



Crystal River Nuclear Plant
Docket No. 50-302
Operating License No. DPR-72

Ref: 10 CFR 50.55a

August 15, 2011
3F0811-08

U.S. Nuclear Regulatory Commission
Attention: Document Control Desk
Washington, DC 20555

Subject: Crystal River Unit 3 - Snubber Inspection and Testing Program Manual, Revision 7

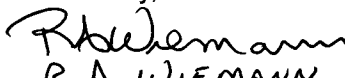
Dear Sir:

Florida Power Corporation (FPC), doing business as Progress Energy Florida, Inc., is hereby submitting the Crystal River Unit 3 (CR-3) Snubber Inspection and Testing Program Manual, Revision 7, to the Nuclear Regulatory Commission (NRC) for information. No changes have been made to the test plan methodology that would require submittal of the subject document to the NRC under the requirements of the 2001 Edition through the 2003 Addenda of the American Society of Mechanical Engineers (ASME) Operation and Maintenance (OM) Code, Subsection ISTA-3200, "Administrative Requirements." However, the subject document has been revised to use OM Code Case OMN-13, "Requirements for Extending Snubber Inservice Visual Examination Interval at LWR Power Plants," to perform visual examinations over a 10 year interval. This change was made necessary due to the current extended CR-3 refueling outage that will delay the next CR-3 refueling outage start date and result in the inability to perform the next examination interval within the 48 month ($\pm 25\%$) allowance specified in Table ISTD-4252-1, "Visual Examination Table."

No regulatory commitments are being made in this submittal.

If you should have any questions regarding this submittal, please contact Mr. Dan Westcott, Superintendent, Licensing & Regulatory Programs, at (352) 563-4796.

Sincerely,


R. A. WIEMANN for S.J. CAHILL

Stephen J. Cahill
Director—Engineering—Nuclear

SJC/dwh

Attachment: Crystal River Unit 3 - Snubber Inspection and Testing Program Manual, Revision 7

xc: NRR Project Manager
Regional Administrator, Region II
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A047
NRR

PROGRESS ENERGY FLORIDA, INC.

CRYSTAL RIVER - UNIT 3

DOCKET NUMBER 50 - 302 / LICENSE NUMBER DPR - 72

ATTACHMENT

CRYSTAL RIVER UNIT 3

SNUBBER INSPECTION AND TESTING PROGRAM MANUAL

REVISION 7



Progress Energy

CRYSTAL RIVER UNIT 3

ASME SECTION XI / ASME OM CODE

INTERVAL 4

**SNUBBER INSPECTION
AND TESTING
PROGRAM MANUAL**

(Revision 7)

EFFECTIVE DATES: August 14th, 2008 through August 13th, 2018

Portmann, Rick

Prepared By

Prepared by: 2011.02.17 17:08:11 -05'00'

Howard, Timothy R

Supervisor Approval

Approved by: 2011.04.20 13:14:51 -04'00'

Program/Plan Title: **Snubber Inspection and Testing Program Manual**

Revision Number: **7, Feb. 17, 2011**

CONFIGURATION DOCUMENT INTERFACE REVIEW FORM

DOCUMENT	DESCRIPTION	Change Process	Affected? (Yes/No)	Change Initiated By
DBD	Design Basis Document	NEP-216	No	N/A
EDBD	Enhanced Design Basis Document	NEP-216	No	N/A
TBD	Technical Basis Document	NEP-216	No	N/A
ISI	ISI Component and Structures Examination Program	NEP-301	No	N/A
IST	Snubber Inspection and Testing Program	NEP-301	No	N/A
ISI	Repair/Replacement Program	NEP-301	No	N/A
ISI	Steam Generator Integrity Program (Eddy Current Data Analysis Guidelines)	NEP-301	No	N/A
IST	IST Pump and Valve Program	NEP-301	No	N/A
FSAR	Final Safety Analysis Report	REG-NGGC-0101	No	N/A
ITS	Improved Technical Specifications	REG-NGGC-0100	No	N/A
SER	Safety Evaluation Report	REG-NGGC-0100	No	N/A
EDB	Equipment Data Base	EGR-NGGC-0012	No	N/A
NOCS	Nuclear Operations Commitment System	CP-252	No	N/A
NOCS	Nuclear Operations Commitment System	REG-NGGC-0110	No	N/A
Mech. Calcs	Mechanical Calculations	EGR-NGGC-0017	No	N/A
Struc. Calcs	Structural Calculations	EGR-NGGC-0017	No	N/A
AI	Administrative Procedures	PRO-NGGC-0204	No	N/A
CP	Compliance Procedures	PRO-NGGC-0204	No	N/A
MP	Maintenance Procedures	PRO-NGGC-0204	No	N/A
PT	Performance Testing Procedures	PRO-NGGC-0204	No	N/A
SP	Surveillance Procedures	PRO-NGGC-0204	No	N/A
Other	N/A	N/A	N/A	N/A



**ASME SECTION XI / ASME OM CODE PROGRAM/PLAN
REVIEWER APPROVAL FORM**

Program/Plan Title: **Snubber Inspection and Testing Program Manual**

New Rev. #: **7**

Reviewer Approvals	Reviewed/Verified By	Date	Comments Attached	No Comments
Independent Technical Review Print Name: Jim Salton	James Salton I have reviewed this document. 2011.04.20 07:20:53 -04'00'	(See Signature Stamp)	None or Resolved	N/A
Verification (Eddy Current Data Analysis Guidelines only) Print Name: N/A	N/A	N/A	N/A	N/A
Other - ANII Print Name: Loyd Larramore	Larramore, Loyd 2011.04.20 09:12:27 -04'00'	(See Signature Stamp)	None or Resolved	N/A
Other []	N/A	N/A	N/A	N/A
Other []	N/A	N/A	N/A	N/A

Notes for review:

Updated Manual Attachment 5 due to R16 Design Changes (EC's 70080, 70101, 74597) and updated service life dates as authorized in Calculation S94-0089 Rev. 2. Adopted ASME OM Code Case OMN-13 (Approved in Reg. Guide 1.192) to perform visual examinations over a 10 year interval. Updated various position title changes. Eliminated snubbers MUH-38 through -40 in various attachments per EC# 77257. [DRR444345].



Progress Energy

**ASME SECTION XI / ASME OM CODE PROGRAM/PLAN
DESCRIPTION REASONS,
AND REFERENCES**

Program/Plan Title: Snubber Inspection and Testing Program Manual

NEW REVISION NUMBER: 7, Feb. 17, 2011

DESCRIPTION OF NEW PROGRAM/PLAN OR CHANGE (Detailed):

Updated Manual Attachment 5 due to R16 Design Changes (EC's 70080, 70101, 74597) and updated service life dates as authorized in Calculation S94-0089 Rev. 2. Adopted ASME OM Code Case OMN-13 (Approved in Reg. Guide 1.192) to perform visual examinations over a 10 year interval. Updated various position title changes. Eliminated snubbers MUH-38 through -40 in various attachments per EC# 77257. [DRR444345].

REASON FOR PROGRAM/PLAN OR CHANGE:

R16 Design Changes (EC's 70080, 70101, 74597, 77257) added and deleted snubbers as well as updated service life dates as authorized in Calculation S94-0089 Rev. 2. With the change in the next refueling outage start date CR3 will not be able to perform the next examination interval within the 48 month ($\pm 25\%$) allowance in the OM, Subsection ISTD Code. To accommodate we have elected to update the program and use OM Code Case OMN-13 to perform visual examinations over a 10 year interval. Equipment Performance was changed to Engineering Programs. [DRR444345].

**Progress Energy**

ASME SECTION XI / ASME OM CODE PROGRAM MANUAL/PLAN REVISION HISTORY

Revision Number	Change Number	Reason for Revision	Date Entered	Entered By
1	N/A	Update current procedures, references and to add snubber service life information as well as update snubber listings to the current plant configuration.	11/19/04	P. Peterson
2	N/A	Revised to update current procedures and references, delete snubbers eliminated by R14 Engineering Changes (EC's) and change those modified from Power Piping to Lisega Hydraulic snubbers by R14 EC's. Snubber totals and breakdowns were also adjusted to reflect actual (current) snubber populations. Added new Attachment 11: Snubber Tech. Spec. Information Table as a result of License Amendment #224. (Ref. EC's 59799, 59887, 59925, 59926, 59939, 59944, 60324).	9/10/07	R. Portmann
3	N/A	Refuel 15 implemented Engineering Changes to numerous snubbers installed in the plant. Most of the modifications were to change Power Piping Hydraulic Snubbers to Lisega Hydraulic Snubbers. The remainder of the changes was snubber eliminations or changing snubbers to struts. Also deletes procedure references applicable to ITT Grinnell snubbers which are no longer installed at CR3. (Ref. EC's 52000-59935, 65794, 65795, 64167).	1/3/08	R. Portmann
4	N/A	The Snubber Inspection and Testing Program is being revised in its entirety due to the 10CFR Interval Update Requirement. The new Code requirements of ASME Section XI (2001 Edition through the 2003 Addenda) and the ASME OM Code (2001 Edition through the 2003 Addenda) are in effect for the 4 th Interval.	8/13/08	R. Portmann
5	N/A	Minor revision to clarify para. 6.8.6.1 as the result of a recommendation from Self Assessment SA216783 [DRR339187].	6/11/09	R. Portmann
6	N/A	Updated Manual Attachments due to R16 Design Changes (EC's 70080, 70101, 74597) and procedure number change (CP-126 to REG-NGGC-0101) [DRR375314 / DRR401449].	2/1/10	R. Portmann
7	N/A	Updated Manual Attachment 5 due to R16 Design Changes (EC's 70080, 70101, 74597) and updated service life dates as authorized in Calculation S94-0089 Rev. 2. Adopted ASME OM Code Case OMN-13 (Approved in Reg. Guide 1.192) to perform visual examinations over a 10 year interval. Updated various position title changes. Eliminated snubbers MUH-38 through -40 in various attachments per EC# 77257. [DRR444345].	2/17/11	R. Portmann



1. Is this change consistent with the ASME Section XI Code of Record for the applicable program manual or plan or has it been pre-approved in Generic Regulatory Compliance (e.g. RG 1.147 or NUREG 1482)?
 - ☐ "NO", initiate a relief request in accordance with NEP-305 and obtain approval from NRC prior to implementation of program manual/plan change.
 - ☒ "YES", no further action required, proceed to question 2.
2. Is this change consistent with other applicable regulatory obligations (such as augmented examinations in 10CFR50.55a)?
 - ☐ "NO", forward to Support Services to obtain applicable exemption or approval prior to implementation of program manual/plan change.
 - ☒ "YES", no further action required, proceed to question 3.
3. Is this change consistent with written commitments made by Progress Energy (responses to violations, LER commitments, Generic Letter responses, etc.)?
 - ☐ "NO", initiate commitment change in accordance with REG-NGGC-0110 prior to implementing program manual/plan change.
 - ☒ "YES", no further action required, proceed to question 4.
4. Was the information being changed the basis for any decision in an NRC Safety Evaluation Report?
 - ☒ "NO", no further action required, proceed to question 5.
 - ☐ "YES", contact Support Services to determine appropriate actions prior to implementation of the program manual/plan change.
5. Was the information being changed originally incorporated as a corrective action or action to prevent recurrence of an adverse condition?
 - ☒ "NO", no further action required, proceed to question 6.
 - ☐ "YES", document the basis for why the revised program manual/plan information ensures continued correction of the problem or minimizes recurrence of the adverse condition:

6.0 Does this change:

- Alter the objective or purpose of the program manual or plan? YES / NO
- Have the potential to cause an SSC to be used in a manner outside the design basis or limit the ability of the SSC to perform its safety function? YES / NO
- Alter any program, inspection or test description in the SAR? YES / NO
- Delete components previously inspected or tested? [Yes, as approved via EC's 70080, 70101, 74597, 77257] YES / NO
- Change the inspection or test method previously required? YES / NO
- Alter acceptance criteria, setpoints, values used to support equipment setup, or values used to make a conclusion or acceptability? YES / NO
- Potentially reduce the level of nuclear safety or lead to an event that impacts safe operations OR create a less conservative method of achieving the task OR create a task or series of steps which have an unknown effect on nuclear safety? YES / NO

Any "YES" answer in item 6 requires completion of a 50.59 screen/evaluation in accordance with REG-NGGC-0010. (See AR# 460522)

Prepared By: Rick Portmann

Portmann, Rick

Date

Prepared By

(See Signature Stamp)

2011.04.19 15:09:08 -04'00'

Independent Approval by 50.59 qualified person: Greg Estep

Estep, Greg

Date

Reviewed By

(See Signature Stamp)

2011.04.20 09:51:27 -04'00'



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1.0 PURPOSE

- 1.1 The Snubber Inspection Program Manual establishes and defines the Snubber Program Administrative requirements as detailed in Crystal River Unit 3 Improved Technical Specifications, Sections 5.6.2.8 and 5.6.2.9. The primary purpose of this snubber program is to maintain the operational readiness of all Class 1, 2, 3 and MC component snubbers by periodically examining, testing and monitoring service life to fulfill applicable plant operating commitments, ASME Section XI, ASME/ANSI OM Code, and OM Code Case OMN-13 requirements.

2.0 SCOPE

- 2.1 As per 10CFR50.55a, the code update requirements for the Fourth Inspection Interval (August 14, 2008 - August 13, 2018), implement as the applicable code of record, ASME Section XI, 2001 Edition through the 2003 Addenda and ASME Code for Operation and Maintenance of Nuclear Power Plants (ASME OM Code), 2001 Edition through the 2003 Addenda.
- 2.2 Progress Energy correspondence 3F1207-04 notified the NRC of our 10CFR50.55a(g) requirement to use the ASME Section XI, 2001 Edition through the 2003 Addenda, and 10CFR50.55a(b)(3)(v) intention to use the ASME OM Code, Subsection ISTD, 2001 Edition through the 2003 Addenda for examination and testing of snubbers based upon a refueling interval of 24 months.
- 2.3 Additional Snubber Program requirements as detailed in the Crystal River Unit 3 Improved Technical Specifications sections 5.6.2.8 and 5.6.2.9. are addressed in this Program Manual.
- 2.4 The Snubber Program supports the Requirements of Maintenance Rule, 10CFR50.65, through implementation of condition monitoring activities to provide reasonable assurance that structures, systems and components within the scope of the program will perform their intended functions.
- 2.5 All snubbers subject to examination and testing in accordance with this Program Manual are listed in Attachments 1, 2 & 3. These are categorized as Accessible or Inaccessible for Small, Medium or Large Bore snubbers and classified as Safety Related, Non-Safety Related, or Safety Significant. Accessibility was determined based on snubber location and accessibility during reactor operations, consideration of manufacturers design characteristics and plant operating conditions (radiation levels during plant operation, temperature and atmosphere).
- 2.6 Safety Related and Safety Significant snubbers shall be examined and tested in accordance with the requirements of ASME Section XI and ASME OM Codes as detailed in this Program Manual.
- 2.7 Non-Safety Related snubbers are not addressed by ASME Section XI or ASME OM Code requirements and therefore, considered an Augmented Non-Safety Scope and are listed in Attachment 4 of this Program Manual. In keeping with good engineering practices to



provide assurance of structural reliability, these snubbers are periodically inspected under an Augmented Scope in accordance with PM-111, titled "Check of Hydraulic Pipe Snubbers," as required.

- 2.8 The program was revised in RFO16 and adopted OM Code Case "OMN-13 – Requirements for Extending Snubber Inservice Visual Examination Interval at LWR Power Plants". The code case has been approved by the NRC and is authorized for use (Ref. NRC Reg. Guide 1.192). Beginning in RFO16 CR3 will start performing visual examinations of snubber over a 10 year interval. Attachment 12 lists the snubbers and tracks the snubber examination visual examination performance.

3.0 REFERENCES

- 3.1 10 CFR 50.55a, Codes and Standards
- 3.2 ASME Section XI, Rules for Inservice Inspection of Nuclear Power Plant Components, 2001 Edition through the 2003 Addenda.
- 3.3 ASME OM Code, Operation and Maintenance of Nuclear Power Plants, 2001 Edition through the 2003 Addenda.
- 3.4 Crystal River Unit 3 Improved Technical Specifications, Sections 5.6.2.8 and 5.6.2.9.
- 3.5 AI-701, Administration of the ASME Section XI and ASME OM Code Inservice Inspection, Examination, and Testing Programs
- 3.6 REG-NGGC-0010, 10 CFR 50.59 and Selected Regulatory Reviews
- 3.7 Design Analysis/Calculation S-94-0089, Snubber Seal Life Extension Study
- 3.8 Design Analysis/Calculation S-99-0621, Evaluate of Thermal Movements for Reactor Building Snubbers
- 3.9 Design Analysis/Calculation S-99-0622, Evaluation Thermal Movements for Balance of Plant Snubbers
- 3.10 Florida Power Corporation, IOC WPN84-0950, Engineering Guidelines for the Installation, Maintenance and Inspection of Small Bore Hydraulic Snubbers
- 3.11 Florida Power Corporation, IOC NL99-0011, Nuclear Licensing response on Snubber Removal
- 3.12 Florida Power Corporation, IOC NPTS 00-0008, Plant Technical Support/EQ, Snubber Seal Life.
- 3.13 MP-128, Removal and Replacement of RC Pump Hydraulic Shock Suppressers
- 3.14 MP-174, Power Piping Pipe Snubber Rebuild Procedure
- 3.15 MP-175, Power Piping Pipe Snubber Removal and Installation
- 3.16 MP-177, Power Piping Snubber In-Place Maintenance



- 3.17 MP-400, Barker/Diacon 130 Kip Bench Tester Model S-4000 Upgrades
- 3.18 NDEP-A, Nuclear NDE Program And Personnel Process
- 3.19 NEP-301, Control of ASME Section XI and ASME OM Code Inspection, Examination and Testing Program Plans, Manuals, and Reports
- 3.20 Paul-Munroe Hydraulics, Large Bore Snubber Maintenance Manual
- 3.21 Pipe Hangers and Supports, Power Piping Company Catalog 72 and Catalog 90.
- 3.22 PM-111, Check of Hydraulic Pipe Snubbers
- 3.23 Power Piping Company, series 1900 Hydraulic Snubber Installation and Maintenance Manual
- 3.24 SP-200, Functional Testing of Hydraulic Snubbers
- 3.25 SP-201, Hydraulic Snubbers Visual Inspection
- 3.26 SP-208, Visual Examination of Component Supports
- 3.27 Technical Specifications, LCO 3.0.8
- 3.28 Code Case OMN-13
- 3.29 Regulatory Guide 1.192



4.0 ABBREVIATIONS AND DEFINITIONS

4.1 ABBREVIATIONS

The following standard abbreviations are used by CR3 and may be found throughout this Program Manual.

AB	Auxiliary Building
ASME	American Society of Mechanical Engineers
AS	Auxiliary Steam System
BS	Reactor Building Spray System, and Reactor Building Pressure Sensing and Testing
CD	Condensate System
CF	Core Flood System
CFR	Code of Federal Regulations
CR3	Crystal River Unit 3
DC	Decay Heat Closed Cycle Cooling System
DH	Decay Heat Removal System
EF	Emergency Feedwater System
FPC	Florida Power Corporation
FW	Feedwater System
HD	Heater Drain System
HV	Heater Vent System
IB	Intermediate Building
ISI	Inservice Inspection
IST	Inservice Testing
MS	Main Steam System
MU	Makeup & Purification System



PGN	Progress Energy
RB	Reactor Building (Outside "D" ring)
RB-2	Reactor Building (Inside "D" ring)
RC	Reactor Coolant System
RV	Reheat Vent
SF	Spent Fuel System
SW	Nuclear Services Closed Cycle Cooling System
TB	Turbine Building

4.2 DEFINITIONS

- 4.2.1 **Acceptable/Satisfactory** - A snubber shall be considered acceptable/satisfactory when it meets the inspection/examination parameters and is capable of performing its design function.
- 4.2.2 **Accessible Snubbers** - Those snubbers that can be inspected/examined during normal plant operating conditions.
- 4.2.3 **Activation** - The change of condition from passive to active, in which the snubber resists/restrains rapid displacement of the attached pipe or component.
- 4.2.4 **Activation Velocity** - The velocity at which the snubber provides restraint of motion.
- 4.2.5 **Application-Induced Failures** - Failures resulting from environmental conditions or application of the snubber for which it has not been designed or qualified.
- 4.2.6 **As-Found** - The condition of a snubber as it exists in the system prior to any preventive maintenance, corrective maintenance, or removal/disassembly to perform testing.
- 4.2.7 **As-Left** - The condition of a snubber as it exists in the system after any preventive maintenance, corrective maintenance, or removal/replacement activity.
- 4.2.8 **Authorized Nuclear Inspector (ANI)** - An employee of an Authorized Inspection Agency who has been qualified in accordance with NCA-5000 of Section III.
- 4.2.9 **Authorized Nuclear Inservice Inspector (ANII)** - A person who is employed and has been qualified by an Authorized Inspection Agency to verify that examinations,



tests and repairs are performed in accordance with the rules and requirements of Section XI.

- 4.2.10 **Augmented Examination Program** - An inspection/examination program, which addresses additional requirements as, established by the Owner or other Regulatory Authority or Agencies that may not require complete compliance with the requirements of ASME, Section XI.
- 4.2.11 **Bleed Rate (Release Rate)** - The velocity of a snubber movement under a load and/or after activation takes place.
- 4.2.12 **Breakaway Force** - The minimum applied force required to initiate extension or retraction of the snubber.
- 4.2.13 **Component** - An item in a nuclear power plant such as a vessel, pump, valve, piping system or component support.
- 4.2.14 **Component Standard Support** - A support consisting of one or more generally mass-produced units usually referred to as catalog items.
- 4.2.15 **Component Support** - A metal support designed to transmit loads from a component to the load carrying building or foundation structure. Component supports include piping supports and encompass those structural elements relied upon to either support the weight or provide structural stability to components.
- 4.2.16 **Cylinder** - The hydraulic pressure vessel, which houses the piston, gland, seals and other components, which make up the moving part of the snubber.
- 4.2.17 **Dead Band** - The clearance or play (axial movement) in the snubber and snubber attachment assembly before motion causes activation.
- 4.2.18 **Defined Test Plan Group (DTPG)** - A population of snubbers selected for testing in accordance with the 10% testing sample plan.
- 4.2.19 **Degraded Condition (snubber)** - For visual examination this is a condition in which the snubber does not fully meet all the acceptable/satisfactory acceptance criteria but is still considered functional and therefore may warrant further investigation or corrective actions for continued service. For functional testing this is a condition in which the snubber is still considered acceptable/satisfactory but within 20% of the acceptance ranges or predicted to trend outside the normal functional capability or performance levels. This condition may warrant further investigation or corrective actions for continued service.
- 4.2.20 **Design/Manufacturing Induced Failures** - A failure resulting from a potential defect in manufacturing or design that gives cause to suspect other similar snubber failures. This includes failure of any snubber that fails to withstand the environment or application for which it is designed.



- 4.2.21 **Drag Force** - The force that will sustain low-velocity snubber movement without activation though out the working range of the snubber stroke.
- 4.2.22 **Dynamic Restraint (snubber)** - A device which provides restraint to a component or system during a sudden application of force in which the load is transmitted through a hydraulic fluid (hydraulic snubber) or through mechanical parts/items (mechanical Snubber), but allows normal (essentially free) motion of the component or system during thermal movement.
- 4.2.23 **End Attachments** - The connections at either end of the snubber (eyes, clevises, etc.) which are used to connect the snubber to piping, piping components and structural members.
- 4.2.24 **Engineering** - Provides clear and concise design requirements for both CR3 and vendor installed equipment to ensure that all requirements are met relative to snubbers. Performs evaluations for degraded or inoperable snubbers and maintains and implements the snubber inspection program.
- 4.2.25 **Examination/Inspection** - The performance of visual observations for impaired functional ability caused by physical damage, leakage, corrosion, or degradation from environmental or operating conditions.
- 4.2.26 **Examination Group** - A composition of snubbers which have been selected to be examined.
- 4.2.27 **Failure Mode Group (FMG)** - A group of snubbers that have failed and those other snubbers that have potential for similar failure.
- 4.2.28 **Functional Ability/Adequacy** - A visual examination to confirm operability by the verification of defined parameters, such as settings or freedom of motion.
- 4.2.29 **Functional/Operability Testing** - An element of inspection/examination done in-place, or as a bench test, of a snubber consisting of measurement and observation of all the required parameters that verify snubber performance.
- 4.2.30 **Inaccessible Snubbers** - Those snubbers that are in high radiation areas or other environments/conditions that would render it impractical for the snubbers to be examined during normal plant operation without exposing plant personnel to undue hazards.
- 4.2.31 **Inspection** - The means of examination, testing, observation or measurement, that determines the conformance of material, supplies components, parts, appurtenances, system processes, or structures to pre-determined requirements.
- 4.2.32 **Isolated Failure** - A failure of a snubber, the nature of which does not cause other snubbers to be suspect.



- 4.2.33 **Maintenance** – Replacement of parts, adjustments, and similar actions that do not change the design of the snubber taken to prevent or correct deficiencies in the functional operation of a snubber. The Maintenance department supports visual examinations, functional tests and performs maintenance and repairs on failed or degraded snubbers.
- 4.2.34 **Maintenance, Repair and Installation-induced Failures** - Failures that result from damage during maintenance, repair and installation activities which may cause other snubbers to be suspect.
- 4.2.35 **Non-Safety Related** - All component snubbers installed on non-safety related systems/equipment and determined that their failure or the failure of the system on which they are installed would have no adverse effect on any safety related system.
- 4.2.36 **Normal Operating Conditions** - Plant operating conditions (MODES1-6), such as reactor startup, operation at power, hot standby, and reactor cool down to cold shutdown.
- 4.2.37 **Operational Readiness** - The ability of a component or system to perform its intended function when required.
- 4.2.38 **Operations** – The Operations Department ensures compliance with plant technical requirements by determining when removal of snubbers for testing or maintenance is allowed, based on plant and system operating conditions.
- 4.2.39 **Operating Temperature** - The temperature of the environment surrounding a snubber at its installed location during the operating conditions for which the snubber is required.
- 4.2.40 **Poppet Valve** - The valve that provides the restriction to flow which results in restraint of axial motion of the snubber.
- 4.2.41 **Qualitative Testing** - The testing inspection/examination performed to establish the functioning of a parameter without determining the specific value/measure of the parameter, as a go/no-go gauging (e.g. Hand Stroking.)
- 4.2.42 **Quantitative Testing** - The testing inspection/examination performed to establish the specific measure/value or the limit/range of the functioning of a parameter to establish that a parameter is functioning within a specified range.
- 4.2.43 **Release Rate** - The rate of the axial snubber movement under a specified load after activation of the snubber takes place.
- 4.2.44 **Relevant Condition** - A condition observed during a visual examination that requires supplemental examination, corrective measure, repair, replacement, or analytical evaluation.



- 4.2.45 **Relief Request** - Documents submitted to the NRC requesting permission to deviate from the inspection and/or test requirements stipulated in the ASME Code. Relief Requests must provide adequate justification and require approval prior to implementation, unless the inspection or test requirement is clearly impractical or relief has been pre-approved in other regulatory publications (i.e. Regulatory Guides, NUREG's, etc.)
- 4.2.46 **Repair** - The action taken to correct deficiencies in the function of a snubber or process of restoring a nonconforming item by welding, brazing, or metal removal, such that existing design requirements are met.
- 4.2.47 **Replacement** - Spare and renewal components, appurtenances, and subassemblies or parts of a component or system. It also includes the addition of components and/or component changes.
- 4.2.48 **Reservoir** - The vessel which contains the hydraulic fluid for the snubber system.
- 4.2.49 **Safety Related (SR)** - All ASME Class 1, 2, 3 and MC component snubbers that are to be examined for the verification of operational readiness. These snubbers are required to be operable to ensure that the structural integrity of the reactor coolant system and other safety-related systems are maintained, during and following, a seismic or other event initiating dynamic loads.
- 4.2.50 **Safety Significant (SS)** - All component snubbers designated as non-safety but determined that their failure or the failure of the system on which they are installed would have an adverse effect on any safety-related system.
- 4.2.51 **Service Life** - The period of time from installation/rebuild acceptance until the snubber or individual snubber parts are replaced or retired from service.
- 4.2.52 **Seismic Support (Component Support)** - A metal/concrete support designed to transmit loads from a component to the load carrying building or foundation structure.
- 4.2.53 **Snubber** - A type of component standard support that is installed on piping and/or equipment that utilizes hydraulic or mechanical methods to provide damping capability primarily to limit the displacement of the piping or equipment during a seismic or severe transient event, while still allowing thermal expansion of piping systems and related equipment or components during normal plant operations.
- 4.2.54 **Swing Clearance** - The amount of free space or movement envelope within which the snubber must operate without restriction (binding or damage) from the cold installed position to the hot operating position. (E.g., 4 to 6 degree movement envelope when anchored to the component)
- 4.2.55 **System Temperature** - System temperature is considered cold for examinations when the steam or gas system is dry and at ambient temperature. Hot examinations



are when the steam, gas or liquid system is charged or at operating pressure and near operating temperature.

- 4.2.56 **Test / Testing** - A procedure to obtain information through measurement or observation to determine the operational readiness of a component while under controlled conditions.
- 4.2.57 **Transient/Dynamic Event** - An unexpected or potentially damaging occurrence, which was determined from, reviews of operating data or during a visual inspection/examination.
- 4.2.58 **Unacceptable/Unsatisfactory Snubbers** - Snubbers that do not meet the examination, testing or evaluation parameter requirements.
- 4.2.59 **Unexplained Failure** - A failure that cannot be categorized as design/manufacturing, maintenance/repair/installation, application induced or isolated. This includes all Failures for which the cause cannot be determined.
- 4.2.60 **Verify** - To determine that a particular action has been performed in accordance with the rules and requirements of this Manual or procedure either by witnessing the action or by reviewing records.
- 4.2.61 **Visual Examination** - Examination of components such as mechanical and hydraulic snubbers, component supports, pumps, valves and spring loaded and constant weight hangers to determine their operability, functional adequacy and general mechanical and structural condition. Visual examinations specified VT-1, VT-2, and VT-3 are defined in ASME Section XI, IWA-2000.

5.0 ADMINISTRATIVE CONTROLS

5.1 Interpretation Contact

- 5.1.1 The Engineering Programs Supervisor is the focal point for implementation, control, and interpretations of this program. The controlling administrative references for this Manual are NEP-301, "Control of ASME Section XI and ASME OM Code Inspection, Examination, and Testing Program Plans, Manuals, and Reports", CP-213, "Preparation of a Safety Assessment and Unreviewed Safety Question Determination" and AI-701, "Administration of the ASME Section XI and ASME OM Code Inservice Inspection, Examination and Testing Programs".



5.2 Relief Requests

As of the time of approval, no requests for relief have been submitted for NRC approval.

5.3 Code Cases

- 5.3.1 Code Cases approved for use by the NRC are listed in Regulatory Guide 1.147, for ASME Section XI and 1.192 for the OM Code, including applicable restrictions. Code Cases not listed in Regulatory Guide 1.147 or 1.192 require a relief request for implementation. Code Case OMN-13 is approved for use and listed in Regulatory Guide 1.192.

5.4 Manual Revisions and Approvals

- 5.4.1 The Snubber Inspection Program Manual shall be revised as necessary following applicable changes to Technical Specifications, or plant modifications. If the proposed revision to the program conflicts with Technical Specifications, an approved License Amendment shall be obtained amending Technical Specifications.
- 5.4.2 All proposed revisions to the Snubber Program Manual must be reviewed to ensure there are no conflicts between the proposed change and Surveillance Procedures, SP-200, "Functional Testing of Hydraulic Snubbers", SP-201, "Hydraulic Snubber Visual Inspection", SP-208, Visual Examination of Component Supports and Maintenance Procedure MP-400, "Barker/Diacon 130 Kip Bench Tester Model S-4000 Upgrades".
- 5.4.3 Minor revisions will be marked with vertical bar in the right margin except for editorial and/or typographical corrections, which do not require vertical bars. Major revisions do not require vertical revision bars, however, a description of the changes incorporated by the major revision will be provided in the Revision History page, located at the front of this document.
- 5.4.4 Revisions to the Snubber Inspection and Testing Program Manual must be approved by the Engineering Programs Supervisor.
- 5.4.5 Minor non-intent changes to the Snubber Inspection Program Manual will be approved by the Engineering Programs Supervisor. These changes will be implemented through Interim Changes. A history of changes will be maintained with this manual and will be incorporated into the next revision of the Manual using NEP-301, "Control of ASME Section XI and ASME OM Code Inspection, Examination, and Testing Program Plans, Manuals, and Reports".



6.0 PROGRAM DESCRIPTION

6.1 General Program Requirements

- 6.1.1 All hydraulic snubbers will be periodically visually inspected in the As Found condition to determine operability with a frequency based on Table 1 – Snubber Visual Inspection Interval, Section 6.8.1.
- 6.1.2 A representative sample of snubbers from Attachments 1, 2 and 3 (locations to which the safety related and safety significant code requirements apply) will be selected each refueling outage and functionally tested to verify operability.
- 6.1.3 Service Life Monitoring of all snubbers will be performed to ensure that no snubbers are left in service beyond their recommended or calculated service life.
- 6.1.4 Maintenance repair/rebuild and replacement frequency of hydraulic snubber seals will be based on manufacturer recommendations of acceptable service life and/or based on plant specific seal life studies.
- 6.1.5 As-left visual inspections will be performed per applicable code/procedural requirements for snubber installations (pre-service) and re-installations (maintenance / testing).
- 6.1.6 Augmented Scopes – visual examination and functional testing may be performed as necessary.
- 6.1.7 Non-Safety Population - The locations listed in Attachment 4 of this manual, are those identified as Non-Safety related. This population does not require inspection or testing, however they are usually visually inspected every other refueling outage. Functional testing of these snubbers may be performed as determined necessary.

6.2 Plant Operational Requirements

- 6.2.1 All safety related and safety significant snubbers, as defined in Attachments 1, 2 and 3 shall be operable during plant MODES 1, 2, 3, and 4 and in MODES 5 and 6 for snubbers located on systems required to be operable.
- 6.2.2 Snubbers can be categorized by their design function and as supporting one or two trains of a system. Snubber design function can be considered as reacting to only seismic loads, reacting to only non-seismic loads (e.g. thrust loads, blowdown loads, waterhammer loads, LOCA loads), and as reacting to both seismic and non-seismic loads.
 - 1. If the design function of the snubber is to react to only seismic loads, LCO 3.0.8 may be applied.
 - 2. If the design function of the snubber includes both seismic loads and nonseismic loads (e.g., thrust loads, blowdown loads, waterhammer loads,



steamhammer loads, LOCA loads, and pipe rupture loads), any TS systems supported by the nonfunctional snubber must be able to remain OPERABLE if subjected to the non-seismic loads with the snubber removed. If the supported TS system will remain OPERABLE when subjected to non-seismic loads, LCO 3.0.8 may be applied. Otherwise, LCO 3.0.8 may not be applied to TS systems supported by the nonfunctional snubber.

3. If the design function of the snubber includes only non-seismic loads (e.g., thrust loads, blowdown loads, waterhammer loads, steamhammer loads, LOCA loads, and pipe rupture loads), LCO 3.0.8 cannot be applied to the TS systems supported by the nonfunctional snubber. However, if it can be confirmed that snubber is not needed for OPERABILITY of the TS system, LCO 3.0.8 is not needed.

6.2.3 LCO 3.0.8: When one or more required snubbers are unable to perform their associated support function(s), any affected supported LCO(s) are not required to be declared not met solely for this reason if risk is assessed and managed, and:

- a. the snubbers not able to perform their associated support function(s) are associated with only one train or subsystem of a multiple train or subsystem supported system or are associated with a single train or subsystem supported system and are able to perform their associated support function within 72 hours; or
- b. the snubbers not able to perform their associated support function(s) are associated with more than one train or subsystem of a multiple train or subsystem supported system and are able to perform their associated support function within 12 hours.

At the end of the specified period the required snubbers must be able to perform their associated support function(s), or the affected supported system LCO(s) shall be declared not met.

6.2.4 Attachment 11 lists all of the snubbers, their design function and the applicability of LCO 3.0.8.

6.3 Snubber Classification

6.3.1 The snubbers detailed in this program have been selected in accordance with their installed location, related system safety significance and design criteria, and classified as Safety Related, Safety Significant, or Non-Safety Related.

6.3.2 Factors considered in snubber categorizations are accessibility during reactor operations, manufacturers design characteristics and operating environment.

6.3.2.1 All snubbers have been categorized as Accessible or Inaccessible based on the above criteria (typically inaccessible snubbers are in the containment building). These test categories may be tested together or independently.



The decision to examine snubbers as one population or as separate categories shall be made and documented before the scheduled interval examinations begin and shall not be changed during the examinations.

- 6.3.3 Factors considered when establishing snubber types and grouping, are manufacturer, design characteristics and design application

- 6.3.3.1 All snubbers within these Accessible or Inaccessible categories have been grouped as Small Bore, Medium Bore, Large Bore, and Non Safety Related snubbers. Additional snubbers not installed within the plant during operation are identified as Spares.

6.4 Snubber and location Identifiers

- 6.4.1 A list of individual snubber locations and related systems with detailed information of the location and installed snubber design characteristics are listed in Attachment 5. Detailed unique identifiers have been assigned to both snubbers and locations.

- 6.4.1.1 Locations are identified by both the plant Tag/Mark Number and Exam Number:

- a. Tag/Mark Number - Identifies the System and unique Hanger Number. (i.e., FWH-139)
- b. Exam Number provides compatibility with the "SnubbWorks" computer tracking system and is a unique set of 5 fields for identifying locations (i.e., 11313):
- c. First Digit - (10000) Accessible, (20000) Inaccessible. (i.e., 11313):
- d. Second Digit - (01000) Safety Related/Safety Significant, (02000) Non-Safety Related. (i.e., 11313):
- e. Third Digit - (00100) Reactor Building (RB), (00200) Reactor Building (RB-2), (00300) Intermediate Building, (00400) Auxiliary Building, (00500) Turbine Building. (i.e., 11313):
- f. Fourth and Fifth Digit for individual location number. (i.e., 11313):

- 6.4.1.2 Snubbers are identified by both the manufacturers Serial Number and a specific Component Number:

- a. Serial Number - design/manufacturers unique number.(i.e., 740051):
- b. Component Number - provides compatibility with the "SnubbWorks" computer tracking system and is a unique set of 6 fields for identifying snubbers .(i.e., H13038):



- c. First character - (H) Hydraulic.(i.e., H13038):
- d. First Digit - (10000) Small Bore, (20000) Medium Bore, (30000) Large Bore. .(i.e., H13038):
 - a Second Digit - (01000): PP 1.5" Dia. / Lisega 3018, (02000): PP 2" Dia. / Lisega 3038 or 3042, (03000): PP 2.5" Dia. / Lisega 3052, (04000): PP 4" Dia. / Lisega 3062, (05000): PP 5" Dia. / Lisega 3072, (06000): Lisega 3082 or 3082-DR, (07000): Lisega 3092, (08000): TBD, (09000): PM 14" Dia. .(i.e., H13038):
- e. Third, Fourth and Fifth Digit for individual snubber number. (i.e., H13038)

6.5 General Test Program Requirements

- 6.5.1 Examinations and tests of snubbers are typically performed during plant outages but may be performed during normal system operations, as applicable, and shall be conducted by implementing the requirements of this program using approved Crystal River Unit 3 procedures as detailed in references, Section 3.0.
- 6.5.2 Snubbers shall not be subjected to prior preventive and/or corrective maintenance (pre-conditioning) specifically for the purpose of meeting the applicable examination or testing requirements.
 - 6.5.2.1 Snubbers that are maintained or repaired by removing or adjusting a snubber part, that can affect the results of the applicable tests required by this program, shall be examined and tested in accordance with the applicable requirements before returning to service. Additionally, the applicable installation requirements shall be met. The requirements selected shall ensure that the parameters that may have been affected are verified to be acceptable by suitable examination and tests.
- 6.5.3 Work planning and preparation should begin well in advance of the scheduled work scope to determine any specific issues to be addressed. Initial planning requirements should include the following:
 - 6.5.3.1 Allow time to inspect / test spare snubbers, review spare parts inventories and review data sheets from previous performances of snubber testing.
 - 6.5.3.2 Perform a review for previous functional test failures and failed snubber locations that will require the past failed snubber and location to be re-tested in the upcoming work scope.
 - 6.5.3.3 Snubbers requiring service life monitoring and seal replacement.
 - 6.5.3.4 Recurring visual inspection deficiencies and test failures.



- 6.5.3.5 Visual As-found examination requirements for the outage/work scope.
- 6.5.3.6 Preparation of each required test program, snubber listing, each test / inspection scope, exam instructions and required paperwork.
- 6.5.3.7 Functional test samples for each snubber subgroup should be selected in accordance with this program plan. A separate plan is required for Large Bore Hydraulic snubbers since they are functionally tested in place.
- 6.5.3.8 A review of the "SnubbWorks" database and past test activities should be conducted to determine scaffolding and other inspection restraints. Such restraints should be noted on any required Work Orders for the selected snubbers.
- 6.5.3.9 Coordination with Scheduling, Maintenance and Radiation Protection to preplan for each work scope to be performed.
- 6.5.4 All examination/test results shall be documented on the appropriate forms and all copies of examinations and test results shall be sent to the Snubber Program Manager for applicable evaluations and reviews.

6.6 Preservice Program Requirements

- 6.6.1 New snubber locations shall only be added, or existing locations permanently removed from the Snubber Program in accordance with the Engineering Change process and applicable implementing procedures.
- 6.6.2 All new snubber installations shall receive a preservice operability test and visual examination. For new snubbers, copies of the manufacturers functional test results may be used.
- 6.6.3 Upon completion of removal and subsequent replacement of any snubber for required maintenance / functional test work scope, an As-Left preservice visual inspection is required to verify correct installation criteria. This visual examination for safety related snubbers may be supplemented or replaced by an ISI VT-3 visual examination to satisfy any repair / replacement requirements of the program. This determination for ASME VT-3 as-Left examination requirements for all applicable locations shall be made by Snubber Program Manager.
- 6.6.4 After installation, the Preservice Operability Visual examination shall be performed in accordance with the applicable visual Inspection procedures to verify the following:
 - 6.6.4.1 No visible signs of damage or impaired operability exist as a result of storage, handling or installation.
 - 6.6.4.2 Snubber load rating, location, orientation, position setting and configuration (e.g., attachments and extensions) are in accordance with design drawings and specifications. Installation records (based on physical examinations) of



verification that the snubbers were installed according to the design drawings and specification shall be acceptable in meeting this requirement.

- 6.6.4.3 Adequate swing clearances is provided to allow snubber movement;
- 6.6.4.4 If applicable, fluid is at the recommended level, and fluid is not leaking from the snubber system; and ;
- 6.6.4.5 Structural connections, such as pins, bearings, fasteners, lock nuts, tabs, wires and cotter pins, are installed correctly;
- 6.6.5 Snubbers that are installed incorrectly or otherwise do not meet the requirements of 6.6.4 shall be corrected, adjusted, repaired or replaced and reexamined.
- 6.6.6 The Preservice Operability Functional Testing shall be performed on all snubbers prior to installation either at the manufacturer's or owner facility and as applicable verify the following:
 - 6.6.6.1 The force that will initiate motion (breakaway force), the force that will maintain low velocity displacement (drag force), or both as required per procedural requirements are within specified limits both in tension and compression.
 - 6.6.6.2 Activation is within the specified range of velocity or acceleration in both tension and compression.
 - 6.6.6.3 Release rate is within the specified range in tension and compression. For units specifically required not to displace under continuous load, the ability of the snubber to withstand load without displacement shall be demonstrated.
- 6.6.7 Snubbers shall be tested at a load sufficient to verify the operating parameters specified in 6.6.6.
- 6.6.8 Snubbers that fail the preservice operability test shall be evaluated for the cause(s) of failure(s). If a design deficiency in the snubber is found, it shall be corrected. Modified, repaired, or replacement snubbers shall be retested in accordance with 6.6.6.

6.7 Preservice and In-Service Procedural Requirements

- 6.7.1 Procedures and associated datasheets shall meet the examination and testing requirements as outlined in this program and be structured in accordance with the applicable Crystal River Unit 3 Administrative procedures.

6.8 In-Service Program Requirements

- 6.8.1 Scope and Frequency of Visual Operability (As Found) Inspections:



Code Case OMN-13 establishes specific requirements that must be met in order to allow extension of the visual interval beyond the maximum interval allowed in Table ISTD 4252-1. In RFO16 it was determined that all of the requirements of ISTD 4251, 5252(a), 4252(b), and 4252(c) had been met and the previous examination in R15 was performed at the maximum interval of two fuel cycles per Table ISTD-4252-1. The initiating requirements for the use of Code Case OMN-13 had been met the interval prior to R16, so the Code Case OMN-13 is being adopted for use.

6.8.1.1 The frequency for the visual examination of all safety related / safety significant snubbers are at least once every 10 years.

6.8.2 Visual Operability (As Found) Examination Requirements:

The Visual As-Found examination for safety related / safety significant snubbers shall be performed before the snubber is disconnected or removed for maintenance or functional testing and extends, as a minimum, from pin to pin connection. This examination is to determine that there are no visible indications of damage or impaired functional ability due to physical damage, leakage, corrosion, or degradation from environmental exposure or operating conditions.

6.8.2.1 The visual inspection and subsequent evaluation should verify that the snubber installation will meet all of the following requirements:

- a. **Restrained Movement.** Snubbers will be installed such that when activated they are capable of restraining abnormal movement.
- b. **Thermal Movement** Installed snubbers will not restrict thermal movement to the extent that unacceptable overstressing could develop in the pipe or other equipment that the snubber is designed to protect or restrain.
- c. **Pass Design-Specific Observations** Snubbers will be free of defects that may be generic to particular designs as may be detected by visual examination.
- d. **Special Features Required for The Actuation of The Snubber.** Fluid supply or content shall be observed. Observation that the fluid level is equal to or greater than the minimum amount which is sufficient for actuation at its operating extension is considered to satisfy the provisions of this requirement.

6.8.2.2 Any unacceptable/unsatisfactory or degraded snubber condition reported on the applicable inspection report sheet, or any noted anomaly identified during the current examination period, shall have an evaluation performed by an individual knowledgeable in snubber operability requirements.



- 6.8.2.3 Evaluations shall be performed to determine the type and cause of the visual examination discrepancy, the effect on the operability of the snubber and related component(s) and any relationship to other snubbers that may have the same failure characteristics. These evaluations may include: determination of operability by analysis, detailed re-inspection, manually induced snubber movement (hand stroking), evaluation of in-place snubber piston settings/movements, or removal and functional testing to determine operability.
- 6.8.2.4 Snubbers which appear inoperable as a result of visual inspections, and have been classified as unacceptable/unsatisfactory; may be reclassified as acceptable/satisfactory, provided that:
- An engineering evaluation is performed with the cause of the rejection being clearly established and remedied for that particular snubber and for other snubbers irrespective of type on that system that may be generically susceptible; **and/or**
 - The affected snubber is functionally tested in the as found condition and determined operable per the testing requirements. For tests determining operability due to low fluid, the initial test shall start with the piston at the as-found setting and be performed in the extension (tension) direction. .
- 6.8.2.5 If an evaluation/analysis determines that a visual examination discrepancy does not affect the operability of the snubber, and the condition is either generic or an isolated case, a Work Request for Corrective Maintenance may be issued to correct any discrepancies found during the visual examination.
- 6.8.2.6 The visual examination scope is considered complete after completing all visual examinations, failure evaluation/corrective actions and dispositions.
- 6.8.3 Augmented Visual Examinations:
- 6.8.3.1 An augmented scope is invoked whenever a visual examination is to be performed as a supplemental scope, outside of the code requirements of this program, or is for Non Safety related snubbers.
- 6.8.3.2 The visual examination acceptance criteria for Non Safety related snubbers is identified in PM-111, titled "Check of Hydraulic Pipe Snubbers" and is to be used in the visual inspection of these snubbers to determine that there are no visible indications of damage or impaired operability.
- 6.8.3.3 Snubbers may be selected as a whole population, defined group, be based on environmental conditions or selected based on preventative maintenance activities and then inspected, as applicable, in conjunction with the requirements of 6.8.1 or as a separate work scope.



- 6.8.3.4 Any unacceptable/unsatisfactory or degraded snubber condition reported on the applicable inspection/test report sheet, or any noted anomaly identified during the current examination period, shall have an evaluation performed by an individual knowledgeable in snubber operability requirements. This evaluation shall be performed to determine the type and cause of the visual examination discrepancy and effect on the operability of the snubber and related component(s). If the condition is determined, as generic, then additional examinations may be required, or if an isolated case, a Work Request may be issued to correct any discrepancies found.
- 6.8.3.5 The results of these examinations do not impact the visual examination frequency of the Safety Related / Safety Significant inspection program.
- 6.8.4 VT-3 ASME Section XI Examination of Snubbers
 - 6.8.4.1 As part of the ASME Section XI, Subsection IWF program plan, defined in the ISI Component and Structures Examination Program, various Safety Related snubber(s) require an additional visual inspection outside of the As-Found Visual snubber pin to pin requirement of the ASME OM Code. These snubber(s) shall be identified by the ISI Program Manager and defined in the snubber program work scope prior to scheduling, so that the applicable snubber(s) can be inspected to any additional requirements.
 - 6.8.4.2 The Visual VT-3 examination criterion for ASME Section XI, Safety Related snubbers is to determine that there are no visible indications of damage or impaired operability, and that fasteners for the attachment of the snubber to the piping system and to the associated building structure are functional. This additional visual VT-3 inspection criteria for safety related snubbers is further defined by the ASME Section XI Code, as follows:
 - a. Preservice and Inservice examinations shall be performed to determine the general mechanical and structural conditions of components and supports.
 - b. The VT-3 visual examination may require, as applicable, determination of structural integrity, the measurement of clearances, detection of physical displacement, structural adequacy of supporting elements and connections between load carrying structural members.
 - 6.8.4.3 When the ASME Section XI, ISI VT-3 visual inspection is to be performed during a refueling outage, it shall be performed before the snubber is disconnected or removed for maintenance or functional testing. The visual As Found examination and VT-3 requirements may be performed as separate scopes or performed as one at the same time, as long as the more stringent, applicable procedural requirements are met.
 - 6.8.4.4 The results of these examinations, if performed as a separate scope, shall be evaluated independently and do not affect the visual examination frequency



of the Safety Related / Safety Significant As-Found Visual program. If performed in conjunction with the Safety Related / Safety Significant As Found Visual program, the inspection results will be evaluated in accordance with 6.8.1 & 6.8.2, as applicable.

- 6.8.4.5 Upon completion of removal and subsequent replacement of any snubber for required maintenance / functional test work scope, an As Left preservice visual inspection is required to verify correct installation criteria. This ISI VT-3 visual examination for safety related snubbers is required to satisfy any repair / replacement code requirements of the program. This determination for ASME VT-3 As-Left examination requirements for all applicable locations shall be made by the ISI Program Manager.

6.8.5 Functional Operability Testing:

- 6.8.5.1 During each refueling outage a representative sample of snubbers shall be functionally tested according to the schedule determined by this program, to verify in-service operability performance. Snubber testing activities may begin no earlier than 60 days prior to the start of a scheduled refueling outage and completed prior to plant start-up from the refueling outage.
- 6.8.5.2 Snubbers shall be tested in their As Found condition, to the fullest extent practicable, with regard to the required test parameters and test methods and removal procedures, which shall not alter the condition of a snubber to the extent that the results do not represent the As Found snubber condition.
- 6.8.5.3 Snubbers may be removed or tested in their installed location by using CR3 approved test methods and equipment. Snubbers may be tested using an "in-situ" test machine (in place testing) or a bench-type machine.
 - a. Bench-type testing of the snubber is performed by securing the snubber at both ends and as such, requires the complete removal of the snubber from a plant location.
 - b. "In-situ" testing of a hydraulic snubber follows the principle of pressuring fluid inside the snubber cylinder to perform various functional tests to determine lock-up velocities, bleed rates, and seal integrity. Using this technique, a snubber can be tested in-place without completely removing the snubber.
- 6.8.5.4 An As Found visual inspection for operability shall be performed prior to the snubber being disconnected or removed for functional testing and the results recorded on the appropriate visual examination data sheet.
- 6.8.5.5 A representative sample from each Design Test Plan Group (DTPG) population shall be selected randomly, as far as practical, based on the significant features (i.e. various designs, configurations, operating environments, sizes, and capacities) and based on the ratio of the number of



snubbers of each significant feature, to the total number of snubbers in the DTPG. Selection shall be generally representative of the above, but may also be selected from snubbers concurrently scheduled for seal replacement or other similar activity related to periodic maintenance or service life monitoring. The snubbers shall be tested, on a generally rotational basis to coincide with the service life monitoring activity.

- 6.8.5.6 The sample plan (10% or 37 plan) shall be selected prior to the test period, changes can be made to this initial sample plan before testing begins, and then not changed during the test period. For each Safety Related/Safety Significant snubber found to be unacceptable/unsatisfactory by operability testing, an additional sample lot of at least one-half the size of the initial sample from that DTPG is required to be tested and the applicable corrective action(s) taken.
- 6.8.5.7 When selecting a snubber that is part of a tandem installation (parallel or multiple) even though they are identified and counted individually, the mate of that snubber may also be selected and credited toward the total number of snubbers required by any sampling plan. If a tandem snubber is deleted from the list, its mate may also be deleted.
- 6.8.5.8 An Augmented Test Scope shall also be identified. This mandatory Augmented Test Scope shall be comprised of snubbers in a location that had failed during the previous functional test cycle, and individual snubbers, if relocated to other locations, which had failed during the previous functional test cycle. These shall be re-tested in this augmented test scope, unless the cause of the failure has been clearly established and corrected. Functional testing failure of any of these snubbers within this augmented test scope does not cause an increase in the sample size as these additional tests are outside of the surveillance requirements and identified as an augmented scope.
- 6.8.5.9 An Augmented Functional Scope for Safety Related/Safety Significant snubbers may be selected for Service Life Monitoring activities as well as Non Safety Related snubbers selected and tested to satisfy good engineering practice and provide assurance of structural reliability. Any augmented functional scope for these snubbers shall be independent of the requirements for Safety Related / Safety Significant mandatory DTPG Test Plan snubbers and the results shall not affect the Safety Related program. Instead, results shall be evaluated on an individual basis and any corrective actions taken applied, as applicable, only to this separate scope.
- 6.8.5.10 Replacement snubbers and snubbers that have repairs which might affect the operational readiness of the snubber, shall be tested to meet the functional test requirements before installation

6.8.6 Functional Testing Sample Plans:



6.8.6.1 Testing will be conducted for each defined test plan group (DTPG) using the following, as applicable, where at least 10% of the total of each group/type of snubber population (fractional numbers will be rounded up) shall be functionally tested either in-place or in a bench test.

- a. The representative sample selected for the initial functional test will be randomly selected from the DTPG and reviewed before beginning the testing. This review will ensure as far as practical, that they are representative of the various designs, configurations, operating environments, range of size, and capacity of snubbers.
- b. Snubbers attached to the reactor coolant pumps (RCP's) shall be one separate DTPG.
- c. All snubbers subject to the functional test requirements are as detailed:

Accessible Safety Related/Safety Significant snubbers

Installed Population	Group
84	Small Bore
16	Medium Bore

Inaccessible Safety Related/Safety Significant snubbers

Installed Population	Group
81	Small Bore
22	Medium Bore
4	Large Bore

6.8.7 Functional Operability Test Acceptance Criteria:

6.8.7.1 The snubber functional test shall verify, as applicable, that:

- a. The force that will initiate motion (breakaway force), the force that will maintain low velocity displacement (drag force), or both as required per procedural requirements are within specified limits both in tension and compression..
- b. Activation is within the specified range of velocity or acceleration in both tension and compression.



- c. Release rate is within the specified range in tension and compression. For units specifically required not to displace under continuous load, the ability of the snubber to withstand load without displacement shall be demonstrated.
- 6.8.7.2 Snubbers shall be tested at a load sufficient to verify the operating parameters specified in 6.8.7.1
- 6.8.7.3 Qualitative testing may be used in lieu of quantitative testing in meeting the requirements of 6.8.7.1 provided sufficient data, based upon service history or life cycle testing is available to justify the ability of the parameter in question to be within specifications over the life of the snubber (e.g., demonstration that activation takes place without measurement of the activation level). A test report verifying that the parameter was within specifications shall be available for each snubber exempted from an in-service quantitative functional test requirement.
- 6.8.7.4 When snubber size, test equipment limitations, or inaccessibility prevents use of bench or in place snubber test methods, snubber sub-components that control the parameters to be verified shall be examined and tested in accordance with approved test methods. Re-assembly shall be in accordance with approved procedures.
 - a. Testing methods may be used to measure parameters indirectly or parameters other than those specified if those results can be correlated to the specified parameters through established methods.
 - b. Correlation of Indirect Measurements: When test methods are used that either measure parameters indirectly, or measure parameters other than those specified, the results shall be correlated with specified parameters through established methods.
- 6.8.7.5 Snubbers that fail the functional test acceptance criteria shall be repaired or replaced. Snubbers that have repairs shall be tested to meet the functional test criteria before installation.
- 6.8.8 Functional Test Failure Analysis
 - 6.8.8.1 Snubbers that do not meet the acceptance criteria for functional testing shall be evaluated to determine the cause of the failure to determine corrective actions.
 - a. Hydraulic snubbers typically fail due to loss of fluid, which results in no restraining action. This is referred to as failing soft. Snubbers may also fail due to loss of bleed capacity. This will only be evident if the snubber has been activated.



- b. Sometimes the cause of an inoperable snubber condition can be determined by external examination, such as a loose tubing connection or the existence of paint on moving parts. Visual examinations and measurements, coupled with the knowledge of snubber operational details, are usually sufficient to determine the cause of the failure.
- c. However, in some cases, the snubber will require disassembly to determine the cause of failure and whether a part broke from an overload or fatigue, or broke in tension or compression, etc. Additional investigation is usually required to determine what caused this defect to develop. Such root causes may be improper maintenance, improper design or operation under excessive vibration from the attached component.

6.8.8.2 For the snubbers found inoperable, an engineering evaluation shall also be performed on the components to which the inoperable snubbers are attached. The purpose of this engineering evaluation is to determine if the components to which the inoperable snubbers are attached were adversely affected by the in-operability of the snubbers in order to ensure that the component remains capable of meeting the designed service.

6.8.8.3 For each snubber of an initial sample group/type that does not meet the functional test acceptance criteria, an additional sample of at least one-half the size of the initial sample lot shall be tested.

6.8.9 Additional Samples / Failure Mode Groups

6.8.9.1 After determination by an engineering evaluation, that a snubber is unacceptable/unsatisfactory an additional sample of at least one-half the size of the initial sample lot shall be tested.

The unacceptable/unsatisfactory snubber may be categorized into an examination / testing failure mode group (FMG). A failure mode group shall include all unacceptable snubbers that have a given failure and all other snubbers evaluated to be subject to the same failure (except snubbers in a separate examination category). The failure mode groups shall be separate and distinct for each examination and testing work scope.

The following failure mode groups shall be used:

- a. Unexplained
- b. Isolated
- c. Design or manufacturing and Application-Induced
- d. Design or manufacturing and Maintenance, repair, or installation and Application-Induced



e. Transient Dynamic Event

- 6.8.9.2 Once a failure mode group has been established, any snubber(s) identified in that failure mode group may be separated for continued examination / testing from the original work scope. The new defined and independent failure mode group will remain until the applicable corrective action has been completed.
- 6.8.9.3 In the event a snubber(s) is included in more than one failure mode group, it shall be counted in each, and subject to the schedule, subsequent schedule and corrective action of each test failure mode group.
- 6.8.9.4 Unexplained Failure. All unacceptable snubbers in this failure mode group shall be replaced/repared to an acceptable condition and additional samples tested as determined in 6.8.9.9 below.
- 6.8.9.5 Isolated Failure Mode. All unacceptable snubbers in this failure mode group shall be replaced/repared to an acceptable condition and re-categorized as acceptable for examination/testing frequency purposes. Additional test are not required for an isolated failure.
- 6.8.9.6 Design or Manufacturing and Application-Induced Failure Mode. The following corrective actions shall apply:
 - a. All snubbers in the failure mode group shall be replaced or modified. The replacement/modified snubbers shall be reclassified as acceptable and the applicable reexamination performed; OR
 - b. All unacceptable snubbers in the failure mode group shall be replaced or repaired to an acceptable condition and the environment or applications shall be made compatible with the design parameters for all snubbers in this FMG.

No additional testing is required provided the above corrective actions have been taken.
- 6.8.9.7 Design or Manufacturing: Maintenance, Repair, or Installation; and Application-Induced Failure Mode. When the corrective actions of 6.8.9.6.a or b. above are not applicable, or are not taken, then additional samples in the FMG shall be taken until the mathematical formula of 6.8.11.1 is satisfied or all the snubbers in the FMG have been tested.
- 6.8.9.8 Transient Dynamic Event Failure Mode Group. Although additional samples of this FMG are not required, the operational readiness of all snubbers in this FMG shall be evaluated by stroking or testing. All operationally ready snubbers in this FMG shall be eligible for selection and testing for other appropriate FMGs and the DTPG.



6.8.9.9 When an unacceptable/unsatisfactory snubber has not been assigned to an FMG, the additional sample shall be taken from the DTPG. As practical, the additional sample shall include the following:

- a. Snubbers of the same manufacturer's design.
- b. Snubbers from the same system including those snubbers immediately adjacent to the unacceptable snubbers.
- c. Other piping systems having the same operating conditions such as temperature, humidity, vibration and radiation.
- d. Snubbers which are previously untested.

6.8.9.10 Deletions of Unacceptable Snubbers. Snubbers may be deleted based on analysis of the affected piping system. When an unacceptable snubber is deleted, the deleted snubber shall continue to be considered in its respective examination population, examination category, or failure mode group for determining the corrective action.

6.8.10 Transient Dynamic Event

6.8.10.1 If a transient dynamic event (e.g. water hammer, steam hammer, etc.) is determined to have occurred, that may have affected snubber operability, then the affected snubbers and systems shall be reviewed and any appropriate actions taken. Any actions taken shall be considered independent of the in-service visual examination inspection plan.

6.8.10.2 Potential actions included visual examination of the snubbers and freedom of motion verification by one of the following:

- a. Manually induced snubber movement, or
- b. Evaluation of in-place snubber piston settings, or
- c. Stroking the snubber through its full range of travel, or
- d. Functional testing of the snubber.

6.8.10.3 Any unacceptable/unsatisfactory or degraded snubber condition reported on the applicable inspection / test report sheet, or any identified anomaly resulting from this supplemental scope, shall have an evaluation / failure analysis performed by an ISI/Engineering individual knowledgeable in snubber operability requirements. This evaluation shall be performed to determine the type and cause of the visual examination discrepancy, effect on the operability of the snubber and related component(s) and any required corrective actions.



6.8.11 Test Plan Completion

- 6.8.11.1 Testing shall be considered complete when the mathematical expressions below are satisfied for each DTPG or FMG or all snubbers in the DTPG or FMG have been tested.

For each DTPG

$$N \geq 0.1n + C(0.1n/2)$$

Where

- N = total number of snubbers tested that were selected from the DTPG
n = number of snubbers in the DTPG
C = total number of unacceptable snubbers found in the DTPG (excluding those counted for FMG tests)

For each FMG

$$N_f \geq C_f(0.1n/2)$$

Where

- N_f = all snubbers selected and tested from the FMG after the FMG was established from the DTPG
 C_f = total number of unacceptable snubbers in the FMG, plus those found in the DTPG and used to establish the
n = number of snubbers in the DTPG

6.8.12 Snubber Service Life Monitoring / Replacement Program:

- 6.8.12.1 The object of service life monitoring is to identify service environment conditions and maintenance functions (rebuilt, handling, and replacements) that can adversely affect snubber performance. Service life varies with manufacturer recommendations, design limits, actual conditions and materials, and should be adjusted based on plant experience and trending to ensure that the snubber(s) periodically undergo a performance evaluation.
- 6.8.12.2 The maximum expected service life for various seals, springs, and other critical parts shall be extended or shortened based on monitored test results and failure history. Critical parts shall be replaced so that the maximum service life will not be exceeded during a period when the snubber is required to be operable.
- 6.8.12.3 The performance of snubbers is indicated by the results of functional tests. Tracking and trending snubber performance may be required relating to snubbers installed in the same location and for snubbers that failed previous outage tests, due to location variables or unknown causes. When the same snubber has been tested several times, its test results may be reviewed to determine whether a trend is developing or if the snubber test values are degrading.



- a. Activation, bleed rate and drag are parameters available for trending hydraulic snubber performance. The results of the next functional test can be compared to the last test to determine if a drift of parameter values has occurred. If the drift is within acceptance limits, the snubber may be determined to be degraded or acceptable for continued use without the need for rebuild or replacement.
- b. Since the Paul Munroe manufactured snubbers located on the Reactor Coolant Pumps are equipped with seals in the critical load bearing areas, the control valves are the primary areas of investigation. One of the primary problems associated with this type of seal configuration is static leakage over the life of the snubber due to inactivity of the snubber. This can be trended through the performed visual inspections and resolved for spare snubbers, by visual inspection or functional stroking on a scheduled frequency.
- c. The static and dynamic seals, moving parts and fluid in a hydraulic snubber are subject to wear or other degradation. The piston, piston rod, cylinder and glands are also subject to wear. These and other parts should be examined carefully each time seals are replaced or each time replacements are made to prevent leakage or other conditions of inoperability before the next snubber rebuild.
- d. Hydraulic fluid, if reused, should be checked at rebuild time for moisture content and particulate to determine whether the fluid should be filtered to bring it back into specification or disposed.

6.8.12.4 A record of the service life of each snubber in the program shall be maintained. The snubber service life record shall include manufacturer, model, serial number, present plant location and installation service life end date for each applicable snubber. When snubbers are rebuilt or overhauled, the service life shall be updated which will provide future statistical bases for consideration of snubber service life.

6.8.12.5 Service life for snubbers shall be evaluated at least once each fuel cycle and adjustments made as warranted. The service life shall be reviewed and necessary actions taken to ensure that the service life of all installed snubbers will not be exceeded during the next operating cycle.

6.8.13 Maintenance

6.8.13.1 Any maintenance function which could affect the operability of a snubber shall be conducted using Crystal River Unit 3 approved Maintenance Procedures. In addition, small and medium bore snubbers will be functionally tested per Maintenance Procedure MP-400, "Barker/Diacon 130 Kip Bench Tester Model S-4000 Upgrades" after any maintenance function which could affect operability.



6.8.13.2 Snubber Seal Life and Replacement

- a. All Paul Monroe Large Bore snubbers at CR3 have a forty (40) year seal life for main seals with the manufacturer recommending changing these seals only if a seal is damaged or leaks. Additionally all large bore snubbers have an eight and a half (8.5) year seal life for secondary seals. (Ref. 3.7)
- b. All Power Piping Small Bore and Medium Bore snubbers have a seal life of fourteen (14) to twenty-two (22) years based on location as determined by actual seal life study. (Ref. 3.7)
- c. All Lisega Small Bore and Medium Bore snubbers have a manufacturers recommended minimum service life of 21 years without scheduled maintenance.
- d. The seal life should be used to determine when all Safety, Safety Significant and Non-Safety related snubber seal replacements are required, at which time snubbers shall be rebuilt and functionality tested using safety related parts, procedures and associated acceptance criteria.

6.8.13.3 Spare Snubbers

- a. All snubbers not installed in an active location within the plant are considered spares. Spares shall be rebuilt using safety related parts and functionally tested in accordance with approved procedures and tagged with the date and results of the functional test.
- b. Spares may be used in all locations where a snubber of the same manufacturer bore and stroke size, requires a change out.
- c. Storage should be in designated areas that provide protection from exposure to airborne and windblown contaminants. When being moved from storage, they should be protected from damage and the possibility of moisture, liquids or other activities that might result in foreign materials entering or damaging the snubber.

6.8.13.4 Replacement or Modified Snubbers

- a. Snubbers shall not be adjusted, maintained, or repaired before an examination or test specifically to meet the examination or test requirements.
- b. Snubbers that are maintained or repaired by removing or adjusting a snubber part that can affect the results of tests shall be examined and tested with the applicable procedures before returning to service. The



requirements selected shall ensure that the parameters that may have been affected are verified to be acceptable.

- c. Replacement or modified snubber(s) shall have a proven suitability for the application and environment and shall be examined and tested in accordance with written procedures and verified to be acceptable.

7.0 EQUIPMENT AND PERSONNEL REQUIREMENTS

7.1 Instrumentation and Test Equipment

7.1.1 Functional Test Equipment

- 7.1.1.1 Instrumentation and test equipment used in the examination and testing of snubbers shall have a current calibration sticker and have the range and accuracy necessary to demonstrate conformance to the test requirements as stated in the applicable testing procedures.
- 7.1.1.2 The test machine presently used at Crystal River Unit 3 is the Anchor Darling / Barker/Diacon 130 Kip Bench Tester Model S-4000 Upgrade. An equivalent approved testing machine is acceptable for the functional preservice and inservice tests provided that it is capable of testing to verify that:
 - a. Free movement force will initiate motion of the snubber rod in both tension and compression during low velocity displacements, and
 - b. Activation is achieved within the specified range of velocity or acceleration in both tension and compression, and
 - c. Snubber bleed or release rate is within the specified range in compression or tension.

7.2 Training and Personnel Qualifications

- 7.2.1 Personnel who are required to witness, perform, and/or evaluate test results will be trained and/or certified, as applicable, in accordance with approved site procedures.
- 7.2.2 Training is performed to meet CR3 general regulatory requirements, and good engineering practices, as applicable. Briefings shall be conducted prior to any performance of visual inspections and snubber functional tests.
- 7.2.3 Craft and maintenance personnel involved with snubber related work, are to be qualified in accordance with the applicable test and removal procedures. In addition, personnel performing the functional testing on snubbers using the test machines must be qualified on and with, the operation of the machines, and have a working knowledge of snubber design and test parameters.



- 7.2.4 Personnel performing snubber evaluations shall be knowledgeable in snubber operability requirements, design, test parameters, failure/degradation mechanisms and maintain a knowledge of current industry events and trends.
- 7.2.5 Personnel performing visual (VT-1, VT-3) inspections must be qualified and meet the visual acuity requirements of ASME Section XI, IWA-2300.

8.0 DATA BASE MANAGEMENT

- 8.1 The "SnubbWorks" data management system is currently used as a tool to manage and maintain the snubber database at CR3. If required other methods of database management are acceptable in meeting the requirements of this manual.
- 8.2 The "SnubbWorks" database contains information on all applicable installed and spare snubbers and the associated plant safety, safety significant and non-safety locations for the snubber test program. Any approved user, may access required information by using the applicable unique identifiers, snubber component or serial number, or the location exam or mark / tag number.
- 8.3 Additional information may also be tracked in the database to aid in work planning and pre-work examination packages. This may include location variables such as scaffolding requirements, radiation conditions, isometric, plan and component drawings, etc.
- 8.4 At the beginning of an inspection/test cycle a review of the database and past test activities should be conducted to aid in determining the new test scopes.
- 8.5 In order to build and maintain the test program database, information from the applicable snubber test data sheets should be transferred into "SnubbWorks" to build historical files for each location and individual snubber. When a snubber is replaced, added or deleted from the plant location or is moved from one location to another and a spare snubber put in its place, to maintain program integrity, the database will require updating. During the current work scope all snubber test data sheets should also be transferred to the database on a frequent basis.
- 8.6 After the test results have been entered, the Snubber Program Manager may use the "SnubbWorks" program to search the data base for any test discrepancies to determine if additional testing is required. A review of applicable test data sheets will also reveal test discrepancies.
- 8.7 Evaluation Reports (available for SNUG updating and trending), for all snubbers that testing, may be generated and issued from the "SnubbWorks" database. This may, as applicable, be forwarded to the ISI / System Engineer for component / system evaluation. In addition any unusual attributes (i.e. repetitive failures, unusual wear etc.) may also be identified for disposition.
- 8.8 Various scheduling, work progress and functional and visual test status reports can be generated from "SnubbWorks" to provide the number of outstanding and completed snubber/location tests for the current test cycle.



9.0 HANGER AND COMPONENT LOCATION AND REFERENCE LOCATION (MAP) DRAWINGS

- 9.1 The Hanger and Component Location Drawings contained within this section of the snubber manual identify the hanger/component and their location that are examined under the requirements of this program and the Inservice Inspection (ISI) program. Code boundaries shown on these drawings were obtained from the plant controlled P&ID drawings.
- Hanger and Component drawings, refer to the enclosed index for Class 1, 2 and 3 Hangers and Component Supports.
- 9.2 Snubber specific Reference Location (MAP) Drawings contained within this section of the snubber manual identifies snubber locations that are examined under the requirements of this program.
- Snubber specific Reference Location (MAP) drawings, refer to the enclosed master index and/or individual Location MAP for snubbers.

CLASS 1 HANGER DRAWING INDEX		
Drawing	Title	
CR3-P-SKH-1.1	12" Decay Heat	
CR3-P-SKH-3.1	10" & 14" Core Flood (A Train)	
CR3-P-SKH-3.2	10" & 14" Core Flood (B Train)	
CR3-P-SKH-4.1	2 1/2" High Pressure Injection (RCP-1A)	
CR3-P-SKH-5.1	2 1/2" High Pressure Injection (RCP-1B)	
CR3-P-SKH-5.2	2 1/2" High Pressure Injection (RCP-1B)	
CR3-P-SKH-6.1	2 1/2" High Pressure Injection (RCP-1C)	
CR3-P-SKH-6.2	2 1/2" High Pressure Injection (RCP-1C)	
CR3-P-SKH-7.1	2 1/2" High Pressure Injection (RCP-1D)	
CR3-P-SKH-7.2	2 1/2" High Pressure Injection (RCP-1D)	
CR3-P-SKH-9.1	2 1/2" Conn. Pump 2B Suction to Letdown Coolers	
CR3-P-SKH-9.2	2 1/2" Conn. Pump 2B Suction to Letdown Coolers	
CR3-P-SKH-9.3	2 1/2" Conn. Pump 2B Suction to Letdown Coolers	
CR3-P-SKH-10.1	MUHE-1A/1B Outlet	
CR3-P-SKH-10.2	MUHE-1C	
CR3-P-SKH-10.3	MUHE-1A, 1B, 1C Outlet	
CR3-P-SKH-18.1	10" Surge Line	
CR3-P-SKH-19.1	2 1/2" Pressurizer Spray Line	
CR3-P-SKH-20.1	Reactor Coolant Drain From RCP-1A	
CR3-P-SKH-20.2	Reactor Coolant Drain From RCP-1B	
CR3-P-SKH-20.3	Reactor Coolant Drain From RCP-1C	
CR3-P-SK-1AH.12	Reactor Coolant Pump Constant Support	



CLASS 2 HANGER DRAWING INDEX

Drawing	Title	
CR3-P-SKH-101.1	24" Main Steam From OTSG "A" to Pen. # 106	
CR3-P-SKH-101.2	24" Main Steam From Pen. # 106 to MSV-412	
CR3-P-SKH-101.3	24" Main Steam From Pen. # 427 to MSh-559	
CR3-P-SKH-102.1	24" Main Steam From OTSG "A" to Pen. # 105	
CR3-P-SKH-102.2	24" Main Steam From Pen # 105 to MSV-411	
CR3-P-SKH-103.1	24" Main Steam From OTSG "B" to Pen # 107	
CR3-P-SKH-103.2	24" Main Steam From Pen # 107 to MSV-414	
CR3-P-SKH-104.1	24" Main Steam From OTSG "B" to Pen # 201	
CR3-P-SKH-104.2	24" Main Steam From Pen # 201 to MSV-413	
CR3-P-SKH-104.3	24" Main Steam From MSH-559 to MSV-128	
CR3-P-SKH-105.1	Feedwater to OTSG "A"	
CR3-P-SKH-105.2	Feedwater to OTSG "A"	
CR3-P-SKH-105.3	Feedwater to OTSG "A"	
CR3-P-SKH-106.1	Feedwater to OTSG "B"	
CR3-P-SKH-106.2	Feedwater to OTSG "B"	
CR3-P-SKH-106.3	Feedwater to OTSG "B"	
CR3-P-SKH-107.1	Emergency Feedwater to OTSG "A"	
CR3-P-SKH-107.2	Emergency Feedwater to OTSG "A"	
CR3-P-SKH-107.3	Emergency Feedwater to OTSG "A"	
CR3-P-SKH-108.1	Emergency Feedwater to OTSG "B"	
CR3-P-SKH-108.2	Emergency Feedwater to OTSG "B"	
CR3-P-SKH-108.3	Emergency Feedwater to OTSG "B"	
CR3-P-SKH-108.4	Emergency Feedwater to OTSG "B"	
CR3-P-SKH-109.1	14" Decay Heat (A Train)	
CR3-P-SKH-109.2	14" Decay Heat (A Train)	
CR3-P-SKH-110.1	14" Decay Heat (B Train)	
CR3-P-SKH-110.2	14" Decay Heat (B Train)	
CR3-P-SKH-111.1	8" Decay Heat	
CR3-P-SKH-111.2	14" Decay Heat	
CR3-P-SKH-112.1	10" Decay Heat (A Train)	
CR3-P-SKH-112.2	10" Decay Heat (A Train)	
CR3-P-SKH-112.3	10" Decay Heat Inside Reactor Building (A Train)	
CR3-P-SKH-113.1	10" Decay Heat From DHV-111 To Pump 3B (B Train)	
CR3-P-SKH-113.2	10" Decay Heat from DHV-111 to Pen. #342 (B Train)	
CR3-P-SKH-113.3	10" Decay Heat Inside Reactor Building (B Train)	
CR3-P-SKH-114.1	8" Decay Heat (A/B Train)	
CR3-P-SKH-115.1	6" Makeup	
CR3-P-SKH-115.2	6" Makeup	
CR3-P-SKH-115.3	4" Decay Heat to DHV-11 (Piggy Back mode)	
CR3-P-SKH-115.4	4" Makeup Suction to MUV-65	
CR3-P-SKH-116.1	6" Makeup	
CR3-P-SKH-116.2	6" Makeup	
CR3-P-SKH-116.3	4" Decay Heat to DHV-12 (Piggy Back mode)	



CLASS 2 HANGER DRAWING INDEX

Drawing	Title	
CR3-P-SKH-117.1	14" Core Flood	
CR3-P-SKH-118.1	14" Core Flood	
CR3-P-SKH-119.1	5" Makeup	
CR3-P-SKH-120.1	10" Building Spray to BSP-1A	
CR3-P-SKH-120.2	10" Building Spray From BSP-1A to Pen # 340	
CR3-P-SKH-121.1	10" Building Spray to BSP-1B	
CR3-P-SKH-121.2	10" Building Spray From BSP-1B to Pen # 341	
CR3-P-SKH-122.1	14" Decay Heat From BWST "A" Train	
CR3-P-SKH-122.2	6" MU Pump Suction From BWST "A" Train	
CR3-P-SKH-122.3	14" Decay Heat from BWST "B" Train	
CR3-P-SKH-122.4	6" MU Pump Suction From BWST "B" Train	
CR3-P-SKH-123.1	4" Makeup Recirc Line	
CR3-P-SKH-123.2	4" Makeup Recirc Line	
CR3-P-SKH-124.1	2" Makeup Recirc Line From MUP-1A	
CR3-P-SKH-125.1	2" Makeup Recirc Line From MUP-1B	
CR3-P-SKH-126.1	2" Makeup Recirc Line From MUP-1C	
CR3-P-SKH-127.1	10" Decay Heat from BWST to SFV-13	
CR3-P-SKH-127.2	10" Decay Heat from BWST to SFV-13	
CR3-P-SKH-128.1	2 1/2" Makeup to RCS	
CR3-P-SKH-128.2	2 1/2" Makeup to RCS	
CR3-P-SKH-128.3	2 1/2" Makeup to RCS	
CR3-P-SKH-128.4	2 1/2" Makeup to RCS	
CR3-P-SKH-129.1	4" Makeup to MUV-18	
CR3-P-SKH-129.2	2 1/2" Makeup to MUV-18	
CR3-P-SKH-129.3	4" Makeup to MUV-18	
CR3-P-SKH-129.4	4" Makeup to MUV-18	
CR3-P-SKH-129.5	2 1/2" Makeup Bypass for MUV-452	
CR3-P-SKH-129.6	2 1/2" Makeup Bypass for MUV-452	
CR3-P-SKH-130.1	4" Makeup Discharge Header	
CR3-P-SKH-130.2	3" Makeup From MUP-1C Discharge	
CR3-P-SKH-130.3	4" High Pressure Injection	
CR3-P-SKH-130.4	3" Makeup to RC Injection	
CR3-P-SKH-130.5	3" Makeup to RC Injection	
CR3-P-SKH-131.1	4" Makeup Header	
CR3-P-SKH-131.2	3" Makeup From MUP-1B Discharge	
CR3-P-SKH-131.3	3" Makeup From MUP-1A Discharge	
CR3-P-SKH-131.4	4" High Pressure Injection	
CR3-P-SKH-131.5	3" Makeup to RC Injection	
CR3-P-SKH-131.6	3" Makeup to RC Injection	
CR3-P-SKH-132.1	3" Makeup Recirc to RB Sump	
CR3-P-SKH-132.2	3" Makeup Recirc to RB Sump	
CR3-P-SKH-132.3	3" Makeup Recirc to RB Sump	
CR3-P-SKH-132.4	3" Makeup Recirc to RB Sump	
CR3-P-SKH-133.1	Nuclear Services (SW) to RB Fan 3A	



CLASS 2 HANGER DRAWING INDEX

Drawing	Title	
CR3-P-SKH-133.2	Nuclear Services (SW) to RB Fan 3A	
CR3-P-SKH-133.3	Nuclear Services (SW) to RB Fan 3A	
CR3-P-SKH-134.1	Nuclear Services (SW) from RB Fan 3A	
CR3-P-SKH-134.2	Nuclear Services (SW) from RB Fan 3A	
CR3-P-SKH-134.3	Nuclear Services (SW) from RB Fan 3A	
CR3-P-SKH-135.1	Nuclear Services (SW) to RB Fan 3B	
CR3-P-SKH-135.2	Nuclear Services (SW) to RB Fan 3B	
CR3-P-SKH-136.1	Nuclear Services (SW) from RB Fan 3B	
CR3-P-SKH-136.2	Nuclear Services (SW) from RB Fan 3B	
CR3-P-SKH-137.1	Nuclear Services (SW) to RB Fan 3C	
CR3-P-SKH-137.2	Nuclear Services (SW) to RB Fan 3C	
CR3-P-SKH-137.3	Nuclear Services (SW) to RB Fan 3C	
CR3-P-SKH-138.1	Nuclear Services (SW) from RB Fan 3C	
CR3-P-SKH-138.2	Nuclear Services (SW) from RB Fan 3C	
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M1	Layout Reactor Building – Containment Outside the D-Rings Basement Floor Elevation 95'.
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Location Map	Mark / Tag No	Safety Classification	Building	Elevation	Location
M1	DHH-17	Safety	RB	110' 6"	O/H (LD) Line W of Sth Stairs D-Ring Wall
M1	DHH-18	Safety	RB	110' 6"	E of AHF-1C by lot drain Valve
M1	DHH-23	Safety	RB	110' 6"	RB Sump O/H
M1	DHH-25	Safety	RB	110' 6"	LD Line in Overhead by S Stairs
M1	DHH-26H	Safety	RB	110' 6"	LD Line in Overhead by S Stairs
M1	DHH-26V	Safety	RB	110' 6"	LD Line in Overhead by S Stairs
M1	DHH-27	Safety	RB	110' 6"	RB Sump O/H
M1	MSH-567L	Safety	RB	110' 0"	LD Line by S Stairs on D-Ring Wall
M1	MSH-567U	Safety	RB	110' 0"	LD Line by S Stairs on D-Ring Wall
M1	MSH-568L	Safety	RB	110' 0"	ESE of AHF-1C on D-Ring Wall
M1	MSH-568U	Safety	RB	110' 0"	ESE of AHF-1C on D-Ring Wall
M1	MSH-576L	Safety	RB	112' 0"	Over Elevator Landing on D-Ring wall
M1	MSH-576U	Safety	RB	112' 0"	Over Elevator Landing on D-Ring wall
M1	MUH-80	Safety	RB-2	108' 0"	I/S Wall Behind RCP-1D LD
M1	MUH-82	Safety	RB	108' 7"	Sump O/H



M2	Layout Reactor Building – Containment Inside the D-Rings Basement Floor Elevation 95'.
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Location Map	Mark / Tag No	Safety Classification	Building	Elevation	Location
M2	CFH-14	Safety	RB	110' 6"	On Top of Old LDCR Roof
M2	CFH-15	Safety	RB-2	120' 9"	I/S E Wall by RCP 1A
M2	MUH-51	Safety	RB-2	117' 0"	I/S E Wall by RCP 1A



M3	Layout Reactor Building – Containment Outside the D-Rings Mezzanine Floor Elevation 119'.
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Location Map	Mark / Tag No	Safety Classification	Building	Elevation	Location
M3	FWH-122	Safety	RB	131' 0"	O/H Between Elevator/P.H.
M3	FWH-128	Safety	RB	146' 0"	Front of AHF 1A / S of A Core Flood Room
M3	MSH-139	Safety	RB	133' 0"	Behind the Cavity Cooling Fans
M3	MSH-147	Safety	RB	139' 0"	Cavity Cooling Fans in Overhead O/S S Inner wall
M3	MSH-149	Safety	RB	123' 0"	Under Mezz Grate
M3	MSH-150	Safety	RB	123' 0"	Under Mezz Grate
M3	MSH-164	Safety	RB	123' 0"	Under Mezz Grate
M3	MSH-165	Safety	RB	123' 0"	Under Mezz Grate Platform at Elevator
M3	RCH-55	Safety Sig	RB	123' 9"	O/H Behind Stairs on D-Ring Wall
M3	RCH-58	Safety Sig	RB	120" 0"	O/H Behind Stairs on D-Ring Wall
M3	RCH-84	Safety Sig	RB	123' 9"	Behind Stairs on D-Ring Wall
M3	RCH-89	Safety Sig	RB	124' 0"	O/H on D-Ring Wall behind N Stairs
M3	RCH-90	Safety Sig	RB	120' 0"	O/H on D-Ring Wall behind N Stairs

M4	Layout Reactor Building – Containment Elevation 143'.
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Location Map	Mark / Tag No	Safety Classification	Building	Elevation	Location
M4	BSH-14	Safety	RB	137' 6"	O/S by S Stairs Close to Cont. Wall
M4	BSH-19	Safety	RB	150' 0"	O/S by S Stairs on Horz. Run Close to Wall
M4	FWH-123	Safety	RB	146' 0"	O/H Between Elevator/P.H.
M4	FWH-124	Safety	RB	149' 0"	O/H Between Elevator/P.H. W Wall
M4	FWH-130	Safety	RB	154' 0"	O/S CFT Area
M4	FWH-131	Safety	RB	154' 0"	SW Wall O/S D-Ring O/H (across from Equip. Hatch)
M4	FWH-132	Safety	RB	154' 0"	SW Wall O/S D-Ring O/H
M4	MSH-159	Safety	RB	148' 0"	O/H by Elevator
M4	MSH-160	Safety	RB	142' 0"	O/H by Elevator
M4	MSH-162	Safety	RB	132' 0"	O/H in front of Elevator
M4	MSH-166	Safety	RB	148' 0"	SW Wall O/S D-Ring O/H (across from Equip. Hatch)
M4	MSH-167	Safety	RB	148' 0"	SW Wall O/S D-Ring O/H (across from Equip. Hatch)
M4	MSH-168	Safety	RB	142' 0"	SW Wall O/S D-Ring O/H
M4	MSH-170	Safety	RB	142' 0"	SW Wall O/S D-Ring N of Equipment Hatch in O/H
M4	MSH-243	Safety	RB	147' 0"	SW Wall O/S D-Ring O/H
M4	RCH-614	Safety	RB-2 D-Ring	134' 6"	I/S by RCP-1A (L-Bore)
M4	RCH-618	Safety	RB-2	134' 6"	I/S by RCP-1C (L-Bore)
M4	RCH-619	Safety	RB-2	134' 6"	I/S by RCP-1C (L-Bore)
M4	RCH-620	Safety	RB-2 I/S B-D-Ring	134' 6"	I/S by RCP-1D (L-Bore)
M4	RCH-86	Safety Sig	RB	144' 9"	O/H by Elevator
M4	SWH-483	Safety	RB	136' 0"	SW Wall by Equip Hatch

M5	Layout Reactor Building – Containment Inside the D-Rings “A” D-Ring Elevation 152’ & 162’.
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Location Map	Mark / Tag No	Safety Classification	Building	Elevation	Location
M5	DHH-35	Safety	RB-2	152' 5"	NW Side PZR Platform
M5	DHH-36	Safety	RB-2	152' 5"	NW Side PZR Platform 15' Down By RCV-12 /53
M5	DHH-37	Safety	RB-2	159' 7"	W Side PZR Platform UPST of RCV-12
M5	DHH-38	Safety	RB-2	160' 1"	W Side PZR Platform
M5	DHH-39	Safety	RB-2	165' 9"	NS Top of PZR on Landing
M5	DHR-64	Safety	RB-2	169' 4"	NS Top of PZR on Landing
M5	RCH-29	Safety	RB-2	168' 8"	Top of PZR
M5	RCH-530	Safety	RB-2	170' 0"	Top of PZR
M5	RCH-531	Safety	RB-2	170' 0"	Top of PZR
M5	RCH-60	Safety Sig	RB	167' 5"	Top of PZR
M5	RCH-63	Safety Sig	RB-2	148' 4"	N Side of PZR Platform
M5	RCH-64	Safety Sig	RB-2	148' 3"	N Side of PZR Platform
M5	RCH-66	Safety	RB-2	140' 0"	S Side of PZR Platform
M5	RCH-67	Safety	RB-2	166' 0"	S Side of PZR Platform
M5	RCH-68	Safety	RB-2	167' 1"	S Side of PZR Platform
M5	RCH-69	Safety	RB-2	167' 1"	Top of PZR - Leave SA Pin (Disconnect in place, pin mushroomed)
M5	RCH-70	Safety	RB-2	167' 1"	Top of PZR
M5	RCH-71L	Safety	RB-2	167' 1"	Top of PZR
M5	RCH-71U	Safety	RB-2	167' 1"	Top of PZR
M5	RCH-73	Safety	RB-2	167' 1"	Top of PZR
M5	RCH-74	Safety	RB-2	167' 1"	Top of PZR
M5	RCH-76	Safety	RB-2	139' 11"	S Side of PZR Platform
M5	RCH-78	Safety	RB-2	150' 10"	S Side of PZR Platform
M5	RCH-79	Safety	RB-2	156' 8"	S Side of PZR Platform
M5	RCH-80	Safety	RB-2	168' 3"	Top of PZR - Removed every outage to access RCV-14
M5	RCH-81	Safety	RB-2	168' 4"	Top of PZR - Removed every outage to access RCV-13
M5	SWR-423	Safety	RB-2	151' 0"	N Side of PZR D-Ring Wall at Ladder by B RCP
M5	SWR-425	Safety	RB-2	153' 0"	Ladder-PZR to RCP 1B
M5	SWR-440	Safety	RB-2	154' 0"	Ladder-PZR to RCP 1B



M6	Layout Reactor Building – Containment Inside the D-Rings “A” D-Ring Elevation 119’ & 142’.
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Location Map	Mark / Tag No	Safety Classification	Building	Elevation	Location
M6	FWH-125	Safety	RB-2	137' 0"	N Side of A D-Ring Wall
M6	RCH-47N	Safety	RB-2	121' 9"	Surge Line at B Pump Near Hot Leg
M6	RCH-47S	Safety	RB-2	121' 9"	Surge Line at B Pump Near Hot Leg
M6	RCH-48	Safety	RB-2	121' 9"	Surge Line at B Pump Near Hot Leg
M6	RCH-49	Safety	RB-2	121' 9"	Surge Line at B Pump Near Hot Leg
M6	RCH-65	Safety	RB-2	131' 9"	Bottom of PZR Platform, S Side O/H
M6	RCH-77	Safety	RB-2	131' 6"	Bottom of PZR Platform, S Side O/H

M7	Layout Reactor Building – Containment Inside the D-Rings “B” D-Ring Elevation 136’ & 142’.
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Location Map	Mark / Tag No	Safety Classification	Building	Elevation	Location
M7	EFH-27	Safety	RB-2	145' 9"	RCP 1D Outer Wall S Side of B Gen.
M7	EFH-28	Safety	RB-2	145' 9"	RCP 1D Outer Wall S Side of B Gen.
M7	FWH-133	Safety	RB-2	138' 0"	N Side of D-Ring Wall by RCP-1D
M7	SWH-493L	Safety	RB-2	136' 0"	RCP 1D Outer Wall
M7	SWH-493U	Safety	RB-2	136' 0"	RCP 1D Outer Wall



M8	Layout Reactor Building – Containment Inside the D-Rings Catwalk to Pressurizer.
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Location Map	Mark / Tag No	Safety Classification	Building	Elevation	Location
M8	CFH-16	Safety	RB-2	120' 9"	CatWalk to PZR
M8	CFH-17	Safety	RB-2	120' 9"	CatWalk South of PZR
M8	CFH-18	Safety	RB-2	120' 9"	CatWalk to PZR
M8	CFH-19	Safety	RB-2	123' 0"	CatWalk to PZR
M8	MUH-32	Safety	RB-2	115' 0"	CatWalk to PZR



M9	Layout Auxiliary & Intermediate Building – “A” Decay Heat Pit Basement Floor Elevation 75’.
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Location Map	Mark / Tag No	Safety Classification	Building	Elevation	Location
M9	BSR-31	Safety	AB	83' 0"	'A' Decay Heat Pit, Sth of Ladder in OH
M9	DHR-31	Safety	AB	84' 9"	'A' Decay Heat Pit, Sth of Ladder OH
M9	DHR-49	Safety	AB	85' 6"	'A' Decay Heat Pit, Sth End of Room



M10	Layout Auxiliary & Intermediate Building – “B” Decay Heat Pit Basement Floor Elevation 75’.
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Location Map	Mark / Tag No	Safety Classification	Building	Elevation	Location
M10	BSR-35	Safety	AB	83' 0"	'B' Decay Heat Pit, 14' NE of Ladder
M10	DHR-18	Safety	AB	84' 7"	'B' Decay Heat Pit, Over E Side of DHHE-1B
M10	DHR-37	Safety	AB	85' 6"	'B' Decay Heat Pit, Sth End of Room



M11	Layout Auxiliary & Intermediate Building – Floor Elevation 95’.
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Location Map	Mark / Tag No	Safety Classification	Building	Elevation	Location
M11	MSH-214	Safety	IB	115' 0"	I.B. Above EF Pump Motor at Ceiling
M11	MSH-250	Safety	IB	111' 0"	I.B. Over EF Pump Motors
M11	MSH-251	Safety	IB	109' 0"	I.B. Over EF Pump Motors
M11	MSH-255	Safety Sig	IB	105' 0"	I.B. by EF Pumps, Over MSV-439 / 440
M11	MSH-664	Safety Sig.	IB	107' 10"	DNST of EFP-1

M12	Layout Auxiliary Building – Reactor Coolant Bleed Tanks Floor Elevation 95'.
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Location Map	Mark / Tag No	Safety Classification	Building	Elevation	Location
M12	DCR-33E	Safety	AB	99' 0"	RC Bleed Tank Room, Between Tanks B/C
M12	DCR-33W	Safety	AB	99' 0"	RC Bleed Tank Room, Between Tanks B/C



M13	Layout Auxiliary Building – Seawater Room Basement Floor Elevation 75' & 95'.
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Location Map	Mark / Tag No	Safety Classification	Building	Elevation	Location
M13	SWR-18	Safety	AB	107' 0"	SeaWater Room, 15' NW of SWHE-1A / 1B



M14	Layout Auxiliary Building – Spent Fuel Coolant Pumps Floor Elevation 119'.
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Location Map	Mark / Tag No	Safety Classification	Building	Elevation	Location
M14	DHR-28	Safety	AB	134' 3"	StairWell to 143' Elev O/H by Dressout

M15	Layout Auxiliary Building – Triangle Room Floor Elevation 95'.
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Location Map	Mark / Tag No	Safety Classification	Building	Elevation	Location
M15	DHR-21	Safety	AB	103' 6"	Triangle RM by 'B' S.I. Filter Next to DHV-39

M16	Layout Auxiliary Building – RMA-6 Area, Block Orifice Room, Valve Alley Floor Elevation 119'.
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Location Map	Mark / Tag No	Safety Classification	Building	Elevation	Location
M16	DHR-24L	Safety	AB	129' 6"	S Wall Deborating Damin V.Alley
M16	DHR-24U	Safety	AB	129' 6"	S Wall Deborating Damin V.Alley
M16	SWR-91	Safety	AB	129' 0"	Entrance to Block Orifice Room

M17	Layout Intermediate Building – Mezzanine Floor Elevation 119'.
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Location Map	Mark / Tag No	Safety Classification	Building	Elevation	Location
M17	FWH-142	Safety	IB	136' 0"	Above CICIP-2A / 2B in O/H
M17	FWH-145	Safety	IB	136' 0"	Above CICIP-2A / 2B in O/H
M17	FWH-146	Safety	IB	133' 0"	On Roof Inside Double Doors
M17	FWH-151	Safety	IB	131' 0"	3' W of MTMC-9 in O/H
M17	FWH-152	Safety	IB	131' 0"	3' W of MTMC-9 in O/H
M17	FWH-153	Safety	IB	131' 0"	24' W of Single Door O/H MTMC-8
M17	FWH-154	Safety	IB	131' 0"	24' W of Single Door O/H MTMC-8
M17	FWH-155	Safety	IB	131' 0"	Inside E Door on Right Wall 12' Up
M17	FWH-156	Safety	IB	131' 0"	Inside E Door on Right Wall 12' Up
M17	FWH-164	Safety	IB	136' 0"	On Roof Inside Double Doors
M17	FWH-165	Safety	IB	134' 0"	In O/H 25' S of W Doorway, Over LRV-21
M17	FWH-166	Safety	IB	134' 0"	Over LRHE-1, 15' O/H
M17	FWH-167	Safety	IB	134' 0"	Just S of LRHE-1 in O/H
M17	FWH-168	Safety	IB	134' 0"	Up Ladder Near Tank
M17	FWH-169	Safety	IB	134' 0"	O/H E of Leak Rate Tank, N Side of Column 310-I-2
M17	FWH-170	Safety	IB	134' 0"	East Side of Column 310-I-2
M17	FWH-171	Safety	IB	119' 0"	Upst On Floor Next To FWV-146
M17	MSH-117	Safety Sig.	IB	122' 0"	To Right Just Inside Double Doors
M17	MSH-118	Safety Sig.	IB	122' 0"	To Right Just Inside Double Doors
M17	MSH-119	Safety Sig.	IB	122' 0"	S Side on E Main Steam Line
M17	MSH-120	Safety Sig.	IB	122' 0"	Three Hangers N of MSV-413
M17	MSH-121	Safety Sig.	IB	122' 0"	Just N of MSV-414
M17	MSH-122	Safety Sig.	IB	122' 0"	Just N of MSV-413
M17	MSH-123	Safety	IB	122' 0"	S of MSV-413 on Same Line
M17	MSH-124	Safety	IB	122' 0"	S of MSV-414 on Same Line
M17	MSH-207	Safety	IB	136' 0"	9' E of CIP-2B in O/H
M17	MSH-227	Safety Sig.	IB	122' 0"	Just DNST of MSV-413
M17	MSH-231	Safety Sig.	IB	122' 0"	Through West Door, on ground past first MS line
M17	MSH-232	Safety Sig.	IB	119' 0"	10' N of MSV-414
M17	MSH-248	Safety	IB	136' 0"	10' N of MSV-48
M17	MSH-665	Safety Sig.	IB	123' 6"	In Single Door to IB, To Right

M18	Layout Intermediate Building – Mezzanine Floor Elevation 119' (detailed area).
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Location Map	Mark / Tag No	Safety Classification	Building	Elevation	Location
M18	EFH-109	Safety Sig	IB	133' 0"	2' W of MSV-412 in OH
M18	EFH-110	Safety Sig	IB	133' 0"	Between MSV-411/412
M18	EFH-141	Safety Sig	IB	126' 6"	Near FWV-34, Work From Grate
M18	EFH-143	Safety Sig	IB	133' 6"	Over Stairs W of MSV-412
M18	EFH-144	Safety Sig	IB	141' 3"	O/H Above MSIV Platform, Next to FWV-39
M18	EFH-92	Safety Sig	IB	140' 0"	11' NW of MSV-412 in O/H
M18	EFH-93	Safety Sig	IB	131' 8"	O/H on N Wall, NW of MSV-412
M18	EFH-94	Safety Sig	IB	131' 8"	6' S of MSV-411
M18	EFH-95	Safety Sig	IB	140' 0"	Over FWV-35 on Wall
M18	FWH-138	Safety Sig	IB	136' 0"	N of MSV-42, O/H at Wall
M18	FWH-139	Safety Sig	IB	136' 0"	3' E of FWV-30 Off Grate
M18	FWH-140	Safety Sig	IB	136' 0"	8' E of FWV-31, Work From Pipe
M18	FWH-141	Safety	IB	136' 0"	3' W of FWV-31, Work From Pipe
M18	FWH-143	Safety	IB	142' 0"	3' E of CIP-2A / 2B in O/H
M18	FWH-144	Safety	IB	136' 0"	3' W (DNST) of FWV-30 Under Grate
M18	FWH-147A	Safety	IB	133' 0"	In Overhead Center of Room Above CIP-2B
M18	FWH-148	Safety	IB	133' 0"	In O/H 8' N of MSV-411 / 412
M18	FWH-149	Safety	IB	133' 0"	In O/H By MSIV's 4' S of MSV-40
M18	FWH-150	Safety	IB	133' 0"	In Overhead over MSIV's 7' above Walk at MSV-411
M18	FWH-157	Safety Sig	IB	136' 0"	NE of MSV-33 O/H
M18	FWH-158	Safety Sig	IB	136' 0"	Over MSV-33
M18	FWH-159	Safety Sig	IB	136' 0"	UPST of FWV-29 Under Grate
M18	FWH-160	Safety	IB	136' 0"	6' SE of MSV-411 O/H
M18	FWH-161	Safety	IB	136' 0"	Over CIP-2A About 12' High
M18	FWH-162	Safety	IB	142' 0"	8' N of CIP-2A at Ceiling
M18	FWH-163	Safety	IB	136' 0"	In Overhead Over MSIV's, W of FWV-29 Below Grate
M18	MSH-125	Safety	IB	122' 0"	Upst (S) of MSV-411
M18	MSH-126A	Safety	IB	122' 0"	Just S of MSV-412
M18	MSH-128	Safety	IB	122' 0"	S of MSV-411, Next to Ladder
M18	MSH-212	Safety	IB	134' 0"	8' S of MSV-411
M18	MSH-213	Safety	IB	130' 0"	8' N of MSV-33
M18	MSH-240	Safety Sig	IB	122' 0"	N Wall Between Doors, N of MSV-411
M18	MSH-252	Safety	IB	136' 0"	In O/H Above MSIV's, 2' S of FWV-32

M19	Layout Turbine Building – Basement Floor Elevation 95’.
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Location Map	Mark / Tag No	Safety Classification	Building	Elevation	Location
M19	MSH-233	Safety Sig.	TB	109' 0"	Above FW Heater
M19	MSH-234	Safety Sig.	TB	109' 0"	On MS Line From MSV-412
M19	MSH-235	Safety Sig.	TB	116' 0"	On MS Line From MSV-412
M19	MSH-237	Safety Sig.	TB	109' 0"	On MS Line From MSV-411
M19	MSH-238	Safety Sig.	TB	109' 0"	On MS Line From MSV-411
M19	MSH-239	Safety Sig.	TB	116' 0"	On MS Line From MSV-411



M20	Layout Turbine Building & Heater Bay – Mezzanine Floor Elevation 119'.
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Location Map	Mark / Tag No	Safety Classification	Building	Elevation	Location
M20	HVR-4	Non Safety	TB	136' 0"	Over FWHE-6A, Above HVV-43

M21	Layout Turbine Building & Heater Bay – Mezzanine Floor Elevation 119' (Cont.).
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Location Map	Mark / Tag No	Safety Classification	Building	Elevation	Location
M21	MSH-223	Safety Sig.	TB	131' 0"	On M/S Line From MSIV-413
M21	MSH-224	Safety Sig.	TB	131' 0"	On M/S Line From MSIV-413
M21	MSH-225	Safety Sig.	TB	131' 0"	On M/S Line From MSIV-413
M21	MSH-226E	Safety Sig.	TB	122' 0"	On M/S Line From MSIV-413
M21	MSH-226W	Safety Sig.	TB	122' 0"	On M/S Line From MSIV-413
M21	MSH-228	Safety Sig.	TB	131' 0"	Just DNST of MSV-413
M21	MSH-229	Safety Sig.	TB	131' 0"	Just DNST of MSV-413
M21	MSH-230	Safety Sig.	TB	131' 0"	Over Double Doors to IB

M22	Layout Above Turbine Building & Heater Bay Operating Floor Elevation 145'.
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Location Map	Mark / Tag No	Safety Classification	Building	Elevation	Location
M22	HVR-10N	Non Safety	TB	206' 0"	On Vent Line From MDT-1
M22	HVR-10S	Non Safety	TB	206' 0"	On Vent Line From MDT-1



M23	Layout Above Heater Bay Floor & Control Complex Elevation 95' to 181".
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Location Map	Mark / Tag No	Safety Classification	Building	Elevation	Location
M23	RVR-3E	Non Safety	TB	178' 0"	On Vent Line, RHV-9 Discharge
M23	RVR-3W	Non Safety	TB	178' 0"	On Vent Line, RHV-9 Discharge
M23	RVR-4E	Non Safety	TB	178' 0"	On Vent Line, RHV-10 Discharge
M23	RVR-4W	Non Safety	TB	178' 0"	On Vent Line, RHV-10 Discharge



M24	Cross Section through Turbine Building & Heater Bay
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Location Map	Mark / Tag No	Safety Classification	Building	Elevation	Location
M24	RVR-5N	Non Safety	TB	215' 0"	On Vent Line, Turbine Building Roof
M24	RVR-5S	Non Safety	TB	215' 0"	On Vent Line, Turbine Building Roof
M24	RVR-6N	Non Safety	TB	215' 0"	On Vent Line, Turbine Building Roof
M24	RVR-6S	Non Safety	TB	215' 0"	On Vent Line, Turbine Building Roof



10.0 ATTACHMENTS

Attachment 1 – Accessible Safety Related / Safety Significant Small & Medium Bore Snubbers
Attachment 2 – Inaccessible Safety Related Small & Medium Bore Snubbers
Attachment 3 – Inaccessible Safety Related Large Bore Snubbers
Attachment 4 – Non Safety Related Snubbers
Attachment 5 – Snubber Seal Life Information
Attachment 6 – Snubber Location Information
Attachment 7 – Safety Assessments
Attachment 8 – NRC Letter # 3F120704 Inservice Inspection Program Plan, 10 Year Update
Attachment 9 – Relief Requests
Attachment 10 – ASME Section XI Interpretations
Attachment 11 – Snubber Tech. Spec. Information
Attachment 12 – OMN-13 Visual Examination Tracking



Attachment 1 Accessible Safety Related Small & Medium Bore Snubbers

Mark / Tag No	Serial No	Model	Category	Safety Classification	ASME Class	Building	Location Map No	Date Installed
BSR-31	30700004/006	3038	Accessible	Safety	2	AB	M9	21-Sept-09
BSR-35	30700257/024	3038	Accessible	Safety	2	AB	M10	16-Sept-09
DCR-33E	30700257/017	3038	Accessible	Safety	3	AB	M12	18-Nov-07
DCR-33W	30700257/018	3038	Accessible	Safety	3	AB	M12	18-Nov-07
DHR-18	30700257/001	3038	Accessible	Safety	2	AB	M10	01-Nov-07
DHR-21	30700636/017	3042	Accessible	Safety	2	AB	M15	22-Sept-09
DHR-24L	30800124/019	3038	Accessible	Safety	2	AB	M16	22-Sept-09
DHR-24U	30700492/020	3038	Accessible	Safety	2	AB	M16	22-Sept-09
DHR-28	30700257/002	3038	Accessible	Safety	2	AB	M14	30-Nov-07
DHR-31	30700492/004	3038	Accessible	Safety	2	AB	M9	21-Sept-09
DHR-37	30700257/003	3038	Accessible	Safety	2	AB	M10	01-Nov-07
DHR-49	30700257/004	3038	Accessible	Safety	2	AB	M9	31-Oct-07
EFH-109	740004	PP 1.5X5	Accessible	Safety Sig	4	IB	M18	02-Oct-01
EFH-110	30700257/006	3038	Accessible	Safety Sig	4	IB	M18	04-Nov-07
EFH-141	750122	PP 1.5X5	Accessible	Safety Sig	4	IB	M18	05-Jan-04
EFH-143	30700257/007	3038	Accessible	Safety Sig	4	IB	M18	07-Nov-07
EFH-144	30700257/008	3038	Accessible	Safety Sig	4	IB	M18	04-Nov-07
EFH-92	04616483/009	3038	Accessible	Safety Sig	4	IB	M18	05-Nov-05
EFH-93	30700257/005	3038	Accessible	Safety Sig	4	IB	M18	15-Nov-07
EFH-94	30700492/017	3038	Accessible	Safety Sig	4	IB	M18	23-Dec-09
EFH-95	750071	PP 2X5	Accessible	Safety Sig	4	IB	M18	31-Dec-03
FWH-138	03616013/009	3052	Accessible	Safety Sig	4	IB	M18	03-Nov-05
FWH-139	30700296/007	3042	Accessible	Safety Sig	4	IB	M18	07-Nov-07
FWH-140	30700636/009	3042	Accessible	Safety Sig	4	IB	M18	05-Nov-09
FWH-141	3070661/001	3052	Accessible	Safety	2	IB	M18	05-Nov-09
FWH-142	30700636/028	3042	Accessible	Safety	2	IB	M17	06-Oct-09
FWH-143	30500067/07	3042	Accessible	Safety	2	IB	M18	04-Nov-05
FWH-144	30500067/002	3042	Accessible	Safety	2	IB	M18	04-Nov-05
FWH-145	30800511/030	3052	Accessible	Safety	2	IB	M17	06-Nov-09
FWH-146	30700636/027	3042	Accessible	Safety	2	IB	M17	02-Nov-09
FWH-147A	30800511/026	3052	Accessible	Safety	2	IB	M18	02-Nov-09
FWH-148	30600231/012	3042	Accessible	Safety	2	IB	M18	23-Nov-07
FWH-149	03616013/010	3052	Accessible	Safety	2	IB	M18	04-Nov-05
FWH-150	30500067/001	3042	Accessible	Safety	2	IB	M18	04-Nov-05
FWH-151	30700636/025	3042	Accessible	Safety	2	IB	M17	01-Nov-09
FWH-152	0361013/007	3052	Accessible	Safety	2	IB	M17	01-Nov-05
FWH-153	30400010/02	3042	Accessible	Safety	2	IB	M17	31-Oct-05
FWH-154	30400010/03	3042	Accessible	Safety	2	IB	M17	31-Oct-05



Attachment 1 Accessible Safety Related Small & Medium Bore Snubbers

Mark / Tag No	Serial No	Model	Category	Safety Classification	ASME Class	Building	Location Map No	Date Installed
FWH-155	30400010/08	3042	Accessible	Safety	2	IB	M17	31-Oct-05
FWH-156	30400010/10	3042	Accessible	Safety	2	IB	M17	31-Oct-05
FWH-157	30400010/09	3042	Accessible	Safety Sig	4	IB	M18	02-Nov-05
FWH-158	04616373/005	3062	Accessible	Safety Sig	4	IB	M18	02-Nov-05
FWH-159	30600572/005	3052	Accessible	Safety Sig	4	IB	M18	19-Nov-07
FWH-160	30700636/026	3042	Accessible	Safety	2	IB	M18	05-Oct-09
FWH-161	30400010/04	3042	Accessible	Safety	2	IB	M18	04-Nov-05
FWH-162	30600231/008	3052	Accessible	Safety	2	IB	M18	23-Nov-07
FWH-163	30700661/005	3052	Accessible	Safety	2	IB	M18	04-Oct-09
FWH-164	30800511/028	3052	Accessible	Safety	2	IB	M17	05-Nov-09
FWH-165	03615923/017	3052	Accessible	Safety	2	IB	M17	04-Nov-05
FWH-166	30500067/05	3042	Accessible	Safety	2	IB	M17	04-Nov-05
FWH-167	03615923/020	3052	Accessible	Safety	2	IB	M17	04-Nov-05
FWH-168	03616013/013	3052	Accessible	Safety	2	IB	M17	06-Nov-05
FWH-169	30700636/030	3042	Accessible	Safety	2	IB	M17	03-Nov-09
FWH-170	30700636/029	3042	Accessible	Safety	2	IB	M17	03-Nov-09
FWH-171	30800289/001	3042	Accessible	Safety	2	IB	M17	01-Nov-09
MSH-117	760190	PP 5X15	Accessible	Safety Sig	4	IB	M17	01-Oct-03
MSH-118	30600707/038	3053	Accessible	Safety Sig	4	IB	M17	25-Nov-07
MSH-119	30600707/039	3053	Accessible	Safety Sig	4	IB	M17	08-Nov-07
MSH-120	30600707/040	3053	Accessible	Safety Sig	4	IB	M17	13-Nov-07
MSH-121	30600231/007	3052	Accessible	Safety Sig	4	IB	M17	08-Nov-07
MSH-122	03615923/019	3052	Accessible	Safety Sig	4	IB	M17	01-Nov-05
MSH-123	30700296/009	3042	Accessible	Safety	2	IB	M17	23-Nov-07
MSH-124	30900002/004	3042	Accessible	Safety	2	IB	M17	16-Dec-09
MSH-125	30600231/001	3052	Accessible	Safety	2	IB	M18	25-Nov-07
MSH-126A	30700113/006	3062	Accessible	Safety	2	IB	M18	30-Sep-09
MSH-128	30700296/014	3042	Accessible	Safety	2	IB	M18	12-Nov-07
MSH-207	04616483/010	3038	Accessible	Safety	3	IB	M17	13-Nov-07
MSH-212	730131	PP 1.5X5	Accessible	Safety	3	IB	M18	31-Dec-03
MSH-213	730029	PP 2X5	Accessible	Safety	3	IB	M18	31-Dec-03
MSH-214	760088	PP 2X5	Accessible	Safety	3	IB	M11	04-Sep-01
MSH-223	04616373/004	3062	Accessible	Safety Sig	4	TB	M21	30-Oct-09
MSH-224	30700210/017	3072	Accessible	Safety Sig	4	TB	M21	30-Nov-07
MSH-225	30600707/041	3053	Accessible	Safety Sig	4	TB	M21	30-Nov-07
MSH-226E	30700296/016	3042	Accessible	Safety Sig	4	TB	M21	16-Nov-07
MSH-226W	30700296/017	3042	Accessible	Safety Sig	4	TB	M21	16-Nov-07
MSH-227	720069	PP 5X5	Accessible	Safety Sig	4	IB	M17	30-Dec-03



Attachment 1 Accessible Safety Related Small & Medium Bore Snubbers

Mark / Tag No	Serial No	Model	Category	Safety Classification	ASME Class	Building	Location Map No	Date Installed
MSH-228	30700113/009	3062	Accessible	Safety Sig	4	TB	M21	08-Oct-09
MSH-229	30600313/003	3062	Accessible	Safety Sig	4	TB	M21	30-Nov-07
MSH-230	04616413/03	3063	Accessible	Safety Sig	4	TB	M21	30-Oct-05
MSH-231	30500001/01	3052	Accessible	Safety Sig	4	IB	M17	31-Oct-05
MSH-232	30800568/003	3072	Accessible	Safety Sig	4	IB	M17	29-Sept-09
MSH-233	840001	PP 5X5	Accessible	Safety Sig	4	TB	M19	13-Jan-98
MSH-234	760067	PP 5X5	Accessible	Safety Sig	4	TB	M19	30-Dec-03
MSH-235	30600572/009	3052	Accessible	Safety Sig	4	TB	M19	30-Nov-07
MSH-237	760068	PP 5X5	Accessible	Safety Sig	4	TB	M19	29-Dec-03
MSH-238	720066	PP 5X5	Accessible	Safety Sig	4	TB	M19	01-Oct-01
MSH-239	30600231/017	3052	Accessible	Safety Sig	4	TB	M19	26-Nov-07
MSH-240	30700113/004	3062	Accessible	Safety Sig	4	IB	M18	11-Nov-09
MSH-248	30700257/025	3038	Accessible	Safety	3	IB	M17	26-Oct-09
MSH-250	30800124/020	3038	Accessible	Safety	3	IB	M11	16-Oct-09
MSH-251	30600572/007	3052	Accessible	Safety	3	IB	M11	23-Nov-07
MSH-252	30800124/007	3038	Accessible	Safety	3	IB	M18	26-Oct-09
MSH-255	04616483/014	3038	Accessible	Safety Sig	4	IB	M11	01-Nov-05
MSH-664	30700257/014	3038	Accessible	Safety Sig	4	IB	M11	14-Nov-07
MSH-665	30700257/015	3038	Accessible	Safety Sig	4	IB	M17	09-Nov-07
SWR-18	30700296/002	3042	Accessible	Safety	3	AB	M13	05-Nov-07
SWR-91	30800289/002	3042	Accessible	Safety	3	AB	M16	29-Sept-09



Attachment 2 Inaccessible Safety Related Small & Medium Bore Snubbers

Mark / Tag No	Serial No	Model	Category	Safety Classification	ASME Class	Building	Location Map No	Date Installed
BSH-14	30500067/09	3042	Inaccessible	Safety	2	RB	M4	04-Nov-05
BSH-19	30500067/04	3042	Inaccessible	Safety	2	RB	M4	04-Nov-05
CFH-14	740047	PP 2.5X5	Inaccessible	Safety	1	RB	M2	08-Oct-01
CFH-15	750046	PP 4X5 (2")	Inaccessible	Safety	1	RB-2	M2	29-Dec-03
CFH-16	30600572/006	3052	Inaccessible	Safety	1	RB-2	M8	16-Nov-07
CFH-17	730018	PP 4X5 (1.75")	Inaccessible	Safety	1	RB-2	M8	06-Oct-01
CFH-18	720083	PP 2.5X5	Inaccessible	Safety	1	RB-2	M8	05-Oct-01
CFH-19	720105	PP 4X5 (1.75")	Inaccessible	Safety	1	RB-2	M8	05-Jan-04
DHH-17	30800997/004	3042	Inaccessible	Safety	2	RB	M1	25-Oct-09
DHH-18	30500067/06	3042	Inaccessible	Safety	2	RB	M1	06-Nov-05
DHH-23	30800997/005	3042	Inaccessible	Safety	2	RB	M1	14-Oct-09
DHH-25	30500067/10	3042	Inaccessible	Safety	2	RB	M1	07-Nov-05
DHH-26H	30500067/08	3042	Inaccessible	Safety	2	RB	M1	07-Nov-05
DHH-26V	30700296/015	3042	Inaccessible	Safety	2	RB	M1	20-Nov-07
DHH-27	30700636/016	3042	Inaccessible	Safety	2	RB	M1	12-Oct-09
DHH-35	30700257/019	3038	Inaccessible	Safety	3	RB-2	M5	12-Nov-07
DHH-36	720128	PP 1.5X5	Inaccessible	Safety	3	RB-2	M5	09-Oct-99
DHH-37	750120	PP 1.5X5	Inaccessible	Safety	3	RB-2	M5	29-Dec-03
DHH-38	30700257/020	3038	Inaccessible	Safety	3	RB-2	M5	12-Nov-07
DHH-39	750104	PP 1.5X5	Inaccessible	Safety	3	RB-2	M5	10-Oct-01
DHR-64	30900553/009	3018	Inaccessible	Safety	3	RB-2	M4	26-Jan-10
EFH-27	30800997/006	3042	Inaccessible	Safety	2	RB-2	M7	21-Dec-09
EFH-28	30800997/007	3042	Inaccessible	Safety	2	RB-2	M7	21-Dec-09
FWH-122	30800568/005	3072	Inaccessible	Safety	2	RB	M3	29-Oct-09
FWH-123	30700113/005	3062	Inaccessible	Safety	2	RB	M4	13-Oct-09
FWH-124	30500001/02	3052	Inaccessible	Safety	2	RB	M4	10-Nov-05
FWH-125	730022	PP 5X5	Inaccessible	Safety	2	RB-2	M6	31-Dec-03
FWH-128	30700661/008	3052	Inaccessible	Safety	2	RB	M3	29-Oct-09
FWH-130	04616373/007	3062	Inaccessible	Safety	2	RB	M4	11-Nov-05
FWH-131	30600313/004	3062	Inaccessible	Safety	2	RB	M4	22-Nov-07
FWH-132	30600572/010	3052	Inaccessible	Safety	2	RB	M4	23-Nov-07
FWH-133	720087	PP 5X5	Inaccessible	Safety	2	RB-2	M7	29-Dec-03
MSH-139	04616373/003	3062	Inaccessible	Safety	2	RB	M3	13-Nov-05
MSH-147	30700113/007	3062	Inaccessible	Safety	2	RB	M3	06-Nov-09
MSH-149	30600231/016	3052	Inaccessible	Safety	2	RB	M3	12-Nov-07



Attachment 2 Inaccessible Safety Related Small & Medium Bore Snubbers

Mark / Tag No	Serial No	Model	Category	Safety Classification	ASME Class	Building	Location Map No	Date Installed
MSH-150	30800511/029	3052	Inaccessible	Safety	2	RB	M3	11-Oct-09
MSH-159	03615643/030	3062	Inaccessible	Safety	2	RB	M4	13-Nov-05
MSH-160	04616493/079	3062	Inaccessible	Safety	2	RB	M4	19-Nov-07
MSH-162	30700113/003	3062	Inaccessible	Safety	2	RB	M4	12-Nov-09
MSH-164	30600231/013	3052	Inaccessible	Safety	2	RB	M3	07-Nov-07
MSH-165	30700113/008	3062	Inaccessible	Safety	2	RB	M3	12-Oct-09
MSH-166	02615453/02	3082-DR	Inaccessible	Safety	2	RB	M4	11-Nov-05
MSH-167	30800568/011	3072	Inaccessible	Safety	2	RB	M4	19-Oct-09
MSH-168	04616593/10	3072	Inaccessible	Safety	2	RB	M4	20-Nov-07
MSH-170	04616453/010	3072	Inaccessible	Safety	2	RB	M4	04-Nov-05
MSH-243	30600313/002	3062	Inaccessible	Safety	2	RB	M4	19-Nov-07
MSH-567L	04616483/011	3038	Inaccessible	Safety	2	RB	M1	25-Oct-09
MSH-567U	04616483/019	3038	Inaccessible	Safety	2	RB	M1	25-Oct-09
MSH-568L	04616483/013	3038	Inaccessible	Safety	2	RB	M1	04-Nov-05
MSH-568U	04616483/015	3038	Inaccessible	Safety	2	RB	M1	14-Nov-05
MSH-576L	04616483/016	3038	Inaccessible	Safety	2	RB	M1	02-Nov-05
MSH-576U	04616483/012	3038	Inaccessible	Safety	2	RB	M1	14-Nov-05
MUH-32	30700257/009	3038	Inaccessible	Safety	1	RB-2	M8	21-Nov-07
MUH-51	04616353/021	3018	Inaccessible	Safety	1	RB-2	M2	13-Nov-05
MUH-80	720125	PP 1.5X5	Inaccessible	Safety	1	RB-2	M1	29-Dec-03
MUH-82	30700296/001	3042	Inaccessible	Safety	1	RB	M1	11-Nov-07
RCH-29	750082	PP 2X5	Inaccessible	Safety	1	RB-2	M5	16-Oct-99
RCH-47N	740069	PP 2.5X5	Inaccessible	Safety	1	RB-2	M6	05-Jan-04
RCH-47S	740080	PP 2.5X5	Inaccessible	Safety	1	RB-2	M6	16-Oct-03
RCH-48	720139	PP 2.5X5	Inaccessible	Safety	1	RB-2	M6	31-Dec-03
RCH-49	740065	PP 2.5X5	Inaccessible	Safety	1	RB-2	M6	31-Dec-03



Attachment 2 Inaccessible Safety Related Small & Medium Bore Snubbers

Mark / Tag No	Serial No	Model	Category	Safety Classification	ASME Class	Building	Location Map No	Date Installed
RCH-530	30700257/016	3038	Inaccessible	Safety	1	RB-2	M5	14-Nov-07
RCH-531	30700257/023	3038	Inaccessible	Safety	1	RB-2	M5	14-Nov-07
RCH-55	03616013/012	3052	Inaccessible	Safety Sig	4	RB	M3	04-Nov-05
RCH-58	03616013/015	3052	Inaccessible	Safety Sig	4	RB	M3	08-Nov-05
RCH-60	720111	PP 2X5	Inaccessible	Safety Sig	4	RB	M5	10-Oct-01
RCH-63	760094	PP 2X5	Inaccessible	Safety Sig	4	RB-2	M5	30-Dec-03
RCH-64	760041	PP 2X5	Inaccessible	Safety Sig	4	RB-2	M5	10-Oct-01
RCH-65	760197	PP 1.5X5	Inaccessible	Safety	1	RB-2	M6	12-Oct-01
RCH-66	730228	PP 1.5X5	Inaccessible	Safety	1	RB-2	M5	05-Jan-04
RCH-67	750100	PP 1.5X5	Inaccessible	Safety	1	RB-2	M5	29-Dec-03
RCH-68	750137	PP 1.5X5	Inaccessible	Safety	1	RB-2	M5	05-Jan-04
RCH-69	760192	PP 1.5X5	Inaccessible	Safety	1	RB-2	M5	18-Nov-07
RCH-70	750119	PP 1.5X5	Inaccessible	Safety	1	RB-2	M5	16-Oct-99
RCH-71L	730076	PP 2X5	Inaccessible	Safety	1	RB-2	M5	31-Dec-03
RCH-71U	750083	PP 2X5	Inaccessible	Safety	1	RB-2	M5	19-Oct-99
RCH-73	730145	PP 1.5X5	Inaccessible	Safety	1	RB-2	M5	18-Nov-07
RCH-74	730139	PP 1.5X5	Inaccessible	Safety	1	RB-2	M5	02-Oct-01
RCH-76	730014	PP 1.5X5	Inaccessible	Safety	1	RB-2	M5	11-Oct-01
RCH-77	730129	PP 1.5X5	Inaccessible	Safety	1	RB-2	M6	30-Dec-03
RCH-78	730124	PP 1.5X5	Inaccessible	Safety	1	RB-2	M5	25-Oct-99
RCH-79	730150	PP 1.5X5	Inaccessible	Safety	1	RB-2	M5	31-Dec-03
RCH-80	30700257/021	3038	Inaccessible	Safety	1	RB-2	M5	29-Nov-07
RCH-81	30700257/022	3038	Inaccessible	Safety	1	RB-2	M5	30-Nov-07
RCH-84	30500067/03	3042	Inaccessible	Safety Sig	4	RB	M3	20-Oct-09
RCH-86	03616013/005	3052	Inaccessible	Safety Sig	4	RB	M4	04-Nov-05
RCH-89	30600186/025	3038	Inaccessible	Safety Sig	4	RB	M3	09-Nov-09
RCH-90	30800124/018	3038	Inaccessible	Safety Sig	4	RB	M3	09-Nov-09
SWH-483	30700257/010	3038	Inaccessible	Safety	2	RB	M4	23-Nov-07
SWH-493L	30700257/011	3038	Inaccessible	Safety	2	RB-2	M7	22-Nov-07
SWH-493U	30700257/012	3038	Inaccessible	Safety	2	RB-2	M7	22-Nov-07
SWR-423	760199	PP 1.5X5	Inaccessible	Safety	2	RB-2	M5	11-Oct-01
SWR-425	30700257/013	3038	Inaccessible	Safety	2	RB-2	M5	22-Nov-07
SWR-440	740011	PP 1.5X5	Inaccessible	Safety	2	RB-2	M5	29-Dec-03



Attachment 3 Inaccessible Safety Related Large Bore Snubbers

Mark / Tag No	Serial No	Model	Category	Safety Classification	ASME Class	Building	Location Map No	Date Installed
RCH-614	16676626	PM 14X4.3	Inaccessible	Safety	1	RB-2 D-Ring	M4	4/8/96
RCH-618	16676624	PM 14X4.3	Inaccessible	Safety	1	RB-2	M4	10/15/99
RCH-619	16676623	PM 14X4.3	Inaccessible	Safety	1	RB-2	M4	10/19/99
RCH-620	16676627	PM 14X4.3	Inaccessible	Safety	1	RB-2 I/S B-D-Ring	M4	4/1/96



Attachment 4 Non Safety Related Snubbers

Mark / Tag No	Serial No	Model	Category	Safety Classification	ASME Class	Building	Location Map No	Date Installed
HVR-10N	760098	PP 2X5	Accessible	Non-Safety	4	TB	M22	09-Jul-91
HVR-10S	760089	PP 2X5	Accessible	Non-Safety	4	TB	M22	09-Jul-91
HVR-4	04616483/007	3038	Accessible	Non-Safety	4	TB	M20	31-Oct-05
RVR-3E	30700210/016	3072	Accessible	Non-Safety	4	TB	M23	13-Nov-07
RVR-3W	30700210/018	3072	Accessible	Non-Safety	4	TB	M23	13-Nov-07
RVR-4E	30700210/019	3072	Accessible	Non-Safety	4	TB	M23	13-Nov-07
RVR-4W	30700210/002	3072	Accessible	Non-Safety	4	TB	M23	13-Nov-07
RVR-5N	99614230/054	3072	Accessible	Non-Safety	4	TB	M24	25-Oct-07
RVR-5S	99614230/055	3072	Accessible	Non-Safety	4	TB	M24	25-Oct-07
RVR-6N	99614230/056	3072	Accessible	Non-Safety	4	TB	M24	25-Oct-07
RVR-6S	99614230/053	3072	Accessible	Non-Safety	4	TB	M24	26-Oct-07



Attachment 5 Snubber Seal Life Information

Mark / Tag No	Serial No	Model	Date Rebuilt	Rebuild WR/WO	Next Rebuild
BSH-14	30500067/09	3042	4/13/2005	Install-600883	4/13/2026
BSH-19	30500067/04	3042	4/13/2005	Install-600886	4/13/2026
BSR-31	30700004/006	3038	8/30/2007	Install-1350890	8/30/2028
BSR-35	30700257/024	3038	8/28/2007	Install-1350889	8/28/2028
CFH-14	740047	PP 2.5X5	9/27/1999	359307	9/27/2017
CFH-15	750046	PP 4X5 (2")	8/31/2001	368284	8/31/2019
CFH-16	30600572/006	3052	12/5/2006	Install 888598	12/5/2027
CFH-17	730018	PP 4X5 (1.75")	10/26/1999	359805	10/26/2017
CFH-18	720083	PP 2.5X5	7/6/1999	359303	7/6/2017
CFH-19	720105	PP 4X5 (1.75")	9/30/2003	324958-01	9/30/2021
DCR-33E	30700257/017	3038	8/27/2007	Install 888599	8/27/2028
DCR-33W	30700257/018	3038	8/28/2007	Install 888600	8/28/2028
DHH-17	30800997/004	3042	11/5/2008	Install-1350887	11/5/2029
DHH-18	30500067/06	3042	4/13/2005	Install-600834	4/13/2026
DHH-23	30800997/005	3042	11/5/2008	Install-1350886	11/5/2029
DHH-25	30500067/10	3042	4/12/2005	Install-600888	4/12/2026
DHH-26H	30500067/08	3042	4/13/2005	Install-600869	4/13/2026
DHH-26V	30700296/015	3042	10/2/2007	Install 888601	10/2/2028
DHH-27	30700636/016	3042	2/28/2008	Install-1350885	2/28/2029
DHH-35	30700257/019	3038	8/27/2007	Install 888602	8/27/2028
DHH-36	720128	PP 1.5X5	7/8/1999	359282	7/8/2017
DHH-37	750120	PP 1.5X5	9/19/2003	324368-13	9/19/2021
DHH-38	30700257/020	3038	8/28/2007	Install 888603	8/28/2028



Attachment 5 Snubber Seal Life Information

Mark / Tag No	Serial No	Model	Date Rebuilt	Rebuild WR/WO	Next Rebuild
DHH-39	750104	PP 1.5X5	10/25/1999	359844	10/25/2017
DHR-18	30700257/001	3038	8/27/2007	Install 888604	8/27/2028
DHR-21	30700636/017	3042	2/28/2008	Install-1350884	2/28/2029
DHR-24L	30800124/019	3038	5/21/2008	Install-1350882	5/21/2029
DHR-24U	30700492/020	3038	1/9/2008	Install-1350879	1/9/2029
DHR-28	30700257/002	3038	8/27/2007	Install 888605	8/27/2028
DHR-31	30700492/004	3038	1/8/2008	Install-1350878	1/8/2029
DHR-37	30700257/003	3038	8/27/2007	Install 888606	8/27/2028
DHR-49	30700257/004	3038	8/27/2007	Install 888607	8/27/2028
DHR-64	30900553/009	3018	11/16/2009	Install-1625935	11/16/2030
EFH-109	740004	PP 1.5X5	8/29/2001	368398	8/29/2019
EFH-110	30700257/006	3038	8/27/2007	Install 888608	8/27/2028
EFH-141	750122	PP 1.5X5	10/4/2001	369631	10/4/2019
EFH-143	30700257/007	3038	8/27/2007	Install 888611	8/27/2028
EFH-144	30700257/008	3038	8/27/2007	Install 888609	8/27/2028
EFH-27	30800997/006	3042	3/31/2009	Install-1650433	3/31/2030
EFH-28	30800997/007	3042	3/31/2009	Install-1650434	3/31/2030
EFH-92	04616483/009	3038	9/1/2004	Install-657107	9/1/2025
EFH-93	30700257/005	3038	8/27/2007	Install 888612	8/27/2028
EFH-94	30700492/017	3038	2/2/2009	Install-1629868	2/2/2030
EFH-95	750071	PP 2X5	9/16/2003	325194-11	9/16/2021
FWH-122	30800568/005	3072	10/6/2008	Install-1350877	10/6/2029
FWH-123	30700113/005	3062	6/8/2007	Install-1458009	6/8/2028
FWH-124	30500001/02	3052	2/24/2005	Install-600847	2/24/2026

**Attachment 5
Snubber Seal Life Information**

Mark / Tag No	Serial No	Model	Date Rebuilt	Rebuild WRWO	Next Rebuild
FWH-125	730022	PP 5X5	10/28/1999	359779	10/28/2017
FWH-128	30700661/008	3052	3/10/2008	Install-1350876	3/10/2029
FWH-130	04616373/007	3062	5/6/2004	Install-600895	5/6/2025
FWH-131	30600313/004	3062	10/25/2006	Install 888613	10/25/2027
FWH-132	30600572/010	3052	12/5/2006	Install 888614	12/5/2027
FWH-133	720087	PP 5X5	10/29/1999	359733	10/29/2017
FWH-138	03616013/009	3052	12/18/2003	Install-600871	12/18/2024
FWH-139	30700296/007	3042	10/1/2007	Install 888615	10/1/2028
FWH-140	30700636/009	3042	2/28/2008	Install-1350874	2/28/2029
FWH-141	30700661/001	3052	3/7/2008	Install-1350873	3/7/2029
FWH-142	30700636/028	3042	2/28/2008	Install-1350872	2/28/2029
FWH-143	30500067/07	3042	4/13/2005	Install-600835	4/13/2026
FWH-144	30500067/002	3042	4/12/2005	Install-600873	4/12/2026
FWH-145	30800511/030	3052	9/8/2008	Install-1350868	9/8/2029
FWH-146	30700636/027	3042	2/28/2008	Install-1351146	2/28/2029
FWH-147A	30800511/026	3052	9/8/2008	Install-1350866	9/8/2029
FWH-148	30600231/012	3042	7/24/2006	Install 888616	7/24/2027
FWH-149	03616013/010	3052	12/18/2003	Install-600875	12/18/2024
FWH-150	30500067/001	3042	4/12/2005	Install-600876	4/12/2026
FWH-151	30700636/025	3042	2/28/2008	Install-1350865	2/28/2029
FWH-152	0361013/007	3052	12/19/2003	Install-657111	12/19/2024
FWH-153	30400010/02	3042	2/3/2005	Install-600877	2/3/2026
FWH-154	30400010/03	3042	4/12/2005	Install-600878	4/12/2026
FWH-155	30400010/08	3042	2/2/2005	Install-657113	2/2/2026

**Attachment 5
Snubber Seal Life Information**

Mark / Tag No	Serial No	Model	Date Rebuilt	Rebuild WR/WO	Next Rebuild
FWH-156	30400010/10	3042	2/2/2005	Install-657114	2/2/2026
FWH-157	30400010/09	3042	2/2/2005	Install-600879	2/2/2026
FWH-158	04616373/005	3062	5/6/2004	Install-600890	5/6/2025
FWH-159	30600572/005	3052	12/5/2006	Install 888618	12/5/2027
FWH-160	30700636/026	3042	2/28/2008	Install-1350862	2/28/2029
FWH-161	30400010/04	3042	2/3/2005	Install-600880	2/3/2026
FWH-162	30600231/008	3052	7/21/2006	Install 888619	7/21/2027
FWH-163	30700661/005	3052	3/10/2008	Install-1350860	3/10/2029
FWH-164	30800511/028	3052	9/8/2008	Install-1350859	9/8/2029
FWH-165	03615923/017	3052	10/16/2003	Install-600881	10/16/2024
FWH-166	30500067/05	3042	4/13/2005	Install-657115	4/13/2026
FWH-167	03615923/020	3052	10/16/2003	Install-600836	10/16/2024
FWH-168	03616013/013	3052	11/17/2003	Install-600838	11/17/2024
FWH-169	30700636/030	3042	2/28/2008	Install-1350858	2/28/2029
FWH-170	30700636/029	3042	2/28/2008	Install-1350857	2/28/2029
FWH-171	30800289/001	3042	6/26/2008	Install-1350856	6/26/2029
HVR-10N	760098	PP 2X5	6/13/1991	271786	6/13/2013
HVR-10S	760089	PP 2X5	4/30/1991	271788	4/30/2013
HVR-4	04616483/007	3038	9/1/2004	Install-600839	9/1/2025
MSH-117	760190	PP 5X15	9/1/2001	368288	9/1/2019
MSH-118	30600707/038	3053	3/16/2007	Install 888761	3/16/2028
MSH-119	30600707/039	3053	3/16/2007	Install 888760	3/16/2028
MSH-120	30600707/040	3053	3/16/2007	Install 888755	3/16/2028
MSH-121	30600231/007	3052	7/21/2006	Install 888754	7/21/2027



Attachment 5 Snubber Seal Life Information

Mark / Tag No	Serial No	Model	Date Rebuilt	Rebuild WR/WO	Next Rebuild
MSH-122	03615923/019	3052	10/16/2003	Install-600868	10/16/2024
MSH-123	30700296/009	3042	10/1/2007	Install 888726	10/1/2028
MSH-124	30900002/004	3042	4/1/2009	Install-1636508	4/1/2030
MSH-125	30600231/001	3052	7/21/2006	Install 888722	7/21/2027
MSH-126A	30700113/006	3062	6/8/2007	Install-1350847	6/8/2028
MSH-128	30700296/014	3042	10/2/2007	Install 888721	10/2/2028
MSH-139	04616373/003	3062	5/6/2004	Install-600849	5/6/2025
MSH-147	30700113/007	3062	6/8/2007	Install-1350846	6/8/2028
MSH-149	30600231/016	3052	7/24/2006	Install 888807	7/24/2027
MSH-150	30800511/029	3052	9/8/2008	Install-1350843	9/8/2029
MSH-159	03615643/030	3062	4/23/2003	Install-600850	4/23/2024
MSH-160	04616493/079	3062	11/25/2004	Install 888765	11/25/2025
MSH-162	30700113/003	3062	6/8/2007	Install-1458010	6/8/2028
MSH-164	30600231/013	3052	7/24/2006	Install 888771	7/24/2027
MSH-165	30700113/008	3062	6/8/2007	Install-1350841	6/8/2028
MSH-166	02615453/02	3082-DR	12/1/2003	Install-600844	12/1/2024
MSH-167	30800568/011	3072	10/10/2008	Install-1350840	10/10/2029
MSH-168	04616593/10	3072	12/14/2004	Install 888774	12/14/2025
MSH-170	04616453/010	3072	6/14/2004	Install-600902	6/14/2025
MSH-207	04616483/010	3038	9/2/2004	Install-600788	9/2/2025
MSH-212	730131	PP 1.5X5	10/4/2001	369632	10/4/2019
MSH-213	730029	PP 2X5	9/12/2001	369624	9/12/2019
MSH-214	760088	PP 2X5	8/24/2001	368392	8/24/2019
MSH-223	04616373/004	3062	5/6/2004	Install-600897	5/6/2025



Attachment 5 Snubber Seal Life Information

Mark / Tag No	Serial No	Model	Date Rebuilt	Rebuild WR/WO	Next Rebuild
MSH-224	30700210/017	3072	7/19/2007	Install 888779	7/19/2028
MSH-225	30600707/041	3053	3/16/2007	Install 888643	3/16/2028
MSH-226E	30700296/016	3042	10/2/2007	Install 888773	10/2/2028
MSH-226W	30700296/017	3042	10/2/2007	Install 888781	10/2/2028
MSH-227	720069	PP 5X5	10/4/2001	368299	10/4/2019
MSH-228	30700113/009	3062	6/8/2007	Install-1350837	6/8/2028
MSH-229	30600313/003	3062	10/25/2006	Install 888809	10/25/2027
MSH-230	04616413/03	3063	5/19/2004	Install-657119	5/19/2025
MSH-231	30500001/01	3052	2/24/2005	Install-657125	2/24/2026
MSH-232	30800568/003	3072	10/3/2008	Install-1350835	10/3/2029
MSH-233	840001	PP 5X5	11/26/1997	POF0700780	11/26/2015
MSH-234	760067	PP 5X5	10/3/2001	368300	10/3/2019
MSH-235	30600572/009	3052	12/5/2006	Install 888719	12/5/2027
MSH-237	760068	PP 5X5	10/10/2001	368297	10/10/2019
MSH-238	720066	PP 5X5	9/10/2001	368289	9/10/2019
MSH-239	30600231/017	3052	7/24/2006	Install 888808	7/24/2027
MSH-240	30700113/004	3062	6/8/2007	Install-1350833	6/8/2028
MSH-243	30600313/002	3062	10/25/2006	Install 888625	10/25/2027
MSH-248	30700257/025	3038	8/28/2007	Install-1350832	8/28/2028
MSH-250	30800124/020	3038	5/21/2008	Install-1350831	5/21/2029
MSH-251	30600572/007	3052	12/5/2006	Install 888626	12/5/2027
MSH-252	30800124/007	3038	5/20/2008	Install-1350823	5/20/2029
MSH-255	04616483/014	3038	9/2/2004	Install-600858	9/2/2025
MSH-567L	04616483/011	3038	9/2/2004	Install-600820	9/2/2025



Attachment 5 Snubber Seal Life Information

Mark / Tag No	Serial No	Model	Date Rebuilt	Rebuild WR/WO	Next Rebuild
MSH-567U	04616323/019	3038	3/26/2004	Install-600861	3/26/2025
MSH-568L	04616483/013	3038	9/2/2004	Install-600804	9/2/2025
MSH-568U	04616483/015	3038	9/2/2004	Install-600815	9/2/2025
MSH-576L	04616483/016	3038	9/2/2004	Install-600818	9/2/2025
MSH-576U	04616483/012	3038	9/2/2004	Install-756023	9/2/2025
MSH-664	30700257/014	3038	8/27/2007	Install 888627	8/27/2028
MSH-665	30700257/015	3038	8/27/2007	Install 888753	8/27/2028
MUH-32	30700257/009	3038	8/27/2007	Install 888752	8/27/2028
MUH-51	04616353/021	3018	12/22/2004	Install-723627	12/22/2025
MUH-80	720125	PP 1.5X5	10/10/2001	368311	10/10/2019
MUH-82	30700296/001	3042	10/1/2007	Install 888822	10/1/2028
RCH-29	750082	PP 2X5	7/16/1999	359117	7/16/2017
RCH-47N	740069	PP 2.5X5	10/9/1999	359827	10/9/2017
RCH-47S	740080	PP 2.5X5	9/23/2003	324894-16	9/23/2021
RCH-48	720139	PP 2.5X5	9/22/2003	324894-13	9/22/2021
RCH-49	740065	PP 2.5X5	9/22/1999	359819	9/22/2017
RCH-530	30700257/016	3038	8/27/2007	Install 888820	8/27/2028
RCH-531	30700257/023	3038	8/28/2007	Install 888628	8/28/2028
RCH-55	03616013/012	3052	12/18/2003	Install-600841	12/18/2024
RCH-58	03616013/015	3052	12/18/2003	Install-600842	12/18/2024
RCH-60	720111	PP 2X5	2/17/1999	343033	2/17/2017
RCH-614	16676626	PM 14X4.3	11/7/2005	600908	5/7/2014
RCH-618	16676624	PM 14X4.3	11/14/2007	216375	5/14/2016
RCH-619	16676623	PM 14X4.3	10/13/2009	216376	4/13/2018



Attachment 5 Snubber Seal Life Information

Mark / Tag No	Serial No	Model	Date Rebuilt	Rebuild WR/WO	Next Rebuild
RCH-620	16676627	PM 14X4.3	11/10/2005	600915	5/10/2014
RCH-63	760094	PP 2X5	9/17/2003	325194-16	9/17/2021
RCH-64	760041	PP 2X5	8/25/2001	368391	8/25/2019
RCH-65	760197	PP 1.5X5	7/12/1999	359292	7/12/2017
RCH-66	730228	PP 1.5X5	10/18/2001	368314	10/18/2019
RCH-67	750100	PP 1.5X5	9/19/2003	324368-12	9/19/2021
RCH-68	750137	PP 1.5X5	9/24/2003	324368-17	9/24/2021
RCH-69	760192	PP 1.5X5	10/18/2003	322430-01	10/18/2021
RCH-70	750119	PP 1.5X5	6/14/1999	359290	6/14/2017
RCH-71L	730076	PP 2X5	2/26/1999	359114	2/26/2017
RCH-71U	750083	PP 2X5	7/16/1999	360135	7/16/2017
RCH-73	730145	PP 1.5X5	10/17/2003	322350-01	10/17/2021
RCH-74	730139	PP 1.5X5	9/26/2001	368296	9/26/2019
RCH-76	730014	PP 1.5X5	10/22/1999	359785	10/22/2017
RCH-77	730129	PP 1.5X5	10/19/2001	369630	10/19/2019
RCH-78	730124	PP 1.5X5	9/20/1999	359285	9/20/2017
RCH-79	730150	PP 1.5X5	10/6/2001	368310	10/6/2019
RCH-80	30700257/021	3038	8/28/2007	Install 888631	8/28/2028
RCH-81	30700257/022	3038	8/28/2007	Install 888632	8/28/2028
RCH-84	30500067/03	3042	4/12/2005	Install-600823	4/12/2026
RCH-86	03616013/005	3052	12/19/2003	Install-600843	12/19/2024
RCH-89	30600186/025	3038	7/18/2006	Install-1350806	7/18/2027
RCH-90	30800124/018	3038	5/21/2008	Install-1350804	5/21/2029
RVR-3E	30700210/016	3072	7/18/2007	Install 888633	7/18/2028



Attachment 5 Snubber Seal Life Information

Mark / Tag No	Serial No	Model	Date Rebuilt	Rebuild WR/WO	Next Rebuild
RVR-3W	30700210/018	3072	7/19/2007	Install 888634	7/19/2028
RVR-4E	30700210/019	3072	7/19/2007	Install 888635	7/19/2028
RVR-4W	30700210/002	3072	7/19/2007	Install 888636	7/19/2028
RVR-5N	99614230/054	3072	12/15/1999	Mfg.	12/15/2020
RVR-5S	99614230/055	3072	12/15/1999	Mfg.	12/15/2020
RVR-6N	99614230/056	3072	2/4/2000	Mfg.	2/4/2021
RVR-6S	99614230/053	3072	12/15/1999	Mfg.	12/15/2020
SWH-483	30700257/010	3038	8/27/2007	Install 888638	8/27/2028
SWH-493L	30700257/011	3038	8/27/2007	Install 888639	8/27/2028
SWH-493U	30700257/012	3038	8/27/2007	Install 888640	8/27/2028
SWR-18	30700296/002	3042	10/1/2007	Install 888641	10/1/2028
SWR-423	760199	PP 1.5X5	7/13/1999	359293	7/13/2017
SWR-425	30700257/013	3038	8/27/2007	Install 888642	8/27/2028
SWR-440	740011	PP 1.5X5	10/4/2001	368307	10/4/2019
SWR-91	30800289/002	3042	6/26/2008	Install-1350803	6/26/2029

**Attachment 6
Snubbers Location Information**

Mark / Tag No	Exam No	Bldg.	Location Description	Category	Isometric	302 Dwg.	304 Dwg.	305 Dwg.
AUXILIARY BUILDING								
BSR-31	11401	AB	'A' Decay Heat Pit, Sth of Ladder in OH	Safety	CR3-P-SKH-120.1	302-651.1, 302-711.1		305-810
BSR-35	11402	AB	'B' Decay Heat Pit, 14' NE of Ladder	Safety	CR3-P-SKH-121.1	302-711		PI-305-811
DCR-33E	11404	AB	RC Bleed Tank Room, Between Tanks B/C	Safety	CR3-P-SKH-201.2	302-631		305-845 SH.2
DCR-33W	11405	AB	RC Bleed Tank Room, Between Tanks B/C	Safety	CR3-P-SKH-201.2	302-631		305-845 SH.2
DHR-18	11407	AB	'B' Decay Heat Pit, Over E Side of DHHE-1B	Safety	CR3-P-SKH-110.1	302-641.1, 302-641.2		305-816, 305-805 / 817
DHR-21	11408	AB	Triangle RM by 'B' S.I. Filter Next to DHV-39	Safety	CR3-P-SKH-111.2	302-641.2		305-815
DHR-24L	11409	AB	S Wall Deborating Demin V.Alley	Safety	CR3-P-SKH-111.1	302-621.1, 302-641.2		305-815
DHR-24U	11410	AB	S Wall Deborating Demin V.Alley	Safety	CR3-P-SKH-111.1	302-621.1, 302-641.2		305-815
DHR-28	11411	AB	StairWell to 143' Elev O/H by Dressout	Safety	CR3-P-SKH-111.1	302-621.1, 302-641.2		305-815
DHR-31	11412	AB	'A' Decay Heat Pit, Sth of Ladder OH	Safety	CR3-P-SKH-109.2	302-641.1, 302-614.2		305-814 SH.1
DHR-37	11413	AB	'B' Decay Heat Pit, Sth End of Room	Safety	CR3-P-SKH-113.1	302-641.1		305-817 SH.6
DHR-49	11414	AB	'A' Decay Heat Pit, Sth End of Room	Safety	CR3-P-SKH-112.2	302-641.1		305-818 SH.5
SWR-18	11415	AB	SeaWater Room, 15' NW of SWHE-1A / 1B	Safety	CR3-P-SKH-211.1	302-601.1	304-601 SH-1 G-4	305-931
SWR-91	11416	AB	Entrance to Block Orifice Room	Safety	CR3-P-SKH-208.1	302-601.4		305-937
INTERMEDIATE BUILDING								
EFH-109	11303	IB	2' W of MSV-412 in OH	Safety Sig	CR3-P-SKH-108.4	302-081.1, 302-082.1	304-091 H-3	305-902

**Attachment 6
Snubbers Location Information**

Mark / Tag No	Exam No	Bldg.	Location Description	Category	Isometric	302 Dwg.	304 Dwg.	305 Dwg.
EFH-110	11304	IB	Between MSV-411/412	Safety Sig	CR3-P-SKH-108.4	302-081.1, 302-082.1	304-091 H-5	305-902
EFH-141	11305	IB	Near FWV-34, Work From Grate	Safety Sig	CR3-P-SKH-108.4	302-081.1, 302-082.1	304-091 H-10	305-902
EFH-143	11306	IB	Over Stairs W of MSV-412	Safety Sig	CR3-P-SKH-304.1	302-081.1, 302-082.1	304-091 H-3	305-905
EFH-144	11307	IB	O/H Above MSIV Platform, Next to FWV-39	Safety Sig	CR3-P-SKH-108.4	302-081.1, 302-082.1	304-091 J-3	305-902
EFH-92	11308	IB	11' NW of MSV-412 in O/H	Safety Sig	CR3-P-SKH-304.1	302-081.1, 302-082.1	304-091 G-3	305-905
EFH-93	11309	IB	O/H on N Wall, NW of MSV-412	Safety Sig	CR3-P-SKH-304.1	302-081.1, 302-082.1	304-091 H-3	305-905
EFH-94	11310	IB	6' S of MSV-411	Safety Sig	CR3-P-SKH-304.1	302-081.1, 302-082.1	304-091 H-5	305-905
EFH-95	11311	IB	Over FWV-35 on Wall	Safety Sig	CR3-P-SKH-304.1	302-081.1, 302-082.1	304-091 G-6	305-905
FWH-138	11312	IB	N of MSV-42, O/H at Wall	Safety Sig	CR3-P-SKH-105.3	302-081.1	304-083 SH-2 D-11	305-832 SH.1
FWH-139	11313	IB	3' E of FWV-30 Off Grate	Safety Sig	CR3-P-SKH-105.3	302-081.1	304-083 SH-2 D-10	305-832 SH.1
FWH-140	11314	IB	8' E of FWV-31, Work From Pipe	Safety Sig	CR3-P-SKH-105.3	302-081.1	304-083 SH-2 D-10	305-832 SH.1
FWH-141	11315	IB	3' W of FWV-31, Work From Pipe	Safety	CR3-P-SKH-105.3	302-081.1	304-083 SH-2 D-8, 304-084	305-832 SH.1
FWH-142	11316	IB	Above CICP-2A / 2B in O/H	Safety	CR3-P-SKH-105.3	302-081.1	304-083 SH-2 D-8, 304-084	305-832 SH.1
FWH-143	11317	IB	3' E of CICP-2A / 2B in O/H	Safety	CR3-P-SKH-105.3	302-081.1	304-083 SH-2 D-8, 304-084	305-832 SH.1
FWH-144	11318	IB	3' W (DNST) of FWV-30 Under Grate	Safety	CR3-P-SKH-105.3	302-081.1	304-083 SH-2 D-8, 304-084	305-832 SH.1

**Attachment 6
Snubbers Location Information**

Mark / Tag No	Exam No	Bldg.	Location Description	Category	Isometric	302 Dwg.	304 Dwg.	305 Dwg.
FWH-145	11319	IB	Above C1CP-2A /2B in O/H	Safety	CR3-P-SKH-105.3	302-081.1	304-083 SH-2 D-8, 304-084	305-832 SH.1
FWH-146	11320	IB	On Roof Inside Double Doors	Safety	CR3-P-SKH-105.3	302-081.1	304-083 SH-2 D-8, 304-084	305-832 SH.1
FWH-147A	11321	IB	In Overhead Center of Room Above CIP-2B	Safety	CR3-P-SKH-105.2	302-081.1	304-083 SH-2 D-12, E-9,10	305-832 SH.1
FWH-148	11322	IB	In O/H 8' N of MSV-411 / 412	Safety	CR3-P-SKH-105.2	302-081.1	304-083 SH-2 D-12, E-9,10	305-832 SH.1
FWH-149	11323	IB	In O/H By MSIV's 4' S of MSV-40	Safety	CR3-P-SKH-105.2	302-081.1	304-083 SH-2 D-12, E-9,10	305-832 SH.1
FWH-150	11324	IB	In Overhead over MSIV's 7' above Walk at MSV-411	Safety	CR3-P-SKH-105.2	302-081.1	304-083 SH-2 D-12, E-9,10	305-832 SH.1
FWH-151	11325	IB	3' W of MTMC-9 in O/H	Safety	CR3-P-SKH-105.2	302-081.1	304-083 SH-2 D-12, E-9,10	305-832 SH.1
FWH-152	11326	IB	3' W of MTMC-9 in O/H	Safety	CR3-P-SKH-105.2	302-081.1	304-083 SH-2 D-12, E-9,10	305-832 SH.1
FWH-153	11327	IB	24' W of Single Door O/H MTMC-8	Safety	CR3-P-SKH-105.2	302-081.1	304-083 SH-2 D-12, E-9,10	305-832 SH.1
FWH-154	11328	IB	24' W of Single Door O/H MTMC-8	Safety	CR3-P-SKH-105.2	302-081.1	304-083 SH-2 D-12, E-9,10	305-832 SH.1
FWH-155	11329	IB	Inside E Door on Right Wall 12' Up	Safety	CR3-P-SKH-105.2	302-081.1	304-083 SH-2 D-12, E-9,10	305-832 SH.1
FWH-156	11330	IB	Inside E Door on Right Wall 12' Up	Safety	CR3-P-SKH-105.2	302-081.1	304-083 SH-2 D-12, E-9,10	305-832 SH.1



Attachment 6 Snubbers Location Information

Mark / Tag No	Exam No	Bldg.	Location Description	Category	Isometric	302 Dwg.	304 Dwg.	305 Dwg.
FWH-157	11331	IB	NE of MSV-33 O/H	Safety Sig	CR3-P-SKH-106.3		304-083 SH-2 E-12	305-831 SH.1
FWH-158	11332	IB	Over MSV-33	Safety Sig	CR3-P-SKH-106.3		304-083 SH-2 E-11	305-831 SH.1
FWH-159	11333	IB	UPST of FWV-29 Under Grate	Safety Sig	CR3-P-SKH-106.3		304-083 SH-2 E-10	305-831 SH.1
FWH-160	11334	IB	6' SE of MSV-411 O/H	Safety	CR3-P-SKH-106.3	302-081.1	304-083 SH-2 E-9, 304-084	305-831 SH.1
FWH-161	11335	IB	Over CIP-2A About 12' High	Safety	CR3-P-SKH-106.3	302-081.1	304-083 SH-2 E-9, 304-084	305-831 SH.1
FWH-162	11336	IB	8' N of CIP-2A at Ceiling	Safety	CR3-P-SKH-106.3	302-081.1	304-083 SH-2 E-9, 304-084	305-831 SH.1
FWH-163	11337	IB	In Overhead Over MSIV's, W of FWV-29 Below Grate	Safety	CR3-P-SKH-106.3	302-081.1	304-083 SH-2 E-9, 304-084	305-831 SH.1
FWH-164	11338	IB	On Roof Inside Double Doors	Safety	CR3-P-SKH-106.3	302-081.1	304-083 SH-2 E-9, 304-084	305-831 SH.1
FWH-165	11339	IB	In O/H 25' S of W Doorway, Over LRV-21	Safety	CR3-P-SKH-106.2	302-081.1	304-083 SH-2 E-5	305-831 SH.1
FWH-166	11340	IB	Over LRHE-1, 15' O/H	Safety	CR3-P-SKH-106.2	302-081.1	304-083 SH-2 G-5	305-831 SH.1
FWH-167	11341	IB	Just S of LRHE-1 in O/H	Safety	CR3-P-SKH-106.2	302-081.1	304-083 SH-1 D-3	305-831 SH.1
FWH-168	11342	IB	Up Ladder Near Tank	Safety	CR3-P-SKH-106.2	302-081.1	304-083 SH-1 D-3	305-831 SH.1
FWH-169	11343	IB	O/H E of Leak Rate Tank, N Side of Column 310-I-2	Safety	CR3-P-SKH-106.2	302-081.1	304-083 SH-1 D-3	305-831 SH.1
FWH-170	11344	IB	East Side of Column 310-I-2	Safety	CR3-P-SKH-106.2	302-081.1	304-083 SH-1 E-4	305-831 SH.1

**Attachment 6
Snubbers Location Information**

Mark / Tag No	Exam No	Bldg.	Location Description	Category	Isometric	302 Dwg.	304 Dwg.	305 Dwg.
FWH-171	11345	IB	Upst On Floor Next To FWV-146	Safety	CR3-P-SKH-106.2	302-081.1	304-083 SH-1	305-831 SH.1
MSH-117	11346	IB	To Right Just Inside Double Doors	Safety Sig.	CR3-P-SKH-103.3	302-011.1	304-011, 304-013	305-752
MSH-118	11347	IB	To Right Just Inside Double Doors	Safety Sig.	CR3-P-SKH-104.2		304-011	305-753
MSH-119	11348	IB	S Side on E Main Steam Line	Safety Sig.		302-011.1	304-011, 304-013	305-752
MSH-120	11349	IB	Three Hangers N of MSV-413	Safety Sig.	CR3-P-SKH-104.2		304-011	HD-306-298, 305-753
MSH-121	11350	IB	Just N of MSV-414	Safety Sig.		302-011.1	304-011, 304-013	305-752
MSH-122	11351	IB	Just N of MSV-413	Safety Sig.	CR3-P-SKH-104.2		304-011	HD-306-298
MSH-123	11352	IB	S of MSV-413 on Same Line	Safety	CR3-P-SKH-104.2	302-011.1	304-011, 304-013	305-753
MSH-124	11353	IB	S of MSV-414 on Same Line	Safety	CR3-P-SKH-103.2	302-011.1	304-011, 304-013	305-752
MSH-125	11354	IB	Upst (S) of MSV-411	Safety	CR3-P-SKH-102.2	302-011.1	304-011, 304-013	305-750
MSH-126A	11355	IB	Just S of MSV-412	Safety	CR3-P-SKH-101.2	302-011.1	304-011, 304-013	305-751
MSH-128	11356	IB	S of MSV-411, Next to Ladder	Safety	CR3-P-SKH-102.2	302-011.1	304-011, 304-013	305-750
MSH-207	11359	IB	9' E of CIP-2B in O/H	Safety	CR3-P-SKH-217.1	302-051.1	304-015 G-4	305-825 SH.2
MSH-212	11363	IB	8' S of MSV-411	Safety	CR3-P-SKH-217.2	302-051.1	304-015 A-11	305-825 SH.1
MSH-213	11364	IB	8' N of MSV-33	Safety	CR3-P-SKH-217.2	302-051.1	304-015 B-11	305-825 SH.1
MSH-214	11365	IB	I.B. Above EF Pump Motor at Ceiling	Safety	CR3-P-SKH-217.2	302-051.1	304-015 C-11	305-825 SH.1

**Attachment 6
Snubbers Location Information**

Mark / Tag No	Exam No	Bldg.	Location Description	Category	Isometric	302 Dwg.	304 Dwg.	305 Dwg.
MSH-227	11366	IB	Just DNST of MSV-413	Safety Sig.	CR3-P-SKH-104.2			305-753
MSH-231	11367	IB	Through West Door, on ground past first MS line	Safety Sig.	CR3-P-SKH-103.3			305-752
MSH-232	11368	IB	10' N of MSV-414	Safety Sig.	CR3-P-SKH-103.3	302-011.1	304-011, 304-013	305-752
MSH-240	11369	IB	N Wall Between Doors, N of MSV-411	Safety Sig.	CR3-P-SKH-102.2		304-011	305-750
MSH-248	11370	IB	10' N of MSV-48	Safety	CR3-P-SKH-217.1		304-015 J-3	305-825 SH.2
MSH-250	11372	IB	I.B. Over EF Pump Motors	Safety	CR3-P-SKH-217.2	302-051.1	304-015 B-2	305-825 SH.1
MSH-251	11373	IB	I.B. Over EF Pump Motors	Safety	CR3-P-SKH-217.2	302-051.1	304-015 B-2	305-825 SH.1
MSH-252	11374	IB	In O/H Above MSIV's, 2' S of FWV-32	Safety	CR3-P-SKH-217.2	302-051.1	304-015 F-5	305-825 SH.1
MSH-255	11377	IB	I.B. by EF Pumps, Over MSV-439 / 440	Safety Sig.	CR3-P-SKH-217.2	302-051.1	304-053 A-5	305-825 SH.2
MSH-664	11378	IB	DNST of EFP-1	Safety Sig.	CR3-P-SKH-237.1		304-015 B-4	HD-306-298
MSH-665	11379	IB	In Single Door to IB, To Right	Safety Sig.	CR3-P-SKH-237.1		304-015 B-4	HD-306-298
REACTOR BUILDING								
BSH-14	21100	RB	O/S by S Stairs Close to Cont. Wall	Safety	CR3-P-SKH-121.3	302-711	304-714	PI-305-809
BSH-19	21102	RB	O/S by S Stairs on Horz. Run Close to Wall	Safety	CR3-P-SKH-121.3	302-711	304-714	PI-305-809
CFH-14	21105	RB	On Top of Old LDCR Roof	Safety	CR3-P-SKH-3.2	302-641.1, 302-702.1		PI-305-805
DHH-17	21106	RB	O/H (LD) Line W of Sth Stairs D-Ring Wall	Safety	CR3-P-SKH-113.3	302-641.1		305-806 SH.1
DHH-18	21107	RB	E of AHF-1C by lot drain Valve	Safety	CR3-P-SKH-113.3	302-641.1		305-806 SH.1



Attachment 6 Snubbers Location Information

Mark / Tag No	Exam No	Bldg.	Location Description	Category	Isometric	302 Dwg.	304 Dwg.	305 Dwg.
DHH-23	21109	RB	RB Sump O/H	Safety	CR3-P-SKH-112.3	302-641.1	304-644	305-805, 305-818
DHH-25	21111	RB	LD Line in Overhead by S Stairs	Safety	CR3-P-SKH-113.3	302-641.1		305-806 SH.1
DHH-26H	21112	RB	LD Line in Overhead by S Stairs	Safety	CR3-P-SKH-113.3	302-641.1		305-806 SH.1
DHH-26V	21113	RB	LD Line in Overhead by S Stairs	Safety	CR3-P-SKH-113.3	302-641.1		305-806 SH.1
DHH-27	21114	RB	RB Sump O/H	Safety	CR3-P-SKH-112.3	302-641.1	304-644	305-805, 305-818
FWH-122	21115	RB	O/H Between Elevator/P.H.	Safety	CR3-P-SKH-105.2	302-081.1	304-083 SH-2 D-12, E-9,10	PI-305-829/832
FWH-123	21116	RB	O/H Between Elevator/P.H.	Safety	CR3-P-SKH-105.2	302-081.1	304-083 SH-2 D-12, E-9,10	PI-305-829/832
FWH-124	21117	RB	O/H Between Elevator/P.H. W Wall	Safety	CR3-P-SKH-105.2	302-081.1	304-083 SH-2 D-12, E-9,10	PI-305-829/832
FWH-128	21120	RB	Front of AHF 1A / S of A Core Flood Room	Safety	CR3-P-SKH-106.2	302-081.1	304-083	PI-305-827/831
FWH-130	21122	RB	O/S CFT Area	Safety	CR3-P-SKH-105.1	302-081.1	304-083, 304-084	PI-305-827
FWH-131	21123	RB	SW Wall O/S D-Ring O/H (across from Equip. Hatch)	Safety	CR3-P-SKH-105.1	302-081.1	304-083, 304-084	PI-305-827
FWH-132	21124	RB	SW Wall O/S D-Ring O/H	Safety	CR3-P-SKH-105.1	302-081.1	304-083, 304-084	PI-305-827
MSH-139	21125	RB	Behind the Cavity Cooling Fans	Safety	CR3-P-SKH-104.1	302-011.1, 302-011.2	304-011	PI-305-804
MSH-147	21126	RB	Cavity Cooling Fans in Overhead O/S S Inner wall	Safety	CR3-P-SKH-103.1	302-011.1, 302-011.2	304-011	PI-305-803
MSH-149	21127	RB	Under Mezz Grate	Safety	CR3-P-SKH-104.1	302-011.1, 302-011.2	304-011	305-804

**Attachment 6
Snubbers Location Information**

Mark / Tag No	Exam No	Bldg.	Location Description	Category	Isometric	302 Dwg.	304 Dwg.	305 Dwg.
MSH-150	21128	RB	Under Mezz Grate	Safety	CR3-P-SKH-103.1	302-011.1, 302-011.2	304-011	PI-305-803
MSH-159	21130	RB	O/H by Elevator	Safety	CR3-P-SKH-101.1	302-011.1, 302-011.2	304-011	305-802
MSH-160	21131	RB	O/H by Elevator	Safety	CR3-P-SKH-102.1	302-011.1, 302-011.2	304-011	305-801
MSH-162	21133	RB	O/H in front of Elevator	Safety	CR3-P-SKH-102.1	302-011.1, 302-011.2	304-011	PI-305-801
MSH-164	21135	RB	Under Mezz Grate	Safety	CR3-P-SKH-102.1	302-011.1, 302-011.2	304-011	305-801
MSH-165	21136	RB	Under Mezz Grate Platform at Elevator	Safety	CR3-P-SKH-101.1	302-011.1, 302-011.2	304-011	PI-305-802
MSH-166	21137	RB	SW Wall O/S D-Ring O/H (across from Equip. Hatch)	Safety	CR3-P-SKH-103.1	302-011.1, 302-011.2	304-011	PI-305-803
MSH-167	21138	RB	SW Wall O/S D-Ring O/H (across from Equip. Hatch)	Safety	CR3-P-SKH-103.1	302-011.1, 302-011.2	304-011	PI-305-803
MSH-168	21139	RB	SW Wall O/S D-Ring O/H	Safety	CR3-P-SKH-104.1	302-011.1, 302-011.2	304-011	PI-305-804
MSH-170	21141	RB	SW Wall O/S D-Ring N of Equipment Hatch in O/H	Safety	CR3-P-SKH-104.1	302-011.1, 302-011.2	304-011	PI-305-804
MSH-243	21142	RB	SW Wall O/S D-Ring O/H	Safety	CR3-P-SKH-103.1	302-011.1, 302-011.2	304-011	305-803
MSH-567L	21143	RB	LD Line by S Stairs on D-Ring Wall	Safety	CR3-P-SKH-104.3		304-781	PI-305-738
MSH-567U	21144	RB	LD Line by S Stairs on D-Ring Wall	Safety	CR3-P-SKH-104.3		304-781	PI-305-738
MSH-568L	21145	RB	ESE of AHF-1C on D-Ring Wall	Safety	CR3-P-SKH-104.3		304-781	PI-305-738
MSH-568U	21146	RB	ESE of AHF-1C on D-Ring Wall	Safety	CR3-P-SKH-104.3		304-781	PI-305-738
MSH-576L	21148	RB	Over Elevator Landing on D-Ring wall	Safety	CR3-P-SKH-104.3		304-781	PI-305-738

**Attachment 6
Snubbers Location Information**

Mark / Tag No	Exam No	Bldg.	Location Description	Category	Isometric	302 Dwg.	304 Dwg.	305 Dwg.
MSH-576U	21149	RB	Over Elevator Landing on D-Ring wall	Safety	CR3-P-SKH-104.3		304-781	PI-305-738
MUH-82	21167	RB	Sump O/H	Safety	CR3-P-SKH-9.1	302-651.1, 302-661.1	304-667.1	PI-305-871
RCH-55	21169	RB	O/H Behind Stairs on D-Ring Wall	Safety Sig	CR3-P-SKH-301.1	302-651.1, 302-681.3	304-851	305-851
RCH-58	21170	RB	O/H Behind Stairs on D-Ring Wall	Safety Sig	CR3-P-SKH-301.1	302-651.1, 302-681.1	304-851	305-851
RCH-60	21171	RB	Top of PZR	Safety Sig	CR3-P-SKH-302.1	302-651.1, 302-681.3		305-852
RCH-84	21172	RB	Behind Stairs on D-Ring Wall	Safety Sig	CR3-P-SKH-302.1	302-651.1, 302-681.3	304-651	PI-305-852
RCH-86	21173	RB	O/H by Elevator	Safety Sig	CR3-P-SKH-302.1	302-651.1, 302-681.3	304-651	PI-305-852
RCH-89	21174	RB	O/H on D-Ring Wall behind N Stairs	Safety Sig	CR3-P-SKH-303.1	302-651.1, 302-681.3	304-651	PI-305-850
RCH-90	21175	RB	O/H on D-Ring Wall behind N Stairs	Safety Sig	CR3-P-SKH-303.1	302-651.1, 302-681.3	304-651	PI-305-850
SWH-483	21176	RB	SW Wall by Equip Hatch	Safety	CR3-P-SKH-220.2	302-601		305-715
CFH-15	21200	RB-2	I/S E Wall by RCP 1A	Safety	CR3-P-SKH-3.2	302-641.1, 302-702.1		PI-305-805
CFH-16	21201	RB-2	CatWalk to PZR	Safety	CR3-P-SKH-3.1	302-641.1, 302-702.1		PI-305-805
CFH-17	21202	RB-2	CatWalk South of PZR	Safety	CR3-P-SKH-3.1	302-641.1, 302-702.1		PI-305-805
CFH-18	21203	RB-2	CatWalk to PZR	Safety	CR3-P-SKH-3.1	302-641.1, 302-702.1		PI-305-805
CFH-19	21204	RB-2	CatWalk to PZR	Safety	CR3-P-SKH-3.1	302-641.1, 302-702.1		PI-305-805
DHH-35	21208	RB-2	NW Side PZR Platform	Safety	CR3-P-SKH-19.1	CR3-P-8091-RC	304-644	
DHH-36	21209	RB-2	NW Side PZR Platform 15' Down By RCV-12 /53	Safety	CR3-P-SKH-19.1	CR3-P-8091-RC	304-644	

**Attachment 6
Snubbers Location Information**

Mark / Tag No	Exam No	Bldg.	Location Description	Category	Isometric	302 Dwg.	304 Dwg.	305 Dwg.
DHH-37	21210	RB-2	W Side PZR Platform UPST of RCV-12	Safety	CR3-P-SKH-19.1	CR3-P-8091-RC	304-644	
DHH-38	21211	RB-2	W Side PZR Platform	Safety	CR3-P-SKH-19.1	CR3-P-8091-RC	304-644	
DHH-39	21212	RB-2	NS Top of PZR on Landing	Safety	CR3-P-SKH-19.1	CR3-P-8091-RC	304-644	
DHR-64	21259	RB-2	NS Top of PZR on Landing	Safety	CR3-P-SKH-19.1	CR3-P-8091-RC	304-644	
EFH-27	21213	RB-2	RCP 1D Outer Wall S Side of B Gen.	Safety	CR3-P-SKH-108.1	302-081.1	304-085	PI-305-901
EFH-28	21214	RB-2	RCP 1D Outer Wall S Side of B Gen.	Safety	CR3-P-SKH-108.1	302-081.1	304-085	PI-305-901
FWH-125	21215	RB-2	N Side of A D-Ring Wall	Safety	CR3-P-SKH-105.1	302-081.1	304-083, 304-084	PI-305-829

**Attachment 6
Snubbers Location Information**

Mark / Tag No	Exam No	Bldg.	Location Description	Category	Isometric	302 Dwg.	304 Dwg.	305 Dwg.
FWH-133	21216	RB-2	N Side of D-Ring Wall by RCP-1D	Safety	CR3-P-SKH-106.1	302-081.1	304-083, 304-084	PI-305-827
MUH-32	21217	RB-2	CatWalk to PZR	Safety	CR3-P-SKH-7.1	302-651.1, 302-661.4		305-869
MUH-51	21223	RB-2	I/S E Wall by RCP 1A	Safety	CR3-P-SKH-4.1	302-651.1, 302-661.3		PI-305-874 SH-1
MUH-80	21224	RB-2	I/S Wall Behind RCP-1D LD	Safety	CR3-P-SKH-9.1	302-651.1, 302-661.1	304-667.1	PI-305-871
RCH-29	21225	RB-2	Top of PZR	Safety	CR3-P-SKH-302.1	302-651.1, 302-681.3	304-651	PI-305-852
RCH-47N	21226	RB-2	Surge Line at B Pump Near Hot Leg	Safety	CR3-P-SKH-18.1	302-651.1		141585E B&W 135881-E19
RCH-47S	21227	RB-2	Surge Line at B Pump Near Hot Leg	Safety	CR3-P-SKH-18.1	302-651.1		141585E B&W 135881-E19
RCH-48	21228	RB-2	Surge Line at B Pump Near Hot Leg	Safety	CR3-P-SKH-18.1	302-651.1		141585E B&W 135881-E19
RCH-49	21229	RB-2	Surge Line at B Pump Near Hot Leg	Safety	CR3-P-SKH-18.1	302-651.1		141585E B&W 135881-E19
RCH-530	21230	RB-2	Top of PZR	Safety	CR3-P-SKH-19.2		304-651	305-762
RCH-531	21231	RB-2	Top of PZR	Safety	CR3-P-SKH-19.2		304-651	305-762
RCH-618	21233	RB-2	I/S by RCP-1C (L-Bore)	Safety	135881E	RCP PUMP	RCP PUMP	RCP PUMP
RCH-619	21234	RB-2	I/S by RCP-1C (L-Bore)	Safety	135881E			RCP PUMP
RCH-63	21236	RB-2	N Side of PZR Platform	Safety Sig	CR3-P-SKH-302.1	302-651.1, 302-681.3	304-651	PI-305-852
RCH-64	21237	RB-2	N Side of PZR Platform	Safety Sig	CR3-P-SKH-302.1	302-651.1, 302-681.3	304-651	PI-305-852

**Attachment 6
Snubbers Location Information**

Mark / Tag No	Exam No	Bldg.	Location Description	Category	Isometric	302 Dwg.	304 Dwg.	305 Dwg.
RCH-65	21238	RB-2	Bottom of PZR Platform, S Side O/H	Safety	CR3-P-SKH-19.1	CR3-P-8091-RC		
RCH-66	21239	RB-2	S Side of PZR Platform	Safety	CR3-P-SKH-19.1	CR3-P-8091-RC		
RCH-67	21240	RB-2	S Side of PZR Platform	Safety	CR3-P-SKH-19.1	CR3-P-8091-RC		
RCH-68	21241	RB-2	S Side of PZR Platform	Safety	CR3-P-SKH-19.1	CR3-P-8091-RC		
RCH-69	21242	RB-2	Top of PZR - Leave SA Pin (Disconnect in place, pin mushroomed)	Safety	CR3-P-SKH-19.1	CR3-P-8091-RC		
RCH-70	21243	RB-2	Top of PZR	Safety	CR3-P-SKH-19.1	CR3-P-8091-RC		
RCH-71L	21244	RB-2	Top of PZR	Safety	CR3-P-SKH-19.1	CR3-P-8091-RC		
RCH-71U	21245	RB-2	Top of PZR	Safety	CR3-P-SKH-19.1	CR3-P-8091-RC		
RCH-73	21246	RB-2	Top of PZR	Safety	CR3-P-SKH-19.1	CR3-P-8091-RC		
RCH-74	21247	RB-2	Top of PZR	Safety	CR3-P-SKH-19.1	CR3-P-8091-RC		
RCH-76	21248	RB-2	S Side of PZR Platform	Safety	CR3-P-SKH-19.1	CR3-P-8091-RC		
RCH-77	21249	RB-2	Bottom of PZR Platform, S Side O/H	Safety	CR3-P-SKH-19.1	CR3-P-8091-RC		
RCH-78	21250	RB-2	S Side of PZR Platform	Safety	CR3-P-SKH-19.1	CR3-P-8091-RC		
RCH-79	21251	RB-2	S Side of PZR Platform	Safety	CR3-P-SKH-19.1	CR3-P-8091-RC		
RCH-80	21252	RB-2	Top of PZR - Removed every outage to access RCV-14	Safety	CR3-P-SKH-19.1	CR3-P-8091-RC		
RCH-81	21253	RB-2	Top of PZR - Removed every outage to access RCV-13	Safety	CR3-P-SKH-19.1	CR3-P-8091-RC		
SWH-493L	21254	RB-2	RCP 1D Outer Wall	Safety	CR3-P-SKH-220.2	302-601		305-715

**Attachment 6
Snubbers Location Information**

Mark / Tag No	Exam No	Bldg.	Location Description	Category	Isometric	302 Dwg.	304 Dwg.	305 Dwg.
SWH-493U	21255	RB-2	RCP 1D Outer Wall	Safety	CR3-P-SKH-220.2	302-601		305-715
SWR-423	21256	RB-2	N Side of PZR D-Ring Wall at Ladder by B RCP	Safety	CR3-P-SKH-220.3	302-011.1	304-607	305-700 / 705
SWR-425	21257	RB-2	Ladder-PZR to RCP 1B	Safety	CR3-P-SKH-220.3	302-011.1	304-607	305-700 / 705
SWR-440	21258	RB-2	Ladder-PZR to RCP 1B	Safety	CR3-P-SKH-220.3	302-011.1	304-607	305-700 / 705
RCH-614	21232	RB-2 D-Ring	I/S by RCP-1A (L-Bore)	Safety	135881E			RCP PUMP
RCH-620	21235	RB-2 I/S B-D-Ring	I/S by RCP-1D (L-Bore)	Safety	135881E			RCP PUMP

TURBINE BUILDING

HVR-10N	12515	TB	On Vent Line From MDT-1	Non Safety			304-118, 304-119 B-8	
HVR-10S	12516	TB	On Vent Line From MDT-1	Non Safety			304-118, 304-119 B-8	
HVR-4	12525	TB	Over FWHE-6A, Above HVV-43	Non Safety			304-117 J-4	
MSH-223	11532	TB	On M/S Line From MSIV-413	Safety Sig.	Location-M28		304-012 SH-2 E-4	305-753
MSH-224	11533	TB	On M/S Line From MSIV-413	Safety Sig.	Location-M28		304-012 SH-2 E-4	305-753
MSH-225	11534	TB	On M/S Line From MSIV-413	Safety Sig.	Location-M28		304-012 SH-2 F-3	305-753
MSH-226E	11535	TB	On M/S Line From MSIV-413	Safety Sig.	Location-M28		304-012	305-753
MSH-226W	11536	TB	On M/S Line From MSIV-413	Safety Sig.	Location-M28		304-012	305-753



Attachment 6 Snubbers Location Information

Mark / Tag No	Exam No	Bldg.	Location Description	Category	Isometric	302 Dwg.	304 Dwg.	305 Dwg.
MSH-228	11537	TB	Just DNST of MSV-413	Safety Sig.	CR3-P-SKH-103.3		304-012	305-752
MSH-229	11538	TB	Just DNST of MSV-413	Safety Sig.	Location-M28		304-012	305-752
MSH-230	11539	TB	Over Double Doors to IB	Safety Sig.	CR3-P-SKH-103.3		304-012 SH-2 G03	305-752
MSH-233	11540	TB	Above FW Heater	Safety Sig.	CR3-P-SKH-103.3		304-012	305-751
MSH-234	11541	TB	On MS Line From MSV-412	Safety Sig.	Location-M27		304-012 SH-2 E-5	305-751
MSH-235	11542	TB	On MS Line From MSV-412	Safety Sig.	Location-M27		304-012 SH-2 E-5	305-751
MSH-237	11543	TB	On MS Line From MSV-411	Safety Sig.	Location-M27		304-012 SH-2 E-5	305-750
MSH-238	11544	TB	On MS Line From MSV-411	Safety Sig.	Location-M27		304-012 SH-2 E-5	305-750
MSH-239	11545	TB	On MS Line From MSV-411	Safety Sig.	Location-M27		304-012 SH-2 E-5	305-750
RVR-3E	12552	TB	On Vent Line, RHV-9 Discharge	Non Safety			304-021, 304-022 D-2	
RVR-3W	12553	TB	On Vent Line, RHV-9 Discharge	Non Safety			304-021, 304-022 D-2	
RVR-4E	12554	TB	On Vent Line, RHV-10 Discharge	Non Safety			304-021, 304-022 D-2	
RVR-4W	12555	TB	On Vent Line, RHV-10 Discharge	Non Safety			304-021, 304-022 D-2	
RVR-5N	12556	TB	On Vent Line, Turbine Building Roof	Non Safety			304-021, 304-022	
RVR-5S	12557	TB	On Vent Line, Turbine Building Roof	Non Safety			304-021, 304-022	

**Attachment 6
Snubbers Location Information**

Mark / Tag No	Exam No	Bldg.	Location Description	Category	Isometric	302 Dwg.	304 Dwg.	305 Dwg.
RVR-6N	12558	TB	On Vent Line, Turbine Building Roof	Non Safety			304-021, 304-022	
RVR-6S	12559	TB	On Vent Line, Turbine Building Roof	Non Safety			304-021, 304-022	

**Attachment 7
Safety Assessment**

[As of the issue date, no Safety Assessments were applicable for the Snubber Inspection and Testing Program]

Attachment 8**NRC Letter # 3F120704 Inservice Inspection Program Plan, 10 Year Update**

Crystal River Nuclear Plant
Tracker No. 316-012
Operating License No. DPR-72

Ref: 10CIR 50.55a

December 21, 2007
3F1207-04

U.S. Nuclear Regulatory Commission
Attention: Document Control Desk
Washington, DC 20555

Subject: Crystal River Unit 3 - Inservice Inspection Program Plan, Ten Year Update

Dear Sir,

Florida Power Corporation (FPC), doing business as Progress Energy Florida, Inc., is hereby submitting the Crystal River Unit 3 (CR-3) Inservice Inspection (ISI) Program Plan for the fourth ten year interval. The ISI Program Plan has been updated to meet the requirements of the 2001 Edition through the 2003 Addenda of the American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel (B&PV) Code, in accordance with ASME Section XI Article IWA-2400, except where specific relief from the B&PV Code has been requested, pursuant to 10CFR50.55a(3). The third ten year interval will end on August 13, 2008, and the fourth ten year interval will begin on August 14, 2008.

ASME Code Cases approved by the NRC, as identified in Regulatory Guide 1.147, and which are applicable to CR-3, along with the specific Relief Requests are identified in the ISI Program Plan.

No regulatory commitments are being made in this submittal.

If you should have any questions regarding this submittal, please contact Mr. Dennis Herold, Acting Supervisor, Licensing & Regulatory Programs, at (352) 563-4633.

Sincerely,



Stephen J. Cahill
Engineering Manager

SJC/scb

Attachment: Crystal River Unit 3 Inservice Inspection Program Plan - Fourth Ten Year Interval

cc: NRR Project Manager
Regional Administrator, Region 1
Senior Resident Inspector

Progress Energy Florida, Inc.
Crystal River Nuclear Plant
2750 W. Powell Road
Crystal River, FL 34428

AD-17
NRR

**Attachment 9
Relief Requests**

[As of the issue date, no Safety Assessments were applicable for the Snubber Inspection and Testing Program]

**Attachment 10
ASME XI Interpretation**

[As of the issue date, no Safety Assessments were applicable for the Snubber Inspection and Testing Program]

**Attachment 11
Snubber Tech. Spec. Information**

TAG NO	TRAIN	LCO INFO	LINE DESC	ANALYTICAL DWG	ISI DWG	TECH SPEC	SAFETY REL.	BLDG
BSH-14	B	LCO 3.0.8.a [72 hr]		305-809.2	CR3-P-SKH-121.3	Yes	Safety	RB
BSH-19	B	LCO 3.0.8.a [72 hr]		305-809	CR3-P-SKH-121.3	Yes	Safety	RB
BSR-31	A	LCO 3.0.8.a [72 hr]		305-810	CR3-P-SKH-120.1	Yes	Safety	AB
BSR-35	B	LCO 3.0.8.a [72 hr]		305-811	CR3-P-SKH-121.1	Yes	Safety	AB
CFH-14	B	LCO 3.0.8.a [72 hr]		305-805 SH.1	CR3-P-SKH-3.2	Yes	Safety	RB
CFH-15	B	LCO 3.0.8.a [72 hr]		305-805 SH.1	CR3-P-SKH-3.2	Yes	Safety	RB-2
CFH-16	A	LCO 3.0.8.a [72 hr]		305-805 SH.2	CR3-P-SKH-3.1	Yes	Safety	RB-2
CFH-17	A	LCO 3.0.8.a [72 hr]		305-805 SH.2	CR3-P-SKH-3.1	Yes	Safety	RB-2
CFH-18	A	LCO 3.0.8.a [72 hr]		305-805 SH.2	CR3-P-SKH-3.1	Yes	Safety	RB-2
CFH-19	A	LCO 3.0.8.a [72 hr]		305-805 SH.2	CR3-P-SKH-3.1	Yes	Safety	RB-2
DCR-33E	B	LCO 3.0.8.a [72 hr]		305-845 SH.2	CR3-P-SKH-201.2	Yes	Safety	AB
DCR-33W	B	LCO 3.0.8.a [72 hr]		305-845 SH.2	CR3-P-SKH-201.2	Yes	Safety	AB
DHH-17	B	LCO 3.0.8.a [72 hr]		305-806 SH.1	CR3-P-SKH-113.3	Yes	Safety	RB
DHH-18	B	LCO 3.0.8.a [72 hr]		305-806 SH.1	CR3-P-SKH-113.3	Yes	Safety	RB
DHH-23	A	LCO 3.0.8.a [72 hr]		305-805, 305-818	CR3-P-SKH-112.3	Yes	Safety	RB
DHH-25	B	LCO 3.0.8.a [72 hr]		305-806 SH.1	CR3-P-SKH-113.3	Yes	Safety	RB
DHH-26H	B	LCO 3.0.8.a [72 hr]		305-806 SH.1	CR3-P-SKH-113.3	Yes	Safety	RB
DHH-26V	B	LCO 3.0.8.a [72 hr]		305-806 SH.1	CR3-P-SKH-113.3	Yes	Safety	RB
DHH-27	A	LCO 3.0.8.a [72 hr]		305-805, 305-818	CR3-P-SKH-112.3	Yes	Safety	RB
DHH-35	COMM	LCO 3.0.8.b [12 hr]	Pressurizer - Aux. Spray, Upstream RCV-53	CR3-P-8045	CR3-P-SKH-19.1	Yes	Safety	RB-2
DHH-36	COMM	LCO 3.0.8.b [12 hr]	Pressurizer - Aux. Spray, RCV-53 to Pressurizer	CR3-P-8045	CR3-P-SKH-19.1	Yes	Safety	RB-2
DHH-37	COMM	LCO 3.0.8.b [12 hr]	Pressurizer - Aux. Spray, RCV-12 to Pressurizer	CR3-P-8045	CR3-P-SKH-19.1	Yes	Safety	RB-2
DHH-38	COMM	LCO 3.0.8.b [12 hr]	Pressurizer - Aux. Spray, RCV-12 to Pressurizer	CR3-P-8045	CR3-P-SKH-19.1	Yes	Safety	RB-2
DHH-39	COMM	LCO 3.0.8.b [12 hr]	Pressurizer - Aux. Spray, RCV-12 to Pressurizer	CR3-P-8045	CR3-P-SKH-19.1	Yes	Safety	RB-2

**Attachment 11
Snubber Tech. Spec. Information**

TAG NO	TRAIN	LCO INFO	LINE DESC	ANALYTICAL DWG	ISI DWG	TECH SPEC	SAFETY REL.	BLDG
DHR-18	B	LCO 3.0.8.a [72 hr]		305-816, 305-805 / 817	CR3-P-SKH-110.1	Yes	Safety	AB
DHR-21	COMM	LCO 3.0.8.b [12 hr]		305-815	CR3-P-SKH-111.2	Yes	Safety	AB
DHR-24L	COMM	LCO 3.0.8.b [12 hr]		305-815	CR3-P-SKH-111.1	Yes	Safety	AB
DHR-24U	COMM	LCO 3.0.8.b [12 hr]		305-815	CR3-P-SKH-111.1	Yes	Safety	AB
DHR-28	COMM	LCO 3.0.8.b [12 hr]		305-815	CR3-P-SKH-111.1	Yes	Safety	AB
DHR-31	A	LCO 3.0.8.a [72 hr]		305-814 SH.1	CR3-P-SKH-109.2	Yes	Safety	AB
DHR-37	B	LCO 3.0.8.a [72 hr]		305-817 SH.6	CR3-P-SKH-113.1	Yes	Safety	AB
DHR-49	A	LCO 3.0.8.a [72 hr]		305-818 SH.5	CR3-P-SKH-112.2	Yes	Safety	AB
DHR-64	COMM	LCO 3.0.8.b [12 hr]	Pressurizer - Aux. Spray, RCV-12 to Pressurizer	CR3-P-8045	CR3-P-SKH-19.1	Yes	Safety	RB-2
EFH-27	B (LCO N/A)	LCO N/A-Transient Load Sn		305-901	CR3-P-SKH-108.1	Yes	Safety	RB-2
EFH-28	B (LCO N/A)	LCO N/A-Transient Load Sn		305-901	CR3-P-SKH-108.1	Yes	Safety	RB-2
EFH-92	A (LCO N/A)	LCO N/A-Transient Load Sn		305-905	CR3-P-SKH-304.1	Yes	Safety Sig	IB
EFH-93	A (LCO N/A)	LCO N/A-Transient Load Sn		305-905	CR3-P-SKH-304.1	Yes	Safety Sig	IB
EFH-94	A (LCO N/A)	LCO N/A-Transient Load Sn		305-905	CR3-P-SKH-304.1	Yes	Safety Sig	IB
EFH-95	A (LCO N/A)	LCO N/A-Transient Load Sn		305-905	CR3-P-SKH-304.1	Yes	Safety Sig	IB
EFH-109	B (LCO N/A)	LCO N/A-Transient Load Sn		305-902	CR3-P-SKH-108.4	Yes	Safety Sig	IB
EFH-110	B (LCO N/A)	LCO N/A-Transient Load Sn		305-902	CR3-P-SKH-108.4	Yes	Safety Sig	IB
EFH-141	B (LCO N/A)	LCO N/A-Transient Load Sn		305-902	CR3-P-SKH-108.4	Yes	Safety Sig	IB
EFH-143	A (LCO N/A)	LCO N/A-Transient Load Sn		305-905	CR3-P-SKH-304.1	Yes	Safety Sig	IB
EFH-144	B (LCO N/A)	LCO N/A-Transient Load Sn		305-902	CR3-P-SKH-108.4	Yes	Safety Sig	IB
FWH-122	A	LCO 3.0.8.a [72 hr]		305-829	CR3-P-SKH-105.2	Yes	Safety	RB
FWH-123	A	LCO 3.0.8.a [72 hr]		305-829	CR3-P-SKH-105.2	Yes	Safety	RB

**Attachment 11
Snubber Tech. Spec. Information**

TAG NO	TRAIN	LCO INFO	LINE DESC	ANALYTICAL DWG	ISI DWG	TECH SPEC	SAFETY REL.	BLDG
FWH-124	A	LCO 3.0.8.a [72 hr]		305-829	CR3-P-SKH-105.2	Yes	Safety	RB
FWH-125	A	LCO 3.0.8.a [72 hr]		305-829	CR3-P-SKH-105.1	Yes	Safety	RB-2
FWH-128	B	LCO 3.0.8.a [72 hr]		305-827	CR3-P-SKH-106.2	Yes	Safety	RB
FWH-130	B	LCO 3.0.8.a [72 hr]		305-827	CR3-P-SKH-105.1	Yes	Safety	RB
FWH-131	B	LCO 3.0.8.a [72 hr]		305-827	CR3-P-SKH-105.1	Yes	Safety	RB
FWH-132	B	LCO 3.0.8.a [72 hr]		305-827	CR3-P-SKH-105.1	Yes	Safety	RB
FWH-133	B	LCO 3.0.8.a [72 hr]		305-827	CR3-P-SKH-106.1	Yes	Safety	RB-2
FWH-138	A	LCO 3.0.8.a [72 hr]		305-832 SH.1	CR3-P-SKH-105.3	Yes	Safety Sig	IB
FWH-139	A	LCO 3.0.8.a [72 hr]		305-832 SH.1	CR3-P-SKH-105.3	Yes	Safety Sig	IB
FWH-140	A	LCO 3.0.8.a [72 hr]		305-832 SH.1	CR3-P-SKH-105.3	Yes	Safety Sig	IB
FWH-141	A	LCO 3.0.8.a [72 hr]		305-832 SH.1	CR3-P-SKH-105.3	Yes	Safety	IB
FWH-142	A	LCO 3.0.8.a [72 hr]		305-832 SH.1	CR3-P-SKH-105.3	Yes	Safety	IB
FWH-143	A	LCO 3.0.8.a [72 hr]		305-832 SH.1	CR3-P-SKH-105.3	Yes	Safety	IB
FWH-144	A	LCO 3.0.8.a [72 hr]		305-832 SH.1	CR3-P-SKH-105.3	Yes	Safety	IB
FWH-145	A	LCO 3.0.8.a [72 hr]		305-832 SH.1	CR3-P-SKH-105.3	Yes	Safety	IB
FWH-146	A	LCO 3.0.8.a [72 hr]		305-832 SH.1	CR3-P-SKH-105.3	Yes	Safety	IB
FWH-147A	A	LCO 3.0.8.a [72 hr]		305-832 SH.1	CR3-P-SKH-105.2	Yes	Safety	IB
FWH-148	A	LCO 3.0.8.a [72 hr]		305-832 SH.1	CR3-P-SKH-105.2	Yes	Safety	IB
FWH-149	A	LCO 3.0.8.a [72 hr]		305-832 SH.1	CR3-P-SKH-105.2	Yes	Safety	IB
FWH-150	A	LCO 3.0.8.a [72 hr]		305-832 SH.1	CR3-P-SKH-105.2	Yes	Safety	IB
FWH-151	A	LCO 3.0.8.a [72 hr]		305-832 SH.1	CR3-P-SKH-105.2	Yes	Safety	IB
FWH-152	A	LCO 3.0.8.a [72 hr]		305-832 SH.1	CR3-P-SKH-105.2	Yes	Safety	IB
FWH-153	A	LCO 3.0.8.a [72 hr]		305-832 SH.1	CR3-P-SKH-105.2	Yes	Safety	IB
FWH-154	A	LCO 3.0.8.a [72 hr]		305-832 SH.1	CR3-P-SKH-105.2	Yes	Safety	IB
FWH-155	A	LCO 3.0.8.a [72 hr]		305-832 SH.1	CR3-P-SKH-105.2	Yes	Safety	IB
FWH-156	A	LCO 3.0.8.a [72 hr]		305-832 SH.1	CR3-P-SKH-105.2	Yes	Safety	IB

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TAG NO	TRAIN	LCO INFO	LINE DESC	ANALYTICAL DWG	ISI DWG	TECH SPEC	SAFETY REL	BLDG
FWH-157	B	LCO 3.0.8.a [72 hr]		305-831 SH.1	CR3-P-SKH-106.3	Yes	Safety Sig	IB
FWH-158	B	LCO 3.0.8.a [72 hr]		305-831 SH.1	CR3-P-SKH-106.3	Yes	Safety Sig	IB
FWH-159	B	LCO 3.0.8.a [72 hr]		305-831 SH.1	CR3-P-SKH-106.3	Yes	Safety Sig	IB
FWH-160	B	LCO 3.0.8.a [72 hr]		305-831 SH.1	CR3-P-SKH-106.3	Yes	Safety	IB
FWH-161	B	LCO 3.0.8.a [72 hr]		305-831 SH.1	CR3-P-SKH-106.3	Yes	Safety	IB
FWH-162	B	LCO 3.0.8.a [72 hr]		305-831 SH.1	CR3-P-SKH-106.3	Yes	Safety	IB
FWH-163	B	LCO 3.0.8.a [72 hr]		305-831 SH.1	CR3-P-SKH-106.3	Yes	Safety	IB
FWH-164	B	LCO 3.0.8.a [72 hr]		305-831 SH.1	CR3-P-SKH-106.3	Yes	Safety	IB
FWH-165	B	LCO 3.0.8.a [72 hr]		305-831 SH.1	CR3-P-SKH-106.2	Yes	Safety	IB
FWH-166	B	LCO 3.0.8.a [72 hr]		305-831 SH.1	CR3-P-SKH-106.2	Yes	Safety	IB
FWH-167	B	LCO 3.0.8.a [72 hr]		305-831 SH.1	CR3-P-SKH-106.2	Yes	Safety	IB
FWH-168	B	LCO 3.0.8.a [72 hr]		305-831 SH.1	CR3-P-SKH-106.2	Yes	Safety	IB
FWH-169	B	LCO 3.0.8.a [72 hr]		305-831 SH.1	CR3-P-SKH-106.2	Yes	Safety	IB
FWH-170	B	LCO 3.0.8.a [72 hr]		305-831 SH.1	CR3-P-SKH-106.2	Yes	Safety	IB
FWH-171	B	LCO 3.0.8.a [72 hr]		305-831 SH.1	CR3-P-SKH-106.2	Yes	Safety	IB
HVR-4	Non-Safety	Non-Safety / Non-Seismic				No	Non Safety	TB
HVR-10N	Non-Safety	Non-Safety / Non-Seismic				No	Non Safety	TB
HVR-10S	Non-Safety	Non-Safety / Non-Seismic				No	Non Safety	TB

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TAG NO	TRAIN	LCO INFO	LINE DESC	ANALYTICAL DWG	ISI DWG	TECH SPEC	SAFETY REL	BLDG
MSH-117	B-2	LCO 3.0.8.a [72 hr]		305-752	CR3-P-SKH-103.3	Yes	Safety Sig.	IB
MSH-118	B-1	LCO 3.0.8.a [72 hr]		305-753	CR3-P-SKH-104.2	Yes	Safety Sig.	IB
MSH-119	B-2	LCO 3.0.8.a [72 hr]		305-752		Yes	Safety Sig.	IB
MSH-120	B-1	LCO 3.0.8.a [72 hr]		305-753	CR3-P-SKH-104.2	Yes	Safety Sig.	IB
MSH-121	B-2	LCO 3.0.8.a [72 hr]		305-752		Yes	Safety Sig.	IB
MSH-122	B-1	LCO 3.0.8.a [72 hr]		305-753	CR3-P-SKH-104.2	Yes	Safety Sig.	IB
MSH-123	B-1	LCO 3.0.8.a [72 hr]		305-753	CR3-P-SKH-104.2	Yes	Safety	IB
MSH-124	B-2	LCO 3.0.8.a [72 hr]		305-752	CR3-P-SKH-103.2	Yes	Safety	IB
MSH-125	A-2	LCO 3.0.8.a [72 hr]		305-750	CR3-P-SKH-102.2	Yes	Safety	IB
MSH-126A	A-1	LCO 3.0.8.a [72 hr]		305-751	CR3-P-SKH-101.2	Yes	Safety	IB
MSH-128	A-2	LCO 3.0.8.a [72 hr]		305-750	CR3-P-SKH-102.2	Yes	Safety	IB
MSH-139	B-1	LCO 3.0.8.a [72 hr]		305-804	CR3-P-SKH-104.1	Yes	Safety	RB
MSH-147	B-2	LCO 3.0.8.a [72 hr]		305-803	CR3-P-SKH-103.1	Yes	Safety	RB
MSH-149	B-1	LCO 3.0.8.a [72 hr]		305-804	CR3-P-SKH-104.1	Yes	Safety	RB
MSH-150	B-2	LCO 3.0.8.a [72 hr]		305-803	CR3-P-SKH-103.1	Yes	Safety	RB
MSH-159	A-1	LCO 3.0.8.a [72 hr]		305-802	CR3-P-SKH-101.1	Yes	Safety	RB
MSH-160	A-2 (LCO N/A)	LCO N/A-Transient Load Sn		305-801	CR3-P-SKH-102.1	Yes	Safety	RB
MSH-162	A-2	LCO 3.0.8.a [72 hr]		305-801	CR3-P-SKH-102.1	Yes	Safety	RB
MSH-164	A-2	LCO 3.0.8.a [72 hr]		305-801	CR3-P-SKH-102.1	Yes	Safety	RB
MSH-165	A-1	LCO 3.0.8.a [72 hr]		305-802	CR3-P-SKH-101.1	Yes	Safety	RB
MSH-166	B-2 (LCO N/A)	LCO N/A-Transient Load Sn		305-803	CR3-P-SKH-103.1	Yes	Safety	RB
MSH-167	B-2 (LCO N/A)	LCO N/A-Transient Load Sn		305-803	CR3-P-SKH-103.1	Yes	Safety	RB
MSH-168	B-1 (LCO N/A)	LCO N/A-Transient Load Sn		305-804	CR3-P-SKH-104.1	Yes	Safety	RB
MSH-170	B-1 (LCO N/A)	LCO N/A-Transient Load Sn		305-804	CR3-P-SKH-104.1	Yes	Safety	RB

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TAG NO	TRAIN	LCO INFO	LINE DESC	ANALYTICAL DWG	ISI DWG	TECH SPEC	SAFETY REL.	BLDG
MSH-207	B	LCO N/A-Transient Load Sn	Terry Turbine (EFP-2) line from MS (B-2) MSV-56	305-825 SH.2	CR3-P-SKH-217.1	Yes	Safety	IB
MSH-212	B	LCO 3.0.8.a [72 hr]	Terry Turbine (EFP-2) line from MS (A-1) MSV-55	305-825 SH.1	CR3-P-SKH-217.2	Yes	Safety	IB
MSH-213	B	LCO 3.0.8.a [72 hr]	Terry Turbine (EFP-2) line from MS (A-1) MSV-55	305-825 SH.1	CR3-P-SKH-217.2	Yes	Safety	IB
MSH-214	B	LCO 3.0.8.a [72 hr]	Terry Turbine (EFP-2) line from MS (A-1) MSV-55	305-825 SH.1	CR3-P-SKH-217.2	Yes	Safety	IB
MSH-223	B-1 (LCO N/A)	LCO N/A-Transient Load Sn		305-753	Location-M28	Yes	Safety Sig.	TB
MSH-224	B-1 (LCO N/A)	LCO N/A-Transient Load Sn		305-753	Location-M28	Yes	Safety Sig.	TB
MSH-225	B-1 (LCO N/A)	LCO N/A-Transient Load Sn		305-753	Location-M28	Yes	Safety Sig.	TB
MSH-226E	B-1 (LCO N/A)	LCO N/A-Transient Load Sn		305-753	Location-M28	Yes	Safety Sig.	TB
MSH-226W	B-1 (LCO N/A)	LCO N/A-Transient Load Sn		305-753	Location-M28	Yes	Safety Sig.	TB
MSH-227	B-1 (LCO N/A)	LCO N/A-Transient Load Sn		305-753	CR3-P-SKH-104.2	Yes	Safety Sig.	IB
MSH-228	B-2 (LCO N/A)	LCO N/A-Transient Load Sn		305-752	CR3-P-SKH-103.3	Yes	Safety Sig.	TB
MSH-229	B-2 (LCO N/A)	LCO N/A-Transient Load Sn		305-752	Location-M28	Yes	Safety Sig.	TB

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TAG NO	TRAIN	LCO INFO	LINE DESC	ANALYTICAL DWG	ISI DWG	TECH SPEC	SAFETY REL.	BLDG
MSH-230	B-2 (LCO N/A)	LCO N/A-Transient Load Sn		305-752	CR3-P-SKH-103.3	Yes	Safety Sig.	TB
MSH-231	B-2 (LCO N/A)	LCO N/A-Transient Load Sn		305-752	CR3-P-SKH-103.3	Yes	Safety Sig.	IB
MSH-232	B-2 (LCO N/A)	LCO N/A-Transient Load Sn		305-752	CR3-P-SKH-103.3	Yes	Safety Sig.	IB
MSH-233	A-1 (LCO N/A)	LCO N/A-Transient Load Sn		305-751	CR3-P-SKH-103.3	Yes	Safety Sig.	TB
MSH-234	A-1 (LCO N/A)	LCO N/A-Transient Load Sn		305-751	Location-M27	Yes	Safety Sig.	TB
MSH-235	A-1 (LCO N/A)	LCO N/A-Transient Load Sn		305-751	Location-M27	Yes	Safety Sig.	TB
MSH-237	A-2 (LCO N/A)	LCO N/A-Transient Load Sn		305-750	Location-M27	Yes	Safety Sig.	TB
MSH-238	A-2 (LCO N/A)	LCO N/A-Transient Load Sn		305-750	Location-M27	Yes	Safety Sig.	TB
MSH-239	A-2 (LCO N/A)	LCO N/A-Transient Load Sn		305-750	Location-M27	Yes	Safety Sig.	TB
MSH-240	A-2 (LCO N/A)	LCO N/A-Transient Load Sn		305-750	CR3-P-SKH-102.2	Yes	Safety Sig.	IB
MSH-243	B-2 (LCO N/A)	LCO N/A-Transient Load Sn		305-803	CR3-P-SKH-103.1	Yes	Safety	RB
MSH-248	B (LCO N/A)	LCO N/A-Transient Load Sn	Terry Turbine (EFP-2) line from MS (B-2) MSV-56	305-825 SH.2	CR3-P-SKH-217.1	Yes	Safety	IB
MSH-250	B (LCO N/A)	LCO N/A-Transient Load Sn	Terry Turbine (EFP-2) line from MS (A-1) MSV-55	305-825 SH.1	CR3-P-SKH-217.2	Yes	Safety	IB
MSH-251	B (LCO N/A)	LCO N/A-Transient Load Sn	Terry Turbine (EFP-2) line from MS (A-1) MSV-55	305-825 SH.1	CR3-P-SKH-217.2	Yes	Safety	IB
MSH-252	B	LCO 3.0.8.a [72 hr]	Terry Turbine (EFP-2) line from MS (A-1) MSV-55	305-825 SH.1	CR3-P-SKH-217.2	Yes	Safety	IB
MSH-255	B	LCO 3.0.8.a [72 hr]	Terry Turbine (EFP-2) line from Aux. Steam	305-825 SH.2	CR3-P-SKH-217.2	Yes	Safety Sig	IB
MSH-567L	A	LCO 3.0.8.a [72 hr]	Blowdown line from SG1A	305-738	CR3-P-SKH-104.3	Yes	Safety	RB
MSH-567U	A	LCO 3.0.8.a [72 hr]	Blowdown line from SG1A	305-738	CR3-P-SKH-104.3	Yes	Safety	RB
MSH-568L	A	LCO 3.0.8.a [72 hr]	Blowdown line from SG1A	305-738	CR3-P-SKH-104.3	Yes	Safety	RB
MSH-568U	A	LCO 3.0.8.a [72 hr]	Blowdown line from SG1A	305-738	CR3-P-SKH-104.3	Yes	Safety	RB

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TAG NO	TRAIN	LCO INFO	LINE DESC	ANALYTICAL DWG	ISI DWG	TECH SPEC	SAFETY REL.	BLDG
MSH-576L	A	LCO 3.0.8.a [72 hr]	Blowdown line from SG1A	305-738	CR3-P-SKH-104.3	Yes	Safety	RB
MSH-576U	A	LCO 3.0.8.a [72 hr]	Blowdown line from SG1A	305-738	CR3-P-SKH-104.3	Yes	Safety	RB
MSH-664	B	LCO 3.0.8.a [72 hr]	EFTB-1 Exhaust Stack	305-909	CR3-P-SKH-237.1	Yes	Safety Sig.	IB
MSH-665	B	LCO 3.0.8.a [72 hr]	EFTB-1 Exhaust Stack	305-909	CR3-P-SKH-237.1	Yes	Safety Sig.	IB
MUH-32	B	LCO 3.0.8.a [72 hr]	HPI to RCP-1D	305-869	CR3-P-SKH-7.1	Yes	Safety	RB-2
MUH-51	A	LCO 3.0.8.a [72 hr]	HPI to RCP-1A	305-874	CR3-P-SKH-4.1	Yes	Safety	RB-2
MUH-80	COMM	LCO 3.0.8.b [12 hr]	Common line to Letdown Coolers MUHE-1A, B, C	305-871	CR3-P-SKH-9.1	Yes	Safety	RB-2
MUH-82	COMM	LCO 3.0.8.b [12 hr]	Common line to Letdown Coolers MUHE-1A, B, C	305-871	CR3-P-SKH-9.1	Yes	Safety	RB
RCH-29	COMM (LCO N/A)	LCO N/A-Transient Load Sn	Pressurizer Relief from RCV-9 (Safety)	305-852	CR3-P-SKH-302.1	Yes	Safety	RB-2
RCH-47N	COMM	LCO 3.0.8.b [12 hr]	Pressurizer Surge Line		CR3-P-SKH-18.1	Yes	Safety	RB-2
RCH-47S	COMM	LCO 3.0.8.b [12 hr]	Pressurizer Surge Line		CR3-P-SKH-18.1	Yes	Safety	RB-2
RCH-48	COMM	LCO 3.0.8.b [12 hr]	Pressurizer Surge Line		CR3-P-SKH-18.1	Yes	Safety	RB-2
RCH-49	COMM	LCO 3.0.8.b [12 hr]	Pressurizer Surge Line		CR3-P-SKH-18.1	Yes	Safety	RB-2
RCH-55	COMM (LCO N/A)	LCO N/A-Transient Load Sn	Pressurizer Relief from RCV-8 (Safety)	305-851	CR3-P-SKH-301.1	Yes	Safety Sig.	RB
RCH-58	COMM (LCO N/A)	LCO N/A-Transient Load Sn	Pressurizer Relief from RCV-8 (Safety)	305-851	CR3-P-SKH-301.1	Yes	Safety Sig.	RB
RCH-60	COMM (LCO N/A)	LCO N/A-Transient Load Sn	Pressurizer Relief from RCV-9 (Safety)	305-852	CR3-P-SKH-302.1	Yes	Safety Sig.	RB
RCH-63	COMM (LCO N/A)	LCO N/A-Transient Load Sn	Pressurizer Relief from RCV-9 (Safety)	305-852	CR3-P-SKH-302.1	Yes	Safety Sig.	RB-2
RCH-64	COMM (LCO N/A)	LCO N/A-Transient Load Sn	Pressurizer Relief from RCV-9 (Safety)	305-852	CR3-P-SKH-302.1	Yes	Safety Sig.	RB-2
RCH-65	COMM	LCO 3.0.8.b [12 hr]	Pressurizer Spray Line from RCP-1B to Pressurizer	CR3-P-8045-DH	CR3-P-SKH-19.1	Yes	Safety	RB-2

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TAG NO	TRAIN	LCO INFO	LINE DESC	ANALYTICAL DWG	ISI DWG	TECH SPEC	SAFETY REL.	BLDG
RCH-66	COMM	LCO 3.0.8.b [12 hr]	Pressurizer Spray Line from RCP-1B to Pressurizer	CR3-P-8045-DH	CR3-P-SKH-19.1	Yes	Safety	RB-2
RCH-67	COMM	LCO 3.0.8.b [12 hr]	Pressurizer Spray Line from RCP-1B to Pressurizer	CR3-P-8045-DH	CR3-P-SKH-19.1	Yes	Safety	RB-2
RCH-68	COMM	LCO 3.0.8.b [12 hr]	Pressurizer Spray Line from RCP-1B to Pressurizer	CR3-P-8045-DH	CR3-P-SKH-19.1	Yes	Safety	RB-2
RCH-69	COMM	LCO 3.0.8.b [12 hr]	Pressurizer Spray Line from RCP-1B to Pressurizer	CR3-P-8045-DH	CR3-P-SKH-19.1	Yes	Safety	RB-2
RCH-70	COMM	LCO 3.0.8.b [12 hr]	Pressurizer Spray Line from RCP-1B to Pressurizer	CR3-P-8045-DH	CR3-P-SKH-19.1	Yes	Safety	RB-2
RCH-71L	COMM	LCO 3.0.8.b [12 hr]	Pressurizer Spray Line from RCP-1B to Pressurizer	CR3-P-8045-DH	CR3-P-SKH-19.1	Yes	Safety	RB-2
RCH-71U	COMM	LCO 3.0.8.b [12 hr]	Pressurizer Spray Line from RCP-1B to Pressurizer	CR3-P-8045-DH	CR3-P-SKH-19.1	Yes	Safety	RB-2
RCH-73	COMM	LCO 3.0.8.b [12 hr]	Pressurizer Spray Line from RCP-1B to Pressurizer	CR3-P-8045-DH	CR3-P-SKH-19.1	Yes	Safety	RB-2
RCH-74	COMM	LCO 3.0.8.b [12 hr]	Pressurizer Spray Line from RCP-1B to Pressurizer	CR3-P-8045-DH	CR3-P-SKH-19.1	Yes	Safety	RB-2
RCH-76	COMM	LCO 3.0.8.b [12 hr]	Pressurizer Spray Line from RCP-1B to Pressurizer	CR3-P-8045-DH	CR3-P-SKH-19.1	Yes	Safety	RB-2
RCH-77	COMM	LCO 3.0.8.b [12 hr]	Pressurizer Spray Line from RCP-1B to Pressurizer	CR3-P-8045-DH	CR3-P-SKH-19.1	Yes	Safety	RB-2
RCH-78	COMM	LCO 3.0.8.b [12 hr]	Pressurizer Spray Line from RCP-1B to Pressurizer	CR3-P-8045-DH	CR3-P-SKH-19.1	Yes	Safety	RB-2
RCH-79	COMM	LCO 3.0.8.b [12 hr]	Pressurizer Spray Line from RCP-1B to Pressurizer	CR3-P-8045-DH	CR3-P-SKH-19.1	Yes	Safety	RB-2
RCH-80	COMM	LCO 3.0.8.b [12 hr]	Pressurizer Spray Line from RCP-1B to Pressurizer	CR3-P-8045-DH	CR3-P-SKH-19.1	Yes	Safety	RB-2
RCH-81	COMM	LCO 3.0.8.b [12 hr]	Pressurizer Spray Line from RCP-1B to Pressurizer	CR3-P-8045-DH	CR3-P-SKH-19.1	Yes	Safety	RB-2
RCH-84	COMM (LCO N/A)	LCO N/A-Transient Load Sn	Pressurizer Relief from RCV-9 (Safety)	305-852	CR3-P-SKH-302.1	Yes	Safety Sig	RB

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TAG NO	TRAIN	LCO INFO	LINE DESC	ANALYTICAL DWG	ISI DWG	TECH SPEC	SAFETY REL.	BLDG
RCH-86	COMM (LCO N/A)	LCO N/A-Transient Load Sn	Pressurizer Relief from RCV-9 (Safety)	305-852	CR3-P-SKH-302.1	Yes	Safety Sig	RB
RCH-89	COMM (LCO N/A)	LCO N/A-Transient Load Sn	Pressurizer Relief from RCV-10 (PORV)	305-850	CR3-P-SKH-303.1	Yes	Safety Sig	RB
RCH-90	COMM (LCO N/A)	LCO N/A-Transient Load Sn	Pressurizer Relief from RCV-10 (PORV)	305-850	CR3-P-SKH-303.1	Yes	Safety Sig	RB
RCH-530	COMM	LCO 3.0.8.b [12 hr]	Pressurizer Vent/Sample Line	305-762	CR3-P-SKH-19.2	Yes	Safety	RB-2
RCH-531	COMM	LCO 3.0.8.b [12 hr]	Pressurizer Vent/Sample Line	305-762	CR3-P-SKH-19.2	Yes	Safety	RB-2
RCH-614	COMM	LCO 3.0.8.b [12 hr]	RCP-1A		135881E	Yes	Safety	RB-2 D-Ring
RCH-618	COMM	LCO 3.0.8.b [12 hr]	RCP-1C		135881E	Yes	Safety	RB-2
RCH-619	COMM	LCO 3.0.8.b [12 hr]	RCP-1C		135881E	Yes	Safety	RB-2
RCH-620	COMM	LCO 3.0.8.b [12 hr]	RCP-1D		135881E	Yes	Safety	RB-2 I/S B-D-Ring
RVR-3E	Non-Safety	Non-Safety / Non-Seismic				No	Non Safety	TB
RVR-3W	Non-Safety	Non-Safety / Non-Seismic				No	Non Safety	TB
RVR-4E	Non-Safety	Non-Safety / Non-Seismic				No	Non Safety	TB
RVR-4W	Non-Safety	Non-Safety / Non-Seismic				No	Non Safety	TB
RVR-5N	Non-Safety	Non-Safety / Non-Seismic				No	Non Safety	TB
RVR-5S	Non-Safety	Non-Safety / Non-Seismic				No	Non Safety	TB
RVR-6N	Non-Safety	Non-Safety / Non-Seismic				No	Non Safety	TB
RVR-6S	Non-Safety	Non-Safety / Non-Seismic				No	Non Safety	TB
SWH-483	"D" RCP	LCO 3.0.8.a [72 hr]	RCP-1D Return	305-715	CR3-P-SKH-220.2	Yes	Safety	RB
SWH-493L	"D" RCP	LCO 3.0.8.a [72 hr]	RCP-1D Return	305-715	CR3-P-SKH-220.2	Yes	Safety	RB-2
SWH-493U	"D" RCP	LCO 3.0.8.a [72 hr]	RCP-1D Return	305-715	CR3-P-SKH-220.2	Yes	Safety	RB-2
SWR-18	COMM	LCO 3.0.8.b [12 hr]		305-931	CR3-P-SKH-211.1	Yes	Safety	AB

**Attachment 11
Snubber Tech. Spec. Information**

TAG NO	TRAIN	LCO INFO	LINE DESC	ANALYTICAL DWG	ISI DWG	TECH SPEC	SAFETY REL.	BLDG
SWR-91	COMM	LCO 3.0.8.b [12 hr]		305-937	CR3-P-SKH-208.1	Yes	Safety	AB
SWR-423	"B" RCP	LCO 3.0.8.a [72 hr]	RCP-1B Supply	305-700	CR3-P-SKH-220.3	Yes	Safety	RB-2
SWR-425	"B" RCP	LCO 3.0.8.a [72 hr]	RCP-1B Supply	305-700	CR3-P-SKH-220.3	Yes	Safety	RB-2
SWR-440	"B" RCP	LCO 3.0.8.a [72 hr]	RCP-1B Return	305-705	CR3-P-SKH-220.3	Yes	Safety	RB-2



Attachment 12 – OMN-13 Visual Examination Tracking

Safety / Safety-Significant Snubbers				
MARK NO	OUTAGE NO	REPORT NO	DATE OF LAST VISUAL EXAM	DATE NEXT VISUAL EXAM DUE
BSR-35	RFO16	VT-09-0003	16-Sep-09	16-Sep-19
CFH-14	RFO15	VT-07-0214	06-Nov-07	06-Nov-17
CFH-15	RFO15	VT-07-0215	06-Nov-07	06-Nov-17
CFH-17	RFO15	VT-07-0149	05-Nov-07	05-Nov-17
CFH-18	RFO15	VT-07-0150	05-Nov-07	05-Nov-17
CFH-19	RFO16	VT-09-0069	07-Oct-09	07-Oct-19
DHH-36	RFO15	VT-07-0176	06-Nov-07	06-Nov-17
DHH-37	RFO15	VT-07-0248	08-Nov-07	08-Nov-17
DHH-39	RFO15	VT-07-0127	04-Nov-07	04-Nov-17
EFH-109	RFO15	VT-07-0016	29-Oct-07	29-Oct-17
EFH-141	RFO15	VT-07-0018	29-Oct-07	29-Oct-17
EFH-95	RFO15	VT-07-0015	29-Oct-07	29-Oct-17
FWH-125	RFO16	VT-09-0072	07-Oct-09	07-Oct-19
FWH-133	RFO16	VT-09-0087	12-Oct-09	12-Oct-19
FWH-142	RFO16	VT-09-0030	29-Sep-09	29-Sep-19
FWH-143	RFO16	VT-09-0024	29-Sep-09	29-Sep-19
FWH-151	RFO16	VT-09-0050	01-Oct-09	01-Oct-19
FWH-163	RFO16	VT-09-0031	29-Sep-09	29-Sep-19
MSH-117	RFO15	VT-07-0061	30-Oct-07	30-Oct-17
MSH-121	RFO15	VT-07-0067	30-Oct-07	30-Oct-17
MSH-150	RFO16	VT-09-0043	30-Sep-09	30-Sep-19
MSH-168	RFO15	VT-07-0165	05-Nov-07	05-Nov-17
MSH-212	RFO15	VT-07-0081	30-Oct-07	30-Oct-17
MSH-213	RFO15	VT-07-0082	30-Oct-07	30-Oct-17
MSH-214	RFO15	VT-07-0083	30-Oct-07	30-Oct-17
MSH-227	RFO15	VT-07-0089	31-Oct-07	31-Oct-17
MSH-233	RFO15	VT-07-0095	31-Oct-07	31-Oct-17
MSH-234	RFO15	VT-07-0096	31-Oct-07	31-Oct-17
MSH-237	RFO15	VT-07-0098	31-Oct-07	31-Oct-17
MSH-238	RFO15	VT-07-0099	31-Oct-07	31-Oct-17
MSH-240	RFO16	VT-09-0036	29-Sep-09	29-Sep-19
MSH-664	RFO15	VT-07-0110	31-Oct-07	31-Oct-17
MUH-80	RFO15	VT-07-0194	12-Nov-07	12-Nov-17



Attachment 12 – OMN-13 Visual Examination Tracking

MARK NO	OUTAGE NO	REPORT NO	DATE OF LAST VISUAL EXAM	DATE NEXT VISUAL EXAM DUE
MUH-82	RFO15	VT-07-0190	09-Nov-07	09-Nov-17
RCH-29	RFO15	VT-07-0122	03-Nov-07	03-Nov-17
RCH-47N	RFO15	VT-07-0225	06-Nov-07	06-Nov-17
RCH-47S	RFO15	VT-07-0226	06-Nov-07	06-Nov-17
RCH-48	RFO15	VT-07-0227	06-Nov-07	06-Nov-17
RCH-49	RFO15	VT-07-0202	08-Nov-07	08-Nov-17
RCH-60	RFO15	VT-07-0137	03-Nov-07	03-Nov-17
RCH-614	RFO15	VT-07-0197	12-Nov-07	12-Nov-17
RCH-620	RFO15	VT-07-0278	20-Nov-07	20-Nov-17
RCH-63	RFO15	VT-07-0249	08-Nov-07	08-Nov-17
RCH-64	RFO15	VT-07-0250	08-Nov-07	08-Nov-17
RCH-65	RFO15	VT-07-0228	06-Nov-07	06-Nov-17
RCH-66	RFO15	VT-07-0229	06-Nov-07	06-Nov-17
RCH-67	RFO15	VT-07-0128	03-Nov-07	03-Nov-17
RCH-68	RFO15	VT-07-0126	03-Nov-07	03-Nov-17
RCH-69	RFO15	VT-07-0124	03-Nov-07	03-Nov-17
RCH-70	RFO15	VT-07-0129	03-Nov-07	03-Nov-17
RCH-71L	RFO15	VT-07-0136	03-Nov-07	03-Nov-17
RCH-71U	RFO15	VT-07-0135	03-Nov-07	03-Nov-17
RCH-73	RFO16	VT-09-0022	28-Sep-09	28-Sep-19
RCH-74	RFO15	VT-07-0123	03-Nov-07	03-Nov-17
RCH-76	RFO16	VT-09-0102	16-Oct-09	16-Oct-19
RCH-77	RFO15	VT-07-0231	06-Nov-07	06-Nov-17
RCH-78	RFO15	VT-07-0232	06-Nov-07	06-Nov-17
RCH-79	RFO15	VT-07-0233	06-Nov-07	06-Nov-17
RCH-80	RFO15	VT-07-0130	03-Nov-07	03-Nov-17
SWR-423	RFO15	VT-07-0275	19-Nov-07	19-Nov-17
SWR-425	RFO15	VT-07-0177	06-Nov-07	06-Nov-17
SWR-440	RFO15	VT-07-0178	06-Nov-07	06-Nov-17
DCR-33E	RFO15	VT-07-0006	29-Oct-07	29-Oct-17
DCR-33W	RFO15	VT-07-0007	29-Oct-07	29-Oct-17
DHH-18	RFO15	VT-07-0217	05-Nov-07	05-Nov-17
DHH-25	RFO15	VT-07-0199	12-Nov-07	12-Nov-17
DHH-26H	RFO15	VT-07-0200	09-Nov-07	09-Nov-17

Attachment 12 – OMN-13 Visual Examination Tracking

MARK NO	OUTAGE NO	REPORT NO	DATE OF LAST VISUAL EXAM	DATE NEXT VISUAL EXAM DUE
DHH-26V	RFO15	VT-07-0245	07-Nov-07	07-Nov-17
DHH-35	RFO15	VT-07-0175	06-Nov-07	06-Nov-17
DHH-38	RFO15	VT-07-0192	08-Nov-07	08-Nov-17
EFH-92	RFO15	VT-07-0013	29-Oct-07	29-Oct-17
EFH-93	RFO15	VT-07-0014	29-Oct-07	29-Oct-17
FWH-122	RFO16	VT-09-0115	27-Oct-09	27-Oct-19
FWH-123	RFO16	VT-09-0042	30-Sep-09	30-Sep-19
FWH-128	RFO16	VT-09-0088	12-Oct-09	12-Oct-19
FWH-138	RFO16	VT-09-0023	29-Sep-09	29-Sep-19
FWH-140	RFO16	VT-09-0062	04-Oct-09	04-Oct-19
FWH-141	RFO16	VT-09-0063	04-Oct-09	04-Oct-19
FWH-144	RFO16	VT-09-0025	29-Sep-08	29-Sep-08
FWH-145	RFO16	VT-09-0029	29-Sep-09	29-Sep-19
FWH-146	RFO16	VT-09-0028	29-Sep-09	29-Sep-19
FWH-159	RFO15	VT-07-0041	29-Oct-07	29-Oct-17
FWH-161	RFO15	VT-07-0043	29-Oct-07	29-Oct-17
FWH-165	RFO15	VT-07-0046	29-Oct-07	29-Oct-17
FWH-166	RFO15	VT-07-0047	30-Oct-07	30-Oct-17
FWH-167	RFO15	VT-07-0048	30-Oct-07	30-Oct-17
FWH-168	RFO15	VT-07-0049	30-Oct-07	30-Oct-17
MSH-118	RFO15	VT-07-0062	30-Oct-07	30-Oct-17
MSH-119	RFO15	VT-07-0063	31-Oct-07	31-Oct-17
MSH-120	RFO15	VT-07-0064	30-Oct-07	30-Oct-17
MSH-122	RFO15	VT-07-0068	30-Oct-07	30-Oct-17
MSH-123	RFO15	VT-07-0069	30-Oct-07	30-Oct-17
MSH-125	RFO15	VT-07-0071	30-Oct-07	30-Oct-17
MSH-128	RFO15	VT-07-0073	30-Oct-07	30-Oct-17
MSH-139	RFO15	VT-07-0218	06-Nov-07	06-Nov-17
MSH-226E	RFO15	VT-07-0087	30-Oct-07	30-Oct-17
MSH-226W	RFO15	VT-07-0088	31-Oct-07	31-Oct-17
MSH-248	RFO16	VT-09-0057	02-Oct-09	02-Oct-19
MSH-250	RFO16	VT-09-0048	01-Oct-09	01-Oct-19
MSH-252	RFO16	VT-09-0049	01-Oct-09	01-Oct-19
MSH-567L	RFO16	VT-09-0071	07-Oct-09	07-Oct-19



Attachment 12 – OMN-13 Visual Examination Tracking

MARK NO	OUTAGE NO	REPORT NO	DATE OF LAST VISUAL EXAM	DATE NEXT VISUAL EXAM DUE
MSH-567U	RFO16	VT-09-0070	07-Oct-09	07-Oct-19
MSH-568L	RFO15	VT-07-0221	07-Nov-07	07-Nov-17
MSH-568U	RFO15	VT-07-0222	07-Nov-07	07-Nov-17
MSH-576L	RFO15	VT-07-0244	07-Nov-07	07-Nov-17
MSH-576U	RFO15	VT-07-0240	07-Nov-07	07-Nov-17
MSH-665	RFO15	VT-07-0109	31-Oct-07	31-Oct-17
MUH-32	RFO15	VT-07-0169	05-Nov-07	05-Nov-17
RCH-618	RFO15	VT-07-0206	12-Nov-07	12-Nov-17
RCH-86	RFO15	VT-07-0172	05-Nov-07	05-Nov-17
BSH-19	RFO15	VT-07-0213	06-Nov-07	06-Nov-17
CFH-16	RFO15	VT-07-0080	05-Nov-07	05-Nov-17
DHR-18	RFO15	VT-07-0008	29-Oct-07	29-Oct-17
DHR-28	RFO15	VT-07-0010	29-Oct-07	29-Oct-17
DHR-37	RFO15	VT-07-0012	29-Oct-07	29-Oct-17
DHR-49	RFO15	VT-07-0001	31-Oct-07	31-Oct-17
EFH-110	RFO15	VT-07-0017	29-Oct-07	29-Oct-17
EFH-143	RFO15	VT-07-0019	29-Oct-07	29-Oct-17
EFH-144	RFO15	VT-07-0020	29-Oct-07	29-Oct-17
FWH-124	RFO15	VT-07-0154	05-Nov-07	05-Nov-17
FWH-130	RFO15	VT-07-0147	05-Nov-07	05-Nov-17
FWH-131	RFO15	VT-07-0155	05-Nov-07	05-Nov-17
FWH-132	RFO15	VT-07-0156	05-Nov-07	05-Nov-17
FWH-139	RFO15	VT-07-0022	29-Oct-07	29-Oct-17
FWH-148	RFO15	VT-07-0030	29-Oct-07	29-Oct-17
FWH-149	RFO15	VT-07-0031	29-Oct-07	29-Oct-17
FWH-150	RFO15	VT-07-0032	29-Oct-07	29-Oct-17
FWH-152	RFO15	VT-07-0034	29-Oct-07	29-Oct-17
FWH-153	RFO15	VT-07-0035	29-Oct-07	29-Oct-17
FWH-154	RFO15	VT-07-0036	29-Oct-07	29-Oct-17
FWH-155	RFO15	VT-07-0037	29-Oct-07	29-Oct-17
FWH-156	RFO15	VT-07-0038	29-Oct-07	29-Oct-17
FWH-157	RFO15	VT-07-0039	29-Oct-07	29-Oct-17
MSH-159	RFO15	VT-07-0247	07-Nov-07	07-Nov-17
MSH-164	RFO15	VT-07-0146	04-Nov-07	04-Nov-17



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MARK NO	OUTAGE NO	REPORT NO	DATE OF LAST VISUAL EXAM	DATE NEXT VISUAL EXAM DUE
MSH-166	RFO15	VT-07-0163	05-Nov-07	05-Nov-17
MSH-170	RFO15	VT-07-0166	05-Nov-07	05-Nov-17
MSH-207	RFO15	VT-07-0076	30-Oct-07	30-Oct-17
MSH-224	RFO15	VT-07-0085	30-Oct-07	30-Oct-17
MSH-225	RFO15	VT-07-0086	30-Oct-07	30-Oct-17
MSH-229	RFO15	VT-07-0091	31-Oct-07	31-Oct-17
MSH-230	RFO15	VT-07-0092	31-Oct-07	31-Oct-17
MSH-231	RFO15	VT-07-0093	31-Oct-07	31-Oct-17
MSH-239	RFO15	VT-07-0100	31-Oct-07	31-Oct-17
MSH-243	RFO15	VT-07-0167	05-Nov-07	05-Nov-17
MSH-251	RFO15	VT-07-0104	31-Oct-07	31-Oct-17
MSH-255	RFO15	VT-07-0108	31-Oct-07	31-Oct-17
MUH-51	RFO15	VT-07-0261	18-Nov-07	18-Nov-17
RCH-530	RFO15	VT-07-0131	06-Nov-07	06-Nov-17
RCH-531	RFO15	VT-07-0134	03-Nov-07	03-Nov-17
RCH-55	RFO15	VT-07-0145	04-Nov-07	04-Nov-17
RCH-58	RFO15	VT-07-0141	04-Nov-07	04-Nov-17
RCH-619	RFO16	VT-09-0079	07-Oct-09	07-Oct-19
SWH-483	RFO15	VT-07-0208	12-Nov-07	12-Nov-17
SWH-493L	RFO15	VT-07-0257	18-Nov-07	18-Nov-17
SWH-493U	RFO15	VT-07-0258	18-Nov-07	18-Nov-17
SWR-18	RFO15	VT-07-0120	31-Oct-07	31-Oct-17
BSH-14	RFO16	VT-09-0097	14-Oct-09	14-Oct-19
BSR-31	RFO16	VT-09-0005	21-Sep-09	21-Sep-19
DHH-17	RFO16	VT-09-0107	22-Oct-09	22-Oct-19
DHH-23	RFO16	VT-09-0083	11-Oct-09	11-Oct-19
DHH-27	RFO16	VT-09-0084	11-Oct-09	11-Oct-19
DHR-21	RFO16	VT-09-0013	22-Sep-09	22-Sep-19
DHR-24L	RFO16	VT-09-0009	22-Sep-09	22-Sep-19
DHR-24U	RFO16	VT-09-0010	22-Sep-09	22-Sep-19
DHR-31	RFO16	VT-09-0006	21-Sep-09	21-Sep-19
DHR-64	RFO16	VT-10-0001	26-Jan-10	26-Jan-20
EFH-27	RFO16	VT-09-0065	05-Oct-09	05-Oct-19
EFH-28	RFO16	VT-09-0064	05-Oct-09	05-Oct-19

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MARK NO	OUTAGE NO	REPORT NO	DATE OF LAST VISUAL EXAM	DATE NEXT VISUAL EXAM DUE
EFH-94	RFO16	VT-09-0052	01-Oct-09	01-Oct-19
FWH-147A	RFO16	VT-09-0037	29-Sep-09	29-Sep-19
FWH-158	RFO16	VT-09-0026	29-Sep-09	29-Sep-19
FWH-160	RFO16	VT-09-0045	01-Oct-09	01-Oct-19
FWH-162	RFO16	VT-09-0021	28-Sep-09	28-Sep-19
FWH-164	RFO16	VT-09-0027	29-Sep-09	29-Sep-19
FWH-169	RFO16	VT-09-0051	01-Oct-09	01-Oct-19
FWH-170	RFO16	VT-09-0056	02-Oct-09	02-Oct-19
FWH-171	RFO16	VT-09-0018	25-Sep-09	25-Sep-19
MSH-124	RFO16	VT-09-0082	11-Oct-09	11-Oct-19
MSH-126A	RFO16	VT-09-0035	29-Sep-09	29-Sep-19
MSH-147	RFO16	VT-09-0044	30-Sep-09	30-Sep-19
MSH-149	RFO16	VT-09-0041	30-Sep-09	30-Sep-19
MSH-160	RFO16	VT-09-0058	02-Oct-09	02-Oct-19
MSH-162	RFO16	VT-09-0060	04-Oct-09	04-Oct-19
MSH-165	RFO16	VT-09-0040	30-Sep-09	30-Sep-19
MSH-167	RFO16	VT-09-0094	13-Oct-09	13-Oct-19
MSH-223	RFO16	VT-09-0055	01-Oct-09	01-Oct-19
MSH-228	RFO16	VT-09-0068	06-Oct-09	06-Oct-19
MSH-232	RFO16	VT-09-0017	25-Sep-09	25-Sep-19
MSH-235	RFO16	VT-09-0038	29-Sep-09	29-Sep-19
RCH-81	RFO16	VT-09-0020	28-Sep-09	28-Sep-19
RCH-84	RFO16	VT-09-0073	08-Oct-09	08-Oct-19
RCH-89	RFO16	VT-09-0074	08-Oct-09	08-Oct-19
RCH-90	RFO16	VT-09-0075	08-Oct-09	08-Oct-19
SWR-91	RFO16	VT-09-0032	29-Sep-09	29-Sep-19

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Non-Safety Snubbers				
MARK NO	OUTAGE NO	REPORT NO	DATE OF LAST VISUAL EXAM	DATE NEXT VISUAL EXAM DUE
HVR-10N	RFO15	VT-07-0054	30-Oct-07	30-Oct-17
HVR-10S	RFO15	VT-07-0055	30-Oct-07	30-Oct-17
HVR-4	RFO15	VT-07-0053	30-Oct-07	30-Oct-17
RVR-3E	RFO15	VT-07-0112	31-Oct-07	31-Oct-17
RVR-3W	RFO15	VT-07-0113	31-Oct-07	31-Oct-17
RVR-4E	RFO15	VT-07-0114	31-Oct-07	31-Oct-17
RVR-4W	RFO15	VT-07-0115	31-Oct-07	31-Oct-17
RVR-5N	RFO15	VT-07-0116	31-Oct-07	31-Oct-17
RVR-5S	RFO15	VT-07-0117	31-Oct-07	31-Oct-17
RVR-6N	RFO15	VT-07-0118	31-Oct-07	31-Oct-17
RVR-6S	RFO15	VT-07-0119	31-Oct-07	31-Oct-17