOW B INLET TEMP	OK	136.16L	*******	DEG F
113000	WTSAA01	2WTS-TK1 RECIRC WTR PH	*LO	4.93	6.50	PH
~~113002~~	~~FWSPA04A~~	~~FW PRESS LOOP A~~	~~*LO~~	~~178.7~~	~~220.0~~	~~PSIG~~
113002	FWSPA05A	FW PRESS LOOP B	*LO	188.1	220.0	PSIG
113006	GMHAC07	STTR CLG WTR TK VENT H2	HIGH			
~~113010~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~INOP~~			
113011	GMHAC07	STTR CLG WTR TK VENT H2	NORMAL			
113011	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
~~113022~~	~~CNALC01~~	~~CLN ST RBLR DT 1A LS9A~~	~~HIGH~~			
113024	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
113025	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
~~113029~~	~~GTSPA01~~	~~RB IN/OUT D/P PDT5A~~	~~OK~~	~~-0.45~~	~~-0.50~~	~~IN WG~~
113030	WTSAA01	2WTS-TK1 RECIRC WTR PH	*LO	5.70	6.50	PH
113032	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL			
~~113038~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~INOP~~			
113039	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
113041	NMSBC02	SRM SHORT PERIOD	ALARM			
~~113044~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	~~ALMCLR~~			
113052	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
113053	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
~~113100~~	~~WTSAA01~~	~~2WTS-TK1 RECIRC WTR PH~~	~~*LO~~	~~4.93~~	~~6.50~~	~~PH~~
113121	DFMXC09	AUX BLR BLDG SMP3 LK RT	HIGH			
113127	NMSBC02	SRM SHORT PERIOD	ALARM			
~~113128~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	~~ALMCLR~~			
113130	WTSAA01	2WTS-TK1 RECIRC WTR PH	*LO	1.29	6.50	PH
113131	CNALC01	CLN ST RBLR DT 1A LS9A	HIGH			
~~113141~~	~~CNALC01~~	~~CLN ST RBLR DT 1A LS9A~~	~~NORMAL~~			
113152	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
113153	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
~~113154~~	~~GTSPA01~~	~~RB IN/OUT D/P PDT5A~~	~~LO~~	~~-0.50~~	~~-0.50~~	~~IN WG~~
113200	WTSAA01	2WTS-TK1 RECIRC WTR PH	OK	8.17	6.50	PH
113210	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
113211	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
113214	NMSBC02	SRM SHORT PERIOD	ALARM			
113219	NMSBC02	SRM SHORT PERIOD	ALMCLR			
113224	TMITA04	PIPE UPSTR 2HRS-SV5A TMP	*LO	351.71	400.00	DEG F
113226	HVCMA04	RELAY ROOM HMDT MT8B	OK	49.25	50.00	%RH
113228	LOSTC02	TURB LUBE OIL XFR P2 MOT	NORMAL			
~~113232~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~INOP~~			
113233	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
113245	HVGBC02	RB VENT/GLYCOL SYSTEM	NORMAL			
~~113246~~	~~CNALC01~~	~~CLN ST RBLR DT 1A LS9A~~	~~HIGH~~			
113246	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
113247	HVRBC25	HVRS TRBL 2CES-IPNL101	NORMAL			
~~113247~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~NORMAL~~			
113255	NMSBC02	SRM SHORT PERIOD	ALARM			

113259	NMSBC02	SRM SHORT PERIOD	ALMCLR			
113300	NMSBC02	SRM SHORT PERIOD	ALARM			
113302	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
113304	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
113304	NMSBC02	SRM SHORT PERIOD	ALMCLR			
113310	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
113311	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
113319	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
113320	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
113321	NSSTA103	RX FW FLOW B INLET TEMP	ADC	136.16L	*******	DEG F
113323	FWSPA04	REACTOR INLET PRES PT40A	*LO	172.15	875.00	PSIG
113329	GTSPA01	RB IN/OUT D/P PDT5A	OK	-0.49	-0.50	IN WG
113335	NMSBC02	SRM SHORT PERIOD	ALARM			
113337	NMSBC02	SRM SHORT PERIOD	ALMCLR			
113339	GTSPA01	RB IN/OUT D/P PDT5A	LO	-0.51	-0.50	IN WG
113356	CNALC01	CLN ST RBLR DT 1A LS9A	HIGH			
113406	GMHAC07	STTR CLG WTR TK VENT H2	HIGH			
113406	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
113407	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL			
113407	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
113408	GMHAC07	STTR CLG WTR TK VENT H2	NORMAL			
113411	GMHAC07	STTR CLG WTR TK VENT H2	HIGH			
113412	GMHAC07	STTR CLG WTR TK VENT H2	NORMAL			
113412	HDLTA03	5PT HTR 2CNH-E5C DRN TMP	*LO	152.28	246.00	DEG F
113419	GTSPA01	RB IN/OUT D/P PDT5A	OK	-0.48	-0.50	IN WG
113424	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
113425	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
113437	GMHAC07	STTR CLG WTR TK VENT H2	HIGH			
113438	GMHAC07	STTR CLG WTR TK VENT H2	NORMAL			
113439	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
113440	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
113441	NMSBC02	SRM SHORT PERIOD	ALARM			
113444	NMSBC02	SRM SHORT PERIOD	ALMCLR			
113453	NMSBC02	SRM SHORT PERIOD	ALARM			
113455	NMSBC02	SRM SHORT PERIOD	ALMCLR			
113456	NMSBC02	SRM SHORT PERIOD	ALARM			
113457	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
113457	NMSBC02	SRM SHORT PERIOD	ALMCLR			
113458	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
113509	NMSBC02	SRM SHORT PERIOD	ALARM			
113510	NMSBC02	SRM SHORT PERIOD	ALMCLR			
113511	CWSAC02	CLG TWR BLOW-DOWN WTR PH	HIGH			
113511	CWSAC01	CLG TWR BLOW-DOWN WTR PH	LOW			
113514	CNALC01	CLN ST RBLR DT 1A LS9A	HIGH			
113516	NSSTA102	RX FW FLOW A INLET TEMP	ADC	136.24L	*******	DEG F
113519	NMSBC02	SRM SHORT PERIOD	ALARM			
113520	HVRPA01	RX BLDG DIFF PRESS	OK	-0.399	-0.400	IN WG
113521	CWSAC02	CLG TWR BLOW-DOWN WTR PH	NORMAL			
113521	CWSAC01	CLG TWR BLOW-DOWN WTR PH	NORMAL			
113521	NMSBC02	SRM SHORT PERIOD	ALMCLR			
113524	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL			
113525	HVRPA01	RX BLDG DIFF PRESS	LO	-0.407	-0.466	IN WG
113528	NMSBC02	SRM SHORT PERIOD	ALARM			
113534	NMSBC02	SRM SHORT PERIOD	ALMCLR			
113546	NMSBC02	SRM SHORT PERIOD	ALARM			

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113548	NMSBC02	SRM SHORT PERIOD	ALMCLR

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113615 HVKBC09   DIV1 CB CHILLED WTR SYS   NORMAL
113618 TMLPC23   OIL RSVR VAP EXTR D/P     LOW
113629 CNALC01   CLN ST RBLR DT 1A LS9A    HIGH
113634 GMHAC07   STTR CLG WTR TK VENT H2   HIGH
113636 GMHAC07   STTR CLG WTR TK VENT H2   NORMAL
113638 HVKBC09   DIV1 CB CHILLED WTR SYS   INOP
113638 NMSBC02   SRM SHORT PERIOD          ALARM
113639 HVKBC09   DIV1 CB CHILLED WTR SYS   NORMAL
113639 NMSBC02   SRM SHORT PERIOD          ALMCLR
113639 GTSPA01   RB IN/OUT D/P PDT5A       LO     -0.50    -0.50 IN WG
113640 CNALC01   CLN ST RBLR DT 1A LS9A    NORMAL
113642 HVKBC09   DIV1 CB CHILLED WTR SYS   INOP
113643 HVKBC09   DIV1 CB CHILLED WTR SYS   NORMAL
113646 NSSTA102  RX FW FLOW A INLET TEMP   OK    136.16L******* DEG F
113647 TMLPC23   OIL RSVR VAP EXTR D/P     NORMAL
113650 TMLPC23   OIL RSVR VAP EXTR D/P     LOW
113652 NMSBC02   SRM SHORT PERIOD          ALARM
113655 NMSBC02   SRM SHORT PERIOD          ALMCLR
113659 GTSPA01   RB IN/OUT D/P PDT5A       OK     -0.46    -0.50 IN WG
113704 GTSPA01   RB IN/OUT D/P PDT5A       LO     -0.50    -0.50 IN WG
113713 NMSBC02   SRM SHORT PERIOD          ALARM
113715 NMSBC02   SRM SHORT PERIOD          ALMCLR
113716 HVKBC09   DIV1 CB CHILLED WTR SYS   INOP
113717 HVKBC09   DIV1 CB CHILLED WTR SYS   NORMAL
113745 CNALC01   CLN ST RBLR DT 1A LS9A    HIGH
113745 HVKBC09   DIV1 CB CHILLED WTR SYS   INOP
113746 HVKBC09   DIV1 CB CHILLED WTR SYS   NORMAL
113748 NMSBC02   SRM SHORT PERIOD          ALARM
113750 NMSBC02   SRM SHORT PERIOD          ALMCLR
113755 CNALC01   CLN ST RBLR DT 1A LS9A    NORMAL
113806 HVKBC09   DIV1 CB CHILLED WTR SYS   INOP
113807 HVKBC09   DIV1 CB CHILLED WTR SYS   NORMAL
113811 HVKBC09   DIV1 CB CHILLED WTR SYS   INOP
113812 HVKBC09   DIV1 CB CHILLED WTR SYS   NORMAL
113815 NMSBC02   SRM SHORT PERIOD          ALARM
113815 FWSTA48   FEED WATER FINAL TEMP     *LO  122.52  324.00 DEG F
113816 NMSBC02   SRM SHORT PERIOD          ALMCLR
113822 NMSBC02   SRM SHORT PERIOD          ALARM
113824 NMSBC02   SRM SHORT PERIOD          ALMCLR
113824 TMITA05   PIPE UPSTR 2HRS-SV5B TMP  *LO  335.94  400.00 DEG F
113831 NSSTA102  RX FW FLOW A INLET TEMP   ADC  136.16L******* DEG F
113841 NMSBC02   SRM SHORT PERIOD          ALARM
113843 NMSBC02   SRM SHORT PERIOD          ALMCLR
113849 CMSPA01   DW LOOP A PRESS EL 293FT  *LO    -0.12L******* PSIG
113857 CNALC01   CLN ST RBLR DT 1A LS9A    HIGH
113905 CNSEC01   CNST XFR PMP DIS DEM FLO  NORMAL
113908 CNALC01   CLN ST RBLR DT 1A LS9A    NORMAL
113916 NSSTA102  RX FW FLOW A INLET TEMP   OK    136.16L******* DEG F
113918 HVKBC09   DIV1 CB CHILLED WTR SYS   INOP
113919 HVKBC09   DIV1 CB CHILLED WTR SYS   NORMAL

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113919 NMSBC02   SRM SHORT PERIOD          ALARM
113922 NMSBC02   SRM SHORT PERIOD          ALMCLR
113934 NMSBC02   SRM SHORT PERIOD          ALARM
113935 NMSBC02   SRM SHORT PERIOD          ALMCLR
113947 NMSBC02   SRM SHORT PERIOD          ALARM
113950 NMSBC02   SRM SHORT PERIOD          ALMCLR
113953 [illegible]
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~~114002~~	~~FWSPA05A~~	~~FW PRESS LOOP B~~	~~*LO~~	~~184.1~~	~~220.0~~	~~PSIG~~
114006	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
114006	NMSBC02	SRM SHORT PERIOD	ALARM			
~~114007~~	~~CNALC01~~	~~CLN ST RBLR DT 1A LS9A~~	~~HIGH~~			
114007	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
114012	NMSBC02	SRM SHORT PERIOD	ALMCLR			
~~114017~~	~~CNALC01~~	~~CLN ST RBLR DT 1A LS9A~~	~~NORMAL~~			
114017	NMSBC02	SRM SHORT PERIOD	ALARM			
114018	NMSBC02	SRM SHORT PERIOD	ALMCLR			
~~114022~~	~~TMLPC23~~	~~OIL RSVR VAP EXTR D/P~~	~~NORMAL~~			
114028	ISCBC37	DW VAC BKR IB RV33A/34A	OPEN			
114037	CNSFA01	CND XFR PUMP HDR FLOW	OK	312.42	300.00	GPM
~~114042~~	~~HDLTA01~~	~~SPT HTR 2CNM-E5A DRN TMP~~	~~*LO~~	~~152.28~~	~~246.00~~	~~DEG F~~
114044	GTSPA01	RB IN/OUT D/P PDT5A	OK	-0.48	-0.50	IN WG
114048	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
~~114050~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~NORMAL~~			
114053	GMHAC07	STTR CLG WTR TK VENT H2	HIGH			
114055	ISCBC37	DW VAC BKR IB RV33A/34A	CLOSED			
~~114057~~	~~GMHAC07~~	~~STTR CLG WTR TK VENT H2~~	NORMAL			
114059	NMSBC02	SRM SHORT PERIOD	ALARM			
114101	NMSBC02	SRM SHORT PERIOD	ALMCLR			
~~114101~~	~~NSSTA102~~	~~RX FW FLOW A INLET TEMP~~	~~ADC~~	~~136.20L~~	~~*******~~	~~DEG F~~
114104	GTSPA01	RB IN/OUT D/P PDT5A	LO	-0.50	-0.50	IN WG
114113	NMSBC02	SRM SHORT PERIOD	ALARM			
~~114114~~	~~HVKBC09~~	DIV1 CB CHILLED WTR SYS	INOP			
114115	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
114116	NMSBC02	SRM SHORT PERIOD	ALMCLR			
~~114119~~	~~CNALC01~~	~~CLN ST RBLR DT 1A LS9A~~	~~HIGH~~			
114119	GTSPA01	RB IN/OUT D/P PDT5A	OK	-0.47	-0.50	IN WG
114123	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
~~114124~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~NORMAL~~			
114129	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL			
114147	ISCBC39	DW VAC BKR OB RV33B/34B	OPEN			
114151	NMSBC02	SRM SHORT PERIOD	ALARM			
114153	NMSBC02	SRM SHORT PERIOD	ALMCLR			
114154	NMSBC02	SRM SHORT PERIOD	ALARM			
114155	NMSBC02	SRM SHORT PERIOD	ALMCLR			
114156	HVCMA04	RELAY ROOM HMDT MT8B	HI	50.00	50.00	%RH
114202	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
~~114203~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	NORMAL			
114204	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
114205	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
~~114218~~	~~ISCBC39~~	~~DW VAC BKR OB RV33B/34B~~	~~CLOSED~~			
114228	CNALC01	CLN ST RBLR DT 1A LS9A	HIGH			
114228	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
~~114229~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~NORMAL~~			
114235	NMSBC02	SRM SHORT PERIOD	ALARM			

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~~114236~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	ALMCLR
114238	NMSBC02	SRM SHORT PERIOD	ALARM
114239	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL
~~114239~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	ALMCLR
114242	GMHAC07	STTR CLG WTR TK VENT H2	HIGH
114247	GMHAC07	STTR CLG WTR TK VENT H2	NORMAL
~~114316~~	~~ISCBC39~~	~~DW VAC BKR OB RV33B/34B~~	OPEN
114318	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP
114319	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL

114347	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
114348	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
~~114348~~	~~ABMPA01~~	~~AUX BLR DEAR INL PRESS~~	~~OK~~	~~2.61~~	~~2.50~~	~~PSIG~~
114349	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
114351	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
~~114352~~	~~CNALC01~~	~~CLN ST RBLR DT 1A LS9A~~	~~NORMAL~~			
114352	NMSBC02	SRM SHORT PERIOD	ALARM			
114353	NMSBC02	SRM SHORT PERIOD	ALMCLR			
~~114354~~	~~ISCBC37~~	~~DW VAC BKR IB RV33A/34A~~	~~OPEN~~			
114413	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
114414	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
~~114415~~	~~CNSFC01~~	~~CNST XFR PMP DIS DEM FLO~~	~~LOW~~			
114420	NMSBC02	SRM SHORT PERIOD	ALARM			
114422	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
~~114422~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	~~ALMCLR~~			
114423	GMHAC07	STTR CLG WTR TK VENT H2	HIGH			
114423	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
~~114425~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~INOP~~			
114426	GMHAC07	STTR CLG WTR TK VENT H2	NORMAL			
114426	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
~~114427~~	~~ISCBC37~~	~~DW VAC BKR IB RV33A/34A~~	~~CLOSED~~			
114442	NMSBC02	SRM SHORT PERIOD	ALARM			
114443	NMSBC02	SRM SHORT PERIOD	ALMCLR			
~~114453~~	~~CNSFC01~~	~~CNST XFR PMP DIS DEM FLO~~	~~NORMAL~~			
114459	CNALC01	CLN ST RBLR DT 1A LS9A	HIGH			
114459	GTSPA01	RB IN/OUT D/P PDT5A	OK	-0.48	-0.50	IN WG
~~114504~~	~~GTSPA01~~	~~RB IN/OUT D/P PDT5A~~	~~LO~~	~~-0.50~~	~~-0.50~~	~~IN WG~~
114507	ISCBC39	DW VAC BKR OB RV33B/34B	OPEN			
114509	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL			
114511	NMSBC02	SRM SHORT PERIOD	ALARM			
114512	DFMBC14	AUX BLR FLR DRN SYS	TRBL			
114513	NMSBC02	SRM SHORT PERIOD	ALMCLR			
114518	CNSFC01	CNST XFR PMP DIS DEM FLO	LOW			
114520	NMSBC02	SRM SHORT PERIOD	ALARM			
114521	NMSBC02	SRM SHORT PERIOD	ALMCLR			
~~114525~~	~~NMIIC113~~	~~IRM CHANNEL BYPASSED~~	~~ON~~			
114539	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
114540	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
~~114549~~	~~ISCBC39~~	~~DW VAC BKR OB RV33B/34B~~	~~CLOSED~~			
114612	CNALC01	CLN ST RBLR DT 1A LS9A	HIGH			
114622	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL			
~~114622~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~INOP~~			
114622	NMSBC02	SRM SHORT PERIOD	ALARM			

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~~114623~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~NORMAL~~			
114625	NMSBC02	SRM SHORT PERIOD	ALMCLR			
114626	NMSBC02	SRM SHORT PERIOD	ALARM			
~~114628~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	~~ALMCLR~~			
114630	NMSBC02	SRM SHORT PERIOD	ALARM			
114631	NMSBC02	SRM SHORT PERIOD	ALMCLR			
~~114642~~	~~HDHTA02~~	~~6PT HTR E6B DR TEMP~~	~~+LO~~	~~179.99~~	~~284.00~~	~~DEG F~~
114642	NMSBC02	SRM SHORT PERIOD	ALARM			
114643	NMSBC02	SRM SHORT PERIOD	ALMCLR			
~~114647~~	~~CNSFA01~~	~~CND XFR PUMP HDR FLOW~~	~~LO~~	~~297.27~~	~~300.00~~	~~GPM~~
114653	ISCBC38	DW VAC BKR IB RV35A/36A	OPEN			
114655	NMSBC02	SRM SHORT PERIOD	ALARM			
~~114656~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	~~ALMCLR~~			

1147[illegible]	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
114712	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
114721	ISCBC38	DW VAC BKR IB RV35A/36A	CLOSED			
~~114722~~	~~NSSTA101~~	~~RX-FW-FLOW-A INLET TEMP~~	~~ADC~~	~~136.16L~~	~~*******~~	~~DEG F~~
114723	CNALC01	CLN ST RBLR DT 1A LS9A	HIGH			
114734	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL			
~~114737~~	~~NMIIC113~~	~~IRM CHANNEL BYPASSED~~	~~OFF~~			
114737	GMHAC07	STTR CLG WTR TK VENT H2	HIGH			
114740	GMHAC07	STTR CLG WTR TK VENT H2	NORMAL			
~~114742~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~INOP~~			
114743	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
114802	ISCBC40	DW VAC BKR OB RV35B/36B	OPEN			
~~114810~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	~~ALARM~~			
114811	NMSBC02	SRM SHORT PERIOD	ALMCLR			
114814	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
~~114816~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~NORMAL~~			
114819	NMSBC02	SRM SHORT PERIOD	ALARM			
114822	NMSBC02	SRM SHORT PERIOD	ALMCLR			
~~114823~~	~~FWSPA05~~	~~REACTOR INLET PRES PT40B~~	~~*LO~~	~~174.90~~	~~875.00~~	~~PSIG~~
114833	NMIIC109	IRM DET NOT FULL IN POS	TRBL			
114836	CNALC01	CLN ST RBLR DT 1A LS9A	HIGH			
~~114836~~	~~ISCBC40~~	~~DW VAC BKR OB RV35B/36B~~	~~CLOSED~~			
114841	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
114842	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
~~114842~~	~~FWSTA05~~	~~6PT HTR 2FWS-E6B OUT TMP~~	~~*LO~~	~~302.63~~	~~324.00~~	~~DEG F~~
114844	NMIIC109	IRM DET NOT FULL IN POS	NORMAL			
114848	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL			
114853	NMIIC110	IRM DOWNSCALE ALARM	ALARM			
114853	DFTBC30	TB FLR DRN SYSTEM	ALMCLR			
114853	DFMBC14	AUX BLR FLR DRN SYS	ALMCLR			
114904	NMSBC02	SRM SHORT PERIOD	ALARM			
114905	NMSBC02	SRM SHORT PERIOD	ALMCLR			
114909	NMSBC02	SRM SHORT PERIOD	ALARM			
~~114912~~	~~FWSTA02~~	~~6PT HTR 2FWS-E6B INL TMP~~	~~*LO~~	~~235.56~~	~~284.00~~	~~DEG F~~
114912	NMSBC02	SRM SHORT PERIOD	ALMCLR			
114916	ISCBC38	DW VAC BKR IB RV35A/36A	OPEN			
~~114924~~	~~TMITA05~~	~~PIPE UPSTR 2HRS-SV6B TMP~~	~~*LO~~	~~335.98~~	~~400.00~~	~~DEG F~~
114927	NMSBC02	SRM SHORT PERIOD	ALARM			
114928	NMSBC02	SRM SHORT PERIOD	ALMCLR			
~~114940~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	~~ALARM~~			
114942	NMSBC02	SRM SHORT PERIOD	ALMCLR			

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~~114944~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	~~ALARM~~			
114946	ISCBC38	DW VAC BKR IB RV35A/36A	CLOSED			
114947	NMSBC02	SRM SHORT PERIOD	ALMCLR			
~~114956~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~INOP~~			
114957	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
114958	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
~~114959~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~NORMAL~~			
115000	HVNBC01	VENT CHL WTR SYS IPNL135	ALMCLR			
115002	NMSBC02	SRM SHORT PERIOD	ALARM			
~~115004~~	~~CNALC01~~	~~CLN ST RBLR DT 1A LS9A~~	~~HIGH~~			
115004	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
115005	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
~~115005~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	~~ALMCLR~~			
115006	NMSBC02	SRM SHORT PERIOD	ALARM			
115007	NMSBC02	SRM SHORT PERIOD	ALMCLR			
115008	NMSBC02	SRM SHORT PERIOD	ALARM			

115015	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL			
~~115026~~	~~NMIIC110~~	~~IRM DOWNSCALE ALARM~~	~~NORMAL~~			
115027	ISCBC40	DW VAC BKR OB RV35B/36B	OPEN			
115031	NMSBC02	SRM SHORT PERIOD	ALARM			
~~115033~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	~~ALMCLR~~			
115036	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
115037	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
~~115038~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~INOP~~			
115039	DSRPA01	SCAVENGING STEAM HDR PR	*LO	24.42	250.00	PSIG
115040	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
115043	NMIIC110	IRM DOWNSCALE ALARM	ALARM			
115101	DFTBC30	TB FLR DRN SYSTEM	TRBL			
115102	HVCMA04	RELAY ROOM HMDT MT8B	OK	49.37	50.00	%RH
~~115106~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~INOP~~			
115107	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
115107	NMSBC02	SRM SHORT PERIOD	ALARM			
~~115108~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	~~ALMCLR~~			
115109	ISCBC40	DW VAC BKR OB RV35B/36B	CLOSED			
115109	NSSTA101	RX FW FLOW A INLET TEMP	OK	136.16L	*******	DEG F
~~115120~~	~~CNALC01~~	~~CLN ST RBLR DT 1A LS9A~~	~~HIGH~~			
115120	NMSBC02	SRM SHORT PERIOD	ALARM			
115123	NMSBC02	SRM SHORT PERIOD	ALMCLR			
~~115131~~	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL			
115142	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
115142	HDLTA05	4PT HTR 2CNM-E4B DRN TMP	*LO	132.97	245.00	DEG F
115143	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
115145	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
115146	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
115152	NSSTA101	RX FW FLOW A INLET TEMP	ADC	136.16L	*******	DEG F
115159	GMHAC07	STTR CLG WTR TK VENT H2	HIGH			
115202	GMHAC07	STTR CLG WTR TK VENT H2	NORMAL			
~~115202~~	~~DFTCA01~~	~~TB DRN SYS DISCH COND~~	~~HI~~	~~92.06~~	~~50.00~~	~~MHHO/C~~
115209	GTSPA01	RB IN/OUT D/P PDT5A	OK	-0.50	-0.50	IN WG
115210	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
~~115211~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~NORMAL~~			
115214	GTSPA01	RB IN/OUT D/P PDT5A	LO	-0.52	-0.50	IN WG
115224	GTSPA01	RB IN/OUT D/P PDT5A	OK	-0.49	-0.50	IN WG
~~115231~~	~~CNALC01~~	~~CLN ST RBLR DT 1A LS9A~~	HIGH			
115231	NMSBC02	SRM SHORT PERIOD	ALARM			

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~~115234~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	ALMCLR			
115235	NMSBC02	SRM SHORT PERIOD	ALARM			
115236	NMSBC02	SRM SHORT PERIOD	ALMCLR			
~~115237~~	~~ESSTA17~~	~~5 PT HTR E5B EXTR ST TMP~~	*LO	179.16	280.00	DEG F
115239	GTSPA01	RB IN/OUT D/P PDT5A	LO	-0.52	-0.50	IN WG
115240	ESSTA10	3 PT HTR E3A EXTR ST TMP	*LO	226.73	256.00	DEG F
~~115242~~	~~CNALC01~~	~~CLN ST RBLR DT 1A LS9A~~	NORMAL			
115255	CNDFC49	2CND-DEMIN1D FLOW	LOW			
115255	CNDBC01	2CND-IPNL287 SYS TROUBLE	TRBL			
~~115256~~	~~CNDFC49~~	~~2CND-DEMIN1D FLOW~~	NORMAL			
115256	CNDBC01	2CND-IPNL287 SYS TROUBLE	ALMCLR			
115300	NMIIC110	IRM DOWNSCALE ALARM	NORMAL			
~~115300~~	~~NMIIC113~~	~~IRM CHANNEL BYPASSED~~	ON			
115304	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
115306	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
~~115311~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	INOP			
115313	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
115341	CNALC01	CLN ST RBLR DT 1A LS9A	HIGH			

115351	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL			
115408	NMSBC02	SRM SHORT PERIOD	ALARM			
~~115409~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	~~ALMCLR~~			
115418	NMIIC113	IRM CHANNEL BYPASSED	OFF			
115419	NMIIC110	IRM DOWNSCALE ALARM	ALARM			
~~115425~~	~~NMIIC110~~	~~IRM DOWNSCALE ALARM~~	~~NORMAL~~			
115429	NMSBC02	SRM SHORT PERIOD	ALARM			
115434	NMSBC02	SRM SHORT PERIOD	ALMCLR			
~~115437~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~INOP~~			
115438	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
115449	CNALC01	CLN ST RBLR DT 1A LS9A	HIGH			
~~115459~~	~~CNALC01~~	~~CLN ST RBLR DT 1A LS9A~~	~~NORMAL~~			
115502	DETCA01	TB DRN SYS DISCH COND	OK	4.59	50.00	MMHO/C
115511	NMSBC02	SRM SHORT PERIOD	ALARM			
~~115512~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~INOP~~			
115513	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
115513	NMSBC02	SRM SHORT PERIOD	ALMCLR			
~~115517~~	~~NMIIC112~~	~~IRM UPSCALE ALARM~~	~~ALARM~~			
115517	NMIBC03	IRM UPSCALE	ALARM			
115538	NSSTA101	RX FW FLOW A INLET TEMP	OK	136.16L	*******	DEG F
115540	NMSBC02	SRM SHORT PERIOD	ALARM			
115541	NMSBC02	SRM SHORT PERIOD	ALMCLR			
115556	NMSBC02	SRM SHORT PERIOD	ALARM			
115557	NMSBC02	SRM SHORT PERIOD	ALMCLR			
115558	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
115559	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
~~115603~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	~~ALARM~~			
115604	CNALC01	CLN ST RBLR DT 1A LS9A	HIGH			
115607	NMSBC02	SRM SHORT PERIOD	ALMCLR			
~~115612~~	~~NMIUC01~~	~~IRM CHAN A UPSC TRIP~~	~~TRIPPED~~			
115612	RPSUC03	RPS A AUTO TRIP	TRIPPED			
115612	NMEUC01	RPS CH A1 NMS TRIP	TRIPPED			
~~115612~~	~~NMIUC09~~	~~IRM TRIP SYS A UPSC/INOP~~	~~TRIPPED~~			
115612	HDLTA08	3PT HTR 2CNM-E3B DRN TMP	*LO	102.08	167.00	DEG F

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~~115615~~	~~CNALC01~~	~~CLN ST RBLR DT 1A LS9A~~	~~NORMAL~~			
115626	NMSBC02	SRM SHORT PERIOD	ALARM			
115628	NMSBC02	SRM SHORT PERIOD	ALMCLR			
~~115631~~	~~NSSTA102~~	~~RX FW FLOW A INLET TEMP~~	~~OK~~	~~136.32L~~	~~*******~~	~~DEG F~~
115631	CCPPA01	RBCLCW PMP DIS HDR PRESS	HI	40.04	40.00	PSIG
115634	NMIUC01	IRM CHAN A UPSC TRIP	ALMCLR			
~~115634~~	~~NMEUC01~~	~~RPS CH A1 NMS TRIP~~	~~ALMCLR~~			
115634	NMIUC09	IRM TRIP SYS A UPSC/INOP	ALMCLR			
115635	NMIIC112	IRM UPSCALE ALARM	NORMAL			
~~115635~~	~~NMIBC03~~	~~IRM UPSCALE~~	~~ALMCLR~~			
115636	CCPPA01	RBCLCW PMP DIS HDR PRESS	OK	39.68	40.00	PSIG
115638	RPSUC03	RPS A AUTO TRIP	ALMCLR			
~~115643~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~INOP~~			
115644	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
115649	ARCLC04	CNSR AIR REM TK SP1B LVL	LOW			
~~115704~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	~~ALARM~~			
115707	NMSBC02	SRM SHORT PERIOD	ALMCLR			
115718	NMIIC113	IRM CHANNEL BYPASSED	ON			
~~115723~~	~~CNALC01~~	~~CLN ST RBLR DT 1A LS9A~~	~~HIGH~~			
115731	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
115732	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
~~115733~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~INOP~~			
[illegible]						

115743	NMIIC113	IRM CHANNEL BYPASSED	OFF			
115743	NMSBC02	SRM SHORT PERIOD	ALARM			
115744	NMSBC02	SRM SHORT PERIOD	ALMCLR			
115754	GTSPA01	RB IN/OUT D/P PDT5A	OK	-0.48	-0.50	IN WG
115755	RPSUC03	RPS A AUTO TRIP	TRIPPED			
115755	NMEUC01	RPS CH A1 NMS TRIP	TRIPPED			
115755	NMIIC111	IRM INSTR-INOP TRIP	INOP			
115755	NMIUC09	IRM TRIP SYS A UPSC/INOP	TRIPPED			
115757	NMEUC01	RPS CH A1 NMS TRIP	ALMCLR			
115757	NMIIC111	IRM INSTR-INOP TRIP	NORMAL			
115757	NMIUC09	IRM TRIP SYS A UPSC/INOP	ALMCLR			
115801	RPSUC03	RPS A AUTO TRIP	ALMCLR			
115801	DFTXC22	TB FLR SMP 3/1A-1F LK RT	HIGH			
115803	ARCLC04	CNSR AIR REM TK SP1B LVL	NORMAL			
115803	NMSBC02	SRM SHORT PERIOD	ALARM			
115805	NMSBC02	SRM SHORT PERIOD	ALMCLR			
115828	ESSTA04	1 PT HTR E1A SHELL TEMP	*LO	96.87	119.00	DEG F
115829	RHSBC20	RHR PUMP 1A STATUS	STOP			
115830	RHSBC23	RHR LOOP A PMP DISCH PR	NORMAL			
115830	ADSBC11	ADS A LPCS/RHR A PERMIS	ALMCLR			
115832	NMSBC02	SRM SHORT PERIOD	ALARM			
115834	CNALC01	CLN ST RBLR DT 1A LS9A	HIGH			
115834	NMSBC02	SRM SHORT PERIOD	ALMCLR			
115835	CNSFC01	CNST XFR PMP DIS DEM FLO	NORMAL			
115845	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL			
115853	NSSTA103	RX FW FLOW B INLET TEMP	OK	136.16L*******		DEG F
115854	GTSPA01	RB IN/OUT D/P PDT5A	LO	-0.51	-0.50	IN WG
115855	NMSBC02	SRM SHORT PERIOD	ALARM			
115858	NMSBC02	SRM SHORT PERIOD	ALMCLR			
115911	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			

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115912	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
115921	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
115921	NMSBC02	SRM SHORT PERIOD	ALARM			
115922	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
115928	NMSBC02	SRM SHORT PERIOD	ALMCLR			
115930	WTSAA01	2WTS-TK1 RECIRC WTR PH	LO	3.51	6.50	PH
115935	NSSTA103	RX FW FLOW B INLET TEMP	ADC	136.16L*******		DEG F
115936	NMSBC02	SRM SHORT PERIOD	ALARM			
115937	NMSBC02	SRM SHORT PERIOD	ALMCLR			
115949	CNALC01	CLN ST RBLR DT 1A LS9A	HIGH			
115953	TMITA07	PIPE UPSTR 2HRS-SV6C TMP	*LO	335.94	400.00	DEG F
120000	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL			
120000	WTSAA01	2WTS-TK1 RECIRC WTR PH	*LO	1.26	6.50	PH
120002	FWSPA04A	FW PRESS LOOP A	*LO	162.9	220.0	PSIG
120002	FWSPA05A	FW PRESS LOOP B	*LO	172.6	220.0	PSIG
120012	CNSFC01	CNST XFR PMP DIS DEM FLO	LOW			
120012	HVCMA04	RELAY ROOM HMDT MT8B	HI	50.12	50.06	%RH
120026	NMSBC02	SRM SHORT PERIOD	ALARM			
120028	DFTBC30	TB FLR DRN SYSTEM	ALMCLR			
120028	DFTXC22	TB FLR SMP 3/1A-1F LK RT	NORMAL			
120029	NMSBC02	SRM SHORT PERIOD	ALMCLR			
120030	NMSBC02	SRM SHORT PERIOD	ALARM			
120030	WTSAA01	2WTS-TK1 RECIRC WTR PH	*LO	2.09	6.50	PH
120031	NMSBC02	SRM SHORT PERIOD	ALMCLR			
120032	NMSBC02	SRM SHORT PERIOD	ALARM			
120033	NMSBC02	SRM SHORT PERIOD	ALMCLR			
120034	NMSBC02	SRM SHORT PERIOD	[illegible]			

~~120101 WTSAA01 2WTS-TK1-RECIRC-WTR-PH OK 8.06 6.50 PH~~
120112 CNALC01 CLN ST RBLR DT 1A LS9A HIGH
120113 HVKBC09 DIV1 CB CHILLED WTR SYS INOP
~~120114 HVKBC09 DIV1 CB CHILLED WTR SYS NORMAL~~
120115 HVKBC09 DIV1 CB CHILLED WTR SYS INOP
120115 FWSTA48 FEED WATER FINAL TEMP *LO 133.24 324.00 DEG F
~~120116 HVKBC09 DIV1 CB CHILLED WTR SYS NORMAL~~
120121 HVKBC09 DIV1 CB CHILLED WTR SYS INOP
120122 HVKBC09 DIV1 CB CHILLED WTR SYS NORMAL
~~120123 CNALC01 CLN ST RBLR DT 1A LS9A NORMAL~~
120131 HVKBC09 DIV1 CB CHILLED WTR SYS INOP
120132 HVKBC09 DIV1 CB CHILLED WTR SYS NORMAL
120133 NMSBC02 SRM SHORT PERIOD ALARM
120135 HVKBC09 DIV1 CB CHILLED WTR SYS INOP
120136 HVKBC09 DIV1 CB CHILLED WTR SYS NORMAL
120136 NMSBC02 SRM SHORT PERIOD ALMCLR
120145 ESSTA15 4 PT HTR E4C EXTR ST TMP *LO 285.75 334.00 DEG F
120202 NMSBC02 SRM SHORT PERIOD ALARM
~~120203 NMSBC02 SRM SHORT PERIOD ALMCLR~~
120204 NMSBC02 SRM SHORT PERIOD ALARM
120204 GTSPA01 RB IN/OUT D/P PDT5A OK -0.49 -0.50 IN WG
~~120207 NMSBC02 SRM SHORT PERIOD ALMCLR~~
120214 GTSPA01 RB IN/OUT D/P PDT5A LO -0.53 -0.50 IN WG
120226 CNALC01 CLN ST RBLR DT 1A LS9A HIGH
~~120233 HVKBC09 DIV1 CB CHILLED WTR SYS INOP~~
120234 HVKBC09 DIV1 CB CHILLED WTR SYS NORMAL

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~~120238 CNALC01 CLN ST RBLR DT 1A LS9A NORMAL~~
120247 HVKBC09 DIV1 CB CHILLED WTR SYS INOP
120248 HVKBC09 DIV1 CB CHILLED WTR SYS NORMAL
~~120306 NMSBC02 SRM SHORT PERIOD ALARM~~
120308 NMSBC02 SRM SHORT PERIOD ALMCLR
120317 SWTBC07 SWT SYSTEM TROUBLE TRBL
~~120345 NMSBC02 SRM SHORT PERIOD ALARM~~
120347 CNALC01 CLN ST RBLR DT 1A LS9A HIGH
120349 NMSBC02 SRM SHORT PERIOD ALMCLR
~~120357 CNALC01 CLN ST RBLR DT 1A LS9A NORMAL~~
120412 HDHTA01 6PT HTR E6A DR TEMP *LO 205.89 284.00 DEG F
120422 RMSRC89 DRMS COMPUTER SYSTEM FAIL
~~120440 NSSTA103 RX FW FLOW B INLET TEMP OK 136.16L******* DEG F~~
120453 CNALC01 CLN ST RBLR DT 1A LS9A HIGH
120500 NMSBC02 SRM SHORT PERIOD ALARM
~~120502 NMSBC02 SRM SHORT PERIOD ALMCLR~~
120504 CNALC01 CLN ST RBLR DT 1A LS9A NORMAL
120512 NSSTA104 RX FW FLOW B INLET TEMP OK 136.16L******* DEG F
~~120520 RMSRC89 DRMS COMPUTER SYSTEM NORMAL~~
120531 NMSBC02 SRM SHORT PERIOD ALARM
120532 NMSBC02 SRM SHORT PERIOD ALMCLR
~~120543 HVKBC09 DIV1 CB CHILLED WTR SYS INOP~~
120544 HVKBC09 DIV1 CB CHILLED WTR SYS NORMAL
120547 HVKBC09 DIV1 CB CHILLED WTR SYS INOP
~~120548 HVKBC09 DIV1 CB CHILLED WTR SYS NORMAL~~
120549 NMIIC113 IRM CHANNEL BYPASSED ON
120610 CNALC01 CLN ST RBLR DT 1A LS9A HIGH
~~120612 FWSTA82 6PT HTR 2FWS-E6B INL TMP *LO 225.75 284.00 DEG F~~
120621 CNALC01 CLN ST RBLR DT 1A LS9A NORMAL
120622 SWTBC07 SWT SYSTEM TROUBLE ALMCLR

120654	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
120701	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
120703	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
120704	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
120705	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
120711	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
120712	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
120728	NMIIC113	IRM CHANNEL BYPASSED	OFF			
120728	CNALC01	CLN ST RBLR DT 1A LS9A	HIGH			
120734	GTSPA01	RB IN/OUT D/P PDT5A	OK	-0.50	-0.50	IN WG
120736	NMSBC02	SRM SHORT PERIOD	ALARM			
120737	NMSBC02	SRM SHORT PERIOD	ALMCLR			
120739	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL			
120739	GTSPA01	RB IN/OUT D/P PDT5A	LO	-0.52	-0.50	IN WG
120748	NMIIC109	IRM DET NOT FULL IN POS	TRBL			
120800	NMIIC109	IRM DET NOT FULL IN POS	NORMAL			
120806	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
120807	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
120808	NMIIC110	IRM DOWNSCALE ALARM	ALARM			
120819	GTSPA01	RB IN/OUT D/P PDT5A	OK	-0.49	-0.50	IN WG
120824	GTSPA01	RB IN/OUT D/P PDT5A	LO	-0.53	-0.50	IN WG
120825	NMIIC110	IRM DOWNSCALE ALARM	NORMAL			
120835	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
120836	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
120838	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			

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120839	NMIIC110	IRM DOWNSCALE ALARM	ALARM			
120839	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
120845	CNALC01	CLN ST RBLR DT 1A LS9A	HIGH			
120856	NMIIC110	IRM DOWNSCALE ALARM	NORMAL			
120856	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL			
120909	NMSBC02	SRM SHORT PERIOD	ALARM			
120910	NMSBC02	SRM SHORT PERIOD	ALMCLR			
120917	NMIIC110	IRM DOWNSCALE ALARM	ALARM			
120917	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
120918	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
120920	NMIIC110	IRM DOWNSCALE ALARM	NORMAL			
120931	NMSBC02	SRM SHORT PERIOD	ALARM			
120932	NMSBC02	SRM SHORT PERIOD	ALMCLR			
120938	NMSBC02	SRM SHORT PERIOD	ALARM			
120940	NMSBC02	SRM SHORT PERIOD	ALMCLR			
120945	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
120946	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
120953	NMIIC112	IRM UPSCALE ALARM	ALARM			
120953	NMIBC03	IRM UPSCALE	ALARM			
121002	ESSPA08A	HTR 4B PRESS	*LO	3.4	14.0	PSIA
121002	FWSPA04A	FW PRESS LOOP A	*LO	154.3	220.0	PSIG
121002	FWSPA05A	FW PRESS LOOP B	*LO	164.0	220.0	PSIG
121004	CNALC01	CLN ST RBLR DT 1A LS9A	HIGH			
121006	SWPPC27	D1 SW DIS TO CWS/LAKE PR	NORMAL			
121009	SWPPA27	D1 SW DIS TO CWS/LAKE PR	OK	17.02	9.50	PSIG
121010	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
121010	NMSBC02	SRM SHORT PERIOD	ALARM			
121011	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
121013	NMSBC02	SRM SHORT PERIOD	ALMCLR			
121013	SWPBC18	SW FV54A HYD UNT ACC PR	LOW			
121014	NMSBC02	SRM SHORT PERIOD	ALARM			
121014	SWPBC18	SW FV54A HYD UNT ACC PR	NORMAL			

121021	RPSUC03	RPS A AUTO TRIP	TRIPPED			
~~121021~~	~~NMEUC02~~	~~RPS CH A2 NMS TRIP~~	~~TRIPPED~~			
121021	NMIUC09	IRM TRIP SYS A UPSC/INOP	TRIPPED			
121021	NMSBC02	SRM SHORT PERIOD	ALARM			
~~121022~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~INOP~~			
121022	NMSBC02	SRM SHORT PERIOD	ALMCLR			
121023	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
121023	SWPBC18	SW FV54A HYD UNT ACC PR	LOW			
121027	NMIUC03	IRM CHAN C UPSC TRIP	ALMCLR			
121027	NMEUC02	RPS CH A2 NMS TRIP	ALMCLR			
121027	NMIUC09	IRM TRIP SYS A UPSC/INOP	ALMCLR			
121027	NMIBC03	IRM UPSCALE	ALMCLR			
121028	NMIIC112	IRM UPSCALE ALARM	NORMAL			
~~121035~~	~~SWPBC18~~	~~SW FV54A HYD UNT ACC PR~~	~~NORMAL~~			
121038	CNDFC49	2CND-DEMIN1D FLOW	LOW			
121038	CNDBC01	2CND-IPNL287 SYS TROUBLE	TRBL			
~~121039~~	~~CNDFC49~~	~~2CND-DEMIN1D FLOW~~	~~NORMAL~~			
121039	CNDBC01	2CND-IPNL287 SYS TROUBLE	ALMCLR			
121044	SWPBC18	SW FV54A HYD UNT ACC PR	LOW			
~~121049~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	~~ALARM~~			
121050	NMSBC02	SRM SHORT PERIOD	ALMCLR			

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~~121054~~	~~NMIIC113~~	~~IRM CHANNEL BYPASSED~~	~~ON~~			
121054	HTSBC01	D1 HEAT TRACE HTS*PNL001	TRBL			
121057	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
~~121058~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~NORMAL~~			
121112	DSRTA01	RHTR DR RCVR TK6A DR TMP	LO	249.90	250.00	DEG F
121115	NMIIC113	IRM CHANNEL BYPASSED	OFF			
~~121115~~	~~CNALC01~~	~~CLN ST RBLR DT 1A LS9A~~	~~HIGH~~			
121117	NMSBC02	SRM SHORT PERIOD	ALARM			
121119	NMSBC02	SRM SHORT PERIOD	ALMCLR			
~~121124~~	~~RPSUC03~~	~~RPS A AUTO TRIP~~	~~ALMCLR~~			
121126	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL			
121130	RPSUC03	RPS A AUTO TRIP	TRIPPED			
~~121130~~	~~NMEUC02~~	~~RPS CH A2 NMS TRIP~~	~~TRIPPED~~			
121130	NMIIC111	IRM INSTR-INOP TRIP	INOP			
121130	NMIUC09	IRM TRIP SYS A UPSC/INOP	TRIPPED			
~~121131~~	~~NMEUC02~~	~~RPS CH A2 NMS TRIP~~	~~ALMCLR~~			
121131	NMIIC111	IRM INSTR-INOP TRIP	NORMAL			
121131	NMIUC09	IRM TRIP SYS A UPSC/INOP	ALMCLR			
~~121133~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~INOP~~			
121134	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
121135	RPSUC03	RPS A AUTO TRIP	ALMCLR			
~~121135~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~INOP~~			
121136	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
121139	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
~~121140~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~NORMAL~~			
121150	NMSBC02	SRM SHORT PERIOD	ALARM			
121151	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
~~121152~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~NORMAL~~			
121152	NMSBC02	SRM SHORT PERIOD	ALMCLR			
121157	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
~~121158~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~NORMAL~~			
121200	NMSBC02	SRM SHORT PERIOD	ALARM			
121201	NMSBC02	SRM SHORT PERIOD	ALMCLR			
~~121204~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	~~ALARM~~			
121206	NMSBC02	SRM SHORT PERIOD	ALMCLR			

121226	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
121227	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
121229	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
121230	NMSBC02	SRM SHORT PERIOD	ALMCLR			
121236	CNALC01	CLN ST RBLR DT 1A LS9A	HIGH			
121242	HDLTA06	4PT HTR 2CNM-E4C DRN TMP	*LO	132.97	245.00	DEG F
121242	HDLTA10	3PT HTR DCL3A DR OUT TMP	LO	98.93	99.00	DEG F
121243	ESSTA14	4 PT HTR E4B EXTR ST TMP	*LO	273.87	334.00	DEG F
121247	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL			
~~121302~~	~~HVCMA04~~	~~RELAY ROOM HMDT HTSB~~	~~OK~~	~~48.69~~	~~50.00~~	~~%RH~~
121316	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
121317	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
~~121334~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	~~ALARM~~			
121335	NMSBC02	SRM SHORT PERIOD	ALMCLR			
121359	CNALC01	CLN ST RBLR DT 1A LS9A	HIGH			
~~121402~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	~~ALARM~~			
121404	NMSBC02	SRM SHORT PERIOD	ALMCLR			

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~~121408~~	~~SWPBC18~~	~~SW FV54A HYD UNT ACC PR~~	~~NORMAL~~			
121409	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL			
121417	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
~~121418~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~NORMAL~~			
121420	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
121420	NMSBC02	SRM SHORT PERIOD	ALARM			
~~121421~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	~~ALMCLR~~			
121423	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
121424	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
~~121425~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~NORMAL~~			
121433	NMSBC02	SRM SHORT PERIOD	ALARM			
121434	NMSBC02	SRM SHORT PERIOD	ALMCLR			
~~121435~~	~~ESSTA16~~	~~5 PT HTR E5A EXTR ST TMP~~	*LO	179.16	280.00	DEG F
121453	NMSBC02	SRM SHORT PERIOD	ALARM			
121453	MSSTA04	TURB BYP PSV89B OUT TEMP	OK	278.88	280.00	DEG F
~~121454~~	~~NMSBC02~~	SRM SHORT PERIOD	ALMCLR			
121454	TMITA03	PIPE UPSTR 2HRS-SV6A TMP	*LO	335.94	400.00	DEG F
121508	CNALC01	CLN ST RBLR DT 1A LS9A	HIGH			
~~121519~~	~~CNALC01~~	~~CLN ST RBLR DT 1A LS9A~~	NORMAL			
121534	NMIIC113	IRM CHANNEL BYPASSED	ON			
121534	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
~~121535~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	NORMAL			
121539	GTSPA01	RB IN/OUT D/P PDT5A	OK	-0.50	-0.50	IN WG
121549	GTSPA01	RB IN/OUT D/P PDT5A	LO	-0.53	-0.50	IN WG
~~121602~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	ALARM			
121603	NMSBC02	SRM SHORT PERIOD	ALMCLR			
121609	GTSPA01	RB IN/OUT D/P PDT5A	OK	-0.47	-0.50	IN WG
~~121614~~	~~GTSPA01~~	~~RB IN/OUT D/P PDT5A~~	LO	-0.53	-0.50	IN WG
121618	CNALC01	CLN ST RBLR DT 1A LS9A	HIGH			
121621	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
~~121622~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	NORMAL			
121628	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL			
121634	GTSPA01	RB IN/OUT D/P PDT5A	OK	-0.49	-0.50	IN WG
~~121636~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	ALARM			
121637	NMSBC02	SRM SHORT PERIOD	ALMCLR			
121639	GTSPA01	RB IN/OUT D/P PDT5A	LO	-0.53	-0.50	IN WG
~~121654~~	~~NMIIC113~~	~~IRM CHANNEL BYPASSED~~	~~OFF~~			
121702	ABFBC04	AUX BLR SYS 2CES-IPNL508	TRBL			
121703	CNSFC01	CNST XFR PMP DIS DEM FLO	NORMAL			
121704	NMIIC109	IRM DET NOT FULL IN POS	TRBL			

121715 NMSBC02 SRM SHORT PERIOD ALMCLR
121716 NMIIC109 IRM DET NOT FULL IN POS NORMAL
121724 NMIIC110 IRM DOWNSCALE ALARM ALARM
121727 CNALC01 CLN ST RBLR DT 1A LS9A HIGH
121727 NS4BC14 D2 NSSS GP 4 ISO SIG ALMCLR
121727 NS4BC13 D2 NSSS GP 7 ISO SIG ALMCLR
~~121729 NS4BC05 D1 NSSS GP 4 ISO SIG ALMCLR~~
121729 NS4BC04 D1 NSSS GP 6 ISO SIG ALMCLR
121734 RPSUC03 RPS A AUTO TRIP TRIPPED
~~121734 NMIIC110 IRM DOWNSCALE ALARM NORMAL~~
121738 CNALC01 CLN ST RBLR DT 1A LS9A NORMAL
121744 NMSBC02 SRM SHORT PERIOD ALARM
~~121745 RPSUC03 RPS A AUTO TRIP ALMCLR~~
121747 NMSBC02 SRM SHORT PERIOD ALMCLR

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~~121749 GTSPA01 RB IN/OUT D/P PDT5A OK -0.49 -0.50 IN WG~~
121800 WTSAA01 2WTS-TK1 RECIRC WTR PH LO 1.27 6.50 PH
121802 NMIIC110 IRM DOWNSCALE ALARM ALARM
~~121804 GTSPA01~~ RB IN/OUT D/P PDT5A LO -0.52 -0.50 IN WG
121805 HVKBC09 DIV1 CB CHILLED WTR SYS INOP
121806 HVKBC09 DIV1 CB CHILLED WTR SYS NORMAL
~~121810 NMSBC02 SRM SHORT PERIOD ALARM~~
121811 NMIIC110 IRM DOWNSCALE ALARM NORMAL
121811 NMSBC02 SRM SHORT PERIOD ALMCLR
~~121818 NMIIC110 IRM DOWNSCALE ALARM ALARM~~
121823 NMSBC02 SRM SHORT PERIOD ALARM
121826 NMSBC02 SRM SHORT PERIOD ALMCLR
~~121829 HVKBC09 DIV1 CB CHILLED WTR SYS INOP~~
121830 HVKBC09 DIV1 CB CHILLED WTR SYS NORMAL
121830 NMSBC02 SRM SHORT PERIOD ALARM
~~121830 WTSAA01 2WTS-TK1 RECIRC WTR PH~~ *LO 1.57 6.50 PH
121831 NMSBC02 SRM SHORT PERIOD ALMCLR
121833 HVKBC09 DIV1 CB CHILLED WTR SYS INOP
~~121834 HVKBC09 DIV1 CB CHILLED WTR SYS NORMAL~~
121837 NMIIC110 IRM DOWNSCALE ALARM NORMAL
121837 CNALC01 CLN ST RBLR DT 1A LS9A HIGH
~~121842 CNSPA01~~ CND-XFR PUMP HDR FLOW OK 309.53 300.00 GPM
121843 RHSBC12 RHR A SYS ALMCLR
121843 RHSTC51 RHR SDC A RTN MOV40A MOT NORMAL
~~121845 NMSBC02 SRM SHORT PERIOD~~ ALARM
121848 CNALC01 CLN ST RBLR DT 1A LS9A NORMAL
121849 NMSBC02 SRM SHORT PERIOD ALMCLR
~~121900 WTSAA01 2WTS-TK1 RECIRC WTR PH~~ *LO 1.26 6.50 PH
121904 NMIIC112 IRM UPSCALE ALARM ALARM
121904 NMIBC03 IRM UPSCALE ALARM
~~121924 NMSBC02 SRM SHORT PERIOD ALARM~~
121925 NMSBC02 SRM SHORT PERIOD ALMCLR
121928 NMIUC05 IRM CHAN E UPSC TRIP TRIPPED
~~121928 RPSUC03 RPS A AUTO TRIP~~ TRIPPED
121928 NMEUC01 RPS CH A1 NMS TRIP TRIPPED
121928 NMIUC09 IRM TRIP SYS A UPSC/INOP TRIPPED
~~121930 WTSAA01 2WTS-TK1 RECIRC WTR PH OK~~ 8.00 6.50 PH
121933 NMIUC05 IRM CHAN E UPSC TRIP ALMCLR
121933 NMEUC01 RPS CH A1 NMS TRIP ALMCLR
~~121933 NMIUC09 IRM TRIP SYS A UPSC/INOP~~ ALMCLR
121934 NMIIC112 IRM UPSCALE ALARM NORMAL
121934 NMIBC03 IRM UPSCALE ALMCLR
121942 RPSUC03 RPS A AUTO TRIP ALMCLR

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121948 HVKBC09  DIV1 CB CHILLED WTR SYS  NORMAL
121950 CNALC01  CLN ST RBLR DT 1A LS9A   HIGH
121952 HVCMA04  RELAY ROOM HMDT MT8B     HI     50.25    50.00 %RH
121955 NMSBC02  SRM SHORT PERIOD         ALARM
121958 NMSBC02  SRM SHORT PERIOD         ALMCLR
121959 NMIIC113 IRM CHANNEL BYPASSED     ON
122001 CNALC01  CLN ST RBLR DT 1A LS9A   NORMAL
122002 FWSPA04A FW PRESS LOOP A          *LO    146.4    220.0 PSIG
122002 FWSPA05A FW PRESS LOOP B          *LO    155.8    220.0 PSIG
122002 FWSTA01A HTR 6A FW TEMP IN        HI     346.0    340.7 DEG F
122003 HVKBC09  DIV1 CB CHILLED WTR SYS  INOP
122004 HVKBC09  DIV1 CB CHILLED WTR SYS  NORMAL

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122006 NMSBC02  SRM SHORT PERIOD         ALARM
122008 NMSBC02  SRM SHORT PERIOD         ALMCLR
122010 NMSBC02  SRM SHORT PERIOD         ALARM
122013 NMSBC02  SRM SHORT PERIOD         ALMCLR
122030 NMIIC113 IRM CHANNEL BYPASSED     OFF
122037 RPSUC03  RPS A AUTO TRIP          TRIPPED
122037 NMEUC01  RPS CH A1 NMS TRIP       TRIPPED
122037 NMIIC111 IRM INSTR-INOP TRIP      INOP
122037 NMIUC09  IRM TRIP SYS A UPSC/INOP TRIPPED
122039 NMEUC01  RPS CH A1 NMS TRIP       ALMCLR
122039 NMIIC111 IRM INSTR-INOP TRIP      NORMAL
122039 CNSFC01  CNST XFR PMP DIS DEM FLO LOW
122039 NMIUC09  IRM TRIP SYS A UPSC/INOP ALMCLR
122046 RPSUC03  RPS A AUTO TRIP          ALMCLR
122050 CNSFC01  CNST XFR PMP DIS DEM FLO NORMAL
122105 CNALC01  CLN ST RBLR DT 1A LS9A   HIGH
122116 CNSFC01  CNST XFR PMP DIS DEM FLO LOW
122116 CNALC01  CLN ST RBLR DT 1A LS9A   NORMAL
122116 NMSBC02  SRM SHORT PERIOD         ALARM
122117 NMSBC02  SRM SHORT PERIOD         ALMCLR
122141 NMSBC02  SRM SHORT PERIOD         ALARM
122142 FWSTA03  6PT HTR 2FWS-E6C INL TMP *LO   133.52   284.00 DEG F
122142 NMSBC02  SRM SHORT PERIOD         ALMCLR
122149 GTSPA01  RB IN/OUT D/P PDT5A      OK     -0.50    -0.50 IN WG
122151 NMSBC02  SRM SHORT PERIOD         ALARM
122152 NMSBC02  SRM SHORT PERIOD         ALMCLR
122157 CNSFA01  CND XFR PUMP HDR FLOW    LO    295.75   300.00 GPM
122204 GTSPA01  RB IN/OUT D/P PDT5A      LO     -0.52    -0.50 IN WG
122207 EGSPC14  EDG3 RCVR TK2B AIR PRESS LOW
122208 NMSBC02  SRM SHORT PERIOD         ALARM
122209 NMSBC02  SRM SHORT PERIOD         ALMCLR
122211 HVKBC09  DIV1 CB CHILLED WTR SYS  INOP
122211 NMSBC02  SRM SHORT PERIOD         ALARM
122212 HVKBC09  DIV1 CB CHILLED WTR SYS  NORMAL
122213 NMSBC02  SRM SHORT PERIOD         ALMCLR
122219 CNALC01  CLN ST RBLR DT 1A LS9A   HIGH
122230 CNALC01  CLN ST RBLR DT 1A LS9A   NORMAL
122236 ESSTA02  6 PT HTR E6B EXTR ST TMP *LO   236.69   325.00 DEG F
122239 ESSTA18  5 PT HTR E5C EXTR ST TMP *LO   191.68   286.00 DEG F
122322 NMSBC02  SRM SHORT PERIOD         ALARM
122323 HVKBC09  DIV1 CB CHILLED WTR SYS  INOP
122323 NMSBC02  SRM SHORT PERIOD         ALMCLR
122324 HVKBC09  DIV1 CB CHILLED WTR SYS  NORMAL
122326 HVKBC09  DIV1 CB CHILLED WTR SYS  INOP
122327 HVKBC09  [illegible]
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~~122342~~	~~EOSTA11~~	~~3 FP HTR E3B EXTR ST TMP~~	~~+LO~~	~~236.41~~	~~256.00~~	~~DEG F~~
122346	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL			
122354	NMSBC02	SRM SHORT PERIOD	ALARM			
~~122356~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	~~ALMCLR~~			
122410	NMSBC02	SRM SHORT PERIOD	ALARM			
122412	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
~~122413~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~NORMAL~~			
122413	NMSBC02	SRM SHORT PERIOD	ALMCLR			

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~~122448~~	~~CNALC01~~	~~CLN ST RBLR DT 1A LS9A~~	~~HIGH~~			
122459	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL			
122500	NMIIC113	IRM CHANNEL BYPASSED	ON			
~~122522~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~INOP~~			
122523	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
122532	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
~~122533~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~NORMAL~~			
122538	NMSBC02	SRM SHORT PERIOD	ALARM			
122539	NMSBC02	SRM SHORT PERIOD	ALMCLR			
~~122553~~	~~MSSTA06~~	~~TURB BYP PSV89D OUT TEMP~~	~~OK~~	~~278.93~~	~~280.00~~	~~DEG F~~
122600	CNALC01	CLN ST RBLR DT 1A LS9A	HIGH			
122600	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
~~122601~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~NORMAL~~			
122611	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL			
122612	NMSBC02	SRM SHORT PERIOD	ALARM			
~~122613~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	~~ALMCLR~~			
122617	NMIIC113	IRM CHANNEL BYPASSED	OFF			
122623	NMIIC109	IRM DET NOT FULL IN POS	TRBL			
~~122628~~	~~NMIIC109~~	~~IRM DET NOT FULL IN POS~~	~~NORMAL~~			
122635	NMIIC110	IRM DOWNSCALE ALARM	ALARM			
122641	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
~~122642~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~NORMAL~~			
122652	NMIIC110	IRM DOWNSCALE ALARM	NORMAL			
122652	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
~~122653~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~NORMAL~~			
122703	NMIIC110	IRM DOWNSCALE ALARM	ALARM			
122712	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
~~122713~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~NORMAL~~			
122714	NMIIC110	IRM DOWNSCALE ALARM	NORMAL			
122714	CNALC01	CLN ST RBLR DT 1A LS9A	HIGH			
~~122725~~	~~CNALC01~~	~~CLN ST RBLR DT 1A LS9A~~	~~NORMAL~~			
122734	NMIIC112	IRM UPSCALE ALARM	ALARM			
122734	NMIBC03	IRM UPSCALE	ALARM			
~~122736~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~INOP~~			
122737	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
122741	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
~~122742~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~NORMAL~~			
122743	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
122745	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
~~122810~~	~~NMIUC07~~	~~IRM CHAN G UPSC TRIP~~	~~TRIPPED~~			
122810	RPSUC03	RPS A AUTO TRIP	TRIPPED			
122810	NMEUC02	RPS CH A2 NMS TRIP	TRIPPED			
122810	NMIUC09	IRM TRIP SYS A UPSC/INOP	TRIPPED			
122819	NMIUC07	IRM CHAN G UPSC TRIP	ALMCLR			
122819	NMEUC02	RPS CH A2 NMS TRIP	ALMCLR			
122819	NMIUC09	IRM TRIP SYS A UPSC/INOP	ALMCLR			
122820	NMIIC112	IRM UPSCALE ALARM	NORMAL			
122820	NMIBC03	IRM UPSCALE	ALMCLR			

122836 NMIIC113 IRM CHANNEL BYPASSED ON
122841 CNALC01 CLN ST RBLR DT 1A LS9A NORMAL
122843 HVKBC09 DIV1 CB CHILLED WTR SYS INOP
122844 HVKBC09 DIV1 CB CHILLED WTR SYS NORMAL

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122903 HVKBC09 DIV1 CB CHILLED WTR SYS INOP
122904 HVKBC09 DIV1 CB CHILLED WTR SYS NORMAL
122906 NSSTA104 RX FW FLOW B INLET TEMP ADC 136.16L******* DEG F
122907 HVKBC09 DIV1 CB CHILLED WTR SYS INOP
122909 HVKBC09 DIV1 CB CHILLED WTR SYS NORMAL
122911 GMHAC07 STTR CLG WTR TK VENT H2 HIGH
122913 GMHAC07 STTR CLG WTR TK VENT H2 NORMAL
122919 NMIIC113 IRM CHANNEL BYPASSED OFF
122925 NMIUC09 IRM TRIP SYS A UPSC/INOP TRIPPED
122926 RPSUC03 RPS A AUTO TRIP TRIPPED
122926 NMEUC02 RPS CH A2 NMS TRIP TRIPPED
122926 NMIIC111 IRM INSTR-INOP TRIP INOP
122926 NMSBC02 SRM SHORT PERIOD ALARM
122927 NMEUC02 RPS CH A2 NMS TRIP ALMCLR
122927 NMIIC111 IRM INSTR-INOP TRIP NORMAL
122927 NMIUC09 IRM TRIP SYS A UPSC/INOP ALMCLR
122927 NMSBC02 SRM SHORT PERIOD ALMCLR
122931 RPSUC03 RPS A AUTO TRIP ALMCLR
122939 HVKBC09 DIV1 CB CHILLED WTR SYS INOP
122940 HVKBC09 DIV1 CB CHILLED WTR SYS NORMAL
122948 CNALC01 CLN ST RBLR DT 1A LS9A HIGH
122959 CNALC01 CLN ST RBLR DT 1A LS9A NORMAL
123002 FWSPA04A FW PRESS LOOP A *LO 139.5 220.0 PSIG
123002 FWSPA05A FW PRESS LOOP B *LO 148.8 220.0 PSIG
123009 GTSPA01 RB IN/OUT D/P PDT5A OK -0.49 -0.50 IN WG
123019 GTSPA01 RB IN/OUT D/P PDT5A LO -0.52 -0.50 IN WG
123036 HVKBC09 DIV1 CB CHILLED WTR SYS INOP
123037 HVKBC09 DIV1 CB CHILLED WTR SYS NORMAL
123104 GTSPA01 RB IN/OUT D/P PDT5A OK -0.49 -0.50 IN WG
123109 GTSPA01 RB IN/OUT D/P PDT5A LO -0.53 -0.50 IN WG
123113 CNALC01 CLN ST RBLR DT 1A LS9A HIGH
123116 HVKBC09 DIV1 CB CHILLED WTR SYS INOP
123117 HVKBC09 DIV1 CB CHILLED WTR SYS NORMAL
123124 CNALC01 CLN ST RBLR DT 1A LS9A NORMAL
123135 RMSRC89 DRMS COMPUTER SYSTEM FAIL
123137 NSSTA103 RX FW FLOW B INLET TEMP ADC 136.16L******* DEG F
123152 HVKBC09 DIV1 CB CHILLED WTR SYS INOP
123153 HVKBC09 DIV1 CB CHILLED WTR SYS NORMAL
123203 NMSBC02 SRM SHORT PERIOD ALARM
123204 NMSBC02 SRM SHORT PERIOD ALMCLR
123204 GTSPA01 RB IN/OUT D/P PDT5A OK -0.48 -0.50 IN WG
123207 HVKBC09 DIV1 CB CHILLED WTR SYS INOP
123209 HVKBC09 DIV1 CB CHILLED WTR SYS NORMAL
123209 GTSPA01 RB IN/OUT D/P PDT5A LO -0.52 -0.50 IN WG
123212 HVCMA04 RELAY ROOM HMDT MT8B OK 48.81 50.00 %RH
123216 NMSBC02 SRM SHORT PERIOD ALARM
123220 NMSBC02 SRM SHORT PERIOD ALMCLR
123239 CNALC01 CLN ST RBLR DT 1A LS9A HIGH
123250 CNALC01 CLN ST RBLR DT 1A LS9A NORMAL
123251 HVKBC09 DIV1 CB CHILLED WTR SYS INOP
123252 HVKBC09 DIV1 CB CHILLED WTR SYS NORMAL
123259 HVNBC01 VENT CHL WTR SYS (PNL135 TRIP

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123334	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
123336	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
123338	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
123343	PWSPA04	REACTOR INLET PRES PT40A	*LO	132.55	875.00	PSIG
123352	CNALC01	CLN ST RBLR DT 1A LS9A	HIGH			
123402	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL			
123405	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
123406	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
123409	NMIIC113	IRM CHANNEL BYPASSED	ON			
123424	GTSPA01	RB IN/OUT D/P PDT5A	OK	-0.49	-0.50	IN WG
123429	GTSPA01	RB IN/OUT D/P PDT5A	LO	-0.51	-0.50	IN WG
123434	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
123434	GTSPA01	RB IN/OUT D/P PDT5A	OK	-0.48	-0.50	IN WG
123435	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
123445	HVRPA01	RX BLDG DIFF PRESS	OK	-0.391	-0.400	IN WG
123500	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
123501	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
123503	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
123505	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
123505	HVRPA01	RX BLDG DIFF PRESS	LO	-0.406	-0.400	IN WG
123507	CNALC01	CLN ST RBLR DT 1A LS9A	HIGH			
123517	HVRBC25	HVRS TRBL 2CES-IPNL101	TRBL			
123518	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL			
123521	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
123523	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
123540	NMIIC113	IRM CHANNEL BYPASSED	OFF			
123551	NMIIC109	IRM DET NOT FULL IN POS	TRBL			
123553	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
123554	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
123557	NMIIC109	IRM DET NOT FULL IN POS	NORMAL			
123604	NMIIC110	IRM DOWNSCALE ALARM	ALARM			
123607	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
123609	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
123616	NMIIC110	IRM DOWNSCALE ALARM	NORMAL			
123616	CNALC01	CLN ST RBLR DT 1A LS9A	HIGH			
123623	TMITA08	PIPE UPSTR 2HRS-SV5C TMP	*LO	319.88	400.00	DEG F
123627	NMIIC110	IRM DOWNSCALE ALARM	ALARM			
123627	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL			
123630	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
123632	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
123657	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
123658	NMIIC110	IRM DOWNSCALE ALARM	NORMAL			
123658	NMIIC113	IRM CHANNEL BYPASSED	ON			
123659	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
123701	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
123702	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
123704	ABFBC04	AUX BLR SYS 2CES-IPNL508	TRBL			
123709	GTSPA01	RB IN/OUT D/P PDT5A	LO	-0.52	-0.50	IN WG
123713	ABFBC04	AUX BLR SYS 2CES-IPNL508	NORMAL			
123717	NMSBC02	SRM SHORT PERIOD	ALARM			
123718	NMSBC02	SRM SHORT PERIOD	ALMCLR			
123735	NMSBC02	SRM SHORT PERIOD	ALARM			
123737	NMSBC02	SRM SHORT PERIOD	ALMCLR			
123753	SPMBC03	MN XFMR XM1B CLR TRBL	ALARM			
123757	CNALC01	CLN ST RBLR DT 1A LS9A	HIGH			
123807	NMSBC02	SRM SHORT PERIOD	ALARM			

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123808 CNALC01  CLN ST RBLR DT 1A LS9A   NORMAL
123809 NMSBC02  SRM SHORT PERIOD         ALMCLR
123813 NMIIC110 IRM DOWNSCALE ALARM      ALARM
123813 NMIIC113 IRM CHANNEL BYPASSED     OFF
123818 NMIIC110 IRM DOWNSCALE ALARM      NORMAL
123818 HVKBC09  DIV1 CB CHILLED WTR SYS  INOP
123819 HVKBC09  DIV1 CB CHILLED WTR SYS  NORMAL
123822 HVKBC09  DIV1 CB CHILLED WTR SYS  INOP
123823 HVKBC09  DIV1 CB CHILLED WTR SYS  NORMAL
123831 GMHAC07  STTR CLG WTR TK VENT H2  HIGH
123833 NMSBC02  SRM SHORT PERIOD         ALARM
123835 GMHAC07  STTR CLG WTR TK VENT H2  NORMAL
123837 NMSBC02  SRM SHORT PERIOD         ALMCLR
123841 NMIIC112 IRM UPSCALE ALARM        ALARM
123841 NMIBC03  IRM UPSCALE              ALARM
123856 HVGMA04  RELAY ROOM HMDT MT8B     HI     50.31    50.00 %RH
123859 CNALC01  CLN ST RBLR DT 1A LS9A   HIGH
123900 NMSBC02  SRM SHORT PERIOD         ALARM
123901 NSSTA101 RX FW FLOW A INLET TEMP  ADC   136.16L******* DEG F
123909 GTSPA01  RB IN/OUT D/P PDT5A      OK     -0.49    -0.50 IN WG
123910 HVKBC09  DIV1 CB CHILLED WTR SYS  INOP
123910 NMSBC02  SRM SHORT PERIOD         ALMCLR
123911 CNALC01  CLN ST RBLR DT 1A LS9A   NORMAL
123911 HVKBC09  DIV1 CB CHILLED WTR SYS  NORMAL
123912 HVKBC09  DIV1 CB CHILLED WTR SYS  INOP
123912 NMSBC02  SRM SHORT PERIOD         ALARM
123913 NMIUC02  IRM CHAN B UPSC TRIP     TRIPPED
123913 RPSUC04  RPS B AUTO TRIP          TRIPPED
123913 NMEUC03  RPS CH B1 NMS TRIP       TRIPPED
123913 HVKBC09  DIV1 CB CHILLED WTR SYS  NORMAL
123913 NMIUC10  IRM TRIP SYS B UPSC/INOP TRIPPED
123914 HVKBC09  DIV1 CB CHILLED WTR SYS  INOP
123914 NMSBC02  SRM SHORT PERIOD         ALMCLR
123914 GTSPA01  RB IN/OUT D/P PDT5A      LO     -0.52    -0.50 IN WG
123915 HVKBC09  DIV1 CB CHILLED WTR SYS  NORMAL
123917 NMIUC02  IRM CHAN B UPSC TRIP     ALMCLR
123917 NMEUC03  RPS CH B1 NMS TRIP       ALMCLR
123917 NMIUC10  IRM TRIP SYS B UPSC/INOP ALMCLR
123918 NMIIC112 IRM UPSCALE ALARM        NORMAL
123918 NMIBC03  IRM UPSCALE              ALMCLR
123922 RHSBC12  RHR A SYS                INOP
123928 RPSUC04  RPS B AUTO TRIP          ALMCLR
123930 HVKBC09  DIV1 CB CHILLED WTR SYS  INOP
123932 HVKBC09  DIV1 CB CHILLED WTR SYS  NORMAL
123941 NMIIC113 IRM CHANNEL BYPASSED     ON
123946 HVKBC09  DIV1 CB CHILLED WTR SYS  INOP
123947 HVKBC09  DIV1 CB CHILLED WTR SYS  NORMAL
123951 NMSBC02  SRM SHORT PERIOD         ALARM
123955 NMSBC02  SRM SHORT PERIOD         ALMCLR
123956 NMSBC02  SRM SHORT PERIOD         ALARM
123958 NMSBC02  SRM SHORT PERIOD         ALMCLR
124001 HVKBC09  DIV1 CB CHILLED WTR SYS  INOP
124002 HVKBC09  DIV1 CB CHILLED WTR SYS  NORMAL
124003 FWSPA04A FW PRESS LOOP A          *LO    134.9    220.0 PSIG
124003 FWSPA05A FW PRESS LOOP B          *LO    144.2    220.0 PSIG
124020 HVKBC09  DIV1 CB CHILLED WTR SYS  INOP
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~~124021~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~NORMAL~~			
124021	NMSBC02	SRM SHORT PERIOD	ALARM			
124023	ARCLC04	CNSR AIR REM TK SP1B LVL	LOW			
~~124023~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~INOP~~			
124024	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
124026	NMSBC02	SRM SHORT PERIOD	ALMCLR			
~~124027~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	~~ALARM~~			
124029	CNALC01	CLN ST RBLR DT 1A LS9A	HIGH			
124030	NMSBC02	SRM SHORT PERIOD	ALMCLR			
124030	WTSAA01	2WTS-TK1 RECIRC WTR PH	LO	4.86	6.50	PH
124041	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL			
124044	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
~~124045~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~NORMAL~~			
124050	NMSBC02	SRM SHORT PERIOD	ALARM			
124053	RMSRC89	DRMS COMPUTER SYSTEM	NORMAL			
~~124054~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	~~ALMCLR~~			
124055	NMSBC02	SRM SHORT PERIOD	ALARM			
124056	NMIIC113	IRM CHANNEL BYPASSED	OFF			
~~124056~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	~~ALMCLR~~			
124100	WTSAA01	2WTS-TK1 RECIRC WTR PH	OK	8.00	6.50	PH
124102	RPSUC04	RPS B AUTO TRIP	TRIPPED			
~~124102~~	~~NMEUC03~~	~~RPS CH B1 NMS TRIP~~	~~TRIPPED~~			
124102	NMIIC111	IRM INSTR-INOP TRIP	INOP			
124102	NMIUC10	IRM TRIP SYS B UPSC/INOP	TRIPPED			
~~124104~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	~~ALARM~~			
124104	NMIUC10	IRM TRIP SYS B UPSC/INOP	ALMCLR			
124105	NMEUC03	RPS CH B1 NMS TRIP	ALMCLR			
~~124105~~	~~NMIIC111~~	~~IRM INSTR-INOP TRIP~~	~~NORMAL~~			
124108	RPSUC04	RPS B AUTO TRIP	ALMCLR			
124109	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
~~124110~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~NORMAL~~			
124110	NMSBC02	SRM SHORT PERIOD	ALMCLR			
124115	NMSBC02	SRM SHORT PERIOD	ALARM			
~~124118~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	~~ALMCLR~~			
124122	NMSBC02	SRM SHORT PERIOD	ALARM			
124123	NMSBC02	SRM SHORT PERIOD	ALMCLR			
~~124134~~	~~ARCLC04~~	~~CNSR AIR REM TK SP1B LVL~~	~~NORMAL~~			
124137	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
124138	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
~~124141~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	~~ALARM~~			
124147	NSSTA101	RX FW FLOW A INLET TEMP	OK	136.16L	*******	DEG F
124153	CNALC01	CLN ST RBLR DT 1A LS9A	HIGH			
124154	NMSBC02	SRM SHORT PERIOD	ALMCLR			
124158	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
124159	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
124159	NMSBC02	SRM SHORT PERIOD	ALARM			
124205	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL			
124206	NMSBC02	SRM SHORT PERIOD	ALMCLR			
~~124215~~	~~ABFBC04~~	~~AUX BLR SYS 2CES-IPNL508~~	~~TRBL~~			
124219	ABFBC04	AUX BLR SYS 2CES-IPNL508	NORMAL			
124219	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
~~124220~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~NORMAL~~			
124224	NMSBC02	SRM SHORT PERIOD	ALARM			
124224	THITA04	PIPE UPSTR 2HRS-SV5A TMP	LO	335.86	400.00	DEG F
~~124228~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	~~ALMCLR~~			
124237	RHSBC12	RHR A SYS	ALMCLR			

144404 HVKBC09 DIV1 CB CHILLED WTR SYS NORMAL
144406 HVKBC09 DIV1 CB CHILLED WTR SYS INOP
144408 HVKBC09 DIV1 CB CHILLED WTR SYS NORMAL
144421 CNALC01 CLN ST RBLR DT 1A LS9A HIGH
144433 CNALC01 CLN ST RBLR DT 1A LS9A NORMAL
144501 NSSXA101 FEEDWATER TURBITITY ADC 102.72L******** %
144514 HVKBC09 DIV1 CB CHILLED WTR SYS INOP
144515 HVKBC09 DIV1 CB CHILLED WTR SYS NORMAL
144518 NMSBC02 SRM SHORT PERIOD ALARM
144520 NMSBC02 SRM SHORT PERIOD ALMCLR
144601 CNALC01 CLN ST RBLR DT 1A LS9A HIGH
144606 HVCMA04 RELAY ROOM HMDT MT8B OK 49.25 50.00 %RH
144610 HVKBC09 DIV1 CB CHILLED WTR SYS INOP
144611 HVKBC09 DIV1 CB CHILLED WTR SYS NORMAL
144612 FWSTA03 6PT HTR 2FWS-E6C INL TMP *LO 98.38 284.00 DEG F
144613 CNALC01 CLN ST RBLR DT 1A LS9A NORMAL
144622 TMEPA02 GLD SL STM RGLTD SPLY PR *LO 2.39 3.00 PSIG
144652 HVKBC09 DIV1 CB CHILLED WTR SYS INOP

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144653 HVKBC09 DIV1 CB CHILLED WTR SYS NORMAL
144655 HVKBC09 DIV1 CB CHILLED WTR SYS INOP
144656 HVKBC09 DIV1 CB CHILLED WTR SYS NORMAL
144747 HVKBC09 DIV1 CB CHILLED WTR SYS INOP
144748 HVKBC09 DIV1 CB CHILLED WTR SYS NORMAL
144758 NMSBC02 SRM SHORT PERIOD ALARM
144759 NMSBC02 SRM SHORT PERIOD ALMCLR
144817 CNALC01 CLN ST RBLR DT 1A LS9A HIGH
144827 NMSOC104 SRM CHANNEL BYPASSED OFF
144830 CNALC01 CLN ST RBLR DT 1A LS9A NORMAL
144839 HVKBC09 DIV1 CB CHILLED WTR SYS INOP
144841 HVKBC09 DIV1 CB CHILLED WTR SYS NORMAL
144906 TMGBC04 TRNGR NOT OPERATING IN OPER
144911 TMGBC04 TRNGR NOT OPERATING ALARM
144919 HVKBC09 DIV1 CB CHILLED WTR SYS INOP
144921 HVKBC09 DIV1 CB CHILLED WTR SYS NORMAL
144925 TMGBC04 TRNGR NOT OPERATING IN OPER
144928 ABMPA01 AUX BLR DEAR INL PRESS OK 2.60 2.50 PSIG
144934 NMSBC02 SRM SHORT PERIOD ALARM
144935 NMSBC02 SRM SHORT PERIOD ALMCLR
144948 TMGBC04 TRNGR NOT OPERATING ALARM
144959 HVKBC09 DIV1 CB CHILLED WTR SYS INOP
145001 HVKBC09 DIV1 CB CHILLED WTR SYS NORMAL
145006 HVKBC09 DIV1 CB CHILLED WTR SYS INOP
145007 HVKBC09 DIV1 CB CHILLED WTR SYS NORMAL
145020 CNALC01 CLN ST RBLR DT 1A LS9A HIGH
145031 HVKBC09 DIV1 CB CHILLED WTR SYS INOP
145032 CNALC01 CLN ST RBLR DT 1A LS9A NORMAL
145032 HVKBC09 DIV1 CB CHILLED WTR SYS NORMAL
145041 HVKBC09 DIV1 CB CHILLED WTR SYS INOP
145042 HVKBC09 DIV1 CB CHILLED WTR SYS NORMAL
145111 NMSBC02 SRM SHORT PERIOD ALARM
145113 NMSBC02 SRM SHORT PERIOD ALMCLR
145117 NMSOC101 SRM DETECTOR POS ABN TRBL
145117 NMSBC04 SRM DETECTOR POS ABN ALARM
145117 NMSBC01 SRM DOWNSCALE ALARM
145129 HVKBC09 DIV1 CB CHILLED WTR SYS INOP
145130 HVKBC09 DIV1 CB CHILLED WTR SYS NORMAL
145140 NMSBC02 SRM SHORT PERIOD ALARM

145154	NMSBC04	SRM DETECTOR POS ABN	ALMCLR			
145205	NMSBC02	SRM SHORT PERIOD	ALMCLR			
145207	NMSBC02	SRM SHORT PERIOD	ALARM			
145210	NMSBC02	SRM SHORT PERIOD	ALMCLR			
145212	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
~~145213~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~NORMAL~~			
145213	NMSBC02	SRM SHORT PERIOD	ALARM			
145215	CNALC01	CLN ST RBLR DT 1A LS9A	HIGH			
~~145215~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~INOP~~			
145215	TMGBC04	TRNGR NOT OPERATING	ALARM			
145216	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
~~145216~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	~~ALMCLR~~			
145228	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL			

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~~145229~~	~~NMSOC101~~	~~SRM DETECTOR POS ABN~~	~~TRBL~~			
145229	NMSBC04	SRM DETECTOR POS ABN	ALARM			
145242	FWSTA06	6PT HTR 2FWS-E6C OUT TMP	*LO	101.39	324.00	DEG F
~~145242~~	~~ESSTA11~~	~~3 PT HTR E3B EXTR ST TMP~~	~~*LO~~	~~217.07~~	~~256.00~~	~~DEG F~~
145254	TMITA03	PIPE UPSTR 2HRS-SV6A TMP	*LO	303.95	400.00	DEG F
145313	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
~~145314~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~NORMAL~~			
145318	NMSOC101	SRM DETECTOR POS ABN	NORMAL			
145318	NMSBC04	SRM DETECTOR POS ABN	ALMCLR			
~~145323~~	~~TMITA07~~	~~PIPE UPSTR 2HRS-SV6C TMP~~	~~*LO~~	~~303.96~~	~~400.00~~	~~DEG F~~
145327	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
145328	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
~~145328~~	~~TMGBC04~~	~~TRNGR NOT OPERATING~~	~~IN OPER~~			
145329	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
145331	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
~~145332~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~INOP~~			
145333	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
145334	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
~~145335~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~NORMAL~~			
145335	IASPA04	ADS HEADER B PRESS	*HI	191.92	180.00	PSIG
145342	TMEPA02	GLD SL STM RGLTD SPLY PR	*LO	2.70	3.00	PSIG
~~145344~~	~~TMGBC04~~	~~TRNGR NOT OPERATING~~	~~ALARM~~			
145356	NMSOC101	SRM DETECTOR POS ABN	TRBL			
145356	NMSBC04	SRM DETECTOR POS ABN	ALARM			
~~145401~~	~~CNALC01~~	~~CLN ST RBLR DT 1A LS9A~~	~~HIGH~~			
145412	NMSBC02	SRM SHORT PERIOD	ALARM			
145413	NMSBC02	SRM SHORT PERIOD	ALMCLR			
~~145414~~	~~CNALC01~~	~~CLN ST RBLR DT 1A LS9A~~	~~NORMAL~~			
145414	NMSBC02	SRM SHORT PERIOD	ALARM			
145415	NMSBC04	SRM DETECTOR POS ABN	ALMCLR			
~~145416~~	~~NMSOC101~~	~~SRM DETECTOR POS ABN~~	~~NORMAL~~			
145416	NMSBC04	SRM DETECTOR POS ABN	ALARM			
145417	NMSBC04	SRM DETECTOR POS ABN	ALMCLR			
~~145423~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	~~ALMCLR~~			
145431	NSSXA101	FEEDWATER TURBITITY	OK	102.GGL******* *		
145458	TMGBC04	TRNGR NOT OPERATING	IN OPER			
~~145504~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	~~ALARM~~			
145507	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
145508	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
~~145508~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	~~ALMCLR~~			
145509	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
145510	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
145511	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			

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165114	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
165127	CNALC01	CLN ST RBLR DT 1A LS9A	HIGH			
165130	WTSAA01	2WTS-TK1 RECIRC WTR PH	OK	6.55	6.50	PH
165138	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL			
165200	WTSAA01	2WTS-TK1 RECIRC WTR PH	LO	3.51	6.50	PH
165203	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
165203	CNSFA01	CND XFR PUMP HDR FLOW	LO	292.80	300.00	GPM
165204	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
165205	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
165206	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
165208	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
165210	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
165230	WTSAA01	2WTS-TK1 RECIRC WTR PH	OK	6.75	6.50	PH
165259	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
165300	WTSAA01	2WTS-TK1 RECIRC WTR PH	LO	1.26	6.50	PH
165301	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
165304	CNALC01	CLN ST RBLR DT 1A LS9A	HIGH			
165316	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL			
165321	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
165322	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
165322	NMSBC02	SRM SHORT PERIOD	ALARM			
165324	NMSBC02	SRM SHORT PERIOD	ALMCLR			
165352	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
165355	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
165355	ISOLA02	RPV WTR LVL(NARROW) CH B	OK	206.65L	*******	IN WG
165357	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
165358	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
165400	WTSAA01	2WTS-TK1 RECIRC WTR PH	*LO	1.52	6.50	PH
165430	NMSBC02	SRM SHORT PERIOD	ALARM			
165430	WTSAA01	2WTS-TK1 RECIRC WTR PH	*LO	1.81	6.50	PH
165434	NMSBC02	SRM SHORT PERIOD	ALMCLR			
165443	NMSBC02	SRM SHORT PERIOD	ALARM			
165444	ARCLC04	CNSR AIR REM TK SP1B LVL	LOW			
165444	CNALC01	CLN ST RBLR DT 1A LS9A	HIGH			
165446	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
165447	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
165447	NMSBC02	SRM SHORT PERIOD	ALMCLR			
165456	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL			
165500	WTSAA01	2WTS-TK1 RECIRC WTR PH	*LO	3.61	6.50	PH
165530	WTSAA01	2WTS-TK1 RECIRC WTR PH	OK	8.15	6.50	PH
165531	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
165532	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
165539	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
165540	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
165546	ARCLC04	CNSR AIR REM TK SP1B LVL	NORMAL			
165548	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
165549	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
165552	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
165553	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
165558	NMSBC02	SRM SHORT PERIOD	ALARM			
165600	NMSBC02	SRM SHORT PERIOD	ALMCLR			
165613	CNALC01	CLN ST RBLR DT 1A LS9A	HIGH			
165619	NMSBC02	SRM SHORT PERIOD	ALARM			
165620	NMSBC02	SRM SHORT PERIOD	ALMCLR			
165625	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL			
165634	FWSPA05	REACTOR INLET PRES PT40B	*LO	54.45	875.00	PSIG

153534	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
~~153541~~	~~RCSLC03~~	~~RCS P1A MOT LOR BRG OIL~~	~~LOW~~			
153545	RCSLC03	RCS P1A MOT LOR BRG OIL	ALMCLR			
153546	RCSLC03	RCS P1A MOT LOR BRG OIL	LOW			
~~153603~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~INOP~~			
153604	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
153604	ABMPA01	AUX BLR DEAR INL PRESS	OK	2.61	2.50	PSIG
~~153609~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~INOP~~			
153611	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
153612	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
~~153612~~	~~HDLTA03~~	~~5PT HTR 2CNM-E5C DRN TMP~~	~~*LO~~	~~128.98~~	~~246.00~~	~~DEG F~~
153613	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
153616	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
~~153617~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~NORMAL~~			
153617	TMEPA02	GLD SL STM RGLTD SPLY PR	OK	3.07	3.00	PSIG
153624	RMSRC11	RB/RWB LOSS OF SMPL FLO	NORMAL			
~~153624~~	~~RMSRC03~~	~~RB/RWB LOSS OF CMPTR PWR~~	~~ALARM~~			
153627	RMSRC11	RB/RWB LOSS OF SMPL FLO	ALARM			
153627	RMSRC03	RB/RWB LOSS OF CMPTR PWR	NORMAL			
~~153645~~	~~CNSFC04~~	~~CNST XFR PMP DIS DEN FLO~~	~~NORMAL~~			
153648	FWSPA04	REACTOR INLET PRES PT40A	*LO	58.30	875.00	PSIG
153649	CNALC01	CLN ST RBLR DT 1A LS9A	HIGH			
~~153655~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~INOP~~			
153656	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
153701	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL			
~~153708~~	~~ABFBC04~~	~~AUX BLR SYS 2CES-IPNL508~~	~~TRBL~~			
153710	EGSPC14	EDG3 RCVR TK2B AIR PRESS	LOW			
153712	ICSLC01	RCIC TURB ST DR TRAP LVL	HIGH			
~~153712~~	~~HDLTA02~~	~~5PT HTR 2CNM-E5B DRN TMP~~	~~*LO~~	~~128.98~~	~~246.00~~	~~DEG F~~
153719	TMGBC04	TRNGR NOT OPERATING	IN OPER			
153724	ICSLC01	RCIC TURB ST DR TRAP LVL	NORMAL			
~~153739~~	~~CWSAC02~~	~~CLG TWR BLOW-DOWN WTR PH~~	~~HIGH~~			
153739	CWSAC01	CLG TWR BLOW-DOWN WTR PH	LOW			
153742	HVRBC12	RB UNIT CLR 401F A/START	START			
~~153749~~	~~CWSAC02~~	~~CLG TWR BLOW-DOWN WTR PH~~	~~NORMAL~~			
153749	CWSAC01	CLG TWR BLOW-DOWN WTR PH	NORMAL			
153751	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
153752	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
153755	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
153756	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
153758	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
153759	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
153807	CNSFA01	CND XFR PUMP HDR FLOW	OK	312.37	300.00	GPM
~~153823~~	~~CNALC01~~	~~CLN ST RBLR DT 1A LS9A~~	~~HIGH~~			
153824	ABFBC04	AUX BLR SYS 2CES-IPNL508	NORMAL			
153835	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL			
~~153849~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~INOP~~			
153851	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
153852	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
~~153853~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~NORMAL~~			
153902	HVRBC12	RB UNIT CLR 401F A/START	ALMCLR			

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~~153911~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~INOP~~			
153912	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
153931	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
~~153932~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~NORMAL~~			
153937	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
[illegible]						

153942	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
~~153943~~	~~ABFBC04~~	~~AUX BLR SYS 2CES-IPNL508~~	~~TRBL~~			
153950	ABFBC04	AUX BLR SYS 2CES-IPNL508	NORMAL			
153953	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL			
~~154002~~	~~FWSPA04A~~	~~FW PRESS LOOP A~~	~~*LO~~	~~62.6~~	~~220.0~~	~~PSIG~~
154002	FWSPA05A	FW PRESS LOOP B	*LO	71.6	220.0	PSIG
154004	ABMPA01	AUX BLR DEAR INL PRESS	HI	7.54	7.50	PSIG
~~154013~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~INOP~~			
154013	DERLA01	DW EQUIP DRN TANK LEVEL	LO	10.87	12.00	%
154014	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
~~154016~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~INOP~~			
154016	ASSPA03	CLN STM RCBLR STM PRESS	*LO	22.12	70.00	PSIG
154018	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
~~154027~~	~~DERFA01~~	~~DW EQPT DR PMPS 3A+3B FL~~	~~LO~~	~~12.04~~	~~45.00~~	~~GPM~~
154032	DERFA01	DW EQPT DR PMPS 3A+3B FL	*LO	3.54	45.00	GPM
154034	ABMPA01	AUX BLR DEAR INL PRESS	OK	7.42	7.50	PSIG
~~154053~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~INOP~~			
154054	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
154105	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
~~154106~~	~~HVKBC09~~	DIV1 CB CHILLED WTR SYS	NORMAL			
154108	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
154109	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
~~154110~~	~~CNALC01~~	~~CLN ST RBLR DT 1A LS9A~~	~~HIGH~~			
154123	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL			
154157	TMEPA01	GLAND SLSTM SUPLY PRESS	*LO	8.06	20.00	PSIG
~~154201~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~INOP~~			
154203	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
154203	RCSLC03	RCS P1A MOT LOR BRG OIL	ALMCLR			
~~154204~~	~~SWPBC18~~	~~SW-FV54A HYD UNT ACC PR~~	~~LOW~~			
154205	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
154206	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
~~154215~~	~~NMPUC04~~	~~APRM D UPSC NEUTRON TRIP~~	~~TRIPPED~~			
154215	RPSUC04	RPS B AUTO TRIP	TRIPPED			
154215	NMEUC04	RPS CH B2 NMS TRIP	TRIPPED			
154216	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
154217	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
154227	CNALC01	CLN ST RBLR DT 1A LS9A	HIGH			
154231	ASSPA03	CLN STM RCBLR STM PRESS	*LO	25.05	70.00	PSIG
154238	HVRBC12	RB UNIT CLR 401F A/START	START			
154240	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL			
~~154253~~	~~TMITA08~~	~~PIPE UPSTR 2HRS-SV5G TMP~~	~~*LO~~	~~288.00~~	~~400.00~~	~~DEG F~~
154303	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
154304	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
~~154310~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~INOP~~			
154311	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
154312	TMEPA03	REBLR 2TME-E1A DIS ST PR	*LO	10.12	25.00	PSIG
~~154314~~	~~NMPUC04~~	~~APRM D UPSC NEUTRON TRIP~~	~~ALMCLR~~			
154314	NMEUC04	RPS CH B2 NMS TRIP	ALMCLR			

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~~154314~~	~~NMP2C108~~	~~APRM UPSCALE ALARM~~	NORMAL			
154314	NMP2C117	APRM BYPASSED CH D	ON			
154314	NMPBC19	APRM TRIP SYS CH D UPSC	ALMCLR			
~~154319~~	~~RPSUC04~~	~~RPS B AUTO TRIP~~	ALMCLR			
154339	CNALC01	CLN ST RBLR DT 1A LS9A	HIGH			
154346	ASSPA03	CLN STM RCBLR STM PRESS	*LO	28.09	70.00	PSIG
~~154347~~	~~CNSFC01~~	~~CNST XFR PMP DIS DEM FLO~~	~~LOW~~			
154351	CWSAC02	CLG TWR BLOW-DOWN WTR PH	HIGH			
154351	CWSAC01	CLG TWR BLOW-DOWN WTR PH	LOW			

~~154403 HVRBC12 RB-UNIT-CLR-401F A/START ALMCLR~~
154407 HVKBC09 DIV1 CB CHILLED WTR SYS INOP
154408 HVKBC09 DIV1 CB CHILLED WTR SYS NORMAL
~~154409 HVKBC09 DIV1 CB CHILLED WTR SYS INOP~~
154410 HVKBC09 DIV1 CB CHILLED WTR SYS NORMAL
154412 HVKBC09 DIV1 CB CHILLED WTR SYS INOP
~~154412 TMEPA01 GLAND SLSTM SUPLY PRESS *LO 12.20 20.00 PSIG~~
154413 HVKBC09 DIV1 CB CHILLED WTR SYS NORMAL
154424 DFTBC30 TB FLR DRN SYSTEM ALMCLR
~~154430 WTSAA01 2WTS-TK1 RECIRC WTR PH LO 1.45 6.50 PH~~
154442 HDLTA09 3PT HTR 2CNM-E3C DRN TMP *LO 110.30 167.00 DEG F
154447 ABFBC04 AUX BLR SYS 2CES-IPNL508 TRBL
~~154452 ABFBC04 AUX BLR SYS 2CES-IPNL508 NORMAL~~
154452 CNALC01 CLN ST RBLR DT 1A LS9A HIGH
154455 HVKBC09 DIV1 CB CHILLED WTR SYS INOP
~~154456 ABFBC04 AUX BLR SYS 2CES-IPNL508 TRBL~~
154456 HVKBC09 DIV1 CB CHILLED WTR SYS NORMAL
154456 ASSPA03 CLN STM RCBLR STM PRESS *LO 31.24 70.00 PSIG
~~154457 CNSFA01 CND XFR PUMP HDR FLOW LO 294.71 300.00 GPM~~
154500 WTSAA01 2WTS-TK1 RECIRC WTR PH OK 6.81 6.50 PH
154505 CNALC01 CLN ST RBLR DT 1A LS9A NORMAL
~~154506 CNSFC01 CNST XFR PMP DIS DEM FLO NORMAL~~
154506 CNSBC03 CNST XFR P1A/B A/START STOP
154527 ABFBC04 AUX BLR SYS 2CES-IPNL508 NORMAL
~~154527 SWPBC18 SW-FV54A-HYD-UNT-ACC-PR NORMAL~~
154527 TMEPA03 REBLR 2TME-E1A DIS ST PR *LO 15.07 25.00 PSIG
154534 ABMPA01 AUX BLR DEAR INL PRESS HI 7.61 7.50 PSIG
~~154551 ABFBC04 AUX BLR SYS 2CES-IPNL508 TRBL~~
154552 TMEPA01 GLAND SLSTM SUPLY PRESS *LO 16.18 20.00 PSIG
154557 HVKBC09 DIV1 CB CHILLED WTR SYS INOP
154558 HVKBC09 DIV1 CB CHILLED WTR SYS NORMAL
154600 CNALC01 CLN ST RBLR DT 1A LS9A HIGH
154602 ASSPA03 CLN STM RCBLR STM PRESS *LO 34.09 70.00 PSIG
154605 GSNBC01 PRI CONTMT N2 PURGE TEMP NORMAL
154613 CNALC01 CLN ST RBLR DT 1A LS9A NORMAL
154630 WTSAA01 2WTS-TK1 RECIRC WTR PH LO 4.24 6.50 PH
~~154635 ISCLA02 RPV WTR LVL(NARROW) CH B ADC 206.71L******* IN WG~~
154641 ISCLA02 RPV WTR LVL(NARROW) CH B OK 206.69L******* IN WG
154642 FWSTA02 6PT HTR 2FWS-E6B INL TMP *LO 237.81 284.00 DEG F
~~154645 ISCLA02 RPV WTR LVL(NARROW) CH B ADC 206.69L******* IN WG~~
154650 ISCLA02 RPV WTR LVL(NARROW) CH B OK 206.74L******* IN WG
154655 ISCLA02 RPV WTR LVL(NARROW) CH B ADC 206.74L******* IN WG
~~154700 ISCLA02 RPV WTR LVL(NARROW) CH B OK 206.69L******* IN WG~~
154700 WTSAA01 2WTS-TK1 RECIRC WTR PH OK 6.50 6.50 PH

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~~154703 CNALC01 CLN ST RBLR DT 1A LS9A HIGH~~
154705 HVKBC09 DIV1 CB CHILLED WTR SYS INOP
154706 HVKBC09 DIV1 CB CHILLED WTR SYS NORMAL
~~154706 ASSPA03 CLN STM RCBLR STM PRESS *LO 37.12 70.00 PSIG~~
154710 ISCLA02 RPV WTR LVL(NARROW) CH B ADC 206.73L******* IN WG
154715 ISCLA02 RPV WTR LVL(NARROW) CH B OK 206.74L******* IN WG
~~154717 CNALC01 CLN ST RBLR DT 1A LS9A NORMAL~~
154720 ISCLA02 RPV WTR LVL(NARROW) CH B ADC 206.74L******* IN WG
154722 TMEPA03 REBLR 2TME-E1A DIS ST PR *LO 20.10 25.00 PSIG
~~154726 HVRBC12 RB-UNIT-CLR 401F A/START START~~
154730 ISCLA02 RPV WTR LVL(NARROW) CH B OK 206.76L******* IN WG
154735 ISCLA02 RPV WTR LVL(NARROW) CH B ADC 206.76L******* IN WG

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154743 ABMPA01  AUX BLR DEAR IND PRESS  OK      7.30      7.50 PSIG
154745 ABFBC04  AUX BLR SYS 2CES-IPNL508 NORMAL
154748 HVKBC09  DIV1 CB CHILLED WTR SYS  INOP
154749 HVKBC09  DIV1 CB CHILLED WTR SYS  NORMAL
154800 WTSAA01  2WTS-TK1 RECIRC WTR PH   LO      6.30      6.50 PH
154806 ASSPA03  CLN STM RCBLR STM PRESS  *LO    40.20     70.00 PSIG
154812 CNALC01  CLN ST RBLR DT 1A LS9A   HIGH
154813 HVKBC09  DIV1 CB CHILLED WTR SYS  INOP
154814 HVKBC09  DIV1 CB CHILLED WTR SYS  NORMAL
154818 DFTBC30  TB FLR DRN SYSTEM        TRBL
154820 HVKBC09  DIV1 CB CHILLED WTR SYS  INOP
154821 HVKBC09  DIV1 CB CHILLED WTR SYS  NORMAL
154824 CNALC01  CLN ST RBLR DT 1A LS9A   NORMAL
154830 WTSAA01  2WTS-TK1 RECIRC WTR PH   *LO     1.30      6.50 PH
154853 HVKBC09  DIV1 CB CHILLED WTR SYS  INOP
154854 HVKBC09  DIV1 CB CHILLED WTR SYS  NORMAL
154858 HVRBC12  RB UNIT CLR 401F A/START ALMCLR
154858 HVKBC09  DIV1 CB CHILLED WTR SYS  INOP
154859 HVKBC09  DIV1 CB CHILLED WTR SYS  NORMAL
154900 HVKBC09  DIV1 CB CHILLED WTR SYS  INOP
154900 WTSAA01  2WTS-TK1 RECIRC WTR PH   *LO     6.08      6.50 PH
154901 HVKBC09  DIV1 CB CHILLED WTR SYS  NORMAL
154902 ASSPA03  CLN STM RCBLR STM PRESS  *LO    43.12     70.00 PSIG
154904 CNALC01  CLN ST RBLR DT 1A LS9A   HIGH
154911 HVKBC09  DIV1 CB CHILLED WTR SYS  INOP
154912 HVKBC09  DIV1 CB CHILLED WTR SYS  NORMAL
154916 CNALC01  CLN ST RBLR DT 1A LS9A   NORMAL
154924 TMEPC03  CLN STM REBLR STM HDR PR NORMAL
154930 WTSAA01  2WTS-TK1 RECIRC WTR PH   *LO     1.26      6.50 PH
154932 TMEPA03  REBLR 2TME-E1A DIS ST PR OK     26.51     25.00 PSIG
154957 HVKBC09  DIV1 CB CHILLED WTR SYS  INOP
154959 HVKBC09  DIV1 CB CHILLED WTR SYS  NORMAL
155000 HVKBC09  DIV1 CB CHILLED WTR SYS  INOP
155001 HVKBC09  DIV1 CB CHILLED WTR SYS  NORMAL
155002 ASSPA03  CLN STM RCBLR STM PRESS  *LO    46.46     70.00 PSIG
155002 HVKBC09  DIV1 CB CHILLED WTR SYS  INOP
155003 HVKBC09  DIV1 CB CHILLED WTR SYS  NORMAL
155003 FWSPA05A FW PRESS LOOP B          *LO     67.6     220.0 PSIG
155004 CNALC01  CLN ST RBLR DT 1A LS9A   HIGH
155008 HVKBC09  DIV1 CB CHILLED WTR SYS  INOP
155010 HVKBC09  DIV1 CB CHILLED WTR SYS  NORMAL
155012 HDLTA04  4PT HTR 2CNM-E4A DRN TMP *LO   154.91    245.00 DEG F
155017 CNALC01  CLN ST RBLR DT 1A LS9A   NORMAL

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155020 SWTBC07  SWT SYSTEM TROUBLE       ALMCLR
155030 WTSAA01  2WTS-TK1 RECIRC WTR PH   *LO     2.41      6.50 PH
155056 ASSPA03  CLN STM RCBLR STM PRESS  *LO    49.27     70.00 PSIG
155100 WTSAA01  2WTS-TK1 RECIRC WTR PH   *LO     1.57      6.50 PH
155103 NMSBC02  SRM SHORT PERIOD         ALARM
155104 NMSBC02  SRM SHORT PERIOD         ALMCLR
155112 CNALC01  CLN ST RBLR DT 1A LS9A   HIGH
155124 HVKBC09  DIV1 CB CHILLED WTR SYS  INOP
155125 CNALC01  CLN ST RBLR DT 1A LS9A   NORMAL
155125 HVKBC09  DIV1 CB CHILLED WTR SYS  NORMAL
155130 WTSAA01  2WTS-TK1 RECIRC WTR PH   *LO     1.28      6.50 PH
155151 ASSPA03  CLN STM RCBLR STM PRESS  *LO    52.27     70.00 PSIG
155153 HVKBC09  DIV1 CB CHILLED WTR SYS  INOP
155154 HVKBC09  DIV1 CB CHILLED WTR SYS  NORMAL
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~~155203~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~INOP~~			
155204	NMSOC103	SRM INSTR-INOP ALARM	INOP			
155204	NMSOC104	SRM CHANNEL BYPASSED	OFF			
~~155204~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~NORMAL~~			
155204	NMSBC03	SRM UPSCALE/INOP	ALARM			
155206	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
~~155207~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~NORMAL~~			
155207	CNATA02	RBLR DRN TK1B DISCH TEMP	*LO	176.24	200.00	DEG F
155209	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
~~155210~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~NORMAL~~			
155223	CNALC01	CLN ST RBLR DT 1A LS9A	HIGH			
155230	WTSAA01	2WTS-TK1 RECIRC WTR PH	*LO	4.13	6.50	PH
~~155235~~	~~CNALC01~~	~~CLN ST RBLR DT 1A LS9A~~	~~NORMAL~~			
155246	NMSOC101	SRM DETECTOR POS ABN	TRBL			
155246	NMSBC04	SRM DETECTOR POS ABN	ALARM			
~~155246~~	~~NMSBC01~~	~~SRM DOWNSCALE~~	~~ALARM~~			
155246	ASSPA03	CLN STM RCBLR STM PRESS	*LO	55.24	70.00	PSIG
155251	NMSOC101	SRM DETECTOR POS ABN	NORMAL			
~~155251~~	~~NMSBC04~~	~~SRM DETECTOR POS ABN~~	~~ALMCLR~~			
155251	NMSBC02	SRM SHORT PERIOD	ALARM			
155251	NMSBC01	SRM DOWNSCALE	ALMCLR			
~~155255~~	~~HVRBC12~~	~~RB UNIT CLR 401F A/START~~	~~START~~			
155256	NMSOC103	SRM INSTR-INOP ALARM	NORMAL			
155256	SWTBC07	SWT SYSTEM TROUBLE	TRBL			
155256	NMSBC03	SRM UPSCALE/INOP	ALMCLR			
155300	WTSAA01	2WTS-TK1 RECIRC WTR PH	*LO	5.25	6.50	PH
155305	NMSBC02	SRM SHORT PERIOD	ALMCLR			
155310	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
155311	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
155326	CNALC01	CLN ST RBLR DT 1A LS9A	HIGH			
~~155330~~	~~WTSAA01~~	~~2WTS-TK1 RECIRC WTR PH~~	~~OK~~	~~7.95~~	~~6.50~~	~~PH~~
155331	NMSOC101	SRM DETECTOR POS ABN	TRBL			
155331	NMSBC04	SRM DETECTOR POS ABN	ALARM			
~~155338~~	~~CNALC01~~	~~CLN ST RBLR DT 1A LS9A~~	~~NORMAL~~			
155343	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
155344	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
~~155346~~	~~ASSPA03~~	~~CLN STM RCBLR STM PRESS~~	~~*LO~~	~~58.46~~	~~70.00~~	~~PSIG~~
155356	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			

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~~155357~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~NORMAL~~			
155359	NMSOC101	SRM DETECTOR POS ABN	NORMAL			
155359	NMSBC04	SRM DETECTOR POS ABN	ALMCLR			
~~155400~~	~~WTSAA01~~	~~2WTS-TK1 RECIRC WTR PH~~	~~LO~~	~~3.60~~	~~6.50~~	~~PH~~
155409	RMSRC11	RB/RWB LOSS OF SMPL FLO	NORMAL			
155419	GMHAC07	STTR CLG WTR TK VENT H2	HIGH			
~~155426~~	~~NMSOC101~~	~~SRM DETECTOR POS ABN~~	~~TRBL~~			
155426	GMHAC07	STTR CLG WTR TK VENT H2	NORMAL			
155426	NMSBC04	SRM DETECTOR POS ABN	ALARM			
~~155427~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~INOP~~			
155428	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
155430	WTSAA01	2WTS-TK1 RECIRC WTR PH	*LO	5.57	6.50	PH
~~155432~~	~~CNALC01~~	~~CLN ST RBLR DT 1A LS9A~~	~~HIGH~~			
155432	HVRBC12	RB UNIT CLR 401F A/START	ALMCLR			
155436	ASSPA03	CLN STM RCBLR STM PRESS	*LO	61.35	70.00	PSIG
~~155439~~	~~ESSTA18~~	~~5-PT HTR E5C EXTR ST TMP~~	~~*LO~~	~~166.54~~	~~280.00~~	~~DEG F~~
155445	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL			
155450	NMSOC101	SRM DETECTOR POS ABN	NORMAL			
~~155450~~	~~NMSBC04~~	~~SRM DETECTOR POS ABN~~	~~ALMCLR~~			

155526	NMSBC01	SRM DOWNSCALE	ALARM			
~~155530~~	~~WTSAA01~~	~~2WTS-TK1-RECIRC WTR PH~~	*LO	1.34	6.50	PH
155531	ASSPA03	CLN STM RCBLR STM PRESS	*LO	64.16	70.00	PSIG
155543	NMSBC01	SRM DOWNSCALE	ALMCLR			
~~155544~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	ALARM			
155550	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
155552	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
~~155553~~	~~CNALC01~~	~~CLN-ST-RBLR DT 1A LS9A~~	HIGH			
155555	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
155556	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
~~155606~~	~~CNALC01~~	~~CLN ST RBLR DT 1A LS9A~~	NORMAL			
155616	NMSOC102	SRM UPSCALE ALARM	ALARM			
155616	NMSBC03	SRM UPSCALE/INOP	ALARM			
~~155622~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	~~ALMCLR~~			
155626	ASSPA03	CLN STM RCBLR STM PRESS	*LO	67.01	70.00	PSIG
155645	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
~~155645~~	~~NMSBC02~~	SRM SHORT PERIOD	ALARM			
155646	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
155647	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
155648	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
155656	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
155657	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
155657	NMSBC02	SRM SHORT PERIOD	ALMCLR			
155701	NMSOC102	SRM UPSCALE ALARM	NORMAL			
155701	NMSBC03	SRM UPSCALE/INOP	ALMCLR			
~~155717~~	~~CNALC01~~	~~CLN-ST-RBLR-DT-1A-LS9A~~	~~HIGH~~			
155718	NMSBC02	SRM SHORT PERIOD	ALARM			
155729	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL			
~~155729~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	ALMCLR			
155730	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
155732	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
~~155736~~	~~ASSPA03~~	~~CLN-STM-RCBLR-STM-PRESS~~	~~OK~~	~~70.69~~	70.00	PSIG
155751	NMSBC02	SRM SHORT PERIOD	ALARM			

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~~155803~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	ALMCLR			
155808	NMSBC01	SRM DOWNSCALE	ALARM			
155812	NMSBC02	SRM SHORT PERIOD	ALARM			
~~155812~~	~~NMSBC01~~	~~SRM DOWNSCALE~~	ALMCLR			
155818	NMSBC03	SRM UPSCALE/INOP	ALARM			
155819	NMSOC103	SRM INSTR-INOP ALARM	INOP			
~~155825~~	~~CNALC01~~	~~CLN-ST-RBLR-DT 1A LS9A~~	~~HIGH~~			
155829	GMHAC07	STTR CLG WTR TK VENT H2	HIGH			
155833	GMHAC07	STTR CLG WTR TK VENT H2	NORMAL			
~~155836~~	~~CNALC01~~	~~CLN ST RBLR DT 1A LS9A~~	NORMAL			
155838	NMSOC103	SRM INSTR-INOP ALARM	NORMAL			
155838	NMSBC03	SRM UPSCALE/INOP	ALMCLR			
~~155843~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	ALMCLR			
155903	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
155904	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
~~155923~~	~~CNALC01~~	~~CLN ST RBLR DT 1A LS9A~~	HIGH			
155924	ABFBC04	AUX BLR SYS 2CES-IPNL508	TRBL			
155933	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
~~155934~~	~~CNALC01~~	~~CLN ST RBLR DT 1A LS9A~~	NORMAL			
155934	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
160007	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
~~160008~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	NORMAL			
160008	ABMPA01	AUX BLR DEAR INL PRESS	HI	7.57	7.50	PSIG

160018	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
~~160019~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~NORMAL~~			
160024	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
160025	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
~~160029~~	~~CNALC01~~	~~CLN ST RBLR DT 1A LS9A~~	~~NORMAL~~			
160031	WTSAA01	2WTS-TK1 RECIRC WTR PH	*LO	5.77	6.50	PH
160037	TMEPA01	GLAND SLSTM SUPLY PRESS	HI	60.20	60.00	PSIG
~~160100~~	~~WTSAA01~~	~~2WTS-TK1 RECIRC WTR PH~~	~~*LO~~	~~3.85~~	~~6.50~~	~~PH~~
160102	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
160103	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
~~160112~~	~~FWSTA03~~	~~6PT HTR 2FWS-E6C INL TMP~~	~~*LO~~	~~110.57~~	~~284.00~~	~~DEG F~~
160112	HDLTA01	5PT HTR 2CNM-E5A DRN TMP	*LO	128.98	246.00	DEG F
160122	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
~~160122~~	~~GNSFA01~~	~~CND XFR PUMP HDR FLOW~~	~~OK~~	~~311.29~~	~~300.00~~	~~GPM~~
160123	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
160125	CNALC01	CLN ST RBLR DT 1A LS9A	HIGH			
160125	TMITA06	PIPE UPSTR 2HRS-SV5B TMP	*LO	287.86	400.00	DEG F
160130	WTSAA01	2WTS-TK1 RECIRC WTR PH	*LO	1.28	6.50	PH
160136	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL			
160138	ABMPA02	AUX BLR STM HDR PRESS	OK	121.10	120.00	PSIG
160208	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
160210	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
~~160222~~	~~MSSTA03~~	~~TURB BYP PSV69A OUT TEMP~~	~~OK~~	~~278.96~~	~~280.00~~	~~DEG F~~
160230	WTSAA01	2WTS-TK1 RECIRC WTR PH	*LO	5.86	6.50	PH
160300	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
~~160300~~	~~WTSAA01~~	~~2WTS-TK1 RECIRC WTR PH~~	~~*LO~~	~~1.26~~	~~6.50~~	~~PH~~
160301	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
160305	CNALC01	CLN ST RBLR DT 1A LS9A	HIGH			
~~160312~~	~~FWSTA02~~	~~6PT HTR 2FWS-E6B INL TMP~~	~~*LO~~	~~262.43~~	~~284.00~~	~~DEG F~~
160312	TMEPA01	GLAND SLSTM SUPLY PRESS	OK	58.94	60.00	PSIG

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~~160347~~	~~CNALC01~~	~~CLN ST RBLR DT 1A LS9A~~	~~NORMAL~~			
160358	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
160359	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
~~160426~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~INOP~~			
160427	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
160432	HVCMA04	RELAY ROOM HMDT MT8B	OK	48.87	50.00	%RH
~~160449~~	~~CNALC01~~	~~CLN ST RBLR DT 1A LS9A~~	~~HIGH~~			
160452	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
160453	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
~~160500~~	~~CNALC01~~	~~CLN ST RBLR DT 1A LS9A~~	~~NORMAL~~			
160511	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
160512	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
~~160514~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~INOP~~			
160515	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
160524	NMPBC41	LPRM UPSC CHAN D	ALARM			
~~160536~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~INOP~~			
160538	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
160539	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
~~160541~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~NORMAL~~			
160615	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
160616	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
~~160617~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~INOP~~			
160620	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
160621	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
~~160622~~	~~CNALC01~~	~~CLN ST RBLR DT 1A LS9A~~	~~HIGH~~			
160622	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			

160704	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
160712	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
~~160713~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~NORMAL~~			
160715	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
160716	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
~~160726~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~INOP~~			
160727	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
160737	CNSFA01	CND XFR PUMP HDR FLOW	LO	296.33	300.00	GPM
~~160816~~	~~CNALC01~~	~~CLN ST RBLR DT 1A LS9A~~	~~HIGH~~			
160825	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
160826	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
~~160827~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	INOP			
160828	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL			
160828	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
160906	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
160907	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
160912	HVCMA04	RELAY ROOM HMDT MT8B	HI	50.37	50.00	%RH
160940	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
160941	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
160953	CNALC01	CLN ST RBLR DT 1A LS9A	HIGH			
~~161003~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~INOP~~			
161004	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
161006	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL			
~~161009~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~INOP~~			
161010	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
161034	TMITA11	TURB EXH HOOD A TEMP	OK	102.60	100.00	DEG F
~~161045~~	~~ESSTA15~~	~~4 PT HTR E4C EXTR ST TMP~~	~~*LO~~	~~237.95~~	~~334.00~~	~~DEG F~~
161100	WTSAA01	2WTS-TK1 RECIRC WTR PH	*LO	2.84	6.50	PH

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~~161123~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	INOP			
161124	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
161130	WTSAA01	2WTS-TK1 RECIRC WTR PH	*LO	1.30	6.50	PH
~~161148~~	~~CNALC01~~	~~CLN ST RBLR DT 1A LS9A~~	HIGH			
161200	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL			
161200	WTSAA01	2WTS-TK1 RECIRC WTR PH	OK	7.85	6.50	PH
~~161222~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	INOP			
161223	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
161224	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
~~161225~~	~~HVKBC09~~	DIV1 CB CHILLED WTR SYS	NORMAL			
161230	WTSAA01	2WTS-TK1 RECIRC WTR PH	LO	6.26	6.50	PH
161231	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
~~161232~~	~~HVKBC09~~	~~DIV1 CB CHILLED~~ WTR SYS	NORMAL			
161243	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
161244	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
~~161251~~	~~HVKBC09~~	~~DIV1 CB CHILLED~~ WTR SYS	INOP			
161252	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
161300	WTSAA01	2WTS-TK1 RECIRC WTR PH	*LO	1.27	6.50	PH
~~161316~~	~~HVKBC09~~	~~DIV1 CB CHILLED~~ WTR SYS	INOP			
161317	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
161318	ARCLC04	CNSR AIR REM TK SP1B LVL	LOW			
~~161325~~	~~CNALC01~~	~~CLN ST RBLR DT 1A LS9A~~	HIGH			
161336	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL			
161340	ESSTA10	3 PT HTR E3A EXTR ST TMP	*LO	197.66	256.00	DEG F
~~161347~~	~~HVKBC09~~	~~DIV1 CB CHILLED~~ WTR SYS	INOP			
161348	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
161354	TMITA05	PIPE UPSTR 2HRS-SV6B TMP	*LO	288.00	406.00	DEG F
~~161400~~	~~WTSAA01~~	~~2WTS-TK1~~ RECIRC WTR PH	*LO	3.56	6.50	PH

~~161430~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~NORMAL~~			
161430	WTSAA01	2WTS-TK1 RECIRC WTR PH	*LO	1.26	6.50	PH
161500	CNALC01	CLN ST RBLR DT 1A LS9A	HIGH			
~~161500~~	~~WTSAA01~~	~~2WTS-TK1 RECIRC WTR PH~~	~~*LO~~	~~4.97~~	~~6.50~~	~~PH~~
161501	GMHAC07	STTR CLG WTR TK VENT H2	HIGH			
161506	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
~~161507~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~NORMAL~~			
161508	GMHAC07	STTR CLG WTR TK VENT H2	NORMAL			
161509	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
161510	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
161512	HDHTA01	6PT HTR E5A DR TEMP	*LO	166.95	284.00	DEG F
161513	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL			
161530	WTSAA01	2WTS-TK1 RECIRC WTR PH	*LO	5.13	6.50	PH
161537	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
161538	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
~~161542~~	~~ESSTA11~~	~~3 PT HTR E3B EXTR ST TMP~~	~~*LO~~	~~207.43~~	~~256.00~~	~~DEG F~~
161552	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
161553	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
~~161600~~	~~WTSAA01~~	~~2WTS-TK1 RECIRC WTR PH~~	~~*LO~~	~~2.46~~	~~6.50~~	~~PH~~
161625	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
161626	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
~~161630~~	~~WTSAA01~~	~~2WTS-TK1 RECIRC WTR PH~~	~~*LO~~	~~5.61~~	~~6.50~~	~~PH~~
161632	ESSTA08	2 PT HTR E2B SHELL TEMP	*LO	96.47	165.00	DEG F

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~~161647~~	~~CNALC01~~	~~CLN ST RBLR DT 1A LS9A~~	~~HIGH~~			
161658	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL			
161700	WTSAA01	2WTS-TK1 RECIRC WTR PH	*LO	1.28	6.50	PH
~~161730~~	~~WTSAA01~~	~~2WTS-TK1 RECIRC WTR PH~~	~~*LO~~	~~5.84~~	~~6.50~~	~~PH~~
161743	ESSTA14	4 PT HTR E4B EXTR ST TMP	*LO	225.89	334.00	DEG F
161745	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
~~161746~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~NORMAL~~			
161800	WTSAA01	2WTS-TK1 RECIRC WTR PH	OK	7.98	6.50	PH
161814	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
~~161815~~	~~CNALC01~~	~~CLN ST RBLR DT 1A LS9A~~	~~HIGH~~			
161815	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
161818	TMITA01	EXT V UPR OUT SURF T	LO	399.85	400.00	DEG F
~~161826~~	~~CNALC01~~	~~CLN ST RBLR DT 1A LS9A~~	~~NORMAL~~			
161830	WTSAA01	2WTS-TK1 RECIRC WTR PH	LO	4.03	6.50	PH
161848	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
~~161849~~	~~NMSOC104~~	~~SRM CHANNEL BYPASSED~~	~~ON~~			
161849	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
161900	WTSAA01	2WTS-TK1 RECIRC WTR PH	*LO	5.66	6.50	PH
~~161903~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~INOP~~			
161904	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
161922	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
~~161923~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~NORMAL~~			
161924	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
161925	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
~~161930~~	~~WTSAA01~~	~~2WTS-TK1 RECIRC WTR PH~~	~~*LO~~	~~1.27~~	~~6.50~~	~~PH~~
161935	CNALC01	CLN ST RBLR DT 1A LS9A	HIGH			
161946	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL			
~~162000~~	~~WTSAA01~~	~~2WTS-TK1 RECIRC WTR PH~~	~~*LO~~	~~5.76~~	~~6.50~~	~~PH~~
162027	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
162028	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
~~162030~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~INOP~~			
162030	WTSAA01	2WTS-TK1 RECIRC WTR PH	*LO	1.29	6.50	PH
162031	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
[illegible]						

162104	CNALC01	CLN ST RBLR DT 1A LS9A	HIGH			
162107	CNSFA01	CND XFR PUMP HDR FLOW	OK	310.46	300.00	GPM
162112	FWSTA03	6PT HTR 2FWS-E6C INL TMP	*LO	121.69	284.00	DEG F
162116	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL			
162117	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
162118	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
162123	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
162124	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
162130	WTSAA01	2WTS-TK1 RECIRC WTR PH	OK	8.00	6.50	PH
162153	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
162154	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
162236	CNALC01	CLN ST RBLR DT 1A LS9A	HIGH			
162239	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
162240	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
162242	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
162243	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
162247	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL			
162248	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
162249	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
162252	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
162253	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
162342	ESSTA13	4 PT HTR E4A EXTR ST TMP	*LO	225.89	334.00	DEG F

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162346	HVCMA04	RELAY ROOM HMDT MT8B	OK	48.94	50.00	%RH
162353	CNALC01	CLN ST RBLR DT 1A LS9A	HIGH			
162404	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL			
162412	FWSTA02	6PT HTR 2FWS-E6B INL TMP	*LO	272.60	284.00	DEG F
162443	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
162444	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
162455	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
162457	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
162459	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
162500	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
162516	CNALC01	CLN ST RBLR DT 1A LS9A	HIGH			
162527	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL			
162530	WTSAA01	2WTS-TK1 RECIRC WTR PH	LO	3.72	6.50	PH
162546	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
162547	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
162549	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
162551	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
162554	TMITA03	PIPE UPSTR 2HRS-SV6A TMP	*LO	287.98	400.00	DEG F
162600	WTSAA01	2WTS-TK1 RECIRC WTR PH	OK	8.21	6.50	PH
162627	CNALC01	CLN ST RBLR DT 1A LS9A	HIGH			
162639	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL			
162706	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
162707	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
162758	CNALC01	CLN ST RBLR DT 1A LS9A	HIGH			
162806	NMSOC103	SRM INSTR INOP ALARM	INOP			
162806	NMSOC104	SRM CHANNEL BYPASSED	OFF			
162806	NMSBC03	SRM UPSCALE/INOP	ALARM			
162811	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL			
162832	HVCMA04	RELAY ROOM HMDT MT8B	HI	50.44	50.00	%RH
162912	CNSFA01	CND XFR PUMP HDR FLOW	LO	298.22	300.00	GPM
162917	NMSOC103	SRM INSTR INOP ALARM	NORMAL			
162917	NMSBC03	SRM UPSCALE/INOP	ALMCLR			
162923	NMSOC101	SRM DETECTOR POS ABN	TRBL			
162923	NMSBC04	SRM DETECTOR POS ABN	ALARM			
162923	NMSBC01	SRM DOWNSCALE	ALARM			

162931	NMSBC04	SRM DETECTOR POS ABN	ALMCLR	
162931	NMSBC02	SRM SHORT PERIOD	ALARM	
162933	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP	
162934	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL	
162936	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP	
162937	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL	
162939	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP	
162939	NMSBC02	SRM SHORT PERIOD	ALMCLR	
162941	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL	
162942	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP	
162943	CNALC01	CLN ST RBLR DT 1A LS9A	HIGH	
162943	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL	
162944	SWTBC07	SWT SYSTEM TROUBLE	ALMCLR	
162949	NMSOC101	SRM DETECTOR POS ABN	TRBL	
162949	NMSBC04	SRM DETECTOR POS ABN	ALARM	
162951	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP	
162952	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL	

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162955	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL	
163023	NMSOC101	SRM DETECTOR POS ABN	NORMAL	
163023	NMSBC04	SRM DETECTOR POS ABN	ALMCLR	
163043	NMSOC101	SRM DETECTOR POS ABN	TRBL	
163043	NMSBC04	SRM DETECTOR POS ABN	ALARM	
163049	NMSOC101	SRM DETECTOR POS ABN	NORMAL	
163049	NMSBC04	SRM DETECTOR POS ABN	ALMCLR	
163049	NMSBC02	SRM SHORT PERIOD	ALARM	
163057	NMSBC02	SRM SHORT PERIOD	ALMCLR	
163101	NMSOC101	SRM DETECTOR POS ABN	TRBL	
163101	NMSBC04	SRM DETECTOR POS ABN	ALARM	
163102	NMSOC101	SRM DETECTOR POS ABN	NORMAL	
163102	NMSBC04	SRM DETECTOR POS ABN	ALMCLR	
163110	CNALC01	CLN ST RBLR DT 1A LS9A	HIGH	
163113	NMSBC01	SRM DOWNSCALE	ALARM	
163114	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP	
163115	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL	
163122	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL	
163124	NMSBC01	SRM DOWNSCALE	ALMCLR	
163125	NMSBC02	SRM SHORT PERIOD	ALARM	
163142	CSLBC02	DIV1 LPCS SYSTEM	ALMCLR	
163142	CSLBC13	LPCS LINE BREAK	ALMCLR	
163143	CSLBC02	DIV1 LPCS SYSTEM	INOP	
163143	CSLBC13	LPCS LINE BREAK	ALARM	
163153	NMSOC102	SRM UPSCALE ALARM	ALARM	
163153	NMSBC03	SRM UPSCALE/INOP	ALARM	
163156	NMSBC02	SRM SHORT PERIOD	ALMCLR	
163201	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP	
163202	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL	
163208	NMSBC02	SRM SHORT PERIOD	ALARM	
163211	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP	
163212	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL	
163213	SWTBC07	SWT SYSTEM TROUBLE	TRBL	
163219	NMSBC02	SRM SHORT PERIOD	ALMCLR	
163221	NMSOC102	SRM UPSCALE ALARM	NORMAL	
163221	NMSBC03	SRM UPSCALE/INOP	ALMCLR	
163223	TMITA14	TURB 1ST STAGE SHL TE139	OK	441.89 450.06 DEG F
163230	NMSBC02	SRM SHORT PERIOD	ALARM	
163233	CSLBC02	DIV1 LPCS SYSTEM	ALMCLR	

163234	CSLBC13	LPCS LINE BREAK	ALARM
163235	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP
163236	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL
163237	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP
163238	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL
163239	CNALC01	CLN ST RBLR DT 1A LS9A	HIGH
163240	CSLBC02	DIV1 LPCS SYSTEM	ALMCLR
~~163241~~	~~CSLBC13~~	~~LPCS LINE BREAK~~	~~ALMCLR~~
163245	NMSBC02	SRM SHORT PERIOD	ALMCLR
163246	CSLBC02	DIV1 LPCS SYSTEM	INOP
~~163246~~	~~CSLBC13~~	~~LPCS LINE BREAK~~	~~ALARM~~
163248	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP
163249	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL
~~163249~~	~~CSLBC02~~	~~DIV1 LPCS SYSTEM~~	~~ALMCLR~~
163250	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL

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~~163250~~	~~CSLBC13~~	~~LPCS LINE BREAK~~	~~ALMCLR~~
163251	CSLBC02	DIV1 LPCS SYSTEM	INOP
163251	CSLBC13	LPCS LINE BREAK	ALARM
~~163254~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~INOP~~
163254	CSLBC13	LPCS LINE BREAK	ALMCLR
163255	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL
~~163255~~	~~CSLBC02~~	~~DIV1 LPCS SYSTEM~~	~~ALMCLR~~
163257	CSLBC02	DIV1 LPCS SYSTEM	INOP
163257	CSLBC13	LPCS LINE BREAK	ALARM
~~163258~~	~~CSLBC02~~	~~DIV1 LPCS SYSTEM~~	~~ALMCLR~~
163258	CSLBC13	LPCS LINE BREAK	ALMCLR
163300	NMSBC02	SRM SHORT PERIOD	ALARM
~~163301~~	~~CSLBC02~~	~~DIV1 LPCS SYSTEM~~	~~INOP~~
163301	CSLBC13	LPCS LINE BREAK	ALARM
163302	CSLBC02	DIV1 LPCS SYSTEM	ALMCLR
~~163302~~	~~CSLBC13~~	~~LPCS LINE BREAK~~	~~ALMCLR~~
163305	CSLBC02	DIV1 LPCS SYSTEM	INOP
163305	CSLBC13	LPCS LINE BREAK	ALARM
~~163308~~	~~CSLBC02~~	~~DIV1 LPCS SYSTEM~~	~~ALMCLR~~
163308	CSLBC13	LPCS LINE BREAK	ALMCLR
163310	CSLBC02	DIV1 LPCS SYSTEM	INOP
~~163310~~	~~CSLBC13~~	~~LPCS LINE BREAK~~	~~ALARM~~
163311	CSLBC02	DIV1 LPCS SYSTEM	ALMCLR
163311	CSLBC13	LPCS LINE BREAK	ALMCLR
~~163313~~	~~CSLBC02~~	~~DIV1 LPCS SYSTEM~~	~~INOP~~
163313	CSLBC13	LPCS LINE BREAK	ALARM
163314	CSLBC02	DIV1 LPCS SYSTEM	ALMCLR
~~163314~~	~~CSLBC13~~	~~LPCS LINE BREAK~~	~~ALMCLR~~
163318	NMSBC02	SRM SHORT PERIOD	ALMCLR
163322	NMSBC01	SRM DOWNSCALE	ALARM
~~163323~~	~~NMSBC01~~	~~SRM DOWNSCALE~~	~~ALMCLR~~
163326	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP
163326	NMSBC02	SRM SHORT PERIOD	ALARM
~~163328~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~NORMAL~~
163333	NMSOC103	SRM INSTR-INOP ALARM	INOP
163333	NMSBC03	SRM UPSCALE/INOP	ALARM
~~163334~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~INOP~~
163335	NMSOC103	SRM INSTR-INOP ALARM	NORMAL
163335	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL
~~163335~~	~~NMSBC03~~	~~SRM UPSCALE/INOP~~	~~ALMCLR~~
163347	NMSBC02	SRM SHORT PERIOD	ALMCLR
163353	NMSBC02	SRM SHORT PERIOD	ALARM

163358	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
163407	CNALC01	CLN ST RBLR DT 1A LS9A	HIGH			
163412	FWSTA02	6PT HTR 2FWS-E6B INL TMP	OK	286.32	284.00	DEG F
163412	FWSTA05	6PT HTR 2FWS-E6B OUT TMP	*LO	292.13	324.00	DEG F
~~163413~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	~~ALARM~~			
163416	NMSBC02	SRM SHORT PERIOD	ALMCLR			
163418	CSLBC02	DIV1 LPCS SYSTEM	INOP			
~~163418~~	~~CSLBC13~~	~~LPCS LINE BREAK~~	~~ALARM~~			
163419	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL			
163419	CSLBC02	DIV1 LPCS SYSTEM	ALMCLR			
~~163419~~	~~CSLBC13~~	~~LPCS LINE BREAK~~	~~ALMCLR~~			
163427	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			

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~~163427~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	~~ALARM~~
163429	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL
163430	NMSBC02	SRM SHORT PERIOD	ALMCLR
~~163432~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	~~ALARM~~
163433	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP
163434	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL
~~163435~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	~~ALMCLR~~
163442	SWTBC07	SWT SYSTEM TROUBLE	ALMCLR
163445	NMSBC02	SRM SHORT PERIOD	ALARM
~~163447~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	~~ALMCLR~~
163454	NMSBC02	SRM SHORT PERIOD	ALARM
163459	NMSBC02	SRM SHORT PERIOD	ALMCLR
~~163503~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~INOP~~
163504	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL
163509	NMSBC02	SRM SHORT PERIOD	ALARM
~~163511~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	~~ALMCLR~~
163512	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP
163513	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL
~~163530~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	~~ALARM~~
163531	NMSBC02	SRM SHORT PERIOD	ALMCLR
163536	NMSBC02	SRM SHORT PERIOD	ALARM
~~163540~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	~~ALMCLR~~
163543	NMSBC02	SRM SHORT PERIOD	ALARM
163546	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP
~~163546~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	~~ALMCLR~~
163547	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL
163548	CNALC01	CLN ST RBLR DT 1A LS9A	HIGH
~~163601~~	~~CNALC01~~	~~CLN ST RBLR DT 1A LS9A~~	~~NORMAL~~
163602	CWSAA02	BLWDN WTR CHLORINE RESID	OK 0.02L******* PPM
163608	NMSBC02	SRM SHORT PERIOD	ALARM
~~163612~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	~~ALMCLR~~
163613	NMSBC02	SRM SHORT PERIOD	ALARM
163615	NMSBC02	SRM SHORT PERIOD	ALMCLR
~~163634~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~INOP~~
163636	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL
163636	NMSBC02	SRM SHORT PERIOD	ALARM
~~163639~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~INOP~~
163640	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL
163641	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP
~~163641~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	~~ALMCLR~~
163642	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL
163702	NMSBC02	SRM SHORT PERIOD	ALARM
163706	NMSBC02	SRM SHORT PERIOD	ALMCLR
163712	NMSBC02	SRM SHORT PERIOD	ALARM
163713	NMSBC02	SRM SHORT PERIOD	ALMCLR

163736	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
163737	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
163738	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL			
163749	NMSBC02	SRM SHORT PERIOD	ALARM			
163750	NMSBC02	SRM SHORT PERIOD	ALMCLR			
163800	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
163802	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
163809	NMSBC02	SRM SHORT PERIOD	ALARM			

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163812	NMSBC02	SRM SHORT PERIOD	ALMCLR			
163829	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
163830	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
163830	WTSAA01	2WTS-TK1 RECIRC WTR PH	LO	5.22	6.50	PH
163837	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
163838	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
163845	CNALC01	CLN ST RBLR DT 1A LS9A	HIGH			
163854	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
163855	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
163858	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL			
163900	WTSAA01	2WTS-TK1 RECIRC WTR PH	OK	8.00	6.50	PH
163912	DSRTA01	RHTR DR RCVR TK6A DR TMP	*LO	224.91	250.00	DEG F
163912	HDHTA02	6PT HTR E6B DR TEMP	*LO	140.96	284.00	DEG F
163912	HDLTA12	3PT HTR DCL3C DR OUT TMP	LO	98.93	99.00	DEG F
163915	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
163916	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
163919	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
163920	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
163927	NMSBC02	SRM SHORT PERIOD	ALARM			
163930	NMSBC02	SRM SHORT PERIOD	ALMCLR			
163944	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
163945	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
163945	FWSTA04	6PT HTR 2FWS-E6A OUT TMP	LO	323.97	324.00	DEG F
163953	TMITA07	PIPE UPSTR 2HRS-SV6C TMP	*LO	287.98	400.00	DEG F
164001	FWSPA04A	FW PRESS LOOP A	*LO	52.0	220.0	PSIG
164001	FWSPA05A	FW PRESS LOOP B	*LO	51.0	220.0	PSIG
164017	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
164018	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
164034	NMSBC02	SRM SHORT PERIOD	ALARM			
164035	CNALC01	CLN ST RBLR DT 1A LS9A	HIGH			
164035	NMSBC02	SRM SHORT PERIOD	ALMCLR			
164038	NMSBC02	SRM SHORT PERIOD	ALARM			
164042	NMSBC02	SRM SHORT PERIOD	ALMCLR			
164047	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL			
164051	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
164052	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
164054	NMSBC02	SRM SHORT PERIOD	ALARM			
164058	NMSBC02	SRM SHORT PERIOD	ALMCLR			
164106	NMSBC02	SRM SHORT PERIOD	ALARM			
164108	NMSBC02	SRM SHORT PERIOD	ALMCLR			
164117	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
164118	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
164122	NMSBC02	SRM SHORT PERIOD	ALARM			
164123	NMSBC02	SRM SHORT PERIOD	ALMCLR			
164128	NMSBC02	SRM SHORT PERIOD	ALARM			
164130	NMSBC02	SRM SHORT PERIOD	ALMCLR			
164142	NMSBC02	SRM SHORT PERIOD	ALARM			
164144	NMSBC02	SRM SHORT PERIOD	ALMCLR			

164200	WTSAA01	2WTS-TK1 RECIRC WTR PH	LO	4.72	6.50	PH
~~164202~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	ALARM			
164202	HVCMA04	RELAY ROOM HMDT MT8B	OK	49.06	50.00	%RH
164203	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
~~164204~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	NORMAL			
164206	NMSBC02	SRM SHORT PERIOD	ALMCLR			

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~~164223~~	~~CNALC01~~	~~CLN ST RBLR DT 1A LS9A~~	HIGH			
164231	NMSBC02	SRM SHORT PERIOD	ALARM			
164233	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
~~164233~~	~~NMSBC02~~	SRM SHORT PERIOD	ALMCLR			
164234	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
164235	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL			
~~164240~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	ALARM			
164243	NMSBC02	SRM SHORT PERIOD	ALMCLR			
164244	ESSTA12	3 PT HTR E3C EXTR ST TMP	*LO	236.41	256.00	DEG F
~~164259~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	ALARM			
164302	NMSBC02	SRM SHORT PERIOD	ALMCLR			
164303	NMSBC02	SRM SHORT PERIOD	ALARM			
~~164304~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	INOP			
164304	NMSBC02	SRM SHORT PERIOD	ALMCLR			
164307	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
~~164309~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	ALARM			
164310	NMSBC02	SRM SHORT PERIOD	ALMCLR			
164311	NMSBC02	SRM SHORT PERIOD	ALARM			
~~164312~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	ALMCLR			
164312	CNSFA01	CND XFR PUMP HDR FLOW	OK	312.14	300.00	GPM
164320	NMSBC02	SRM SHORT PERIOD	ALARM			
~~164323~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	ALMCLR			
164330	WTSAA01	2WTS-TK1 RECIRC WTR PH	*LO	5.99	6.50	PH
164342	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
~~164343~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	NORMAL			
164344	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
164345	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
~~164348~~	~~HVKBC09~~	DIV1 CB CHILLED WTR SYS	INOP			
164349	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
164354	NMSBC02	SRM SHORT PERIOD	ALARM			
~~164359~~	~~CNALC01~~	~~CLN ST RBLR DT 1A LS9A~~	HIGH			
164400	WTSAA01	2WTS-TK1 RECIRC WTR PH	OK	8.04	6.50	PH
164402	NMSBC02	SRM SHORT PERIOD	ALMCLR			
~~164408~~	~~NMSBC02~~	SRM SHORT PERIOD	ALARM			
164410	NMSBC02	SRM SHORT PERIOD	ALMCLR			
164411	NMSBC02	SRM SHORT PERIOD	ALARM			
~~164412~~	~~CNALC01~~	~~CLN ST RBLR DT 1A LS9A~~	NORMAL			
164414	NMSBC02	SRM SHORT PERIOD	ALMCLR			
164418	NMSBC02	SRM SHORT PERIOD	ALARM			
~~164419~~	~~NMSBC02~~	SRM SHORT PERIOD	ALMCLR			
164436	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
164437	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
164500	WTSAA01	2WTS-TK1 RECIRC WTR PH	LO	4.47	6.50	PH
164509	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
164510	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
164513	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
164514	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
164530	WTSAA01	2WTS-TK1 RECIRC WTR PH	OK	8.19	6.50	PH
~~164538~~	~~ESSTA03~~	~~6 PT HTR E6C EXTR ST TMP~~	*LO	163.07	325.00	DEG F
164543	CNALC01	CLN ST RBLR DT 1A LS9A	HIGH			

164630	WTSAA01	2WTS-TK1 RECIRC WTR PH	*LO	6.26	6.50	PH
164700	WTSAA01	2WTS-TK1 RECIRC WTR PH	*LO	4.13	6.50	PH

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164705	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
164706	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
164709	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
164710	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
164712	HDHTA03	6PT HTR EGC DR TEMP	*LO	140.96	284.00	DEG F
164712	HDLTA17	2PT HTR DR TK2B DR TEMP	*LO	100.98	201.00	DEG F
164727	CNALC01	CLN ST RBLR DT 1A LS9A	HIGH			
164730	WTSAA01	2WTS-TK1 RECIRC WTR PH	*LO	5.45	6.50	PH
164738	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL			
164750	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
164752	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
164800	WTSAA01	2WTS-TK1 RECIRC WTR PH	OK	7.55	6.50	PH
164803	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
164804	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
164812	HVCMA04	RELAY ROOM HMDT MT8B	HI	50.56	50.00	%RH
164826	NMSBC02	SRM SHORT PERIOD	ALARM			
164827	NMSBC02	SRM SHORT PERIOD	ALMCLR			
164830	WTSAA01	2WTS-TK1 RECIRC WTR PH	LO	6.26	6.50	PH
164837	CSLBC02	DIV1 LPCS SYSTEM	INOP			
164837	CSLBC13	LPCS LINE BREAK	ALARM			
164839	CSLBC02	DIV1 LPCS SYSTEM	ALMCLR			
164839	CSLBC13	LPCS LINE BREAK	ALMCLR			
164840	CSLBC02	DIV1 LPCS SYSTEM	INOP			
164840	CSLBC13	LPCS LINE BREAK	ALARM			
164845	CNALC01	CLN ST RBLR DT 1A LS9A	HIGH			
164846	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
164847	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
164856	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL			
164900	WTSAA01	2WTS-TK1 RECIRC WTR PH	*LO	1.46	6.50	PH
164902	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
164903	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
164930	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
164930	WTSAA01	2WTS-TK1 RECIRC WTR PH	*LO	6.40	6.50	PH
164931	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
164936	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
164937	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
164943	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
164944	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
164951	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
164952	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
164955	NMSBC02	SRM SHORT PERIOD	ALARM			
164956	NMSBC02	SRM SHORT PERIOD	ALMCLR			
164957	CNALC01	CLN ST RBLR DT 1A LS9A	HIGH			
165000	WTSAA01	2WTS-TK1 RECIRC WTR PH	*LO	3.60	6.50	PH
165008	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL			
165020	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
165021	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
165025	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
165026	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
165028	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
165029	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
165030	WTSAA01	2WTS-TK1 RECIRC WTR PH	OK	6.72	6.50	PH
165100	WTSAA01	2WTS-TK1 RECIRC WTR PH	LO	3.53	6.50	PH
165103	NMSBC02	SRM SHORT PERIOD	ALARM			

145952	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
~~145953~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	~~ALARM~~			
150000	NMSBC02	SRM SHORT PERIOD	ALMCLR			
150005	TMGBC04	TRNGR NOT OPERATING	IN OPER			
~~150016~~	~~IHGBC01~~	~~SPDS PARAMETER ALARM~~	~~TRBL~~			
150022	TMGBC04	TRNGR NOT OPERATING	ALARM			

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~~150029~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	~~ALARM~~			
150030	NMSBC02	SRM SHORT PERIOD	ALMCLR			
150037	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
~~150038~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~NORMAL~~			
150041	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
150042	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
~~150046~~	~~CNALC01~~	~~CLN ST RBLR DT 1A LS9A~~	~~HIGH~~			
150046	ESSTA15	4 PT HTR E4C EXTR ST TMP	*LO	249.90	334.00	DEG F
150049	NMSBC02	SRM SHORT PERIOD	ALARM			
~~150052~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	~~ALMCLR~~			
150055	NMSBC02	SRM SHORT PERIOD	ALARM			
150058	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL			
~~150101~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	~~ALMCLR~~			
150103	NMSBC02	SRM SHORT PERIOD	ALARM			
150107	NMSBC02	SRM SHORT PERIOD	ALMCLR			
~~150111~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	~~ALARM~~			
150112	NMSBC02	SRM SHORT PERIOD	ALMCLR			
150112	FWSTA01	6PT HTR 2FWS-E5A INL TMP	*LO	200.17	284.00	DEG F
~~150113~~	~~NMSBC03~~	~~SRM INSTR INOP ALARM~~	~~NORMAL~~			
150113	NMSBC03	SRM UPSCALE/INOP	ALMCLR			
150113	NMSBC02	SRM SHORT PERIOD	ALARM			
~~150116~~	~~NMSBC01~~	~~SRM DOWNSCALE~~	~~ALMCLR~~			
150124	CNGFC01	CNST XFR PMP DIS DEM FLO	LOW			
150136	ESSTA02	5 PT HTR E5B EXTR ST TMP	*LO	221.83	325.00	DEG F
~~150142~~	~~HDLTA18~~	~~2PT HTR DR TK2C DR TEMP~~	*LO	100.98	201.00	DEG F
150146	NMSBC02	SRM SHORT PERIOD	ALMCLR			
150148	NMSBC02	SRM SHORT PERIOD	ALARM			
~~150148~~	~~TMEPA02~~	GLD SL STM RGLTD SPLY PR	OK	3.09	3.00	PSIG
150150	NMSBC02	SRM SHORT PERIOD	ALMCLR			
150155	NMSBC02	SRM SHORT PERIOD	ALARM			
~~150156~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	ALMCLR			
150200	NMSBC02	SRM SHORT PERIOD	ALARM			
150203	NMSBC02	SRM SHORT PERIOD	ALMCLR			
~~150205~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	ALARM			
150206	NMSBC02	SRM SHORT PERIOD	ALMCLR			
150215	TMGBC04	TRNGR NOT OPERATING	IN OPER			
~~150218~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	ALARM			
150219	NMSBC02	SRM SHORT PERIOD	ALMCLR			
150220	CNALC01	CLN ST RBLR DT 1A LS9A	HIGH			
~~150220~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	INOP			
150220	NMSBC02	SRM SHORT PERIOD	ALARM			
150221	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
150221	NMSBC02	SRM SHORT PERIOD	ALMCLR			
150222	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
150223	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
150223	NMSBC02	SRM SHORT PERIOD	ALARM			
150230	NMSBC02	SRM SHORT PERIOD	ALMCLR			
150232	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL			
~~150232~~	~~TMGBC04~~	~~TRNGR NOT OPERATING~~	ALARM			
150233	NMSBC02	SRM SHORT PERIOD	ALARM			

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150246 NMSBC02  SRM SHORT PERIOD          ALMCLR
150255 HVKBC09  DIV1 CB CHILLED WTR SYS   INOP

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150257 HVKBC09  DIV1 CB CHILLED WTR SYS   NORMAL
150300 NMSOC102 SRM UPSCALE ALARM         NORMAL
150300 NMSBC03  SRM UPSCALE/INOP          ALMCLR
150301 NMSBC02  SRM SHORT PERIOD          ALARM
150303 NMSBC02  SRM SHORT PERIOD          ALMCLR
150304 NMSBC02  SRM SHORT PERIOD          ALARM
150312 CNSFA01  CND XFR PUMP HDR FLOW     LO    298.12   300.00 GPM
150315 NMSBC02  SRM SHORT PERIOD          ALMCLR
150327 HVKBC09  DIV1 CB CHILLED WTR SYS   INOP
150328 HVKBC09  DIV1 CB CHILLED WTR SYS   NORMAL
150328 NMSBC02  SRM SHORT PERIOD          ALARM
150341 HVKBC09  DIV1 CB CHILLED WTR SYS   INOP
150342 HVKBC09  DIV1 CB CHILLED WTR SYS   NORMAL
150359 NMSBC02  SRM SHORT PERIOD          ALMCLR
150401 CNALC01  CLN ST RBLR DT 1A LS9A    HIGH
150412 HVGMA04  RELAY ROOM HMDT MT8B      OK     49.37    50.00 %RH
150413 CNALC01  CLN ST RBLR DT 1A LS9A    NORMAL
150414 NMSBC02  SRM SHORT PERIOD          ALARM
150422 MSSTA03  TURB BYP PSV89A OUT TEMP  *HI   305.00   280.00 DEG F
150432 HVKBC09  DIV1 CB CHILLED WTR SYS   INOP
150433 HVKBC09  DIV1 CB CHILLED WTR SYS   NORMAL
150434 SSRGA01  WCS FLT DEMIN4A OUT COND  HI      0.10     0.10 MMHO/C
150435 HVKBC09  DIV1 CB CHILLED WTR SYS   INOP
150436 HVKBC09  DIV1 CB CHILLED WTR SYS   NORMAL
150437 NMSBC02  SRM SHORT PERIOD          ALMCLR
150443 NMSBC01  SRM DOWNSCALE             ALARM
150449 NMSBC02  SRM SHORT PERIOD          ALARM
150451 NMSBC01  SRM DOWNSCALE             ALMCLR
150501 HVKBC09  DIV1 CB CHILLED WTR SYS   INOP
150502 HVKBC09  DIV1 CB CHILLED WTR SYS   NORMAL
150506 NMSOC103 SRM INSTR-INOP ALARM      INOP
150506 NMSBC03  SRM UPSCALE/INOP          ALARM
150512 HDLTA10  3PT HTR DCL3A DR OUT TMP  *LO    95.16    99.00 DEG F
150516 NMSOC103 SRM INSTR-INOP ALARM      NORMAL
150516 NMSBC03  SRM UPSCALE/INOP          ALMCLR
150527 NMSBC02  SRM SHORT PERIOD          ALMCLR
150530 NMSBC02  SRM SHORT PERIOD          ALARM
150533 NMSBC02  SRM SHORT PERIOD          ALMCLR
150534 CNALC01  CLN ST RBLR DT 1A LS9A    HIGH
150534 NMSBC03  SRM UPSCALE/INOP          ALARM
150534 NMSBC02  SRM SHORT PERIOD          ALARM
150535 NMSOC103 SRM INSTR-INOP ALARM      INOP
150539 TMGBC04  TRNGR NOT OPERATING       IN OPER
150545 NMSBC02  SRM SHORT PERIOD          ALMCLR
150547 CNALC01  CLN ST RBLR DT 1A LS9A    NORMAL
150559 NMSOC103 SRM INSTR-INOP ALARM      NORMAL
150559 NMSBC03  SRM UPSCALE/INOP          ALMCLR
150604 ABMPA01  AUX BLR DEAR INL PRESS    LO      2.48     2.50 PSIG
150604 GTSPA01  RB IN/OUT D/P PDT5A       OK     -0.45    -0.50 IN WG
150606 HVKBC09  DIV1 CB CHILLED WTR SYS   INOP
150607 HVKBC09  DIV1 CB CHILLED WTR SYS   NORMAL
150615 ICSLC01  RCIC TURB ST DR TRAP LVL  HIGH
150619 ICSLC01  RCIC TURB ST DR TRAP LVL  NORMAL
150627 HVKBC09  DIV1 CB CHILLED WTR SYS   INOP
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~~150654~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~INOP~~			
150655	GMHAC07	STTR CLG WTR TK VENT H2	HIGH			
150655	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
~~150658~~	~~GMHAC07~~	~~STTR CLG WTR TK VENT H2~~	~~NORMAL~~			
150716	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
150716	TMGBC04	TRNGR NOT OPERATING	ALARM			
~~150717~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~NORMAL~~			
150721	CWSAC02	CLG TWR BLOW-DOWN WTR PH	HIGH			
150721	CWSAC01	CLG TWR BLOW-DOWN WTR PH	LOW			
~~150723~~	~~CNALC01~~	~~CLN ST RBLR DT 1A LS9A~~	~~HIGH~~			
150730	CWSAC02	CLG TWR BLOW-DOWN WTR PH	NORMAL			
150730	CWSAC01	CLG TWR BLOW-DOWN WTR PH	NORMAL			
~~150730~~	~~ESSTA05~~	~~1 PT HTR E1B SHELL TEMP~~	~~*LO~~	~~96.87~~	~~119.00~~	~~DEG F~~
150736	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL			
150747	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
~~150748~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~NORMAL~~			
150807	TMGBC04	TRNGR NOT OPERATING	IN OPER			
150813	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
~~150814~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~NORMAL~~			
150820	RHSBC21	RHR PUMP 1B STATUS	RUN			
150821	RHSPC03	RHR PMP 1A DISCH PRESS	ABNORM			
~~150821~~	~~RHSPC09~~	~~RHR PMP 1B SUCT PRESS~~	~~ABNORM~~			
150822	RHSPC03	RHR PMP 1A DISCH PRESS	NORMAL			
150822	RHSPC09	RHR PMP 1B SUCT PRESS	NORMAL			
~~150825~~	~~RHSBC27~~	~~RHR B INJECTION FLOW~~	~~NORMAL~~			
150827	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
150827	NMSBC02	SRM SHORT PERIOD	ALARM			
~~150828~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~NORMAL~~			
150828	NMSBC02	SRM SHORT PERIOD	ALMCLR			
150841	TMGBC04	TRNGR NOT OPERATING	ALARM			
~~150842~~	~~ESSTA13~~	~~4 PT HTR E4A EXTR ST TMP~~	~~*LO~~	~~237.81~~	~~334.00~~	~~DEG F~~
150843	ESSTA14	4 PT HTR E4B EXTR ST TMP	*LO	237.95	334.00	DEG F
150858	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
~~150858~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	~~ALARM~~			
150859	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
150859	GTSPA01	RB IN/OUT D/P PDT5A	OK	-0.49	-0.50	IN WG
~~150901~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	~~ALMCLR~~			
150914	FWSLC01	REACTOR WTR LEVEL HI/LO	ALMCLR			
150932	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
~~150933~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~NORMAL~~			
150934	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
150936	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
150943	CNALC01	CLN ST RBLR DT 1A LS9A	HIGH			
150944	NMPBC25	APRM TRIP SYS CH D DNSC	ALMCLR			
150944	GTSPA01	RB IN/OUT D/P PDT5A	LO	-0.52	-0.50	IN WG
150946	NMSBC02	SRM SHORT PERIOD	ALARM			
150949	NMSBC02	SRM SHORT PERIOD	ALMCLR			
150957	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL			
~~151007~~	~~THEPA02~~	~~GLD SL STM RGLTD SPLY PR~~	~~LO~~	~~2.97~~	~~3.06~~	~~PSIG~~
151008	NMSBC02	SRM SHORT PERIOD	ALARM			
151013	NMSBC02	SRM SHORT PERIOD	ALMCLR			
~~151015~~	~~HTSBC01~~	~~D1 HEAT TRACE HTS*PNL001~~	~~NORMAL~~			
151040	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
151042	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
~~151050~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	~~ALARM~~			
151059	CSLPC04	LPCS MOV104 D/P PERMIS	ALARM			

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~~151101~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	~~ALMCLR~~			
151102	NMSBC02	SRM SHORT PERIOD	ALARM			
151104	NMSBC02	SRM SHORT PERIOD	ALMCLR			
~~151112~~	~~TNABC12~~	~~BYP VLV CONT UNIT LOGIC~~	~~ALMCLR~~			
151122	HVCMA04	RELAY ROOM HMDT MT8B	HI	50.12	50.00	%RH
151123	MSSBC23	TURB BYPASS VALVE PSV89A	NORMAL			
~~151129~~	~~CSHBC01~~	~~HPCS SYSTEM~~	~~INOP~~			
151130	CSHBC01	HPCS SYSTEM	ALMCLR			
151134	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
~~151135~~	~~CSHBC01~~	~~HPCS SYSTEM~~	~~INOP~~			
151136	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
151136	CSHBC01	HPCS SYSTEM	ALMCLR			
~~151138~~	~~CSHBC01~~	~~HPCS SYSTEM~~	~~INOP~~			
151139	GMHAC07	STTR CLG WTR TK VENT H2	HIGH			
151139	CSHBC01	HPCS SYSTEM	ALMCLR			
~~151140~~	~~CSHBC01~~	~~HPCS SYSTEM~~	~~INOP~~			
151141	CSHBC01	HPCS SYSTEM	ALMCLR			
151142	FWSTA02	6PT HTR 2FWS-E6B INL TMP	*LO	189.17	284.00	DEG F
~~151143~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~INOP~~			
151144	GMHAC07	STTR CLG WTR TK VENT H2	NORMAL			
151144	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
~~151144~~	~~CSHBC01~~	~~HPCS SYSTEM~~	~~INOP~~			
151145	CSHBC01	HPCS SYSTEM	ALMCLR			
151146	FWSLC01	REACTOR WTR LEVEL HI/LO	H/L			
~~151147~~	~~CSHBC01~~	~~HPCS SYSTEM~~	~~INOP~~			
151147	ESSPA17	1 PT HTR E1C SHELL PRESS	*LO	1.09	2.00	PSIA
151148	CSHBC01	HPCS SYSTEM	ALMCLR			
~~151158~~	~~CNALC01~~	~~CLN ST RBLR DT 1A LS9A~~	~~HIGH~~			
151203	NMSBC02	SRM SHORT PERIOD	ALARM			
151211	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL			
~~151211~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	~~ALMCLR~~			
151212	NMSBC02	SRM SHORT PERIOD	ALARM			
151212	FWSTA01	6PT HTR 2FWS-E6A INL TMP	*LO	219.87	284.00	DEG F
~~151219~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	~~ALMCLR~~			
151222	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
151223	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
~~151242~~	~~FWSTA01~~	~~6PT HTR 2FWS-E6A INL TMP~~	~~*LO~~	~~250.32~~	~~284.00~~	~~DEG F~~
151316	CNMFA08	CNST PMPS DISCH HDR FLO	OK	10.17	11.00	KGPM
151342	FWSTA01	6PT HTR 2FWS-E6A INL TMP	OK	302.91	284.00	DEG F
~~151354~~	~~CNALC01~~	~~CLN ST RBLR DT 1A LS9A~~	~~HIGH~~			
151407	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL			
151412	HDLTA11	3PT HTR DCL3B DR OUT TMP	*LO	95.10	99.00	DEG F
151421	RMSRC11	RB/RWB LOSS OF SMPL FLO	NORMAL			
151422	HVCMA04	RELAY ROOM HMDT MT8B	*HI	53.12	50.00	%RH
151440	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
151443	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
151511	CNMPA06	RX FD WTR PMP1B SUCT PR	*LO	81.40	230.00	PSIG
151521	CNMPA06	RX FD WTR PMP1B SUCT PR	*LO	117.80	230.00	PSIG
~~151526~~	~~MSSPA05~~	~~MAIN STEAM INL HDR PR~~	~~LO~~	~~97.50~~	~~100.00~~	~~PSIA~~
151528	ESSTA04	1 PT HTR E1A SHELL TEMP	*LO	91.41	119.00	DEG F
151532	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
~~151533~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~NORMAL~~			
151536	CNMPA06	RX FD WTR PMP1B SUCT PR	*LO	68.20	230.00	PSIG
151537	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
~~151538~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~NORMAL~~			
151548	CNALC01	CLN ST RBLR DT 1A LS9A	HIGH			

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~~151548~~	~~ABMPA01~~	~~AUX BLR DEAR INL PRESS~~	~~OK~~	~~2.64~~	~~2.50~~	~~PSIG~~
151551	CNMPA06	RX FD WTR PMP1B SUCT PR	*LO	46.00	230.00	PSIG
151601	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL			
~~151623~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	~~ALARM~~			
151624	NMSBC02	SRM SHORT PERIOD	ALMCLR			
151628	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
~~151628~~	~~FWSPA04~~	~~REACTOR INLET PRES PT40A~~	~~*LO~~	~~99.00~~	~~875.00~~	~~PSIG~~
151629	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
151652	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
~~151653~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~NORMAL~~			
151718	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
151719	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
~~151720~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~INOP~~			
151721	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
151744	ESSTA12	3 PT HTR E3C EXTR ST TMP	*LO	246.24	256.00	DEG F
~~151749~~	~~CNALC01~~	~~CLN ST RBLR DT 1A LS9A~~	~~HIGH~~			
151750	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
151751	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
~~151802~~	~~CNALC01~~	~~CLN ST RBLR DT 1A LS9A~~	~~NORMAL~~			
151833	FWSUC09	FDW RX WTR LVL HIGH TRIP	TRIPPED			
151838	FWSUC09	FDW RX WTR LVL HIGH TRIP	ALMCLR			
~~151838~~	~~ABMPA01~~	~~AUX BLR DEAR INL PRESS~~	~~LO~~	~~2.46~~	~~2.50~~	~~PSIG~~
151846	CSLBC02	DIV1 LPCS SYSTEM	INOP			
151846	CSLBC13	LPCS LINE BREAK	ALARM			
~~151851~~	~~CNMFA01~~	~~CNST BSTR PMP P2A FLO~~	~~LO~~	~~3.34~~	~~4.00~~	~~KGPM~~
151856	CNMFA01	CNST BSTR PMP P2A FLO	*LO	0.00	4.00	KGPM
151856	CNMPA05	RX FD WTR PMP 1A SUCT PR	*LO	55.80	230.00	PSIG
~~151857~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~INOP~~			
151857	CNMPA07	RX FD WTR PMP 1C SUCT PR	*LO	68.20	230.00	PSIG
151858	FWSPA03	RX FEED WTR P1C DISCH PR	*LO	61.60	930.00	PSIG
~~151859~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~NORMAL~~			
151902	CNMFA01	CNST BSTR PMP P2A FLO	*LO	1.95	4.00	KGPM
151902	CNMPA05	RX FD WTR PMP 1A SUCT PR	*LO	39.00	230.00	PSIG
~~151902~~	~~CNMPA06~~	~~RX FD WTR PMP1B SUCT PR~~	~~*LO~~	~~22.20~~	~~230.00~~	~~PSIG~~
151906	CNMFA01	CNST BSTR PMP P2A FLO	*LO	0.00	4.00	KGPM
151907	RHSTC04	RHR HX CLG WTR OUTL TEMP	HIGH			
~~151909~~	~~FWSUC09~~	~~FDW RX WTR LVL HIGH TRIP~~	~~TRIPPED~~			
151936	CNALC01	CLN ST RBLR DT 1A LS9A	HIGH			
151941	SWTBC07	SWT SYSTEM TROUBLE	TRBL			
~~151948~~	~~CNALC01~~	~~CLN ST RBLR DT 1A LS9A~~	~~NORMAL~~			
152002	FWSPA04A	FW PRESS LOOP A	*LO	107.7	220.0	PSIG
152002	FWSPA05A	FW PRESS LOOP B	*LO	117.0	220.0	PSIG
152014	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
152015	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
152017	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
152018	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
152105	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
152106	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
~~152112~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~INOP~~			
152113	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
152122	CNALC01	CLN ST RBLR DT 1A LS9A	HIGH			
~~152126~~	~~FWSLA101~~	~~REACTOR WATER LEVEL~~	~~SHI~~	~~204.91~~	~~205.00~~	~~INCHES~~
152128	FWSPA05	REACTOR INLET PRES PT40B	*LO	95.15	875.00	PSIG
152129	ICSPC15	D2 RCIC STM SUPPLY PR	LOW			
~~152134~~	~~CNALC01~~	~~CLN ST RBLR DT 1A LS9A~~	~~NORMAL~~			
152149	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			

152150	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
152154	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
152154	ICSPC14	D1 RCIC STM SUPPLY PR	LOW			
152155	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
152156	ICSPC16	D2 RCIC STM SUPPLY PR	LOW			
152200	FWSTA48	FEED WATER FINAL TEMP	*LO	143.30	324.00	DEG F
152215	FWSTA48	FEED WATER FINAL TEMP	*LO	154.08	324.00	DEG F
152235	ICSPC13	D1 RCIC STM SUPPLY PR	LOW			
152251	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
152252	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
152300	FWSTA48	FEED WATER FINAL TEMP	*LO	127.74	324.00	DEG F
152308	CNALC01	CLN ST RBLR DT 1A LS9A	HIGH			
152315	FWSTA48	FEED WATER FINAL TEMP	*LO	121.00	324.00	DEG F
152319	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
152320	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL			
152320	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
152348	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
152349	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
152356	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
152357	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
152400	FWSTA48	FEED WATER FINAL TEMP	*LO	111.26	324.00	DEG F
152402	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
152403	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
152406	HVCMA04	RELAY ROOM HMDT MT8B	OK	49.37	50.00	%RH
152423	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
152424	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
152437	CNMPA07	RX FD WTR PMP 1C SUCT PR	*LO	44.00	230.00	PSIG
152449	CNALC01	CLN ST RBLR DT 1A LS9A	HIGH			
152501	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL			
152523	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
152524	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
152529	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
152531	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
152537	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
152538	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
152554	TMITA04	PIPE UPSTR 2HRS-SV5A TMP	*LO	303.91	400.00	DEG F
152602	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP	....		
152603	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
152621	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
152622	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
152646	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
152647	CNALC01	CLN ST RBLR DT 1A LS9A	HIGH			
152647	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
152656	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
152657	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
152659	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL			
152703	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
152704	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
152714	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
152716	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
152717	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
152718	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
152719	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
152720	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
152723	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
152724	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			

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~~152733~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~NORMAL~~			
152736	MSSPA04	REHTR E1B REG ST SPLY PR	*LO	4.00	800.00	PSIA
152738	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
~~152739~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~NORMAL~~			
152741	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
152742	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
~~152742~~	~~FWSLA101~~	~~REACTOR WATER LEVEL~~	~~HI~~	~~204.46~~	~~205.00~~	~~INCHES~~
152744	NMPBC19	APRM TRIP SYS CH D UPSC	ALARM			
152745	NMP2C108	APRM UPSCALE ALARM	ALARM			
~~152749~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~INOP~~			
152750	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
152751	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
~~152753~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~NORMAL~~			
152811	FWSLA101	REACTOR WATER LEVEL	SHI	205.00	205.00	INCHES
152820	ISCLA01	RPV WTR LVL(NARROW) CH A	ADC	206.39L	*******	IN WG
~~152830~~	~~CNALC01~~	~~CLN ST RBLR DT 1A LS9A~~	~~HIGH~~			
152842	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL			
152857	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
~~152858~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~NORMAL~~			
152900	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
152901	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
~~152907~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~INOP~~			
152908	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
152910	NMSOC104	SRM CHANNEL BYPASSED	ON			
~~152912~~	~~FWSTA02~~	~~6PT HTR 2FWS-E6B INL TMP~~	~~*LO~~	~~220.29~~	~~284.00~~	~~DEG F~~
152936	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
152937	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
~~152942~~	~~FWSTA02~~	~~6PT HTR 2FWS-E6B INL TMP~~	~~*LO~~	~~229.11~~	~~284.00~~	~~DEG F~~
153003	FWSPA04A	FW PRESS LOOP A	*LO	78.4	220.0	PSIG
153003	FWSPA05A	FW PRESS LOOP B	*LO	87.7	220.0	PSIG
~~153012~~	~~CNALC01~~	~~CLN ST RBLR DT 1A LS9A~~	~~HIGH~~			
153016	HVCMA04	RELAY ROOM HMDT MT8B	HI	50.19	50.00	%RH
153023	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL			
~~153026~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~INOP~~			
153028	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
153102	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
~~153103~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~NORMAL~~			
153104	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
153106	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
153152	CNALC01	CLN ST RBLR DT 1A LS9A	HIGH			
153205	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL			
153258	RMSRC11	RB/RWB LOSS OF SMPL FLO	ALARM			
153300	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
153301	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
153310	ARCLC04	CNSR AIR REM TK SP1B LVL	LOW			
~~153326~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~INOP~~			
153327	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
153342	CNALC01	CLN ST RBLR DT 1A LS9A	HIGH			
~~153354~~	~~CNALC01~~	~~CLN ST RBLR DT 1A LS9A~~	~~NORMAL~~			
153415	ARCLC04	CNSR AIR REM TK SP1B LVL	NORMAL			
153442	DERFA01	DW EQPT DR PMPS 3A+3B FL	OK	82.50	45.00	GPM
~~153459~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~INOP~~			
153500	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			

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~~153504~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~INOP~~
153505	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL
153518	CNALC01	CLN ST RBLR DT 1A LS9A	HIGH
[illegible]			

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145520 TMGBC04  TRNGR NOT OPERATING         ALARM
145523 HVKBC09  DIV1 CB CHILLED WTR SYS     INOP
145524 RMSRC11  RB/RWB LOSS OF SMPL FLO     ALARM
145525 HVKBC09  DIV1 CB CHILLED WTR SYS     NORMAL
145526 NMSBC02  SRM SHORT PERIOD            ALMCLR
145537 NMSBC02  SRM SHORT PERIOD            ALARM
145538 NMSBC01  SRM DOWNSCALE               ALMCLR
145556 CNALC01  CLN ST RBLR DT 1A LS9A      HIGH
145557 NMSOC102 SRM UPSCALE ALARM           ALARM
145558 NMSOC102 SRM UPSCALE ALARM           NORMAL

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145605 NMSBC02  SRM SHORT PERIOD            ALMCLR
145608 CNALC01  CLN ST RBLR DT 1A LS9A      NORMAL
145623 HVKBC09  DIV1 CB CHILLED WTR SYS     INOP
145624 HVKBC09  DIV1 CB CHILLED WTR SYS     NORMAL
145635 HVKBC09  DIV1 CB CHILLED WTR SYS     INOP
145636 HVKBC09  DIV1 CB CHILLED WTR SYS     NORMAL
145643 HVKBC09  DIV1 CB CHILLED WTR SYS     INOP
145644 HVKBC09  DIV1 CB CHILLED WTR SYS     NORMAL
145653 NMSBC02  SRM SHORT PERIOD            ALARM
145654 NMSBC02  SRM SHORT PERIOD            ALMCLR
145654 NMSBC01  SRM DOWNSCALE               ALARM
145656 NMSBC02  SRM SHORT PERIOD            ALARM
145657 NMSBC01  SRM DOWNSCALE               ALMCLR
145703 NMSBC02  SRM SHORT PERIOD            ALMCLR
145718 HVKBC09  DIV1 CB CHILLED WTR SYS     INOP
145719 TMGBC04  TRNGR NOT OPERATING         IN OPER
145720 HVKBC09  DIV1 CB CHILLED WTR SYS     NORMAL
145726 HVKBC09  DIV1 CB CHILLED WTR SYS     INOP
145727 HVKBC09  DIV1 CB CHILLED WTR SYS     NORMAL
145734 NMSBC01  SRM DOWNSCALE               ALARM
145737 CNALC01  CLN ST RBLR DT 1A LS9A      HIGH
145739 TMGBC04  TRNGR NOT OPERATING         ALARM
145749 CNALC01  CLN ST RBLR DT 1A LS9A      NORMAL
145752 NMSBC02  SRM SHORT PERIOD            ALARM
145754 NMSBC02  SRM SHORT PERIOD            ALMCLR
145805 RCSFC102 RECIRC LOOP B INACTIVE      NO
145813 HVKBC09  DIV1 CB CHILLED WTR SYS     INOP
145814 HVKBC09  DIV1 CB CHILLED WTR SYS     NORMAL
145816 NMSOC102 SRM UPSCALE ALARM           ALARM
145819 HVKBC09  DIV1 CB CHILLED WTR SYS     INOP
145820 HVKBC09  DIV1 CB CHILLED WTR SYS     NORMAL
145821 HVKBC09  DIV1 CB CHILLED WTR SYS     INOP
145822 HVKBC09  DIV1 CB CHILLED WTR SYS     NORMAL
145834 NMSOC102 SRM UPSCALE ALARM           NORMAL
145842 FWSTA01  6PT HTR 2FWS-E6A INL TMP    ^LO   213.72   284.66 DEG F
145846 FWSLC01  REACTOR WTR LEVEL HI/LO     H/L
145905 CNALC01  CLN ST RBLR DT 1A LS9A      HIGH
145911 HVKBC09  DIV1 CB CHILLED WTR SYS     INOP
145912 HVKBC09  DIV1 CB CHILLED WTR SYS     NORMAL
145914 HVKBC09  DIV1 CB CHILLED WTR SYS     INOP
145915 HVKBC09  DIV1 CB CHILLED WTR SYS     NORMAL
145917 CNALC01  CLN ST RBLR DT 1A LS9A      NORMAL
145922 NMSBC02  SRM SHORT PERIOD            ALARM
145923 NMSBC02  SRM SHORT PERIOD            ALMCLR
145925 NMSBC02  SRM SHORT PERIOD            ALARM
145926 RCSBC34  RCS P1B SUCT/DISCH VLVS     NOFLOP
145931 NMSBC02  SRM SHORT PERIOD            ALMCLR
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165641 ISCLA01  RPV WTR LVL(NARROW) CH A OK   206.73L******* IN WG
165700 HVKBC09  DIV1 CB CHILLED WTR SYS  INOP
165701 HVKBC09  DIV1 CB CHILLED WTR SYS  NORMAL
165705 HVKBC09  DIV1 CB CHILLED WTR SYS  INOP
165706 HVKBC09  DIV1 CB CHILLED WTR SYS  NORMAL
165707 NMSBC02  SRM SHORT PERIOD         ALARM
165708 HVKBC09  DIV1 CB CHILLED WTR SYS  INOP
165709 HVKBC09  DIV1 CB CHILLED WTR SYS  NORMAL
165709 NMSBC02  SRM SHORT PERIOD         ALMCLR
165711 NMSBC02  SRM SHORT PERIOD         ALARM
165713 NMSBC02  SRM SHORT PERIOD         ALMCLR
165714 HVKBC09  DIV1 CB CHILLED WTR SYS  INOP
165715 HVKBC09  DIV1 CB CHILLED WTR SYS  NORMAL
165724 HVKBC09  DIV1 CB CHILLED WTR SYS  INOP
165725 HVKBC09  DIV1 CB CHILLED WTR SYS  NORMAL
165730 WTSAA01  2WTS-TK1 RECIRC WTR PH   LO      1.32     6.50 PH
165731 HVKBC09  DIV1 CB CHILLED WTR SYS  INOP
165732 HVKBC09  DIV1 CB CHILLED WTR SYS  NORMAL
165742 HVKBC09  DIV1 CB CHILLED WTR SYS  INOP
165743 HVKBC09  DIV1 CB CHILLED WTR SYS  NORMAL
165749 CNALC01  CLN ST RBLR DT 1A LS9A   HIGH
165800 CNALC01  CLN ST RBLR DT 1A LS9A   NORMAL
165812 FWSTA02  6PT HTR 2FWS-E6B INL TMP LO   283.91   284.00 DEG F
165826 NMSBC02  SRM SHORT PERIOD         ALARM
165828 NMSBC02  SRM SHORT PERIOD         ALMCLR
165830 WTSAA01  2WTS-TK1 RECIRC WTR PH   OK      6.53     6.50 PH
165837 GMHAC07  STTR CLG WTR TK VENT H2  HIGH
165838 GMHAC07  STTR CLG WTR TK VENT H2  NORMAL
165841 FWSLA101 REACTOR WATER LEVEL      HI   204.49   205.00 INCHES
165900 WTSAA01  2WTS-TK1 RECIRC WTR PH   LO      4.22     6.50 PH
165906 CNALC01  CLN ST RBLR DT 1A LS9A   HIGH
165913 NMSBC02  SRM SHORT PERIOD         ALARM
165915 NMSBC02  SRM SHORT PERIOD         ALMCLR
165916 NMSBC02  SRM SHORT PERIOD         ALARM
165917 CNALC01  CLN ST RBLR DT 1A LS9A   NORMAL
165921 NMSBC02  SRM SHORT PERIOD         ALMCLR
165923 NMSBC02  SRM SHORT PERIOD         ALARM
165925 NMSBC02  SRM SHORT PERIOD         ALMCLR
165930 WTSAA01  2WTS-TK1 RECIRC WTR PH   *LO     6.44     6.56 PH
165938 NMSBC02  SRM SHORT PERIOD         ALARM
165940 NMSBC02  SRM SHORT PERIOD         ALMCLR
170000 WTSAA01  2WTS-TK1 RECIRC WTR PH   *LO     4.43     6.50 PH
170001 FWSPA04A FW PRESS LOOP A          *LO     49.7    220.0 PSIG
170022 FWSLA101 REACTOR WATER LEVEL      OK   202.96   205.00 INCHES
170023 HVKBC09  DIV1 CB CHILLED WTR SYS  INOP
170024 HVKBC09  DIV1 CB CHILLED WTR SYS  NORMAL
170026 HVKBC09  DIV1 CB CHILLED WTR SYS  INOP
170027 HVKBC09  DIV1 CB CHILLED WTR SYS  NORMAL
170031 WTSAA01  2WTS-TK1 RECIRC WTR PH   OK      7.01     6.50 PH
170033 CNALC01  CLN ST RBLR DT 1A LS9A   HIGH
170035 NMSBC02  SRM SHORT PERIOD         ALARM
170037 NMSBC02  SRM SHORT PERIOD         ALMCLR
170045 CNALC01  CLN ST RBLR DT 1A LS9A   NORMAL
170100 WTSAA01  2WTS-TK1 RECIRC WTR PH   LO      6.12     6.50 PH
170102 HVCMA04  RELAY ROOM HMDT MT8B     OK    49.19    50.00 %RH
170110 NMSBC02  SRM SHORT PERIOD         ALARM
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170114	NMSBC02	SRM SHORT PERIOD	ALMCLR			
170130	WTSAA01	2WTS-TK1 RECIRC WTR PH	*LO	1.65	6.50	PH
170136	FWSUC09	FDW RX WTR LVL HIGH TRIP	ALMCLR			
170144	NMSBC02	SRM SHORT PERIOD	ALARM			
170147	NMSBC02	SRM SHORT PERIOD	ALMCLR			
170153	NMSBC02	SRM SHORT PERIOD	ALARM			
170156	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
170157	NMSBC02	SRM SHORT PERIOD	ALMCLR			
170158	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
170200	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
170201	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
170201	WTSAA01	2WTS-TK1 RECIRC WTR PH	*LO	1.36	6.50	PH
170202	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
170203	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
170211	CNALC01	CLN ST RBLR DT 1A LS9A	HIGH			
170212	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
170213	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
170223	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL			
170230	WTSAA01	2WTS-TK1 RECIRC WTR PH	OK	6.74	6.50	PH
170255	NMSBC02	SRM SHORT PERIOD	ALARM			
170258	NMSBC02	SRM SHORT PERIOD	ALMCLR			
170300	WTSAA01	2WTS-TK1 RECIRC WTR PH	LO	1.36	6.50	PH
170306	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
170307	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
170309	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
170310	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
170330	WTSAA01	2WTS-TK1 RECIRC WTR PH	*LO	5.56	6.50	PH
170341	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
170343	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
170344	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
170345	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
170352	CNALC01	CLN ST RBLR DT 1A LS9A	HIGH			
170354	TMITA04	PIPE UPSTR 2HRS-SV5A TMP	*LO	287.83	400.00	DEG F
170400	WTSAA01	2WTS-TK1 RECIRC WTR PH	*LO	2.41	6.50	PH
170404	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL			
170424	NMSBC02	SRM SHORT PERIOD	ALARM			
170425	NMSBC02	SRM SHORT PERIOD	ALMCLR			
170430	WTSAA01	2WTS-TK1 RECIRC WTR PH	OK	8.01	6.50	PH
170431	NMSBC02	SRM SHORT PERIOD	ALARM			
170432	NMSBC02	SRM SHORT PERIOD	ALMCLR			
170433	NMSBC02	SRM SHORT PERIOD	ALARM			
170435	NMSBC02	SRM SHORT PERIOD	ALMCLR			
170440	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
170441	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
170452	CNSFA01	CND XFR PUMP HDR FLOW	OK	310.91	300.00	GPM
170510	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
170511	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
170513	NMSBC02	SRM SHORT PERIOD	ALARM			
170515	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
170516	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
170516	NMSBC02	SRM SHORT PERIOD	ALMCLR			
170524	CNALC01	CLN ST RBLR DT 1A LS9A	HIGH			
170528	NMSBC02	SRM SHORT PERIOD	ALARM			
170534	NMSBC02	SRM SHORT PERIOD	ALMCLR			
170536	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL			
170554	NMSBC02	SRM SHORT PERIOD	ALARM			

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170604	TMITA13	TURB EXH HOOD C TEMP	OK	102.50	190.00	DEG F
170612	DSRTA05	SCAV STEAM HDR TEMP	LO	199.90	200.00	DEG F
170618	NMSBC02	SRM SHORT PERIOD	ALARM			
170620	NMSBC02	SRM SHORT PERIOD	ALMCLR			
170625	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
170626	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
170628	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
170629	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
170631	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
170632	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
170700	WTSAA01	2WTS-TK1 RECIRC WTR PH	LO	1.35	6.50	PH
170708	CNALC01	CLN ST RBLR DT 1A LS9A	HIGH			
170711	CNALC03	CLN ST RBLR DT 1A LS10A	H/H			
170717	CNALC03	CLN ST RBLR DT 1A LS10A	ALMCLR			
170720	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL			
170722	HVCMA04	RELAY ROOM HMDT MT8B	HI	50.09	50.00	%RH
170730	WTSAA01	2WTS-TK1 RECIRC WTR PH	*LO	4.34	6.50	PH
170731	RCSTA103	RCS P1A SUCT TEMP TE-1	ADC	236.4L*******		DEG F
170800	WTSAA01	2WTS-TK1 RECIRC WTR PH	*LO	5.74	6.50	PH
170827	NMSBC02	SRM SHORT PERIOD	ALARM			
170829	NMSBC02	SRM SHORT PERIOD	ALMCLR			
170830	NMSBC02	SRM SHORT PERIOD	ALARM			
170830	WTSAA01	2WTS-TK1 RECIRC WTR PH	*LO	1.26	6.50	PH
170831	NMSBC02	SRM SHORT PERIOD	ALMCLR			
170831	RCSTA104	RCS P1A SUCT TEMP TE-2	ADC	236.52L*******		DEG F
170845	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
170846	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
170853	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
170854	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
170857	CNALC01	CLN ST RBLR DT 1A LS9A	HIGH			
170900	WTSAA01	2WTS-TK1 RECIRC WTR PH	*LO	2.17	6.50	PH
170904	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
170905	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
170908	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL			
170912	FWSTA01	6PT HTR 2FWS-E6A INL TMP	LO	283.62	284.00	DEG F
170927	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
170929	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
170930	WTSAA01	2WTS-TK1 RECIRC WTR PH	*LO	1.51	6.50	PH
170932	NMSBC02	SRM SHORT PERIOD	ALARM			
170937	NMSBC02	SRM SHORT PERIOD	ALMCLR			
170946	RCSTA105	RCS P1B SUCT TEMP TE-1	ADC	236.24L*******		DEG F
170952	HVCMA04	RELAY ROOM HMDT MT8B	*HI	53.00	50.00	%RH
170953	NMSBC02	SRM SHORT PERIOD	ALARM			
170957	NMSBC02	SRM SHORT PERIOD	ALMCLR			
171000	WTSAA01	2WTS-TK1 RECIRC WTR PH	*LO	5.17	6.50	PH
171001	FWSPA05A	FW PRESS LOOP B	*LO	54.4	220.0	PSIG
171001	RCSTA106	RCS P1B SUCT TMP TE-2	ADC	236.40L*******		DEG F
171019	CNALC01	CLN ST RBLR DT 1A LS9A	HIGH			
171030	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL			
171030	WTSAA01	2WTS-TK1 RECIRC WTR PH	*LO	4.13	6.50	PH
171038	NMSBC02	SRM SHORT PERIOD	ALARM			
171039	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
171039	NMSBC02	SRM SHORT PERIOD	ALMCLR			

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171040	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL
171041	NMSBC02	SRM SHORT PERIOD	ALARM
171043	NMSBC02	SRM SHORT PERIOD	ALMCLR
171048	HVKBC09	[illegible]	[illegible]

171055	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
171056	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
171059	NMSBC02	SRM SHORT PERIOD	ALARM			
171100	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
171100	WTSAA01	2WTS-TK1 RECIRC WTR PH	OK	8.20	6.50	PH
171101	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
171101	NMSBC02	SRM SHORT PERIOD	ALMCLR			
171106	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
171107	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
171117	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
171118	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
171120	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
171121	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
171123	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
171124	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
171125	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
171126	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
171127	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
171128	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
171130	WTSAA01	2WTS-TK1 RECIRC WTR PH	LO	3.93	6.50	PH
171135	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
171137	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
171137	CNATA02	RBLR DRN TK1B DISCH TEMP	*LO	188.05	200.00	DEG F
171138	CNALC01	CLN ST RBLR DT 1A LS9A	HIGH			
171138	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
171139	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
171150	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL			
171200	WTSAA01	2WTS-TK1 RECIRC WTR PH	OK	8.20	6.50	PH
171212	FWSTA05	5PT HTR 2FWS-E5B OUT TMP	*LO	281.51	324.00	DEG F
171216	NMSBC02	SRM SHORT PERIOD	ALARM			
171223	NMSBC02	SRM SHORT PERIOD	ALMCLR			
171230	WTSAA01	2WTS-TK1 RECIRC WTR PH	LO	5.68	6.50	PH
171235	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
171236	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
171240	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
171241	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
171253	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
171254	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
171259	NMSBC02	SRM SHORT PERIOD	ALARM			
171300	WTSAA01	2WTS-TK1 RECIRC WTR PH	OK	8.06	6.50	PH
171302	NMSBC02	SRM SHORT PERIOD	ALMCLR			
171305	CNALC01	CLN ST RBLR DT 1A LS9A	HIGH			
171317	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL			
171330	WTSAA01	2WTS-TK1 RECIRC WTR PH	LO	3.82	6.50	PH
171332	CNSFA01	CND XFR PUMP HDR FLOW	LO	293.60	300.00	GPM
171400	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
171400	WTSAA01	2WTS-TK1 RECIRC WTR PH	OK	8.21	6.50	PH
171403	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
171404	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
171405	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
171410	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			

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171412	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL
171415	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP
171416	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL
171443	CNALC03	CLN ST RBLR DT 1A LS10A	H/H
171444	CNALC01	CLN ST RBLR DT 1A LS9A	HIGH
171454	CNALC03	CLN ST RBLR DT 1A LS10A	[illegible]

[illegible]						
~~171511~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	~~ALARM~~			
171516	NMSBC02	SRM SHORT PERIOD	ALMCLR			
171534	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
~~171535~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~NORMAL~~			
171537	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
171538	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
~~171618~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~INOP~~			
171620	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
171631	FWSLC01	REACTOR WTR LEVEL HI/LO	ALMCLR			
~~171634~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	~~ALARM~~			
171634	FWSLC01	REACTOR WTR LEVEL HI/LO	H/L			
171635	FWSLC01	REACTOR WTR LEVEL HI/LO	ALMCLR			
~~171639~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	~~ALMCLR~~			
171641	CNALC01	CLN ST RBLR DT 1A LS9A	HIGH			
171641	FWSLC01	REACTOR WTR LEVEL HI/LO	H/L			
~~171643~~	~~FWSLC01~~	~~REACTOR WTR LEVEL HI/LO~~	~~ALMCLR~~			
171653	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL			
171711	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
~~171713~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~NORMAL~~			
171721	NMSBC02	SRM SHORT PERIOD	ALARM			
171724	NMSBC02	SRM SHORT PERIOD	ALMCLR			
~~171749~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~INOP~~			
171751	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
171754	NMSBC02	SRM SHORT PERIOD	ALARM			
~~171758~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	~~ALMCLR~~			
171759	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
171800	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
~~171821~~	~~CNALC01~~	~~CLN ST RBLR DT 1A LS9A~~	~~HIGH~~			
171828	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
171830	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
~~171831~~	~~CCPPA01~~	RBCLCW PMP DIS HDR PRESS	HI	40.06	40.00	PSIG
171833	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL			
171836	CCPPA01	RBCLCW PMP DIS HDR PRESS	OK	39.80	40.00	PSIG
171900	WTSAA01	2WTS-TK1 RECIRC WTR PH	LO	1.31	6.50	PH
171909	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
171910	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
171922	CWSAC02	CLG TWR BLOW-DOWN WTR PH	HIGH			
171922	CWSAC01	CLG TWR BLOW-DOWN WTR PH	LOW			
171930	WTSAA01	2WTS-TK1 RECIRC WTR PH	OK	8.14	6.50	PH
~~171932~~	~~CWSAC02~~	~~CLG TWR BLOW-DOWN WTR PH~~	NORMAL			
171932	CWSAC01	CLG TWR BLOW-DOWN WTR PH	NORMAL			
171942	HVCMA04	RELAY ROOM HMDT MT8B	OK	49.25	50.00	*RH
~~171944~~	~~CNALC01~~	CLN ST RBLR DT 1A LS9A	HIGH			
171947	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
171951	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
~~171956~~	~~CNALC01~~	~~CLN ST RBLR DT 1A LS9A~~	NORMAL			
172001	FWSPA04A	FW PRESS LOOP A	*LO	43.1	220.0	PSIG

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~~172034~~	~~HVKBC09~~	~~DIV1~~ CB CHILLED WTR SYS	INOP
172035	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL
172036	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP
~~172037~~	~~HVKBC09~~	DIV1 CB CHILLED WTR SYS	NORMAL
172048	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP
172049	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL
~~172118~~	~~CNALC01~~	~~CLN ST RBLR DT 1A LS9A~~	HIGH
172125	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP
172126	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL

172135	ESSTA16	5 PT HTR E5A EXTR ST TMP	*LO	153.95	280.00	DEG F
172200	WTSAA01	2WTS-TK1 RECIRC WTR PH	OK	6.73	6.50	PH
172232	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
172233	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
172249	CNALC01	CLN ST RBLR DT 1A LS9A	HIGH			
172252	NMSBC02	SRM SHORT PERIOD	ALARM			
172254	NMSBC02	SRM SHORT PERIOD	ALMCLR			
172256	NMSBC02	SRM SHORT PERIOD	ALARM			
172258	NMSBC02	SRM SHORT PERIOD	ALMCLR			
172301	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL			
172304	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
172305	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
172346	NMSBC02	SRM SHORT PERIOD	ALARM			
172349	NMSBC02	SRM SHORT PERIOD	ALMCLR			
172359	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
172400	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
172421	ARCLC01	CNSR AIR REM TK SP1A LVL	NORMAL			
172433	NMSBC02	SRM SHORT PERIOD	ALARM			
172435	CNALC01	CLN ST RBLR DT 1A LS9A	HIGH			
172437	CNALC03	CLN ST RBLR DT 1A LS10A	H/H			
172437	NMSBC02	SRM SHORT PERIOD	ALMCLR			
172438	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
172440	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
172444	CNALC03	CLN ST RBLR DT 1A LS10A	ALMCLR			
172448	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL			
172451	NMSBC02	SRM SHORT PERIOD	ALARM			
172452	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
172453	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
172456	NMSBC02	SRM SHORT PERIOD	ALMCLR			
172457	NMSBC02	SRM SHORT PERIOD	ALARM			
172502	NMSBC02	SRM SHORT PERIOD	ALMCLR			
172507	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
172508	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
172512	FWSTA06	6PT HTR 2FWS-EGC OUT TMP	*LO	112.08	324.00	DEG F
172522	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
172524	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
172525	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
172525	NMSBC02	SRM SHORT PERIOD	ALARM			
172526	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
172527	NMSBC02	SRM SHORT PERIOD	ALMCLR			
172532	CNSFA01	CND XFR PUMP HDR FLOW	OK	310.89	300.00	GPM
172538	NMSBC02	SRM SHORT PERIOD	ALARM			
172539	NMSBC02	SRM SHORT PERIOD	ALMCLR			
172544	NMSBC02	SRM SHORT PERIOD	ALARM			
172545	NMSBC02	SRM SHORT PERIOD	ALMCLR			

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172602	NMSBC02	SRM SHORT PERIOD	ALARM			
172606	NMSBC02	SRM SHORT PERIOD	ALMCLR			
172611	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
172612	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
172619	NMSBC02	SRM SHORT PERIOD	ALARM			
172621	NMSBC02	SRM SHORT PERIOD	ALMCLR			
172626	HVCHA04	RELAY ROOM HMDT MT8B	HI	50.00	50.00	%RH
172628	CNALC01	CLN ST RBLR DT 1A LS9A	HIGH			
172630	WTSAA01	2WTS-TK1 RECIRC WTR PH	LO	5.31	6.50	PH
172640	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL			
172641	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
172642	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			

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124241	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
124241	NMSBC02	SRM SHORT PERIOD	ALARM			
124242	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
124242	NMSBC02	SRM SHORT PERIOD	ALMCLR			
124244	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
124244	NMSBC02	SRM SHORT PERIOD	ALARM			
124245	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
124246	NMSBC02	SRM SHORT PERIOD	ALMCLR			
124255	NMSBC02	SRM SHORT PERIOD	ALARM			
124303	NMSBC02	SRM SHORT PERIOD	ALMCLR			
124304	NMSBC02	SRM SHORT PERIOD	ALARM			
124306	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
124306	NMSBC02	SRM SHORT PERIOD	ALMCLR			
124307	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
124308	GMHAC07	STTR CLG WTR TK VENT H2	HIGH			
124309	CNALC01	CLN ST RBLR DT 1A LS9A	HIGH			
124311	NMSBC02	SRM SHORT PERIOD	ALARM			
124314	GMHAC07	STTR CLG WTR TK VENT H2	NORMAL			
124314	NMSBC02	SRM SHORT PERIOD	ALMCLR			
124320	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL			
124324	NMSBC02	SRM SHORT PERIOD	ALARM			
124326	NMSBC02	SRM SHORT PERIOD	ALMCLR			
124330	NMSBC02	SRM SHORT PERIOD	ALARM			
124330	WTSAA01	2WTS-TK1 RECIRC WTR PH	LO	5.28	6.50	PH
124340	NMSBC02	SRM SHORT PERIOD	ALMCLR			
124342	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
124342	NMSBC02	SRM SHORT PERIOD	ALARM			
124343	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
124344	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
124345	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
124345	NMSBC02	SRM SHORT PERIOD	ALMCLR			
124353	ABMPA01	AUX BLR DEAR INL PRESS	HI	7.51	7.50	PSIG
124356	RHSBC12	RHR A SYS	INOP			
124400	WTSAA01	2WTS-TK1 RECIRC WTR PH	*LO	3.69	6.50	PH
124401	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
124402	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
124408	NMSBC02	SRM SHORT PERIOD	ALARM			
124409	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
124409	GTSPA01	RB IN/OUT D/P PDT5A	OK	-0.50	-0.50	IN WG
124410	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
124419	GTSPA01	RB IN/OUT D/P PDT5A	LO	-0.53	-0.50	IN WG
124420	NMSBC02	SRM SHORT PERIOD	ALMCLR			
124422	HVNBC01	VENT CHL WTR SYS IPNL135	ALMCLR			
124423	CNALC01	CLN ST RBLR DT 1A LS9A	HIGH			
124430	WTSAA01	2WTS-TK1 RECIRC WTR PH	OK	8.18	6.50	PH
124434	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL			
124436	NSSTA101	RX FW FLOW A INLET TEMP	ADC	136.16L	*******	DEG F
124442	FWSTA06	6PT HTR 2FWS-E6C OUT TMP	*LO	133.24	324.00	DEG F
124500	WTSAA01	2WTS-TK1 RECIRC WTR PH	LO	4.98	6.50	PH
124526	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
124527	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
124527	NMSBC02	SRM SHORT PERIOD	ALARM			
124530	NMSBC02	SRM SHORT PERIOD	ALMCLR			
124530	WTSAA01	2WTS-TK1 RECIRC WTR PH	*LO	4.76	6.50	PH
124535	CNALC01	CLN ST RBLR DT 1A LS9A	HIGH			
124535	NMSBC02	SRM SHORT PERIOD	ALARM			

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~~124546~~	~~CNALC01~~	~~CLN ST RBLR DT 1A LS9A~~	~~NORMAL~~			
124547	NMSBC02	SRM SHORT PERIOD	ALARM			
124549	NMSBC02	SRM SHORT PERIOD	ALMCLR			
~~124550~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	~~ALARM~~			
124551	NMSBC02	SRM SHORT PERIOD	ALMCLR			
124553	ABMPA01	AUX BLR DEAR INL PRESS	OK	6.94	7.50	PSIG
~~124556~~	~~NMIIC113~~	~~IRM CHANNEL BYPASSED~~	~~ON~~			
124600	WTSAA01	2WTS-TK1 RECIRC WTR PH	*LO	1.55	6.50	PH
124601	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
~~124602~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~NORMAL~~			
124602	NMSBC02	SRM SHORT PERIOD	ALARM			
124603	NMSBC02	SRM SHORT PERIOD	ALMCLR			
~~124604~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~INOP~~			
124605	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
124606	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
~~124607~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~NORMAL~~			
124630	NMSBC02	SRM SHORT PERIOD	ALARM			
124630	WTSAA01	2WTS-TK1 RECIRC WTR PH	*LO	5.80	6.50	PH
~~124633~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	~~ALMCLR~~			
124643	CNSLA01	CND DRAW OFF TK1A LEVEL	*HI	39.44	26.06	FT WG
124645	CNALC01	CLN ST RBLR DT 1A LS9A	HIGH			
~~124647~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	~~ALARM~~			
124649	NMSBC02	SRM SHORT PERIOD	ALMCLR			
124656	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL			
~~124700~~	~~WTSAA01~~	~~2WTS-TK1 RECIRC WTR PH~~	~~*LO~~	~~1.53~~	~~6.50~~	~~PH~~
124701	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
124702	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
~~124705~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	~~ALARM~~			
124706	NMSBC02	SRM SHORT PERIOD	ALMCLR			
124709	NMSBC02	SRM SHORT PERIOD	ALARM			
~~124714~~	~~HDLLA01~~	~~FDW 2CNM=E4A WTR LEVEL~~	~~LO~~	~~7.39~~	~~7.50~~	~~IN WG~~
124715	NMSBC02	SRM SHORT PERIOD	ALMCLR			
124726	NMSBC02	SRM SHORT PERIOD	ALARM			
~~124730~~	~~WTSAA01~~	~~2WTS-TK1 RECIRC WTR PH~~	~~OK~~	~~8.17~~	~~6.50~~	~~PH~~
124731	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
124732	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
~~124733~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	~~ALMCLR~~			
124748	ABMPA01	AUX BLR DEAR INL PRESS	LO	2.49	2.50	PSIG
124751	CNALC01	CLN ST RBLR DT 1A LS9A	HIGH			
124802	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL			
124807	NMSBC02	SRM SHORT PERIOD	ALARM			
124809	NMSBC02	SRM SHORT PERIOD	ALMCLR			
124810	NMSBC02	SRM SHORT PERIOD	ALARM			
124811	NMSBC02	SRM SHORT PERIOD	ALMCLR			
124813	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
~~124814~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~NORMAL~~			
124815	CNDFC49	2CND-DEMIN1D FLOW	LOW			
124815	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
~~124815~~	~~CNDBC01~~	~~2CND-IPNL287 SYS TROUBLE~~	~~TRBL~~			
124816	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
124817	CNDFC49	2CND-DEMIN1D FLOW	NORMAL			
~~124817~~	~~CNDBC01~~	~~2CND-IPNL287 SYS TROUBLE~~	~~ALMCLR~~			
124828	NMSBC02	SRM SHORT PERIOD	ALARM			

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~~124831~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	~~ALMCLR~~
124832	NMSBC02	SRM SHORT PERIOD	ALARM
124840	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP

124845	NMSBC02	SRM SHORT PERIOD	ALARM			
~~124846~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	~~ALMCLR~~			
124851	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
124852	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
~~124858~~	~~CNALC01~~	~~CLN ST RBLR DT 1A LS9A~~	~~HIGH~~			
124900	WTSAA01	2WTS-TK1 RECIRC WTR PH	LO	4.77	6.50	PH
124906	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
~~124907~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~NORMAL~~			
124909	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL			
124917	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
~~124918~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~NORMAL~~			
124918	NMSBC02	SRM SHORT PERIOD	ALARM			
124920	NMSBC02	SRM SHORT PERIOD	ALMCLR			
~~124930~~	~~WTSAA01~~	~~2WTS-TK1 RECIRC WTR PH~~	~~OK~~	~~8.18~~	~~6.50~~	~~PH~~
124939	NMSBC02	SRM SHORT PERIOD	ALARM			
124941	NMSBC02	SRM SHORT PERIOD	ALMCLR			
~~124942~~	~~RHSBC12~~	~~RHR A SYS~~	~~ALMCLR~~			
124949	GTSPA01	RB IN/OUT D/P PDT5A	OK	-0.48	-0.50	IN WG
124954	GTSPA01	RB IN/OUT D/P PDT5A	LO	-0.53	-0.50	IN WG
~~124957~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	~~ALARM~~			
125000	NMIIC113	IRM CHANNEL BYPASSED	OFF			
125000	WTSAA01	2WTS-TK1 RECIRC WTR PH	LO	4.12	6.50	PH
~~125003~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~INOP~~			
125004	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
125008	NMIIC109	IRM DET NOT FULL IN POS	TRBL			
~~125008~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	~~ALMCLR~~			
125010	NMSBC02	SRM SHORT PERIOD	ALARM			
125013	NMIIC109	IRM DET NOT FULL IN POS	NORMAL			
~~125014~~	~~CNALC01~~	~~CLN ST RBLR DT 1A LS9A~~	~~HIGH~~			
125014	NMSBC02	SRM SHORT PERIOD	ALMCLR			
125021	NMIIC110	IRM DOWNSCALE ALARM	ALARM			
~~125025~~	~~CNALC01~~	~~CLN ST RBLR DT 1A LS9A~~	~~NORMAL~~			
125030	WTSAA01	2WTS-TK1 RECIRC WTR PH	*LO	2.04	6.50	PH
125041	NMIIC110	IRM DOWNSCALE ALARM	NORMAL			
~~125045~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	~~ALARM~~			
125046	NMSBC02	SRM SHORT PERIOD	ALMCLR			
125047	NMSBC02	SRM SHORT PERIOD	ALARM			
125049	NMIIC110	IRM DOWNSCALE ALARM	ALARM			
125049	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
125050	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
125054	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
125054	NMSBC02	SRM SHORT PERIOD	ALMCLR			
125055	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
~~125100~~	~~WTSAA01~~	~~2WTS-TK1 RECIRC WTR PH~~	~~*LO~~	~~1.48~~	~~6.50~~	~~PH~~
125110	NMSBC02	SRM SHORT PERIOD	ALARM			
125112	NMSBC02	SRM SHORT PERIOD	ALMCLR			
~~125113~~	~~NMIIC110~~	~~IRM DOWNSCALE ALARM~~	~~NORMAL~~			
125122	HVCMA04	RELAY ROOM HMDT MT8B	OK	48.87	50.00	%RH
125129	NMIIC112	IRM UPSCALE ALARM	ALARM			
~~125129~~	~~NMIDC03~~	~~IRM UPSCALE~~	~~ALARM~~			
125129	NMSBC02	SRM SHORT PERIOD	ALARM			

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~~125130~~	~~WTSAA01~~	~~2WTS-TK1 RECIRC WTR PH~~	~~*LO~~	~~5.74~~	~~6.50~~	~~PH~~
125136	NMSBC02	SRM SHORT PERIOD	ALMCLR			
125138	CNALC01	CLN ST RBLR DT 1A LS9A	HIGH			
~~125144~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~INOP~~			
125142	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			

~~125149~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~INOP~~			
125150	NMIUC04	IRM CHAN D UPSC TRIP	TRIPPED			
125150	RPSUC04	RPS B AUTO TRIP	TRIPPED			
~~125150~~	~~NMEUC04~~	~~RPS CH B2 NMS TRIP~~	~~TRIPPED~~			
125150	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL			
125150	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
~~125150~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	~~ALARM~~			
125150	NMIUC10	IRM TRIP SYS B UPSC/INOP	TRIPPED			
125151	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
~~125152~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~NORMAL~~			
125152	NMSBC02	SRM SHORT PERIOD	ALMCLR			
125154	NMIUC04	IRM CHAN D UPSC TRIP	ALMCLR			
~~125154~~	~~NMEUC04~~	~~RPS CH B2 NMS TRIP~~	~~ALMCLR~~			
125154	NMIBC03	IRM UPSCALE	ALMCLR			
125154	NMIUC10	IRM TRIP SYS B UPSC/INOP	ALMCLR			
~~125155~~	~~NMIIC112~~	~~IRM UPSCALE ALARM~~	~~NORMAL~~			
125158	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
125159	RPSUC04	RPS B AUTO TRIP	ALMCLR			
~~125159~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~NORMAL~~			
125200	WTSAA01	2WTS-TK1 RECIRC WTR PH	OK	8.05	6.50	PH
125203	NMSBC02	SRM SHORT PERIOD	ALARM			
~~125205~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	~~ALMCLR~~			
125209	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
125210	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
~~125216~~	~~NMIIC113~~	~~IRM CHANNEL BYPASSED~~	~~ON~~			
125217	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
125218	NMSBC02	SRM SHORT PERIOD	ALARM			
~~125219~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~NORMAL~~			
125220	NMSBC02	SRM SHORT PERIOD	ALMCLR			
125229	NMSBC02	SRM SHORT PERIOD	ALARM			
~~125233~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	~~ALMCLR~~			
125234	NMSBC02	SRM SHORT PERIOD	ALARM			
125242	NMSBC02	SRM SHORT PERIOD	ALMCLR			
125242	HDHTA03	6PT HTR E6C DR TEMP	*LO	166.95	284.00	DEG F
125243	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
125243	NMSBC02	SRM SHORT PERIOD	ALARM			
125244	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
125244	NMSBC02	SRM SHORT PERIOD	ALMCLR			
125247	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
~~125248~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~NORMAL~~			
125249	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
125250	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
~~125250~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	~~ALARM~~			
125253	MSSTA07	TURB BYP PSV89E OUT TEMP	OK	278.93	280.00	DEG F
125254	NMIIC113	IRM CHANNEL BYPASSED	OFF			
~~125257~~	~~RPSUC04~~	~~RPS B AUTO TRIP~~	~~TRIPPED~~			
125257	NMEUC04	RPS CH B2 NMS TRIP	TRIPPED			

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~~125257~~	~~NMIIC111~~	~~IRM INSTR-INOP TRIP~~	~~INOP~~			
125257	NMIUC10	IRM TRIP SYS B UPSC/INOP	TRIPPED			
125258	NMSBC02	SRM SHORT PERIOD	ALMCLR			
~~125259~~	~~NMEUC04~~	~~RPS CH B2 NMS TRIP~~	~~ALMCLR~~			
125259	NMIIC111	IRM INSTR-INOP TRIP	NORMAL			
125259	NMIUC10	IRM TRIP SYS B UPSC/INOP	ALMCLR			
~~125300~~	~~WTSAA01~~	~~2WTS-TK1 RECIRC WTR PH~~	~~LO~~	~~3.46~~	~~6.50~~	~~PH~~
125302	RPSUC04	RPS B AUTO TRIP	ALMCLR			
125311	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			

~~125326~~	~~CNALC01~~	~~CLN ST RBLR DT 1A LS9A~~	~~NORMAL~~			
125330	WTSAA01	2WTS-TK1 RECIRC WTR PH	*LO	1.32	6.50	PH
125339	NMSBC02	SRM SHORT PERIOD	ALARM			
~~125343~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~INOP~~			
125343	NMSBC02	SRM SHORT PERIOD	ALMCLR			
125344	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
~~125400~~	~~WTSAA01~~	~~2WTS-TK1 RECIRC WTR PH~~	~~OK~~	~~7.65~~	~~6.50~~	~~PH~~
125426	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
125427	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
~~125428~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~INOP~~			
125430	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
125431	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
~~125432~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~NORMAL~~			
125434	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
125435	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
~~125436~~	~~CNALC01~~	~~CLN ST RBLR DT 1A LS9A~~	~~HIGH~~			
125437	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
125439	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
~~125442~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~INOP~~			
125443	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
125447	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL			
~~125448~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~INOP~~			
125449	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
125500	WTSAA01	2WTS-TK1 RECIRC WTR PH	LO	3.92	6.50	PH
~~125502~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~INOP~~			
125503	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
125504	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
~~125505~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~NORMAL~~			
125530	WTSAA01	2WTS-TK1 RECIRC WTR PH	OK	8.20	6.50	PH
125534	YXCBC01	2YXC-MDS1 DC CONT PWR	FAIL			
125554	TMITA06	PIPE UPSTR 2HRS-SV5B TMP	*LO	319.85	400.00	DEG F
125600	CNALC01	CLN ST RBLR DT 1A LS9A	HIGH			
125601	WTSAA01	2WTS-TK1 RECIRC WTR PH	LO	3.93	6.50	PH
125610	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL			
125611	NMSBC02	SRM SHORT PERIOD	ALARM			
125616	NMSBC02	SRM SHORT PERIOD	ALMCLR			
~~125630~~	~~WTSAA01~~	~~2WTS-TK1 RECIRC WTR PH~~	~~*LO~~	~~1.81~~	~~6.50~~	~~PH~~
125645	ESSTA15	4 PT HTR E4C EXTR ST TMP	*LO	273.87	334.00	DEG F
125700	WTSAA01	2WTS-TK1 RECIRC WTR PH	*LO	1.41	6.50	PH
~~125702~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~INOP~~			
125705	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
125707	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
~~125708~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~NORMAL~~			
125713	CNALC01	CLN ST RBLR DT 1A LS9A	HIGH			

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~~125719~~	~~GTSPA01~~	~~RB IN/OUT D/P PDT5A~~	~~OK~~	~~-0.50~~	~~-0.50~~	~~IN WG~~
125723	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL			
125724	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
~~125724~~	~~GTSPA01~~	~~RB IN/OUT D/P PDT5A~~	~~LO~~	~~-0.53~~	~~-0.50~~	~~IN WG~~
125725	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
125730	WTSAA01	2WTS-TK1 RECIRC WTR PH	*LO	1.26	6.50	PH
~~125731~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~INOP~~			
125732	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
125742	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
~~125742~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	~~ALARM~~			
125744	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
125744	NMSBC02	SRM SHORT PERIOD	ALMCLR			

125802	HVCMA04	RELAY ROOM HMDT MT8B	HI	50.44	50.00	%RH
~~125803~~	~~GMHAC07~~	~~STTR CLG WTR TK VENT H2~~	HIGH			
125806	GMHAC07	STTR CLG WTR TK VENT H2	NORMAL			
125825	CNALC01	CLN ST RBLR DT 1A LS9A	HIGH			
~~125830~~	~~WTSAA01~~	~~2WTS-TK1 RECIRC WTR PH~~	OK	8.12	6.50	PH
125831	NMIIC113	IRM CHANNEL BYPASSED	ON			
125836	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL			
~~125842~~	~~ESSTA13~~	~~4-PT HTR E4A EXTR ST TMP~~	*LO	261.73	334.00	DEG F
125858	NMSBC02	SRM SHORT PERIOD	ALARM			
125900	WTSAA01	2WTS-TK1 RECIRC WTR PH	LO	3.01	6.50	PH
~~125903~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	ALMCLR			
125908	NMSBC02	SRM SHORT PERIOD	ALARM			
125909	NMSBC02	SRM SHORT PERIOD	ALMCLR			
~~125915~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	ALARM			
125917	NMSBC02	SRM SHORT PERIOD	ALMCLR			
125924	NMSBC02	SRM SHORT PERIOD	ALARM			
~~125930~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	ALMCLR			
125930	WTSAA01	2WTS-TK1 RECIRC WTR PH	OK	6.63	6.50	PH
125931	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
~~125932~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	ALARM			
125933	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
125937	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
~~125938~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~NORMAL~~			
125939	GTSPA01	RB IN/OUT D/P PDT5A	OK	-0.50	-0.50	IN WG
125940	NMSBC02	SRM SHORT PERIOD	ALMCLR			
~~125943~~	~~CNALC01~~	~~CLN ST RBLR DT 1A LS9A~~	HIGH			
125943	NMSBC02	SRM SHORT PERIOD	ALARM			
125945	NMSBC02	SRM SHORT PERIOD	ALMCLR			
125946	NMSBC02	SRM SHORT PERIOD	ALARM			
125947	NMSBC02	SRM SHORT PERIOD	ALMCLR			
125949	GTSPA01	RB IN/OUT D/P PDT5A	LO	-0.52	-0.50	IN WG
125953	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL			
130000	WTSAA01	2WTS-TK1 RECIRC WTR PH	LO	4.12	6.50	PH
130001	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
~~130002~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	NORMAL			
130003	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
130004	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
~~130020~~	~~RMSRC11~~	~~RB/RWB LOSS OF SMPL FLO~~	ALARM			
130030	WTSAA01	2WTS-TK1 RECIRC WTR PH	OK	6.91	6.50	PH
130040	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
~~130040~~	~~GTSPA01~~	~~RB IN/OUT D/P PDT5A~~	OK	-0.45	-0.50	IN WG
130041	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			

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~~130048~~	~~HVKBC09~~	~~DIV1 CB~~ CHILLED WTR SYS	INOP			
130049	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
130056	NMSBC02	SRM SHORT PERIOD	ALARM			
~~130059~~	~~CNALC01~~	~~CLN ST RBLR~~ DT 1A LS9A	HIGH			
130100	WTSAA01	2WTS-TK1 RECIRC WTR PH	LO	4.34	6.50	PH
130104	NMSBC02	SRM SHORT PERIOD	ALMCLR			
~~130106~~	~~HVKBC09~~	~~DIV1 CB CHILLED~~ WTR SYS	INOP			
130108	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
130109	RMSRC11	RB/RWB LOSS OF SMPL FLO	NORMAL			
~~130109~~	~~CNALC01~~	~~CLN ST RBLR~~ DT 1A LS9A	NORMAL			
130121	NMSBC02	SRM SHORT PERIOD	ALARM			
130128	NMIIC113	IRM CHANNEL BYPASSED	OFF			
~~130129~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	ALMCLR			
130129	CNSLA02	CND DRAW OFF TK1B LEVEL	*HIL*******	L*******		FT WG
130131	WTSAA01	2WTS-TK1 RECIRC WTR PH	LO	[illegible]	[illegible]	[illegible]

~~130142~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	~~ALMCLR~~			
130144	NMSBC02	SRM SHORT PERIOD	ALARM			
130145	NMIIC109	IRM DET NOT FULL IN POS	NORMAL			
~~130147~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	~~ALMCLR~~			
130149	NMIIC110	IRM DOWNSCALE ALARM	ALARM			
130151	NMSBC02	SRM SHORT PERIOD	ALARM			
~~130152~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	~~ALMCLR~~			
130153	DFTBC30	TB FLR DRN SYSTEM	TRBL			
130153	NMSBC02	SRM SHORT PERIOD	ALARM			
~~130154~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	~~ALMCLR~~			
130201	WTSAA01	2WTS-TK1 RECIRC WTR PH	*LO	1.26	6.50	PH
130205	NMSBC02	SRM SHORT PERIOD	ALARM			
~~130211~~	~~CNALC01~~	~~CLN ST RBLR DT 1A LS9A~~	~~HIGH~~			
130213	NMSBC02	SRM SHORT PERIOD	ALMCLR			
130222	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL			
~~130225~~	~~NMIIC110~~	~~IRM DOWNSCALE ALARM~~	~~NORMAL~~			
130230	WTSAA01	2WTS-TK1 RECIRC WTR PH	*LO	6.26	6.50	PH
130239	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
~~130240~~	~~NMIIC110~~	~~IRM DOWNSCALE ALARM~~	~~ALARM~~			
130240	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
130240	NMSBC02	SRM SHORT PERIOD	ALARM			
~~130241~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~INOP~~			
130242	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
130242	HDHTA02	6PT HTR E6B DR TEMP	*LO	166.95	284.00	DEG F
130242	HDLTA02	5PT HTR 2CNM-E5B DRN TMP	*LO	140.69	246.00	DEG F
130244	NMSBC02	SRM SHORT PERIOD	ALMCLR			
130247	NMIIC110	IRM DOWNSCALE ALARM	NORMAL			
130300	WTSAA01	2WTS-TK1 RECIRC WTR PH	OK	8.15	6.50	PH
130303	NMIIC112	IRM UPSCALE ALARM	ALARM			
130303	NMIBC03	IRM UPSCALE	ALARM			
~~130305~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~INOP~~			
130306	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
130317	NMSBC02	SRM SHORT PERIOD	ALARM			
~~130318~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~INOP~~			
130319	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
130322	NMIIC112	IRM UPSCALE ALARM	NORMAL			
~~130322~~	~~NMIIC113~~	~~IRM CHANNEL BYPASSED~~	~~ON~~			
130322	NMIBC03	IRM UPSCALE	ALMCLR			

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~~130322~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	~~ALMCLR~~
130324	CNALC01	CLN ST RBLR DT 1A LS9A	HIGH
130333	NMSBC02	SRM SHORT PERIOD	ALARM
~~130334~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	~~ALMCLR~~
130335	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL
130352	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP
~~130352~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	~~ALARM~~
130353	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL
130353	NMSBC02	SRM SHORT PERIOD	ALMCLR
~~130420~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~INOP~~
130421	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL
130423	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP
~~130425~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~NORMAL~~
130427	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP
130428	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL
~~130430~~	~~RHSBC24~~	~~RHR LOOP B PMP DISCH PR~~	~~NORMAL~~
130431	ADSBC12	ADS B RHR B/RHR C PERMIS	ALMCLR
130434	CNSFC01	CNST XFR PMP DIS DEM FLO	NORMAL
130439	CNALC01	[illegible]	[illegible]

130503	NMIIC112	IRM UPSCALE ALARM	ALARM			
~~130503~~	~~NMIIC113~~	~~IRM CHANNEL BYPASSED~~	~~OFF~~			
130503	NMIBC03	IRM UPSCALE	ALARM			
130521	NMIUC06	IRM CHAN F UPSC TRIP	TRIPPED			
~~130521~~	~~RPSUC04~~	~~RPS B AUTO TRIP~~	~~TRIPPED~~			
130521	NMEUC03	RPS CH B1 NMS TRIP	TRIPPED			
130521	NMIUC10	IRM TRIP SYS B UPSC/INOP	TRIPPED			
~~130524~~	~~NMIUC10~~	~~IRM TRIP SYS B UPSC/INOP~~	~~ALMCLR~~			
130525	NMIUC06	IRM CHAN F UPSC TRIP	ALMCLR			
130525	NMEUC03	RPS CH B1 NMS TRIP	ALMCLR			
~~130525~~	~~NMIIC112~~	~~IRM UPSCALE ALARM~~	~~NORMAL~~			
130525	NMIBC03	IRM UPSCALE	ALMCLR			
130529	RPSUC04	RPS B AUTO TRIP	ALMCLR			
~~130530~~	~~WTSAA01~~	~~2WTS-TK1 RECIRC WTR PH~~	~~LO~~	~~5.68~~	~~6.50~~	~~PH~~
130538	NMIIC113	IRM CHANNEL BYPASSED	ON			
130542	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
~~130543~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~NORMAL~~			
130544	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
130545	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
~~130552~~	~~CNALC01~~	~~CLN ST RBLR DT 1A LS9A~~	~~HIGH~~			
130554	TMITA05	PIPE UPSTR 2HRS-SV6B TMP	*LO	319.87	406.00	DEG F
130555	GMHAC07	STTR CLG WTR TK VENT H2	HIGH			
130558	GMHAC07	STTR CLG WTR TK VENT H2	NORMAL			
130600	WTSAA01	2WTS-TK1 RECIRC WTR PH	OK	8.17	6.50	PH
130603	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL			
130607	NMIIC113	IRM CHANNEL BYPASSED	OFF			
130607	CNSFA01	CND XFR PUMP HDR FLOW	OK	311.07	300.00	GPM
130614	RPSUC04	RPS B AUTO TRIP	TRIPPED			
~~130614~~	~~NMEUC03~~	~~RPS CH B1 NMS TRIP~~	~~TRIPPED~~			
130614	NMIIC111	IRM INSTR-INOP TRIP	INOP			
130614	NMIUC10	IRM TRIP SYS B UPSC/INOP	TRIPPED			
~~130615~~	~~NMEUC03~~	~~RPS CH B1 NMS TRIP~~	~~ALMCLR~~			
130615	NMIIC111	IRM INSTR-INOP TRIP	NORMAL			
130615	NMIUC10	IRM TRIP SYS B UPSC/INOP	ALMCLR			
~~130618~~	~~RPSUC04~~	~~RPS B AUTO TRIP~~	~~ALMCLR~~			
130630	WTSAA01	2WTS-TK1 RECIRC WTR PH	LO	6.14	6.50	PH

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~~130645~~	~~ICSLC01~~	~~RCIC TURB ST DR TRAP LVL~~	~~HIGH~~			
130651	ICSLC01	RCIC TURB ST DR TRAP LVL	NORMAL			
130652	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
~~130653~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~NORMAL~~			
130655	NMSBC02	SRM SHORT PERIOD	ALARM			
130700	WTSAA01	2WTS-TK1 RECIRC WTR PH	OK	8.18	6.50	PH
~~130701~~	~~CNALC01~~	~~CLN ST RBLR DT 1A LS9A~~	~~HIGH~~			
130703	NMSBC02	SRM SHORT PERIOD	ALMCLR			
130712	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL			
~~130712~~	~~FWSTA03~~	~~6PT HTR 2FWS-E6C INL TMP~~	~~*LO~~	~~120.87~~	~~284.00~~	~~DEG F~~
130714	NSSTA101	RX FW FLOW A INLET TEMP	OK	136.16L	*******	DEG F
130720	NMSBC02	SRM SHORT PERIOD	ALARM			
~~130725~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	~~ALMCLR~~			
130728	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
130729	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
~~130735~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	~~ALARM~~			
130737	NMSBC02	SRM SHORT PERIOD	ALMCLR			
130743	ESSTA14	4 PT HTR E4B EXTR ST TMP	*LO	261.87	334.00	DEG F
~~130750~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	~~ALARM~~			
130752	NMSBC02	SRM SHORT PERIOD	ALMCLR			
130800	NMSBC02	SRM SHORT PERIOD	ALARM			

130820	NMSBC02	SRM SHORT PERIOD	ALARM			
130823	NMSBC02	SRM SHORT PERIOD	ALMCLR			
130826	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL			
130828	HDLLC38	2PT HTR DRN TK2B WTR LVL	NORMAL			
130842	FWSTA02	6PT HTR 2FWS-E6B INL TMP	*LO	214.27	284.00	DEG F
130842	NMSBC02	SRM SHORT PERIOD	ALARM			
130850	NMSBC02	SRM SHORT PERIOD	ALMCLR			
130854	NMSBC02	SRM SHORT PERIOD	ALARM			
130856	NMSBC02	SRM SHORT PERIOD	ALMCLR			
130856	NSSTA103	RX FW FLOW B INLET TEMP	OK	136.16L*******		DEG F
130902	NMSBC02	SRM SHORT PERIOD	ALARM			
130903	NMSBC02	SRM SHORT PERIOD	ALMCLR			
130908	NMSBC02	SRM SHORT PERIOD	ALARM			
130910	NMSBC02	SRM SHORT PERIOD	ALMCLR			
130918	NMSBC02	SRM SHORT PERIOD	ALARM			
130919	NMSBC02	SRM SHORT PERIOD	ALMCLR			
130923	ABMPA01	AUX BLR DEAR INL PRESS	OK	2.66	2.50	PSIG
130926	NMSBC02	SRM SHORT PERIOD	ALARM			
130927	NMSBC02	SRM SHORT PERIOD	ALMCLR			
130933	CNALC01	CLN ST RBLR DT 1A LS9A	HIGH			
130936	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
130938	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
130940	ESSTA10	3 PT HTR E3A EXTR ST TMP	*LO	217.07	256.00	DEG F
130943	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
130944	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL			
130944	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
130949	NMSBC02	SRM SHORT PERIOD	ALARM			
130951	NMSBC02	SRM SHORT PERIOD	ALMCLR			
130953	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
130954	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
130958	NMSBC02	SRM SHORT PERIOD	ALARM			
130959	GTSPA01	RB IN/OUT D/P PDT5A	OK	-0.50	-0.50	IN WG

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131000	WTSAA01	2WTS-TK1 RECIRC WTR PH	LO	5.91	6.50	PH
131001	NMSBC02	SRM SHORT PERIOD	ALMCLR			
131008	NMSBC02	SRM SHORT PERIOD	ALARM			
131009	NMSBC02	SRM SHORT PERIOD	ALMCLR			
131012	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
131013	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
131019	GTSPA01	RB IN/OUT D/P PDT5A	LO	-0.52	-0.50	IN WG
131025	NMSBC02	SRM SHORT PERIOD	ALARM			
131027	NMSBC02	SRM SHORT PERIOD	ALMCLR			
131030	WTSAA01	2WTS-TK1 RECIRC WTR PH	*LO	5.21	6.50	PH
131032	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
131033	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
131037	NMSBC02	SRM SHORT PERIOD	ALARM			
131042	CNALC01	CLN ST RBLR DT 1A LS9A	HIGH			
131046	NMSBC02	SRM SHORT PERIOD	ALMCLR			
131046	HVCMA04	RELAY ROOM HMDT MT8B	OK	48.94	50.00	%RH
131051	IHSBC01	SPDS PARAMETER ALARM	NORMAL			
131052	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL			
131054	NMSBC02	SRM SHORT PERIOD	ALARM			
131100	WTSAA01	2WTS-TK1 RECIRC WTR PH	OK	8.16	6.50	PH
131103	NMSBC02	SRM SHORT PERIOD	ALMCLR			
131109	GTSPA01	RB IN/OUT D/P PDT5A	OK	-0.49	-0.50	IN WG
131114	NMSBC02	SRM SHORT PERIOD	ALARM			
131114	GTSPA01	RB IN/OUT D/P PDT5A	LO	-0.52	-0.50	IN WG

131132	CNSFC01	CNST XFR PMP DIS DEM FLO	LOW			
~~131134~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	~~ALARM~~			
131138	NMSBC02	SRM SHORT PERIOD	ALMCLR			
131142	NMSBC02	SRM SHORT PERIOD	ALARM			
~~131143~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	~~ALMCLR~~			
131156	CNALC01	CLN ST RBLR DT 1A LS9A	HIGH			
131158	NMSBC02	SRM SHORT PERIOD	ALARM			
~~131200~~	~~WTSAA01~~	~~2WTS-TK1 RECIRC WTR PH~~	~~LO~~	~~5.98~~	~~6.50~~	~~PH~~
131206	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL			
131206	NMSBC02	SRM SHORT PERIOD	ALMCLR			
~~131214~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	~~ALARM~~			
131215	NMSBC02	SRM SHORT PERIOD	ALMCLR			
131225	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
~~131225~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~NORMAL~~			
131227	NMSBC02	SRM SHORT PERIOD	ALARM			
131230	NMSBC02	SRM SHORT PERIOD	ALMCLR			
131230	WTSAA01	2WTS-TK1 RECIRC WTR PH	*LO	4.41	6.50	PH
131232	NMSBC02	SRM SHORT PERIOD	ALARM			
131233	NMSBC02	SRM SHORT PERIOD	ALMCLR			
131234	NMSBC02	SRM SHORT PERIOD	ALARM			
131236	NMSBC02	SRM SHORT PERIOD	ALMCLR			
131241	NMSBC02	SRM SHORT PERIOD	ALARM			
~~131242~~	~~NMIIC113~~	~~IRM CHANNEL BYPASSED~~	~~OFF~~			
131242	CNSFA01	CND XFR PUMP HDR FLOW	LO	296.93	300.00	GPM
131249	NMSBC02	SRM SHORT PERIOD	ALMCLR			
~~131253~~	~~NMIIC109~~	~~IRM DET NOT FULL IN POS~~	~~TRBL~~			
131256	NMIIC109	IRM DET NOT FULL IN POS	NORMAL			
131257	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
~~131259~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~NORMAL~~			
131300	WTSAA01	2WTS-TK1 RECIRC WTR PH	OK	8.20	6.50	PH
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~~131304~~	~~NMIIC110~~	~~IRM DOWNSCALE ALARM~~	~~ALARM~~			
131309	CNALC01	CLN ST RBLR DT 1A LS9A	HIGH			
131312	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
~~131313~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~NORMAL~~			
131315	NMSBC02	SRM SHORT PERIOD	ALARM			
131319	NMSBC02	SRM SHORT PERIOD	ALMCLR			
~~131319~~	~~GTSPA01~~	~~RB IN/OUT D/P PDT5A~~	~~OK~~	~~-0.49~~	~~-0.50~~	~~IN WG~~
131320	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL			
131322	NMIIC110	IRM DOWNSCALE ALARM	NORMAL			
~~131322~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	~~ALARM~~			
131324	NMSBC02	SRM SHORT PERIOD	ALMCLR			
131328	NMSBC02	SRM SHORT PERIOD	ALARM			
~~131329~~	~~GTSPA01~~	~~RB IN/OUT D/P PDT5A~~	~~LO~~	~~-0.51~~	~~-0.50~~	~~IN WG~~
131334	NMIIC110	IRM DOWNSCALE ALARM	ALARM			
131339	NMSBC02	SRM SHORT PERIOD	ALMCLR			
~~131345~~	~~NMIIC110~~	~~IRM DOWNSCALE ALARM~~	~~NORMAL~~			
131349	NMSBC02	SRM SHORT PERIOD	ALARM			
131350	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
~~131351~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~NORMAL~~			
131352	NMSBC02	SRM SHORT PERIOD	ALMCLR			
131400	WTSAA01	2WTS-TK1 RECIRC WTR PH	LO	1.34	6.50	PH
~~131403~~	~~NMIIC112~~	~~IRM UPSCALE ALARM~~	~~ALARM~~			
131403	NMIBC03	IRM UPSCALE	ALARM			
131412	HDLTA03	5PT HTR 2CNM-E5C DRN TMP	*LO	140.69	246.00	DEG F
~~131414~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	~~ALARM~~			
131416	NSSTA102	RX FW FLOW A INLET TEMP	ADC	136.16L*******		DEG F

131422 RPSUC04 RPS B AUTO TRIP TRIPPED
131422 NMEUC04 RPS CH B2 NMS TRIP TRIPPED
~~131422 NMIUC10 IRM TRIP SYS B UPSC/INOP TRIPPED~~
131423 NMSBC02 SRM SHORT PERIOD ALARM
131425 NMIUC08 IRM CHAN H UPSC TRIP ALMCLR
~~131425 NMEUC04 RPS CH B2 NMS TRIP ALMCLR~~
131425 HVKBC09 DIV1 CB CHILLED WTR SYS INOP
131425 NMIUC10 IRM TRIP SYS B UPSC/INOP ALMCLR
~~131426 NMIIC112 IRM UPSCALE ALARM NORMAL~~
131426 HVKBC09 DIV1 CB CHILLED WTR SYS NORMAL
131426 NMIBC03 IRM UPSCALE ALMCLR
~~131427 CNALC01 CLN ST RBLR DT 1A LS9A HIGH~~
131427 NSSTA103 RX FW FLOW B INLET TEMP ADC 136.16L******* DEG F
131429 HVKBC09 DIV1 CB CHILLED WTR SYS INOP
131429 NMSBC02 SRM SHORT PERIOD ALMCLR
131430 HVKBC09 DIV1 CB CHILLED WTR SYS NORMAL
131430 WTSAA01 2WTS-TK1 RECIRC WTR PH *LO 3.93 6.50 PH
131431 HVKBC09 DIV1 CB CHILLED WTR SYS INOP
131432 HVKBC09 DIV1 CB CHILLED WTR SYS NORMAL
131433 RPSUC04 RPS B AUTO TRIP ALMCLR
~~131433 NMSBC02 SRM SHORT PERIOD ALARM~~
131434 HVKBC09 DIV1 CB CHILLED WTR SYS INOP
131434 NMSBC02 SRM SHORT PERIOD ALMCLR
~~131435 HVKBC09 DIV1 CB CHILLED WTR SYS NORMAL~~
131438 CNALC01 CLN ST RBLR DT 1A LS9A NORMAL
131438 NMSBC02 SRM SHORT PERIOD ALARM
~~131441 HVKBC09 DIV1 CB CHILLED WTR SYS INOP~~
131442 NMIIC113 IRM CHANNEL BYPASSED ON

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~~131442 HVKBC09 DIV1 CB CHILLED WTR SYS NORMAL~~
131442 NMSBC02 SRM SHORT PERIOD ALMCLR
131452 HVKBC09 DIV1 CB CHILLED WTR SYS INOP
~~131452 MSSTA03 TURB BYP PSV89A OUT TEMP *HI 329.89 280.00 DEG F~~
131453 HVKBC09 DIV1 CB CHILLED WTR SYS NORMAL
131500 HVRTA01 RB VENT SUPPLY AIR TEMP HI L*******L******* DEG F
~~131500 WTSAA01 2WTS-TK1 RECIRC WTR PH OK 8.20 6.50 PH~~
131503 NMSBC02 SRM SHORT PERIOD ALARM
131509 NMIIC113 IRM CHANNEL BYPASSED OFF
~~131513 NMSBC02 SRM SHORT PERIOD ALMCLR~~
131514 RPSUC04 RPS B AUTO TRIP TRIPPED
131514 NMEUC04 RPS CH B2 NMS TRIP TRIPPED
~~131514 NMIIC111 IRM INSTR INOP TRIP INOP~~
131514 NMIUC10 IRM TRIP SYS B UPSC/INOP TRIPPED
131516 NMEUC04 RPS CH B2 NMS TRIP ALMCLR
~~131516 NMIIC111 IRM INSTR INOP TRIP NORMAL~~
131516 NMIUC10 IRM TRIP SYS B UPSC/INOP ALMCLR
131517 HVKBC09 DIV1 CB CHILLED WTR SYS INOP
~~131518 RPSUC04 RPS B AUTO TRIP ALMCLR~~
131519 HVKBC09 DIV1 CB CHILLED WTR SYS NORMAL
131529 HVKBC09 DIV1 CB CHILLED WTR SYS INOP
~~131530 HVKBC09 DIV1 CB CHILLED WTR SYS NORMAL~~
131533 NSSTA103 RX FW FLOW B INLET TEMP OK 136.16L******* DEG F
131533 ESSTA09 2 PT HTR E2C SHELL TEMP *LO 95.47 155.00 DEG F
~~131541 NMSBC02 SRM SHORT PERIOD ALARM~~
131544 CNALC01 CLN ST RBLR DT 1A LS9A HIGH
131545 NMSBC02 SRM SHORT PERIOD ALMCLR
~~131547 NSSTA103 RX FW FLOW B INLET TEMP ADC 136.16L******* DEG F~~
131554 CNALC01 CLN ST RBLR DT 1A LS9A NORMAL

131601	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL	
131601	NSSTA102	RX FW FLOW A INLET TEMP	OK	136.24L******* DEG F
~~131613~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	ALMCLR	
131627	NMSBC02	SRM SHORT PERIOD	ALARM	
131628	NMSBC02	SRM SHORT PERIOD	ALMCLR	
~~131630~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	~~ALARM~~	
131637	NMSBC02	SRM SHORT PERIOD	ALMCLR	
131638	NMSBC02	SRM SHORT PERIOD	ALARM	
~~131639~~	~~NMSBC02~~	SRM SHORT PERIOD	ALMCLR	
131641	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP	
131641	NMSBC02	SRM SHORT PERIOD	ALARM	
131642	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL	
131642	NMSBC02	SRM SHORT PERIOD	ALMCLR	
131654	CNALC01	CLN ST RBLR DT 1A LS9A	HIGH	
131656	NMSBC02	SRM SHORT PERIOD	ALARM	
131701	NMSBC02	SRM SHORT PERIOD	ALMCLR	
131702	HVCMA04	RELAY ROOM HMDT MT8B	HI	50.50 50.00 %RH
~~131705~~	~~CNALC01~~	~~CLN ST RBLR DT 1A LS9A~~	NORMAL	
131707	NMSBC02	SRM SHORT PERIOD	ALARM	
131714	NMSBC02	SRM SHORT PERIOD	ALMCLR	
~~131721~~	~~HVKBC09~~	DIV1 CB CHILLED WTR SYS	INOP	
131722	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL	
131733	NMSBC02	SRM SHORT PERIOD	ALARM	
~~131736~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	~~ALMCLR~~	
131741	NMSBC02	SRM SHORT PERIOD	ALARM	

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~~131742~~	~~HDHTA01~~	~~GPT HTR EGA DR TEMP~~	*LO	192.93 284.00 DEG F
131742	NSSTA103	RX FW FLOW B INLET TEMP	OK	136.16L******* DEG F
131750	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP	
~~131751~~	~~NMSBC02~~	SRM SHORT PERIOD	ALMCLR	
131752	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL	
131757	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP	
~~131757~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	ALARM	
131758	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL	
131759	NMSBC02	SRM SHORT PERIOD	ALMCLR	
~~131812~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	ALARM	
131815	CNALC01	CLN ST RBLR DT 1A LS9A	HIGH	
131819	NMSBC02	SRM SHORT PERIOD	ALMCLR	
~~131826~~	~~CNALC01~~	~~CLN ST RBLR DT 1A LS9A~~	NORMAL	
131828	NMSBC02	SRM SHORT PERIOD	ALARM	
131832	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP	
~~131832~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	ALMCLR	
131833	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL	
131840	NMSBC02	SRM SHORT PERIOD	ALARM	
~~131843~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	ALMCLR	
131846	NMSBC02	SRM SHORT PERIOD	ALARM	
131854	NMSBC02	SRM SHORT PERIOD	ALMCLR	
~~131856~~	~~RHSPC03~~	~~RHR PMP 1A DISCH PRESS~~	ABNORM	
131903	NMSBC02	SRM SHORT PERIOD	ALARM	
131905	RHSTC33	RHR SDC B BYP MOV67B MOT	OVERLD	
~~131906~~	~~NSSTA104~~	~~RX FW FLOW B INLET TEMP~~	OK	136.16L******* DEG F
131907	NMSBC02	SRM SHORT PERIOD	ALMCLR	
131908	RHSTC33	RHR SDC B BYP MOV67B MOT	NORMAL	
~~131912~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	INOP	
131914	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL	
131915	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP	
~~131916~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	NORMAL	
131917	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP	

~~131934~~	~~GNSFG01~~	~~GNST XFR PMP DIS DEM FLO~~	~~NORMAL~~			
131939	NMSBC02	SRM SHORT PERIOD	ALARM			
131941	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL			
~~131945~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	~~ALMCLR~~			
131954	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
131955	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
131959	ARCLC04	CNSR AIR REM TK SP1B LVL	LOW			
132002	ESSPA07A	HTR 4A PRESS	*LO	4.4	14.0	PSIA
132002	ESSPA09A	HTR 4C PRESS	*LO	1.8	14.0	PSIA
132017	NMSBC02	SRM SHORT PERIOD	ALARM			
132028	NMSBC02	SRM SHORT PERIOD	ALMCLR			
132034	NMSBC02	SRM SHORT PERIOD	ALARM			
~~132038~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	~~ALMCLR~~			
132039	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
132040	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
~~132042~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	~~ALARM~~			
132044	NMSBC02	SRM SHORT PERIOD	ALMCLR			
132052	CNALC01	CLN ST RBLR DT 1A LS9A	HIGH			
~~132052~~	~~CNSFA01~~	~~CND XFR PUMP HDR FLOW~~	~~OK~~	~~310.01~~	~~300.00~~	~~GPM~~
132056	NMSBC02	SRM SHORT PERIOD	ALARM			

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~~132057~~	~~ABFBC04~~	~~AUX BLR SYS 2CES-IPNL508~~	~~TRBL~~			
132059	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
132059	NMSBC02	SRM SHORT PERIOD	ALMCLR			
~~132100~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~NORMAL~~			
132102	NMSBC02	SRM SHORT PERIOD	ALARM			
132103	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL			
~~132103~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	~~ALMCLR~~			
132104	ABFBC04	AUX BLR SYS 2CES-IPNL508	NORMAL			
132106	NMSBC02	SRM SHORT PERIOD	ALARM			
~~132107~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	~~ALMCLR~~			
132110	NMSBC02	SRM SHORT PERIOD	ALARM			
132111	ARCLC04	CNSR AIR REM TK SP1B LVL	NORMAL			
~~132114~~	~~HDLLA01~~	~~PDW 2CNM-E4A WTR LEVEL~~	~~*LO~~	~~4.86~~	~~7.50~~	~~IN WG~~
132121	NMSBC02	SRM SHORT PERIOD	ALMCLR			
132123	ABMPA01	AUX BLR DEAR INL PRESS	HI	7.57	7.50	PSIG
~~132125~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~INOP~~			
132126	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
132128	ABMPA02	AUX BLR STM HDR PRESS	OK	121.10	120.00	PSIG
~~132129~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~INOP~~			
132130	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
132132	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
~~132133~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~NORMAL~~			
132134	NMSBC02	SRM SHORT PERIOD	ALARM			
132139	RMSRC11	RB/RWB LOSS OF SMPL FLO	ALARM			
~~132141~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	~~ALMCLR~~			
132154	NMSBC02	SRM SHORT PERIOD	ALARM			
132155	NMSBC02	SRM SHORT PERIOD	ALMCLR			
~~132200~~	~~NSSTA104~~	~~RX FW FLOW B INLET TEMP~~	~~ADC~~	~~136.16L*******~~		~~DEG F~~
132210	NMSBC02	SRM SHORT PERIOD	ALARM			
132221	NMSBC02	SRM SHORT PERIOD	ALMCLR			
~~132223~~	~~TMITA07~~	~~PIPE UPSTR 2HRS-SV6C TMP~~	~~*LO~~	~~319.94~~	~~400.00~~	~~DEG F~~
132224	CNALC01	CLN ST RBLR DT 1A LS9A	HIGH			
132232	ABFBC04	AUX BLR SYS 2CES-IPNL508	TRBL			
~~132232~~	~~HVIBC01~~	~~AUX BLR RM VENT SYS~~	~~TRBL~~			
132232	ESSTA06	1 PT HTR E1C SHELL TEMP	*LO	96.87	119.00	DEG F
132233	ABFBC04	AUX BLR SYS 2CES-IPNL508	NORMAL			

132238	ESSTA03	6 PT HTR E6C EXTR ST TMP	*LO	177.77	325.00	DEG F
~~132246~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	ALARM			
132247	NMSBC02	SRM SHORT PERIOD	ALMCLR			
132251	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
132252	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
132312	NMSBC02	SRM SHORT PERIOD	ALARM			
132315	NMSBC02	SRM SHORT PERIOD	ALMCLR			
132317	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
132318	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
132321	NMSBC02	SRM SHORT PERIOD	ALARM			
~~132324~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	ALMCLR			
132332	RMSRC11	RB/RWB LOSS OF SMPL FLO	NORMAL			
132346	NMSBC02	SRM SHORT PERIOD	ALARM			
~~132346~~	~~NSSTA102~~	~~RX FW FLOW A INLET TEMP~~	ADC	136.16L*******		DEG F
132348	NMSBC02	SRM SHORT PERIOD	ALMCLR			
132354	GMHAC07	STTR CLG WTR TK VENT H2	HIGH			
~~132355~~	~~GMHAC07~~	~~STTR CLG WTR TK VENT H2~~	NORMAL			
132355	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
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~~132356~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	NORMAL			
132359	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
132400	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
~~132401~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	INOP			
132402	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
132410	NMSBC02	SRM SHORT PERIOD	ALARM			
~~132412~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	ALMCLR			
132413	ABMPA02	AUX BLR STM HDR PRESS	LO	119.44	120.00	PSIG
132414	CNALC01	CLN ST RBLR DT 1A LS9A	HIGH			
~~132426~~	~~CNALC01~~	~~CLN ST RBLR DT 1A LS9A~~	NORMAL			
132427	NMSBC02	SRM SHORT PERIOD	ALARM			
132428	ABMPA01	AUX BLR DEAR INL PRESS	OK	7.35	7.50	PSIG
~~132435~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	INOP			
132436	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
132436	NMSBC02	SRM SHORT PERIOD	ALMCLR			
~~132445~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	ALARM			
132447	NMSBC02	SRM SHORT PERIOD	ALMCLR			
132507	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
~~132508~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	NORMAL			
132509	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
132510	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
~~132512~~	~~CNSFC01~~	~~CNST XFR PMP DIS DEM FLO~~	LOW			
132514	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
132515	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
~~132520~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	ALARM			
132523	NMSBC02	SRM SHORT PERIOD	ALMCLR			
132525	NSSTA103	RX FW FLOW B INLET TEMP	ADC	136.16L*******		DEG F
~~132528~~	~~ABMPA02~~	~~AUX BLR STM HDR PRESS~~	OK	121.06	120.00	PSIG
132549	NMSBC02	SRM SHORT PERIOD	ALARM			
132550	CNALC01	CLN ST RBLR DT 1A LS9A	HIGH			
~~132551~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	ALMCLR			
132554	GTSPA01	RB IN/OUT D/P PDT5A	OK	-0.50	-0.50	IN WG
132555	NMSBC02	SRM SHORT PERIOD	ALARM			
~~132558~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	ALMCLR			
132559	GTSPA01	RB IN/OUT D/P PDT5A	LO	-0.53	-0.50	IN WG
132600	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL			
~~132614~~	~~NSSTA101~~	~~RX FW FLOW A INLET TEMP~~	ADC	136.16L*******		DEG F
132622	CNSFA01	CND XFR PUMP HDR FLOW	LO	293.55	300.00	GPM

132649	NMSBC02	SRM SHORT PERIOD	ALMCLR			
132704	CNALC01	CLN ST RBLR DT 1A LS9A	HIGH			
132705	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
132706	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
132712	FWSTA01	6PT HTR 2FWS-E6A INL TMP	LO	282.07	284.00	DEG F
132715	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL			
132723	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
~~132724~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	NORMAL			
132727	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
132728	ABFBC04	AUX BLR SYS 2CES-IPNL508	TRBL			
~~132728~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	NORMAL			
132758	ABMPA01	AUX BLR DEAR INL PRESS	HI	7.60	7.50	PSIG
132805	ABFBC04	AUX BLR SYS 2CES-IPNL508	NORMAL			
~~132813~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	INOP			
132814	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			

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~~132826~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	ALARM			
132827	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
132828	NMSBC02	SRM SHORT PERIOD	ALMCLR			
~~132829~~	~~CNALC01~~	~~CLN ST RBLR DT 1A LS9A~~	HIGH			
132829	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
132840	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL			
~~132846~~	~~DPTBC50~~	~~TB FLR DRN SYSTEM~~	ALMCLR			
132912	NMSBC02	SRM SHORT PERIOD	ALARM			
132913	NMSBC02	SRM SHORT PERIOD	ALMCLR			
~~132945~~	~~HVKBC09~~	~~DIV1 CB CHILLED~~ WTR SYS	INOP			
132946	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
132946	HVCMA04	RELAY ROOM HMDT MT8B	OK	49.06	50.00	%RH
~~132948~~	~~CNALC01~~	~~CLN ST RBLR DT 1A LS9A~~	HIGH			
132954	TMITA03	PIPE UPSTR 2HRS-SV6A TMP	*LO	319.91	400.00	DEG F
132959	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL			
~~133001~~	~~FWSTA01A~~	~~HTR 6A FW TEMP IN~~	OK	298.7	340.7	DEG F
133019	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
133020	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
~~133033~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	ALARM			
133035	NMSBC02	SRM SHORT PERIOD	ALMCLR			
133040	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
~~133041~~	~~HVKBC09~~	~~DIV1~~ CB CHILLED WTR SYS	NORMAL			
133042	FWSTA01	6PT HTR 2FWS-E6A INL TMP	*LO	271.75	284.00	DEG F
133049	GTSPA01	RB IN/OUT D/P PDT5A	OK	-0.48	-0.50	IN WG
~~133054~~	~~GTSPA01~~	~~RB IN/OUT D/P PDT5A~~	LO	-0.51	-0.50	IN WG
133059	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
133100	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
~~133101~~	~~CNALC01~~	CLN ST RBLR DT 1A LS9A	HIGH			
133101	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
133102	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
~~133112~~	~~CNALC01~~	~~CLN ST RBLR DT 1A LS9A~~	NORMAL			
133130	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
133131	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
~~133134~~	~~HVKBC09~~	~~DIV1 CB~~ CHILLED WTR SYS	INOP			
133135	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
133156	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
~~133157~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	NORMAL			
133158	ABMPA02	AUX BLR STM HDR PRESS	LO	118.74	120.00	PSIG
133219	GTSPA01	RB IN/OUT D/P PDT5A	OK	-0.47	-0.50	IN WG
~~133221~~	~~GMHAC07~~	~~STTR CLG WTR TK VENT H2~~	HIGH			
133222	GMHAC07	STTR CLG WTR TK VENT H2	NORMAL			
133223	CNALC01	CLN ST RBLR DT 1A LS9A	HIGH			

133247 HVKBC09 DIV1 CB CHILLED WTR SYS INOP
133248 HVKBC09 DIV1 CB CHILLED WTR SYS NORMAL
133250 GTSPA01 RB IN/OUT D/P PDT5A LO -0.50 -0.50 IN WG
~~133253 HVKBC09 DIV1 CB CHILLED WTR SYS INOP~~
133254 HVKBC09 DIV1 CB CHILLED WTR SYS NORMAL
133303 HVKBC09 DIV1 CB CHILLED WTR SYS INOP
~~133304 HVKBC09 DIV1 CB CHILLED WTR SYS NORMAL~~
133311 RHSPC03 RHR PMP 1A DISCH PRESS NORMAL
133312 RHSBC27 RHR B INJECTION FLOW NORMAL
~~133312 FWSTA01 6PT HTR 2FWS-E6A INL TMP *LO 260.18 284.00 DEG F~~
133317 RHSBC24 RHR LOOP B PMP DISCH PR HIGH

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~~133317 ADSBC12 ADS B RHR B/RHR C PERMIS ALARM~~
133318 FWSLC01 REACTOR WTR LEVEL HI/LO H/L
133318 RCSBC42 RCS FCV B PART CL/RFP TR TRIPPED
~~133319 RCSBC40 RCS FCV A PART CL/RFP TR TRIPPED~~
133321 RHSBC27 RHR B INJECTION FLOW LOW
133324 FWSLC01 REACTOR WTR LEVEL HI/LO ALMCLR
~~133326 HVKBC09 DIV1 CB CHILLED WTR SYS INOP~~
133328 HVKBC09 DIV1 CB CHILLED WTR SYS NORMAL
133328 ABMPA01 AUX BLR DEAR INL PRESS OK 7.29 7.50 PSIG
~~133330 RHSBC24 RHR LOOP B PMP DISCH PR NORMAL~~
133331 ADSBC12 ADS B RHR B/RHR C PERMIS ALMCLR
133334 FWSLC01 REACTOR WTR LEVEL HI/LO H/L
~~133336 FWSLC01 REACTOR WTR LEVEL HI/LO ALMCLR~~
133340 CNALC01 CLN ST RBLR DT 1A LS9A HIGH
133343 FWSLC01 REACTOR WTR LEVEL HI/LO H/L
~~133344 NMSBC02 SRM SHORT PERIOD ALARM~~
133345 FWSLC01 REACTOR WTR LEVEL HI/LO ALMCLR
133346 NMSBC02 SRM SHORT PERIOD ALMCLR
~~133347 NMSBC02 SRM SHORT PERIOD ALARM~~
133347 FWSLC01 REACTOR WTR LEVEL HI/LO H/L
133349 NMSBC02 SRM SHORT PERIOD ALMCLR
~~133350 CNALC01 CLN ST RBLR DT 1A LS9A NORMAL~~
133352 FWSLC01 REACTOR WTR LEVEL HI/LO ALMCLR
133405 HVKBC09 DIV1 CB CHILLED WTR SYS INOP
~~133406 HVKBC09 DIV1 CB CHILLED WTR SYS NORMAL~~
133426 HVKBC09 DIV1 CB CHILLED WTR SYS INOP
133428 HVKBC09 DIV1 CB CHILLED WTR SYS NORMAL
~~133442 FWSTA06 6PT HTR 2FWS-E6C OUT TMP *LO 122.24 324.00 DEG F~~
133442 HDLTA01 5PT HTR 2CNM-E5A DRN TMP *LO 140.69 246.00 DEG F
133442 ESSTA11 3 PT HTR E3B EXTR ST TMP *LO 226.87 256.00 DEG F
~~133446 HVKBC09 DIV1 CB CHILLED WTR SYS INOP~~
133447 HVKBC09 DIV1 CB CHILLED WTR SYS NORMAL
133448 HVKBC09 DIV1 CB CHILLED WTR SYS INOP
~~133449 HVKBC09 DIV1 CB CHILLED WTR SYS NORMAL~~
133451 HVKBC09 DIV1 CB CHILLED WTR SYS INOP
133452 HVKBC09 DIV1 CB CHILLED WTR SYS NORMAL
~~133508 NSSTA103 RX FW FLOW B INLET TEMP OK 136.16L******* DEG F~~
133511 ASSPA03 CLN STM RCBLR STM PRESS LO 69.75 70.00 PSIG
133512 FWSTA01 6PT HTR 2FWS-E6A INL TMP *LO 248.07 284.06 DEG F
~~133513 NSSTA103 RX FW FLOW B INLET TEMP ADC 136.16L******* DEG F~~
133514 HVKBC09 DIV1 CB CHILLED WTR SYS INOP
133515 HVKBC09 DIV1 CB CHILLED WTR SYS NORMAL
133520 CNALC01 CLN ST RBLR DT 1A LS9A HIGH
133539 HVKBC09 DIV1 CB CHILLED WTR SYS INOP
133540 HVKBC09 DIV1 CB CHILLED WTR SYS NORMAL

133543 CNALC01 CLN ST RBLR DT 1A LS9A NORMAL
~~133559 GTSPA01 RB IN/OUT D/P PDT5A OK -0.50 -0.50 IN WG~~
133614 GTSPA01 RB IN/OUT D/P PDT5A LO -0.53 -0.50 IN WG
133616 ASSPA03 CLN STM RCBLR STM PRESS *LO 66.71 70.00 PSIG
~~133616 HVCMA04 RELAY ROOM HMDT MT8B HI 50.56 50.00 %RH~~
133619 GTSPA01 RB IN/OUT D/P PDT5A OK -0.50 -0.50 IN WG
133624 GTSPA01 RB IN/OUT D/P PDT5A LO -0.53 -0.50 IN WG
~~133628 CNSFG01 CNST XFR PMP DIS DEM FLO NORMAL~~
133630 HVKBC09 DIV1 CB CHILLED WTR SYS INOP

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~~133631 HVKBC09 DIV1 CB CHILLED WTR SYS NORMAL~~
133632 HVKBC09 DIV1 CB CHILLED WTR SYS INOP
133633 HVKBC09 DIV1 CB CHILLED WTR SYS NORMAL
~~133634 HVKBC09 DIV1 CB CHILLED WTR SYS INOP~~
133635 HVKBC09 DIV1 CB CHILLED WTR SYS NORMAL
133654 DSRPA01 SCAVENGING STEAM HDR PR *LO 9.90 250.00 PSIG
~~133701 HVKBC09 DIV1 CB CHILLED WTR SYS INOP~~
133702 HVKBC09 DIV1 CB CHILLED WTR SYS NORMAL
133707 HVKBC09 DIV1 CB CHILLED WTR SYS INOP
~~133708 HVKBC09 DIV1 CB CHILLED WTR SYS NORMAL~~
133712 HVKBC09 DIV1 CB CHILLED WTR SYS INOP
133713 HVKBC09 DIV1 CB CHILLED WTR SYS NORMAL
~~133736 ASSPA03 CLN STM RCBLR STM PRESS *LO 63.22 70.00 PSIG~~
133744 HVKBC09 DIV1 CB CHILLED WTR SYS INOP
133745 HVKBC09 DIV1 CB CHILLED WTR SYS NORMAL
~~133754 HVKBC09 DIV1 CB CHILLED WTR SYS INOP~~
133755 HVKBC09 DIV1 CB CHILLED WTR SYS NORMAL
133757 NSSTA101 RX FW FLOW A INLET TEMP OK 136.15L******* DEG F
~~133757 CNSPA01 CND XFR PUMP HDR FLOW OK 313.29 300.00 GPM~~
133820 HVKBC09 DIV1 CB CHILLED WTR SYS INOP
133821 HVKBC09 DIV1 CB CHILLED WTR SYS NORMAL
~~133829 ABFBC04 AUX BLR SYS 2CES-IPNL508 TRBL~~
133832 ABFBC04 AUX BLR SYS 2CES-IPNL508 NORMAL
133843 HVKBC09 DIV1 CB CHILLED WTR SYS INOP
~~133844 HVKBC09 DIV1 CB CHILLED WTR SYS NORMAL~~
133850 ABDBC02 AUX BLR SYS 2CES-IPNL507 TRBL
133850 ABMUC01 AUX BLR 1A/1B AT/FTS TRIPPED
~~133851 ASSPA03 CLN STM RCBLR STM PRESS *LO 60.64 70.00 PSIG~~
133852 HVKBC09 DIV1 CB CHILLED WTR SYS INOP
133853 HVKBC09 DIV1 CB CHILLED WTR SYS NORMAL
~~133854 ABDBC02 AUX BLR SYS 2CES-IPNL507 NORMAL~~
133854 HVKBC09 DIV1 CB CHILLED WTR SYS INOP
133855 HVKBC09 DIV1 CB CHILLED WTR SYS NORMAL
~~133903 ABDBC02 AUX BLR SYS 2CES-IPNL507 TRBL~~
133904 ABMPA01 AUX BLR DEAR INL PRESS LO 2.47 2.50 PSIG
133905 ABDBC02 AUX BLR SYS 2CES-IPNL507 NORMAL
~~133905 ABMUC01 AUX BLR 1A/1B AT/FTS ALMCLR~~
133912 FWSTA01 6PT HTR 2FWS-E6A INL TMP *LO 237.11 284.00 DEG F
133918 HVKBC09 DIV1 CB CHILLED WTR SYS INOP
~~133919 HVKBC09 DIV1 CB CHILLED WTR SYS NORMAL~~
133921 HVKBC09 DIV1 CB CHILLED WTR SYS INOP
133922 HVKBC09 DIV1 CB CHILLED WTR SYS NORMAL
133931 CNALC01 CLN ST RBLR DT 1A LS9A HIGH
133945 HVKBC09 DIV1 CB CHILLED WTR SYS INOP
133946 HVKBC09 DIV1 CB CHILLED WTR SYS NORMAL
133951 ASSPA03 CLN STM RCBLR STM PRESS *LO 57.86 70.00 PSIG
133957 CNALC01 CLN ST RBLR DT 1A LS9A NORMAL

134026 NSSTA101 RX FW FLOW A INLET TEMP ADC 136.16L******* DEG F
134027 NSSTA101 RX FW FLOW A INLET TEMP OK 136.16L******* DEG F
~~134029 NSSTA101 RX FW FLOW A INLET TEMP ADC 136.16L******* DEG F~~
134030 WTSAA01 2WTS-TK1 RECIRC WTR PH OK 8.21 6.50 PH

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~~134040 HVKBC09 DIV1 CB CHILLED WTR SYS INOP~~
134041 HVKBC09 DIV1 CB CHILLED WTR SYS NORMAL
134051 ASSPA03 CLN STM RCBLR STM PRESS *LO 54.82 70.00 PSIG
~~134100 WTSAA01 2WTS-TK1 RECIRC WTR PH LO 4.04 6.50 PH~~
134108 HVKBC09 DIV1 CB CHILLED WTR SYS INOP
134109 HVKBC09 DIV1 CB CHILLED WTR SYS NORMAL
~~134130 WTSAA01 2WTS-TK1 RECIRC WTR PH *LO 4.91 6.50 PH~~
134135 HVKBC09 DIV1 CB CHILLED WTR SYS INOP
134136 HVKBC09 DIV1 CB CHILLED WTR SYS NORMAL
~~134137 HVKBC09 DIV1 CB CHILLED WTR SYS INOP~~
134138 HVKBC09 DIV1 CB CHILLED WTR SYS NORMAL
134200 WTSAA01 2WTS-TK1 RECIRC WTR PH OK 8.11 6.50 PH
~~134213 ABMPA01 AUX BLR DEAR INL PRESS OK 2.62 2.50 PSIG~~
134217 ABDBC02 AUX BLR SYS 2CES-IPNL507 TRBL
134217 ABMUC04 AUX BLR 1B ELECTRICAL FAULT
~~134217 ABMUC01 AUX BLR 1A/1B AT/FTS TRIPPED~~
134217 NSSTA103 RX FW FLOW B INLET TEMP OK 136.16L******* DEG F
134221 ABDBC02 AUX BLR SYS 2CES-IPNL507 NORMAL
~~134222 ABMUC01 AUX BLR 1A/1B AT/FTS ALMCLR~~
134229 NSSTA101 RX FW FLOW A INLET TEMP OK 136.16L******* DEG F
134231 HVKBC09 DIV1 CB CHILLED WTR SYS INOP
~~134231 ASSPA03 CLN STM RCBLR STM PRESS *LO 51.60 70.00 PSIG~~
134232 HVKBC09 DIV1 CB CHILLED WTR SYS NORMAL
134234 ABMPA01 AUX BLR DEAR INL PRESS LO 2.46 2.50 PSIG
~~134240 HVNBG01 VENT CHL WTR SYS IPNL135 TRBL~~
134249 RMSRC11 RB/RWB LOSS OF SMPL FLO ALARM
134257 HVKBC09 DIV1 CB CHILLED WTR SYS INOP
~~134258 HVKBC09 DIV1 CB CHILLED WTR SYS NORMAL~~
134311 CNSFC01 CNST XFR PMP DIS DEM FLO LOW
134313 NSSTA101 RX FW FLOW A INLET TEMP ADC 136.16L******* DEG F
~~134315 ABDBC02 AUX BLR SYS 2CES-IPNL507 TRBL~~
134319 ABDBC02 AUX BLR SYS 2CES-IPNL507 NORMAL
134327 ASSPC06 CLN STM REBLR INL STM PR H/L
~~134334 NSSTA103 RX FW FLOW B INLET TEMP ADC 136.16L******* DEG F~~
134351 ASSPA03 CLN STM RCBLR STM PRESS *LO 48.60 70.00 PSIG
134400 HVKBC09 DIV1 CB CHILLED WTR SYS INOP
~~134400 WTSAA01 2WTS-TK1 RECIRC WTR PH LO 3.89 6.50 PH~~
134401 HVKBC09 DIV1 CB CHILLED WTR SYS NORMAL
134410 RMSRC11 RB/RWB LOSS OF SMPL FLO NORMAL
~~134412 FWSTA01 6PT HTR 2FWS-E6A INL TMP *LO 225.47 284.00 DEG F~~
134412 CNSFA01 CND XFR PUMP HDR FLOW LO 297.35 300.00 GPM
134430 WTSAA01 2WTS-TK1 RECIRC WTR PH OK 8.20 6.50 PH
134456 HVKBC09 DIV1 CB CHILLED WTR SYS INOP
134458 HVKBC09 DIV1 CB CHILLED WTR SYS NORMAL
134506 ASSPA03 CLN STM RCBLR STM PRESS *LO 45.79 70.00 PSIG
134526 ABDBC01 AUX BLR SYS 2CES-IPNL506 TRBL
134526 ABMUC01 AUX BLR 1A/1B AT/FTS TRIPPED
134530 ABDBC01 AUX BLR SYS 2CES-IPNL506 NORMAL
~~134537 ABMUC01 AUX BLR 1A/1B AT/FTS ALMCLR~~
134539 ESSTA18 5 PT HTR E5C EXTR ST TMP *LO 179.16 280.00 DEG F
134541 HVKBC09 DIV1 CB CHILLED WTR SYS INOP
~~134542 HVKBC09 DIV1 CB CHILLED WTR SYS NORMAL~~

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~~134553~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~INOP~~			
134554	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
134607	CNATA02	RBLR DRN TK1B DISCH TEMP	*LO	175.83	200.00	DEG F
~~134615~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~INOP~~			
134616	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
134617	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
~~134618~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~NORMAL~~			
134626	ASSPA03	CLN STM RCBLR STM PRESS	*LO	42.49	70.00	PSIG
134631	CNALC01	CLN ST RBLR DT 1A LS9A	HIGH			
~~134634~~	~~CNALC01~~	~~CLN ST RBLR DT 1A LS9A~~	~~NORMAL~~			
134638	CNALC01	CLN ST RBLR DT 1A LS9A	HIGH			
134642	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL			
~~134643~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~INOP~~			
134644	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
134649	CNALC01	CLN ST RBLR DT 1A LS9A	HIGH			
~~134654~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~INOP~~			
134655	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
134705	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL			
~~134721~~	~~ASSPA03~~	~~CLN STM RCBLR STM PRESS~~	~~*LO~~	~~39.71~~	~~70.00~~	~~PSIG~~
134723	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
134724	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
~~134731~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~INOP~~			
134732	TMEPA03	REBLR 2TME-E1A DIS ST PR	LO	24.67	25.00	PSIG
134733	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
~~134734~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~INOP~~			
134735	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
134743	ABMPA01	AUX BLR DEAR INL PRESS	OK	2.57	2.50	PSIG
~~134755~~	~~TMEPC03~~	~~CLN STM REBLR STM HDR PR~~	~~LOW~~			
134805	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
134806	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
~~134808~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~INOP~~			
134809	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
134826	ASSPA03	CLN STM RCBLR STM PRESS	*LO	36.75	70.00	PSIG
~~134839~~	~~ABFBC04~~	~~AUX BLR SYS 2CES-IPNL508~~	~~TRBL~~			
134842	ABFBC04	AUX BLR SYS 2CES-IPNL508	NORMAL			
134844	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
~~134845~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~NORMAL~~			
134853	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
134854	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
~~134858~~	~~ABMPA01~~	~~AUX BLR DEAR INL PRESS~~	~~HI~~	~~7.58~~	~~7.50~~	~~PSIG~~
134906	HVCMA04	RELAY ROOM HMDT MTSB	OK	49.06	50.00	%RH
134912	IHSBC01	SPDS PARAMETER ALARM	TRBL			
134939	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
134940	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
134944	IHSBC01	SPDS PARAMETER ALARM	NORMAL			
135026	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
135027	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
135028	ABMPA01	AUX BLR DEAR INL PRESS	OK	7.37	7.50	PSIG
~~135030~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~INOP~~			
135031	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
135032	TMEPA03	REBLR 2TME-E1A DIS ST PR	*LO	19.84	25.00	PSIG
~~135047~~	~~TMEPA01~~	~~GLAND SLSTM SUPLY PRESS~~	~~LO~~	~~19.82~~	~~20.00~~	~~PSIG~~
135102	ASSPA03	CLN STM RCBLR STM PRESS	*LO	33.97	70.00	PSIG
135123	CNALC01	CLN ST RBLR DT 1A LS9A	HIGH			
~~135125~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~INOP~~			
135126	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			

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~~135143~~	~~CNALC01~~	~~CLN-ST-RBLR DT 1A LS9A~~	~~NORMAL~~			
135143	ABMPA01	AUX BLR DEAR INL PRESS	LO	2.48	2.50	PSIG
135232	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
~~135233~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~NORMAL~~			
135234	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
135235	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
~~135237~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~INOP~~			
135239	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
135312	FWSTA01	6PT HTR 2FWS-E6A INL TMP	*LO	213.86	284.00	DEG F
~~135329~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~INOP~~			
135330	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
135333	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
~~135334~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~NORMAL~~			
135342	FWSTA03	6PT HTR 2FWS-E6C INL TMP	*LO	109.88	284.00	DEG F
135349	ABFBC04	AUX BLR SYS 2CES-IPNL508	TRBL			
~~135355~~	~~ABFBC04~~	~~AUX BLR SYS 2CES-IPNL508~~	~~NORMAL~~			
135403	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
135404	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
~~135408~~	~~GMHAC07~~	~~STTR CLG WTR TK VENT H2~~	~~HIGH~~			
135410	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
135411	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
~~135411~~	~~ASSPA03~~	~~CLN-STM RCBLR STM PRESS~~	~~*LO~~	~~30.97~~	~~70.00~~	~~PSIG~~
135414	GMHAC07	STTR CLG WTR TK VENT H2	NORMAL			
135421	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
~~135423~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~NORMAL~~			
135437	TMEPA01	GLAND SLSTM SUPLY PRESS	*LO	15.90	20.00	PSIG
135450	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
~~135451~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~NORMAL~~			
135453	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
135454	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
~~135459~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~INOP~~			
135500	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
135512	HVCMA04	RELAY ROOM HMDT MT8B	HI	50.56	50.00	*RH
~~135548~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~INOP~~			
135549	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
135550	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
~~135552~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~NORMAL~~			
135602	TMEPA03	REBLR 2TME-E1A DIS ST PR	*LO	14.59	25.00	PSIG
135636	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
~~135637~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~NORMAL~~			
135639	ABDBC02	AUX BLR SYS 2CES-IPNL507	TRBL			
135641	ABDBC02	AUX BLR SYS 2CES-IPNL507	NORMAL			
135645	ESSTA15	4 PT HTR E4C EXTR ST TMP	*LO	261.87	334.00	DEG F
135719	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
135720	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
135726	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
135727	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
135736	RCSBC42	RCS FCV B PART CL/RFP TR	CLOSED			
~~135744~~	~~ESSTA12~~	~~3-PT-HTR-E3C-EXTR-ST TMP~~	~~LO~~	~~255.81~~	~~256.00~~	~~DEG F~~
135803	GMHAC07	STTR CLG WTR TK VENT H2	HIGH			
135807	GMHAC07	STTR CLG WTR TK VENT H2	NORMAL			
~~135807~~	~~GNATA02~~	~~RBLR-DRN TK1B DISCH TEMP~~	~~*LO~~	~~163.91~~	~~200.00~~	~~DEG F~~
135813	CNSFC01	CNST XFR PMP DIS DEM FLO	NORMAL			
135838	CWSAC02	CLG TWR BLOW-DOWN WTR PH	HIGH			
~~135838~~	~~CWSAC01~~	~~CLG-TWR-BLOW-DOWN-WTR-PH~~	~~LOW~~			
135840	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			

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~~135841~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~NORMAL~~			
135842	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
135843	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
~~135845~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~INOP~~			
135846	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
135848	CWSAC02	CLG TWR BLOW-DOWN WTR PH	NORMAL			
~~135848~~	~~CWSAC01~~	~~CLG TWR BLOW-DOWN WTR PH~~	~~NORMAL~~			
135900	SWPBC18	SW FV54A HYD UNT ACC PR	LOW			
135918	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
~~135919~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~NORMAL~~			
135931	ASSPA03	CLN STM RCBLR STM PRESS	*LO	27.64	70.00	PSIG
135937	CNSFA01	CND XFR PUMP HDR FLOW	OK	312.67	300.00	GPM
~~135953~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~INOP~~			
135954	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
135954	TMITA04	PIPE UPSTR 2HRS-SV5A TMP	*LO	319.87	400.00	DEG F
~~135956~~	~~CNALC01~~	~~CLN ST RBLR DT 1A LS9A~~	~~HIGH~~			
140002	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
140003	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
~~140008~~	~~RCSBC40~~	~~RCS-FCV A PART CL/RFP TR~~	~~CLOSED~~			
140014	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL			
140042	ESSTA13	4 PT HTR E4A EXTR ST TMP	*LO	249.90	334.00	DEG F
~~140100~~	~~TMGBC04~~	~~TRNGR NOT OPERATING~~	~~ALARM~~			
140104	GTSPA01	RB IN/OUT D/P PDT5A	OK	-0.49	-0.50	IN WG
140111	TMGBC04	TRNGR NOT OPERATING	IN OPER			
~~140112~~	~~ARCLC04~~	~~CNSR AIR REM TK SP1B LVL~~	~~LOW~~			
140116	GMHAC07	STTR CLG WTR TK VENT H2	HIGH			
140117	GMHAC07	STTR CLG WTR TK VENT H2	NORMAL			
~~140122~~	~~TMEPA01~~	~~GLAND SLSTM SUPLY PRESS~~	~~*LO~~	~~11.88~~	~~20.00~~	~~PSIG~~
140126	NSSTA101	RX FW FLOW A INLET TEMP	OK	136.16L*******		DEG F
140131	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
~~140132~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~NORMAL~~			
140133	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
140134	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
~~140136~~	~~TMGBC04~~	~~TRNGR NOT OPERATING~~	~~ALARM~~			
140141	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
140142	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
~~140146~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~INOP~~			
140147	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
140209	GTSPA01	RB IN/OUT D/P PDT5A	LO	-0.51	-0.50	IN WG
~~140210~~	~~ABMUC04~~	~~AUX BLR 1B ELECTRICAL~~	~~ALMCLR~~			
140220	SWPBC18	SW FV54A HYD UNT ACC PR	NORMAL			
140223	ARCLC04	CNSR AIR REM TK SP1B LVL	NORMAL			
140225	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
140226	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
140241	EGSPC14	EDG3 RCVR TK2B AIR PRESS	NORMAL			
140241	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
140242	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
140253	TMITA08	PIPE UPSTR 2HRS-SV5C TMP	*LO	303.89	400.00	DEG F
~~140258~~	~~CNALC01~~	~~CLN ST RBLR DT 1A LS9A~~	~~HIGH~~			
140301	NSSTA102	RX FW FLOW A INLET TEMP	OK	136.16L*******		DEG F
140310	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL			
~~140332~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~INOP~~			
140333	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
140339	GTSPA01	RB IN/OUT D/P PDT5A	OK	-0.49	-0.50	IN WG
~~140344~~	~~GTSPA01~~	~~RB IN/OUT D/P PDT5A~~	~~LO~~	~~-0.51~~	~~-0.50~~	~~IN WG~~
140355	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			

~~140356~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~NORMAL~~			
140406	CNSFC01	CNST XFR PMP DIS DEM FLO	LOW			
140406	NSSTA103	RX FW FLOW B INLET TEMP	OK	136.16L*******		DEG F
~~140413~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~INOP~~			
140414	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
140416	RMSRC05	RB/RWB VENT SYS NOT REM	ALARM			
~~140431~~	~~NSSTA104~~	~~RX FW FLOW B INLET TEMP~~	~~OK~~	~~136.16L*******~~		~~DEG F~~
140442	CNALC01	CLN ST RBLR DT 1A LS9A	HIGH			
140454	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL			
~~140505~~	~~NSSTA104~~	~~RX FW FLOW B INLET TEMP~~	~~ADC~~	~~136.16L*******~~		~~DEG F~~
140506	ASSPA03	CLN STM RCBLR STM PRESS	*LO	24.94	70.00	PSIG
140507	CNSFA01	CND XFR PUMP HDR FLOW	LO	299.68	300.00	GPM
~~140520~~	~~NSSTA104~~	~~RX FW FLOW B INLET TEMP~~	~~OK~~	~~136.16L*******~~		~~DEG F~~
140522	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
140523	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
~~140524~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~INOP~~			
140525	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
140532	TMEPA03	REBLR 2TME-E1A DIS ST PR	*LO	9.94	25.00	PSIG
~~140609~~	~~HVNBC01~~	~~VENT CHL WTR SYS IPNL135~~	~~ALMCLR~~			
140630	CNALC01	CLN ST RBLR DT 1A LS9A	HIGH			
140641	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
~~140642~~	~~CNALC01~~	~~CLN ST RBLR DT 1A LS9A~~	~~NORMAL~~			
140642	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
140648	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
~~140649~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~NORMAL~~			
140741	NMSBC02	SRM SHORT PERIOD	ALARM			
140743	ESSTA14	4 PT HTR E4B EXTR ST TMP	*LO	249.76	334.00	DEG F
~~140744~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	~~ALMCLR~~			
140753	GMHAC07	STTR CLG WTR TK VENT H2	HIGH			
140756	GMHAC07	STTR CLG WTR TK VENT H2	NORMAL			
~~140815~~	~~CNALC01~~	~~CLN ST RBLR DT 1A LS9A~~	~~HIGH~~			
140826	HVCMA04	RELAY ROOM HMDT MT8B	OK	49.12	50.00	*RH
140827	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL			
~~140838~~	~~NSSTA104~~	~~RX FW FLOW B INLET TEMP~~	~~ADC~~	~~136.16L*******~~		~~DEG F~~
140853	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
140854	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
~~140856~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~INOP~~			
140858	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
140859	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
~~140900~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~NORMAL~~			
140934	TMGBC04	TRNGR NOT OPERATING	IN OPER			
140941	TMGBC04	TRNGR NOT OPERATING	ALARM			
140958	NSSTA103	RX FW FLOW B INLET TEMP	ADC	136.16L*******		DEG F
141000	CNALC01	CLN ST RBLR DT 1A LS9A	HIGH			
141005	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
141006	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
141009	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
141010	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
~~141012~~	~~CNALC01~~	~~CLN ST RBLR DT 1A LS9A~~	~~NORMAL~~			
141016	NSSTA102	RX FW FLOW A INLET TEMP	ADC	136.40L*******		DEG F
141042	TMEPA01	GLAND SLSTM SUPLY PRESS	*LO	7.84	20.00	PSIG
~~141059~~	~~TMGBC04~~	~~TRNGR NOT OPERATING~~	~~IN OPER~~			
141105	TMGBC04	TRNGR NOT OPERATING	ALARM			
141106	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
~~141107~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~NORMAL~~			
141122	RMSRC95	RB/RWB LOSS MCA COMM	ALARM			

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141136 WCSPC09 RWCU DISCH PRESS H/L
~~141137 HVKBC09 DIV1 CB CHILLED WTR SYS INOP~~
141138 RMSRC04 RB/RWB PLC NOT RUN PGM NORMAL
141138 TMGBC04 TRNGR NOT OPERATING IN OPER
~~141139 RMSRC95 RB/RWB LOSS MCA COMM NORMAL~~
141140 HVKBC09 DIV1 CB CHILLED WTR SYS NORMAL
141140 NSSTA101 RX FW FLOW A INLET TEMP ADC 136.16L******* DEG F
~~141141 HVKBC09 DIV1 CB CHILLED WTR SYS INOP~~
141142 HVKBC09 DIV1 CB CHILLED WTR SYS NORMAL
141152 CNALC01 CLN ST RBLR DT 1A LS9A HIGH
~~141152 TMGBC04 TRNGR NOT OPERATING ALARM~~
141156 ASSPA03 CLN STM RCBLR STM PRESS *LO 21.75 70.00 PSIG
141201 GMHAC07 STTR CLG WTR TK VENT H2 HIGH
~~141204 CNALC01 CLN ST RBLR DT 1A LS9A NORMAL~~
141205 GMHAC07 STTR CLG WTR TK VENT H2 NORMAL
141205 HVKBC09 DIV1 CB CHILLED WTR SYS INOP
~~141206 HVKBC09 DIV1 CB CHILLED WTR SYS NORMAL~~
141231 HVKBC09 DIV1 CB CHILLED WTR SYS INOP
141232 HVKBC09 DIV1 CB CHILLED WTR SYS NORMAL
~~141259 HVKBC09 DIV1 CB CHILLED WTR SYS INOP~~
141300 HVKBC09 DIV1 CB CHILLED WTR SYS NORMAL
141303 HVKBC09 DIV1 CB CHILLED WTR SYS INOP
~~141305 HVKBC09 DIV1 CB CHILLED WTR SYS NORMAL~~
141326 RMSRC05 RB/RWB VENT SYS NOT REM NORMAL
141326 HVKBC09 DIV1 CB CHILLED WTR SYS INOP
~~141328 HVKBC09 DIV1 CB CHILLED WTR SYS NORMAL~~
141343 CNALC01 CLN ST RBLR DT 1A LS9A HIGH
141344 NMSOC103 SRM INSTR-INOP ALARM INOP
~~141344 NMSOC104 SRM CHANNEL BYPASSED OFF~~
141344 NMSBC03 SRM UPSCALE/INOP ALARM
141350 HVKBC09 DIV1 CB CHILLED WTR SYS INOP
~~141351 HVKBC09 DIV1 CB CHILLED WTR SYS NORMAL~~
141356 CNALC01 CLN ST RBLR DT 1A LS9A NORMAL
141356 HVKBC09 DIV1 CB CHILLED WTR SYS INOP
~~141357 HVKBC09 DIV1 CB CHILLED WTR SYS NORMAL~~
141358 TMGBC04 TRNGR NOT OPERATING IN OPER
141402 CWSAA02 BLWDN WTR CHLORINE RESID SLO -0.25L******* PPM
~~141422 NMSBC02 SRM SHORT PERIOD ALARM~~
141424 NMSBC02 SRM SHORT PERIOD ALMCLR
141436 HVCMA04 RELAY ROOM HMDT MT8B HI 50.62 50.00 %RH
141437 NMSBC02 SRM SHORT PERIOD ALARM
141439 NMSBC02 SRM SHORT PERIOD ALMCLR
141444 NMSBC02 SRM SHORT PERIOD ALARM
141448 NMSBC02 SRM SHORT PERIOD ALMCLR
141452 HVKBC09 DIV1 CB CHILLED WTR SYS INOP
141453 HVKBC09 DIV1 CB CHILLED WTR SYS NORMAL
~~141501 RMSRC11 RB/RWB LOSS OF SMPL FLO ALARM~~
141513 HVKBC09 DIV1 CB CHILLED WTR SYS INOP
141514 HVKBC09 DIV1 CB CHILLED WTR SYS NORMAL
~~141518 HVKBC09 DIV1 CB CHILLED WTR SYS INOP~~
141518 NMSBC02 SRM SHORT PERIOD ALARM
141519 HVKBC09 DIV1 CB CHILLED WTR SYS NORMAL
~~141520 NMSBC02 SRM SHORT PERIOD ALMCLR~~
141522 HVKBC09 DIV1 CB CHILLED WTR SYS INOP

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~~141523 HVKBC09 DIV1 CB CHILLED WTR SYS NORMAL~~
141544 HVKBC09 DIV1 CB CHILLED WTR SYS INOP
141545 CNALC01 CLN ST RBLR DT 1A LS9A HIGH

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141610 HVKBC09  DIV1 CB CHILLED WTR SYS  INOP
141611 RCSBC41  RCS FLUX ESTIMATOR       FAIL
141612 HVKBC09  DIV1 CB CHILLED WTR SYS  NORMAL
141612 FWSTA06  6PT HTR 2FWS-E6C OUT TMP *LO  111.95  324.00 DEG F
141614 HVKBC09  DIV1 CB CHILLED WTR SYS  INOP
141615 HVKBC09  DIV1 CB CHILLED WTR SYS  NORMAL
141622 RMSRC11  RB/RWB LOSS OF SMPL FLO  NORMAL
141638 NMSOC104 SRM CHANNEL BYPASSED     ON
141640 NMSBC02  SRM SHORT PERIOD         ALARM
141642 NMSBC02  SRM SHORT PERIOD         ALMCLR
141644 NMSBC02  SRM SHORT PERIOD         ALARM
141647 HVKBC09  DIV1 CB CHILLED WTR SYS  INOP
141647 NMSBC02  SRM SHORT PERIOD         ALMCLR
141649 HVKBC09  DIV1 CB CHILLED WTR SYS  NORMAL
141713 RHSBC24  RHR LOOP B PMP DISCH PR  HIGH
141713 ADSBC12  ADS D RHR B/RHR C PERMIS ALARM
141723 HVKBC09  DIV1 CB CHILLED WTR SYS  INOP
141724 HVKBC09  DIV1 CB CHILLED WTR SYS  NORMAL
141726 NMSBC02  SRM SHORT PERIOD         ALARM
141729 NMSBC02  SRM SHORT PERIOD         ALMCLR
141730 HVKBC09  DIV1 CB CHILLED WTR SYS  INOP
141731 HVKBC09  DIV1 CB CHILLED WTR SYS  NORMAL
141742 HDLTA07  3PT HTR 2CNM-E3A DRN TMP *LO   94.01  167.00 DEG F
141745 NMSBC02  SRM SHORT PERIOD         ALARM
141746 CNALC01  CLN ST RBLR DT 1A LS9A   HIGH
141746 NMSBC02  SRM SHORT PERIOD         ALMCLR
141747 TMEPA02  GLD SL STM RGLTD SPLY PR *LO    2.67    3.00 PSIG
141757 GMHAC07  STTR CLG WTR TK VENT H2  HIGH
141758 CNALC01  CLN ST RBLR DT 1A LS9A   NORMAL
141802 GMHAC07  STTR CLG WTR TK VENT H2  NORMAL
141805 HVKBC09  DIV1 CB CHILLED WTR SYS  INOP
141806 HVKBC09  DIV1 CB CHILLED WTR SYS  NORMAL
141815 FWSTA48  FEED WATER FINAL TEMP    *LO  122.52  324.00 DEG F
141835 HVKBC09  DIV1 CB CHILLED WTR SYS  INOP
141836 HVKBC09  DIV1 CB CHILLED WTR SYS  NORMAL
141841 HVKBC09  DIV1 CB CHILLED WTR SYS  INOP
141842 HVKBC09  DIV1 CB CHILLED WTR SYS  NORMAL
141858 ABMPA01  AUX BLR DEAR INL PRESS   OK     2.59    2.50 PSIG
141859 NMSBC02  SRM SHORT PERIOD         ALARM
141900 NMSBC02  SRM SHORT PERIOD         ALMCLR
141905 NMSBC02  SRM SHORT PERIOD         ALARM
141906 NMSBC02  SRM SHORT PERIOD         ALMCLR
141907 HVKBC09  DIV1 CB CHILLED WTR SYS  INOP
141908 HVKBC09  DIV1 CB CHILLED WTR SYS  NORMAL
141923 HVKBC09  DIV1 CB CHILLED WTR SYS  INOP
141924 HVKBC09  DIV1 CB CHILLED WTR SYS  NORMAL
141928 HVKBC09  DIV1 CB CHILLED WTR SYS  INOP
141930 HVKBC09  DIV1 CB CHILLED WTR SYS  NORMAL
141936 CNALC01  CLN ST RBLR DT 1A LS9A   HIGH
141947 CNALC01  CLN ST RBLR DT 1A LS9A   NORMAL
141950 HVKBC09  DIV1 CB CHILLED WTR SYS  INOP

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141951 HVKBC09  DIV1 CB CHILLED WTR SYS  NORMAL
141953 HVKBC09  DIV1 CB CHILLED WTR SYS  INOP
141954 HVKBC09  DIV1 CB CHILLED WTR SYS  NORMAL
142007 TMEPA03  REBLR 2TME-E1A DIS ST PR *LO    4.91   25.00 PSIG
142016 HVKBC09  DIV1 CB CHILLED WTR SYS  INOP
142017 HVKBC09  DIV1 CB CHILLED WTR SYS  NORMAL
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142053	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
~~142055~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~INOP~~			
142056	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
142058	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
~~142058~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	~~ALARM~~			
142059	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
142059	NMSBC02	SRM SHORT PERIOD	ALMCLR			
~~142123~~	~~CNALC01~~	~~CLN ST RBLR DT 1A LS9A~~	~~HIGH~~			
142124	IHSBC01	SPDS PARAMETER ALARM	TRBL			
142124	TMITA06	PIPE UPSTR 2HRS-SV5B TMP	*LO	303.91	400.00	DEG F
~~142129~~	~~GMHAC07~~	~~STTR CLG WTR TK VENT H2~~	~~HIGH~~			
142132	GMHAC07	STTR CLG WTR TK VENT H2	NORMAL			
142136	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL			
~~142137~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~INOP~~			
142138	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
142147	IHSBC01	SPDS PARAMETER ALARM	NORMAL			
~~142208~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	~~ALARM~~			
142209	NMSBC02	SRM SHORT PERIOD	ALMCLR			
142220	NMSBC02	SRM SHORT PERIOD	ALARM			
~~142221~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~INOP~~			
142222	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
142222	NMSBC02	SRM SHORT PERIOD	ALMCLR			
~~142225~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~INOP~~			
142226	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
142248	NMSBC02	SRM SHORT PERIOD	ALARM			
~~142249~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	~~ALMCLR~~			
142255	CWSAC02	CLG TWR BLOW-DOWN WTR PH	HIGH			
142255	CWSAC02	CLG TWR BLOW-DOWN WTR PH	LOW			
~~142302~~	~~ASSPA03~~	~~CLN STM RCBLR STM PRESS~~	~~*LO~~	~~18.52~~	~~70.00~~	~~PSIG~~
142303	NMSBC02	SRM SHORT PERIOD	ALARM			
142304	CWSAC02	CLG TWR BLOW-DOWN WTR PH	NORMAL			
~~142304~~	~~CWSAC01~~	~~CLG TWR BLOW-DOWN WTR PH~~	~~NORMAL~~			
142306	NMSBC02	SRM SHORT PERIOD	ALMCLR			
142307	TMEPA02	GLD SL STM RGLTD SPLY PR	*LO	2.40	3.00	PSIG
142313	ABMPA01	AUX BLR DEAR INL PRESS	LO	2.43	2.50	PSIG
142314	CNALC01	CLN ST RBLR DT 1A LS9A	HIGH			
142321	NMSBC02	SRM SHORT PERIOD	ALARM			
142323	NMSBC02	SRM SHORT PERIOD	ALMCLR			
142326	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL			
142326	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
~~142327~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~NORMAL~~			
142332	TMEPA01	GLAND SLSTM SUPLY PRESS	*LO	3.90	20.00	PSIG
142356	NMSBC02	SRM SHORT PERIOD	ALARM			
~~142358~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	~~ALMCLR~~			
142405	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
142407	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
~~142410~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~INOP~~			
142411	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			

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~~142427~~	~~TMEPA02~~	~~GLD SL STM RGLTD SPLY PR~~	~~*LO~~	~~2.07~~	~~3.00~~	~~PSIG~~
142443	NMSBC02	SRM SHORT PERIOD	ALARM			
142444	NMSBC02	SRM SHORT PERIOD	ALMCLR			
~~142456~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~INOP~~			
142457	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
142500	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
~~142501~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~NORMAL~~			
142512	TMEPA02	GLD SL STM RGLTD SPLY PR	*LO	1.77	3.00	PSIG
142549	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			

~~142742 HVCHA04 RELAY ROOM HMDT MT8B OK 49.19 50.00 %RH~~
142743 HVKBC09 DIV1 CB CHILLED WTR SYS INOP
142744 HVKBC09 DIV1 CB CHILLED WTR SYS NORMAL
~~142748 CNALC01 CLN ST RBLR DT 1A LS9A HIGH~~
142750 HVKBC09 DIV1 CB CHILLED WTR SYS INOP
142753 HVKBC09 DIV1 CB CHILLED WTR SYS NORMAL
~~142754 HVKBC09 DIV1 CB CHILLED WTR SYS INOP~~
142755 HVKBC09 DIV1 CB CHILLED WTR SYS NORMAL
142757 NMSBC02 SRM SHORT PERIOD ALARM
~~142759 CNALC01 CLN ST RBLR DT 1A LS9A NORMAL~~
142759 NMSBC02 SRM SHORT PERIOD ALMCLR
142819 NMSBC02 SRM SHORT PERIOD ALARM
142819 TMGBC04 TRNGR NOT OPERATING IN OPER
142820 NMSBC02 SRM SHORT PERIOD ALMCLR
142822 NMSBC02 SRM SHORT PERIOD ALARM
142824 NMSBC02 SRM SHORT PERIOD ALMCLR
142829 CNSFC01 CNST XFR PMP DIS DEM FLO NORMAL
142833 HVKBC09 DIV1 CB CHILLED WTR SYS INOP
~~142834 HVKBC09 DIV1 CB CHILLED WTR SYS NORMAL~~
142835 HVKBC09 DIV1 CB CHILLED WTR SYS INOP
142836 HVKBC09 DIV1 CB CHILLED WTR SYS NORMAL
~~142837 HVKBC09 DIV1 CB CHILLED WTR SYS INOP~~
142838 HVKBC09 DIV1 CB CHILLED WTR SYS NORMAL
142844 TMGBC04 TRNGR NOT OPERATING ALARM
~~142858 FWSPA05 REACTOR INLET PRES PT40B LO 135.30 875.00 PSIG~~
142915 NMSBC02 SRM SHORT PERIOD ALARM

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~~142916 NMSBC02 SRM SHORT PERIOD ALMCLR~~
142936 CNALC01 CLN ST RBLR DT 1A LS9A HIGH
142937 CNSFA01 CND XFR PUMP HDR FLOW OK 311.57 300.00 GPM
~~142948 CNALC01 CLN ST RBLR DT 1A LS9A NORMAL~~
142950 HVKBC09 DIV1 CB CHILLED WTR SYS INOP
142951 HVKBC09 DIV1 CB CHILLED WTR SYS NORMAL
~~142956 HVKBC09 DIV1 CB CHILLED WTR SYS INOP~~
142957 HVKBC09 DIV1 CB CHILLED WTR SYS NORMAL
143004 NMSBC02 SRM SHORT PERIOD ALARM
~~143012 NMSBC02~~ SRM SHORT PERIOD ALMCLR
143016 NMSBC02 SRM SHORT PERIOD ALARM
143019 HVKBC09 DIV1 CB CHILLED WTR SYS INOP
~~143020 TMGBC04 TRNGR NOT OPERATING IN OPER~~
143021 NMSBC02 SRM SHORT PERIOD ALMCLR
143022 HVKBC09 DIV1 CB CHILLED WTR SYS NORMAL
~~143025 NMSBC02 SRM SHORT PERIOD ALARM~~
143027 NMSBC02 SRM SHORT PERIOD ALMCLR
143036 TMGBC04 TRNGR NOT OPERATING ALARM
~~143055 NMSBC02 SRM SHORT PERIOD ALARM~~
143058 NMSBC02 SRM SHORT PERIOD ALMCLR
143110 HVKBC09 DIV1 CB CHILLED WTR SYS INOP
~~143111 HVKBC09 DIV1 CB CHILLED WTR SYS NORMAL~~
143119 CNALC01 CLN ST RBLR DT 1A LS9A HIGH
143131 CNALC01 CLN ST RBLR DT 1A LS9A NORMAL
~~143133 HVKBC09 DIV1 CB CHILLED WTR SYS INOP~~
143134 HVKBC09 DIV1 CB CHILLED WTR SYS NORMAL
143144 GMHAC07 STTR CLG WTR TK VENT H2 HIGH
~~143145 GMHAC07 STTR CLG WTR TK VENT H2 NORMAL~~
143203 HVKBC09 DIV1 CB CHILLED WTR SYS INOP
143204 HVKBC09 DIV1 CB CHILLED WTR SYS NORMAL

143211	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
143213	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
143215	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
143231	TMGBC04	TRNGR NOT OPERATING	IN OPER			
143235	ESSTA16	5 PT HTR E5A EXTR ST TMP	*LO	166.54	280.00	DEG F
143237	ESSTA17	5 PT HTR E5B EXTR ST TMP	*LO	166.54	280.00	DEG F
143305	CNALC01	CLN ST RBLR DT 1A LS9A	HIGH			
143310	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
143311	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
143312	TMEPA02	GLD SL STM RGLTD SPLY PR	*LO	2.12	3.00	PSIG
143318	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL			
143324	NMSBC02	SRM SHORT PERIOD	ALARM			
143325	NMSBC02	SRM SHORT PERIOD	ALMCLR			
143342	HVCMA04	RELAY ROOM HMDT MT8B	HI	50.75	50.00	%RH
143351	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
143353	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
143412	HDLTA15	1PT HTR E1C DRAIN TEMP	*LO	97.29	119.00	DEG F
143423	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
143424	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
143424	TMITA05	PIPE UPSTR 2HRS-SV6B TMP	*LO	303.82	400.00	DEG F
143427	NMSBC02	SRM SHORT PERIOD	ALARM			
143428	TMGBC04	TRNGR NOT OPERATING	ALARM			
143430	NMSBC02	SRM SHORT PERIOD	ALMCLR			

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143440	ESSTA18	3 PT HTR E3A EXTR ST TMP	*LO	207.43	256.00	DEG F
143503	CNALC01	CLN ST RBLR DT 1A LS9A	HIGH			
143504	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
143506	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
143512	FWSTA02	6PT HTR 2FWS-E6B INL TMP	*LO	202.27	284.00	DEG F
143516	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL			
143522	TMEPA02	GLD SL STM RGLTD SPLY PR	*LO	2.41	3.00	PSIG
143526	RMSRC11	RB/RWB LOSS OF SMPL FLO	ALARM			
143533	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
143534	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
143542	HDHTA03	6PT HTR E6C DR TEMP	*LO	153.95	284.00	DEG F
143544	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
143545	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
143547	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
143548	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
143550	RMSRC11	RB/RWB LOSS OF SMPL FLO	NORMAL			
143553	DFTBC30	TB FLR DRN SYSTEM	TRBL			
143602	CWSAA02	BLWDN WTR CHLORINE RESID	OK	-0.25L	*******	PPM
143613	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
143614	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
143617	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
143620	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
143647	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
143647	TMGBC04	TRNGR NOT OPERATING	IN OPER			
143648	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
143652	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
143653	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
143703	TMGBC04	TRNGR NOT OPERATING	ALARM			
143706	CNALC01	CLN ST RBLR DT 1A LS9A	HIGH			
143716	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
143717	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
143718	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL			
143723	ICSLC01	RCIC TURB ST DR TRAP LVL	HIGH			

143755	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
~~143756~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~NORMAL~~			
143812	HDHTA01	5PT HTR E6A DR TEMP	*LO	179.99	284.00	DEG F
143817	TMEPA02	GLD SL STM RGLTD SPLY PR	*LO	2.72	3.00	PSIG
~~143824~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~INOP~~			
143826	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
143902	CNALC01	CLN ST RBLR DT 1A LS9A	HIGH			
143914	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL			
143915	FWSTA48	FEED WATER FINAL TEMP	*LO	111.95	324.00	DEG F
143918	NMSBC02	SRM SHORT PERIOD	ALARM			
143919	NMSBC02	SRM SHORT PERIOD	ALMCLR			
143921	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
143922	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
~~143932~~	~~CWSAA02~~	~~BLWDN WTR CHLORINE RESID~~	~~SLO~~	~~-0.25L*******~~		~~PPM~~
143952	TMGBC04	TRNGR NOT OPERATING	IN OPER			
144002	FWSPA04A	FW PRESS LOOP A	*LO	125.9	220.0	PSIG
~~144003~~	~~FWSPA05A~~	~~FW PRESS LOOP B~~	~~*LO~~	~~135.3~~	~~220.0~~	~~PSIG~~
144009	TMGBC04	TRNGR NOT OPERATING	ALARM			
144015	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
~~144016~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~NORMAL~~			
144049	IHSBC01	SPDS PARAMETER ALARM	TRBL			

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~~144050~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~INOP~~			
144051	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
144054	CNALC01	CLN ST RBLR DT 1A LS9A	HIGH			
~~144054~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~INOP~~			
144055	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
144100	IHSBC01	SPDS PARAMETER ALARM	NORMAL			
~~144101~~	~~NSSXA101~~	~~FEEDWATER TURBITITY~~	~~OK~~	~~102.75L*******~~		~~%~~
144106	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL			
144136	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
~~144137~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~NORMAL~~			
144140	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
144141	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
~~144142~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~INOP~~			
144143	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
144145	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
~~144146~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~NORMAL~~			
144154	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
144155	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
~~144211~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~INOP~~			
144212	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
144224	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
~~144225~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~NORMAL~~			
144225	NMSBC02	SRM SHORT PERIOD	ALARM			
144226	NMSBC02	SRM SHORT PERIOD	ALMCLR			
~~144229~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	~~ALARM~~			
144230	NMSBC02	SRM SHORT PERIOD	ALMCLR			
144232	CNALC01	CLN ST RBLR DT 1A LS9A	HIGH			
~~144238~~	~~ABMPA01~~	~~AUX BLR DEAR INL PRESS~~	~~LO~~	~~2.46~~	~~2.50~~	~~PSIG~~
144244	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL			
144301	TMGBC04	TRNGR NOT OPERATING	IN OPER			
~~144302~~	~~ARCLC04~~	~~CNSR AIR REM TK SP1B LVL~~	~~LOW~~			
144317	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
144318	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
~~144326~~	~~TMGBC04~~	~~TRNGR NOT OPERATING~~	~~ALARM~~			
144332	NMSBC02	SRM SHORT PERIOD	ALARM			

172700	WTSAA01	2WTS-TK1 RECIRC WTR PH	OK	7.59	6.50	PH
~~172711~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	ALARM			
172716	NMSBC02	SRM SHORT PERIOD	ALMCLR			
172725	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
~~172726~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	NORMAL			
172726	NMSBC02	SRM SHORT PERIOD	ALARM			
172728	NMSBC02	SRM SHORT PERIOD	ALMCLR			
~~172730~~	~~WTSAA01~~	~~2WTS-TK1 RECIRC WTR PH~~	LO	2.41	6.50	PH
172741	NMSBC02	SRM SHORT PERIOD	ALARM			
172743	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
~~172743~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	ALMCLR			
172744	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
172744	NMSBC02	SRM SHORT PERIOD	ALARM			
~~172746~~	~~NMSBC02~~	SRM SHORT PERIOD	ALMCLR			
172747	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
172748	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
~~172753~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	INOP			
172754	CNALC01	CLN ST RBLR DT 1A LS9A	HIGH			
172754	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
~~172800~~	~~WTSAA01~~	2WTS-TK1 RECIRC WTR PH	*LO	6.28	6.50	PH
172803	NMSBC02	SRM SHORT PERIOD	ALARM			
172805	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL			
~~172809~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	ALMCLR			
172825	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
172826	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
~~172830~~	~~WTSAA01~~	2WTS-TK1 RECIRC WTR PH	OK	8.18	6.50	PH
172833	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
172833	NMSBC02	SRM SHORT PERIOD	ALARM			
172834	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
172836	NMSBC02	SRM SHORT PERIOD	ALMCLR			
172841	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
172842	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
172853	NMSBC02	SRM SHORT PERIOD	ALARM			
172855	NMSBC02	SRM SHORT PERIOD	ALMCLR			
~~172900~~	~~WTSAA01~~	~~2WTS-TK1 RECIRC WTR PH~~	LO	5.11	6.56	PH
172917	NMSBC02	SRM SHORT PERIOD	ALARM			
172919	CNALC01	CLN ST RBLR DT 1A LS9A	HIGH			
~~172919~~	~~NMSBC02~~	SRM SHORT PERIOD	ALMCLR			
172930	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL			
172930	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
~~172930~~	~~WTSAA01~~	~~2WTS-TK1 RECIRC WTR PH~~	OK	8.18	6.56	PH
172931	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			

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~~172932~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	INOP			
172933	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
172935	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
~~172936~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	NORMAL			
173002	FWSPA04A	FW PRESS LOOP A	*LO	38.5	220.0	PSIG
173002	FWSPA05A	FW PRESS LOOP B	*LO	47.8	220.0	PSIG
~~173004~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	ALARM			
173005	NMSBC02	SRM SHORT PERIOD	ALMCLR			
173026	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
~~173029~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	NORMAL			
173030	WTSAA01	2WTS-TK1 RECIRC WTR PH	LO	5.87	6.56	PH
173043	CNALC01	CLN ST RBLR DT 1A LS9A	HIGH			
~~173043~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	ALARM			
173043	ESSTA14	4 PT HTR E4B EXTR ST TMP	*LO	213.99	334.00	DEG F

173109	NMSBC02	SRM SHORT PERIOD	ALMCLR			
173115	NMSBC02	SRM SHORT PERIOD	ALARM			
173119	NMSBC02	SRM SHORT PERIOD	ALMCLR			
173124	NMSBC02	SRM SHORT PERIOD	ALARM			
173127	NMSBC02	SRM SHORT PERIOD	ALMCLR			
173129	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
173130	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
173133	NMSBC02	SRM SHORT PERIOD	ALARM			
173135	NMSBC02	SRM SHORT PERIOD	ALMCLR			
173136	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
173136	NMSBC02	SRM SHORT PERIOD	ALARM			
173137	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
173138	NMSBC02	SRM SHORT PERIOD	ALMCLR			
173144	NMSBC02	SRM SHORT PERIOD	ALARM			
173152	NMSBC02	SRM SHORT PERIOD	ALMCLR			
173200	NMSBC02	SRM SHORT PERIOD	ALARM			
173201	NMSBC02	SRM SHORT PERIOD	ALMCLR			
173212	NMSBC02	SRM SHORT PERIOD	ALARM			
173216	NMSBC02	SRM SHORT PERIOD	ALMCLR			
173219	GTSPA01	RB IN/OUT D/P PDT5A	OK	-0.49	-0.50	IN WG
173223	CNALC01	CLN ST RBLR DT 1A LS9A	HIGH			
173225	GTSPA01	RB IN/OUT D/P PDT5A	LO	-0.53	-0.50	IN WG
173227	NMSBC02	SRM SHORT PERIOD	ALARM			
173230	NMSBC02	SRM SHORT PERIOD	ALMCLR			
173235	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL			
173248	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
173248	NMSBC02	SRM SHORT PERIOD	ALARM			
173249	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
173250	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
173250	NMSBC02	SRM SHORT PERIOD	ALMCLR			
173251	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
173254	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
173255	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
173256	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
173257	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
173300	NMSBC02	SRM SHORT PERIOD	ALARM			
173301	NMSBC02	SRM SHORT PERIOD	ALMCLR			
173332	CNSFA01	CND XFR PUMP HDR FLOW	LO	299.27	300.00	GPM

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173355	CNALC01	CLN ST RBLR DT 1A LS9A	HIGH			
173356	NMSBC02	SRM SHORT PERIOD	ALARM			
173359	NMSBC02	SRM SHORT PERIOD	ALMCLR			
173405	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL			
173406	NMSBC02	SRM SHORT PERIOD	ALARM			
173411	NMSBC02	SRM SHORT PERIOD	ALMCLR			
173413	DERLA01	DW EQUIP DRN TANK LEVEL	OK	14.15	12.00	%
173420	NMSBC02	SRM SHORT PERIOD	ALARM			
173421	NMSBC02	SRM SHORT PERIOD	ALMCLR			
173429	NMSBC02	SRM SHORT PERIOD	ALARM			
173434	NMSBC02	SRM SHORT PERIOD	ALMCLR			
173459	NMSBC02	SRM SHORT PERIOD	ALARM			
173501	NMSBC02	SRM SHORT PERIOD	ALMCLR			
173512	CNALC01	CLN ST RBLR DT 1A LS9A	HIGH			
173514	NMSBC02	SRM SHORT PERIOD	ALARM			
173517	NMSBC02	SRM SHORT PERIOD	ALMCLR			
173524	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL			
173534	SWPBC18	SW FV54A HYD UNT ACC PR	LOW			

173557	NMSBC02	SRM SHORT PERIOD	ALARM			
~~173559~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	~~ALMCLR~~			
173601	NMSBC02	SRM SHORT PERIOD	ALARM			
173605	NMSBC02	SRM SHORT PERIOD	ALMCLR			
~~173610~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	~~ALARM~~			
173613	NMSBC02	SRM SHORT PERIOD	ALMCLR			
173626	FWSLC01	REACTOR WTR LEVEL HI/LO	H/L			
~~173630~~	~~WTSAA01~~	~~2WTS-TK1 RECIRC WTR PH~~	~~LO~~	~~6.31~~	~~6.50~~	~~PH~~
173632	NMSBC02	SRM SHORT PERIOD	ALARM			
173632	FWSLC01	REACTOR WTR LEVEL HI/LO	ALMCLR			
~~173634~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	~~ALMCLR~~			
173637	ESSTA17	5 PT HTR E5B EXTR ST TMP	*LO	153.95	280.00	DEG F
173638	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
~~173639~~	~~ARGLC04~~	~~CNSR AIR REM TK SP1B LVL~~	~~LOW~~			
173639	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
173640	CNALC01	CLN ST RBLR DT 1A LS9A	HIGH			
~~173641~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	~~ALARM~~			
173642	HDLTA14	1PT HTR E1B DRAIN TEMP	*LO	97.29	119.00	DEG F
173644	CNALC03	CLN ST RBLR DT 1A LS10A	H/H			
~~173647~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	~~ALMCLR~~			
173649	CNALC03	CLN ST RBLR DT 1A LS10A	ALMCLR			
173653	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL			
173655	NMSBC02	SRM SHORT PERIOD	ALARM			
173656	NMSBC02	SRM SHORT PERIOD	ALMCLR			
173700	WTSAA01	2WTS-TK1 RECIRC WTR PH	*LO	3.78	6.50	PH
173702	NMSBC02	SRM SHORT PERIOD	ALARM			
173703	NMSBC02	SRM SHORT PERIOD	ALMCLR			
173705	NMSBC02	SRM SHORT PERIOD	ALARM			
~~173706~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	~~ALMCLR~~			
173712	NMSBC02	SRM SHORT PERIOD	ALARM			
173715	NMSBC02	SRM SHORT PERIOD	ALMCLR			
~~173723~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~INOP~~			
173724	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
173726	NMSBC02	SRM SHORT PERIOD	ALARM			
~~173730~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	~~ALMCLR~~			
173730	WTSAA01	2WTS-TK1 RECIRC WTR PH	OK	8.20	6.50	PH

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~~173737~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~INOP~~			
173738	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
173743	ARCLC04	CNSR AIR REM TK SP1B LVL	NORMAL			
~~173743~~	~~CNSLA01~~	~~CND DRAW OFF TK1A LEVEL~~	~~*HI~~	~~40.14~~	~~26.00~~	~~FT WG~~
173750	SWPBC18	SW FV54A HYD UNT ACC PR	NORMAL			
173802	NMSBC02	SRM SHORT PERIOD	ALARM			
~~173804~~	~~GTSPA01~~	~~RB IN/OUT D/P PDT5A~~	~~OK~~	~~-0.45~~	~~-0.50~~	~~IN WG~~
173809	NMSBC02	SRM SHORT PERIOD	ALMCLR			
173810	HVRPA01	RX BLDG DIFF PRESS	OK	-0.399	-0.406	IN WG
~~173817~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~INOP~~			
173818	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
173823	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
~~173823~~	~~TMITA00~~	~~PIPE UPSTR 2HRS-SV5C TMP~~	~~*LO~~	~~271.99~~	~~406.00~~	~~DEG F~~
173824	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
173827	CNALC01	CLN ST RBLR DT 1A LS9A	HIGH			
~~173827~~	~~FWSLC01~~	~~REACTOR WTR LEVEL HI/LO~~	~~H/L~~			
173830	HVRPA01	RX BLDG DIFF PRESS	LO	-0.402	-0.406	IN WG
173836	HVCMA04	RELAY ROOM HMDT MT8B	OK	49.37	50.00	*RH
~~173839~~	~~CNALC01~~	~~CLN ST RBLR DT 1A LS9A~~	~~NORMAL~~			
173843	NMSBC02	SRM SHORT PERIOD	ALARM			
173844	NMSBC02	SRM SHORT PERIOD	ALMCLR			

173855	FWSLC01	REACTOR WTR LEVEL HI/LO	H/L		
173856	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP		
173856	FWSLC01	REACTOR WTR LEVEL HI/LO	ALMCLR		
173857	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL		
173908	NMSBC02	SRM SHORT PERIOD	ALARM		
173912	NMSBC02	SRM SHORT PERIOD	ALMCLR		
173920	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP		
173921	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL		
173925	NMSBC02	SRM SHORT PERIOD	ALARM		
173927	NMSBC02	SRM SHORT PERIOD	ALMCLR		
173930	WTSAA01	2WTS-TK1 RECIRC WTR PH	LO	1.32	6.50 PH
173935	NMSBC02	SRM SHORT PERIOD	ALARM		
173937	NMSBC02	SRM SHORT PERIOD	ALMCLR		
173946	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP		
173947	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL		
173952	NMSBC02	SRM SHORT PERIOD	ALARM		
173953	NMSBC02	SRM SHORT PERIOD	ALMCLR		
174000	WTSAA01	2WTS-TK1 RECIRC WTR PH	LO	3.51	6.50 PH
174002	CNALC01	CLN ST RBLR DT 1A LS9A	HIGH		
174009	FWSLC01	REACTOR WTR LEVEL HI/LO	H/L		
174015	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL		
174017	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP		
174018	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL		
174018	NMSBC02	SRM SHORT PERIOD	ALARM		
174019	NMSBC02	SRM SHORT PERIOD	ALMCLR		
174030	WTSAA01	2WTS-TK1 RECIRC WTR PH	OK	8.21	6.50 PH
174034	FWSLC01	REACTOR WTR LEVEL HI/LO	ALMCLR		
174044	NMSBC02	SRM SHORT PERIOD	ALARM		
174047	NMSBC02	SRM SHORT PERIOD	ALMCLR		
174051	NMSBC02	SRM SHORT PERIOD	ALARM		
174054	NMSBC02	SRM SHORT PERIOD	ALMCLR		
174100	WTSAA01	2WTS-TK1 RECIRC WTR PH	LO	3.49	6.50 PH
174109	NMSBC02	SRM SHORT PERIOD	ALARM		

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174111	NMSBC02	SRM SHORT PERIOD	ALMCLR		
174112	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP		
174113	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL		
174118	NMSBC02	SRM SHORT PERIOD	ALARM		
174120	NMSBC02	SRM SHORT PERIOD	ALMCLR		
174127	FWSLC01	REACTOR WTR LEVEL HI/LO	H/L		
174130	WTSAA01	2WTS-TK1 RECIRC WTR PH	OK	8.21	6.50 PH
174138	NMSBC02	SRM SHORT PERIOD	ALARM		
174139	NMSBC02	SRM SHORT PERIOD	ALMCLR		
174148	CNALC01	CLN ST RBLR DT 1A LS9A	HIGH		
174150	CNALC03	CLN ST RBLR DT 1A LS10A	H/H		
174153	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP		
174154	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL		
174157	CNALC03	CLN ST RBLR DT 1A LS10A	ALMCLR		
174157	NMSBC02	SRM SHORT PERIOD	ALARM		
174200	WTSAA01	2WTS-TK1 RECIRC WTR PH	LO	2.09	6.50 PH
174201	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL		
174201	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP		
174202	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL		
174202	NMSBC02	SRM SHORT PERIOD	ALMCLR		
174206	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP		
174207	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL		
174223	NMSBC02	SRM SHORT PERIOD	ALARM		
174224	NMSBC02	SRM SHORT PERIOD	ALMCLR		

174240	NMSBC02	SRM SHORT PERIOD	ALMCLR		
174247	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP		
174248	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL		
174249	NMSBC02	SRM SHORT PERIOD	ALARM		
174251	NMSBC02	SRM SHORT PERIOD	ALMCLR		
174257	FWSLC01	REACTOR WTR LEVEL HI/LO	ALMCLR		
174302	FWSLC01	REACTOR WTR LEVEL HI/LO	H/L		
174304	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP		
174305	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL		
174305	NMSBC02	SRM SHORT PERIOD	ALARM		
174306	NMSBC02	SRM SHORT PERIOD	ALMCLR		
174307	NMSBC02	SRM SHORT PERIOD	ALARM		
174309	NMSBC02	SRM SHORT PERIOD	ALMCLR		
174317	NMSBC02	SRM SHORT PERIOD	ALARM		
174319	FWSLC01	REACTOR WTR LEVEL HI/LO	ALMCLR		
174322	FWSLC01	REACTOR WTR LEVEL HI/LO	H/L		
174323	FWSLC01	REACTOR WTR LEVEL HI/LO	ALMCLR		
174324	NMSBC02	SRM SHORT PERIOD	ALMCLR		
174326	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP		
174327	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL		
174328	FWSLC01	REACTOR WTR LEVEL HI/LO	H/L		
174335	CNALC01	CLN ST RBLR DT 1A LS9A	HIGH		
174335	FWSLC01	REACTOR WTR LEVEL HI/LO	ALMCLR		
174347	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL		
174347	NMSBC02	SRM SHORT PERIOD	ALARM		
174349	NMSBC02	SRM SHORT PERIOD	ALMCLR		
174358	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP		
174400	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL		

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174400	WTSAA01	2WTS-TK1 RECIRC WTR PH	LO	2.89	6.50 PH
174402	NMSBC02	SRM SHORT PERIOD	ALARM		
174408	NMSBC02	SRM SHORT PERIOD	ALMCLR		
174412	NMSBC02	SRM SHORT PERIOD	ALARM		
174414	NMSBC02	SRM SHORT PERIOD	ALMCLR		
174420	FWSLC01	REACTOR WTR LEVEL HI/LO	H/L		
174423	FWSLC01	REACTOR WTR LEVEL HI/LO	ALMCLR		
174425	NMSBC02	SRM SHORT PERIOD	ALARM		
174427	NMSBC02	SRM SHORT PERIOD	ALMCLR		
174428	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP		
174429	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL		
174430	WTSAA01	2WTS-TK1 RECIRC WTR PH	OK	8.10	6.50 PH
174433	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP		
174436	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL		
174438	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP		
174439	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL		
174444	FWSLC01	REACTOR WTR LEVEL HI/LO	H/L		
174446	NMSBC02	SRM SHORT PERIOD	ALARM		
174447	NMSBC02	SRM SHORT PERIOD	ALMCLR		
174448	NMSBC02	SRM SHORT PERIOD	ALARM		
174451	NMSBC02	SRM SHORT PERIOD	ALMCLR		
174507	NMSBC02	SRM SHORT PERIOD	ALARM		
174508	CNALC01	CLN ST RBLR DT 1A LS9A	HIGH		
174513	NMSBC02	SRM SHORT PERIOD	ALMCLR		
174517	CNSFA01	CND XFR PUMP HDR FLOW	OK	312.70	300.00 GPM
174520	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL		
174520	NMSBC02	SRM SHORT PERIOD	ALARM		
174523	NMSBC02	SRM SHORT PERIOD	ALMCLR		

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174542 HVKBC09  DIV1 CB CHILLED WTR SYS  INOP
174543 HVKBC09  DIV1 CB CHILLED WTR SYS  NORMAL
174546 HVKBC09  DIV1 CB CHILLED WTR SYS  INOP
174547 HVKBC09  DIV1 CB CHILLED WTR SYS  NORMAL
174549 HVKBC09  DIV1 CB CHILLED WTR SYS  INOP
174550 HVKBC09  DIV1 CB CHILLED WTR SYS  NORMAL
174600 WTSAA01  2WTS-TK1 RECIRC WTR PH   LO      4.22     6.50 PH
174601 NMSBC02  SRM SHORT PERIOD         ALARM
174602 HVCMA04  RELAY ROOM HMDT MT8B     HI     50.12    50.00 *RH
174608 NMSBC02  SRM SHORT PERIOD         ALMCLR
174612 NMSBC02  SRM SHORT PERIOD         ALARM
174615 NMSBC02  SRM SHORT PERIOD         ALMCLR
174622 NMSBC02  SRM SHORT PERIOD         ALARM
174626 NMSBC02  SRM SHORT PERIOD         ALMCLR
174630 WTSAA01  2WTS-TK1 RECIRC WTR PH   *LO     2.74     6.50 PH
174636 CNALC01  CLN ST RBLR DT 1A LS9A   HIGH
174644 NMSBC02  SRM SHORT PERIOD         ALARM
174647 CNALC01  CLN ST RBLR DT 1A LS9A   NORMAL
174649 NMSBC02  SRM SHORT PERIOD         ALMCLR
174700 WTSAA01  2WTS-TK1 RECIRC WTR PH   OK      8.12     6.50 PH
174731 NMSBC02  SRM SHORT PERIOD         ALARM
174732 NMSBC02  SRM SHORT PERIOD         ALMCLR
174733 NMSBC02  SRM SHORT PERIOD         ALARM
174735 NMSBC02  SRM SHORT PERIOD         ALMCLR

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174742 HDLTA04  4PT HTR 2CNM-E4A DRN TMP *LO  143.03   245.00 DEG F
174742 ESSTA11  3 PT HTR E3B EXTR ST TMP *LO  197.66   256.00 DEG F
174752 CNALC01  CLN ST RBLR DT 1A LS9A   HIGH
174803 CNALC01  CLN ST RBLR DT 1A LS9A   NORMAL
174818 HVKBC09  DIV1 CB CHILLED WTR SYS  INOP
174818 NMSBC02  SRM SHORT PERIOD         ALARM
174819 HVKBC09  DIV1 CB CHILLED WTR SYS  NORMAL
174819 NMSBC02  SRM SHORT PERIOD         ALMCLR
174820 HVKBC09  DIV1 CB CHILLED WTR SYS  INOP
174821 HVKBC09  DIV1 CB CHILLED WTR SYS  NORMAL
174828 HVKBC09  DIV1 CB CHILLED WTR SYS  INOP
174829 HVKBC09  DIV1 CB CHILLED WTR SYS  NORMAL
174902 NMSBC02  SRM SHORT PERIOD         ALARM
174902 HVCMA04  RELAY ROOM HMDT MT8B     *HI    53.12    50.00 *RH
174904 NMSBC02  SRM SHORT PERIOD         ALMCLR
174906 NMSBC02  SRM SHORT PERIOD         ALARM
174907 NMSBC02  SRM SHORT PERIOD         ALMCLR
174908 NMSBC02  SRM SHORT PERIOD         ALARM
174910 NMSBC02  SRM SHORT PERIOD         ALMCLR
174914 CNALC01  CLN ST RBLR DT 1A LS9A   HIGH
174920 HVKBC09  DIV1 CB CHILLED WTR SYS  INOP
174922 HVKBC09  DIV1 CB CHILLED WTR SYS  NORMAL
174926 CNALC01  CLN ST RBLR DT 1A LS9A   NORMAL
174942 FWSTA01  6PT HTR 2FWS-E5A INL TMP *LO  272.32   284.00 DEG F
174950 NMSBC02  SRM SHORT PERIOD         ALARM
174952 NMSBC02  SRM SHORT PERIOD         ALMCLR
174955 HVKBC09  DIV1 CB CHILLED WTR SYS  INOP
174956 HVKBC09  DIV1 CB CHILLED WTR SYS  NORMAL
174957 HVKBC09  DIV1 CB CHILLED WTR SYS  INOP
174958 HVKBC09  DIV1 CB CHILLED WTR SYS  NORMAL
174959 HVKBC09  DIV1 CB CHILLED WTR SYS  INOP
175000 HVKBC09  DIV1 CB CHILLED WTR SYS  NORMAL
175001 HVKBC09  DIV1 CB CHILLED WTR SYS  INOP
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175004	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP	
~~175005~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~NORMAL~~	
175006	NMSBC02	SRM SHORT PERIOD	ALARM	
175008	WTSBC02	2WTS-IPNL301 SYS TRBL	ALMCLR	
~~175011~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	~~ALMCLR~~	
175015	NMSBC02	SRM SHORT PERIOD	ALARM	
175020	NMSBC02	SRM SHORT PERIOD	ALMCLR	
175046	CNALC01	CLN ST RBLR DT 1A LS9A	HIGH	
175050	NMSBC02	SRM SHORT PERIOD	ALARM	
175051	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP	
175051	NMSBC02	SRM SHORT PERIOD	ALMCLR	
175052	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL	
175057	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL	
~~175101~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	ALARM	
175102	NMSBC02	SRM SHORT PERIOD	ALMCLR	
175106	NMSBC02	SRM SHORT PERIOD	ALARM	
~~175108~~	~~NMSBC02~~	SRM SHORT PERIOD	ALMCLR	
175117	NMSBC02	SRM SHORT PERIOD	ALARM	
175119	NMSBC02	SRM SHORT PERIOD	ALMCLR	
~~175137~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	INOP	
175141	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL	

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~~175144~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	INOP	
175145	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL	
175154	NMSBC02	SRM SHORT PERIOD	ALARM	
~~175156~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	ALMCLR	
175202	CNALC01	CLN ST RBLR DT 1A LS9A	HIGH	
175203	NMSBC02	SRM SHORT PERIOD	ALARM	
~~175205~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	ALMCLR	
175210	NMSBC02	SRM SHORT PERIOD	ALARM	
175211	NMSBC02	SRM SHORT PERIOD	ALMCLR	
~~175212~~	~~CNALC01~~	~~CLN ST RBLR DT 1A LS9A~~	NORMAL	
175213	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP	
175214	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL	
~~175218~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	ALARM	
175221	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP	
175222	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL	
~~175222~~	~~NMSBC02~~	SRM SHORT PERIOD	ALMCLR	
175231	NMSBC02	SRM SHORT PERIOD	ALARM	
175232	NMSBC02	SRM SHORT PERIOD	ALMCLR	
~~175256~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	ALARM	
175301	NMSBC02	SRM SHORT PERIOD	ALMCLR	
175316	NMSBC02	SRM SHORT PERIOD	ALARM	
~~175318~~	~~NMSBC02~~	SRM SHORT PERIOD	ALMCLR	
175320	CNALC01	CLN ST RBLR DT 1A LS9A	HIGH	
175325	NMSBC02	SRM SHORT PERIOD	ALARM	
~~175329~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	ALMCLR	
175332	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL	
175335	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP	
~~175336~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	NORMAL	
175344	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP	
175345	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL	
~~175347~~	~~ABFBC04~~	~~AUX BLR SYS 2CES-IPNL508~~	NORMAL	
175347	CNSFA01	CND XFR PUMP HDR FLOW	LO	295.43 300.00 GPM
175410	NMSBC02	SRM SHORT PERIOD	ALARM	
~~175412~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	ALMCLR	
175414	NMSBC02	SRM SHORT PERIOD	ALARM	
175417	NMSBC02	SRM SHORT PERIOD	ALMCLR	

175429	CNSEA02	CND DRAW OFF TK1B LEVEL	*HIGH	[illegible]		FT WG
175432	NMSBC02	SRM SHORT PERIOD	ALARM			
175434	NMSBC02	SRM SHORT PERIOD	ALMCLR			
175436	NMSBC02	SRM SHORT PERIOD	ALARM			
175440	NMSBC02	SRM SHORT PERIOD	ALMCLR			
175448	NMSBC02	SRM SHORT PERIOD	ALARM			
175451	NMSBC02	SRM SHORT PERIOD	ALMCLR			
175452	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
175453	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
175455	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
175456	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
175457	CNALC01	CLN ST RBLR DT 1A LS9A	HIGH			
175458	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
175459	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
175500	WTSAA01	2WTS-TK1 RECIRC WTR PH	LO	5.72	6.50	PH
175501	CNALC03	CLN ST RBLR DT 1A LS10A	H/H			
175506	CNALC03	CLN ST RBLR DT 1A LS10A	ALMCLR			

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175506	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
175507	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
175510	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL			
175510	NMSBC02	SRM SHORT PERIOD	ALARM			
175512	FWSTA06	6PT HTR 2FWS-E6C OUT TMP	*LO	122.65	324.00	DEG F
175513	NMSBC02	SRM SHORT PERIOD	ALMCLR			
175530	WTSAA01	2WTS-TK1 RECIRC WTR PH	OK	8.04	6.50	PH
175545	NMSBC02	SRM SHORT PERIOD	ALARM			
175547	NMSBC02	SRM SHORT PERIOD	ALMCLR			
175555	NMSBC02	SRM SHORT PERIOD	ALARM			
175558	NMSBC02	SRM SHORT PERIOD	ALMCLR			
175607	NMSBC02	SRM SHORT PERIOD	ALARM			
175609	NMSBC02	SRM SHORT PERIOD	ALMCLR			
175618	ABFBC04	AUX BLR SYS 2CES-IPNL508	TRBL			
175623	NMSBC02	SRM SHORT PERIOD	ALARM			
175625	NMSBC02	SRM SHORT PERIOD	ALMCLR			
175628	NMSBC02	SRM SHORT PERIOD	ALARM			
175633	NMSBC02	SRM SHORT PERIOD	ALMCLR			
175634	NMSBC02	SRM SHORT PERIOD	ALARM			
175636	NMSBC02	SRM SHORT PERIOD	ALMCLR			
175637	NMSBC02	SRM SHORT PERIOD	ALARM			
175638	ABMPA01	AUX BLR DEAR INL PRESS	OK	7.40	7.50	PSIG
175640	NMSBC02	SRM SHORT PERIOD	ALMCLR			
175641	CNALC01	CLN ST RBLR DT 1A LS9A	HIGH			
175653	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL			
175702	NMSBC02	SRM SHORT PERIOD	ALARM			
175704	NMSBC02	SRM SHORT PERIOD	ALMCLR			
175705	NMSBC02	SRM SHORT PERIOD	ALARM			
175708	NMSBC02	SRM SHORT PERIOD	ALMCLR			
175717	DFTBC30	TB FLR DRN SYSTEM	ALMCLR			
175727	ABFBC04	AUX BLR SYS 2CES-IPNL508	NORMAL			
175727	NMSBC02	SRM SHORT PERIOD	ALARM			
175729	NMSBC02	SRM SHORT PERIOD	ALMCLR			
175732	NMSBC02	SRM SHORT PERIOD	ALARM			
175737	NMSBC02	SRM SHORT PERIOD	ALMCLR			
175742	NMSBC02	SRM SHORT PERIOD	ALARM			
175744	NMSBC02	SRM SHORT PERIOD	ALMCLR			
175807	NMSBC02	SRM SHORT PERIOD	ALARM			
175811	NMSBC02	SRM SHORT PERIOD	ALMCLR			
175813	CNALC01	CLN ST RBLR DT 1A LS9A	HIGH			

175829 NMSBC02 SRM SHORT PERIOD ALARM
175830 NMSBC02 SRM SHORT PERIOD ALMCLR
175852 NMSBC02 SRM SHORT PERIOD ALARM
175854 NMSBC02 SRM SHORT PERIOD ALMCLR
175901 NMSBC02 SRM SHORT PERIOD ALARM
175903 NMSBC02 SRM SHORT PERIOD ALMCLR
~~175908 NMSBC02 SRM SHORT PERIOD ALARM~~
175911 NMSBC02 SRM SHORT PERIOD ALMCLR
175922 HVKBC09 DIV1 CB CHILLED WTR SYS INOP
~~175923 HVKBC09 DIV1 CB CHILLED WTR SYS NORMAL~~
175928 HVKBC09 DIV1 CB CHILLED WTR SYS INOP
175929 HVKBC09 DIV1 CB CHILLED WTR SYS NORMAL
~~175936 CNALC01 CLN ST RBLR DT 1A LS9A HIGH~~
175937 NMSBC02 SRM SHORT PERIOD ALARM

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~~175938 HVKBC09 DIV1 CB CHILLED WTR SYS INOP~~
175939 HVKBC09 DIV1 CB CHILLED WTR SYS NORMAL
175940 NMSBC02 SRM SHORT PERIOD ALMCLR
~~175944 HVKBC09 DIV1 CB CHILLED WTR SYS INOP~~
175945 HVKBC09 DIV1 CB CHILLED WTR SYS NORMAL
175947 CNALC01 CLN ST RBLR DT 1A LS9A NORMAL
~~175954 HVKBC09 DIV1 CB CHILLED WTR SYS INOP~~
175955 HVKBC09 DIV1 CB CHILLED WTR SYS NORMAL
175958 NMSBC02 SRM SHORT PERIOD ALARM
~~180003 FWSPA04A FW PRESS LOOP A *LO 31.9 220.0 PSIG~~
180004 NMSBC02 SRM SHORT PERIOD ALMCLR
180018 ABMPA01 AUX BLR DEAR INL PRESS LO 2.50 2.50 PSIG
~~180021 NMSBC02 SRM SHORT PERIOD ALARM~~
180028 NMSBC02 SRM SHORT PERIOD ALMCLR
180030 WTSAA01 2WTS-TK1 RECIRC WTR PH LO 4.23 6.50 PH
~~180043 HVKBC09 DIV1 CB CHILLED WTR SYS INOP~~
180044 HVKBC09 DIV1 CB CHILLED WTR SYS NORMAL
180049 NMSBC02 SRM SHORT PERIOD ALARM
~~180051 NMSBC02 SRM SHORT PERIOD ALMCLR~~
180100 NMSBC02 SRM SHORT PERIOD ALARM
180100 WTSAA01 2WTS-TK1 RECIRC WTR PH OK 8.21 6.50 PH
~~180104 NMSBC02 SRM SHORT PERIOD ALMCLR~~
180106 NMSBC02 SRM SHORT PERIOD ALARM
180108 CNALC01 CLN ST RBLR DT 1A LS9A HIGH
~~180108 NMSBC02 SRM SHORT PERIOD ALMCLR~~
180120 CNALC01 CLN ST RBLR DT 1A LS9A NORMAL
180121 NMSBC02 SRM SHORT PERIOD ALARM
~~180122 NMSBC02 SRM SHORT PERIOD ALMCLR~~
180124 NMSBC02 SRM SHORT PERIOD ALARM
180125 NMSBC02 SRM SHORT PERIOD ALMCLR
~~180127 HVKBC09 DIV1 CB CHILLED WTR SYS INOP~~
180128 HVKBC09 DIV1 CB CHILLED WTR SYS NORMAL
180136 HVKBC09 DIV1 CB CHILLED WTR SYS INOP
~~180137 HVKBC09 DIV1 CB CHILLED WTR SYS NORMAL~~
180138 HVKBC09 DIV1 CB CHILLED WTR SYS INOP
180139 HVKBC09 DIV1 CB CHILLED WTR SYS NORMAL
~~180139 NMSBC02 SRM SHORT PERIOD ALARM~~
180140 NMSBC02 SRM SHORT PERIOD ALMCLR
180151 NMSBC02 SRM SHORT PERIOD ALARM
~~180154 NMSBC02 SRM SHORT PERIOD ALMCLR~~
180155 NMSBC02 SRM SHORT PERIOD ALARM
180156 NMSBC02 SRM SHORT PERIOD ALMCLR

180227	NMSBC02	SRM SHORT PERIOD	ALMCLR			
180231	NMSBC02	SRM SHORT PERIOD	ALARM			
180232	NMSBC02	SRM SHORT PERIOD	ALMCLR			
180241	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
180242	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
180247	NMSBC02	SRM SHORT PERIOD	ALARM			
180249	NMSBC02	SRM SHORT PERIOD	ALMCLR			
180254	NMSBC02	SRM SHORT PERIOD	ALARM			
180255	CNALC03	CLN ST RBLR DT 1A LS10A	H/H			
180255	NMSBC02	SRM SHORT PERIOD	ALMCLR			
180257	CNALC01	CLN ST RBLR DT 1A LS9A	HIGH			

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180257	NMSBC02	SRM SHORT PERIOD	ALARM			
180258	NMSBC02	SRM SHORT PERIOD	ALMCLR			
180307	CNALC03	CLN ST RBLR DT 1A LS10A	ALMCLR			
180310	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL			
180314	NMSBC02	SRM SHORT PERIOD	ALARM			
180317	NMSBC02	SRM SHORT PERIOD	ALMCLR			
180321	NMSBC02	SRM SHORT PERIOD	ALARM			
180324	NMSBC02	SRM SHORT PERIOD	ALMCLR			
180328	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
180329	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
180343	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
180344	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
180346	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
180347	NMSBC02	SRM SHORT PERIOD	ALARM			
180348	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
180349	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
180351	NMSBC02	SRM SHORT PERIOD	ALMCLR			
180352	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
180354	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
180355	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
180400	NMSBC02	SRM SHORT PERIOD	ALARM			
180402	NMSBC02	SRM SHORT PERIOD	ALMCLR			
180411	GMHAC07	STTR CLG WTR TK VENT H2	HIGH			
180414	GMHAC07	STTR CLG WTR TK VENT H2	NORMAL			
180425	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
180426	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
180447	NMSBC02	SRM SHORT PERIOD	ALARM			
180448	NMSBC02	SRM SHORT PERIOD	ALMCLR			
180450	NMSBC02	SRM SHORT PERIOD	ALARM			
180451	NMSBC02	SRM SHORT PERIOD	ALMCLR			
180500	CNALC01	CLN ST RBLR DT 1A LS9A	HIGH			
180502	CNALC03	CLN ST RBLR DT 1A LS10A	H/H			
180510	CNALC03	CLN ST RBLR DT 1A LS10A	ALMCLR			
180512	HVCMA04	RELAY ROOM HMDT MT3B	HI	50.12	50.00	%RH
180513	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL			
180516	NMSBC02	SRM SHORT PERIOD	ALARM			
180517	NMSBC02	SRM SHORT PERIOD	ALMCLR			
180531	NMSBC02	SRM SHORT PERIOD	ALARM			
180537	NMSBC02	SRM SHORT PERIOD	ALMCLR			
180544	ESSTA12	3 PT HTR E3C EXTR ST TMP	*LO	226.87	256.00	DEG F
180547	CNSFA01	CND XFR PUMP HDR FLOW	OK	312.07	300.00	GPM
180551	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
180552	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
180552	NMSBC02	SRM SHORT PERIOD	ALARM			
180553	NMSBC02	SRM SHORT PERIOD	ALMCLR			

~~180611~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	~~ALMCLR~~		
180633	NMSBC02	SRM SHORT PERIOD	ALARM		
180636	NMSBC02	SRM SHORT PERIOD	ALMCLR		
~~180638~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	ALARM		
180639	NMSBC02	SRM SHORT PERIOD	ALMCLR		
180642	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP		
~~180643~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	NORMAL		
180651	CNALC01	CLN ST RBLR DT 1A LS9A	HIGH		

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~~180701~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~INOP~~		
180702	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL		
180703	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL		
~~180706~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	INOP		
180707	NMSBC02	SRM SHORT PERIOD	ALARM		
180708	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL		
~~180710~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	~~ALMCLR~~		
180724	NMSBC02	SRM SHORT PERIOD	ALARM		
180725	NMSBC02	SRM SHORT PERIOD	ALMCLR		
~~180728~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	ALARM		
180732	NMSBC02	SRM SHORT PERIOD	ALMCLR		
180748	NMSBC02	SRM SHORT PERIOD	ALARM		
~~180749~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	~~ALMCLR~~		
180750	NMSBC02	SRM SHORT PERIOD	ALARM		
180751	NMSBC02	SRM SHORT PERIOD	ALMCLR		
~~180757~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	INOP		
180758	ABMPA01	AUX BLR DEAR INL PRESS	OK	2.61	2.50 PSIG
180759	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL		
~~180801~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	INOP		
180802	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL		
180804	NMSBC02	SRM SHORT PERIOD	ALARM		
~~180805~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	INOP		
180805	NMSBC02	SRM SHORT PERIOD	ALMCLR		
180806	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL		
~~180817~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	ALARM		
180818	ABMPA01	AUX BLR DEAR INL PRESS	LO	2.49	2.50 PSIG
180819	NMSBC02	SRM SHORT PERIOD	ALMCLR		
~~180824~~	~~CNALC01~~	~~CLN ST RBLR DT 1A LS9A~~	HIGH		
180828	ABMPA01	AUX BLR DEAR INL PRESS	OK	2.70	2.50 PSIG
180832	NMSBC02	SRM SHORT PERIOD	ALARM		
~~180834~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	ALMCLR		
180836	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL		
180930	NMSBC02	SRM SHORT PERIOD	ALARM		
~~180931~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	ALMCLR		
180934	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP		
180935	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL		
~~180935~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	ALARM		
180937	NMSBC02	SRM SHORT PERIOD	ALMCLR		
180946	NMSBC02	SRM SHORT PERIOD	ALARM		
~~180947~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	ALMCLR		
180957	NMSBC02	SRM SHORT PERIOD	ALARM		
180959	NMSBC02	SRM SHORT PERIOD	ALMCLR		
181011	CNALC01	CLN ST RBLR DT 1A LS9A	HIGH		
181015	CNALC03	CLN ST RBLR DT 1A LS10A	H/H		
181015	NMSBC02	SRM SHORT PERIOD	ALARM		
181016	ICSLC01	RCIC TURB ST DR TRAP LVL	HIGH		
181017	NMSBC02	SRM SHORT PERIOD	ALMCLR		
181019	CNALC03	CLN ST RBLR DT 1A LS10A	ALMCLR		

181026	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
~~181052~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	ALARM			
181055	NMSBC02	SRM SHORT PERIOD	ALMCLR			
181105	NMSBC02	SRM SHORT PERIOD	ALARM			
~~181109~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	ALMCLR			
181124	TMITA03	PIPE UPSTR 2HRS-SV6A TMP	*LO	271.87	400.00	DEG F

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~~181129~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	ALARM			
181130	NMSBC02	SRM SHORT PERIOD	ALMCLR			
181135	NMSBC02	SRM SHORT PERIOD	ALARM			
~~181137~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	ALMCLR			
181158	CNALC01	CLN ST RBLR DT 1A LS9A	HIGH			
181202	NMSBC02	SRM SHORT PERIOD	ALARM			
~~181204~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	~~ALMCLR~~			
181210	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL			
181220	ABFBC04	AUX BLR SYS 2CES-IPNL508	TRBL			
~~181239~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	ALARM			
181240	NMSBC02	SRM SHORT PERIOD	ALMCLR			
181248	ABMPA01	AUX BLR DEAR INL PRESS	HI	7.57	7.50	PSIG
~~181254~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	~~ALARM~~			
181259	NMSBC02	SRM SHORT PERIOD	ALMCLR			
181306	NMSBC02	SRM SHORT PERIOD	ALARM			
~~181310~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	ALMCLR			
181324	TMITA05	PIPE UPSTR 2HRS-SV6B TMP	*LO	271.99	400.00	DEG F
181337	CNALC01	CLN ST RBLR DT 1A LS9A	HIGH			
~~181344~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	ALARM			
181347	CNSFA01	CND XFR PUMP HDR FLOW	LO	299.79	300.00	GPM
181348	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL			
~~181349~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	ALMCLR			
181401	NMSBC02	SRM SHORT PERIOD	ALARM			
181403	NMSBC02	SRM SHORT PERIOD	ALMCLR			
~~181437~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	ALARM			
181438	NMSBC02	SRM SHORT PERIOD	ALMCLR			
181449	NMSBC02	SRM SHORT PERIOD	ALARM			
~~181453~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	ALMCLR			
181512	NMSBC02	SRM SHORT PERIOD	ALARM			
181514	NMSBC02	SRM SHORT PERIOD	ALMCLR			
~~181522~~	~~CNALC03~~	~~CLN ST RBLR DT 1A LS10A~~	H/H			
181530	CNALC01	CLN ST RBLR DT 1A LS9A	HIGH			
181532	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
~~181534~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	NORMAL			
181535	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
181536	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
~~181539~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	~~ALARM~~			
181540	CNALC03	CLN ST RBLR DT 1A LS10A	ALMCLR			
181540	NMSBC02	SRM SHORT PERIOD	ALMCLR			
~~181541~~	~~NMSBC02~~	SRM SHORT PERIOD	ALARM			
181543	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL			
181543	NMSBC02	SRM SHORT PERIOD	ALMCLR			
181608	NMSBC02	SRM SHORT PERIOD	ALARM			
181611	NMSBC02	SRM SHORT PERIOD	ALMCLR			
181627	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
181628	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
181631	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
181632	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
~~181637~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	ALARM			
181640	NMSBC02	SRM SHORT PERIOD	ALMCLR			

181708 NMSBC02 SRM SHORT PERIOD ALMCLR
~~181712 HDHTA01 6PT HTR E6A DR TEMP *LO 153.95 284.00 DEG F~~
181720 NMSBC02 SRM SHORT PERIOD ALARM

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~~181724 NMSBC02 SRM SHORT PERIOD ALMCLR~~
181747 CNALC03 CLN ST RBLR DT 1A LS10A H/H
181756 CNALC01 CLN ST RBLR DT 1A LS9A HIGH
~~181801 NMSBC02 SRM SHORT PERIOD ALARM~~
181803 CNALC03 CLN ST RBLR DT 1A LS10A ALMCLR
181804 NMSBC02 SRM SHORT PERIOD ALMCLR
~~181808 NMSBC02 SRM SHORT PERIOD ALARM~~
181809 HVKBC09 DIV1 CB CHILLED WTR SYS INOP
181810 HVKBC09 DIV1 CB CHILLED WTR SYS NORMAL
~~181814 NMSBC02 SRM SHORT PERIOD ALMCLR~~
181816 CNALC01 CLN ST RBLR DT 1A LS9A NORMAL
181835 HVKBC09 DIV1 CB CHILLED WTR SYS INOP
~~181836 HVKBC09 DIV1 CB CHILLED WTR SYS NORMAL~~
181845 NMSBC02 SRM SHORT PERIOD ALARM
181846 HVKBC09 DIV1 CB CHILLED WTR SYS INOP
~~181847 HVKBC09 DIV1 CB CHILLED WTR SYS NORMAL~~
181848 NMSBC02 SRM SHORT PERIOD ALMCLR
181849 HVKBC09 DIV1 CB CHILLED WTR SYS INOP
~~181851 HVKBC09 DIV1 CB CHILLED WTR SYS NORMAL~~
181853 NMSBC02 SRM SHORT PERIOD ALARM
181854 HVKBC09 DIV1 CB CHILLED WTR SYS INOP
~~181854 NMSBC02 SRM SHORT PERIOD ALMCLR~~
181855 HVKBC09 DIV1 CB CHILLED WTR SYS NORMAL
181913 NMSBC02 SRM SHORT PERIOD ALARM
~~181918 NMSBC02 SRM SHORT PERIOD ALMCLR~~
181923 NMSBC02 SRM SHORT PERIOD ALARM
181925 NMSBC02 SRM SHORT PERIOD ALMCLR
~~181935 NMSBC02 SRM SHORT PERIOD ALARM~~
181939 NMSBC02 SRM SHORT PERIOD ALMCLR
181942 HVKBC09 DIV1 CB CHILLED WTR SYS INOP
~~181946 HVKBC09 DIV1 CB CHILLED WTR SYS NORMAL~~
181947 HVKBC09 DIV1 CB CHILLED WTR SYS INOP
181948 HVKBC09 DIV1 CB CHILLED WTR SYS NORMAL
~~182019 NMSBC02 SRM SHORT PERIOD ALARM~~
182023 NMSBC02 SRM SHORT PERIOD ALMCLR
182025 NMSBC02 SRM SHORT PERIOD ALARM
~~182026 NMSBC02 SRM SHORT PERIOD ALMCLR~~
182033 ARCLC04 CNSR AIR REM TK SP1B LVL LOW
182033 FWSLC01 REACTOR WTR LEVEL HI/LO ALMCLR
~~182038 HVKBC09 DIV1 CB CHILLED WTR SYS INOP~~
182038 NMSBC02 SRM SHORT PERIOD ALARM
182039 NMSBC02 SRM SHORT PERIOD ALMCLR
182040 HVKBC09 DIV1 CB CHILLED WTR SYS NORMAL
182051 HVKBC09 DIV1 CB CHILLED WTR SYS INOP
182052 HVKBC09 DIV1 CB CHILLED WTR SYS NORMAL
182104 DFTBC30 TB FLR DRN SYSTEM TRBL
182104 FWSLC01 REACTOR WTR LEVEL HI/LO H/L
182105 HVKBC09 DIV1 CB CHILLED WTR SYS INOP
~~182106 HVKBC09 DIV1 CB CHILLED WTR SYS NORMAL~~
182109 NMSBC02 SRM SHORT PERIOD ALARM
182114 HVKBC09 DIV1 CB CHILLED WTR SYS INOP
~~182114 NMSBC02 SRM SHORT PERIOD ALMCLR~~
182115 HVKBC09 DIV1 CB CHILLED WTR SYS NORMAL
182116 CNALC01 CLN ST RBLR DT 1A LS9A HIGH

182117	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			

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~~182122~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	~~ALARM~~			
182125	FWSLC01	REACTOR WTR LEVEL HI/LO	ALMCLR			
182127	NMSBC02	SRM SHORT PERIOD	ALMCLR			
~~182136~~	~~ARCLC04~~	~~CNSR AIR REM TK SP1B LVL~~	~~NORMAL~~			
182140	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL			
182154	NMSBC02	SRM SHORT PERIOD	ALARM			
~~182155~~	~~FWSLC01~~	~~REACTOR WTR LEVEL HI/LO~~	~~H/L~~			
182157	NMSBC02	SRM SHORT PERIOD	ALMCLR			
182203	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
~~182203~~	~~MSSTA01~~	~~RHTR E1A REHTG STM TEMP~~	LO	300.00	300.00	DEG F
182204	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
182208	FWSLC01	REACTOR WTR LEVEL HI/LO	ALMCLR			
~~182228~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	~~ALARM~~			
182230	WTSAA01	2WTS-TK1 RECIRC WTR PH	LO	6.30	6.50	PH
182232	NMSBC02	SRM SHORT PERIOD	ALMCLR			
~~182236~~	~~ESSTA02~~	~~6 PT HTR E6B EXTR ST TMP~~	*LO	207.29	325.00	DEG F
182241	NMSBC02	SRM SHORT PERIOD	ALARM			
182242	NMSBC02	SRM SHORT PERIOD	ALMCLR			
~~182244~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~INOP~~			
182246	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
182250	NMSBC02	SRM SHORT PERIOD	ALARM			
~~182255~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	ALMCLR			
182300	WTSAA01	2WTS-TK1 RECIRC WTR PH	OK	8.07	6.50	PH
182313	NMSBC02	SRM SHORT PERIOD	ALARM			
~~182316~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	~~ALMCLR~~			
182332	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
182333	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
~~182335~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~INOP~~			
182336	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
182338	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
~~182338~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	~~ALARM~~			
182339	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
182340	NMSBC02	SRM SHORT PERIOD	ALMCLR			
~~182346~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~INOP~~			
182347	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
182355	NMSBC02	SRM SHORT PERIOD	ALARM			
~~182356~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~INOP~~			
182357	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
182358	NMSBC02	SRM SHORT PERIOD	ALMCLR			
~~182400~~	~~FWSTA04~~	6PT-HTR 2FWS-E6A OUT TMP	*LO	302.70	324.00	DEG F
182401	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
182402	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
182408	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
182409	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
182411	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
182412	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
182419	NMSBC02	SRM SHORT PERIOD	ALARM			
182420	NMSBC02	SRM SHORT PERIOD	ALMCLR			
~~182431~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	ALARM			
182432	NMSBC02	SRM SHORT PERIOD	ALMCLR			
182434	CNSLC10	CND TK1B LVL LS16B	NORMAL			
~~182444~~	~~HVKBC09~~	~~DIV1 CB CHILLED~~ WTR SYS	INOP			
182444	NMSBC02	SRM SHORT PERIOD	ALARM			
182445	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
~~182446~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	ALMCLR			
182449	NMSBC02	SRM SHORT PERIOD	ALARM			

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~~182452~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~INOP~~			
182452	NMSBC02	SRM SHORT PERIOD	ALMCLR			
182453	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
~~182512~~	~~CNSPA01~~	~~CND XFR PUMP HDR FLOW~~	~~OK~~	~~312.72~~	~~300.00~~	~~GPM~~
182534	TMITA12	TURB EXH HOOD B TEMP	OK	102.55	100.00	DEG F
182535	NMSBC02	SRM SHORT PERIOD	ALARM			
~~182539~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	~~ALMCLR~~			
182545	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
182546	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
~~182549~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	~~ALARM~~			
182554	NMSBC02	SRM SHORT PERIOD	ALMCLR			
182559	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
~~182600~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~NORMAL~~			
182612	FWSTA05	6PT HTR 2FWS-E6B OUT TMP	*LO	270.91	324.00	DEG F
182621	NMSBC02	SRM SHORT PERIOD	ALARM			
~~182627~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	~~ALMCLR~~			
182628	NMSBC02	SRM SHORT PERIOD	ALARM			
182631	NMSBC02	SRM SHORT PERIOD	ALMCLR			
~~182654~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	~~ALARM~~			
182658	NMSBC02	SRM SHORT PERIOD	ALMCLR			
182719	NMSBC02	SRM SHORT PERIOD	ALARM			
~~182721~~	~~CNALC01~~	~~CLN ST RBLR DT 1A LS9A~~	~~HIGH~~			
182721	NMSBC02	SRM SHORT PERIOD	ALMCLR			
182725	NMSBC02	SRM SHORT PERIOD	ALARM			
~~182730~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	~~ALMCLR~~			
182731	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
182732	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
~~182732~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	~~ALARM~~			
182733	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
182733	NMSBC02	SRM SHORT PERIOD	ALMCLR			
~~182735~~	~~CNALC03~~	~~CLN ST RBLR DT 1A LS10A~~	~~H/H~~			
182735	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
182735	NMSBC02	SRM SHORT PERIOD	ALARM			
~~182736~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	~~ALMCLR~~			
182746	CNALC03	CLN ST RBLR DT 1A LS10A	ALMCLR			
182749	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL			
~~182751~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~INOP~~			
182751	NMSBC02	SRM SHORT PERIOD	ALARM			
182752	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
~~182753~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	~~ALMCLR~~			
182802	NMSBC02	SRM SHORT PERIOD	ALARM			
182803	NMSBC02	SRM SHORT PERIOD	ALMCLR			
182812	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
182813	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
182814	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
182814	NMSBC02	SRM SHORT PERIOD	ALARM			
182815	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
182815	NMSBC02	SRM SHORT PERIOD	ALMCLR			
~~182819~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	~~ALARM~~			
182823	NMSBC02	SRM SHORT PERIOD	ALMCLR			
182830	NMSBC02	SRM SHORT PERIOD	ALARM			
~~182836~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	~~ALMCLR~~			
182840	NMSBC02	SRM SHORT PERIOD	ALARM			
182842	NMSBC02	SRM SHORT PERIOD	ALMCLR			
~~182858~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~INOP~~			
182859	NMSBC02	SRM SHORT PERIOD	ALARM			

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182900	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
182901	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
182901	NMSBC02	SRM SHORT PERIOD	ALMCLR			
182902	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
182909	NMSBC02	SRM SHORT PERIOD	ALARM			
182910	NMSBC02	SRM SHORT PERIOD	ALMCLR			
182917	NMSBC02	SRM SHORT PERIOD	ALARM			
182921	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
182922	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
182922	NMSBC02	SRM SHORT PERIOD	ALMCLR			
182934	NMSBC02	SRM SHORT PERIOD	ALARM			
182935	NMSBC02	SRM SHORT PERIOD	ALMCLR			
182950	NMSBC02	SRM SHORT PERIOD	ALARM			
182954	NMSBC02	SRM SHORT PERIOD	ALMCLR			
183008	NMSBC02	SRM SHORT PERIOD	ALARM			
183012	NMSBC02	SRM SHORT PERIOD	ALMCLR			
183018	NMSBC02	SRM SHORT PERIOD	ALARM			
183021	NMSBC02	SRM SHORT PERIOD	ALMCLR			
183034	NMSBC02	SRM SHORT PERIOD	ALARM			
183036	NMSBC02	SRM SHORT PERIOD	ALMCLR			
183039	ESSTA18	5 PT HTR E5C EXTR ST TMP	*LO	153.95	280.00	DEG F
183042	NMSBC02	SRM SHORT PERIOD	ALARM			
183043	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
183044	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
183045	NMSBC02	SRM SHORT PERIOD	ALMCLR			
183047	NMSBC02	SRM SHORT PERIOD	ALARM			
183056	NMSBC02	SRM SHORT PERIOD	ALMCLR			
183100	WTSAA01	2WTS-TK1 RECIRC WTR PH	LO	3.78	6.50	PH
183101	NMSBC02	SRM SHORT PERIOD	ALARM			
183102	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
183103	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
183105	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
183105	NMSBC02	SRM SHORT PERIOD	ALMCLR			
183106	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
183130	NMSBC02	SRM SHORT PERIOD	ALARM			
183130	WTSAA01	2WTS-TK1 RECIRC WTR PH	OK	8.14	6.50	PH
183132	NMSBC02	SRM SHORT PERIOD	ALMCLR			
183141	NMSBC02	SRM SHORT PERIOD	ALARM			
183144	NMSBC02	SRM SHORT PERIOD	ALMCLR			
183155	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
183156	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
183158	CNSLA01	CND DRAW OFF TK1A LEVEL	*HI	40.84	26.00	FT WG
183200	WTSAA01	2WTS-TK1 RECIRC WTR PH	LO	4.18	6.50	PH
183209	NMSBC02	SRM SHORT PERIOD	ALARM			
183213	NMSBC02	SRM SHORT PERIOD	ALMCLR			
183226	IASPC11	ADS CPRSR TK4 PRESS	LOW			
183230	WTSAA01	2WTS-TK1 RECIRC WTR PH	OK	7.94	6.50	PH
183246	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
183247	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
183248	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
183249	CNALC01	CLN ST RBLR DT 1A LS9A	HIGH			
183250	NMSBC02	SRM SHORT PERIOD	ALARM			
183251	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
183252	NMSBC02	SRM SHORT PERIOD	ALMCLR			
183253	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
183254	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			

183256	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
183257	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
183300	WTSAA01	2WTS-TK1 RECIRC WTR PH	LO	4.44	6.50	PH
183322	CNALC01	CLN-ST-RBLR-DT 1A LS9A	NORMAL			
183324	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
183325	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
183330	WTSAA01	2WTS-TK1 RECIRC WTR PH	OK	8.04	6.50	PH
183341	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
183342	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
183411	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
183412	FWSTA02	6PT HTR 2FWS-E6B INL TMP	LO	272.03	284.00	DEG F
183412	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
183412	NMSBC02	SRM SHORT PERIOD	ALARM			
183414	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
183414	NMSBC02	SRM SHORT PERIOD	ALMCLR			
183415	NMSBC02	SRM SHORT PERIOD	ALARM			
183416	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
183416	NMSBC02	SRM SHORT PERIOD	ALMCLR			
183420	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
183422	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
183425	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
183426	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
183427	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
183429	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
183436	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
183437	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
183439	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
183441	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
183442	TMEPA03	REBLR 2TME-E1A DIS ST PR	LO	24.60	25.00	PSIG
183448	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
183449	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
183450	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
183451	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
183456	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
183458	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
183459	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
183503	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
183508	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
183509	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
183510	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
183511	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
183513	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
183514	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
183519	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
183520	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
183522	TMEPC03	CLN STM REBLR STM HDR PR	LOW			
183528	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
183530	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
183532	CNSPA01	CND XFR PUMP HDR FLOW	LO	294.10	300.00	GPM
183537	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
183538	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
183543	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
183544	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
183545	NMSBC02	SRM SHORT PERIOD	ALARM			
183547	NMSBC02	SRM SHORT PERIOD	ALMCLR			
183553	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			

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183604	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
~~183700~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~INOP~~			
183701	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
183712	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
~~183713~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~NORMAL~~			
183723	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
183723	NMSBC02	SRM SHORT PERIOD	ALARM			
~~183724~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~NORMAL~~			
183726	NMSBC02	SRM SHORT PERIOD	ALMCLR			
183740	NMSBC02	SRM SHORT PERIOD	ALARM			
~~183741~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	~~ALMCLR~~			
183748	TMITA01	EXT V UPR OUT SURF T	*LO	383.89	400.00	DEG F
183752	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
~~183753~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~NORMAL~~			
183754	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
183755	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
~~183845~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	~~ALARM~~			
183849	NMSBC02	SRM SHORT PERIOD	ALMCLR			
183855	NMSBC02	SRM SHORT PERIOD	ALARM			
~~183857~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	~~ALMCLR~~			
183859	CNSLA02	CND DRAW OFF TK1B LEVEL	*HIL******L*******			FT WG
183902	TMEPA03	REBLR 2TME-E1A DIS ST PR	*LO	19.99	25.00	PSIG
~~183927~~	~~TMEPA01~~	~~GLAND SLSTM SUPLY PRESS~~	~~LO~~	~~19.80~~	~~20.00~~	~~PSIG~~
183936	HVCMA04	RELAY ROOM HMDT MT8B	OK	48.81	50.00	%RH
183945	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
~~183946~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~NORMAL~~			
183959	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
184000	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
~~184004~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~INOP~~			
184005	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
184012	FWSTA01	6PT HTR 2FWS-E6A INL TMP	*LO	260.74	284.00	DEG F
~~184019~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	~~ALARM~~			
184020	NMSBC02	SRM SHORT PERIOD	ALMCLR			
184121	ARCLC03	CNSR AIR REM TK SP1A LVL	LOW			
~~184127~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	~~ALARM~~			
184129	NMSBC02	SRM SHORT PERIOD	ALMCLR			
184140	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
~~184141~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~NORMAL~~			
184142	FWSTA02	6PT HTR 2FWS-E6B INL TMP	*LO	260.46	284.00	DEG F
184204	CNALC01	CLN ST RBLR DT 1A LS9A	HIGH			
184217	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL			
184224	NMSBC02	SRM SHORT PERIOD	ALARM			
184226	NMSBC02	SRM SHORT PERIOD	ALMCLR			
184240	NMSBC02	SRM SHORT PERIOD	ALARM			
184243	NMSBC02	SRM SHORT PERIOD	ALMCLR			
184245	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
~~184247~~	~~TMEPA01~~	~~GLAND SLSTM SUPLY PRESS~~	~~OK~~	~~21.08~~	~~20.00~~	~~PSIG~~
184248	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
184253	TMITA07	PIPE UPSTR 2HRS-SV6C TMP	*LO	271.91	400.00	DEG F
~~184304~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	~~ALARM~~			
184306	NMSBC02	SRM SHORT PERIOD	ALMCLR			
184308	ABMPA02	AUX BLR STM HDR PRESS	LO	119.96	120.00	PSIG
~~184312~~	~~HDLTA03~~	~~5PT HTR 2GNM-E5C DRN TMP~~	~~*LO~~	~~117.30~~	~~246.00~~	~~DEG F~~
184322	CNALC01	CLN ST RBLR DT 1A LS9A	HIGH			

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~~184322~~	~~HVCMA04~~	~~RELAY ROOM HMDT MT8B~~	~~HI~~	~~50.31~~	~~50.00~~	~~%RH~~
184325	CNALC03	CLN ST RBLR DT 1A LS10A	H/H			

184343	NMSBC02	SRM SHORT PERIOD	ALARM			
184344	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
~~184347~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	~~ALMCLR~~			
184355	NMSBC02	SRM SHORT PERIOD	ALARM			
184359	NMSBC02	SRM SHORT PERIOD	ALMCLR			
~~184413~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	~~ALARM~~			
184416	NMSBC02	SRM SHORT PERIOD	ALMCLR			
184417	NMSBC02	SRM SHORT PERIOD	ALARM			
~~184418~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	~~ALMCLR~~			
184420	NMSBC02	SRM SHORT PERIOD	ALARM			
184422	NMSBC02	SRM SHORT PERIOD	ALMCLR			
~~184431~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~INOP~~			
184432	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
184433	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
~~184434~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~NORMAL~~			
184441	ASSPA03	CLN STM RCBLR STM PRESS	LO	67.72	70.00	PSIG
184449	NMSBC02	SRM SHORT PERIOD	ALARM			
~~184452~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	~~ALMCLR~~			
184453	ABMPA02	AUX BLR STM HDR PRESS	LO	117.47	120.00	PSIG
184457	CNALC01	CLN ST RBLR DT 1A LS9A	HIGH			
~~184509~~	~~CNALC01~~	~~CLN ST RBLR DT 1A LS9A~~	~~NORMAL~~			
184515	NMSBC02	SRM SHORT PERIOD	ALARM			
184516	NMSBC02	SRM SHORT PERIOD	ALMCLR			
~~184517~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	~~ALARM~~			
184519	NMSBC02	SRM SHORT PERIOD	ALMCLR			
184520	NMSBC02	SRM SHORT PERIOD	ALARM			
~~184522~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	~~ALMCLR~~			
184534	TMEPC03	CLN STM REBLR STM HDR PR	NORMAL			
184542	TMEPA03	REBLR 2TME-E1A DIS ST PR	OK	26.55	25.00	PSIG
~~184610~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	~~ALARM~~			
184611	NMSBC02	SRM SHORT PERIOD	ALMCLR			
184612	FWSTA02	6PT HTR 2FWS-E6B INL TMP	*LO	248.63	284.00	DEG F
~~184616~~	~~CNALC01~~	~~CLN ST RBLR DT 1A LS9A~~	~~HIGH~~			
184620	CNALC03	CLN ST RBLR DT 1A LS10A	H/H			
184625	CNALC03	CLN ST RBLR DT 1A LS10A	ALMCLR			
184626	ASSPA03	CLN STM RCBLR STM PRESS	OK	76.57	70.00	PSIG
184627	NMSBC02	SRM SHORT PERIOD	ALARM			
184629	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL			
184630	NMSBC02	SRM SHORT PERIOD	ALMCLR			
184632	CNSFA01	CND XFR PUMP HDR FLOW	OK	312.20	300.00	GPM
184654	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
~~184655~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~NORMAL~~			
184655	NMSBC02	SRM SHORT PERIOD	ALARM			
184658	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
~~184658~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	~~ALMCLR~~			
184659	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
184709	NMSBC02	SRM SHORT PERIOD	ALARM			
~~184715~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	~~ALMCLR~~			
184718	ABMPA02	AUX BLR STM HDR PRESS	OK	120.92	120.00	PSIG

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~~184723~~	~~CNALC01~~	~~CLN ST RBLR DT 1A LS9A~~	~~HIGH~~			
184723	NMSBC02	SRM SHORT PERIOD	ALARM			
184725	NMSBC02	SRM SHORT PERIOD	ALMCLR			
~~184732~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	~~ALARM~~			
184734	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL			
184734	NMSBC02	SRM SHORT PERIOD	ALMCLR			
~~184746~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	~~ALARM~~			

184751	NMSBC02	SRM SHORT PERIOD	ALMCLR			
184756	NMSBC02	SRM SHORT PERIOD	ALARM			
184757	NMSBC02	SRM SHORT PERIOD	ALMCLR			
184802	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
184805	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
184806	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
184807	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
184808	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
184809	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
184810	NMSBC02	SRM SHORT PERIOD	ALARM			
184813	NMSBC02	SRM SHORT PERIOD	ALMCLR			
184817	DFWXC04	RW FLR/EQ DR SMP LK RATE	HIGH			
184825	NMSBC02	SRM SHORT PERIOD	ALARM			
184826	DFTBC30	TB FLR DRN SYSTEM	ALMCLR			
184826	DFWXC04	RW FLR/EQ DR SMP LK RATE	NORMAL			
184827	NMSBC02	SRM SHORT PERIOD	ALMCLR			
184901	IASPC11	ADS CPRSR TK4 PRESS	NORMAL			
184932	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
184933	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
184934	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
184935	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
184938	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
184939	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
184939	NMSBC02	SRM SHORT PERIOD	ALARM			
184941	NMSBC02	SRM SHORT PERIOD	ALMCLR			
184944	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
184945	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
184958	IASPA06	ADS CPRSR RCVR TK4 PRESS	HI	371.39	370.00	PSIG
185006	CNALC03	CLN ST RBLR DT 1A LS10A	H/H			
185006	CNALC01	CLN ST RBLR DT 1A LS9A	HIGH			
185018	CNALC03	CLN ST RBLR DT 1A LS10A	ALMCLR			
185021	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL			
185022	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
185027	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
185028	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
185029	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
185045	ESSTA15	4 PT HTR E4C EXTR ST TMP	*LO	213.99	334.00	DEG F
185052	TMEPA03	REBLR 2TME-E1A DIS ST PR	LO	24.71	25.00	PSIG
185105	CNALC01	CLN ST RBLR DT 1A LS9A	HIGH			
185108	CNALC03	CLN ST RBLR DT 1A LS10A	H/H			
185109	NMSBC02	SRM SHORT PERIOD	ALARM			
185109	TMEPC03	CLN STM REBLR STM HDR PR	LOW			
185111	NMSBC02	SRM SHORT PERIOD	ALMCLR			
185112	FWSTA02	6PT HTR 2FWS-E6B INL TMP	*LO	237.39	284.00	DEG F
185114	CNALC03	CLN ST RBLR DT 1A LS10A	ALMCLR			
185118	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL			
185126	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
185127	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
185128	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			

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185129	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
185136	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
185137	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
185143	ESSTA14	4 PT HTR E4B EXTR ST TMP	*LO	201.98	334.00	DEG F
185144	MSSUC01	MSIV CLOSURE TRIP CH A	TRIPPED			
185154	TMITA04	PIPE UPSTR 2HRS-SV5A TMP	*LO	271.96	400.00	DEG F
185219	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
185221	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			

185225	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
185227	NMSBC02	SRM SHORT PERIOD	ALMCLR			
185228	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
185229	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
185238	MSSUC03	MSIV CLOSURE TRIP CH B	TRIPPED			
185258	IASPA06	ADS CPRSR RCVR TK4 PRESS	OK	369.00	370.00	PSIG
185300	NMSBC02	SRM SHORT PERIOD	ALARM			
185301	NMSBC02	SRM SHORT PERIOD	ALMCLR			
185309	CSHBC01	HPCS SYSTEM	INOP			
185310	ARCLC03	CNSR AIR REM TK SP1A LVL	LOW			
185310	NMSBC02	SRM SHORT PERIOD	ALARM			
185310	CSHBC01	HPCS SYSTEM	ALMCLR			
185311	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
185312	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
185315	NMSBC02	SRM SHORT PERIOD	ALMCLR			
185316	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
185317	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
185321	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
185322	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
185323	CNALC01	CLN ST RBLR DT 1A LS9A	HIGH			
185324	MSSUC04	MSIV CLOSURE TRIP CH D	TRIPPED			
185324	MSSUC02	MSIV CLOSURE TRIP CH C	TRIPPED			
185331	MSSPA05	MAIN STEAM INL HDR PR	*LO	19.25	100.00	PSIA
185334	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL			
185336	NMSBC02	SRM SHORT PERIOD	ALARM			
185341	NMSBC02	SRM SHORT PERIOD	ALMCLR			
185345	NMSBC02	SRM SHORT PERIOD	ALARM			
185346	NMSBC02	SRM SHORT PERIOD	ALMCLR			
185423	NMSBC02	SRM SHORT PERIOD	ALARM			
185426	NMSBC02	SRM SHORT PERIOD	ALMCLR			
185447	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
185448	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
185450	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
185451	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
185504	CNALC01	CLN ST RBLR DT 1A LS9A	HIGH			
185516	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL			
185520	ARCLC03	CNSR AIR REM TK SP1A LVL	NORMAL			
185521	NMSBC02	SRM SHORT PERIOD	ALARM			
185522	NMSBC02	SRM SHORT PERIOD	ALMCLR			
185531	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
185532	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
185534	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
185534	NMSBC02	SRM SHORT PERIOD	ALARM			
185535	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			

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185539	NMSBC02	SRM SHORT PERIOD	ALMCLR			
185542	FWSTA02	6PT HTR 2FWS-E6B INL TMP	*LO	225.47	284.00	DEG F
185542	HDLTA16	2PT HTR DR TK2A DR TEMP	*LO	96.87	201.00	DEG F
185543	NMSBC02	SRM SHORT PERIOD	ALARM			
185545	NMSBC02	SRM SHORT PERIOD	ALMCLR			
185602	NMSBC02	SRM SHORT PERIOD	ALARM			
185604	NMSBC02	SRM SHORT PERIOD	ALMCLR			
185607	NMSBC02	SRM SHORT PERIOD	ALARM			
185611	NMSBC02	SRM SHORT PERIOD	ALMCLR			
185627	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
185630	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
185638	NMSBC02	SRM SHORT PERIOD	ALARM			

~~185858~~	~~CNALC01~~	~~CLN ST RBLR DT 1A LS9A~~	~~NORMAL~~			
185707	CNSFA01	CND XFR PUMP HDR FLOW	LO	298.77	300.00	GPM
185713	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
~~185714~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~NORMAL~~			
185717	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
185718	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
~~185719~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~INOP~~			
185720	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
185737	NMSBC02	SRM SHORT PERIOD	ALARM			
~~185739~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	~~ALMCLR~~			
185742	NMSBC02	SRM SHORT PERIOD	ALARM			
185745	NMSBC02	SRM SHORT PERIOD	ALMCLR			
~~185755~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~INOP~~			
185756	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
185808	NMSBC02	SRM SHORT PERIOD	ALARM			
~~185810~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	~~ALMCLR~~			
185812	HVCMA04	RELAY ROOM HMDT MT8B	OK	48.81	50.00	%RH
185819	NMSBC02	SRM SHORT PERIOD	ALARM			
~~185820~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	~~ALMCLR~~			
185834	NMSBC02	SRM SHORT PERIOD	ALARM			
185837	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
~~185839~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	~~ALMCLR~~			
185841	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
185846	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
~~185847~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~NORMAL~~			
185922	CNALC01	CLN ST RBLR DT 1A LS9A	HIGH			
185923	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
185924	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
185928	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
185928	NMSBC02	SRM SHORT PERIOD	ALARM			
185930	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
185930	NMSBC02	SRM SHORT PERIOD	ALMCLR			
185935	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL			
~~185942~~	~~FWGTA02~~	~~6PT HTR 2FWS-E6B INL TMP~~	~~*LO~~	~~213.30~~	~~284.00~~	~~DEG F~~
185948	NMSBC02	SRM SHORT PERIOD	ALARM			
185953	NMSBC02	SRM SHORT PERIOD	ALMCLR			
~~185957~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	~~ALARM~~			
185958	NMSBC02	SRM SHORT PERIOD	ALMCLR			
185958	CSHBC01	HPCS SYSTEM	INOP			
~~185959~~	~~CSHBC01~~	~~HPCS SYSTEM~~	~~ALMCLR~~			
190012	HDLTA08	3PT HTR 2CNM-E3B DRN TMP	*LO	94.01	157.00	DEG F

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~~190021~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~INOP~~			
190022	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
190023	NMSBC02	SRM SHORT PERIOD	ALARM			
~~190026~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	~~ALMCLR~~			
190027	CNALC01	CLN ST RBLR DT 1A LS9A	HIGH			
190029	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
~~190030~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~NORMAL~~			
190032	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
190033	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
~~190035~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~INOP~~			
190039	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL			
190039	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
~~190056~~	~~CSHBC01~~	~~HPCS SYSTEM~~	~~INOP~~			
190057	CSHBC01	HPCS SYSTEM	ALMCLR			
190105	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
190105	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			

190128	CSHBC01	HPCS SYSTEM	INOP			
190129	CSHBC01	HPCS SYSTEM	ALMCLR			
190134	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
190135	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
190136	NMSBC02	SRM SHORT PERIOD	ALARM			
190137	NMSBC02	SRM SHORT PERIOD	ALMCLR			
190145	ARCLC04	CNSR AIR REM TK SP1B LVL	LOW			
190146	CNALC01	CLN ST RBLR DT 1A LS9A	HIGH			
190152	NMSBC02	SRM SHORT PERIOD	ALARM			
190157	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL			
190159	CSHBC01	HPCS SYSTEM	INOP			
190200	CSHBC01	HPCS SYSTEM	ALMCLR			
190201	NMSBC02	SRM SHORT PERIOD	ALMCLR			
190205	NMSBC02	SRM SHORT PERIOD	ALARM			
190208	NMSBC02	SRM SHORT PERIOD	ALMCLR			
190222	HVCMA04	RELAY ROOM HMDT MT8D	HI	50.31	50.00	%RH
190234	CSHBC01	HPCS SYSTEM	INOP			
190235	CSHBC01	HPCS SYSTEM	ALMCLR			
190244	ARCLC04	CNSR AIR REM TK SP1B LVL	NORMAL			
190302	CNALC01	CLN ST RBLR DT 1A LS9A	HIGH			
190303	CSHBC01	HPCS SYSTEM	INOP			
190304	NMSBC02	SRM SHORT PERIOD	ALARM			
190304	CSHBC01	HPCS SYSTEM	ALMCLR			
190309	NMSBC02	SRM SHORT PERIOD	ALMCLR			
190314	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL			
190332	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
190334	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
190336	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
190339	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
190339	NMSBC02	SRM SHORT PERIOD	ALARM			
190340	GMHAC07	STTR CLG WTR TK VENT H2	HIGH			
190341	NMSBC02	SRM SHORT PERIOD	ALMCLR			
190342	FWSTA02	6PT HTR 2FWS-E6B INL TMP	*LO	202.41	284.00	DEG F
190343	GMHAC07	STTR CLG WTR TK VENT H2	NORMAL			
190351	CSHBC01	HPCS SYSTEM	INOP			
190352	CSHBC01	HPCS SYSTEM	ALMCLR			
190406	NMSBC02	SRM SHORT PERIOD	ALARM			
190407	NMSBC02	SRM SHORT PERIOD	ALMCLR			
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190414	NMSBC02	SRM SHORT PERIOD	ALARM			
190416	NMSBC02	SRM SHORT PERIOD	ALMCLR			
190420	CNALC01	CLN ST RBLR DT 1A LS9A	HIGH			
190432	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL			
190434	GTSPA01	RB IN/OUT D/P PDT5A	OK	-0.46	-0.50	IN WG
190445	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
190446	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
190446	NMSBC02	SRM SHORT PERIOD	ALARM			
190450	CSHBC01	HPCS SYSTEM	INOP			
190451	CSHBC01	HPCS SYSTEM	ALMCLR			
190502	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
190502	NMSBC02	SRM SHORT PERIOD	ALMCLR			
190503	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
190504	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
190504	NMSBC02	SRM SHORT PERIOD	ALARM			
190505	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
190506	NMSBC02	SRM SHORT PERIOD	ALMCLR			
190507	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			

~~190512~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	INOP			
190513	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
190515	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
~~190515~~	~~CSHBC01~~	~~HPCS SYSTEM~~	INOP			
190516	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
190516	CSHBC01	HPCS SYSTEM	ALMCLR			
~~190519~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	INOP			
190519	GTSPA01	RB IN/OUT D/P PDT5A	LO	-0.51	-0.50	IN WG
190520	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
~~190523~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	INOP			
190524	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
190528	CSHBC01	HPCS SYSTEM	INOP			
~~190529~~	~~CSHBC01~~	~~HPCS SYSTEM~~	ALMCLR			
190545	CNALC01	CLN ST RBLR DT 1A LS9A	HIGH			
190557	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL			
~~190613~~	~~CSHBC01~~	~~HPCS SYSTEM~~	INOP			
190614	CSHBC01	HPCS SYSTEM	ALMCLR			
190616	CSHBC01	HPCS SYSTEM	INOP			
~~190617~~	~~CSHBC01~~	~~HPCS SYSTEM~~	ALMCLR			
190620	CSHBC01	HPCS SYSTEM	INOP			
190621	CSHBC01	HPCS SYSTEM	ALMCLR			
190633	CSHBC01	HPCS SYSTEM	INOP			
190634	CSHBC01	HPCS SYSTEM	ALMCLR			
190643	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
190644	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
190645	NMSBC02	SRM SHORT PERIOD	ALARM			
190646	NMSBC02	SRM SHORT PERIOD	ALMCLR			
~~190700~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	INOP			
190702	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
190702	CSHBC01	HPCS SYSTEM	INOP			
~~190703~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	INOP			
190703	CSHBC01	HPCS SYSTEM	ALMCLR			
190704	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
~~190712~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	INOP			
190713	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			

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~~190716~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	ALARM
190720	NMSBC02	SRM SHORT PERIOD	ALMCLR
190724	CNALC01	CLN ST RBLR DT 1A LS9A	HIGH
~~190733~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	ALARM
190734	ARCLC03	CNSR AIR REM TK SP1A LVL	LOW
190736	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL
~~190736~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	ALMCLR
190738	CSHBC01	HPCS SYSTEM	INOP
190739	CSHBC01	HPCS SYSTEM	ALMCLR
~~190754~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	ALARM
190757	NMSBC02	SRM SHORT PERIOD	ALMCLR
190807	CSHBC01	HPCS SYSTEM	INOP
~~190809~~	~~CSHBC01~~	~~HPCS SYSTEM~~	ALMCLR
190816	NMSBC02	SRM SHORT PERIOD	ALARM
190819	NMSBC02	SRM SHORT PERIOD	ALMCLR
~~190825~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	ALARM
190826	CSHBC01	HPCS SYSTEM	INOP
190827	NMSBC02	SRM SHORT PERIOD	ALMCLR
~~190827~~	~~CSHBC01~~	~~HPCS SYSTEM~~	ALMCLR
190831	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP
190833	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL

190842	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
~~190844~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	~~ALMCLR~~			
190845	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
190847	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
~~190847~~	~~CNSPA01~~	~~CND-XPR-PUMP HDR FLOW~~	~~OK~~	~~309.56~~	~~300.00~~	~~GPM~~
190850	CSHBC01	HPCS SYSTEM	INOP			
190851	CSHBC01	HPCS SYSTEM	ALMCLR			
~~190856~~	~~CSHBC01~~	~~HPCS SYSTEM~~	~~INOP~~			
190857	CSHBC01	HPCS SYSTEM	ALMCLR			
190921	CNALC03	CLN ST RBLR DT 1A LS10A	H/H			
~~190924~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	~~ALARM~~			
190925	CNALC01	CLN ST RBLR DT 1A LS9A	HIGH			
190927	NMSBC02	SRM SHORT PERIOD	ALMCLR			
~~190934~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~INOP~~			
190935	CNALC03	CLN ST RBLR DT 1A LS10A	ALMCLR			
190935	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
~~190939~~	~~CNALC01~~	~~CLN ST RBLR DT 1A LS9A~~	~~NORMAL~~			
190945	ARCLC03	CNSR AIR REM TK SP1A LVL	NORMAL			
190954	NMSBC02	SRM SHORT PERIOD	ALARM			
190956	NMSBC02	SRM SHORT PERIOD	ALMCLR			
191000	WTSAA01	2WTS-TK1 RECIRC WTR PH	LO	4.10	6.50	PH
191011	ASSPA03	CLN STM RCBLR STM PRESS	LO	67.39	70.00	PSIG
191014	TMEPC03	CLN STM REBLR STM HDR PR	NORMAL			
191016	ASSPA03	CLN STM RCBLR STM PRESS	*LO	64.46	70.00	PSIG
191017	TMEPA03	REBLR 2TME-E1A DIS ST PR	OK	26.21	25.00	PSIG
~~191018~~	~~ARMPA02~~	~~AUX-BLR-STM-HDR-PRESS~~	~~LO~~	~~116.55~~	~~120.00~~	~~PSIG~~
191023	NMSBC02	SRM SHORT PERIOD	ALARM			
191026	ASSPA03	CLN STM RCBLR STM PRESS	*LO	58.57	70.00	PSIG
~~191027~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	~~ALMCLR~~			
191030	NMSBC02	SRM SHORT PERIOD	ALARM			
191030	WTSAA01	2WTS-TK1 RECIRC WTR PH	LO	6.35	6.50	PH
~~191031~~	~~ASSPA03~~	~~CLN-STM-RCBLR-STM-PRESS~~	~~*LO~~	~~54.94~~	~~70.00~~	~~PSIG~~
191033	NMSBC02	SRM SHORT PERIOD	ALMCLR			

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~~191038~~	~~CSHBC01~~	~~HPCS SYSTEM~~	~~INOP~~			
191039	CSHBC01	HPCS SYSTEM	ALMCLR			
191054	NMSBC02	SRM SHORT PERIOD	ALARM			
~~191057~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	~~ALMCLR~~			
191100	WTSAA01	2WTS-TK1 RECIRC WTR PH	OK	8.08	6.50	PH
191112	FWSTA02	6PT HTR 2FWS-E6B INL TMP	*LO	190.70	284.00	DEG F
~~191127~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~INOP~~			
191128	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
191136	CNALC01	CLN ST RBLR DT 1A LS9A	HIGH			
~~191144~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	~~ALARM~~			
191147	NMSBC02	SRM SHORT PERIOD	ALMCLR			
191148	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL			
~~191148~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~INOP~~			
191150	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
191151	CSHBC01	HPCS SYSTEM	INOP			
~~191152~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	~~ALARM~~			
191152	CSHBC01	HPCS SYSTEM	ALMCLR			
191154	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
~~191155~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~NORMAL~~			
191157	NMSBC02	SRM SHORT PERIOD	ALMCLR			
191159	DFTBC30	TB FLR DRN SYSTEM	TRBL			
~~191203~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~INOP~~			
191204	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			

~~191239~~	~~CNALC01~~	~~CLN ST RBLR DT 1A LS9A~~	~~HIGH~~			
191243	CSHBC01	HPCS SYSTEM	INOP			
191244	CSHBC01	HPCS SYSTEM	ALMCLR			
~~191246~~	~~ASSPA03~~	~~CLN STM RCBLR STM PRESS~~	~~*LO~~	~~66.15~~	~~70.00~~	~~PSIG~~
191247	NMSBC02	SRM SHORT PERIOD	ALARM			
191249	CNALC03	CLN ST RBLR DT 1A LS10A	ALMCLR			
~~191250~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	~~ALMCLR~~			
191251	ASSPA03	CLN STM RCBLR STM PRESS	OK	74.96	70.00	PSIG
191252	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL			
~~191258~~	~~CSHBC01~~	~~HPCS SYSTEM~~	~~INOP~~			
191259	CSHBC01	HPCS SYSTEM	ALMCLR			
191311	CSHBC01	HPCS SYSTEM	INOP			
~~191312~~	~~CSHBC01~~	~~HPCS SYSTEM~~	ALMCLR			
191328	ESSTA04	1 PT HTR E1A SHELL TEMP	*LO	97.97	119.00	DEG F
191331	CSHBC01	HPCS SYSTEM	INOP			
191332	CSHBC01	HPCS SYSTEM	ALMCLR			
191334	CSHBC01	HPCS SYSTEM	INOP			
191335	CSHBC01	HPCS SYSTEM	ALMCLR			
191338	ABMPA02	AUX BLR STM HDR PRESS	OK	123.24	120.00	PSIG
191340	ESSTA10	3 PT HTR E3A EXTR ST TMP	*LO	178.33	256.00	DEG F
191341	CSHBC01	HPCS SYSTEM	INOP			
~~191342~~	~~CSHBC01~~	~~HPCS SYSTEM~~	~~ALMCLR~~			
191349	NMSBC02	SRM SHORT PERIOD	ALARM			
191351	NMSBC02	SRM SHORT PERIOD	ALMCLR			
~~191400~~	~~WTSAA01~~	~~2WTS-TK1 RECIRC WTR PH~~	LO	3.99	6.50	PH
191409	CNALC03	CLN ST RBLR DT 1A LS10A	H/H			
191409	CSHBC01	HPCS SYSTEM	INOP			
~~191410~~	~~CSHBC01~~	~~HPCS SYSTEM~~	~~ALMCLR~~			
191414	CNALC01	CLN ST RBLR DT 1A LS9A	HIGH			

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~~191418~~	~~CSHBC01~~	~~HPCS SYSTEM~~	INOP			
191419	CSHBC01	HPCS SYSTEM	ALMCLR			
191421	CSHBC01	HPCS SYSTEM	INOP			
~~191422~~	~~CSHBC01~~	~~HPCS SYSTEM~~	ALMCLR			
191424	CNALC03	CLN ST RBLR DT 1A LS10A	ALMCLR			
191424	CSHBC01	HPCS SYSTEM	INOP			
~~191425~~	~~CSHBC01~~	~~HPCS SYSTEM~~	ALMCLR			
191427	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL			
191430	WTSAA01	2WTS-TK1 RECIRC WTR PH	OK	8.21	6.50	PH
~~191431~~	~~ABDBC02~~	~~AUX BLR SYS 2CES-IPNL507~~	TRBL			
191431	ABMUC01	AUX BLR 1A/1B AT/FTS	TRIPPED			
191431	NMSBC02	SRM SHORT PERIOD	ALARM			
~~191433~~	~~CSHBC01~~	~~HPCS SYSTEM~~	~~INOP~~			
191435	CSHBC01	HPCS SYSTEM	ALMCLR			
191436	NMSBC02	SRM SHORT PERIOD	ALMCLR			
~~191439~~	~~ARCLC03~~	~~CNSR AIR REM TK SP1A LVL~~	LOW			
191442	FWSTA01	6PT HTR 2FWS-E6A INL TMP	*LO	247.79	284.00	DEG F
191444	CSHBC01	HPCS SYSTEM	INOP			
~~191445~~	~~CSHBC01~~	~~HPCS SYSTEM~~	ALMCLR			
191449	CSHBC01	HPCS SYSTEM	INOP			
191450	CSHBC01	HPCS SYSTEM	ALMCLR			
~~191453~~	~~CSHBC01~~	~~HPCS SYSTEM~~	INOP			
191454	CSHBC01	HPCS SYSTEM	ALMCLR			
191500	WTSAA01	2WTS-TK1 RECIRC WTR PH	LO	3.95	6.50	PH
~~191507~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	~~ALARM~~			
191509	NMSBC02	SRM SHORT PERIOD	ALMCLR			
191511	CSHBC01	HPCS SYSTEM	INOP			

~~191530~~	~~WTSAA01~~	~~2WTS-TK1-RECIRC-WTR-PH~~	~~OK~~	~~6.66~~	~~6.50~~	~~PH~~
191531	CNMPA01	CNSR 2CNM-CND1A VACUUM	*LO	1.52	2.50	PSIA
191531	CNMPA02	CNSR 2CNM-CND1B VACUUM	*LO	1.52	2.50	PSIA
~~191531~~	~~CNMPA03~~	~~CNSR 2CNM-CND1C VACUUM~~	~~*LO~~	~~1.59~~	~~2.50~~	~~PSIA~~
191532	ESSPA17	1 PT HTR E1C SHELL PRESS	*LO	1.47	2.00	PSIA
191533	CSHBC01	HPCS SYSTEM	INOP			
~~191534~~	~~CSHBC01~~	~~HPCS SYSTEM~~	~~ALMCLR~~			
191536	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
191536	CNMPA01	CNSR 2CNM-CND1A VACUUM	*LO	1.73	2.50	PSIA
~~191536~~	~~CNMPA02~~	~~CNSR 2CNM-CND1B VACUUM~~	~~*LO~~	~~1.74~~	~~2.50~~	~~PSIA~~
191536	CNMPA03	CNSR 2CNM-CND1C VACUUM	*LO	1.81	2.50	PSIA
191537	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
191537	CSHBC01	HPCS SYSTEM	INOP			
191537	ESSPA15	1 PT HTR E1A SHELL PRESS	*LO	1.50	2.00	PSIA
191537	ESSPA16	1 PT HTR E1B SHELL PRESS	*LO	1.1	2.0	PSIA
191538	CSHBC01	HPCS SYSTEM	ALMCLR			
191540	CSHBC01	HPCS SYSTEM	INOP			
191541	CSHBC01	HPCS SYSTEM	ALMCLR			
~~191541~~	~~CNMPA01~~	~~CNSR 2CNM-CND1A VACUUM~~	~~*LO~~	~~2.02~~	~~2.50~~	~~PSIA~~
191541	CNMPA02	CNSR 2CNM-CND1B VACUUM	*LO	2.03	2.50	PSIA
191541	CNMPA03	CNSR 2CNM-CND1C VACUUM	*LO	2.11	2.50	PSIA
~~191542~~	~~ESSTA13~~	~~4 PT HTR E4A EXTR ST TMP~~	~~*LO~~	~~201.98~~	~~334.00~~	~~DEG F~~
191542	ESSPA15	1 PT HTR E1A SHELL PRESS	*LO	1.79	2.00	PSIA
191542	ESSPA16	1 PT HTR E1B SHELL PRESS	*LO	1.4	2.0	PSIA
~~191543~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~INOP~~			
191544	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			

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~~191546~~	~~CNMPA01~~	~~CNSR 2CNM-CND1A VACUUM~~	~~*LO~~	~~2.38~~	~~2.50~~	~~PSIA~~
191546	CNMPA02	CNSR 2CNM-CND1B VACUUM	*LO	2.39	2.50	PSIA
191546	CNMPA03	CNSR 2CNM-CND1C VACUUM	*LO	2.47	2.50	PSIA
~~191547~~	~~CSHBC01~~	~~HPCS SYSTEM~~	~~INOP~~			
191547	ESSPA15	1 PT HTR E1A SHELL PRESS	OK	2.13	2.00	PSIA
191547	ESSPA16	1 PT HTR E1B SHELL PRESS	*LO	1.7	2.0	PSIA
~~191547~~	~~ESSPA17~~	~~1 PT HTR E1C SHELL PRESS~~	~~OK~~	~~2.37~~	~~2.00~~	~~PSIA~~
191547	ESSPA19	2 PT HTR E2B SHELL PRESS	*LO	1.9	7.3	PSIA
191549	CSHBC01	HPCS SYSTEM	ALMCLR			
~~191551~~	~~CSHBC01~~	~~HPCS SYSTEM~~	~~INOP~~			
191551	CNMPA01	CNSR 2CNM-CND1A VACUUM	OK	2.78	2.50	PSIA
191551	CNMPA02	CNSR 2CNM-CND1B VACUUM	OK	2.79	2.50	PSIA
~~191551~~	~~CNMPA03~~	~~CNSR 2CNM-CND1C VACUUM~~	~~OK~~	~~2.87~~	~~2.50~~	~~PSIA~~
191552	CSHBC01	HPCS SYSTEM	ALMCLR			
191552	ESSPA16	1 PT HTR E1B SHELL PRESS	OK	2.1	2.0	PSIA
~~191552~~	~~ESSPA18~~	~~2 PT HTR E2A SHELL PRESS~~	~~*LO~~	~~4.1~~	~~7.3~~	~~PSIA~~
191552	ESSPA20	2 PT HTR E2C SHELL PRESS	*LO	3.0	7.3	PSIA
191554	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
~~191554~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	~~ALARM~~			
191555	TMAPC03	CNSR VAC (2TMA-PS2C)	LOW			
191555	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
~~191555~~	~~CSHBC01~~	~~HPCS SYSTEM~~	~~INOP~~			
191556	CSHBC01	HPCS SYSTEM	ALMCLR			
191557	NMSBC02	SRM SHORT PERIOD	ALMCLR			
~~191558~~	~~HDHLC03~~	~~6PT HTR E6C WTR LEVEL~~	~~LOW~~			
191559	TMAPC02	CNSR VAC (2TMA-PS2B)	LOW			
191601	CSHBC01	HPCS SYSTEM	INOP			
~~191602~~	~~TMAPC01~~	~~CNSR VAC (2TMA-PS2A)~~	~~LOW~~			
191602	CSHBC01	HPCS SYSTEM	ALMCLR			
191602	ESSPA19	2 PT HTR E2B SHELL PRESS	*LO	3.2	7.3	PSIA

191605	TMABC04	VAC SYS BELLOWS FAIL	ALARM			
~~191606~~	~~TMAUG07~~	~~CNSR VAC LOW TRIP~~	~~TRIPPED~~			
191606	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
191606	CSHBC01	HPCS SYSTEM	INOP			
~~191606~~	~~TMABC04~~	~~VAC SYS BELLOWS FAIL~~	~~ALMCLR~~			
191607	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
191607	CSHBC01	HPCS SYSTEM	ALMCLR			
~~191607~~	~~ESSPA18~~	~~2 PT HTR E2A SHELL PRESS~~	~~*LO~~	~~5.5~~	~~7.3~~	~~PSIA~~
191607	ESSPA20	2 PT HTR E2C SHELL PRESS	*LO	4.3	7.3	PSIA
191608	HDLLC12	5 PT HTR E5C WTR LEVEL	NORMAL			
191610	NMSBC02	SRM SHORT PERIOD	ALARM			
191611	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
191611	CSHBC01	HPCS SYSTEM	INOP			
191611	HDLLC10	5 PT HTR E5A WTR LEVEL	NORMAL			
191612	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
191612	ESSPA19	2 PT HTR E2B SHELL PRESS	*LO	4.1	7.3	PSIA
~~191613~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~INOP~~			
191613	CSHBC01	HPCS SYSTEM	ALMCLR			
191613	HDLLC11	5 PT HTR E5B WTR LEVEL	NORMAL			
~~191614~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~NORMAL~~			
191617	NMSBC02	SRM SHORT PERIOD	ALMCLR			
191617	ESSPA18	2 PT HTR E2A SHELL PRESS	*LO	6.4	7.3	PSIA
~~191617~~	~~ESSPA20~~	~~2 PT HTR E2C SHELL PRESS~~	~~*LO~~	~~5.2~~	~~7.3~~	~~PSIA~~
191619	ARCLC04	CNSR AIR REM TK SP1B LVL	LOW			

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~~191619~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~INOP~~			
191620	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
191620	NMSBC02	SRM SHORT PERIOD	ALARM			
~~191621~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~INOP~~			
191621	NMSBC02	SRM SHORT PERIOD	ALMCLR			
191622	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
~~191622~~	~~ESSPA15~~	~~1 PT HTR E1A SHELL PRESS~~	~~HI~~	~~5.67~~	~~5.00~~	~~PSIA~~
191622	ESSPA17	1 PT HTR E1C SHELL PRESS	HI	5.44	5.00	PSIA
191623	CSHBC01	HPCS SYSTEM	INOP			
~~191624~~	~~CSHBC01~~	~~HPCS SYSTEM~~	~~ALMCLR~~			
191625	CSHBC01	HPCS SYSTEM	INOP			
191626	CSHBC01	HPCS SYSTEM	ALMCLR			
~~191626~~	~~HVCMA04~~	~~RELAY ROOM HMDT MT6B~~	~~OK~~	~~48.81~~	~~50.00~~	~~%RH~~
191627	ESSPA15	1 PT HTR E1A SHELL PRESS	*HI	5.50	5.00	PSIA
191627	ESSPA16	1 PT HTR E1B SHELL PRESS	HI	5.1	5.0	PSIA
~~191627~~	~~ESSPA17~~	~~1 PT HTR E1C SHELL PRESS~~	~~*HI~~	~~5.88~~	~~5.00~~	~~PSIA~~
191627	ESSPA19	2 PT HTR E2B SHELL PRESS	*LO	5.5	7.3	PSIA
191628	CSHBC01	HPCS SYSTEM	INOP			
~~191629~~	~~CSHBC01~~	~~HPCS SYSTEM~~	~~ALMCLR~~			
191631	CSHBC01	HPCS SYSTEM	INOP			
191632	ESSPA15	1 PT HTR E1A SHELL PRESS	*HI	5.94	5.00	PSIA
~~191632~~	~~ESSPA16~~	~~1 PT HTR E1B SHELL PRESS~~	~~*HI~~	~~5.5~~	~~5.0~~	~~PSIA~~
191632	ESSPA17	1 PT HTR E1C SHELL PRESS	*HI	6.33	5.00	PSIA
191632	ESSPA18	2 PT HTR E2A SHELL PRESS	OK	7.8	7.3	PSIA
~~191632~~	~~ESSPA20~~	~~2 PT HTR E2C SHELL PRESS~~	~~*LO~~	~~6.5~~	~~7.3~~	~~PSIA~~
191633	CSHBC01	HPCS SYSTEM	ALMCLR			
191634	MSSTA01	REHTR E1A REHTG STM TEMP	OK	306.90	300.00	DEG F
~~191635~~	~~CSHBC01~~	~~HPCS SYSTEM~~	~~INOP~~			
191636	CSHBC01	HPCS SYSTEM	ALMCLR			
191637	CSHBC01	HPCS SYSTEM	INOP			
~~191637~~	~~ESSPA15~~	~~1 PT HTR E1A SHELL PRESS~~	~~*HI~~	~~6.36~~	~~5.00~~	~~PSIA~~
191637	ESSPA16	1 PT HTR E1B SHELL PRESS	*HI	5.9	5.0	PSIA

191641	CSHBC01	HPCS SYSTEM	INOP			
191642	CSHBC01	HPCS SYSTEM	ALMCLR			
191642	ESSPA15	1 PT HTR E1A SHELL PRESS	^HI	6.79	5.00	PSIA
191642	ESSPA16	1 PT HTR E1B SHELL PRESS	^HI	6.3	5.0	PSIA
191642	ESSPA17	1 PT HTR E1C SHELL PRESS	^HI	7.18	5.00	PSIA
191646	CSHBC01	HPCS SYSTEM	INOP			
191647	CSHBC01	HPCS SYSTEM	ALMCLR			
191647	HDLLC20	5 PT HTR E5B WTR LEVEL	LOW			
191647	ESSPA15	1 PT HTR E1A SHELL PRESS	^HI	7.22	5.00	PSIA
191647	ESSPA16	1 PT HTR E1B SHELL PRESS	^HI	6.8	5.0	PSIA
191647	ESSPA17	1 PT HTR E1C SHELL PRESS	^HI	7.61	5.00	PSIA
191647	ESSPA20	2 PT HTR E2C SHELL PRESS	OK	7.8	7.3	PSIA
191649	NMSBC02	SRM SHORT PERIOD	ALARM			
191650	NMSBC02	SRM SHORT PERIOD	ALMCLR			
191651	CSHBC01	HPCS SYSTEM	INOP			
191652	CSHBC01	HPCS SYSTEM	ALMCLR			
191652	ESSPA15	1 PT HTR E1A SHELL PRESS	^HI	7.64	5.00	PSIA
191652	ESSPA16	1 PT HTR E1B SHELL PRESS	^HI	7.2	5.0	PSIA
191652	ESSPA17	1 PT HTR E1C SHELL PRESS	^HI	8.03	5.00	PSIA
191652	ESSPA19	2 PT HTR E2B SHELL PRESS	OK	7.6	7.3	PSIA
191653	CSHBC01	HPCS SYSTEM	INOP			

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191653	HRSPA03	INL PRESS TO LP TURB T2C	^LO	9.65	100.00	PSIA
191654	CSHBC01	HPCS SYSTEM	ALMCLR			
191655	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
191656	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
191656	CSHBC01	HPCS SYSTEM	INOP			
191657	CSHBC01	HPCS SYSTEM	ALMCLR			
191657	ESSPA15	1 PT HTR E1A SHELL PRESS	^HI	8.66	5.00	PSIA
191657	ESSPA16	1 PT HTR E1B SHELL PRESS	^HI	7.6	5.0	PSIA
191657	ESSPA17	1 PT HTR E1C SHELL PRESS	^HI	8.45	5.00	PSIA
191658	CSHBC01	HPCS SYSTEM	INOP			
191659	CNALC01	CLN ST RBLR DT 1A LS9A	HIGH			
191659	CSHBC01	HPCS SYSTEM	ALMCLR			
191700	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
191701	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
191702	ESSPA15	1 PT HTR E1A SHELL PRESS	^HI	8.49	5.00	PSIA
191702	ESSPA16	1 PT HTR E1B SHELL PRESS	^HI	8.0	5.0	PSIA
191702	ESSPA17	1 PT HTR E1C SHELL PRESS	^HI	8.87	5.00	PSIA
191704	HRSPA01	INL PRESS TO LP TURB T2A	^LO	9.01	100.00	PSIA
191705	CSHBC01	HPCS SYSTEM	INOP			
191707	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
191707	CSHBC01	HPCS SYSTEM	ALMCLR			
191707	ESSPA15	1 PT HTR E1A SHELL PRESS	^HI	8.90	5.00	PSIA
191707	ESSPA16	1 PT HTR E1B SHELL PRESS	^HI	8.4	5.0	PSIA
191707	ESSPA17	1 PT HTR E1C SHELL PRESS	^HI	9.28	5.00	PSIA
191708	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
191708	NMSBC02	SRM SHORT PERIOD	ALARM			
191710	DSMTA02	MSTR SEP DR TK4B DR TEMP	^LO	111.53	300.00	DEG F
191711	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL			
191711	CSHBC01	HPCS SYSTEM	INOP			
191712	FWSTA01	6PT HTR 2FWS-E6A INL TMP	^LO	235.84	284.00	DEG F
191712	HDLTA07	3PT HTR 2CNM-E3A DRN TMP	^LO	84.72	167.00	DEG F
191712	ESSPA15	1 PT HTR E1A SHELL PRESS	^HI	9.35	5.00	PSIA
191712	ESSPA16	1 PT HTR E1B SHELL PRESS	^HI	8.9	5.0	PSIA
191712	ESSPA17	1 PT HTR E1C SHELL PRESS	^HI	9.72	5.00	PSIA
191713	CSHBC01	HPCS SYSTEM	ALMCLR			

191718	ESSPA16	1 PT HTR E1B SHELL PRESS	HI	9.2	5.0	PSIA
~~191718~~	~~ESSPA17~~	~~1 PT HTR E1C SHELL PRESS~~	SHI	9.72	5.00	PSIA
191720	CSHBC01	HPCS SYSTEM	INOP			
191721	CSHBC01	HPCS SYSTEM	ALMCLR			
191722	ESSPA15	1 PT HTR E1A SHELL PRESS	SHI	9.73	5.00	PSIA
191722	ESSPA16	1 PT HTR E1B SHELL PRESS	*HI	9.6	5.0	PSIA
191727	ESSPA16	1 PT HTR E1B SHELL PRESS	*HI	10.0	5.0	PSIA
191733	ESSPA16	1 PT HTR E1B SHELL PRESS	ADC	10.0	5.0	PSIA
191734	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
191735	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
~~191742~~	~~ESSTA11~~	~~3 PT HTR E3B EXTR ST TMP~~	~~*LO~~	~~167.50~~	256.00	DEG F
191743	CSHBC01	HPCS SYSTEM	INOP			
191744	CSHBC01	HPCS SYSTEM	ALMCLR			
~~191753~~	~~CRSPA03~~	~~2MSS-E1A SHL PR PT3A~~	*LO	5.16	140.00	PSIA
191759	NMSBC02	SRM SHORT PERIOD	ALARM			
191800	NMSBC02	SRM SHORT PERIOD	ALMCLR			
~~191808~~	~~CRSPA09~~	~~REHTR A COLD REHT PRESS~~	~~*LO~~	~~5.52~~	140.00	PSIA
191810	CSHBC01	HPCS SYSTEM	INOP			

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~~191810~~	~~DSMTA01~~	~~MSTR SEP DR TK4A DR TEMP~~	*LO	119.68	300.00	DEG F
191811	CSHBC01	HPCS SYSTEM	ALMCLR			
191811	MSSPA06	TURB FIRST STAGE PT103	*LO	6.35	30.00	PSIA
~~191812~~	~~HDHTA01~~	~~6PT HTR E6A DR TEMP~~	*LO	171.66	284.00	DEG F
191818	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
191819	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
~~191822~~	~~CNMPU01~~	~~CNSR 2CNM-CND1A VACUUM~~	LO	2.49	2.50	IN HG
191822	CNMPU02	CNSR 2CNM-CND1B VACUUM	LO	2.33	2.50	IN HG
191822	CNMPU03	CNSR 2CNM-CND1C VACUUM	LO	1.84	2.50	IN HG
~~191823~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	ALARM			
191823	CSHBC01	HPCS SYSTEM	INOP			
191823	CRSPA02	2MSS-E1A SHL PR PT1A	*LO	5.34	140.00	PSIA
~~191823~~	~~CRSPA04~~	~~2MSS-E1A SHL PR PT2A~~	*LO	5.52	140.00	PSIA
191823	CRSPA06	2MSS-E1B SHL PR PT1B	*LO	8.05	140.00	PSIA
191824	CSHBC01	HPCS SYSTEM	ALMCLR			
~~191827~~	~~ESSPA05~~	~~3 PT HTR E3B EXTR STM PR~~	*LO	8.21	24.00	PSIA
191828	NMSBC02	SRM SHORT PERIOD	ALMCLR			
191829	NMSBC02	SRM SHORT PERIOD	ALARM			
~~191829~~	~~CSHBC01~~	~~HPCS SYSTEM~~	INOP			
191834	CRSPA10	REHTR B COLD REHT PRESS	*LO	5.07	140.00	PSIA
191837	NMSBC02	SRM SHORT PERIOD	ALMCLR			
~~191838~~	~~HDHLC01~~	~~6PT HTR E6A WTR LEVEL~~	LOW			
191838	CRSPA01	2MSS-E1A SHL PR PT16A	*LO	8.32	140.00	PSIA
191838	CRSPA08	2MSS-E1B SHL PR PT2B	*LO	8.19	140.00	PSIA
~~191843~~	~~CRSPA05~~	~~2MSS-E1B SHL PR PT16B~~	~~*LO~~	8.16	140.00	PSIA
191845	NMSBC02	SRM SHORT PERIOD	ALARM			
191848	NMSBC02	SRM SHORT PERIOD	ALMCLR			
~~191852~~	~~CSHBC01~~	~~HPCS SYSTEM~~	ALMCLR			
191853	CRSPA07	2MSS-E1B SHL PR PT3B	*LO	8.32	140.00	PSIA
191856	CSHBC01	HPCS SYSTEM	INOP			
~~191857~~	~~ESSPA04~~	~~3 PT HTR E3A EXTR STM PR~~	*LO	8.46	24.00	PSIA
191908	CRSPA03	2MSS-E1A SHL PR PT3A	*LO	8.59	140.00	PSIA
191908	CRSPA09	REHTR A COLD REHT PRESS	*LO	8.28	140.00	PSIA
~~191910~~	~~DSMTA01~~	~~MSTR SEP DR TK4A DR TEMP~~	~~*LO~~	125.95	300.00	DEG F
191911	MSSPA06	TURB FIRST STAGE PT103	*LO	9.10	30.00	PSIA
191912	CNALC01	CLN ST RBLR DT 1A LS9A	HIGH			
~~191912~~	~~FWSTA02~~	~~6PT HTR 2FWS-E6B INL TMP~~	~~*LO~~	~~179.16~~	284.00	DEG F
191912	HDHTA01	6PT HTR E6A DR TEMP	*LO	180.83	284.00	DEG F
191914	CSHBC01	HPCS SYSTEM	ALMCLR			

191916	CSHBC01	HPCS SYSTEM	INOP			
191917	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
191923	CRSPA02	2MSS-E1A SHL PR PT1A	*LO	8.16	140.00	PSIA
191923	CRSPA04	2MSS-E1A SHL PR PT2A	*LO	8.28	140.00	PSIA
191927	ESSPA06	3 PT HTR E3C EXTR STM PR	*LO	8.39	24.00	PSIA
191928	HRSPA03	INL PRESS TO LP TURB T2C	*LO	15.51	100.00	PSIA
191933	TMEPA02	GLD SL STM RGLTD SPLY PR	LO	0.23	3.00	PSIG
191933	CNSFA01	CND XFR PUMP HDR FLOW	LO	295.72	300.00	GPM
~~191936~~	~~CNALC01~~	~~CLN-ST-RBLR-DT-1A-LS9A~~	~~NORMAL~~			
191938	CRSPA06	2MSS-E1B SHL PR PT1B	*LO	11.39	140.00	PSIA
191947	ABMUC01	AUX BLR 1A/1B AT/FTS	ALMCLR			
~~191948~~	~~TMEPA05~~	~~STM SEAL EXH VACUUM~~	~~LO~~	~~3.88~~	~~5.00~~	~~IN WG~~
191948	CRSPA10	REHTR B COLD REHT PRESS	*LO	8.37	140.00	PSIA
191949	ABDBC02	AUX BLR SYS 2CES-IPNL507	NORMAL			
~~191952~~	~~TMEPA05~~	~~STM-SEAL-EXH-VACUUM~~	~~*LO~~	~~1.57~~	~~5.00~~	~~IN WG~~
191953	CRSPA01	2MSS-E1A SHL PR PT16A	*LO	11.57	140.00	PSIA

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~~191953~~	~~CRSPA08~~	~~2MSS-E1B-SHL-PR-PT2B~~	~~*LO~~	~~11.48~~	~~140.00~~	~~PSIA~~
191955	ABFBC04	AUX BLR SYS 2CES-IPNL508	NORMAL			
191957	TMEPA05	STM SEAL EXH VACUUM	*LO	0.41	5.00	IN WG
~~191958~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	~~ALARM~~			
191958	CRSPA05	2MSS-E1B SHL PR PT16B	*LO	11.35	140.00	PSIA
192000	NMSBC02	SRM SHORT PERIOD	ALMCLR			
~~192000~~	~~CNMPA01A~~	~~CONDENSER-A-PRESSURE~~	~~OK~~	~~5.6~~	~~1.5~~	~~PSIA~~
192000	CNMPA02A	CONDENSER B PRESSURE	OK	5.6	1.5	PSIG
192000	CNMPA03A	CONDENSER C PRESSURE	OK	5.7	1.5	PSIA
~~192003~~	~~ESSPA15A~~	~~HTR-1A-PRESS~~	~~OK~~	~~1.9~~	~~1.0~~	~~PSIA~~
192003	ESSPA16A	HTR 1B PRESS	OK	2.1	1.0	PSIA
192007	ESSPA05	3 PT HTR E3B EXTR STM PR	*LO	12.24	24.00	PSIA
~~192008~~	~~CRSPA03~~	~~2MSS-E1A-SHL-PR-PT3A~~	~~*LO~~	~~11.04~~	~~140.00~~	~~PSIA~~
192008	CRSPA07	2MSS-E1B SHL PR PT3B	*LO	11.44	140.00	PSIA
192008	HRSPA07	HRS PR TO T2A FR MS E1B	*LO	11.05	102.00	PSIA
~~192008~~	~~HRSPA09~~	~~HRS-PR-TO-T2C FR MS E1B~~	~~*LO~~	~~11.22~~	~~102.00~~	~~PSIA~~
192009	GMHAC07	STTR CLG WTR TK VENT H2	HIGH			
192010	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
~~192010~~	~~TMEPC01~~	~~GLD-SL-FN1A-1B-2A-2B VAC~~	~~LOW~~			
192011	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
192012	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
~~192012~~	~~FWSTA01~~	~~6PT-HTR-2FWS-E6A INL TMP~~	~~*LO~~	~~225.05~~	~~284.00~~	~~DEG F~~
192013	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
192014	GMHAC07	STTR CLG WTR TK VENT H2	NORMAL			
~~192014~~	~~HVKBC09~~	~~DIV1-CB-CHILLED WTR SYS~~	~~INOP~~			
192015	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
192022	ESSPA04	3 PT HTR E3A EXTR STM PR	*LO	12.28	24.00	PSIA
~~192023~~	~~CRSPA09~~	~~REHTR-A-COLD REHT PRESS~~	~~*LO~~	~~11.30~~	~~140.00~~	~~PSIA~~
192023	HRSPA04	HRS PR TO T2A FR MS E1A	*LO	11.09	102.00	PSIA
192023	HRSPA06	HRS PR TO T2C FR MS E1A	*LO	11.31	102.00	PSIA
~~192026~~	~~NMSBC02~~	~~SRM-SHORT-PERIOD~~	~~ALARM~~			
192029	NMSBC02	SRM SHORT PERIOD	ALMCLR			
192036	MSSPA06	TURB FIRST STAGE PT103	*LO	12.46	30.00	PSIA
~~192038~~	~~CRSPA04~~	~~2MSS-E1A-SHL PR PT2A~~	~~*LO~~	~~11.12~~	~~140.00~~	~~PSIA~~
192040	DSMTA01	MSTR SEP DR TK4A DR TEMP	*LO	132.83	300.00	DEG F
192048	HRSPA05	HRS PR TO T2B FR MS E1A	*LO	11.52	102.00	PSIA
~~192048~~	~~HRSPA08~~	~~HRS-PR-TO-T2B-FR-MS-E1B~~	~~*LO~~	~~11.57~~	~~102.00~~	~~PSIA~~
192056	ARCLC03	CNSR AIR REM TK SP1A LVL	NORMAL			
192057	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
~~192058~~	~~HVKBC09~~	~~DIV1-CB-CHILLED WTR SYS~~	~~NORMAL~~			
192058	CRSPA02	2MSS-E1A SHL PR PT1A	*LO	11.52	140.00	PSIA

192112	HDLTA02	5PT HTR 2CNM-E5B DRN TMP	*LO	117.30	246.00	DEG F
192113	CRSPA10	REHTR B COLD REHT PRESS	*LO	11.17	140.00	PSIA
192118	ESSPA06	3 PT HTR E3C EXTR STM PR	*LO	12.08	24.00	PSIA
~~192121~~	~~ABFBC04~~	~~AUX BLR SYS 2CES-IPNL508~~	~~TRBL~~			
192123	CRSPA08	2MSS-E1B SHL PR PT2B	*LO	14.37	140.00	PSIA
192128	ABDBC01	AUX BLR SYS 2CES-IPNL506	TRBL			
~~192128~~	~~CRSPA01~~	~~2MSS-E1A SHL PR PT16A~~	~~*LO~~	~~14.55~~	~~140.00~~	~~PSIA~~
192129	ABFBC04	AUX BLR SYS 2CES-IPNL508	NORMAL			
192129	NMSBC02	SRM SHORT PERIOD	ALARM			
~~192131~~	~~ABDBC01~~	~~AUX BLR SYS 2CES-IPNL506~~	~~NORMAL~~			
192132	NMSBC02	SRM SHORT PERIOD	ALMCLR			

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~~192138~~	~~CRSPA05~~	~~2MSS-E1B SHL PR PT16B~~	~~*LO~~	~~14.37~~	~~140.00~~	~~PSIA~~
192140	NMSBC02	SRM SHORT PERIOD	ALARM			
192142	NMSBC02	SRM SHORT PERIOD	ALMCLR			
~~192148~~	~~CRSPA07~~	~~2MSS-E1B SHL PR PT3B~~	~~*LO~~	~~14.28~~	~~140.00~~	~~PSIA~~
192150	SWPBC18	SW FV54A HYD UNT ACC PR	LOW			
192153	ABMPA01	AUX BLR DEAR INL PRESS	OK	7.38	7.50	PSIG
~~192153~~	~~ABMPA02~~	~~AUX BLR STM HDR PRESS~~	~~LO~~	~~119.79~~	~~120.00~~	~~PSIG~~
192210	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
192211	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
~~192212~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~INOP~~			
192213	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
192223	CRSPA03	2MSS-E1A SHL PR PT3A	*LO	14.42	140.00	PSIA
~~192230~~	~~CRSPA09~~	~~REHTR A COLD REHT PRESS~~	~~*LO~~	~~14.33~~	~~140.00~~	~~PSIA~~
192251	GMHAC07	STTR CLG WTR TK VENT H2	HIGH			
192251	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
~~192252~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~NORMAL~~			
192254	GMHAC07	STTR CLG WTR TK VENT H2	NORMAL			
192257	ESSPA05	3 PT HTR E3B EXTR STM PR	*LO	16.06	24.00	PSIA
~~192304~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~INOP~~			
192305	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
192320	OFGPA01	OFFGAS SYS INLET PRESS	LO	7.50	11.00	PSIA
~~192324~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	~~ALARM~~			
192327	NMSBC02	SRM SHORT PERIOD	ALMCLR			
192332	OFGPA01	OFFGAS SYS INLET PRESS	*LO	10.00	11.00	PSIA
~~192335~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~INOP~~			
192336	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
192344	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
~~192345~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~NORMAL~~			
192347	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
192350	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
~~192405~~	~~OFGPA01~~	~~OFFGAS SYS INLET PRESS~~	~~*LO~~	~~10.47~~	~~11.00~~	~~PSIA~~
192416	ASSPA03	CLN STM RCBLR STM PRESS	LO	69.52	70.00	PSIG
192421	ASSPA03	CLN STM RCBLR STM PRESS	*LO	66.19	70.00	PSIG
~~192425~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	~~ALARM~~			
192426	ASSPA03	CLN STM RCBLR STM PRESS	*LO	63.26	70.00	PSIG
192427	NMSBC02	SRM SHORT PERIOD	ALMCLR			
~~192431~~	~~ASSPA03~~	~~CLN STM RCBLR STM PRESS~~	~~*LO~~	~~60.56~~	~~70.00~~	~~PSIG~~
192441	ASSPA03	CLN STM RCBLR STM PRESS	*LO	56.40	70.00	PSIG
192446	ASSPA03	CLN STM RCBLR STM PRESS	*LO	54.82	70.00	PSIG
~~192447~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~INOP~~			
192449	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
192453	SWPBC18	SW FV54A HYD UNT ACC PR	NORMAL			
192455	ABDBC02	AUX BLR SYS 2CES-IPNL507	TRBL			
192458	OFGPA01	OFFGAS SYS INLET PRESS	OK	11.11	11.00	PSIA
192459	SWPBC18	SW FV54A HYD UNT ACC PR	LOW			

192519	SWPBC18	SW FV54A HYD UNT ACC PR	NORMAL			
192520	CNALC01	CLN ST RBLR DT 1A LS9A	HIGH			
192524	SWPBC18	SW FV54A HYD UNT ACC PR	LOW			
192530	WTSAA01	2WTS-TK1 RECIRC WTR PH	LO	5.60	6.50	PH
192531	CNALC01	CLN ST RBLR DT 1A LS9A	NORMAL			
192542	FWSTA01	6PT HTR 2FWS-E6A INL TMP	*LO	214.13	284.00	DEG F
192544	ASSPC06	CLN STM REBLR INL STM PR	H/L			
192559	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
192600	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			

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192600	WTSAA01	2WTS-TK1 RECIRC WTR PH	*LO	3.89	6.50	PH
192606	ASSPA03	CLN STM RCBLR STM PRESS	*LO	48.86	70.00	PSIG
192625	NMSBC02	SRM SHORT PERIOD	ALARM			
192626	NMSBC02	SRM SHORT PERIOD	ALMCLR			
192628	NMSBC02	SRM SHORT PERIOD	ALARM			
192630	NMSBC02	SRM SHORT PERIOD	ALMCLR			
192630	WTSAA01	2WTS-TK1 RECIRC WTR PH	*LO	5.47	6.50	PH
192644	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
192645	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
192646	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
192648	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
192704	DFTBC30	TB FLR DRN SYSTEM	ALMCLR			
192730	WTSAA01	2WTS-TK1 RECIRC WTR PH	*LO	4.96	6.50	PH
192744	SWPBC18	SW FV54A HYD UNT ACC PR	NORMAL			
192752	NMSBC02	SRM SHORT PERIOD	ALARM			
192754	NMSBC02	SRM SHORT PERIOD	ALMCLR			
192800	WTSAA01	2WTS-TK1 RECIRC WTR PH	*LO	2.28	6.50	PH
192810	DSMTA01	MSTR SEP DR TK4A DR TEMP	*LO	124.85	300.00	DEG F
192828	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
192829	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
192830	WTSAA01	2WTS-TK1 RECIRC WTR PH	*LO	1.55	6:50	PH
192840	ARCLC04	CNSR AIR REM TK SP1B LVL	NORMAL			
192842	FWSTA02	6PT HTR 2FWS-E6B INL TMP	*LO	167.78	284.00	DEG F
192851	ASSPA03	CLN STM RCBLR STM PRESS	*LO	45.97	70.00	PSIG
192858	NMSBC02	SRM SHORT PERIOD	ALARM			
192900	NMSBC02	SRM SHORT PERIOD	ALMCLR			
192900	WTSAA01	2WTS-TK1 RECIRC WTR PH	*LO	2.30	6.50	PH
192902	TMSPA01	TURB EXH HOOD SPRAY PR	OK	1.42L	*******	PSIG
192904	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
192907	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
192908	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
192909	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
192918	CNSFA01	CND XFR PUMP HDR FLOW	OK	312.24	300.00	GPM
192930	WTSAA01	2WTS-TK1 RECIRC WTR PH	OK	7.27	6.50	PH
192933	ABMPA01	AUX BLR DEAR INL PRESS	LO	2.47	2.50	PSIG
192942	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
192944	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
192949	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
192950	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
192951	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
192952	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
193000	WTSAA01	2WTS-TK1 RECIRC WTR PH	LO	4.79	6.50	PH
193000	CNMPA01A	CONDENSER A PRESSURE	HI	14.6	13.2	PSIA
193000	CNMPA02A	CONDENSER B PRESSURE	HI	14.7	13.2	PSIG
193000	CNMPA03A	CONDENSER C PRESSURE	HI	14.8	13.2	PSIA
193002	NMSBC02	SRM SHORT PERIOD	ALARM			
193003	ESSPA04A	HTR 3A PRESS	OK	14.4	9.8	PSIA
193003	ESSPA05A	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

[illegible]						
193003	ESSPA19A	HTR 2B PRESS	OK	14.2	6.5	PSIA
193003	ESSPA20A	HTR 2C PRESS	OK	14.7	6.5	PSIA
~~193003~~	~~HRSPA05A~~	~~MOIST SEP A OUTLET PRESS~~	~~*LO~~	~~13.4~~	~~17.2~~	~~PSIA~~
193003	HRSPA08A	MOIST SEP B OUTLET PRESS	*LO	13.4	17.2	PSIA

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~~193008~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	~~ALMCLR~~			
193027	NMSBC02	SRM SHORT PERIOD	ALARM			
193029	NMSBC02	SRM SHORT PERIOD	ALMCLR			
~~193030~~	~~WTSAA01~~	~~2WTS-TK1 RECIRC WTR PH~~	~~OK~~	~~8.04~~	~~6.50~~	~~PH~~
193039	NMSBC02	SRM SHORT PERIOD	ALARM			
193042	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
~~193042~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	~~ALMCLR~~			
193044	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
193100	WTSAA01	2WTS-TK1 RECIRC WTR PH	LO	2.14	6.50	PH
~~193106~~	~~ASSPA03~~	~~CLN STM RCBLR STM PRESS~~	~~*LO~~	~~42.94~~	~~70.00~~	~~PSIG~~
193129	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
193130	WTSAA01	2WTS-TK1 RECIRC WTR PH	*LO	1.26	6.50	PH
~~193131~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~NORMAL~~			
193133	NMSBC02	SRM SHORT PERIOD	ALARM			
193137	NMSBC02	SRM SHORT PERIOD	ALMCLR			
~~193138~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~INOP~~			
193139	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
193153	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
~~193154~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~NORMAL~~			
193204	ABDBC02	AUX BLR SYS 2CES-IPNL507	TRBL			
193205	ABDBC02	AUX BLR SYS 2CES-IPNL507	NORMAL			
~~193225~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~INOP~~			
193226	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
193230	WTSAA01	2WTS-TK1 RECIRC WTR PH	OK	8.06	6.50	PH
~~193233~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	~~ALARM~~			
193235	NMSBC02	SRM SHORT PERIOD	ALMCLR			
193242	FWSTA01	6PT HTR 2FWS-E6A INL TMP	*LO	201.98	284.00	DEG F
~~193246~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	~~ALARM~~			
193249	NMSBC02	SRM SHORT PERIOD	ALMCLR			
193253	TMITA07	PIPE UPSTR 2HRS-SV6C TMP	*LO	288.16	400.00	DEG F
~~193301~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~INOP~~			
193304	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
193304	NMSBC02	SRM SHORT PERIOD	ALARM			
~~193307~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	~~ALMCLR~~			
193312	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
193313	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
~~193321~~	~~ASSPA03~~	~~CLN STM RCBLR STM PRESS~~	~~*LO~~	~~39.97~~	~~70.00~~	~~PSIG~~
193342	HDLTA01	5PT HTR 2CNM-E5A DRN TMP	*LO	117.30	246.00	DEG F
193344	NMSBC02	SRM SHORT PERIOD	ALARM			
~~193346~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	~~ALMCLR~~			
193347	NMSBC02	SRM SHORT PERIOD	ALARM			
193350	NMSBC02	SRM SHORT PERIOD	ALMCLR			
193353	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
193354	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
193355	NMSBC02	SRM SHORT PERIOD	ALARM			
193357	NMSBC02	SRM SHORT PERIOD	ALMCLR			
193417	NMSBC02	SRM SHORT PERIOD	ALARM			
193428	NMSBC02	SRM SHORT PERIOD	ALMCLR			
~~193447~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~INOP~~			
193448	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
193451	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
193453	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			

193456	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
193457	NMSBC02	SRM SHORT PERIOD	ALMCLR			

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193459	NMSBC02	SRM SHORT PERIOD	ALARM			
193501	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
193502	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
193502	NMSBC02	SRM SHORT PERIOD	ALMCLR			
193513	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
193514	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
193522	NMSBC02	SRM SHORT PERIOD	ALARM			
193522	HVCMA04	RELAY ROOM HMDT MT8B	OK	48.94	50.00	%RH
193524	TMITA05	PIPE UPSTR 2HRS-SV6B TMP	*LO	288.03	400.00	DEG F
193525	NMSBC02	SRM SHORT PERIOD	ALMCLR			
193553	NMSBC02	SRM SHORT PERIOD	ALARM			
193556	ASSPA03	CLN STM RCBLR STM PRESS	*LO	36.90	70.00	PSIG
193558	NMSBC02	SRM SHORT PERIOD	ALMCLR			
193602	NMSBC02	SRM SHORT PERIOD	ALARM			
193609	NMSBC02	SRM SHORT PERIOD	ALMCLR			
193633	NMSBC02	SRM SHORT PERIOD	ALARM			
193636	NMSBC02	SRM SHORT PERIOD	ALMCLR			
193639	NMSBC02	SRM SHORT PERIOD	ALARM			
193645	NMSBC02	SRM SHORT PERIOD	ALMCLR			
193700	NMSBC02	SRM SHORT PERIOD	ALARM			
193701	NMSBC02	SRM SHORT PERIOD	ALMCLR			
193709	NMSBC02	SRM SHORT PERIOD	ALARM			
193714	NMSBC02	SRM SHORT PERIOD	ALMCLR			
193721	NMSBC02	SRM SHORT PERIOD	ALARM			
193724	NMSBC02	SRM SHORT PERIOD	ALMCLR			
193729	NMSBC02	SRM SHORT PERIOD	ALARM			
193730	WTSAA01	2WTS-TK1 RECIRC WTR PH	LO	1.27	6.50	PH
193731	NMSBC02	SRM SHORT PERIOD	ALMCLR			
193800	WTSAA01	2WTS-TK1 RECIRC WTR PH	*LO	1.90	6.50	PH
193806	NMSBC02	SRM SHORT PERIOD	ALARM			
193808	HDLPC02	4PT HTR DR P1B SUCT PR	NORMAL			
193809	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
193810	NMSBC02	SRM SHORT PERIOD	ALMCLR			
193811	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
193812	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
193812	FWSTA01	6PT HTR 2FWS-E5A INL TMP	*LO	190.84	284.00	DEG F
193813	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
193815	NMSBC02	SRM SHORT PERIOD	ALARM			
193816	NMSBC02	SRM SHORT PERIOD	ALMCLR			
193819	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
193820	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
193830	WTSAA01	2WTS-TK1 RECIRC WTR PH	*LO	3.31	6.50	PH
193831	ASSPA03	CLN STM RCBLR STM PRESS	*LO	33.82	70.00	PSIG
193840	NMSBC02	SRM SHORT PERIOD	ALARM			
193843	NMSBC02	SRM SHORT PERIOD	ALMCLR			
193844	NMSBC02	SRM SHORT PERIOD	ALARM			
193848	NMSBC02	SRM SHORT PERIOD	ALMCLR			
193851	NMSBC02	SRM SHORT PERIOD	ALARM			
193854	NMSBC02	SRM SHORT PERIOD	ALMCLR			
193854	TMITA06	PIPE UPSTR 2HRS-SV5B TMP	*LO	288.05	400.00	DEG F
193858	NMSBC02	SRM SHORT PERIOD	ALARM			
193900	CNALC01	CLN-ST-RBLR DT 1A LS9A	HIGH			
193900	WTSAA01	2WTS-TK1 RECIRC WTR PH	*LO	2.75	6.50	PH
193901	NMSBC02	SRM SHORT PERIOD	ALMCLR			

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193909 HVKBC09  DIV1 CB CHILLED WTR SYS  INOP
193909 NMSBC02  SRM SHORT PERIOD         ALARM
193911 HVKBC09  DIV1 CB CHILLED WTR SYS  NORMAL
193913 CNALC03  CLN ST RBLR DT 1A LS10A  H/H
193914 HVKBC09  DIV1 CB CHILLED WTR SYS  INOP
193915 HVKBC09  DIV1 CB CHILLED WTR SYS  NORMAL
193917 CNALC03  CLN ST RBLR DT 1A LS10A  ALMCLR
193923 NMSBC02  SRM SHORT PERIOD         ALMCLR
193930 CNALC03  CLN ST RBLR DT 1A LS10A  H/H
193930 WTSAA01  2WTS-TK1 RECIRC WTR PH   *LO     1.28     6.50 PH
193932 CNALC03  CLN ST RBLR DT 1A LS10A  ALMCLR
193934 CNALC01  CLN ST RBLR DT 1A LS9A   NORMAL
193940 NMSBC02  SRM SHORT PERIOD         ALARM
193945 NMSBC02  SRM SHORT PERIOD         ALMCLR
193949 NMSBC02  SRM SHORT PERIOD         ALARM
193950 NMSBC02  SRM SHORT PERIOD         ALMCLR
194000 WTSAA01  2WTS-TK1 RECIRC WTR PH   *LO     1.83     6.50 PH
194003 ESSPA07A HTR 4A PRESS             *LO      5.4     14.0 PSIA
194003 ESSPA08A HTR 4B PRESS             *LO      7.9     14.0 PSIA
194003 ESSPA09A HTR 4C PRESS             *LO      3.1     14.0 PSIA
194006 HVKBC09  DIV1 CB CHILLED WTR SYS  INOP
194007 HVKBC09  DIV1 CB CHILLED WTR SYS  NORMAL
194008 HVKBC09  DIV1 CB CHILLED WTR SYS  INOP
194009 HVKBC09  DIV1 CB CHILLED WTR SYS  NORMAL
194011 NMSBC02  SRM SHORT PERIOD         ALARM
194012 NMSBC02  SRM SHORT PERIOD         ALMCLR
194018 HVKBC09  DIV1 CB CHILLED WTR SYS  INOP
194019 HVKBC09  DIV1 CB CHILLED WTR SYS  NORMAL
194030 WTSAA01  2WTS-TK1 RECIRC WTR PH   *LO     1.26     6.50 PH
194037 NMSBC02  SRM SHORT PERIOD         ALARM
194044 NMSBC02  SRM SHORT PERIOD         ALMCLR
194046 ASSPA03  CLN STM RCBLR STM PRESS  *LO    30.75    70.00 PSIG
194052 HVCMA04  RELAY ROOM HMDT MT8B     HI     50.44    50.00 %RH
194055 HVKBC09  DIV1 CB CHILLED WTR SYS  INOP
194056 HVKBC09  DIV1 CB CHILLED WTR SYS  NORMAL
194100 WTSAA01  2WTS-TK1 RECIRC WTR PH   OK      6.77     6.50 PH
194103 CNSFA01  CND XFR PUMP HDR FLOW    LO    296.14   300.00 GPM
194106 NMSBC02  SRM SHORT PERIOD         ALARM
194107 NMSBC02  SRM SHORT PERIOD         ALMCLR
194113 NMSBC02  SRM SHORT PERIOD         ALARM
194114 HVKBC09  DIV1 CB CHILLED WTR SYS  INOP
194115 HVKBC09  DIV1 CB CHILLED WTR SYS  NORMAL
194115 NMSBC02  SRM SHORT PERIOD         ALMCLR
194118 HVKBC09  DIV1 CB CHILLED WTR SYS  INOP
194119 HVKBC09  DIV1 CB CHILLED WTR SYS  NORMAL
194130 WTSAA01  2WTS-TK1 RECIRC WTR PH   LO      1.27     6.50 PH
194133 HVKBC09  DIV1 CB CHILLED WTR SYS  INOP
194134 HVKBC09  DIV1 CB CHILLED WTR SYS  NORMAL
194157 NMSBC02  SRM SHORT PERIOD         ALARM
194159 NMSBC02  SRM SHORT PERIOD         ALMCLR
194200 WTSAA01  2WTS-TK1 RECIRC WTR PH   OK      8.02     6.50 PH
194202 NMSBC02  SRM SHORT PERIOD         ALARM
194209 NMSBC02  SRM SHORT PERIOD         ALMCLR
194255 NMSBC02  SRM SHORT PERIOD         ALARM
194257 NMSBC02  SRM SHORT PERIOD         ALMCLR
194259 NMSBC02  SRM SHORT PERIOD         ALARM
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~~194300 FWSTA04 6PT HTR 2FWS-E6A OUT TMP *LO 292.20 324.00 DEG F~~
194302 NMSBC02 SRM SHORT PERIOD ALMCLR
194304 HVKBC09 DIV1 CB CHILLED WTR SYS INOP
~~194305 HVKBC09 DIV1 CB CHILLED WTR SYS NORMAL~~
194311 ASSPA03 CLN STM RCBLR STM PRESS *LO 27.56 70.00 PSIG
194313 NMSBC02 SRM SHORT PERIOD ALARM
~~194316 NMSBC02 SRM SHORT PERIOD ALMCLR~~
194322 NMSBC02 SRM SHORT PERIOD ALARM
194324 NMSBC02 SRM SHORT PERIOD ALMCLR
~~194328 ARCLC02 CNSR AIR REM TK SP1B LVL HIGH~~
194331 ARCLC02 CNSR AIR REM TK SP1B LVL NORMAL
194332 ARCLC02 CNSR AIR REM TK SP1B LVL HIGH
~~194334 ARCLC02 CNSR AIR REM TK SP1B LVL NORMAL~~
194335 ARCLC02 CNSR AIR REM TK SP1B LVL HIGH
194336 ARCLC02 CNSR AIR REM TK SP1B LVL NORMAL
~~194338 ARCLC02 CNSR AIR REM TK SP1B LVL HIGH~~
194340 NMSBC02 SRM SHORT PERIOD ALARM
194342 NMSBC02 SRM SHORT PERIOD ALMCLR
~~194344 HVKBC09 DIV1 CB CHILLED WTR SYS INOP~~
194347 HVKBC09 DIV1 CB CHILLED WTR SYS NORMAL
194349 HVKBC09 DIV1 CB CHILLED WTR SYS INOP
~~194350 HVKBC09 DIV1 CB CHILLED WTR SYS NORMAL~~
194351 NMSBC02 SRM SHORT PERIOD ALARM
194352 HVCMA04 RELAY ROOM HMDT MT8B *HI 53.50 50.00 *RH
~~194353 HVKBC09 DIV1 CB CHILLED WTR SYS INOP~~
194353 NMSBC02 SRM SHORT PERIOD ALMCLR
194354 HVKBC09 DIV1 CB CHILLED WTR SYS NORMAL
~~194355 HVKBC09 DIV1 CB CHILLED WTR SYS INOP~~
194356 HVKBC09 DIV1 CB CHILLED WTR SYS NORMAL
194402 ARCLC02 CNSR AIR REM TK SP1B LVL NORMAL
~~194403 NMSBC02 SRM SHORT PERIOD ALARM~~
194404 ARCLC02 CNSR AIR REM TK SP1B LVL HIGH
194404 NMSBC02 SRM SHORT PERIOD ALMCLR
~~194411 NMSBC02 SRM SHORT PERIOD ALARM~~
194420 NMSBC02 SRM SHORT PERIOD ALMCLR
194430 WTSAA01 2WTS-TK1 RECIRC WTR PH LO 2.62 6.50 PH
~~194431 ASSPA03 CLN STM RCBLR STM PRESS *LO 24.82 70.00 PSIG~~
194434 ARCLC02 CNSR AIR REM TK SP1B LVL NORMAL
194437 ARCLC02 CNSR AIR REM TK SP1B LVL HIGH
~~194439 ARCLC02 CNSR AIR REM TK SP1B LVL NORMAL~~
194441 ARCLC02 CNSR AIR REM TK SP1B LVL HIGH
194442 ARCLC02 CNSR AIR REM TK SP1B LVL NORMAL
194443 ARCLC02 CNSR AIR REM TK SP1B LVL HIGH
194500 WTSAA01 2WTS-TK1 RECIRC WTR PH OK 8.04 6.50 PH
194511 NMSBC02 SRM SHORT PERIOD ALARM
194514 DFMBC14 AUX BLR FLR DRN SYS TRBL
194514 NMSBC02 SRM SHORT PERIOD ALMCLR
194518 NMSBC02 SRM SHORT PERIOD ALARM
~~194523 NMSBC02 SRM SHORT PERIOD ALMCLR~~
194530 WTSAA01 2WTS-TK1 RECIRC WTR PH LO 1.26 6.50 PH
194553 TMITA08 PIPE UPSTR 2HRS-SV5C TMP *LO 288.01 400.00 DEG F
~~194600 WTSAA01 2WTS-TK1 RECIRC WTR PH OK 7.92 6.50 PH~~
194601 NMSBC02 SRM SHORT PERIOD ALARM
194603 HVKBC09 DIV1 CB CHILLED WTR SYS INOP
~~194604 HVKBC09 DIV1 CB CHILLED WTR SYS NORMAL~~
194605 NMSBC02 SRM SHORT PERIOD ALMCLR

194612	ESSPA08	4 PT HTR E4B EXTR STM PR	*LO	10.99	38.00	PSIA
194618	NMSBC02	SRM SHORT PERIOD	ALARM			
194627	DFTXC22	TB FLR SMP 3/1A-1F LK RT	HIGH			
194628	NMSBC02	SRM SHORT PERIOD	ALMCLR			
194630	WTSAA01	2WTS-TK1 RECIRC WTR PH	LO	1.37	6.50	PH
194633	NMSBC02	SRM SHORT PERIOD	ALARM			
194634	NMSBC02	SRM SHORT PERIOD	ALMCLR			
194640	NMSBC02	SRM SHORT PERIOD	ALARM			
194642	NMSBC02	SRM SHORT PERIOD	ALMCLR			
194647	CSLBC02	DIV1 LPCS SYSTEM	ALMCLR			
194647	CSLBC13	LPCS LINE BREAK	ALMCLR			
194730	WTSAA01	2WTS-TK1 RECIRC WTR PH	*LO	4.69	6.50	PH
194800	WTSAA01	2WTS-TK1 RECIRC WTR PH	*LO	1.70	6.50	PH
194801	NMSBC02	SRM SHORT PERIOD	ALARM			
194804	NMSBC02	SRM SHORT PERIOD	ALMCLR			
194806	ASSPA03	CLN STM RCBLR STM PRESS	*LO	21.56	70.00	PSIG
194811	NMSBC02	SRM SHORT PERIOD	ALARM			
194815	NMSBC02	SRM SHORT PERIOD	ALMCLR			
194830	WTSAA01	2WTS-TK1 RECIRC WTR PH	*LO	2.52	6.50	PH
194832	NMSBC02	SRM SHORT PERIOD	ALARM			
194836	NMSBC02	SRM SHORT PERIOD	ALMCLR			
194842	FWSTA02	5PT HTR 2FWS-E5B INL TMP	*LO	156.16	284.00	DEG F
194845	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
194846	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
194900	WTSAA01	2WTS-TK1 RECIRC WTR PH	*LO	1.59	6.50	PH
194901	NMSBC02	SRM SHORT PERIOD	ALARM			
194905	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
194905	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
194906	NMSBC02	SRM SHORT PERIOD	ALMCLR			
194907	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
194908	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
194909	NMSBC02	SRM SHORT PERIOD	ALARM			
194910	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
194911	NMSBC02	SRM SHORT PERIOD	ALMCLR			
194912	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
194922	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
194923	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
194925	NMSBC02	SRM SHORT PERIOD	ALARM			
194927	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
194930	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
194930	WTSAA01	2WTS-TK1 RECIRC WTR PH	*LO	3.70	6.50	PH
194933	NMSBC02	SRM SHORT PERIOD	ALMCLR			
194936	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
194937	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
194940	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
194941	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
194944	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
194944	NMSBC02	SRM SHORT PERIOD	ALARM			
194946	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
194947	NMSBC02	SRM SHORT PERIOD	ALMCLR			
194948	NMSBC02	SRM SHORT PERIOD	ALARM			
194952	NMSBC02	SRM SHORT PERIOD	ALMCLR			
195000	WTSAA01	2WTS-TK1 RECIRC WTR PH	*LO	5.64	6.50	PH
195001	ESSPA07A	HTR 4A PRESS	*LO	6.6	14.0	PSIA
195001	ESSPA08A	HTR 4B PRESS	*LO	10.5	14.0	PSIA
195001	ESSPA09A	HTR 4C PRESS	*LO	4.2	14.0	PSIA

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195018	NMSBC02	SRM SHORT PERIOD	ALARM			
195021	NMSBC02	SRM SHORT PERIOD	ALMCLR			
195027	CNSFA01	CND XFR PUMP HDR FLOW	OK	311.97	300.00	GPM
195030	WTSAA01	2WTS-TK1 RECIRC WTR PH	OK	8.15	6.50	PH
195046	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
195048	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
195101	NMSBC02	SRM SHORT PERIOD	ALARM			
195110	NMSBC02	SRM SHORT PERIOD	ALMCLR			
195130	WTSAA01	2WTS-TK1 RECIRC WTR PH	LO	2.27	6.50	PH
195145	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
195146	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
195200	WTSAA01	2WTS-TK1 RECIRC WTR PH	*LO	5.91	6.50	PH
195202	NMSBC02	SRM SHORT PERIOD	ALARM			
195204	NMSBC02	SRM SHORT PERIOD	ALMCLR			
195211	ASSPA03	CLN STM RCBLR STM PRESS	*LO	18.86	70.00	PSIG
195230	WTSAA01	2WTS-TK1 RECIRC WTR PH	*LO	2.30	6.50	PH
195240	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
195241	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
195242	FWSTA01	6PT HTR 2FWS-E6A INL TMP	*LO	179.58	284.00	DEG F
195253	NMSBC02	SRM SHORT PERIOD	ALARM			
195255	NMSBC02	SRM SHORT PERIOD	ALMCLR			
195300	WTSAA01	2WTS-TK1 RECIRC WTR PH	*LO	4.72	6.50	PH
195305	NMSBC02	SRM SHORT PERIOD	ALARM			
195308	NMSBC02	SRM SHORT PERIOD	ALMCLR			
195313	NMSBC02	SRM SHORT PERIOD	ALARM			
195315	NMSBC02	SRM SHORT PERIOD	ALMCLR			
195317	NMSBC02	SRM SHORT PERIOD	ALARM			
195330	NMSBC02	SRM SHORT PERIOD	ALMCLR			
195330	WTSAA01	2WTS-TK1 RECIRC WTR PH	*LO	1.20	6.50	PH
195353	NMSBC02	SRM SHORT PERIOD	ALARM			
195401	NMSBC02	SRM SHORT PERIOD	ALMCLR			
195417	NMSBC02	SRM SHORT PERIOD	ALARM			
195422	ARCLC01	CNSR AIR REM TK SP1A LVL	HIGH			
195424	NMSBC02	SRM SHORT PERIOD	ALMCLR			
195444	NMSBC02	SRM SHORT PERIOD	ALARM			
195448	NMSBC02	SRM SHORT PERIOD	ALMCLR			
195454	NMSBC02	SRM SHORT PERIOD	ALARM			
195455	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
195456	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
195458	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
195459	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
195500	NMSBC02	SRM SHORT PERIOD	ALMCLR			
195501	NMSBC02	SRM SHORT PERIOD	ALARM			
195503	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
195504	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
195504	NMSBC02	SRM SHORT PERIOD	ALMCLR			
195506	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
195507	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
195517	NMSBC02	SRM SHORT PERIOD	ALARM			
195519	NMSBC02	SRM SHORT PERIOD	ALMCLR			
195521	ASSPA03	CLN STM RCBLR STM PRESS	*LO	15.60	70.00	PSIG
195530	NMSBC02	SRM SHORT PERIOD	ALARM			
195530	WTSAA01	2WTS-TK1 RECIRC WTR PH	*LO	5.84	6.50	PH
195532	HVCMA04	RELAY ROOM HMDT MT8B	OK	43.00	50.00	%RH

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195540	NMSBC02	SRM SHORT PERIOD	ALMCLR
195542	NMSBC02	SRM SHORT PERIOD	ALARM
195548	NMSBC02	SRM SHORT PERIOD	[illegible]

195609	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
195630	WTSAA01	2WTS-TK1 RECIRC WTR PH	*LO	1.27	6.50	PH
195631	NMSBC02	SRM SHORT PERIOD	ALARM			
195638	NMSBC02	SRM SHORT PERIOD	ALMCLR			
195639	NMSBC02	SRM SHORT PERIOD	ALARM			
195641	NMSBC02	SRM SHORT PERIOD	ALMCLR			
195658	NMSBC02	SRM SHORT PERIOD	ALARM			
195700	WTSAA01	2WTS-TK1 RECIRC WTR PH	*LO	4.18	6.50	PH
195702	NMSBC02	SRM SHORT PERIOD	ALMCLR			
195719	NMSBC02	SRM SHORT PERIOD	ALARM			
195720	NMSBC02	SRM SHORT PERIOD	ALMCLR			
195730	WTSAA01	2WTS-TK1 RECIRC WTR PH	*LO	6.12	6.50	PH
195735	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
195736	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
195740	NMSBC02	SRM SHORT PERIOD	ALARM			
195743	NMSBC02	SRM SHORT PERIOD	ALMCLR			
195744	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
195745	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
195748	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
195749	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
195750	NMSBC02	SRM SHORT PERIOD	ALARM			
195752	NMSBC02	SRM SHORT PERIOD	ALMCLR			
195800	WTSAA01	2WTS-TK1 RECIRC WTR PH	*LO	3.79	6.50	PH
195801	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
195802	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
195807	NMSBC02	SRM SHORT PERIOD	ALARM			
195808	NMSBC02	SRM SHORT PERIOD	ALMCLR			
195811	NMSBC02	SRM SHORT PERIOD	ALARM			
195813	NMSBC02	SRM SHORT PERIOD	ALMCLR			
195814	NMSBC02	SRM SHORT PERIOD	ALARM			
195819	NMSBC02	SRM SHORT PERIOD	ALMCLR			
195823	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
195824	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
195830	WTSAA01	2WTS-TK1 RECIRC WTR PH	OK	8.20	6.50	PH
195855	NMSBC02	SRM SHORT PERIOD	ALARM			
195900	WTSAA01	2WTS-TK1 RECIRC WTR PH	LO	3.95	6.50	PH
195903	NMSBC02	SRM SHORT PERIOD	ALMCLR			
195905	NMSBC02	SRM SHORT PERIOD	ALARM			
195907	NMSBC02	SRM SHORT PERIOD	ALMCLR			
195929	NMSBC02	SRM SHORT PERIOD	ALARM			
195930	WTSAA01	2WTS-TK1 RECIRC WTR PH	*LO	5.62	6.50	PH
195931	NMSBC02	SRM SHORT PERIOD	ALMCLR			
195939	NMSBC02	SRM SHORT PERIOD	ALARM			
195947	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
195948	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
195952	NMSBC02	SRM SHORT PERIOD	ALMCLR			
195953	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
195954	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
200000	WTSAA01	2WTS-TK1 RECIRC WTR PH	*LO	3.84	6.50	PH
200001	ESSPA07A	HTR 4A PRESS	*LO	7.7	14.0	PSIA
200001	ESSPA08A	HTR 4B PRESS	*LO	13.0	14.0	PSIA

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200001	ESSPA09A	HTR 4C PRESS	*LO	5.3	14.0	PSIA
200005	NMSBC02	SRM SHORT PERIOD	ALARM			
200013	NMSBC02	SRM SHORT PERIOD	ALMCLR			
200017	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
200018	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			

200034	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
200046	HVCMA04	RELAY ROOM HMDT MTSB	HI	50.50	50.00	*RH
200049	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
200049	NMSBC02	SRM SHORT PERIOD	ALARM			
200050	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
200053	NMSBC02	SRM SHORT PERIOD	ALMCLR			
200100	WTSAA01	2WTS-TK1 RECIRC WTR PH	LO	4.11	6.50	PH
200118	TMITA02	TURB EXTRNL V CHEST TMP	LO	399.84	400.00	DEG F
200131	WTSAA01	2WTS-TK1 RECIRC WTR PH	OK	6.75	6.50	PH
200136	NMSBC02	SRM SHORT PERIOD	ALARM			
200145	NMSBC02	SRM SHORT PERIOD	ALMCLR			
200201	WTSAA01	2WTS-TK1 RECIRC WTR PH	LO	3.51	6.50	PH
200206	ASSPA03	CLN STM RCBLR STM PRESS	*LO	12.79	70.00	PSIG
200217	NMSBC02	SRM SHORT PERIOD	ALARM			
200219	NMSBC02	SRM SHORT PERIOD	ALMCLR			
200224	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
200225	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
200227	NMSBC02	SRM SHORT PERIOD	ALARM			
200228	NMSBC02	SRM SHORT PERIOD	ALMCLR			
200230	WTSAA01	2WTS-TK1 RECIRC WTR PH	OK	8.21	6.50	PH
200239	NMSBC02	SRM SHORT PERIOD	ALARM			
200241	NMSBC02	SRM SHORT PERIOD	ALMCLR			
200244	NMSBC02	SRM SHORT PERIOD	ALARM			
200246	NMSBC02	SRM SHORT PERIOD	ALMCLR			
200254	NMSBC02	SRM SHORT PERIOD	ALARM			
200256	NMSBC02	SRM SHORT PERIOD	ALMCLR			
200259	NMSBC02	SRM SHORT PERIOD	ALARM			
200300	WTSAA01	2WTS-TK1 RECIRC WTR PH	LO	1.28	6.50	PH
200305	NMSBC02	SRM SHORT PERIOD	ALMCLR			
200308	NMSBC02	SRM SHORT PERIOD	ALARM			
200316	NMSBC02	SRM SHORT PERIOD	ALMCLR			
200330	WTSAA01	2WTS-TK1 RECIRC WTR PH	OK	6.70	6.50	PH
200338	NMSBC02	SRM SHORT PERIOD	ALARM			
200343	NMSBC02	SRM SHORT PERIOD	ALMCLR			
200344	NMSBC02	SRM SHORT PERIOD	ALARM			
200346	NMSBC02	SRM SHORT PERIOD	ALMCLR			
200348	NMSBC02	SRM SHORT PERIOD	ALARM			
200349	NMSBC02	SRM SHORT PERIOD	ALMCLR			
200350	NMSBC02	SRM SHORT PERIOD	ALARM			
200352	NMSBC02	SRM SHORT PERIOD	ALMCLR			
200407	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
200408	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
200408	NMSBC02	SRM SHORT PERIOD	ALARM			
200409	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
200410	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
200411	NMSBC02	SRM SHORT PERIOD	ALMCLR			
200413	NMSBC02	SRM SHORT PERIOD	ALARM			
200415	NMSBC02	SRM SHORT PERIOD	ALMCLR			

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200416	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
200417	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
200421	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
200422	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
200436	NMSBC02	SRM SHORT PERIOD	ALARM			
200437	CNATA02	RBLR DRN TK1B DISCH TEMP	OK	202.41	200.00	DEG F
200445	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
200446	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			

200453	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
200454	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
200455	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
200458	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
200459	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
200502	CMSPA05	CONTMT DW PRESS	LO	14.20	14.20	PSIA
200504	NMSBC02	SRM SHORT PERIOD	ALARM			
200510	NMSBC02	SRM SHORT PERIOD	ALMCLR			
200529	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
200530	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
200540	NMSBC02	SRM SHORT PERIOD	ALARM			
200543	NMSBC02	SRM SHORT PERIOD	ALMCLR			
200548	NMSBC02	SRM SHORT PERIOD	ALARM			
200553	NMSBC02	SRM SHORT PERIOD	ALMCLR			
200554	GTSPA01	RB IN/OUT D/P PDT5A	OK	-0.44	-0.50	IN WG
200600	WTSAA01	2WTS-TK1 RECIRC WTR PH	LO	3.95	6.50	PH
200605	WTSBC02	2WTS-IPNL301 SYS TRBL	TRBL			
200607	NMSBC02	SRM SHORT PERIOD	ALARM			
200608	NMSBC02	SRM SHORT PERIOD	ALMCLR			
200609	HDLLC20	5 PT HTR E5B WTR LEVEL	NORMAL			
200611	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
200612	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
200614	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
200615	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
200617	NMSBC02	SRM SHORT PERIOD	ALARM			
200621	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
200622	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
200623	NMSBC02	SRM SHORT PERIOD	ALMCLR			
200630	NMSBC02	SRM SHORT PERIOD	ALARM			
200630	WTSAA01	2WTS-TK1 RECIRC WTR PH	*LO	1.30	6.50	PH
200638	NMSBC02	SRM SHORT PERIOD	ALMCLR			
200642	FWSTA01	6PT HTR 2FWS-E6A INL TMP	*LO	167.51	284.00	DEG F
200649	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
200652	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
200654	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
200655	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
200657	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
200658	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
200659	GTSPA01	RB IN/OUT D/P PDT5A	LO	-0.51	-0.50	IN WG
200700	WTSAA01	2WTS-TK1 RECIRC WTR PH	*LO	4.16	6.50	PH
200723	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
200724	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
200730	WTSAA01	2WTS-TK1 RECIRC WTR PH	OK	6.80	6.50	PH
200740	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
200741	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			

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200746	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
200747	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
200749	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
200750	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
200800	HVRTA01	RB VENT SUPPLY AIR TEMP	OK	L*******	L*******	DEG F
200826	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
200827	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
200831	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
200831	NMSBC02	SRM SHORT PERIOD	ALARM			
200832	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
200835	NMSBC02	SRM SHORT PERIOD	ALMCLR			

200919	NMSBC02	SRM SHORT PERIOD	ALMCLR			
~~200920~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	ALARM			
200922	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
200923	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
~~200926~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	ALMCLR			
200934	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
200935	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
~~200942~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	ALARM			
200944	NMSBC02	SRM SHORT PERIOD	ALMCLR			
201002	ESSPA07A	HTR 4A PRESS	*LO	8.8	14.0	PSIA
~~201002~~	~~ESSPA08A~~	~~HTR 4B PRESS~~	OK	15.0	14.0	PSIA
201002	ESSPA09A	HTR 4C PRESS	*LO	6.3	14.0	PSIA
201005	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
~~201006~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	NORMAL			
201009	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
201010	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
~~201012~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~INOP~~			
201013	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
201015	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
~~201016~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	NORMAL			
201055	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
201056	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
~~201101~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	~~ALARM~~			
201102	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
201103	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
~~201105~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	ALMCLR			
201106	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
201107	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
201111	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
201112	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
201156	NMSBC02	SRM SHORT PERIOD	ALARM			
201203	HDLPC03	4PT HTR DR P1C SUCT PR	NORMAL			
201209	NMSBC02	SRM SHORT PERIOD	ALMCLR			
201210	NMSBC02	SRM SHORT PERIOD	ALARM			
~~201211~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	ALMCLR			
201217	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
201218	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
~~201226~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	ALARM			
201233	NMSBC02	SRM SHORT PERIOD	ALMCLR			
201255	NMSBC02	SRM SHORT PERIOD	ALARM			
~~201258~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	ALMCLR			
201300	WTSAA01	2WTS-TK1 RECIRC WTR PH	LO	4.95	6.50	PH

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~~201304~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	ALARM			
201304	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
201304	NMSBC02	SRM SHORT PERIOD	ALMCLR			
~~201305~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	NORMAL			
201306	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
201307	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
~~201330~~	~~WTSAA01~~	~~2WTS-TK1 RECIRC WTR PH~~	OK	7.59	6.50	PH
201339	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
201341	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
~~201357~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	ALARM			
201400	NMSBC02	SRM SHORT PERIOD	ALMCLR			
201400	WTSAA01	2WTS-TK1 RECIRC WTR PH	LO	5.08	6.50	PH
~~201412~~	~~DSRTA05~~	~~SCAV STEAM HDR TEMP~~	*LO	174.99	200.00	DEG F
201412	CNSFA01	CND XFR PUMP HDR FLOW	OK	310.06	300.00	GPM

201430	WTSAA01	2WTS-TK1 RECIRC WTR PH	OK	[illegible]	[illegible]	PH
~~201439~~	~~WTSBC02~~	~~2WTS-IPNL301 SYS TRBL~~	~~ALMCLR~~			
201444	NMSBC02	SRM SHORT PERIOD	ALARM			
201445	NMSBC02	SRM SHORT PERIOD	ALMCLR			
~~201500~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~INOP~~			
201500	NMSBC02	SRM SHORT PERIOD	ALARM			
201500	WTSAA01	2WTS-TK1 RECIRC WTR PH	LO	5.25	6.50	PH
~~201501~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~NORMAL~~			
201502	NMSBC02	SRM SHORT PERIOD	ALMCLR			
201510	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
~~201511~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~NORMAL~~			
201523	NMSBC02	SRM SHORT PERIOD	ALARM			
201524	NMSBC02	SRM SHORT PERIOD	ALMCLR			
~~201526~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	~~ALARM~~			
201528	NMSBC02	SRM SHORT PERIOD	ALMCLR			
201530	WTSAA01	2WTS-TK1 RECIRC WTR PH	OK	7.97	6.50	PH
~~201554~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	~~ALARM~~			
201600	WTSAA01	2WTS-TK1 RECIRC WTR PH	LO	5.39	6.50	PH
201601	GMHAC07	STTR CLG WTR TK VENT H2	HIGH			
~~201601~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	~~ALMCLR~~			
201605	GMHAC07	STTR CLG WTR TK VENT H2	NORMAL			
201616	FWSLC01	REACTOR WTR LEVEL HI/LO	H/L			
~~201623~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~INOP~~			
201625	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
201630	WTSAA01	2WTS-TK1 RECIRC WTR PH	*LO	4.69	6.50	PH
201642	FWSTA01	6PT HTR 2FWS-E6A INL TMP	*LO	156.29	284.00	DEG F
201700	WTSAA01	2WTS-TK1 RECIRC WTR PH	*LO	5.52	6.50	PH
201710	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
201711	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
201719	NMSBC02	SRM SHORT PERIOD	ALARM			
201720	NMSBC02	SRM SHORT PERIOD	ALMCLR			
~~201730~~	~~WTSAA01~~	~~2WTS-TK1 RECIRC WTR PH~~	~~*LO~~	~~4.81~~	~~6.50~~	~~PH~~
201731	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
201732	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
~~201743~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	~~ALARM~~			
201745	NMSBC02	SRM SHORT PERIOD	ALMCLR			
201750	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
~~201751~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~NORMAL~~			
201800	WTSAA01	2WTS-TK1 RECIRC WTR PH	*LO	1.35	6.50	PH

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~~201802~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	~~ALARM~~			
201811	NMSBC02	SRM SHORT PERIOD	ALMCLR			
201816	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
~~201817~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~NORMAL~~			
201844	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
201845	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
~~201846~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~INOP~~			
201847	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
201854	ABDBC01	AUX BLR SYS 2CES-IPNL506	NORMAL			
~~201900~~	~~WTSAA01~~	~~2WTS-TK1 RECIRC WTR PH~~	~~*LO~~	5.84	6.50	PH
201930	WTSAA01	2WTS-TK1 RECIRC WTR PH	*LO	1.29	6.50	PH
202001	WTSAA01	2WTS-TK1 RECIRC WTR PH	OK	8.19	6.50	PH
~~202001~~	~~ESSPA07A~~	~~HTR 4A PRESS~~	*LO	9.9	14.0	PSIA
202001	ESSPA09A	HTR 4C PRESS	*LO	7.4	14.0	PSIA
202006	HVCMA04	RELAY ROOM HMDT MT8B	HI	50.62	50.00	%RH
~~202018~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	INOP			
202019	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
202047	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			

202052	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
~~202114~~	~~GTSPA01~~	~~RB IN/OUT D/P PDT5A~~	~~OK~~	~~-0.47~~	~~-0.50~~	~~IN WG~~
202122	WTSBC02	2WTS-IPNL301 SYS TRBL	TRBL			
202142	NMSBC02	SRM SHORT PERIOD	ALARM			
~~202152~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	~~ALMCLR~~			
202200	NMSBC02	SRM SHORT PERIOD	ALARM			
202204	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
~~202206~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~NORMAL~~			
202206	NMSBC02	SRM SHORT PERIOD	ALMCLR			
202207	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
~~202208~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~NORMAL~~			
202224	GTSPA01	RB IN/OUT D/P PDT5A	LO	-0.52	-0.50	IN WG
202228	ESSTA04	1 PT HTR E1A SHELL TEMP	*LO	91.41	119.00	DEG F
~~202311~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	~~ALARM~~			
202313	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
202314	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
~~202316~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~INOP~~			
202318	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
202324	NMSBC02	SRM SHORT PERIOD	ALMCLR			
~~202418~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	INOP			
202419	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
202421	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
202422	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
202427	DFTBC30	TB FLR DRN SYSTEM	TRBL			
202435	NMSBC02	SRM SHORT PERIOD	ALARM			
202451	NMSBC02	SRM SHORT PERIOD	ALMCLR			
202526	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
202528	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
~~202533~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~INOP~~			
202534	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
202606	ASSPA03	CLN STM RCBLR STM PRESS	*LO	16.16	70.00	PSIG
~~202607~~	~~CNATA02~~	~~RBLR DRN TK1B DISCH TEMP~~	~~LO~~	~~199.90~~	~~200.00~~	~~DEG F~~
202618	NMSBC02	SRM SHORT PERIOD	ALARM			
202621	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
~~202621~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	~~ALMCLR~~			
202622	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			

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~~202624~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	ALARM			
202627	NMSBC02	SRM SHORT PERIOD	ALMCLR			
202632	ESSTA06	1 PT HTR E1C SHELL TEMP	*LO	91.41	119.00	DEG F
~~202636~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	ALARM			
202638	NMSBC02	SRM SHORT PERIOD	ALMCLR			
202641	ASSPA03	CLN STM RCBLR STM PRESS	*LO	19.12	70.00	PSIG
~~202718~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	ALARM			
202721	NMSBC02	SRM SHORT PERIOD	ALMCLR			
202721	ASSPA03	CLN STM RCBLR STM PRESS	*LO	22.31	70.00	PSIG
~~202723~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	INOP			
202724	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
202725	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
~~202726~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	NORMAL			
202729	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
202730	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
~~202731~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	INOP			
202732	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
202735	NMSBC02	SRM SHORT PERIOD	ALARM			
~~202736~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	ALMCLR			
202737	NMSBC02	SRM SHORT PERIOD	ALARM			
202743	NMSBC02	SRM SHORT PERIOD	ALMCLR			

202812	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
~~202813~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~NORMAL~~			
202814	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
202815	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
~~202820~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	~~ALARM~~			
202821	NMSBC02	SRM SHORT PERIOD	ALMCLR			
202830	WTSAA01	2WTS-TK1 RECIRC WTR PH	LO	3.53	6.50	PH
~~202833~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	~~ALARM~~			
202834	NMSBC02	SRM SHORT PERIOD	ALMCLR			
202835	NMSBC02	SRM SHORT PERIOD	ALARM			
~~202839~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	~~ALMCLR~~			
202851	NMSBC02	SRM SHORT PERIOD	ALARM			
202851	ASSPA03	CLN STM RCBLR STM PRESS	*LO	28.39	70.00	PSIG
~~202853~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	~~ALMCLR~~			
202854	NMSBC02	SRM SHORT PERIOD	ALARM			
202855	NMSBC02	SRM SHORT PERIOD	ALMCLR			
~~202900~~	~~WTSAA01~~	~~2WTS-TK1 RECIRC WTR PH~~	~~OK~~	~~8.21~~	~~6.50~~	~~PH~~
202902	CNSFA01	CND XFR PUMP HDR FLOW	LO	297.56	300.00	GPM
202911	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
202912	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
202914	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
202915	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
202915	FWSTA48	FEED WATER FINAL TEMP	*LO	122.65	324.00	DEG F
202926	ASSPA03	CLN STM RCBLR STM PRESS	*LO	31.87	70.00	PSIG
202936	ASSPA03	CLN STM RCBLR STM PRESS	*LO	34.87	70.00	PSIG
~~202946~~	~~ASSPA03~~	~~CLN STM RCBLR STM PRESS~~	~~*LO~~	~~38.25~~	~~70.00~~	~~PSIG~~
202947	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
202948	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
~~202951~~	~~ASSPA03~~	~~CLN STM RCBLR STM PRESS~~	~~*LO~~	~~40.01~~	~~70.00~~	~~PSIG~~
203001	ESSPA07A	HTR 4A PRESS	*LO	10.9	14.0	PSIA
203001	ESSPA09A	HTR 4C PRESS	*LO	8.5	14.0	PSIA
~~203001~~	~~FWSPA04A~~	~~FW PRESS LOOP A~~	~~*LO~~	~~40.5~~	~~220.0~~	~~PSIG~~
203002	ASSPA03	CLN STM RCBLR STM PRESS	*LO	43.57	70.00	PSIG

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~~203011~~	~~ASSPA03~~	~~CLN STM RCBLR STM PRESS~~	~~*LO~~	~~46.61~~	~~70.00~~	~~PSIG~~
203021	ASSPA03	CLN STM RCBLR STM PRESS	*LO	49.12	70.00	PSIG
203032	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
~~203033~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~NORMAL~~			
203041	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
203041	ASSPA03	CLN STM RCBLR STM PRESS	*LO	52.09	70.00	PSIG
~~203042~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~NORMAL~~			
203042	NMSBC02	SRM SHORT PERIOD	ALARM			
203042	HDLTA12	3PT HTR DCL3C DR OUT TMP	*LO	95.10	99.00	DEG F
~~203044~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	~~ALMCLR~~			
203048	ASSPC06	CLN STM REBLR INL STM PR	NORMAL			
203118	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
~~203119~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~NORMAL~~			
203119	NMSBC02	SRM SHORT PERIOD	ALARM			
203120	NMSBC02	SRM SHORT PERIOD	ALMCLR			
~~203126~~	~~ASSPA03~~	~~CLN STM RCBLR STM PRESS~~	~~*LO~~	~~55.27~~	~~70.00~~	~~PSIG~~
203133	NMSBC02	SRM SHORT PERIOD	ALARM			
203136	NMSBC02	SRM SHORT PERIOD	ALMCLR			
~~203145~~	~~ESSTA15~~	~~4 PT HTR E4C EXTR ST TMP~~	~~*LO~~	~~201.98~~	~~334.00~~	~~DEG F~~
203151	ASSPA03	CLN STM RCBLR STM PRESS	*LO	58.16	70.00	PSIG
203202	NMSBC02	SRM SHORT PERIOD	ALARM			
~~203204~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	~~ALMCLR~~			
203211	ASSPA03	CLN STM RCBLR STM PRESS	*LO	61.05	70.00	PSIG
203219	HVKBC09	DIV1 CB [illegible]	[illegible]			

~~203242~~	~~HVGMA04~~	~~RELAY ROOM [illegible]~~	~~OK~~	[illegible]	[illegible]	[illegible]
203243	ESSTA14	4 PT HTR E4B EXTR ST TMP	*LO	189.87	334.00	DEG F
203255	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
~~203258~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~NORMAL~~			
203259	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
203300	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
~~203301~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~INOP~~			
203302	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
203303	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
~~203304~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~NORMAL~~			
203306	ASSPA03	CLN STM RCBLR STM PRESS	*LO	67.57	70.00	PSIG
203308	NMSBC02	SRM SHORT PERIOD	ALARM			
~~203310~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	~~ALMCLR~~			
203324	ABFBC04	AUX BLR SYS 2CES-IPNL508	TRBL			
203326	NMSBC02	SRM SHORT PERIOD	ALARM			
203328	NMSBC02	SRM SHORT PERIOD	ALMCLR			
203329	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
203330	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
203341	ASSPA03	CLN STM RCBLR STM PRESS	OK	71.17	70.00	PSIG
203342	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
203342	HDLTA19	2PT HTR DCL2A DISCH TEMP	LO	93.87	94.00	DEG F
~~203343~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~NORMAL~~			
203407	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
203408	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
~~203409~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~INOP~~			
203410	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
203413	ABFBC04	AUX BLR SYS 2CES-IPNL508	NORMAL			
~~203430~~	~~WTSAA01~~	~~2WTS-TK1 RECIRC WTR PH~~	~~LO~~	~~4.83~~	~~6.50~~	~~PH~~
203442	FWSTA01	6PT HTR 2FWS-E6A INL TMP	*LO	144.55	284.00	DEG F

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~~203442~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~INOP~~			
203443	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
203500	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
~~203500~~	~~WTSAA01~~	~~2WTS-TK1 RECIRC WTR PH~~	~~OK~~	~~8.00~~	~~6.50~~	~~PH~~
203501	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
203510	NMSBC02	SRM SHORT PERIOD	ALARM			
~~203512~~	~~FWSTA02~~	~~6PT HTR 2FWS-E6B INL TMP~~	~~*LO~~	~~144.69~~	~~284.00~~	~~DEG F~~
203512	NMSBC02	SRM SHORT PERIOD	ALMCLR			
203513	ABMPA01	AUX BLR DEAR INL PRESS	OK	2.72	2.50	PSIG
~~203552~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~INOP~~			
203553	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
203557	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
~~203558~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~NORMAL~~			
203603	ABFBC04	AUX BLR SYS 2CES-IPNL508	TRBL			
203605	ABFBC04	AUX BLR SYS 2CES-IPNL508	NORMAL			
~~203611~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	~~ALARM~~			
203613	CNSLA01	CND DRAW OFF TK1A LEVEL	*HI	41.54	26.00	FT WG
203613	MSSTA08	MAIN STEAM LINE A TEMP	ADC	137.37	486.00	DEG F
~~203614~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	~~ALMCLR~~			
203627	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
203628	ABMPA01	AUX BLR DEAR INL PRESS	HI	7.71	7.50	PSIG
~~203629~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~NORMAL~~			
203631	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
203632	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
~~203634~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~INOP~~			
203635	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
203649	NMSBC02	SRM SHORT PERIOD	ALARM			
203652	NMSBC02	SRM SHORT PERIOD	ALMCLR			

203658	ABMPA01	AUX BLR DEAR INL PRESS	OK	7.09	7.50	PSIG
203700	WTSAA01	2WTS-TK1 RECIRC WTR PH	LO	5.77	6.50	PH
~~203707~~	~~CNATA02~~	~~RBLR DRN TK1B DISCH TEMP~~	~~OK~~	~~202.55~~	~~206.00~~	~~DEG F~~
203709	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
203710	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
~~203713~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~INOP~~			
203714	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
203730	WTSAA01	2WTS-TK1 RECIRC WTR PH	*LO	5.38	6.50	PH
~~203742~~	~~TMSPA01~~	~~TURB EXH HOOD SPRAY PR~~	~~HI~~	~~64.69~~	~~50.00~~	~~PSIG~~
203743	ABMPA01	AUX BLR DEAR INL PRESS	LO	2.29	2.50	PSIG
203745	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
~~203746~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~NORMAL~~			
203752	NMSBC02	SRM SHORT PERIOD	ALARM			
203756	NMSBC02	SRM SHORT PERIOD	ALMCLR			
203757	TMSPA01	TURB EXH HOOD SPRAY PR	OK	17.54	50.00	PSIG
203800	WTSAA01	2WTS-TK1 RECIRC WTR PH	OK	8.00	6.50	PH
203820	NMSBC02	SRM SHORT PERIOD	ALARM			
203824	GTSPA01	RB IN/OUT D/P PDT5A	OK	-0.49	-0.50	IN WG
203826	NMSBC02	SRM SHORT PERIOD	ALMCLR			
203827	CNSFA01	CND XFR PUMP HDR FLOW	OK	312.39	300.00	GPM
~~203832~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~INOP~~			
203833	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
203836	HVCMA04	RELAY ROOM HMDT MT8B	HI	50.62	50.00	%RH
~~203839~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~INOP~~			
203840	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
203854	GTSPA01	RB IN/OUT D/P PDT5A	LO	-0.51	-0.50	IN WG
~~203934~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	~~ALARM~~			
203935	NMSBC02	SRM SHORT PERIOD	ALMCLR			

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~~203942~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	~~ALARM~~			
203947	NMSBC02	SRM SHORT PERIOD	ALMCLR			
204002	ESSPA07A	HTR 4A PRESS	*LO	11.9	14.0	PSIA
~~204002~~	~~ESSPA09A~~	~~HTR 4C PRESS~~	*LO	9.6	14.0	PSIA
204003	FWSPA04A	FW PRESS LOOP A	*LO	45.1	220.0	PSIG
204003	FWSPA05A	FW PRESS LOOP B	*LO	54.4	220.0	PSIG
~~204004~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	INOP			
204006	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
204011	NMSBC02	SRM SHORT PERIOD	ALARM			
~~204012~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	ALMCLR			
204020	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
204021	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
~~204042~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	~~ALARM~~			
204044	NMSBC02	SRM SHORT PERIOD	ALMCLR			
204101	NMSBC02	SRM SHORT PERIOD	ALARM			
~~204108~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	ALMCLR			
204139	NMSBC02	SRM SHORT PERIOD	ALARM			
204141	NMSBC02	SRM SHORT PERIOD	ALMCLR			
~~204147~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	ALARM			
204153	NMSBC02	SRM SHORT PERIOD	ALMCLR			
204203	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
~~204204~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	NORMAL			
204215	NMSBC02	SRM SHORT PERIOD	ALARM			
204220	NMSBC02	SRM SHORT PERIOD	ALMCLR			
~~204222~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	ALARM			
204224	NMSBC02	SRM SHORT PERIOD	ALMCLR			
204229	NMSBC02	SRM SHORT PERIOD	ALARM			
~~204230~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	ALMCLR			

204234	ABMPA02	AUX BLR STM HDR PRESS	OK	120.92	120.00	PSIG
204237	NMSBC02	SRM SHORT PERIOD	ALMCLR			
~~204313~~	~~ABMPA01~~	~~AUX BLR DEAR INL PRESS~~	OK	2.69	2.50	PSIG
204314	NMSBC02	SRM SHORT PERIOD	ALARM			
204317	NMSBC02	SRM SHORT PERIOD	ALMCLR			
~~204318~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~INOP~~			
204319	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
204326	NMSBC02	SRM SHORT PERIOD	ALARM			
~~204330~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	ALMCLR			
204342	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
204343	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
204345	NMSBC02	SRM SHORT PERIOD	ALARM			
204346	NMSBC02	SRM SHORT PERIOD	ALMCLR			
204359	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
204400	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
204401	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
204402	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
~~204403~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	INOP			
204404	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
204405	NMSBC02	SRM SHORT PERIOD	ALARM			
~~204407~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	ALMCLR			
204408	NMSBC02	SRM SHORT PERIOD	ALARM			
204412	NMSBC02	SRM SHORT PERIOD	ALMCLR			
~~204416~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	~~ALARM~~			
204417	NMSBC02	SRM SHORT PERIOD	ALMCLR			

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~~204424~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	INOP			
204425	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
204445	NMSBC02	SRM SHORT PERIOD	ALARM			
~~204450~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	ALMCLR			
204528	ABMPA01	AUX BLR DEAR INL PRESS	LO	2.24	2.50	PSIG
204529	NMSBC02	SRM SHORT PERIOD	ALARM			
~~204532~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	ALMCLR			
204548	ESSPA09	4 PT HTR E4C EXTR STM PR	*LO	10.88	38.00	PSIA
204600	NMSBC02	SRM SHORT PERIOD	ALARM			
~~204606~~	~~NMSBC02~~	SRM SHORT PERIOD	ALMCLR			
204610	NMSBC02	SRM SHORT PERIOD	ALARM			
204611	NMSBC02	SRM SHORT PERIOD	ALMCLR			
~~204624~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	ALARM			
204628	NMSBC02	SRM SHORT PERIOD	ALMCLR			
204630	WTSAA01	2WTS-TK1 RECIRC WTR PH	LO	6.45	6.50	PH
~~204648~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	ALARM			
204649	NMSBC02	SRM SHORT PERIOD	ALMCLR			
204655	NMSBC02	SRM SHORT PERIOD	ALARM			
~~204656~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	ALMCLR			
204700	WTSAA01	2WTS-TK1 RECIRC WTR PH	OK	8.08	6.50	PH
204704	ABMPA01	AUX BLR DEAR INL PRESS	OK	2.61	2.50	PSIG
~~204707~~	~~HVHBC04~~	~~VENT HOT WTR HTG SYS~~	TRBL			
204709	NMSBC02	SRM SHORT PERIOD	ALARM			
204711	HVHBC04	VENT HOT WTR HTG SYS	NORMAL			
~~204711~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	INOP			
204712	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
204717	NMSBC02	SRM SHORT PERIOD	ALMCLR			
~~204721~~	~~ABFBC04~~	~~AUX BLR SYS 2CES-IPNL508~~	TRBL			
204727	NMSBC02	SRM SHORT PERIOD	ALARM			
204728	ABFBC04	AUX BLR SYS 2CES-IPNL508	NORMAL			
~~204729~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	ALMCLR			

204752	NMSBC02	SRM SHORT PERIOD	ALMCLR			
~~204800~~	~~WTSAA01~~	~~2WTS-TK1 RECIRC WTR PH~~	~~LO~~	~~3.77~~	6.50	PH
204806	NMSBC02	SRM SHORT PERIOD	ALARM			
204815	NMSBC02	SRM SHORT PERIOD	ALMCLR			
~~204819~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	INOP			
204820	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
204826	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
204827	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
204828	ABMPA01	AUX BLR DEAR INL PRESS	OK	7.10	7.50	PSIG
204830	WTSAA01	2WTS-TK1 RECIRC WTR PH	OK	6.63	6.50	PH
204833	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
204834	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
204845	NMSBC02	SRM SHORT PERIOD	ALARM			
~~204852~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	~~ALMCLR~~			
204853	ABMPA01	AUX BLR DEAR INL PRESS	LO	1.95	2.50	PSIG
204857	TMEPA01	GLAND SLSTM SUPLY PRESS	HI	60.06	60.00	PSIG
~~204903~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	ALARM			
204905	NMSBC02	SRM SHORT PERIOD	ALMCLR			
204910	NMSBC02	SRM SHORT PERIOD	ALARM			
~~204916~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	~~ALMCLR~~			
204917	NMSBC02	SRM SHORT PERIOD	ALARM			

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~~204920~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	ALMCLR			
204923	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
204924	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
~~204932~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	INOP			
204933	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
204946	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
~~204947~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	NORMAL			
205001	ESSPA07A	HTR 4A PRESS	*LO	12.8	14.0	PSIA
205001	ESSPA09A	HTR 4C PRESS	*LO	10.6	14.0	PSIA
~~205036~~	~~HVCMA04~~	~~RELAY ROOM HMDT MT8B~~	OK	49.12	50.00	%RH
205042	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
205043	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
~~205045~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~INOP~~			
205046	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
205047	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
~~205048~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	NORMAL			
205049	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
205050	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
~~205054~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	~~ALARM~~			
205057	NMSBC02	SRM SHORT PERIOD	ALMCLR			
205107	NMSBC02	SRM SHORT PERIOD	ALARM			
~~205111~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	ALMCLR			
205111	ASSPA03	CLN STM RCBLR STM PRESS	LO	69.41	70.00	PSIG
205142	FWSTA05	6PT HTR 2FWS-E5B OUT TMP	*LO	281.65	324.00	DEG F
~~205142~~	~~TMEPA01~~	~~GLAND SLSTM SUPLY PRESS~~	OK	59.18	60.00	PSIG
205155	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
205156	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
~~205159~~	~~GMHAC07~~	~~STTR CLG WTR TK VENT H2~~	HIGH			
205200	HVRTA01	RB VENT SUPPLY AIR TEMP	HI	L*******	L*******	DEG F
205202	GMHAC07	STTR CLG WTR TK VENT H2	NORMAL			
~~205207~~	~~CNSPA01~~	~~CND XFR PUMP HDR FLOW~~	LO	293.84	300.00	GPM
205212	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
205213	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
~~205215~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	INOP			
205216	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			

~~205242~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	~~ALMCLR~~			
205255	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
205255	NMSBC02	SRM SHORT PERIOD	ALARM			
205256	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
205259	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
205300	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
205300	NMSBC02	SRM SHORT PERIOD	ALMCLR			
205300	WTSAA01	2WTS-TK1 RECIRC WTR PH	LO	3.61	6.50	PH
205303	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
~~205304~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~NORMAL~~			
205305	NMSBC02	SRM SHORT PERIOD	ALARM			
205306	NMSBC02	SRM SHORT PERIOD	ALMCLR			
~~205323~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	~~ALARM~~			
205324	NMSBC02	SRM SHORT PERIOD	ALMCLR			
205330	WTSAA01	2WTS-TK1 RECIRC WTR PH	*LO	1.89	6.50	PH
~~205337~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~INOP~~			
205338	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			

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~~205339~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~INOP~~			
205341	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
205342	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
~~205343~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~NORMAL~~			
205346	ASSPA03	CLN STM RCBLR STM PRESS	*LO	63.52	70.00	PSIG
205357	GMHAC07	STTR CLG WTR TK VENT H2	HIGH			
~~205400~~	~~HVRTA01~~	~~RB VENT SUPPLY AIR TEMP~~	~~*HIL*******L*******~~			~~DEG F~~
205400	WTSAA01	2WTS-TK1 RECIRC WTR PH	*LO	3.72	6.50	PH
205401	GMHAC07	STTR CLG WTR TK VENT H2	NORMAL			
~~205414~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	~~ALARM~~			
205421	NMSBC02	SRM SHORT PERIOD	ALMCLR			
205426	ASSPA03	CLN STM RCBLR STM PRESS	*LO	60.82	70.00	PSIG
~~205427~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~INOP~~			
205428	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
205430	FWSLC01	REACTOR WTR LEVEL HI/LO	ALMCLR			
~~205430~~	~~WTSAA01~~	~~2WTS-TK1 RECIRC WTR PH~~	~~*LO~~	~~6.29~~	~~6.50~~	~~PH~~
205438	NMSBC02	SRM SHORT PERIOD	ALARM			
205439	NMSBC02	SRM SHORT PERIOD	ALMCLR			
~~205443~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	~~ALARM~~			
205448	NMSBC02	SRM SHORT PERIOD	ALMCLR			
205449	NMSBC02	SRM SHORT PERIOD	ALARM			
~~205450~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	~~ALMCLR~~			
205451	NMSBC02	SRM SHORT PERIOD	ALARM			
205453	NMSBC02	SRM SHORT PERIOD	ALMCLR			
~~205500~~	~~WTSAA01~~	~~2WTS-TK1 RECIRC WTR PH~~	~~*LO~~	~~2.94~~	~~6.50~~	~~PH~~
205505	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
205506	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
~~205514~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~INOP~~			
205515	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
205516	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
~~205516~~	~~ASSPA03~~	~~CLN STM RCBLR STM PRESS~~	~~*LO~~	~~57.45~~	~~70.00~~	~~PSIG~~
205517	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
205529	NMSBC02	SRM SHORT PERIOD	ALARM			
~~205530~~	~~HVRTA01~~	~~RB VENT SUPPLY AIR TEMP~~	~~*HIL*******L*******~~			~~DEG F~~
205530	WTSAA01	2WTS-TK1 RECIRC WTR PH	OK	6.79	6.50	PH
205533	NMSBC02	SRM SHORT PERIOD	ALMCLR			
~~205534~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	~~ALARM~~			
205540	NMSBC02	SRM SHORT PERIOD	ALMCLR			
205551	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			

205557	NMSBC02	SRM SHORT PERIOD	ALMCLR			
205611	ASSPA03	CLN STM RCBLR STM PRESS	*LO	54.67	70.00	PSIG
205625	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
205627	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
205630	HVRTA01	RB VENT SUPPLY AIR TEMP	*HIL*******L*******			DEG F
205648	NMSBC02	SRM SHORT PERIOD	ALARM			
205651	NMSBC02	SRM SHORT PERIOD	ALMCLR			
~~205657~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	~~ALARM~~			
205658	NMSBC02	SRM SHORT PERIOD	ALMCLR			
205703	NMSBC02	SRM SHORT PERIOD	ALARM			
~~205711~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	ALMCLR			
205715	NMSBC02	SRM SHORT PERIOD	ALARM			
205716	ASSPA03	CLN STM RCBLR STM PRESS	*LO	51.79	70.00	PSIG
~~205718~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	INOP			
205719	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			

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~~205719~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	ALMCLR			
205721	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
205722	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
~~205729~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	~~ALARM~~			
205730	HVRTA01	RB VENT SUPPLY AIR TEMP	*HIL*******L*******			DEG F
205730	WTSAA01	2WTS-TK1 RECIRC WTR PH	LO	5.98	6.50	PH
~~205731~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	ALMCLR			
205736	HVCMA04	RELAY ROOM HMDT MT8B	HI	50.62	50.00	%RH
205800	WTSAA01	2WTS-TK1 RECIRC WTR PH	*LO	4.44	6.50	PH
~~205803~~	~~ASSPC06~~	~~CLN STM REBLR INL STM PR~~	H/L			
205821	ASSPA03	CLN STM RCBLR STM PRESS	*LO	48.60	70.00	PSIG
205827	NMSBC02	SRM SHORT PERIOD	ALARM			
~~205830~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	ALMCLR			
205830	HVRTA01	RB VENT SUPPLY AIR TEMP	*HIL*******L*******			DEG F
205830	WTSAA01	2WTS-TK1 RECIRC WTR PH	*LO	1.67	6.50	PH
~~205831~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	ALARM			
205842	NMSBC02	SRM SHORT PERIOD	ALMCLR			
205849	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
~~205850~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	NORMAL			
205900	WTSAA01	2WTS-TK1 RECIRC WTR PH	OK	8.15	6.50	PH
205907	SFCBC07	SFP CLEANUP SYS IPNL141	TRBL			
~~205915~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	INOP			
205916	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
205918	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
~~205919~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~NORMAL~~			
205926	ASSPA03	CLN STM RCBLR STM PRESS	*LO	45.49	70.00	PSIG
205930	HVRTA01	RB VENT SUPPLY AIR TEMP	*HIL*******L*******			DEG F
~~205930~~	~~WTSAA01~~	~~2WTS-TK1 RECIRC WTR PH~~	LO	5.92	6.50	PH
205931	NMSBC02	SRM SHORT PERIOD	ALARM			
205932	NMSBC02	SRM SHORT PERIOD	ALMCLR			
~~205944~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	INOP			
205945	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
205945	NMSBC02	SRM SHORT PERIOD	ALARM			
~~205946~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	ALMCLR			
210000	WTSAA01	2WTS-TK1 RECIRC WTR PH	OK	8.16	6.50	PH
210002	ASSPA03	CLN STM RCBLR STM PRESS	*LO	42.71	70.00	PSIG
~~210002~~	~~ESSPA07A~~	~~HTR 4A PRESS~~	*LO	13.6	14.0	PSIA
210002	ESSPA09A	HTR 4C PRESS	*LO	11.6	14.0	PSIA
210002	FWSPA04A	FW PRESS LOOP A	*LO	51.7	220.0	PSIG
~~210002~~	~~FWSPA05A~~	~~FW PRESS LOOP B~~	*LO	60.1	220.0	PSIG
210021	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
[illegible]	HVKBC09	DIV1 CB CHILLED WTR SYS	[illegible]			

210033 HVKBC09 DIV1 CB CHILLED WTR SYS NORMAL
210035 NMSBC02 SRM SHORT PERIOD ALARM
210036 NMSBC02 SRM SHORT PERIOD ALMCLR
210037 CCPFC01 RBCLCW TO RWCU FLO HIGH
~~210038 CCPFC01 RBCLCW TO RWCU FLO NORMAL~~
210039 NMSBC02 SRM SHORT PERIOD ALARM
210042 NMSBC02 SRM SHORT PERIOD ALMCLR
~~210047 NMSBC02 SRM SHORT PERIOD ALARM~~
210050 NMSBC02 SRM SHORT PERIOD ALMCLR
210051 NMSBC02 SRM SHORT PERIOD ALARM
~~210054 HVKBC09 DIV1 CB CHILLED WTR SYS INOP~~
210055 HVKBC09 DIV1 CB CHILLED WTR SYS NORMAL

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~~210100 NMSBC02 SRM SHORT PERIOD ALMCLR~~
210111 ASSPA03 CLN STM RCBLR STM PRESS *LO 39.30 70.00 PSIG
210119 HVKBC09 DIV1 CB CHILLED WTR SYS INOP
~~210120 DFTBC30 TB FLR DRN SYSTEM ALMCLR~~
210120 DFTXC22 TB FLR SMP 3/1A-1F LK RT NORMAL
210120 DFMBC14 AUX BLR FLR DRN SYS ALMCLR
~~210120 HVKBC09 DIV1 CB CHILLED WTR SYS NORMAL~~
210130 HVRTA01 RB VENT SUPPLY AIR TEMP *HIL*******L******* DEG F
210130 WTSAA01 2WTS-TK1 RECIRC WTR PH LO 6.17 6.50 PH
~~210132 CNSPA01 CND XFR PUMP HDR FLOW OK 309.86 300.00 GPM~~
210138 HVKBC09 DIV1 CB CHILLED WTR SYS INOP
210139 HVKBC09 DIV1 CB CHILLED WTR SYS NORMAL
~~210141 ASSPA03 CLN STM RCBLR STM PRESS *LO 36.49 70.00 PSIG~~
210150 NMSBC02 SRM SHORT PERIOD ALARM
210158 HVKBC09 DIV1 CB CHILLED WTR SYS INOP
~~210159 HVKBC09 DIV1 CB CHILLED WTR SYS NORMAL~~
210159 NMSBC02 SRM SHORT PERIOD ALMCLR
210200 HVRTA01 RB VENT SUPPLY AIR TEMP *HIL*******L******* DEG F
~~210200 WTSAA01 2WTS-TK1 RECIRC WTR PH OK 8.17 6.50 PH~~
210209 HVKBC09 DIV1 CB CHILLED WTR SYS INOP
210210 HVKBC09 DIV1 CB CHILLED WTR SYS NORMAL
~~210216 NMSBC02 SRM SHORT PERIOD ALARM~~
210219 NMSBC02 SRM SHORT PERIOD ALMCLR
210220 HVKBC09 DIV1 CB CHILLED WTR SYS INOP
~~210221 HVKBC09 DIV1 CB CHILLED WTR SYS NORMAL~~
210246 ASSPA03 CLN STM RCBLR STM PRESS *LO 33.64 70.00 PSIG
210247 HVKBC09 DIV1 CB CHILLED WTR SYS INOP
~~210247 NMSBC02 SRM SHORT PERIOD ALARM~~
210248 HVKBC09 DIV1 CB CHILLED WTR SYS NORMAL
210250 NMSBC02 SRM SHORT PERIOD ALMCLR
~~210251 NMSBC02 SRM SHORT PERIOD ALARM~~
210254 NMSBC02 SRM SHORT PERIOD ALMCLR
210300 HVRTA01 RB VENT SUPPLY AIR TEMP *HIL*******L******* DEG F
~~210314 NMSBC02 SRM SHORT PERIOD ALARM~~
210317 NMSBC02 SRM SHORT PERIOD ALMCLR
210319 NMSBC02 SRM SHORT PERIOD ALARM
~~210323 NMSBC02 SRM SHORT PERIOD ALMCLR~~
210325 HVKBC09 DIV1 CB CHILLED WTR SYS INOP
210326 HVKBC09 DIV1 CB CHILLED WTR SYS NORMAL
~~210326 ASSPA03 CLN STM RCBLR STM PRESS *LO 30.67 70.00 PSIG~~
210352 GMHAC07 STTR CLG WTR TK VENT H2 HIGH
210355 GMHAC07 STTR CLG WTR TK VENT H2 NORMAL
210400 HVRTA01 RB VENT SUPPLY AIR TEMP *HIL*******L******* DEG F
210402 ASSPA03 CLN STM RCBLR STM PRESS *LO 27.56 70.00 PSIG
[illegible]

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210439 NMSBC02  SRM SHORT PERIOD             ALARM
210442 NMSBC02  SRM SHORT PERIOD             ALMCLR
210442 HDLTA04  4PT HTR 2CNM-E4A DRN TMP *LO  155.46   245.00 DEG F
210500 WTSAA01  2WTS-TK1 RECIRC WTR PH   LO     5.79     6.50 PH
210504 NMSBC02  SRM SHORT PERIOD             ALARM
210505 NMSBC02  SRM SHORT PERIOD             ALMCLR
210511 HVKBC09  DIV1 CB CHILLED WTR SYS      INOP
210512 HVKBC09  DIV1 CB CHILLED WTR SYS      NORMAL
210530 HVRTA01  RB VENT SUPPLY AIR TEMP  *HIL*******L******* DEG F

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210530 WTSAA01  2WTS-TK1 RECIRC WTR PH   OK     8.03     6.50 PH
210540 HVKBC09  DIV1 CB CHILLED WTR SYS      INOP
210541 HVKBC09  DIV1 CB CHILLED WTR SYS      NORMAL
210551 ASSPA03  CLN STM RCBLR STM PRESS  *LO   24.34    70.00 PSIG
210600 HVRTA01  RB VENT SUPPLY AIR TEMP  *HIL*******L******* DEG F
210600 WTSAA01  2WTS-TK1 RECIRC WTR PH   LO     5.70     6.50 PH
210612 DSRTA10  SCAV STM TMP TO 2FWS-ECC LO   199.90   200.00 DEG F
210627 NMSBC02  SRM SHORT PERIOD             ALARM
210628 CNDBC01  2CND-IPNL287 SYS TROUBLE TRBL
210629 NMSBC02  SRM SHORT PERIOD             ALMCLR
210630 HVRTA01  RB VENT SUPPLY AIR TEMP  *HIL*******L******* DEG F
210630 WTSAA01  2WTS-TK1 RECIRC WTR PH   OK     7.38     6.50 PH
210631 ASSPA03  CLN STM RCBLR STM PRESS  *LO   21.56    70.00 PSIG
210637 CNDBC01  2CND-IPNL287 SYS TROUBLE ALMCLR
210641 CNDBC01  2CND-IPNL287 SYS TROUBLE TRBL
210651 CNDBC01  2CND-IPNL287 SYS TROUBLE ALMCLR
210656 ABFBC04  AUX BLR SYS 2CES-IPNL508 TRBL
210656 HVKBC09  DIV1 CB CHILLED WTR SYS      INOP
210657 HVKBC09  DIV1 CB CHILLED WTR SYS      NORMAL
210700 FWSTA04  6PT HTR 2FWS-E5A OUT TMP *LO  302.91   324.00 DEG F
210700 HVRTA01  RB VENT SUPPLY AIR TEMP  *HIL*******L******* DEG F
210711 ABFBC04  AUX BLR SYS 2CES-IPNL508 NORMAL
210721 HVKBC09  DIV1 CB CHILLED WTR SYS      INOP
210722 HVKBC09  DIV1 CB CHILLED WTR SYS      NORMAL
210729 NMSBC02  SRM SHORT PERIOD             ALARM
210730 NMSBC02  SRM SHORT PERIOD             ALMCLR
210732 NMSBC02  SRM SHORT PERIOD             ALARM
210735 NMSBC02  SRM SHORT PERIOD             ALMCLR
210746 NMSBC02  SRM SHORT PERIOD             ALARM
210748 NMSBC02  SRM SHORT PERIOD             ALMCLR
210800 HVRTA01  RB VENT SUPPLY AIR TEMP  *HIL*******L******* DEG F
210803 NMSBC02  SRM SHORT PERIOD             ALARM
210806 NMSBC02  SRM SHORT PERIOD             ALMCLR
210807 NMSBC02  SRM SHORT PERIOD             ALARM
210808 NMSBC02  SRM SHORT PERIOD             ALMCLR
210830 HVRTA01  RB VENT SUPPLY AIR TEMP  *HIL*******L******* DEG F
210845 NMSBC02  SRM SHORT PERIOD             ALARM
210847 NMSBC02  SRM SHORT PERIOD             ALMCLR
210900 NMSBC02  SRM SHORT PERIOD             ALARM
210900 HVRTA01  RB VENT SUPPLY AIR TEMP  *HIL*******L******* DEG F
210902 NMSBC02  SRM SHORT PERIOD             ALMCLR
210907 NMSBC02  SRM SHORT PERIOD             ALARM
210911 ASSPA03  CLN STM RCBLR STM PRESS  *LO   18.64    70.00 PSIG
210914 NMSBC02  SRM SHORT PERIOD             ALMCLR
210940 DSMTA02  MSTR SEP DR TK4B DR TEMP *LO  118.12   300.00 DEG F
210942 HVCMA04  RELAY ROOM HMDT MT8B     OK    49.19    50.00 %RH
210948 NMSBC02  SRM SHORT PERIOD             ALARM
210954 NMSBC02  SRM SHORT PERIOD             ALMCLR
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211008 HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
211010 HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
211011 HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
211012 HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
211016 ASSPA03	CLN STM RCBLR STM PRESS	*LO	15.97	70.00 PSIG	

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211048 NMSBC02	SRM SHORT PERIOD	ALARM		
211050 NMSBC02	SRM SHORT PERIOD	ALMCLR		
211054 NMSBC02	SRM SHORT PERIOD	ALARM		
211100 NMSBC02	SRM SHORT PERIOD	ALMCLR		
211105 HVKBC09	DIV1 CB CHILLED WTR SYS	INOP		
211106 HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL		
211108 HVKBC09	DIV1 CB CHILLED WTR SYS	INOP		
211109 HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL		
211122 NMSBC02	SRM SHORT PERIOD	ALARM		
211129 NMSBC02	SRM SHORT PERIOD	ALMCLR		
211132 NMSBC02	SRM SHORT PERIOD	ALARM		
211134 NMSBC02	SRM SHORT PERIOD	ALMCLR		
211140 NMSBC02	SRM SHORT PERIOD	ALARM		
211144 NMSBC02	SRM SHORT PERIOD	ALMCLR		
211148 NMSBC02	SRM SHORT PERIOD	ALARM		
211153 NMSBC02	SRM SHORT PERIOD	ALMCLR		
211158 NMSBC02	SRM SHORT PERIOD	ALARM		
211202 HVKBC09	DIV1 CB CHILLED WTR SYS	INOP		
211202 NMSBC02	SRM SHORT PERIOD	ALMCLR		
211203 HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL		
211212 HVKBC09	DIV1 CB CHILLED WTR SYS	INOP		
211213 NMSBC02	SRM SHORT PERIOD	ALARM		
211214 HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL		
211214 NMSBC02	SRM SHORT PERIOD	ALMCLR		
211239 HVKBC09	DIV1 CB CHILLED WTR SYS	INOP		
211241 HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL		
211243 MSSTA08	MAIN STEAM LINE A TEMP	OK	196.69	486.00 DEG F
211301 NMSBC02	SRM SHORT PERIOD	ALARM		
211305 NMSBC02	SRM SHORT PERIOD	ALMCLR		
211313 NMSBC02	SRM SHORT PERIOD	ALARM		
211317 HVKBC09	DIV1 CB CHILLED WTR SYS	INOP		
211319 HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL		
211320 HVKBC09	DIV1 CB CHILLED WTR SYS	INOP		
211321 HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL		
211322 NMSBC02	SRM SHORT PERIOD	ALMCLR		
211330 WTSAA01	2WTS-TK1 RECIRC WTR PH	LO	3.91	6.50 PH
211337 NMSBC02	SRM SHORT PERIOD	ALARM		
211339 NMSBC02	SRM SHORT PERIOD	ALMCLR		
211348 TMITA01	EXT V UPR OUT SURF T	*LO	367.90	400.00 DEG F
211351 NMSBC02	SRM SHORT PERIOD	ALARM		
211356 HVKBC09	DIV1 CB CHILLED WTR SYS	INOP		
211357 HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL		
211358 NMSBC02	SRM SHORT PERIOD	ALMCLR		
211400 WTSAA01	2WTS-TK1 RECIRC WTR PH	OK	8.21	6.50 PH
211406 HVKBC09	DIV1 CB CHILLED WTR SYS	INOP		
211407 HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL		
211412 HVKBC09	DIV1 CB CHILLED WTR SYS	INOP		
211413 HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL		
211430 WTSAA01	2WTS-TK1 RECIRC WTR PH	LO	3.49	6.50 PH
211433 NMSBC02	SRM SHORT PERIOD	ALARM		
211436 NMSBC02	SRM SHORT PERIOD	ALMCLR		

211442	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
~~211443~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~NORMAL~~			
211443	NMSBC02	SRM SHORT PERIOD	ALMCLR			

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~~211446~~	~~ASSPA03~~	~~CLN-STM-RCBLR STM-PRESS~~	~~*LO~~	~~12.90~~	~~70.00~~	~~PSIG~~
211500	WTSAA01	2WTS-TK1 RECIRC WTR PH	OK	8.20	6.50	PH
211530	WTSAA01	2WTS-TK1 RECIRC WTR PH	LO	3.54	6.50	PH
~~211539~~	~~CWSAC02~~	~~CLG TWR BLOW-DOWN WTR PH~~	~~HIGH~~			
211539	CWSAC01	CLG TWR BLOW-DOWN WTR PH	LOW			
211549	CWSAC02	CLG TWR BLOW-DOWN WTR PH	NORMAL			
~~211549~~	~~CWSAC01~~	~~CLG TWR BLOW-DOWN WTR PH~~	~~NORMAL~~			
211554	NMSBC02	SRM SHORT PERIOD	ALARM			
211559	NMSBC02	SRM SHORT PERIOD	ALMCLR			
~~211600~~	~~WTSAA01~~	~~2WTS-TK1 RECIRC WTR PH~~	~~OK~~	~~8.21~~	~~6.50~~	~~PH~~
211621	NMSBC02	SRM SHORT PERIOD	ALARM			
211628	NMSBC02	SRM SHORT PERIOD	ALMCLR			
~~211630~~	~~FWSTA04~~	~~CPT HTR 2FWS-E6A OUT TMP~~	~~*LO~~	~~313.43~~	~~324.00~~	~~DEG F~~
211640	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
211641	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
~~211648~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	~~ALARM~~			
211652	HVCMA04	RELAY ROOM HMDT MT8B	HI	50.00	50.00	%RH
211700	NMSBC02	SRM SHORT PERIOD	ALMCLR			
~~211730~~	~~WTSAA01~~	~~2WTS-TK1 RECIRC WTR PH~~	~~LO~~	~~1.93~~	~~6.50~~	~~PH~~
211731	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
211731	NMSBC02	SRM SHORT PERIOD	ALARM			
~~211732~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~NORMAL~~			
211733	NMSBC02	SRM SHORT PERIOD	ALMCLR			
211741	NMSBC02	SRM SHORT PERIOD	ALARM			
~~211744~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	~~ALMCLR~~			
211750	ABFBC04	AUX BLR SYS 2CES-IPNL508	TRBL			
211754	NMSBC02	SRM SHORT PERIOD	ALARM			
~~211800~~	~~WTSAA01~~	~~2WTS-TK1 RECIRC WTR PH~~	~~OK~~	~~6.80~~	~~6.50~~	~~PH~~
211801	NMSBC02	SRM SHORT PERIOD	ALMCLR			
211807	NMSBC02	SRM SHORT PERIOD	ALARM			
~~211809~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	~~ALMCLR~~			
211810	NMSBC02	SRM SHORT PERIOD	ALARM			
211812	NMSBC02	SRM SHORT PERIOD	ALMCLR			
~~211814~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	~~ALARM~~			
211816	NMSBC02	SRM SHORT PERIOD	ALMCLR			
211818	ABMPA01	AUX BLR DEAR INL PRESS	OK	2.51	2.50	PSIG
~~211819~~	~~ABFBC04~~	~~AUX BLR SYS 2CES-IPNL508~~	~~NORMAL~~			
211830	WTSAA01	2WTS-TK1 RECIRC WTR PH	LO	4.22	6.50	PH
211836	NMSBC02	SRM SHORT PERIOD	ALARM			
~~211839~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	~~ALMCLR~~			
211854	NMSBC02	SRM SHORT PERIOD	ALARM			
211900	WTSAA01	2WTS-TK1 RECIRC WTR PH	OK	8.10	6.50	PH
211901	NMSBC02	SRM SHORT PERIOD	ALMCLR			
211906	NMSBC02	SRM SHORT PERIOD	ALARM			
211912	NMSBC02	SRM SHORT PERIOD	ALMCLR			
211942	HVCMA04	RELAY ROOM HMDT MT8B	*HI	53.12	50.00	%RH
212001	HVRTA01	RB VENT SUPPLY AIR TEMP	*HIL******L******			DEG F
212001	ESSPA09A	HTR 4C PRESS	*LO	13.4	14.0	PSIA
~~212001~~	~~FWSPA04A~~	~~FW PRESS LOOP A~~	~~*LO~~	~~68.2~~	~~220.0~~	~~PSIG~~
212001	FWSPA05A	FW PRESS LOOP B	*LO	76.6	220.0	PSIG
212023	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
~~212023~~	~~ABMPA01~~	~~AUX BLR DEAR INL PRESS~~	~~LO~~	~~2.17~~	~~2.50~~	~~PSIG~~
212024	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

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~~212056~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	~~ALARM~~			
212057	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
212100	WTSAA01	2WTS-TK1 RECIRC WTR PH	OK	7.94	6.50	PH
~~212104~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	~~ALMCLR~~			
212111	NMSBC02	SRM SHORT PERIOD	ALARM			
212113	NMSBC02	SRM SHORT PERIOD	ALMCLR			
~~212142~~	~~FWSTA01~~	~~6PT HTR 2FWS-E6A INL TMP~~	~~*LO~~	~~133.11~~	~~284.00~~	~~DEG F~~
212201	NMSBC02	SRM SHORT PERIOD	ALARM			
212204	ABMPA02	AUX BLR STM HDR PRESS	OK	121.06	120.00	PSIG
~~212212~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	~~ALMCLR~~			
212230	WTSAA01	2WTS-TK1 RECIRC WTR PH	LO	4.64	6.50	PH
212236	ESSTA02	6 PT HTR E6B EXTR ST TMP	*LO	192.51	325.00	DEG F
~~212300~~	~~WTSAA01~~	~~2WTS-TK1 RECIRC WTR PH~~	~~*LO~~	~~6.09~~	~~6.50~~	~~PH~~
212303	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
212304	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
~~212306~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~INOP~~			
212307	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
212330	NMSBC02	SRM SHORT PERIOD	ALARM			
~~212330~~	~~WTSAA01~~	~~2WTS-TK1 RECIRC WTR PH~~	~~OK~~	~~8.15~~	~~6.50~~	~~PH~~
212341	NMSBC02	SRM SHORT PERIOD	ALMCLR			
212348	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
~~212349~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~NORMAL~~			
212400	WTSAA01	2WTS-TK1 RECIRC WTR PH	LO	5.81	6.50	PH
212415	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
~~212416~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~NORMAL~~			
212426	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
212428	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
~~212430~~	~~WTSAA01~~	~~2WTS-TK1 RECIRC WTR PH~~	~~OK~~	~~8.17~~	~~6.50~~	~~PH~~
212435	NMSBC02	SRM SHORT PERIOD	ALARM			
212441	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
~~212442~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~NORMAL~~			
212445	ABFBC04	AUX BLR SYS 2CES-IPNL508	TRBL			
212446	NMSBC02	SRM SHORT PERIOD	ALMCLR			
~~212502~~	~~ABFBC04~~	~~AUX BLR SYS 2CES-IPNL508~~	~~NORMAL~~			
212520	NMSBC02	SRM SHORT PERIOD	ALARM			
212521	NMSBC02	SRM SHORT PERIOD	ALMCLR			
~~212530~~	~~WTSAA01~~	~~2WTS-TK1 RECIRC WTR PH~~	~~LO~~	~~5.40~~	~~6.50~~	~~PH~~
212537	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
212538	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
~~212600~~	~~WTSAA01~~	~~2WTS-TK1 RECIRC WTR PH~~	~~OK~~	~~8.00~~	~~6.50~~	~~PH~~
212603	HVHBC04	VENT HOT WTR HTG SYS	TRBL			
212639	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
212640	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
212651	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
212652	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
212652	CNSFA01	CND XFR PUMP HDR FLOW	LO	297.57	300.00	GPM
212700	WTSAA01	2WTS-TK1 RECIRC WTR PH	LO	5.16	6.50	PH
212705	HVHBC04	VENT HOT WTR HTG SYS	NORMAL			
~~212730~~	~~WTSAA01~~	~~2WTS-TK1 RECIRC WTR PH~~	~~*LO~~	~~5.68~~	~~6.50~~	~~PH~~
212746	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
212747	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
~~212800~~	~~WTSAA01~~	~~2WTS-TK1 RECIRC WTR PH~~	~~OK~~	~~6.98~~	~~6.50~~	~~PH~~
212830	WTSAA01	2WTS-TK1 RECIRC WTR PH	LO	5.67	6.50	PH
212845	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
~~212846~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~NORMAL~~			
212851	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			

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212852	HVCNA04	RELAY ROOM HMDT MTSB	OK	49.37	50.00	%RH
212853	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
212855	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
212856	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
212859	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
212900	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
212900	WTSAA01	2WTS-TK1 RECIRC WTR PH	OK	8.03	6.50	PH
212903	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
212904	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
212913	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
212914	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
212921	NMSBC02	SRM SHORT PERIOD	ALARM			
212926	NMSBC02	SRM SHORT PERIOD	ALMCLR			
212932	NMSBC02	SRM SHORT PERIOD	ALARM			
212938	NMSBC02	SRM SHORT PERIOD	ALMCLR			
212939	NMSBC02	SRM SHORT PERIOD	ALARM			
212942	NMSBC02	SRM SHORT PERIOD	ALMCLR			
212951	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
212952	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
212953	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
212954	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
212957	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
212958	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
213002	ESSPA09A	HTR 4C PRESS	OK	14.1	14.0	PSIA
213012	NMSBC02	SRM SHORT PERIOD	ALARM			
213021	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
213022	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
213026	NMSBC02	SRM SHORT PERIOD	ALMCLR			
213041	NMSBC02	SRM SHORT PERIOD	ALARM			
213047	NMSBC02	SRM SHORT PERIOD	ALMCLR			
213120	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
213124	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
213125	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
213126	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
213130	WTSAA01	2WTS-TK1 RECIRC WTR PH	LO	6.03	6.50	PH
213136	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
213137	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
213142	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
213143	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
213153	NMSBC02	SRM SHORT PERIOD	ALARM			
213159	NMSBC02	SRM SHORT PERIOD	ALMCLR			
213200	HVRTA01	RB VENT SUPPLY AIR TEMP	*HIL*******L*******			DEG F
213200	WTSAA01	2WTS-TK1 RECIRC WTR PH	*LO	4.27	6.50	PH
213207	NMSBC02	SRM SHORT PERIOD	ALARM			
213211	GMHAC07	STTR CLG WTR TK VENT H2	HIGH			
213213	NMSBC02	SRM SHORT PERIOD	ALMCLR			
213214	GMHAC07	STTR CLG WTR TK VENT H2	NORMAL			
213230	HVRTA01	RB VENT SUPPLY AIR TEMP	*HIL*******L*******			DEG F
213230	WTSAA01	2WTS-TK1 RECIRC WTR PH	*LO	6.26	6.50	PH
213236	NMSBC02	SRM SHORT PERIOD	ALARM			
213240	NMSBC02	SRM SHORT PERIOD	ALMCLR			
213247	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
213248	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
213248	NMSBC02	SRM SHORT PERIOD	ALARM			
213250	NMSBC02	SRM SHORT PERIOD	ALMCLR			
213300	HVRTA01	RB VENT SUPPLY AIR TEMP	*HIL*******L*******			DEG F

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213300	WTSAA01	2WTS-TK1 RECIRC WTR PH	*LO	4.05	6.50	PH
213313	NMSBC02	SRM SHORT PERIOD	ALARM			
213328	NMSBC02	SRM SHORT PERIOD	ALMCLR			
213330	WTSAA01	2WTS-TK1 RECIRC WTR PH	OK	8.20	6.50	PH
213343	IHSBC01	SPDS PARAMETER ALARM	NORMAL			
213400	HVRTA01	RB VENT SUPPLY AIR TEMP	*HIL*******L*******			DEG F
213401	NMSBC02	SRM SHORT PERIOD	ALARM			
213406	NMSBC02	SRM SHORT PERIOD	ALMCLR			
213410	NMSBC02	SRM SHORT PERIOD	ALARM			
213414	FWSLC01	REACTOR WTR LEVEL HI/LO	H/L			
213415	NMSBC02	SRM SHORT PERIOD	ALMCLR			
213420	NMSBC02	SRM SHORT PERIOD	ALARM			
213423	NMSBC02	SRM SHORT PERIOD	ALMCLR			
213428	ABMPA01	AUX BLR DEAR INL PRESS	OK	2.60	2.50	PSIG
213430	HVRTA01	RB VENT SUPPLY AIR TEMP	*HIL*******L*******			DEG F
213430	WTSAA01	2WTS-TK1 RECIRC WTR PH	LO	6.33	6.50	PH
213445	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
213446	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
213448	NMSBC02	SRM SHORT PERIOD	ALARM			
213454	NMSBC02	SRM SHORT PERIOD	ALMCLR			
213500	HVRTA01	RB VENT SUPPLY AIR TEMP	*HIL*******L*******			DEG F
213500	WTSAA01	2WTS-TK1 RECIRC WTR PH	*LO	3.88	6.50	PH
213506	FWSLC01	REACTOR WTR LEVEL HI/LO	ALMCLR			
213529	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
213530	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
213530	NMSBC02	SRM SHORT PERIOD	ALARM			
213530	WTSAA01	2WTS-TK1 RECIRC WTR PH	OK	8.06	6.50	PH
213536	NMSBC02	SRM SHORT PERIOD	ALMCLR			
213555	NMSBC02	SRM SHORT PERIOD	ALARM			
213557	NMSBC02	SRM SHORT PERIOD	ALMCLR			
213557	CNMPA07	RX FD WTR PMP 1C SUCT PR	*LO	69.60	230.00	PSIG
213600	HVRTA01	RB VENT SUPPLY AIR TEMP	*HIL*******L*******			DEG F
213600	WTSAA01	2WTS-TK1 RECIRC WTR PH	LO	3.63	6.50	PH
213619	NMSBC02	SRM SHORT PERIOD	ALARM			
213626	NMSBC02	SRM SHORT PERIOD	ALMCLR			
213629	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
213630	HVRTA01	RB VENT SUPPLY AIR TEMP	*HIL*******L*******			DEG F
213630	WTSAA01	2WTS-TK1 RECIRC WTR PH	OK	8.21	6.50	PH
213631	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
213634	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
213635	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
213656	DFTBC30	TB FLR DRN SYSTEM	TRBL			
213656	HVCMA04	RELAY ROOM HMDT MT8B	HI	50.12	50.00	%RH
213700	WTSAA01	2WTS-TK1 RECIRC WTR PH	LO	1.45	6.50	PH
213704	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
213705	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
213709	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
213710	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
213712	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
213713	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
213730	HVRTA01	RB VENT SUPPLY AIR TEMP	*HIL*******L*******			DEG F
213730	WTSAA01	2WTS-TK1 RECIRC WTR PH	OK	6.72	6.50	PH
213753	NMSBC02	SRM SHORT PERIOD	ALARM			
213755	NMSBC02	SRM SHORT PERIOD	ALMCLR			
213800	HVRTA01	RB VENT SUPPLY AIR TEMP	*HIL*******L*******			DEG F
213805	SWPBC18	SW FV54A HYD UNT ACC PR	LOW			

213806	NMSBC02	SRM SHORT PERIOD	ALARM			
213815	NMSBC02	SRM SHORT PERIOD	ALMCLR			
213816	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
213817	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
213821	NMSBC02	SRM SHORT PERIOD	ALARM			
213824	NMSBC02	SRM SHORT PERIOD	ALMCLR			
213826	CNDBC01	2CND-IPNL287 SYS TROUBLE	TRBL			
213828	CNDBC01	2CND-IPNL287 SYS TROUBLE	ALMCLR			
213842	CNSFA01	CND XFR PUMP HDR FLOW	OK	312.39	300.00	GPM
213849	GMHAC07	STTR CLG WTR TK VENT H2	HIGH			
213850	GMHAC07	STTR CLG WTR TK VENT H2	NORMAL			
213900	HVRTA01	RB VENT SUPPLY AIR TEMP	*HIL*******L*******			DEG F
213902	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
213903	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
213910	NMSBC02	SRM SHORT PERIOD	ALARM			
213918	ABMPA01	AUX BLR DEAR INL PRESS	LO	2.49	2.50	PSIG
213920	NMSBC02	SRM SHORT PERIOD	ALMCLR			
213922	NMSBC02	SRM SHORT PERIOD	ALARM			
213925	NMSBC02	SRM SHORT PERIOD	ALMCLR			
213939	NMSBC02	SRM SHORT PERIOD	ALARM			
213942	NMSBC02	SRM SHORT PERIOD	ALMCLR			
213943	NMSBC02	SRM SHORT PERIOD	ALARM			
213945	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
213946	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
213948	NMSBC02	SRM SHORT PERIOD	ALMCLR			
213950	NMSBC02	SRM SHORT PERIOD	ALARM			
213952	NMSBC02	SRM SHORT PERIOD	ALMCLR			
214001	HVRTA01	RB VENT SUPPLY AIR TEMP	*HIL*******L*******			DEG F
214004	NMSBC02	SRM SHORT PERIOD	ALARM			
214006	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
214007	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
214009	NMSBC02	SRM SHORT PERIOD	ALMCLR			
214052	NMSBC02	SRM SHORT PERIOD	ALARM			
214057	NMSBC02	SRM SHORT PERIOD	ALMCLR			
214100	HVRTA01	RB VENT SUPPLY AIR TEMP	*HIL*******L*******			DEG F
214100	WTSAA01	2WTS-TK1 RECIRC WTR PH	LO	3.62	6.50	PH
214113	NMSBC02	SRM SHORT PERIOD	ALARM			
214122	CWSAC02	CLG TWR BLOW-DOWN WTR PH	HIGH			
214122	CWSAC01	CLG TWR BLOW-DOWN WTR PH	LOW			
214124	NMSBC02	SRM SHORT PERIOD	ALMCLR			
214125	SWPBC18	SW FV54A HYD UNT ACC PR	NORMAL			
214128	NMSBC02	SRM SHORT PERIOD	ALARM			
214130	WTSAA01	2WTS-TK1 RECIRC WTR PH	*LO	1.78	6.50	PH
214131	CWSAC02	CLG TWR BLOW-DOWN WTR PH	NORMAL			
214131	CWSAC01	CLG TWR BLOW-DOWN WTR PH	NORMAL			
214133	NMSBC02	SRM SHORT PERIOD	ALMCLR			
214134	ABMPA01	AUX BLR DEAR INL PRESS	OK	2.60	2.50	PSIG
214137	NMSBC02	SRM SHORT PERIOD	ALARM			
214138	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
214139	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
214141	NMSBC02	SRM SHORT PERIOD	ALMCLR			
214200	WTSAA01	2WTS-TK1 RECIRC WTR PH	*LO	3.87	6.50	PH
214204	NMSBC02	SRM SHORT PERIOD	ALARM			
214211	NMSBC02	SRM SHORT PERIOD	ALMCLR			
214218	NMSBC02	SRM SHORT PERIOD	ALARM			
214223	NMSBC02	SRM SHORT PERIOD	ALMCLR			

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214238	NMSBC02	SRM SHORT PERIOD	ALARM			
~~214240~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	~~ALMCLR~~			
214244	NMSBC02	SRM SHORT PERIOD	ALARM			
214248	CNSFA01	CND XFR PUMP HDR FLOW	LO	293.57	300.00	GPM
~~214253~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	~~ALMCLR~~			
214256	NMSBC02	SRM SHORT PERIOD	ALARM			
214300	WTSAA01	2WTS-TK1 RECIRC WTR PH	LO	4.00	6.50	PH
~~214301~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	~~ALMCLR~~			
214330	WTSAA01	2WTS-TK1 RECIRC WTR PH	OK	6.50	6.50	PH
214430	WTSAA01	2WTS-TK1 RECIRC WTR PH	LO	6.35	6.50	PH
~~214432~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~INOP~~			
214433	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
214437	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
~~214440~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~NORMAL~~			
214500	HVRTA01	RB VENT SUPPLY AIR TEMP	*HIL*******L*******			DEG F
214500	WTSAA01	2WTS-TK1 RECIRC WTR PH	*LO	2.88	6.50	PH
~~214520~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~INOP~~			
214521	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
214530	HVRTA01	RB VENT SUPPLY AIR TEMP	*HIL*******L*******			DEG F
~~214530~~	~~WTSAA01~~	~~2WTS-TK1 RECIRC WTR PH~~	~~*LO~~	~~2.15~~	~~6.50~~	~~PH~~
214600	WTSAA01	2WTS-TK1 RECIRC WTR PH	*LO	4.79	6.50	PH
214601	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
~~214602~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~NORMAL~~			
214630	HVRTA01	RB VENT SUPPLY AIR TEMP	*HIL*******L*******			DEG F
214630	WTSAA01	2WTS-TK1 RECIRC WTR PH	*LO	1.30	6.50	PH
~~214638~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~INOP~~			
214639	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
214640	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
~~214641~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~NORMAL~~			
214700	WTSAA01	2WTS-TK1 RECIRC WTR PH	*LO	4.79	6.50	PH
214721	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
~~214722~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~NORMAL~~			
214730	HVRTA01	RB VENT SUPPLY AIR TEMP	*HIL*******L*******			DEG F
214730	WTSAA01	2WTS-TK1 RECIRC WTR PH	*LO	1.30	6.50	PH
~~214757~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~INOP~~			
214758	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
214759	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
~~214800~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~NORMAL~~			
214800	WTSAA01	2WTS-TK1 RECIRC WTR PH	*LO	4.88	6.50	PH
214802	NMSBC02	SRM SHORT PERIOD	ALARM			
214805	NMSBC02	SRM SHORT PERIOD	ALMCLR			
214814	NMSBC02	SRM SHORT PERIOD	ALARM			
214816	NMSBC02	SRM SHORT PERIOD	ALMCLR			
214825	NMSBC02	SRM SHORT PERIOD	ALARM			
214830	WTSAA01	2WTS-TK1 RECIRC WTR PH	*LO	1.57	6.50	PH
214836	NMSBC02	SRM SHORT PERIOD	ALMCLR			
~~214849~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~INOP~~			
214851	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
214854	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
~~214855~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~NORMAL~~			
214900	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
214900	WTSAA01	2WTS-TK1 RECIRC WTR PH	*LO	5.16	6.50	PH
~~214901~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~NORMAL~~			
214906	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			

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~~214907~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~NORMAL~~
214909	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP

214917	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
~~214918~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~NORMAL~~			
214927	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
214928	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
~~214929~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~INOP~~			
214930	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
214930	WTSAA01	2WTS-TK1 RECIRC WTR PH	*LO	5.40	6.50	PH
~~214931~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~INOP~~			
214932	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
214936	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
~~214938~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~NORMAL~~			
214943	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
214944	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
~~214949~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~INOP~~			
214950	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
215000	WTSAA01	2WTS-TK1 RECIRC WTR PH	OK	8.17	6.50	PH
~~215003~~	~~FWSPA04A~~	~~FW-PRESS LOOP A~~	*LO	77.8	220.0	PSIG
215008	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
215009	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
~~215016~~	~~HVGHA04~~	~~RELAY ROOM HHDT NT8B~~	~~OK~~	48.69	50.00	*RH
215021	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
215022	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
~~215030~~	~~WTSAA01~~	~~2WTS-TK1 RECIRC WTR PH~~	LO	5.15	6.50	PH
215053	ABMPA01	AUX BLR DEAR INL PRESS	LO	2.47	2.50	PSIG
215108	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
~~215108~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	~~ALARM~~			
215109	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
215111	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
~~215112~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	NORMAL			
215119	NMSBC02	SRM SHORT PERIOD	ALMCLR			
215130	WTSAA01	2WTS-TK1 RECIRC WTR PH	*LO	4.95	6.50	PH
~~215155~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~INOP~~			
215156	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
215200	WTSAA01	2WTS-TK1 RECIRC WTR PH	OK	8.18	6.50	PH
~~215202~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	INOP			
215203	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
215209	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
215210	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
215230	WTSAA01	2WTS-TK1 RECIRC WTR PH	LO	4.78	6.50	PH
215249	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
215251	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
215300	WTSAA01	2WTS-TK1 RECIRC WTR PH	*LO	5.74	6.50	PH
215323	ABMPA02	AUX BLR STM HDR PRESS	LO	119.83	120.00	PSIG
~~215330~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	ALARM			
215330	WTSAA01	2WTS-TK1 RECIRC WTR PH	*LO	4.38	6.50	PH
215335	NMSBC02	SRM SHORT PERIOD	ALMCLR			
~~215342~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	ALARM			
215345	NMSBC02	SRM SHORT PERIOD	ALMCLR			
215354	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
~~215355~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	NORMAL			
215400	WTSAA01	2WTS-TK1 RECIRC WTR PH	OK	8.00	6.50	PH

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~~215430~~	~~WTSAA01~~	~~2WTS-TK1 RECIRC WTR PH~~	LO	5.10	6.50	PH
215431	NMSBC02	SRM SHORT PERIOD	ALARM			
215435	ESSTA16	5 PT HTR E5A EXTR ST TMP	*LO	141.37	280.00	DEG F
~~215436~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	INOP			
215437	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			

215510	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
215511	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
215512	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
215513	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
215530	WTSAA01	2WTS-TK1 RECIRC WTR PH	OK	7.22	6.50	PH
215536	HVCMA04	RELAY ROOM HMDT MT8B	HI	50.25	50.00	%RH
215541	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
215542	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
215558	NMSBC02	SRM SHORT PERIOD	ALARM			
215600	WTSAA01	2WTS-TK1 RECIRC WTR PH	LO	2.02	6.50	PH
215612	NMSBC02	SRM SHORT PERIOD	ALMCLR			
215627	NMSBC02	SRM SHORT PERIOD	ALARM			
215630	WTSAA01	2WTS-TK1 RECIRC WTR PH	*LO	1.50	6.50	PH
215631	NMSBC02	SRM SHORT PERIOD	ALMCLR			
215632	NMSBC02	SRM SHORT PERIOD	ALARM			
215634	NMSBC02	SRM SHORT PERIOD	ALMCLR			
215642	HDLTA20	2PT HTR DCL2B DISCH TEMP	LO	93.87	94.00	DEG F
215700	WTSAA01	2WTS-TK1 RECIRC WTR PH	*LO	6.16	6.50	PH
215710	NMSBC02	SRM SHORT PERIOD	ALARM			
215722	NMSBC02	SRM SHORT PERIOD	ALMCLR			
215725	NMSBC02	SRM SHORT PERIOD	ALARM			
215726	NMSBC02	SRM SHORT PERIOD	ALMCLR			
215730	WTSAA01	2WTS-TK1 RECIRC WTR PH	*LO	1.49	6.50	PH
215733	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
215734	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
215738	ESSTA03	6 PT HTR E6C EXTR ST TMP	*LO	148.41	325.00	DEG F
215759	NMSBC02	SRM SHORT PERIOD	ALARM			
215800	WTSAA01	2WTS-TK1 RECIRC WTR PH	*LO	1.99	6.50	PH
215801	NMSBC02	SRM SHORT PERIOD	ALMCLR			
215804	NMSBC02	SRM SHORT PERIOD	ALARM			
215808	NMSBC02	SRM SHORT PERIOD	ALMCLR			
215810	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
215811	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
215814	NMSBC02	SRM SHORT PERIOD	ALARM			
215819	NMSBC02	SRM SHORT PERIOD	ALMCLR			
215830	WTSAA01	2WTS-TK1 RECIRC WTR PH	OK	8.08	6.50	PH
215834	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
215835	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
215836	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
215837	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
215856	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
215857	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
215904	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
215905	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
215911	NMSBC02	SRM SHORT PERIOD	ALARM			
215915	NMSBC02	SRM SHORT PERIOD	ALMCLR			
215919	NMSBC02	SRM SHORT PERIOD	ALARM			

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215925	NMSBC02	SRM SHORT PERIOD	ALMCLR			
215930	NMSBC02	SRM SHORT PERIOD	ALARM			
215930	WTSAA01	2WTS-TK1 RECIRC WTR PH	LO	3.80	6.50	PH
215932	NMSBC02	SRM SHORT PERIOD	ALMCLR			
215933	NMSBC02	SRM SHORT PERIOD	ALARM			
215934	NMSBC02	SRM SHORT PERIOD	ALMCLR			
215935	NMSBC02	SRM SHORT PERIOD	ALARM			
215937	NMSBC02	SRM SHORT PERIOD	ALMCLR			
215941	NMSBC02	SRM SHORT PERIOD	ALARM			

215956	NMSBC02	SRM SHORT PERIOD	ALARM			
220000	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
220000	WTSAA01	2WTS-TK1 RECIRC WTR PH	OK	8.21	6.50	PH
220001	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
220003	NMSBC02	SRM SHORT PERIOD	ALMCLR			
220003	FWSPA05A	FW PRESS LOOP B	*LO	87.4	220.0	PSIG
220011	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
220012	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
220012	NMSBC02	SRM SHORT PERIOD	ALARM			
220014	NMSBC02	SRM SHORT PERIOD	ALMCLR			
220025	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
220026	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
220030	WTSAA01	2WTS-TK1 RECIRC WTR PH	LO	3.54	6.50	PH
220042	NMSBC02	SRM SHORT PERIOD	ALARM			
220048	NMSBC02	SRM SHORT PERIOD	ALMCLR			
220049	NMSBC02	SRM SHORT PERIOD	ALARM			
220051	NMSBC02	SRM SHORT PERIOD	ALMCLR			
220101	WTSAA01	2WTS-TK1 RECIRC WTR PH	OK	8.21	6.50	PH
220104	NMSBC02	SRM SHORT PERIOD	ALARM			
220105	NMSBC02	SRM SHORT PERIOD	ALMCLR			
220112	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
220113	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
220113	NMSBC02	SRM SHORT PERIOD	ALARM			
220117	NMSBC02	SRM SHORT PERIOD	ALMCLR			
220127	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
220128	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
220130	WTSAA01	2WTS-TK1 RECIRC WTR PH	LO	3.93	6.50	PH
220140	NMSBC02	SRM SHORT PERIOD	ALARM			
220142	NMSBC02	SRM SHORT PERIOD	ALMCLR			
220200	WTSAA01	2WTS-TK1 RECIRC WTR PH	OK	8.19	6.50	PH
220202	NMSBC02	SRM SHORT PERIOD	ALARM			
220205	NMSBC02	SRM SHORT PERIOD	ALMCLR			
220218	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
220221	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
220238	NMSBC02	SRM SHORT PERIOD	ALARM			
220239	NMSBC02	SRM SHORT PERIOD	ALMCLR			
220254	NMSBC02	SRM SHORT PERIOD	ALARM			
220255	NMSBC02	SRM SHORT PERIOD	ALMCLR			
220257	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
220258	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
220330	WTSAA01	2WTS-TK1 RECIRC WTR PH	LO	3.53	6.50	PH
220334	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
220337	CNATA02	RBLR-DRN-TK1B-DISCH TEMP	LO	199.76	206.00	DEG F
220338	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			

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220400	WTSAA01	2WTS-TK1 RECIRC WTR PH	OK	8.19	6.50	PH
220402	CWSAA02	BLWDN WTR CHLORINE RESID	SLO	-0.25L*******		PPM
220407	NMSBC02	SRM SHORT PERIOD	ALARM			
220414	NMSBC02	SRM SHORT PERIOD	ALMCLR			
220432	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
220433	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
220434	NMSBC02	SRM SHORT PERIOD	ALARM			
220436	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
220437	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
220439	NMSBC02	SRM SHORT PERIOD	ALMCLR			
220500	WTSAA01	2WTS-TK1 RECIRC WTR PH	LO	2.48	6.50	PH
220504	NMSBC02	SRM SHORT PERIOD	ALARM			

220528	NMSBC02	SRM SHORT PERIOD	ALARM			
220530	WTSAA01	2WTS-TK1 RECIRC WTR PH	*LO	3.77	6.50	PH
220532	NMSBC02	SRM SHORT PERIOD	ALMCLR			
220540	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
220541	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
220544	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
220545	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
220547	NMSBC02	SRM SHORT PERIOD	ALARM			
220549	NMSBC02	SRM SHORT PERIOD	ALMCLR			
220554	NMSBC02	SRM SHORT PERIOD	ALARM			
220556	NMSBC02	SRM SHORT PERIOD	ALMCLR			
220557	NMSBC02	SRM SHORT PERIOD	ALARM			
220600	NMSBC02	SRM SHORT PERIOD	ALMCLR			
220600	WTSAA01	2WTS-TK1 RECIRC WTR PH	OK	8.10	6.50	PH
220612	NMSBC02	SRM SHORT PERIOD	ALARM			
220613	NMSBC02	SRM SHORT PERIOD	ALMCLR			
220630	WTSAA01	2WTS-TK1 RECIRC WTR PH	LO	2.95	6.50	PH
220632	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
220633	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
220637	NMSBC02	SRM SHORT PERIOD	ALARM			
220639	NMSBC02	SRM SHORT PERIOD	ALMCLR			
220644	ESSTA12	3 PT HTR E3C EXTR ST TMP	*LO	217.07	256.00	DEG F
220700	WTSAA01	2WTS-TK1 RECIRC WTR PH	OK	7.83	6.50	PH
220702	CNSFA01	CND XFR PUMP HDR FLOW	LO	294.71	300.00	GPM
220712	NMSBC02	SRM SHORT PERIOD	ALARM			
220714	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
220715	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
220716	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
220717	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
220719	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
220720	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
220723	NMSBC02	SRM SHORT PERIOD	ALMCLR			
220740	NMSBC02	SRM SHORT PERIOD	ALARM			
220743	NMSBC02	SRM SHORT PERIOD	ALMCLR			
220756	NMSBC02	SRM SHORT PERIOD	ALARM			
220803	NMSBC02	SRM SHORT PERIOD	ALMCLR			
220814	NMSBC02	SRM SHORT PERIOD	ALARM			
220816	NMSBC02	SRM SHORT PERIOD	ALMCLR			
220822	HVCNA04	RELAY ROOM HMDT MTSB	OK	48.75	50.00	%RH
220840	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
220841	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
220900	WTSAA01	2WTS-TK1 RECIRC WTR PH	LO	6.26	6.50	PH
220915	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			

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220916	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
220930	WTSAA01	2WTS-TK1 RECIRC WTR PH	OK	8.15	6.50	PH
220938	NMSBC02	SRM SHORT PERIOD	ALARM			
220939	NMSBC02	SRM SHORT PERIOD	ALMCLR			
220945	NMSBC02	SRM SHORT PERIOD	ALARM			
220947	NMSBC02	SRM SHORT PERIOD	ALMCLR			
220956	NMSBC02	SRM SHORT PERIOD	ALARM			
220959	NMSBC02	SRM SHORT PERIOD	ALMCLR			
221020	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
221021	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
221029	NMSBC02	SRM SHORT PERIOD	ALARM			
221032	NMSBC02	SRM SHORT PERIOD	ALMCLR			
221038	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
221042	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			

221103	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL	
221104	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP	
221107	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL	
221110	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP	
221111	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL	
221125	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP	
221126	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL	
221132	NMSBC02	SRM SHORT PERIOD	ALARM	
221138	NMSBC02	SRM SHORT PERIOD	ALMCLR	
221145	NMSBC02	SRM SHORT PERIOD	ALARM	
221147	NMSBC02	SRM SHORT PERIOD	ALMCLR	
221155	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP	
221156	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL	
221214	NMSBC02	SRM SHORT PERIOD	ALARM	
221217	NMSBC02	SRM SHORT PERIOD	ALMCLR	
221218	NMSBC02	SRM SHORT PERIOD	ALARM	
221220	ABDBC01	AUX BLR SYS 2CES-IPNL506	TRBL	
221231	NMSBC02	SRM SHORT PERIOD	ALMCLR	
221239	NMSBC02	SRM SHORT PERIOD	ALARM	
221248	NMSBC02	SRM SHORT PERIOD	ALMCLR	
221319	NMSBC02	SRM SHORT PERIOD	ALARM	
221322	NMSBC02	SRM SHORT PERIOD	ALMCLR	
221333	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP	
221334	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL	
221345	NMSBC02	SRM SHORT PERIOD	ALARM	
221348	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP	
221349	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL	
221350	NMSBC02	SRM SHORT PERIOD	ALMCLR	
221359	CNSLA02	CND DRAW OFF TK1B LEVEL	*HIL*******L*******	FT WG
221400	NMSBC02	SRM SHORT PERIOD	ALARM	
221401	NMSBC02	SRM SHORT PERIOD	ALMCLR	
221408	NMSBC02	SRM SHORT PERIOD	ALARM	
221409	NMSBC02	SRM SHORT PERIOD	ALMCLR	
221421	NMSBC02	SRM SHORT PERIOD	ALARM	
221422	NMSBC02	SRM SHORT PERIOD	ALMCLR	
221436	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP	
221437	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL	

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221439	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP	
221440	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL	
221508	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP	
221509	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL	
221512	HVCMA04	RELAY ROOM HMDT MT8B	HI	50.25 50.00 *RH
221513	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP	
221514	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL	
221527	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP	
221528	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL	
221539	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP	
221540	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL	
221542	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP	
221543	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL	
221544	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP	
221545	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL	
221546	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP	
221548	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL	
221549	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP	
221550	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL	

221557 CWSAC01 CLG TWR BLOW-DOWN WTR PH LOW
~~221557 NMSBC02 SRM SHORT PERIOD~~ ALMCLR
221559 HVKBC09 DIV1 CB CHILLED WTR SYS INOP
221600 HVKBC09 DIV1 CB CHILLED WTR SYS NORMAL
~~221602 HVKBC09 DIV1 CB CHILLED WTR SYS~~ INOP
221604 HVKBC09 DIV1 CB CHILLED WTR SYS NORMAL
221607 CWSAC02 CLG TWR BLOW-DOWN WTR PH NORMAL
~~221607 CWSAC01 CLG TWR BLOW-DOWN WTR PH~~ NORMAL
221612 HDHTA01 6PT HTR E6A DR TEMP *LO 166.95 284.00 DEG F
221625 HVKBC09 DIV1 CB CHILLED WTR SYS INOP
~~221626 HVKBC09 DIV1 CB CHILLED WTR SYS~~ NORMAL
221630 WTSAA01 2WTS-TK1 RECIRC WTR PH LO 5.66 6.50 PH
221649 NMSBC02 SRM SHORT PERIOD ALARM
~~221651 NMSBC02 SRM SHORT PERIOD~~ ALMCLR
221652 NMSBC02 SRM SHORT PERIOD ALARM
221654 NMSBC02 SRM SHORT PERIOD ALMCLR
~~221659 NMSBC02 SRM SHORT PERIOD~~ ALARM
221700 WTSAA01 2WTS-TK1 RECIRC WTR PH OK 8.04 6.50 PH
221701 NMSBC02 SRM SHORT PERIOD ALMCLR
221709 NMSBC02 SRM SHORT PERIOD ALARM
221712 NMSBC02 SRM SHORT PERIOD ALMCLR
221718 CNSFA01 CND XFR PUMP HDR FLOW OK 311.20 306.00 GPM
221728 NMSBC02 SRM SHORT PERIOD ALARM
221730 WTSAA01 2WTS-TK1 RECIRC WTR PH LO 4.36 6.50 PH
221733 NMSBC02 SRM SHORT PERIOD ALMCLR
~~221800 WTSAA01 2WTS-TK1 RECIRC WTR PH~~ OK 8.05 6.50 PH
221803 SWPBC18 SW FV54A HYD UNT ACC PR LOW
221806 HVKBC09 DIV1 CB CHILLED WTR SYS INOP
~~221807 HVKBC09 DIV1 CB CHILLED WTR SYS NORMAL~~
221814 HVKBC09 DIV1 CB CHILLED WTR SYS INOP
221815 HVKBC09 DIV1 CB CHILLED WTR SYS NORMAL
~~221817 HVKBC09 DIV1 CB CHILLED WTR SYS~~ INOP
221818 HVKBC09 DIV1 CB CHILLED WTR SYS NORMAL

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~~221820 HVKBC09 DIV1 CB CHILLED WTR SYS~~ INOP
221822 HVKBC09 DIV1 CB CHILLED WTR SYS NORMAL
221826 NMSBC02 SRM SHORT PERIOD ALARM
~~221829 NMSBC02 SRM SHORT PERIOD~~ ALMCLR
221904 HVKBC09 DIV1 CB CHILLED WTR SYS INOP
221905 HVKBC09 DIV1 CB CHILLED WTR SYS NORMAL
~~221911 HVKBC09 DIV1 CB CHILLED WTR SYS~~ INOP
221912 HVKBC09 DIV1 CB CHILLED WTR SYS NORMAL
221914 HVKBC09 DIV1 CB CHILLED WTR SYS INOP
~~221915 HVKBC09 DIV1 CB CHILLED WTR SYS~~ NORMAL
221916 HVKBC09 DIV1 CB CHILLED WTR SYS INOP
221917 HVKBC09 DIV1 CB CHILLED WTR SYS NORMAL
~~221919 HVKBC09 DIV1 CB CHILLED WTR SYS~~ INOP
221920 HVKBC09 DIV1 CB CHILLED WTR SYS NORMAL
221922 SWPBC18 SW FV54A HYD UNT ACC PR NORMAL
~~221957 HVKBC09 DIV1 CB CHILLED WTR SYS~~ INOP
221958 HVKBC09 DIV1 CB CHILLED WTR SYS NORMAL
222020 NMSBC02 SRM SHORT PERIOD ALARM
~~222023 NMSBC02 SRM SHORT PERIOD~~ ALMCLR
222026 HVKBC09 DIV1 CB CHILLED WTR SYS INOP
222027 HVKBC09 DIV1 CB CHILLED WTR SYS NORMAL
~~222027 NMSBC02 SRM SHORT PERIOD~~ ALARM
222031 HVKBC09 DIV1 CB CHILLED WTR SYS INOP

~~222140~~	~~HVHBG04~~	~~VENT-HOT-WTR HTG SYS~~	~~TRBL~~			
222157	TMSPA01	TURB EXH HOOD SPRAY PR	HI	77.14	50.00	PSIG
222200	WTSAA01	2WTS-TK1 RECIRC WTR PH	OK	8.08	6.50	PH
~~222206~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~INOP~~			
222207	TMSPA01	TURB EXH HOOD SPRAY PR	ADC	96.32	50.00	PSIG
222208	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
~~222231~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~INOP~~			
222232	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
222237	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
~~222237~~	~~TMSPA01~~	~~TURB EXH HOOD SPRAY PR~~	~~HI~~	~~97.12~~	~~50.00~~	~~PSIG~~
222239	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
222241	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
~~222242~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~NORMAL~~			
222242	TMSPA01	TURB EXH HOOD SPRAY PR	ADC	97.12	50.00	PSIG
222300	WTSAA01	2WTS-TK1 RECIRC WTR PH	LO	4.28	6.50	PH
222312	TMSPA01	TURB EXH HOOD SPRAY PR	HI	90.91	50.00	PSIG
222318	TMSPA01	TURB EXH HOOD SPRAY PR	ADC	90.91	50.00	PSIG
222330	WTSAA01	2WTS-TK1 RECIRC WTR PH	OK	8.21	6.50	PH
222345	ESSTA15	4 PT HTR E4C EXTR ST TMP	*LO	189.87	334.00	DEG F
222354	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
222355	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
~~222357~~	~~TMSPA01~~	~~TURB EXH HOOD SPRAY PR~~	~~HI~~	~~87.18~~	~~50.00~~	~~PSIG~~
222400	WTSAA01	2WTS-TK1 RECIRC WTR PH	LO	4.13	6.50	PH
222402	TMSPA01	TURB EXH HOOD SPRAY PR	ADC	87.18	50.00	PSIG
~~222423~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~INOP~~			
222424	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
222430	WTSAA01	2WTS-TK1 RECIRC WTR PH	OK	8.21	6.50	PH
~~222432~~	~~TMSPA01~~	~~TURB EXH HOOD SPRAY PR~~	~~HI~~	~~96.12~~	~~50.00~~	~~PSIG~~
222437	TMSPA01	TURB EXH HOOD SPRAY PR	ADC	96.12	50.00	PSIG

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~~222446~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~INOP~~			
222448	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
222502	TMSPA01	TURB EXH HOOD SPRAY PR	HI	74.93	50.00	PSIG
~~222507~~	~~TMSPA01~~	~~TURB EXH HOOD SPRAY PR~~	~~ADC~~	~~74.93~~	~~50.00~~	~~PSIG~~
222521	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
222522	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
~~222524~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~INOP~~			
222525	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
222527	TMSPA01	TURB EXH HOOD SPRAY PR	HI	99.80	50.00	PSIG
~~222530~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~INOP~~			
222531	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
222532	TMSPA01	TURB EXH HOOD SPRAY PR	ADC	99.80	50.00	PSIG
~~222542~~	~~TMSPA01~~	~~TURB EXH HOOD SPRAY PR~~	~~HI~~	~~99.22~~	~~50.00~~	~~PSIG~~
222548	TMSPA01	TURB EXH HOOD SPRAY PR	ADC	99.22	50.00	PSIG
222552	TMSPA01	TURB EXH HOOD SPRAY PR	OK	13.86	50.00	PSIG
~~222557~~	~~TMSPA01~~	~~TURB EXH HOOD SPRAY PR~~	~~ADC~~	~~13.86~~	~~50.00~~	~~PSIG~~
222627	TMSPA01	TURB EXH HOOD SPRAY PR	HI	82.86	50.00	PSIG
222632	TMSPA01	TURB EXH HOOD SPRAY PR	OK	23.18	50.00	PSIG
~~222634~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~INOP~~			
222635	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
222637	TMSPA01	TURB EXH HOOD SPRAY PR	ADC	23.18	50.00	PSIG
~~222659~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~INOP~~			
222700	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
222700	WTSAA01	2WTS-TK1 RECIRC WTR PH	LO	3.92	6.50	PH
~~222707~~	~~TMSPA01~~	~~TURB EXH HOOD SPRAY PR~~	~~HI~~	~~79.24~~	~~50.00~~	~~PSIG~~
222712	HVCMA04	RELAY ROOM HMDT MT8B	OK	48.81	50.00	%RH
222718	TMSPA01	TURB EXH HOOD SPRAY PR	ADC	95.00	50.00	PSIG

222730	WTSAA01	ZWTS-TRT RECIRC WTR PH	[illegible]	[illegible]	[illegible]	
222732	TMSPA01	TURB EXH HOOD SPRAY PR	HI	92.58	50.00	PSIG
~~222737~~	~~TMSPA01~~	~~TURB EXH HOOD SPRAY PR~~	ADC	92.58	50.00	PSIG
222739	ESSTA18	5 PT HTR E5C EXTR ST TMP	*LO	141.37	280.00	DEG F
222746	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
~~222747~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	NORMAL			
222822	TMSPA01	TURB EXH HOOD SPRAY PR	HI	86.46	50.00	PSIG
222827	TMSPA01	TURB EXH HOOD SPRAY PR	ADC	86.46	50.00	PSIG
~~222837~~	~~TMSPA01~~	~~TURB EXH HOOD SPRAY PR~~	~~HI~~	~~98.96~~	50.00	PSIG
222839	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
222840	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
~~222842~~	~~TMSPA01~~	~~TURB EXH HOOD SPRAY PR~~	SHI	98.96	50.00	PSIG
222848	TMSPA01	TURB EXH HOOD SPRAY PR	HI	88.21	50.00	PSIG
222852	CNSFA01	CND XFR PUMP HDR FLOW	LO	296.30	300.00	GPM
222857	TMSPA01	TURB EXH HOOD SPRAY PR	ADC	76.77	50.00	PSIG
222902	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
222902	TMSPA01	TURB EXH HOOD SPRAY PR	HI	79.18	50.00	PSIG
222903	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
222907	TMSPA01	TURB EXH HOOD SPRAY PR	ADC	79.18	50.00	PSIG
222918	TMSPA01	TURB EXH HOOD SPRAY PR	HI	99.11	50.00	PSIG
~~222922~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	INOP			
222922	TMSPA01	TURB EXH HOOD SPRAY PR	ADC	99.11	50.00	PSIG
222923	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
~~222924~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	INOP			
222925	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
222942	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
~~222943~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	NORMAL			
222947	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			

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~~222948~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	NORMAL			
222952	TMSPA01	TURB EXH HOOD SPRAY PR	HI	96.40	50.00	PSIG
222957	TMSPA01	TURB EXH HOOD SPRAY PR	ADC	96.40	50.00	PSIG
~~223012~~	~~TMSPA01~~	~~TURB EXH HOOD SPRAY PR~~	HI	98.42	50.00	PSIG
223018	TMSPA01	TURB EXH HOOD SPRAY PR	ADC	98.42	50.00	PSIG
223029	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
~~223030~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	NORMAL			
223052	TMSPA01	TURB EXH HOOD SPRAY PR	HI	97.81	50.00	PSIG
223102	TMSPA01	TURB EXH HOOD SPRAY PR	ADC	91.92	50.00	PSIG
~~223107~~	~~TMSPA01~~	TURB EXH HOOD SPRAY PR	HI	90.74	50.00	PSIG
223112	TMSPA01	TURB EXH HOOD SPRAY PR	ADC	90.74	50.00	PSIG
223126	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
~~223127~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	NORMAL			
223127	TMSPA01	TURB EXH HOOD SPRAY PR	HI	70.73	50.00	PSIG
223128	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
~~223129~~	~~HVKBC09~~	~~DIV1 CB~~ CHILLED WTR SYS	NORMAL			
223130	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
223131	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
~~223132~~	~~TMSPA01~~	~~TURB EXH~~ HOOD SPRAY PR	ADC	70.73	50.00	PSIG
223202	TMSPA01	TURB EXH HOOD SPRAY PR	HI	77.63	50.00	PSIG
223207	TMSPA01	TURB EXH HOOD SPRAY PR	ADC	77.63	50.00	PSIG
~~223208~~	~~HVKBC09~~	DIV1 CB CHILLED WTR SYS	INOP			
223209	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
223214	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
~~223216~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	NORMAL			
223222	TMSPA01	TURB EXH HOOD SPRAY PR	HI	78.41	50.00	PSIG
223227	TMSPA01	TURB EXH HOOD SPRAY PR	ADC	78.41	50.00	PSIG
~~223232~~	~~NMSRC02~~	~~SRM SHORT PERIOD~~	ALARM			
223232	TMSPA01	TURB EXH HOOD SPRAY PR	HI	[illegible]	[illegible]	[illegible]

223240	NMSBC02	SRM SHORT PERIOD	ALMCLR			
~~223249~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~INOP~~			
223250	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
223252	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
~~223253~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~NORMAL~~			
223257	TMSPA01	TURB EXH HOOD SPRAY PR	HI	79.90	50.00	PSIG
223302	TMSPA01	TURB EXH HOOD SPRAY PR	ADC	79.90	50.00	PSIG
~~223307~~	~~TMSPA01~~	~~TURB EXH HOOD SPRAY PR~~	~~HI~~	~~78.98~~	~~50.00~~	~~PSIG~~
223312	TMSPA01	TURB EXH HOOD SPRAY PR	SHI	78.98	50.00	PSIG
223318	TMSPA01	TURB EXH HOOD SPRAY PR	HI	96.17	50.00	PSIG
223322	TMSPA01	TURB EXH HOOD SPRAY PR	ADC	96.17	50.00	PSIG
223332	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
223333	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
223337	TMSPA01	TURB EXH HOOD SPRAY PR	HI	81.20	50.00	PSIG
223348	TMSPA01	TURB EXH HOOD SPRAY PR	ADC	74.47	50.00	PSIG
223350	GMHAC07	STTR CLG WTR TK VENT H2	HIGH			
~~223351~~	~~GMHAC07~~	~~STTR CLG WTR TK VENT H2~~	~~NORMAL~~			
223352	TMSPA01	TURB EXH HOOD SPRAY PR	HI	82.12	50.00	PSIG
223357	TMSPA01	TURB EXH HOOD SPRAY PR	ADC	82.12	50.00	PSIG
~~223402~~	~~TMSPA01~~	~~TURB EXH HOOD SPRAY PR~~	~~HI~~	~~98.73~~	~~50.00~~	~~PSIG~~
223418	TMSPA01	TURB EXH HOOD SPRAY PR	ADC	52.47	50.00	PSIG
223418	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
~~223419~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~NORMAL~~			
223423	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			

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~~223424~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~NORMAL~~			
223427	NMSBC02	SRM SHORT PERIOD	ALARM			
223431	NMSBC02	SRM SHORT PERIOD	ALMCLR			
~~223438~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~INOP~~			
223439	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
223444	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
~~223446~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~NORMAL~~			
223447	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
223448	TMSPA01	TURB EXH HOOD SPRAY PR	HI	64.15	50.00	PSIG
~~223448~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~NORMAL~~			
223450	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
223451	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
~~223452~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~INOP~~			
223453	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
223454	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
~~223455~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~NORMAL~~			
223502	HVCMA04	RELAY ROOM HMDT MT8B	HI	50.31	50.00	%RH
223502	TMSPA01	TURB EXH HOOD SPRAY PR	ADC	68.58	50.00	PSIG
~~223512~~	~~DSRTA01~~	~~RHTR DR RCVR TK6A DR TMP~~	~~*LO~~	~~199.90~~	~~250.00~~	~~DEG F~~
223512	TMSPA01	TURB EXH HOOD SPRAY PR	HI	96.43	50.00	PSIG
223522	TMSPA01	TURB EXH HOOD SPRAY PR	ADC	68.83	50.00	PSIG
~~223527~~	~~TMSPA01~~	~~TURB EXH HOOD SPRAY PR~~	~~HI~~	~~68.29~~	~~50.00~~	~~PSIG~~
223532	TMSPA01	TURB EXH HOOD SPRAY PR	ADC	68.29	50.00	PSIG
223537	TMSPA01	TURB EXH HOOD SPRAY PR	HI	54.52	50.00	PSIG
~~223552~~	~~TMSPA01~~	~~TURB EXH HOOD SPRAY PR~~	~~ADC~~	~~81.08~~	~~50.00~~	~~PSIG~~
223554	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
223556	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
~~223557~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~INOP~~			
223558	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
223602	TMSPA01	TURB EXH HOOD SPRAY PR	HI	68.09	50.00	PSIG
~~223612~~	~~TMSPA01~~	~~TURB EXH HOOD SPRAY PR~~	~~ADC~~	~~85.13~~	~~50.00~~	~~PSIG~~
223618	TMSPA01	TURB EXH HOOD SPRAY PR	HI	98.39	50.00	PSIG

223626	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
~~223637~~	~~NMSOC104~~	~~SRM CHANNEL BYPASSED~~	~~ON~~			
223648	TMITA02	TURB EXTRNL V CHEST TMP	*LO	383.93	400.00	DEG F
223649	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
~~223651~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	~~NORMAL~~			
223652	TMSPA01	TURB EXH HOOD SPRAY PR	OK	39.39	50.00	PSIG
223657	TMSPA01	TURB EXH HOOD SPRAY PR	HI	98.22	50.00	PSIG
223712	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
223713	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
223714	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
223715	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
223807	TMSPA01	TURB EXH HOOD SPRAY PR	SHI	81.94	50.00	PSIG
223812	TMSPA01	TURB EXH HOOD SPRAY PR	OK	34.79	50.00	PSIG
~~223815~~	~~GMHAC07~~	~~STTR CLG WTR TK VENT H2~~	~~HIGH~~			
223817	GMHAC07	STTR CLG WTR TK VENT H2	NORMAL			
223822	TMSPA01	TURB EXH HOOD SPRAY PR	HI	65.50	50.00	PSIG
~~223837~~	~~TMSPA01~~	~~TURB EXH HOOD SPRAY PR~~	OK	28.50	50.00	PSIG
223842	TMSPA01	TURB EXH HOOD SPRAY PR	HI	63.49	50.00	PSIG
223845	NMSBC02	SRM SHORT PERIOD	ALARM			
~~223847~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	~~ALMCLR~~			
223848	TMSPA01	TURB EXH HOOD SPRAY PR	OK	48.88	50.00	PSIG
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~~223852~~	~~TMSPA01~~	~~TURB EXH HOOD SPRAY PR~~	HI	96.46	50.00	PSIG
223857	TMSPA01	TURB EXH HOOD SPRAY PR	OK	15.59	50.00	PSIG
223903	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
~~223904~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	NORMAL			
223906	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
223907	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
~~223907~~	~~TMSPA01~~	~~TURB EXH HOOD SPRAY PR~~	HI	55.90	50.00	PSIG
223909	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
223910	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
~~223912~~	~~CNSFA01~~	~~CND XFR PUMP HDR FLOW~~	OK	310.89	300.00	GPM
223912	TMSPA01	TURB EXH HOOD SPRAY PR	OK	37.96	50.00	PSIG
223926	ABFBC04	AUX BLR SYS 2CES-IPNL508	TRBL			
~~223931~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	ALARM			
223933	NMSBC02	SRM SHORT PERIOD	ALMCLR			
223937	TMSPA01	TURB EXH HOOD SPRAY PR	HI	67.68	50.00	PSIG
~~223942~~	~~TMSPA01~~	~~TURB EXH HOOD SPRAY PR~~	OK	28.64	50.00	PSIG
223952	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
223953	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
~~224002~~	~~TMSPA01~~	~~TURB EXH HOOD SPRAY PR~~	HI	85.65	50.00	PSIG
224017	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
224018	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
~~224018~~	~~TMSPA01~~	~~TURB EXH HOOD SPRAY PR~~	OK	34.74	50.00	PSIG
224040	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
224041	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
~~224041~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	ALARM			
224042	NMSOC103	SRM INSTR-INOP ALARM	INOP			
224042	NMSBC03	SRM UPSCALE/INOP	ALARM			
~~224042~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	ALMCLR			
224042	NMSBC01	SRM DOWNSCALE	ALARM			
224048	TMSPA01	TURB EXH HOOD SPRAY PR	HI	66.02	50.00	PSIG
~~224052~~	~~TMSPA01~~	~~TURB EXH HOOD SPRAY PR~~	OK	35.46	50.00	PSIG
224053	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
224054	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
~~224059~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	INOP			
224100	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			

224307	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
~~224308~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	NORMAL			
224350	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
224351	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
224400	ICSLC02	RCIC TURB EXH TRAP LVL	HIGH			
224402	CWSAA02	BLWDN WTR CHLORINE RESID	SLO	-0.25L*******		PPM
224413	MSSTA08	MAIN STEAM LINE A TEMP	ADC	50.45	486.00	DEG F
224414	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
224415	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
224448	ICSLC02	RCIC TURB EXH TRAP LVL	NORMAL			
~~224532~~	~~CWSAA02~~	~~BLWDN WTR CHLORINE RESID~~	~~OK~~	~~0.03L*******~~		PPM
224602	CWSAA02	BLWDN WTR CHLORINE RESID	SLO	0.03L*******		PPM
224608	NMSBC02	SRM SHORT PERIOD	ALARM			
~~224608~~	~~NMSBC01~~	~~SRM DOWNSCALE~~	ALMCLR			
224612	HVCMA04	RELAY ROOM HMDT MT8B	OK	48.81	50.00	%RH
224615	NMSBC02	SRM SHORT PERIOD	ALMCLR			
~~224617~~	~~NMSOC103~~	~~SRM INSTR INOP ALARM~~	~~NORMAL~~			
224617	NMSBC02	SRM SHORT PERIOD	ALARM			

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~~224618~~	~~NMSBC03~~	~~SRM UPSCALE/INOP~~	ALMCLR			
224631	NMSBC02	SRM SHORT PERIOD	ALMCLR			
224647	NMSBC02	SRM SHORT PERIOD	ALARM			
~~224649~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	ALMCLR			
224650	NMSBC02	SRM SHORT PERIOD	ALARM			
224651	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
~~224652~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	NORMAL			
224652	NMSBC02	SRM SHORT PERIOD	ALMCLR			
224712	NMSBC02	SRM SHORT PERIOD	ALARM			
~~224715~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	ALMCLR			
224716	NMSBC02	SRM SHORT PERIOD	ALARM			
224718	NMSBC02	SRM SHORT PERIOD	ALMCLR			
~~224718~~	~~TMSPA01~~	~~TURB EXH HOOD SPRAY PR~~	HI	66.16	50.00	PSIG
224721	NMSBC02	SRM SHORT PERIOD	ALARM			
224727	TMSPA01	TURB EXH HOOD SPRAY PR	SHI	58.51	50.00	PSIG
~~224729~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	ALMCLR			
224730	HVRTA01	RB VENT SUPPLY AIR TEMP	*HIL*******L*******			DEG F
224732	TMSPA01	TURB EXH HOOD SPRAY PR	HI	92.35	50.00	PSIG
~~224737~~	~~TMSPA01~~	~~TURB EXH HOOD SPRAY PR~~	ADC	92.35	50.00	PSIG
224752	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
224753	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
~~224814~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	INOP			
224815	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
224816	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
~~224817~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	NORMAL			
224835	NMSBC02	SRM SHORT PERIOD	ALARM			
224836	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
~~224837~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	NORMAL			
224837	NMSBC02	SRM SHORT PERIOD	ALMCLR			
224837	CNATA02	RBLR DRN TK1B DISCH TEMP	*LO	187.92	200.00	DEG F
~~224838~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	INOP			
224839	HVKBC09	DIV1 CB CHILLED WTR SYS	NORMAL			
224842	DSRTA06	SCAV STM TMP TO 2FWS-E6A	LO	199.90	200.00	DEG F
~~224846~~	~~NMSBC02~~	~~SRM SHORT PERIOD~~	ALARM			
224851	NMSBC02	SRM SHORT PERIOD	ALMCLR			
224859	HVKBC09	DIV1 CB CHILLED WTR SYS	INOP			
~~224900~~	~~HVKBC09~~	~~DIV1 CB CHILLED WTR SYS~~	NORMAL			
224906	NMSBC02	SRM SHORT PERIOD	ALARM			

DETAILED CONTROL ROOM DESIGN REVIEW
FINAL SUMMARY REPORT
PROGRAM IMPLEMENTATION
VOLUME 1

For:

Nine Mile Point Unit 2

Submitted by:

Niagara Mohawk Power Corporation

September 1985

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1.0 OBJECTIVES AND BACKGROUND

Niagara Mohawk Power Corporation (NMPC) initiated a control room review program for the Nine Mile Point Unit 2 (NMP-2) power station in response to NUREG-0737 Supplement 1 and earlier guidance, which requires that all licensees and applicants for operating licenses (OL) conduct a Detailed Control Room Design Review (DCRDR) to identify and correct design deficiencies. NUREG-0700, "Guidelines for Control Room Design Review", issued in September, 1981, provides human engineering guidelines to assist each licensee and applicant in performing a detailed control room review. The NMPC program emphasizes determination of the adequacy of information available to the operator to effectively mitigate emergency conditions. The review program is also designed to correct human factors problems and to improve controls and displays determined to be discrepant from good human factors practices. The DCRDR process, as suggested by NUREG-0700, is divided into four major activities: planning; review; assessment and implementation; and reporting. This report reflects the human engineering processes developed to address the DCRDR requirements.

1.1 Reporting Requirements for the DCRDR

NUREG 0737 Supplement 1 requires the submittal of a Program Plan containing the following major elements: (1) a qualified multidisciplinary review team; (2) use of function and task analysis; (3) control room inventory comparison; (4) control

room survey; (5) Human Engineering Observation (HEO) assessment; and (6) verification of design improvements.

The Program Plan, which describes how each of the requirements listed above would be (or had been) accomplished, was submitted to the Nuclear Regulatory Commission (NRC) in June, 1984.

1.2 Summary of Supplement 1 Human Factors Activities to be Performed

The adequacy of the control room was reviewed to determine whether it could provide the system status information, control capabilities, feedback and performance aids necessary for personnel to accomplish their functions and tasks effectively. In addition, characteristics outside the scope of the NRC's DCRDR requirements for the existing control room's instrumentation, controls, other equipment and physical arrangements were identified that either add to or detract from operator performance. Six review processes were used to analyze the man/machine interface within the control room: (1) operating experience review (historical document review and operator survey); (2) system review, function review and task analysis; (3) control room inventory; (4) control room checklist supplement; (5) verification of task performance capabilities; and (6) validation of control room functions.

The first three are foundation processes in which frames of reference and benchmarks for discrepancy identification were established. The last three are investigative processes in which the benchmarks were applied and HEOs identified. Activities performed during these two groups of processes are explained below:

1. Foundation Processes. Industry-wide reviews of Licensee Event Reports (LERs) for similarly designed General Electric-5 (GE-5) plants were analyzed. Since

these reports have generic applicability, they were used to identify conditions which affect the probability for operator error and the safe operation of the generating station. In addition, operating personnel completed questionnaires and were interviewed to obtain feedback based on previous operating experience. The procedures used in the Historical Document Review and the Control Room Operator Survey are described in Chapters 4.0 and 5.0, respectively.

A control room inventory was conducted on a system-by-system basis to identify all instrumentation, controls, and equipment within the control room. This information was compared to the requirements identified through the analysis of operator tasks. The methodology performed during the inventory phase is described in Chapter 6.0.

A systems review and function allocation review was conducted. Operator task lists were prepared and used during the task analysis and validation of the control room capabilities. These analyses established the information flow and control requirements between the operator and the control boards. A summary of the approach is included in Chapter 7.0.

2. Investigative Processes. Using the foundation processes as a basis, the investigative processes provided the appropriate information necessary to determine the adequacy of the control room from a human engineering perspective. Deficiencies were identified and documented during this part of the review. An explanation of the control room checklist survey is contained in Chapter 8.0. This step was followed by a verification of task performance capabilities which included: (1) availability and adequacy of the instrumentation and controls, and

(2) efficient interface between the operator and the control board. A summary of verification is explained in Chapter 9.0.

Subject to the verification process, a validation of the control room functions, was conducted. This procedure determined whether the functions allocated to the operating crew could be accomplished within the structure of the defined emergency operating procedures and the design of the existing control room. Validation is described in Chapter 10.0.

1.3 Assessment, Implementation and Scheduling

Upon completion of the Supplemental Review Processes, an examination of the HEOs was conducted by the Human Factors Engineering Review Team, described in Chapter 11.0. This review served to identify the significance of each of the HEOs, as well as to provide the review team with an opportunity for determining corrective actions, where appropriate. A schedule was also developed that will implement the human engineering resolutions.

1.4 Summary Report

This report is submitted at the conclusion of the NMP-2 DCRDR. The report: (1) summarizes the overall review process; (2) describes the identified HEOs; (3) describes human engineering improvements implemented during the course of this and previous reviews; (4) identifies any proposed improvements and their schedules for implementation; and (5) discusses integration of DCRDR activities with other NUREG-0737 Supplemental Requirements.

1.5 References

Additional information concerning objectives and background for the DCRDR can be found in the following document:

Nine Mile Point Nuclear Station - Unit 2. Program Plan Report Detailed Control Room Design Review. Lycoming, New York. June, 1984.

1.6 Summary of Past NMP-2 Human Factors-Related Activities

Historically, Niagara Mohawk has had a strong interest in human factors. This was developed over several years of experience in the design of fossil plants. In the 1960s, human factors was actively applied to our Nine Mile Point Unit 1 Nuclear Plant.

Since conceptual design, the Unit 2 control room was reviewed from a human factors perspective. In the late 1970s, System Engineers and Operators reviewed full-size mock-ups prior to the fabrication of the panels. In 1982, a preliminary human factors review was conducted using methodology developed by the Control Room Improvements Committee of the BWR Owners' Group (BWROG). A review team comprised of Operations and Engineering personnel from three utilities performed the evaluation, with the assistance of a human factors specialist and representatives from the General Electric Company.

The scope of this preliminary review was defined so as to be commensurate with the manufacturing status of the control panels, concentrating primarily upon panel design, instrumentation, hardware and annunciators. Because the panels were staged in the factory at the time of the survey, it was not possible to evaluate some sections of the BWR Owners' Group Control Room Survey Checklists.

Each panel was compared to a set of design criteria in checklist form developed from recognized human factors standards. These checklists provided detailed guidelines for panel layout, panel design, instrumentation, hardware and annunciators. In addition, task analyses of the BWROG Emergency Procedure Guidelines were developed and used to evaluate the adequacy of control room instrumentation.

A preliminary prioritization of potential enhancements was also included in the form of Evaluation Products. These products have been derived from two numerical rating factors, one indicating the degree to which the panel under consideration complies with the checklist criterion, the second representing the relative likelihood that noncompliance with that item could cause or contribute to operator error. The products of the two factors are then categorized as follows:

9-12 - Modifications are recommended
8 - Modification should be strongly considered
6 - Modification should be considered
4 - Modifications may be beneficial in some cases

Final recommendations for improvements were determined by Niagara Mohawk in an item-by-item review of these concerns as part of an integrated approach to control room upgrades. The review included an analysis of the safety significance and frequency of use of the components and systems involved, the consequences of operator retraining required by the change and the engineering practicalities of instituting the change. Input was obtained from operations, engineering, training and human factors specialists.

As a direct result of this review, major human factors modifications were incorporated in the panels. In addition to improved demarcation and enhancements, some 391 devices were

relocated, 762 labels were added and/or revised and 168 spare devices were removed from the panels.

With this strong history of human factors involvement and the comprehensive NUREG-0700 Program recently conducted, we are confident that the Nine Mile Unit 2 control room meets the demand for safe, reliable plant operations.

2.0 MANAGEMENT AND STAFFING

The purpose of the DCRDR was to identify and correct those features in the control room environment which could potentially detract from the safe and efficient operation of the facility. The DCRDR activities were implemented by experienced operations, nuclear systems, and human factors engineering personnel.

2.1 Utility Management Responsibilities

Management responsibilities included the following:

1. Analysis of objectives and constraints
2. Commitment of resources
3. Selection of review team personnel
4. Assurance that the review team functions in accordance with all procedures, directives, and commitments applicable to the work being performed by the review team
5. Integration of the DCRDR with other projects involving human factors concerns
6. Interface among the review team and vendors, consultants, and state and federal agencies

Management responsibilities also included definition of responsibilities of utility and contractor personnel associated with the review.

Upon completion of the DCRDR, the review team prepared a comprehensive report which listed all discrepancies found, recommendations for their correction, and appropriate supporting data including the prepared schedule for implementation. Justifications for HEOs with safety significance to be left uncorrected or partially corrected were also included. The report was then presented to management for review and subsequent submittal to the NRC.

2.2 DCRDR Organization

The DCRDR organization was structured as shown in Figure 2-1. The review team leader reported directly to the management team and coordinated the overall review team effort. The Stone & Webster engineer, General Electric engineer, and operating personnel provided support for the human factors engineers (consultant) performing the review team activities (survey, interviews, verification, report writing, etc.). The consultant provided a human factors specialist to direct the day-to-day activities of the human factors engineers. He reported to the team leader for overall coordination.

The team leader was responsible for presenting the recommended changes, task completion reports, and final report to the management team for their review. He also was responsible for providing the recommended changes and final report to the executive team for their approval.

An additional independent Human Factors Group is on contract with Niagara Mohawk on an as-needed basis. This group provided additional perspectives and guidance on various stages of the DCRDR, particularly in assessment planning. It is expected that this group will continue to provide services on an ad hoc basis for the remainder of the DCRDR.

EXECUTIVE TEAM

Vice President, T. E. Lempges Nuclear Generation	APPROVE: Recommended Changes Final Report
NMP-2 Project Director D. L. Quamme	

MANAGEMENT TEAM*

Manager, Nuclear Licensing (A. F. Zallnick/N. Rademacher)	REVIEW: (PRELIMINARY AND FINAL) Recommended Changes Task Completion Reports Final
Manager, Project Engineering (J. P. Thomas/D. L. Pike) Superintendent Operations (R. B. Abbott) Assistant Project Engineer-SWEC (A. Lattie/E. Hubner) Human Factors-ARD (R. Shannon) Superintendent Training (K. Zollitsch/G. Weimer)	

REVIEW TEAM**

Team Leader/Project Engineer (A.G. Vierling) Human Factors Engineers-ARD (D. Taylor) BOP Systems Engineer Coordinator - SWEC (P. Buttacovoli) NSSS Systems Engineer Coordinator - GE (D. Rennels) Station Operations Coordinator (R. Gayne) Training Department Coordinator (M. Dooley) Licensing Coordinator (N. Rademacher) SPDS Coordinator-SWEC (M. I. Schneider) EOP Coordinator (M. Colomb)	Develop and/or Perform: Program Plan Survey Inventory Task Analysis Verification Validation Assessment and Improvement Recommended Changes Task Completion Report Final Report

*Team Members or Designee
**Participation on an as-need basis

Figure 2-1. Organization Chart

2.3 Review Team Qualifications

Resumes for each member of the review and management teams are contained in Appendix A. Job descriptions of selected members of the review team, who interacted on a continual basis, are outlined below:

1. Review Team Leader. The review team had the review team leader as its key person. This individual provided the administrative and technical direction for the project and had responsibility for the project. Access to information, facilities, and individuals providing useful or necessary input to the team was coordinated by the review team leader. Because of his detailed knowledge of NMP-2 systems and methods, this individual provided a cohesive force for the various NMPC department personnel and vendor organizations involved with this project. Plant operations personnel provided input to the review team through contact with the review team leader.

2. Human Factors Engineer. The human factors engineer worked closely with the review team throughout each phase of the control room review and shared with the team the human factors technical leadership of the entire DCRDR project.

3. BOP Systems Engineer Coordinator - SWEC. This individual assisted in the identification of BOP system design goals and functions and served as the review team expert on the factors affecting system design decisions. During the assessment phase, which extended over a 12-week period and covered several BOP systems, this coordinator attended the daily assessment meetings and interfaced directly with the Stone

and Webster system engineers on an as-needed basis. He was provided management support and authorization to assure priority and timely response.

4. NSSS Systems Engineer Coordinator - GE. The responsibility of this engineer was to assist in the identification of NSSS design goals and functions and to serve as the review team expert on the factors affecting NSSS design decisions.

5. Station Operations Coordinator. This individual assisted in identifying operator tasks and served as the review team expert on the operational constraints for manipulations of plant systems. He provided the necessary operations support for the various DCRDR activities by assigning and scheduling subject matter experts (reactor operators) when they were needed.

6. Training Department Coordinator. Provided support for the validation effort, made recommendations as to possible training fixes and improvements, and set up a vehicle to identify new HEOs. This vehicle is in the form of a log book in the training simulator, where operators, during training, may identify an HEO and have it submitted to Project Engineering for evaluation.

7. Licensing Coordinator. Integrated technical and scheduling concerns with the overall NMP-2 commitment.

8. SPDS Coordinator - SWEC. This position was especially useful due to the number of systems covered by the SPDS system. The coordinator provided technical input based on the integration of the various responsible parties.

9. Emergency Operating Coordinator. Provided technical expertise relative to the development of the EOPs. Integrated Task Analysis and HEO assessment with the requirements of the EOPs.

2.4 Team Responsibilities and Orientation

The review team had the full support of the management. In addition, they were given access to (1) all pertinent records including system descriptions, logic and flow diagrams, drawings and procedures, (2) necessary headquarters facilities (office services, communications, and computer services), and (3) appropriate areas of the plant through badging.

Each individual of the review team had to contribute an in-depth knowledge of specific topics to the team. It was important, however, that the review team was able to conduct the DCRDR from a common basis of understanding. Therefore, each member had to undergo an orientation program designed to provide a certain base level of knowledge, particularly of human factors and to acquaint each team member with the other disciplines represented on the team.

The orientation was presented by the NMPC Team Leader/Project Engineer (A. Vierling), ARD Human Factors Engineers (D. Taylor and R. Shannon), and ARD Vice President (R. Kershner). The topics covered during the orientation program and the approximate time spent on each are as follows:

- Supplement I to NUREG-0737. Provided an introduction to the DCRDR process and goals. A background of the systems analysis approach to be employed in the human factors engneering evaluation of the control room was discussed (15 minutes).

- <u>Historical Review</u>. Described documentation to be researched and the value and type of information to be obtained (15 minutes).

- <u>Operator Survey</u>. Described the questionnaire to be used and how the data is incorporated into DCRDR (15 minutes).

- <u>Inventory/Task Analysis/Verification</u>. Each of these procedures and methodologies were discussed as well as their relation to one another (45 minutes).

- <u>Validation</u>. The walk-through and talk-through procedures and video tape analysis were discussed (15 minutes).

- <u>Checklist Survey</u>. NUREG-0700 was discussed as the foundation of the checklist. Each section of the checklist and the areas of the control room covered were reviewed (15 minutes).

- <u>HEDs/Assessment/Implementation</u>. The process of writing HEDs, the assessment of their severity and the implementation of proposed changes was briefly discussed (30 minutes).

The orientation was attended by the following persons:

N. Rademacher	NMPC/Licensing
G. Weimer	NMPC/Training
R.B. Abbott	NMPC/Operations
A.G. Vierling	NMPC/Team Leader
E.M. Davis	NMPC/Operations
B. Tesoriero	NMPC/Operations
F. Conway	NMPC/Operations

F. Kane	NMPC/Operations
T. Bloom	G.E. Startup
D.F. Helms	G.E. Startup
A. Hwu	G.E. Startup
E. Hubner	SWEC/Management Team
D. Pike	NMPC/Management Team
M. Schneider	SWEC/SPDS Coordinator
R. Gayne	NMPC/Operations Coordinator
B. Wambsgan	NMPC Operations
T.E. Lempeges	NMPC Executive Team
P. Buttacavoli	SWEC BOP Systems Coordinator

3.0 DOCUMENTATION AND DOCUMENT CONTROL

This section describes the documentation system (input/output documents), and documentation management/control procedures which NMPC used to support the NMP-2 DCRDR.

From the beginning of the review, the team had at its disposal the following reference documents: System lists, system descriptions, piping and instrumentation drawings, control room floor plan, panel layout drawings, list of acronyms, abbreviations, samples of computer printouts, procedures (emergency, off-normal and operating), guidelines for procedural development, other human factors/control room studies.

As additional documents were acquired or written, they were added to the library.

3.1 Output Documentation

To facilitate systematizing and recording Control Room Design Reviews, a series of standard forms was developed. The following forms were used and they appear in their entirety in the Appendices of this report: Control Room Human Engineering Observation Record, Historical Report Problem Analysis Report, Sound Survey Record, Lighting Survey - Illuminance Record, Lighting Survey - Luminance and Reflectance Record, Humidity/Temperature Record, Air Velocity Survey Record, Control Room Design Review Operator Survey, Inventory Form, and Task Analysis Data Collection Form.

3.2 Document Control

NMPC recognized that at Unit 2, a data collection/analysis effort, such as that inherent in a DCRDR, could generate volumes of paperwork which need to be managed properly. Therefore, NMPC implemented a database management system (DBMS) to collect, update, analyze and provide the information necessary to fulfill the requirements of DCRDRs on a dedicated computer. Implementation of the DBMS minimized the number of manual transformation steps required in the data collection/analysis effort. Furthermore, it afforded the DCRDR team the capability of real-time data analysis. Through the use of the DBMS parameters, any number or combination of data points was accessed and analyzed on an as-needed basis.

3.3 Database Management System

The DBMS was implemented on a VAX 11/730 using INFO/INFO-TEXT. It consists of a master program with memory storage devices to hold the data extracted from various source documents. Because manual handling of data is largely eliminated after data is entered into the system, the DBMS greatly reduced duplication of efforts, document loss and errors resulting from unnecessary handling of data.

After the DBMS was implemented, a series of data files and records was created using information derived from the various source documents. Each source document contained specific forms, charts, schedules, etc., required for the DCRDR and each constituted a single data file. Data files, in turn, comprised individual records which represent the specific parameters contained in the file forms, charts, etc. The file then served as a model of the document from which it was created, as well as an area to store data records. The source documents included those reports and forms listed previously in this

chapter. To avoid file damage or unauthorized data manipulation, access to the DBMS was restricted by limiting user training and by issuing passwords to a limited number of users.

One especially pertinent use of the DBMS was in determining the cumulative effect of HEOs. After all HEOs had been identified, a computer sort was generated which produced a listing of HEOs by type of fix. This listing was reviewed and the cumulative effect of HEOs were assessed.

4.0 HISTORICAL DOCUMENT REVIEW

4.1 Introduction

In the nuclear power industry, human error can combine with improper design features and lead to unacceptable consequences. Fortunately in the industry, instances of past human performance error and equipment/design arrangement problems are documented in plant and industry records and can be used as a database for recommending design improvements. This document presents the approach that was used to access archival information and identify areas of potential human performance problems at NMP-2 as well as the results based on this review and analysis.

Specifically described in this document are the approaches that were used to: (1) identify, collect and select historical reports for review; (2) review and analyze the reports; and (3) document and report the results of the review and analysis. The review and analysis were conducted by a Human Factors Specialist (HFS) from ARD Corporation and a Subject Matter Expert (SME) from the DCRDR team.

4.2 Identifying, Collecting and Selecting Historical Reports

NMPC has a convenient industry-wide source of historical reports - the Licensee Event Report (LER). Since NMP-2 does not have an operating history, no in-house reports were reviewed. Similar plants (LaSalle-1, LaSalle-2, Limerick-1, Susquehanna-2, WNP-2) were included in the review.

LER information is stored in an NRC computerized database and includes all Reportable Occurrences (ROs) to the NRC. Licensees are required to submit these reports to comply with federal regulations. The database is set up to provide ease in obtaining information regarding the incidents.

Since all LERs are submitted to the Institute for Nuclear Power Operations (INPO), an LER sort was obtained from the INPO database. The request was limited to reports of those events related to personnel error which occurred in GE-5 plants over the past five years (January, 1979-September, 1984).

ARD Corporation, with the assistance of NMP-2 plant personnel, obtained copies of the applicable LERs. These reports were then sorted by data and possible applicability. Copies of those events which involve control room operator, procedural and/or control board equipment failure, and errors attributed to design arrangement errors were retained for further review.

All reports were screened to determine if they described and documented a control room problem meeting the following criteria:

1. Equipment referenced (valve/pump controls, displays, indicators, etc.) must be in the physical confines of the control room.

2. Procedure steps referenced must be accomplished within the physical confines of the control room.

3. Personnel error referenced must have occurred in the control room on equipment in the control room, or entailed a deviation from procedures that should be accomplished in the control room.

Reports that met one or more of the above criteria were retained for further analysis.

4.3 Report Review and Analysis

For every report that cleared the initial screening, a Problem Analysis Report (PAR) was compiled. The two-page PAR, shown in Appendix B, was used to record the following information: investigators' names, station and unit, event date, report type and number, operating status of plant, circumstances and events leading to the problem, nature of the problem, steps taken to correct or alleviate the problem, outcome, corrective measures undertaken, and human performance problems associated with the event.

With the assistance of the SME, the HFS reviewed each report to determine whether the event was applicable to NMP-2. In the cases where the systems or equipment were different at NMP-2, the report was not considered applicable. For each event determined applicable to NMP-2, the second page of the PAR was completed. The information completed at this time included: (1) areas in which the event is applicable to NMP-2; (2) corrective actions taken at the plant under review; (3) unresolved discrepancies (if any); and (4) HEO number (where applicable).

4.4 Result Documentation and Reporting

The PAR constitutes the primary document for this aspect of the DCRDR process and contains pertinent information from the analyzed report. In addition, when the recommendations generated entailed panel alterations, panel enhancements, training revisions or additions, operating procedure modifications and/or administrative procedure modifications, the apparent fundamental problem and its recommended corrective

action were recorded, by the HFS, as an HEO on an HEO form (Appendix B). The event and task relevant to the HEO were noted in the description of the discrepancy.

In addition to maintaining the PARs and HEOs, the HFS responsible for this aspect of the DCRDR maintained the historical review notebook. This notebook is a working document which was started at the beginning of the Historical Report Review process and contains:

1. An index of Problem Status Reports (PSRs) that were reviewed

2. A copy of all completed HEOs identified during the review

3. A copy of all reports concerning Human Factors problems in the control room which were reviewed and analyzed

4. Additional information collected in the review and used in the analysis (e.g., previous review by station, cover letters transmitting LER)

5. The final PAR for each document reviewed

Additionally, the PSRs are included in the historical review notebook as an index (with applicable page numbers) for all reports included in the notebook.

4.5 Results of the Analysis

The LER sort resulted in a listing of 253 reports. After the initial review, a total of 12 reports, which were related to both human factors and the control room, as defined by the criteria listed previously, were retained. From these 12 reports, six were considered not to be applicable to NMP-2. After removing these six reports from the review process, six

reports remained, with two of these events having been corrected at NMP-2. Therefore, four HEOs were identified regarding a problem derived from an LER which could potentially occur at NMP-2. A summary of the results of each sort is shown in Table 4.1. In addition, all of the Human Factors/Control Room documents are included in the historical review notebook.

Table 4.1 Summary of Results of Sorts

Document Status	Number of Documents
Not Applicable to Human Factors and/or Control Room	241
Not Applicable to NMP-2	6
Problem Corrected at NMP-2	2
HEO Written	4
Total	253

The following four HEOs were identified as being pertinent to NMP-2 operations:

(a) HEO 283 - During the historical review, it was found that at the Susquehanna Station, the controls for the outside air makeup damper were placed in the 100% closed position instead of the 100% open position during surveillance testing. This caused "B" train of standby gas treatment system trip shortly after starting (LER 83-089/03).

(b) HEO 284 - It was found during the historical review that at LaSalle Station, a Suppression Pool chart recorder was turned off during paper changing. It was later discovered not to be printing (LER 83-068/03).

(c) HEO 285 - During the historical review, it was found that at Susquehanna Station, channel gains were inadvertently adjusted during startup testing. "D" average power range monitor was made inoperable (LER 83-009/03).

(d) HEO 286 - During the historical review, it was found that during startup tests at LaSalle station, the displayed heating rate was one-half actual valve due to an error in the computer program which calculated heatup rate for CRT displays. The operator failed to note the discrepancy from other control room indications (LER 82-073/03).

4.6 References

Additional information concerning the Historical Document Review can be found in the following document:

Advanced Resource Development Corporation. Historical Document Review Summary of Results for Nine Mile Point-2. Columbia, MD. July 1985.

5.0 CONTROL ROOM OPERATOR SURVEY

5.1 Objective and Approach

The objective of the operator survey is to obtain special, pertinent knowledge that operating personnel possess regarding control room system features which they have experienced and/or observed in the course of preparing for operations or during operations themselves. As one of the foundation processes of the DCRDR, the operator survey is intended to provide information that will guide the HFSs during subsequent investigative phases of the DCRDR (i.e., the checklist survey, task analysis, verification and validation processes). Aside from this primary function, the survey also provides an avenue for plant management to gather general information about the plant operators' perceptions and opinions of control room design and procedures. The respondents were encouraged to identify both positive and negative features of the control room. The negative items were, as appropriate, considered in later stages of the DCRDR, either presented as general reference information for NMP-2's consideration, or written as HEOs. The positive items, also presented for reference, suggest control room features that should not be compromised in the course of correcting other HEOs. These items will be used by the review team as guidance for corrective actions, since they illustrate aspects of the control room design that the operators believe are particularly effective.

An effort was made to present all comments and suggestions made by the operators, even though not all of the negative comments were determined to be valid HEOs. The determination as to which problems qualified as HEOs was based in part on an understanding of the principles of human factors engineering and in part on information collected from operations personnel during the follow-up interviews. It should be emphasized that there are many of the operator comments and suggestions presented herein that will prove useful to NMP-2 management, in addition to those that resulted in HEOs.

Although emphasis was placed on emergency-related design features during the control room review, the operators were encouraged to consider all modes of plant operations in formulating their responses.

It was expected that the findings reported here would, to some extent, overlap with those resulting from other phases of the DCRDR. This redundancy serves as one indication of the extent of identified problems. Another indication of problem severity is the number of operators who mentioned a particular problem. Nevertheless, a strength of the operator survey was that it gave individual operators the opportunity to apply their unique backgrounds and experiences to the control room review process. Therefore, the possible importance of concerns that were voiced by only one or two respondents was not overlooked.

5.2 Construction of the Self-Administered Questionnaire

The self-administered questionnaire was structured to address the following areas which are those suggested in NUREG-0700: Workspace Layout and Environment, Panel Design, Annunciator Warning System, Communications, Computer-Generated Information, Maintenance Procedures, Operating Procedures, Staffing and Job Design, and Training. A draft questionnaire was prepared by the HFS. NMP-2 members of the review team reviewed this draft

and provided suggestions which were incorporated in the final version of the questionnaire. The resulting questionnaire, with accompanying explanatory materials, was then distributed to the operators. A copy of the distribution packet is shown in Appendix C.

Each question in the first nine topic areas was posed in a multiple-choice format to encourage the response of operators who might not have been inclined to provide written comments for each item. In addition, open-ended questions for each item encouraged the operators to describe in detail the specifics upon which their multiple-choice responses were based. The operators were frequently reminded to consider all modes of plant operation, including start-up, hot standby, full power, reduced power and abnormal or emergency operating conditions. Opinions regarding both positive and negative design features of the control room were solicited. Each respondent was also asked to fill out a separate sheet detailing his background, level of experience, and current status at NMP-2.

5.3 <u>Distribution and Analysis of the Self-Administered Questionnaire</u>

These questionnaires were distributed to forty-seven operators, based on a list prepared by NMPC. The participants included all licensed operating personnel as well as training personnel in NMP-2. The operators were given several weeks to fill out the self-administered questionnaire and to return it by mail to the HFS in self-addressed, stamped envelopes provided by the HFS. Confidentiality was assured by assigning each outgoing questionnaire a number. The list of potential respondents and corresponding numbers were kept in confidence by HFS personnel. In all, twenty-four operators or fifty-one percent of the operators to whom the self-administered questionnaire was distributed, contributed to the Operator Survey. The

demographics of these individuals are summarized in Table 5.1. The respondents reflect a representative sample in terms of operating experience and positions of personnel at NMP-2. In addition to their commercial nuclear experience, most of these people had been involved in the Navy nuclear program prior to joining the commercial nuclear industry.

Table 5.1 Average Population Demographics and Statistics

	N	Height	Age	Nuclear Oper Exp	Yrs CR Oper Exp	Yrs RO	Yrs SO
SRO License NMP-1	8	70.1	38.2	15.25	5.9	4.7	6
RO License NMP-1	11	70.7	30.7	6.9	2.0	2.7	0
SRO Cert GE BWR	2	68.5	38.5	6.25	4.25	2.25	2.25
Training	3	72.3	29.7	10.3	9.3	0	0

The HFS logged the twenty-four questionnaires that were returned, and tallied the demographic information and multiple-choice responses. Written responses were compiled for each question and then summarized. Responses which addressed the same issue were collapsed into a summary statement of the concern, with an associated count of the frequency with which that concern had been mentioned. In the few instances in which a concern was addressed by different respondents under different questionnaire items, the responses were cross-indexed and the HEO was summarized under the question which was most appropriate for that response. Ambiguities in the written comments were noted. In addition, the multiple-choice responses and the written comments were examined with an eye towards areas of particular concern to the operators and the extent to which a consensus emerged on each item.

The multiple choices were structured such that the first alternative (a) represented a positive statement (no problems, excellent), the second (b) represented slight problems (only 1 or 2 problem areas, adequate), the third (c) represented significant problems (several problem areas), and the fourth (d) represented the most negative choice (many problem areas). In general, the multiple-choice responses reflected a positive view of the control room design by the operators. In all questions, the most frequent response to each question was an (a) or (b). There were, of course, differing amounts of spread (reflecting degree of consensus) to the responses; however, on all questions, more than 50% of the responses fell in the (a) and (b) choices. Despite these overall positive findings, it should be noted that a few negative features were identified under most questions. Furthermore, the most negative responses were distributed over the operators, and therefore cannot be attributed to the opinions of a few.

5.4 Follow-up Interviews

The HFS conducted on-site interviews with twenty of the twenty-four operators who completed the survey. These interviewees included Operations Supervisors, Shift Supervisors, Operators, Trainees and Engineers. Each interview lasted approximately one hour. Confidentiality of operators' responses was maintained both during the interview process and in the notes taken by the HFS during the interviews. The objectives of the follow-up interviews were as follows: (1) to clarify ambiguities in an individual's written responses to the self-administered questionnaire, (2) to gather additional details (e.g., system or component information) pertaining to that individual's responses, and (3) to examine the extent to which operators agreed or disagreed with their colleagues' questionnaires. Thus, there were a few issues that were discussed with all interviewees and some that varied from one individual to the next, depending on each person's written responses on the self-administered questionnaire.

5.5 Integration of Interview Data with Self-Administered Questionnaire Responses

The information compiled previously from the self-administered questionnaires was enhanced, based on notes taken by the interviewer during the follow-up interviews. Ambiguities noted previously were resolved and, where appropriate, specifics such as system or component names were added. The tables of issues which had been stated previously were then updated. Finally, for each issue of concern, a recommended action for the review team was determined. These were classified into the following categories:

1. Problems that were sufficiently well-defined and valid, from a human factors perspective, were written as HEOs.

2. Problems that had already been written as HEOs were noted as such.

3. Operator-suggested changes, which would have violated sound human factors engineering practices, were noted separately.

4. Comments of a more general nature, which expressed valid concerns outside the scope of the DCRDR, were noted for management's reference.

5.6 Documentation for Future Reference

The data gathered during the Operator Survey are being maintained by the HFS in a form that will provide the review team with reference material. The HEOs were entered into the computerized DBMS and were presented to the review team. The tables of comments and cross-reference suggestions for

corrective actions were entered into a Wang text processing system. These software files can be searched by keyword, question number, or code for follow-up action. Back-up documentation that includes the respondent number and question on which each response was made has also been maintained. Therefore, if additional follow-up information is desired by the review team, the data summarized in these tables can be related back to the original questionnaire responses, while maintaining confidentiality.

5.7 References

Additional information concerning the Control Room Operator Survey can be found in the following document:

Advanced Resource Development Corporation. Report on CRDR Operator Survey for Niagara Mohawk Power Corporation, Nine Mile Point Unit 2, Columbia, MD: January 1985.

6.0 CONTROL ROOM INVENTORY

6.1 Objective and Approach

The objective of the control room inventory for NMP-2 was to establish a reference set of data which identified all instrumentation and controls in the main operating area of the control room, for comparison with the equipment requirements identified during the task analysis. All displays, controls, controllers, annunciators and other equipment on the front and some back panels in the control room were included in this inventory. Based on the guidance of NUREG-0700, HFSs from ARD Corporation completed the inventory of NMP-2. Because the inventory was performed during the time that some control room equipment was still being installed, the approach taken was to base the inventory on the Stone and Webster arrangement drawings, and to confirm and gather additional information about each component by direct observation in the control room.

ARD used Stone and Webster arrangement drawings for their inventory. These drawings reflect an Engineering Design Base of January 1985 with hardware implementation expected to be completed in late 1985. These drawings are also used as design configuration control for control room panel changes submitted to General Electric. From these SWEC arrangements and other SWEC drawings, GE generates production drawings (i.e., connection diagrams, elementaries, assembly drawings, etc.) which are used to implement hardware changes. This design process and

subsequent hardware implementation is covered by 10CFR50 Appendix B and include proper drawings and as-built verification. In addition to this, ARD performed an on-site confirmation as described in Section 6.3.4. As a final check, ARD will perform an additional inventory analysis of the completed control room. This analysis will provide a discrepancy list of the components reviewed in the DCRDR from the final configuration, including any additions to the design base.

Each piece of equipment on the control boards was identified by a unique code which was developed to meet the specific needs of the DCRDR project. This code served to identify the section of the specific control panel in which each piece of equipment was located, as well as equipment components that were functionally related. Then the relevant physical characteristics of each piece of equipment, as they appeared from the front of the control panels, were coded. The characteristics noted were those which would determine, from a human factors standpoint, any usefulness of the equipment to the operators in monitoring and controlling the plant.

The data were stored in the computerized DBMS developed by ARD for NMPC's DCRDR. The data were then used to support the DCRDR verification process, whereby it was determined the extent to which suitable equipment was available in the control room to allow the plant operators to effectively perform emergency operating procedures. Having the inventory data stored in the DBMS along with the equipment requirements derived from the task analysis, allowed an automated comparison of the two to be accomplished.

6.2 Panels Inventoried

All equipment on the following panels was inventoried:

P601 -- Reactor Core Cooling Control Board
P602 -- RWCU and Recirculation Control Board

P603 -- Reactor Control Board

P851 -- Steam and Water Systems and Turbine/Generator Control Board

P852 -- Electrical Control Board

P870 -- HVAC Division 1 Control Panel

P871 -- HVAC Division 2 Control Panel

P873 -- Drywell Cooling and Primary Containment Purge Division 1 Control Panel

P875 -- Primary Containment Purge Division 2 Control Panel

6.3 Procedural Steps

The following steps summarize the approach taken in performing the inventory:

1. Stone and Webster arrangement drawings reflecting a January 1985 design base were obtained. These prints included label information and Stone & Webster tag numbers for each component on the control boards.

2. A grid matrix was superimposed on each corrected print to provide a code that would uniquely identify the approximate location of each piece of equipment on the boards. The unique identifier derived from the matrix was termed an Equipment Identification (EID) Number.

   In tailoring this grid to particular control panel drawings, the placement of the cell boundaries was adapted to follow the natural grouping of equipment on the panels as much as possible. The cells for each panel were then numbered with an X value (abscissa) that identified the horizontal position (left to right) of a given cell across the panel with a Y value (ordinate) that identified the vertical position (top to bottom) of that cell down the panel. When the drawing for a particular panel spanned more than one print, the X values were continued from the first print onto the second.

The components within each cell of the grid matrix were numbered sequentially from left to right and top to bottom, starting with the number "1" in each cell. Control switches and their associated indicator lights were, at this level of analysis, considered as one component, as were recorders with multiple pens or points, controllers with multiple indicator or control functions, and vendor panels (e.g., the Turbine Control Panel).

The EID was then derived from the marked up drawings. It consisted of the panel number, X then Y grid coordinates, and sequential number. (Example: 601-6-5-12 or, panel 601, X coordinate "6", Y coordinate "5", sector sequential number "12".) For annunciators, the EID consisted of control panel number (in which each window box was mounted), annunciator panel number (i.e., window box number), and row and column in the window box.

There was a sub-identification number (Sub-ID) scheme used to designate components that were functionally related. For example, given a control switch and its associated indicator lights, the control switch was given an EID to show location on the boards. The indicator lights were given the same EID to show functional relationship, but, in addition, each indicator was given a unique Sub-ID number. The Sub-ID numbers were assigned starting with "1" for a given component and increasing sequentially as the related indicator lights for that component were observed from left to right, top to bottom. The control switch was assigned a Sub-ID of 000. Sub-numbers were also used to distinguish among points on multi-point recorders, different control and display components on a controller, and different components on a vendor-supplied panel inset.

3. The inventory was accomplished panel by panel. The information that was coded into the DBMS from the prints included, for each component, EID and Sub-ID, label, tag number, and whether it was a control or display. For annunciators, the extracted information consisted of EID and label. As each piece of equipment was inventoried, it was checked off on the appropriate print.

4. A print-out of these data was obtained for each panel. An on-site confirmation of this inventory information was then performed, based on direct observation in the control room. This on-site data gathering served several purposes. First, it served as a check on the accuracy with which the information had been extracted from the prints. When an apparent discrepancy was noted between the information extracted from the prints and the component observed on the control boards, the first action was to check the prints to be sure that the information had been extracted accurately.

   Second, the systematic observation of the boards allowed the identification of actual discrepancies between the as-built prints and control boards. These discrepancies might have been due to errors in the prints, errors in the installation of equipment, or simply the fact that the as-built equipment had not yet been installed.

   Third, the on-site segment of the inventory was used to code additional information about each component that was not available from the front panel elevation drawings. The Inventory Form (Appendix D) was used when significant information about a component had to

be coded. Otherwise, the information shown on this form was added to the print-out from the DBMS, which had been formatted to prompt the HFS for the appropriate additional information.

5. The on-site inventory was completed by HFSs, with input as needed by NMP Operations and Engineering. The data fields were filled in with numerical codes. By utilizing these codes, data entry into the computerized DBMS was facilitated and consistency in terminology was assured.

6. The unique numbers by which annunciators were identified were derived from the position of each annunciator tile in a window box. The columns of tiles in a given window box were numbered sequentially from left to right. The rows of tiles in a given window box were lettered sequentially from top to bottom, starting with A. Thus, each tile was uniquely identified by the combination of panel number, row letter and column number. For annunciators, the following information was entered on the inventory form: equipment name (the label engraved on the tile), and panel location (number of the entire window box of annunciator tiles, and number of the column and letter of the row in which the tile was located).

7. The information that had been entered on the DMBS print-outs and Inventory Forms by the HFSs in the control room was typed by data entry personnel into the computerized data base management system. Two files were created: one for annunciators, and one for displays and controls.

6.4 Coding of Inventory Form

The following paragraphs explain the type of data that was entered on the Inventory Form:

1. The LABEL name was taken verbatim from the control panel. Whether the label was permanent or not (e.g., dyno tape, Kroy lettering, etc.) was noted under the Label Type column.

2. The SUB-NAME was used for legends on indicating lights, names of points on multi-point recorders, names of pens for dual-pen or multi-pen recorders, or labels for components that were sub-numbered. Detailed information about each piece of equipment (i.e., that which had been assigned a sequence or sub-number) was then entered with reference to the lists of codes. Some fields were appropriate for displays and others were appropriate for controls. Also, there could be multiple entries in some fields in the detailed record of information about a given piece of equipment. The DBMS was structured to accommodate these possibilities.

3. The COLOR field was used for several purposes: to identify the color of indicating lights, targets on breaker controls, or pens on multi-pen recorders.

4. The TYPE OF DISPLAY field referred to anything that measures (e.g., meters, gauges) or presents information other than a label name or a switch position. There could be only one type of display per detail record. Instruments that had more than one scale or point would have had these coded in separate sub-numbered records.

5. WHAT MEASURED referred to the parameter(s) being displayed on one physical scale or continuum. In data collection, this was assumed or inferred from the display in question. For instance, if the units were "gallons per minute", flow was postulated to be the WHAT MEASURED. If more than one scale existed on an instrument (e.g., dual-pen recorder), each scale was inventoried on a separate detail record (and appropriately subnumbered).

6. The UNITS field related directly to WHAT MEASURED, but was taken directly from the scale shown on the display.

7. The RANGE of a meter or gauge was directly observable from the instrument. Any one instrument could have more than one range. Any change in the "DIVISIONS" on the meter indicated a new range. Some scales had multipliers generally increasing the range by a factor of 10 (e.g., x10; x100; x1000; x10E3). Some meters conveyed this multiplier as part of the UNITS (e.g., gpm x 100). This was one case in which the boards were not copied verbatim. The multiplier was always assumed to be associated with the RANGE.

8. The DIVISIONS of the meter or gauge were directly observable from the instrument. DIVISIONS were always derived; they were defined as the absolute value of the smallest gradation on the scale to be read. Any one instrument could have several different divisions. Whenever there was a change in the number of minor scale marks between the major scale marks, a change in divisions was indicated. For ease of coding, divisions were assumed to have no multiplier. Scales could have ranges with multipliers but it was only necessary to code multipliers for ranges.

9. TYPE OF SWITCH referred to any control including controllers. Shape was the most important characteristic in determining the value coded here. Examples would be a J-handle valve control or a pushbutton test or a keylock selector control switch. There was only one type of switch per detail line in the inventory.

10. WHAT CONTROLLED refers to the type of equipment being controlled. For example, valve, pump, circuit breaker, fan, etc., would be coded in this column.

11. VALVE CONTROL referred to specific types of switches -- those that control valves. This field was used to delineate whether or not a valve was seal-in (valve travels full open or closed) or throttleable (valve is able to be stopped in a midposition of travel). For this parameter, there were only four possible variables -- throttle open, throttle closed, seal-in open, seal-in closed. If a switch is throttle open but has an as-is function (see SWITCH ACTION) the valve will travel full open without any further operator action, therefore having seal-in <u>features</u>. On the inventory, it was documented as both throttle open <u>and</u> seal-in open.

12. SWITCH ACTION referred to what a control switch will do after it has been repositioned. It stays where it is put (as-is) or it returns to its mid-position (spring return). It is possible that one switch is both as-is and spring return (e.g., a pump control that is able to be locked "off" but normally is spring return).

13. SWITCH POSITION was the verbatim position labels taken from the escutcheon plate of a control. Pushbuttons were assumed not to have switch positions based soley on their action. All other controls were assumed to have more than one switch position. The inventory form was designed to handle this contingency on one detail record.

14. The UNID was the Stone & Webster tag number. Entering the UNID for a component allowed it to be cross-referenced.

6.5 References

Additional information concerning Control Room Inventory can be found in the following document:

Advanced Resource Development Corporation. Summary of DCRDR Phases for Nine Mile Point Unit 2. Columbia, MD. June 1985.

7.0 FUNCTION AND TASK ANALYSES

7.1 Function Analysis

Operator task identification and analysis entailed the identification and documentation of tasks for emergency events. A draft of the Plant Specific Boiling Water Reactor Owner's Group (BWROG) Emergency Procedure Guidelines (EPGs) was used to identify the operator tasks to be analyzed. The BWR EPGs consist of four guidelines and seven contingencies which are designed to (1) maintain Reactor Pressure Vessel (RPV) inventory, (2) maintain the integration of primary and secondary containments through adequate heat rejection, and (3) minimize and control radioactivity release to the environment. The operator is directed into these guidelines by the occurrence of easily recognizable conditions, which are normally accompanied by alarms. The guidelines are designed such that if incorrect actions are taken, the error is quickly recognized and corrective measures can be implemented. This is accomplished by focusing the operator's attention on those plant process parameters affected by the action taken. Incorrect actions may result in further degradation of plant conditions and, as a consequence, the guidelines direct the operator to take further corrective actions.

The EPGs provided a functional analysis that identified generic information and control needs. The plant-specific EPGs used during the task analysis provided detailed information on operator response during transients and accidents. All steps and contingencies represented in the EPGs were analyzed,

resulting in a list of plant-specific tasks for the accomplishment of all branches of the guidelines. Appendix E lists the tasks that were derived from the EOPs. Niagara Mohawk procedures N2-EOP-1, N2-EOP-2, N2-EOP-3, and N2-EOP-4 explain the transition from generic to specific EOPs. This translation is considered outside the context of the DCRDR and this summary report; however, these procedures are included in Appendix F for information purposes.

The task description form was the link between the EPG transient analyses and the DCRDR task analysis effort. A task description form was completed for each section of the EPG identifying: operator functions to be accomplished, operator tasks associated with operator functions, corresponding procedure step numbers of identified tasks, unique task numbers for future analysis, and common task elements.

The Task Description Form (Appendix G) was utilized for this phase of the effort. Task elements identified to be common to more than one procedure were not recorded twice. For example, if an action step involved observing Reactor Pressure Vessel Pressure less than 1000 PSIG, then the characteristics of the pressure instrument needed to accomplish the task were recorded. If this same task element were to be accomplished in a subsequent step, the task number of the original element would be recorded on the Task Analysis Form. Thus, availability and suitability was assessed for all tasks, but the data recording, entry and analysis was simplified.

7.2 Task Analysis

For each task identified in the Task Description Form, a Task Analysis Form (Appendix G) was completed by an HFS working with NMP-2 reactor operators and senior reactor operators outside the control room. The purpose of the Task Analysis Form is to identify the information and control needs for task performance

and provide a template of operator activities in the task for use in validation efforts. A single task was generally comprised of several subtasks or action steps. Characteristics of the information and control needs for performing each action step within the task were recorded on the Task Analysis Form. The information collected to describe the control needs for operator tasks included:

1. Equipment - The name of the plant equipment involved in the control action, noting the required type of control equipment (e.g., pump, isolation valve, governor valve, etc.)

2. Position - The control position name which corresponds to the escutcheon label (e.g., ON, RUN, CLOSED, AUTO)

3. Mode - The required mode of control for the task action (i.e., discrete or continuous)

4. SR - The need for a spring-return device for the control action

5. Pull-to-Lock - The need for a Pull-to-Lock function for the control action

6. Key - The need for a key-lock function for the control action

7. Cover - The need to protect the control function from inadvertent actuation

8. CSL - The need for a control status light as a feedback indication to the operator that the control action was initiated or established

9. Flag - The need for a flag or target to indicate that the device was automatically operated

10. Indicator - The need for a separate indicator for feedback or control actuation

11. ID - A unique identifier derived from the panel location of the control

The information needs for the operator task were described in terms of the following categories of characteristics:

1. Equipment - The name of the plant equipment involved in the feedback, noting the parameter measured (status, flow, pressure)

2. Level - The level of information (i.e., state, value, or trend) needed to suit the nature of the information need

3. State - The state of the parameter which is pertinent to the task accomplishment (e.g., less than 500 psig, At Low Level Limit, Lit, etc.)

4. Units - The units needed for the parameter display in order to accomplish the task without the need for conversion

5. Range - The range of parameter values required for the accomplishment of the particular task under investigation

6. Divisions - The required precision of the parameter value display, in terms of the smallest scale division

7. ID - A unique identifier derived from the panel location of the indicator

A separate column entitled "OTHER PERFORMANCE REQUIREMENTS" was provided for description of operator activities other than control and display actions.

Data collection efforts took place at the Nine Mile Point Training Center during January, 1985. At no time did the task analysis team members go into the control room in order to establish a context for information and control needs. The avoidance of the control room during the documentation of control needs was one method employed to ensure the independence of the needs data collection from the characteristics of the instrumentation and controls in the control room. Instructions to the operators also emphasized that the information and control needs and their characteristics should be based upon the task definitions and not upon the existing control room equipment. The effort successfully determined the appropriate operator tasks for accomplishment of the EPG guideline steps and the operator information and control needs to perform those tasks.

The Task Analysis data were entered into a data base constituting a specification of operator needs to accomplish the operator functions. This specification was used as a foundation reference point to verify the availability and suitability of control room instrumentation, to provide a context within which to survey the control room, and to provide a base of understanding on which to assess HEOs.

Based on guidance from the Nuclear Regulatory Commission Audit Team during the March, 1985 in-progress audit of the Nine Mile Point Unit 2 DCRDR, a review of the completed task analysis forms and task descriptions was conducted to identify tasks or

task action steps which branched to non-EOP procedures. The objective of the review was to ensure that all information and control needs necessary to place the plant into a safe shutdown condition (hot standby), including those needs contained in normal, abnormal, or other types of procedures and documents referenced out of the plant specific EOPs were included in the NMP-2 task analysis documentation. The review was conducted in April, 1985 and resulted in additions to several tasks. These new information and control needs were added to the original listings for their respective tasks. A final verification of availability and suitability, as described in Section 9, was conducted based on the revised task needs.

7.3 Future Revision of Control Room Requirements

Niagara Mohawk Administrative Procedure, APN-2, will be revised to require that all new or revised Emergency Operating Procedures be reviewed for impact to the System and Function Task Analysis. This review will be in accordance with guidance provided in the Human Factors manual. For those revisions impacting the SFTA and revising operator information and control needs, the reviewer will notify Niagara Mohawk's Nuclear Engineering Department of the new hardware requirements. Additional changes can be incorporated as part of the open ended follow up solution package described in Volume II of this Summary Report.

7.4 References

Additional information concerning functional and task analysis can be found in the following documents:

Advanced Resource Development Corporation. Summary of DCRDR Phases for Nine Mile Point Unit 2. Columbia, MD. June 1985.

Nine Mile Point Nuclear Station Unit 2. Emergency Operating Procedure No. N2-EOP-1. Emergency Operating Procedure Development.

Nine Mile Point Nuclear Station Unit 2. <u>Emergency Operating Procedure No. N2-EOP-2</u>. Emergency Operating Procedure Verification.

Nine Mile Point Nuclear Station Unit 2. <u>Emergency Operating Procedure No. N2-EOP-3</u>. Emergency Operating Procedure Validation.

Nine Mile Point Nuclear Station Unit 2. <u>Emergency Operating Procedure No. N2-EOP-4</u>. Emergency Operating Procedure Writers Guide.

8.0 CONTROL ROOM CHECKLIST SURVEY

8.1 Procedural Steps

The human factors engineering survey used a checklist based on that illustrated in Section 6 of NUREG-0700. This survey considered the extent to which equipment and the environment in the control room and the remote shutdown panel is designed to accommodate basic human characteristics such as physical size and perceptual-motor capabilities. A comparison of instrument and control features to the human engineering guidelines was conducted using the data generated from the task analysis and from visual observation. HFSs, in concert with experienced utility personnel knowledgeable of plant systems and control room instruments and equipment, and operations personnel observed and measured control room features.

Instrumentation, controls and other equipment items were examined for human engineering acceptability as components, without reference to their specific uses in task performance. Discrepancies were based on design incompatibility with human perceptual, motor, psychological or size characteristics. Examples included controls too closely spaced for easy manipulation, meters with markings too small to be distinguishable at a practical distance and displays too high to be read. Environmental conditions will be surveyed at a later date when the control room is more complete.

The guidelines in the checklist include principles or explanatory statements followed by specific categorical or numeric statements. The procedure is to observe or measure, as required, and check compliance with each categorical or numerical statement. The review team members who conducted the checklist survey placed a check in the "No" box to indicate noncompliance. "Yes" was checked only if there was total compliance (i.e., only if every instance of the item was fully consistent with provisions of the checklist). If there was any instance of noncompliance, the "No" box was checked and a reference made as to where noncompliance occurred.

8.2 Human Factors Engineering Checklist

The Human Factors Engineering guidelines were examined for the nine topic areas listed below:

1. Control Room Workspace addresses the general layout, availability and accessibility of operating equipment and materials; the anthropometric suitability of work stations; availability and accessibility of emergency equipment; and environmental factors.

2. Communications addresses auditory communications equipment used in the control room. Communications is a specialized topic to be treated relatively independently, on a control room-wide basis. Individual work stations are to be considered only incidentally.

3. Annunciator Warning System addresses overall concerns such as alarm parameter selection and set points, first-out alarms and prioritization; and design features of the auditory alert, visual alarm and operator response subsystems.

4. Controls addresses principles of selection, protection, and designs and specifications for different types of controls.

5. Displays addresses principles of displays including information to be displayed, usability of displayed values, readability, printing, markings and coding. Guidelines are also given as to design characteristics of particular types of displays including meters, light indicators, graphic recorders and counters.

6. Labels and Location Aids addresses labeling, location, content and lettering; use of temporary labels; and use of location aids such as demarcation, color and mimics.

7. Process Computer addresses software security and characteristics (dialogue/command language, prompting, structuring); procedures and other aids to computer use; keyboard arrangement, function controls and other controls; computer response time; and design characteristics of displays and printers/printer messages.

8. Panel Layout addresses allocation of controls and displays to preferred panel areas; groupings of controls and displays; spacing, demarcation and color shading to enhance recognizability of individual components and of groupings; ordering of components within groupings; layout consistency within and among panels; and strings, clusters or matrices of similar components.

9. Control-Display Integration addresses relative positioning of single control and display pairs and

multiple controls and displays; function and sequence-of-use relationships; movement relationship; and other aspects of compatibility of controls and displays which are used together.

The Human Factors Engineering checklist was conducted in the NMP-2 control room during the months of January and February, 1985. In response to the NRC audit team comments after the in-process audit of March, 1985, a re-survey of the NMP-2 control room using the Human Factors Engineering checklist was conducted in April and May, 1985. The second survey was needed because of the incompleteness of the control room during the first survey. As a result of the re-survey, 11 new HEOs were generated as well as numerous equipment additions to existing "generic" HEOs. The remote shutdown panel was included in the second survey and accounted for 28 HEOs added to the database. Checklist items that could not be surveyed due to the incomplete nature of the control room are listed in Appendix K.

8.3 Environmental Measurement Procedures

Environmental measures of the control room have not been taken because construction is still in progress. This data is planned to be collected in October, 1985. The paragraphs below outline the procedures to be used:

1. Sound Survey Procedures. Using a control room layout drawing, the HFS will select and mark the locations where sound measurements will be taken. Measurements will be taken at each operator position that requires verbal communication and/or auditory discrimination of a signal. The meter will be located 5 ft. above the floor at positions where the operator stands and 4 ft. above the floor at seated positions. Measurement positions will include the operator's desk and work station (or points near the center of each panel or console).

Measurement will include ambient noise levels (where ambient noise is defined as background control room noise without the contribution of alarms, printers or communications equipment), annunciator alarm levels (work station annunciator and any other annunciators that must be heard at that work station) under both ambient and high-level noise conditions (e.g., with printers, other alarms and signals), telephones and other communication equipment, evacuation signals and other alarms. Integrated "A" weighted db(A) measurements will be taken for all of the above positions. The appropriate form is located in Appendix H.

2. Lighting Survey Procedures. Using a control room layout drawing, the HFS will select and mark the location where the illumination measurements will be taken. Full AC ambient and DC emergency readings will be taken in front of each front panel and in the center of the control room at each operator workstation.

   In order to determine the luminance and reflectance ratios, the following procedures will be followed: (1) cover object with "perfect reflector" pad, being careful not to block light; (2) take luminance reading pad and record reading; (3) remove reflector pad; (4) take luminance reading of object and record reading. At each panel, the following measurements will be taken using these procedures: reflectance pad on panel, panel background (where reflectance pad was placed), meter faces (with and without glare), and other display faces (with and without glare). The appropriate forms are located in Appendix H.

Control room lighting is provided by an interleafed network of normal, emergency, and essential lighting. The percentage of lighting in the control room is 50% normal, 20% division 1, 20% division 2 and 10% essential lighting. The essential lighting system is backed up by the normal nonsafety-related UPS. In the event of loss of all normal power, divisional power, and UPS failure; eight hour battery packs are also provided in the control room.

Remote shutdown room lighting is powered 50% from division 1 source and 50% from division 2. Four eight hour battery backs; two for 2CES*405G, the other two for panel 2CES*405Y, are provided in the remote shutdown room in the event of loss of both division 1 and division 2 emergency lighting system.

If circumstances require manning the remote shutdown panel, the operator will leave the control room via the hallway on the southside of 306 control building, walk towards one stairway in the southwest part of the control building, descend to elevation 261 and travel east to the remote shutdown room. Eight hour battery pack lighting on approximately 20 ft. centers are provided in the hallways and stairtower between these two points.

3. <u>Humidity/Temperature Procedures</u>. To measure humidity and temperature, meters will be set-up in an area where they will not be disturbed. Readings will be taken at floor level and at 6 ft. above floor level every hour for a 24-hour period. The HFS will record the time, and the temperature and humidity values for both levels. The appropriate form is located in Appendix H.

4. Air Velocity Survey Procedures. Using a control room layout drawing, locations will be selected and marked where air velocity readings will be taken. Measurements will be taken at principal operator work stations at an elevation of 6 ft. for standing positions, and at 4 ft. for sitting positions. The appropriate form is located in Appendix H.

8.4 References

The following publication was used during this phase of the DCRDR:

U.S. Nuclear Regulatory Commission. Guidelines for Control Room Design Reviews (NUREG-0700). Washington, D.C.: September, 1981.

9.0 VERIFICATION OF TASK PERFORMANCE CAPABILITIES

9.1 Objective and Approach

The objectives of the task verification process is to assure that operator tasks can be performed in the existing control room with minimum potential for human error. The methodology and evaluation criteria devised for the verification process were based upon guidance provided in NUREG-0700 Sections 3.7 and 6.0. This process was completed in two steps. The first step verified the presence (or absence) of instruments and equipment that provides the information and control capabilities necessary to implement each task. The second step determined whether the man-machine interfaces in the control room are effectively designed to support task accomplishment.

To ensure that every task has the necessary equipment and each equipment item performs a necessary task/function, a comparison of the inventory list with information from the task analysis was conducted. In addition to verifying the availability of control room equipment, a verification of human engineering suitability was conducted to identify interface problems that may affect task performance but may not be evident when the control room equipment is examined. Personnel knowledgeable in plant systems, human factors engineering and operations participated in the verification process.

Because the inventory was organized into three component types, there were separate verifications performed for controls,

indicators and annunciators. In addition, there were also verifications performed for back panels and other control room equipment whose characteristics were omitted or not fully described in the NMP-2 inventory data base. Where the inventory and task analysis data bases were compatible, the verification process was automated (i.e., a computerized matching of corresponding data fields was performed).

For both the automated and manual verification checks, the mechanics were the same: for each information, control, and characteristic need identified in the task analysis, corresponding control room equipment and characteristics were verified to be available and suitable. If a need was found to be either unavailable or unsuitable, an HEO was generated to further investigate a potential discrepancy.

9.2 The Verification of Control Capability

For controls, including control functions on process controllers, the verification process was a simple matching of the appropriate data fields. In this process, the following verification checks were performed:

1. Availability - If the needed control did not have a corresponding control in the inventory, an availability mismatch message appeared in the verification printout.

2. Control Mode/Control Type - If the control type from the inventory was not suitable for the specified discrete or continuous control capability (e.g., rotary selector switch for discrete control vs. continuous rotary switch for continuous control), then a control mode/control type mismatch message appeared in the verification printout.

3. <u>Control Mode/Valve Action</u> - If the valve action from the inventory (e.g., throttleable vs. seal in) was not suitable for the specified discrete or continuous control capability, a control mode/valve action mismatch message appeared in the verification.

4. <u>Discrete Control Setting</u> - If the needed control position did not have a corresponding position match in the inventory, a discrete control setting mismatch appeared in the verification printout.

5. <u>Spring-Return</u> - If the control need specified a spring-return characteristic, the corresponding control inventory characteristics were checked for a spring-return feature. If a match was not found, the spring-return mismatch message appeared in the verification printout.

6. <u>Pull-to-Lock</u> - If the control need specified a pull-to-lock characteristic, the corresponding control inventory characteristics were checked for a pull-to-lock feature. If a match was not found, the pull-to-lock mismatch message appeared in the verification printout.

7. <u>Key</u> - If the control need specified a key characteristic, the corresponding control inventory characteristics were checked for a key feature. If a match was not found, the key mismatch message appeared in the verification printout.

8. <u>Cover</u> - If the control need specified a cover characteristic, the corresponding control inventory characteristics were checked for a cover feature. If a match was not found, the control status light mismatch message appeared in the verification printout.

9. Control Status Light - If the control need specified a control status light as needed feedback information, the corresponding control inventory characteristics were checked for a matching light color. If a match was not found, the control status light mismatch message appeared in the verification printout.

10. Flag - If the control need specified a flag or target as needed feedback information, the corresponding control inventory characteristics were checked for a matching flag color. If a match was not found, the flag mismatch message appeared in the verification printout.

11. Backlit - If the control need specified a backlit message as needed feedback information, the corresponding control inventory characteristics were checked for a matching backlit color. If a match was not found, the backlit message appeared in the verification printout.

12. Unavailable Feedback - If the control need did not specify either a CSL, flag, backlit, or indicator feedback on the analysis form, an unavailable feedback message appeared on the verification printout.

9.3 Verification of Information Capability

For information needs which were represented by control room hardware other than CRT displays (e.g., indicators), the verification process was a matching of appropriate data fields. Indicators which were identified as subcomponents of controllers were included in this verification check.

For the indicator verification, the following verification checks were performed:

1. Availability - If the needed display did not have a corresponding display in the inventory, an availability mismatch message appeared in the verification printout.

2. Display Type - If the type of display (e.g., meter, recorder, etc.) from the inventory was not suitable for the specified level of information need (e.g., state, value or trend), a type mismatch message appeared in the verification printout.

3. Units - If the specified units of display, as determined in the task analysis, did not match the units of the corresponding indicator, a units mismatch message appeared in the verification printout.

4. Range - If the specified range of parameter display as determined in the task analysis was not encompassed by the range of the corresponding indicator, a range mismatch message appeared in the verification printout.

5. Divisions - If the divisions of the corresponding indicator did not match or exceed the specified division or precision of parameter display, as determined in the task analysis, a divisions mismatch message appeared in the verification printout.

6. Status Light - If the indicator need specified a status light as needed feedback information, the corresponding indicator inventory characteristics were checked for a matching light color. If a match was not found, a status light mismatch message appeared in the

verification printout. The legend message of a legend status light was printed on the verification printout, and a manual verification of the content was performed.

7. Collective Range Suitability - For each parameter, a collective range consisting of the lowest "low range" and the highest "high range" recorded for the parameter in the task analysis database was calculated. If this collective parameter range did not represent 80% of the corresponding indicator range from the inventory, then a collective range suitability HEO was generated. This check was a manual comparison of the task analysis collective range with the inventory indicator range.

9.4 Verification of Annunciator Capability

The verification of annunciator availability was performed as part of the computerized verification program. If an annunciator need was identified in the task analysis, a corresponding tile in the inventory should have been identified, or an annunciator availability mismatch message appeared in the verification printout. Annunciator suitability was verified by analyzing the legend content to meet the required need.

9.5 Verification of Other Equipment Capability

When a need was identified in the task analysis data base and a corresponding ID number was not available (as in the case of back panel equipment) or present in the inventory listing, an unavailability message appeared in the verification printout. This generated an HEO which required a manual verification of the availability of control room equipment to supply the need and the suitability of the equipment's characteristics to meet the identified needs of the task.

9.6 References

Additional information concerning Verification of Task Performance Capabilities can be found in the following document:

Advanced Resource Development Corporation. Summary of DCRDR Phases for Nine Mile Point Unit 2. Columbia, MD. June 1985.

10.0 VALIDATION OF CONTROL ROOM FUNCTIONS

10.1 Objective and Approach

The objective of the validation review was to determine if the functions allocated to the control room operating crew can be accomplished effectively within the structure of the established emergency procedures and the design of the control room as it exists.

The NMP-2 validation used two techniques: control room walk-throughs and talk-throughs. Five scenarios were selected for the walk-through; these events were videotaped in the NMP-2 simulator and analyzed at ARD in Columbia. The talk-through technique analyzed tasks identified in the task analysis phase of the CRDR at the control panels in the NMP-2 control room.

10.2 Validation Criteria

Twenty-three performance criteria were used during the analysis of the walk-through videotaping and during the talk-through. These items can be divided into five groups of control criteria (items 1 to 7), display criteria (items 8 to 12), control/display relationship criteria (items 13 to 16), procedure criteria (items 17 and 18), and task performance criteria (items 19 to 23). These criteria items are listed below:

1. Availability - Controls needed to perform critical emergency tasks are available in the control room without the operator leaving the primary operating area.

2. Usability - Each control is easily adjusted with the required level of precision.

3. Type - Each control is the type normally expected by the operator.

4. Inadvertent Actuation - Control actuation does not result in inadvertent actuation of an adjacent control.

5. Redundancy - Duplication of controls does not occur unless there is a specified reason.

6. Simultaneous Actuation - The requirement that simultaneous actuation of adjacent controls is performed.

7. Feedback - For each control action, there is positive feedback that the action was initiated.

8. Unavailable Information - Information needed to perform critical emergency tasks is available in the control room without the operator leaving the primary operating area.

9. Obscured - Controls and displays are located so that displays are not obscured during task performance.

10. Suitability - Information is presented in the form needed by the operator (i.e., appropriate units, range, and divisions).

11. Related Displays Location - When information from two or more displays must be compared, the displays are located in close proximity to one another.

12. Redundancy - Redundancy of information is minimized.

13. <u>Control/Display Location</u> - A visual display monitored during control manipulation is located close enough to the operator to allow easy reading without parallax.

14. <u>Lag Time</u> - There is no lag time between system condition change and display indication.

15. <u>Task Grouping</u> - Controls and displays used to accomplish a task sequence are logically grouped in a common panel area.

16. <u>Minimize Operator Movements</u> - Panel elements are assigned to work stations to minimize operator movements.

17. <u>Consistent Nomenclature</u> - Nomenclature used in the procedure is consistent with the terminology used in the control room labeling and the vernacular of the operators.

18. <u>Sequence</u> - The sequence of an operator's actions in response to the initiating event is the same as that outlined in the procedure. This sequence accomplishes the stated purpose of the procedure.

19. <u>Leave Primary Area</u> - Operators do not have to leave the primary operating area when continuous monitoring of instruments is critical.

20. <u>Appropriate Manning/Task Assignments</u> - Control room manning and task assignments ensure complete and timely coverage of controls, displays and other equipment during the event.

21. <u>Excessive Workload</u> - Operators can cope with the variety and time sequence of the tasks needed to be accomplished in the mitigation of the event.

22. <u>Obstructions to Traffic Flow</u> - Operators are able to access any work station without having to overcome obstacles such as tripping hazards, poorly positioned file cabinets, storage racks, maintenance equipment, or other trip hazards.

23. <u>Minimize Operator Movements</u> - The layout of the control room is efficient in that operator movements are minimized in carrying out tasks and in transitioning between related tasks.

10.3. Event Selection

Events for the DCRDR validation walk-throughs were selected based on the extent to which the event-based procedures exercised the four major sections of the EPGs and encompassed the tasks identified in the task analysis effort. Based on this criterion, the following events were selected for the walk-through validation:

1. <u>Loss of Cooling Accident (LOCA) - Large Break</u> - A large line break inside the drywell.

2. <u>Anticipated Transient Without a Scram (ATWS)</u> - A low reactor water level signal fails to produce a scram.

3. <u>Stuck Open Relief Valve (SORV)</u> - An inadvertent opening of a safety relief valve causes pool temperature to increase, generator load to decrease, and other effects.

4. <u>Loss of Feedwater Pumps</u> - Loss of feedwater pumps causes a rapid decrease in reactor water level.

5. <u>Loss of Coolant Accident (LOCA) - Small Break</u> - A small, high-energy leak inside the drywell causes drywell pressure and temperature to increase.

10.4 Control Room Walk-Through Procedures

Control room walk-throughs were performed at the NMP-2 simulator March 16, 1985, according to the following procedural steps:

1. The validation coordinator selected the event for validation and obtained the appropriate procedures. A trained operating crew consisting of two reactor operators, an assistant shift supervisor (STA), and a shift supervisor reviewed the procedures for the event selected.

2. Two cameras and recorders were used to document the event simulation walk-through. The cameras were positioned at a distance from the work stations to ensure an unobstructed view of each station.

3. The validation coordinator and the human factors specialist assembled and briefed the participating control room personnel on the purpose and specific objectives of the event simulation and on the walk-through procedure. Initial conditions, symptoms, entry conditions and any assumptions about the operating situation were specified to the operators during the briefing.

4. To facilitate the simulation fidelity, other members of the validation team remained in the background to take observational notes. Procedures were available to the operating crew for reference but procedural steps were not called out. During the event simulation, a voice-over narration by an SME was recorded on the video tape. The narration conveyed what was transpiring and what the operator(s) performed and why. Specifically, the narrator

recorded the following information during the event simulation: actions operators were taking, direction of action movement, display/indicator to which the operators refer, to identify the system response to actions taken, and system response to actions taken.

5. At a cue from the validation coordinator, the event terminated. The video tape operators, at that point, removed the tape from the recorder and logged in: the event taped, the date of taping, the time of taping, any unusual circumstances surrounding the taping, and the counter reading from the video tape recorder.

6. The HFS who conducted the validation processes viewed the video tape and evaluated the operator performance versus the control board/control room design criteria, specified earlier.

10.5 Control Room Procedures

Although walk-throughs provided a real-time validation of operator tasks, this procedure did not cover all of the tasks described in the task analysis data base. In addition, control/display relationships and other layout criteria were difficult to analyze in real time. To fully validate operator functions in the NMP-2 control room, control room talk-throughs were performed for all tasks identified in the NMP-2 task analysis effort. An SME demonstrated to the HFS the operator actions and equipment responses for the reviewed tasks. Talk-throughs were conducted in the NMP-2 control room during the month of March.

The talk-throughs examined the operator actions in response to the event, starting with the initiating cue(s) and including each immediate and subsequent operator action. Specific plant

equipment and operator decisions involved in each task were identified as the SME described the actions from the applicable control panel work station. The goal of the talk-through was to assess, using the validation criteria, the availability and suitability of control room equipment and layout to support the operator's needs in performing emergency tasks.

During the talk-throughs, questions were raised by the HFS concerning the operator needs and equipment characteristics. In addition, the HFS evaluated the operator performance versus the control board/control room design criteria described in Section 10.2 for each action of the task under consideration. The Validation Review Worksheet (Appendix I) was used to record evaluation observations.

10.6 Validation Results

The comments recorded on the Validation Review Worksheets were cross-checked against the HEOs documented in previous review processes of the DCRDR. A comment not previously addressed by existing HEOs represented a new observation and was reported as such. From this review, new HEOs were identified for NMPC consideration during the Assessment Phase of the DCRDR.

10.7 References

Additional information concerning Validation of Control Room Functions can be found in the following document:

Advanced Resource Development Corporation. Summary of DCRDR Phases for Nine Mile Point Unit 2. Columbia, MD. June 1985.

11.0 ASSESSMENT, IMPLEMENTATION AND SCHEDULING

11.1 Purpose

In theory, each HEO identified in the review process is a deviation from human engineering criteria which could be eliminated by some form of design or task modification. However, the number and extent of modifications that can be implemented are limited for reasons of economic feasibility, practicality, and worth. Therefore, a process is required which identifies HEOs worth considering for correction. The assessment and improvement process meets this requirement by assessing the importance or significance of given HEOs (which identifies HEDs or significant HEOs); identifying the appropriate method of correction for HEDs; and assuring the proper implementation of either procedural changes, training and/or design corrections for HEDs. Where possible, corrections will be verified and validated using the review techniques employed in Chapters 9.0 and 10.0.

The result of this process was the selection of HEDs from the set of HEOs, a set of recommended design corrections, and an implementation schedule for their corrections. In summary, the assessment and improvement process provides an organized approach to identifying necessary design changes to the control room on a rational, consistent and thorough basis. The attendance record of the personnel performing the assessment is presented in Appendix J.

11.2 Process

Figure 11-1 outlines the procedural steps in the assessment and improvement process. The first step (categorization) was accomplished with Review Team members assembled in one room. Each HEO was reviewed, discussed and assigned a category and level per the process outlined in Section 11.3. In cases where team members chose different categories and levels for a particular HEO, the Team Leader assigned the highest category and level (lowest numerical value) of those chosen. After the package of HEO's was assigned a category and level, they were revisited to determine significance and to select a correction method as described in Sections 11.4 and 11.5, respectively. The complete HEO/HED package, including categorization, significance and recommended corrective methods was then presented by the Team Leader to the Management Team for their review.

The Management Team reviewed all HEDs/HEOs and assigned an implementation schedule to all items requiring a fix. This package, including the implementation schedules, were then submitted by the Team Leader to the Executive Team for their approval. Once the Executive Team approval was received, all HEDs requiring fixes were sent to the responsible parties. Training fixes went to the NMPC Training Department. Procedural changes went to NMPC Operations or Engineering Departments, and design fixes went to Stone and Webster Engineering along with Solution Packages described in Volume 2 of this report. The final corrective packages will then be verified and validated as described in Section 11.7.

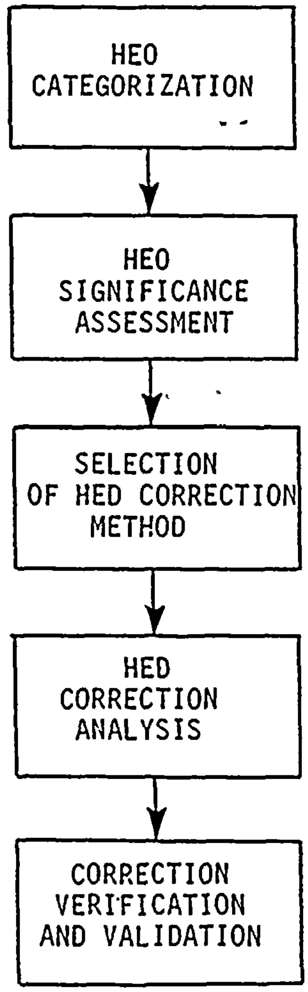


Figure 11-1. Procedural Steps in the Assessment and Improvement Process

11.3 <u>HEO Categorization</u>

The purpose of this step of the assessment and improvement process was to place HEOs in detailed categories and category levels. HEOs were categorized systematically so that HED identification and decisions to correct HEDs fully, partially, or not to correct them was made rationally.

The HEO categorization procedure distinguished among HEOs on the basis of risk (probability) of operator error and error importance (severity of consequences). This process is outlined in Figure 11-2, which depicts the logical steps in determining HEO categories and levels. These four categories of risk and five category levels of adverse effects are defined as follows:

1. <u>Category 1 are HEOs Associated with Documented Errors in Similar Plants Included in the Operating Experience Review</u>. Includes HEOs which were known to have previously caused or contributed to an operating error as documented in an LER or other historical record, or as established by the interview (or questionnaire) responses of operating personnel. Since NMP-2 has no operating history, this information was obtained from selected similar plants and correlated with NMP-2 design characteristics.

2. <u>Category 2 are HEOs Associated with Potential Errors</u>. Contains all HEOs which were assessed and determined to increase the potential for causing or contributing to a human error.

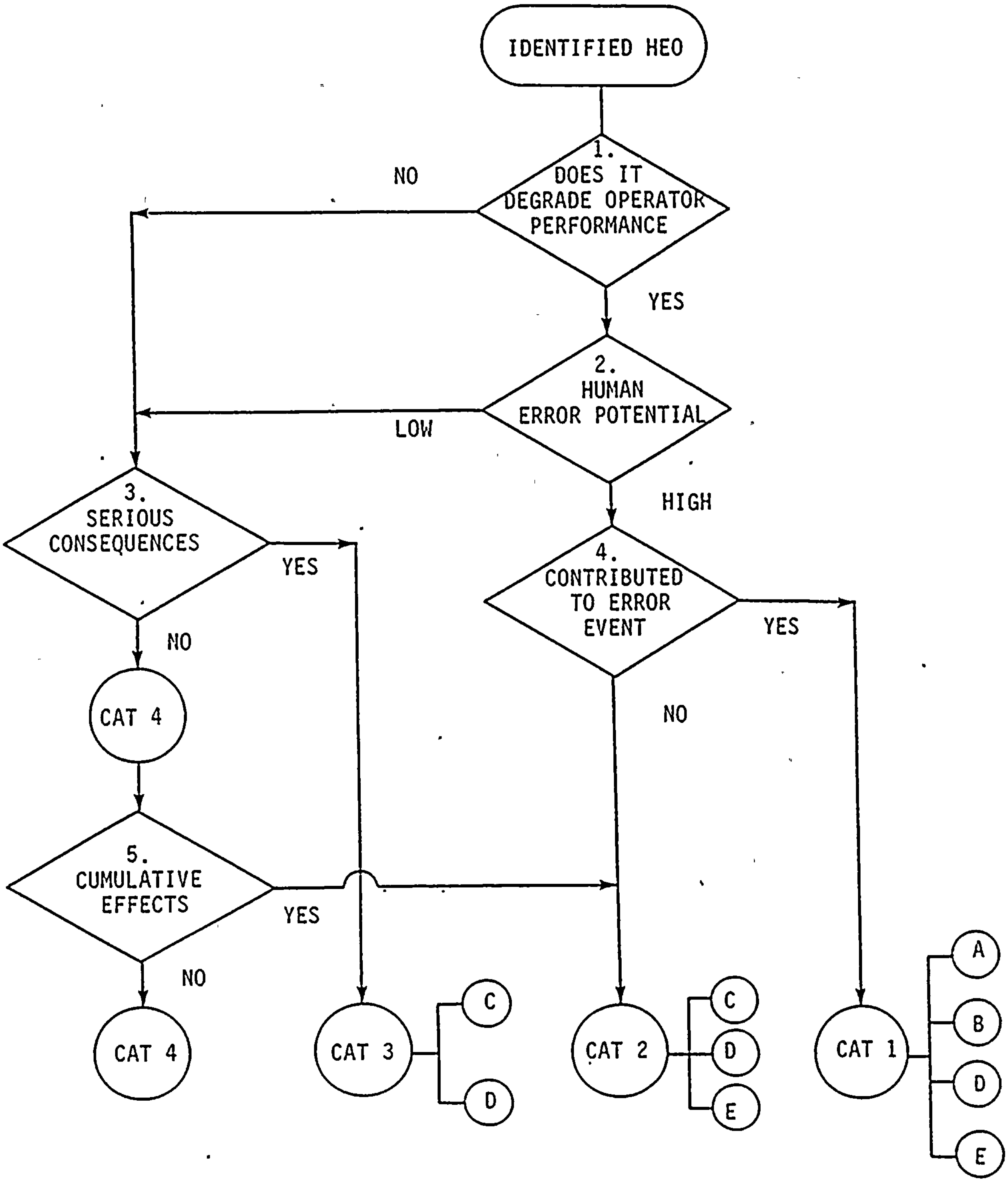


Figure 11-2. HEO Categorization Process

3. <u>Category 3 are HEOs Associated with Low Probability Errors of Serious Consequence</u>. Depicts all HEOs that were associated with low probability errors of serious consequence. HEOs in this category were those associated with errors which were intolerable because of their possible adverse consequences.

4. <u>Category 4 are HEOs not Associated with Errors</u>. Includes any HEOs that were evaluated and determined neither to increase the potential for causing or contributing to a human error, nor to have adverse safety consequences. In addition, HEOs associated with the SPDS were considered category four. This is consistent with NMPC's functional use of the non-safety related SPDS. Its purpose is to enhance control room personnel's capability to diagnose and assess transient or accident conditions. The SPDS will not be used to respond in accordance with Emergency Operating Procedures. The functional criteria for the SPDS includes on-line trending and bar chart information for the control room, Technical Support Center (TSC) and Emergency Operating Facility (EOF) displays.

5. <u>Level A</u>. Those HEOs for which the related documented error (in similar plants) was associated with a safety-related function, and resulted in an unsafe operation.

6. <u>Level B</u>. Those HEOs for which the related documented error (in similar plants) was associated with a safety-related function, and resulted in violation of a technical specification.

7. <u>Level C</u>. Those HEOs for which the related potential error was associated with a safety-related function, and could result in an unsafe operation or the

violation of a technical specification. As identified by the NRC during their review of the program plan, Category 1 cannot be associated with Level C in the assessment phase. By definition, Category 1 is HEOs associated with documented errors in similar plants included in the Operating Experience Review. Level C on the other hand covers potentially unsafe operation or technical specification violation. The appropriate levels for Category 1 are Level A and B which are for documented unsafe operations or technical specification violations. Level D and E can be associated with either documented or potential errors.

8. Level D. Those HEOs for which the related potential error was associated with a nonsafety-related function, but resulted or could have resulted in a plant outage or significant financial loss.

9. Level E. Those HEOs for which the related potential error was associated with either a safety-related function or a nonsafety-related function, but could not result in unsafe operation, the violation of a technical specification, a plant outage, or a significant financial loss.

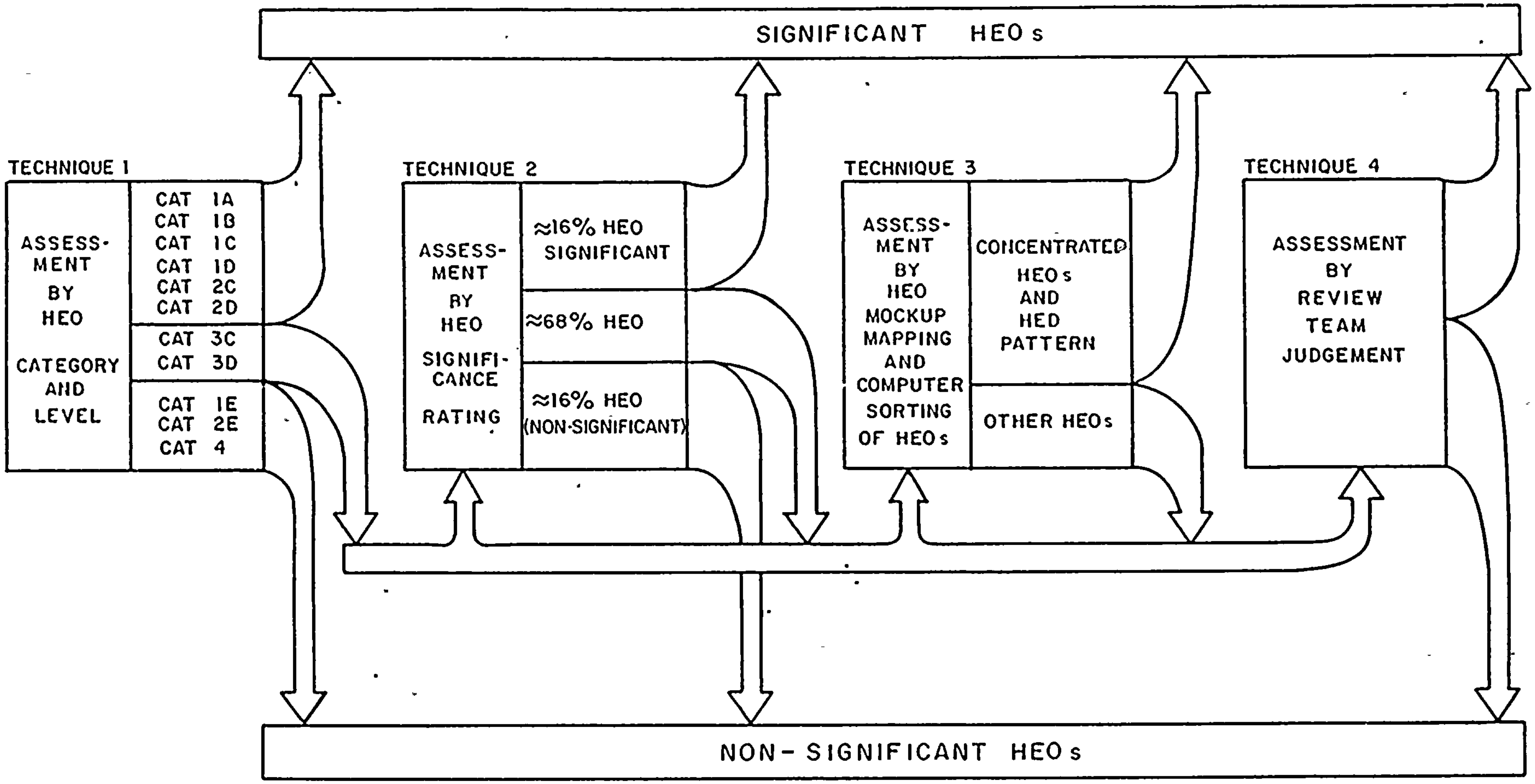
11.4 HEO Significance Assessment

The purpose of this step was to determine which HEOs among those identified during the review process were significant and should be defined as HEDs. An HED represents a potential source of operator error with significant plant operation consequences -- safety-related and nonsafety-related. The term significant has two applications. It is applied to HEOs which have the potential to compromise plant safety, and to HEOs which affect plant operability/availability in a manner unacceptable to management. Accordingly, all HEOs involving

plant safety and selected nonsafety-related HEOs of concern to management were considered significant. Significant HEOs (i.e., HEDs) were analyzed for correction while non-significant HEOs were not considered necessary to be corrected. For Nine Mile Point Unit 2, all HEOs that were designated 1A, 1B, 1D, 2C and 2D were judged to be significant HEOs (HEDs). All Category 3 HEOs were further assessed using Techniques 2, 3 or 4 described below.

Before an individual, nonsafety-related HEO was discounted as non-significant, a second stage of assessment was performed in which the interrelationships or cumulative effects of nonsignificant HEOs were studied to identify any unacceptable safety- or nonsafety-related effects on plant operation. If unacceptable effects were identified, the HEOs originally classified as nonsignificant were redefined as significant, defined as HEDs, and were analyzed for correction.

Techniques were developed to aid the assessment of HEO significance and are depicted in Figure 11-3. Four techniques were outlined in the Program Plan Report Detailed Control Room Design Review for Nine Mile Point Unit 2. The categorization phase included Technique 1 (assessment by category and level). At a minimum, the significance assessment should have included one of Techniques 2, 3 or 4. These three techniques were developed as tools to assist the Review Team in assessing Category 3 HEOs. Typically, category 3 HEOs are more difficult to assess since they fall in the middle range of significance as determined in Technique 1. The Review Team Leader made a conscientious decision to perform the significance assessment using Technique 4 (assessment by Review Team judgment). If Review Team consensus was difficult to obtain, Techniques 2 or 3 could have been employed (assessment by HEO significance rating, or assessment by HEO mockup mapping and computer sorting of HEOs). However, this situation never arose.



NOTES:

1. TECHNIQUE 1. USED FOR ALL HEOs
   TECHNIQUES 2,3,4 USED AS REQUIRED
2. SIGNIFICANT HEOs = HEDs

FIGURE 11-3
SIGNIFICANCE ASSESSMENT
DECISION PROCESS

Technique 4 proved to be successful with team concurrence on all 145 of the Category 3 HEOs. One hundred twenty six of these HEOs were judged to be significant. The remaining 19 were dispositioned as non-significant; and therefore, did not require a fix.

11.5 Selection of Correction Method

The purpose of this step was to choose the appropriate method of correcting a given HED and did not apply to nonsignificant HEOs. Two methods to correct an HED were defined to account for the range in HED type and extent. One method was termed enhancement and applied to HEDs which could be satisfactorily corrected by simple surface treatment techniques or administrative charges. The other method, for HEDs which could not be satisfactorily corrected by enhancement, was correction by means of a separate design effort.

Enhancement corrections were distinguished from design corrections by the physical nature of the correction and the scope of analysis and design effort required to develop them. Corrections, such as labeling changes, array demarcation, changing chart recorder paper, or modifying a procedure, are clear cut and require limited analysis. Recommendations for enhancement corrections were developed by the review team. Other corrections such as a major panel redesign were approached as a separate design project requiring significant resources not allocated to the DCRDR. In such a case, the review team prepared design objectives and a scope of work for the design effort. At the completion of major design changes, verification and validation will be conducted using the methods described in Chapters 9.0 and 10.0.

11.6 HED Correction Analysis

The approaches to HEO correction by enhancement and by design improvements are described in the following paragraphs of this section. In both cases, analyses were weighted towards using the judgment of the review team members in developing design recommendations.

Development of enhancements proceeded soon after the design improvement approach selection, since an enhancement typically provides a significant improvement quickly and at low cost. In some cases, the enhancement will be implemented as an interim improvement while a long-term design solution will be developed. In this way, a requirement to provide a near-term solution as well as an integrated control room design in the long-term would be resolved. It may be necessary to reiterate the enhancement design, verification, and validation cycle before reaching a final design recommendation. The final design recommendation may comprise a complete or partial correction of the given HEO. A decision not to correct an HEO will be a possible product of the analysis process. Recommendation for either partial correction or no correction will be justified and documented. The basis of justification will be benefit/cost or other appropriate analyses.

Design corrections, by definition, are corrections which are developed through planned design efforts, and extensive human factors studies. These solution packages have been contracted in order to correct the problems isolated by the DCRDR. These studies are outlined in Volume 2 of this report. The review team's responsibilities were, therefore, limited to producing preliminary conceptual design recommendations. The specificity of a recommendation varied with the type and extent of the HEO. A recommendation specified what design correction is

needed, why it is needed, and how to accomplish the correction. The recommendation included problem description, design objectives, and proposed correction description.

Recommendations were based on preliminary design analyses performed by the review team. Analyses included alternative solution identification, comparison, and selection for the case of a simple, isolated HEO. The product of preliminary analysis was a preliminary conceptual level design requiring further design analyses and engineering.

11.7 Correction Verification and Validation

Recommendations for improvement were supported by documents produced throughout the assessment process. This information was useful in establishing the implementation priority of design recommendations or in justifying a decision not to implement the recommendations. Verification and validation of the final results of design efforts initiated after the completion of the DCRDR will be conducted. The approach that will be used to verify and validate the design corrections is described in Chapters 9.0 and 10.0.

12.0 COORDINATION WITH OTHER NUREG-0737 SUPPLEMENT 1 INITIATIVES

Niagara Mohawk Power Corporation has a coordinated program to address each of the to NUREG-0737 Supplement 1 initiatives. This program is headed by NMPC Project Engineering which provides the necessary coordination and support to ensure that a systematic approach is adopted for the inclusion of each of the recommended design changes resulting from these activities. This integrated approach is intended to optimize the interface within the control room network.

Integration was effected in the early stages of the DCRDR. All responsible parties for the Supplement 1 initiatives were involved in the identification, categorization, assessment and recommendation of solutions in the DCRDR. Regulatory Guide 1.97 based instrument displays were incorporated into the hardware prior to commencing the DCRDR. Functions and tasks were analyzed to determine informational and control needs and identify operator tasks during emergency operations. This analysis was used to verify the completeness of the Emergency Operating Procedures. A key DCRDR participant was the lead author of the Nine Mile Point-Unit Two Plant-Specific Emergency Procedure Guidelines, and the Emergency Operating Procedures.

Similarly, the training department was involved at both the Review Team and Management Team levels to assure proper retraining and upgrading of procedures to reflect the physical

changes made in the control room. The SPDS System Engineer was also a team member who coordinated SPDS design information to DCRDR concerns.

Corrective action modifications resulting from the DCRDR will be evaluated for their effects on the Supplement 1 initiatives. Existing NMPC, General Electric, and Stone and Webster design modification procedures will be used and each engineering work product will be tied to the initiating HEO. In addition, future design changes will be guided and reviewed in accordance with the Nine Mile Point Unit 2 Human Factors Design Manual. This review will be incorporated as a requirement in the Niagara Mohawk Engineering Procedures.

APPENDIX A

RESUMES OF KEY PERSONNEL

Name: Douglas L. Pike

TITLE: Assistant Project Engineering Manager - Systems

AFFILIATION: Niagara Mohawk Power Corporation

EDUCATION: 1959 - 1963

Potsdam Central High School - Potsdam, New York - Majors in Math, Science, and Language (French) - Regents Diploma

1963 - 1967

Clarkson College of Technology - Potsdam, New York - Graduated with a Bachelor of Science in Electrical Engineering

LICENSE: Reactor Operators License - Nine Mile Point Unit 1
Engineer in Training - New York State

EXPERIENCE: 8/67 - 12/73

Assistant to Plant Superintendent
Niagara Mohawk Power Corporation
Nine Mile Point Nuclear Station

a) Aug. 1967 to Feb. 1969 - Under direct supervision of Instrument & Control Supervisor, responsible for the formulation and writing of instrumentation calibration procedures, the coordination of plant instrumentation turnover from construction forces, participation with headquarters instrument and control design engineering in resolving design problems uncovered during installation and initial calibration of instruments and direct supervision of instrument and control technicians during the start-up phase of plant operations.

b) March, 1969 to Aug. 1970 - Under direct supervision of the Reactor Analyst, responsible for the performance and analysis of plant start-up transient testing as one of four assigned start-up and test engineers. This program required the use of special testing equipment and the performance of detailed engineering and design calculations such as thermal efficiency, shielding and reactor core physics calculations. Following the testing program, responsible for performing and analyzing tests concerned with the aspects of an operating reactor core such as in core detector calibrations, reactor heat balances, control rod worth calculations, and the determination of start-up and shutdown control rod patterns.

EXPERIENCE:
(Continued)

c) Sept. 1970 to Sept. 1971 - Under the direct supervision of the Radiation Protection Supervisor, responsible for all radwaste activities. This included indirect supervision of plant operators performing radwaste activities, the monitoring and analysis of radwaste processing equipment and flow paths, and the development of recommendations for revised or new designs in mechanical, electrical and instrument and control equipment to improve radwaste handling operations. Other responsibilities included the supervision and performance of laboratory chemical analysis of reactor coolant to detect leaking fuel pins.

d) Oct. 1971 to Dec. 1973 - Under the general supervision of the Operating Supervisor, responsible for the preliminary design review of all electrical and mechanical systems for the James A. Fitzpatrick Nuclear Power Plant. As a result of this review, recommendations for changes in plant design were made to the Operating Supervisor for consideration by the Architect-Engineer (Stone & Webster). Directly particpated with the Stone & Webster engineers in the development of instrument and control logic which pictorally describes the function of the control circuits for plant equipment. Was directly responsible for the assigning the supervision of operating personnel in writing plant preoperational test procedures.

<u>1/74 - 6/74</u>

Assistant to the Superintendent for Operations
Niagara Mohawk Power Corporation
James A. Fitzpatrick Nuclear Power Plant

Responsible for the supervision of plant operations during the initial testing phase of plant start-up. Duties included the direct supervision of 26 plant operators and assisting the plant superintendent in the planning of start-up activities. Indirectly responsible for the review of all plant pre-operational test procedures, special procedures, start-up testing procedures and operating procedures and making recommendations for changes thereto. Other duties included coordination of daily work activities between construction and operating forces and assisting the plant superintendent in determining, in coordination with the Architect-Engineer, any design changes required based on results of plant systems testing.

EXPERIENCE: (Continued)

7/74 - 8/77

Assistant to the General Superintendent of Nuclear Generation
Niagara Mohawk Power Corporation
Nine Mile Point Nuclear Station

Responsible for special projects of a technical nature as assigned by the General Superintendent. Among the projects assigned, were the coordination, review and implementation of JAF Operator Surveillance Test Program, the development of various procedures for local leak rate testing and the acceptance testing of new plant systems, the development and review of the NMP Operator Surveillance Test Program, and the coordination and management of all refuel floor activities during the 1975 JAF Outage. Other responsibilities included the design review of all mechanical and electrical systems for NMP Unit #2, the writing of reports required by the NRC and the documentation of Site Operation Review Committee meeting minutes as Secretary to the Committee.

9/77 - 9/79

Technial Assistant to the General Superintendent of Nuclear Generation
Niagara Mohawk Power Corporation
Nine Mile Point Nuclear Station

Responsibilities and Authority included:

a) Performance of investigations and evaluations of a technical nature concerning the design, construction and operation of nuclear stations.

b) Review reports of regulatory agencies; prepare and present reports of technical nature to the Site Operations Review Committee; prepare technical reports in response to inquiries of regulatory agencies.

c) Prepare new or revise existing procedures, consistent with regulatory requirements and Company standards, including pre-operational test procedures.

d) Review submissions to regulatory agencies concerning licensing, serving as a liasion with the Engineering Department in their preparation.

e) Provide supervision of critical path activities during refueling outages.

f) Insure compliance with existing work standards and safety requirements for the benefit and protection of employees, customers, and the public.

EXPERIENCE:
(Continued)

Major responsibilities in this position included the operational design review of all Nine Mile Point #2 Mechanical and Electrical Systems and the participation in design review meetings with Stone & Webster engineers, including the review of various FSAR sections. Also, responsible for technical input for Technical Specification preparation and providing technical support to the Nine Mile Point #2 Operating Department for the preparation of plant procedures. Responsible also for coordination between Site Operations Group and Project Management Group in matters relating to Unit #2.

10/79 - 8/82

Project Engineer - Nuclear Generation Projects
Niagara Mohawk Power Corporation

Under the general direction of the Manager of Engineering - Nuclear Generation Projects, responsible for the following related to the engineering of the Nine Mile Point Nuclear Station Unit #2:

a) The coordination, within Niagara Mohawk, of the review of all plant mechanical and electrical systems as designed by the architect-engineer (Stone & Webster). Personally responsible for the detailed review of specifications, engineering claculations and engineering drawings associated with plant design and making recommendations for changes to systems design.

b) Responsible for the performance of economic evaluations of cost estimates made by the architect-engineer and technical and cost-benefit evaluations for recommended changes to plant design submitted by the architect-engineer.

c) Responsible for review of architect-engineer design as it applies to the ability to be licensed by the Nuclear Regulatory Commission. This includes review of all systems design and licensing documents. As assigned by the Engineering Manager, responsible for following specific licensing problems and making recommendations for their resolution.

d) In general, the performance of technical and economic studies and evaluations as assigned by the Manager of Engineering.

EXPERIENCE:
(Continued)

9/82 - 12/82

Lead Electrical Engineer - Nine Mile Point Unit 2 Project
Niagara Mohawk Power Corporation

Under the general direction of the Manager of Project Engineering, responsible for the supervision of project activities associated with the following:

a) Conceptual design review of plant systems and changes thereto.

b) Detailed review of all project electrical design and procurement functions.

c) Detailed review of all project instrument and control design and procurement.

d) Detailed review of all project equipment qualification.

e) Coordination of project engineering with operational and start-up and test organizations.

1/83 - Present

Assistant Manager Nine Mile Point Unit 2 Project Engineering - Systems
Niagara Mohawk Power Corporation

Under the general direction of the Manager of Project Engineering, responsible for the management and direction of the following activities:

a) Conceptual design review of plant systems and changes thereto.

b) Detailed review of all project instrument and control design and procurement.

c) Coordination of the project engineering interface with the nuclear steam supply vendor.

d) Project engineering administration and reports.

e) Coordination and review of project engineering matters related to security.

EXPERIENCE:
(Continued)

f) Coordination and review of project engineering matters related to fire protection.

g) Review of all project equipment qualification.

h) Coordination of project engineering with operational and start-up testing organizations.

PROFESSIONAL ACTIVITIES:

Member - Nine Mile Point Unit 2 ALARA Review Committee

Member - Technical Review Committee - General Electric Equipment Qualification Program

Resume

May 1983

Name: Richard B. Abbott

Address:

Education: High School: Jamesville-DeWitt

Major: Math/Science
Graduated - June 1967

Clarkson College of Technology
Potsdam, New York

Degree: Bachelor of Science
Mechanical Engineering
May 1971

Military Branch: U.S. Army (Reserve)
Infantry/Drill Sgt.
7/71 - 2/72 Active

Job Experience:

Niagara Mohawk Power Corporation

Date of Hire: 6/14/71

Job Experience: (Cont.)

11/1/81 - 12/31/82 Supervisor Operations-Nuclear-9 Mile Point #2

Direction of Operations Department activities for design reviews, procedure generation, licensing (FSAR) document reviews. Department staffing, promotion, normal department head administrative functions. Interface with contractor organizations, NMPC project organizations, site Nuclear Generation departments for design, construction, testing activities of 9 Mile Point #2.

10/1/79 - 11/1/81 Supervisor Operations-Nuclear-9 Mile Point #1

Direction of the Operations Department in all activities related to the safe and efficient operation of the 9 Mile Point #1 Nuclear Station. Perform all administrative duties normally associated with the department head position.

6/1/76 - 10/1/79 Superintendent Maintenance-Nuclear

Direction of Maintenance Department activities related to the mechanical and electrical maintenance of the 9 Mile Point #1 and James A. FitzPatrick Nuclear Stations. Perform all administrative duties normally associated with the department head position.

5/75 - 6/1/76 Assistant Maintenance Supervisor

Supervision of Maintenance activities at 9 Mile Point #1, Unit 1 and James A. FitzPatrick Nuclear Power Plant.

2/72 - 5/75 Assistant to the General Superintendent Nuclear Generation

Supervision of operation and maintenance activities of Radioactive Waste Disposal System at 9 Mile Point #1.

General engineering, supervision of maintenance related activities at 9 Mile Point #1.

Supervision of pre-operational testing activities at James A. FitzPatrick Nuclear Power Plant.

Start-Up test engineer for Start-Up Test Program at James A. FitzPatrick Nuclear Power Plant

Supervision of Maintenance activities at 9 Mile Point #1 and James A. FitzPatrick Nuclear Power Plant.

Job Experience: (Cont.)

1/1/83 - Present: Station Superintendent - 9 Mile Point #2

Direction of the Operations Department and Test Group for the formulation and implementation of a preoperational and startup testing program. Interface with contractor organizations, Nuclear Construction, Nuclear Generation and Nuclear Licensing departments for design, construction, licensing and testing of 9MP#2. Ensure adequate staffing and training for station personnel. Responsible for the Startup and Test budget and control thereof.

Past Experience:

Hold current Senior Reactor Operator License at 9 Mile Point Nuclear Station #1 (since May, 1976)

EDWARD J. HUBNER

EDUCATION

Princeton University - Bachelor of Science, Electrical Engineering - 1974
Northeastern University - Courses in control theory and transformer and motor design.

LICENSES AND REGISTRATIONS

Engineer-in-Training - Massachusetts
Professional Engineer - Pennsylvania

EXPERIENCE SUMMARY

Mr. Hubner has over 10 years of experience in the engineering industry. Currently, as Assistant Superintendent of Engineering, he is responsible for the overall management and technical direction of Multiple Discipline Engineering and Design efforts for Niagara Mohawk Power Corporation's Nine Mile Point Nuclear Station Project.

Since joining Stone and Webster Engineering Corporation in 1971 as an Engineering Aide in the Control Division, he has been a member of four project teams. He has been assigned as Lead Control Engineer and Principal Control Systems Engineer to an 1000-MW BWR plant project, as an Instrument Applications Engineer to 938-MW PWR plant projects, and as an Instrument Test Engineer to an 856-MW PWR plant Project.

In addition to his project-related duties, he has taken part in the SWEC training program for new engineers, lecturing on instrument application and Control Systems Engineering topics.

PROFESSIONAL AFFILIATIONS

Instrument Society of America - Senior Member, South Jersey Section, Secretary 1979-1980, President 1980-1981.

DETAILED EXPERIENCE RECORD

STONE & WEBSTER ENGINEERING CORPORATION
Oswego, NY; Cherry Hill, NJ; Boston, MA; and Shippingport, PA
(June 1971 - Present)

Appointments:

Assistant Superintendent of Engineering - October 1984
Senior control Engineer - September 1983
Lead Control Engineer - June 1980
Principal Control Systems Engineer - May 1979
Principal Instrument Applications Engineer - April 1978
PGCC Coordinator - January 1978
Instrument Applications Engineer - March 1976
Career Development Engineer - June 1974
Engineering Aide - June 1971

Nine Mile Point Nuclear Station - Unit #2
Niagara Mohawk Power Corporation
(March 1976 - Present)

As ASSISTANT SUPERINTENDENT of ENGINEERING (9/84 - present) assigned to the Nine Mile Point - Unit #2 jobsite, responsible for management of the structural, electrical, I&C, start-up support, and licensing disciplines assigned to the Site Engineering Group. Accountable for budget and schedule for those disciplines under his management control. Responsible for those multi-discipline tasks as assigned by the Superintendent of Engineering.

As LEAD CONTROL ENGINEER (9/81 - 9/84) responsible for all Control Systems activities on this Project, including those previously associated with PGCC. Also performs budget and schedule monitoring, establishment of technical direction, personnel supervision, and client interface.

As LEAD CONTROL ENGINEER (6/80 - 9/81) responsible for the coordination and direction of all technical activities associated with the design and fabrication of the Nine Mile Point Power Generation Control Complex (PGCC). PGCC is a two-floor prefabricated and cabled modular control room consisting of over 100 control panels. Included in his duties were schedule development and monitoring, manpower loading, technical direction, and interface with the prime supplier of this prefabricated comlex. Also, was actively involved in commercial contract negotiations which were successfully completed for this multi-million dollar complex.

As PRINCIPAL CONTROL SYSTEMS ENGINEER (5/79 - 6/80) responsible for all control systems engineering activities on the Project. Reviewed and approved all control system design documents such as logic diagrams, loop diagrams, elementary diagrams, HVAC P&IDs, control panel layouts and Bills of Material, and FSAR section. Participated in all system design reviews, both balance of plant and nuclear steam supply systems with the client. Additionally, responsible for all scheduling associated with these activities.

As PRINCIPAL INSTRUMENT APPLICATIONS ENGINEER (4/78 - 5/79) responsible for directing and coordinating the instrumentation design, procurement, and installation activities on the Project. This included manpower scheduling and assisting in the Project planning effort for all instrumentation-related activities.

As PGCC COORDINATOR (1/78 - 4/78) responsible for a modularized control room complex, called the power generation and control complex. With this concept, a design basis for the balance-of-plant equipment was defined by SWEC and given to the supplier. Functioned as the liaison during the initial design phase of the supplier. During this period, divided time equally between the SWEC offices and supplier's office.

As INSTRUMENT APPLICATIONS ENGINEER (3/76 - 1/78) responsible for the design and procurement of instrumentation systems; preparation of logic diagrams for process systems; P&IDs for HVAC systems; preparation of instrument loop diagrams; preparation of bid specifications, bid comparisons, and subsequent vendor recommendations t the client; and review of equipment drawings for technical acceptance.

North Anna Nuclear Power Station - Units 3 and 4
Virginia Electric Power Corporation
(June 1975 - March 1976)

Duties similar to those listed above.

Beaver Valley Power Station - Unit 4
Duquesne Light Company
(October 1974 - June 1975)

As INSTRUMENT TEST ENGINEER (10/74 - 6/75) assignment took place during the completion of construction through the "hot functional" testing of the plant. Responsibilities included installation, calibration, and testing of instrumentation as well as system troubleshooting when necessary.

As CAREER DEVELOPMENT ENGINEER (6/74 -10/74) assigned to the Control Division Logic Group and prepared standard system guidelines t be used by projects.

James A.FitzPatrick Nuclear Station
Power Authority of the State of New York
(June 1973 - September 1973)

As ENGINEERING AIDE in the Electrical Control Group, responsible for the review, revision, and verification of both General Electric and Stone and Webster electrical control diagrams.

North Anna Nuclear Station - Units 3 and 4
Virginia Electric and Power Company
(June 1972 - June 1973)

As ENGINEERING AIDE prepared electrical control diagrams for supply breakers, motors, and valve control. Also, responsible for development of the initial main control board layout for this Project.

Beaver Valley Nuclear Power Station - Unit #1
Duquesne Light Company
(June 1971 - September 1971)

As ENGINEERING AIDE responsible for reviewing and revising electrical control diagrams for the Beaver Valley switchyard.

RICHARD H. SHANNON
Manager, Automation Services Group
Senior Engineer

- Human Factors Engineering
- Anthropometrics/Biomechanics
- Job/Task Analysis
- Human Performance Assessment
- Work Measurement
- Systems Analysis
- Experimental Design
- Human Error Analysis

Dr. Shannon is a Senior Engineer providing industrial engineering and research support in human performance measurement. His experience spans a wide range of human factors activities and areas of application, both military and industrial. Dr. Shannon has participated in many studies on the effects of stressful environments upon human performance (cold, heat, chemical warfare, acceleration, vibration, flight).. He has recently developed a battery of 31 cognitive and psychomotor tests with fifteen alternative forms in order to observe the effects of the environment using a repeated measures design. He has conducted studies on manual materials handling and the proper biomechanical techniques for handling loads. Dr. Shannon has also worked with numerous existing and emerging naval aircraft and ship systems as a human factors and systems safety engineer.

Presently Dr. Shannon is Project Director for the CRDR at the Louisiana Power and Light Company's Waterford-3 station. This position requires that he coordinate and participate in the various phases of inventory review, task analysis, operator experience review, checklist survey, verification and validation. He has also assisted Combustion Engineering in the development of a generic task analysis and instrument/control requirements for the C-E Owner's Group.

PREVIOUS EXPERIENCE

- 1982 to 1984 Naval Medical Research Institute, Bethesda, Maryland
  Head, Performance Physiology Branch

Coordinated a multi-disciplinary program on the effects of cold, heat and chemical warfare on human performance under field and laboratory conditions. Relative to these duties, Dr. Shannon developed a cognitive/psychomotor battery of 31 tests with normative baselines (each test measuring a specific construct and containing 15 alternative forms); and the construction of a human performance laboratory containing various psychomotor apparatus tests, work physiology equipment, evoked-potential computer, a programmable environmental chamber, and a network system of computers for behavioral testing.

- 1979 to 1982 Naval Biodynamics Laboratory, New Orleans, Louisiana
  Head, Human Performance Sciences Department; Chief, Task and Workload Division

Coordinated the activities of personnel in the design, scheduling and conduct of experiments involving human performance under normal and stressful conditions (acceleration, vibration). Performed task analyses of U.S. Navy jobs and work stations for the purpose of establishing synthetic validity for a selected battery of performance tests. Designed a human performance laboratory which included an automated test battery and six APPLE computers in a network system.

- 1979 and 1983 to 1984 University of Southern California, Los Angeles, California, and Golden Gate University, San Francisco, California Lecturer, Human Factors and Safety Science Departments of USC and Public Administration Department of GGU.

Taught ten graduate courses in research methodology, statistics, experimental design, human factors engineering and system safety engineering as a part of the educational extension programs of these two universities in Virginia.

- 1977 to 1979 Naval Safety Center, Norfolk, Virginia
  Human Factors Engineer, Systems Safety Engineer

Major areas of effort were to monitor human engineering and system safety efforts on the F18, LAMPS, AV8, OA4M aircraft through plant visits, conferences, program and mock-up/lighting reviews, statistical analyses of mishap reports, functional studies of maintenance and pilot duties, and evaluations of aircraft design deficiencies.

- 1975 to 1977 Texas Tech University, Lubbock, Texas
  Doctoral Candidate, Psychology and Industrial Engineering Departments

Emphasis of educational program was upon human factors engineering, biomechanics, human performance, safety, statistics, work measurement and analysis, motion analysis and modeling.

- 1971 to 1975 Naval Aerospace Medical Research Laboratory, Pensacola, Florida
  Research Psychologist

Developed pilot and flight officer task analyses in all major aircraft in the Navy inventory. Additional areas of concern were flight student attritions, statistical models for pilot prediction and performance assessment, aircrew human error, instructor reliability and bias, student selection and training, and aircrew safety.

- 1969 to 1971 Fleet Air Wings, U.S. Atlantic Fleet, Norfolk, Virginia
  Research Psychologist

Research of Patrol aircrewmen included personnel fatigue, crew coordination/utilization, human engineering of work stations, performance assessment, maintenance and pilot human errors, and flight safety. In addition, studies into maintenance procedures, organizational climate, aircrew human error, and pilot training within fighter squadrons were conducted.

EDUCATION

Ph.D., Industrial Engineering, Experimental Psychology, Texas Tech University, Lubbock, Texas, 1978.

M.Ed., Industrial Psychology, Springfield College, Springfield, Massachusetts, 1969.

B.S., General Engineering, Naval Science, U.S. Naval Academy, Annapolis, Maryland, 1961.

PROFESSIONAL AFFILIATIONS

Human Factors Society
American Institute of Industrial Engineers (Senior Member)

MILITARY SERVICE

1957 to 1961	Midshipman, U.S. Naval Academy, Annapolis, Maryland
1961 to 1963	Flight Training, Pensacola, Florida
1963 to 1966	Naval Aviator, Plane Commander in S2E Aircraft (received Air Medal), VS-29, San Diego, California
1966 to 1968	Flight Instructor, VT-1, Pensacola, Florida
1969 to 1984	Research Psychologist, U.S. Navy

RESUME OF: Gary Weimer DATE: 7/19/85 DATE OF BIRTH: 3/17/85

SOCIAL SECURITY #: DATE OF HIRE: 12/21/83

Education

High School: Gowanda Central School Address: Gowanda, New York 14070

Date of Graduation: June 1971 Major: Art

College: Mohegan Community College Number of Years: 2

Major: General Studies Degree/Date of Grad: Associate in Arts

Special Training/Education/Courses:
Six month course on electronic circuit operation and design analysis.

Certifications/Licenses: Senior Reactor Operator (SRO) SOP-10345

Additional Skills/Attributes: Trained in Electronic/Electrical maintenance and repair, Quality Assurance Inspection and Human Relations/resources.

Military Record

Branch of Service: Navy Dates: Oct 5, 1971 - Dec 19, 1983

Special Courses/Training: Qualified Engineering Officer of the Watch (EOOW), Engineering Watch Supervisor (EWS), Reactor Operator (RO), Instructor.

Niagara Mohawk Employment

From: 12/21/83 To: Present Job Title: Assistant Training Supervisor-Nuclear
Duties: Training program development and implementation

From: To: Job Title:
Duties:

From: To: Job Title:
Duties:

From: To: Job Title:
Duties:

From: To: Job Title:
Duties:

Previous Employers:

From: 10/5/71 To: 12/19/83 Name of Company: US Navy
Duties: Operate, manage personnel, maintain records for and implement training on PWR plants.

From: To: Name of Company:
Duties:

From: To: Name of Company:
Duties:

From: To: Name of Company:
Duties:

Additional Information (Use extra sheet of paper if necessary)

ARTHUR G. VIERLING

Graduated from Clarkson College with BSME in 1974. Joined Niagara Mohawk Power Corporation as a Mechanical Design Engineer in June 1974. Offers experience in a variety of engineering functions, ranging from design and testing to project work.

Project Engineer (April 1983 to Present)

Employed at Nine Mile Point Unit #2 as Field Project Engineer. Provided technical direction for the installation and modification of the Unit #2 Control Room.. Acted as the primary technical interface to the NRC, NMPC QA and NMPC Contract Administration, for Control Room concerns.

Test Engineer (October 1981 to March 1983)

Employed at General Electric's test facility in San Jose, California as a Control Room Equipment Test Engineer. Responsibilities included development of test plans/procedures for inter and intra panel component testing. Additional responsibilities included monitoring the manufacturing facilities for a compliance to cost estimates, schedule, contractual agreements and technical specifications.

Nuclear Staff Engineer (November 1979 to September 1981)

As Nuclear Staff Engineer my major undertakings were the installation of an ATWS (Anticipated Transient Without Scram) System and the TMI (Three Mile Island) modifications to Nine Mile Point Unit #1. Responsibilities included development of system specification and overall project coordination with final review of system design and hardware procurements. Additional responsibilities included supervision of engineers (multiple discipline) and cost and schedule compliance. Was a member of the BWROG Subcommittee on Control Room Improvement. Performed NUREG-0700 Review on Brown's Ferry Units #1 and #2, as well as WSPPS Unit #2.

Instrumentation and Control Engineer (November 1977 to November 1979)

Employed in corporate engineering as a Fossil - Nuclear I&C Engineer. Projects included modification to fossil boiler combustion control systems, installation of EPA Air-Water Monitoring and Reactor Protection System upgrading at Nine Mile Point Unit #1. Responsibilities included design, procurement and acceptance criteria of control equipment, review of vendor drawings and specifications, and supervision of designers and drafting technicians for installation drawings.

Quality Control Operations Engineer (June 1976 to November 1977)

Employed at Nine Mile Point Nuclear Plant #1 as a Quality Control Engineer. Responsibilities included procedural compliance to the installation, operation and refueling outages. Daily activities included review and approval of procurement specifications and receipt inspection testing. Was certified as a Level II Non-Destructive Tester in accordance with ASNT TC1A and as a Level II Test Engineer in accordance with ANSI N 45.2.6.

Mechanical Design Engineer (June 1974 to June 1976)

Employed in corporate engineering as a Mechanical Design Engineer. Projects included the design, procurement and construction of high pressure gas control regulating stations. Daily responsibilities include the design, procurement and construction of piping systems, control valve selection remote metering and control systems. Supervised designers and drafting technicians for installation drawings and provided field technical assistance during construction.

Arthur G. Vierling

SPECIAL TRAINING

Type of Training	Year Taken	Duration	Administered By
Metallurgy of Welding and Joining	1975	1 wk seminar	Metals Engineering Institute
Electric Utility Systems and Practices	1977		Niagara Mohawk/ General Electric
IRD Vibration Analysis	1978	2 day seminar	IRD Mechanalysis, Inc.
Control Systems Engineering	1979	2 wk course	Foxboro
Microprocessor Technology	1982	40 hrs class time	General Electric

BUTTACAVOLI, PETER

ENGINEER
CONTROL SYSTEMS
DIVISION

EDUCATION

Brooklyn Technical High School - Courses in Mechanical Engineering
Pratt Institute - Courses in Mechanical Engineering
Stone & Webster Engineering Corporation - Courses in Management Concepts and Principles

EXPERIENCE SUMMARY

Mr. Buttacavoli has 25 years of experience in the design of power plants and industrial and chemical process industries. Currently, as Principal Engineer for Niagara Mohawk Power Corporation's Nine Mile Point Nuclear Station - Unit 2 PGCC, his primary responsibilities are the control and evaluation of system requirements affecting the main control room and relay room. He is also responsible for the Human Factors Engineering criteria for functional and operational organization of these areas.

Since joining Stone & Webster Engineering Corporation in 1974, he has also functioned as Division Staff Human Factors Squad Leader for all projects. Prior to this he had been assigned to two nuclear power plant projects as Control Design Squad Leader and Group Leader. He was previously assigned as Control Design Group Leader for an industrial plant gas-to-oil conversion. Special assignments included participation in the task force studying approaches and applications of implementing human factors engineering in control room design.

Prior to joining Stone & Webster, Mr. Buttacavoli was a Senior Designer with 15 years of experience in the engineering, design, and production of computerized industrial batch control systems, military launching and tracking systems, and high-speed, automated, industrial production facilities. He was also a Designer for 3 years on fossil plant projects.

PROFESSIONAL AFFILIATIONS

Human Factors Society - Member

DATE 6/84

RESUME

NAME: Ralph William Gayne

DATE OF BIRTH: 7-18-37

SOCIAL SECURITY

ADDRESS:

DATE OF HIRE: 1-23-56

JOB TITLE: Assist. Supervisor Operations

DEPARTMENT: Operations

EDUCATION:

Gouverneur Central High School
Gouverneur, New York
Graduated - 1955

Canton ATC. Canton, New York
Part-time
Electrical I, II, III - 1956

I.C.S. Course
Industrial Electronics - 1957

Niagara Mohawk Sponsored Training
Nine Mile Point Nuclear Station
1967-1968 (2 months)

Covering: Reactor Physics, Radiation Protection, Math, Chemistry, Electricity, Heat Transfer, and time on Minneapolis Honeywell Simulator

NMPC Fire School
1968 - 1 week

General Physics Basic Introduction Course
January - March 1972

G.E. BWR Technology Course
April 1972 - 4 weeks

G.E. BWR Technology Course
May 1973 - 2 weeks

G.E. Simulator Training
Morris, Illinois
November 1972 - 1 week

General Physics Corporation Training Course
March-April 1974
100 hours

Ro . JAF

EDUCATION CONT.: General Physics Corporation
SRO License Preparation
1976 - 320 hours

TVA BWR Simulator
Soddy-Daisy, Tennessee
1977 - 3 Days

TVA BWR Simulator
Soddy-Daisy, Tennessee
1978 - 3 Days

General Physics Corp
SRO License Preparation
198c - 320 hours SRO [illegible] I

Name: RALPH W. GAYNE

EMPLOYMENT: Positions held with Niagara Mohawk:

Position: Assitant Supervisor Operations

Duties: Assists the Supervisor Operations, analyzes operating data, formulates and updates operating procedures and operating orders, schedules work activities to ensure 24 hr, 365 day coverage, and also, maintains NRC Senior Reactor Operator license.

Position: Station Shift Supervisor

1978 to 1981

Duties: Writing pre-operational tests, Operating Procedures, Special Procedures and performing design reviews on plant systems for Nine Mile Point Unit #2, writing major portion of Section 13 and 14 of the FSAR for Unit #2. Acted as the Turbine Building coordinator during the Unit #1 refuel outage, 1979 and participated in the testing of pipe restraints for NMP-#1 during the outage. SRO, Unit 1 July 1981

Position: Station Shift Supervisor, James A. Fitzpatrick Nuclear Power Plant

1976 to 1978

Duties: As senior man on shift, functions include direction of shift activities, assurance that the plant is operated safely and within the license and technical specifications and that plant operations are conducted in accordance with approved procedures. Obtained SRO License.

Position: Shift Operating Foreman, James A. Fitzpatrick Nuclear Power Plant

1972 to 1976

Duties: As SOF, in charge of the operation of the Control Room. From this position, the SOF is able to control the starting and stopping of all major pieces of equipment and the control of the reactor and turbine. Other duties included the directing and training of operators of lower grade.

Position: Nuclear Operator "E", Nine Mile Point Unit #1

1967 to 1972

Duties: As an NOE, responsible for the care and operation of all plant equipment, including the main turbo-generator unit and reactor unit. Also to direct the operation of auxiliary equipment by operators of lower grade. Included duties of the rescue and fire brigade. Obtained RO License.

Position: Travelling Operator "B" - Gouverneur

1964 to 1967

Duties: Responsible for a large area and more complicated auto equipment. Responsible for distribution of power to major industry in the area.

Name: RALPH W. GAYNE

EMPLOYMENT: (cont'd)

1961 to 1964

Position: Travelling Operator "A" - Star Lake

Duties: Responsible for the auto-operation of the Hydro Units in the area, also for the distribution of power to substations.

1957 to 1961

Position: Switchboard Operator "A" - South Edwards

Duties: Responsible on a shift for the generators at a Hydro Station, loading and unloading of the units, and synchronizing to the system. Doing light maintenance to the units and maintaining the plant in a clean and orderly condition. Responsible for the breakers and switchyard and for mark-ups to the equipment.

1956 to 1957

Position: Switchboard Operator "A" - Malone

Duties: Same as above

1956

Position: Janitor

Duties: General janitorial duties.

RESUME

NAME: Donald C. Rennels

CURRENT TITLE: Principal Engineer, Systems Application Engineering

NUCLEAR EXPERIENCE: 17 years

EDUCATION: BSME, University of California, Berkeley

ADVANCED TRAINING: Registered Professional Engineer, California & Minnesota
3 yr Work Rotation Program
Various Management/Project Leadership/Technical Courses
Kepner Tregoe

EXPERIENCE:

o General Electric Company - 14 years

- System Engineer
  - Hydraulic design and test of feedwater spargers and overhead core spray spargers. Performance analysis of ring core spray spargers. Investigate vessel internal cracking problems. Investigate plant operation anomalies. Developed transient model of control rod drive scram discharge system. Prepared performance specifications and hydraulic analysis models for main steam and feedwater systems. Prepared hydraulic analysis models for flow measuring devices and jet pumps. Prepared "Hydraulic Analysis Procedures For BWR Piping Systems".

- Work Rotation Program
  - Emergency Core Cooling System Analysis - Performed special transient studies and evaluated low pressure core injection loop selection logic.
  - Operating Plant Engineering - Evaluated plant performance and safety at increased core flow. Supported feedwater nozzle repair programs.
  - Plant Equipment Design - Evaluated hydraulic and structural performance of valves. Analysed relief valve discharge line transients.

o Lawrence Livermore Laboratory - 3 years

- Project Engineer
  - Designed and tested nuclear weapons. Directed the development of fabrication and assembly techniques at the production agency.

o Hughes Aircraft Company - 2 years

- Group Suvervisor, Space Simulation Laboratory
  - Designed vibration and shock test equipment, vacuum and cryogenic systems, and satellite spin/tilt test fixtures.

o Aerojet General Corporation - 6 years

- Project Engineer, Liquid Rocket Engine Test Area
  - Designed concrete and steel structures, pressure vessels, piping systems and thrust measurement systems.

DONALD F. TAYLOR
Manager, Energy Systems Group
Senior Engineer

- Human Factors Engineering
- Industrial Engineering
- Information Presentation Techniques
- Procedures Enhancement
- Nuclear Engineering
- Training
- Experimental Design
- Workspace Layout
- Statistical Analysis

Mr. Taylor has been active in human factors for a period of twelve years. He has applied experience in mechanical and fluids engineering as well as in nuclear maintenance and operations. As Manager of Energy Systems Group in the Applied Systems Technology Division, Mr. Taylor has served as project manager to a number of the ARD nuclear programs.

Mr. Taylor has extensive experience in the design, evaluation, and enhancement of the man-machine interface in process control applications. He developed human factors guidelines for the design of nuclear power plants (Electric Power Reseach Institute Guide NP-1637); prepared emergency procedures for the Duke Power Company; and developed maintenance procedures and documentation at Duke Power. He has participated in all phases of Control Room Design Reviews (CRDRs), including over 75 interviews with licensed nuclear operators and surveys of 15 control rooms.

- Nine Mile Point Unit 1 Detailed Control Room Design Review - Served as Project Director responsible for the planning and coordination of all project tasks. Conducted Operator Interview and Control Room Survey efforts. Established methods and procedures to identify and analyze operator tasks based upon the plant specific BWROG EPGs. Established methods and procedures and conducted the verification of suitability and availability of information and control needs to accomplish operator task. Designed and conducted efforts to validate that emergency task can be effectively accomplished by the operating crew in the NMP-1 control room. Directed a review of the proposed Safety Parameter Safety System and a survey of the Technical Support Center and Emergency Offsite Facility. Developed methodology and procedures for the NMP-1 Assessment Phase and conducted the assessment of HEDs. Developed conceptual solutions to significant discrepancies and designed and established a Human Factors Manual providing guidance and criteria for the implementation of control room enhancements. Developed detailed solutions for the implementation of control room enhancements including establishment of system and subsystem demarcation lines, mimicing of system flows, system, subsystem, and component labeling packages, replacement of meter scales, and color coding of meter scales. Designed and conducted efforts to verify that enhancements effectly resolve discrepancies but do no introduce new HEDs.

- Ginna Control Room Design Review - Served as Project Director responsible for planning and coordination of all project tasks. Established methodology and procedure for utilizing the Westinghouse generic ERGs to identify operator tasks for accomplishing critical safety functions. Directed and conducted the Control Room Survey effort including the environmental measures of control room lighting, noise, humidity, temperature, and air velocity. Established methodology and procedures for

the Ginna DCRDR Validation of control room functions conducted in coordination with the Ginna EOP development program. Directed and evaluation of the Ginna SPDS in response to NUREG 0737, Supplement 1, requirements. Peformed a human engineering review of panel modification drawings and characteristics for equipment installed in response to Reg. Guide 1.97. Currently conducting the Ginna Assessment Phase.

o <u>Nine Mile Point Unit 2 Detailed Control Room Design Review</u> - Served as Project Director responsible for the planning and coordination of all project tasks. Directed a survey of control room instrumentation and controls, an inventory of control room equipment and a review of historical documents for BWR plants. Directed a review of the Safety Parameter Display System the Technical Support Center, and the Emergency Offsite Facility.. Revised methodology and procedures for identifying operator tasks and establishing the information and control needs to execute the emergency operating procedures. Conducted the comparison of the information and control needs to the control room inventory to establish availability and suitability of control room equipment. Established methodology and procedures for the walk-through/talk-through validation of control room functions. Conducted the talk-through validation task effort. Currently conducting the assessment of NMP-2 HEDs.

o <u>Arkansas Power & Light Control Room Design Review</u> - Task Leader for the identification of operator functions and analysis of emergency task for ANO-1. Working with ANO-1 operators, identified information and control needs for executing task objectives. Conducted a review of NUREG-0700 criteria and basis documents to establish the ANO survey checklist. Determined the applicability of the Section 6 design criteria to the ANO-1 control room and researched the basis documentation for the appropriateness of specific criteria values to the nuclear power plant control room application. Conducted the ANO-1 Control Room Survey effort to identify discrepancies to appropriate design criteria.

o <u>Marble Hill Control Room Design Review</u> - Task Leader for the operator interviews and checklist efforts. Conducted over 25 interviews with Marble Hill training and operations personnel. Analyzed results to identify potential human engineeing discrepancies, and prepared the Operator Interview Task Report. Using the Westinghouse Emergency Response Guidelines (ERGs) as a baseline, identified the operator functions and tasks needed to accomplish the emergency response objectives. Working with Marble Hill subject matter experts, identified the information and control needs to perform emergency tasks comprising the Westinghouse ERGs.

<u>PREVIOUS EXPERIENCE</u>

o 1982 to 1983 <u>BioTechnology, Incorporated</u>, Falls Church, Virginia
Senior Program Analyst

Served as project director for the Duke Power control room review human factors support effort. Principal in an operating experience review for the Duke Power control room review and established checklist criteria and methodology for the control room survey effort. Principle investigator in a project conducted for Duke Power to prepare a guide for the development of maintenance

procedures. Prepared and conducted training seminars for Duke Power procedure writers and engineers to enhance their technical writing skills.

o 1980 to 1982 Essex Corporation, Alexandria, Virginia
Human Factors Branch Manager

Responsible for the planning and coordination of projects with private utilities to enhance control room operations in nuclear power applications. Designed survey checklists and data forms for evaluation of control room environment, equipment design, and facility design and layout. Developed a methodology for the review of plant system functions and analysis of operator tasks. Designed and conducted an experiment using the Duke Power control room training simulators to evaluate the effectiveness of three candidate emergency procedure formats. Principle author of a writer's guide for emergency procedures prepared for the nuclear stations at Duke Power.

o 1978 to 1980 U.S. Coast Guard, Washington, DC
Industrial Engineer

Technical expert and staff advisor to the Office of Research and Development on matters of industrial engineering, human factors, and operations research. Primary projects were in the areas of product design and safety, crew station design, and crew performance. Directed efforts to establish an index of life saving capability for personal flotation devices. Planned and organized research to assess the effects of wave motions on crew performance and designed a ship test program to establish criteria for fatigue standards on Coast Guard 41-foot and 44-foot search and rescue crafts.

o 1974 to 1978 Norfolk Naval Shipyard, Portsmouth, Virginia
Nuclear Engineer

Successfully completed 1,500 hours of course work and formal instruction in the operation and maintenance of the S5W submarine reactor plant. Qualified by NAVSEA on the Naval Reactor Exam as a Reactor Plant Shift Test Engineer and advanced to the highest grade level of nuclear engineer. Prepared technical instructions and specifications for the repair and maintenance of the mechanical and fluids systems of the Westinghouse reactor plant.

o 1972 to 1974 Virginia Polytechnic Institute and State University, Blacksburg, Virginia
Research Assistant

Assisted in research projects specializing in eye movements and visual search. Established an experimental setup to collect eye position data at a sample rate of 1,000-per-second and developed computer models of search behavior to extract eye movement parameters.

EDUCATION

M.S., Industrial Engineering and Operations Research (Human Factors), Virginia Polytechnic Institute and State University, Blacksburg, Virginia, 1975

EDUCATION (continued)

B.S., Industrial Engineering and Operations Research, Virginia Polytechnic Institute and State University, Blacksburg, Virginia, 1972

PROFESSIONAL AFFILIATIONS

Human Factors Society
American Institute of Industrial Engineers

September 1985

CONFIDENTIAL RESUME

NAME: Mark Allen Dooley

PERSONAL: Age: 31
Date of Birth: 2-25-54
Married; Good Health

EDUCATION: Licenses - RO NMP Unit 1
SRO NMP Unit 1
Currently undergoing Training
for SRO NMP Unit II

Rochester Institute of Technology
June 1982 - Sept. 1984

Remsen Central School
Remsen, New York
Graduate, 1972

U.S. Navy

Machinist Mate "A" School
Great Lakes, Illinois
1972

Machinists Mate "B" School
Great Lakes, Illinois
1972

Nuclear Power School
Bainbridge, Maryland
1973

Nuclear Training Power Unit
West Milton, New York
1974

Other Military Schools
Jan. 1975 - Sept. 1976

EMPLOYMENT/
EXPERIENCE: Niagara Mohawk Power Corporation
Syracuse, New York

9-83 to Present

Position: Training Supervisor NMP-2

Duties: Responsible for the development and implementation of Training and Retraining programs for licensed and non-licensed personnel at Nine Mile Point Nuclear Station Unit-2. This includes initial Cold License Training and INPO Accreditation. The Training Supervisor is also responsible for the documentation and testing records for site personnel.

11-81 to 9-83

Position: Assistant Training Supervisor (Nuclear)

Duties: Assist in the development and implementation of training and retraining programs conducted for licensed personnel at the Nine Mile Point Nuclear Site; prepare lesson plans, conduct classes, prepare and administer annual operator examinations; develop and present general interest and special classes; maintain documented training and testing records. Develop and conduct training sessions for non-licensed personnel at the site including semi-annual steam and mechanical fundamental classes.

1-81 to 11-81

Position: Nuclear Auxiliary Operator E

Duties: Under general supervision on a shift in a Nuclear Station to perform any of the duties of Auxiliary Operators of lower grade and to assist in their training; and at times, as required, to be responsible for the operation of the reactor turbo-generator unit and related equipment from the Control Room.

3-80 to 1-81

Position: Nuclear Auxiliary Operator C

Duties: Under direct supervision on a shift in a Nuclear Station to be responsible for the operational care of main turbo-generator and reactor units; to operate or direct the operation of the highest types of auxiliary equipment; to execute safe and effective mark-ups on equipment within the station and to assist in the detailed training of Auxiliary Operators of lower grade.

12-78 to 3-80

Position: Auxiliary Operator B

Duties: As an AOB, under direct supervision on shift, to be responsible for the operation and care of various types of complicated auxiliary equipment and be responsible for the safe handling of waste products and other equipment associated with turbo-generator or boiler units and with casual supervision to start and stop such equipment.

EMPLOYMENT CONTINUED:

U.S. Navy
Naval Nuclear Power Training Unit S3G Prototype

10-77 to 12-78

Position: Mechanical Operator Staff Instructor

Duties: Helped in training of assigned students in system knowledge and operational concepts of the S3G Prototype. Directed personnel in both corrective and preventive maintenance associated with all mechanical systems. Responsible for major repairs to service and Control Air Systems. Chosen for Advance Qualifications. Assigned the task of self-motivated training in the area of Engineering Watch Supervisor and Engineering Officer of the Watch.

8-74 to 10-78

U.S.S. James K. Polk (SSBN645)
Fleet Ballistics Missile Submarine

Qualified as Engine Room Supervisor of the Mechanical Division. Assisted in maintenance required to keep the submarine operationally ready. Assigned as Training Petty Officer for the Mechanical Division. During this time I reorganized the training system to a more efficient program. I was responsible for the testing, upgrading and qualification of qualified and unqualified personnel. Assigned as Diesel Expert at which time I was responsible for the trend analysis, preventive maintenance and a complete overhaul of the diesel engine. I received a Squadron Accommodation for this task. Assigned as Nuclear Administrative Petty Officer for the Mechanical Division. I was responsible for maintaining all Technical Manuals up to date.

6-73 to 8-74

U.S.S. Simon Lake AS19
Submarine Tender

Assigned to the Radiological Control division. Qualified as Radiological Control Supervisor.

3-73 to 6-74

Naval Nuclear Power School & Prototype
Bainbridge, Maryland

Completed six months of college level courses, covering all aspects as Reactor Core Construction, operation theory, and related chemistry control. This was followed by six months of training at the D1G Prototype at the Knolls Atomic Power Laboratory, West Milton, New York. The qualification program included theoretical routine maintenance and casualty aspects of reactor and propulsion plant operation.

1-73 to 3-73

U.S.S. Yosemite AD19

Assigned to Evaporator Division of the Engineering Department. Responsible for the maintenance and operation of two triple-effect evaporators.

RECEIVED VIA TELECOPIER
DATE 7/22/85
TIME 10:55
NINE MILE POINT UNIT 2

SCHNEIDER, MARC I.

October 1984

ENGINEER
CONTROL SYSTEMS DIVISION

EDUCATION

Rutgers University - Bachelor of Electrical Engineering - 1968
University of Massachusetts - Postgraduate courses in Electrical Engineering - 1970
Monmouth College - Master of Electrical Engineering - 1975
New Jersey Institute of Technology - Postgraduate courses in Computer Science and Electrical Engineering - 1978
Rutgers University - Postgraduate courses in Business - 1980
I.S.A. - Course in Fossil Plant Instrumentation - 1981
Drexel University - Postgraduate courses in Electrical Engineering - Power

LICENSES AND REGISTRATIONS

Engineer-in-Training

EXPERIENCE SUMMARY

Mr. Schneider has 12 years of experience in the engineering industry. Currently, as Computer Applications Engineer, he is responsible for the emergency response facilities/liquid radwaste control computer system.

Since joining Stone & Webster Engineering Corporation in 1980, he has been assigned to an 1100-MW boiling water reactor plant project as Computer Applications Engineer.

Prior to joining Stone & Webster Engineering Corporation, Mr. Schneider was a Digital and Computer System Design Engineer for RCA, and a Communications System Engineer for Booz-Allen Applied Research and the Israel Electric Corporation.

PROFESSIONAL AFFILIATIONS

Instrument Society of America - Member

DETAILED EXPERIENCE RECORD
SCHNEIDER, MARC I. 81825

STONE & WEBSTER ENGINEERING CORPORATION, CHERRY HILL, NJ (Nov 1980 - Present)

Appointments:

Computer Applications Engineer - Nov 1980

Nine Mile Point Nuclear Station - Unit 2, Niagara Mohawk Power Corporation (Jan 1981 - Present)

As COMPUTER APPLICATIONS ENGINEER for the Control Division Staff (Nov 1980 - Present), responsible for main plant computer, liquid radwaste control system, digital radiation monitoring system, and emergency response facilities data system. For the main plant computer, identified and defined data information to be supplied to the computer vendor and identified deficiencies in software performance requirements and documentation of these requirements. For the liquid radwaste control system, wrote bid specifications and issued competitive bids. For the digital radiation monitoring system, wrote bid specifications. For the emergency response facilities data system, develops preliminary requirements, evaluates GE quotes, identifies potential vendors, and develops implementation schedule. For the ERF/LWC computer system, wrote bid specifications issued for competitive bids, evaluated bids, selected vendor, wrote purchase specification, provided engineering and first level management interface with Honeywell, PMSD, the vendor, to include a 6-week factory acceptance test. Currently responsible for providing continuing engineering and first level management functions to support installation and startup of the computer, including the site acceptance testing.

As COMPUTER APPLICATIONS ENGINEER for the Computer Applications Staff (Nov 1980 - Dec 1980), studied NRC emergency response facilities system requirements.

RCA GOVERNMENT COMMUNICATIONS SYSTEMS, CAMDEN, NJ (July 1978 - Nov 1980)

As DIGITAL DESIGN ENGINEER for the Technical Staff, investigated approaches and developed hardware and firmware for the X.25 communications controller of a GA 220 TELEX concentrator. Developed video controller and keyboard communications interface modules for GA 220 microprocessor-based TELEX operator's console, wrote electrical engineering portion of a proposal to build video terminals for the government, provided field engineering support during installation of 4,000-line TELEX concentrator, and wrote the performance specification for 16,000-line TELEX switch utilizing AMD 2901 bit slice microprocessors and GA minicomputers.

RCA GLOBAL COMMUNICATIONS INCORPORATED, NEW YORK CITY, NY (Feb 1975 - July 1978)

As ADMINISTRATOR for the Quality Assurance Group (Jan - July 1978), performed technical evaluation of accuracy and applicability of system reporting procedures, developed new procedures where appropriate, and

defined quality assurance functions in a new computerized circuit management system.

As DESIGN ENGINEER for the Technical Staff (Feb 1975 - Jan 1978), assisted in the development of the system performance specification, bid specification, and configuration design for a microprocessor-based leased channel controller utilizing COSMAC 1802; participated in bid evaluation, system design, and implementation of an autovon trunk microprocessor-based monitor; wrote software for the monitor microprocessor COSMAC 1802; participated in system and software design for microprocessor-based test point monitor utilizing an INTEL 8080; wrote data base requirements for computerized circuit management system and system specification; and designed system for Nodal alarm monitor.

BOOZ-ALLEN APPLIED RESEARCH, NEW SHREWSBURY, NJ (April 1973 - Feb 1975)

As COMMUNICATIONS SYSTEM ENGINEER, participated in formulating candidate systems evaluation of each design and development of final design for a tactical mobile subscriber telephone system, participated in the development of an interface standardization proposal for peripheral devices purchased by the U.S. government for military communications systems, and developed the network control data requirements for a family of small computerized switchboards including formats, data message lengths, memory requirements, and data transfer techniques.

ISRAEL ELECTRIC COMPANY, HAIFA, ISRAEL (Feb - Nov 1972)

As TELECOMMUNICATIONS SYSTEMS ENGINEER, designed a new leg of powerline carrier network utilizing multichannel, speech plus, communications equipment, and integrated it into the existing program. Participated in site selection and preparation for new microwave communications link of company-owned telephone system.

June 1983

CONFIDENTIAL RESUME

NAME: Michael James Colomb

PERSONAL: Age: 33
Date of Birth: 6/25/50
Married; Good health

EDUCATION: St. Anthony of Padua High School
Syracuse, New York
Graduated 1968 - Regents Diploma

Onondaga Community College
Syracuse, New York
Graduated 1970 - A.A.S. in Electrical Technology

General Physics Basic Introduction Course
January - March 1972 - 8 weeks

Covering: Math, Physics, Engineering, Chemistry, Health Physics, Nuclear Instrumentation.

General Electric BWR Technology Course
April 1972 - 4 weeks

Covering: General BWR Technology, Specifics on JAFNPP Systems.

Niagara Mohawk System Course
June 1972 - 2 weeks

General Electric BWR Technology Course
May 1973 - 2 weeks

Niagara Mohawk Fire School
June 1974 - 3 days

General Physics Training Program
December 1974 thru March 1975 - 80 hrs.

General Physics License Preparation Course
April - May 1975 - 4 weeks

TVA BWR Simulator Training
January 1977 - 3 days

TVA BWR Simulator Training
May 1978 - 3 days

EMPLOYMENT: Niagara Mohawk Power Corporation
Syracuse, NY

June 1981 to Present
Position: Station Shift Supervisor
Duties: Writing pre-op, operating, and special procedures for NMP#2 and reviewing Design Reviews for NMP#2 systems. Supervise operating personnel and assist in their training for licensing.

1979 to 1981
Position: Chief Shift Operator
Duties: Writing pre-operational tests, operating and special procedures, and surveillance tests for Nine Mile Point Unit 2. During the 1979 Nine Mile Point Unit 1 refueling outage, supervised installation and testing of several plant modifications.

1976 to 1979
Position: Chief Shift Operator, JAFNPP
Duties: Responsible for operation of Control Room. Provided supervision and training for all lower grade operators. Participated in all phases of plant operation, start-up and shutdown. Performed and directed surveillance tests on all plant safety systems.

1975 to 1976
Position: Nuclear Operator "E", JAFNPP
Duties: As Senior "In Plant" Operator, responsible for care and operation of all plant equipment including the Main Turbine Generator, all plant auxiliary systems and reactor safety systems. Participated in all phases of plant start-up, shutdown and operation, including surveillance testing. Participated in all phases of refueling operations. Obtained R.O. License June, 1975.

1972 to 1975
Position: Nuclear Operator "C", JAFNPP
Duties: Participated in all phases of pre-operational testing and initial plant start-up testing program. Responsible for initial equipment "run-ins", system flushing operations and system turnover for operations.

1971 to 1972
Position: Nuclear Operator "C", NMPNPP
Duties: As Auxiliary Operator on Shift, obtained experience operating all plant auxiliary systems from outside the Control Room. Participated in all phases of refueling operations, and "sipping" procedures.

1970 to 1971
Position: Gas Mechanic "B", NMPC, Oswego, NY
Duties: During this period was promoted from Gas Mechanic Helper to Gas Mechanic "A" to position above. Responsibilities were to operate various machinery associated with construction, maintenance and repair of natural gas lines and services. Also worked in the maintenance crew during a refueling outage at Nine Mile Point Unit 1 during this period.

ARD Corporation

ROBERT L. KERSHNER
Vice President, Applied Systems Technology Division
Principal Human Factors Engineer

- o Human Factors Engineering
- o System Analysis
- o Experimental Design
- o Anthropometrics
- o Statistical Analysis
- o Control Room Reviews
- o Training
- o General Systems Theory

As Vice President of the Applied Systems Technology Division, Mr. Kershner is responsible for the coordination and review of all human engineering, applied behavioral research, human factors and industrial engineering projects for ARD Corporation. Mr. Kershner has been active in providing professional services for over ten years. In the private sector of the industry, he has conducted Government-sponsored research as well as held professional positions within the Federal Government.

Mr. Kershner's specialty is the application of general systems theory to the design, analysis and improvement of complex systems, applying human factors engineering principles to process control design. Mr. Kershner has managed ARD's control room review support to the Arkansas Power & Light Company's Arkansas Nuclear One station, Public Service Indiana's Marble Hill station and the Commonwealth Edison Company's Dresden, Byron and Braidwood nuclear generating stations. In addition, he supervised Safety Parameter Display System development for the Virginia Electric and Power Company. Mr. Kershner has developed Control Room Design Review program plans for several major utilities including Commonwealth Edison, Virginia Electric and Power, Arkansas Power & Light, and Public Service Indiana. He was instrumental in the design and development of the ARD Performance Measurement System for the validation of Emergency Operating Procedures and the evaluation of control room equipment modifications.

PREVIOUS EXPERIENCE

- o 1980 to 1981 Andrulis Research Corporation, Bethesda, Maryland
  Director, Human Factors Engineering Division

Responsible for corporate human engineering and social science research projects. Provided technical direction of research and development, test and evaluation studies in: human factors engineering; military systems design, analysis and improvement; and personnel profiles. Completed a variety of projects for the U.S. Army Human Engineering Laboratory, including Human Factors Engineering Recommendations in the System Development Process, a profile of the enlisted infantryman, a critical review of Infantry Systems Testing, the effects of CB clothing and equipment on soldier performance, and a critical review of Night Vision Systems (Infrared and Light Intensification).

- o 1978 to 1980 National Bureau of Standards (NBS) - Consumer Sciences Division, Gaithersburg, Maryland
  Engineering Research Psychologist, Project Leader

Provided human factors engineering research and analysis support to other federal agencies and to NBS-sponsored programs. Areas of involvement included analysis of driver navigation aids; research on operator visual search patterns and determination of the efficacy of establishing a standard

ergonomic reference data system. Developed a set of human engineering guidelines for energy consumption displays.

- 1977 to 1978 Biotechnology, Incorporated, Falls Church, Virginia
  Research Associate

Provided human factors engineering support to projects in the Personnel Performance and Transportation Programs. Conducted an evaluation of a new format for information presentation to time critical materials for the U.S. Navy and investigated an U.S. Air Force-sponsored project to test and evaluate low-fidelity simulation aids for intermediate-level avionics training.

- 1976 to 1977 Federal Highway Administration - Analysis and Experimental Division, McLean, Virginia
  Assistant Research Psychologist

Responsible for conducting all phases of human engineering research, in particular, driver performance studies in support of the Federal Highway Administration's research programs related to traffic management and motorist information systems.

- 1975 to 1977 Cybernetics Research Institute, Washington, DC
  Assistant Research Psychologist

Responsible for the psychological research conducted at the institute contracted through the Bureau of Education for the Handicapped. Assisted in the development and evaluation of selected vibrotactile codes as an alternative communication system for the deaf and/or blind.

EDUCATION

M.A., Human Factors Psychology, The Catholic University of America, Washington, DC, 1977

B.A., Applied Psychology, cum laude, University of Baltimore, Baltimore, Maryland, 1975

Certificate, Industrial Safety, Health and Environment - Department of Engineering, University of Wisconsin, Madison, Wisconsin, 1979

PROFESSIONAL AFFILIATIONS

Human Factors Society (National & Potomac Chapter)
American Nuclear Society
Psi Chi (Psychology Honorary)

MILITARY SERVICE

U.S. Army Paratroops, 1968 to 1970

ARD Corporation

VINCENT J. FORTUNATO III
Staff Engineer
Human Factors Psychologist

- Human Factors Engineering
- Psychophysiology
- Human Performance Assessment
- Human Electrophysiology in Operational Settings
- Display Technology
- Experimental Design
- Statistical Analyses
- Man-Computer Interfacing

As a staff engineer, Mr. Fortunato provides human factors support to a variety of ARD clients, both research and consulting. His research activities include NASA-funded projects involving psychophysiological measures of workload, and the generation of computer graphic displays.

His support of ARD's nuclear clients has included human factors reviews of computer graphic display systems at Nine Mile Point Unit 2, Rochester's Ginna station, Commonwealth Edison's Quad Cities and Dresden plants, and Lousiana Power and Light's Waterford 3 station. He has also reviewed graphic displays of radiation/meteorological data for Virginia Electric Power Company and Commonwealth Edison. His support of ARD's nuclear clients has also included control room I&C inventories at Niagara Mohawk's Nine Mile Point Unit 2 and Rochester Gas and Electric's Ginna stations, and has also supported CRDR reviews for Commonwealth Edison.

PREVIOUS EXPERIENCE

- 1984-1985 KLD Associates, Huntington Station, New York
  Research Scientist

Project manager responsible for conducting driver performance studies under contract to the Federal Highway Administration. Duties included day-to-day office management, employee training, subject testing, data collection and data analysis.

- 1983-1984 Extensis Medical Center, Roslyn, New York
  Biofeedback Consultant

Initiated and developed all facets of biofeedback therapy, from conception to inception, as an integral part of an existing medical practice. Responsibilities included development of effective clinical procedures, purchasing of computer/physiology equipment, and the treatment of patients, which included real-time display of computer graphics and user computer interfacing.

- 1980-1983 State University of New York, Binghamton, New York
  Supervisor of Research, Psychophysiology Laboratory

Responsible for direction, coordination, and supervison of all research projects involving psychophysiology measurements and autonomic control using computer assisted biofeedback techniques. Duties included subject testing, data collection and analysis, computer program design, and preparation of drafts for publication, as well as supervision of lab assistants. Also collaborated with computer specialists to design and program CRT graphic displays of electrophysiology.

- 1980-1982 State University of New York, Binghamton, New York
  Instructor

Responsible for development of curricula for several psychology courses including Introduction to Psychology, Psychology of Learning, Learning Laboratory, Motivation Laboratory, Sensation and Perception, Perception Laboratory, and Social Psychology

- 1979-1979 Gerontology Research Center NIH/NIA, Baltimore, Maryland
  Psychology Intern/Technician, Lab of Behavioral Sciences

Collaborated with doctors at NIH/NIA in the design and implementation of research projects involving cardiovascular control hypertension, athletic ability and other psychophysiology projects. Responsibilities included subject testing, data collection and analysis, and preparation of drafts for publication.

EDUCATION

M.A., Experimental Psychology, State University of New York, Binghamton, New York, 1982.

B.S., Psychology, State University College, Oswego, New York, 1979.

PROFESSIONAL AFFILIATIONS

Human Factors Society
Biofeedback Society of America
Biofeedback Certification Institute of America
Psi Chi (Psychology Honorary)

ARD Corporation

E. RALPH DUSEK
Manager, Special Projects
Senior Scientist

- Human Factors Engineering
- Man-machine Compatibility Evaluation
- Training and Simulation
- Anthropometrics
- Personnel Selection
- Job Proficiency Measurement

Dr. Dusek has over 30 years of experience in applied experimental psychology and human factors engineering. During that period he held a succession of responsible positions, all involving applied research. In addition, he has extensive management experience in directing the activities of in-house personnel and contractors conducting work for which he was responsible.

Dr. Dusek has conducted studies on the effects of extreme environments on man-machine compatibility. His work in this area has been applied to the design of clothing, equipment and workplaces. Dr. Dusek was responsible for early military studies on performance-based training, testing and on-the-job training, as well realistic unit training techniques. Dr. Dusek's work with performance-based testing has been directed toward qualifying or verifying individual's job proficiency for holding a specific level position. He has also had wide experience with design of tests for selecting and classifying enlisted and officer personnel for assignment to specific positions.

During the past year, Dr. Dusek has participated in human factors evaluations in nuclear plant control room design reviews. He has been responsible for the operating personnel surveys and reports at Niagara-Mohawk's Nine Mile Point 2, Louisiana Power and Light's Waterford 3, Rochester Gas and Electric's Ginna plant, and Commonwealth Edison's Dresden, Quad Cities, and LaSalle plants. He participated in task analyses at Arkansas Power and Light's Arkansas Nuclear One, Unit 2. He has also written Human Factors Manuals for use in future modifications of the Nine Mile Point Unit 1 and Unit 2 and Ginna Station control rooms.

PREVIOUS EXPERIENCE

- 1982 to 83 American Psychological Association, Washington, DC
  Administrative Officer for Scientific Affairs

Responsible for promoting the science of psychology and recognition of psychology's scientific achievements. Responsible for stimulating and monitoring research support for the behavioral sciences available from Government agencies and major foundations, and supporting development and dissemination of standards for psychological and educational tests, assessments and the ethics of animal and human experimentation. Senior editor of APA's Guide to Research Support, Washington, DC, 1984.

- 1971 to 81 U.S. Army Research Institute, Alexandria, Virginia
  Director, Personnel and Training Research Laboratory

Responsible for planning, directing and managing an Army-wide research program in training, industrial and organizational psychology. Areas included new

techniques and methods for skill training in schools and units, extension training, leadership and organizational development training, training aids and simulation, selection and classification of officer and enlisted personnel, career development, job proficiency testing and program evaluation.

- 1965 to 71 U.S. Army Institute of Environmental Medicine, Natick, Massachusetts
  Director, Behavioral Sciences Laboratory

Planned and directed a research program on the effects of cold, heat, high altitude and work effort on human performance. Research involved altitude and temperature chambers and field maneuvers in extreme environments. Initiated project which resulted in Army doctrine for maneuvering troops at high terrestrial altitudes.

- 1957 to 64 U.S. Army Natick Laboratories, Natick, Massachusetts
  Head of Engineering Psychology Laboratory

Planned and directed a research program on the effects of protective clothing (climatic, ballistic, chemical) and personal equipment, materials handling and aerial delivery equipment on human performance. Research also involved obtaining anthropometric data on large numbers of soldiers for use in design of Army equipment and conducting consumer preference research on Army-developed clothing and food products. Initiated project for determining safety and ventilation requirements for missile fuel handler's impermeable uniforms for handling toxic chemicals.

- 1953 to 57 U.S. Army Natick Laboratories, Natick, Massachusetts
  Research Psychologist

Conducted research on visual perception and on psychophysiological responses and performance of men exposed to extreme temperatures. Responsible for early research defining effects of ambient temperature and skin temperatures on manual dexterity.

- 1951 to 53 University of Arkansas, Fayetteville, Arkansas
  Assistant Professor of Psychology

Taught undergraduate and graduate courses in experimental psychology, statistics and experimental design.

EDUCATION

Ph.D., Experimental Psychology, Statistics, State University of Iowa, Iowa City, Iowa, 1951

M.A., Experimental Psychology, Statistics, State University of Iowa, Iowa City, Iowa, 1949

B.A., Psychology, Mathematics, University of Missouri, Columbia, Missouri, 1947

Resident Student and Graduate, Industrial College of the Armed Forces, Ft. McNair, Washington, DC, 1965

EDUCATION (continued)

Graduate, Senior Executive Institute, Charlottesville, Virginia, 1974

Certificate, Army Human Factors Engineering Course, Natick, Massachusetts, 1960

PROFESSIONAL AFFILIATIONS

Human Factors Society (National and Potomac Chapter); Fellow
American Psychological Association
    Society of Applied Experimental and Engineering Psychology; Fellow
    Division of Military Psychology; Fellow
Society of Applied Learning Technology
Inter-University Seminar on Armed Forces and Society; Fellow
Psi Chi (Psychology Honorary)
Sigma Xi (Scientific Research Honorary)
Consulting Editor, Journal of Applied Psychology

MILITARY SERVICE

1943 to 1946 U.S. Army Air Corps

1981 U.S. Army, Meritorious Civilian Service Award

ARD Corporation

ROBERT KLEIN
Staff Engineer
Human Factors Psychologist

- Human Factors Engineering
- Systems Analysis
- Display Technology
- Human Performance Assessment
- Systems Safety
- Statistical Analysis

Mr. Klein has been involved with human engineering in the design and evaluation of complex control and display systems for over four years. He prepared an overall assessment of cruise missile weapon control system hardware and software components, reporting on human factors engineering, operability, maintainability, safety, and nuclear security. He was the human factors member of a multidiscipline maintainability demonstration team to verify system compliance with Navy maintenance standards. He participated in experimental design, execution, and analysis on Coast Guard and DOD related projects. Mr. Klein's experience in military applications of process control and integrated display systems is now utilized in support of nuclear power plant control room design reviews. As a Staff Engineer in ARD's Human Factors Technology Group, he has participated in the inventory, checklist, validation, and task analysis phases of the Detailed Control Room Design Review for the Arkansas Nuclear One, Ginna, Quad Cities, LaSalle, and Nine Mile Point (Units 1 and 2) stations. He has also worked on the development of a Human Factors Manual for Future Design Change at Nine Mile Point Unit 1 and is currently managing preparation of control room enhancement packages at Nine Mile Point Unit 1 and Unit 2.

PREVIOUS EXPERIENCE

- 1982 to 1984 Vitro Corporation, Silver Spring, Maryland
  Human Factors Engineer

Performed analysis of Tomahawk cruise missile weapons control system man/machine interface. Performed anthropometric observation and evaluation of hardware onboard Navy destroyer to ensure compliance with military standards. Made design recommendations to enhance system operability, maintainability, and safety. Reviewed system software to ensure adequate control and display information is provided to system operators. Participated in maintainability demonstrations to verify safe and efficient system and equipment maintenance and to satisfy Navy maintainability requirements.

- 1979 to 1981 Bendix Field Engineering Corporation, Columbia, Maryland
  Technical Writer and Editor

Wrote and prepared documentation for NASA Spaceflight Tracking and Data Network. Wrote occupational safety manual for NAVELEX.

- 1976 to 1977 Hughes Aircraft Company, Culver City, California
  Human Factors Engineer

Designed and conducted target detection experiments to determine relative merits of several radar image enhancement techniques. Performed computer data analysis, wrote detailed recommendations, and reported findings at science staff meetings.

- 1977 Franklin Institute Research Laboratories, Philadelphia, Pennsylvania
  Human Factors Engineer

Initiated a project of photometric research for night safety of small boats, which was sponsored by the U.S. Coast Guard. Developed experimental design and built effective apparatus to measure low level glare thresholds.

EDUCATION

M.S., Industrial Psychology, California State University at Long Beach, Long Beach, California, 1978

B.S., Psychology, St. Joseph's College, Philadelphia, Pennsylvania, 1973

PROFESSIONAL AFFILIATIONS

Human Factors Society

ARD Corporation

D. KENT BARNES II
Staff Engineer
Human Factors Engineer

- Human Factors Engineering
- Nuclear Engineering
- Computer Applications
- Control Room Design Reviews
- Probabilistic Risk Assessment
- Task Analysis

Mr. Barnes brings a nuclear engineering background to ARD's CRDR efforts. He has performed task analysis, checklist survey, operator experience survey, historical document review, and verification at several nuclear stations including Arkansas Nuclear One Unit 1 and Unit 2, Nine Mile Point Unit 1 and Unit 2, Waterford 3, and Ginna Station. He also participated in the development of a generic task analysis methodology for Combustion Engineering, to be used by the C-E Owners Group. Mr. Barnes is currently participating in the NRC audit of Arkansas Nuclear One Unit 1 and Unit 2, and the HED Assessment Process for Unit 2. He is also directing a study of annunciator relocation and rewording for Nine Mile Point Unit 2.

Mr. Barnes past Human Factors experience includes a Control Room Design Review for the University of Missouri's 10MW Research Reactor. This review was based on NUREG-0700 and included Operator Survey, Inventory Collection, Document Review, and Human Engineering Deficiency Assessment. Mr. Barnes' background includes a knowledge of Probabilistic Risk Assessment, with an emphasis on Fault Tree Analysis. He has also worked with several PRA computer codes used for evaluating fault trees. Mr. Barnes nuclear background includes a knowledge of computer applications for nuclear power systems. This includes knowledge of large nuclear computer codes such as CITATION, COBRA, and the AMPX-II system.

PREVIOUS EXPERIENCE

- 1984 University of Missouri, Columbia, Missouri
  Graduate Research Assistant

Performed a Control Room Design Review for the 10MW Research Reactor. This project was based on NUREG-0700, and the results are to be used for a study of a possible power upgrade for the reactor. Review included Operator Survey, Inventory, Document Review, and Assessment.

- 1983 University of Missouri, Rolla, Missouri
  Student Assistant

Helped design a Positron Annihilation Experiment while working at the university's 200KW Training Reactor. This experiment was to be used to determine fatigue in metals.

Programmed an Apple IIe microcomputer. This project involved setting the computer to interact with an electronic measuring device, in order to study radiation damage and dose rates for reactor pressure vessels.

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EDUCATION

B.S., Nuclear Engineering, University of Missouri-Rolla, Rolla, Missouri, 1983

Certificate, Engineer in Training

PROFESSIONAL AFFILIATIONS

Human Factors Society
American Nuclear Society
Order of the Engineer

ARD Corporation

RICHARD L. HORST
Manager, Applied Behavioral Research Group
Senior Engineer

- Human Factors Engineering
- Multivariate Statistics
- Cognitive Information-Processing
- Computer-based Data Acquisition Systems
- Display Technology and Computer Graphics
- Human Performance Assessment
- Human Electrophysiology in Operational Settings
- Teleoperation, 3-D Viewing

As a senior engineer, Dr. Horst provides human factors engineering support to a variety of ARD's corporate and power industry clients. He is also responsible for a number of the company's research and development efforts. His human factors support has included the task-level management of the Control Room Design Review at Public Service Indiana's Marble Hill station; a task analysis at Commonwealth Edison's Byron station to define the parameters for the Safety Parameter Display System; an evaluation of lighting and alternative louvers for the Byron control room; operator surveys at Marble Hill, Arkansas Power and Light's Arkansas Nuclear One and Niagara Mohawk's Nine Mile Point stations; an assessment of operator performance using Emergency Operating Procedures at Virginia Electric and Power Company's Surry station control room simulator; an analysis of graphics hardware and software needs for the Virginia Electric and Power Company Emergency Response Facilities; a review of the SPDS and plant computer graphics for Louisiana Power and Light's Waterford 3 station; and an evaluation of several CRT graphics systems being marketed for process control applications. Dr. Horst's background in experimental psychology and neuroscience is currently being utilized through his direction of ARD's research projects in robotics, 3-D viewing systems, and biocybernetics.

PREVIOUS EXPERIENCE

- 1980 to 1982 University of Maryland Medical School - Applied Neuroscience Laboratory, Baltimore, Maryland
  Research Faculty and Project Coordinator

Responsible for managing the day-to-day operations of a research lab studying electrophysiological, psychometric and nutritional indices of human development. Supervised and trained lab personnel. Coordinated installation and maintenance of computer hardware and software. Conducted research on neurometric measures of normal development and the feasibility of their use for assessing learning disabilities. Adapted and implemented a computerized system for recording EEG and evoked potentials in a hospital ICU. Participated in the clinical electrophysiological assessment of neurology and neurosurgery patients. Designed and programmed software for data management and analysis. Developed grant support for research.

- 1975 to 1979 University of Illinois, Champaign-Urbana, Illinois
  Research Assistant, Cognitive Psychophysiology Laboratory

While doing dissertation research, participated in a group studying electrophysiological measures of human performance with applications to human engineering. Responsible for laboratory studies of visual information-processing, auditory signal detection, and computer-assisted instruction.

ARD Corporation

Developed statistical techniques (principal components analyses, discriminant analysis, and cross-correlation analyses) for evoked potential data. Designed, programmed and documented a comprehensive, general-purpose computer program for quantifying peak amplitudes and latencies of evoked potentials. Made extensive use of SPSS, BMDP and ALICE data analysis packages. Contributed to the development of grant and contract support for research.

- 1971 to 1975 Carnegie-Mellon University - Psychology Department, Pittsburgh, Pennsylvania
  Graduate Research Assistant

During graduate course-work in experimental psychology, was responsible for research projects in human visual perception and animal memory processes. Developed a lab facility for recording human-evoked potentials. Designed and programmed software for real-time data acquisition and data management and used SPSS for statistical analyses.

EDUCATION

Ph.D., Experimental Psychology, NIMH Graduate Traineeship, Carnegie-Mellon University, Pittsburgh, Pennsylvania, 1981

M.S., Experimental Psychology, Carnegie-Mellon University, Pittsburgh, Pennsylvania, 1972

B.S., Biology-Psychology, Bucknell University, Lewisburg, Pennsylvania, 1971

PROFESSIONAL AFFILIATIONS

Human Factors Society
American Psychological Association
American Association for the Advancement of Science
Society for Psychophysiological Research
Psi Chi (Psychology Honorary)
Phi Sigma (Biology Honorary)

ARD Corporation

<u>ROBERT C. MUNSON</u>
Project Engineer
Human Factors Psychologist

- o Human Factors Engineering
- o Computer Graphics
- o Control Room Reviews
- o Computer Software Design
- o Psychophysiology
- o Psychometric Applications
- o Statistical Analysis
- o Experimental Design

Mr. Munson provides human factors support, to both nuclear and non-nuclear clients, primarily in the areas of computer graphic display systems. He is currently Project Manager in support of the Virginia Electric and Power Company' Emergency Response Facilities system development efforts. This effort involves the design and review of both CRT displays and the hardware and console systems on which the displays will be implemented. Mr. Munson has performed numerous SPDS reviews (including those at Nine Mile Point Units 1 and 2 and Ginna), as well as a large number of NUREG-0700 (Section 7) reviews of process computers in the context of ARD's DCRDR project work. He also provided support to Gould's System Simulation Division in the preparation of a proposal to the FAA to redesign the Air Traffic Control System. Mr. Munson's efforts for this proposal were concentrated in the areas of hardware design (both console design and computer display technology), maintenance, and CRT display design.

Mr. Munson also has a strong background in Experimental Psychology and User-System Interface (USI) design. He is currently Principal Investigator of a NASA-funded Phase I SBIR project entitled "Polar Graphics for Rapid Assessment of Multivariate Information" and is Co-Investigator of a NASA-funded Phase II SBIR project entitled "Brain Wave Measures of Workload in the Advanced Cockpit". Mr Munson is well-acquainted with current concepts in display technology and has implemented a variety of computer systems for such applications as real-time data acquisition, data base management, and color graphics displays.

<u>EXPERIENCE</u>

- o 1982 to 1983 <u>General Physics Corporation</u>, Columbia, Maryland
  Staff Scientist, Human Factors Engineering

Participated in CRDRs at Zimmer, Susquehanna and Salem nuclear generating stations. Provided human engineering support for resolution of human engineering discrepancies to Shoreham station. Performed a human factors assessment of the layout design of the Technical Support Center at Salem station. Assisted in the development and implementation of an entry-level selection test for technicians for the Intermountain Power Project. Administered selection tests to reactor operator trainee candidates at the Vermont Yankee and Perry stations.

- o 1979 to 1982 <u>University of Maryland School of Medicine</u>, Baltimore, Maryland
  Research Fellow, Department of Physiology

Conducted experiments which focused on the measurement of event-related brain potentials (ERPs), recorded from the scalp of humans, during subjects' performance of psychophysical tasks. Subsequent data analyses investigated

the relationships between various components of the ERP to both behavioral measures and assumed underlying cognitive processes. Duties included data collection and analysis, computer programming and preparaton of drafts for publication.

- 1978 to 1980 Towson State University, Towson, Maryland
  Graduate Assistant, Department of Psychology

Provided small group and individualized instruction in statistics and experimental design. Assisted in the instruction of a seminar in statistics and programming in BASIC and FORTRAN.

- 1978 to 1979 Towson State University, Towson, Maryland
  Graduate Assistant to Dean of Division of Continuing Studies

Developed, administered and reported results of survey instruments designed to assess student and faculty opinion relative to curriculum issues.

EDUCATION

M.A., Experimental Psychology, Towson State University, Baltimore, Maryland, 1982

B.A., Psychology, University of Maryland Baltimore County, Baltimore, Maryland, 1977

PROFESSIONAL AFFILIATIONS

Society for Psychophysiological Research
American Association for the Advancement of Science
Sigma Xi

ARD Corporation

CYNTHIA F. WEISS
Project Engineer
Human Factors Engineer

- o Industrial Engineering
- o Human Factors Engineering
- o Human Performance
- o Occupational Safety and Health
- o Statistical Analysis
- o Anthropometrics
- o Epidemiology
- o Facility Planning

As a project engineer in the Human Factors Technology Group, Ms. Weiss provides human factors engineering support to a variety of ARD programs.. Ms. Weiss is presently providing Detailed Control Room Design Review (DCRDR) support to the Arkansas Power & Light Company's Arkansas Nuclear One generating station and the Louisiana Power and Light Waterford-3 where she has coordinated the Historical Document review and checklist survey phases of the review.

Ms. Weiss' expertise in the control room is in the design and retrofit of annunciator systems. She has performed annunciator reviews for several nuclear stations and has published and presented a paper on this subject. In addition, she has designed workstations for control room operators to ensure that computers, hardcopy records, and spare parts were easily accessible, and performed environmental evaluations on light, ventilation, and auditory design to numerous stations. Ms. Weiss currently is involved in productivity studies for manufacturing as well as office environments, mathematical models for process control variables, facility planning techniques (office layout) and automation technology research projects for ARD's commercial and Government clients.

PREVIOUS EXPERIENCE

o 1982 Michigan Bell, Southfield, Michigan
Master's Thesis

Observed visual display terminal (VDT) operators and supervisors in a telephone company office. Identified the psychophysical stresses of the operators attributed to their interactions with VDTs. Developed, administered, and analyzed questionnaires with respect to these stresses. Recommended redesign of jobs and supervisors' function as well as alternative office layouts. Recommendations were based on questionnaire and interview results as well as an in-depth literature search in an attempt to reduce stress and improve productivity.

o 1979 to 1982 Center for Ergonomics, University of Michigan, Ann Arbor, Michigan
Research Assistant

Responsible for entering job and task data from four industrial plants into a computerized biomechanical model. Edited existing computer files and updated records of tasks which exceeded OSHA standards for manual lifting. Directed driving simulator project involving correlating the scores of a road test with scores on a simulator for both healthy and handicapped subjects. Responsible for coordinating all data collection for the project. Assisted in analysis of data and summarizing the results. Directed maximum reach project involving

the development of a computer graphic representation of maximum reach based on anthropometric data. Responsible for coordinating all data collection for the project.

- 1981 to 1982 Epidemiology Department, University of Michigan, Ann Arbor, Michigan
  Research Assistant

Assisted in designing questionnaire, pre-testing questions, phone interviewing, home interviewing, coding, and analysis of a project on the lifestyle and health of senior citizens in Southfield, Michigan.

- 1980 to 1981 University of Michigan, Flint, Michigan
  Teaching Assistant

Taught lab for graduate class in work measurement. Prepared and set-up materials for lab. Graded lab reports. Tutored students in Time Study, MTM, and Work Sampling.

- 1980 Economics Laboratory, Incorporated, St. Paul, Minnesota
  Industrial Engineer Intern

Developed direct labor cost estimates for existing as well as new products. Established elemental times for receiving, mixing, packaging, fork trucking, and changeover activities for the five chemical plants. Updated documentation and standards in the computer's direct labor file. Conducted MTM studies on new procedures. Developed graphs on monthly direct labor comparisons.

EDUCATION

M.S.E., Industrial Engineering (Occupational Safety and Health), NIOSH Graduate Traineeship, University of Michigan, Ann Arbor, Michigan, 1982

B.S.E., Industrial Engineering (Human Factors), University of Michigan, Ann Arbor, Michigan, 1981

PROFESSIONAL AFFILIATIONS

Human Factors Society
American Nuclear Society
American Institute of Industrial Engineers (Ergonomic and Utility Divisions)
Society of Women Engineers
Alpha Pi Mu (Industrial Engineering Honorary)

NAME HWU (last) ALBERT (first) J. T. (initial) SOCIAL SECURITY N:

WORK EXPERIENCE

Begin with first position held. Include military service and work with other companies.

Dates From (mo/yr) To (mo/yr)	Position Level	GE Component, or Other Company and Location / Immediate Manager(s)	POSITION TITLE & DESCRIPTION Underline position title; then describe responsibilities and achievements or significant contributions. Indicate product, type of operation and industries involved. Show field or activity or subfunction. If managerial position, show number and types of employees supervised.
7/69-7/70		Chinese Air Force 1st AMA C. S. Lu	Second Lieutenent - involved in aircraft hydraulic components repair, overhaul and test, supervised 10 technicians.
7/70-12/73		Institute of Nuclear Energy Research Taoyuan, Taiwan W. C. Fang	
7/70-10/70		Same as Above	Attended Taipei language center for English proficiency.
10/70-10/71		Same as above	On-job training in NRX reactor (30mw) AECL. Chalk River, Ontario, Canada, Certified reactor operator and shift supervisor in NRX.
10/71-12/73		Same as above	Worked at Taiwan research reactor (40mw). Wrote operation and surveillance procedures Participated in preop phase, first fuel loading and test programs. Shift supervisor in charge, responsible for safe operation of the reactor.
01/74-10/74		Getsco, Taiwan E. R. Kilsby	Startup Engineer - BWR training course at San Jose. Chin-Shan Technology Course, Joliet, Ill. BWRTC, Morris, Ill.

NAME HWU (last) ALBERT (first) J.T. (initial) SOCIAL SECURITY N

WORK EXPERIENCE

Begin with first position held. Include military service and work with other companies.

Dates From (mo/yr) To (mo/yr)	Position Level	[redacted] Component, or Other Company and Location / Immediate Manager(s)	POSITION TITLE & DESCRIPTION — Underline position title; then describe responsibilities and achievements or significant contributions. Indicate . . . type of operation and industries involved. Show . . . or subfunction. If managerial position, show number and types of employees supervised.
10/74-8/75		GE STO, Brunswick C. R. Dietz	Startup Engineer - Participated pre-op test, initial fuel loading and subsequent heatup and power tests up to 75 per-cent power. Obtained GE SRO certification in Brunswick.
9/75-7/79	[redacted]	Getsco, Chin-Shan C. D. Shadinger	Startup Engineer - Wrote integrated system flush for Chin-Shan I. Wrote pre-op procedures for HPCI, Reactor Recirculation and SRM. Wrote various tech. spec. related surveillance procedures. Participated early phase system tests and equipment initial runs. Involved in total system flush and construction vessel hydro activities. Test director for HPCI and Reactor Recirculation system (Chin-Shan I). GE Certified SRO. Chin-Shan. Shift Supervisor during initial fuel loading, heatup and power testing thru warranty run of Chin-Shan I. Test Director for RHR, ECCS integrated test, Chin-Shan II. Shift Superintendent for Chin-Shan II during initial fuel loading, heatup and power test thru warranty run.

NAME HWU (last) ALBERT (first) J.T. (initial) SOCIAL SECURITY NO. [illegible]

WORK EXPERIENCE

Begin with first position held. Include military service and work with other companies.

Dates From (mo/yr) To (mo/yr)	Position Level	[redacted] Component, or Other Company and Location / Immediate Manager(s)	POSITION TITLE & DESCRIPTION Underline position title; then describe responsibilities and achievements or significant contributions. Indicate products, type of operation and industries involved. Show field of activity or subfunction. If managerial position, show number and types of employees supervised.
7/79-7/82	[redacted]	Getsco, Taiwan Kuosheng Site C. D. Shadinger	Startup Engineer - Reviewed various flushing and hydro procedures. Wrote pre-op procedures - Nuclear Boiler, Main Steam and Reactor Recirculation. Participated integrated system flush and vessel hydro activitie K.S.I. Test Director for Reactor Recirculation System K.S.I. Certified GE SRO, Kuosheng. Shift Superintendent during initial fuel loading, heatup and power test program thru warranty run for K.S.I. Test Director for Primary Containment Isolation System K.S.II. Shift Superintendent during initial fuel loading and day shift supervisor for K.S.II.
7/82-1/83	[redacted]	Getsco, Taiwan Kuosheng Site C. D. Shadinger	Operating Superintendent K.S.II - Supervised 8 startup engineers for K.S.II power ascension test. Participated daily startup progress, planning and trouble-shoot until full power operation.
?/83-present	[redacted]	GE STO, Hanford-2 L. B. Biddlecome	Operations Superintendent WNP-2 - Supervised 3 startup engineers for WNP-2 tech. spec. related surveillance test procedures preparation and review. Participated in WNP-2 operating committee for operation and surveillance procedures approval discussion. Supervised 3 customer engineers for the annunciator test procedures writing. Certified GE SRO Hanford-2. Supervised 4 STO engineers during the initial fuel loading and power ascension test program.

[redacted]

NAME Helms (last) Douglas (first) F. (initial) GE SERVICE 7/14/80 mo/day/yr

Photograph 2" x 2"

CITIZENSHIP ☒ U.S. ☐ other ______ specify

EDUCATION (High School, Trade School, Business School, College, University, etc.)

School & Location	Curriculum or Major	Dates Attended	Degree
ia Glenville HS	College Prep	9/68-8/71	Regents Diploma(11 of 350:honors
n College	Chemistry	9/71-8/75	BS Chemistry (Cum laude)
l Nuc.Power-Vallejo,CA	Navy Nuc. Engineering	5/76-10/76	Graduated
l Prototype Trg. Unit ho Falls, Idaho	Navy Nuc. Engineering	11/76-5/77	Graduated

MAJOR GE PROGRAMS & TRAINING (Show formal training programs; i.e., BTC-FMP, Test Program, MTP-MMP, etc., and courses such as "A," "B," or "C" engineering courses, Adv. Marketing Mgmt. Seminar (AMMS), Management Development Course (MDC), General Management Course (GMC), etc. Also show dates)

BWR6 Tulsa Training Center GE SRO Certification (Perry) 11/80
Kepner Tregoe. 12/80
BWR6 Tulsa Training Center Refresher Training 4/81
La Salle Site GE SRO Certification 6/81
La Salle Site GE SRO Certification 8/83

ONORS, AWARDS, PATENTS, PROFESSIONAL LICENSES, PUBLICATIONS, etc. (Describe and show dates)

ber of Sigma Xi Research Society, Private Pilot

OTHER PROFICIENCIES (Describe any special skills, aptitudes, or accomplishments)

marine Officer, EOOW/EOO S1W, S5W propulsion plants

Douglas (first) E (initial)

...en held. Include military service and work with other companies.

Position Level	GE Component, or Other Company and Location / Immediate Manager(s)	POSITION TITLE & DESCRIPTION — Underline position title; then describe responsibilities and achievements or significant contributions. Indicate products, type of operation and industries involved. Show field or activity or subfunction. If managerial position, show number and types of employees supervised.
	Financial Computer Center of Eastern NY, Schenectady, NY	OPERATOR: Demand deposit accounting and payroll processing via computer and associated peripherals for several area banks.
	Scotia-Glenville Central Schoo MGR: George Bunt	MAINTENANCE: Cleaning, painting and repair of schools during summer.
	1st Nat'l Bank of Scotia MGR: Cal Welch	RECONCILER: Balancing daily DDA transactions and general ledger prior to input into compute
	St. Claire's Hosp-Sch'dy NY MGR: Mary Lou Guerierra	ORDERLY, TECHNICIAN: Floating orderly and O.R. Technician.
OCUI 2	US Navy-Officer Candidate School, Newport, RI	STUDENT
ENS	Nuclear Power School Mare Island, Vallejo, CA	STUDENT
ENS	Submarine Officer Basic Course Idaho Falls, ID	STUDENT S1W Prototype
ENS	Submarine Officer Basic Course Groton, CT	STUDENT
ENS/LT	USS DACE (SSN607) FPO San Francisco CDR R.S. Fitch/CDR R.L. Tinda	OFFICER: Qualified Officer of the Deck, Command Duty Officer, Engineering Officer of the Watch, Engineering Duty Officer, Diving Officer of the Watch. Served as Electrical Officer, Interior Communications Officer, Damage Control Assistant/Auxiliary Division Officer, Communication Officer, CMS Custodian, Crypto Officer, Controlled Medicinals Officer, Quality Assurance Assistant, Ship's Diving Officer, Calibration Coordinator, Alteration Co-ordinator, Sound Silencing Officer. Supervised 12-24 people.

(last) (first) (initial)

WORK EXPERIENCE

Begin with first position held. Include military service and work with other companies.

Dates From (mo/yr) To (mo/yr)	Position Level	GE Component, or Other Company and Location / Immediate Manager(s)	POSITION TITLE & DESCRIPTION Underline position title; then describe responsibilities and achievements or significant contributions. Indicate products, type of operation and industries involved. Show field or activity or subfunction. If managerial position, show number and types of employees supervised.
30-11/80	8	GE/NEBG Startup Operations Tulsa Training Center MGR: J.J. Sheehan/L.C. Tabke	ENGINEER: Completed BWR/5 SRO Certification on the Perry plant simulator. Performed technical writing of lesson plans for Vermont Yankee STA Training Course.
'EL.DATE '80	9		
'80-1/83	9	GE/NEBO Startup Operations La Salle Site MGR: S.S. Duink/J.E. Ellis	ENGINEER: Provided technical direction for the completion of preop testing on Unit 1 for RWCU (G33), MSIV-LCS (E32), ADS/SRV (B21C) and Emergency Power Redundance Testing. Assumed responsibility for SBLC (C41) after transfer of original cognizant system engineer. Completed SRO Certification on La Salle Unit 1 (BWR/5). Performed on shift technical direction during startup testing from fuel load to Test Condition 3 on La Salle Unit 1. Provided technical direction for preop testing on Unit 2 for HPCS (E22), PCIS (B21H), Remote Shutdown (C61), RCIC (E51), RR (B33) and Unit 2 flushing.
3- esent	9/10		SENIOR ENGINEER: As Day Shift Supervisor during La Salle 1 startup test program, provided direction to 5 startup engineers including preparation of daily startup reports and standing orders to shift Superintendents. Interfaced with the customer, and the project office to resolve reactor plant operating and equipment problems. Provided direction for 8 startup engineers during La Salle 2 preoperational test program in reviewing preop test procedures, making recommendations to the customer, preparing reports, FDDRs, PET. Acted as Operations Superintendent for about one month. Prepared monthly reports on La Salle 2 preop test status.
'EL DATE 33	10		

K EXPERIENCE

with first position held. Include military service and work with other companies.

Dates (mo/yr) (mo/yr)	Position Level	GE Component, or Other Company and Location / Immediate Manager(s)	POSITION TITLE & DESCRIPTION Underline position title; then describe responsibilities and achievements or significant contributions. Indicate products, type of operation and industries involved. Show field of activity or subfunction. If managerial position, show number and types of employees supervised.
			SENIOR ENGINEER (Continued) As Operations Superintendent during La Salle 1 and 2 startup test programs and La Salle 2 preoperational test program, assumed responsibility for the direction of 10 startup engineers. In addition to the above assumed a more active role in the startup test program i.e., performing startup test scheduling, resolving startup test related problems, reviewing startup test reports and directing shift superintendents. Acted as Operations Manager for about three months. Provided direction and support to San Jose engineers while on site visits to resolve problems. Coordinated La Salle 1 and 2 activity with the lead STD&A Engineer.

(If more room is needed, use Form GEM01-2A)

DATE 5/10/84

RESUME

NAME: ROBERT BERGENSTOCK

DATE OF BIRTH: 11/29/52

DATE OF HIRE: 9/7/82

JOB TITLE: NOE

DEPARTMENT: OPERATIONS

EDUCATION: High School (Name) AUBURN HIGH

Address AUBURN, N.Y.

Date of Graduation 6/71

College (Name)

Address

Number of Years

Major

Degree/Date of Grad.

Other Education:

Resume: Page 2

Name: ROBERT BERGENSTOCK

MILITARY SERVICE (BRANCH)

Please list in detail all military experience including Base or Ship Station, inclusive dates (month and year) and position held at each place. Itemize all training (i.e. Nuc. Pwr School, Machinist Mate, etc) and location of training and length of course.

2/82 SHIPBOARD WATER TREATMENT CHLORINATION/BROMINATION
USS VIRGINIA

5/79 - 7/79 AIR CONDITIONING & REFRIG
NORFOLK, VA.

9/75 - 3/76 NUCLEAR POWER PROTOTYPE
S3G, BALSTON SPA, N.Y.

1/75 - 8/75 NAVAL NUCLEAR POWER SCHOOL
BAINBRIDGE, MD.

9/1/74 - 10/2/74 MACHINIST MATE CLASS "A"
GREAT LAKES, ILL.

Resume: Page 3

Name: ROBERT BERGENSTOCK

EMPLOYMENT: Positions held with Niagara Mohawk:

Present Position: NOE

Start Date: 4/84

Duties: PROVIDE OPERATIONAL CARE OF EQUIPMENT

Previous Position: AOB

Start Date: 9/83

Duties: UNDER DIRECT SUPERVISION, BE RESPONSIBLE FOR OPERATIONAL CARE OF COMPLICATED AUX. EQUIPMENT.

Next Previous:

Start Date:

Duties:

Next Previous:

Start Date:

Duties:

PLEASE LIST ALL POSITIONS HELD WITH NIAGARA MOHAWK - USE ADDITIONAL PAPER IF NECESSARY

Name: ROBERT BERGENSTOCK

EMPLOYMENT: (cont'd)

PAST EMPLOYERS: (Please list chronologically, with most recent position first. Use additional paper if necessary.)

COMPANY'S NAME US NAVY

DATES/POSITION 5/74 - 9/82

DUTIES QUALIFIED EWS FOR 2 YRS. LEADING PETTY OFFICER FOR NUMBER TWO ENGINE ROOM.

IN CHARGE OF APPROXIMATELY 25 MEN, RESPONSIBLE FOR THE MAINTENANCE & REPAIR OF ALL EQUIPMENT ASSOC. WITH #2 REACTOR AND ENGINE ROOM.

Name: ROBERT BERGENSTOG

EMPLOYMENT: (cont'd)

(Please list chronologically past experience in present job related categories. Professional or Volunteer basis). (i.e., Volunteer Fire Companies, etc..)

ATTEN. NIAGARA MOHAWK N.R.C LICENSE CLASS 4/83-10/83

RECIEVED NRC LICENSE # 10073

February 1983

CONFIDENTIAL RESUME

NAME: Robert W. Bullock PHONE:

9

PERSONAL: Age 31 Height: 5'6"
Date of Birth: September 5, 1951 Weight: 145
Married; Good Health

EDUCATION: East High School
Rochester, New York
Regents Diploma - 1969

Paul Smith's College
Paul Smith's, New York
1969-1970

Monroe Community College
Rochester, New York
A.S. in Liberal Arts - 1973

Navy Schools:

Machinist Mate Class A School
April 1974

Navy Nuclear Power School
(18 Weeks) May - 1975
Subjects Including:
- Math
- Physics
- Metallurgy
- Special Training (Turbine Theory, etc.)
- Thermodynamics
- Reactor Principles
- Health Physics/Rad. Controls
- Reactor Plant Technology
- Chemistry

Navy Nuclear Power Prototype, Dec. 1975
Reactor Prototype Training - S3G site
West Milton, N. Y.
Training and qualification as a mechanical operator on an operating PWR.

3-M Managers School
December 1978

3-M Coordinator School
March 1979

Propulsion Plant Management School
March 1979

EDUCATION CONTINUED:

Boiler Water/Feedwater Test & Treatment School
(Caustic Soda)
April 1979

Air Conditioning & Refrigeration School
December 1980

Damage Control and Fire Fighting Team Training School
August 1981

GE BWR Simulator
Morris, Ill.
Introduction to Integrated Plant Operation Program
5 days November 1982

EMPLOYMENT:

Niagara Mohawk Power Corp.
Syracuse, New York

Nine Mile Point Unit #2
Lycoming, New York

1982 to Present

Position: Auxiliary Operator B

Duties: Assigned to Unit #1 for training, under direct supervision on a shift to be responsible for the operational care of various types of auxiliary equipment associated with one or more main turbo-generator or boiler units and with only casual supervision to start and stop such equipment under normal and emergency situations.

1980 to 1982

U. S. Navy, U.S.S. Brumby FF-1044 Auxiliary Division - Work Center Supervisor

Duties: Operation and maintenance of ship's refrigeration and air conditioning units, steering units, and diesel generator units. Assisted in quality control for engineering department during major overhaul period in Bath Ironworks Shipyard, Bath, Maine. Discharged Janury 4, 1982.

1977 to 1980

U.S. Navy, U.S.S. Valdez FF-1096 - Auxiliary Machinery Room Supervisor

Dutiies: Operation and maintenance of high pressure (1200 PSIG) steam driven turbine generators, hydraulic fin stabilizing units, high and low pressure compressed air systems and air drying systems, supervision of assigned personnel, in performance of routine and corrective maintenance, routine and casualty operations of equipment. Also supervision of assigned personnel and quality control during major overhaul period in Bethlehem Steel Shipyard, Boston, Mass.

EMPLOYMENT
CONT'D:

1975 to 1977 U.S. Navy, S3G Prototype, West Milton, New York

<u>Duties</u>: Six months as a student qualifying on S3G nuclear prototype. Remainder of time spent as staff instructor. Duties included instructing and supervising enlisted and officer nuclear power trainees in operation, maintenance and systems of S3G nuclear prototype. Also assigned to insulation repair, removal and installation team, and main coolant pump removal team during reactor refueling maintenance period.

1974 to 1975 U.S. Navy: Enlisted Janury 1, 1974

<u>Duties</u>: 8 weeks recruit training Orlando, Fla., 4 weeks machinist's mate "A" school, Great Lakes, Illinois, 6 months assigned to U.S.S. Mitscher, DDG-35, M-Division, and November 1975 through May 1975, Navy Nuclear Power School, Bainbridge, Maryland.

F.C. 5.1

November 1983

RESUME

NAME: Michael Carson

PHONE: Home:
Work:

PERSONAL: Date of Birth: October 6, 1957
Date of Hire: October 18, 1982

EDUCATION: Dumont High School
Dumont, NJ. 07628
Diploma - June 1975

William Paterson College
Wayne, NJ
Major - Mathematics
No Degree

EMPLOYMENT: Niagara Mohawk Power Corporation
Nine Mile Point Nuclear Station

10/82 to Present

Position: Auxiliary Operator "B"

Duties: Under direct supervision on a shift, to be responsible for the operational care of various types of complicated auxiliary equipment associated with one or more main turbo-generator or boiler units and with only casual supervision to start and stop such equipment under normal and emergency situations.

MILITARY EXPERIENCE:

US NAVY
1977-1982

U.S.S. Arkansas (CGN-41)
8/78 - 2/79 Pre-commissioning Unit

10/80 - 6/82

Electrician, assigned to maintenance and repair of electrical equipment of #1 Engineroom and reactor plant. Operation of #1 and #2 Reactor plants.

MILITARY SCHOOLS

Basic Electricity and Electronics School
Orlando, Fla. July - Aug. 1977

Advanced Elect. and Electronics School
Great Lakes, Ill. Aug. - Sept. 1977

Electricians Mate "A" School
Great Lakes, Ill. Sept. - Dec. 1977

Pre-Nuclear Power School
Orlando, Fla. Jan. - Feb. 1978

Nuclear Prototype Training
West Milton, NY Aug. 1978 - Feb. 1979

DATE 15 May 84

RESUME

NAME: M. Churilla

DATE OF BIRTH: 5 AUG 56

ADDRESS:

DATE OF HIRE: 15 AUG 1982

JOB TITLE: NUCLEAR OPERATOR E

DEPARTMENT: OPERATIONS

EDUCATION:

High School (Name) ST MARY'S-RYKEN H.S.

Address LEONARDTOWN MARYLAND

Date of Graduation MAY 7, 1974

College (Name) NA

Address

Number of Years

Major

Degree/Date of Grad.

Other Education: US NAVY NUCLEAR PROPULSION TRAINING UNIT BAINBRIDGE MD. + WINDSOR LOCKS CONN.

AIRCONDITIONING + REFRIGERATION + Lithium Bromide A/C systems school

Name: M. CHURILLA

MILITARY SERVICE (BRANCH)

Please list in detail all military experience including Base or Ship Station, inclusive dates (month and year) and position held at each place. Itemize all training (i.e. Nuc. Pwr School, Machinist Mate, etc) and location of training and length of course.

US NAVY 8 YEARS

SEPT 74 MACHINIST MATE A SCHOOL

GREAT LAKES ILL, (STUDENT)

JAN 75 NAVY NUCLEAR PROPULSION SCHOOL

BAINBRIDGE, MARYLAND (STUDENT)

AUG 75 NUCLEAR POWER TRAINING UNIT

WINDSOR LOCKS CONN. (STUDENT GRAD.)

APRIL 76 USS SPADEFISH (SSN 668)

NORFOLK VA (DUTY) ENGINE ROOM SUPER.

ENGINEERING WATCH SUPER.

APRIL 81 USS YELLOWSTONE (AD 41)

NORFOLK VA. (DUTY) NUCLEAR REPAIR COORDINATOR

IN CHARGE OF PLANNING NUCLEAR RELATED

PROPULSION PLANT REPAIRS + MODIFICATIONS.

Name: ____________________

EMPLOYMENT: Positions held with Niagara Mohawk:

Present Position: NUCLEAR OPERATOR E

Start Date: JAN 84

Duties: CONTROL ROOM OPERATOR

Previous Position: AUXILLARY OPERATOR B

Start Date: AUG 82

Duties: LEARNING THE PLANT

Next Previous: USN

Start Date:

Duties:

Next Previous:

Start Date:

Duties:

PLEASE LIST ALL POSITIONS HELD WITH NIAGARA MOHAWK - USE ADDITIONAL PAPER IF NECESSARY

Name: MCHURILLA

EMPLOYMENT: (cont'd)

PAST EMPLOYERS: (Please list chronologically, with most recent position first. Use additional paper if necessary.)

COMPANY'S NAME US NAVY

DATES/POSITION JULY 74 - JULY 82

DUTIES NUCLEAR OPERATOR, ENGINE ROOM
Supervisor, ENGINEERING WATCH
Super. NUCLEAR REPAIR COORDINATOR

STUDENT

Resume: Page 5

Name: M CHUKILLA

EMPLOYMENT: (cont'd)

(Please list chronologically past experience in present job related categories. Professional or Volunteer basis).. (i.e., Volunteer Fire Companies, etc..)

USN 8 years

13 June 1984

RESUME

NAME: Michael S. Conway

PERSONAL: Date of Birth: January 7, 1958
Date of Hire: November 15, 1982

EDUCATION: Hamilton Central High School
Hamilton, NY
Diploma - 1976

MILITARY EXPERIENCE:

US NAVY
1976 - 1982

U.S.S. Holland (AS-32)
5/82 - 9/82

Safety Inspector/Leading Petty Officer

Ensure shipboard safety during a drydock overhaul period. Perform inspections and report any discrepancies. Coordinate Fire-watch program for shipboard welder and brazers. Set up training program for division personnel.

U.S.S. John Calhoun (SSBN-630)
3/79 - 5/82

Nuclear Machinist's Mate 2nd Class

Qualified senior watchstations for steaming and shutdown conditions of the reactor plant. As Engineroom Supervisor, coordinated and monitored watchstanders for the reactor and steam plants during normal and casualty operation, directly responsible for engineroom operations. As Shutdown Roving Watch, monitored shutdown plant conditions and maintained the plant in stable condition. Also served as Secondary Plant Chemist, involving analysis of boiler and feedwater, chemical computations and additions to prevent corrosion. Additional duties as Machinery Division Calibration Coordinator, Nuclear Cosal Coordinator, Diesel Engine Expert and Fuel, Oil and Water Coordinator.

0310T

MILITARY SCHOOLS:

Griscom Russell Steam Evaporator Plant Replacement Technician - 4 days - 1981

Submarine Low Pressure Vapor Compressor Distilling Unit - 3 days - 1981

Boiler Water Chemistry - 4 days - 1981

Fairbanks Morse Diesel Engine Maintenance - 11 days - 1980

Diesel Engine Operator - 4 days - 1980

Propulsion Shaft Components Combined Maintenance - 4 days - 1980

175-ton R-114 Air Conditioning Plant - 11 days 1979

Nuclear Power Plant Operator - 45 weeks - 1978

Naval Nuclear Power School - 40 weeks - 1977

Machinist's Mate "A" School - 12 weeks - 1977

Name: M. CONWAY

EMPLOYMENT: Positions held with Niagara Mohawk:

Present Position: AUXILIARY OPERATOR B

Start Date: 15 November 1982

Duties: Under direct supervision, on a shift, to be responsible for the operational care of various types of complicated auxiliary equipment associated with one or more main turbo-generator or boiler units and with only casual supervision to start and stop such equipment under normal or emergency conditions.

Name: M. CONWAY

NIAGARA MOHAWK TRAINING:

CONTROL ROOM TRAINING @ NINE MILE POINT NUCLEAR STATION UNIT I
- 12 WEEKS 1983

GENERAL PHYSICS REACTOR OPERATOR HOT LICENSE CLASS - 21 WEEKS 1983-1984

GENERAL ELECTRIC REACTOR OPERATOR SIMULATOR CERTIFICATION - 14 DAYS 1983

N.R.C. REACTOR OPERATOR HOT LICENSE ISSUED FOR NINE MILE POINT NUCLEAR STATION UNIT I - 21 MARCH 1984
- LICENSE # OP-10146

September, 1980 FC 5.1

CONFIDENTIAL RESUME

NAME: Franklin L. Conaway, Jr.

PERSONAL:

AGE: 33 Height: 5' 11"
Date of Birth: 9/2/47 Weight: 172 lbs.
Married; Good health

EDUCATION:

Oswego High School
Oswego, New York
Graduated - 1966

Canton ATC, Canton, N.Y.
Full Time
1 Year Certificate degree in Electrical Construction and Maintenance

General Physics Basic Introduction Course
Jan. - March 1972

G.E. BWR Technology Course
April 1972 - 4 weeks

G.E. BWR Technology Course
May 1973 - 2 weeks

G.E. Simulator Training, Morris, Ill.
November 1972 - 1 week

General Physics Corp. Training Course (Rx. License)
1976 - 320 hrs.

G.E. Simulator Certification, Morris, Ill.
March 1976 - Certification attesting to the applicants ability for manipulating the controls safely

Obtained Reactor Operator License for James A. Fitzpatrick Nuclear Power Plant in May, 1976.
TVA Simulator Soddy - Daisy, Tenn. - Oct. 1978
Requalified at JAFNPP - May, 1978

EMPLOYMENT:

Niagara Mohawk Power Corp.
Syracuse, New York

1978 to Present

Position: Chief Shift Operator

Duties: Assisting in the writing of pre-operational tests, operating procedures, special procedures and performing desig[n] reviews on plant systems for Nine Mile Point Unit #2. Worked as a Maintenance Helper during the refuel outage of 1979 in which I helped reassemble the Reactor internals and Reactor head.

1977 to 1978

<u>Position</u>: Chief Shift Operator at JAFNPP

<u>Duties</u>: As C.S.O. in charge of the operation of the Control Room. Starting and stopping of all major pieces of equipment and the control of the Rx and the Turbine. Also directing and training of operators of a lower grade.

1976 to 1977

<u>Position</u>: Nuclear Operator "E" at JAFNPP

<u>Duties</u>: As an N.O.E., responsible for the care and operation of all plant equipment, including the Main Turbo-generator unit and Reactor unit. Also to direct the operation of auxiliary equipment by Operators of a lower grade. Included duties of the rescue and fire brigade.

1972 to 1976

<u>Position</u>: Nuclear Operator "C" at JAFNPP

<u>Duties</u>: The operation or supervision of the operation of the highest types of auxiliary equipment, the execution of safe and effective markups on equipment within the station, and the assistance in the detailed training of operators of a lower grade.

1971 to 1972

<u>Position</u>: Nuclear Operator "B" at JAFNPP & NMPNPP

<u>Duties</u>: Responsible for operational care of various types of complicated auxiliary equipment associated with the main turbo-generator unit with only causal supervision to start and stop such equipment under normal and emergency conditions.

1971

<u>Position</u>: Meter Tester "A" 7th North Street, Syracuse, N.Y.

<u>Duties</u>: Worked in Meter & Test Department and responsible for repair and test of single phase watt-hour meters.

Service: U.S.M.C.
Active duty - Oct. 1966 - Oct. 1968

/·C.5./

November 1983

CONFIDENTIAL RESUME

NAME: Eugene M. Davis

PERSONAL: Date of Birth: August 7, 1955
Date of Hire: June 21, 1982

EDUCATION: Edwards Central School
Edwards, NY
Diploma - June 1973

State University College
Potsdam, NY
Major: Sociology
Degree: B.A. - May 1981

EMPLOYMENT:

Niagara Mohawk Power Corporation
Nine Mile Point Nuclear Station

6/82 to Present

Position - Auxiliary Operator "B"

Duties - Under direct supervision on a shift, to be responsible for the operational care of various types of complicated auxiliary equipment assoicated with one or more main turbo-generator or boiler units and with only casual supervision to start and stop such equipment under normal and emergency situations.

Carroll's C-Mart (Convenience Store)
December 1981 - March 1982

Position - Cashier

Duties - Maintained daily store report of business, nightly cash-up and deposits.

MILITARY EXPERIENCE:

Four years active service U.S. Navy
November 1, 1973 - October 31, 1977

Served over 3 years on board the USS Compass Island (AG-153), a navigational research ship, from July 1974 to EAOS. Also served as Test Equipment Petty Officer, and was a qualified Supervisor in the ships Combat Information Center.

Classified as ET-1501, Basic Electronics Maintenance Man, concentrating in Radar (AN/SP5-10) and Decca Pathfinder Radar. Honorable discharge as ETR-2.

MILITARY SCHOOLS:

Communications and Counselor School - 1974

Basic Electricity and Electronics School - Jan - July 1974

ET "A" Phase A1 School - 1974

AN/SRC-20 Omega Receiving Set Maintenance School - 1975

Loran A Maintenance School - 1976

FC 5.1

November 1983

RESUME

NAME: Steven J. Davis

PHONE: Home:
Work:

PERSONAL: Date of Birth: March 31, 1952
Date of Hire: January 3, 1983

EDUCATION: Lawrenceville High School
Lawrenceville, Ill
Diploma - June 1970

EMPLOYMENT: Niagara Mohawk Power Corporation
Nine Mile Point Nuclear Station

1/83 to Present

Position: Auxiliary Operator "B"

Duties: Under direct supervision on a shift, to be responsible fir the operational care of various types of complicated auxiliary equipment associated with one or more main turbo-generator or boiler units and with only casual supervision to start and stop such equipment under normal and emergency situations.

MILITARY EXPERIENCE:

US NAVY
1974 - 1982

U.S.S. Josephus Daniels (CG-27)
1981 - 1982

Division Officer

Leading Division Chief Petty Officer with direct responsibilities for a staff of engineering specialists. Provide techincal training (formal, on-the-job, practical) to subordinates relative to engineering operations, theories and techniques requiring empathy, objectivity, tact, poise and excellence in interpersonal relationships.

Designated and certified ENGINEER OFFICER OF THE WATCH.

U.S.S. King (DDG-41)
1979 - 1981

Workcenter Supervisor

Assisted, supervised and performed diverse technical functions, to include the maintenance, repair and calibration of sophisticated automatic boiler control systems.

MILITARY EXPERIENCE (Cont.)

1977 - 1979: SHORE INTERMEDIATE MAINTENANCE ACTIVITY
LITTLE CREEK, VA

Title: Boiler Repair Specialist and Automatic Boiler Control Systems Repair Specialist.

Concurrently accorded responsibilities as a Quality Assurance Inspector and Safety Coordinator.

1977: SHORE INTERMEDIATE MAINTENANCE ACTIVITY
CHARLESTON, SC

Title: Boiler Repair Specialist

U.S.S. Sierra (AD-18)
1976 - 1977

Boiler Repair Engineering Specialist

U.S.S. Hoist (ARS-40)
1975 - 1976

Stability Coordinator and Boiler Operator responsible for providing expertise relative to technical functions related to the towing of the USS BELKNAP (CG-26).

U.S.S. BELKNAP (CG-26)
1974 - 1975

Fireroom Maintenanceman responsible for upkeep, maintenance, and overhaul of gate and globe valves, pumps and auxiliary steam turbines.

MILITARY SCHOOLS:

Maintenance and Material Management School - May 1982 - 1 wk

Gauge and Thermometer Calibration School - April 1979 - 1 wk

Boiler Technician Class "A" (Basics) School - Feb. - April 1972 - 12 wks

Boiler Technician Class "B" (Advanced) School - June - Oct. 1974 - 18 wks

General Regulator Automatic Combustion and Boiler Water Level Control Systems Maintenanceman - March - April 1977 - 6 wks

MILITARY SCHOOLS:

Petroleums, Oils and Lubricants Course - Feb. 1973 - 1 wk

Boiler water/Feedwater Test and Treatment Certification - Jan. 1981 - 1 wk

1-C 5.1

November 1983

RESUME

NAME: James Graff

PHONE: Home:
Work:

PERSONAL: Date of Birth: April 15, 1958
Date of Hire: September 27, 1982

EDUCATION: Cardinal Mooney High School
Greece NY
Diploma - June 1976

EMPLOYMENT: Niagara Mohawk Power Corporation
Nine Mile Point Nuclear Station

9/82 to Present

Position: Auxiliary Operator "B"

Duties: Under direct supervision on a shift, to be responsible for the operational care of various types of complicated auxiliary equipment associated with one or more main turbo-generator or boiler units and with only casual supervision to start and stop such equipment under normal and emergency situations.

MILITARY EXPERIENCE

US NAVY
9/76 - 9/82

U.S.S. Arkansas (CGN-41)
6/79 - 8/82

Second Class Elect. Technician

Qualified Reactor Operator, shutdown reactor operator and reactor technician on D2G reactor.

MILITARY SCHOOLS:

Basic Electricity & Electronics School
Great Lakes, Ill. 1/77 - 3/77

Electronics Tech. "A" School
Great Lakes, Ill. 3/77 - 8/77

Navy Nuclear Power School
Orlando, Fla. 6/78 - 12/78

Nuclear Prototype Training 1/79 - 6/79

MAY 1984

CONFIDENTIAL RESUME

NAME: Daniel M. Holt

Job Title: Nuclear Auxiliary Operator E
Department: Operations Unit II
Date of Hire: 7/26/82

EDUCATION: Utica Free Academy
Utica, NY
Graduated - June 1976

MILITARY EXPERIENCE: U.S. Navy (1976 - 1982)

SCHOOLS: Machinest Mate "A" School
Great Lakes, IL
Sept. 1976 - Nov. 1976
2 months

Navy Nuclear Power School
Orlando, FL
Jan. 1977 - July 1977
6 months

S3G Prototype Training
Ballston Spa, NY
July 1977 - Jan. 1978
6 months

(Other) Education — Niagara Mohawk Power Corporation
Reactor Operator Licensing Training Course
(Nine Mile Point Nuclear Station Unit 1
taught by the General Physics Corporation)
Oswego New York
April 1983 September 1983
22 weeks.

Jan 1980 to June 1982 — U.S.S. Carl Vinson (CVN-70)

Duties: Assigned to the Pre-commissioning unit of the U.S.S. Carl Vinson, equipped with an A4W/A1G Reactor Plant. Responsible for supervising preventive & corrective maintenance & operation of various nuclear & non-nuclear propulsion plant systems. Qualified various subordinate watch stations. In November, 1980, qualified senior in-rate watch station, Chief Reactor Watch; a supervisory watch responsible for supervising the operation of various mechanical systems and support systems of the reactor plant. Involved in various reactor plant testing during the construction of the Ship.

March 1978 to Jan. 1980 — U.S.S. Nimitz (CVN-68)
Duties: Responsible for the preventive & corrective maintenance of pumps, valves, heat exchangers & piping systems of various nuclear & non-nuclear propulsion plant systems. Qualified for various watch stations, responsible for the control & safe operation of various pumps, valves & heat exchangers of the Reactor Plant.

July 1977 to January 1978 — U.S. Naval Nuclear Powered Training Unit
Ballston Spa, NY
S3G Prototype, 26 Weeks
Trained in the basic mechanical operation of S3G Prototype included actual hands on experience, training in reactor theory and electrical theory of this prototype. Became a qualified radiation worker.

January 1977 to July 1977 — U.S. Naval Nuclear Power School
Orlando, FL
Reactor Theory, 24 Weeks
Courses in Reactor Theory, Heat Transfer and Fluid Flow, various Mechanical and Electrical Theory, Chemistry and Corrosion Control of Pressurized Water Reactors. Also courses in Radiological Theory and Controls.

September 1976 to November 1976 — Mechinist Mate "A" School
Great Lakes, IL
Basic theory and operation of Naval Steam Propulsion Plants. Including theory and operation of pumps, valves, heat exchangers, turbines, and generators

EMPLOYMENT: Niagara Mohawk Power Corporation, Syracuse NY

Nine Mile Point Nuclear Station
7/26/82 to March 1984
Position: Aux. Oper. "B"
Duties: Under direct supervision on a shift, to be responsible for the operational care of various types of complicated auxiliary equipment associated with one or more main turbo-generator or boiler units and with only casual supervision to start and stop such equipment under normal and emergency situations.

1 April 1983 to September 1983 — Attended Reactor Operator Licensing Training for Nine Mile Point Nuclear Station - Unit 1 which included detailed training in Nine Mile Point Nuclear Station Unit 1 system designs and operation (normal and abnormal), and Station emergency procedures. Also received training in Reactor theory, thermodynamics, basic mechanical and electrical theory, Boiling Water Reactor Thermodynamics, Boiling Water Reactor Chemistry and Corrosion Control.

18 October 1983 — Received Reactor Operator License for Nine Mile Point Nuclear Station - Unit 1

March 1984 to Present — Advanced to the position of Nuclear Auxiliary Operator E

Duties.

The Nuclear Auxiliary Operator E on shift provides operational attendance to the plant equipment. He shall perform all evolutions with the concurrence of or at the direction of the Chief Shift Operator. In addition, as required, he is responsible for the operation of the main turbine generator unit and related equipment from the control room and performs switching in the switchyard. He shall hold an NRC Reactor Operator License. When acting for the Chief Shift Operator, as principal reactor operator, he shall assume the shutdown and safe operation authority and responsibilities outlined for the Chief Shift Operator. He shall at all times perform his duties in accordance with approved procedures unless immediate and unforseen action is required to ensure the safety of the reactor, the station personnel and the general public.

:C.D./

November 1983

RESUME

NAME:	Jay Lawrence	PHONE:	Home: Work:

PERSONAL: Date of Birth: Januray 8, 1958
Date of Hire: October 15, 1982

EDUCATION: Alfred-Almond Central School
Almond, NY 14804
Diploma - June 1976

EMPLOYMENT: Niagara Mohawk Power Corporation
Nine Mile Point Nuclear Station

11/82 to Present

Position: Auxiliary Operator "B"

Duties: Under direct supervision on a shift, to be responsible for the operational care of various types of complicated auxiliary equipment associated with one or more main turbo-generator or boiler units and with only casual supervision to start and stop such equipment under normal and emergency situations.

MILITARY EXPERIENCE:

US NAVY
10/76 - 10/82

U.S.S. Austin
3/77 - 7/77
On the job training

U.S.S. Groton (SSN-694)
9/78 - 10-82

Duties: Operations, maintenance, secondary chemist, QA Inspector, QA paperwork, Reactor Plant preventive maintenance and machinery history Petty Officer, fuel oil and water king, ships machinist, weight handling Petty Officer.

MILITARY SCHOOLS:

Machinist Mate "A" School
Great Lakes, Ill. 1/77 - 3/77

Navy Nuclear Power School
Orlando, Fla. 7/77 - 1/78

Nuclear Prototype Training
Ballston Spa, NY 2/78 - 8/78

Other schools while aboard U.S.S. Groton:

Machine Tool Operator - 3 weeks
Secondary Chemist - 1 week
Drug & Alcohol Prevention - 2 weeks
8K & 2K Distilling Plants - 2 weeks
Hi Press. Air Compressor - 1 week

1-C 5.1

November 1983

RESUME

NAME: David Allan Rathbun

PHONE: Home:
Work:

PERSONAL: Date of Birth: June 29, 1958
Date of Hire: October 4, 1982

EDUCATION: Honeoye Central School
Honeoye, NY
Diploma - June 1976

EMPLOYMENT: Niagara Mohawk Power Corporation
Nine Mile Point Nuclear Station

10/82 to Present

Position: Auxiliary Operator "B"

Duties: Under direct supervision on a shift, to be responsible for the operational care of various types of complicated auxiliary equipment associated with one or more main turbo-generator or boiler units, and with only casual supervision to start & stop such equipment under normal and emergency situations.

MILITARY EXPERIENCE:

US NAVY

U.S.S. Dyess (ETN-3)
6/77 - 10/77

Test Equipment Petty Officer

Inventoried all test equipment. Assigned to OE Division and signed in and out such equipment to other divisions. Also maintained and repaired communications equipment.

U.S.S. Mississippi (ET3)

Assigned to work center RC02 in Reactor Control Division (with exception to statement below). Maintained, repaired and operated Reactor Control Equipment and Reactor Instrumentation equipment. Qualified Reactor Operator.

From Sept. 1981 - March 1982; assigned to Technical Publications Library (TPL) for maintenance and repair of Reactor Plant and Steam Plant Manuals and all Tech. Manuals of required equipment maintained by the engineering department. Also at this time, assigned duties as Supply Petty Officer for TPL and Training Division.

MILITARY SCHOOLS:

U.S. Navy Basic Training
RTC Orlando, Fla.
9/76 - 11/76

Basic Electricity and Electronics School
NTC Orlando, Fla.
11/76 - 1/77

Electronics Technician "A" School
NTC Orlando, Fla.
10/77 - 4/78

Naval Nuclear Prototype (S3G)
NPTU Balston Spa, NY
4/78 - 11/78

R. Reynolds

DATE 2-10-84

RESUME

NAME: RICHARD J. REYNOLDS

DATE OF BIRTH: 2-26-49.

ADDRESS:

DATE OF HIRE: 5-18-81

JOB TITLE: NUC. AUX. OP. C

DEPARTMENT: OPERATIONS: UNIT 2

EDUCATION: High School (Name) Osuego High School

Address OSWEGO, NY.

Date of Graduation JUNE 1967

College (Name) S.U.C. OSWEGO

Address. OSWEGO

Number of Years 2

Major ELEMENTARY EDUCATION (PSYCHOLOGY)

Degree/Date of Grad. B.S. MAY 1975

Other Education: AUBURN COMM. COLLEGE

2 yrs

A.A. in GEN. EDUCATION 1970

[illegible]

Resume: Page 2

Name: R. J. REYNOLDS

MILITARY SERVICE (BRANCH)

Please list in detail all military experience including Base or Ship Station, inclusive dates (month and year) and position held at each place. Itemize all training (i.e. Nuc. Pwr School, Machinist Mate, etc) and location of training and length of course.

1968 - 74 U.S. ARMY RESERVE Co. D 479th EN BN

DISC APR. 74 E-6 SQUAD LEADER

1975 - 83 SAME UNIT - PLATOON SGT 3yr ; OPERATIONS & TNG

SGT. 7yrs PROMOTED TO SFC E7 1982

ADVANCED COMBAT ENGINEER CORRESPONDENCE COURSE 81-82 140 cal hrs.

1983 - TRANSFER TO CONTROL (IRR) FEB 83

Resume: Page 3

Name: R.J. REYNOLDS

EMPLOYMENT: Positions held with Niagara Mohawk:

Present Position: N.A.O.C.

Start Date: FEB 13, 1984

Duties: ASSIST IN OPERATION OF NUC PLANT

MARK UPS

Previous Position: A.O.B.

Start Date: AUG 83

Duties: ASSIST IN OPERATION OF NUC PLANT

Next Previous: NUC. ARMED GUARD

Start Date: MAY 18, 1981

Duties: Prevent nuclear sabotage.

Next Previous:

Start Date:

Duties:

PLEASE LIST ALL POSITIONS HELD WITH NIAGARA MOHAWK - USE ADDITIONAL PAPER IF NECESSARY

Resume: Page 4

Name: R.J. REYNOLDS

EMPLOYMENT: (cont'd)

PAST EMPLOYERS: (Please list chronologically, with most recent position first. Use additional paper if necessary.)

COMPANY'S NAME LABORERS LOCAL 214/ D.KIGNITT, WALSH,

DATES/POSITION CRIVES, J+K BOILUR, BOULEY COUPER/ 1976-81

DUTIES CONCRETE CREW, CLEANUP, ROCK DRILLER, CARPENTER HELPER, MASON TENDER

MEXICO ACAD. + CENT SCHOOL DIST./ 1975-76

PERMANENT SUBSTITUTE TEACHER/

UNDER CONTRACT TO SCHOOL DIST TO REPLACE ABSENT TEACHERS IN GRADES K-12.

TRI LIONS TAVERN 1972-75 BARTENDER

BUTLER SYSTEMS 1974 TRUCK DRIVER

SUPERVISE 1-3 LABORERS

ANTHONY'S WAREHOUSE 1970-71 REST. MGR.

SCHEDULE EMPLOYEES - ORDER STOCK

SUPERVISE BAR + RESTURANT IN ALL PHASES OF OPERATION.

DATE 3/1/84

RESUME

NAME: GARY DEAN SANFORD

DATE OF BIRTH: 8/30/50

ADDRESS:

DATE OF HIRE: 2/6/84

JOB TITLE: ASSISTANT STATION SHIFT SUPERVISOR

DEPARTMENT: OPERATIONS UNIT #II

EDUCATION:

High School (Name) KNAPPA H.S.

Address KNAPPA, OREGON

Date of Graduation MAY 29, 1968

College (Name) OREGON STATE UNIVERSITY

Address CORVALLIS OREGON

Number of Years 3

Major NUCLEAR ENGINEERING

Degree/Date of Grad. B.S. IN NE. / JUNE 1977

Other Education:

CLATSOP COMMUNITY COLLEGE

ASTORIA, OREGON

ATTENDED 2 YEARS, ENGINEERING [illegible]

Name: GARY SANFORD

MILITARY SERVICE (BRANCH)

Please list in detail all military experience including Base or Ship Station, inclusive dates (month and year) and position held at each place. Itemize all training (i.e. Nuc. Pwr School, Machinist Mate, etc) and location of training and length of course.

UNITED STATES AIR FORCE

ENLISTED - OCTOBER 1968

ATTENDED AIR TRAFFIC CONTROL OPERATOR SCHOOL AT KEESLER AFB MISSISSIPPI NOVEMBER 1968 TO FEBRUARY 1969, HONOR GRADUATE. PERFORMED OJT AT FAIRCHILD AFB WHICH RESULTED IN ATTAINING FEDERAL AVIATION ADMINISTRATION CERTIFICATION AS A CONTROL TOWER OPERATOR. TRANSFERED TO PLEIKU AFB, PLEIKU, REPUBLIC OF VIET NAM JUNE 1970 ATTAINED USAF CERTIFICATION AS AN AIR TRAFFIC REGULATION CENTER (ATRC) OPERATOR. TRANSFERED TO SAN TRA AIR STATION AT DANANG (RVN) SEPTEMBER 1970 AND ATTAINED USAF CERTIFICATION AS AN ATRC OPERATOR. TRANSFERED TO HOLLOMAN AFB, ALAMOGORDO, NEW MEXICO, JUNE 1971 ATTAINED FAA CERTIFICATION AS A CONTROL TOWER OPERATOR, AND ALSO AS A PRECISION APPROACH RADAR OPERATOR.

HONORABLE DISCHARGE - SEPTEMBER 1972

Name: GARY SANFORD

EMPLOYMENT: Positions held with Niagara Mohawk:

Present Position: ASSISTANT STATION SHIFT SUPERVISOR

Start Date: 2/6/84

Duties: SHIFT TECHNICAL ADVISOR, ASSIST THE STATION SHIFT SUPERVISOR IN THE SAFE OPERATION OF NINE MILE PT. UNIT #II

Previous Position: NO PREVIOUS POSITIONS WITH NM HELD.

Start Date:

Duties:

Next Previous:

Start Date:

Duties:

Next Previous:

Start Date:

Duties:

PLEASE LIST ALL POSITIONS HELD WITH NIAGARA MOHAWK - USE ADDITIONAL PAPER IF NECESSARY

Resume: Page 4

Name: GARY SANFORD

EMPLOYMENT: (cont'd)

PAST EMPLOYERS: (Please list chronologically, with most recent position first. Use additional paper if necessary.)

COMPANY'S NAME: PUGET SOUND NAVAL SHIPYARD (PSNS)

DATES/POSITION: JANUARY 1979 TO JANUARY 1984

DUTIES: SHIFT TEST ENGINEER: (SEE ATTACHED SHEET FOR JOB REQUIREMENTS AND DUTIES) QUALIFIED OCTOBER 1981 FOR C1W TYPE NAVAL NUCLEAR PROPULSION PLANTS AND SUBSEQUENTLY PARTICIPATED IN THE OVERHAUL OF THE USS LONGBEACH INCLUDING THE PREFILL, COLD OPERATIONS, HOT OPERATIONS, CRITICALITY AND POWER RANGE TESTING PHASES OF THE OVERHAUL.

CROSS QUALIFIED TO D2G TYPE REACTOR PLANTS IN MARCH 1983 AND PARTICIPATED IN THE ARRIVAL PHASE PREPLANNING

FROM MARCH 1983 TO SEPTEMBER 1983 AS A LEAD PLANNING ENGINEER (SEE ATTACHED SHEET). UPON USS BAINBRIDGE ARRIVAL AT PSNS REASSUMED DUTIES AS A SENIOR SHIFT TEST ENGINEER FOR USS BAINBRIDGE TO JANUARY 1984.

FROM JANUARY 1979 TO OCTOBER 1981 WAS AN ASSISTANT SHIFT TEST ENGINEER IN TRAINING FOR SHIFT TEST ENGINEER QUALIFICATION AND PARTICIPATED IN THE OVERHAUL OF THE USS ENTERPRISE (A2W) USS CAVALLA (S5W) AND USS WILLIAM H. BATES (S5W) INCLUDING ARRIVAL, PLANT COOLDOWN, PREFILL, COLD OPERATIONS, HOT OPERATIONS, CRITICALITY AND POWER RANGE TESTING.

Name: GARY SANFORD

EMPLOYMENT: (cont'd)

(Please list chronologically past experience in present job related categories. Professional or Volunteer basis). (i.e., Volunteer Fire Companies, etc..)

COMPANY NAME: . MARE ISLAND NAVAL SHIPYARD

JUNE 1977 TO JAN 1979

NUCLEAR QUALITY ASSURANCE ENGINEER: PERFORMED INSPECTIONS AND/OR TESTS OF MECHANICAL, PIPING AND STRUCTURAL SYSTEMS, COMPONENT PARTS, OR SUB-ASSEMBLIES RELATED TO NAVAL NUCLEAR PROPULSION PLANTS. ENSURE COMPLIANCE WITH SPECIFICATIONS, INSTRUCTIONS AND REGULATORY CRITERIA. PERFORM SYSTEM PRETEST INSPECTIONS AND PREPARE DOCUMENTATION TO ALLOW FINAL SYSTEM CERTIFICATION FOR REACTOR MECHANICAL, PIPING, AND STRUCTURAL SYSTEMS PRIOR TO REACTOR CRITICALITY AND POWER OPERATIONS. ASSIST DISCIPLINE ENGINEERS IN TROUBLE ANALYSIS OF APPROPRIATE SYSTEMS. VERIFICATION AND CERTIFICATION OF PIPING, MECHANICAL AND STRUCTURAL SYSTEMS IN ASSOCIATION WITH REACTOR REFUELINGS (SSN SEAWOLF). REVIEW OF NUCLEAR ENGINEERING INSTRUCTIONS AND PROCEDURES FOR COMPLIANCE TO REGULATORY CRITERIA.

ATTAINED CERTIFICATION I.A.W. NAVSHIPS 250-1500-1 TO PERFORM CERTIFICATION OF PIPING WELDS BY PERFORMANCE OF LIQUID PENETRANT AND VISUAL TESTING TECHNIQUES.

Gary D. Sanford

SHIFT TEST ENGINEER

The Shift Test Engineer is in charge of all reactor plant operations and the overall reactor plant test program on his shift and is responsible for its progress. His primary responsibility is to ensure the safe operation of the reactor plant which he does by assuring all operations are performed in accordance with approved procedures and expected plant responses are obtained as indicated by instrumentation or reports with watchstanders. Where in his judgement the plant responces are not appropriate, he must evaluate the parameter, determine the cause(s) and take appropriate action to assure plant and personnel saftey.

The Shift Test Engineer position requires an in depth knowledge of the theory of design and operation of pressurized water reactor plants including reactor theory (reactor physics, materials, thermal and hydraulic design principles), chemistry, corrosion, basic nuclear physics as it applies to radiation and radiological control, operation of electrical instrumentation and control equipment and systems, design and operational theory of fluid system equipment, nuclear plant saftey, overall plant operation theory and casualty procedures. This knowledge is verified prior to attaining qualification via oral and written examinations administered and witnessed by the Department of Energy.

Periodic written and oral examinations are administered by the shipyard to ascertain adequate retention of knowledge and understanding of new or revised procedures.

The Shift Test Engineer is the single shipyard authority for determining that all necessary preparations are complete and provides final approval for commencement of the evolution. He directs the evolution, controlling all associated personnel, and reviews all data for completeness and acceptability. This includes all requests for work on systems (electrical and mechanical) which may have an effect on the reactor.

LEAD PLANNER

The Lead Planner is responsible for directing and participating in engineering work related to developement of test documentation to be used for conduct of complex integrated reactor and propulsion plant testing and operation. The work assigned is broad in scope requiring considerable independent judgement. In carrying out assignments the engineer is responsible for: (1) extensive coordination with related groups and reactor plant contractors; (2) integration of many different requirements within complex plant condition and sequencing constraints, and; (3) technical direction and work review for assigned engineers and technicians.

FC5.1

November 1983

RESUME

NAME: Robert.L. Spooner

PHONE: Home:
Work:

PERSONAL: Date of Birth: January 29, 1958
Date of Hire: November 15, 1982

EDUCATION: West Genesee Sr. High
Camillus, NY 13031
Diploma - June 1976

EMPLOYMENT: Niagara Mohawk Power Corporation
Nine Mile Point Nuclear Station

11/82 to Present

Position - Auxiliary Operator "B"

Duties - Under direct supervision on a shift, to be responsible for the operational care of various types of complicated auxiliary equipment associated with one or more main turbo-generator or boiler units and with only casual supervision to start and stop such equipment under normal and emergency situations.

MILITARY SERVICE:

U.S. NAVY

U.S.S. Boston (SSN-703)
November 1979 - October 1982

"M" Division, Machinist Mate 1st Class (SS), New London, Conn.

Responsible for maintenance and operation of propulsion plant machinery spaces and equipment. Reactor plant and steam plant maintenance and operation.

Qualified Engineroom Supervisor (ERS) from October 1980 - October 1982.

MILITARY SERVICE: (Cont.)

U.S.S. Nautilus (SSN-571)
August 1978 - November 1979

"M" Division, Machinist Mate 2nd Class,(SS), New London, Conn.

Responsible for maintenance and operation of Reactor plant and steam plant machinery.

U.S.S. Vulcan (AR-5)
March 1977 - June 1977

"A" Division
Temporary duty

MILITARY SCHOOLS:

Machinist Mate "A" School - Jan - March 1977

Navy Nuclear Power School
Orlando, Fla. June 1977 - Jan 1978

Nuclear Power Prototype Training (S3G)
Ballston Spa, NY Feb 1978 - Aug 1978
Machinist Mate 3rd Class (Student)

Basic Submarine School
New London, Conn. 2 wks. 1978

High Press. Air Compressor School
New London, Conn. 2 wks.

Gage Calibration School
New London, Conn. 1 wk.

Air Conditioning School
Charleston, S.C. 2 wks.

FC5.1

November 1983

CONFIDENTIAL RESUME

NAME:	Barbara S. Tesoriero	PHONE:	Home: Work:

PERSONAL: Date of Birth: 10/6/52
Date of Hire: 10/22/79

EDUCATION: Whitesboro Central High School
Whitesboro, NY
Diploma - June 1970

State University College at Oswego
Oswego, NY 13126
Major - Sociology
3 years, no degree

EMPLOYMENT: Niagara Mohawk Power Corporation, Nine Mile Point Nuclear Station

8/82 to Present

Position - Nuclear Operator "C"

Duties - Under direct supervision on a shift in a Nuclear Station to be responsible for the operational care of main turbo-generator and reactor units; to operate or direct the operation of the highest types of auxiliary equipement; to execute safe and effective mark-ups on equipment within the station and to assist in the detailed training of Auxiliary Operators of lower grade.

12/81 to 8/82

Position - Auxiliary Operator "B"

Duties - Under direct supervision on a shift, to be responsible for the operational care of various types of complicated auxiliary equipment associated with one or more main turbo-generator or boiler units and with only casual supervision to start and stop such equipment under normal and emergency situations.

10/79 to 12/81

Position - Armed Guard

Duties - Security Access and control.

PASNY - J. A. Fitzpatrick Nuclear Power Plant

1975

Position - Guard

Duties - Monitoring individuals for security access.

FC 5.1

June 1983

CONFIDENTIAL RESUME

NAME: Eric Lyle Townsend PHONE:

PERSONAL: Age: 34
Date of Birth: 11-25-49
Married - 4 dependents
Health: Excellent

Height: 5'8"
Weight: 170

EDUCATION: Phoenix Central High School - Phoenix, New York
Graduated: 1967 Regent's Diploma

S.U.N.Y. College of Forestry at Syracuse University
1 year Fall 1967 - Summer 1968

U.S. Navy Schools -

March 1969 - June 1969:	Machinist Mate "A" School
Jan 1970 - April 1971:	Navy Nuclear Power School, Bainbridge, Maryland; Prototype S3G Training, West Milton, New York; Engineering Lab. Technical School, S3G, West Milton, New York.
May 1971 -	Submarine School, New London, Conn.
June 1971 - March 1973:	USS Tecumseh SSBN628 (G) attended and instructed Engineering Department off-crew training.
June 1973 - Sept 1978:	Formal and informal training at James A. FitzPatrick Nuclear Power Plant ending in R.O. License in December 1976. Attended BWR Simulator in Morris, Illinois, for certification and Simulator at Chattanooga, Tenn. for Requal. Participated in formal requal program after obtaining R.O. License.

EDUCATION CONTINUED:

General Physics Corp. License Training Course
Oct. 1980 - Feb. 1981
520 hours
Obtained NRC Reactor Operator License

TVA BWR Simulator
Soddy-Daisy, Tenn.
7 Days - Jan 1981
Hot License Certification Program

GE BWR Simulator
Morris, Ill
3 Day Requal Program
Sept. 1981

EMPLOYMENT:

Niagara Mohawk Power Corp.
Syracuse, NY

December 1982 to Present

Position: Station Shift Supervisor

Duties: Writing pre-op, operating and special procedures for Nine Mile Point #2 and reviewing design reviews for Nine Mile Point #2 systems. Supervise operating personnel and assist in their training for licensing.

Sept 1981 to Present

Position: Chief Shift Operator

Duties: Under general supervision, on a shift, to direct and perform the work of, and to assist in the training of all personnel engaged in the operation of major steam-electric generating units, including electrical and mechanical equipment, auxiliaries, controls and associated transmission facilities.

1978 to Sept 1981

Position: Nuclear Auxiliary Operator "E"

Duties: Writing pre-operational tests, operating procedures, special procedures and performing design reviews on plant systems for Nine Mile Point Unit #2.

APPENDIX B

PROBLEM ANALYSIS REPORT FORM

AND

HUMAN ENGINEERING OBSERVATION FORM

Nine Mile Point-2

Historical Document Review

PROBLEM ANALYSIS REPORT (PAR)

Name of Investigator(s): ______________________

Report Type and Number: ______________________

Station: ______________________ Unit: __________

Event Date: ______________ Operating Status: __________

Circumstances and Events Leading to the Problem: __________

____

____

Nature of the Problem: ______________________

____

____

Steps Taken to Correct or Alleviate the Problem __________

____

____

Outcome: ______________________________________

____

____

Corrective Measures Undertaken: ______________

____

____

Human Performance Problems Associated With Event: __________

____

____

Nine Mile Point-2
Historical Document Review

PROBLEM ANALYSIS REPORT (PAR) (Continued)

Applicable to Plant Under Review? Yes ________ No ________
(If no, end form here.)

In Which Areas: ____

____

____

Corrective Actions Taken: ____

____

____

Unresolved Discrepancies: ____
(If none, end form here.)

____

____

HEO Number: ________

HUMAN ENGINEERING DISCREPANCY (HED) FORM

Plant (5A): ____________ Unit (1N): ________

Originator (3A): ________ Date (MM/DD/YYYY): ________ No·(4N): ________

Description: ____________________

Comments: ____________________

Source (1N)	Reference Information (40A)

Panel ID# (10A):	Equipment No. (10A):	Equipment Name (40A):	Other (5A):

/4396h

APPENDIX C

CONTROL ROOM DESIGN REVIEW
OPERATOR SURVEY

Control Room Design Review Operator Survey

The Nuclear Regulatory Commission is requiring that a detailed human factors review of every nuclear power plant control room be performed. Part of the guidance document published to support these reviews, NUREG-0700, suggests the use of your training and operating experience to help the review team identify potential operator/control board interface problems.

Niagara Mohawk Power Corporation (NMPC) and the management of the Nine Mile Point Unit 2 (NMP-2) station support the spirit of the NRC's directives. As a result, we are asking for you to support and assist in the program by completing the attached questionnaire. For this program, the company's goal is to improve the operating crew's capability to recognize, control and manage plant abnormal and emergency conditions.

The questionnaire contains 42 questions that cover ten general topic areas dealing with different aspects of control room design as well as the job duties and tasks to be performed by the operating crew. The questions deal with "problem" areas as well as good or beneficial features associated with the control room. Each question involves a multiple choice response based on your judgements and opinions. In addition, you will be asked to provide specific examples of the positive or negative aspects of the control room on which you based your multiple choice responses.

In completing the questionnaire please read each question carefully, circle the item in the multiple choice that best reflects your view, and provide additional information as appropriate. In preparing your answers, consider the questions from the perspective of all the various modes of plant operation, e.g., startup, hot stand-by, full power, and reduced power, in addition to possible abnormal or emergency operating conditions. Give detailed answers so that someone not as familiar with the area as you are will be able to understand exactly what you mean.

Please answer all the questions. Your responses are important to the success of this review. Use additional paper if necessary and attach it to this questionnaire. If you do use additional paper, please be sure to match your answer to the appropriate question. If you feel that we have left anything out or failed to cover an area in which you have a concern, please tell us by attaching comments to the questionnaire. If you are unable to answer a particular question, please indicate this in the space provided for your response.

We want to benefit from your training and past experience. For example, you may be familiar with design of a NMP-2 system or component from your previous experience at another power plant. If the question applies to that equipment, you should base your answers on specific incidents involving the operation of the equipment where it affected operator performance or plant safety and availability. Another way your experience can be helpful is in identifying

potential problems or, alternatively, effective design features which you have experienced from a previous job situation and which you feel may apply to the NMP-2 design. This interface between past experience and training and the anticipated operating procedures for the current plant should be the basis for your answers to the questions.

In asking for your support in this program we feel it is important for you to know what we will do with your answers. As the questionnaires are returned, ARD Corporation personnel will summarize your answers on a question-by-question basis and compile results for each question. The team conducting the control room design review will then be informed of each problem area identified, so that they can pay special attention to it during the remainder of the review process. As problems are verified, they will be documented more formally. Positive aspects of the control room will also be noted, so that in correcting any problems that arise, these positive features will not be compromised.

Although the NRC may eventually be told of the problems you help identify, we want to assure you that your answers and comments on this questionnaire will be kept strictly confidential. You should mail your completed questionnaire directly to ARD using the self-addressed stamped envelope that is attached. Your answers will be summarized so that your exact words do not appear and your name will be dissociated from your answers. You may be contacted for a follow-up interview by ARD personnel, to clarify any ambiguities in your written responses or to gather additional information. However, the information you provide at that time will likewise be summarized and treated confidential. Your answers will in no way affect your career, standing, or promotions within NMPC. Therefore, in answering the questionnaire, be as open, honest and straightforward as you can.

In addition to completing the questionnaire, we would like you to supply us with additional background information requested on the following page. It will help us to integrate your responses with other information we must collect as part of this project. However, this background information will not be associated with your responses when they are reported to NMPC or to the NRC.

When you have completed the questionnaire, place it in the envelope provided, seal the envelope, and drop it in the mail. Thank you very much for your cooperation and assistance.

Please Return To: ARD Corporation
5457 Twin Knolls Road
Columbia, MD 21045
Attn.: Ralph Dusek

- Name: ______________________________
- Present Position: ______________________________________
- Nuclear Operating Experience: ________________________years
- Control Board Operating Experience: ___________________years
- Held a Reactor Operator (RO) License: _________________years
- Held a Senior Reactor Operator (SRO) License: __________years
- Age: __________________
- Sex: __________________
- Height: ________________

A. Workspace Layout and Environment

A.1. Based on your personal background, training and experience, do you know of any additional controls needed in the control room? Your response should consider the controls needed to respond to potential emergency or abnormal situations in addition to the various modes of normal operations.

a. None
b. 1 or 2
c. Several
d. Many

Please identify any needed controls and your reasons for wanting them.

Also identify any systems in which the controls are particularly well designed, i.e. you would not like to see them changed.

A.2 From your past experience and training do you believe any of the controls that are presently in the control room are unnecessary? That is, are there controls that will not be used in any mode of plant operation?

a. None
b. 1 or 2
c. Several
d. Many

Please identify any extraneous controls.

A.3. Based on your operating system training and experience are additional indicators (i.e. meters, status lights, chart recorders) needed in the control room? Your response should consider the indicators needed to respond to potential emergency or abnormal situations in addition to the various modes of normal operations.

a. None
b. 1 or 2
c. Several
d. Many

Please identify the needed displays and your reasons for wanting them.

Also identify any systems in which the indicators are particularly well designed, i.e. you would not like to see them changed.

A.4. Based on your operating system training and experience are any of the indicators that are presently in the control room unnecessary? That is, are there indicators that will not be used in any mode of plant operation?

a. None
b. 1 or 2
c. Several
d. Many

Please identify any extraneous indicators.

A.5. Based on your training and experience with such plants how would you characterize the capability for direct voice communication between personnel in the main control room? Conditions that might impede direct voice communications could include high background noise, physical barriers, or distance between workstations. Remember to consider all modes of operation, including potential abnormal or emergency conditions.

a. Excellent
b. Adequate
c. Some problem areas
d. Many problem areas

Please identify any problem areas.

A.6. Operator's ability to move around the control room in an unobstructed manner is:

a. Excellent
b. Adequate
c. Some obstructions
d. Many obstructions

Please identify any obstacle(s) in the main control room which interfere with movement.

B. <u>Panel Design</u>

B.1. Automatic control operations allow the operator to attend to other instrumentation and intervene only when the automated system malfunctions. Manual control operations typically demand more attention but allow more flexibility, as the operator can tailor his response to the situation at hand. Based on your operating system training and experience are there any control device(s) which should be operated manually instead of automatically or vice versa?

a. None
b. 1 or 2
c. Several
d. Many

Please identify any such inappropriate controls and reasons why they should be reconfigured.

B.2. Throttleable valves typically require the operator to remain at a given workstation for a period of time, operating a particular control. Based on your operating system training and experience are there any throttleable valve(s) that would unnecessarily restrict your time to respond should an emergency situation occur?

a. None
b. 1 or 2
c. Several
d. Many

Please identify any throttleable valves that could pose a problem in emergency conditions.

Also, identify any throttleable valves that pose problems under other modes of operation, e.g. start-up or shut-down.

B.3. From your operating system training and experience are there any system(s) in which controls or indicators are not placed in functional groups?

a. None
b. 1 or 2
c. Several
d. Many

Please identify any systems in which instrumentation is not functionally grouped.

Also, identify systems in which functional grouping is particularly effective (i.e. that you would not like to see changed).

B.4. The layout of the control equipment on the panels is:

a. Excellent
b. Adequate
c. Some problem areas
d. Many problem areas

Describe any aspects of the layout of control board equipment that should be improved to allow operators to perform more effectively.

Also, describe any areas of the control board where the layout of equipment is particularly conducive to effective operations.

B.5. Are there areas on the main control boards where your use of a control is hindered or the control may be accidentally activated because of the position, shape, labeling or relationship to the controls?
a. None
b. 1 or 2
c. Several
d. Many
Please identify any such problem areas.

B.6. Are there any controls that are hard to reach or indicators that are difficult to read? Remember to consider all modes of plant operation, including possible abnormal or emergency operations.
a. None
b. 1 or 2
c. Several
d. Many
Please identify any such inaccessible instrumentation.

B.7. Are there any control(s) or indicators on back panels that should be on front panels, or vice-versa? In formulating your response, please consider the accessibility of instrumentation that you need under all modes of plant operations.

a. None
b. 1 or 2
c. Several
d. Many

Please identify any controls or indicators that should be moved to a front panel, and explain your reasoning.

Please identify any controls or indicators that should be moved to a back panel, and explain your reasoning.

B.8. Are there any system(s) in the control room which you feel are difficult or confusing to operate?

a. None
b. 1 or 2
c. Several
d. Many

Describe any systems that are difficult to operate.

Also, describe any systems that are particulary well-designed for ease of operation (i.e. that you would not like to see changed).

C. Annunciator System

C.1. Are there any areas in the control room where background noise levels are likely to interfere with annunciator auditory signals? Remember to consider all possible plant conditions and modes of operation.

a. None
b. 1 or 2
c. Several
d. Many

Please identify any areas in which it may be difficult to distinguish auditory alarms, and the plant conditions in which the problem occurs.

C.2. Have you experienced or can you conceive of situations in which the annunciator warning system may be ineffective in helping, or might actually hinder, operators response to a system problem?

a. None
b. 1 or 2
c. Several
d. Many

Please describe any such potential incidents or situations.

C.3. Are there any alarm windows that have an inappropriate setpoint; that is, those that may give the operator either too much or too little time in which to respond to a plant problem? Please consider all modes of plant operation.

a. None
b. 1 or 2
c. Several
d. Many

Please identify windows that may allow too little time and the setpoint(s) that would be more appropriate.

C.4. Are there alarms with multiple inputs for which there are no devices (e.g. printers) from which the operator can determine the cause of the alarm?

a. None
b. 1 or 2
c. Several
d. Many

Please identify any multiple input alarms that should be split into single inputs.

C.5. Are there any single input alarms (e.g. "nuisance alarms") that could be eliminated or combined into multiple input alarms?

a. None
b. 1 or 2
c. Several
d. Many

Please identify any single input alarms that could be eliminated or integrated into multiple input alarms.

C.6. Are there any alarm windows in the main control room with engravings that are confusing or difficult to understand?

a. None
b. 1 or 2
c. Several
d. Many

Please identify any confusing alarm engravings and explain why they are difficult to understand.

D. <u>Communications</u>

D.1. Are there any auditory signal(s) presented in the control room, other than annunciator alarms, which are confusing?

a. None
b. 1 or 2
c. Several
d. Many

Please identify any such auditory signals and the reason for the confusion.

D.2. Are there area(s) in the control room where messages presented over the paging system cannot be heard clearly?

a. None
b. 1 or 2
c. Several
d. Many

Please identify any such problem areas.

D.3. Given present plant communication systems and procedures for their use, is it likely that the use of communication systems by non-operating personnel could interfere with control room use of the system?

a. No problems
b. 1 or 2 systems vulnerable
c. Several systems vulnerable
d. Major problems with system design or procedures

Please describe any such potential problems.

From your experience at other plants, can you suggest design features which would reduce or eliminate potential communication problems.

E. <u>Computer-Generated Information</u> (e.g. SPDS, CAPS, 8600, CEAC, CPC, SPINGS, GERMS, TAMDEM)

E.1. Is there any information or calculation not presently provided on a computer-generated display that would be more useful if it were available in that form? Please consider both information that should be made available on one or the other CRT, as well as information that is presently available on one CRT but which should be available on another. Consider all modes of plant operation, including possible abnormal or emergency conditions.

a. None
b. 1 or 2 kinds of information
c. Several kinds of information
d. Many kinds of information

Please describe any additional computer information that should be made available. Identify the relevant computer.

Also, describe aspects of the computer-generated information that you find particularly useful. Identify the relevant computer.

E.2. Is there any information presently available on CRTs that would be more useful if it were presented in another form? Consider information that could be deleted from all computer-generated displays as well as information that should still be presented by the computers but in a more effective format.

a. None
b. 1 or 2
c. Several
d. Many

Please explain and suggest a better way for presenting such information other than on a CRT. Identify the relevant computer.

E.3. Do you know of any words or symbols used on the computer displays that are difficult to understand or interpret?

a. None
b. 1 or 2
c. Several
d. Many

What words or symbols would be more accurate or easier to use? Identify the relevant computer.

E.4. Are there any CRTs located in the control room which are difficult to use because of their placement in the room? Please consider all modes of plant operations, including possible abnormal or emergency conditions.

a. None
b. 1 or 2
c. Several
d. Many

Please explain and suggest alternative placements.

E.5. Is any of the information presented on the computer printer not useful to control room operations? Particularly consider the information demands of emergency and abnormal operations.

a. None
b. 1 or 2
c. Several
d. Many

Please identify any extraneous information.

Also identify any aspect of the hardcopy printouts that you may find particularly useful and would not want to see changed.

E.6. Are there any computer system procedures which are difficult to understand?

a. None
b. 1 or 2
c. Several
d. Many

Please identify any such procedures and the relevant computer.

F. Maintenance Procedures

F.1. Are there any maintenance procedures that could contribute to an operational problem? That is, assuming that preventive and corrective maintenance is performed "by the book," are there problem areas that could adversely affect operations, particularly during emergency conditions?

a. None
b. 1 or 2
c. Several
d. Many

Please describe any such problems.

Also, describe aspects of maintenance activities that may be particularly effective from the standpoint of control room personnel.

F.2. How would you characterize current procedures and availability of supplies for replacing equipment such as fuses, bulbs, ink, chart paper, etc.?

a. Excellent
b. Adequate
c. Some problems
d. Major problems

Please describe aspects of these procedures that are particularly effective.

Please describe aspects of these procedures that may be particularly ineffective.

G. <u>Procedures</u>

G.1. Are there any procedure(s) which are unclear or difficult to use? Please consider all modes of plant operation including possible abnormal or emergency conditions.

a. None
b. 1 or 2
c. Several
d. Many

Please identify any particular effective procedures.

Please identify any particular ineffective procedures.

G.2. Are there any operator aids, such as tables/checklists/ status boards etc. which could be redesigned to improve their usefulness?

a. None
b. 1 or 2
c. Several
d. Many

Please identify any such materials and suggest how they should be redesigned.

Also, describe operator aids that you find particularly useful.

G.3. Are there any manual log(s) that you feel will be difficult to update or maintain?

a. None
b. 1 or 2
c. Several
d. Many

Please identify the troublesome logs and suggest how they could be improved.

G.4. Are there any mathematical calculation(s) that are time consuming and/or difficult to perform?

a. None
b. 1 or 2
c. Several
d. Many

Please describe the calculations that are troublesome.

H. Staffing and Job Design

H.1. Based on your training and experience are there any job duties which are presently performed by others in which you feel control room personnel should be more directly involved, or vice versa? Please consider all modes of plant operation including abnormal or emergency conditions.

a. None
b. 1 or 2
c. Several
d. Many

Please describe any such duties that should be reallocated and specify who should perform them.

H.2. Are there any recurring distractions, in the form of unnecessary personnel, traffic, etc., that could interfere with your duties?

a. None
b. 1 or 2
c. Several
d. Many

Please describe any such sources of distraction and how they can be avoided.

H.3. Does the proposed shift turnover process appear to be workable?

a. Excellent
b. Adequate
c. Some problems
d. Significant problems

If there are problems, suggest how they can be improved.

H.4. Have you experienced or can you conceive of situations in which the operating crew staffing structure could adversely affect control room operations? Consider all modes of plant operation, including potential abnormal and emergency conditions.

a. None
b. 1 or 2
c. Several
d. Many

Please describe any such incidents or potential situations and suggest how they could be improved.

Also, describe plant conditions or potential conditions for which the present staffing seem particularly appropriate.

I. Training

I.1. Are there any potential emergency situation(s) for which you feel you have not received enough training?

a. None
b. 1 or 2
c. Several
d. Many

Please describe any emergency situations that you think should receive more emphasis.

Also, describe aspects of your emergency training that you think has been particularly effective.

J. Operator Aids

J.1. How much knowledge do you have of the Nine Mile Point Unit 2 SPDS design and operation?

a. No knowledge
b. Little knowledge
c. Some knowledge
d. Full knowledge

What could be done to improve your familiarity with SPDS design and operation?

J.2. What parameters, inputs, operator aids, or other information would assist you in performing operations during the following conditions?

Start up/Shutdown

Normal Operations

Abnormal Operations

APPENDIX D

INVENTORY FORM

UTILITY ______ HFS ________

PLANT ______ DATE ________

SYSTEM DESIGNATOR ______________

PAGE ____ OF ____

INVENTORY

EQUIPMENT ID NUMBER		LABEL NAME	DISPLAYS											CONTROLS				
			COLOR	TYPE OF DISPLAY	WHAT MEASURED	UNITS	LOW RANGE	EXP	HIGH RANGE	EXP	DIV	EXP	SCALE	TYPE OF SWITCH	WHAT CONTROLLED	VALVE CONTROL	SWITCH ACTION	NAMES OF SWITCH POSITIONS
CP	0 2 2 5																	
SUB NUMBER	LABEL TYPE																	
SUB NAME																		
UNID																		
CP	0 2 2 5																	
SUB NUMBER	LABEL TYPE																	
SUB NAME																		
UNID																		
CP	0 2 2 5																	
SUB NUMBER	LABEL TYPE																	
SUB NAME																		
UNID																		
CP	0 2 2 5																	
SUB NUMBER	LABEL TYPE																	
SUB NAME																		
UNID																		
CP	0 2 2 5																	
SUB NUMBER	LABEL TYPE																	
SUB NAME																		
UNID																		
CP	0 2 2 5																	
SUB NUMBER	LABEL TYPE																	
SUB NAME																		
UNID																		

APPENDIX E

TASK ANALYSIS TASKS

NMP - 2
Task Analysis' Tasks by E.P.N.

Procedure #: 001 RC RPV CONTROL GUIDELINE

E.P.G #	Task #	Task Title	
RC-1	000001	IDENTIFY RPV WATER LEVEL < 159.3 IN.	
	000002	IDENTIFY RPV PRESS > 1037 PSI	
	000003	IDENTIFY DRYWELL PRESS > 1.68 PSI	
	000004	IDENTIFY A CONDITION REQUIRING MSIV	ISOLATION
	000005	IDENTIFY A CONDITION REQUIRING REACTOR	SCRAM
	000006	OBSERVE REACTOR POWER > 4%	
	000007	DETERMINE REACTOR POWER CANNOT BE	DETERMINED
	000008	VERIFY REACTOR SCRAM	
	000009	INITIATE REACTOR SCRAM	

NMP - 2
Task Analysis' Tasks by E.P.N.

Procedure #: 002 RC/L MONITOR AND CONTROL RPV WATER LEVEL

E.P.G #	Task #	Task Title
RC/L-1	000001	OBSERVE AUTO SYSTEM ISOLATIONS
	000002	MANUALLY ISOLATE SYSTEMS
	000003	OBSERVE ECCS INITIATION
	000004	MANUALLY INITIATE ECCS
	000005	DETERMINE BORON INJECTION IS REQUIRED
	000006	DETERMINE RPV LEVEL CANNOT BE DETERMINED
	000007	DETERMINE RPV FLOODING IS REQUIRED
RC/L-2	000008	CONTROL RPV LEVEL USING CONDENSATE/FEEDWATER SYSTEM
	000009	CONTROL RPV LEVEL USING CRD SYSTEM
	000010	CONTROL RPV LEVEL USING RCIC SYSTEM
	000011	CONTROL RPV LEVEL USING HPCS SYSTEM
	000012	CONTROL RPV LEVEL USING LCPS SYSTEM
	000013	CONTROL RPV LEVEL USING LPCI SYSTEM
	000014	OBSERVE RPV LEVEL LESS THAN OR EQUAL TO 159.3 IN.
	000015	OBSERVE RPV LEVEL GREATER THAN OR EQUAL TO -14 IN.
	000016	OBSERVE ADS TIMER HAS INITIATED
	000017	RESET ADS TIMER
	000018	OBSERVE RPV LEVEL < -14 IN
	000019	DETERMINE IF ALTERNATE SHUTDOWN COOLING IS REQUIRED

NMP - 2

Task Analysis' Tasks by E.P.N.

Procedure #: 003 RC/P MONITOR AND CONTROL RPV PRESSURE

E.P.G #	Task #	Task Title
RC/P-1	000001	DETERMINE IF RPV DEPRESSURIZATION IS REQUIRED
	000002	DEPRESSURIZE THE RPV USING MAIN TURBINE BYPASS VALVES
	000003	DETERMINE IF RPV FLOODING IS REQUIRED
	000004	OBSERVE LESS THAN 7 SRVS OPEN
	000005	DETERMINE IF ANY SRV IS CYCLING
	000006	MANUALLY OPEN SRVS UNTIL RPV PRESS IS < 940 PSI
	000007	DETERMINE SUPPRESSION POOL TEMP CANNOT BE MAINTAINED BELOW HEAT CAPACITY TEMP LIMIT
	000008	DETERMINE SUPRESSION POOL LEVEL CANNOT BE MAINTAINED BELOW LOAD LIMIT
	000009	DETERMINE STEAM COOLING IS REQUIRED
	000010	DETERMINE IF BORON INJECTION IS REQUIRED
	000011	DETERMINE IF MAIN CONDENSOR IS AVAILABLE
	000012	OBSERVE NO GROSS FUEL FAILURE CONDITION
	000013	OBSERVE NO STEAM LINE BREAK CONDITION
	000014	OPEN MSIVS
RC/P-2	000015	CONTROL RPV-PRESS USING MAIN TURBINE BYPASS VALVE
	000016	CONTROL RPV PRESS USING SRVS
	000017	CONTROL RPV PRESS USING RCIC
	000018	CONTROL RPV PRESS USING RWCU
	000019	CONTROL RPV PRESS USING MAIN STEAM LINE DRAINS
RC/P-3	000020	OBSERVE SRV PNEUMATIC SUPPLY IS UNAVAILABLE
	000021	VERIFY REACTOR SHUTDOWN
	000022	VERIFY RODS INSERTED TO POSITION 00
	000023	OBSERVE SLC TANK LEVEL LESS THAN OR EQUAL TO 1850 GAL.
	000024	DETERMINE THAT NO BORON HAS BEEN INJECTED
	000025	DEPRESSURIZE THE RPV
	000026	MAINTAIN COOLDOWN RATE < 100 DEG/F/HR
RC/P-4	000027	OBSERVE RHR SHUTDOWN COOLING INTERLOCKS CLEAR
	000028	INITIATE RHR SHUTDOWN COOLING MODE
	000029	DETERMINE RHR SHUTDOWN COOLING MODE CANNOT BE ESTABLISHED
	000030	DETERMINE RPV COOLDOWN REQUIRED
	000031	CONTINUE COOLDOWN ESTABLISHED IN DEPRESSURIZATION
	000032	DETERMINE RPV COOLDOWN REQUIRED
	000033	DETERMINE COOLDOWN CANNOT BE ESTABLISHED
	000034	OBSERVE ALL RODS INSERTED TO POSITION 00

NMP - 2

Task Analysis' Tasks by E.P.N.

Procedure #: 004 RC/Q MONITOR AND CONTROL REACTOR POWER

E.P.G #	Task #	Task Title		
RC/Q-1	000001	OBSERVE ALL RODS INSERTED		
	000002	TERMINATE BORON INJECTION		
	000003	VERIFY REACTOR SHUTDOWN		
	000004	DETERMINE THAT NO BORON HAS BEEN	INJECTED	
	000005	PLACE REACTOR MODE SWITCH IN SHUTDOWN		
RC/Q-2	000006	DETERMINE MAIN TURBINE GENERATOR IS ON	LINE	
	000007	OBSERVE MSIVS OPEN		
	000008	INITIATE FLOW RUNBACK TO MINIMUM		
RC/Q-3	000009	OBSERVE REACTOR POWER > 4%		
	000010	DETERMINE REACTOR POWER CANNOT BE	DETERMINED	
	000011	TRIP RECIRCULATION PUMPS		
RC/Q-4	000012	DETERMINE REACTOR CANNOT BE SHUTDOWN	BEFORE SUPPRESSSION POOL TEMP = 111 DEG	OF F.
	000013	INJECT BORON USING SLC		OF F.
	000014	PREVENT AUTO INITIATION OF ADS		OF F.
	000015	DETERMINE BORON CANNOT BE INJECTED USING SLC		
	000016	INJECT BORON USING CRD		
	000017	INJECT BORON USING HPCS		
	000018	INJECT BORON USING RWCU		
	000019	INJECT BORON USING FEEDWATER		
	000020	INJECT BORON USING HPCI		
	000021	INJECT BORON USING RCIC		
	000022	INJECT BORON USING HYDRO PUMP		
RC/Q-4.1	000023	DETERMINE BORON IS NOT BEING INJECTED	USING RWCU	
	000024	CONFIRM AUTO ISOLATION OF RWCU		
	000025	MANUALLY ISOLATE RWCU		
RC/Q-4.2	000026	OBSERVE SLC TANK LEVEL LESS THAN OR	EQUAL TO 1850 GPM	
RC/Q-5.1	000027	DETERMINE ANY SCRAM VLV IS NOT OPEN		
	000028	REMOVE FUSES FOR RPS SCRAM SOLENOIDS		
	000029	CLOSE SCRAM HEADER SUPPLY VLV		
	000030	OPEN SCRAM AIR HEADER VENT VALVE		
	000031	OBSERVE CONTROL RODS NOT MOVING INWARD		
	000032	REPLACE FUSES FOR RPS SCRAM SOLENOIDS		
	000033	CLOSE AIR HEADER VENT VLV		
	000034	OPEN SCRAM AIR HEADER SUPPLY VLV		
RC/Q-5.2	000035	RESET REACTOR SCRAM		
	000036	OBSERVE REACTOR SCRAM CANNOT BE RESET		
	000037	START CRD PUMPS		
	000038	CLOSE HCU ACCUMULATOR CHARGING WATER	HEADER VALVE	
	000039	MANUALLY INSERT CONTROL RODS		
	000040	DETERMINE REACTOR SCRAM CAN BE RESET		
	000041	RESET REACTOR SCRAM		
	000042	OPEN HCU ACCUMULATOR CHARGING WATER	HEADER VALVE	
RC/Q-5.3	000043	OBSERVE SCRAM DISCHARGE VOLUME VENT AND	DRAIN VLVS OPEN	

NMP - 2
Task Analysis' Tasks by E.P.N.

Procedure #: 004 RC/Q MONITOR AND CONTROL REACTOR POWER

E.P.G #	Task #	Task Title
RC/Q-5.3	000044	INITIATE A MANUAL REACTOR SCRAM
	000045	OBSERVE CONTROL RODS MOVING INWARD
	000046	RESET REACTOR SCRAM
	000047	OBSERVE REACTOR SCRAM CANNOT BE RESET
	000048	OPEN SCRAM DISCHARGE VOLUME VENT AND DRAIN VALVES
RC/Q-5.4	000049	OPEN SCRAM TEST SWITCHES FOR CONTROL RODS
	000050	OBSERVE A CONTROL ROD NOT MOVING INWARD
	000051	CLOSE SCRAM TEST SWITCHES FOR CONTROL RODS
RC/Q-5.5	000052	RESET REACTOR SCRAM
	000053	OBSERVE REACTOR SCRAM CANNOT BE RESET
	000054	START CRD PUMPS
	000055	CLOSE HCU ACCUMULATOR CHARGING WATER HEADER VALVE
RC/Q-5.6	000056	MANUALLY INSERT CONTROL RODS
	000057	OBSERVE CONTROL ROD NOT MOVING INWARD
	000058	DIRECT EFFLUENT FROM CRD WITHDRAW LINE VENT VALVE TO RADWASTE DRAIN
	000059	OPEN CRD WITH DRAW LINE VENT VALVE
	000060	OBSERVE CONTROL ROD NOT MOVING INWARD
	000061	CLOSE CRD WITHDRAW LINE VENT VALVE

NMP - 2
Task Analysis' Tasks by E.P.N.

Procedure #: 005 SP PRIMARY CONTAINMENT CONTROL

E.P.G #	Task #	Task Title
	000001	OBSERVE SUPPRESSION POOL TEMP > 95 DEG/F
	000002	OBSERVE DRYWELL TEMP > 135 DEG/F
	000003	OBSERVE CONTAINMENT TEMP > 90 DEG/F
	000004	OBSERVE DRYWELL PRESS > 1.68 PSI
	000005	OBSERVE SUPPRESSION POOL LEVEL > EL. 201 FT
	000006	OBSERVE SUPPRESSION POOL LEVEL > EL. 199.5 FT

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Task Analysis' Tasks by E.P.N.

Procedure #: 006 SP/T MONITOR AND CONTROL SUPPRESSION POOL TEMP

E.P.G #	Task #	Task Title		
SP.T-1	000001	CLOSE ALL SORVS		
	000002	DETERMINE IF SRV CANNOT BE CLOSED	WITHIN 2 MIN	
	000003	INITIATE REACTOR SCRAM		
SP/T-2	000004	OBSERVE SUPPRESSION POOL TEMP > 95 DEG/F		
	000005	OPERATE AVAILABLE SUPPRESSION POOL	COOLING	
SP/T-3	000006	OBSERVE SUPPRESSION POOL TEMP LESS THAN	OR EQUAL TO 110 DEG/F	
	000007	INITIATE REACTOR SCRAM		
SP/T-4	000008	DETERMINE IF SUPPRESSION POOL TEMP	CANNOT BE MAINTAINED BELOW HEAT CAPACITY	TEMP LIMIT
	000009	MAINTAIN RPV PRESSURE BELOW LIMIT		TEMP LIMIT
	000010	DETERMINE RPV PRESS CANNOT BE MAINTAINED	BELOW HEAT CAPACITY TEMP LIMIT	

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Task Analysis' Tasks by E.P.N.

Procedure #: 007 DW/T MONITOR AND CONTROL DRYWELL TEMP

E.P.G #	Task #	Task Title		
DW/T-1	000001	OBSERVE DRYWELL TEMP > 135 DEG/F		
	000002	OPERATE AVAILABLE DRYWELL COOLING		
DW/T-2	000003	OBSERVE DRYWELL TEMP GREATER THAN OR	EQUAL TO RPV SAT TEMP	
DW/T-3	000004	OBSERVE DRYWELL TEMP GREATER THAN OR	EQUAL TO 340 DEG/F	
	000005	OBSERVE SUPPRESSION CHAMBER TEMP AND	DRYWELL PRESS < DRYWELL SPRAY INITIATION	PRESS LIMIT
	000006	SHUTDOWN RECIRC PUMPS		PRESS LIMIT
	000007	SHUTDOWN DRYWELL COOLING FANS		PRESS LIMIT
	000008	INITIATE DRYWELL SPRAYS		PRESS LIMIT
	000009	THROTTLE DRYWELL SPRAY FLOW < 720 GPM		PRESS LIMIT
	000010	OBSERVE DRYWELL TEMP > 340 DEG/F		PRESS LIMIT

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Task Analysis' Tasks by E.P.N.

Procedure #: 008 CN/T MONITOR AND CONTROL CONTAINMENT TEMP

E.P.G #	Task #	Task Title
CN/T-1	000001	OBSERVE CONTAINMENT TEMP > 90 DEG/F
	000002	OPERATE AVAILABLE CONTAINMENT COOLING
CN/T-2	000003	OBSERVE CONTAINMENT TEMP > 185 DEG/F
	000004	OBSERVE SUPPRESSION CHAMBER PRESS > 1.7 PSI
	000005	INITIATE SUPPRESSION POOL SPRAYS
CN/T-3	000006	OBSERVE CONTAINMENT TEMP > 185 DEG/F
CN/T-4	000007	OBSERVE CONTAINMENT TEMP GE RPV SAT TEMP

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Task Analysis' Tasks by E.P.N.

Procedure #: 009 PC/P MONITOR AND CONTROL PRIMARY CONTAINMENT PRESS

E.P.G #	Task #	Task Title		
PC/P-1	000001	OPERATE THE CONTAINMENT PRESS CONTROL	SYSTEM	
	000002	OBSERVE TEMP FOR SBGT SUCTION < 212	DEG/F	
	000003	OPERATE SBGT		
PC/P-2	000004	OBSERVE SUPPRESSION CHAMBER PRESS	< 17.4 PSI	
	000004	OBSERVE SUPPRESSION CHAMBER PRESS	< 17.4 PSI BUT > 1.7 PSI	
	000005	OBSERVE SUPPRESSION POOL WATER LVL	< 24 FT	
	000006	INITIATE SUPPRESSION POOL SPRAYS		
PC/P-3	000007	OBSERVE SUPPRESSION CHAMBER PRESS	> 17.4 PSI	
	000008	OBSERVE SUPPRESSION CHAMBER TEMP AND	DRYWELL PRESS < DRYWELL SPRAY INITIATION	PRESS LIMIT
	000009	SHUTDOWN RECIRC PUMPS		PRESS LIMIT
	000010	SHUTDOWN DRYWELL COOLING FANS		
	000011	INITIATE DRYWELL SPRAYS		
	000012	THROTTLE DRYWELL SPRAY FLOW < 720 GPM		
PC/P-4	000013	OBSERVE SUPPRESSION CHAMBER PRESS	CANNOT BE MAINTAINED BELOW PRESSURE	SUPPRESSION PRESSURE
PC/P-5	000014	OBSERVE SUPPRESSION CHAMBER PRESS	CANNOT BE MAINTAINED BELOW PRIMARY	CONTAINMENT DESIGN PRESS
PC/P-6	000015	OBSERVE SUPPRESSION CHAMBER PRESS	CANNOT BE MAINTAINED BELOW CONTAINMENT	PRESS LIMIT
	000016	OBSERVE SUPPRESSION POOL WATER LVL	<24 FT 6 IN	
	000017	INITIATE SUPPRESSION POOL SPRAYS		
	000018	OBSERVE SUPPRESSION CHAMBER TEMP AND	DRYWELL PRESS < DRYWELL SPRAY INITIATION	PRESS LIMIT
	000019	SHUTDOWN RECIRC PUMPS		PRESS LIMIT
	000020	SHUTDOWN DRYWELL COOLING FANS		PRESS LIMIT
	000021	INITIATE DRYWELL SPRAYS		PRESS LIMIT
	000022	THROTTLE DRYWELL SPRAY FLOW < 720 GPM		PRESS LIMIT
PC/P-7	000023	OBSERVE SUPPRESSION CHAMBER PRESS	GREATER THAN OR EQUAL TO PRIMARY	CONTAINMENT PRESS LIMIT
	000024	VENT PRIMARY CONTAINMENT		CONTAINMENT PRESS LIMIT

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Task Analysis' Tasks by E.P.N.

Procedure #: 010 SP/L MONITOR AND CONTROL SUPPRESSION POOL WATER LEVEL

E.P.G #	Task #	Task Title		
SP/L-1	000001	MAINTAIN SUPPRESSION POOL WATER LEVEL	BETWEEN 12 FT 6 IN AND 12 FT 2 IN	
	000002	OBSERVE SPMS HAS INITIATED		
	000003	MAINTAIN SUPPRESSION POOL WTR LVL	BETWEEN 23 FT 9 IN AND 19 FT 11 IN	
	000004	OBSERVE SUPPRESSION POOL WTR LVL CANNOT	BE MAINTAINED > 12 FT 2 IN	
	000005	OBSERVE SUPPRESSION POOL WTR LVL CANNOT	BE MAINTAINED < 12 FT 6 IN (NO SPMS)	
	000006	OBSERVE SUPPRESSION POOL WTR LVL CANNOT	BE MAINTAINED < 23 FT 9 IN (W/SPMS)	
SP/L-2	000007	MAINTAIN SUPPRESSION POOL WTR LVL > HEAT	CAPACITY LEVEL LIMIT	
SP/L-3.1	000008	MAINTAIN SUPPRESSION POOL WTR LVL <	SUPPRESSION POOL LOAD LIMIT	
	000009	DETERMINE SUPPRESSION POOL WTR LVL	CANNOT BE MAINTAINED BELOW LOAD LIMIT	
	000010	MAINTIAN RPV PRESS < SUPPRESSION POOL	LOAD LIMIT	
	000011	DETERMINE RPV CANNOT BE MAINTAINED <	LOAD LIMIT	
	000012	DETERMINE ADEQUATE CORE COOLING	AVAILABLE	
	000013	TERMINATE RPV INJECTION FROM EXTERNAL	SOURCES EXCEPT BORON AND CRD SYS	
SP/L-3.2	000014	OBSERVE SUPPRESSION POOL WTR LVL GREATER	THAN OR EQUAL TO 17 FT 2 IN	
	000015	DETERMINE ADEQUATE CORE COOLING	AVAILABLE	
	000016	TERMINATE RPV INJECTION FROM EXTERNAL	SOURCES EXCEPT BORON AND CRD SYS	
	000017	OBSERVE SUPPRESSION POOL WTR LVL = 17 FT 2 IN		
	000018	OBSERVE SUPPRESSION CHAMBER TEMP AND	DRYWELL PRESS < DRYWELL SPRAY INITIATION	PRESS LIMIT
	000019	SHUTDOWN RECIRC PUMPS		PRESS LIMIT
	000020	SHUTDOWN DRYWELL COOLING FANS		PRESS LIMIT
	000021	INITIATE DRYWELL SPRAYS		PRESS LIMIT
	000022	THROTTLE DRYWELL SPRAY FLOW < 720 GPM		PRESS LIMIT
	000023	OBSERVE SUPPRESSION POOL WTR LVL > 17 FT 2 IN		
	000024	OPERATE DRYWELL SPRAYS		
	000025	THROTTLE DRYWELL SPRAY FLOW < 720 GPM		
	000026	OBSERVE PRIMARY CONTAINMENT WTR LVL		
	000027	TERMINATE RPV INJECTION FROM ALL	EXTERNAL SOURCES	

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Task Analysis' Tasks by E.P.N.

Procedure #: 011 SC SECONDARY CONTAINMENT CONTROL GUIDELINE

E.P.G #	Task #	Task Title
SC	000001	OBSERVE DIFFERENTIAL PRESSURE RX BLDG TO OUTSIDE GREATER THAN OR EQUAL TO 0 IN. OF WATER
	000002	OBSERVE ANY AREA TEMP > MAX NORMAL OPERATING
	000003	OBSERVE A HVAC COOLER DIFFERENTIAL TEMP > MAX NORMAL
	000004	OBSERVE RX BLDG HVAC EXHAUST RAD LEVEL > MAX NORMAL
	000005	OBSERVE AN AREA RAD LVL > MAX NORMAL
	000006	OBSERVE RX FLOOR DRAIN SUMP LVL > MAX NORMAL
	000007	OBSERVE AREA WTR LVL > MAX NORMAL
	000008	OBSERVE ANY RX BLDG HIGH RADIATION ALARM

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Task Analysis' Tasks by E.P.N.

Procedure #: 012 SC/T MONITOR AND CONTROL SECONDARY CONTAINMENT TEMPS

E.P.G #	Task #	Task Title
SC/T-1	000001	OBSERVE RX BLDG HVAC EXHAUST RAD LVL > RX BLDG HVAC ISOLATION STPT
	000002	MANUALLY INITIATE RX BLDG HVAC ISOLATION
	000003	MANUALLY INITIATE SBGT
	000004	OBSERVE RX BLDG HVAC ISOLATION
	000005	OBSERVE RX BLDG HVAC EXHAUST RAD LVL < RX BLDG HVAC ISOLATION SETPT
	000006	OPERATE RX BLDG HVAC
	000007	OPERATE AVAILABLE COOLERS
	000008	OBSERVE RX BLDG HVAC EXHAUST RAD LEVEL < RX BLDG HVAC ISOLATION
	000009	OPERATE RX BLDG HVAC
	000010	OBSERVE ANY AREA TEMP > MAX NORMAL
	000011	ISOLATE SYS DISCHARGING INTO AFFECTED AREA EXCEPT SYS FOR SHUTDOWN CORE COOLING OR FIRE SUPPRESSION
	000012	OBSERVE A PRIMARY SYS DISCHARGING INTO AN AREA
	000013	OBSERVE AFFECTED AREA TEMP < MAX NORMAL
	000014	OBSERVE PRIMARY SYS DISCHARGING INTO AN AREA
	000015	OBSERVE AFFECTED AREA TEMP > MAX NORMAL

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Task Analysis' Tasks by E.P.N.

Procedure #: 013 SC/R MONITOR AND CONTROL SECONDARY RADIATION LVLS

E.P.G #	Task #	Task Title		
SC/R-1	000001	OBSERVE ANY AREA RADIATION MONITOR >	HIGH ALARM SETPT	
	000002	ISOLATE ALL SYSTEMS DISCHARGE INTO	AFFECTED AREA EXCEPT FOR SHUTDOWN	CORE COOLING OR FIRE SUPPRESSI
SC/R-2	000003	OBSERVE A PRIMARY SYS DISCHARGING INTO	AN AREA	
	000004	OBSERVE AFFECTED AREA RAD LVL LESS THAN	OR EQUAL TO MAX NORMAL	
SC/R-3	000005	OBSERVE A PRIMARY SYS DISCHARGING INTO	AN AREA	
	000006	OBSERVE AFFECTED AREA RAD LVL GREATER	THAN OR EQUAL TO MAX NORMAL	

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Task Analysis' Tasks by E.P.N.

Procedure #: 014 SC/L MONITOR AND CONTROL SECONDARY CONTAINMENT WATER LEVEL

E.P.G #	Task #	Task Title
SC/L-1	000001	OBSERVE ANY FLOOR DRAIN SUMP > HIGH-HIGH LVL SETPT
	000002	OPERATE AVAILABLE SUMP PUMPS FOR AFFECTED AREA
	000003	OBSERVE ANU FLOOR DRAIN SUMP CANNOT BE MAINTAINED < HIGH-HIGH LVL SETPT
	000004	ISOLATE ALL SYS DISCHARGE INTO SUMP AREA EXCEPT FOR SHUTDOWN CORE COOLING OR FIRE SUPPRESSION
SC/L-2	000005	OBSERVE A PRIMARY SYS DISCHARGING IN AN AREA
	000006	OBSERVE AFFECTED FLOOR DRAIN SUMP < HIGH-HIGH LEVEL SETPT
SC/L-3	000007	OBSERVE A PRIMARY SYS DISCHARGING INTO AN AREA
	000008	OBSERVE AFFECTED FLOOR DRAIN SUMP GREATER THAN OR EQUAL TO HIGH-HIGH SETPT

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Task Analysis' Tasks by E.P.N.

Procedure #: 015 RR RADIOACTIVITY RELEASE CONTROL GUIDELINE

E.P.G #	Task #	>-------------------- Task Title --------------------		
RR-1	000001	OBSERVE OFFSITE RADIOACTIVITY RELEASE	RATE GREATER THAN OR EQUAL TO ALRERT	RATE
	000002	ISOLATE ALL PRIM SYS DISCH INTO AREAS	OUTSIDE PRIM AND SECOND CNTMTS EXCEPT	SHUTDOWN: CORE COOLING: FIRE S
RR-2	000003	OBSERVE OFFSITE RADIOACTIVITY RELEASE	RATE APPROACHES OR EXCEEDS GENERAL	EMERGENCY RATE
	000004	OBSERVE A PRIMARY SYS DISCHARGING INTO	AN AREA OUTSIDE PRIMARY AND SECONDARY	CONTAINMENTS

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Task Analysis' Tasks by E.P.N.

Procedure #: 016 CONTINGENCY 1: LEVEL RESTORATION

E.P.G #	Task #	Task Title		
C1-1	000001	DETERMINE BORON INJECTION IS REQUIRED		
	000002	DETERMINE RPV WTR LVL CANNOT BE	DETERMINED	
	000003	DETERMINE RPV FLOODING IS REQUIRED		
C1-2	000004	CONTROL RPV LVL USING CONDENSATE SYS		
	000005	CONTROL RPV LVL USING HPCS		
	000006	CONTROL RPV LVL USING LPCI		
	000007	CONTROL RPV LVL USING LPCS		
	000008	LINEUP RHR SERVICE WTR CROSSTIE		
	000009	LINEUP FIRE SYS		
	000010	LINEUP ECCS KEEPFUL SYSTEMS		
	000011	LINEUP SLC (TEST TANK)		
	000012	LINEUP SLC (BORON TANK)		
C1-3	000013	OBSERVE RPV PRESS HIGH (GREATER THAN OR	EQUAL TO 425 PSIG)	
	000014	OBSERVE RPV PRESS INTERMEDIATE (GREATER	THAN OR EQUAL TO 100 PSIG)	
	000015	OBSERVE RPV PRESS LOW (< 100 PSIG)		
	000016	OBSERVE RPV LVL INCREASING		
	000017	OBSERVE RPV LVL DECREASING		
	000018	OBSERVE RPV WTR LVL TREND REVERSE		
	000019	OBSERVE RPV WTR LVL < 17.8 IN		
	000020	OBSERVE RPV PRESS CHANGE REGION WITHIN	GRAPHIC AID	
	000021	PREVENT AUTOMATIC INITIATION OF ADS		
C1-4	000022	DETERMINE HPCI AND RCIC ARE NOT	AVAILABLE	
	000023	OBSERVE RPV PRESS INCREASING		
	000024	OBSERVE RPV PRESS DECREASING		
	000025	DETERMINE HPCI AND RCIC ARE NOT	AVAILABLE	
	000026	OBSERVE RPV PRESS NOT INCREASING		
	000027	OBSERVE RPV WTR LVL GREATER THAN OR	EQUAL TO 159.3 IN	
C1-5	000028	OBSERVE RPV PRESS INCREASING		
	000029	OBSERVE RPV PRESS DECREASING OR CONSTANT		
C1-6	000030	OBSERVE RCIC NOT OPERATING		
	000031	START RCIC		
	000032	OBSERVE NO INJECTION SUBSYSTEM LINED UP		
	000033	OBSERVE AT LEAST ONE PUMP RUNNING IN	INJECTION SUBSYSTEM	
	000034	START PUMPS IN ALTERNATE SUBSYSTEMS	LINED UP FOR INJECTION	
	000035	OBSERVE RPV WTR LVL LESS THAN OR EQUAL	TO -14 IN	
	000036	OBSERVE NO SYSTEM SUBSYSTEM OR	ALTERNATE SUBSYSTEM LINED UP FOR	INJECTION
	000037	OBSERVE AT LEAST 1 PUMP RUNNING IN SYS	SUBSYS OR ALTERNATE SUBSYS LINED UP FOR	INJECTION
	000038	OBSERVE RPV WTR LVL INCREASING		INJECTION
	000039	OBSERVE RPV PRESS < 100 PSIG		INJECTION
C1-7	000040	DETERMINE HPCI AND RCIC NOT AVAILABLE		INJECTION
	000041	START PUMPS IN ALTERNATE INJECTION	SUBSYS LINED UP FOR INJECTION	
	000042	OBSERVE RPV PRESS INCREASING		
	000043	OBSERVE RPV PRESS INCREASING		
	000044	OBSERVE RPV WTR LVL LE -14 IN		

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Task Analysis' Tasks by E.P.N.

Procedure #: 017 CONTINGENCY 2: EMERGENCY RPV DEPRESSURIZATION

E.P.G #	Task #	Task Title		
C2-1	000001	DETERMINE BORON INJECTION IS REQUIRED		
	000002	DETERMINE ALL INJECTION INTO THE RPV	EXCEPT FOR BORON AND CRD HAS BEEN	TERMINATED
	000003	DETERMINE BORON INJECTION IS NOT	REQUIRED	
C2-1.2	000004	OBSERVE SUPPRESSION POOL WTR LVL <	190 FT	
	000005	OPEN ADS VLVS		
	000006	OBSERVE ANY ADS VLVS CANNOT BE OPENED		
	000007	OPEN SRVS		
C2-1.3	000008	OBSERVE < 3 SRVS OPEN		
	000009	OBSERVE RPV PRESS GREATER THAN OR EQUAL	TO 50 PSIG	
	000010	DEPRESSURIZE THE RPV USING	MAIN CONDENSER	
	000011	DEPRESSURIZE THE RPV USING	RHR (STEAM CONDENSING)	
	000012	DEPRESSURIZE THE RPV USING	MS LINE DRAINS	
	000013	DEPRESSURIZE THE RPV USING	RCIC STEAM LINE	
	000014	DEPRESSURIZE THE RPV USING	HPCI STEAM LINE	
	000015	HEAD VENT		
	000015	DEPRESSURIZE THE RPV USING	HEAD VENT	
	000016	HEAD VENT		
C2-1.3	000016	DEPRESSURIZE THE RPV USING	IC TUBE SIDE VENT	
C2-2	000017	DETERMINE IF RPV FLOODING IS REQUIRED		

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Task Analysis' Tasks by E.P.N.

Procedure #: 018 CONTINGENCY 3: STEAM COOLING

E.P.G #	Task #	Task Title		
C3-1	000001	DETERMINE RPV DEPRESSURIZATION IS	REQUIRED	
	000002	DETERMINE ANY INJECTION SYS SUBSYS OR	ALTERNATE IS LINED UP FOR INJECTION	
	000003	OBSERVE AT LEAST 1 PUMP RUNNING IN SYS	SUBSYS OR ALTERNATE SUBSYS LINED UP FOR INJECTION	
	000004	OBSERVE RPV WTR LVL LESS THAN OR EQUAL	TO -67.5 IN	
	000005	DETERMINE RPV WTR LVL CANNOT BE	DETERMINED	
	000006	OPEN SRV		
	000007	OBSERVE RPV PRESS LESS THAN OR EQUAL TO	700 PSIG	

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Task Analysis' Tasks by E.P.N.

Procedure #: 019 CONTINGENCY 4: CORE COOLING WITHOUT LVL RESTORATION

E.P.G #	Task #	Task Title		
C4-1	000001	OPEN ALL ADS VLVS		
	000002	OBSERVE ANY ADS VLV CANNOT BE OPENED		
	000003	OPEN SRVS		
C4-2	000004	OPERATE HPCS WITH SUCTION FROM	SUPPRESSION POOL	
	000005	OPERATE LPCS WITH SUCTION FROM	SUPPRESSION POOL	
	000006	DETERMINE ONE CORE SPRAY SUBSYS	OPERATIONAL WITH SUCTION FROM	SUPPRESSION POOL
	000007	OBSERVE RPV PRESS LESS THAN 289 PSIG		
	000008	TERMINATE RPV INJECTION FROM SOURCES	EXTERNAL TO PRIMARY CONTAINMENT	
C4-3	000009	OBSERVE RPV LVL GREATER THAN OR EQUAL TO -14. IN		

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Task Analysis' Tasks by E.P.N.

Procedure #: 020 CONTINGENCY 5: ALTERNATE SHUTDOWN COOLING

E.P.G #	Task #	Task Title		
C5-1	000001	INITIATE SUPPRESSION POOL COOLING		
C5-2	000002	CLOSE THE RPV HEAD VENTS		
	000003	CLOSE MSIVS		
	000004	CLOSE MAIN STEAM LINE DRAIN VLVS		
	000005	CLOSE RCIC ISOLATION VLVS		
C5-3	000006	OPEN SRV		
C5-4	000007	CONTROL RPV WTR LVL TO ESTABLISH FLOW	PATH THROUGH SRV BACK TO SUPPRESSION	POOL
C5-5	000008	START LPCS PUMP WITH SUCTION FROM	SUPPRESSION POOL	
C5-5-	000009	START LPCI PUMP WITH SUCTION FROM	SUPPRESSION POOL	
C5-6	000010	THROTTLE LPCS INJECTION TO MAX		
	000011	THROTTLE LPCI INJECTION TO MAX		
C5-6.1	000012	OBSERVE RPV PRESS DOES NOT STABILIZE AT	161 PSIG > SUPPRESSION CHAMBER PRESS	
	000013	START LPCS PUMP		
	000014	START LPCI PUMP		
C5-6.2	000015	OBSERVE RPV PRESS DOES NOT STABILIZE	< 230 PSIG	
	000016	OPEN SRV		
C5-6.3	000017	OBSERVE COOL DOWN RATE > 100 DEG/F/HR		
	000018	THROTTLE LPCS TO ESTABLISH COOLDOWN RATE < 100 DEG/F/HR		
	000019	THROTTLE LPCI TO ESTABLISH COOLDOWN RATE < 100 DEG/F/HR		
C5-7	000020	CONTROL SUPPRESSION POOL TEMP TO	MAINTAIN RPV TEMP > 70 DEG/F	

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Task Analysis' Tasks by E.P.N.

Procedure #: 021 CONTINGENCY 6: RPV FLOODING

E.P.G #	Task #	Task Title		
C6-1	000001	OBSERVE SRVS OPEN		
	000002	OPEN SRVS		
	000003	DETERMINE HPCS AVAILABLE FOR INJECTION		
	000004	DETERMINE MOTOR DRIVEN FEEDWATER PUMP	AVAILABLE FOR INJECTION	
	000005	CLOSE MSIVS		
	000006	CLOSE MAIN STEAM LINE DRAIN VLVS		
	000007	CLOSE RCIC/RHR STEAM CONDENSING	ISOLATION VLVS	
C6-2	000008	OBSERVE ANY CONTROL ROD NOT INSERTED	BEYOND 00	
C6-2.1	000009	TERMINATE ALL RPV INJECTION EXCEPT FOR	BORON AND CRD SYS	
	000010	OBSERVE RPV PRESS < MIN ALTERNATE	FLOODING PRESS	
	000011	DETERMINE < 2 SRVS CAN BE OPENED		
	000012	DETERMINE RPV WTR LVL CANNOT BE	DETERMINED	
	000013	DETERMINE RPV FLOODING IS NOT REQUIRED		
C6-2.2	000014	SLOWLY INCREASE INJECTION INTO RPV SYS	USING FEEDWATER PUMPS	
	000015	SLOWLY INCREASE INJECTION INTO RPV SYS	USING CONDENSATE BOOSTER PUMPS	
	000016	SLOWLY INCREASE INJECTION INTO RPV SYS	CONDENSATE PUMPS	
	000017	SLOWLY INCREASE INJECTION INTO RPV SYS	CRD	
	000018	OBSERVE 2 SRVS OPEN		
	000019	OBSERVE RPV PRESS > MIN ALTERNATE	FLOODING PRESS	
	000020	SLOWLY INCREASE INJECTION IN RPV USING	HPCS	
	000021	SLOWLY INCREASE INJECTION IN RPV USING	LPCS	
	000022	SLOWLY INCREASE INJECTION IN RPV USING	LPCI/RHR	
	000023	SLOWLY INCREASE INJECTION INTO RPV USING	SERVICE WTR TO RHR	
	000024	SLOWLY INCREASE INJECTION INTO RPV USING	FIRE SYS	
	000025	SLOWLY INCREASE INJECTION INTO RPV USING	ECCS KEEP-FULL	
C6-2.3	000026	THROTTLE FEEDWATER TO MAINTAIN 2 SRVS	OPEN AND RPV PRESS < MIN ALT FLOODING	PRESS
	000027	THROTTLE CONDENSATE TO MAINTAIN 2 SRVS	OPEN AND RPV PRESS < MIN ALT FLOODING	PRESS
	000028	THROTTLE CRD TO MAINTAIN 2 SRVS	OPEN AND RPV PRESS < MIN ALT FLOODING	PRESS
	000029	THROTTLE HPCS TO MAINTAIN 2 SRVS	OPEN AND RPV PRESS < MIN ALT FLOODING	PRESS
	000030	THROTTLE LPCS TO MAINTAIN 2 SRVS	OPEN AND RPV PRESS < MIN ALT FLOODING	PRESS
	000031	THROTTLE LPCI/RHR TO MAINTAIN 2 SRVS	OPEN AND RPV PRESS < MIN ALT FLOODING	PRESS
	000032	THROTTLE SERVICE WTR TO RHR TO MAINTAIN	2 SRVS OPEN AND RPV PRESS < MIN ALT	FLOODING PRESS
	000033	THROTTLE FIRE SYS TO MAINTAIN 2 SRVS	OPEN AND RPV PRESS < MIN ALT FLOODING	PRESS
	000034	THROTTLE ECCS KEEPFULL TO MAINTAIN 2 SRV	OPEN AND RPV PRESS < MIN ALT FLOODING	PRESS
C6-2.4	000035	OBSERVE ALL CONTROL RODS INSERTED BEYOND	POSITION 00	
	000036	VERIFY REACTOR SHUTDOWN		
	000037	DETERMINE NO BORON HAS BEEN INJECTED		
C6-3	000038	DETERMINE RPV LVL CANNOT BE DETERMINED		
C6-3.1	000039	SLOWLY INCREASE RPV INJECTION USING	HPCS	
	000040	SLOWLY INCREASE RPV INJECTION USING	FEEDWATER PUMPS	
	000041	SLOWLY INCREASE RPV INJECTION USING	LPCS	
	000042	SLOWLY INCREASE RPV INJECTION USING	LPCI	
	000043	SLOWLY INCREASE RPV INJECTION USING	CONDENSATE BOOSTER PUMPS	
	000044	SLOWLY INCREASE RPV INJECTION USING	CONDENSATE PUMPS	

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Task Analysis' Tasks by E.P.N.

Procedure #: 021 CONTINGENCY 6: RPV FLOODING

E.P.G #	Task #	Task Title		
C6-3.1	000045	SLOWLY INCREASE RPV INJECTION USING	CRD	
	000046	SLOWLY INCREASE RPV INJECTION USING	SERVICE WATER TO RHR	
	000047	SLOWLY INCREASE RPV INJECTION USING	FIRE SYS	
	000048	SLOWLY INCREASE RPV INJECTION USING	ECCS KEEPFULL	
	000049	SLOWLY INCREASE RPV INJECTION USING	SLC TEST TANK	
	000050	SLOWLY INCREASE RPV INJECTION USING	SLC BORON TANK	
C6-3.2	000051	OBSERVE 3 SRVS OPEN		
	000052	OBSERVE RPV PRESS GREATER THAN OR EQUAL	TO 80 PSIG ABOVE SUPPRESSION CHAMBER	PRESS
	000053	THROTTLE HPCS TO MAINTAIN 3 SRVS OPEN	AND RPV PRESS GREATER THAN OR EQUAL TO	80 PSIG ABOVE SUPPRESSION CHAM
	000054	THROTTLE FEEDWATER TO MAINTAIN 3 SRVS	OPEN AND RPV PRESS GREATER THAN OR EQUAL	TO 80 PSIG ABOVE SUPPRESS CHAM
	000055	THROTTLE LPCS TO MAINTAIN 3 SRVS OPEN	AND RPV PRESS GREATER THAN OR EQUAL TO	80 PSIG ABOVE SUPPRESSION CHAM
	000056	THROTTLE LPCI TO MAINTAIN 3 SRVS OPEN	AND RPV PRESS GREATER THAN OR EQUAL TO	80 PSIG ABOVE SUPPRESSION CHAM
	000057	THROTTLE CONDENSATE TO MAINTAIN 3 SRVS	OPEN AND RPV PRESS GE 80 PSIG ABOVE	SUPPRESSION CHAMBER PRESS
	000058	THROTTLE CRD TO MAINTAIN 3 SRVS OPEN AND	RPV PRESS GE 80 PSIG ABOVE SUPPRESSION	CHAMBER PRESS
	000059	THROTTLE SERVICE WTR TO RHR TO MAINTAIN	3 SRVS OPEN AND RPV PRESS GE 80 PSIG	ABOVE SUPPRESSION CHAMBER PRES
	000060	THROTTLE FIRE SYS TO MAINTAIN 3 SRVS	OPEN AND RPV PRESS GE 80 PSIG ABOVE	SUPPRESSION CHAMBER PRESS
	000061	THROTTLE ECCS KEEPFULL TO MAINTAIN 3 SRV	OPEN AND RPV PRESS GE 80 PSIG ABOVE	SUPPRESSION CHAMBER PRESS
	000062	THROTTLE SLC TEST TANK TO MAINTAIN 3 SRV	OPEN AND RPV PRESS GE 80 PSIG ABOVE	SUPPRESSION CHAMBER PRESS
	000063	THROTTLE SLC BORON TEST TANK TO MAINTAIN	3 SRVS OPEN AND RPV PRESS GE 80 PSIG	ABOVE SUPPRESSION CHAMBER PRES
C6-4	000064	DETERMINE RPV WTR LVL CAN BE DETERMINED		ABOVE SUPPRESSION CHAMBER PRES
	000065	INREASE RPV INJECTION USING	HPCS	
	000066	INREASE RPV INJECTION USING	FEEDWATER PUMPS	
	000067	INREASE RPV INJECTION USING	LPCS	
	000068	INREASE RPV INJECTION USING	LPCI	
	000069	INREASE RPV INJECTION USING	CONDENSATE PUMPS	
	000070	INREASE RPV INJECTION USING	CONDENSATE BOOSTER PUMPS	
	000071	INREASE RPV INJECTION USING	CRD	
	000072	INREASE RPV INJECTION USING	RHR SERVICE WTR TIE	
	000073	INREASE RPV INJECTION USING	FIRE SYS	
	000074	INREASE RPV INJECTION USING	ECCS KEEPFULL	
	000075	INREASE RPV INJECTION USING	SLC TEST TANK	
	000076	INREASE RPV INJECTION USING	SLC BORON TANK	
C6-5	000077	DETERMINE RPV WTR LVL CANNOT BE	DETERMINED	
C6-5.1	000078	FILL RPV LVL INST REFERENCE COLUMNS		
C6-5.2	000079	OBSERVE DRYWELL TEMP < 212 DEG/F		
	000080	DETERMINE RPV WTR LVL CAN BE DETERMINED		
C6-5.3	000081	DETERMINE RPV IS FILLED		
	000082	OBSERVE RPV PRESS GE 80 PSIG ABOVE	SUPPRESSION CHAMBER PRESS	
	000083	TERMINATE RPV INJECTION		
	000084	REDUCE RPV LVL		
C6-5.4	000085	DETERMINE RPV WTR LVL INDICATION NOT	RESTORED WITHIN MAX CORE RECOVERY TIME	LIMIT
C6-6	000086	OBSERVE SUPPRESSION CHAMBER PRESS IS	MAINTAINED BELOW PRIMARY CONTAINMENT	DESIGN PRESS

NMP - 2

Task Analysis' Tasks by E.P.N.

Procedure #: 022 CONTINGENCY 7: LEVEL/POWER CONTROL

E.P.G #	Task #	Task Title
C7-1	000001	DETERMINE RPV FLOODING IS REQUIRED
	000002	DETERMINE RPV WTR LVL CANNOT BE DETERMINED
	000003	CONTROL INJECTION TO RPV TO MAINTAIN RX POWER > 8% BUT LOW AS PRACTICABLE
	000004	DETERMINE RX POWER CANNOT BE DETERMINED
	000005	OBSERVE RX POWER CANNOT BE MAINTAINED GE 8%
	000006	OBSERVE REACTOR POWER > 3%
	000007	DETERMINE REACTOR POWER CANNOT BE DETERMINED
	000008	OBSERVE SUPPRESSION POOL TEMP > 111 DEG OF F
	000009	OBSERVE ANY SRV OPEN
	000010	OBSERVE DRYWELL PRESS > 1.68 PSIG
	000011	TERMINATE INJECTION INTO RPV EXCEPT BORON AND CRD
	000012	OBSERVE RPV WTR LVL GE -14 IN
	000013	OBSERVE RX POWER < 4%
	000014	OBSERVE ALL SRVS REMAIN CLOSED
	000015	OBSERVE DRYWELL PRESS < 1.68 PSIG
C7-2	000016	DETERMINE EMERGENCY RPV DEPRESSURIZATION IS REQUIRED
	000017	OBSERVE RX POWER > 4%
	000018	DETERMINE RX POWER CANNOT BE DETERMINED
	000019	OBSERVE RPV WTR LVL GE -14 IN
	000020	OBSERVE SUPPRESSION POOL TEMP > 111 DEG OF F
	000021	OBSERVE ANY SRV OPEN
	000022	OBSERVE DRYWELL PRESS > 1.68 PSIG
	000023	CONTROL RPV WTR LVL BETWEEN 159.3 AND 202.3 IN USING CONDENSATE/FEEDWATER
	000024	CONTROL RPV WTR LVL BETWEEN 159.3 AND 202.3 IN USING CRD
	000025	CONTROL RPV WTR LVL BETWEEN 159.3 AND 202.3 IN USING RCIC
	000026	OBSERVE RPV WTR LVL CANNOT BE MAINTAINED BETWEEN 159.3 AND 202.3 IN
	000027	CONTROL RPV WTR LVL > -14 IN
C7-2.1	000028	TERMINATE RPV INJECTION EXCEPT FOR BORON AND CRD SYS
	000029	OBSERVE RPV PRESS < MIN ALT RPV FLOODING PRESS
	000030	OBSERVE 2 OR MORE SRVS OPEN
	000031	CONTROL PRESS AT MIN ALT FLOODING PRESS
	000032	OBSERVE <2 SRVS CAN BE OPENED
C7-2.2	000033	CONTROL RPV WTR LVL > -14 IN USING CONDENSATE/FEEDWATER
	000034	CONTROL RPV WTR LVL > -14 IN USING CR
	000035	CONTROL RPV WTR LVL > -14 IN USING RCIC
	000036	OBSERVE RPV WTR LVL < -14 IN
	000037	CONTROL RPV WTR LVL > -14 IN USING HPCL
	000038	CONTROL RPV WTR LVL > -14 IN USING LPCS
	000039	CONTROL RPV WTR LVL > -14 IN USING LPCI
	000040	CONTROL RPV WTR LVL > -14 IN USING FIRE SYS
	000041	CONTROL RPV WTR LVL > -14 IN USING ECCS KEEPFULL
	000042	CONTROL RPV WTR LVL > -14 IN USING SERVICE WTR TO RHR
C7-3	000043	OBSERVE RX POWER INCREASE
	000044	OBSERVE SLC TANK LVL LE 2950 GAL
	000045	OBSERVE ALL CONTROL RODS INSERTED BEYOND 00
	000046	CONTROL RPV WTR LVL BETWEEN 159.3 AND 202.3 IN
	000047	OBSERVE RPV WTR LVL < 159.3 IN

NMP - 2
Task Analysis' Tasks by E.P.N.

Procedure #: 022 CONTINGENCY 7: LEVEL/POWER CONTROL

E.P.G #	Task #	Task Title
C7-3	000048	CONTROL RPV WTR LVL > -14 IN
	000049	OBSERVE RPV WTR LVL < -14 IN
	000050	DETERMINE IF ALT SHUTDOWN COOLING REQUIRED

APPENDIX F

GENERIC TO SPECIFIC TASK EOPs

NINE MILE POINT NUCLEAR STATION UNIT #2

EMERGENCY OPERATING PROCEDURE

PROCEDURE NO. N2-EOP-1

EMERGENCY OPERATING PROCEDURE DEVELOPMENT

		DATE AND INITIALS		
APPROVALS	SIGNATURES	REVISION 0	REVISION 1	REVISION 2
Supervisor Operations	Ralph W Fayne	RWF 2/12/85		
Station Superintendent	RB Abbott	RBA 2/12/85		

Summary of Pages

NIAGARA MOHAWK POWER CORPORATION

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Table of Contents

1.0 Introduction

1.1 Purpose

The purpose of this procedure is to provide guidance for the development of Emergency Operating Procedures for Nine Mile Point Unit 2.

1.2 Scope

This procedure applies to the initial development of EOPs and revisions. This process involves development of a Plant Specific Technical Guideline and Emergency Operating Procedures.

2.0 References

2.1 Nine Mile Point Unit 2 FSAR

2.2 Emergency Operating Procedures Implementation Guideline (INPO 82-016, Rev. 1)

2.3 Response to Supplement 1 to NUREG 9737, Item 7.2b, page 15

3.0 Definitions

3.1 Emergency Procedure Guideline (EPG)

This is a generic document, developed by the BWR Owners Group (BWROG), on which the Plant Specific Technical Guideline is based.

3.2 Plant Specific Technical Guideline (PSTG)

This is the document on which the Emergency Operating Procedures is based. It is developed by incorporating plant specific information into the EPG.

3.3 Emergency Operating Procedures

This document provides operation actions necessary to mitigate the consequences of transients and accidents.

3.4 Nine Mile Point Unit 2 EOP Writers Guide

This document provides instructions to the EOP Writers concerning format and content of the Emergency Operating Procedures.

3.5 Verification

This is the evaluation performed to verify technical accuracy of the PSTG, and the technical accuracy and written correctness of the EOPs.

3.6 Validation

This is the process which provides assurance that the EOPs can be used successfully in emergency situations.

4.0 Responsibilities

4.1 Station Superintendent

The Station Superintendent shall have the overall responsibility for development of EOPs.

4.2 Operations Supervisor

The Operations Supervisor shall assign the responsibility of EOP development to EOP Writers.

4.3 EOP Writers

EOP Writers shall develop Emergency Operating Procedures in accordance with this procedure.

5.0 Plant Specific Technical Guideline (PSTG)

A PSTG will be developed by the EOP Writers using the latest revision of the General Electric Boiling Water Reactor Owners Group Emergency Procedure Guideline for which a Safety Evaluation Report (SER) has been issued by the NRC. The EOP writers will obtain and review the following plant specific technical information (EOP source documents) as required to develop the PSTG:

1. EPGS; with Appendices A, B and C,
2. Nine Mile Point Unit 2 FSAR,
3. Operating Procedures,
4. Technical Specification,
5. Plant-specific drawings which form the data base for testing and operation of the plant,
6. Engineering approved vendor documents.

The EOP writers will review the EPG step-by-step, adding specific information where required, and making deletions where required. Additions and deletions will be documented, along with justifications, on an EPG Change Form (EOP-FORM1).

The EPG-PSTG, applicable EPG Change Forms and calculation procedures shall be considered the PSTG package.

6.0 Emergency Operating Procedures

The EOP writers will follow the PSTG step-by-step and, using the Nine Mile Point Unit 2 EOP Writer's Guide (N2-EOP-4), develop a set of Emergency Operating Procedures. Differences between the PSTG steps and EOP steps will be documented, with justification, on Step Documentation forms (EOP-FORM 2). All Step Documentation forms will be submitted with the EOPs for verification.

Additions to Operating Procedures will be made as required to assure adequate support of the EOPs.

The EOPs shall be verified in accordance with the EOP Verification Procedure (N2-EOP-2).

The EOPs shall be validated in accordance with the EOP Validation Procedure (N2-EOP-3).

7.0 EOP Training Guide

Concurrent with the development of the Plant-Specific Guideline and EOPs, a Training Guide will be developed. The Training Guide will contain the following:

- GE BWR Owner's Group Generic Emergency Procedure Guideline.
- The Plant-Specific Technical Guideline (including Addition/Deletion Forms).
- The Step Documentation forms.
- The EOPs.
- A step-by-step breakdown of the technical bases for the EOP decisions and operator actions.
- The calculational procedures and references for data used in developing EOPs.

Using the Training Guide, the Training Department, assisted by the EOP Writing Team where required, can develop lesson plans for the Training Program.

8.0 Documentation

The following will provide documentation of the EOP development process:

1. Generic EPG,
2. PSTG package,
3. PSTG Verification Package (see EOP Verification Procedure N2-EOP-2),
4. EOP Verification Package (see EOP Verification Procedure N2-EOP-2),
5. Step Documentation forms,
6. EOP Validation Package (see EOP Validation procedure N2-EOP-3).

The above shall be maintained as part of the Permanent Plant file.

EPG CHANGE FORM EOP-FORM 1

GENERIC
EPG STEP:

DESCRIPTION OF CHANGE:

JUSTIFICATION:

EOP WRITER:________________ DATE:_______

STEP DOCUMENTATION

EOP-FORM 2
EOP No._____Rev. No.____

EOP STEP:

NMP II
PSTG STEP:

JUSTIFICATION OF DIFFERENCES:

EOP WRITER:__________________DATE:_______

NINE MILE POINT NUCLEAR STATION UNIT #2

EMERGENCY OPERATING PROCEDURE

PROCEDURE NO. N2-EOP-2

EMERGENCY OPERATING PROCEDURE VERIFICATION

APPROVALS	SIGNATURES	DATE AND INITIALS REVISION 0	REVISION 1	REVISION 2
Supervisor Operations	Ralph W Gayne	RWG 2/17/85		
Station Superintendent	RB Abbott	RBA 2/12/85		

Summary of Pages

Revision 0 (Effective 2/12/85)

Pages	Date
i, 1-9	February, 1985

NIAGARA MOHAWK POWER CORPORATION

THIS PROCEDURE NOT TO BE USED
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Table of Contents

1.0 Introduction

1.1 Purpose

The purpose of this procedure is to provide guidance for the process of verification of the Plant Specific Technical Guideline (PSTG) and the Emergency Operating Procedures (EOPs) at Nine Mile Point Unit 2.

1.2 Scope

This procedure will describe and direct the verification process. The verification process is meant to ensure the technical accuracy of the Plant Specific Technical Guideline and the EOPs, and the correct implementation of the Writer's Guide in the EOPs. This procedure applies to the initial PSTG and EOPs, and revisions.

2.0 References

2.1 Emergency Operating Procedure Verification Guideline (INPO 83-004)

2.2 Nine Mile Point Unit 2 EOP Writer's Guide

2.3 Nine Mile Point Unit 2 FSAR

3.0 Definitions

3.1 Emergency Procedure Guideline (EPG)

This is a generic document, developed by the BWR Owners Group, on which the Plant Specific Technical Guideline is based.

3.2 Plant Specific Technical Guideline (PSTG)

This is the document on which the Emergency Operating Procedures is based. It is developed by incorporating plant specifics into the EPG.

3.3 Emergency Operating Procedures

This document provides operator actions necessary to mitigate the consequences of transients and accidents.

3.4 Nine Mile Point Unit 2 EOP Writer's Guide

This document provides instructions to the EOP Writers concerning format and content of the Emergency Operating Procedures.

3.5 Verification

This is the evaluation performed to technical accuracy of the PSTG, and the technical accuracy and written correctness of the EOPs.

4.0 Responsibilities

4.1 Station Superintendent

The Station Superintendent shall have the overall responsibility for the development of EOPs. The Station Superintendent shall assign the responsibility for EOP verification.

4.2 Operations Supervisor

The Operations Supervisor shall determine the requirement for, and scope of, verification and approve verification resolutions. The Operations Supervisor shall assign the responsibility of EOP writing.

4.3 EOP Writers

EOP Writers shall normally be members of the plant operating department designated by the Operations Supervisor. Writers shall have the responsibility of resolving any discrepancies disclosed during the verification process.

5.0 Plant Specific Technical Guideline Verification

5.1 Verification Requirements

The Plant Specific Technical Guideline will be verified using the following criteria:

1. Generic Emergency Procedure Guidelines have been properly implemented.
2. Plant specific numbers are correct.
3. Calculational procedures are correct.

5.2 Verification Process

Steps, cautions and notes will be verified using the criteria listed in Section 5.1. A PSTG Verification Form will be prepared each time a verification is performed in order to document the process. EOP-FORM 3 is the PSTG Verification Form. The following information will be included:

1. PSTG revision being verified.
2. The applicable Generic Emergency Procedure Guideline revision number.
3. Start date.
4. Scope of verification (specific steps or "all").
5. Source documents used.
6. Name of person(s) performing verification.
7. A list of discrepancies including step, caution or calculation number, and discrepancy sheet number.
8. Discrepancy Form numbers applicable (entered upon approval of resolutions).
9. Signature of approval of verification process.
10. Date of approval.

Part I of a PSTG Discrepancy Form (EOP-FORM 4) will be completed by the person(s) performing the verification for each discrepancy. The following information will be included:

1. Discrepancy Form number.
2. Step/caution/calculation number.
3. Description of discrepancy.
4. Signature of the person who identified the discrepancy.
5. Date.

Note: When more than one person is responsible for verification, one person should assign discrepancy numbers.

The Discrepancy Form number will consist of two parts. The first part will be the revision number of the PSTG being reviewed. The second number will be the sequential number assigned to the discrepancy. For example, the first discrepancy of the revision "0" PSTG would be numbered: Number 0 - 1.

The person(s) performing the evaluation will be provided with the applicable revision of the Generic Emergency Procedure Guideline, EPG Change Forms, the PSTG and calculational procedures (PSTG Package). The person(s) performing the verification shall independently review any source documents required to verify the technical accuracy of the PSTG.

All PSTG Discrepancy Forms will be attached to the PSTG Verification Form. This will be the PSTG Verification Package.

When the review process is complete, the Verification Package (Verification Form and Discrepancy sheets) and PSTG Package will be returned to the Operations Supervisor for resolution.

5.3 Resolution

When the PSTG Package and Verification Package are returned to the Operations Supervisor, he will assign the responsibility of resolution. Assigned personnel are EOP Writers (see Section 3.3). The EOP Writers will resolve each discrepancy and complete Part II of each Discrepancy Form, entering the following information:

1. Description of resolution.
2. Signature.
3. Date.

5.4 Review/Approval

The completed Verification Package will then be returned to the Operations Supervisor for review and approval. The Operations Supervisor, after reviewing the Verification Package, will return it to the EOP Writers if a resolution is found to be unsatisfactory, or approve it by completing the Verification Form with the applicable discrepancy sheet numbers, signature and date.

6.0 Emergency Operating Procedure Verification

6.1 Verification Requirements

The EOPs shall be verified using the following criteria:

1. The PSTG has been properly implemented.
2. The EOPs have been written in accordance with the EOP Writer's Guide.
3. The information required in the EOPs is available to the operator in the control room.
4. The parameter values required by the EOPs are consistent with the available control room indications.
5. The controls and indications required to perform tasks called for in the EOPs are available to the control room operator.
6. The nomenclature used in the EOPs is consistent with that used in the control room and plant.
7. The language and level of information is compatible with the qualifications, training and experience of a licensed operator.
8. Differences between the PSTG and the EOP are properly justified (Step Documentation Forms).

6.2 Verification Process

Each step, caution, graph and note will be verified using the criteria listed in Section 6.1. As many EOP Verification Forms (EOP-FORM 5) as required will be completed for each EOP verified to document the process. The following information will be included:

1. EOP number.
2. PSTG revision number.
3. EOP revision number.
4. Start date.
5. Scope of verification (specific steps or "all").
6. Name of person(s) performing verification and initials.
7. A list of all steps verified with either initials indicating acceptance, or a Discrepancy Form number indicating a discrepancy.
8. Sheet number (if more than one form is required).
9. Discrepancy Form numbers - entered upon approval of resolutions.
10. Signature of approval of the verification process.
11. Date of approval.

Notes, cautions and graphs will be verified as part of the step to which they apply.

Part I of an EOP Verification Discrepancy Form (EOP-FORM 6) will be completed by the person performing the verification for each step not in compliance with the Section 6.1 criteria. The following information will be included:

1. EOP being verified.
2. Discrepancy Form number.
3. The EOP step number.
4. A description of the discrepancy.
5. Signature of the person identifying the discrepancy
6. Date.

Note: When more than one person is responsible for verification, one person should be responsible for assigning discrepancy numbers.

The Discrepancy Form number will consist of two parts. The first is the revision number of the EOP being verified. The second is the sequential number assigned to the discrepancy. For example, the first discrepancy in revision "0" of EOP-RL would be number: Number 0 - 1 .

The person(s) assigned the responsibility of EOP verification will be provided with the following material:

1. The EOP(s) to be verified
2. The PSTG
3. The EOP Writer's Guide
4. Step Documentation forms.

The person(s) responsible for the verification will review these documents, any other source material required and the control room to assure that the Section 6.1 criteria is met for each EOP step.

All EOP Verification Discrepancy Forms will be attached to the EOP Verification Form, this will be the EOP Verification Package.

Upon completion of the review by the person(s) responsible for verification, the Verification Package, PSTG and Step Documentation Forms will be returned to the Operations Supervisor.

6.3 Resolution

The Verification Package is returned to the Operations Supervisor. The Operations Supervisor will assign the responsibility of resolution. Assigned personnel are EOP Writers (see Section 3.3). The EOP Writers will resolve each discrepancy and complete Part II of the Discrepancy Forms, entering the following information:

1. A description of the resolution
2. Signature
3. Date.

6.4 Review/Approval

The completed EOP Verification Package is returned to the Operations Supervisor for review and approval. The Operations Supervisor, after reviewing the package, will return it to the EOP Writers if a resolution is found to be unsatisfactory, or approve it by completing the Verification Form. Completion of the form requires entering the applicable Discrepancy Sheet numbers, signature and date.

7.0 Documentation

The PSTG Verification Package and the EOP Verification Package provide documentation of the verification process.

Plant Specific Technical Guideline
VERIFICATION FORM

EOP-FORM 3

PSTG Rev. No.:__________ Scope of Verification:____________________

EPG Rev. No.:__________ Person(s) Performing Verification:____________________

Start Date:__________

Source Documents:

PSTG: Step, Caution, Calculation#	Discrepancy Form #	PSTG: Step, Caution, Calculation#	Discrepancy Form #	PSTG: Step, Caution, Calculation#	Discrepancy Form #

Discrepancy Form No.:__________ to __________ Resolved satisfactorily:__________

Signature of Operations Supervisor:____________________ Date:______

PSTG

DISCREPANCY FORM
Number:______

Part I to be completed by persone performing verification)

PSTG Step/Caution/Calculation Number:________________________

Description of Discrepancy:

Signature:________________________ Date:______________

Part II: (to be completed by EOP Writer)

Description of Resolution:

Signature:________________________ Date:______________

EOP VERIFICATION FORM EOP-FORM 5

EOP ______ Rev. _____

PSTG Rev. No.: __________ Scope of Verification: ______________________________

Start Date: __________ Person(s) Performing Verification: __________ / __________
Name Initials

__________ / __________
Name Initials

__________ / __________
Name Initials

Sheet No.: __________

Step No.	Sect. 5.1 Criteria Met (Initials)	Discrepancy Number	Step No.	Sect. 5.1 Criteria Met (Initials)	Discrepancy Number	Step No.	Sect. 5.1 Criteria Met (Initials)	Discrepancy Number

Discrepancy Form No.: __________ to __________ Resolved satisfactorily: __________

Signature of Operations Supervisor: ______________________________ Date: ______

EOP VERIFICATION DISCREPANCY FORM

EOP-FORM 6

Part I (to be completed by person performing the verification)

EOP Step Number: ______________

Description of Discrepancy:

Signature: ______________________________ Date: ____________________

Part II: (to be completed by EOP Writer)

Description of Resolution:

EOP Writer:

Signature: ______________________________ Date: ____________________

NINE MILE POINT NUCLEAR STATION UNIT #2

EMERGENCY OPERATING PROCEDURE

PROCEDURE NO. N2-EOP-3

EMERGENCY OPERATING PROCEDURE VALIDATION

APPROVALS	SIGNATURES	DATE AND INITIALS REVISION 0	REVISION 1	REVISION 2
Supervisor Operations	Ralph W. Hayne	RWH 2/12/85		
Station Superintendent	RB Abbott	RBA 2/12/85		

Summary of Pages

Revision 0 (Effective 2/12/85)

Pages	Date
i, 1-12	February, 1985

NIAGARA MOHAWK POWER CORPORATION

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Table of Contents

1.0 Introduction

1.1 Purpose

The purpose of this procedure is to provide guidance for the process of validation of the Emergency Operating Procedures at Nine Mile Point Unit 2.

1.2 Scope

This procedure will describe and direct the validation process. Validation provides assurance that the Emergency Operating Procedures are accurate, sound and usable. This procedure applies to the initial Emergency Operating Procedures and revisions.

2.0 References

2.1 Emergency Operating Procedures Validation Guideline (INPO 83-006)

2.2 Nine Mile Point Unit 2 FSAR

3.0 Definitions

3.1 Emergency Operating Procedure (EOP)

A plant procedure which provides the operator actions necessary to mitigate the consequences of transients and accidents.

3.2 Validation

A process which ensures that EOPs can be used succesfully in emergency situations.

3.3 Support Procedures

Procedures (other EOPs, Operating Procedures) required to supplement the use of an EOP.

3.4 Scenario

An event or sequency of events developed to test an EOP, or a specific section of an EOP.

3.5 Table-Top Validation

A discussion method of checking EOPs using specific criteria.

3.6 Walk-Through Validation

A simulated response to a scenario done in the plant control room.

3.7 Simulator Validation

A response to a real time simulated scenario done on a plant reference simulator.

4.0 Responsibility

4.1 Station Superintendent

The Station Superintendent shall have the overall responsibility for the development of Emergency Operating procedures.

4.2 Operations Supervisor

The Operations Supervisor shall determine the requirement for, the scope of, and method (or methods) of, validation, and approve validation resolutions.

The Operations Supervisor shall assign the responsibility of EOP writing. The Operations Supervisor shall assign the responsibility of validation.

4.3 Reviewers

Persons performing the validation shall be referred to as reviewers. They shall complete the process as directed by this procedure.

4.4 EOP Writers

EOP writers shall normally be members of the plant operation department designated by the Operations Supervisor. EOP writers shall have the responsibility of resolution of discrepancies disclosed during the validation process.

5.0 Emergency Operating Procedure Validation

5.1 Validation Requirements

The Emergency Operating Procedures will be validated using specific criteria. The applicability of the criteria is dependent on the method. Each validation method will use the acceptance criteria as presented in Table 1. The validation methods are:

1. Table-Top,
2. Walk-through,
3. Simulator.

5.2 Validation Process

The validation process will be initiated by the Operations Supervisor (see Section 4.2). The Operations Supervisor will

complete Part I of the Validation form (EOP-FORM 7). The following information will be included:

1. EOP Title,
2. EOP Number,
3. EOP Revision,
4. Scope of Validation (specific steps or "All),
5. Method(s) to be used,
6. Names of reviewer(s),
7. Signature of the operations supervisor,
8. Date.

An EOP Assessment Form (EOP-FORM 8) shall be filled out by a reviewer for each method of assessment utilized. The following information will be included:

1. EOP Number,
2. EOP Title,
3. EOP Revision,
4. Assessment method,
5. Name of reviewer(s),
6. Date,
7. Names of Operations personnel involved,
8. Position held by operator, license held by operator (enter "None" if not licensed),
9. Check-off for completion of step-by-step discussion (Table-Top method only),
10. Description of scenario(s) (a brief description of scenario(s) used to test the procedure).

Part I of a Validation Discrepancy Form (EOP-FORM 9) shall be filled out by the reviewer for each discrepancy disclosed during assessment. The following information will be included:

1. Assessment method,
2. Discrepancy number (a sequential number will be assigned to each discrepancy disclosed during a specific method of assessment),
3. EOP Number,
4. EOP Revision,
5. Description of discrepancy (the description should include sufficient detail to properly define problem, and suggested resolution(s) resulting from discussion with Operations personnel),
6. Signature of Reviewer,
7. Date.

Validation Discrepancy Forms should be attached to the applicable EOP Assessment Form.

The reviewer or reviewers will be responsible for the preparation and assessment phases of the validation. The preparation and assessment for each method is described in the following sections.

5.2.1 Table-Top Method

Preparation for the table-top method for validation involves the following:

1. Selection of operating personnel to participate (minimum of 3, SRO or RO),
2. Obtaining copies of the EOP to be validated,
3. Obtaining any support procedures which might be required during discussion,
4. Reviewing EOP and acceptance criteria with Operations personnel.

An EOP Assessment Form shall be completed by the reviewer.

The assessment should involve a step-by-step discussion of the procedure, talk-through of possible scenarios involving use of the procedures, and documentation of discrepancies. Possible resolution of discrepancies should be discussed.

The step-by-step discussion should involve identification of the operator tasks required for each step. The discussion of possible scenarios may be done during or after the step-by-step discussion. The reviewer may specify equipment failures as required to test the procedures. Discussion of possible discrepancies should involve causes and resolutions. All discrepancies should be documented on a Validation Discrepancy Form (EOP-FORM 9).

5.2.2 Walk-Through Method

Preparation for the walk-through method of validation involves the following:

1. Selection of operating personnel to participate. The number and qualifications of people used to staff the control room should be consistent with the staffing in an actual situation. Others can be involved for comment and discussion.
2. Obtaining copies of the EOP to be validated.
3. Assuring availability of support procedures in the control room
4. Reviewing the EOP and acceptance criteria with the operations personnel.
5. Preparation of scenario(s) to be used for assessment of procedures.
6. Arranging use of the control room with the operations supervisor.

An EOP Assessment Form should be completed.

The walk-through should involve a simulated response to symptoms or conditions specified in the scenario. The walk-through can be interupted for discussion of tasks and possible discrepancies; however, an attempt should be made to maintain the continuity of the exercise.

At the conclusion of each scĕnario exercise, discrepancies should be identified, discussed and documented on a Validation Discrepancy Form (EOP-FORM 9).

The number of different scenarios required is that necessary to test the procedure being verified, branches from the procedure and references to other procedures.

5.2.3 Simulator Method

Preparation for the simulator method includes the following:

1. Selection of operations personnel to participate. The number and qualifications of people used to staff the simulator should be consistent with the staffing in an actual situation. Others can be involved for comment and discussion.
2. Obtaining copies of the EOP to be verified.
3. Obtaining any support procedures required.
4. Reviewing the EOP and acceptance criteria with the operations personnel.
5. Preparation of scenario(s) to be used for assessment of procedures.
6. Reserving simulator time with the Nine Mile Point Training Department.

An EOP Assessment Form should be completed by the reviewer.

The simulator assessment should involve real time response to the scenario(s) developed to validate the EOP. The reviewer should present initial plant conditions to the operations personnel prior to each exercise.

The exercise (response to a simulated incident) should run without interuption until completion, or as long as required to complete the assessment. Notes can be taken by the reviewer and non-participating operations personnel concerning possible procedure discrepancies. At the conclusion of each exercise, the possible discrepancies should be discussed. Discussion should include possible causes and resolutions, and differences between the simulator and plant equipment which would affect the response. Discrepancies should be documented on a Validation Discrepancy Form.

The number and type of scenarios is dependent on the procedure being validated, and should be sufficient to test the EOP, branches to other procedures and references to other procedures.

5.3 Resolution

Upon completion of the required assessments, Part II of the EOP Validation Form shall be completed by a reviewer. The EOP Assessment Form/Validation Discrepancy Form group(s) should be attached to the EOP Validation Form. This shall be the EOP Validation Package. The Validation Package is then returned to the operations supervisor.

The operations supervisor will assign the responsibility of resolution to EOP writers. The EOP writers will resolve all discrepancies and complete Part II of each Validation Discrepancy Form. The following

information shall be included:

1. Description of the resolution,
2. Signature,
3. Date.

When resolutions are completed, the EOP Validation Package is returned to the operations supervisor for review and approval. After reviewing the package, the operations supervisor will return the Validation Package to the EOP writers if any resolution is unsatisfactory, or complete Part III of the EOP Validation Form (with his signature and date) denoting approval of the Validation process.

6. <u>Documentation</u>

The EOP Validation package shall provide documentation of the Validation process.

TABLE 1

EVALUATION CRITERIA

Legend:

x - applicable to the validation method

o - not applicable to the validation method

T-T - table-top validation method

W-T - walk-through validation method

S - simulator validation method

T-T	W-T	S	
x	x	x	1. There is sufficient information to perform the specified actions.
x	x	x	2. The labeling, abbreviations, and locations as provided in the EOP are sufficient to enable the operator to find the needed equipment.
x	x	x	3. The EOP is not missing information needed to manage the emergency condition.
x	x	x	4. The contingency actions are sufficient to address the symptoms.
x	x	x	5. The titles and number are sufficiently descriptive to enable the operation to find referenced and branched procedures.
x	x	x	6. The EOP is easy to interpret and follow.
x	x	x	7. The figures and tables are easy to read with accuracy.

T-T	W-T	S	
x	x	x	8. The values on figures and charts can be easily determined.
x	x	x	9. Caution and note statements are readily understandable.
x	x	x	10. The actions specified in the procedure can be performed in the designated sequence.
x	x	x	11. All systems or components which could be utilized for given symptoms are used.
o	x	x	12. The information from the plant instrumentation can be obtained, as specified by the EOP.
o	o	x	13. The plant symptoms specified by the EOP are adequate to enable the operator to select the applicable EOP.
o	o	x	14. The EOP entry conditions are appropriate for the plant parameters displayed to the operator.
o	o	x	16. The plant responses agree with the EOP basis.
o	x	x	17. The instrument readings and tolerances stated in the EOP are consistent with the instrument values displayed on the instruments.
o	x	o	18. The instrument readings and tolerances specified by the EOP for remotely located instruments are accurate.
o	x	x	19. If time intervals are specified, the procedure action steps can be performed on the plant within or at the designated time intervals.
x	x	x	20. The procedure action steps can be performed by the operation shift.
x	x	x	21. The operating shift can follow the designated action step sequences.

T-T	W-T	S	
x	x	x	22. Procedure branches can be entered at the correct point.
x	x	x	23. EOP exit points are specified adequately.
x	x	x	24. Adequate support procedures are available.

EOP VALIDATION FORM

Part I (to be completed by Operations Supervisor)

EOP Title: ______________________________

EOP Number: ____________________ EOP Revision: __________

Scope of Validation: ______________________________

Validation Method(s): ______________________________

Reviewer(s): ____________________ ____________________

____________________ ____________________

Signature: ______________________________ Date: __________

Part II (to be completed by reviewer)

Table-Top Validation Assessment complete -

Number of discrepancies: ______ Signature: ______________ Date: ______

Walk-Through Validation Assessment complete -

Number of discrepancies: ______ Signature: ______________ Date: ______

Simulator Validation Assessment complete -

Number of discrepancies: ______ Signature: ______________ Date: ______

Part III (to be completed by Operations Supervisor)

This validation package has been reviewed. All discrepancies have been resolved satisfactorily.

Signature: ______________________________ Date: __________

EOP ASSESSMENT FORM EOP-FORM 8

EOP Number:_______________ EOP Title:______________________________

EOP Revision:_____________ Assessment Method:_______________ Date:______

Reviewer(s):_________________________ _____________________________

Operations Personnel:

Name	Position	License

Step-by-Step discussion completed: ____ (Check if done, Table-Top Method only)

Description of Scenario(s):

VALIDATION DISCREPANCY FORM

EOP-FORM 9

Part I (to be completed by reviewer)

Assessment Method: ____________________ Discrepancy No. ____________________

EOP Number: ____________________ EOP Revision: ____________________

Description of Discrepancy:

Signature: ______________________________ Date: ____________

Part II (to be completed by EOP writer)

Description of Resolution:

Signature: ______________________________ Date: ____________

NINE MILE POINT NUCLEAR STATION UNIT 2

EMERGENCY OPERATING PROCEDURES

PROCEDURE NO. N2-EOP-4

EMERGENCY OPERATING PROCEDURE WRITERS GUIDE

APPROVALS	SIGNATURES	REVISION 0	REVISION 1	REVISION 2
		DATE AND INITIALS		
Supervisor Operations	Ralph W. Hayne	RWH 2/12/85		
Station Superintendent	RB Abbott	RBA 2/12/85		

Summary of Pages

Revision 0 (Effective 2/12/85)

Pages	Date
i-ii, 1-23	February, 1985

NIAGARA MOHAWK POWER CORPORATION

THIS PROCEDURE NOT TO BE
USED AFTER INITIAL FUEL LOAD

EMERGENCY OPERATING PROCEDURE WRITERS GUIDE

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EMERGENCY OPERATING PROCEDURE WRITERS GUIDE

TABLE OF CONTENTS

EMERGENCY OPERATING PROCEDURE WRITERS GUIDE

1.0 PURPOSE

The purpose of this document is to provide administrative and technical guidance on the preparation of Emergency Operating Procedures (EOPs)..

2.0 SCOPE

This procedure applies to the writing and revision of all Emergency Operating Procedures, in both text and flow chart format.

3.0 REFERENCES

3.1 INPO 82-017

3.2 NUREG 0899

3.3 ANS 3.2 1982 - Section 5.2

4.0 EOP DESIGNATION AND NUMBERING

EOPs are procedures that govern the plant operation during emergency conditions and specify operator actions to be taken to return the plant to a stable condition.

Each plant procedure shall be uniquely identified. This identification permits easy administration of the process of procedure preparation, review, revision, distribution, and operator use.

4.1 Title Page

Every EOP shall have a Title Page (see Figure 1). The primary purposes of this Title Page are (1) to identify the procedure and (2) to identify the authorized revision. To identify the procedure, a descriptive title is to be used that also designates the scope. This page is not numbered.

The Title Page shall contain the following information (see Figure 1):

1) The name of the company.

2) The name of the unit or station.

3) The title and number of the procedure.

4.1 (Cont)

4) A tabulation of titles and names of all persons approving the procedure or revision with provision for entering signatures and dates of approval.

5) Approval of a revision as indicated by date and initials under the revision numbers of a previously signed title page.

6) A summary of pages with a listing of all pages, figures and attachments included in the approved revision.

4.2 Procedure Designation

Emergency Operating Procedures shall be designated EOP.

4.3 Procedure Numbering

A specific procedure descriptive Alphabetic or Alphanumeric designator will follow the procedure type designator.

Example N2-EOP-RL

-------Procedure Description Designator

-------Procedure Type Designator

-------Applicable Unit

4.4 Revision Numbering and Designation

Two digits following the abbreviation "Rev" will be used to designate the revision number of the emergency operating procedure.

Example Rev 01

-------Revision Number

-------Abbreviation

To identify the most recent revision to the text of an EOP, a change bar located in the right margin alongside the text change will be used.

4.5 Page Identification and Numbering

Each page of the procedure will be identified by (1) the procedure designator, (2) Page number specified as "Page ____of____, 3) The revision number, and 4) The revision date.

The procedure designator and the page number will be within the bottom margin at the right margin. The revision number and date will be within the bottom margin at the left margin (see Figure 2).

5.0 PROCEDURE FORMAT

5.1 Procedure Organization

The procedure organization will be as follows:

1) The Title Page (See Section 4.1).

2) ENTRY CONDITIONS Page - EOPs which require entry conditions will contain an ENTRY CONDITIONS Page. It will be Page 1 of the procedure. It will contain the procedure title, the entry conditions, and a list of the EOPs which must be concurrently executed (See Figure 2).

3) PROCEDURE - The procedure will contain the instruction and action guidance for the operator.

5.2 Operator Action Format

A combination of single and dual column format will be used. Dual column format is used when operator action is contingent on a specific decision, based on interpretation of parameters and conditions. The left column will contain the instructions for the decision process. The right column will contain the contingent actions. A single column will be utilized when the decision/action format is not applicable (See Figure 3).

Each page shall have the title centered in the top margin and enclosed in dashed lines (Figure 3).

5.3 Procedure Step Numbering

Letters and Arabic numerals will be used for numbering sections and subsections in the following format. The first level section numbers will be preceded by the specific procedure designator.

RL 1.	First-Level Section Number
RL 2.	First-Level Section Number
2.1	Second-Level Section Number
2.1.1	(Subsection)
2.2	Second-Level Section Number
2.2.1	(Subsection)
RL 3.	First-Level Section Number

Parallel construction between columns for each section and subsection will be sued where applicable. (See Figure 3). The action step contingent on the decision (two column format) will be numbered with the same number as the decision step from which it is entered.

6.0 WRITING INSTRUCTIONAL STEPS

6.1 Instruction Step Length and Content

Instruction steps will be concise and precise. Conciseness denotes brevity; preciseness means exactly defined. Thus, instruction should be short and exact. General rules to be used in meeting these objectives are as follows:

1) Instruction steps should deal with only one idea.

2) Short, simple sentences or phrases should be used in preference to long, compound, or complex sentences.

3) Complex evolutions should be described in a series of steps, with each step made as simple as practicable.

4) Operator actions should be specifically stated. This includes identification of exactly what is to be done.

5) For instructional steps that involve an action verb relating to three or more objects, the objects will be listed with space provided for operator checkoff: i.e., RL 2. Close valves:
   2.1 MOV-1
   2.2 MOV-2
   2.3 MOV-3

6) Limits should be expressed quantitatively whenever possible (refer to Subsection 7.5).

6.1 (Cont.)

7) Identification of components and parts should be precise.

8. Instruction content should be written to communicate to the user. (Terminology consistent with that used during normal day-to-day operations).

9. Expected results of routine tasks need not be stated.

10. Avoid using time to initiate operator actions. Operator actions should be related to plant parameters.

11. When anticipated system response may adversely affect instrument indications, describe the conditions that will likely introduce instrument error.

6.1.1 Dual Column Format - Instruction Column

The left-hand column of the dual-column format will contain the decisions based on parameters or equipment availability on which actions are contingent. The following rules are established for this column, in addition to the general rules above.

1) Expected indications should be presented in this column.

2) Information necessary for a decision shall be readily available to the operator.

6.1.2 Dual Column Format - Actions Column

Contingency actions will be presented in the right-hand column of the dual-column format. Contingency actions are operator actions that should be taken in the event a stated condition, event, or parameter does not represent or achieve the expected result. The need for contingency action occurs as a result of verification, observation, confirmation and monitoring.

An action statement which evokes an override statement (See Section 6.1.4) in one or more procedures shall be capitalized. For example:

<u>THEN</u> EMERGENCY DEPRESSURIZATION IS REQUIRED.

Contingency actions will be specified for each circumstance in which the expected results or actions might not be achieved. The contingency actions should identify, as appropriate, directions to override automatic controls and to initiate manually what is normally automatically initiated.

6.1.3 Single Column Format - When operator actions are not contingent on a decision a single column format will be used.

6.1.4 Override Statement

An override statement contains a condition or set of conditions which requires an operator to discontinue a set of instructions/actions and enter or concurrently execute a different set. An override statement will typically start with "IF while executing the following steps . . ."

These statements require the operator to be cognizant of the possible existence of the override conditions while executing procedure instructions/actions.

As an aid to the operator colored lines will be used in the left margin to indicate possible override condition. The line will start at a bracket at the left side of the override condition, and extent (from page to page if required) to all steps effected. Because more than one override statement might be involved, the line will be different colors, the left-most being the first encountered.

6.2 Use of Logic Terms

The logic terms AND, OR, NOT, IF, IF NOT, BEFORE, WHEN, and THEN are often necessary to describe precisely a set of conditions or sequence of actions. When logic statements are used, logic terms will be capitalized and underlined so that all the conditions are clear to the operator.

Use logic terms as follows:

1) When attention should be called to combinations of conditions, the word AND shall be placed between the description of each condition.

2) The word OR shall be used when calling attention to alternative conditions or combinations of conditions. The use of the word OR shall always be in the inclusive sense. To specify the exclusive "OR," the following may be used: "either A OR B but not both."

3) When action steps are contingent upon certain conditions or combinations of conditions (dual column), the step shall begin with the word IF or WHEN or BEFORE followed by a description of the condition or conditions. IF is used for a possible condition. WHEN is used for an expected condition. BEFORE is used to imply that the condition must be anticipated.

4) At any point in a logic statement where actions are contingent on a decision completed at that point, the use of an arrow ( ) will indicate a possible shift to action(s) in the right column. The associated action step will be the same number as, and directly adjacent to the final instruction step. It will be a THEN statement.

6.2 (Cont.)

5) In an instruction step which involves a decision based on multiple logic statements, logic words (AND, OR) will be within the text of a single logic statement, and between sections of text (logic statements) which need to be addressed separately to make the decision. IF, WHEN, BEFORE may precede each logic statement if required for clarification. For example:

   RL1. IF Reactor Water Level is >0 in. AND Reactor Pressure is <150 psig,

   OR

   IF Drywell Pressure is <1 psig,

6) Use of IF NOT should be limited to those cases in which the operator must respond to the second to two possible conditions. IF should be used to specify the first condition.

7) THEN shall be used at the beginning of an action step to instruct the operator to execute the step as the result on a decision.

6.3 Use of Cautionary Information and Notes

Cautionary information can be considered in two fundamental categories: those that apply to the entire procedure and those that apply to a portion or a specific step of the procedure. Those that apply to the entire procedure are called "PRECAUTIONS" and are covered in operator training. Those that apply to a portion of a procedure are called "CAUTIONS" and are placed immediately before the procedural steps to which they apply.

Cautions shall be indented approximately 1/2 inch on both sides of the text and shall be boxed as shown in the Example CAUTION (Figure 3). This placement of cautions helps ensure that the procedure user observes the caution before performing the step. It should be used to denote a potential hazard to equipment or personnel associated with or consequent to the subsequent step. Two blank lines should be used between cautions and text. Cautions should not be located between second level steps.

If additional information other than cautions is necessary to support an action instruction, a NOTE should be used. A NOTE should present information only, not instructions, and should be located the same as a Caution, but no boxed.

6.4 Calculations

Mathematical calculations should be avoided in EOPs. If a value has to be determined in order to perform a procedural step, a chart or graph should be used whenever possible.

6.5 Use of Underlining

Underlining will be used for emphasis of logic terms and the word CAUTION.

6.6 Branching to Other Procedures of Steps

To minimize potential operator confusion, branching will be sued when the operator is to leave one procedure or step and use another procedure or step. Use the key words "Go To" for a branch within a procedure, and "Enter" for a branch to another procedure. Where branching is intended to require concurrent procedure performance, the action statement will define that clearly. For example: "Enter EOP RL and execute concurrently with this procedure".

6.7 Component Identification

With respect to identification of components, the following rules are to be followed:

1) Equipment, controls, and displays will be identified in operator language (common usage) terms. These terms will be precise.

2) When the engraved names and numbers on panel placards and alarm windows are specifically the item of concern in the procedure, the engraving should be quoted verbatim.

3) The names of plant systems are emphasized by initial capitalization. Acronyms may be used. All letters will be capitalized in an acronym.

4) If the component is seldom used or it is felt that the component would be difficult to find, location information should be given in parentheses following the identification. It should, however, be realized that component location is normally a function of on-the-job familiarization and specific EOP training.

6.8 Level of Detail

Too much detail in EOPs should be avoided in the interest of being able to effectively execute the instructions in a timely manner. The level of detail required is the detail that a newly trained and licenses operator would desire during an emergency condition.

To assist in determining the level of EOP detail, the following general rules apply.

1) For control circuitry that executes an entire function upon actuation of the control switch, the action verb appropriate to the component suffices without further amplification of how to manipulate the control device; for example, "Shut SERVICE WATER PUMP E DISCHARGE VALVE (SWP-MOV71E)". Recommended action verbs are as follows:

   a. For power-driven rotating equipment, use Start, Stop.

   b. For valves, use Open, Shut, Throttle Open, Throttle Shut, Throttle.

   c. For power distribution breakers, use Synchronize (if applicable), Close, Trip.

2) Standard practices for observing for abnormal results need not be prescribed within procedural steps. For example, observation of noise, vibration, erratic flow, or discharge pressure need not be specified by steps that start pumps.

3) For control switch positional placement, the verb "Place" should be used, along with the engraved name of the desired position.

6.9 Printed Operator Aids

When information is presented using graphs and tables, these aids must be self-explanatory, legible, and readable under the expected conditions of use and within the reading precision of the operator. A referenced graph or table should be placed on the page opposite the page opposite the test, when possible. Unacceptable regions of graphs will be shaded to and the operator in identifying above limit valves.

Capitalization should be used for references to tables and for graph titles. Title boxes for graphs should be conspicuous. Attachments should be sequentially numbered (if used), by type (FIGURE, TABLE) in separate series.

7.0 MECHANICS OF STYLE

7.1 Spelling

Spelling should be consistent with modern usage, and consistent throughout the EOPs.

7.2 Hyphenation

Hyphens are used between elements of a compound word when usage calls for it. The following rules should be followed for hyphenation.

1) When doubt exists, the compound word should be restructured to avoid hyphenation. Hyphenation shall not be used to show a range (100-200). Some wording will be used instead. For example: "from 100 to 200".

2) Hyphens should be used in the following circumstances:

   a. in compound numerals from twenty-one to ninety-nine; example: one hundred thirty-four

   b. in fractions; examples: one-half, two-thirds

   c. in compounds with "self"; examples: self-contained, self-lubricated

   d. when the last letter of the first word is the same vowel as the first letter of the second word--as an alternative, two words may be used; example: fire-escape or fire escape

   e. when misleading or awkward consonants would result by joining the words; example: bell-like

   f. to avoid confusion with another word; examples: re-cover to prevent confusion with recover, pre-position to avoid confusion with preposition

   g. when a letter is linked with a noun; examples: X-ray, O-ring, U-bolt, I-beam

   h. to separate chemical elements and their atomic weight; examples: Uranium-235, U-235

7.3 Punctuation

Punctuation should be used only as necessary to aid reading and prevent misunderstanding. Word order should be selected to require a minimum of punctuation. Punctuation should be in accordance with the following rules.

7.3.1 Brackets

Do not use brackets.

7.3.2 Colon

Use a colon to indicate that a list of items is to follow, for example: Restore cooling flow as follows:

7.3.3 Comma

Use a comma after conditional phrases for clarity and ease of reading. Example: WHEN level decreases to 10 inches, (THEN start pump . . .).

7.3.4 Parentheses

Parentheses shall be used to indicate: 1) alternative items in a procedure, 2) amplifying instruction, or 3) alternate equipment numbers.

7.3.5 Period

Use a period at the end of complete sentences and for indicating the decimal place in numbers.

7.4 Vocabulary

Words used in procedures should convey precise understanding to the trained person. The following rules apply.

1) Use simple words. Simple words are usually short words of few syllables. Simple words are generally common words.

2) Use common usage if it make the procedure easier to understand.

3) Use words that are concrete rather than vague, specific rather than general, familiar rather than formal, precise rather than blanket.

4) Define key words that may be understood in more than one sense.

5) Verbs with specific meaning should be used. Acceptable examples are listed in Table 1.

6) Equipment status should be denoted as follows:

    a. Operable/operability--These words mean that a system, subsystem, train, component, or device is capable of performing its specified function(s) in the intended manner. Implicit in this definition is the assumption that all necessary attendant instrumentation, controls, normal and emergency electrical power sources, cooling or seal water, lubrication or other auxiliary equipment required for the system, subsystem, train, component, or device to perform its function(s) are also capable of performing related support function(s).

7.4 (Cont.)

6) Equipment status should be denoted as follows: (Cont.)

   b. Operating--This word means that a system, subsystem, train, component, or device is in operation and is performing its specified function(s), and that mark-ups or other conditions do not prevent it from maintaining that service.

   c. Available--This word means that a system, subsystem, train, component, or device is operable and can be used as desired; however, it need not be operating.

7.5 Numercial Values

The use of numerical values should be consistent with the following rules:

1) Arabic numerals should be used.

2) Units of measure should be given for numerical values that represent observed data or calculated results. A slanted line should be used instead of "per"; examples: ft/sec, lbs/hr.

3) For numbers between zero and unity, the decimal point should be preceded by a zero; for example: 0.1.

4) The number of significant digits should be equal to the number of significant digits available from the display and the reading precision of the operator.

5) Acceptance values should be specified in such a way that addition and subtraction by the user is avoided if possible. This can generally be done by stating acceptance values as limits. Examples: 510° maximum, 300 psig minimum, 580° to 600°F. For calibration points, statement of the midpoint and its lower and upper limits for each data cell would accomplish the same purpose; for example, 10 milliamperes (9.5 to 10.5). Avoid using $\pm$.

6) Engineering units should always be specified for numerical values of process variables. They should be the same as those used on the control room displays, for example: psig, gpm, #/hr., °F.

7.6 Abbreviations, Letter Symbols, and Acronyms

Abbreviations may be used where necessary to save time and space, and when their meaning is unquestionably clear to the intended reader. The full meaning of the abbreviation should be covered in EOP specific training. Consistency should be maintained throughout the procedure.

7.6 Capitalization of abbreviations should be uniform. The period should be omitted in abbreviations except in cases where the omission would result in confusion.

Letter symbols may be used to represent operations, quantities, elements, relations, and qualities.

An acronym is a type of symbol formed by the initial letter or letters of each of the successive parts or major parts of a compound term. Acronyms may be used if they are defined or commonly used.

Symbols may be used to define relative magniture ($<$, $>$, $\leq$, $\geq$, $=$).

Abbreviations, symbols, and acronyms should not be overused. Their use should be for the benefit of the reader. They can be beneficial by saving reading time, ensuring clarity when space is limited, and communicating mathematic ideas. See Table 2 for a listing of examples of acceptable abbreviations.

8.0 TYPING FORMAT

8.1 General Typing Instructions

For emergency operating procedures, the following generaT requirements are to be followed.

1) Paper size should be 8-1/2 x 11 inches.

2) Method and type of print should be consistent throughout.

8.2 Margins

The page margins shall be:

Top - 1 inch
Bottom - 1 inch
Right - 1 inch
Left - 1 1/4 inches

8.3 Spacing

The procedure will be double spaced. One blank line will be left between the following:

1) Steps.

2) Logic Words and Steps.

8.3 (Cont.)

Two blank lines will be left between the following:

1) Cautions and Steps.

2) Title and Procedure.

3) Entry Conditions.

8.4 Check-Off Boxes

Check-Off Boxes will be directly after the applicable step. Their dimensions will be approximately the size of a typing line on each side.

8.5 Continuations

When a step is continued from page to page, the continuation will be noted: "RL4 (Continued)". Continuations should be avoided where possible.

8.6 Division of Words

Division of words should be avoided. Words shall not be divided between pages.

8.7 Use of Foldout Pages

When used, a foldout page is treated as a single page. It should follow the same format as a standard page except the width is different. The page should be folded so that a small margin exists between the fold and the right-hand edge of standard pages. This will reduce wear of the fold.

8.8 Use of Oversized Pages

Oversize pages should not be used. They should be reorganized or reduced to a standard page. If this cannot be done, a foldout page should be used.

8.9 Use of Reduced Pages

Reduced pages should be avoided whenever possible. Final size of reduced pages should be standard page size. Reduced pages should be readable.

9.0 FLOW CHARTS

Flow charts will be developed as an aid to the operator in utilization of the EOP's. The flow charts will provide the same guidance to the operator as the written procedures. Flow charts may be used independent of, or in conjunction with written procedures. This section provides guidelines for writing Emergency Operating Procedure Flowcharts from existing EOP's.

9.1 Symbols

Symbols to be used in flowchart writing are shown below:

CAUTIONS

CONTINGENT ACTIONS
INFORMATION
ACTIONS
ENTRY CONDITIONS

DECISION
MAKING
STEPS

These symbols may be enlarged as required to hold a sizable amount of information.

Cautions will be positioned adjacent to the applicable step.

9.2 General Instructions

In general, the procedure should start in the upper left corner of the page, beginning with an underlined heading to include title and EOP number. Immediately below the heading, a box labeled entry conditions should start the sequence of steps. Contingency EOPs (or any EOP entered from other procedures which has no entry conditions) will begin directly with a title and steps. Each step will be labeled with the corresponding text step number to the left of each step.

The format will in general have a flowpath of down and to the right of the page. Where more than one step or sequence of steps is to be performed at one time (branching occurs), the words "concurrently or concurrently enter" will help minmize confusion. Where branching takes place and a connecting line would make the flow chart cumbersome, the line will end with an arrow and directions. For example:

Then ———— Enter
EOP-C1

All entry points will be conspicuous. Arrows will indicate direction of flow. A sample section of a flowchart is provided on Figure 4.

Table 1. Action Verbs

Verb	Application
Allow	To permit a stated condition to be achieved prior to proceeding, for example, "allow discharge pressure to stabilize".
Assure	Make certain that a specified state or condition is established and will be maintained.
Bypassing	Temporarily disabling the functioning or an automatic protection feature.
Close	To change the physical position of a mechanical device so that it permits passage of electrical current, for example, "Close disconnect switch YUC-MDS20".
Complete	To accomplish specified procedural requirements, for example, "complete steps 7 through 9 of Section III".
Concurrently Execute	Carry out the required actions of more than one procedure or section simultaneously.
Defeating	Permanently disabling the logic or function of a system so as to prevent it from operating; generally indicates more than just the positioning of a bypass switch.
Enter	Branch to another procedure.
Establish	To make arrangement for a stated condition, for example, "establish communication with control room".
Go to	Branch to another section of a procedure.
Initiate	Operate readily available system controls as necessary to cause the identified action or function to occur.
Inspect	To measure, observe, or evaluate a feature or characteristic for comparison with specified limits; method of inspection should be included, for example, "visually inspect for leaks".
Maintain below (or above)	Take the action necessary to prevent the value of the parameter from rising above (or decreasing below) the identified limit, action level or range.
Open	To change the physical position of a mechanical device, such as valve or door to the unobstructed position that permits access or flow, for example, "open valve SWP-MOV71E".
Place	Refers to the repositioning of a switch or another control device.

Table 1. Action Verbs (Cont.)

Verb	Application
Prevent	Take whatever action is necessary to preclude the stated action, occurrence, etc. Where not otherwise qualified or prohibited, this includes jumpering, (or opening) contacts in the control logic of system components, deenergizing equipment, overriding automatic signals, etc.
Record	To document specified condition or characteristic, for example, "record discharge pressure".
Restore	Action necessary to return the value of a plant parameter or the status of plant equipment to the specified state or condition.
Secure	To terminate the operation of a system or subsystem.
Shut	To change the physical position of a mechanical device so that it prevents physical access or flow. For example: "Close SWP-MOVL7E".
Stable	Defines the ability to maintain the value of a parameter within acceptable or specified limits.
Start	To initiate the operation of an electric or mechanical device directly or by remote control, for example, "start . . . pump"
Stop	To terminate operation, for example, "stop . . . pump"
Throttle	To operate a valve in an intermediate position to obtain a certain flow rate, for example, "throttle valve CNM-V201C to . . ."
Trip	To manually activate a semi-automatic feature, fro example, "trip breaker . . ."
Vent	To permit a gas or liquid confined under pressure to escape at a vent, for example, "vent . . . pump"
Verify	To observe an expected condition or characteristic, for example, "verify discharge pressure is stable"

10.2

TABLE 2

ABBREVIATIONS/ACRONYMS

ADS	-	Automatic Depressurization System
APRM	-	Average Power Range Monitor
CRD	-	Control Rod Drive
ECCS	-	Emergency Core Cooling System
HCU	-	Hydraulic Control Unit
HPCS	-	High Pressure Core Spray
HVAC	-	Heating, Ventilating and Air Conditioning
LCO	-	Limiting Condition for Operation
LOCA	-	Loss of Coolant Accident
LPCI	-	Low Pressure Coolant Injection
LPCS	-	Low Pressure Core Spray
MSIV	-	Main Steamline Isolation Valve
NDTT	-	Nil-Ductility Transition Temperature
NPSH	-	Net Positive Suction Head
RCIC	-	Reactor Core Isolation Cooling
RHR	-	Residual Heat Removal
RPS	-	Reactor Protection System
RPV	-	Reactor Pressure Vessel
RSCS	-	Rod Sequence Control System
RWCU	-	Reactor Water Cleanup
SBGT	-	Standby Gas Treatment

TABLE 2 (Cont.)

ABBREVIATIONS/ACRONYMS

SBLC - Standby liquid Control

SORV - Stuck Open Relief Valve

SRV. - Safety Relief Valve

IAW - In accordance with

in - Inch, inches

ft - feet, foot

CDR - Cool Down Rate

Sec - Second, Seconds

mr - Millirem

RX - Reactor

Ci - Curie

lb - Pounds

- less than

| - greater than

°F - degrees Fahrenheit

hr - hour

% - percent

PSIG - pounds per inch^2 gage

GPM - gallons per minute

NINE MILE POINT NUCLEAR STATION

EMERGENCY OPERATING PROCEDURES

PROCEDURE NO. ________

(TITLE)

APPROVALS	SIGNATURES	DATE AND INITIALS REVISION 0	REVISION 1	REVISION 2
Supervisor Operations	________	________	________	________
Station Superintendent	________	________	________	________

Summary of Pages

Revision 0 (Effective ________)

Page	Date

NIAGARA MOHAWK POWER CORPORATION

THIS PROCEDURE NOT TO BE
USED AFTER
SUBJECT TO PERIODIC REVIEW.

FIGURE 1 - TYPICAL TITLE PAGE

TITLE: Reactivity Control

ENTRY CONDITIONS:

1. Reactor water level < 12 inches.

2. Reactor pressure > 1045 psig.

3. Drywell pressure > 1.68 psig.

4. An MSIV isolation

5. A condition which requires a scram, and reactor power > 3% or cannot be determined.

Concurrently Execute:

EOP-RL RPV Level Control

EOP-RP RPV Pressure Control

EOP-RQ RPV Reactivity Control

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FIGURE 2 EXAMPLE ENTRY CONDITONS PAGE

1" margin

TITLE: Reactivity Control

CAUTION
Defeating RSCS Interlocks may be required to accomplish this step.

RQ17. Rapidly insert control rods manually until the reactor scram can be reset. ☐

RQ18. Reset the reactor scram. ☐

RQ19. Open charging water header isolation valve C12-F034. ☐

INSTRUCTIONS	ACTIONS
RQ20. IF the scram discharge volume vent and drain valves are open. → ☐	RQ20. THEN initiate a manual reactor scram. ☐
RQ21. IF the control rods moved inward. → ☐	RQ21. THEN go to RQ13. ☐

1 1/4" margin

1" margin

RQ22. Reset the reactor scram. ☐

1" margin

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FIGURE 3 EXAMPLE FORMAT

RADIOACTIVITY RELEASE CONTROL EOP-RR

ENTRY CONDTIONS

1. Offsite radioactivity release rate above 3Ci/Sec

Isolate all primary systems that are discharging into areas outside the primary and secondary containments except systems required to assure adequate core cooling or shutdown the reactor

RR-1

IF,
Offsite
Radioactivity Release
rate approaches or exceeds
91 Ci/Sec, □
AND
A primary system is discharging to outside containment

THEN

EMERGENCY
RPV
DEPRESSURIZATION
IS REQUIRED

FIGURE 4 SAMPLE FLOWCHART FORMAT

APPENDIX G

TASK ANALYSIS FORMS

Task Description Form

Proc # ______________________ Proc Title ________________

Proc Step #	Task #	Task Title	Common To

TASK ANALYSIS DATA COLLECTION FORM NMP NMP 2 PAGE ____ OF ____

PROCEDURE:

TASK NUMBER:

DUPLICATE TASK:

ALTERNATE TASK:

ACTION STEP	EQUIPMENT NAME	CONTROL			INDICATOR									ID	LEGEND/OTHER PERFORMANCE REQUIREMENT
		POSITION	CSL	FLAG	STATE	UNITS	LOWER RANGE	EXP	UPPER RANGE	EXP	DIV	EXP	TYPE	NUMBER	

CODE	MODE	CSL/FLAG				LEVEL	ID TYPE	
0-NO	D-DISCRETE	01-AMBER	04-GREEN	09-WHITE	12-GRAY	S-STATE	I-INDICATOR	O-OTHER PERFORMANCE REQUIREMENTS
1-YES	C-CONTINUOUS	02-BLACK	05-ORANGE	10-YELLOW	13-BEIGE	V-VALUE	C-CONTROL	N-NOT AVAILABLE
		03-BLUE	07-RED	11-CLEAR	14-BROWN	T-TREND	A-ANNUNCIATOR	

APPENDIX H

ENVIRONMENTAL MEASUREMENT FORMS

SOUND SURVEY RECORD

Plant: ____________________ Date: __________ Time: __________ Sheet # _____ of _____

Measurements made by: ____

Equipment/Instrument used: ____

Serial #: ____________________ Calibration date: ____________________

Operator Work Station	db(A)	Octave Band Center Frequency					Remarks
		250	500	1K	2K	4K	

LIGHTING SURVEY ILLUMINANCE RECORD

Plant: ______________________ Date: ____________ Time: __________

Measurements made by: ______________________________ Sheet # ____ of ____

Equipment/Instrument used: ______________________________

Serial #: ______________________ Calibration date: ______________

Location Ref. No.	Panel I.D. No.	Full AC Ambient	Full Emergency	Other Conditions (Specify)

LIGHTING SURVEY - LUMINANCE AND REFLECTANCE RECORD

Plant: ______________________ Date: __________ Time: __________

Measurements made by: ______________________________ Sheet # ____ of ____

Equipment/Instrument used: ______________________________

Serial #: ______________________ Calibration date: ______________

Location Ref. No.	Panel # and Surfaces	Record					Calculations				
		Panel		Meter/Display			Luminance Ratio of Display: Panel		Reflectance Ratio		
		Reflect. Pad	Panel Back-ground	Reflect. Pad	Surface w/Glare	Surface w/o Glare	w/Glare	w/o Glare	Panel: Pad	Meter/Display: Pad	
										w/Glare	w/o Glare

HUMIDITY/TEMPERATURE RECORD

Plant: ______________________ Date: __________ Time: __________

Measurements made by: ______________________ Sheet # ____ of ____

Equipment/Instrument used: ______________________

Serial #: ______________________ Calibration date: __________

Time	Height	Temperature	Humidity	Remarks
	Floor			
	6 ft.			
	Floor			
	6 ft.			
	Floor			
	6 ft.			
	Floor			
	6 ft.			
	Floor			
	6 ft.			
	Floor			
	6 ft.			
	Floor			
	6 ft.			
	Floor			
	6 ft.			
	Floor			
	6 ft.			
	Floor			
	6 ft.			

AIR VELOCITY SURVEY RECORD

Plant: ______________________ Date: ____________ Time: __________

Measurements made by: ______________________________ Sheet # ____ of ____

Equipment/Instrument used: ______________________________________

Serial #: ____________________ Calibration date: ______________

Location	6 ft.	4 ft.

APPENDIX I

VALIDATION REVIEW WORKSHEET

OBSERVATIONS FROM VALIDATION

WALK-THROUGHS (WT) AND TALK-THROUGHS (TT)

Task or

Procedure: ______________ ______________________________

Number Title

TT	WT	Proc Step	Tape Elapsed Time	Criteria Topic	Observation Description

APPENDIX J

ASSESSMENT ATTENDANCE RECORD

NINE MILE TWO DCRDR ASSESSMENT ATTENDANCE RECORD

Name	Co.	Title	DATE: 4/23 SUBJECT: Cat & Level	4/24 Cat & Level	4/25 Cat & Level	4/26 Cat & Level
Albert Hwu	GE	Sys. Engineer	7	6	-	4
Doug Helms	GE	Sys. Engineer	3	-	-	-
Pete Buttacavoli	SWEC	Sys. Coord.	7	7	3	4
Don Taylor	ARD	Human Factors	7	7	3	4
Art Vierling	NMPC	Team Leader	7	7	3	4
Barb Tesoriero	NMPC	CSO Operations	4 1/2	7	3	4
Mark Davis	NMPC	D Operations	4 1/2	7	3	4
Frank Conoway	NMPC	CSO Operations	-	6	-	4
Eric Townsend	NMPC	SSS Operations	-	2	-	-

Week Two

Name	Co.	Title	DATE: 4/30 SUBJECT: Cat & Level	5/1 Cat & Level	5/2 Fix/ No fix	5/3 Fix/ No Fix
Art Vierling	NMPC	Engineering	6	5	5	5
Frank Conoway	NMPC	Ops Unit II	7	7	7	5
Steve Davis		Ops Unit II	7	7	7	5
Jim Graff		Ops Unit II	7	7	4	0
Bob Spooner		Ops Unit II	7	7	7	5
Dan Holt		Ops Unit II	7	7	7	5
Pete Buttacavoli	SWEC		6	7	7	4
Albert Hwu	GE		6	7	7	5
Don Taylor	ARD		7	7	7	-

Week Three

Name	Co.	Title	DATE: 5/6 SUBJECT: Fix/ No Fix	5/7 Recommen-dation	5/8 Recommen-dation	5/26 Recommen-dation
Jay Lawrence	NMPC	Operations	5	7	7	7
Don Rennels	GE	Systems	7	7	7	7
Frank Conaway	NMPC	Operations Unit II	5	5	-	-
David Rathbon	NMPC	Operations Unit II	5	7	7	7
Dick Shannon	ARD		3	7	7	7
Pete Buttacavoli	SWEC	Systems	7	7	7	7
Art Vierling	NMPC	Engineering	6	4	4	6
Steve Davis	NMPC	Operations Unit II	-	2	-	-
Don Kent	NMPC	Startup & Test II	-	2	0	-

Week Four

Name	Co.	Title	DATE: 5/13 SUBJECT: Recommen-dation	5/14 Cat & Level	5/15 Cat & No fix	5/16 Fix/ No Fix
Art Vierling	NMPC	Engineering	6	.6	5	6
Bob Bulluck	NMPC	Ops II	7	7	6	-
Gary Sanford	NMPC	Ops II (ASSS)	4	-	-	-
M.J. Colomb	NMPC/SSS		4	5	6	4
Don Rennels	GE	Systems	7	7	5	7
Mike Carson	NMPC	Ops II	7	7	6	7
Pete Buttacavoli	SWEC	CHOC	-	7	6	7
Kent Barnes	ARD		-	7	6	7
Mike Conway	NMPC	Ops II				6

(0590E)

NINE MILE TWO DCRDR ASSESSMENT ATTENDANCE RECORD

Name	Dept./Co.	6/4/85	6/5/85	6/6/85	6/7/85
A. Vierling	Eng.	5	7	7	7
S. Davis	Ops 2	-	7	7	4
D. Holt	Ops 2	5	7	7	7
L. Barnes	ARD	5	7	-	-
P. Buttacavoli	SWEC	5	7	7	-
J. Graff	Ops 2	4 1/2	6 1/2	5	4
A. Hwu	GE	1	-	-	-
B. Spooner	Ops 2	4 1/2	6 1/2	5	4
D. Mahaffy	ARD	-	-	7	7
D. Horst	ARD	-	-	7	7

Name	Dept./Co.	6/11/85	6/12/85	6/13/85	6/14/85
A. Vierling	NMPC Eng.	7	7	7	7
B. Klein	ARD	7	7	-	-
D. Rathbun	NMPC Ops II	6	7	7	-
K. Barnes	ARD	7	7	7	-
P. Buttacavoli	SWEC	7	7	7	-
M. Powell	NMPC Ops II	6	7	7	7
J. Lawrence	Ops	6	7	7	7

Name	Dept./Co.	7/9/85
A. Vierling	Eng.	7
R. Bergenstock	Ops 2	7
M. Churilla	Ops 2	7
D. Richards	Ops 2	7
R. Shannon	ARD	7

APPENDIX K

INCOMPLETE CHECKLIST ITEMS

INCOMPLETE CHECKLIST ITEMS

The following checklist items from NUREG-0700, Section 6 have not been completed due to the construction state of the NMP-2 Control Room. Many of these items are environmental and communications measures that can not be surveyed until the control room is in an operable condition. These items are expected to be completed by December 1985.

6.1.1.3.2
6.1.1.3.c
6.1.1.3.g
6.1.1.4.a-d
6.1.1.7
6.1.2.4.a-c
6.1.2.7.a-d
6.1.2.8.a-g
6.1.3.1.d
6.1.4.1.a-g
6.1.4.2.a,b,d,e
6.1.4.3.a-b
6.1.5.1.a-b
6.1.5.2.a-b
6.1.5.3.a-h
6.1.5.4.a-c
6.1.5.5.a-e
6.1.5.6.a-b
6.1.5.7.a-c

6.2.1.2.b.7-8
6.2.1.3.a-e
6.2.1.4.b.2
6.2.1.4.d
6.2.1.5.a-c
6.2.1.6.a.2
6.2.1.6.c
6.2.1.6.e.1
6.2.1.7.a-b
6.2.1.8.a-c
6.2.2.1.a-c
6.2.2.2.a-c
6.2.2.3.a-e
6.2.2.4.a-b
6.2.2.5.a-b
6.2.2.6.a-c
6.2.2.7.a-c

6.3.1.2.a
6.3.2.1.a,c,d,f
6.3.2.2.a
6.3.3.2.e
6.3.3.4.a
6.3.4.1.d.2

6.4.1.1.a.2
6.4.1.1.b.1-3
6.4.1.1.e.2,3
6.4.1.2.a
6.4.3.3.b.4
6.4.4.5.f

6.5.1.2.f
6.5.4.1.a,e,k
6.5.4.2.a
6.5.4.2.b.2,3
6.5.5.2.a-c

6.6.2.4.a
6.6.3.3.c

6.9.1.1.c.3
6.9.3.1.c
6.9.3.2.a,c,d