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CNRO-2007-00044
November 30, 2007

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

SUBJECT: Inservice Testing Plan

River Bend Station
Docket No. 50-458
License No. NPF-47

Grand Gulf Nuclear Station
Docket No. 50-416
License No. NPF-29

Arkansas Nuclear One
Unit, 1 and 2
Docket Nos. 50-313 and 50-368
License Nos. DPR-51 and NPF-6

Waterford 3 Steam Electric
Station
Docket No. 50-382
License No. NPF-38

Dear Sir or Madam:

10 CFR 50.55a requires an Inservice Testing Program be developed in accordance with applicable ASME Code requirements. ASME OM Code-2001 Edition with addenda through OMB Code-2003 Addenda, Subsection ISTA-3200 (a), requires that IST Plans shall be filed with the regulatory authorities having jurisdiction at the plant site. Entergy Operations, Inc. (Entergy) is therefore providing the plan to the NRC in this submittal. The plan applies to Arkansas Nuclear One - Units 1 and 2, Grand Gulf Nuclear Station, River Bend Station, and Waterford Steam Electric Station, Unit 3. The plan is provided in the attachment.

Entergy is providing this plan for information only and is not requesting NRC approval for the plan. The Relief Requests associated with this plan have been submitted as a separate submittal.

If you have any questions or require additional information, please contact Bill Brice at (601) 368- 5076.

This letter contains no new commitments.

Sincerely,

BSF/WBB/bal

A047
NRR

Attachment: Inservice Testing Plan Entergy Nuclear

cc: Mr. W. R. Brian (GGNS), w/o attachments
Mr. T. A. Burke (ECH), w/o attachments
Mr. J. S. Forbes (ECH), w/o attachments
Mr. J. T. Herron (ECH), w/o attachments
Mr. T. G. Mitchell (ANO), w/o attachments
Mr. N. S. Reynolds (W&S), w/o attachments
Mr. L. J. Smith (Wise, Carter), w/o attachments
Mr. J. E. Venable (RBS), w/o attachments
Mr. K. T. Walsh (W-3), w/o attachments

Mr. E. E. Collins, Regional Administrator, RIV, w/o attachments
Mr. K. Kalyanam, Project Manager, W-3, w/o attachments
Mr. B. K. Vaidya, Project Manager, GGNS, RBS, w/o attachments
Mr. A. B. Wang, Project Manager, ANO, w/o attachments

Attachment 1

CNRO-2007-00044

Inservice Testing Plan

Entergy Nuclear

INSERVICE TESTING PLAN

ENTERGY NUCLEAR

ENGINEERING PROGRAMS

APPLICABLE SITES

ANO Unit 1: ☒

ANO Unit 2: ☒

GGNS: ☒

IPEC Unit 1: ☐

IPEC Unit 2: ☐

JAF: ☐

PAL: ☐

PNPS: ☐

RBS: ☒

VY: ☐

W3: ☒

Safety Related: ☒ Yes

☐ No

TABLE OF CONTENTS

<u>SECTION</u>	<u>PAGE NUMBER</u>
Cover Sheet.....	1
Table of Contents.....	2
Concurrence.....	3
Revision Status.....	4
Introduction.....	5
Valve Program.....	8
Pump Program.....	13

SECTIONS IN EACH PLANT SPECIFIC APPENDICES

Table of Contents (provides page numbers)

Valve Relief Requests

Valve Position Statements

Pump Relief Requests

Pump Position Statements

Cold Shutdown Justifications

Refueling Outage Justifications

Condition Monitoring Justifications (Database Report)

Valve Summary Listings (Database Report)

Pump Summary Listings (Database Report)

IST PLAN
FRONT SECTION

PROGRAM SECTION NO.: CEP-IST-2
REVISION: 307
PAGE: 3 OF 15

CONCURRENCE

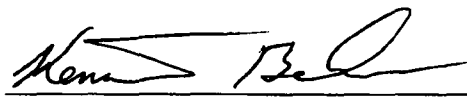
Program Section Title: Inservice Testing Plan (IST Plan)

Prepared By:



Date: 11-30-2007

Checked By:


For Incorporation of PCNs Only*

Date: 11-30-07

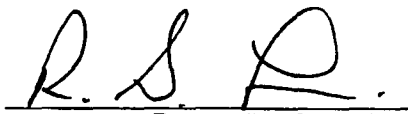
* - This Checker function is administrative in nature and does not require specific IST Qualification.

ANII:

N/A See Rev. 307 Description (Page 4)
For Changes Applicable to ANO-2 Only

Date: N/A

Concurred:


Responsible Supervisor

Date: 11/30/07

IST PLAN FRONT SECTION	PROGRAM SECTION NO.: CEP-IST-2 REVISION: 307 PAGE: 4 OF 15
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REVISION STATUS

<u>REV. NO.</u>	<u>ISSUE DATE</u>	<u>DESCRIPTION</u>
0	6-27-00	<p>Issued For Use. This document incorporates Revision 9 of Program Plan GGNS-M-189.1 with PCN-00--002, PCN-99-010, PCR-99-007, and other changes as follows:</p> <ul style="list-style-type: none"> • GGNS-M-189.1 Appendix A, Bases for Maximum Stroke Times of Power Actuated Valves, and Appendix C, Calculation of IST Maximum Stroke Times have been combined and placed in Section 5.0 of the GGNS Plant Specific Appendix of CEP-IST-001. • GGNS-M-189.1 Appendix B, Program Plan Change Request/Notice, has been replaced with the Program Change Notices section. • Added a paragraph at the beginning of the Introduction Section that addresses the conversion of the GGNS Program Plan to a Program Section.
1	12-21-00	<p>Revision 1 changes include:</p> <ul style="list-style-type: none"> • Revised Front Section and GGNS Appendix to incorporate CEP-IST-PCN-1. • Transfer of information from the RBS, W-3 and ANO-1/ANO-2 IST program documents as noted in CEP-IST-PCN-2, CEP-IST-PCN-3, and CEP-IST-PCN-4. • This is a general revision; revision bars have not been used.
2	1-9-02	<p>Revision 2 includes editorial and format changes, and changes necessary to incorporate Program Change Notices CEP-IST-PCN-6, -8, -10, -15, -16, -17, -18, -20, -21, -23, and -25. The 50.59 reviews for these changes are provided with the Program Change Notices.</p>
3	12-18-03	<p>Revision 3 includes editorial and format changes, and changes necessary to incorporate Program Change Notices CEP-IST-PCN-19, -26, -29, -30, -31, -32, -33, -35, -37, -38, -40, -41, -42, -43, -44, -47, -48, -50, -51, -52, -55, -56, -57, -59, -60, -61, -66, -67, -68, -70, -71, and -75. The ANII and 50.59 reviews for these changes are provided with the Program Change Notices.</p>
4	5-22-06	<p>Revision 4 includes editorial and format changes, and changes necessary to incorporate Program Change Notices CEP-IST-PCN-72, 74, 78, 82, 83, 86, 88, 89, 90, 91, 92, 95, 96, 97, 100, 101, 102, 103, 104, 105, 106, 110, 111, 116, 117, 118, 119, 120, 122, 123, 126, 127, 136 and 137. The ANII and 50.59 reviews for these changes are provided with the Program Change Notices.</p>
301 to 306	Various	<p>Revision 4 was the last single revision number utilize. 300 series numbers were determined to be needed by the Administrative Department and Revisions 301 through 306 were associated with PCN issuance.</p>
307	12-1-2007	<ul style="list-style-type: none"> • Revision 307 includes editorial and format changes, and changes necessary to incorporate Program Change Notices CEP-IST-PCN-94, 144, 146, 148, 149, 150, 151, 156, 157, 159, 160, 161, 162, 167, 168, 172, 174, 175, and 176. • Any required ANII and 50.59 reviews are provided with the program change notices listed above. • This revision is substantive enough that the entire document is considered to be revised and revision bars may not be used for all changes.

IST PLAN FRONT SECTION	PROGRAM SECTION NO.: CEP-IST-2 REVISION: 307 PAGE: 5 OF 15
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REVISION STATUS

CEP-IST-2, FRONT SECTION, PAGE REVISION STATUS

<u>SECTION</u>	<u>PAGE NO.</u>	<u>REV.</u>
Front Section	All	307

CEP-IST-2, ANO-1 APPENDIX, PAGE REVISION STATUS

<u>SECTION</u>	<u>PAGE NO.</u>	<u>REV.</u>
Entire Appendix	All	307

CEP-IST-2, ANO-2 APPENDIX, PAGE REVISION STATUS

<u>SECTION</u>	<u>PAGE NO.</u>	<u>REV.</u>
Entire Appendix	All	307

CEP-IST-2, GGNS APPENDIX, PAGE REVISION STATUS

<u>SECTION</u>	<u>PAGE NO.</u>	<u>REV.</u>
Entire Appendix	All	307

CEP-IST-2, RBS APPENDIX, PAGE REVISION STATUS

<u>SECTION</u>	<u>PAGE NO.</u>	<u>REV.</u>
Entire Appendix	All	307

CEP-IST-2, W3 APPENDIX, PAGE REVISION STATUS

<u>SECTION</u>	<u>PAGE NO.</u>	<u>REV.</u>
Entire Appendix	All	307

INTRODUCTION

Entergy Nuclear IST Program

This 10CFR 50.55a Inservice Testing (IST) Plan, hereafter referred to as the IST Plan, is for Arkansas Nuclear One Units 1 (ANO-1) and 2 (ANO-2), Grand Gulf Nuclear Station (GGNS), River Bend Station (RBS), and Waterford 3 (W3).

The IST Plan is designed to contain the information necessary to identify the pumps and valves subject to IST, categorization of components, identification of tests to be performed and the frequencies of those tests. It also provides relief requests, justifications for cold shutdown and refueling testing, and positions taken with respect to the prescribed testing in 10 CFR 50.55a.

The IST Plan is just one part of the EN IST Program; other parts include:

- Nuclear Nuclear Management Manual (NMM) Program Section No. CEP-IST-1, IST Bases Document: Primarily used to document the component function reviews performed to determine those components that are subject to IST.
- Program Section No. CEP-IST-3, IST Cross-Reference Document: Primarily used to provide identification of the implementing test procedure for each of the thousands of tests listed in the IST Plan.
- Program Section No. CEP-IST-4, Standard on IST: Primarily used to provide the consolidated and standardized technical requirements, including Entergy positions, for compliance with the regulatory requirements governing pump and valve IST.
- IST Program Files: Defined as all of the elements (Microsoft Word files and Microsoft Access databases) used to produce the EN IST Program.

The IST Plan is controlled and implemented in accordance with NMM Procedure EN-DC-332, Inservice Testing and NMM Procedure EN-DC-174, Engineering Program Sections. Program Change Notices (PCNs), which may be used to request changes to this IST Plan, are initiated and processed per EN-DC-174.

This document contains an appendix for each plant. A combination of the Front Section and any one of the appendices constitute the IST Plan for that plant. Each plant's appendix contains similar information as follows:

- Valve Relief Requests and Valve Position Statements
- Pump Relief Requests and Pump Position Statements
- Cold Shutdown Justifications, Refueling Outage Justifications, and Check Valve Condition Monitoring Justifications, as applicable
- Valve Summary Listings
- Pump Summary Listings

This IST plan meets the rules in set forth in the applicable ASME Code as required by 10CFR50.55a. The applicable ASME Codes are based on the start of the 10-Year Intervals, unless an alternative is specifically approved otherwise. The current 10-Year Intervals for the plants addressed in this IST Plan are as noted below:

10-Year Interval Dates and References

<u>Site</u>	<u>Interval</u>	<u>Start Date</u>	<u>End Date</u>	<u>Reference</u>
ANO-1	Fourth	12-1-2007	11-30-2017	Letter (GNRI-96/00184) dated 8-27-1996, TAC M94471
ANO-2	Third	3-26-2000	3-25-2010	Letter (2CAN119904) dated 3-21-2000, TAC MA7302, TAC MA7305

INTRODUCTION

<u>Site</u>	<u>Interval</u>	<u>Start Date</u>	<u>End Date</u>	<u>Reference</u>
GGNS	Third	12-1-2007	11-30-2017	Letter (GNRI-96/00184) dated 8-27-1996, TAC M94454
RBS	Third	12-2-2007	12-1-2017	Letter (RBC-46371) dated 11-13-1995, TAC M93235
W3	Third	12-1-2007	11-30-2017	Letter (GNRI-96/00184) dated 8-27-1996, TAC M94454

For the ANO-2 IST Plan, the applicable Code is the ASME B&PV Code, Section XI, 1989 Edition with no addenda (referred to as OM-1, OM-6, and OM-10).

For the ANO-1, GGNS, RBS, and W3 IST Plans, the applicable Code is the ASME OM Code-2001 Edition with addenda through and including the ASME Omb Code-2003 Addenda (referred to as Omb-2003).

The term "the Code" is used in this plan to call out both of these sets of rules. Were necessary, OM-1, OM-6, OM-10, or Omb-2003 will be listed at the bottom of a page or specially called out to indicate that a section is only applicable to a specific Code.

VALVE PROGRAM

GENERAL

The valve test requirements are presented on the Valve Summary Listing forms provided in each plant's appendix, along with pertinent valve, system, and plant information. The forms, organized by systems, are to be used in conjunction with Piping and Instrument Diagrams (P&IDs).

The following pages contain instructional information to aid in the use of the Valve Summary Listings and are keyed to the various heading categories.

As noted in the Introduction, other parts of the IST Program provide bases for the selection of valves, cross-reference to testing procedures, and requirements for the performance of IST.

INSTRUCTIONS FOR USE OF VALVE SUMMARY LISTING FORM

SYSTEM – if applicable, indicates the number used to designate the system, the noun name of the system and the system alpha code

VALVE NO. - Indicates valve (component) number

VALVE SIZE - Size of valve (in inches)

VALVE TYPE - Type of each valve. Valve types not included in this list are described in the "NOTES" column of the Summary Listing:

Valve Type	ANO-1	ANO-2	GGNS	RBS	W3
Air release			AR		
Angle					ANG
Ball	BA	BA	BA	BA	BL
Butterfly	BF	BF	B	B	B
Check	CK	CK	C	C	CK
Clevis			CL		
Diaphragm	DIA	DIA	D		D
Gate	G	G	G	G	GA
Globe	GL	GL	GL	GL	GL
Needle			N		N
Plug	P	P			
Pressure Control			PC		
Relief or Safety	RV	RV	RV	RV	PR
Rupture Disk			RD	RD	
Shear Plug (explosive actuated)			X	X	
Sluice Gate	SG	SG			
Stop Check	SC	SC	SC	SC	
Temperature control			TC		
Three-way			T		

VALVE PROGRAM

VALVE ACT. - Type of actuator(s) for each valve:

Actuator Type	ANO-1	ANO-2	GGNS	RBS	W3
Air	AO	AO	A	A	AO
Explosive charge			EXP	EXP	
Hand (manual)	H	H	H	H	M
Hydraulic				E/H	HO
Hydraulic/pneumatic					HP
Motor	M	M	M	M	MO
Self (system) actuated	SA	SA	SA	SA	SA
Solenoid	S	S	S	S	SO

Combinations of actuator types are indicated as appropriate. Examples are H/SA for a stop check valve and A/SA for a testable check valve.

P&ID NO., COORD. - P&ID number and coordinate on the P&ID at which each valve is located. For W3 Flow Diagrams are listed under the P&ID No. column.

IST PASS –“A” or blank for IST Active valves; “P” for IST Passive valves.

IST Passive valves are those valves which maintain obturator position and are not required to change obturator position to accomplish the required function(s) for shutting down the reactor to the safe shutdown condition, maintaining the reactor in safe shutdown, or in mitigating the consequences of an accident.

Valves that are locked or deenergized in their required positions, or are only repositioned from their safety position for the performance of surveillance procedures are considered passive. Valves that are periodically repositioned during plant operation are not considered passive. "Periodic" includes valve operations that occur as a result of normal operating procedures. Valve operations included within off-normal or emergency procedures are not considered periodic. Valve operations that occur as a result of system startup or shutdown procedures, or infrequent operating procedures may be considered periodic depending upon the frequency of the operation.

For example, a valve has the active safety function to close, if open, on a LOCA signal to provide containment isolation. However, review of plant procedures indicates that the valve is not operated to the open position except for performance of IST surveillance procedures. Therefore, this valve is considered IST Passive by the above definition.

Certain valves do not fit the IST Passive category because they have an active safety function in one position but have a passive function in the opposite position. The passive position for these valves is noted in the "Notes" column of the Valve Summary Listing.

IST CODE CLASS

	ANO-1	ANO-2	GGNS	RBS	W3
ASME Code Class 1, 2 or 3 valves within the scope of the Code.	1, 2 or 3	1, 2 or 3	1, 2 or 3	1, 2 or 3	1, 2 or 3
Safety related non-ASME valves.	N or SR	NN	A	A	N
ASME valves that are not within the scope of the Code.			A		

VALVE PROGRAM

CODE CAT. - Valve category as defined by the Code for each nonexempt valve. Combined category valves are identified in this program when more than one Code category is needed to identify the valve functions. Examples are "C, A" and "C, B".

Category A - Valves for which seat leakage is limited to a specific maximum amount in the closed position for fulfillment of their function(s).

Valves for which seat leakage is important may also be classified as Pressure Isolation Valves (PIV), Containment Isolation Valves (CIV), or both Pressure and Containment Isolation Valves.

Category B - Valves for which seat leakage in the closed position is inconsequential for fulfillment of their function(s).

Category C - Valves which are self-actuating in response to some system characteristic such as pressure (safety relief valves) or flow direction (check valves) for fulfillment of their function(s).

Category D - Valves which are actuated by an energy source capable of only one operation, such as rupture disks or explosive-actuated valves.

SAFETY POSITION - Position the valve is required to be in to perform its safety function.

O - Open

C - Closed

O/C - Open and Closed

REQUIRED TESTS AND FREQUENCY - Required valve tests for the respective safety position of each valve are indicated by an entry for the associated test frequency in the Summary Listing and are described below. These columns will describe the method(s) of testing for each valve, using the following test designations:

FS - Valve is full-stroke exercised to the position in which the valve is required to be to fulfill its safety function. For Category A and B valves, the necessary valve obturator movement shall be determined by exercising the valve while observing an appropriate indicator, such as indicating lights which signal the required change of obturator position, or by observing other evidence, such as changes in system pressure, flow rate, level, temperature, or other positive means which reflect change of obturator position. For Category C valves, each check valve shall be exercised or examined in a manner which verifies obturator travel to the closed or full-open position except as provided in the Code.

PS - Partial-stroke exercising a check valve to an open position less than full open or less than that required to pass the maximum required accident condition flow rate. For power operated valves, exercising a valve to an intermediate position, versus full-stroke open or full-stroke closed exercising.

LT - Seat leakage test required by the Code, for Pressure Isolation Valves (ref. Tech Specs) and other Category A valves that are not containment isolation valve.

LJ - Seat leakage test required by 10 CFR 50, Appendix J the Code for Containment Isolation Valves. Valves within the scope of the Code classified as Pressure and Containment Isolation Valves shall also be tested to the requirements of the Code.

ST - Measure and record valve full-stroke time (to the nearest second) to the position required to fulfill its safety function.

FT - Observe operation of the actuator upon loss of valve actuating power; may be accomplished by observation of valve indicating lights during normal valve operation or full-

VALVE PROGRAM

stroke exercising, if normal valve stroking involves or simulates loss of valve actuating power.

PI - Verify valve operation corresponds to remote position indicators. Only those remote indicators used for inservice testing are required to be verified.

RV - Pressure relief devices are to be performance tested and/or visually inspected in accordance with the Code which references the requirements of the Code.

EX - At least 20% of the charges in explosively actuated valves shall be fired and replaced every two (2) years.

CD or CM

CD (ANO2) - Check valve disassembly and inspection in accordance with disassembly and inspection program procedures each refueling. This test designation does not apply for sample plan disassembly and inspections as allowed by GL 89-04.

CM (ANO1, GGNS, RBS, and W3) - Condition Monitoring Justification (CMJ) statements will provide CVCMP testing requirements.

TEST FREQUENCY - Frequency of performance for the required tests.

Q - Test performed once every 92 days (3 months).

C - Test performed every cold shutdown but not more frequently than once every 92 days (3 months).

Cold Shutdown Testing – Entergy plants will commence testing no later than 48 hours after cold shutdown condition is achieved, and will continue until all tests are complete or the plant is ready to return to power. This time requirement is necessary such that scheduling arrangements, appropriate valve lineups, and system adjustments can be made prior to valve testing. Any testing not completed at one cold shutdown will be performed during any subsequent cold shutdowns that may occur before refueling to meet the code-specified testing frequency. For planned cold shutdowns, where Entergy plants will complete all the valves identified in the Inservice Testing Program for testing in the cold shutdown mode, exception to the 48-hour start time may be taken. In the case of frequent cold shutdowns, valve testing will not be performed more often than once every 92 days (3 months) for Category A, B, and C valves.

R - Test performed at each reactor refueling outage.

2R – Test performed every other reactor refueling outage

4R – Test performed every fourth reactor refueling outage

M – Test performed every month

6M – Test performed every six months

BiM – Test performed bi-monthly

18M – Test performed every eighteen months (547 days)

2Y - Test performed once every two years.

5Y - All Class 1 pressure relief valves of each type and manufacture are to be tested within each subsequent 5 year period following the initial 5 year period, with a minimum of 20% of the

VALVE PROGRAM

valves tested within any 24 months. This 20% is to be previously untested valves (from the current 5 year period), if they exist.

If less than 20% of each type and manufacture of the group of all Class 1 pressure relief valves remain to be tested in the current 5 year period, then valves are to be retested as necessary such that at least 20% of each type and manufacture is tested within any 24 month period.

Classes 1, 2 and 3 nonreclosing pressure relief devices are to be replaced every 5 years, unless historical data indicates a requirement for more frequent replacement.

IST Code Class Augmented relief valves: Test performed once every 5 years.

10Y - All Classes 2 and 3 pressure relief valves of each type and manufacture are to be tested within each subsequent 10-year period following the initial 10-year period, with a minimum of 20% of the valves tested within any 48 months. This 20% is to be previously untested valves (from the current 10 year period), if they exist.

If less than 20% of each type and manufacture of the group of all Classes 2 and 3 pressure relief valves remain to be tested in the current 10 year period, then valves are to be retested as necessary such that at least 20% of each type and manufacture is tested within any 48 month period.

J - 10 CFR 50 Appendix J Type C leak rate tests are controlled by the ENTERGY PLANT'S Local Leak Rate Test (LLRT) Program. Refer to the LLRT Program for individual valve leak rate test requirements. For ANO-1 and ANO-2, "J" indicates "Refueling."

SK – Skid-Mounted Component (adequately tested via testing of major component) [W3]

TS - As specified by Technical Specification

V - Variable based on other programmatic requirements

RELIEF REQUEST (RR/VRR) - Relief Requests (RR) and Valve Relief Requests (VRR) for valves that cannot be tested per Code requirements are provided in the Relief Requests section. The appropriate relief request number is provided in the Valve Summary Listing. Relief requests of a generic nature have been placed in the Relief Requests section.

OTHER (CJ/CSJ,RJ/ROJ,AVT,VPS,CMJ,VC) – Cold Shutdown Justifications (CJ/CSJ), Refueling Outage Justifications (RJ/ROJ), Augmented Valve Tests (AVT), Valve Position Statement (VPS), Condition Monitoring Justification (CMJ), and Valve Clarification (VC) are listed in this column.

CJ/CSJ -Those valves that cannot be full-stroke exercised during normal plant operation and are tested during cold shutdowns are identified by the test frequency "C" in the Valve Summary Listing. The referenced Cold Shutdown Justification (CJ/CSJ) identifies the applicable valve(s) that cannot be full-stroke exercised during plant operation, and provides justification for deferring the test to cold shutdown. Cold Shutdown Justifications are provided in the Cold Shutdown section of each site appendix.

RJ/ROJ -Those valves that can only be full-stroke exercised during refueling outages are identified by the test frequency "R" in the Valve Summary Listing. The referenced Refueling Justification (RJ/ROJ) identifies the applicable valve(s) that cannot be full-stroke exercised during plant operation, or cold shutdown, and provides justification for deferring the test to refueling. Refueling Justifications are provided in the Refueling Justification sections of each site appendix.

Certain check valves cannot be exercised full-stroke open or closed by any means other than disassembly and inspection. As allowed by Generic Letter 89-04, Position 2, those

VALVE PROGRAM

valves may be included in a sample disassembly and inspection program, and testing by disassembly of a sample from each group will be deferred to refueling outages. Valves that are exercised full-stroke open or closed in this manner are identified in "Refueling Justifications". Justification for extension of the test frequency to refueling outages is provided, and sample groups are identified.

AVT - Augmented Valve Test (AVT) descriptions are included for Augmented valves (IST Code Class "A"). These valves are tested to 10 CFR 50 Appendix B requirements rather than to 10 CFR 50.55a requirements.

VPS – Valve Position Statement (VPS); used to provide plant positions concerning alternate valve testing/frequency

CMJ – Statement that provides CVCMP testing requirements and reference to records of data collected and reviews performed that support the stated requirements.

VC – Clarifications of Valve Testing Methods

NOTES - Any explanatory notes required are either provided or referenced. Specific notes for the Valve Summary Listing are included at the end of the Valve Summary Listing section.

PUMP PROGRAM

GENERAL

The pump test requirements are presented on the Pump Summary Listing form, along with pertinent pump, system, and plant information. The form, organized by system/component, is to be used in conjunction with Piping and Instrument Diagrams (P&IDs). Each inservice test shall include the measurement and observation of all quantities at the frequency indicated on the Pump Summary Listing forms.

The following pages contain instructional information to aid in the use of the Pump Summary Listing and are keyed to the various heading categories.

As noted in the Introduction, other parts of the IST Program provide bases for the selection of pumps, cross-reference to testing procedures, and requirements for the performance of IST.

INSTRUCTIONS FOR USE OF PUMP SUMMARY LISTING

PUMP NO. - Indicates the pump number.

PUMP DESCRIPTION - Brief description of each pump.

PUMP TYPE — Pump types include the terms Centrifugal, Vertical Line Shaft, Positive Displacement, and Reciprocating. These terms are used to correspond with terms used in the Codes.

DRIVER - Driver type include the terms Motor or Turbine.

P&ID NO., COORD. - P&ID number and coordinates on the P&ID at which each pump is located. For W3 Flow Diagrams are listed under the P&ID No. column.

IST CODE CLASS –

	ANO-1	ANO-2	GGNS	RBS	W3
ASME Code Class 2 or 3 pumps within the scope of the Code.	2 or 3	2 or 3	2 or 3	2 or 3	2 or 3
Safety related non-ASME pumps.	N	NN	A	NC	N
ASME pumps that are not within the scope of the Code.			A		

REQUIRED TESTS AND FREQUENCY - Required tests for each pump are indicated by an entry for the associated test frequency in the Summary Listing column for the tests described below.

S - Rotational speed measurement (required for variable speed pumps only; pumps directly coupled to synchronous or induction motors are exempt).

dP - Differential pressure across the centrifugal or vertical line shaft pump, either by direct measurement or by calculating the difference between the pressure at a point in the inlet pipe and the pressure at a point in the discharge pipe.

FR - Flow rate (Q) measurement.

Pd - Pump discharge pressure; required for positive displacement pumps only.

V - Broad band (unfiltered) measurement of pump vibration (velocity or displacement). If velocity measurements are used they shall be peak; if displacement measurements are used, they shall be peak-to-peak.

TEST FREQUENCY - Frequency of performance for the required tests.

Q - Test performed once every 92 days (3 months).

PUMP PROGRAM

18M – Test performed every eighteen months (547 days)

2Y - Test performed once every two years.

PUMP RELIEF REQUEST (PRR) – Pump Relief Requests (PRR) for pumps that cannot be tested per Code requirements are provided in the Relief Requests section. The appropriate PRR number is provided in the Pump Summary Listing.

PUMP POSITION STATEMENT (PPS) – Used to provide plant positions on alternate pump testing/frequency and clarification of pump testing methods

NOTES - Any explanatory notes required are either provided or referenced. Notes for the Pump Summary Listing are included at the end of the Pump Summary Listing section. The Notes are used to designate if OMB-2003 Group A, Group B, or Comprehensive testing requirements apply.

ANO-1 APPENDIX

INSERVICE TESTING PLAN

ENTERGY NUCLEAR

ENGINEERING PROGRAMS

TABLE OF CONTENTS

<u>SECTION</u>	<u>PAGE NUMBER</u>
Table of Contents	2
Valve Relief Requests	3
Valve Position Statements	5
Pump Relief Requests	7
Pump Position Statements	10
Cold Shutdown Justifications	11
Refueling Outage Justifications	22
Database Report – Condition Monitoring Justifications	
Database Report - Valve Summary Listings	
Database Report - Pump Summary Listings	

VALVE RELIEF REQUESTS (VRR)

10 CFR 50.55a Request Number VRR-ANO1-2007-1

Proposed Alternative in Accordance with 10 CFR 50.55a(a)(3)(ii)

10 CFR 50.55a Request Title: PSV-1617 Alternative Request

PLANT/UNIT: Arkansas Nuclear One Unit 1

INTERVAL: Fourth 120 Month Inservice Testing Interval

**COMPONENTS
AFFECTED:** Valve: PSV-1617

System: Reactor Building Spray

Relief valve PSV-1617 has an active open safety function to relieve over-pressure and vacuum conditions in the sodium hydroxide storage tank. Note that, although the tank vent valve AV-10 is normally open to perform these functions, PSV-1617 is considered to be the primary and most reliable mechanism for performing this function.

(The above valve is an ASME Code Class 3, OM Code Category C relief valve.)

**CODE EDITION AND
ADDENDA:** ASME OM Code-2001 Edition with addenda through OMB Code-2003 Addenda

REQUIREMENTS: ASME OM Code-2001 Edition with addenda through OMB Code-2003 Addenda, Appendix I, Paragraph I-8200:

"Seat Tightness Testing. Seat tightness testing shall be performed in accordance with the Owner's valve test procedure."

**REASON FOR
RELIEF REQUEST:** Pursuant to 10 CFR 50.55a, "Codes and Standards", paragraph (a)(3)(ii), an alternative is requested when using the requirements of ASME OM Code-2001 Edition with addenda through OMB Code-2003 Addenda (as listed above).

This alternative is a re-submittal of NRC approved 3rd Interval Relief Request-9 that was based on the ASME OM Code 1987 Edition with addenda through OMA-1988 Addenda. This 3rd Interval alternative request is based on the ASME OM Code-2001 Edition with addenda through OMB Code-2003 Addenda. There have been no substantive changes to this alternative, to the OM Code requirements or to the basis for use, which

VALVE RELIEF REQUESTS (VRR)

10 CFR 50.55a Request Number VRR-ANO1-2007-1

would alter the previous NRC Safety Evaluation conclusions.

This alternative is to eliminate the requirement related to seat tightness testing of vacuum relief devices.

**PROPOSED
ALTERNATIVE AND
BASIS:**

Seat leakage testing of this vacuum breaker valve will not be performed.

This vacuum breaker valve has no significant safety function in the closed position. Furthermore, seat leakage is irrelevant since, in effect, the valve is normally bypassed by a line with a normally-open valve.

Based on the determination that compliance with the ASME OM Code-2001 Edition with addenda through OMB Code-2003 Addenda requirements results in a hardship without a compensating increase in the level of quality or safety, this proposed alternative should be granted pursuant to 10 CFR 50.55a(a)(3)(ii).

DURATION:

Arkansas Nuclear One Unit 1's 4th 120-month Inservice Testing Interval (December 2, 2007 through December 1, 2017 based on TAC No. MA0275).

PRECEDENTS:

Use of an alternative for similar requirements was previously granted for Arkansas Nuclear One Unit 1's 3rd 120-month Inservice Testing Interval (TAC No. MA0275).

REFERENCES:

TAC No. MA0275 related correspondences: September 26, 2000 (NRC); October 29, 1999 (EOI); October 9, 1998 (NRC); December 1, 1997 (EOI)

STATUS:

Submitted for Nuclear Regulatory Commission review and approval by CNRO-2007-00042.

VALVE POSITION STATEMENTS (VPS)

VPS-001

System: Emergency Diesel Generator

Components: CV-5218, CV-5233, CV-5237, CV-5239, SV-5218, SV-5233, SV-5237, SV-5239

Function: These valves comprise the means by which starting air is admitted to the emergency diesel generators (EDGs) air start motors. An electrical signal from the EDG start circuitry causes one of the two solenoid valves associated with a particular EDG to change position such that pressurized air is admitted to the pinion engagement mechanism of the first of two air start motors arranged in series. As the pinion is engaged, a port is open to allow air flow to the pinion engagement of the second air start motor. Air flow then continues to the associated control valve to cause it to open to admit air to the vaned air start motors in order to crank the EDG. When the EDG starts, speed sensors cause the start signal to be removed at which time the solenoid valve repositions to isolate starting air to and, via the associated check valve, depressurize the piping to the air start motors pinion engagement mechanism and the air supply control valve. This action allows the air supply control valve to close and the pinion to disengage from the EDG ring gear. One solenoid valve, one check valve, and one control valve comprise one train of air start capability. An alternator switches the start signal such that the two trains operate in an alternating fashion each time the start signal is generated.

Code Class: Non-Code components included based on safety function

Code Category: Category B

Code Requirement: Power Operated Valve Stroke Timing

The stroke time of all power operated valves shall be measured to at least the nearest second.

Justification for Deviation: These valves do not have position indicating lights or other means of directly monitoring the time required for a change in valve position. Exercising of the valves is accomplished during EDG surveillances at a frequency which meets or exceeds Code requirements. The proper operation of the air start solenoid, check, and air control valves can be monitored by virtue of proper starting operation of the EDG. The normal time required from the receipt of a start signal for the EDG to start and achieve rated speed and voltage is 9 to 13 seconds based on surveillance test results. The required time per ANO-1 Technical Specifications 4.6.1.1 is less than 15 seconds. Therefore, by virtue of proper EDG starting operation, the air start solenoid, check, and air control valves are verified to be operating properly.

Alternative Testing: ANO-1 will monitor proper operation of the air start valves by verification of EDG operability during the EDG surveillance. The base frequency for EDG testing is once per month. Surveillance procedures are written such that every other month the EDG is started both locally and remotely. At this time local

VALVE POSITION STATEMENTS (VPS)

verification is performed to insure that the EDG starts from each of the two trains. The time required to start and achieve rated speed and voltage on each train is monitored and recorded. If the required time is greater than 15 seconds for either train, then the associated train is declared inoperable and corrective actions taken.

IST PLAN ANO-1 APPENDIX	PROGRAM SECTION NO.: CEP-IST-2 REVISION: 307 PAGE: 7 OF 23
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PUMP RELIEF REQUESTS (PRR)

10 CFR 50.55a Request Number PRR-ANO1-2007-1

Proposed Alternative in Accordance with 10 CFR 50.55a(a)(3)(ii)

10 CFR 50.55a Request Title: P-4A, P-4B, P-4C Alternative Request

PLANT/UNIT:	Arkansas Nuclear One Unit 1
INTERVAL:	Fourth 120 Month Inservice Testing Interval
COMPONENTS AFFECTED:	<p>Pumps: P-4A, P-4B, P-4C</p> <p>System: Service Water</p> <p>Under emergency conditions these vertical line-shaft pumps provide an assured source of cooling water and the ultimate heat sink to various safety related and safe shutdown components. In addition, they provide cooling water to non-safety related plant components during normal plant operation.</p>
CODE EDITION AND ADDENDA:	ASME OM Code-2001 Edition with addenda through OMB Code-2003 Addenda
REQUIREMENTS:	<p>ISTB-5221 and ISTB-5223</p> <p>"Group A and Comprehensive tests shall be conducted with the pump operating at a specified reference point. The test parameters shown in Table ISTB-3000-1 shall be determined and recorded as required by this paragraph."</p>
REASON FOR RELIEF REQUEST:	<p>Pursuant to 10 CFR 50.55a, "Codes and Standards", paragraph (a)(3)(ii), an alternative is requested when using the requirements of ASME OM Code-2001 Edition with addenda through OMB Code-2003 Addenda (as listed above).</p> <p>The service water system provides a continuous supply of cooling water to the two safety-related (essential) service water headers as well as the non-essential header related to main turbine generator and other plant support auxiliaries. During normal plant operation at power the heat removal demands of the service water system require the operation of at least two and frequently three pumps. After the system operation reaches a degree of stability, perturbation of flow to any of the on-line heat exchangers could have a severe adverse impact on plant operation with the potential for unacceptable flow and temperature transients. This situation precludes flow adjustments on specific heat loads and certainly throttling of pump or header isolation valves. As such, returning the system operating parameters to a prescribed unique reference value (either flow or differential pressure) is impractical and could result in an unreasonable and</p>

PUMP RELIEF REQUESTS (PRR)

10 CFR 50.55a Request Number PRR-ANO1-2007-1

unwarranted risk to plant operation with little or no apparent gain in plant safety or reliability.

This alternative is a re-submittal of NRC approved Third Interval Relief Request-6 that was based on the ASME OM Code 1987 Edition with addenda through OMa-1988. This Fourth Interval alternative request is based on the ASME OM Code-2001 Edition with addenda through OMB Code-2003 Addenda. The proposed relief is in accordance with Code Case OMN-16. The only substantive change to this alternative versus Relief Request-6 is the requirement to have at least one data point for each 20% of the maximum pump curve range. This change would not alter the previous NRC Safety Evaluation conclusions.

**PROPOSED
ALTERNATIVE AND
BASIS:**

Following maintenance activities and when the pump is known to be operating acceptably the reference curve will be either reconfirmed or a new curve created as follows:

- a. The subject flow rate will be varied over a specified range with the pump operating at or near its design basis flow rate. Per SAR Table 9-8 a service water pump design capacity is 6500 gpm. This specified range, approximately 4000 gpm to 7500 gpm, will be beyond the theoretical "flat" portion of the pump performance curve.
- b. At least five (5) points over the test range, corresponding differential pressure and flow rate measurements will be recorded after flow stability is achieved at each point (minimum 2 minutes run time). The points will include at least one point below 5200 gpm, one point between 5200 gpm to 6500 gpm, and one point greater than 6500 gpm. Instruments used for obtaining pump performance data will satisfy the accuracy and range requirements as set forth in ISTB-3500.
- c. The recorded curve data will be plotted graphically or electronically and an equivalent pump curve will be derived.

Individual acceptance criteria will be developed for each pump as follows:

- a. For the Type A test, an acceptable range of operation will be established when pump differential pressure, corresponding to a specific flow rate, deviates by no more than 0.95 times the reference value for the lower limit and 1.10 times the reference value for the upper limit. For the Comprehensive test, an acceptable range of operation will be established when pump differential pressure, corresponding to a specific flow rate, deviates by no more than 0.95 times the reference value for the lower limit and 1.03 times the reference value for the upper limit.
- b. For the Type A test and the Comprehensive test, an alert range of operation will be established when pump differential pressure, corresponding to a specific flow rate, falls between 0.95 times the reference value to 0.93 times the reference value.

PUMP RELIEF REQUESTS (PRR)

10 CFR 50.55a Request Number PRR-ANO1-2007-1

c. Each of the pump's acceptance criteria curves shall be compared to the applicable and corresponding requirements for these pumps as set fourth in the ANO-1 Technical Specifications, Safety Evaluation Report, and Safety Analysis Report. This review will ensure that a pump cannot be declared operable if it is operating outside the requirements of any of these documents.

d. In the event that a pump's operational parameters fall outside of these stated ranges (Type A test: 0.93 times the reference value for the lower range and 1.1 times the reference value for the upper range) or greater than 1.03 times the reference value for the Comprehensive test in what is know as the "required action range", appropriate corrective actions will be implemented in accordance with ISTB-6200 (b).

e. The acceptance criteria for pump/motor vibration will be derived from Table ISTB-5121-1 based on reference values measured during typical pump operation, e.g., between approximately 4000 gpm and 7500 gpm. A curve of vibration levels versus flow rate is not required to be developed since vibration levels are essentially the same over the flow rates of interest.

Each of these pumps will be Type A and Comprehensive tested as follows: With the subject pump operating at a condition based on system demands, measurements for pump flow rate, differential pressure, and vibration will be recorded. Should any of the pump's operating points fall outside the plotted areas of acceptability, the appropriate corrective action as prescribed in ISTB-6200 will be applied.

Based on the determination that compliance with the ASME OM Code-2001 Edition with addenda through Omb Code-2003 Addenda requirements results in a hardship without a compensating increase in the level of quality or safety, this proposed alternative should be granted pursuant to 10 CFR 50.55a(a)(3)(ii).

DURATION: Arkansas Nuclear One Unit 1's Fourth 120-month Inservice Testing Interval (December 2, 2007 through December 1, 2017 based on TAC No. MA0275).

PRECEDENTS: Use of an alternative for similar requirements was previously granted for Arkansas Nuclear One Unit 1's Third 120-month Inservice Testing Interval (TAC No. MA0275).

REFERENCES: TAC No. MA0275 related correspondences: September 26, 2000 (NRC); October 29, 1999 (EOI); October 9, 1998 (NRC); December 1, 1997 (EOI)

STATUS: Submitted for Nuclear Regulatory Commission review and approval by CNRO-2007-00042.

IST PLAN
ANO-1 APPENDIX

PROGRAM SECTION NO.: CEP-IST-2
REVISION: 307
PAGE: 10 OF 23

PUMP POSITION STATEMENTS (PPS)

NONE

COLD SHUTDOWN JUSTIFICATIONS (CSJ)

CSJ-001

System: Steam Generator Secondary System

Valve(s): CV-2691, CV-2692

**Code
Class:** 2

**Code
Category:** B

Function: These spring-loaded normally-open air-operated valves have an active closed safety function to isolate the steam generators on a MSLI actuation signal to prevent unrestricted blowdown of both steam generators in the event of a downstream steam leak, help ensure a source of steam for EFW pump operation, and to isolate the steam generators in the event of a tube rupture. In the open position this valve provides a pathway for steam from the steam generators to the main turbine generator and auxiliaries. There is no safety function associated with steam flow downstream of this valve.

Cold Shutdown

Justification: Closure of either of these valves under power conditions effectively isolates the associated steam generator. This, in turn, would result in an extreme power transient and a plant trip. There is a valve control mechanism that allows a partial stroke (approximately 10%) during power operation. However, Improved Technical Specifications state that it is imprudent to stroke the valves at power due to risk of valve closure.

Alternate Test

Schedule: These valves will be full-stroke exercised in the closed direction and fail safe tested during cold shutdown periods in accordance with the provisions of the Code.

CSJ-002

System: Steam Generator Secondary System

Valve(s): CV-2630, CV-2680

**Code
Class:** 2

**Code
Category:** B

Function: These normally-open motor-operated valves have an active closed safety function to isolate the main feedwater system from the steam generators following a MSLI actuation signal. They are normally open to provide feedwater supply to the steam generators - non-safety function.

Cold Shutdown

COLD SHUTDOWN JUSTIFICATIONS (CSJ)

Justification: Closure of either of these valves during power operation results in the loss of feedwater to the associated steam generator. This, in turn, would cause a loss of steam generator level control, severe plant transient, and ultimately a plant trip. There is, however, a valve control mechanism that allows a partial stroke (approximately 10%) during power operation. However, Improved Technical Specifications state that it is imprudent to stroke the valves at power due to risk of valve closure.

Alternate Test

Schedule: These valves will be full-stroke exercised in the closed direction during cold shutdown periods in accordance with the provisions of the Code.

CSJ-003

System: Service Water System

Valve(s): CV-3643

**Code
Class:** 3

**Code
Category:** A

Function: This normally-open motor-operated valve has an active closed safety function to maximize service water flow to the Loop 1 and 2 headers by isolating the auxiliary cooling water (ACW) loop under emergency conditions. It is required to be leak tested to ensure maintenance of ECP inventory per DBA analysis requirements.

Cold Shutdown

Justification: Closing this valve requires a shutdown of cooling water to various coolers supplied by the ACW cooling line. During normal plant operation at power the heat removal demands of the ACW system requires the supply of cooling water to the various coolers. Perturbation of flow to any of the on-line heat exchangers served by ACW (including main turbine generator auxiliaries) could have a severe adverse impact on plant operation with the potential for unacceptable flow and temperature transients, equipment damage, and a plant trip.

Alternate Test

Schedule: This valve will be full-stroke exercised in the closed direction during cold shutdown periods in accordance with the provisions of the Code.

CSJ-004

System: Chilled Water System

Valve(s): CV-6202, CV-6203, CV-6205

**Code
Class:** 2

IST PLAN ANO-1 APPENDIX	PROGRAM SECTION NO.: CEP-IST-2 REVISION: 307 PAGE: 13 OF 23
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COLD SHUTDOWN JUSTIFICATIONS (CSJ)

Code

Category: A

Function: These normally-open power-operated valves have an active closed safety function on an ES actuation signal to provide containment isolation. In the open position they provide flowpaths for the supply and return of chilled water for cooling in the reactor building - non-safety function.

Cold Shutdown

Justification: Testing of these valves would require isolation of chill water to the reactor building coolers. Since the reactor building coolers are a significant chilled water load, the main chillers would have to be secured to avoid an automatic trip on low chilled water flow or temperature. To avoid an unacceptable rise in reactor building temperatures, service water would also need to be aligned to the reactor building cooling coils. Auxiliary cooling water system flows and the associated secondary plant components would be affected by the reduction in available cooling water. A number of secondary plant components require manual valve operations to control ACW flow including the seal oil coolers, exciter air coolers, condenser vacuum pump coolers and electro-hydraulic control fluid coolers. Intermediate cooling water system temperatures would also be affected by the reduction in available service water to the ICW coolers. Manual valve operations are also required to adjust ICW temperatures. The service water bays should also be injected with biocide while service water is aligned to the reactor building cooling coils to avoid the potential of biological fouling. The required valve operations coincident with the activity of securing and restarting a main chiller present a significant operating burden. The demands on the plant staff and potential adverse temperature effects on plant equipment are not commensurate with any gain in safety resulting from performing this test every three months.

Alternate Test

Schedule: These valves will be full-stroke exercised in the closed (fail-safe tested for CV-6202 and CV-6203) direction during cold shutdown periods in accordance with the provisions of the Code.

CSJ-005

System: Reactor Coolant System

Valve(s): SV-1077, SV-1079

Code

Class: 1

Code

Category: B

Function: These normally-closed solenoid-operated valves provide the pressure boundary between the RCS and the containment atmosphere. They have an active open safety function to vent non-condensable gases from the pressurizer to ensure natural circulation under accident conditions.

COLD SHUTDOWN JUSTIFICATIONS (CSJ)

Cold Shutdown

Justification: These valves connect directly to the reactor coolant system (RCS) and are the Class 1 isolation valves for the system, forming part of the RCS boundary. Opening any of these valves during power operation exposes the plant to the possibility of a valve failure in the open position. While a dual valve isolation configuration exists, the potential for developing a reactor coolant leak is increased by testing at power. Although the maximum leakage potential from this line is less than that defined as a loss of coolant accident, it could be of sufficient magnitude as to exceed the ANO-1 Technical Specification limits and force an expedited plant shutdown and cooldown. In addition, historical data and operational experience related to these valves indicate a high potential for seat leakage - a problem that would be exacerbated by repeated (quarterly) operation at RCS operating pressure.

Alternate Test

Schedule: These valves will be full-stroke exercised in the open direction during cold shutdown periods in accordance with the provisions of the Code.

CSJ-006

System: Reactor Coolant System

Valve(s): SV-1071, SV-1072, SV-1073, SV-1074

**Code
Class:** 1

**Code
Category:** B

Function: These normally-closed solenoid-operated valves provide the pressure boundary between the RCS and the containment atmosphere. They have an active open safety function to vent non-condensable gases from the reactor vessel to ensure natural circulation under accident conditions.

Cold Shutdown

Justification: These valves connect directly to the reactor coolant system (RCS) and are the Class 1 isolation valves for the system, forming part of the RCS boundary. Opening any of these valves during power operation exposes the plant to the possibility of a valve failure in the open position. While a dual valve isolation configuration exists, the potential for developing a reactor coolant leak is increased by testing at power. Although the maximum leakage potential from this line is less than that defined as a loss of coolant accident, it could be of sufficient magnitude as to exceed the ANO-1 Technical Specification limits and force an expedited plant shutdown and cooldown. In addition, historical data and operational experience related to these valves indicate a high potential for seat leakage - a problem that would be exacerbated by repeated (quarterly) operation at RCS operating pressure.

Alternate Test

Schedule: These valves will be full-stroke exercised in the open direction during cold shutdown periods in accordance with the provisions of the Code.

COLD SHUTDOWN JUSTIFICATIONS (CSJ)

CSJ-007

System: Reactor Coolant System

Valve(s): SV-1081, SV-1082, SV-1083, SV-1084
SV-1091, SV-1092, SV-1093, SV-1094

Code

Class: 1

Code

Category: B

Function: These normally-closed solenoid-operated valves provide the pressure boundary between the RCS and the containment atmosphere. They have an active open safety function to vent non-condensable gases from the reactor coolant loop high points to ensure natural circulation under accident conditions.

Cold Shutdown

Justification: These valves connect directly to the reactor coolant system (RCS) and are the Class 1 isolation valves for the system, forming part of the RCS boundary. Opening any of these valves during power operation exposes the plant to the possibility of a valve failure in the open position. While a dual valve isolation configuration exists, the potential for developing a reactor coolant leak is increased by testing at power. Although the maximum leakage potential from this line is less than that defined as a loss of coolant accident, it could be of sufficient magnitude as to exceed the ANO-1 Technical Specification limits and force an expedited plant shutdown and cooldown. In addition, historical data and operational experience related to these valves indicate a high potential for seat leakage - a problem that would be exacerbated by repeated (quarterly) operation at RCS operating pressure.

Alternate Test

Schedule: These valves will be full-stroke exercised in the open direction during cold shutdown periods in accordance with the provisions of the Code.

CSJ-008

System: Reactor Coolant System

Valve(s): PSV-1000

Code

Class: 1

Code

Category: B

Function: This pilot-operated electromatic relief valve (PORV) has active open safety functions to relieve RCS pressure to preclude challenging the Code safety valves, mitigate a tube

COLD SHUTDOWN JUSTIFICATIONS (CSJ)

rupture event, and when the reactor coolant system is operated at low temperatures this valve provides over-pressure protection (LTOP) to reactor coolant system components.

Cold Shutdown

Justification: This valve is part of the Class 1 isolation for the RCS, forming part of the RCS boundary. Opening this valve during power operation exposes the plant to the possibility of a valve failure in the open position and the potential of developing a significant reactor coolant leak. In addition, historical data and operational experience related to this valve indicate a high potential for failure of this valve to re-close.

Alternate Test

Schedule: This valve will be full-stroke exercised in both the open and closed (includes fail-safe testing) directions during cold shutdown periods in accordance with the provisions of the Code.

CSJ-009

System: Primary Makeup and Purification System

Valve(s): CV-1270, CV-1271, CV-1272, CV-1273, CV-1274

Code

Class: 2

Code

Category: A

Function: These normally-open motor-operated valves provide flowpaths for seal water leakoff from the reactor coolant pumps - non-safety function. They have an active closed safety function on an ES actuation signal to provide containment isolation.

Cold Shutdown

Justification: Isolation of the reactor coolant pump seal bleedoff lines or alternate seal bleedoff line to the quench tank would subject the seals to severe hydraulic and/or thermal transients, potentially resulting in seal damage or even failure.

Alternate Test

Schedule: These valves will be full-stroke exercised in the closed direction during cold shutdown periods in accordance with the provisions of the Code.

CSJ-010

System: Primary Makeup and Purification System

Valve(s): CV-1300, CV-1301

Code

Class: 2

Code

COLD SHUTDOWN JUSTIFICATIONS (CSJ)

Category: B

Function: These normally-open motor-operated valves have an active closed safety function on an ES actuation signal to isolate the minimum flow recirculation flowpath in order to maximize high pressure injection flow to the reactor coolant system.

Cold Shutdown

Justification: These valves remain open during normal operation to provide minimum flow for pump protection to the running makeup pump. Isolation of this flowpath in a non-ES actuated condition places the pump at risk. A small perturbation in makeup flow requirements could reduce pump flow to less than that required to preclude pump damage. The makeup pumps are particularly vulnerable to this phenomenon in a very short time due to their high speed, high head design.

Alternate Test

Schedule: These valves will be full-stroke exercised in the closed direction during cold shutdown periods in accordance with the provisions of the Code.

CSJ-011

System: Decay Heat Removal System

Valve(s): CV-1050, CV-1410

Code

Class: CV-1050 - Class 1
CV-1410 - Class 2

Code

Category: A

Function: These normally-closed motor-operated valves have a closed safety function to act as a redundant pressure boundary between the reactor coolant system and the decay heat removal system during power operation. Due to past commitments, isolation of the reactor coolant system is considered to be significantly important and, in response to this, this valve is seat leakage tested. They have an active open function to provide a decay heat removal flowpath to effect plant cooldown. Note that although this function supports plant cooldown, it is not required since ANO-1 is licensed for hot shutdown only, decay heat removal is considered to be significantly important to safety and testing in the open direction is justified.

Cold Shutdown

Justification: These valves are provided with an interlock feature that prevents opening when reactor coolant pressure exceeds 290 psig. Overriding this interlock and opening either of these valves would subject the low pressure rated portions of the decay heat removal/low pressure coolant injection system to reactor coolant pressures separated by only a single closed valve. This is considered to be imprudent under normal RCS operating pressure.

Alternate Test

Schedule: These valves will be full-stroke exercised in both the open and closed directions during cold shutdown periods in accordance with the provisions of the Code.

COLD SHUTDOWN JUSTIFICATIONS (CSJ)

CSJ-012

System: Intermediate Cooling Water System

Valve(s): CV-2235

**Code
Class:** 2

**Code
Category:** A

Function: This motor-operated valve opens to provide a flowpath for cooling water to the control rod drive (CRD) coolers. Cooling of these components is not required for accident mitigation nor for reactor cooldown, thus this is not considered to be a safety function. It has an active closed safety function to provide containment isolation.

Cold Shutdown

Justification: Closing this valve requires isolating cooling water flow to the CRDs. High temperature alarm response for multiple CRDs requires a plant trip.

Alternate Test

Schedule: This valve will be full-stroke exercised in the closed direction during cold shutdown periods in accordance with the provisions the Code.

CSJ-013

System: Intermediate Cooling Water System

Valve(s): CV-2220, CV-2221

**Code
Class:** 2

**Code
Category:** A

Function: These motor-operated valves open to provide a flowpath for cooling water from the reactor coolant pump (RCP) and control rod drive coolers. Cooling of these components is not required for accident mitigation nor for reactor cooldown, thus this is not considered to be a safety function. It has an active closed safety function to provide containment isolation.

Cold Shutdown

Justification: Closing these valves requires isolating cooling water flow to the RCPs and the CRDs. High temperature alarm response for multiple CRDs requires a plant trip.

Alternate Test

COLD SHUTDOWN JUSTIFICATIONS (CSJ)

Schedule: These valves will be full-stroke exercised in the closed direction during cold shutdown periods in accordance with the provisions of the Code.

CSJ-014

System: Intermediate Cooling Water System

Valve(s): CV-2214, CV-2215, CV-2233

Code

Class: 2

Code

Category: A

Function: CV-2214, CV-2215, and CV-2233 open to provide a flowpath for cooling water to and from the reactor coolant letdown heat exchangers. Cooling of these components is not required for accident mitigation nor for reactor cooldown, thus this is not considered to be a safety function. They have an active closed safety function to provide containment isolation.

Cold Shutdown

Justification: At power operation closing CV-2214, CV-2215, or CV-2233 would result in securing letdown flow. Securing letdown flow during power operation would result in thermal transients to nozzles and piping and perturbations to the makeup system which among other effects will result in a transient in RCP seal injection which could result in damage to the RCP seals.

Alternate Test

Schedule: CV-2214, CV-2215 and CV-2233 will be full-stroke exercised in the closed direction during cold shutdown periods in accordance with the provisions of the Code. CV-2214 and CV-2233 will also be failed safe tested at that time.

CSJ-015

System: Steam Generator Secondary System

Valve(s): CV-2625, CV-2675

Code

Class: Non-code

Code

Category: B

Function: These normally-open motor operated valves have an active closed safety function to isolate the main feedwater system from the steam generators. They are normally open to provide feedwater supply to the steam generators – non-safety function.

COLD SHUTDOWN JUSTIFICATIONS (CSJ)

Cold Shutdown

Justification: Closure of either of these valves during power operation results in the loss of feedwater to the associated steam generator. This, in turn, would cause a loss of steam generator level control, severe plant transient, and ultimately a plant trip.

Alternate Test

Schedule: These valves will be full-stroke exercised in the closed position during cold shutdown periods in accordance with the provisions of the Code.

CSJ-016

System: Steam Generator Secondary System

Valve(s): CV-2622, CV-2672

Code

Class: Non-code

Code

Category: B

Function: These normally-open air operated valves have an active closed safety function to isolate the main feedwater system from the steam generators. They are normally open to provide control of the feedwater supply to the steam generators – non-safety function.

Cold Shutdown

Justification: Closure of either of these valves during power operation results in feedwater flow perturbations to the associated steam generator. This, in turn, could cause a loss of steam generator level control, severe plant transient, and possibly a plant trip.

Alternate Test

Schedule: These valves will be full-stroke exercised in the closed position during cold shutdown periods in accordance with the provisions of the Code.

CSJ-017

System: Steam Generator Secondary System

Valve(s): CV-2623, CV-2673

Code

Class: Non-code

Code

Category: B

Function: These normally-closed air operated valves have an active closed safety function to isolate the main feedwater system from the steam generators. They are normally closed to provide control of the feedwater supply to the steam generators – non-safety function.

COLD SHUTDOWN JUSTIFICATIONS (CSJ)

Cold Shutdown

Justification: Cycling of either of these valves during power operation results in feedwater flow perturbations to the associated steam generator. This, in turn, could cause a loss of steam generator level control, severe plant transient, and possibly a plant trip.

Alternate Test

Schedule: These valves will be full-stroke exercised in the closed position during cold shutdown periods in accordance with the provisions of the Code.

REFUELING OUTAGE JUSTIFICATIONS (ROJ)

ROJ-001

System: Sodium Hydroxide

Valve(s): CV-1616, CV-1617

Code Class: 3

**Code
Category:** B

Function: These normally-closed MOVs have an active open safety function on an ES actuation signal to provide a flowpath for sodium hydroxide to the Reactor Building Spray Pumps suction headers. They have an active closed safety function, by operator action, to ensure water from the Reactor Building Sump is not introduced into the system piping and tank subsequent to sodium hydroxide injection when reactor building spray or decay heat removal pump suctions are aligned to the Reactor Building Sump for recirculation cooling.

Refueling Outage

Justification: Stroke timing and exercising these valves during power operation or during cold shutdowns introduces sodium hydroxide into Reactor Building Spray Pump suction headers. Once the sodium hydroxide is in the suction header, starting a pump associated with the suction header introduces the sodium hydroxide into the Borated Water Storage Tank (BWST). When the Spent Fuel Pool Demineralizer (T-3) is placed into service to purify the BWST, the higher than normal levels of sodium are removed thus shortening the life of the resin.

To avoid shortening the T-3 resin life, ANO had attempted to build a buffer of Demineralized Water (DI) around CV-1616 and CV-1617. Building this buffer necessitated the use of rubber hoses which contain pressurized sodium hydroxide and routing the resulting mixture to floor drains. Then the water was flushed to Laundry Tanks and had to be neutralized prior to being released. The Laundry Tanks are not designed to neutralize chemicals, i.e. it does not have an installed chemical addition pot. The above process caused personnel risk, exposure to caustic when draining hoses and during the neutralization phase, increased dose due to connecting, disconnecting, and draining hoses in the decay heat vaults, and increased costs for neutralizing the sodium hydroxide.

Other methods of flushing the lines of sodium hydroxide had been investigated and were found to be infeasible. One method involves flushing DI water towards the Sodium Hydroxide Storage Tank during valve operation. This method results in the dilution and inventory addition to the NaOH tank over time. The end result is that the NaOH tank has to be drained, the effluent chemically treated to neutralize it, and NaOH added to the storage tank.

In summary, these valves will be exercised and stroke timed during refueling outages when the piping is drained and flushed, since exercising these valves results in the following hardships: Reduction in life of plant equipment – decreased resin life; Personal safety concerns – exposure to caustic; and, Dose.

IST PLAN
ANO-1 APPENDIX

PROGRAM SECTION NO.: CEP-IST-2
REVISION: 307
PAGE: 23 OF 23

REFUELING OUTAGE JUSTIFICATIONS (ROJ)

Alternate Test

Schedule: During refueling outages this piping is drained and flushed. During this period of time these valves will be full stroked exercised and timed in both the open and closed directions in accordance with the Code.

CONDITION MONITORING JUSTIFICATIONS

NOTE: CEP-IST-1, ANO-1 Appendix, Enclosure 1 provides the data collected, and the Advisory Panel review, that supports the following testing requirements.

Condition Monitoring Justification: **AC-60**

Valves in Grouping: AC-60

CM Testing Requirements: Perform open flow testing and closed leak testing at a frequency aligned with Appendix J testing.

Condition Monitoring Justification: **BS-4A**

Valves in Grouping: BS-4A & BS-4B

CM Testing Requirements: Perform disassembly and inspection at a frequency that may be extended to one valve in the group every 2R.

Condition Monitoring Justification: **BS-4B**

Valves in Grouping: BS-4A & BS-4B

CM Testing Requirements: Perform disassembly and inspection at a frequency that may be extended to one valve in the group every 2R.

Condition Monitoring Justification: **BW-2**

Valves in Grouping: BW-2 & BW-3

CM Testing Requirements: Perform open flow testing and closed leak testing at a frequency that may be extended to one valve in the group every 2 years.

Condition Monitoring Justification: **BW-3**

Valves in Grouping: BW-2 & BW-3

CM Testing Requirements: Perform open flow testing and closed leak testing at a frequency that may be extended to one valve in the group every 2 years.

Condition Monitoring Justification: **BW-4A**

Valves in Grouping: BW-4A & BW-4B

CM Testing Requirements: Perform open flow testing and closed leak testing at a frequency that may be extended to one valve in the group every 2R.

Condition Monitoring Justification: **BW-4B**

Valves in Grouping: BW-4A & BW-4B

CM Testing Requirements: Perform open flow testing and closed leak testing at a frequency that may be extended to one valve in the group every 2R.

Condition Monitoring Justification: **BW-6A**

Valves in Grouping: BW-6A & BW-6B

CM Testing Requirements: Perform open flow verification and close testing using NIT or leak test starting at baseline then at a frequency that may be extended to one valve in the group every 1R.

CONDITION MONITORING JUSTIFICATIONS

NOTE: CEP-IST-1, ANO-1 Appendix, Enclosure 1 provides the data collected, and the Advisory Panel review, that supports the following testing requirements.

Condition Monitoring Justification: **BW-6B**

Valves in Grouping: BW-6A & BW-6B

CM Testing Requirements: Perform open flow verification and close testing using NIT or leak test starting at baseline then at a frequency that may be extended to one valve in the group every 1R.

Condition Monitoring Justification: **CA-61**

Valves in Grouping: CA-61 & CA-62

CM Testing Requirements: Perform forward flow verification and RT or disassembly and inspection at a frequency that may be extended to one valve in the group every 2R.

Condition Monitoring Justification: **CA-62**

Valves in Grouping: CA-61 & CA-62

CM Testing Requirements: Perform forward flow verification and RT or disassembly and inspection at a frequency that may be extended to one valve in the group every 2R.

Condition Monitoring Justification: **CF-1A**

Valves in Grouping: CF-1A

CM Testing Requirements: Perform open flow verification and close leak testing at a frequency aligned with the Category A leak test.

Condition Monitoring Justification: **CF-1B**

Valves in Grouping: CF-1B

CM Testing Requirements: Perform open flow verification and close leak testing at a frequency aligned with the Category A leak test.

Condition Monitoring Justification: **CS-1196**

Valves in Grouping: CS-1196

CM Testing Requirements: Perform open flow verification and close testing using NIT starting at baseline then at a frequency that may be extended to every 1R.

Condition Monitoring Justification: **CS-1198**

Valves in Grouping: CS-1198

CM Testing Requirements: Perform open flow verification and close testing using NIT starting at baseline then at a frequency that may be extended to every 1R.

Condition Monitoring Justification: **CS-26**

Valves in Grouping: CS-26

CM Testing Requirements: Perform open flow testing and closed leak testing at a frequency aligned with Appendix J testing.

CONDITION MONITORING JUSTIFICATIONS

NOTE: CEP-IST-1, ANO-1 Appendix, Enclosure 1 provides the data collected, and the Advisory Panel review, that supports the following testing requirements.

Condition Monitoring Justification: **CS-293**

Valves in Grouping: CS-293 & CS-294

CM Testing Requirements: Perform open flow and close testing using NIT starting at baseline then at a frequency that may be extended to one valve in the group every 1R.

Condition Monitoring Justification: **CS-294**

Valves in Grouping: CS-293 & CS-294

CM Testing Requirements: Perform open flow and close testing using NIT starting at baseline then at a frequency that may be extended to one valve in the group every 1R.

Condition Monitoring Justification: **CV-1275**

Valves in Grouping: CV-1275

CM Testing Requirements: Perform a leak test and forward flow verification at a frequency that may be extended to 3R.

Condition Monitoring Justification: **CZ-46**

Valves in Grouping: CZ-46

CM Testing Requirements: Perform disassembly and inspection at a frequency that may be extended to every 3R.

Condition Monitoring Justification: **DH-12**

Valves in Grouping: DH-12 & DH-16

CM Testing Requirements: Perform open verification using normal operations and close testing using NIT starting at baseline then at a frequency that may be extended to one valve in the group every 1R.

Condition Monitoring Justification: **DH-13A**

Valves in Grouping: DH-13A

CM Testing Requirements: Perform open flow verification and close leak testing at a frequency aligned with Category A leak test.

Condition Monitoring Justification: **DH-13B**

Valves in Grouping: DH-13B

CM Testing Requirements: Perform open flow verification and close leak testing at a frequency aligned with Category A leak test.

Condition Monitoring Justification: **DH-14A**

Valves in Grouping: DH-14A

CM Testing Requirements: Perform open flow verification and close leak testing at a frequency aligned with Category A leak test.

CONDITION MONITORING JUSTIFICATIONS

NOTE: CEP-IST-1, ANO-1 Appendix, Enclosure 1 provides the data collected, and the Advisory Panel review, that supports the following testing requirements.

Condition Monitoring Justification: **DH-14B**

Valves in Grouping: DH-14B

CM Testing Requirements: Perform open flow verification and close leak testing at a frequency aligned with Category A leak test.

Condition Monitoring Justification: **DH-16**

Valves in Grouping: DH-12 & DH-16

CM Testing Requirements: Perform open verification using normal operations and close testing using NIT starting at baseline then at a frequency that may be extended to one valve in the group every 1R.

Condition Monitoring Justification: **DH-17**

Valves in Grouping: DH-17 & DH-18

CM Testing Requirements: Perform open flow verification and close leak testing at a frequency aligned with Category A leak test. Based on the past performance, a disassembly and inspect will be performed on one valve in the group every 2R. If the valves see better results from the disassembly, it can be extended and is not bound by the code requirements.

Condition Monitoring Justification: **DH-18**

Valves in Grouping: DH-17 & DH-18

CM Testing Requirements: Perform open flow verification and close leak testing at a frequency aligned with Category A leak test. Based on the past performance, a disassembly and inspect will be performed on one valve in the group every 2R. If the valves see better results from the disassembly, it can be extended and is not bound by the code requirements.

Condition Monitoring Justification: **DH-2A**

Valves in Grouping: DH-2A & DH-2B

CM Testing Requirements: Perform open flow verification and close testing using NIT starting at baseline then at a frequency that may be extended to one valve in the group every 1R.

Condition Monitoring Justification: **DH-2B**

Valves in Grouping: DH-2A & DH-2B

CM Testing Requirements: Perform open flow verification and close testing using NIT starting at baseline then at a frequency that may be extended to one valve in the group every 1R.

Condition Monitoring Justification: **DH-96**

Valves in Grouping: DH-96

CM Testing Requirements: Perform open flow testing and closed leak testing at a frequency aligned with Appendix J testing.

CONDITION MONITORING JUSTIFICATIONS

NOTE: CEP-IST-1, ANO-1 Appendix, Enclosure 1 provides the data collected, and the Advisory Panel review, that supports the following testing requirements.

Condition Monitoring Justification: **FO-54A1**

Valves in Grouping: FO-54A1

CM Testing Requirements: Perform disassembly and inspection at a frequency that may be extended to every 6 years.

Condition Monitoring Justification: **FO-54A2**

Valves in Grouping: FO-54A2

CM Testing Requirements: Perform disassembly and inspection at a frequency that may be extended to every 6 years.

Condition Monitoring Justification: **FO-54B1**

Valves in Grouping: FO-54B1

CM Testing Requirements: Perform disassembly and inspection at a frequency that may be extended to every 6 years.

Condition Monitoring Justification: **FO-54B2**

Valves in Grouping: FO-54B2

CM Testing Requirements: Perform disassembly and inspection at a frequency that may be extended to every 6 years.

Condition Monitoring Justification: **FO-55A1**

Valves in Grouping: FO-55A1

CM Testing Requirements: Perform disassembly and inspection at a frequency that may be extended to every 6 years.

Condition Monitoring Justification: **FO-55A2**

Valves in Grouping: FO-55A2

CM Testing Requirements: Perform disassembly and inspection at a frequency that may be extended to every 6 years.

Condition Monitoring Justification: **FO-55B1**

Valves in Grouping: FO-55B1

CM Testing Requirements: Perform disassembly and inspection at a frequency that may be extended to every 6 years.

Condition Monitoring Justification: **FO-55B2**

Valves in Grouping: FO-55B2

CM Testing Requirements: Perform disassembly and inspection at a frequency that may be extended to every 6 years.

Condition Monitoring Justification: **FO-8A**

Valves in Grouping: FO-8A & FO-8B

CM Testing Requirements: Perform disassembly and inspection at a frequency that may be extended to one valve in the group every 6 years.

CONDITION MONITORING JUSTIFICATIONS

NOTE: CEP-IST-1, ANO-1 Appendix, Enclosure 1 provides the data collected, and the Advisory Panel review, that supports the following testing requirements.

Condition Monitoring Justification: FO-8B

Valves in Grouping: FO-8A & FO-8B

CM Testing Requirements: Perform disassembly and inspection at a frequency that may be extended to one valve in the group every 6 years.

Condition Monitoring Justification: FW-10A

Valves in Grouping: FW-10A & FW-10B

CM Testing Requirements: Perform NIT or disassembly & inspection at a frequency that will start at baseline and then be extended to one valve in the group every 1R.

Condition Monitoring Justification: FW-10B

Valves in Grouping: FW-10A & FW-10B

CM Testing Requirements: Perform NIT or disassembly & inspection at a frequency that will start at baseline and then be extended to one valve in the group every 1R.

Condition Monitoring Justification: FW-13A

Valves in Grouping: FW-13A & FW-13B

CM Testing Requirements: Perform open flow testing and closed leak testing starting at a frequency that may be extended to one valve in the group every 1R.

Condition Monitoring Justification: FW-13B

Valves in Grouping: FW-13A & FW-13B

CM Testing Requirements: Perform open flow testing and closed leak testing starting at a frequency that may be extended to one valve in the group every 1R.

Condition Monitoring Justification: FW-55A

Valves in Grouping: FW-55A, FW-55B, FW-56A, FW-56B

CM Testing Requirements: Perform open flow testing and closed leak testing at a frequency that may be extended to one valve in the group every 2R.

Condition Monitoring Justification: FW-55B

Valves in Grouping: FW-55A, FW-55B, FW-56A, FW-56B

CM Testing Requirements: Perform open flow testing and closed leak testing at a frequency that may be extended to one valve in the group every 2R.

Condition Monitoring Justification: FW-56A

Valves in Grouping: FW-55A, FW-55B, FW-56A, FW-56B

CM Testing Requirements: Perform open flow testing and closed leak testing at a frequency that may be extended to one valve in the group every 2R.

Condition Monitoring Justification: FW-56B

Valves in Grouping: FW-55A, FW-55B, FW-56A, FW-56B

CM Testing Requirements: Perform open flow testing and closed leak testing at a frequency that may be extended to one valve in the group every 2R.

CONDITION MONITORING JUSTIFICATIONS

NOTE: CEP-IST-1, ANO-1 Appendix, Enclosure 1 provides the data collected, and the Advisory Panel review, that supports the following testing requirements.

Condition Monitoring Justification: FW-61

Valves in Grouping: FW-61 & FW-62

CM Testing Requirements: Perform NIT open, steady state, and close testing starting with baseline then at a frequency that may be extended to one valve in the group every 1R.

Condition Monitoring Justification: FW-62

Valves in Grouping: FW-61 & FW-62

CM Testing Requirements: Perform NIT open, steady state, and close testing starting with baseline then at a frequency that may be extended to one valve in the group every 1R.

Condition Monitoring Justification: IA-767

Valves in Grouping: IA-767, IA-771, & IA-775

CM Testing Requirements: Perform open flow testing and closed leak testing at a frequency that may be extended to one valve in the group every 1R.

Condition Monitoring Justification: IA-771

Valves in Grouping: IA-767, IA-771, & IA-775

CM Testing Requirements: Perform open flow testing and closed leak testing at a frequency that may be extended to one valve in the group every 1R.

Condition Monitoring Justification: IA-775

Valves in Grouping: IA-767, IA-771, & IA-775

CM Testing Requirements: Perform open flow testing and closed leak testing at a frequency that may be extended to one valve in the group every 1R.

Condition Monitoring Justification: IA-824

Valves in Grouping: IA-824

CM Testing Requirements: Perform open flow testing and closed leak testing at a frequency aligned with Appendix J testing.

Condition Monitoring Justification: ICW-114

Valves in Grouping: ICW-114

CM Testing Requirements: Perform open flow testing and closed leak testing at a frequency aligned with Appendix J testing.

Condition Monitoring Justification: ICW-26

Valves in Grouping: ICW-26

CM Testing Requirements: Perform open flow testing and closed leak testing at a frequency aligned with Appendix J testing.

Condition Monitoring Justification: ICW-30

Valves in Grouping: ICW-30

CM Testing Requirements: Perform open flow testing and closed leak testing at a frequency aligned with Appendix J testing.

CONDITION MONITORING JUSTIFICATIONS

NOTE: CEP-IST-1, ANO-1 Appendix, Enclosure 1 provides the data collected, and the Advisory Panel review, that supports the following testing requirements.

Condition Monitoring Justification: **MS-271**

Valves in Grouping: MS-271 & MS-272

CM Testing Requirements: Perform disassembly and inspection at a frequency that may be extended to one valve in the group every 1R.

Condition Monitoring Justification: **MS-272**

Valves in Grouping: MS-271 & MS-272

CM Testing Requirements: Perform disassembly and inspection at a frequency that may be extended to one valve in the group every 1R.

Condition Monitoring Justification: **MU-1211**

Valves in Grouping: MU-1211, MU-1212, MU-1213, MU-1214, & MU-1215

CM Testing Requirements: Perform open flow verification and close testing using leak testing or NIT starting at baseline then at a frequency that may be extended to one valve in the group every 1R.

Condition Monitoring Justification: **MU-1212**

Valves in Grouping: MU-1211, MU-1212, MU-1213, MU-1214, & MU-1215

CM Testing Requirements: Perform open flow verification and close testing using leak testing or NIT starting at baseline then at a frequency that may be extended to one valve in the group every 1R.

Condition Monitoring Justification: **MU-1213**

Valves in Grouping: MU-1211, MU-1212, MU-1213, MU-1214, & MU-1215

CM Testing Requirements: Perform open flow verification and close testing using leak testing or NIT starting at baseline then at a frequency that may be extended to one valve in the group every 1R.

Condition Monitoring Justification: **MU-1214**

Valves in Grouping: MU-1211, MU-1212, MU-1213, MU-1214, & MU-1215

CM Testing Requirements: Perform open flow verification and close testing using leak testing or NIT starting at baseline then at a frequency that may be extended to one valve in the group every 1R.

Condition Monitoring Justification: **MU-1215**

Valves in Grouping: MU-1211, MU-1212, MU-1213, MU-1214, & MU-1215

CM Testing Requirements: Perform open flow verification and close testing using leak testing or NIT starting at baseline then at a frequency that may be extended to one valve in the group every 1R.

Condition Monitoring Justification: **MU-1306**

Valves in Grouping: MU-1306, MU-1307, MU-1308, & MU-1309

CM Testing Requirements: Perform open flow verification and close testing using NIT starting at baseline then at a frequency that may be extended to one valve in the group every 2 years.

CONDITION MONITORING JUSTIFICATIONS

NOTE: CEP-IST-1, ANO-1 Appendix, Enclosure 1 provides the data collected, and the Advisory Panel review, that supports the following testing requirements.

Condition Monitoring Justification: MU-1307

Valves in Grouping: MU-1306, MU-1307, MU-1308, & MU-1309

CM Testing Requirements: Perform open flow verification and close testing using NIT starting at baseline then at a frequency that may be extended to one valve in the group every 2 years.

Condition Monitoring Justification: MU-1308

Valves in Grouping: MU-1306, MU-1307, MU-1308, & MU-1309

CM Testing Requirements: Perform open flow verification and close testing using NIT starting at baseline then at a frequency that may be extended to one valve in the group every 2 years.

Condition Monitoring Justification: MU-1309

Valves in Grouping: MU-1306, MU-1307, MU-1308, & MU-1309

CM Testing Requirements: Perform open flow verification and close testing using NIT starting at baseline then at a frequency that may be extended to one valve in the group every 2 years.

Condition Monitoring Justification: MU-19A

Valves in Grouping: MU-19A, MU-19B & MU-19C

CM Testing Requirements: Perform open flow verification and close testing using NIT starting at baseline then at a frequency that may be extended to one valve in the group every 2 years.

Condition Monitoring Justification: MU-19B

Valves in Grouping: MU-19A, MU-19B & MU-19C

CM Testing Requirements: Perform open flow verification and close testing using NIT starting at baseline then at a frequency that may be extended to one valve in the group every 2 years.

Condition Monitoring Justification: MU-19C

Valves in Grouping: MU-19A, MU-19B & MU-19C

CM Testing Requirements: Perform open flow verification and close testing using NIT starting at baseline then at a frequency that may be extended to one valve in the group every 2 years.

Condition Monitoring Justification: MU-22A

Valves in Grouping: MU-22A, MU-22B, & MU-22C

CM Testing Requirements: Perform open flow testing and a disassembly & inspection or NIT testing at a frequency that may be extended to one valve in the group every 2R.

Condition Monitoring Justification: MU-22B

Valves in Grouping: MU-22A, MU-22B, & MU-22C

CM Testing Requirements: Perform open flow testing and a disassembly & inspection or NIT testing at a frequency that may be extended to one valve in the group every 2R.

CONDITION MONITORING JUSTIFICATIONS

NOTE: CEP-IST-1, ANO-1 Appendix, Enclosure 1 provides the data collected, and the Advisory Panel review, that supports the following testing requirements.

Condition Monitoring Justification: **MU-22C**

Valves in Grouping: MU-22A, MU-22B, & MU-22C

CM Testing Requirements: Perform open flow testing and a disassembly & inspection or NIT testing at a frequency that may be extended to one valve in the group every 2R.

Condition Monitoring Justification: **MU-29A**

Valves in Grouping: MU-29A, MU-29B, MU-29C, & MU-29D

CM Testing Requirements: (LATER)

Condition Monitoring Justification: **MU-29B**

Valves in Grouping: MU-29A, MU-29B, MU-29C, & MU-29D

CM Testing Requirements: (LATER)

Condition Monitoring Justification: **MU-29C**

Valves in Grouping: MU-29A, MU-29B, MU-29C, & MU-29D

CM Testing Requirements: (LATER)

Condition Monitoring Justification: **MU-29D**

Valves in Grouping: MU-29A, MU-29B, MU-29C, & MU-29D

CM Testing Requirements: (LATER)

Condition Monitoring Justification: **MU-34A**

Valves in Grouping: MU-34A, MU-34B, MU-34C, & MU-34D

CM Testing Requirements: Perform open flow testing and monitor for leakage by watching the upstream temperature alarm at a frequency that may be extended to one valve in the group every 2R.

Condition Monitoring Justification: **MU-34B**

Valves in Grouping: MU-34A, MU-34B, MU-34C, & MU-34D

CM Testing Requirements: Perform open flow testing and monitor for leakage by watching the upstream temperature alarm at a frequency that may be extended to one valve in the group every 2R.

Condition Monitoring Justification: **MU-34C**

Valves in Grouping: MU-34A, MU-34B, MU-34C, & MU-34D

CM Testing Requirements: Perform open flow testing and monitor for leakage by watching the upstream temperature alarm at a frequency that may be extended to one valve in the group every 2R.

Condition Monitoring Justification: **MU-34D**

Valves in Grouping: MU-34A, MU-34B, MU-34C, & MU-34D

CM Testing Requirements: Perform open flow testing and monitor for leakage by watching the upstream temperature alarm at a frequency that may be extended to one valve in the group every 2R.

CONDITION MONITORING JUSTIFICATIONS

NOTE: CEP-IST-1, ANO-1 Appendix, Enclosure 1 provides the data collected, and the Advisory Panel review, that supports the following testing requirements.

Condition Monitoring Justification: MU-36A

Valves in Grouping: MU-36A & MU-36B

CM Testing Requirements: Perform open flow testing and closed leak testing at a frequency aligned with Appendix J testing.

Condition Monitoring Justification: MU-36B

Valves in Grouping: MU-36A & MU-36B

CM Testing Requirements: Perform open flow testing and closed leak testing at a frequency aligned with Appendix J testing.

Condition Monitoring Justification: MU-66A

Valves in Grouping: MU-66A, MU-66B, MU-66C & MU-66D

CM Testing Requirements: Perform open flow testing and NIT testing at a frequency starting at baseline then it can be extended to one valve in the group every 1R.

Condition Monitoring Justification: MU-66B

Valves in Grouping: MU-66A, MU-66B, MU-66C & MU-66D

CM Testing Requirements: Perform open flow testing and NIT testing at a frequency starting at baseline then it can be extended to one valve in the group every 1R.

Condition Monitoring Justification: MU-66C

Valves in Grouping: MU-66A, MU-66B, MU-66C & MU-66D

CM Testing Requirements: Perform open flow testing and NIT testing at a frequency starting at baseline then it can be extended to one valve in the group every 1R.

Condition Monitoring Justification: MU-66D

Valves in Grouping: MU-66A, MU-66B, MU-66C & MU-66D

CM Testing Requirements: Perform open flow testing and NIT testing at a frequency starting at baseline then it can be extended to one valve in the group every 1R.

Condition Monitoring Justification: N2-32

Valves in Grouping: N2-32

CM Testing Requirements: Perform open flow testing and closed leak testing at a frequency aligned with Appendix J testing.

Condition Monitoring Justification: RC-1009

Valves in Grouping: RC-1009, RC-1010, RC-1011, RC-1012, RC-1013, RC-1014, RC-1015, & RC-1016

CM Testing Requirements: Perform a disassembly and inspection on one valve in the group every 1R.

Condition Monitoring Justification: RC-1010

Valves in Grouping: RC-1009, RC-1010, RC-1011, RC-1012, RC-1013, RC-1014, RC-1015, & RC-1016

CM Testing Requirements: Perform a disassembly and inspection on one valve in the group every 1R.

CONDITION MONITORING JUSTIFICATIONS

NOTE: CEP-IST-1, ANO-1 Appendix, Enclosure 1 provides the data collected, and the Advisory Panel review, that supports the following testing requirements.

Condition Monitoring Justification: RC-1011

Valves in Grouping: RC-1009, RC-1010, RC-1011, RC-1012, RC-1013, RC-1014, RC-1015, & RC-1016

CM Testing Requirements: Perform a disassembly and inspection on one valve in the group every 1R.

Condition Monitoring Justification: RC-1012

Valves in Grouping: RC-1009, RC-1010, RC-1011, RC-1012, RC-1013, RC-1014, RC-1015, & RC-1016

CM Testing Requirements: Perform a disassembly and inspection on one valve in the group every 1R.

Condition Monitoring Justification: RC-1013

Valves in Grouping: RC-1009, RC-1010, RC-1011, RC-1012, RC-1013, RC-1014, RC-1015, & RC-1016

CM Testing Requirements: Perform a disassembly and inspection on one valve in the group every 1R.

Condition Monitoring Justification: RC-1014

Valves in Grouping: RC-1009, RC-1010, RC-1011, RC-1012, RC-1013, RC-1014, RC-1015, & RC-1016

CM Testing Requirements: Perform a disassembly and inspection on one valve in the group every 1R.

Condition Monitoring Justification: RC-1015

Valves in Grouping: RC-1009, RC-1010, RC-1011, RC-1012, RC-1013, RC-1014, RC-1015, & RC-1016

CM Testing Requirements: Perform a disassembly and inspection on one valve in the group every 1R.

Condition Monitoring Justification: RC-1016

Valves in Grouping: RC-1009, RC-1010, RC-1011, RC-1012, RC-1013, RC-1014, RC-1015, & RC-1016

CM Testing Requirements: Perform a disassembly and inspection on one valve in the group every 1R.

Condition Monitoring Justification: SW-11

Valves in Grouping: SW-11 & SW-13

CM Testing Requirements: Perform a forward flow verification and NIT starting at baseline then at a frequency that may be extended one valve in the group every 1R.

Condition Monitoring Justification: SW-13

Valves in Grouping: SW-11 & SW-13

CM Testing Requirements: Perform a forward flow verification and NIT starting at baseline then at a frequency that may be extended one valve in the group every 1R.

Condition Monitoring Justification: SW-1A

Valves in Grouping: SW-1A

CM Testing Requirements: Perform open flow verification and close leak testing at a frequency aligned with Category A leak test.

CONDITION MONITORING JUSTIFICATIONS

NOTE: CEP-IST-1, ANO-1 Appendix, Enclosure 1 provides the data collected, and the Advisory Panel review, that supports the following testing requirements.

Condition Monitoring Justification: **SW-1B**

Valves in Grouping: SW-1B

CM Testing Requirements: Perform open flow verification and close leak testing at a frequency aligned with Category A leak test.

Condition Monitoring Justification: **SW-1C**

Valves in Grouping: SW-1C

CM Testing Requirements: Perform open flow verification and close leak testing at a frequency aligned with Category A leak test.

Condition Monitoring Justification: **SW-604A**

Valves in Grouping: SW-604A & SW-604B

CM Testing Requirements: Perform open flow testing and closed NIT starting with baseline then at a frequency that may be extended to one valve in the group every 1R.

Condition Monitoring Justification: **SW-604B**

Valves in Grouping: SW-604A & SW-604B

CM Testing Requirements: Perform open flow testing and closed NIT starting with baseline then at a frequency that may be extended to one valve in the group every 1R.

Condition Monitoring Justification: **SW-9**

Valves in Grouping: SW-9

CM Testing Requirements: Perform open flow verification and close leak testing at a frequency aligned with Category A leak test.

IST PLAN
ANO-1 APPENDIX
VALVE SUMMARY LISTING

PROGRAM SECTION NO. CEP-IST-2
REVISION NO. 307
PAGE 1 OF 25

VALVE NO.	VALVE SIZE (in.) TYPE ACT.	P & ID NO. , COORD.	IST PASS	IST CODE CLASS	CODE CAT.	SAFETY POS.	REQUIRED TESTS AND FREQUENCY										RELIEF REQUEST (VRR)	OTHER (CSJ/ROJ/ VPS/CMJ)	NOTES:
							FS	PS	LT	LJ	ST	FT	PI	RV	EX	CM			
AC-60	6	M-222 Sh 1 F-4	A	2	C, A	O										V		CMJ	
	CK SA					C				J						V			
BA-140	2	M-218 Sh 5 E-3	P	2	A														
	G H					C				J									
BA-141	2	M-218 Sh 5 D-3	P	2	A														
	G H					C				J									
BS-4A	8	M-236 F-6	A	2	C	O										V		CMJ	
	CK SA															V			
BS-4B	8	M-236 F-6	A	2	C	O										V		CMJ	
	CK SA															V			
BW-2	6	M-231 Sh 1 B-7	A	2	C	O										V		CMJ	
	SC H/SA					C										V			
BW-3	6	M-231 Sh 1 G-7	A	2	C	O										V		CMJ	
	SC H/SA					C										V			
BW-4A	14	M-232 F-7	A	2	C	O										V		CMJ	
	CK SA					C										V			
BW-4B	14	M-232 F-7	A	2	C	O										V		CMJ	
	CK SA					C										V			
BW-6A	10	M-236 F-2	A	2	C	O										V		CMJ	
	CK SA															V			
BW-6B	10	M-236 F-2	A	2	C	O										V		CMJ	
	CK SA															V			
CA-61	4	M-232 F-7	A	2	C	O										V		CMJ	
	SC H/SA					C										V			
CA-62	4	M-232 E-7	A	2	C	O										V		CMJ	
	SC H/SA					C										V			
CF-1A	14	M-230 Sh 1 H-3	A	1	C, A	O										V		CMJ	
	CK SA					C			R							V			
CF-1B	14	M-230 Sh 1 G-3	A	1	C, A	O										V		CMJ	
	CK SA					C			R							V			
CF-2	1	M-236 B-4	P	2	A														
	G H					C				J			R						

IST PLAN
ANO-1 APPENDIX
VALVE SUMMARY LISTING

PROGRAM SECTION NO. CEP-IST-2
REVISION NO. 307
PAGE 2 OF 25

VALVE NO.	VALVE SIZE (in.) TYPE ACT.		P & ID NO. , COORD.	IST PASS	IST CODE CLASS	CODE CAT.	SAFETY POS.	REQUIRED TESTS AND FREQUENCY										RELIEF REQUEST (VRR)	OTHER (CSJ/ROJ/ VPS/CMJ)	NOTES:
								FS	PS	LT	LJ	ST	FT	PI	RV	EX	CM			
CS-1196	0.5		M-204 Sh 3 F4	A	3	C	O										V		CMJ	
	CK	SA															V			
CS-1198	0.5		M-204 Sh 3 F4	A	3	C	O										V		CMJ	
	CK	SA															V			
CS-26	3		M-230 Sh 2 C-5	A	2	C, A	O										V		CMJ	
	CK	SA					C				J						V			
CS-293	10		M-204 Sh 5 D-8	A	3	C	O										V		CMJ	
	CK	SA															V			
CS-294	10		M-204 Sh 5 D-8	A	3	C	O										V		CMJ	
	CK	SA															V			
CV-1000	4		M-230 Sh 1 G-5	A	1	A	O	Q				Q		R						
	G	M					C	Q		R		Q		R						
CV-1050	12		M-230 Sh 1 F-5	A	1	A	O	C				C		R					CSJ-011	
	G	M					C	C		C		C		R						
CV-1052	3		M-230 Sh 2 A-6	P	2	A														Stroke timed per T.S. commitment
	G	AO					C	Q			J	Q	Q	R						
CV-1053	3		M-230 Sh 2 A-6	P	2	A														Stroke timed per T.S. commitment
	G	M					C	Q			J	Q		R						
CV-1054	1		M-230 Sh 2 B-6	P	2	A														Stroke timed per T.S. commitment
	G	M					C	Q			J	Q		R						
CV-1065	3		M-230 Sh 2 C-4	P	2	A														Stroke timed per T.S. commitment
	G	AO					C	Q			J	Q	Q	R						
CV-1214	2.5		M-231 Sh 2 H-7	A	1	A														
	G	M					C	Q			J	Q		R						
CV-1216	2.5		M-231 Sh 2 E-7	A	1	A														
	G	M					C	Q			J	Q		R						
CV-1219	2.5		M-231 Sh 3 D-7	A	2	B	O	Q				Q		18M						
	GL	M																		
CV-1220	2.5		M-231 Sh 3 C-7	A	2	B	O	Q				Q		18M						
	GL	M																		
CV-1221	2.5		M-231 Sh 2 G-6	A	2	A														
	G	M					C	Q			J	Q		R						

**IST PLAN
ANO-1 APPENDIX
VALVE SUMMARY LISTING**

PROGRAM SECTION NO. CEP-IST-2
 REVISION NO. 307
 PAGE 3 OF 25

[illegible]

IST PLAN
ANO-1 APPENDIX
VALVE SUMMARY LISTING

PROGRAM SECTION NO. CEP-IST-2
REVISION NO. 307
PAGE 4 OF 25

VALVE NO.	VALVE SIZE (in.) TYPE ACT.		P & ID NO. , COORD.	IST PASS	IST CODE CLASS	CODE CAT.	SAFETY POS.	REQUIRED TESTS AND FREQUENCY									RELIEF REQUEST (VRR)	OTHER (CSJ/ROJ/ VPS/CMJ)	NOTES:
								FS	PS	LT	LJ	ST	FT	PI	RV	EX	CM		
CV-1300	2		M-231 Sh 1	A	2	B												CSJ-010	
	G	M	G-4				C	C				C		R					
CV-1301	2		M-231 Sh 1	A	2	B												CSJ-010	
	G	M	F-4				C	C				C		R					
CV-1400	10		M-232	A	2	B	O	Q				Q		18M					
	G	M	F-1																
CV-1401	10		M-232	A	2	B	O	Q				Q		18M					
	G	M	G-1																
CV-1404	12		M-232	A	2	B	O	Q				Q		R					
	G	M	C-7				C	Q				Q		R					
CV-1405	14		M-232	A	2	B	O	Q				Q		R					
	G	M	B-7				C	Q				Q		R					
CV-1406	14		M-232	A	2	B	O	Q				Q		R					
	G	M	A-7				C	Q				Q		R					
CV-1407	14		M-232	A	2	B	O	Q				Q		18M					
	G	M	F-7				C	Q				Q		18M					
CV-1408	14		M-232	A	2	B	O	Q				Q		18M					
	G	M	F-7				C	Q				Q		18M					
CV-1410	12		M-232	A	2	A	O	C				C		R				CSJ-011	
	G	M	B-8				C	C		C		C		R					
CV-1414	14		M-232	P	2	B	O							R					
	G	M	B-8																
CV-1415	14		M-232	P	2	B	O							R					
	G	M	A-8																
CV-1416	1.5		M-232	P	2	A													
	GL	M	D-1				C				J			R					
CV-1428	10		M-232	A	2	B	O	Q				Q		18M					
	GL	M	G-3																
CV-1429	10		M-232	A	2	B	O	Q				Q		18M					
	GL	M	E-3																
CV-1432	6		M-232	A	2	B	O	Q				Q							
	BF	AO	B-3				C	Q				Q	Q						

IST PLAN
ANO-1 APPENDIX
VALVE SUMMARY LISTING

PROGRAM SECTION NO. CEP-IST-2
REVISION NO. 307
PAGE 5 OF 25

[illegible]

IST PLAN
ANO-1 APPENDIX
VALVE SUMMARY LISTING

PROGRAM SECTION NO. CEP-IST-2
REVISION NO. 307
PAGE 6 OF 25

VALVE NO.	VALVE SIZE (in.) TYPE ACT.		P & ID NO. , COORD.	IST PASS	IST CODE CLASS	CODE CAT.	SAFETY POS.	REQUIRED TESTS AND FREQUENCY									RELIEF REQUEST (VRR)	OTHER (CSJ/ROJ/ VPS/CMJ)	NOTES:
								FS	PS	LT	LJ	ST	FT	PI	RV	EX			
CV-2220	8		M-234 Sh 1	A	2	A												CSJ-013	
	G	M	H-4				C	C			J	C		R					
CV-2221	8		M-234 Sh 1	A	2	A												CSJ-013	
	G	M	H-4				C	C			J	C		R					
CV-2233	8		M-234 Sh 2	A	2	A												CSJ-014	
	G	AO	C-4				C	C			J	C	C	R					
CV-2234	8		M-234 Sh 1	A	2	A													
	G	AO	E-6				C	C			J	C	C	R					
CV-2235	3		M-234 Sh 1	A	2	A												CSJ-012	
	G	M	E-4				C	C			J	C		R					
CV-2400	8		M-236	A	2	B	O	Q				Q		18M					
	GL	M	F-5																
CV-2401	8		M-236	A	2	B	O	Q				Q		18M					
	GL	M	F-5																
CV-2415	14		M-236	P	2	B	O							R					
	G	M	B-5																
CV-2416	1		M-236	P	2	A													
	GL	M	C-5				C				J			R					
CV-2417	1		M-236	P	2	B													
	GL	M	D-5				C							R					
CV-2418	1		M-236	P	2	A													
	GL	M	C-4				C				J			R					
CV-2419	14		M-236	P	2	B	O							R					
	G	M	B-3																
CV-2420	1		M-236	P	2	B													
	GL	M	D-3				C							R					
CV-2613	4		M-204 Sh 6	A	3	B	O	Q				Q		18M					
	G	M	F-5																
CV-2615	2		M-204 Sh 6	A	3	B	O	Q				Q		18M					
	G	M	F6																
CV-2617	4		M-204 Sh 6	A	2	B	O	Q				Q		18M					
	G	M	G-7				C	Q				Q		18M					

IST PLAN
ANO-1 APPENDIX
VALVE SUMMARY LISTING

PROGRAM SECTION NO. CEP-IST-2
REVISION NO. 307
PAGE 7 OF 25

VALVE NO.	VALVE SIZE (in.) TYPE ACT.		P & ID NO. , COORD.	IST PASS	IST CODE CLASS	CODE CAT.	SAFETY POS.	REQUIRED TESTS AND FREQUENCY								RELIEF REQUEST (VRR)	OTHER (CSJ/ROJ/ VPS/CMJ)	NOTES:
								FS	PS	LT	LJ	ST	FT	PI	RV	EX	CM	
CV-2619	10		M-206 Sh 1	P	2	B												
	G	M	H-2				C							R				
CV-2620	4		M-204 Sh 3	A	2	B	O	Q				Q		18M				
	G	M	C-2				C	Q				Q		18M				
CV-2622	10		M-206 Sh 1	A	N	B												CSJ-016 Augmented Ref. Improved Tech. Specs.
	GL	AO	B-6				C	C				C		R				
CV-2623	6		M-206 Sh 1	A	N	B												CSJ-017 Augmented Ref. Improved Tech. Specs.
	GL	AO	B-6				C	C				C		R				
CV-2625	18		M206 Sh 1	A	N	B												CSJ-015 Augmented Ref. Improved Tech. Specs.
	G	M	C-6				C	C				C		R				
CV-2626	4		M-204 Sh 3	A	2	B	O	Q				Q		18M				
	G	M	D-2				C	Q				Q		18M				
CV-2627	4		M-204 Sh 3	A	2	B	O	Q				Q		18M				
	G	M	F-2				C	Q				Q		18M				
CV-2630	18		M-206 Sh 1	A	2	B												CSJ-002
	G	M	D-2				C	C				C		R				
CV-2645	4		M-204 Sh 3	A	3	B	O	Q				Q	Q	Q				
	GL	S	F-3				C	Q				Q		Q				
CV-2646	4		M-204 Sh 3	A	3	B	O	Q				Q	Q	Q				
	GL	S	G-3				C	Q				Q		Q				
CV-2647	4		M-204 Sh 3	A	3	B	O	Q				Q	Q	Q				
	GL	S	C-3				C	Q				Q		Q				
CV-2648	4		M-204 Sh 3	A	3	B	O	Q				Q	Q	Q				
	GL	S	D-3				C	Q				Q		Q				
CV-2667	4		M-204 Sh 6	A	2	B	O	Q				Q		18M				
	G	M	F-7				C	Q				Q		18M				
CV-2670	4		M-204 Sh 3	A	2	B	O	Q				Q		18M				
	G	M	G-2				C	Q				Q		18M				
CV-2672	10		M206 Sh 1	A	N	B												CSJ-016 Augmented Ref. Improved Tech. Specs.
	GL	AO	B-2				C	C				C		R				
CV-2673	6		M-206 Sh 1	A	N	B												CSJ-017 Augmented Ref. Improved Tech. Specs.
	GL	AO	B-3				C	C				C		R				

IST PLAN
ANO-1 APPENDIX
VALVE SUMMARY LISTING

PROGRAM SECTION NO. CEP-IST-2
REVISION NO. 307
PAGE 8 OF 25

VALVE NO.	VALVE SIZE (in.) TYPE ACT.		P & ID NO. , COORD.	IST PASS	IST CODE CLASS	CODE CAT.	SAFETY POS.	REQUIRED TESTS AND FREQUENCY									RELIEF REQUEST (VRR)	OTHER (CSJ/ROJ/ VPS/CMJ)	NOTES:
								FS	PS	LT	LJ	ST	FT	PI	RV	EX	CM		
CV-2675	18		M-206 Sh 1	A	N	B												CSJ-015	Augmented Ref. Improved Tech. Specs.
	G	M	C-3				C	C				C		R					
CV-2676	10		M-206 Sh 1	P	2	B													
	G	M	H-7				C							R					
CV-2680	18		M-206 Sh 1	A	2	B												CSJ-002	
	G	M	D-7				C	C				C		R					
CV-2691	36		M-206 Sh 2	A	2	B												CSJ-001	
	GL	AO	E-7				C	C				C	C	R					
CV-2692	36		M-206 Sh 2	A	2	B												CSJ-001	
	GL	AO	E-5				C	C				C	C	R					
CV-2800	8		M-204 Sh 3	A	3	B	O	Q				Q		18M					
	G	M	F-7				C	Q				Q		18M					
CV-2802	8		M-204 Sh 3	A	3	B	O	Q				Q		18M					
	G	M	C-7				C	Q				Q		18M					
CV-2803	6		M-204 Sh 3	A	3	B	O	Q				Q		18M					
	G	M	G-7																
CV-2806	6		M-204 Sh 3	A	3	B	O	Q				Q		18M					
	G	M	B-7																
CV-2869	4		M-204 Sh 3	P	3	B													
	G	M	E-3				C							18M					
CV-2870	4		M-204 Sh 3	P	3	B													
	G	M	E-3				C							18M					
CV-3640	18		M-209 Sh 1	A	3	B	O	Q				Q		18M					
	BF	M	C-3				C	Q				Q		18M					
CV-3642	18		M-209 Sh 1	A	3	B	O	Q				Q		18M					
	BF	M	C-3				C	Q				Q		18M					
CV-3643	18		M-209 Sh 1	A	3	A												CSJ-003	
	BF	M	D-3				C	C		R		C		R					
CV-3644	18		M-209 Sh 1	A	3	B	O	Q				Q		18M					
	BF	M	E-3				C	Q				Q		18M					
CV-3646	18		M-209 Sh 1	A	3	B	O	Q				Q		18M					
	BF	M	E-3				C	Q				Q		18M					

PROGRAM SECTION NO. CEP-IST-2
REVISION NO. 307
PAGE 9 OF 25

VALVE NO.	VALVE SIZE (in.) TYPE ACT.		P & ID NO. , COORD.	IST PASS	IST CODE CLASS	CODE CAT.	SAFETY POS.	REQUIRED TESTS AND FREQUENCY									RELIEF REQUEST (VRR)	OTHER (CSJ/ROJ/VPS/CMJ)	NOTES:
	FS	PS						LT	LJ	ST	FT	PI	RV	EX	CM				
CV-3804	1.5		M-210 Sh 1	A	3	B	O	Q				Q	Q	18M					
	GL	AO	F-8																
CV-3805	1.5		M-210 Sh 1	A	3	B	O	Q				Q	Q	18M					
	GL	AO	E-8																
CV-3806	6		M-210 Sh 1	A	3	B	O	Q				Q		R					
	G	M	F-5																
CV-3807	6		M-210 Sh 1	A	3	B	O	Q				Q		R					
	G	M	E-5																
CV-3811	14		M-210 Sh 1	A	3	A													
	BF	M	H-4				C	Q		R		Q		18M					
CV-3812	10		M-210 Sh 1	A	2	B	O	Q				Q		18M					
	G	M	C-4																
CV-3813	10		M-210 Sh 1	A	2	B	O	Q				Q		18M					
	G	M	B-4																
CV-3814	10		M-210 Sh 1	A	2	B	O	Q				Q		18M					
	BF	M	D-2																
CV-3815	10		M-210 Sh 1	A	2	B	O	Q				Q		18M					
	BF	M	C-2																
CV-3820	14		M-210 Sh 1	A	3	A													
	BF	M	H-3				C	Q		R		Q		18M					
CV-3821	12		M-210 Sh 1	A	3	B	O	Q				Q		18M					
	BF	M	H-8																
CV-3822	12		M-210 Sh 1	A	3	B	O	Q				Q		18M					
	BF	M	H-8																
CV-3823	18		M-210 Sh 1	A	3	B	O	Q				Q		R					
	BF	M	A-5																
CV-3824	18		M-210 Sh 1	A	3	A													
	BF	M	E-2				C	Q		R		Q		R					
CV-3840	1.5		M-210 Sh 1	A	3	B	O	Q				Q	Q	18M					
	GL	AO	C-8																
CV-3841	1.5		M-210 Sh 1	A	3	B	O	Q				Q	Q	18M					
	GL	AO	D-8																

IST PLAN
ANO-1 APPENDIX
VALVE SUMMARY LISTING

PROGRAM SECTION NO. CEP-IST-2
REVISION NO. 307
PAGE 11 OF 25

VALVE NO.	VALVE SIZE (in.) TYPE ACT.		P & ID NO. , COORD.	IST PASS	IST CODE CLASS	CODE CAT.	SAFETY POS.	REQUIRED TESTS AND FREQUENCY										RELIEF REQUEST (VRR)	OTHER (CSJ/ROJ/ VPS/CMJ)	NOTES:
								FS	PS	LT	LJ	ST	FT	PI	RV	EX	CM			
CV-7401	54		M-261 Sh 1	P	2	A														
	BF	AO	G-8				C				J			R						
CV-7402	54		M-261 Sh 1	P	2	A														
	BF	AO	F-8				C				J			R						
CV-7403	54		M-261 Sh 1	P	2	A														
	BF	AO	G-7				C				J			R						
CV-7404	54		M-261 Sh 1	P	2	A														
	BF	AO	F-7				C				J			R						
CV-7444	2		M-261 Sh 3	A	2	A														
	GL	M	E-8				C	Q			J	Q		R						
CV-7445	2		M-261 Sh 3	P	2	A														
	GL	M	D-6				C				J									
CV-7446	2		M-261 Sh 3	A	2	A														
	GL	M	D-8				C	Q			J	Q		R						
CV-7448	2		M-261 Sh 3	A	2	A														
	GL	M	F-8				C	Q			J	Q		R						
CV-7449	2		M-261 Sh 3	P	2	A														
	GL	M	G-7				C				J									
CV-7450	2		M-261 Sh 3	A	2	A														
	GL	M	G-8				C	Q			J	Q		R						
CV-7453	1		M-261 Sh 3	A	2	A														
	GL	M	A-8				C	Q			J	Q		R						
CZ-46	2.5		M-231 Sh 1	A	2	C											V		CMJ	
	CK	SA	H-6				C										V			
DH-12	1.5		M-230 Sh 1	A	1	C											V		CMJ	
	CK	SA	G-5														V			
DH-13A	12		M-230 Sh 1	A	1	C, A											V		CMJ	
	CK	SA	H-3				C			C							V			
DH-13B	12		M-230 Sh 1	A	1	C, A											V		CMJ	
	CK	SA	G-3				C			C							V			
DH-14A	14		M-230 Sh 1	A	1	C, A											V		CMJ	
	CK	SA	F-5				C			C							V			

IST PLAN
ANO-1 APPENDIX
VALVE SUMMARY LISTING

PROGRAM SECTION NO. CEP-IST-2
REVISION NO. 307
PAGE 12 OF 25

VALVE NO.	VALVE SIZE (in.) TYPE ACT.		P & ID NO. , COORD.	IST PASS	IST CODE CLASS	CODE CAT.	SAFETY POS.	REQUIRED TESTS AND FREQUENCY									RELIEF REQUEST (VRR)	OTHER (CSJ/ROJ/ VPS/CMJ)	NOTES:
								FS	PS	LT	LJ	ST	FT	PI	RV	EX			
DH-14B	14		M-230 Sh 1	A	1	C, A	O										V	CMJ	
	CK	SA	F-4				C			C							V		
DH-16	1.5		M-230 Sh 1	A	1	C	O										V	CMJ	
	CK	SA	G-5														V		
DH-17	8		M-230 Sh 1	A	1	C, A	O										V	CMJ	
	CK	SA	H-3				C			C							V		
DH-18	8		M-230 Sh 1	A	1	C, A	O										V	CMJ	
	CK	SA	G-3				C			C							V		
DH-2A	10		M-232	A	2	C	O										V	CMJ	
	CK	SA	E-4														V		
DH-2B	10		M-232	A	2	C	O										V	CMJ	
	CK	SA	C-4														V		
DH-96	1.5		M-230 Sh 1	A	2	C, A	O										V	CMJ	
	CK	SA	G-4				C				J						V		
DWD-4411	0.75		M-213 Sh 2	P	2	A													
	GL	H	B-3				C				J								
FO-10A	3		M-217 Sh 1	A	N	B	O	2Y											
	G	H	C-6																
FO-10B	3		M-217 Sh 1	A	N	B	O	2Y											
	G	H	C-4																
FO-54A1	1.5		M-217 Sh 4	A	N	C											V	CMJ	
	CK	SA	H-7				C										V		
FO-54A2	1.5		M-217 Sh 4	A	N	C											V	CMJ	
	CK	SA	A-7				C										V		
FO-54B1	1.5		M-217 Sh 4	A	N	C											V	CMJ	
	CK	SA	H-3				C										V		
FO-54B2	1.5		M-217 Sh 4	A	N	C											V	CMJ	
	CK	SA	A-3				C										V		
FO-55A1	1.5		M-217 Sh 4	A	N	C											V	CMJ	
	CK	SA	H-7				C										V		
FO-55A2	1.5		M-217 Sh 4	A	N	C											V	CMJ	
	CK	SA	A-7				C										V		

IST PLAN
ANO-1 APPENDIX
VALVE SUMMARY LISTING

PROGRAM SECTION NO. CEP-IST-2
REVISION NO. 307
PAGE 13 OF 25

VALVE NO.	VALVE SIZE (in.) TYPE ACT.	P & ID NO. , COORD.	IST PASS	IST CODE CLASS	CODE CAT.	SAFETY POS.	REQUIRED TESTS AND FREQUENCY										RELIEF REQUEST (VRR)	OTHER (CSJ/ROJ/ VPS/CMJ)	NOTES:
							FS	PS	LT	LJ	ST	FT	PI	RV	EX	CM			
FO-55B1	1.5	M-217 Sh 4 H-3	A	N	C											V		CMJ	
	CK SA					C										V			
FO-55B2	1.5	M-217 Sh 4 A-3	A	N	C											V		CMJ	
	CK SA					C										V			
FO-8A	2	M-217 Sh 1 C-7	A	N	C	O										V		CMJ	
	CK SA															V			
FO-8B	2	M-217 Sh 1 C-3	A	N	C	O										V		CMJ	
	CK SA															V			
FW-10A	6	M-204 Sh 3 B-4	A	3	C	O										V		CMJ	
	CK SA															V			
FW-10B	6	M-204 Sh 3 G-4	A	3	C	O										V		CMJ	
	CK SA															V			
FW-13A	4	M-204 Sh 3 G-1	A	2	C	O										V		CMJ	
	CK SA					C										V			
FW-13B	4	M-204 Sh 3 C-1	A	2	C	O										V		CMJ	
	CK SA					C										V			
FW-55A	4	M-204 Sh 3 C-3	A	3	C	O										V		CMJ	
	CK SA					C										V			
FW-55B	4	M-204 Sh 3 F-2	A	3	C	O										V		CMJ	
	CK SA					C										V			
FW-56A	4	M-204 Sh 3 G-3	A	3	C	O										V		CMJ	
	CK SA					C										V			
FW-56B	4	M-204 Sh 3 D-3	A	3	C	O										V		CMJ	
	CK SA					C										V			
FW-61	2	M-204 Sh 3 C-4	A	3	C	O										V		CMJ	
	CK SA					C										V			
FW-62	2	M-204 Sh 3 G-4	A	3	C	O										V		CMJ	
	CK SA					C										V			
HV-139	4	M-206 Sh 1 D-1	P	2	A														
	G H					C				J									
HV-140	4	M-206 Sh 1 D-1	P	2	A														
	G H					C				J									

IST PLAN
ANO-1 APPENDIX
VALVE SUMMARY LISTING

PROGRAM SECTION NO. CEP-IST-2
REVISION NO. 307
PAGE 14 OF 25

VALVE NO.	VALVE SIZE (in.)		P & ID NO. , COORD.	IST PASS	IST CODE CLASS	CODE CAT.	SAFETY POS.	REQUIRED TESTS AND FREQUENCY									RELIEF REQUEST (VRR)	OTHER (CSJ/ROJ/ VPS/CMJ)	NOTES:
	TYPE	ACT.						FS	PS	LT	LJ	ST	FT	PI	RV	EX	CM		
HV-150	4		M-206 Sh 1 D-8	P	2	A													
	G	H					C				J								
HV-151	4		M-206 Sh 1 D-8	P	2	A													
	G	H					C				J								
IA-15	1.5		M-218 Sh 4 G-4	P	2	A													
	G	H					C				J								
IA-37	1		M-218 Sh 4 E-4	P	2	A													
	G	H					C				J								
IA-767	0.38		M-234 Sh 2 G-5	A	3	C											V	CMJ	
	CK	SA					C										V		
IA-771	0.38		M-234 Sh 2 E-4	A	3	C											V	CMJ	
	CK	SA					C										V		
IA-775	0.38		M-234 Sh 1 E-5	A	3	C											V	CMJ	
	CK	SA					C										V		
IA-823	1		M-218 Sh 4 E-7	P	2	A													
	G	H					C				J								
IA-824	1		M-218 Sh 4 E-8	P	2	A											V	CMJ	
	CK	SA					C				J						V		
ICW-114	8		M-234 Sh 2 C-4	A	2	C, A	O										V	CMJ	
	CK	SA					C				J						V		
ICW-26	8		M-234 Sh 1 F-6	A	2	C, A	O										V	CMJ	
	CK	SA					C				J						V		
ICW-30	3		M-234 Sh 1 E-5	A	2	C, A	O										V	CMJ	
	CK	SA					C				J						V		
MS-271	4		M-204 Sh 6 G-7	A	3	C	O										V	CMJ	
	CK	SA					C										V		
MS-272	4		M-204 Sh 6 F-7	A	3	C	O										V	CMJ	
	CK	SA					C										V		
MU-1211	3		M-231 Sh 3 D-6	A	2	C	O										V	CMJ	
	CK	SA															V		
MU-1212	3		M-231 Sh 3 C-5	A	2	C	O										V	CMJ	
	CK	SA															V		

IST PLAN
ANO-1 APPENDIX
VALVE SUMMARY LISTING

PROGRAM SECTION NO. CEP-IST-2
REVISION NO. 307
PAGE 15 OF 25

VALVE NO.	VALVE SIZE (in.) TYPE ACT.		P & ID NO. , COORD.	IST PASS	IST CODE CLASS	CODE CAT.	SAFETY POS.	REQUIRED TESTS AND FREQUENCY								RELIEF REQUEST (VRR)	OTHER (CSJ/ROJ/ VPS/CMJ)	NOTES:
								FS	PS	LT	LJ	ST	FT	PI	RV			
MU-1213	3		M-231 Sh 3	A	2	C	O									V	CMJ	
	CK	SA	C-6													V		
MU-1214	3		M-231 Sh 3	A	2	C	O									V	CMJ	
	CK	SA	G-3													V		
MU-1215	3		M-231 Sh 3	A	2	C	O									V	CMJ	
	CK	SA	F-3													V		
MU-1306	2.5		M-231 Sh 3	A	2	C	O									V	CMJ	
	CK	SA	D-2													V		
MU-1307	2.5		M-231 Sh 3	A	2	C	O									V	CMJ	
	CK	SA	C-2													V		
MU-1308	2.5		M-231 Sh 3	A	2	C	O									V	CMJ	
	CK	SA	G-6													V		
MU-1309	2.5		M-231 Sh 3	A	2	C	O									V	CMJ	
	CK	SA	F-6													V		
MU-19A	4		M-231 Sh 1	A	2	C	O									V	CMJ	
	CK	SA	G-4				C									V		
MU-19B	4		M-231 Sh 1	A	2	C	O									V	CMJ	
	CK	SA	E-4				C									V		
MU-19C	4		M-231 Sh 1	A	2	C	O									V	CMJ	
	CK	SA	C-4				C									V		
MU-22A	2		M-231 Sh 1	A	2	C										V	CMJ	
	SC	H/SA	F-4				C									V		
MU-22B	2		M-231 Sh 1	A	2	C										V	CMJ	
	SC	H/SA	D-4				C									V		
MU-22C	2		M-231 Sh 1	A	2	C										V	CMJ	
	SC	H/SA	B-4				C									V		
MU-29A	1.5		M-231 Sh 1	A	2	C	O									V	CMJ	
	SC	SA	G-1													V		
MU-29B	1.5		M-231 Sh 1	A	2	C	O									V	CMJ	
	SC	SA	F-1													V		
MU-29C	1.5		M-231 Sh 1	A	2	C	O									V	CMJ	
	SC	SA	E-1													V		

IST PLAN
ANO-1 APPENDIX
VALVE SUMMARY LISTING

PROGRAM SECTION NO. CEP-IST-2
REVISION NO. 307
PAGE 16 OF 25

VALVE NO.	VALVE SIZE (in.) TYPE ACT.		P & ID NO. , COORD.	IST PASS	IST CODE CLASS	CODE CAT.	SAFETY POS.	REQUIRED TESTS AND FREQUENCY										RELIEF REQUEST (VRR)	OTHER (CSJ/ROJ/ VPS/CMJ)	NOTES:
								FS	PS	LT	LJ	ST	FT	PI	RV	EX	CM			
MU-29D	1.5		M-231 Sh 1	A	2	C	O										V		CMJ	
	SC	SA	C-1														V			
MU-34A	2.5		M-230 Sh 1	A	1	C	O										V		CMJ	
	CK	SA	A-4														V			
MU-34B	2.5		M-230 Sh 1	A	1	C	O										V		CMJ	
	CK	SA	A-4														V			
MU-34C	2.5		M-230 Sh 1	A	1	C	O										V		CMJ	
	CK	SA	A-5														V			
MU-34D	2.5		M-230 Sh 1	A	1	C	O										V		CMJ	
	CK	SA	A-5														V			
MU-35A	1		M-236	P	2	A														
	GL	H	D-7				C				J									
MU-35B	1		M-236	P	2	A														
	GL	H	D-2				C				J									
MU-36A	1		M-236	A	2	C, A	O										V		CMJ	
	CK	SA	D-6				C				J						V			
MU-36B	1		M-236	A	2	C, A	O										V		CMJ	
	CK	SA	D-2				C				J						V			
MU-66A	2.5		M-230 Sh 1	A	1	C	O										V		CMJ	
	CK	SA	A-4														V			
MU-66B	2.5		M-230 Sh 1	A	1	C	O										V		CMJ	
	CK	SA	A-4														V			
MU-66C	2.5		M-230 Sh 1	A	1	C	O										V		CMJ	
	CK	SA	A-5														V			
MU-66D	2.5		M-230 Sh 1	A	1	C	O										V		CMJ	
	CK	SA	A-5														V			
N2-3	1		M-236	P	2	A														
	GL	H	C-7				C				J									
N2-32	1		M-233	P	2	A											V		CMJ	
	CK	SA	D-4				C				J						V			
N2-47	1		M-233	P	2	A														
	G	H	D-4				C				J									

IST PLAN
ANO-1 APPENDIX
VALVE SUMMARY LISTING

PROGRAM SECTION NO. CEP-IST-2

REVISION NO. 307

PAGE 17 OF 25

VALVE NO.	VALVE SIZE (in.) TYPE ACT.		P & ID NO. , COORD.	IST PASS	IST CODE CLASS	CODE CAT.	SAFETY POS.	REQUIRED TESTS AND FREQUENCY									RELIEF REQUEST (VRR)	OTHER (CSJ/ROJ/ VPS/CMJ)	NOTES:
	FS	PS						LT	LJ	ST	FT	PI	RV	EX	CM				
N2-5	1		M-236	P	2	A													
	GL	H	C-2				C				J								
N2-61	1		M-230 Sh 1	P	2	A													
	G	H	G-7				C				J								
PH-17	3		M-220 Sh 3	P	2	A													
	G	H	D-7				C				J								
PH-18	3		M-220 Sh 3	P	2	A													
	G	H	D-7				C				J								
PH-19	3		M-220 Sh 3	P	2	A													
	G	H	D-7				C				J								
PH-20	3		M-220 Sh 3	P	2	A													
	G	H	D-6				C				J								
PSV-1000	4		M-230 Sh 1	A	1	B	O	C				C							
	GL	S	G-3				C	C				C	C					CSJ-008	
PSV-1001	6		M-230 Sh 1	A	1	C	O								R				
	RV	SA	G-4																
PSV-1002	6		M-230 Sh 1	A	1	C	O								R				
	RV	SA	G-5																
PSV-1003	0.75		M-230 Sh 2	A	2	C	O								*				* Per 1306.038
	RV	SA	C-4																
PSV-1004	0.75		M-230 Sh 2	A	2	C, A	O								*				* Per 1306.038
	RV	SA	A-6				C				J								
PSV-1200	0.75		M-231 Sh 2	A	2	C, A	O								*				* Per 1306.038
	RV	SA	G-6				C				J								
PSV-1201	0.75		M-231 Sh 2	A	2	C, A	O								*				* Per 1306.038
	RV	SA	E-5				C				J								
PSV-1241	0.75		M-231 Sh 1	A	2	C	O								*				* Per 1306.038
	RV	SA	G-6																
PSV-1242	0.75		M-231 Sh 1	A	2	C	O								*				* Per 1306.038
	RV	SA	D-6																
PSV-1243	0.75		M-231 Sh 1	A	2	C	O								*				* Per 1306.038
	RV	SA	B-6																

IST PLAN
ANO-1 APPENDIX
VALVE SUMMARY LISTING

PROGRAM SECTION NO. CEP-IST-2
REVISION NO. 307
PAGE 18 OF 25

[illegible]

IST PLAN
ANO-1 APPENDIX
VALVE SUMMARY LISTING

PROGRAM SECTION NO. CEP-IST-2
REVISION NO. 307
PAGE 19 OF 25

[illegible]

PROGRAM SECTION NO. CEP-IST-2
REVISION NO. 307
PAGE 20 OF 25

VALVE NO.	VALVE SIZE (in.) TYPE ACT.		P & ID NO. , COORD.	IST PASS	IST CODE CLASS	CODE CAT.	SAFETY POS.	REQUIRED TESTS AND FREQUENCY									RELIEF REQUEST (VRR)	OTHER (CSJ/ROJ/ VPS/CMJ)	NOTES:
	FS	PS						LT	LJ	ST	FT	PI	RV	EX	CM				
PSV-2695	6		M-206 Sh 1	A	2	C	O								5Y				
	RV	SA	G-5																
PSV-2696	6		M-206 Sh 1	A	2	C	O								5Y				
	RV	SA	G-5																
PSV-2697	6		M-206 Sh 1	A	2	C	O								5Y				
	RV	SA	G-6																
PSV-2698	6		M-206 Sh 1	A	2	C	O								5Y				
	RV	SA	G-6																
PSV-2699	6		M-206 Sh 1	A	2	C	O								5Y				
	RV	SA	G-6																
PSV-5215	0.5		M-217 Sh 4	A	N	C	O								*			* Per 1306.038	
	RV	SA	G-7																
PSV-5216	0.5		M-217 Sh 4	A	N	C	O								*			* Per 1306.038	
	RV	SA	G-8																
PSV-5231	0.5		M-217 Sh 4	A	N	C	O								*			* Per 1306.038	
	RV	SA	C-7																
PSV-5232	0.5		M-217 Sh 4	A	N	C	O								*			* Per 1306.038	
	RV	SA	C-8																
PSV-5237	0.5		M-217 Sh 4	A	N	C	O								*			* Per 1306.038	
	RV	SA	G-2																
PSV-5238	0.5		M-217 Sh 4	A	N	C	O								*			* Per 1306.038	
	RV	SA	G-2																
PSV-5240	0.5		M-217 Sh 4	A	N	C	O								*			* Per 1306.038	
	RV	SA	C-2																
PSV-5241	0.5		M-217 Sh 4	A	N	C	O								*			* Per 1306.038	
	RV	SA	C-2																
PSV-6203	0.75		M-222 Sh 1	A	2	C	O								*			* Per 1306.038	
	RV	SA	F-4																
PSV-6205	0.75		M-222 Sh 1	A	2	C, A	O								*			* Per 1306.038	
	RV	SA	F-4				C			J									
RBD-23	4		M-214 Sh 3	P	N	A													
	G	H	F-3				C			J									

IST PLAN
ANO-1 APPENDIX
VALVE SUMMARY LISTING

PROGRAM SECTION NO. CEP-IST-2
REVISION NO. 307
PAGE 21 OF 25

VALVE NO.	VALVE SIZE (in.) TYPE ACT.		P & ID NO. , COORD.	IST PASS	IST CODE CLASS	CODE CAT.	SAFETY POS.	REQUIRED TESTS AND FREQUENCY									RELIEF REQUEST (VRR)	OTHER (CSJ/ROJ/ VPS/CMJ)	NOTES:
								FS	PS	LT	LJ	ST	FT	PI	RV	EX	CM		
RBD-24	4		M-214 Sh 3	P	N	A													
	G	H	F-3				C				J								
RC-1009	14		M-230 Sh 1	A	1	C	O										V	CMJ	
	CK	SA	E-4				C										V		
RC-1010	14		M-230 Sh 1	A	1	C	O										V	CMJ	
	CK	SA	E-4				C										V		
RC-1011	14		M-230 Sh 1	A	1	C	O										V	CMJ	
	CK	SA	E-4				C										V		
RC-1012	14		M-230 Sh 1	A	1	C	O										V	CMJ	
	CK	SA	E-4				C										V		
RC-1013	14		M-230 Sh 1	A	1	C	O										V	CMJ	
	CK	SA	E-4				C										V		
RC-1014	14		M-230 Sh 1	A	1	C	O										V	CMJ	
	CK	SA	E-4				C										V		
RC-1015	14		M-230 Sh 1	A	1	C	O										V	CMJ	
	CK	SA	E-4				C										V		
RC-1016	14		M-230 Sh 1	A	1	C	O										V	CMJ	
	CK	SA	E-4				C										V		
SF-42	8		M-235 Sh 1	P	2	A													
	G	H	E-6				C				J								
SG-1	36 X 36		M-209 Sh 1	A	3	A													
	G	M	F-4				C	Q		R		Q		18M					
SG-2	36 X 36		M-209 Sh 1	A	3	A													
	G	M	C-4				C	Q		R		Q		18M					
SG-3	36 X 36		M-209 Sh 1	A	3	B	O	Q				Q		18M					
	G	M	E-2				C	Q				Q		18M					
SG-4	36 X 36		M-209 Sh 1	A	3	B	O	Q				Q		18M					
	G	M	D-2				C	Q				Q		18M					
SG-5	36 X 36		M-209 Sh 1	A	3	B	O	Q				Q		18M					
	G	M	F-1				C	Q				Q		18M					
SG-6	36 X 36		M-209 Sh 1	A	3	B	O	Q				Q		18M					
	G	M	D-1				C	Q				Q		18M					

IST PLAN
ANO-1 APPENDIX
VALVE SUMMARY LISTING

PROGRAM SECTION NO. CEP-IST-2
REVISION NO. 307
PAGE 22 OF 25

VALVE NO.	VALVE SIZE (in.) TYPE ACT.	P & ID NO. , COORD.	IST PASS	IST CODE CLASS	CODE CAT.	SAFETY POS.	REQUIRED TESTS AND FREQUENCY										RELIEF REQUEST (VRR)	OTHER (CSJ/ROJ/ VPS/CMJ)	NOTES:
							FS	PS	LT	LJ	ST	FT	PI	RV	EX	CM			
SG-7	36 X 36	M-209 Sh 1	A	3	B	O	Q				Q		18M						
	G M	C-1				C	Q				Q		18M						
SS-146	0.75	M-237 Sh 1	P	2	A														
	GL H	F-7				C				J			R						
SV-1071	1	M-230 Sh 2	A	1	B	O	C				C		C					CSJ-006	
	GL S	G-5																	
SV-1072	1	M-230 Sh 2	A	1	B	O	C				C		C					CSJ-006	
	GL S	H-5																	
SV-1073	1	M-230 Sh 2	A	1	B	O	C				C		C					CSJ-006	
	GL S	G-5																	
SV-1074	1	M-230 Sh 2	A	1	B	O	C				C		C					CSJ-006	
	GL S	H-5																	
SV-1077	1	M-230 Sh 1	A	1	B	O	C				C		C					CSJ-005	
	GL S	H-7																	
SV-1079	1	M-230 Sh 1	A	1	B	O	C				C		C					CSJ-005	
	GL S	G-7																	
SV-1081	1	M-230 Sh 2	A	1	B	O	C				C		C					CSJ-007	
	GL S	G-7																	
SV-1082	1	M-230 Sh 2	A	1	B	O	C				C		C					CSJ-007	
	GL S	H-7																	
SV-1083	1	M-230 Sh 2	A	1	B	O	C				C		C					CSJ-007	
	GL S	G-7																	
SV-1084	1	M-230 Sh 2	A	1	B	O	C				C		C					CSJ-007	
	GL S	H-7																	
SV-1091	1	M-230 Sh 2	A	1	B	O	C				C		C					CSJ-007	
	GL S	G-3																	
SV-1092	1	M-230 Sh 2	A	1	B	O	C				C		C					CSJ-007	
	GL S	H-3																	
SV-1093	1	M-230 Sh 2	A	1	B	O	C				C		C					CSJ-007	
	GL S	G-3																	
SV-1094	1	M-230 Sh 2	A	1	B	O	C				C		C					CSJ-007	
	GL S	H-3																	

IST PLAN
ANO-1 APPENDIX
VALVE SUMMARY LISTING

PROGRAM SECTION NO. CEP-IST-2
REVISION NO. 307
PAGE 23 OF 25

VALVE NO.	VALVE SIZE (in.) TYPE ACT.	P & ID NO. , COORD.	IST PASS	IST CODE CLASS	CODE CAT.	SAFETY POS.	REQUIRED TESTS AND FREQUENCY										RELIEF REQUEST (VRR)	OTHER (CSJ/ROJ/ VPS/CMJ)	NOTES:
							FS	PS	LT	LJ	ST	FT	PI	RV	EX	CM			
SV-1440	1	M-232	P	2	A														
	GL S	A-6				C				J			R						
SV-1443	1	M-232	P	2	A														
	GL S	A-6				C				J			R						
SV-1818	1	M-237 Sh 1	P	1	A														
	GL S	G-7				C				J			R						
SV-1840	1	M-237 Sh 1	P	1	A														
	GL S	F-7				C				J			R						
SV-3812	2	M-210 Sh 1	P	2	B	O							R						
	G S	D-3																	
SV-3813	2	M-210 Sh 1	P	2	B	O							R						
	G S	D-3																	
SV-5218	1.5	M-217 Sh 4	A	N	B	O	BiM											VPS-001	
	GL S	E-6				C	BiM				BiM								
SV-5233	1.5	M-217 Sh 4	A	N	B	O	BiM					BiM						VPS-001	
	GL S	D-6				C	BiM				BiM								
SV-5237	1.5	M-217 Sh 4	A	N	B	O	BiM					BiM						VPS-001	
	GL S	E-3				C	BiM				BiM								
SV-5239	1.5	M-217 Sh 4	A	N	B	O	BiM					BiM						VPS-001	
	GL S	D-3				C	BiM				BiM								
SV-7454	1	M-261 Sh 3	A	2	A														
	GL S	A-6				C	Q			J	Q	Q	R						
SV-7456	1	M-261 Sh 3	A	2	A														
	GL S	B-4				C	Q			J	Q	Q	R						
SV-7457	1	M-261 Sh 3	A	2	A	O	Q				Q		R						
	GL S	C-5				C	Q			J	Q	Q	R						
SV-7459	1	M-261 Sh 3	A	2	A	O	Q				Q		R						
	GL S	B-5				C	Q			J	Q	Q	R						
SV-7467	1	M-261 Sh 3	A	2	A	O	Q				Q		R						
	GL S	C-6				C	Q			J	Q	Q	R						
SV-7469	1	M-261 Sh 3	A	2	A	O	Q				Q		R						
	GL S	B-6				C	Q			J	Q	Q	R						

IST PLAN
ANO-1 APPENDIX
VALVE SUMMARY LISTING

PROGRAM SECTION NO. CEP-IST-2
REVISION NO. 307
PAGE 24 OF 25

VALVE NO.	VALVE SIZE (in.) TYPE ACT.	P & ID NO. , COORD.	IST PASS	IST CODE CLASS	CODE CAT.	SAFETY POS.	REQUIRED TESTS AND FREQUENCY										RELIEF REQUEST (VRR)	OTHER (CSJ/ROJ/ VPS/CMJ)	NOTES:
							FS	PS	LT	LJ	ST	FT	PI	RV	EX	CM			
SV-7479	0.75	M-261 Sh 3	A	2	A														
	GL S	B-6				C	Q			J	Q	Q	R						
SV-7510	1	M-261 Sh 3	A	2	A														
	GL S	B-5				C	Q			J	Q	Q	R						
SV-7512	1	M-261 Sh 3	A	2	A														
	GL S	B-6				C	Q			J	Q	Q	R						
SW-11	6	M-204 Sh 3	A	3	C	O										V		CMJ	
	CK SA	H-8														V			
SW-13	6	M-204 Sh 3	A	3	C	O										V		CMJ	
	CK SA	A-8														V			
SW-1A	18	M-209 Sh 1	A	3	C, A	O										V		CMJ	
	CK SA	F-3				C			R							V			
SW-1B	18	M-209 Sh 1	A	3	C, A	O										V		CMJ	
	CK SA	D-3				C			R							V			
SW-1C	18	M-209 Sh 1	A	3	C, A	O										V		CMJ	
	CK SA	C-3				C			R							V			
SW-604A	2	M-221 Sh 2	A	3	C	O										V		CMJ	
	CK SA	F-8														V			
SW-604B	2	M-221 Sh 2	A	3	C	O										V		CMJ	
	CK SA	C-8														V			
SW-72	2	M-210 Sh 1	A	3	B	O	2Y												
	G H	A-4																	
SW-9	14	M-210 Sh 1	A	3	C, A											V		CMJ	
	CK SA	E-2				C			R							V			

IST PLAN
ANO-1 APPENDIX
VALVE SUMMARY LISTING

PROGRAM SECTION NO. CEP-IST-2
REVISION NO. 307
PAGE 25 OF 25

Valve Summary Listing Notes

No.

1 None

**IST PLAN
ANO-1 APPENDIX
PUMP SUMMARY LISTING**

**PROGRAM SECTION NO. CEP-IST-2
REVISION NO. 307
PAGE 1 OF 3**

PUMP NO.	PUMP DESCRIPTION	PUMP TYPE	DRIVER	P & ID NO., COORD.	IST CODE CLASS	REQUIRED TESTS AND FREQUENCY					RELIEF REQUESTS:	NOTES:
						S	dP	FR	Pd	V		
P-34A	Low Pressure Injection Pump	Centrifugal	Motor	M-232 E-5	2		Q	Q		Q		Group A Test. See Pump Note 2.
P-34A*							2Y	2Y		2Y		* Comprehensive Test
P-34B	Low Pressure Injection Pump	Centrifugal	Motor	M-232 C-5	2		Q	Q		Q		Group A Test. See Pump Note 3.
P-34B*							2Y	2Y		2Y		* Comprehensive Test
P-35A	Reactor Building Spray Pump	Centrifugal	Motor	M-236 F-3	2			Q				Group B Test.
P-35A*							2Y	2Y		2Y		* Comprehensive Test
P-35B	Reactor Building Spray Pump	Centrifugal	Motor	M-236 F-3	2			Q				Group B Test.
P-35B*							2Y	2Y		2Y		* Comprehensive Test
P-36A	High Pressure Injection Pump	Centrifugal	Motor	M-231 G-5	2		Q	Q		Q		Group A Test. See Pump Note 4.
P-36A*							2Y	2Y		2Y		* Comprehensive Test
P-36B	High Pressure Injection Pump	Centrifugal	Motor	M-231 E-5	2		Q	Q		Q		Group A Test. See Pump Note 4.
P-36B*							2Y	2Y		2Y		* Comprehensive Test
P-36C	High Pressure Injection Pump	Centrifugal	Motor	M-231 B-5	2		Q	Q		Q		Group A Test. See Pump Note 4.
P-36C*							2Y	2Y		2Y		* Comprehensive Test
P-4A	Service Water Pump	Vertical Line Shaft	Motor	M-209 F-4	3		Q	Q		Q	PRR-07-1	Group A Test. See Pump Note 1.
P-4A*							2Y	2Y		2Y		* Comprehensive Test

**IST PLAN
ANO-1 APPENDIX
PUMP SUMMARY LISTING**

**PROGRAM SECTION NO. CEP-IST-2
REVISION NO. 307
PAGE 2 OF 3**

PUMP NO.	PUMP DESCRIPTION	PUMP TYPE	DRIVER	P & ID NO., COORD.	IST CODE CLASS	REQUIRED TESTS AND FREQUENCY					RELIEF REQUESTS:	NOTES:
						S	dP	FR	Pd	V		
P-4B	Service Water Pump	Vertical Line Shaft	Motor	M-209 D-4	3		Q	Q		Q	PRR-07-1	Group A Test. See Pump Note 1.
P-4B*							2Y	2Y		2Y		* Comprehensive Test
P-4C	Service Water Pump	Vertical Line Shaft	Motor	M-209 C-4	3		Q	Q		Q	PRR-07-1	Group A Test. See Pump Note 1.
P-4C*							2Y	2Y		2Y		* Comprehensive Test
P-7A	Emergency Feedwater Pump	Centrifugal	Turbine	M-204 B-5	3	Q		Q				Group B Test.
P-7A*						2Y	2Y	2Y		2Y		* Comprehensive Test
P-7B	Emergency Feedwater Pump	Centrifugal	Motor	M-204 G-5	3			Q				Group B Test.
P-7B*							2Y	2Y		2Y		* Comprehensive Test

Pump Summary Table Notes

No.

- 1 Regarding dP and flow testing, 1104.029, Attachment C is used as the post Maintenance Testing procedure when maintenance is performed with the potential to affect the hydraulic parameters of the pump.
- 2 1104.004 Supplement 4 can be used to satisfy IST Requirement for P-34A during Cold Shutdowns.
- 3 1104.004 Supplement 5 can be used to satisfy IST Requirement for P-34B during Cold Shutdowns.
- 4 Quarterly testing is at partial flow.

IST PLAN ANO-2 APPENDIX	PROGRAM SECTION NO.: CEP-IST-2 REVISION: 307 PAGE: 1 OF 43
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ANO-2 APPENDIX

INSERVICE TESTING PLAN

ENTERGY NUCLEAR

ENGINEERING PROGRAMS

TABLE OF CONTENTS

<u>SECTION</u>	<u>PAGE NUMBER</u>
Table of Contents.....	2
Valve Relief Requests.....	3
Valve Position Statements.....	11
Pump Relief Requests.....	14
Pump Position Statements.....	18
Cold Shutdown Justifications.....	19
Refueling Outage Justifications.....	41
Database Report - Valve Summary Listings	
Database Report - Pump Summary Listings	

VALVE RELIEF REQUESTS (VRR)

RELIEF REQUEST IST 2-99-5 - Withdrawn

RELIEF REQUEST IST 2-99-6

System: Reactor Coolant

Valves: 2SI-27A, 2SI-27B, 2SI-28A and 2SI-28B

Category: AC

Class: 1

Function: These valves open to allow safety injection flow to RCS hot leg piping during long-term core cooling to prevent boron precipitation. They have a closed safety function to act as pressure isolation valves.

Impractical Test Requirement: OMa – 1988, Part 10, Section 4.2.2.3 (c) Seat Leakage Measurement

“Valve seat leakage shall be determined by one of the following methods:...”

Basis For Relief: The absence of isolation valves on the downstream side does not allow individual leak rate testing of these valves. The low pressure side of these valves is monitored for back leakage through high pressure alarms in the control room. In addition, 2SI-26A and 2SI-26B, a third valve in series on each injection path, are individually leak rate tested. 2SI-26A and 2SI-26B provide a second, leak-tested, pressure isolation between high design pressure and low design pressure piping.

Alternative Testing: 2SI-27A and 2SI-28A will be treated as one valve. 2SI-27B and 2SI-28B will also be treated as one valve. These valve pairs are demonstrated to be leak tight during power operation. Per OM-10, Section 4.2.2.1, these valves do not require a leak test. The low pressure side of these valve pairs is instrumented, 2PI-5105 and 2PI-5106, and will alarm in the control room in the event of high pressure; hence demonstrating that these valves, as a pair, are leak tight. If one or both of these valve pairs were leaking and if other valves were leaking such that no pressure buildup is observed on 2PI-5105 and or 2PI-5106, then leakage through these valve pairs would still be detected as an increase in unknown leakage when the daily reactor coolant system leakage test is performed. In the event the RCS unknown leakage becomes significant (greater than one gpm) then additional steps will be performed to determine if the leakage is through 2SI-27A/28A or 2SI-27B/28B. Leak testing only one of the two valves in each identified pair does not create a conflict with any ANO-2 regulatory or license requirements.

Approval: This relief request is similar to Relief Request RC-1, which was approved by the NRC on February 16, 1996, for use during the 2nd IST interval.

VALVE RELIEF REQUESTS (VRR)

RELIEF REQUEST IST 2-99-7

System: Chemical and Volume Control

Valves: 2CVC-22A, 2CVC-22B, 2CVC-22C, 2CVC-69A, 2CVC-69B, and 2CVC-69C

Category: C

Class: 2

Function: These valves open to supply normal charging and emergency boration to the reactor coolant system and prevent reverse flow through an idle charging pump.

Impractical Test Requirement: OMa – 1988, Part 10, Section 4.3.2.

“Check valves shall be exercised nominally every 3 months, except as provided by Sections 4.3.2.2, 4.3.2.3, 4.3.2.4, and 4.3.2.5.”

Basis For Relief: The discharge of each charging pump (ANO-2 has three charging pumps) has two 1-1/2 inch piston check valves installed in series. The piston check valves both have an open and closed safety function. Insufficient space (approximately 1 1/2 inches) exists between the two piston check valves to allow for pressure taps that would be required to perform individual valve closure testing. Only one valve is needed to meet design requirements for this application.

Alternative Testing: The piston check valves will be full flow tested each quarter. The piston check valves that are in series will be treated as one valve and will be reverse flow tested each quarter. Should a valve pair fail a reverse flow closure test, both valves will be disassembled, repaired, and re-tested.

Approval: This relief request is similar to Relief Request CVCS-1, which was approved by the NRC on December 22, 1994, for use during the 2nd IST interval.

RELIEF REQUEST IST 2-99-8

System: Safety Injection

Valves: 2SI-16A, 2SI-16B, 2SI-16C, and 2SI-16D

Category: AC

Class: 1

Function: These valves have an open safety function to provide safety injection flow from safety injection tanks to the reactor coolant system. These valves also have a closed safety function to act as pressure isolation valves between low pressure safety injection tanks and the reactor coolant system.

Impractical Test Requirement: OMa-1988, Part 10, Section 4.3.2.

VALVE RELIEF REQUESTS (VRR)

"Check valves shall be exercised nominally every 3 months, except as provided by Sections 4.3.2.2, 4.3.2.3, 4.3.2.4, and 4.3.2.5."

Basis For Relief: These valves cannot be full-stroke tested during power operation because the safety injection tanks pressure is less than the reactor coolant system pressure during normal operation. Due to the time it takes the safety injection tank motor-operated valves to open, there is no way to establish maximum accident flow through these valves during cold shutdown or refueling outages.

Alternative Testing: These valves will be disassembled and stroke tested during refueling outages in accordance with the requirements of GL 89-04, Position 2. One valve will be opened and inspected each refueling outage. The check valve inspected will be alternated each refueling outage until all of the check valves have been inspected. When all of the valves have been inspected, the inspection schedule will be repeated. If a common failure mode that could affect a valve's safety function is discovered during an inspection, all of the other potentially affected valves will be inspected. If a valve is disassembled, then the valve will receive a partial flow and leak test prior to returning it to service. 2SI-16A, 2SI-16B, 2SI-16C, and 2SI-16D are quarterly partial stroke tested.

In lieu of disassembling these check valves, non-intrusive testing may be performed to confirm the ability of these valves to full stroke open. If non-intrusive testing is performed, the guidance in NUREG-1482, Section 4.1.2 will be followed. If non-intrusive testing cannot confirm that the valve strokes full open or reveals a failure mechanism that could impact the valve's safety function, the valve will be opened and inspected. If non-intrusive testing is not performed or provides inconclusive results, disassembly of the check valves as outlined in the previous paragraph will be resumed.

Approval: This relief request is similar to Relief Request SI-2, which was approved by the NRC on February 16, 1996, for use during the 2nd IST interval.

RELIEF REQUEST IST 2-99-9

System: Containment Spray

Valves: 2BS-1A, 2BS-1B

Category: C

Class: 2

Function: These valves open to provide a flow path from refueling water tank to containment spray and safety injection pumps. They have a closed function to prevent reverse flow to the refueling water tank.

Impractical Test Requirement: OMa – 1988, Part 10, Section 4.3.2.

VALVE RELIEF REQUESTS (VRR)

"Check valves shall be exercised nominally every 3 months, except as provided by Sections 4.3.2.2, 4.3.2.3, 4.3.2.4, and 4.3.2.5."

Basis For Relief:

Full-stroke exercising these valves during power operation or cold shutdown would require the simultaneous operation of one high pressure safety injection pump, one low pressure safety injection pump, and one containment spray pump at design accident flow rates. During power operation, the discharge pressure of the high pressure safety injection pump and low pressure safety injection pump is less than RCS pressure. During cold shutdowns, there is insufficient RCS volume to allow concurrent operation of the high pressure and low pressure safety injection pumps.

The ability of these valves to fully open can be confirmed by non-intrusive monitoring techniques. Although non-intrusive testing can be performed quarterly during pump testing to confirm the ability of the valves to open, the following provides justification for deferring non-intrusive testing to once per refueling cycle during plant operation:

- a. These valves are exercised (partial-stroked open and verified closed) on a quarterly frequency.
- b. NUREG-1482, Section 4.1.4 and the Summary of Public Workshops Held in NRC Regions on Inspection Procedure 73759 "Inservice Testing of Pumps and Valves" and Answers to Panel Questions on Inservice Testing Issues, reference question 2.3.19 state that the need to setup special test equipment is adequate justification to defer flow testing of check valves. This guidance is applicable to ANO-2 pertaining to open stroke testing of these valves.
- c. System pressures and flow conditions have been verified to cause the valves to fully stroke during containment spray pump testing.
- d. Quarterly testing using non-intrusive testing methods could provide indeterminate results caused by unrelated system dynamic conditions which could, in turn, result in unnecessary additional testing or disassembly or possibly an unnecessary plant shutdown.
- e. Each of these valves has been disassembled several times with no unexpected service related deterioration identified during these inspections.

Alternative Testing:

These valves will be part-stroke exercised open and verified closed quarterly. Non-intrusive monitoring techniques in conjunction with a quarterly containment spray pump test will be performed once per refueling cycle, during plant operation.

Approval:

Approved by SER dated March 31, 2000. (2CNA030004)

RELIEF REQUEST IST 2-99-10

System:

Containment Spray

IST PLAN ANO-2 APPENDIX	PROGRAM SECTION NO.: CEP-IST-2 REVISION: 307 PAGE: 7 OF 43
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VALVE RELIEF REQUESTS (VRR)

Valves: 2BS-5A, 2BS-5B

Category: C

Class: 2

Function: The containment spray discharge header check valves remain closed to maintain the spray headers full of spray water. These valves open to provide containment spray flow to the reactor building.

Impractical Test Requirement: OMa – 1988, Part 10, Section 4.3.2.

“Check valves shall be exercised nominally every 3 months, except as provided by Sections 4.3.2.2, 4.3.2.3, 4.3.2.4, and 4.3.2.5.”

Basis For Relief: Full-stroke or partial-stroke exercising these valves with flow during power operation or cold shutdown would result in spraying the containment, with possible damage to plant equipment.

Alternative Testing: These valves will be disassembled and stroke tested during refueling outages in accordance with the requirements of GL 89-04, Position 2. One of these valves will be inspected each refueling outage, alternating between the valves. Valves 2BS-5A and 2BS-5B have been disassembled and manually exercised with no discernible degradation to date. When the valve is disassembled, the valve internals are visually inspected by quality control personnel for worn or corroded parts. If problems are found, repairs will be made and the remaining valve shall be inspected unless a common-mode failure mechanism can be dismissed. Following re-assembly, a small amount of water is passed through these valves while re-filling the spray header.

Approval: This relief request is similar to Relief Request CS-2, which was approved by the NRC on February 16, 1996, for use during the 2nd IST interval.

RELIEF REQUEST IST 2-99-11

System: Emergency Diesel Generator Starting Air, Safety Injection Tank Nitrogen

Components: Safety and relief valves used for compressible fluid service other than steam

2PSV-2803, 2PSV-2805, 2PSV-2806, 2PSV-2808, 2PSV-2823, 2PSV-2825, 2PSV-2826, 2PSV-2828, 2PSV-5007, 2PSV-5027, 2PSV-5047, 2PSV-5067

Function: Provide over-pressure protection to safety-related systems.

Code Class: Class 2 – 2PSV-5007, 2PSV-5027, 2PSV-5047, 2PSV-5067
Non-Code – 2PSV-2803, 2PSV-2805, 2PSV-2806, 2PSV-2808, 2PSV-2823, 2PSV-2825, 2PSV-2826, 2PSV-2828

Code Category: C

VALVE RELIEF REQUESTS (VRR)

Code Requirement: OM-1987, Part 1, Paragraph 8.1.2.2

"Accumulator Volume. There shall be a minimum accumulator volume below the valve inlet, based on the valve capacity (cu ft) and calculated from the following formula:

$$\text{Minimum Volume} = [\text{valve capacity (cu ft per sec)} \times \text{time open (sec)}] / 10"$$

Basis for Relief: The specified accumulator volume requirement is not needed for simple determination of the valve set pressure. This was recognized by the Code working group and committees and is corrected in more recent versions of the OM Code. (Ref. ASME OM Code-1990, OMc-1994 Addenda, Paragraph I 8.1.2, and OMa Code 1996, Paragraph I 8.1.2(b).)

Alternative Testing: The volume of the accumulator drum and the pressure source flow rate will be sufficient to determine the valve set-pressure. (Ref. ASME OM Code-1990, OMc-1994 Addenda, Paragraph I 8.1.2 and OMa Code 1996, Paragraph I 8.1.2(b).)

Approval: This relief request is similar to Relief Request 10 for the ANO-1 3rd Interval IST Program which was approved by the NRC on October 9, 1998.

RELIEF REQUEST - 2-06-01

System: Emergency Feedwater

Components: 2MS-39A, 2MS-39B

Function: These check valves have an active open safety function to admit steam from the steam generators to the emergency feedwater (EFW) pump turbine steam supply header. They have an active closed safety function to provide isolation between the steam generators to prevent blowdown of both steam generators in the event of a steam line rupture.

Code Class: 3

Code Category: C

Code Requirement: OMa-1988, - Part 10, Section. 4.3.2.1 Exercising Test Frequency

"Check valves shall be exercised nominally every 3 months, except as provided by Sections. 4.3.2.2, 4.3.2.3, 4.3.2.4, and 4.3.2.5."

Relief Requested: These are check valves with no external means for exercising and no external position indication mechanism. Reverse flow (closure) testing of these valves is impractical during power operation and under cold shutdown conditions.

VALVE RELIEF REQUESTS (VRR)

Basis for Relief: These spring loaded nozzle check valves are maintained open via their springs during normal plant operation. The only means of closing these valves is via disassembly. Non-intrusive means to verify closure has been tried but sufficient differential pressure can not be established across the valves during power operation or during cold shutdowns to overcome the spring force holding the valves open. The alternate testing proposed below meets the intent of NRC Generic Letter 89-04, Position 2 for sample inspection programs.

Alternative Testing: During each reactor refueling outage at least one of these valves will be disassembled, inspected, and manually exercised on a sequential and rotating schedule. If, in the course of an inspection, a valve is found to be inoperable with respect to its function to fully close, then the other valve will be inspected during the same refueling outage. During activities associated with valve disassembly and inspection and prior to system closure, appropriate precautions will be applied and inspections performed to ensure internal cleanliness standards are maintained and foreign materials are excluded from valve and system internals. These measures may include creating control work areas, maintaining a tool and equipment accounting system, installation of covers during non-work periods, and final close-out inspections. These valves are verified to be full open each quarter. Following reassembly the affected valve will be verified to be full open using flow.

RELIEF REQUEST – 2-06-02

System: Service Water

Components: 2SW-62, 2SW-56, 2SW-67, 2SW-1211, 2SW-8401, 2SW-57, 2SW-138, 2FP-31, 2FP-46

Function: Service water emergency makeup to spent fuel pool

Code Class: 3

Code Category: B

Code Requirement: OMa -1988, Part 10, Section 4.2.1, Exercising Test Frequency, requires that active Category A and B valves shall be tested nominally every 3 months.

Relief Requested: Extend exercising test frequency from every 3 months to every 2 years.

Basis for Relief: NRC approval was granted by CNRI-2006-00001 dated 1/5/2006 to apply the requirements of Subarticle ISTC-3540 of the 2001 Edition with 2003 Addenda of ASME OM Code for exercising all manual valves within the Inservice Testing (IST) Program with the limitation imposed by 67FR60520. This limitation requires an exercise interval of 2 years for manual valves within the scope of the ASME OM Code rather than the 5 year interval specified in the 2001 Edition with 2003 Addenda of ASME OM Code provided that adverse conditions do not require more frequent testing.

VALVE RELIEF REQUESTS (VRR)

Alternate Testing The valves listed above were determined not to be affected by adverse conditions and will be manual exercised to the open and closed position once every 2 years.

RELIEF REQUEST – 2-06-03

System: Emergency Feedwater

Components: 2CS-844, 2CS-845

Function: Condensate Supply to Emergency Feedwater Pumps

Code Class: 3

Code Category: C

Code Requirement: OMa -1988, Part 10, Section 4.3.2.1, Exercising Test Frequency –*“Check valves shall be exercised nominally every 3 months, except as provided by Sections 4.3.2.2, 4.3.2.3, 4.3.2.4, and 4.3.2.5.”*

Relief Requested: These are check valves with no external means for exercising and no external position indication mechanism. There is no practical means to verify both valves open to the full open position during power operation or cold shutdown conditions.

Basis for Relief: These check valves are installed in parallel flow paths between the condensate storage tank and the emergency feedwater pumps. No isolation valves are provided to ensure full flow through either check valve during quarterly pump testing. Non-intrusive testing cannot be used effectively because the valves are in such close proximity to each other that it is not possible to definitively verify that both valves impact the open stop when a pump is started. The alternate testing proposed below meets the intent of NRC Generic Letter 89-04, Position 2 for sample inspection programs.

Alternate Testing: During each reactor refueling outage, at least one of these valves will be disassembled, inspected, and manually exercised on a sequential and rotating schedule. If, in the course of an inspection, a valve is found to be inoperable with respect to its function to fully open or fully close, then the other valve will be inspected during the same refueling outage. During activities associated with valve disassembly and inspection and prior to system closure, appropriate precautions will be applied and inspections performed to ensure internal cleanliness standards are maintained and foreign materials are excluded from valve and system internals. These measures may include creating control work areas, maintaining a tool and equipment accounting system, installation of covers during non-work periods, and final close-out inspections. During quarterly pump testing the combined flow through both valves provides sufficient flow to meet the safety analysis assumption for emergency feedwater flow during an accident. This verifies at least partial flow through one or both of these valves.

VALVE POSITION STATEMENTS (VPS)

VPS-001

System: Emergency Diesel Generator

Components: 2ED-3A, 2ED-3B

Function: Fuel Oil Transfer Pump Discharge Check

Code Class: NN

Code Category: C

Code Requirement: OMa -1988, Part 10, Section 4.3.2.1, Exercising Test Frequency, requires that check valves shall be exercised nominally every 3 months.

Justification For Deviation: There is no installed flow instrumentation; hence, full flow through these valves cannot be verified.

Alternate Testing: These Non-ASME Class 1, 2, or 3 valves will be tested approximately once every two years during emergency diesel generator maintenance outages.

VPS-002

System: Emergency Diesel Generator

Components: 2SV-2802-1, 2SV-2822-2

Function: Fuel Oil Transfer To EDG Day Tanks

Code Class: NN

Code Category: B

Code Requirement: OMa -1988, Part 10, Section 4.2.1.4(b) – The stroke time of all power-operated valves shall be measured to at least the nearest second.

Justification For Deviation: These are enclosed solenoid valves; hence, the stem cannot be visually observed to verify movement. Also, these valves do not have remote open/close lights, therefore, they cannot be stroke timed.

Alternate Testing: These Non-ASME Class 1, 2, or 3 valves are tested by confirming that day tank level increases while the associated EDG is running. This test verifies that the solenoid valve has met its intended safety function. This test is performed monthly.

VALVE POSITION STATEMENTS (VPS)

VPS-003

System: Emergency Diesel Generator

Components: 2SV-2809-1, 2SV-2810-1, 2SV-2829-2, 2SV-2830-2, 2SV-2811, and 2SV-2831

Function: EDG Starting Air Solenoid Valves

Code Class: NN

Code Category: B

Code Requirement: OMa -1988, Part 10, Section 4.2.1.4(b) – The stroke time of all power-operated valves shall be measured to at least the nearest second.

Justification For Deviation: These enclosed solenoid valves do not have any position lights nor do they have any actuation switches. However, their ability to stroke to their safety position is confirmed at least quarterly by the monthly diesel start.

Alternate Testing: These Non-ASME Class 1, 2, or 3 valves are indirectly stroke timed based on a successful EDG start. If EDG start time does not exceed 15 seconds, then its associated valves have been successfully stroke time tested. There are no normal or limiting value limits associated with these valves.

VPS-004

System: Emergency Diesel Generator

Components: 2ED-5A, 2ED-5B, 2ED-6A, 2ED-6B

Function: EDG Fuel Oil Cross-Connect

Code Class: NN

Code Category: B

Code Requirement: OMa -1988, Part 10, Section 4.2.1, Exercising Test Frequency, requires that active Category A and B valves shall be tested nominally every 3 months.

Deviation: Extend exercising test frequency from every 3 months to every 2 years.

Justification For Deviation: NRC approval was granted by CNRI-2006-00001 dated 1/5/2006 to apply the requirements of Subarticle ISTC-3540 of the 2001 Edition with 2003 Addenda of ASME OM Code for exercising all manual valves within the Inservice Testing (IST) Program with the limitation imposed by 67FR60520. This limitation requires an exercise interval of 2 years for manual valves within the scope of the ASME OM Code rather than the 5 year interval specified in the 2001 Edition with 2003 Addenda of ASME OM Code provided that adverse conditions do not require more frequent testing.

VALVE POSITION STATEMENTS (VPS)

Alternate Testing: The valves listed above were determined not to be affected by adverse conditions and will be manual exercised to the open and closed position once every 2 years.

PUMP RELIEF REQUESTS (PRR)

RELIEF REQUEST IST 2-99-1

System: Service Water (SW)

P&ID: M-2210, Sheet 1

Pumps: 2P-4A, 2P-4B, 2P-4C

Class: 3

Function: These pumps provide an assured source of cooling water to various safety-related and safe shutdown components. They also provide cooling water to various balance-of-plant components during normal plant operation.

Impractical Test Requirements: OMa – 1988, Part 6, Section 5.2

An inservice test shall be conducted with the pump operating at specified test reference conditions. The test parameters shown in Table 2 shall be determined and recorded as directed in this paragraph.

Basis For Relief: During normal plant operation, either two or three service water pumps are required to be in operation. The pumps provide cooling water flow to the two safety grade service water loops and to the non-safety grade auxiliary cooling water loop. Interrupting the cooling water flow to certain components would result in an immediate plant transient or a plant trip. The system flow requirements are defined by the service loads of the supplied components. After system operation reaches a degree of stability, perturbation of flow to any of the on-line heat exchangers could have a severe adverse impact on plant operation with the potential for unacceptable flow and temperature transients. This situation precludes flow adjustments on specific heat loads and certainly throttling of pump or header isolation valves. As such, returning the system operating parameters to a prescribed unique reference value (either flow or differential pressure) is impractical and could result in an unreasonable and unwarranted risk to plant operation with little or no apparent gain in plant safety or reliability.

Historical test data indicates that over the operating range of interest there is little or no variation in pump vibration characteristics (e.g., vibration levels are independent of flow rate over the allowed range of flows).

Alternative Testing: These pumps will be tested on a quarterly basis with the specific unique test reference values, as defined in Section 1.3 and discussed in Section 4.3, replaced by a set of variable reference values in the form of a representative curve denoting reference differential pressure as a function of pump indicated flow rate for each pump. The reference flow versus differential pressure (ΔP) curve represents hydraulic performance over the entire flow range of the pump. The reference curve will be determined for each pump as follows:

1. Each reference pump curve will be determined when the pump is known to be operating acceptably.

PUMP RELIEF REQUESTS (PRR)

2. Measurements used to obtain reference points for the curve will use instruments that meet the accuracy and range requirements of OM-6, Section 4.6.
3. The reference curve will be constructed from at least five measured points over the operating range of pump flow rates. Corresponding differential pressure and flow rate measurements will be recorded after flow stability is achieved at each point.
4. Only those points of the reference curve beyond the flat, low flow region and within the design flow rate of the pump will be used to establish acceptance criteria for quarterly testing. This range will include pump design basis flow rates.
5. Acceptance criteria will be established that do not conflict with operability criteria for flow rate and differential pressure in technical specifications or the safety analysis report.
6. The acceptance criteria for pump/motor vibration will be those specified in OM-6, Table 3a based on reference values measured during typical pump operation at or near the pump's design basis flow rate. Vibration levels have been demonstrated to remain essentially the same over the entire range of flow rates used.
7. After any maintenance or repair to a pump that may have affected or significantly altered the previous pump performance curve, a new reference pump curve will be developed or the previous curve revalidated by an appropriate inservice test.

The Service Water pumps are centrifugal vertical line shaft pumps. The limits for acceptable pump differential pressure at operating flow will be derived from Table 3b of OM-6. Individual acceptance criteria for each pump will be developed as follows:

1. The "required action range" will be where pump differential pressure, at the operating flow rate, indicates less than 93% of the value taken from the reference curve and greater than 110% of the reference value.
2. An "alert range" will be established where pump differential pressure, at the operating flow rate, indicates between 95% and 93% of the value taken from the reference curve:
3. Each of the pump's acceptance criteria curves shall be compared to the applicable and corresponding requirements for these pumps as set forth in ANO-2 Technical Specifications, Safety Evaluation Report, and Safety Analysis Report. If necessary, adjustments to the required action range limits will be made to ensure that the acceptance criteria are conservative with respect to the requirements of license basis documents.
4. In the event that a pump's operational parameters fall outside of the acceptance criteria, appropriate corrective actions will be implemented in accordance with Section 6.1.

PUMP RELIEF REQUESTS (PRR)

The proposed alternate testing for these pumps meets or exceeds the requirements as set forth in NUREG-1482, Section 5.2.

The proposed alternate testing will provide adequate test information and assurance equivalent to that of the Code requirement needed to assess the operational readiness of the subject pumps and adequately detect significant pump degradation.

Approval: This relief request is similar to Relief Request PR-6, which was approved by the NRC on February 16, 1996, for use during the 2nd IST interval.

RELIEF REQUEST IST 2-99-2 - Withdrawn

RELIEF REQUEST IST 2-99-3

System: Low Pressure Safety Injection

P&ID: M-2232

Pumps: 2P-60A, 2P-60B

Class: Class 2

Function: The low pressure safety injection pumps supply borated water to the reactor coolant system (RCS) in the event of an accident. These pumps start upon the receipt of a safety injection actuation signal. These pumps also provide shutdown cooling to the RCS during cold shutdowns.

Impractical Test Requirements: OMa-1988, Part 6, Section 5.2, Test Procedure

The test quantities shown in Table 2 shall be determined and recorded as directed in this paragraph.

Basis For Relief: During power operation, minimum recirculation is the only available flow path for testing LPSI pumps that does not violate train separation requirements. On recirculation, flow is from the refueling water tank, through an orificed line back to the refueling water tank. The flow resistance of the loop is therefore, fixed and consistent for each inservice test. Although the test flow rate is set by a fixed system resistance; no means are available to measure flow each quarter as required by OM-6. All of the piping in the flow test loop is stainless steel. Little likelihood exists of an unexpected increase in system resistance due to corrosion product build-up or fouling. Any gradual reduction in system resistance would produce lower than normal pump differential pressure which would result in an evaluation, if results indicate a degrading condition.

Alternative Testing: These pumps will be tested on recirculation flow each quarter. Vibration and pump differential pressure data will be taken and analyzed. These pumps will also be full flow tested during cold shutdowns (in accordance with NUREG-1482, Section 3.1.1.1 guidance) through a fully instrumented flow path to the reactor coolant system. Full-flow pump differential pressure and vibration data will be

PUMP RELIEF REQUESTS (PRR)

taken and analyzed. This alternative testing is in accordance with Generic Letter 89-04, Position 9.

Approval: This relief request is similar to Relief Request PR-8, which was utilized during the 2nd IST interval.

RELIEF REQUEST IST 2-99-4

System: High Pressure Safety Injection

P&ID: M-2232

Pumps: 2P-89A, 2P-89B, 2P-89C

Class: Class 2

Function: The high pressure safety injection pumps supply high pressure borated water to the RCS in the event of an accident. These pumps start upon the receipt of a safety injection actuation signal.

Impractical Test Requirements: OMa-1988, Part 6, Section 5.2, Test Procedure

The test quantities shown in Table 2 shall be determined and recorded as directed in this paragraph.

Basis For Relief: During power operation, minimum recirculation is the only practical flow path for testing HPSI pumps. On recirculation, flow is from the refueling water tank, through an orificed line back to the refueling water tank. The flow resistance of the loop is therefore fixed and consistent for each inservice test. Although the test flow rate is set by a fixed system resistance, no means are available to measure flow each quarter as required by OM-6. All of the piping in the flow test loop is stainless steel. Little likelihood exists of an unexpected increase in system resistance due to corrosion product build-up or fouling. Any gradual reduction in system resistance would produce lower than normal pump differential pressure which would result in an evaluation, if results indicate a degrading condition.

Alternative Testing: These pumps will be tested on recirculation flow each quarter. Vibration and pump differential pressure data will be taken and analyzed. These pumps will also be full flow tested during cold shutdowns (in accordance with NUREG-1482, Section 3.1.1.1 guidance) through a fully instrumented flow path to the reactor coolant system. Full-flow pump differential pressure and vibration data will be taken and analyzed. This alternative testing is allowed by Generic Letter 89-04, Position 9.

Approval: This relief request is similar to Relief Request PR-9, which was utilized during the 2nd IST interval.

PUMP POSITION STATEMENTS (PPS)

PPS-001

System: Emergency Diesel Generator

Components: 2P-16A, 2P-16B

Function: Fuel Oil Transfer Pumps

Code Class: NN

Code Requirement: OMa -1988, Part 6, Paragraph 5.2 – An inservice test shall be conducted with the pump operation at specified test reference conditions. The test parameters shown in Table 2 shall be determined and recorded as directed in this paragraph.

**Justification
For Deviation:** These pumps do not have installed suction or discharge pressure gauges nor installed flow measurement instrumentation. The design of these pumps does not lend itself to vibration monitoring because the pump and motor are integral and enclosed within the fluid boundary. Also, certain design features of the pump should reduce potential problems that vibration monitoring would detect. These design features include lack of thrust bearing, using the pumped medium for cooling the motor stator and rotor, using the pumped medium for lubricating and cooling the motor bearings, and lack of a coupling.

Alternate Testing: These Non-ASME Class 1, 2, or 3 pumps will be tested by verifying that day tank level increases while the EDG is running; hence, proving that the EDG Fuel Transfer pump is meeting its intended safety function of supplying fuel oil to the emergency diesel generators.

COLD SHUTDOWN JUSTIFICATIONS (CSJ)

CSJ-001

System: Main Steam

Valve(s): 2CV-1010-1, 2CV-1060-2

Code Class: Class 2

Code Category: Category B

Function: These valves function to isolate the steam generators from the remainder of the main steam system in the event of steam generator depressurization. These valves are actuated closed by receipt of a main steam isolation signal or containment spray actuation signal.

Code Requirement: OMa – 1988, Part 10, Section 4.2.1.2 (b) Exercising Test Frequency
If full-stroke exercising during plant operation is not practicable, it may be limited to part-stroke during plant operation and full-stroke during cold shutdowns;....

Cold Shutdown Justification: Full stroke exercising these valves during power operation would result in the loss of steam flow to the main turbine, resulting in high steam generator pressure and an inevitable reactor trip.

Alternate Test Schedule: These valves are partial stroke tested quarterly. These valves are full-stroke exercised and fail-safe tested during each cold shutdown in accordance with Section 4.2.1.2.

CSJ-002

System: Main Feedwater

Valve(s): 2CV-1023-2, 2CV-1024-1, 2CV-1073-2, 2CV-1074-1

Code Class: Class 2 (2CV-1024-1 and 2CV-1074-1)
Non-code (2CV-1023-2 and 2CV-1073-2)

Code Category: Category B

Function: These valves isolate feedwater to a steam generator in the event of depressurization of a steam generator. These valves are actuated closed by a main steam isolation signal or containment spray actuation signal.

Code Requirement: OMa – 1988, Part 10, Section 4.2.1.2 (c) Exercising Test Frequency

COLD SHUTDOWN JUSTIFICATIONS (CSJ)

If exercising is not practicable during plant operation, it may be limited to full-stroke exercising during cold shutdowns;....

**Cold Shutdown
Justification:**

Stroking these valves during power operation would interrupt normal feedwater flow to the steam generators resulting in lowering of steam generator level and an inevitable reactor trip.

**Alternate Test
Schedule:**

These valves will be full stroke exercised during each cold shutdown in accordance with Section 4.2.1.2.

CSJ-003

System: Main Feedwater

Valves(s): 2FW-5A, 2FW-5B

Code Class: Class 2

Code Category: Category C

Function: Upon EFW actuation these check valves have a closed safety function to ensure the maximum flow to the steam generator.

**Code
Requirement:** OMa – 1988, Part 10, Section 4.3.2.2 (c) Exercising Test Frequency

If exercising is not practicable during plant operation, it may be limited to full-stroke exercising during cold shutdown.

**Cold Shutdown
Justification:**

Stroking these valves during power operation would interrupt normal feedwater flow to the steam generators resulting in lowering of steam generator level and an inevitable reactor trip.

**Alternate Test
Schedule:**

The closed safety function of these check valves will be verified by exercising during each cold shutdown, in accordance with Section 4.3.2.2.

CSJ-004

System: Emergency Feedwater

Valve(s): 2EFW-7A, 2EFW-7B, 2EFW-8A, 2EFW-8B, 2EFW-9A, 2EFW-9B

Code Class: Class 2

Code Category: Category C

COLD SHUTDOWN JUSTIFICATIONS (CSJ)

Function: These check valves have an open safety function to allow emergency feedwater to their associated steam generator. These valves have a closed safety function to provide isolation between emergency feedwater headers.

Code Requirement: OMa – 1988, Part 10, Section 4.3.2.2 (c) Exercising Test Frequency

If exercising is not practicable during plant operation, it may be limited to full-stroke exercising during cold shutdown.

Cold Shutdown Justification: To full or partial stroke 2EFW-7A, 2EFW-7B, 2EFW-8A, and 2EFW-8B in the open and closed directions requires that power be reduced by approximately 3% for the duration of the test, which takes several hours. To full stroke or partial stroke 2EFW-9A and 2EFW-9B in the open direction also requires that power be reduced for the duration of the test. NUREG-1482, Section 2.4.5 provides guidance on the types of hardships that warrant extending test frequency to cold shutdowns. One example of a hardship is a test that requires a reduction in power.

Alternate Test Schedule: 2EFW-7A, 2EFW-7B, 2EFW-8A, and 2EFW-8B will be full stroke tested in the open and closed directions during each cold shutdown in accordance with Section 4.3.2.2. 2EFW-9A and 2EFW-9B will be full stroke tested in the open direction during each cold shutdown in accordance with Section 4.3.2.2. 2EFW-9A and 2EFW-9B are also confirmed closed quarterly.

CSJ-005

System: Service Water

Valve(s): 2CV-1425-1, 2CV-1427-2

Code Class: Class 3

Code Category: Category A

Function: These valves have a closed safety function to isolate the service water system from the non-code, non-seismic auxiliary cooling water system. These valves are actuated closed by main steam isolation signal, safety injection actuation signal, or recirculation actuation signal.

Code Requirement: OMa – 1988, Part 10, Section 4.2.1.2 (c) Exercising Test Frequency

If exercising is not practicable during plant operation, it may be limited to full-stroke exercising during cold shutdowns;....

Cold Shutdown

COLD SHUTDOWN JUSTIFICATIONS (CSJ)

Justification: Exercising these valves during power operation would interrupt the cooling water supply to main turbine generator support systems resulting in a main turbine generator trip.

Alternate Test Schedule: These valves will be full stroke exercised during each cold shutdown in accordance with Section 4.2.1.2.

CSJ-006

System: Service Water

Valve(s): 2SW-12A, 2SW-12B

Code Class: Class 3

Code Category: Category C

Function: These valves allow service water flow from the shutdown cooling heat exchangers.

Code Requirement: OMa – 1988, Part 10, Section 4.3.2.2 (b) Exercising Test Frequency

If full-stroke exercising during plant operation is not practicable it may be limited to part-stroke during plant operation and full-stroke during cold shutdown.

Cold Shutdown Justification: In order to obtain adequate service water flow through the shutdown heat exchanger to full stroke these valves during power operation, fluctuating the service water flow to the component cooling water heat exchangers could be required. These fluctuations could cause oscillations in the cooling water temperatures to the reactor coolant pump seals. These oscillations could potentially lead to seal degradation which could result in plant shutdown.

Alternate Test Schedule: These valves are partial stroke tested quarterly. These valves will be full stroked open during cold shutdowns in accordance with Section 4.3.2.2.

CSJ-007

System: Chilled Water

Valve(s): 2CV-3850-2, 2CV-3851-1, 2CV-3852-1

Code Class: Class 2

Code Category: Category A

COLD SHUTDOWN JUSTIFICATIONS (CSJ)

Function: These are containment isolation valves in the chilled water system. These valves provide containment isolation upon receipt of a containment isolation signal.

Code Requirement: OMa – 1988, Part 10, Section 4.2.1.2 (c) Exercising Test Frequency

If exercising is not practicable during plant operation, it may be limited to full-stroke exercising during cold shutdowns;....

Cold Shutdown Justification: Exercising these valves during power operation would interrupt the cooling water flow to the control element drive mechanisms. The control element drive mechanisms would have to be de-energized to prevent damage from overheating during periods without cooling and de-energization of the control element drive mechanisms would result in reactor shutdown.

Alternate Test Schedule: These valves will be full stroke exercised and fail safe tested (fail safe testing only applies to 2CV-3851-1 and 2CV-3852-1) during each cold shutdown in accordance with Section 4.2.1.2.

CSJ-008

System: Chilled Water

Valve(s): 2AC-49

Code Class: Class 2

Code Category: Category AC

Function: This chilled water system check valve performs a containment isolation function.

Code Requirement: OMa – 1988, Part 10, Section 4.3.2.2 (c) Exercising Test Frequency

If exercising is not practicable during plant operation, it may be limited to full-stroke exercising during cold shutdown.

Cold Shutdown Justification: Exercising this valve during power operation would interrupt the cooling water flow to the control element drive mechanisms. The control element drive mechanisms would have to be de-energized to prevent damage from overheating during periods without cooling and de-energization of the control element drive mechanisms would result in reactor shutdown.

Alternate Test Schedule: The closed safety function of this check valve will be verified each cold shutdown in accordance with Section 4.3.2.2.

COLD SHUTDOWN JUSTIFICATIONS (CSJ)

CSJ-009

System: Safety Injection

Valve(s): 2SI-26A, 2SI-26B, 2SI-27A, 2SI-27B, 2SI-28A, 2SI-28B

Code Class: Class 1 (2SI-27A, 2SI-27B, 2SI-28A, 2SI-28B)
Class 2 (2SI-26A, 2SI-26B)

Code Category: Category AC

Function: These valves allow safety injection flow to RCS hot leg piping during long-term core cooling to prevent boron precipitation. The valves have a closed safety function to act as pressure isolation valves.

Code Requirement: OMa – 1988, Part 10, Section 4.3.2.2 (c) Exercising Test Frequency
If exercising is not practicable during plant operation, it may be limited to full-stroke exercising during cold shutdown.

Cold Shutdown Justification: These valves cannot be exercised during power operation because the high pressure safety injection pumps maximum discharge pressure is less than the reactor coolant system pressure during normal operations.

Alternate Test Schedule: These valves will be full stroke exercised during each cold shutdown in accordance with Section 4.3.2.2. Pressure indications and alarms in the control room confirm 2SI-27A/28A and 2SI-27B/28B remain closed at normal RCS operating pressure. 2SI-26A and 2SI-26B are verified closed each cold shutdown (Cold Shutdown Justification - 29).

CSJ-010

System: Reactor Coolant

Valves: 2CV-4698-1, 2CV-4730-1, 2CV-4731-2, 2CV-4740-2, 2CV-4741-1

Code Class: Class 1

Code Category: Category B

Function: These valves have an open function to provide overpressure protection during conditions of low pressure, low temperature operation. These valves have a closed function to maintain RCS integrity during power operation.

Code Requirement: OMa – 1988, Part 10, Section 4.2.1.2 (c) Exercising Test Frequency

COLD SHUTDOWN JUSTIFICATIONS (CSJ)

If exercising is not practicable during plant operation, it may be limited to full-stroke exercising during cold shutdowns;....

**Cold Shutdown
Justification:**

Exercising these valves during power operation could cause a loss of RCS pressure boundary integrity and a loss of coolant event.

**Alternate Test
Schedule:**

These valves will be full stroke exercised during each cold shutdown in accordance with Section 4.2.1.2.

CSJ-011

System: Reactor Coolant

Valve(s): 2SV-4636-1, 2SV-4636-2, 2SV-4668-1, 2SV-4668-2, 2SV-4669-1 2SV-4670-2

Code Class: Class 1 (2SV-4636-1, 2SV-4636-2, 2SV-4668-1, 2SV-4668-2)
Class 2 (2SV-4669-1, 2SV-4670-2)

Code Category: Category B

Function: These valves have a closed function during power operation to maintain RCS integrity. These valves have an open function to vent non-condensable gases from the RCS after an accident to facilitate natural circulation of reactor coolant.

Code Requirement: OMa – 1988, Part 10, Section 4.2.1.2 (c) Exercising Test Frequency

If exercising is not practicable during plant operation, it may be limited to full-stroke exercising during cold shutdowns;....

**Cold Shutdown
Justification:**

Exercising these valves during power operation could cause a loss of RCS pressure boundary integrity and a loss of coolant event.

**Alternate Test
Schedule:**

These valves will be full stroke exercised and fail safe tested during each cold shutdown in accordance with Section 4.2.1.2.

CSJ-012

System: Chemical and Volume Control

Valve(s): 2CV-4820-2, 2CV-4821-1, 2CV-4823-2

Code Class: Class 1 (2CV-4820-2 and 2CV-4821-1)
Class 2 (2CV-4823-2)

Code Category: Category B (2CV-4820-2)

COLD SHUTDOWN JUSTIFICATIONS (CSJ)

Category A (2CV-4821-1 and 2CV-4823-2)

Function: These valves have a closed safety function to isolate the letdown system. In addition, 2CV-4821-1 and 2CV-4823-2 serve as containment isolation valves. 2CV-4820-2 is actuated closed upon receipt of a safety injection actuation signal. 2CV-4821-1 is actuated closed upon receipt of either a safety injection actuation signal or containment isolation actuation signal. 2CV-4823-2 is actuated closed upon receipt of a containment isolation actuation signal.

Code Requirement: OMa – 1988, Part 10, Section 4.2.1.2 (c) Exercising Test Frequency

If exercising is not practicable during plant operation, it may be limited to full-stroke exercising during cold shutdowns;....

Cold Shutdown Justification: Exercising these valves during power operation would necessitate that letdown and charging be secured. Re-establishing charging and letdown causes undesirable pressure and temperature transients. These pressure and temperature cycles would increase the risk of pipe failures due to fatigue.

Alternate Test Schedule: These valves will be full stroke exercised and fail safe tested (fail safe testing only applies to 2CV-4823-2) during each cold shutdown in accordance with Section 4.2.1.2.

CSJ-013

System: Chemical and Volume Control

Valve(s): 2CV-4824-2

Code Class: Class 1

Code Category: Category B

Function: This valve has an open safety function to provide auxiliary spray to the pressurizer. This valve has a passive closed function to prevent diversion of borated water to the pressurizer during emergency boration.

Code Requirement: OMa – 1988, Part 10, Section 4.2.1.2 (c) Exercising Test Frequency

If exercising is not practicable during plant operation, it may be limited to full-stroke exercising during cold shutdowns;....

Cold Shutdown Justification: This valve cannot be exercised open during power operation because such action would subject the spray line nozzles to thermal shock at the pressurizer. Also, this would cause an undesirable RCS pressure transient due to cooling of

COLD SHUTDOWN JUSTIFICATIONS (CSJ)

the pressurizer. These pressure and temperature cycles would increase the risk of pipe failures due to fatigue.

**Alternate Test
Schedule:**

This valve will be full stroke exercised during each cold shutdown in accordance with Section 4.2.1.2.

CSJ-014

System: Chemical and Volume Control

Valve(s): 2CV-4846-1, 2CV-4847-2

Code Class: Class 2

Code Category: Category A

Function: These valves have a closed safety function to provide containment isolation. These valves are actuated closed by either a containment isolation actuation signal or a safety injection actuation signal.

**Code
Requirement:** OMa – 1988, Part 10, Section 4.2.1.2 (c) Exercising Test Frequency

If exercising is not practicable during plant operation, it may be limited to full-stroke exercising during cold shutdowns;....

**Cold Shutdown
Justification:**

Exercising these valves during power operation would interrupt reactor coolant pump seal bleed-off flow resulting in reactor coolant pump seal pressure transients, thus raising the potential for seal related failures.

**Alternate Test
Schedule:**

These valves will be full stroke exercised and fail safe tested (fail safe testing only applies to 2CV-4847-2) during each cold shutdown in accordance with Section 4.2.1.2.

CSJ-015

System: Chemical and Volume Control

Valve(s): 2CV-4873-1

Code Class: Class 2

Code Category: Category B

COLD SHUTDOWN JUSTIFICATIONS (CSJ)

Function: This valve isolates the volume control tank from the suction of the charging pumps. This valve is actuated closed upon the receipt of a safety isolation actuation signal.

Code Requirement: OMa – 1988, Part 10, Section 4.2.1.2 (c) Exercising Test Frequency

If exercising is not practicable during plant operation, it may be limited to full-stroke exercising during cold shutdowns;....

Cold Shutdown Justification: Exercising this valve during power operation would necessitate that letdown and charging be secured. Re-establishing charging and letdown causes undesirable pressure and temperature transients. These pressure and temperature cycles would increase the risk of pipe failures due to fatigue.

Alternate Test Schedule: This valve will be full stroke exercised during each cold shutdown in accordance with Section 4.2.1.2.

CSJ-016

System: Chemical and Volume Control

Valve(s): 2CV-4950-2

Code Class: Class 2

Code Category: Category B

Function: This valve has an open safety function to provide adequate suction for the charging pumps from the refueling water tank.

Code Requirement: OMa – 1988, Part 10, Section 4.2.1.2 (c) Exercising Test Frequency

If exercising is not practicable during plant operation, it may be limited to full-stroke exercising during cold shutdowns;....

Cold Shutdown Justification: This valve cannot be exercised during power operation without over-borating the reactor coolant system resulting in a reactor shutdown.

Alternate Test Schedule: This valve will be full stroke exercised during each cold shutdown in accordance with Section 4.2.1.2.

CSJ-017

System: Chemical and Volume Control

COLD SHUTDOWN JUSTIFICATIONS (CSJ)

Valve(s): 2CVC-26

Code Class: Class 1

Code Category: Category C

Function: This valve has an open safety function to provide overpressure protection for the charging system.

Code Requirement: OMa – 1988, Part 10, Section 4.3.2.2 (c) Exercising Test Frequency

If exercising is not practicable during plant operation, it may be limited to full-stroke exercising during cold shutdown.

Cold Shutdown Justification:

This check valve is in the bypass line around a motor operated valve in the charging system. This valve cannot be exercised during power operation since it would require closing both of the normally open charging valves, and failure of this valve to open under those conditions would result in an interruption of charging flow. Increasing letdown temperatures would require isolating letdown. Re-establishing charging and letdown causes undesirable pressure and temperature transients. These pressure and temperature cycles would increase the risk of pipe failures due to fatigue.

Alternate Test Schedule:

This valve will be full stroke exercised during each cold shutdown in accordance with Section 4.3.2.2.

CSJ-018

System: Chemical and Volume Control

Valve(s): 2CVC-28A

Code Class: Class 1

Code Category: Category C

Function: This valve has an open safety function to provide auxiliary spray to the pressurizer.

Code Requirement: OMa – 1988, Part 10, Section 4.3.2.2 (c) Exercising Test Frequency

If exercising is not practicable during plant operation, it may be limited to full-stroke exercising during cold shutdown.

Cold Shutdown

COLD SHUTDOWN JUSTIFICATIONS (CSJ)

Justification: This valve cannot be exercised open during power operation because such action would subject the spray line nozzles to thermal shock at the pressurizer. Also, this would cause an undesirable RCS pressure transient due to cooling of the pressurizer. These pressure and temperature cycles would increase the risk of pipe failures due to fatigue.

Alternate Test Schedule: The open safety function of this check valve will be verified by exercising during each cold shutdown, in accordance with Section 4.3.2.2.

CSJ-019

System: Chemical and Volume Control

Valve(s): 2CVC-28B, 2CVC-28C

Code Class: Class 1

Code Category: Category C

Function: These valves have an open safety function to provide an emergency boration flow path to the RCS.

Code Requirement: OMa – 1988, Part 10, Section 4.3.2.2 (b) Exercising Test Frequency

If full-stroke exercising during plant operation is not practicable it may be limited to part-stroke during plant operation and full-stroke during cold shutdown.

Cold Shutdown Justification: Opening these valves with full flow to the RCS during power operation would result in a significant increase in pressurizer level. The resulting upset of the pressurizer level control system would result in undesirable temperature transients in letdown system piping. These pressure and temperature cycles would increase the risk of pipe failures due to fatigue.

Alternate Test Schedule: These valves are partial stroke tested quarterly. These valves will be full stroked open during cold shutdowns in accordance with Section 4.3.2.2.

CSJ-020

System: Chemical and Volume Control

Valve(s): 2CVC-49, 2CVC-58, 2CVC-70

Code Class: Class 2

Code Category: Category C

COLD SHUTDOWN JUSTIFICATIONS (CSJ)

Function: These valves have an open safety function to provide borated water to the charging pumps.

Code Requirement: OMa – 1988, Part 10, Section 4.3.2.2 (c) Exercising Test Frequency
If exercising is not practicable during plant operation, it may be limited to full-stroke exercising during cold shutdowns.

Cold Shutdown Justification: These valves cannot be exercised during power operation without over-borating the reactor coolant system resulting in a reactor shutdown.

Alternate Test Schedule: The open safety function of these check valves will be verified by exercising during each cold shutdown, in accordance with Section 4.3.2.2.

CSJ-021

System: Chemical and Volume Control

Valve(s): 2CVC-41A, 2CVC-41B

Code Class: Class 2

Code Category: Category C

Function: These valves have an open safety function to provide borated water to the charging pumps. These valves also have a closed safety function to prevent reverse flow through an idle boric acid makeup pump.

Code Requirement: OMa – 1988, Part 10, Section 4.3.2.2 (b) Exercising Test Frequency
If full-stroke exercising during plant operation is not practicable it may be limited to part-stroke during plant operation and full-stroke during cold shutdown.

Cold Shutdown Justification: These valves cannot be full stroke exercised during power operation without over-borating the reactor coolant system resulting in a reactor shutdown.

Alternate Test Schedule: These valves are partial stroke tested quarterly. Closure of these valves is also confirmed quarterly. These valves will be full stroked open during cold shutdowns in accordance with Section 4.3.2.2.

CSJ-022

System: Safety Injection

COLD SHUTDOWN JUSTIFICATIONS (CSJ)

Valve(s): 2CV-5084-1, 2CV-5086-2

Code Class: Class 1

Code Category: Category A

Function: These valves have an open safety function to provide a suction to the low pressure safety injection pumps during shutdown cooling. These valves also have a closed safety function to act as pressure isolation valves during power operation.

Code Requirement: OMa – 1988, Part 10, Section 4.2.1.2 (c) Exercising Test Frequency

If exercising is not practicable during plant operation, it may be limited to full-stroke exercising during cold shutdown.

Cold Shutdown Justification: These valves cannot be exercised during power operation because they are interlocked shut with reactor coolant system pressure above 300 psia.

Alternate Test Schedule: These valves will be full stroke exercised during each cold shutdown in accordance with Section 4.2.1.2.

CSJ-023

System: Safety Injection

Valve(s): 2SI-3A, 2SI-3B

Code Class: Class 2

Code Category: Category C

Function: These valves have an open safety function to provide low pressure safety injection to the reactor coolant system. These valves also have a closed safety function to prevent reverse flow through an idle low pressure safety injection pump.

Code Requirement: OMa – 1988, Part 10, Section 4.3.2.2 (c) Exercising Test Frequency

If exercising is not practicable during plant operation, it may be limited to full-stroke exercising during cold shutdown.

Cold Shutdown Justification: Exercising these valves during power operation is impractical because the low pressure safety injection pumps cannot overcome reactor coolant system pressure.

COLD SHUTDOWN JUSTIFICATIONS (CSJ)

**Alternate Test
Schedule:**

Closure of these valves is confirmed quarterly. These valves will be full stroked open during each cold shutdown, in accordance with Section 4.3.2.2.

CSJ-024

System: Safety Injection

Valve(s): 2SI-10A, 2SI-10B, 2SI-10C, 2SI-12, 2SI-13A, 2SI-13B, 2SI-13C, 2SI-13D

Code Class: Class 1 (2SI-13A, 2SI-13B, 2SI-13C, 2SI-13D)
Class 2 (2SI-10A, 2SI-10B, 2SI-10C, and 2SI-12)

Code Category: Category AC (2SI-13A, 2SI-13B, 2SI-13C, 2SI-13D)
Category C (2SI-10A, 2SI-10B, 2SI-10C, and 2SI-12)

Function: These valves open to allow high pressure safety injection flow to the RCS. 2SI-10A, 2SI-10B, and 2SI-10C close to prevent reverse flow through an idle HPSI pump. 2SI-13A, 2SI-13B, 2SI-13C, and 2SI-13D close to prevent over-pressurization of upstream piping.

**Code
Requirement:** OMa – 1988, Part 10, Section 4.3.2.2 (c) Exercising Test Frequency

If exercising is not practicable during plant operation, it may be limited to full-stroke exercising during cold shutdown.

**Cold Shutdown
Justification:**

These valves cannot be exercised during power operation because the high pressure safety injection pumps maximum discharge pressure is less than the reactor coolant system pressure during normal operations.

**Alternate Test
Schedule:**

These valves will be full stroke exercised during each cold shutdown in accordance with Section 4.3.2.2. 2SI-10A, 2SI-10B, 2SI-10C, 2SI-13A, 2SI-13B, 2SI-13C, and 2SI-13D are verified closed quarterly.

CSJ-025

System: Safety Injection

Valve(s): 2SI-14A, 2SI-14B, 2SI-14C, 2SI-14D

Code Class: Class 1

Code Category: Category AC

Function: These valves have an open safety function to provide low pressure safety injection to the reactor coolant system. These valves also have a closed safety

COLD SHUTDOWN JUSTIFICATIONS (CSJ)

function to act as pressure isolation valves between the low pressure safety injection system and the reactor coolant system.

Code

Requirement:

OMa – 1988, Part 10, Section 4.3.2.2 (c) Exercising Test Frequency

If exercising is not practicable during plant operation, it may be limited to full-stroke exercising during cold shutdown.

**Cold Shutdown
Justification:**

Exercising these valves during power operation is impractical because the low pressure safety injection pumps cannot overcome reactor coolant system pressure.

**Alternate Test
Schedule:**

Closure of these valves is confirmed quarterly. These valves will be full stroked open during each cold shutdown, in accordance with Section 4.3.2.2.

CSJ-026

System:

Safety Injection

Valve(s):

2SI-22A, 2SI-22B

Code Class:

Class 2

Code Category:

Category C

Function:

These valves have an open safety function to provide minimum recirculation flow for low pressure safety injection pumps.

Code

Requirement:

OMa – 1988, Part 10, Section 4.3.2.2 (c) Exercising Test Frequency

If exercising is not practicable during plant operation, it may be limited to full-stroke exercising during cold shutdown.

**Cold Shutdown
Justification:**

Since flow indication is not provided on the minimum recirculation flow path for low pressure safety injection pumps, observation of pump differential pressure during quarterly pump testing provides limited assurance that the minimum recirculation check valve opens. Instrument uncertainty in the measurement of pump differential pressure, however, creates uncertainty in the verification that the pump minimum recirculation check valve opens. Absolute verification that the check valve opens requires a measurement of recirculation flow. Ultrasonic flow measurement can be used to demonstrate sufficient flow to provide adequate pump recirculation flow, but the application of this technique on a quarterly basis is considered burdensome.

Alternate Test

COLD SHUTDOWN JUSTIFICATIONS (CSJ)

Schedule: These valves will be verified to open during each during each cold shutdown, in accordance with Section 4.3.2.2, using ultrasonic flow measurement. An indication of 80 gpm or greater has been determined to provide adequate minimum recirculation flow. Therefore, an indication of 80 gpm or greater will be used as full-open indication for these check valves.

CSJ-027

System: Safety Injection

Valve(s): 2SI-23A, 2SI-23B, 2SI-23C

Code Class: Class 2

Code Category: Category C

Function: These valves have an open safety function to provide minimum recirculation flow for high pressure safety injection pumps.

Code Requirement: OMa – 1988, Part 10, Section 4.3.2.2 (c) Exercising Test Frequency

If exercising is not practicable during plant operation, it may be limited to full-stroke exercising during cold shutdown.

Cold Shutdown Justification:

Since flow indication is not provided on the minimum recirculation flow path for high pressure safety injection pumps, observation of pump differential pressure during quarterly pump testing provides limited assurance that the minimum recirculation check valve opens. Instrument uncertainty in the measurement of pump differential pressure, however, creates uncertainty in the verification that the pump minimum recirculation check valve opens. Absolute verification that the check valve opens requires a measurement of recirculation flow. Ultrasonic flow measurement can be used to demonstrate sufficient flow to provide adequate pump recirculation flow, but the application of this technique on a quarterly basis is considered burdensome.

Alternate Test Schedule:

These valves will be verified to open during each during each cold shutdown, in accordance with Section 4.3.2.2, using ultrasonic flow measurement. An indication of 20 gpm or greater has been determined to provide adequate minimum recirculation flow. Therefore, an indication of 20 gpm or greater will be used as full-open indication for these check valves.

CSJ-028

System: Safety Injection

Valve(s): 2SI-26A, 2SI-26B

COLD SHUTDOWN JUSTIFICATIONS (CSJ)

Code Class: Class 2

Code Category: Category AC

Function: These valves allow flow during long-term core cooling to prevent boron precipitation. These valves also serve as pressure isolation valves.

Code Requirement: OMa – 1988, Part 10, Section 4.3.2.2 (c) Exercising Test Frequency

If exercising is not practicable during plant operation, it may be limited to full-stroke exercising during cold shutdown.

Cold Shutdown Justification:

Several possible methods of verifying the quarterly closure of these valves were considered and deemed either to be impractical or to result in an increase in risk without a corresponding increase in safety from performing the test. The test methods considered and the resulting hardships are documented below.

1. Creating a differential pressure across the check valves using the opposite train HPSI pump. Cross-connecting the HPSI headers is prohibited by Technical Specifications 3.5.2 and 3.0.3 during Modes 1, 2, and 3.
2. Creating a differential pressure across the check valves by starting and stopping a HPSI pump in the same train with the HPSI hot leg injection MOV open. This test option requires that piping upstream of the check valve be vented. Venting this piping causes both dose and personnel hazard concerns; thus, this test option was rejected based on the risk and hardship involved without a commensurate increase in safety.
3. Creating a differential pressure across the check valves by using a SIT as a test volume. This option requires connecting a safety injection tank to the HPSI header via the non-seismic, non-code SIT drain header. Connecting the seismic HPSI and SIT piping through a non-seismic line is undesirable since the systems are no longer independent and causes entry into an action statement for Technical Specification 3.5.2. Also, using the SIT as a test volume could cause entry into a one hour action statement for Technical Specification 3.5.1 and possibly Technical Specification 3.0.3 due to valves other than 2SI-26s leaking when the drain header is pressurized. The test method also requires that HPSI piping be vented which for reasons discussed in option 2 is not desirable. Finally, entry or potential entry into multiple Technical Specifications is not considered prudent from guidance provided by the NRC in NUREG-1482, Section 3.1.2.

Alternate Test Schedule:

The closed safety function of these valves will be verified each cold shutdown in accordance with Section 4.3.2.2. 2SI-26A and 2SI-26B will be full stroke exercised during each cold shutdown (Cold Shutdown Justification - 9).

COLD SHUTDOWN JUSTIFICATIONS (CSJ)

CSJ-029

System: Component Cooling Water

Valve(s): 2CV-5236-1, 2CV-5254-2, 2CV-5255-1

Code Class: Class 2

Code Category: Category A

Function: These valves have a closed safety function to establish containment isolation upon receipt of a containment isolation actuation signal.

Code Requirement: OMa – 1988, Part 10, Section 4.2.1.2 (c) Exercising Test Frequency

If exercising is not practicable during plant operation, it may be limited to full-stroke exercising during cold shutdowns;....

Cold Shutdown Justification:

Exercising these valves during power operation would interrupt cooling water flow to the reactor coolant pumps. Operating procedures prohibit operation of the reactor coolant pumps without cooling water flow because a loss of cooling water flow would cause overheating and failure of reactor coolant pump seals. If a reactor coolant pump is secured, a reactor trip will occur.

Alternate Test Schedule:

These valves will be full stroke exercised during each cold shutdown in accordance with Section 4.2.1.2.

CSJ-030

System: Component Cooling Water

Valve(s): 2CCW-38

Code Class: Class 2

Code Category: Category AC

Function: This valve has a closed safety function to establish containment isolation.

Code Requirement: OMa – 1988, Part 10, Section 4.3.2.2 (c) Exercising Test Frequency

If exercising is not practicable during plant operation, it may be limited to full-stroke exercising during cold shutdown.

Cold Shutdown Justification:

Exercising this valve during power operation would interrupt cooling water flow to the reactor coolant pumps. Operating procedures prohibit operation of the

COLD SHUTDOWN JUSTIFICATIONS (CSJ)

reactor coolant pumps without cooling water flow because a loss of cooling water flow would cause overheating and failure of reactor coolant pump seals. If a reactor coolant pump is secured, a reactor trip will occur.

**Alternate Test
Schedule:**

The closed safety function of this check valve will be verified by exercising during each cold shutdown, in accordance with Section 4.3.2.2.

CSJ-031

System: Chemical and Volume Control

Valve(s): 2BS-6

Code Class: Class 2

Code Category: Category C

Function: This valve has an open safety function to provide adequate suction for the charging pumps from the refueling water tank.

**Code
Requirement:** OMa – 1988, Part 10, Section 4.3.2.2 (b) Exercising Test Frequency

If full-stroke exercising during plant operation is not practicable it may be limited to part-stroke during plant operation and full-stroke during cold shutdown.

**Cold Shutdown
Justification:**

This valve cannot be full stroke exercised during power operation without over-borating the reactor coolant system resulting in a reactor shutdown.

**Alternate Test
Schedule:**

The open safety function of this check valve will be verified by exercising during each cold shutdown, in accordance with Section 4.3.2.2 and part-stroke exercised quarterly.

CSJ-032

System: Nitrogen Addition

Valve(s): 2N2-18

Code Class: Class 2

Code Category: Category AC

Function: This stop check valve has an active closed safety function to establish containment isolation.

COLD SHUTDOWN JUSTIFICATIONS (CSJ)

Code

Requirement: OMa – 1988, Part 10, Section 4.3.2.2 (c) Exercising Test Frequency

If exercising is not practicable during plant operation, it may be limited to full-stroke exercising during cold shutdown.

**Cold Shutdown
Justification:**

In order to confirm closure of this valve, vent valves in the high pressure nitrogen addition system have to be opened to atmosphere. Opening the vent valves presents a contamination hazard unless a high efficiency particulate air filter is connected to the vent piping. The vent piping is approximately seven feet off of the floor. There is no permanent structure available to access these valves. To erect scaffolding every quarter presents a hardship without a compensating increase in safety. To leave a scaffold in place would add congestion to an already congested area.

In addition, a personnel safety concern is created if the valves are stroked quarterly. If the check valve is not seated then gas pressure at the vent valve could be as high as 620 psig. This would expose the operator to an undue risk with no commensurate safety benefit.

**Alternate Test
Schedule:**

The closed safety function of this check valve will be verified by exercising during each cold shutdown, in accordance with Section 4.3.2.2.

CSJ-033

System: Air Flow and Control, Containment Building

Valve(s): 2CV-8283-1, 2CV-8284-2, 2CV-8285-1, 2CV-8286-2, 2CV-8289-1, 2CV-8291-1

Code Class: Class 2

Code Category: Category A (2CV-8283-1, 2CV-8284-2, 2CV-8285-1, 2CV-8286-2) Category B (2CV-8289-1, 2CV-8291-1)

Function: 2CV-8283-1, 2CV-8284-2, 2CV-8285-1, 2CV-8286-2 have a closed safety function for containment isolation. 2CV-8283-1, 2CV-8284-2, 2CV-8285-1, 2CV-8286-2, 2CV-8289-1, and 2CV-8291-1 are designed to close upon receipt of either a containment isolation actuation signal or safety injection actuation signal.

Code

Requirement: OMa – 1988, Part 10, Section 4.2.1.2 (c) Exercising Test Frequency

If exercising is not practicable during plant operation, it may be limited to full-stroke exercising during cold shutdowns;....

**Cold Shutdown
Justification:**

ANO-2 Technical Specification 3.6.1.6 requires these valves to be maintained closed, except during cold shutdown.

COLD SHUTDOWN JUSTIFICATIONS (CSJ)

**Alternate Test
Schedule:**

These valves will be full stroke exercised and fail safe tested (fail safe testing only applies to 2CV-8283-1, 2CV-8284-2, 2CV-8285-1 2CV-8286-2) during each cold shutdown in accordance with Section 4.2.1.2.

CSJ-034

System: Chemical & Volume Control

Valve(s): 2CVC-78

Code Class: Class 2

Code Category: Category AC

Function: This check valve has a closed safety function to establish containment isolation, and an open safety function to prevent overpressurization of penetration piping.

**Code
Requirement:** OMa – 1988, Part 10, Section 4.3.2.2 (c) Exercising Test Frequency

If exercising is not practicable during plant operation, it may be limited to full-stroke exercising during cold shutdown.

**Cold Shutdown
Justification:**

This check valve is stroke tested to the open position quarterly by addition to the quench tank. During normal power operations, there is not sufficient pressure in the containment demin water supply header to seat the check valve. A containment entry to fill and vent the containment demin hose station header to provide the necessary back pressure for testing, is not practical on a quarterly basis due to dose and cost considerations.

**Alternate Test
Schedule:**

The closed safety function of this check valve will be verified during each cold shutdown, in accordance with Section 4.3.2.2.

REFUELING OUTAGE JUSTIFICATIONS (ROJ)

ROJ-001

System: Emergency Feedwater

Valves: 2EFW-2A and 2EFW-2B

Category: C

Class: 3

Function: Allows service water as emergency supply to steam generators

Code Requirement: OMa – 1988, Part 10, Section 4.3.2.2 (e)

If exercising is not practicable during plant operation or cold shutdowns, it may be limited to full-stroke during refueling outages.

**Refueling Outage
Justification:**

There is no means available to verify the disc in valves 2EFW-2A and 2EFW-2B moves promptly away from the seat when the closing differential is removed and flow through the valve is initiated. Furthermore, partial or full stroke exercising of these valves during power operation or cold shutdown would introduce water of unacceptable chemical quality into the secondary coolant.

Alternative Testing:

These valves will be full flow tested during refueling outages when the service water piping is flushed. During refueling outages, pipe spools downstream of these valves (but upstream of the emergency feedwater pumps) are removed to flush the subject piping using the service water pumps. This is done to prevent chemical contamination of the EFW system with service water and subsequent contamination of the steam generators during plant startup. Flow through 2EFW-2A and 2EFW-2B is confirmed by using a strap-on ultrasonic flow meter ($\pm 5\%$ accuracy). Full flow through these valves will be confirmed by verifying greater than 550 gpm. The EFW pumps are designed to provide 485 gpm in accident conditions. Hence, full flow will be passed through 2EFW-2A and 2EFW-2B.

These valves are confirmed closed each quarter.

ROJ-002

System: Safety Injection

Valves: 2SI-15A, 2SI-15B, 2SI-15C, 2SI-15D

Category: AC

Class: 1

Function: These valves have an open safety function to provide safety injection to the reactor coolant system. These valves also have a closed safety function to act

REFUELING OUTAGE JUSTIFICATIONS (ROJ)

as pressure isolation valves between low pressure-rated safety injection systems and the reactor coolant system.

Code Requirement: OMa-1988, Part 10, Section 4.3.2.2 (d)

If exercising is not practicable during plant operation and full-stroke during cold shutdowns is also not practicable, it may be limited to part-stroke during cold shutdowns, and full-stroke during refueling outages.

**Refueling Outage
Justification:**

These valves cannot be full stroke tested during power operation because the high pressure safety injection pumps and safety injection tanks maximum discharge pressure is less than the reactor coolant system pressure during normal operation. Due to the time it takes the safety injection tank motor operated valves (MOVs) to open, no way exists to establish maximum accident flow through these valves.

In addition, it is impractical to partial stroke 2SI-15A, 2SI-15B, 2SI-15C and 2SI-15D during power operation using the charging/HPSI cross connect piping for the following reasons:

1. Difficulties in evaluating the thermal stresses and potential stratification issues caused by injecting 120 degree water through the safety injection nozzles into the RCS.
2. Aligning charging through the safety injection headers would result in a loss of flow in the charging header causing a loss of cooling by 2E-23, regenerative heat exchanger, resulting in increased letdown temperature and a corresponding component cooling water transient. Transients in the component cooling water systems can cause unnecessary temperature transients on the reactor coolant pump seals that can result in seal damage.
3. The safety injection headers are typically flushed and laid up with water containing boron at refueling water tank concentration levels. Charging through the safety injection headers would inject the boron at the current RCS concentration, thus diluting the safety injection header boron concentration.
4. Charging through the safety injection headers could also result in problems with the 2SI-15 valves reseating. To reseal the 2SI-15s, which are inboard pressure isolation valves, would require manipulating manual vent valves - a very undesirable condition.

Full-stroke verification of 2SI-15A, 2SI-15B, 2SI-15C, and 2SI-15D is accomplished by non-intrusive monitoring techniques. These valves are inside containment where it would be impractical to setup the specialized test equipment and acquire appropriate data during each cold shutdown.

Alternative Testing: Non-intrusive monitoring techniques in conjunction with full-flow testing of LPSI pumps will be performed during refueling outages to confirm the ability of these valves to full stroke open. The guidance in NUREG-1482, Section 4.1.2, for a sampling plan will be followed with these four valves in a single group. System

REFUELING OUTAGE JUSTIFICATIONS (ROJ)

pressures and flow conditions have been verified to cause the valves to fully stroke during full-flow testing of LPSI pumps. If non-intrusive testing does not confirm that the valve strokes full open or reveals a failure mechanism that could impact the valve's safety function, the valve will be opened and inspected. If problems are found with the sample valve that are determined to affect the operational readiness of the valve, all valves in the group will be tested using non-intrusive techniques during the same outage.

In addition to full open verification using non-intrusive techniques, these valves are also verified closed quarterly and at least partially open each cold shutdown in accordance with OM-10 Section 4.3.2.2. Leak testing of these Category A PIVs is performed each refueling outage.

IST PLAN
ANO-2 APPENDIX
VALVE SUMMARY LISTING

PROGRAM SECTION NO. CEP-IST-2
REVISION NO. 307
PAGE 1 OF 28

VALVE NO.	VALVE SIZE (in.) TYPE ACT.		P & ID NO., COORD.	IST PASS	IST CODE CLASS	CODE CAT.	SAFETY POS.	REQUIRED TESTS AND FREQUENCY										RELIEF REQUEST (VRR)	OTHER (CSJ/ROJ VPS/CMJ)	NOTES:
								FS	PS	LT	LJ	ST	FT	PI	RV	EX	CD			
2AC-49	6		M-2222 Sh 1	A	2	C, A	O	Q											CSJ-8	
	CK	SA	H-3				C	C			J									
2BA-216	2		M-2218 Sh 5	P	2	A														
	G	H	F-4				C				J									
2BA-217	2		M-2218 Sh 5	P	2	A														
	G	H	F-3				C				J									
2BS-1A	20		M-2236 Sh 1	A	2	C	O	R	Q											See Valve Notes 1 and 2.
	CK	SA	E-2				C	Q												
2BS-1B	20		M-2236 Sh 1	A	2	C	O	R	Q											See Valve Notes 1 and 2.
	CK	SA	E-1				C	Q												
2BS-3A	14		M-2236 Sh 1	A	2	C	O	Q												
	CK	SA	E-3																	
2BS-3B	14		M-2236 Sh 1	A	2	C	O	Q												
	CK	SA	D-3																	
2BS-4A	12		M-2236 Sh 1	A	2	C	O	Q												
	SC	H/SA	E-5				C	Q												
2BS-4B	12		M-2236 Sh 1	A	2	C	O	Q												
	SC	H/SA	D-5				C	Q												
2BS-5A	10		M-2236 Sh 1	A	2	C	O										2R			See Valve Note 1. * Normal Operation
	CK	SA	F-8				C	*												
2BS-5B	10		M-2236 Sh 1	A	2	C	O										2R			See Valve Note 1. * Normal Operation
	CK	SA	F-8				C	*												
2BS-6	3		M-2236 Sh 1	A	2	C	O	C	Q										CSJ-32	
	SC	SA	F-1																	
2CCW-38	10		M-2234 Sh 1	A	2	C, A													CSJ-31	
	CK	SA	B-4				C	C			J									
2CS-844	10		M-204 Sh 5	A	3	C	O		Q								2R			
	CK	SA	E-1																	
2CS-845	10		M-204 Sh 5	A	3	C	O		Q								2R			
	CK	SA	E-1																	
2CV-0205-2	1		M-2202 Sh 4	A	3	B	O	Q				Q		Q						
	G	M	B-4																	

IST PLAN
ANO-2 APPENDIX
VALVE SUMMARY LISTING

PROGRAM SECTION NO. CEP-IST-2
REVISION NO. 307
PAGE 2 OF 28

VALVE NO.	VALVE SIZE (in.)		P & ID NO., COORD.	IST PASS	IST CODE CLASS	CODE CAT.	SAFETY POS.	REQUIRED TESTS AND FREQUENCY										RELIEF REQUEST (VRR)	OTHER (CSJ/ROJ VPS/CMJ)	NOTES:
	TYPE	ACT.						FS	PS	LT	LJ	ST	FT	PI	RV	EX	CD			
2CV-0336	4		M-2202 Sh 4	P	3	B	O							Q						Valve is spring actuated
	GL	SA	H-3	-																
2CV-0340-2	4		M-2202 Sh 4	A	3	B	O	Q				Q		R						
	G	M	B-4																	
2CV-0711-2	6		M-2204 Sh 4	A	3	B	O	Q				Q		R						
	G	M	C-2																	
2CV-0714-1	4		M-2204 Sh 4	A	3	B														
	G	AO	G-4				C	Q				Q	Q	R						
2CV-0716-1	6		M-2204 Sh 4	A	3	B	O	Q				Q		R						
	G	M	G-2																	
2CV-0789-1	8		M-2204 Sh 4	A	3	B	O	Q				Q		R						
	G	M	E-3				C	Q				Q		R						
2CV-0795-2	8		M-2204 Sh 4	A	3	B	O	Q				Q		R						
	G	M	D-3				C	Q				Q		R						
2CV-0798-1	4		M-2204 Sh 4	A	3	B														
	G	AO	G-7				C	Q				Q	Q	R						
2CV-1000-1	4		M-2206 Sh 1	A	2	B	O	Q				Q		R						
	G	M	H-5				C	Q				Q		R						
2CV-1001	10		M-2206 Sh 1	A	2	B	O	Q				Q	Q	R						
	GL	AO	H-6				C	Q				Q		R						
2CV-1002	10		M-2206 Sh 1	A	2	B	O	Q				Q		R						
	G	M	G-6				C	Q				Q		R						
2CV-1010-1	36		M-2206 Sh 1	A	2	B													CSJ-1	Valve is air/spring actuated
	GL	AO	G-5				C	C	Q			C	C	R						
2CV-1016-1	4		M-2206 Sh 2	A	2	B														
	G	AO	G-7				C	Q				Q	Q	R						
2CV-1023-2	24		M-2206 Sh 1	A	NN	B													CSJ-2	
	G	M	C-7				C	C				C		R						
2CV-1024-1	24		M-2206 Sh 1	A	2	B													CSJ-2	
	G	M	C-7				C	C				C		R						
2CV-1025-1	4		M-2204 Sh 4	A	3	B	O	Q				Q		R						
	GL	M	F-7				C	Q				Q		R						

IST PLAN
ANO-2 APPENDIX
VALVE SUMMARY LISTING

PROGRAM SECTION NO. CEP-IST-2
REVISION NO. 307
PAGE 3 OF 28

VALVE NO.	VALVE SIZE (in.)		P & ID NO., COORD.	IST PASS	IST CODE CLASS	CODE CAT.	SAFETY POS.	REQUIRED TESTS AND FREQUENCY									RELIEF REQUEST (VRR)	OTHER (CSJ/ROJ VPS/CMJ)	NOTES:
	TYPE	ACT.						FS	PS	LT	LJ	ST	FT	PI	RV	EX	CD		
2CV-1026-2	4		M-2204 Sh 4	A	3	B	O	Q				Q		R					
	G	M	C-7				C	Q				Q		R					
2CV-1036-2	4		M-2204 Sh 4	A	2	B	O	Q				Q		R					
	G	M	F-8				C	Q				Q		R					
2CV-1037-1	4		M-2204 Sh 4	A	2	B	O	Q				Q		R					
	G	M	C-8				C	Q				Q		R					
2CV-1038-2	4		M-2204 Sh 4	A	2	B	O	Q				Q		R					
	G	M	F-8				C	Q				Q		R					
2CV-1039-1	4		M-2204 Sh 4	A	2	B	O	Q				Q		R					
	G	M	D-8				C	Q				Q		R					
2CV-1040-1	2		M-2206 Sh 1	P	2	B													
	G	M	G-5				C							R					
2CV-1050-2	4		M-2206 Sh 1	A	2	B	O	Q				Q		R					
	G	M	H-4				C	Q				Q		R					
2CV-1051	10		M-2206 Sh 1	A	2	B	O	Q				Q	Q	R					
	GL	AO	G-3				C	Q				Q		R					
2CV-1052	10		M-2206 Sh 1	A	2	B	O	Q				Q		R					
	G	M	G-3				C	Q				Q		R					
2CV-1060-2	36		M-2206 Sh 1	A	2	B												CSJ-1	
	GL	AO	G-4				C	C	Q			C	C	R					
2CV-1066-1	4		M-2206 Sh 2	A	2	B													
	G	AO	G-2				C	Q				Q	Q	R					
2CV-1073-2	24		M-2206 Sh 1	A	NN	B												CSJ-2	
	G	M	C-2				C	C				C		R					
2CV-1074-1	24		M-2206 Sh 1	A	2	B												CSJ-2	
	G	M	C-2				C	C				C		R					
2CV-1075-1	4		M-2204 Sh 4	A	3	B	O	Q				Q		R					
	GL	M	F-7				C	Q				Q		R					
2CV-1076-2	4		M-2204 Sh 4	A	3	B	O	Q				Q		R					
	G	M	D-7				C	Q				Q		R					
2CV-1090-2	2		M-2206 Sh 1	P	2	B													
	G	M	G-4				C							R					

PROGRAM SECTION NO. CEP-IST-2
REVISION NO. 307
PAGE 4 OF 28

[illegible]

**IST PLAN
ANO-2 APPENDIX
VALVE SUMMARY LISTING**

**PROGRAM SECTION NO. CEP-IST-2
REVISION NO. 307
PAGE 6 OF 28**

VALVE NO.	VALVE SIZE (in.) TYPE ACT.	P & ID NO., COORD.	IST PASS	IST CODE CLASS	CODE CAT.	SAFETY POS.	REQUIRED TESTS AND FREQUENCY										RELIEF REQUEST (VRR)	OTHER (CSJ/ROJ VPS/CMJ)	NOTES:
							FS	PS	LT	LJ	ST	FT	PI	RV	EX	CD			
2CV-1504-2	8	M-2210 Sh 1	A	3	B	O	M				M		R						
	BF M	G-3																	
2CV-1510-2	12	M-2210 Sh 3	A	2	B	O	Q				Q		R						
	BF M	G-6																	
2CV-1511-1	12	M-2210 Sh 3	A	2	B	O	Q				Q		R						
	BF M	E-6																	
2CV-1513-2	12	M-2210 Sh 3	A	2	B	O	Q				Q		R						
	BF M	E-4																	
2CV-1519-1	12	M-2210 Sh 3	A	2	B	O	Q				Q		R						
	BF M	B-4																	
2CV-1525-1	12	M-2210 Sh 3	A	3	A														
	BF M	G-5				C	Q		R		Q		R						
2CV-1526-2	12	M-2210 Sh 3	A	3	A														
	BF M	G-4				C	Q		R		Q		R						
2CV-1529-2	2	M-2210 Sh 3	A	3	B	O	Q				Q		R						
	G M	G-4																	
2CV-1530-1	18	M-2210 Sh 3	A	3	A														
	BF M	G-3				C	Q		R		Q		R						
2CV-1531-2	18	M-2210 Sh 3	A	3	A														
	BF M	G-2				C	Q		R		Q		R						
2CV-1532-1	2	M-2210 Sh 3	A	3	B	O	Q				Q		R						
	G M	F-4																	
2CV-1541-1	18	M-2210 Sh 3	A	3	A	O	Q				Q		R						
	BF M	B-2				C	Q		R		Q		R						
2CV-1542-2	16	M-2210 Sh 3	A	3	A														
	BF M	C-2				C	Q		R		Q		R						
2CV-1543-1	16	M-2210 Sh 3	A	3	A														
	BF M	C-2				C	Q		R		Q		R						
2CV-1560-2	18	M-2210 Sh 3	A	3	A	O	Q				Q		R						
	BF M	C-2				C	Q		R		Q		R						
2CV-1561-1	1.5	M-2210 Sh 3	A	3	B	O	Q				Q		R						
	G M	H-1																	

**IST PLAN
ANO-2 APPENDIX
VALVE SUMMARY LISTING**

**PROGRAM SECTION NO. CEP-IST-2
REVISION NO. 307
PAGE 7 OF 28**

VALVE NO.	VALVE SIZE (in.) TYPE ACT.		P & ID NO., COORD.	IST PASS	IST CODE CLASS	CODE CAT.	SAFETY POS.	REQUIRED TESTS AND FREQUENCY										RELIEF REQUEST (VRR)	OTHER (CSJ/ROJ VPS/CMJ)	NOTES:
								FS	PS	LT	LJ	ST	FT	PI	RV	EX	CD			
2CV-1562-2	1.5		M-2210 Sh 3	A	3	B	O	Q				Q		R						
	G	M	C-5																	
2CV-1563-1	1.5		M-2210 Sh 3	A	3	B	O	Q				Q		R						
	G	M	F-3																	
2CV-1564-2	1.5		M-2210 Sh 3	A	3	B	O	Q				Q		R						
	G	M	C-5																	
2CV-2060-1	4		M-2213 Sh 8	A	2	A														
	G	M	A-2				C	Q			J	Q		R						
2CV-2061-2	4		M-2213 Sh 1	A	2	A														
	BA	AO	H-4				C	Q			J	Q	Q	R						
2CV-2201-2	4		M-2214 Sh 1	A	2	A														
	BA	AO	F-7				C	Q			J	Q	Q	R						
2CV-2202-1	4		M-2214 Sh 1	A	2	A														
	G	M	F-7				C	Q			J	Q		R						
2CV-3200-2	3		M-2219 Sh 2	P	2	A														
	G	M	D-3				C				J			R						
2CV-3850-2	6		M-2222 Sh 1	A	2	A													CSJ-7	
	G	M	G-3				C	C			J	C		R						
2CV-3851-1	6		M-2222 Sh 1	A	2	A													CSJ-7	
	G	AO	G-3				C	C			J	C	C	R						
2CV-3852-1	6		M-2222 Sh 1	A	2	A													CSJ-7	
	G	AO	H-3				C	C			J	C	C	R						
2CV-4690-2	2		M-2230 Sh 2	P	2	A														
	G	M	A-5				C				J			R						
2CV-4693	1.5		M-2230 Sh 2	P	3	B	O							R						
	G	M	A-3																	
2CV-4698-1	3		M-2230 Sh 2	A	1	B	O	C				C		R					CSJ-10	
	G	M	H-3				C	C				C		R						
2CV-4730-1	4		M-2230 Sh 2	A	1	B	O	C				C		R					CSJ-10	
	G	M	G-4				C	C				C		R						
2CV-4731-2	4		M-2230 Sh 2	A	1	B	O	C				C		R					CSJ-10	
	G	M	H-4				C	C				C		R						

IST PLAN
ANO-2 APPENDIX
VALVE SUMMARY LISTING

PROGRAM SECTION NO. CEP-IST-2
REVISION NO. 307
PAGE 8 OF 28

VALVE NO.	VALVE SIZE (in.) TYPE ACT.		P & ID NO., COORD.	IST PASS	IST CODE CLASS	CODE CAT.	SAFETY POS.	REQUIRED TESTS AND FREQUENCY										RELIEF REQUEST (VRR)	OTHER (CSJ/ROJ VPS/CMJ)	NOTES:
								FS	PS	LT	LJ	ST	FT	PI	RV	EX	CD			
2CV-4740-2	4		M-2230 Sh 2	A	1	B	O	C				C		R					CSJ-10	
	G	M	G-3				C	C				C		R						
2CV-4741-1	4		M-2230 Sh 2	A	1	B	O	C				C		R					CSJ-10	
	G	M	H-3				C	C				C		R						
2CV-4820-2	2		M-2231 Sh 1	A	1	B													CSJ-12	
	GL	M	E-8				C	C				C		R						
2CV-4821-1	2		M-2231 Sh 1	A	1	A													CSJ-12	
	GL	M	E-7				C	C			J	C		R						
2CV-4823-2	2		M-2231 Sh 1	A	2	A													CSJ-12	
	G	AO	E-6				C	C			J	C	C	R						
2CV-4824-2	2		M-2231 Sh 1	A	1	B	O	C				C		R					CSJ-13	
	GL	M	D-7				C	C				C		R						
2CV-4827-2	2		M-2231 Sh 1	A	1	B	O	Q				Q		R						
	GL	M	C-7				C	Q				Q		R						
2CV-4831-2	2		M-2231 Sh 1	A	1	B	O	Q				Q		R						
	GL	M	D-7				C	Q				Q		R						
2CV-4840-2	2		M-2231 Sh 1	P	2	B	O							R						
	G	M	C-6																	
2CV-4846-1	0.75		M-2231 Sh 1	A	2	A													CSJ-14	
	G	M	B-3				C	C			J	C		R						
2CV-4847-2	0.75		M-2231 Sh 1	A	2	A													CSJ-14	
	GL	AO	B-3				C	C			J	C	C	R						
2CV-4873-1	4		M-2231 Sh 1	A	2	B													CSJ-15	
	G	M	B-2				C	C				C		R						
2CV-4903-2	1		M-2231 Sh 2	A	2	B														
	GL	AO	F-8				C	Q				Q	Q	R						
2CV-4915-2	1		M-2231 Sh 2	A	2	B														
	GL	AO	F-3				C	Q				Q	Q	R						
2CV-4916-2	3		M-2231 Sh 2	A	2	B	O	Q				Q		R						
	G	M	F-3																	
2CV-4920-1	3		M-2231 Sh 2	A	2	B	O	Q				Q		R						
	G	M	D-7																	

**IST PLAN
ANO-2 APPENDIX
VALVE SUMMARY LISTING**

**PROGRAM SECTION NO. CEP-IST-2
REVISION NO. 307
PAGE 9 OF 28**

VALVE NO.	VALVE SIZE (in.) TYPE ACT.		P & ID NO., COORD.	IST PASS	IST CODE CLASS	CODE CAT.	SAFETY POS.	REQUIRED TESTS AND FREQUENCY									RELIEF REQUEST (VRR)	OTHER (CSJ/ROJ VPS/CMJ)	NOTES:
								FS	PS	LT	LJ	ST	FT	PI	RV	EX	CD		
2CV-4921-1	3		M-2231 Sh 2 D-5	A	2	B	O	Q				Q		R					
	G	M																	
2CV-4941-2	3		M-2231 Sh 2 H-3	A	3	B													
	GL	AO					C	Q				Q	Q	R					
2CV-4950-2	3		M-2231 Sh 1 A-3	A	2	B	O	C				C		R				CSJ-16	
	G	M																	
2CV-5003-1	12		M-2232 E-8	P	1	B	O							R					
	G	M					C							R					
2CV-5015-1	2		M-2232 F-5	A	2	B	O	Q				Q		R					
	GL	M																	
2CV-5016-2	2		M-2232 E-5	A	2	B	O	Q				Q		R					
	GL	M																	
2CV-5017-1	6		M-2232 E-5	A	2	B	O	Q				Q		R					
	GL	M					C	Q				Q		R					
2CV-5023-1	12		M-2232 G-7	P	1	B	O							R					
	G	M					C							R					
2CV-5035-1	2		M-2232 H-5	A	2	B	O	Q				Q		R					
	GL	M																	
2CV-5036-2	2		M-2232 G-5	A	2	B	O	Q				Q		R					
	GL	M																	
2CV-5037-1	6		M-2232 G-5	A	2	B	O	Q				Q		R					
	GL	M					C	Q				Q		R					
2CV-5038-1	14		M-2232 F-5	A	2	B	O	Q				Q		R					
	G	M					C	Q				Q		R					
2CV-5043-2	12		M-2232 A-7	P	1	B	O							R					
	G	M					C							R					
2CV-5055-1	2		M-2232 B-5	A	2	B	O	Q				Q		R					
	GL	M																	
2CV-5056-2	2		M-2232 B-5	A	2	B	O	Q				Q		R					
	GL	M																	
2CV-5057-2	6		M-2232 A-5	A	2	B	O	Q				Q		R					
	GL	M					C	Q				Q		R					

**IST PLAN
ANO-2 APPENDIX
VALVE SUMMARY LISTING**

**PROGRAM SECTION NO. CEP-IST-2
REVISION NO. 307
PAGE 10 OF 28**

VALVE NO.	VALVE SIZE (in.) TYPE ACT.		P & ID NO., COORD.	IST PASS	IST CODE CLASS	CODE CAT.	SAFETY POS.	REQUIRED TESTS AND FREQUENCY									RELIEF REQUEST (VRR)	OTHER (CSJ/ROJ VPS/CMJ)	NOTES:	
								FS	PS	LT	LJ	ST	FT	PI	RV	EX				CD
2CV-5063-2	12		M-2232	P	1	B	O							R						
	G	M	C-7				C							R						
2CV-5075-1	2		M-2232	A	2	B	O	Q				Q		R						
	GL	M	D-5																	
2CV-5076-2	2		M-2232	A	2	B	O	Q				Q		R						
	GL	M	C-5																	
2CV-5077-2	6		M-2232	A	2	B	O	Q				Q		R						
	GL	M	C-5				C	Q			Q		R							
2CV-5082	2		M-2232	P	2	A														
	G	M	B-8				C				J		R							
2CV-5084-1	14		M-2232	A	1	A	O	C				C		R					CSJ-22	
	G	M	F-7				C	C		R		C		R						
2CV-5086-2	14		M-2232	A	1	A	O	C				C		R					CSJ-22	
	G	M	F-6				C	C		R		C		R						
2CV-5091	8		M-2232	P	2	B	O							R						
	BF	AO	G-3																	
2CV-5101-1	3		M-2232	A	2	B	O	Q				Q		R						
	GL	M	E-4				C	Q				Q		R						
2CV-5102-2	3		M-2232	A	2	B	O	Q				Q		R						
	GL	M	B-4				C	Q				Q		R						
2CV-5103-1	4		M-2232	A	2	B	O	Q				Q		R						
	G	M	D-4				C	Q				Q		R						
2CV-5104-2	4		M-2232	A	2	B	O	Q				Q		R						
	G	M	C-4				C	Q				Q		R						
2CV-5105-1	2		M-2232	P	2	B														
	GL	M	E-4				C							R						
2CV-5106-2	2		M-2232	P	2	B														
	GL	M	B-4				C							R						
2CV-5123-1	2		M-2232	A	2	B	O	Q				Q		R						
	G	M	G-3				C	Q				Q		R						
2CV-5124-1	2		M-2232	A	2	B	O	Q				Q		R						
	G	M	F-3				C	Q				Q		R						

IST PLAN
ANO-2 APPENDIX
VALVE SUMMARY LISTING

PROGRAM SECTION NO. CEP-IST-2
REVISION NO. 307
PAGE 11 OF 28

VALVE NO.	VALVE SIZE (in.) TYPE ACT.		P & ID NO., COORD.	IST PASS	IST CODE CLASS	CODE CAT.	SAFETY POS.	REQUIRED TESTS AND FREQUENCY										RELIEF REQUEST (VRR)	OTHER (CSJ/ROJ VPS/CMJ)	NOTES:
								FS	PS	LT	LJ	ST	FT	PI	RV	EX	CD			
2CV-5126-1	2		M-2232	A	2	B	O	Q				Q		R						
	G	M	E-3				C	Q				Q		R						
2CV-5127-1	2		M-2232	A	2	B	O	Q				Q		R						
	G	M	D-3				C	Q				Q		R						
2CV-5128-1	2		M-2232	A	2	B	O	Q				Q		R						
	G	M	C-3				C	Q				Q		R						
2CV-5236-1	10		M-2234	A	2	A												CSJ-30		
	BF	M	B-4				C	C			J	C		R						
2CV-5254-2	10		M-2234	A	2	A												CSJ-30		
	BF	M	G-4				C	C			J	C		R						
2CV-5255-1	10		M-2234	A	2	A												CSJ-30		
	BF	M	G-4				C	C			J	C		R						
2CV-5612-1	10		M-2236 Sh 1	A	2	B	O	Q				Q		R						
	G	M	D-7				C	Q				Q		R						
2CV-5613-2	10		M-2236 Sh 1	A	2	B	O	Q				Q		R						
	G	M	C-7				C	Q				Q		R						
2CV-5628-2	4		M-2236 Sh 1	A	2	B	O	Q				Q		R						
	G	M	G-3				C	Q				Q		R						
2CV-5630-1	20		M-2236 Sh 1	A	2	B	O	Q				Q		R						
	G	M	F-2				C	Q				Q		R						
2CV-5631-2	20		M-2236 Sh 1	A	2	B	O	Q				Q		R						
	G	M	F-1				C	Q				Q		R						
2CV-5637-1	3		M-2235 Sh 1	A	2	B														
	G	AO	D-2				C	Q				Q	Q	R						
2CV-5638-2	3		M-2235 Sh 1	A	2	B														
	G	AO	D-2				C	Q				Q	Q	R						
2CV-5647-1	24		M-2236 Sh 1	A	2	B	O	Q				Q		R						
	G	M	B-5																	
2CV-5648-2	24		M-2236 Sh 1	A	2	B	O	Q				Q		R						
	G	M	A-5																	
2CV-5649-1	24		M-2236 Sh 1	A	2	B	O	Q				Q		R						
	G	M	B-4				C	Q				Q		R						

IST PLAN
ANO-2 APPENDIX
VALVE SUMMARY LISTING

PROGRAM SECTION NO. CEP-IST-2
REVISION NO. 307
PAGE 12 OF 28

[illegible]

IST PLAN
ANO-2 APPENDIX
VALVE SUMMARY LISTING

PROGRAM SECTION NO. CEP-IST-2
REVISION NO. 307
PAGE 13 OF 28

VALVE NO.	VALVE SIZE (in.) TYPE ACT.		P & ID NO., COORD.	IST PASS	IST CODE CLASS	CODE CAT.	SAFETY POS.	REQUIRED TESTS AND FREQUENCY										RELIEF REQUEST (VRR)	OTHER (CSJ/ROJ VPS/CMJ)	NOTES:
								FS	PS	LT	LJ	ST	FT	PI	RV	EX	CD			
2CVC-22C	1.5		M-2231 Sh 1	A	2	C	O	Q												See Valve Note 1.
	CK	SA	C-6				C	Q												
2CVC-26	2		M-2231 Sh 1	A	1	C	O	C											CSJ-17	
	CK	SA	C-7																	
2CVC-28A	2		M-2231 Sh 1	A	1	C	O	C											CSJ-18	
	CK	SA	D-7																	
2CVC-28B	2		M-2231 Sh 1	A	1	C	O	C	Q										CSJ-19	
	CK	SA	C-7																	
2CVC-28C	2		M-2231 Sh 1	A	1	C	O	C	Q										CSJ-19	
	CK	SA	D-7																	
2CVC-41A	3		M-2231 Sh 2	A	2	C	O	C	Q										CSJ-21	
	CK	SA	C-3				C	Q												
2CVC-41B	3		M-2231 Sh 2	A	2	C	O	C	Q										CSJ-21	
	CK	SA	D-3				C	Q												
2CVC-49	3		M-2231 Sh 2	A	2	C	O	C											CSJ-20	
	CK	SA	G-6																	
2CVC-58	3		M-2231 Sh 2	A	2	C	O	C											CSJ-20	
	CK	SA	G-4																	
2CVC-69A	1.5		M-2231 Sh 1	A	2	C	O	Q												See Valve Note 1.
	CK	SA	D-6				C	Q												
2CVC-69B	1.5		M-2231 Sh 1	A	2	C	O	Q												See Valve Note 1.
	CK	SA	A-6				C	Q												
2CVC-69C	1.5		M-2231 Sh 1	A	2	C	O	Q												See Valve Note 1.
	CK	SA	C-6				C	Q												
2CVC-70	3		M-2231 Sh 1	A	2	C	O	C											CSJ-20	
	CK	SA	A-3																	
2CVC-78	2		M-2230 Sh 2	A	2	C, A	O	Q											CSJ-35	
	CK	SA	A-4				C	C			J									
2ED-12A	1.5		M-2217 Sh 2	A	NN	C	O	Q												
	CK	SA	E-6				C	Q												
2ED-12B	1.5		M-2217 Sh 2	A	NN	C	O	Q												
	CK	SA	E-5				C	Q												

PROGRAM SECTION NO. CEP-IST-2
REVISION NO. 307
PAGE 14 OF 28

[illegible]

IST PLAN
ANO-2 APPENDIX
VALVE SUMMARY LISTING

PROGRAM SECTION NO. CEP-IST-2
REVISION NO. 307
PAGE 15 OF 28

VALVE NO.	VALVE SIZE (in.)		P & ID NO., COORD.	IST PASS	IST CODE CLASS	CODE CAT.	SAFETY POS.	REQUIRED TESTS AND FREQUENCY										RELIEF REQUEST (VRR)	OTHER (CSJ/ROJ VPS/CMJ)	NOTES:
	TYPE	ACT.						FS	PS	LT	LJ	ST	FT	PI	RV	EX	CD			
2EFW-7A	4		M-2206 Sh 1	A	2	C	O	C											CSJ-4	
	SC	SA	C-8				C	C												
2EFW-7B	4		M-2206 Sh 1	A	2	C	O	C											CSJ-4	
	SC	SA	C-8				C	C												
2EFW-8A	4		M-2206 Sh 1	A	2	C	O	C											CSJ-4	
	SC	SA	D-1				C	C												
2EFW-8B	4		M-2206 Sh 1	A	2	C	O	C											CSJ-4	
	SC	SA	D-1				C	C												
2EFW-9A	4		M-2206 Sh 1	A	2	C	O	C											CSJ-4	
	CK	SA	D-8				C	Q												
2EFW-9B	4		M-2206 Sh 1	A	2	C	O	C											CSJ-4	
	CK	SA	D-2				C	Q												
2FP-31	3		M-2235 Sh 1	A	3	B	O	2Y												
	G	H	C-5																	
2FP-34	3		M-2235 Sh 1	P	2	A														
	G	H	B-6				C				J									
2FP-46	3		M-2235 Sh 1	A	3	B	O	2Y												
	G	H	D-4																	
2FS-37	3		M-2219 Sh 2	P	2	A														
	CK	SA	E-4				C				J									
2FW-5A	24		M-2206 Sh 1	A	2	C													CSJ-3	
	CK	SA	D-7				C	C												
2FW-5B	24		M-2206 Sh 1	A	2	C													CSJ-3	
	CK	SA	D-2				C	C												
21A-88			M-2218 Sh 2	P	2	A														
	G	H	G-5				C				J									
21A-89			M-2218 SH 2	P	2	A														
	G	H	G-5				C				J									
2MS-39A	4		M-2206 Sh 1	A	3	C	O	Q												
	CK	SA	H-5				C										2R			
2MS-39B	4		M-2206 Sh 1	A	3	C	O	Q												
	CK	SA	H-4				C										2R			

IST PLAN
ANO-2 APPENDIX
VALVE SUMMARY LISTING

PROGRAM SECTION NO. CEP-IST-2
REVISION NO. 307
PAGE 16 OF 28

[illegible]

PROGRAM SECTION NO. CEP-IST-2
REVISION NO. 307
PAGE 17 OF 28

VALVE NO.	VALVE SIZE (in.) TYPE ACT.		P & ID No., COORD.	IST PASS	IST CODE CLASS	CODE CAT.	SAFETY POS.	REQUIRED TESTS AND FREQUENCY									RELIEF REQUEST (VRR)	OTHER (CSJ/ROJ VPS/CMJ)	NOTES:
	FS	PS						LT	LJ	ST	FT	PI	RV	EX	CD				
2PSV-1056	8		M-2206 Sh 1	A	2	C	O								5Y				
	RV	SA	G-4																
2PSV-1801	0.75		M-2231 Sh 1	A	2	C, A	O								*			* Per 2306.024	
	RV	SA	B-3				C			J									
2PSV-2000	0.75		M-2213 Sh 1	A	2	C, A	O								*			* Per 2306.024	
	RV	SA	H-4				C			J									
2PSV-2200	0.75		M-2214 Sh 1	A	2	C, A	O								*			* Per 2306.024	
	RV	SA	B-3				C			J									
2PSV-2205	3		M-2214 Sh 1	A	3	C	O								*			* Per 2306.024	
	RV	SA	G-8																
2PSV-2803	0.75		M-2217 Sh 2	A	NN	C	O								*			See Valve Note 1. * Per 2306.024	
	RV	SA	C-7																
2PSV-2805	0.5		M-2217 Sh 2	A	NN	C	O								*			See Valve Note 1. * Per 2306.024	
	RV	SA	C-7																
2PSV-2806	0.75		M-2217 Sh 2	A	NN	C	O								*			See Valve Note 1. * Per 2306.024	
	RV	SA	C-5																
2PSV-2808	0.5		M-2217 Sh 2	A	NN	C	O								*			See Valve Note 1. * Per 2306.024	
	RV	SA	C-5																
2PSV-2823	0.75		M-2217 Sh 2	A	NN	C	O								*			See Valve Note 1. * Per 2306.024	
	RV	SA	C-4																
2PSV-2825	0.5		M-2217 Sh 2	A	NN	C	O								*			See Valve Note 1. * Per 2306.024	
	RV	SA	C-4																
2PSV-2826	0.75		M-2217 Sh 2	A	NN	C	O								*			See Valve Note 1. * Per 2306.024	
	RV	SA	C-3																
2PSV-2828	0.5		M-2217 Sh 2	A	NN	C	O								*			See Valve Note 1. * Per 2306.024	
	RV	SA	C-2																
2PSV-2938	0.75		M-2217 Sh 1	A	NN	C	O								*			* Per 2306.024	
	RV	SA	E-5																
2PSV-2988	0.75		M-2217 Sh 1	A	NN	C	O								*			* Per 2306.024	
	RV	SA	E-4																
2PSV-3805	0.75		M-2222 Sh 1	A	2	C, A	O								*			* Per 2306.024	
	RV	SA	G-3				C			J									

IST PLAN
ANO-2 APPENDIX
VALVE SUMMARY LISTING

PROGRAM SECTION NO. CEP-IST-2
REVISION NO. 307
PAGE 18 OF 28

[illegible]

PROGRAM SECTION NO. CEP-IST-2
REVISION NO. 307
PAGE 19 OF 28

VALVE NO.	VALVE SIZE (in.) TYPE ACT.	P & ID NO., COORD.	IST PASS	IST CODE CLASS	CODE CAT.	SAFETY POS.	REQUIRED TESTS AND FREQUENCY										RELIEF REQUEST (VRR)	OTHER (CSJ/ROJ VPS/CMJ)	NOTES:
							FS	PS	LT	LJ	ST	FT	PI	RV	EX	CD			
2PSV-5000	0.75	M-2232 Sh 1 A-8	A	2	C, A	O								*					* Per 2306.024
	RV SA								J										
2PSV-5007	1.5	M-2232 F-6	A	2	C	O								*					See Valve Note 1. * Per 2306.024
	RV SA																		
2PSV-5027	1.5	M-2232 H-6	A	2	C	O								*					See Valve Note 1. * Per 2306.024
	RV SA																		
2PSV-5047	1.5	M-2232 C-6	A	2	C	O								*					See Valve Note 1. * Per 2306.024
	RV SA																		
2PSV-5067	1.75	M-2232 D-6	A	2	C	O								*					See Valve Note 1. * Per 2306.024
	RV SA																		
2PSV-5082	0.75	M-2232 H-4	A	2	C	O								*					* Per 2306.024
	RV SA																		
2PSV-5085	0.75	M-2232 H-4	A	2	C	O								*					* Per 2306.024
	RV SA																		
2PSV-5087	1.75	M-2232 F-6	A	2	C	O								*					* Per 2306.024
	RV SA																		
2PSV-5089	0.75	M-2232 F-4	A	2	C	O								*					* Per 2306.024
	RV SA																		
2PSV-5110	0.75	M-2232 B-4	A	2	C	O								*					* Per 2306.024
	RV SA																		
2PSV-5111	0.75	M-2232 D-3	A	2	C	O								*					* Per 2306.024
	RV SA																		
2PSV-5112	1.5	M-2232 D-4	A	2	C	O								*					* Per 2306.024
	RV SA																		
2PSV-5249	0.75	M-2234 Sh 1 B-4	A	2	C, A	O								*					* Per 2306.024
	RV SA								J					*					
2PSV-5256	0.75	M-2234 Sh 1 G-4	A	2	C, A	O								*					* Per 2306.024
	RV SA								J					*					
2PSV-5653	0.75	M-2236 Sh 1 C-2	A	2	C	O								*					* Per 2306.024
	RV SA																		
2PSV-5654	0.75	M-2236 Sh 1 C-2	A	2	C	O								*					* Per 2306.024
	RV SA																		

PROGRAM SECTION NO. CEP-IST-2
REVISION NO. 307
PAGE 20 OF 28

VALVE NO.	VALVE SIZE (in.) TYPE ACT.		P & ID NO., COORD.	IST PASS	IST CODE CLASS	CODE CAT.	SAFETY POS.	REQUIRED TESTS AND FREQUENCY									RELIEF REQUEST (VRR)	OTHER (CSJ/ROJ VPS/CMJ)	NOTES:	
								FS	PS	LT	LJ	ST	FT	PI	RV	EX				CD
2PSV-5696	0.75		M-2236 Sh 1	A	2	C	O								*					* Per 2306.024
	RV	SA	D-6																	
2PSV-5697	0.75		M-2236 Sh 1	A	2	C	O								*					* Per 2306.024
	RV	SA	C-6																	
2SA-68	3		M-2218 Sh 1	P	2	A														
	G	H	G-5				C				J									
2SA-69	3		M-2218 Sh 1	P	2	A														
	G	H	G-5				C				J									
2SI-10A	4		M-2232	A	2	C	O	C											CSJ-25	
	SC	SA	D-3				C	Q												
2SI-10B	4		M-2232	A	2	C	O	C											CSJ-25	
	SC	SA	C-3				C	Q												
2SI-10C	4		M-2232	A	2	C	O	C											CSJ-25	
	SC	SA	D-3				C	Q												
2SI-12	4		M-2232	A	2	C	O	C											CSJ-25	
	CK	SA	D-3																	
2SI-13A	3		M-2232	A	1	C, A	O	C											CSJ-25	See Valve Note 5.
	CK	SA	E-5				C	Q		C										
2SI-13B	3		M-2232	A	1	C, A	O	C											CSJ-25	See Valve Note 5.
	CK	SA	G-5				C	Q		C										
2SI-13C	3		M-2232	A	1	C, A	O	C											CSJ-25	See Valve Note 5.
	CK	SA	A-5				C	Q		C										
2SI-13D	3		M-2232	A	1	C, A	O	C											CSJ-25	See Valve Note 5.
	CK	SA	C-5				C	Q		C										
2SI-14A	6		M-2232	A	1	C, A	O	C											CSJ-26	See Valve Note 5.
	CK	SA	E-5				C	Q		C										
2SI-14B	6		M-2232	A	1	C, A	O	C											CSJ-26	See Valve Note 5.
	CK	SA	G-5				C	Q		C										
2SI-14C	6		M-2232	A	1	C, A	O	C											CSJ-26	See Valve Note 5.
	CK	SA	A-5				C	Q		C										
2SI-14D	6		M-2232	A	1	C, A	O	C											CSI-26	See Valve Note 5.
	CK	SA	C-5				C	Q		C										

IST PLAN
ANO-2 APPENDIX
VALVE SUMMARY LISTING

PROGRAM SECTION NO. CEP-IST-2
REVISION NO. 307
PAGE 21 OF 28

VALVE NO.	VALVE SIZE (in.) TYPE ACT.		P & ID NO., COORD.	IST PASS	IST CODE CLASS	CODE CAT.	SAFETY POS.	REQUIRED TESTS AND FREQUENCY									RELIEF REQUEST (VRR)	OTHER (CSJ/ROJ VPS/CMJ)	NOTES:
								FS	PS	LT	LJ	ST	FT	PI	RV	EX	CD		
2SI-15A	12		M-2232	A	1	C, A	O	R	C									ROJ-2	See Valve Notes 2 and 5.
	CK	SA	E-8				C	Q		C									
2SI-15B	12		M-2232	A	1	C, A	O	R	C									ROJ-2	See Valve Notes 2 and 5.
	CK	SA	G-8				C	Q		C									
2SI-15C	12		M-2232	A	1	C, A	O	R	C									ROJ-2	See Valve Notes 2 and 5.
	CK	SA	A-7				C	Q		C									
2SI-15D	12		M-2232	A	1	C, A	O	R	C									ROJ-2	See Valve Notes 2 and 5.
	CK	SA	C-8				C	Q		C									
2SI-16A	12		M-2232	A	1	C, A	O		Q								4R		See Valve Note 1.
	CK	SA	E-7				C	Q		R									
2SI-16B	12		M-2232	A	1	C, A	O		Q								4R		See Valve Note 1.
	CK	SA	G-7				C	Q		R									
2SI-16C	12		M-2232	A	1	C, A	O		Q								4R		See Valve Note 1.
	CK	SA	A-7				C	Q		R									
2SI-16D	12		M-2232	A	1	C, A	O		Q								4R		See Valve Note 1.
	CK	SA	C-7				C	Q		R									
2SI-17	2		M-2232	P	2	A													
	G	H	A-8				C				J								
2SI-22A	2		M-2232	A	2	C	O	C										CSJ-27	
	CK	SA	G-3																
2SI-22B	2		M-2232	A	2	C	O	C										CSJ-27	
	CK	SA	F-3																
2SI-23A	2		M-2232	A	2	C	O	C										CSJ-28	
	CK	SA	E-3																
2SI-23B	2		M-2232	A	2	C	O	C										CSJ-28	
	CK	SA	C-3																
2SI-23C	2		M-2232	A	2	C	O	C										CSJ-28	
	CK	SA	D-3																
2SI-26A	3		M-2232	A	2	C, A	O	C										CSJ-29 CSJ-9	
	CK	SA	E-4				C	C		R									
2SI-26B	3		M-2232	A	2	C, A	O	C										CSJ-29 CSJ-9	
	CK	SA	B-4				C	C		R									

IST PLAN
ANO-2 APPENDIX
VALVE SUMMARY LISTING

PROGRAM SECTION NO. CEP-IST-2
REVISION NO. 307
PAGE 22 OF 28

VALVE NO.	VALVE SIZE (in.)		P & ID NO., COORD.	IST PASS	IST CODE CLASS	CODE CAT.	SAFETY POS.	REQUIRED TESTS AND FREQUENCY										RELIEF REQUEST (VRR)	OTHER (CSJ/ROJ VPS/CMJ)	NOTES:
	TYPE	ACT.						FS	PS	LT	LJ	ST	FT	PI	RV	EX	CD			
2SI-27A	3		M-2230 Sh 1	A	1	C, A	O	C											CSJ-9	See Valve Notes 1 and 6. * Demonstrated daily.
	CK	SA	D-3				C	*		R										
2SI-27B	3		M-2230 Sh 1	A	1	C, A	O	C											CSJ-9	See Valve Notes 1 and 6. * Demonstrated daily.
	CK	SA	C-3				C	*		R										
2SI-28A	3		M-2230 Sh 1	A	1	C, A	O	C											CSJ-9	See Valve Notes 1 and 6. * Demonstrated daily.
	CK	SA	D-3				C	*		R										
2SI-28B	3		M-2230 Sh 1	A	1	C, A	O	C											CSJ-9	See Valve Notes 1 and 6. * Demonstrated daily.
	CK	SA	C-3				C	*		R										
2SI-3A	12		M-2232	A	2	C	O	C											CSJ-23	
	SC	H/SA	G-3				C	Q												
2SI-3B	12		M-2232	A	2	C	O	C											CSJ-23	
	SC	H/SA	F-3				C	Q												
2SI-42	1		M-2232	A	2	C														
	CK	SA	G-7				C	Q												
2SI-48	1		M-2232	A	2	C														
	CK	SA	F-7				C	Q												
2SI-5115A	0.75		M-2232	P	2	A														
	GL	H	A-8				C				J									
2SI-54	1		M-2232	A	2	C														
	CK	SA	C-7				C	Q												
2SI-60	1		M-2232	A	2	C														
	CK	SA	B-7				C	Q												
2SV-0317-2	1		M-2202 Sh 4	A	3	B	O	Q				Q	Q	M						
	GL	S	C-5																	
2SV-0712-2	0.75		M-2204 Sh 4	A	3	B														See Valve Note 7.
	GL	S	C-2				C	Q					Q							
2SV-0724-1	0.75		M-2204 Sh 4	A	3	B														See Valve Note 7.
	GL	S	F-2				C	Q					Q							
2SV-1510-2	1		M-2210 Sh 3	P	2	B	O							R						
	G	S	G-6																	
2SV-1511-1	1		M-2210 Sh 3	P	2	B	O							R						
	G	S	E-6																	

IST PLAN
ANO-2 APPENDIX
VALVE SUMMARY LISTING

PROGRAM SECTION NO. CEP-IST-2
REVISION NO. 307
PAGE 23 OF 28

VALVE NO.	VALVE SIZE (in.) TYPE ACT.	P & ID NO. , COORD.	IST PASS	IST CODE CLASS	CODE CAT.	SAFETY POS.	REQUIRED TESTS AND FREQUENCY										RELIEF REQUEST (VRR)	OTHER (CSJ/ROJ VPS/CMJ)	NOTES:
							FS	PS	LT	LJ	ST	FT	PI	RV	EX	CD			
2SV-2802-1	2	M-2217 Sh 1	A	NN	B	O	M												
	DIA S	E-8																	
2SV-2809-1	1.5	M-2217 Sh 2	A	NN	B	O	Q												
	G S	E-6																	
2SV-2810-1	1.5	M-2217 Sh 2	A	NN	B	O	Q												
	G S	E-6																	
2SV-2811	1.5	M-2217 Sh 2	A	NN	B														
	G S	E-6				C	M												
2SV-2822-2	2	M-2217 Sh 1	A	NN	B	O	M												
	DIA S	E-1																	
2SV-2829-2	1.5	M-2217 Sh 2	A	NN	B	O	Q												
	G S	E-3																	
2SV-2830-2	1.5	M-2217 Sh 2	A	NN	B	O	Q												
	G S	E-3																	
2SV-2831	1.5	M-2217 Sh 2	A	NN	B														
	G S	E-3				C	M												
2SV-4636-1	1	M-2230 Sh 2	A	1	B	O	C				C		R					CSJ-11	
	GL S	H-2				C	C				C	C	R						
2SV-4636-2	1	M-2230 Sh 2	A	1	B	O	C				C		R					CSJ-11	
	GL S	H-2				C	C				C	C	R						
2SV-4639	0.5	M-2230 Sh 2	A	2	B	O	Q				Q		2Y						
	S	B-4																	
2SV-4668-1	1	M-2230 Sh 2	A	1	B	O	C				C		R					CSJ-11	
	GL S	G-2				C	C				C	C	R						
2SV-4668-2	1	M-2230 Sh 2	A	1	B	O	C				C		R					CSJ-11	
	GL S	G-2				C	C				C	C	R						
2SV-4669-1	1	M-2230 Sh 2	A	2	B	O	C				C		R					CSJ-11	
	GL S	H-2				C	C				C	C	R						
2SV-4670-2	1	M-2230 Sh 2	A	2	B	O	C				C		R					CSJ-11	
	GL S	G-1				C	C				C	C	R						
2SV-5001-1	1	M-2232	A	1	B														
	GL S	E-7				C	Q				Q	Q	Q						

IST PLAN
ANO-2 APPENDIX
VALVE SUMMARY LISTING

PROGRAM SECTION NO. CEP-IST-2
REVISION NO. 307
PAGE 24 OF 28

VALVE NO.	VALVE SIZE (in.)		P & ID NO., COORD.	IST PASS	IST CODE CLASS	CODE CAT.	SAFETY POS.	REQUIRED TESTS AND FREQUENCY									RELIEF REQUEST (VRR)	OTHER (CSJ/ROJ VPS/CMJ)	NOTES:
	TYPE	ACT.						FS	PS	LT	LJ	ST	FT	PI	RV	EX	CD		
2SV-5005A/B	1		M-2232 F-7	P	2	B													
	GL	S					C							R					
2SV-5006	1		M-2232 F-7	P	2	B													
	GL	S					C							R					
2SV-5021-1	1		M-2232 G-7	A	1	B													
	GL	S					C	Q				Q	Q	Q					
2SV-5025A/B	1		M-2232 H-7	P	2	B													
	GL	S					C							R					
2SV-5026	1		M-2232 H-7	P	2	B													
	GL	S					C							R					
2SV-5041-2	1		M-2232 A-7	A	1	B													
	GL	S					C	Q				Q	Q	Q					
2SV-5045A/B	1		M-2232 B-8	P	2	B													
	GL	S					C							R					
2SV-5046	1		M-2232 B-7	P	2	B													
	GL	S					C							R					
2SV-5061-2	1		M-2232 C-7	A	1	B													
	GL	S					C	Q				Q	Q	Q					
2SV-5065A/B	1		M-2232 D-8	P	2	B													
	GL	S					C							R					
2SV-5066	1		M-2232 D-7	P	2	B													
	GL	S					C							R					
2SV-5633-1	1		M-2236 Sh 1 B-4	A	2	A													
	GL	S					C	Q			J	Q	Q	R					
2SV-5633-2	1		M-2236 Sh 1 B-4	A	2	A													
	GL	S					C	Q			J	Q	Q	R					
2SV-5634-1	1		M-2236 Sh 1 A-4	A	2	A													
	GL	S					C	Q			J	Q	Q	R					
2SV-5634-2	1		M-2236 Sh 1 A-3	A	2	A													
	GL	S					C	Q			J	Q	Q	R					
2SV-5833-1	0.5		M-2237 Sh 1 G-2	A	2	A	O	Q				Q		R					
	GL	S					C	Q			J	Q	Q	R					

IST PLAN
ANO-2 APPENDIX
VALVE SUMMARY LISTING

PROGRAM SECTION NO. CEP-IST-2
REVISION NO. 307
PAGE 25 OF 28

VALVE NO.	VALVE SIZE (in.) TYPE ACT.	P & ID NO., COORD.	IST PASS	IST CODE CLASS	CODE CAT.	SAFETY POS.	REQUIRED TESTS AND FREQUENCY										RELIEF REQUEST (VRR)	OTHER (CSJ/ROJ VPS/CMJ)	NOTES:
							FS	PS	LT	LJ	ST	FT	PI	RV	EX	CD			
2SV-5843-2	0.375	M-2237 Sh 1	A	2	A														
	GL S	G-2				C	Q			J	Q	Q	R						
2SV-5871-2	0.5	M-2237 Sh 1	A	2	A														
	GL S	C-4				C	Q			J	Q	Q	R						
2SV-5872	0.5	M-2237 Sh 1	A	2	A	O	Q				Q		2Y						
	GL S	B-3				C	Q			J	Q	Q	2Y						
2SV-5873	0.5	M-2237 Sh 1	A	2	A	O	Q				Q		2Y						
	GL S	B-3				C	Q			J	Q	Q	2Y						
2SV-5874	0.5	M-2237 Sh 1	A	2	A	O	Q				Q		2Y						
	GL S	A-3				C	Q			J	Q	Q	2Y						
2SV-5875	0.5	M-2237 Sh 1	A	2	A	O	Q				Q		2Y						
	GL S	A-3				C	Q			J	Q	Q	2Y						
2SV-5876-2	0.375	M-2237 Sh 1	A	2	A														
	GL S	B-3				C	Q			J	Q	Q	2Y						
2SV-5878-1	0.75	M-2237 Sh 1	A	2	A														
	G S	C-3				C	Q			J	Q	Q	R						
2SV-8231-2	2	M-2261 Sh 1	A	2	A	O	Q				Q	Q	R						
	GL S	G-7				C	Q			J	Q		R						
2SV-8259-1	2	M-2261 Sh 1	A	2	A	O	Q				Q	Q	R						
	GL S	F-6				C	Q			J	Q		R						
2SV-8260-2	1	M-2261 Sh 1	A	3	A														
	GL S	F-7				C	Q			J	Q	Q	R						
2SV-8261-2	2	M-2261 Sh 1	A	2	A	O	Q				Q		R						
	GL S	F-7				C	Q			J	Q	Q	R						
2SV-8262-2	1	M-2261 Sh 1	A	3	A														
	GL S	E-7				C	Q			J	Q	Q	R						
2SV-8263-2	2	M-2261 Sh 1	A	2	A	O	Q				Q		R						
	GL S	E-7				C	Q			J	Q	Q	R						
2SV-8265-1	2	M-2261 Sh 1	A	2	A	O	Q				Q	Q	R						
	GL S	E-6				C	Q			J	Q		R						
2SV-8271-2	2	M-2261 Sh 1	A	2	A	O	Q				Q	Q	R						
	GL S	F-7				C	Q			J	Q		R						

IST PLAN

ANO-2 APPENDIX

VALVE SUMMARY LISTING

PROGRAM SECTION NO. CEP-IST-2
REVISION NO. 307
PAGE 26 OF 28

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IST PLAN
 ANO-2 APPENDIX
 VALVE SUMMARY LISTING

PROGRAM SECTION NO. CEP-IST-2
 REVISION NO. 307
 PAGE 27 OF 28

VALVE NO.	VALVE SIZE (in.) TYPE ACT.	P & ID NO., COORD.	IST PASS	IST CODE CLASS	CODE CAT.	SAFETY POS.	REQUIRED TESTS AND FREQUENCY										RELIEF REQUEST (VRR)	OTHER (CSJ/ROJ VPS/CMJ)	NOTES:
							FS	PS	LT	LJ	ST	FT	PI	RV	EX	CD			
2SW-8401	1	M-2235 Sh 1	A	3	B														
	G H	E-2				C	2Y												

Valve Summary Listing Notes

No.	
1	See Commitment P16898, Update IST Program to incorporate approved relief requests (2CNA030004)
2	FS open test is non-intrusive.
3	Deleted
4	Deleted
5	See TS 4.4.6.2.2 regarding leakage test (PIV).
6	Leak tightness is functionally demonstrated.
7	Added for prudence. See ANO-2 IST Position 2-97-001

**IST PLAN
ANO-2 APPENDIX
PUMP SUMMARY LISTING**

**PROGRAM SECTION NO. CEP-IST-2
REVISION NO. 307
PAGE 1 OF 3**

PUMP NO.	PUMP DESCRIPTION	PUMP TYPE	DRIVER	P & ID NO., COORD.	IST CODE CLASS	REQUIRED TESTS AND FREQUENCY					RELIEF REQUESTS:	NOTES:
						S	dP	FR	Pd	V		
2P-16A	Emergency Diesel Fuel Transfer Pump				NN			M				PPS-1
2P-16B	Emergency Diesel Fuel Transfer Pump				NN			M				PPS-1
2P-35A	Containment Spray Pump				2		Q	Q		Q		
2P-35B	Containment Spray Pump				2		Q	Q		Q		
2P-36A	Charging Pump				2			Q	Q	Q	2-99-2	See Pump Note 8.
2P-36B	Charging Pump				2			Q	Q	Q	2-99-2	See Pump Note 8.
2P-36C	Charging Pump				2			Q	Q	Q	2-99-2	See Pump Note 8.
2P-39A	Boric Acid Makeup Pump				2		Q, C	Q, C		Q, C		See Pump Note 2.
2P-39B	Boric Acid Makeup Pump				2		Q, C	Q, C		Q, C		See Pump Note 2.
2P-4A	Service Water Pump				3		Q	Q		Q	2-99-1	See Pump Notes 3 and 8.
2P-4B	Service Water Pump				3		Q	Q		Q	2-99-1	See Pump Notes 4 and 8.
2P-4C	Service Water Pump				3		Q	Q		Q	2-99-1	See Pump Notes 5 and 8.
2P-60A	Low Pressure Safety Injection Pump				2		Q, C	C		Q, C	2-99-3	See Pump Notes 6 and 8.
2P-60B	Low Pressure Safety Injection Pump				2		Q, C	C		Q, C	2-99-3	See Pump Notes 6 and 8.
2P-7A	Emergency Feedwater Pump				3	Q	Q	Q		Q		
2P-7B	Emergency Feedwater Pump				3		Q	Q		Q		

**IST PLAN
ANO-2 APPENDIX
PUMP SUMMARY LISTING**

**PROGRAM SECTION NO. CEP-IST-2
REVISION NO. 307
PAGE 2 OF 3**

PUMP NO.	PUMP DESCRIPTION	PUMP TYPE	DRIVER	P & ID NO., COORD.	IST CODE CLASS	REQUIRED TESTS AND FREQUENCY					RELIEF REQUESTS:	NOTES:
						S	dP	FR	Pd	V		
2P-89A	High Pressure Safety Injection Pump				2		Q, C	C		Q, C	2-99-4	See Pump Notes 7 and 8.
2P-89B	High Pressure Safety Injection Pump				2		Q, C	C		Q, C	2-99-4	See Pump Notes 7 and 8.
2P-89C	High Pressure Safety Injection Pump				2		Q, C	C		Q, C	2-99-4	See Pump Notes 7 and 8.

Pump Summary Table Notes

No.	
1	Deleted
2	Quarterly test is at partial flow.
3	Procedure 2305.019, Supplement 1 is used as the Post Maintenance Testing Procedure when maintenance is performed that affects the hydraulic parameters of this pump.
4	Procedure 2305.019, Supplement 2 is used as the Post Maintenance Testing Procedure when maintenance is performed that affects the hydraulic parameters of this pump.
5	Procedure 2305.019, Supplement 3 is used as the Post Maintenance Testing Procedure when maintenance is performed that affects the hydraulic parameters of this pump.
6	The LPSI pump mini-flow line is orificed but is not instrumented. Generic Letter 89-04, Position 9, allows quarterly testing through a non-instrumented line, provided the pump is full flow tested (using an instrumented flow path) during either cold shutdowns or refueling outages.
7	The HPSI pump mini-flow line is orificed but is not instrumented. Generic Letter 89-04, Position 9, allows quarterly testing through a non-instrumented line, provided the pump is full flow tested (using an instrumented flow path) during either cold shutdowns or refueling outages.
8	See Commitment P16898, Update IST Program to incorporate approved relief requests (2CNA030004)

GGNS APPENDIX

INSERVICE TESTING PLAN

ENTERGY NUCLEAR

ENGINEERING PROGRAMS

TABLE OF CONTENTS

<u>SECTION</u>	<u>PAGE NUMBER</u>
Table of Contents	2
Valve Relief Requests	3
Valve Position Statements	4
Pump Relief Requests	14
Pump Position Statements	32
Cold Shutdown Justifications	33
Refueling Outage Justifications	44
Database Report – Condition Monitoring Justifications	
Database Report - Valve Summary Listings	
Database Report - Pump Summary Listings	

IST PLAN
GGNS APPENDIX

PROGRAM SECTION NO.: CEP-IST-2
REVISION: 307
PAGE: 3 of 44

VALVE RELIEF REQUESTS (VRR)

NONE

VALVE POSITION STATEMENTS (VPS)

VPS-001

Note: It is acceptable to use an VPS for rupture disk even though the VPS name implies it is only applicable to valves.

SYSTEM G36 – RWCU Filter/Demineralizer System

Component Identification	Size (inches)	Code Class	Code Category	Component Function
G36D060	1.0	A	D	RELIEF FOR PENETRATION 49

SYSTEM P45 – Floor and Equipment Drain System

Component Identification	Size (inches)	Code Class	Code Category	Component Function
P45D044	1.0	A	D	RELIEF FOR PENETRATION 51 AND 349
P45D045	1.0	A	D	RELIEF FOR PENETRATION 50 AND 348
P45D046	1.0	A	D	RELIEF FOR PENETRATION 84 AND 364

SYSTEM P71 – Plant Chill Water System

Component Identification	Size (inches)	Code Class	Code Category	Component Function
P71D021	1.0	A	D	RELIEF FOR PENETRATION 38 AND 39

COMPONENT FUNCTION

See CEP-IST-1 for component function discussion for above rupture discs.

TEST REQUIREMENTS

Because the rupture discs identified above are non-ASME components, the following test requirements are considered recommended test requirements to meet 10CFR50.55a Appendix B rules (testing commensurate to an item's importance to safety):

The Code requires that Classes 2 and 3 nonreclosing pressure relief devices shall be replaced every 5 years, unless historical data indicates a requirement for more frequent replacement."

BASIS FOR RELIEF

Background

The rules for inservice testing contain requirements that govern the frequency of replacing nonreclosing pressure relief devices including rupture discs. An alternative to the frequency used is addressed by this VPS. The alternative is to allow an interval extension to the specified 5 year replacement. Because the discs identified above are non-ASME components, this VPS follows the same format that GGNS Valve Relief uses in order to meet 10CFR50.55a Appendix B rules (testing commensurate to an items importance to safety):

Basis

Surveillance requirements for the Inservice Testing program are in TRM, which contains a listing of

VALVE POSITION STATEMENTS (VPS)

testing frequencies specified in the Code. This listing does not include the rupture disk replacement frequency of five years. NUREG-1482 addresses this table and notes that any change to this table would require a relief requests to extend the test interval (for ASME components). The Component Engineering group has looked at the application of the rupture discs identified above and have identified no technical reason to prevent a five year replacement extension similar to that provided in TRM. Since only non-ASME components are involved, a relief request to the NRC is not applicable.

PROPOSED ALTERNATE TESTING

The alternative is to allow an interval extension such that the replacement is performed within 1.25 times the specified 5 year replacement.

CONCLUSIONS

Application of the above alternative is acceptable.

APPROVAL

Approval is per the Program Change Notice providing this VPS which documents Central Engineering Programs, Code Programs, and Component Engineering reviews.

VPS-002

System: B21, Nuclear Boiler System

Component: B21F501AA, B21F501AB, B21F501BA, B21F501BB, B21F501CA, B21F501CB, B21F501DA, B21F501DB, B21F502AA, B21F502AB, B21F502BA, B21F502BB, B21F502CA, B21F502CB, B21F502DA, B21F502DB

Category: B **Class:** A

Function: Close to vent air from MSIV actuator, allowing MSIV to close.

Detailed Discussion: B21F501's and F502's are solenoid valves which control MSIV B21F022A-D and B21F028A-D operation. Both the F501 and F502 valves associated with an MSIV must be deenergized for the MSIV to fast close. The solenoid valves do not have position indication and system design does not provide for testing the valves individually. Therefore, these valves cannot be tested unless plant conditions allow MSIV operation. As discussed in Cold Shutdown Justification CSJ-001, the MSIVs are tested during start-up from cold shutdown. Degradation of the F501s and F502s would affect the associated MSIV stroke time, therefore, measuring MSIV stroke time is an indirect method of monitoring acceptability of solenoid valve stroke time. Since the valves are de-energized to close (operation of the MSIV is done by control switch operation which de-energizes the solenoids (F501, F502)), fast closure of the MSIV also demonstrates the fail-safe feature of the pilot solenoids.

Test Method(s): Closure testing of these valves is to be performed during the MSIV (B21F022A-D and B21F028A-D) full-stroke testing described in CSJ-001. Satisfactory MSIV operation demonstrates proper performance of the associated B21F501 and F502 valves.

VPS-003

System: B21, Nuclear Boiler System

Component: B21F505A, B21F505B, B21F505C, B21F505D, B21F505E, B21F505F, B21F505G, B21F505H, B21F505J, B21F505K, B21F505L, B21F505M, B21F505N, B21F505P, B21F505R, B21F505S, B21F505T, B21F505U, B21F505V, B21F505W, B21F506A, B21F506B, B21F506C, B21F506D, B21F506E, B21F506F, B21F506G, B21F506H, B21F506J, B21F506K, B21F506L,

VALVE POSITION STATEMENTS (VPS)

B21F506M, B21F506N, B21F506P, B21F506R, B21F506S, B21F506T, B21F506U, B21F506V, B21F506W

Category: B **Class:** A

Function: Open to supply air to MSRV actuator to open MSRV; Close to isolate air to MSRV actuator to close MSRV

Detailed Discussion: B21F505's and F506's are pilot air solenoid valves which control MSRV operation. The solenoid valves do not have position indication. Opening either MSRV pilot air solenoid would cause the associated MSRV to open. Opening MSRVs at power would cause unnecessary transients and could result in a LOCA. Therefore, these valves cannot be tested unless plant conditions allow MSRV operation. The MSRVs are tested during setpoint testing and certification activities on the test bench during refueling outages. Satisfactory MSRV operation demonstrates proper performance of the associated B21F505 and F506 solenoid valves.

Test Method(s): Testing of these valves is performed during the MSRV testing. Satisfactory MSRV operation demonstrates proper performance of the associated B21F505 and F506 solenoid valves.

VPS-004

System: B21, Nuclear Boiler System

Component: B21F113, B21F114

Category: B **Class:** A

Function: Closed to provide Secondary Containment Isolation

Detailed Discussion: Main Steam Line Drain Valves are provided for removing condensate generated during heat-up and low power operations. Since the subject valves will be exercised during cold shutdown periods prior to heat-up operations, this discussion will address only those concerns associated with low power operations (less than 50% power).

A low point drain is provided upstream of each inboard Main Steam Isolation Valve (MSIV). Each inboard MSIV drain line connects to a common header which then routes condensation out of the containment through containment isolation valves B21-F016 and B21-F019. Once outside of containment, the condensate then flows through automatic drain bypass valve B21-F033, through restricting orifice B21-D001, and then on to the main condenser through secondary containment isolation valves B21-F113 and B21-F114.

A low point drain is also provided upstream of each outboard MSIV, with each drain line also entering a common header. This common header then routes condensation through automatic drain bypass valve B21-F069, through restricting orifice B21-D010, and into the header to the main condenser with the drainage from the inboard MSIVs.

During plant startup and shutdown, steam line drainage is controlled with fail-open control valves B21-F033 and B21-F069, which close when flow in any main steam line is at least 50% of its normal flow rate. While at power, valves B21-F016, B21-F019, B21-F113, and B21-F114 are normally left open due to potential thermal binding concerns.

If either B21-F-113 or B21-F114 fail in the closed position during stroke exercising, the ability to remove condensate from the inboard and outboard MSIV drain lines during low power operation is lost. Since the closed position is the safety related position for these valves, failure in the closed position would typically be considered as conservative. However, the reactor cannot operate indefinitely above 50% power, and will eventually require shutdown for maintenance or refueling. Since a controlled approach to shutdown and cooldown requires plant operation below 50% power, the potential exists for excessive condensate

VALVE POSITION STATEMENTS (VPS)

collection in the main steam drain lines to sweep into the Main Steam Lines. Condensate carryover in the steam lines can result in damage to both the steam lines and the main turbine.

The total free volume in the main steam drain line is approximately 13 cubic feet (B21-F114 failed closed). Assuming that any condensate collected in the line immediately cools to 70°F, the total mass that can be accumulated in the main steam drain line is approximately 810 lbm. Any additional condensate generated beyond 810 lbm will then be swept down the main steam line.

Per System Flow Diagram SFD-1077, the normal drain flow through the main steam drain line is 2000 lbm/hr. Conservatively assuming only one tenth of this flow is generated during shutdown, the steam drain volume will be filled and the steam lines will start carrying away condensate in about four hours. A normal controlled reactor shutdown and cooldown will typically take from 12 to 16 hours.

Corrective maintenance cannot be performed at power on either of these valves due to the radiological fields associated with the steam tunnel where the valves are located. Therefore, the only means available for the plant to achieve reactor shutdown without risking damage to the main steam and turbine systems would be to close the main steam isolation valves while significant heat generation capacity remains in the reactor core. Such action would most likely challenge safety systems (e.g., ADS, SRVs, RCIC, etc.), and, in essence, create an incident analyzed in the FSAR. It is clearly not the intent of the Inservice Testing Program to increase the risk of initiating a Design Basis Accident.

Test Method(s): These main steam drain valves will be exercised closed during cold shutdowns per the Code.

VPS-005

System: C11, Control Rod Drive Hydraulic System

Component: C11-126, C11-127

Category: B **Class:** A

Function: Open to provide exhaust path from CRD HCU's to SDV during a scram (C11-127). Open to provide flow path from CRD pumps and accumulators to the HCU's during scram (C11-126).

Detailed Discussion: These valves are found on each of the 193 control rod drive hydraulic control units (HCU's).

The scram inlet and outlet valves (C11-126, C11-127) full-stroke in milli-seconds and are not equipped with indication for both positions; therefore, measuring their full-stroke time is impracticable. Scram insertion time can be directly affected by full-stroke time of these valves. Verifying that the associated control rod meets the scram insertion time limits specified in the Technical Specifications can be used to detect degradation of these valves.

The alternative testing specified meets the requirements of Position 7 of Generic Letter 89-04.

Test Method(s): Scram testing and control rod insertion timing will be performed in accordance with GGNS Technical Specifications (reactor coolant pressure greater than or equal to 950 psig and, during single control rod scram time tests, the control rod drive pumps isolated from the accumulators) which will verify proper operation of the C11-126 and C11-127 valves:

- a. For all control rods prior to thermal power exceeding 40% of rated thermal power following core alterations or after a reactor shutdown that is greater than 120 days (SR 3.1.4.1),
- b. Prior to exceeding 40% of rated thermal power, for specific individual control rods following maintenance on or modification to the control rod or control rod drive system which could affect scram time (SR 3.1.4.4), and

VALVE POSITION STATEMENTS (VPS)

c. For a representative sample of control rods, at least once per 120 days of operation in Mode 1 (SR 3.1.4.2).

d. For specific individual control rods following maintenance on or modification to the control rod or control rod drive system which could affect scram insertion time, prior to declaring the control rod operable and at any reactor steam dome pressure (SR 3.1.4.3).

VPS-006

System: C11, Control Rod Drive Hydraulic System

Component: C11F322

Category: B **Class:** A

Function: Close manually for secondary containment isolation.

Detailed Discussion: F322 is a normally open valve in the condensate supply piping to the CRD pumps suction. Exercising this valve would require a system shutdown and a loss of drive water and cooling water supply to the control rod drive hydraulic control units and seal injection water supply to the reactor recirculation pumps, resulting in potential equipment damage if tested during power operation. Additionally, the test cannot be performed during each cold shutdown since at least one of the reactor recirculation pumps is usually kept running. Therefore, F322 full-stroke exercising is deferred to refueling outages.

Test Method(s): Full-stroke exercise valve during each refueling outage.

VPS-007

System: P75, Standby Diesel Generator System

Component: P75F507A, P75F507B, P75F507C, P75F507D, P75F508A, P75F508B, P75F508C, P75F508D

Category: B **Class:** A

Function: Open to allow starting air flow to diesel. Close to maintain pressure in starting air storage tank to supply pneumatic control system.

Detailed Discussion: These valves are rapid acting and are not equipped with position indication; therefore, measuring their full-stroke time is impracticable. Verifying that the Diesel Generator starting time (using only one starting air subsystem after rolling the diesel using each air line individually) meets the time limits specified in the GGNS Technical Specifications can be used to detect degradation of these valves. If the diesel reaches rated speed within 10 seconds, the starting air valves will have stroked and passed full safety flow. Additionally, following an air roll of the diesel engine using each air start solenoid valve individually, verification of the absence of air flow from the air start manifold vents confirms air start solenoid valve closure.

Test Method(s): At least once every 3 months, the diesel will be rolled using each air line individually. This will prove that the valve opens. Additionally, following air rolling of the diesel engine using each air start solenoid valve individually, verification of the absence of air flow from the air start manifold vents confirms air start solenoid valve closure.

At least once every 3 months, during alternating starts, the diesel will also be started using only one starting air subsystem (two starting air lines) per the surveillance requirements in GGNS Technical Specification SR 3.8.1.2 which states:

VALVE POSITION STATEMENTS (VPS)

"Verify each diesel generator starts from standby conditions and achieves, in less than or equal to 10 seconds, voltage greater than or equal to 3744 V and less than or equal to 4576 V and frequency greater than or equal to 58.8 Hz and less than or equal to 61.2 Hz."

If the diesel reaches rated speed within 10 seconds, the two starting air valves will have stroked and passed full safety flow.

VPS-008

System: P81, HPCS Diesel Generator System

Component: P81F503A, P81F503B, P81F504A, P81F504B

Category: B **Class:** A

Function: Open to allow starting air flow to air start motors for diesel engine start. Close after engine start to vent control air from air relay valve, isolating starting air to air start motors and allowing pinion gear to retract. After engine start, closes to prevent loss of starting air from starting air storage tanks when engine is in standby.

Detailed Discussion: P81F503A/B and F504A/B are located in the HPCS Diesel Generator air start piping. Current design does not provide the capability of individually testing these valves. These valves have neither local nor remote position indication, therefore, measuring their full-stroke time is impracticable. Verifying that the Diesel Generator starting time (using only two of the four starting air subsystems after rolling the diesel using each air line individually) meets the time limits specified in the GGNS Technical Specifications can be used to detect degradation of these valves. If the diesel reaches rated speed within 10 seconds, the starting air valves will have stroked and passed full safety flow. Satisfactory operation of the valves will be determined during diesel generator operability testing by performing the following:

The diesel will be rolled using each air start subsystem (consisting of one starting air line with one solenoid valve, one air relay valve, one check valve and two starting air motors) separately. During this test, the air motor pinions will be observed to engage prior to the air start motors turning. This will prove that each solenoid valve opens (by manual actuation), that each relay valve opens to admit air to the starting motor, and that each check valve closes.

After each air roll, the air motors will be observed to verify that the air motor pinions have disengaged and that the air motors have slowed and stopped. This verifies that each solenoid valve has closed (vented the air motors), that each air relay valve has closed (vented the air motors), and that each check valve has opened and passed its required safety flow.

The diesel will also be started using two of the four starting air subsystems and will be evaluated per Technical Specifications. This testing will be performed on a staggered basis such that all four subsystems are tested at least quarterly.

Test Method(s): Test each valve at a frequency of at least once every three months by performing the following:

Roll the diesel using each air start subsystem (consisting of one starting air line with one solenoid valve, one air relay valve, one check valve and two starting air motors) separately. During this test, observe that the air motor pinions engage prior to the air start motors turning. This will prove that each solenoid valve opens (by manual actuation), that each relay valve opens to admit air to the starting motor, and that each check valve closes.

After each air roll, observe that the air motor pinions have disengaged and that the air motors have slowed and stopped. This verifies that each solenoid valve has closed (vented the air motors), that each

VALVE POSITION STATEMENTS (VPS)

air relay valve has closed (vented the air motors), and that each check valve has opened and passed its required safety flow.

Start the diesel using two of the four starting air subsystems and evaluate acceptable diesel operation (including starting time) per Technical Specification SR3.1.8.2 which states:

"Verify each diesel generator starts from standby conditions and achieves, in less than or equal to 10 seconds, voltage greater than or equal to 3744 V and less than or equal to 4576 V and frequency greater than or equal to 58.8 Hz and less than or equal to 61.2 Hz."

If the diesel reaches rated speed within 10 seconds, the two starting air valves and the two air relay valves associated with the two starting air subsystems used to start the diesel will be judged to have stroked open and passed their full safety flow.

VPS-009

System: P81, HPCS Diesel Generator System

Component: P81F053A, P81F053B, P81F054A, P81F054B

Category: B **Class:** A

Function: Open to allow starting air flow to air start motors to start diesel engine. Close after engine start to isolate starting air to air start motors and allow pinion gear to retract. After engine start, closes to prevent loss of starting air from starting air storage tanks when engine is in standby.

Detailed Discussion: P81F053A/B and F054A/B are located in the HPCS Diesel Generator air start piping. Current design does not provide the capability of individually testing these valves. These valves have neither local nor remote position indication, making measurement of full-stroke time impracticable. Therefore, alternative testing is necessary. Verifying that the Diesel Generator starting time (using only two of the four starting air subsystems after rolling the diesel using each air line individually) meets the time limits specified in the GGNS Technical Specifications can be used to detect degradation of these valves. If the diesel reaches rated speed within 10 seconds, the valves will have stroked and passed full safety flow. Satisfactory operation of the valves will be determined during diesel generator operability testing by performing the following:

The diesel will be rolled using each air start subsystem (consisting of one starting air line with one solenoid valve, one air relay valve, one check valve and two starting air motors) separately. During this test, the air motor pinions will be observed to engage prior to the air start motors turning. This will prove that each solenoid valve opens (by manual actuation), that each relay valve opens to admit air to the starting motor, and that each check valve closes.

After each air roll, the air motors will be observed to verify that the air motor pinions have disengaged and that the air motors have slowed and stopped. This verifies that each solenoid valve has closed (vented the air motors), that each air relay valve has closed (vented the air motors), and that each check valve has opened and passed its required safety flow. The diesel will also be started using two of the four starting air subsystems and will be evaluated per Technical Specifications. This testing will be performed on a staggered basis such that all four subsystems are tested at least quarterly.

Test Method(s): Test each valve at a frequency of at least once every three months by performing the following:

Roll the diesel using each air start subsystem (consisting of one starting air line with one solenoid valve, one air relay valve, one check valve and two starting air motors) separately. During this test, the air motor pinions will be observed to engage prior to the air start motors turning. This will prove that each

VALVE POSITION STATEMENTS (VPS)

solenoid valve opens, that each relay valve opens to admit air to the starting motor, and that each check valve closes.

After each air roll, observe that the air motor pinions have disengaged and that the air motors have slowed and stopped. This verifies that each solenoid valve has closed (vented the air motors), that each air relay valve has closed (vented the air motors), and that each check valve has opened and passed its required safety flow.

Start the diesel using two of the four starting air subsystems and evaluate per Technical Specification SR 3.8.1.2 which states:

"Verify each diesel generator starts from standby conditions and achieves, in less than or equal to 10 seconds, voltage greater than or equal to 3744 V and less than or equal to 4576 V and frequency greater than or equal to 58.8 Hz and less than or equal to 61.2 Hz."

If the diesel reaches rated speed within 10 seconds, the two starting air valves and the two air relay valves associated with the two starting air subsystems used to start the diesel will be judged to have stroked open and passed their full safety flow.

VPS-010

System: P81, HPCS Diesel Generator System

Component: P81F103A, P81F103B

Category: C **Class:** A

Function: Normally closed to prevent diverting lube oil to engine sump instead of engine components during engine operation in response to a LOCA or LOP/LOCA. Opens to limit maximum lube oil pressure entering the engine oil system during engine operation.

Detailed Discussion: P81F103A and F103B are relief valves on the engine-driven lube oil pumps for the A and B engines of the High Pressure Core Spray (HPCS) Diesel Generator. They are normally closed during engine operation and open only if the oil pressure exceeds the relief valve set point due to some malfunction in the diesel generator lube oil system.

Part 1 of OMa-1988 contains requirements for set-pressure testing relief valve and other relief devices. Although these valves are classified as Augmented, set pressure testing would normally be required on these valves in accordance with Part 1 requirements.

The vendor manual for the diesel generator, Vendor Manual 460000154, Section 9 VPF-3636-71(1)-1, pages 9-3 and 9-4, contains description of purpose and maintenance of the lube oil pressure relief valves. It explains that the valves limit the maximum pressure of the main lube oil pump to 125 psi at the lube oil manifold. It points out that the valve will open if engine oil is cold at startup. Since the lube oil for this engine is maintained at a hot condition, the valve is not expected to open.

The vendor manual also contains the following instructions under the heading "Setting Oil Pressure Relief Valve":

"The setting of the oil pressure relief valve connected to the lube oil manifold determines the maximum oil pressure at the main lube oil pump. It is not set by pressure gauges, but by a specific dimension from the top of the valve guide to the top of the valve holder.

VALVE POSITION STATEMENTS (VPS)

"To set valve, loosen the locknut ... and position the valve guide so that it extends 38.10 mm (1-1/2") above the safety plate."

Oil pressure is routinely monitored at the lube oil pressure indicator and recorded during the monthly surveillance runs and consistently ranges between 85-90 psig. The valve is mounted within the engine housing, connected to the lube oil pressure manifold.

Based on the guidance in the vendor manual, set pressure testing of these valves per OMa-1988, Part 1, will not be performed. Instead, the position of the valve guide above the safety plate on each valve will be measured at five-year intervals.

Test Method(s): Measure the position of the valve guide above the safety plate on each valve at a frequency of at least once every five years.

VPS-011

System: P81, HPCS Diesel Generator System

Component: P81F047A, P81F047B (Motor Driven Fuel Oil Pumps C005A/B Pressure Relief Valves)

Category: C **Class:** A

Function:

OM Scope Function: Active – Opens to protect motor driven fuel oil pump C005A/B from over-pressurization. Passive – Valves are normally closed to prevent short cycling of fuel oil from the discharge of motor driven pump to its suction.

Detailed Discussion: These valves are mounted integral to the motor-driven fuel oil booster pumps, and are regulated to ensure adequate fuel oil pressure at the fuel supply header piping. These are skid-mounted components which were procured without features for Inservice Testing these individual relief valves, and current system design does not provide the means to individually test these valves because they cannot be removed and bench tested. Additionally, there are no pressure taps or ports for monitoring opening or closure of the valves.

NUREG1482 specifically discusses "Skid-Mounted Components and Component Subassemblies" for ASME Code Class 1, 2, or 3 IST components. The NRC Recommendation for skid-mounted components which are subject to IST (such as valves in diesel air-start subassemblies, diesel skid-mounted fuel oil pump(s) and valves, steam admission and trip throttle valves for high-pressure coolant injection or auxiliary feedwater pump turbine drivers, steam traps, and air supply system check valves and solenoid-operated valves for main steam isolation valves) is that testing of the major component is an acceptable means for verifying the operational readiness of the skid-mounted and components subassemblies if the licensee documents this approach in the IST Program and, provided that testing the major component is adequate to test the functions of P81F047A and P81F047B. This is acceptable for both Code class components and non-Code class components tested and tracked by the IST Program.

The "Basis for Recommendation" in NUREG-1482 states that when many of the components were procured, the requirements for IST did not apply and thus the components may not have included features for IST.

Test Method(s): Routine surveillances include observation of "Fuel System Faults" and "Low Fuel Oil Pressure" annunciators and recording the surveillance results to ensure adequate fuel oil pressure at the

VALVE POSITION STATEMENTS (VPS)

fuel supply header piping. The active and passive functions of valves F047A/B are tested, although not removed and bench tested, by verification of required fuel oil pressure during the surveillances.

VPS-012

System: P81, HPCS Diesel Generator System

Component: P81F052A, P81F052B (Fuel Oil Filter Assembly D018A/B Pressure Relief Valves)

Category: C **Class:** A

Function:

Code Scope Function: Active – Opens to prevents over-pressurization of Engine-driven fuel pump discharge piping. Passive – Maintains the pressure boundary of the fuel oil system, thereby maintaining fuel oil inventory and pressure during operation. The valve is normally closed to prevent short cycling of fuel oil from the discharge of engine driven fuel oil pump to the fuel oil day tank which could result in starving the engine.

Non-Code Function: Active – Opens to protect engine driven fuel oil pump and filter from over-pressurization due to filter clogging or other obstruction.

Detailed Discussion: These valves are manifold-mounted valves, mounted close-coupled to the D018 filter assembly, and are regulated to ensure adequate fuel oil pressure at the fuel supply header piping. These are skid-mounted components which were procured without features for Inservice Testing these individual relief valves, and current system design does not provide the means to individually test these valves because they cannot be removed and bench tested. Additionally, there are no pressure taps or ports for monitoring opening or closure of the valves.

NUREG1482 specifically discusses "Skid-Mounted Components and Component Subassemblies" for ASME Code Class 1, 2, or 3 IST components. The NRC Recommendation for skid-mounted components which are subject to IST (such as valves in diesel air-start subassemblies, diesel skid-mounted fuel oil pump(s) and valves, steam admission and trip throttle valves for high-pressure coolant injection or auxiliary feedwater pump turbine drivers, steam traps, and air supply system check valves and solenoid-operated valves for main steam isolation valves) is that testing of the major component is an acceptable means for verifying the operational readiness of the skid-mounted and components subassemblies if the licensee documents this approach in the IST Program and, provided that testing the major component is adequate to test the functions of P81F052A and P81F052B. This is acceptable for both Code class components and non-Code class components tested and tracked by the IST Program.

The "Basis for Recommendation" in NUREG-1482 states that when many of the components were procured, the requirements for IST did not apply and thus the components may not have included features for IST.

Test Method(s): Routine surveillances include observation of "Fuel System Faults" and "Low Fuel Oil Pressure" annunciators and recording the surveillance results to ensure adequate fuel oil pressure at the fuel supply header piping. The active function of valves F052A/B are tested, although not removed and bench tested, by observation of expected fuel oil pressure during the surveillances. Additionally, the passive safety function is tested by verification of adequate fuel oil pressure during the surveillances.

PUMP RELIEF REQUESTS (PRR)

10 CFR 50.55a Request Number PRR-GGNS-2007-1	
Proposed Alternative in Accordance with 10 CFR 50.55a(a)(3)(ii)	
10 CFR 50.55a Request Title: E12 Jockey Pumps Alternative Request	
PLANT/UNIT:	Grand Gulf Nuclear Station
INTERVAL:	Third 120 Month Inservice Testing Interval
COMPONENTS AFFECTED:	<p>E12C003A Residual Heat Removal System Jockey Pump A</p> <p>E12C003B Residual Heat Removal System Jockey Pump B</p> <p>E12C003C Residual Heat Removal System Jockey Pump C</p> <p>(The above pumps are ASME Code Class 2, Centrifugal, Motor Driven, OM Code Category A pumps.)</p>
CODE EDITION AND ADDENDA:	ASME OM Code-2001 Edition with addenda through OMb Code-2003 Addenda
REQUIREMENTS:	<p>ASME OM Code-2001 Edition with addenda through OMb Code-2003 Addenda ISTB-3300</p> <p>Reference values shall be obtained as follows:</p> <p>(a) Initial reference values shall be determined from the results of testing meeting the requirements of ISTB-3100, Preservice Testing, or from the results of the first inservice test.</p> <p>(b) New or additional reference values shall be established as required by ISTB-3310, ISTB-3320, or ISTB-6200(c).</p> <p>(c) Reference values shall be established only when the pump is known to be operating acceptably.</p> <p>(d) Reference values shall be established at a point(s) of operation (reference point) readily duplicated during subsequent tests.</p> <p>(e) Reference values shall be established in a region(s) of relatively stable pump flow.</p> <p>(1) Reference values shall be established within $\pm 20\%$ of pump design</p>

PUMP RELIEF REQUESTS (PRR)

10 CFR 50.55a Request Number PRR-GGNS-2007-1

flow rate for the comprehensive test.

(2) Reference values shall be established within $\pm 20\%$ of pump design flow for the Group A and Group B tests, if practicable. If not practicable, the reference point flow rate shall be established at the highest practical flow rate.

(f) All subsequent test results shall be compared to these initial reference values or to new reference values established in accordance with ISTB-3310, ISTB-3320, or ISTB-6200(c).

(g) Related conditions that can significantly influence the measurement or determination of the reference value shall be analyzed in accordance with ISTB-6400.

ASME OM Code-2001 Edition with addenda through OMB Code-2003
Addenda ISTB 3510

(b) Range

(1) The full-scale range of each analog instrument shall be not greater than three times the reference value.

ASME OM Code-2001 Edition with addenda through OMB Code-2003
Addenda ISTB 3510

(c) Instrument Location. The sensor location shall be established by the Owner, documented in the plant records (see ISTB-9000), and shall be appropriate for the parameter being measured. The same location shall be used for subsequent tests. Instruments that are position sensitive shall be either permanently mounted, or provision shall be made to duplicate their position during each test.

ASME OM Code-2001 Edition with addenda through OMB Code-2003
Addenda ISTB-5121

Group A Test Procedure. Group A tests shall be conducted with the pump operating at a specified reference point. The test parameters shown in Table ISTB-3000-1 shall be determined and recorded as required by this paragraph.

ASME OM Code-2001 Edition with addenda through OMB Code-2003
Addenda ISTB-5121

PUMP RELIEF REQUESTS (PRR)

10 CFR 50.55a Request Number PRR-GGNS-2007-1

(b) The resistance of the system shall be varied until the flow rate equals the reference point. The differential pressure shall then be determined and compared to its reference value. Alternatively, the flow rate shall be varied until the differential pressure equals the reference point and the flow rate determined and compared to the reference flow rate value.

ASME OM Code-2001 Edition with addenda through OMB Code-2003 Addenda TABLE ISTB-3000-1 INSERVICE TEST PARAMETERS lists Flow Rate as a required parameter for both Group A and Comprehensive pump tests.

**REASON FOR
RELIEF REQUEST:**

Pursuant to 10 CFR 50.55a, "Codes and Standards", paragraph (a)(3)(ii), an alternative is requested when using the requirements of ASME OM Code ISTB (as listed above).

This alternative is a re-submittal of NRC approved 2nd Interval PRR-E12-01 that was based on the ASME OM Code 1987 Edition with addenda through OMA-1988. This 3rd Interval alternative request is based on the ASME OM Code-2001 Edition with addenda through OMB Code-2003 Addenda. There have been no substantive changes to this alternative, to the OM Code requirements or to the basis for use, which would alter the previous NRC Safety Evaluation conclusions.

These jockey pumps are required to operate whenever their respective LPCI/RHR trains are in the operable condition. As such, the pumps perform continuous duty on a recirculation line and provide makeup as needed.

Pressure taps exist in the jockey pump suction and discharge piping where pump suction and discharge pressure can be measured for calculation of differential pressure, and throttle valves exist which can be used to set differential pressure equal to the pump's reference value. However, the pump differential pressure information provided is of little use for analyzing the hydraulic condition of the jockey pump without being able to measure flow rate or set flow rate at a known reference value, as required by ASME OM Code-2001 Edition with addenda through OMB Code-2003 Addenda ISTB-5121(b).

There are no practical means of measuring the flow rate of these jockey pumps. No flow rate meters, orifices or other measurement devices are installed in the system for measurement of jockey pump flow rate. The installed main LPCI/RHR process flow measurement instrumentation loops, which are discussed below, cannot be used for jockey pump flow

PUMP RELIEF REQUESTS (PRR)

10 CFR 50.55a Request Number PRR-GGNS-2007-1

measurement. Attempts have been made to use portable ultrasonic flow instruments to measure jockey pump flow rate, but the results have been too variable to be repeatable.

Flow orifices 1E12-FE-N014A, B, and C, which are installed in the system to measure flow rate of the main LPCI/RHR Pumps 1E12C002A, B, and C, each have a rated maximum flow rate of 10,000 gpm. Each flow instrument loop, which consists of the flow orifice, flow transmitter, flow indicator and signal processing electronics, has an overall loop accuracy of between one and two percent of the maximum measurable flow rate. Even at the lower, more accurate, point, one percent accuracy is equivalent to 100 gpm, which is over 2-1/2 times the jockey pumps' rated flow rate of 40 gpm at 50 psid (UFSAR Section 6.3.2.2.5).

The flow orifices are installed in 18-inch NPS piping. Even if the typical operational jockey pump flow rate of 30 to 50 gpm registered on this flow instrumentation, it would not meet the requirements of ASME OM Code-2001 Edition through addenda OMB-2003 ISTB 3510(b)(1) and ASME OM Code-2001 Edition through addenda OMB-2003 ISTB-3510(c), since the full-scale ranges of these analog instruments are more than 200 times the probable reference values for these jockey pumps. Under ideal conditions, the jockey pump flows would be just barely detectable at the lower end of the instrument scales, and accurate measurement would be masked by instrument noise and other conditions.

Additionally, the flow path for each of the jockey pumps in standby operation is through a minimum-flow return line with a flow-limiting orifice plate (1E12-RO-D002A, B or C) which is sized to hold flow rate reasonably constant at about 40 gpm (UFSAR Figure 5.4-19), while providing adequate margin in jockey pump capacity to make up for any leakage from the main LPCI/RHR pump discharge header. Flow rate through this orifice plate cannot be measured, as discussed above, since there are no installed measurement points and portable flow rate instrumentation has not proven adequate. This flow rate also cannot be considered constant and repeatable enough to meet the requirements of ASME OM Code-2001 Edition through addenda OMB-2003 ISTB-3300(d), due to the potential for changes in the main LPCI/RHR discharge header leakage from test to test.

**PROPOSED
ALTERNATIVE AND
BASIS:**

Jockey pump discharge header pressure is continuously monitored, and an annunciator alarms in the Control Room if the discharge header pressure drops below a preset value. This pressure alarm is currently adjusted to 40 psig for the Loop A and B jockey pumps, and 28 psig for the Loop C jockey

PUMP RELIEF REQUESTS (PRR)

10 CFR 50.55a Request Number PRR-GGNS-2007-1

pump. Based on the pumps' rated capacities (40 gpm at 50 psid, per UFSAR Section 6.3.2.2.5) and the required suppression pool level during power operation (greater than, or equal to, 18 feet 4-1/12 inches and less than, or equal to, 18 feet 9-3/4 inches per Tech Spec LCO 3.6.2.2), these low header pressure annunciators will alarm at approximately 70 percent of the Loop A and B jockey pumps' operating differential pressure, and at approximately 50 percent of the Loop C jockey pump's operating differential pressure.

Also, GGNS Technical Specification SR 3.5.1.1 requires verification every 31 days that the respective LPCI/RHR headers are filled with water by venting the piping at the high point vents. Such continuous monitoring and monthly venting will provide timely warning if a jockey pump has failed, or that system leakage has exceeded the capacity of the jockey pump. In addition, these pumps are currently being monitored at least once a quarter under the GGNS Vibration Monitoring Program, which is currently not required by any Federal, state or industry requirements. Because rotating equipment faults that can be detected by vibration monitoring will show up any time the equipment is operating, returning these pumps to a fixed set of operating conditions is not necessary to detect such faults. The faults themselves, however, are affected by the equipment operating parameters. For example, if the equipment is heavily loaded, fault growth will typically be escalated.

These jockey pumps may be categorized as "smooth running," that is, they are typically running with very low vibration velocities. Each pump's flow rate is normally at or only slightly higher than the flow through the pump's minimum flow return piping. Any additional flow is typically only to make up for leakage from the main LPCI/RHR pump's discharge piping. Under these conditions, these pumps' reference values of vibration velocity are normally less than 0.05 inches per second (IPS).

Limits established in the GGNS Vibration Monitoring Program are not only based on vendor and industry data, but also on changes in vibration levels and in the spectral content of the vibration signals. Unlike ASME OM Code-2001 Edition through addenda OMB Code-2003 Addenda ISTB Table-ISTB-5100-1, "Acceptance Criteria," which has fixed Alert and Required Action limits at 2.5 times and 6 times respectively, of the reference values for vibration, the GGNS Vibration Monitoring Program analyzes changes in vibration spectrum or spectral content over time, looks for trends in the changes, and attempts to determine the reasons for the changes. If changes are determined to be from an equipment problem,

PUMP RELIEF REQUESTS (PRR)

10 CFR 50.55a Request Number PRR-GGNS-2007-1

rather than changes in operating parameters, increased monitoring is established to determine the rate of the trend, and equipment maintenance is scheduled to correct the problem before any vendor or industry recommendations or limits of ASME OM Code-2001 Edition through addenda OMB Code-2003 Addenda ISTB are expected to be exceeded.

Hydraulic condition of the jockey pumps will be considered acceptable by continuous monitoring of pump discharge header pressures and verifying adequate header pressures as indicated by the absence of low pressure alarms. Corrective action will be taken if a header low pressure alarm sounds, indicating low header pressure.

Vibration will continue to be measured on these pumps as required by ASME OM Code-2001 Edition through addenda OMB Code-2003 Addenda. Differential pressure will be set equal to its' reference value prior to the measurements (Reference values of vibration were taken with the jockey pumps in normal operation with header pressure alarm cleared and flow rate through the jockey pump minimum flow return orifice plate). If a measured vibration velocity exceeds an Alert, or Required Action limit according to ASME OM Code-2001 Edition through addenda OMB Code-2003 Addenda ISTB-Table-ISTB-5100-1, "Acceptance Criteria," the required actions of ASME OM Code-2001 Edition through addenda OMB Code-2003 Addenda ISTB-6200, "Corrective Action," will be taken.

Based on the determination that compliance with the ASME OM Code requirements results in a hardship without a compensating increase in the level of quality or safety, this proposed alternative should be granted pursuant to 10 CFR 50.55a(a)(3)(ii).

DURATION:

Grand Gulf Nuclear Station's 3rd 120-month Inservice Testing Interval (December 1, 2007, through November 30, 2017 based on TAC No. M94454).

PRECEDENTS:

Use of an alternative for similar requirements was previously granted as PRR-E12-01 for Grand Gulf Nuclear Station's 2nd 120-month Inservice Testing Interval (TAC No. MA0196).

REFERENCES:

Revision 1 of NUREG-1482, Guidelines for Inservice testing at Nuclear Power Plants, Final Report, Published January 2005

UFSAR 3.9.3.2.2.1.3, 6.3.2.2.5, 6.7.2.2, UFSAR Figures 5.4-19 and 5.4-35, UFSAR Table 3.9-3b, 6.7-2

IST PLAN GGNS APPENDIX	PROGRAM SECTION NO.: CEP-IST-2 REVISION: 307 PAGE: 20 of 44
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PUMP RELIEF REQUESTS (PRR)

10 CFR 50.55a Request Number PRR-GGNS-2007-1	
STATUS:	Submitted for Nuclear Regulatory Commission review and approval by CNRO-2007-00042.

10 CFR 50.55a Request Number PRR-GGNS-2007-2	
Proposed Alternative in Accordance with 10 CFR 50.55a(a)(3)(ii) 10 CFR 50.55a Request Title: E21 Jockey Pump Alternative Request	
PLANT/UNIT:	Grand Gulf Nuclear Station
INTERVAL:	Third 120 Month Inservice Testing Interval
COMPONENTS AFFECTED:	E21C002 Low Pressure Core Spray System Jockey Pump (The above pump is an ASME Code Class 2, Centrifugal, Motor Driven, OM Code Category A pump.)
CODE EDITION AND ADDENDA:	ASME OM Code-2001 Edition with addenda through OMb Code-2003 Addenda
REQUIREMENTS:	<p>ASME OM Code-2001 Edition with addenda through OMb Code-2003 Addenda ISTB-3300</p> <p>Reference values shall be obtained as follows:</p> <p>(a) Initial reference values shall be determined from the results of testing meeting the requirements of ISTB-3100, Preservice Testing, or from the results of the first inservice test.</p> <p>(b) New or additional reference values shall be established as required by ISTB-3310, ISTB-3320, or ISTB-6200(c).</p> <p>(c) Reference values shall be established only when the pump is known to be operating acceptably.</p> <p>(d) Reference values shall be established at a point(s) of operation (reference point) readily duplicated during subsequent tests.</p> <p>(e) Reference values shall be established in a region(s) of relatively stable pump flow.</p> <p>(1) Reference values shall be established within $\pm 20\%$ of pump design flow rate for the comprehensive test.</p> <p>(2) Reference values shall be established within $\pm 20\%$ of pump design flow for the Group A and Group B tests, if practicable. If not practicable, the reference point flow rate shall be established at the highest practical flow rate.</p>

PUMP RELIEF REQUESTS (PRR)

10 CFR 50.55a Request Number PRR-GGNS-2007-2

(f) All subsequent test results shall be compared to these initial reference values or to new reference values established in accordance with ISTB-3310, ISTB-3320, or ISTB-6200(c).

(g) Related conditions that can significantly influence the measurement or determination of the reference value shall be analyzed in accordance with ISTB-6400.

ASME OM Code-2001 Edition with addenda through OMb Code-2003
Addenda ISTB 3510

(b) Range

(1) The full-scale range of each analog instrument shall be not greater than three times the reference value.

ASME OM Code-2001 Edition with addenda through OMb Code-2003
Addenda ISTB 3510

(c) Instrument Location. The sensor location shall be established by the Owner, documented in the plant records (see ISTB-9000), and shall be appropriate for the parameter being measured. The same location shall be used for subsequent tests. Instruments that are position sensitive shall be either permanently mounted, or provision shall be made to duplicate their position during each test.

ASME OM Code-2001 Edition with addenda through OMb Code-2003
Addenda ISTB-5121

Group A Test Procedure. Group A tests shall be conducted with the pump operating at a specified reference point. The test parameters shown in Table ISTB-3000-1 shall be determined and recorded as required by this paragraph.

ASME OM Code-2001 Edition with addenda through OMb Code-2003
Addenda ISTB-5121

(b) The resistance of the system shall be varied until the flow rate equals the reference point. The differential pressure shall then be determined and compared to its reference value. Alternatively, the flow rate shall be varied until the differential pressure equals the reference point and the flow rate determined and compared to the reference flow rate value.

ASME OM Code-2001 Edition with addenda through OMb Code-2003
Addenda TABLE ISTB-3000-1 INSERVICE TEST PARAMETERS lists Flow Rate as a required parameter for both Group A and Comprehensive pump tests.

REASON FOR

Pursuant to 10 CFR 50.55a, "Codes and Standards", paragraph (a)(3)(ii), an

PUMP RELIEF REQUESTS (PRR)

10 CFR 50.55a Request Number PRR-GGNS-2007-2

RELIEF REQUEST:

alternative is requested when using the requirements of ASME OM Code-2001 Edition with addenda through OMB Code-2003 Addenda ISTB (as listed above).

This alternative is a re-submittal of NRC approved 2nd Interval PRR-E21-01 that was based on the ASME OM Code 1987 Edition with addenda through OMA-1988. This 3rd Interval alternative request is based on the ASME OM Code-2001 Edition with addenda through OMB Code-2003 Addenda. There have been no substantive changes to this alternative, to the OM Code requirements or to the basis for use, which would alter the previous NRC Safety Evaluation conclusions.

This jockey pump is required to operate whenever the LPCS system is in the operable condition. As such, the pump performs continuous duty on a recirculation line and provides makeup as needed.

Pressure taps exist in the jockey pump suction and discharge piping where pump suction and discharge pressure can be measured for calculation of differential pressure, and a throttle valve exists which can be used to set differential pressure equal to the pump's reference value. However, the pump differential pressure information provided is of little use for analyzing the hydraulic condition of the jockey pump without being able to measure flow rate or set flow rate at a known reference value, as required by ASME OM Code-2001 Edition with addenda through OMB Code-2003 Addenda ISTB-5121(b).

There are no practical means of measuring the flow rate of this pump. No flow rate meters, orifices or other measurement devices are installed in the system for measurement of jockey pump flow rate. The installed main process flow measurement instrumentation loop, which is discussed below cannot be used for jockey pump flow measurement. Attempts have been made to use ultrasonic flow instruments to measure jockey pump flow rate, but the results have been too variable to be repeatable.

Flow orifice 1E21-FE-N002, which is installed in the system to measure flow rate of the main LPCS Pump 1E12C001, has a rated maximum flow rate of 10,000 gpm. The flow instrument loop, which consists of the flow orifice, flow transmitter, flow indicator and signal processing electronics, has an overall loop accuracy of between one and two percent of the maximum measurable flow rate. Even at the lower, more accurate, point, one percent accuracy is equivalent to 100 gpm, which is over 2-1/2 times the jockey pump's rated flow rate of 40 gpm at 45 psid (SAR Section 6.3.2.2.5). The flow orifice is installed in 16-inch NPS piping. Even if the typical operational jockey pump flow rate of 30 to 50 gpm registered on this flow instrumentation, it would not meet the requirements of ASME OM

PUMP RELIEF REQUESTS (PRR)

10 CFR 50.55a Request Number PRR-GGNS-2007-2

	<p>Code-2001 Edition with addenda through OMB Code-2003 Addenda paragraphs ISTB-3510(b) and ISTB-3510(c), since the full-scale range of this analog instrument is more than 200 times the probable reference values for this jockey pump. Under ideal conditions, the jockey pump flow would be just barely detectable at the lower end of the instrument scale, and accurate measurement would be masked by instrument noise and other conditions.</p> <p>Additionally, the flow path for the jockey pump in standby operation is through a minimum-flow return line with a flow restricting orifice plate (1E21-RO-D003) which is sized to hold flow rate reasonably constant at about 40 gpm (SAR Figure 5.4-19), while providing adequate margin in jockey pump capacity to make up for any leakage from the main LPCS pump discharge header. Flow rate through this orifice plate cannot be measured, as discussed above, since there are no installed measurement points and portable flow rate instrumentation has not proven adequate. This flow rate also cannot be considered constant and repeatable enough to meet the requirements of ASME OM Code-2001 Edition with addenda through OMB Code-2003 Addenda ISTB-3300, due to the potential for changes in the main LPCS discharge header leakage from test to test.</p>
<p>PROPOSED ALTERNATIVE AND BASIS:</p>	<p>Jockey pump discharge header pressure is continuously monitored, and an annunciator alarms in the Control Room if the main LPCS discharge header pressure drops below a preset value (currently 32 psig). Based on the jockey pump's rated capacity (40 gpm at 45 psid, per UFSAR Section 6.3.2.2.5) and the required suppression pool level during power operation (greater than, or equal to, 18 feet 4-1/12 inches and less than, or equal to, 18 feet 9-3/4 inches per Tech Spec LCO3.6.2.2), this low header pressure annunciator will alarm at approximately 60 percent of the jockey pump's operating differential pressure.</p> <p>Also, GGNS Technical Specification SR 3.5.1.1 requires verification every 31 days that the main LPCS discharge header is filled with water by venting the piping at the high point vent. Such continuous monitoring and monthly venting will provide timely warning if the jockey pump has failed, or that system leakage has exceeded the capacity of the jockey pump.</p> <p>In addition, the pump is currently being monitored at least once a quarter under the GGNS Vibration Monitoring Program, which is currently not required by any Federal, state or industry requirements. Because rotating equipment faults that can be detected by vibration monitoring will show up any time the equipment is operating, returning the pump to a fixed set of operating conditions is not necessary to detect such faults. The faults themselves however, are affected by the equipment operating parameters.</p>

PUMP RELIEF REQUESTS (PRR)

10 CFR 50.55a Request Number PRR-GGNS-2007-2

For example, if the equipment is heavily loaded, fault growth will typically be escalated.

This jockey pump may be categorized as "smooth running," that is, it is typically running with very low vibration velocities. The pump's flow rate is normally at or only slightly higher than the flow through the pump's minimum flow return piping. Any additional flow is typically only to make up for leakage from the main LPCS pump's discharge piping. Under these conditions, the pump's reference values of vibration velocity are normally less than 0.05 inches per second (IPS).

Limits established in the GGNS Vibration Monitoring Program are not only based on vendor and industry data but also on changes in vibration levels and in the spectral content of the vibration signals. Unlike ASME OM Code-2001 Edition through addenda OMb Code-2003 Addenda, ISTB Table-ISTB-5100-1, "Acceptance Criteria," which has fixed Alert and Required Action limits at 2.5 times and 6 times, respectively, of the reference values, the GGNS Vibration Monitoring Program analyzes changes in vibration spectrum or spectral content over time, looks for trends in the changes, and attempts to determine the reasons for the changes. If changes are determined to be from an equipment problem, rather than changes in operating parameters, increased monitoring is established to determine the rate of the trend and equipment maintenance is scheduled to correct the problem before any vendor or industry recommendations or limits of ASME OM Code-2001 Edition through addenda OMb Code-2003 Addenda ISTB are expected to be exceeded.

Hydraulic condition of the jockey pump will be considered acceptable by continuing to monitor the pump discharge header pressure and verifying adequate header pressures as indicated by the absence of low pressure alarm. Corrective action will be taken if header low pressure alarm sounds, indicating low header pressure.

Vibration will continue to be measured on this pump as required by ASME OM Code-2001 Edition through addenda OMb Code-2003 Addenda. Differential pressure will be set equal to its' reference value prior to the measurements (Reference values of vibration were taken with the jockey pump in normal operation with header pressure alarm cleared and flow rate through the jockey pump minimum flow return orifice plate). If a measured vibration velocity exceeds an Alert, or Required Action limit according to ASME OM Code-2001 Edition through addenda OMb Code-2003 Addenda ISTB-Table-ISTB-5100-1, "Acceptance Criteria," the required actions of ASME OM Code-2001 Edition through addenda OMb Code-2003 Addenda ISTB-6200, "Corrective Action," will be taken.

IST PLAN GGNS APPENDIX	PROGRAM SECTION NO.: CEP-IST-2 REVISION: 307 PAGE: 25 of 44
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PUMP RELIEF REQUESTS (PRR)

10 CFR 50.55a Request Number PRR-GGNS-2007-2	
	Based on the determination that compliance with the ASME OM Code requirements results in a hardship without a compensating increase in the level of quality or safety, this proposed alternative should be granted pursuant to 10 CFR 50.55a(a)(3)(ii).
DURATION:	Grand Gulf Nuclear Station's 3 rd 120-month Inservice Testing Interval (December 1, 2007, through November 30, 2017 based on TAC No. M94454).
PRECEDENTS:	Use of an alternative for similar requirements was previously granted as PRR-E21-01 for Grand Gulf Nuclear Station's 2 nd 120-month Inservice Testing Interval (TAC No. MA0196).
REFERENCES:	Revision 1 of NUREG-1482, Guidelines for Inservice testing at Nuclear Power Plants, Final Report, Published January 2005 UFSAR 6.3.2.2.5, 9A.5.3.4, UFSAR Figures 5.4-19 and 5.4-36, UFSAR Table 3.9-3b, 6.3-10, 9A.1
STATUS:	Submitted for Nuclear Regulatory Commission review and approval by CNRO-2007-00042.

10 CFR 50.55a Request Number PRR-GGNS-2007-3	
Proposed Alternative in Accordance with 10 CFR 50.55a(a)(3)(ii) 10 CFR 50.55a Request Title: E22 Jockey Pump Alternative Request	
PLANT/UNIT:	Grand Gulf Nuclear Station
INTERVAL:	Third 120 Month Inservice Testing Interval
COMPONENTS AFFECTED:	E22C003 High Pressure Core Spray System Jockey Pump (The above pump is an ASME Code Class 2, Centrifugal, Motor Driven, OM Code Category A pump.)
CODE EDITION AND ADDENDA:	ASME OM Code-2001 Edition with addenda through OMB Code-2003 Addenda
REQUIREMENTS:	ASME OM Code-2001 Edition with addenda through OMB Code-2003 Addenda ISTB-3300

PUMP RELIEF REQUESTS (PRR)

10 CFR 50.55a Request Number PRR-GGNS-2007-3

Reference values shall be obtained as follows:

(a) Initial reference values shall be determined from the results of testing meeting the requirements of ISTB-3100, Preservice Testing, or from the results of the first inservice test.

(b) New or additional reference values shall be established as required by ISTB-3310, ISTB-3320, or ISTB-6200(c).

(c) Reference values shall be established only when the pump is known to be operating acceptably.

(d) Reference values shall be established at a point(s) of operation (reference point) readily duplicated during subsequent tests.

(e) Reference values shall be established in a region(s) of relatively stable pump flow.

(1) Reference values shall be established within $\pm 20\%$ of pump design flow rate for the comprehensive test.

(2) Reference values shall be established within $\pm 20\%$ of pump design flow for the Group A and Group B tests, if practicable. If not practicable, the reference point flow rate shall be established at the highest practical flow rate.

(f) All subsequent test results shall be compared to these initial reference values or to new reference values established in accordance with ISTB-3310, ISTB-3320, or ISTB-6200(c).

(g) Related conditions that can significantly influence the measurement or determination of the reference value shall be analyzed in accordance with ISTB-6400.

ASME OM Code-2001 Edition with addenda through OMB Code-2003
Addenda ISTB 3510

(b) Range

(1) The full-scale range of each analog instrument shall be not greater than three times the reference value.

ASME OM Code-2001 Edition with addenda through OMB Code-2003

PUMP RELIEF REQUESTS (PRR)

10 CFR 50.55a Request Number PRR-GGNS-2007-3

Addenda ISTB 3510

(c) *Instrument Location.* The sensor location shall be established by the Owner, documented in the plant records (see ISTB-9000), and shall be appropriate for the parameter being measured. The same location shall be used for subsequent tests. Instruments that are position sensitive shall be either permanently mounted, or provision shall be made to duplicate their position during each test.

ASME OM Code-2001 Edition with addenda through OMB Code-2003
Addenda ISTB-5121

Group A Test Procedure. Group A tests shall be conducted with the pump operating at a specified reference point. The test parameters shown in Table ISTB-3000-1 shall be determined and recorded as required by this paragraph.

ASME OM Code-2001 Edition with addenda through OMB Code-2003
Addenda ISTB-5121

(b) The resistance of the system shall be varied until the flow rate equals the reference point. The differential pressure shall then be determined and compared to its reference value. Alternatively, the flow rate shall be varied until the differential pressure equals the reference point and the flow rate determined and compared to the reference flow rate value.

ASME OM Code-2001 Edition with addenda through OMB Code-2003
Addenda TABLE ISTB-3000-1 INSERVICE TEST PARAMETERS lists Flow Rate as a required parameter for both Group A and Comprehensive pump tests.

**REASON FOR
RELIEF REQUEST:**

Pursuant to 10 CFR 50.55a, "Codes and Standards", paragraph (a)(3)(ii), an alternative is requested when using the requirements of ASME OM Code-2001 Edition with addenda through OMB Code-2003 Addenda ISTB (as listed above).

This alternative is a re-submittal of NRC approved 2nd Interval PRR-E22-01 that was based on the ASME OM Code 1987 Edition with addenda through OMa-1988. This 3rd Interval alternative request is based on the ASME OM Code-2001 Edition with addenda through OMB Code-2003 Addenda. There have been no substantive changes to this alternative, to the OM Code requirements or to the basis for use, which would alter the previous NRC

PUMP RELIEF REQUESTS (PRR)

10 CFR 50.55a Request Number PRR-GGNS-2007-3

Safety Evaluation conclusions.

This jockey pump is required to operate whenever the HPCS system is in the operable condition. As such, the pump performs continuous duty on a recirculation line and provides makeup as needed.

Pressure taps exist in the jockey pump suction and discharge piping where pump suction and discharge pressure can be measured for calculation of differential pressure, and a throttle valve exists which can be used to set differential pressure equal to the pump's reference value. However, the pump differential pressure information provided is of little use for analyzing the hydraulic condition of the jockey pump without being able to measure flow rate or set flow rate at a known reference value, as required by ASME OM Code-2001 Edition with addenda through OMB Code-2003 Addenda ISTB-5121(b).

There are no practical means of measuring the flow rate of this pump. No flow rate meters, orifices or other measurement devices are installed in the system for measurement of jockey pump flow rate. The installed main process flow measurement instrumentation loop, which is discussed below, cannot be used for jockey pump flow measurement. Attempts have been made to use ultrasonic flow instruments to measure jockey pump flow rate, but the results have been inconsistent and unrepeatable.

Flow orifice 1E22-FE-N007, which is installed in the system to measure flow rate of the main HPCS Pump 1E22C001, has a rated maximum flow rate of 10,000 gpm. The flow instrument loop, which consists of the flow orifice, flow transmitter, flow indicator and signal processing electronics, has an overall loop accuracy of between one and two percent of the maximum measurable flow rate. Even at the lower, more accurate, point, one percent accuracy is equivalent to 100 gpm, which is over 2-1/2 times the jockey pump's rated flow rate of 40 gpm at 45 psid (UFSAR Section 6.3.2.2.5). The flow orifice is installed in 16-inch NPS piping. Even if the typical operational jockey pump flow rate of 30 to 50 gpm registered on this flow instrumentation, it would not meet the requirements of ASME OM Code-2001 Edition through addenda OMB-2003 ISTB 3510(b)(1) and ASME OM Code-2001 Edition through addenda OMB-2003 ISTB-3510(c), since the full-scale range of this analog instrument is more than 200 times the probable reference value for this jockey pump. Under ideal conditions, the jockey pump flow would be just barely detectable at the lower end of the instrument scale, and accurate measurement would be masked by instrument noise and other variables.

PUMP RELIEF REQUESTS (PRR)

10 CFR 50.55a Request Number PRR-GGNS-2007-3

	<p>Additionally, the flow path for the jockey pump in standby operation is through a minimum-flow return line with a flow restricting orifice plate (1E22-RO-D003) which is sized to hold flow rate reasonably constant at about 40 gpm (UFSAR Figure 5.4-19), while providing adequate margin in jockey pump capacity to make up for any leakage from the main HPCS pump discharge header. Flow rate through this orifice plate cannot be measured, as discussed above, since there are no installed measurement points and portable flow rate instrumentation has not proven adequate. This flow rate also cannot be considered constant and repeatable enough to meet the requirements of ASME OM Code-2001 Edition through addenda OMB-2003 ISTB-3300(d), due to the potential for changes in the main HPCS discharge header leakage from test to test.</p>
PROPOSED ALTERNATIVE AND BASIS:	<p>Jockey pump discharge header pressure is continuously monitored, and an annunciator alarms in the Control Room if the discharge header pressure drops below a preset value (currently 28 psig). Based on the pump's rated capacity (40 gpm at 45 psid, per UFSAR Section 6.3.2.2.5), and the required suppression pool level during power operation (greater than, or equal to, 18 feet 4-1/12 inches and less than, or equal to, 18 feet 9-3/4 inches per Tech Spec LCO 3.6.2.2), this low header pressure annunciator will alarm at approximately 55 percent of the jockey pump's operating differential pressure.</p> <p>Also, GGNS Technical Specification SR 3.5.1.1 requires verification every 31 days that the respective header is filled with water by venting the piping at the high point vents. Such continuous monitoring and monthly venting will provide timely warning if the jockey pump has failed, or that system leakage has exceeded the capacity of the jockey pump.</p> <p>In addition, the pump is currently being monitored at least once a quarter under the GGNS Vibration Monitoring Program, which is currently not required by any Federal, state or industry requirements. Because rotating equipment faults that can be detected by vibration monitoring will show up any time the equipment is operating, returning the pump to a fixed set of operating conditions is not necessary to detect such faults. The faults themselves however, are affected by the equipment operating parameters. For example, if the equipment is heavily loaded, fault growth will typically be escalated.</p> <p>This jockey pump may be categorized as "smooth running," that is, it is typically running with very low vibration velocities. The pump's flow rate is normally at or only slightly higher than the flow through the pump's</p>

PUMP RELIEF REQUESTS (PRR)

10 CFR 50.55a Request Number PRR-GGNS-2007-3

minimum flow return piping. Any additional flow is typically only to make up for leakage from the main HPCS pump's discharge piping. Under these conditions, the pump's reference values of vibration velocity are normally less than 0.05 inches per second (IPS).

Limits established in the GGNS Vibration Monitoring Program are not only based on vendor and industry data but also on changes in vibration levels and in the spectral content of the vibration signals. Unlike ASME OM Code-2001 Edition through addenda OMb Code-2003 Addenda, ISTB Table-ISTB-5100-1, "Acceptance Criteria," which has fixed Alert and Required Action limits at 2.5 times and 6 times, respectively, of the reference values, the GGNS Vibration Monitoring Program analyzes changes in vibration spectrum or spectral content over time, looks for trends in the changes, and attempts to determine the reasons for the changes. If changes are determined to be from an equipment problem, rather than changes in operating parameters, increased monitoring is established to determine the rate of the trend and equipment maintenance is scheduled to correct the problem before any vendor or industry recommendations or limits of ASME OM Code-2001 Edition through addenda OMb Code-2003 Addenda ISTB are expected to be exceeded.

Hydraulic condition of the jockey pump will be considered acceptable by continuing to monitor the pump discharge header pressure and verifying adequate header pressures as indicated by the absence of low pressure alarm. Corrective action will be taken if header low pressure alarm sounds, indicating low header pressure.

Vibration will continue to be measured on this pump as required by ASME OM Code-2001 Edition through addenda OMb Code-2003 Addenda. Differential pressure will be set equal to its reference value prior to the measurements. (Reference values of vibration were taken with the jockey pump in normal operation with header pressure alarm cleared and flow rate through the jockey pump minimum flow return orifice plate). If a measured vibration velocity exceeds an Alert or Required Action limit according to ASME OM Code-2001 Edition through addenda OMb Code-2003 Addenda, ISTB-Table-ISTB-5100-1, "Acceptance Criteria," the required actions of ASME OM Code-2001 Edition through addenda OMb Code-2003 Addenda ISTB-6200, "Corrective Action," will be taken.

Based on the determination that compliance with the ASME OM Code requirements results in a hardship without a compensating increase in the level of quality or safety, this proposed alternative should be granted

PUMP RELIEF REQUESTS (PRR)

10 CFR 50.55a Request Number PRR-GGNS-2007-3	
	pursuant to 10 CFR 50.55a(a)(3)(ii).
DURATION:	Grand Gulf Nuclear Station's 3 rd 120-month Inservice Testing Interval (December 1, 2007, through November 30, 2017 based on TAC No. M94454).
PRECEDENTS:	Use of an alternative for similar requirements was previously granted as PRR-E22-01 for Grand Gulf Nuclear Station's 2 nd 120-month Inservice Testing Interval (TAC No. MA0196).
REFERENCES:	Revision 1 of NUREG-1482, Guidelines for Inservice testing at Nuclear Power Plants, Final Report, Published January 2005 UFSAR 6.3.2.2.5, 9A.5.5.4, UFSAR Figures 5.4-19 and 5.4-36, UFSAR Table 3.9-3b, 9A.1
STATUS:	Submitted for Nuclear Regulatory Commission review and approval by CNRO-2007-00042.

IST PLAN
GGNS APPENDIX

PROGRAM SECTION NO.: CEP-IST-2
REVISION: 307
PAGE: 32 of 44

PUMP POSITION STATEMENTS (PPS)

NONE

COLD SHUTDOWN JUSTIFICATIONS (CSJ)

CSJ-001

System/Component, Category, Class: B21F022A, A, 1; B21F022B, A, 1; B21F022C, A, 1; B21F022D, A, 1; B21F028A, A, 1; B21F028B, A, 1; B21F028C, A, 1; B21F028D, A, 1

Function: Close automatically on an isolation signal to provide containment isolation. Close automatically on an isolation signal to prevent core damage due to coolant loss.

Code Requirements: Active Category A valves shall be tested nominally every 3 months.... If full-stroke exercising during plant operation is not practicable, it may be limited to part-stroke during plant operation and full-stroke during cold shutdowns.

Justification: Part-stroke exercising of these valves in a slow close mode can be accomplished during plant operation at any power level. However, full-stroke exercising and stroke time testing during power operation can only be performed after a significant decrease in power, to prevent a reactor power excursion and possible reactor scram resulting from a reactor pressure increase when the valve is closed. Therefore, it is desirable to perform full-stroke exercising during cold shutdown (Technical Specification SR 3.6.1.3.6) as permitted by the Code.

Alternative Testing: Part-stroke exercise the valves every 3 months during power operation. Full-stroke exercise the valves during cold shutdown (Technical Specification SR 3.6.1.3.6).

CSJ-002

System/Component, Category, Class: B21F065A, A, 2; B21F065B, A, 2

Function: Close manually for containment isolation.

Close manually for FWLC operation.

Code Requirements: Active Category A valves shall be tested nominally every 3 months.... If exercising is not practicable during plant operation, it may be limited to full-stroke exercising during cold shutdowns.

Justification: B21F065A and B are normally open valves in the feedwater piping to the reactor vessel. Exercising these valves during power operation would interrupt the flow of feedwater through the respective line and would require a significant reduction of reactor power prior to testing to prevent a reactor scram. Even at reduced power levels, system perturbations and resultant fluctuations in vessel level create the potential for a reactor scram (low vessel level) or turbine trip/reactor scram (high vessel level). Therefore, full-stroke exercising is deferred to cold shutdown.

Alternative Testing: Full-stroke exercise valves during cold shutdowns.

CSJ-003

System/Component, Category, Class: B21F098A, B, 2; B21F098B, B, 2; B21F098C, B, 2; B21F098D, B, 2

Function: Close (manually) to provide for proper post-LOCA operation of MSIV-LCS.

Code Requirements: Active Category B valves shall be tested nominally every 3 months.... If exercising is not practicable during plant operation, it may be limited to full-stroke exercising during cold shutdowns.

Justification: B21F098A, B, C and D are normally open valves in the main steam lines to the turbine. Closure of any valve during power operation would interrupt steam flow through the respective steam line and could only be performed after a significant decrease in power, to prevent a reactor power

COLD SHUTDOWN JUSTIFICATIONS (CSJ)

excursion resulting from a pressure increase when the valve is closed. Therefore, full-stroke exercising of these valves is deferred to cold shutdowns.

Alternative Testing: Full-stroke exercise valves during cold shutdowns.

CSJ-004

System/Component, Category, Class: B21F147A, B, 3; B21F147B, B, 3

Function: Open manually to vent main steam line piping for post-LOCA leakage control.

Code Requirements: Active Category B valves shall be tested nominally every 3 months.... If exercising is not practicable during plant operation, it may be limited to full-stroke exercising during cold shutdowns.

Justification: B21F147A/B are vent valves connected to the main steam drain line. They are located in the main steam tunnel which, during power operation, is a high radiation area and is inaccessible. If either of these valves failed open during testing, the steam line drain paths would not be available for use during shutdown because the steam would be exhausted directly to the steam tunnel atmosphere through the failed open valve. The loss of drain capability creates the potential for turbine water induction and resultant equipment damage. Therefore, full-stroke exercising of these valves is deferred to cold shutdowns.

Alternative Testing: Full-stroke exercise valves during cold shutdowns.

CSJ-005

System/Component, Category, Class: B21F067A, A, 1; B21F067B, A, 1; B21F067C, A, 1; B21F067D, A, 1

Function: Close automatically on a main steam line isolation signal for containment isolation and RPV isolation.

Code Requirements: Active Category A valves shall be tested nominally every 3 months.... If exercising is not practicable during plant operation, it may be limited to full-stroke exercising during cold shutdowns.

Justification: These valves are located in the main steam tunnel, which is inaccessible during power operation. They are normally open during startup for steam drainage but are closed at about 55% power due to concerns regarding postulated high energy line breaks near instrument tubing connections. By isolating the drain lines during high power operation, the lines may be considered as moderate energy piping, as opposed to high energy piping which would require additional restraints to protect the instrument tubing runs of pressure transmitters on the main steam lines. Therefore, the valves must remain closed at high power.

Stroking the valves quarterly would require significant power reduction, and failure of the valves in the open position would require reactor shutdown for repairs.

Alternative Testing: Full-stroke exercise valves during cold shutdowns.

COLD SHUTDOWN JUSTIFICATIONS (CSJ)

CSJ-007

System/Component, Category, Class: B21F016, A, 1; B21F019, A, 1

Function: Close automatically on a main steam line isolation signal for containment isolation and RPV isolation.

Code Requirements: Active Category A valves shall be tested nominally every 3 months.... If exercising is not practicable during plant operation, it may be limited to full-stroke exercising during cold shutdowns.

Justification: Main Steam Line Drain Valves are provided for removing condensate generated during heat-up and low power operations. Since the subject valves will be exercised during cold shutdown periods prior to heat-up operations, this discussion will address only those concerns associated with low power operations (less than 50% power).

A low point drain is provided upstream of each inboard Main Steam Isolation Valve (MSIV). Each inboard MSIV drain line connects to a common header which then routes condensation out of the containment through containment isolation valves B21-F016 and B21-F019. Once outside of containment, the condensate then flows through automatic drain bypass valve B21-F033, through restricting orifice B21-D001, and then on to the main condenser through secondary containment isolation valves B21-F113 and B21-F114.

During plant startup and shutdown, steam line drainage is controlled with fail-open control valves B21-F033 and B21-F069, which close when flow in any main steam line is at least 50% of its normal flow rate. While at power, valves B21-F016 and B21-F019 are normally left open due to potential thermal binding concerns.

If either valve fails in the closed position during stroke exercising, the ability to remove condensate from the inboard MSIV drain lines during low power operation is lost. Since the closed position is the safety related position for these valves, failure in the closed position would typically be considered as conservative. However, the reactor cannot operate indefinitely above 50% power, and will eventually require shutdown for maintenance or refueling. Since a controlled approach to shutdown and cooldown requires plant operation below 50% power, the potential exists for excessive condensate collection in the main steam drain lines to sweep into the Main Steam Lines. Condensate carryover in the steam lines can result in damage to both the steam lines and the main turbine.

The total free volume in the main steam drain line is approximately 3 cubic feet (B21-F019 failed closed). Assuming that any condensate collected in the line immediately cools to 70°F, the total mass that can be accumulated in the main steam drain line is approximately 190 lbm. Any additional condensate generated beyond 190 lbm will then be swept down the main steam line.

Per System Flow Diagram SFD-1077, the normal drain flow through the main steam drain line is 2000 lbm/hr. Conservatively assuming only one twentieth of this flow is generated during shutdown, the steam drain volume will be filled and the steam lines will start carrying away condensate in about two hours. A normal controlled reactor shutdown and cooldown will typically take from 12 to 16 hours.

Corrective maintenance cannot be performed at power on either of these valves due to the radiological fields associated with the steam tunnel where the valves are located. Therefore, the only means available for the plant to achieve reactor shutdown without risking damage to the main steam and turbine systems would be to close the main steam isolation valves while significant heat generation capacity remains in the reactor core. Such action would most likely challenge safety systems (e.g., ADS, SRVs, RCIC, etc.) and, in essence, create an incident analyzed in the FSAR. It is clearly not the intent of the Inservice Testing Program to increase the risk of initiating a Design Basis Accident.

Alternative Testing: These main steam drain valves will be exercised closed during cold shutdowns.

COLD SHUTDOWN JUSTIFICATIONS (CSJ)

CSJ-008

System/Component, Category, Class: E12F008, A, 1; E12F009, A, 1

Function: Close for containment/system isolation; Close for RCPB high-low pressure boundary isolation

Code Requirements: Active Category A valves shall be tested nominally every 3 months.... If exercising is not practicable during plant operation, it may be limited to full-stroke exercising during cold shutdowns.

Justification: These valves are in the RHR shutdown cooling suction piping, and cannot be exercised during power operation because they are provided with pressure interlocks to prevent opening at reactor pressures above 135 psig (approximately). Therefore, full-stroke exercising is deferred to cold shutdown.

Alternative Testing: Full-stroke exercise valves during cold shutdowns.

CSJ-009

System/Component, Category, Class: E12F042A, A, 1; E12F042B, A, 1; E12F042C, A, 1

Function: Open for LPCI injection to Reactor Vessel; Close for containment isolation; Close for RCPB high-low pressure boundary isolation

Code Requirements: Active Category A valves shall be tested nominally every 3 months.... If exercising is not practicable during plant operation, it may be limited to full-stroke exercising during cold shutdowns.

Justification: During plant operation, downstream check valve E12F041A (B, C) is subjected to reactor coolant system pressure on its downstream side. Upstream LPCI Injection Shutoff Valve, E12F042A (B, C), is isolated from reactor pressure only by E12F041A (B, C). During plant operation the lower pressure rated piping is protected by normally closed valves E12F042A (B, C) and E12F041A (B, C). Pressure sensing instrumentation is provided to monitor pressure between the check valve and the injection shutoff valve to prevent opening the injection valve above a sensed pressure of approximately 500 psig, also providing protection for the low pressure upstream piping. Should E12F041A (B, C) leak during plant operation, testing of shutoff valve E12F042A (B, C) would be precluded without venting the piping section between valves E12F041A (B, C) and E12F042A (B, C). Venting is considered impracticable due to personnel hazard and ALARA considerations from venting high pressure contaminated fluid to open (in some cases) drains. Depending upon the magnitude of the leakage, repressurization after venting may occur such that testing would be precluded. Therefore, E12F042A (B, C) full-stroke exercising is deferred to cold shutdown.

Alternative Testing: Full-stroke exercise valves E12F042A (B, C) during cold shutdowns.

CSJ-010

System/Component, Category, Class: E12F053A, A, 2; E12F053B, A, 2

Function: Close for system isolation; Close for LPCI operation of RHR; Close for RCPB high-low pressure boundary isolation

Code Requirements: Active Category A valves shall be tested nominally every 3 months.... If exercising is not practicable during plant operation, it may be limited to full-stroke exercising during cold shutdowns.

COLD SHUTDOWN JUSTIFICATIONS (CSJ)

Justification: E12F053A and B are the RHR shutdown cooling return isolation valves. They are provided with an interlock to prevent opening at reactor pressure above 135 psig (approximately), and cannot be exercised during power operation. Therefore, full-stroke exercising is deferred to cold shutdown.

Alternative Testing: Full-stroke exercise valves during cold shutdowns.

CSJ-011

System/Component, Category, Class: E12F066A, B, 2; E12F066B, B, 2

Function: Closed manually for isolation from ADHRS or Fuel Pool Cooling System for safety related RHR operations. Closed for system boundary integrity. Open function statement to be provided later (see CR-GGN-1999-0392).

Code Requirements: Active Category B valves shall be tested nominally every 3 months.... If exercising is not practicable during plant operation, it may be limited to full-stroke exercising during cold shutdowns.

Justification: The Alternate Decay Heat Removal System is out of service when the plant is in modes 1, 2, and 3. Therefore, valves E12F066A and F066B are passive closed during modes 1, 2, and 3 and as such require only verification of closed position indication. However, full-stroke and stroke-time testing are required during cold shutdowns and refueling outages if the ADHRS is placed in service. Operational readiness will be verified by performing the alternative testing below.

Alternative Testing: ADHRS valves E12F066A and F066B shall be exercised within 30 days prior to return of the system to operable status and every 3 months during ADHRS operation .

CSJ-012

System/Component, Category, Class: E21F005, A, 1

Function: Open for LPCS injection to Reactor Vessel; Close for containment isolation; Close for RCPB high-low pressure boundary isolation

Code Requirements: Active Category A valves shall be tested nominally every 3 months.... If exercising is not practicable during plant operation, it may be limited to full-stroke exercising during cold shutdowns.

Justification: During plant operation, downstream check valve E21F006 is subjected to reactor coolant system pressure on its downstream side. Upstream LPCS Injection Shutoff Valve, E21F005, is isolated from reactor pressure only by E21F006. During plant operation the lower pressure rated piping upstream of E21F005 is protected by normally closed valves E21F005 and E21F006. Pressure sensing instrumentation is provided to monitor pressure between the check valve and the injection shutoff valve to prevent opening the injection valve above a sensed pressure of approximately 500 psig, also providing protection for the low pressure upstream piping. Should E21F006 leak during plant operation, testing of shutoff valve E21F005 would be precluded without venting the piping section between valves E21F006 and E21F005. Venting is considered impracticable due to personnel hazard and ALARA considerations from venting high pressure contaminated fluid to open drains. Depending upon the magnitude of the leakage, repressurization may occur such that testing would be precluded. Therefore, E21F005 full-stroke exercising is deferred to cold shutdown.

Alternative Testing: Full-stroke exercise valve E21F005 during cold shutdowns.

COLD SHUTDOWN JUSTIFICATIONS (CSJ)

CSJ-013

System/Component, Category, Class: E32F001A, A, 1; E32F001E, A, 1; E32F001J, A, 1; E32F001N, A, 1; E32F002A, B, 2; E32F002E, B, 2; E32F002J, B, 2; E32F002N, B, 2; E32F006, B, 2; E32F007, B, 2; E32F008, B, 2; E32F009, B, 2

Function: (F001A, E, J, N): Close (active) manually or remain closed (passive) to provide containment isolation; Open (active) automatically, with permissives, after manual MSIV-LCS initiation to provide for depressurization and long term bleed-off downstream of the inboard MSIV; Close (active) automatically or remain closed (passive) to provide for system protection and limit release to the environment.

(F002A, E, J, N): Open (active) automatically, with permissives, after manual MSIV-LCS initiation to provide for depressurization and long term bleed-off downstream of the inboard MSIV; Close (active) or remain closed (passive) to provide for system protection and limit release to the environment.

(F006, F007): Open (active) automatically after manual MSIV-LCS initiation and control system permissives satisfied to process MSIV leakage; Close (active) or remain closed (passive) if control system permissives are not satisfied for system protection and limit release to the environment.

(F008, F009): Open (active) automatically after manual MSIV-LCS initiation and control system permissives satisfied to depressurize the steam line downstream of the outboard MSIV; Close (active) automatically after steam line depressurization; Close (active) or remain closed (passive) to limit release to the environment.

Code Requirements: Active Category A and Category B valves shall be tested nominally every 3 months.... If exercising is not practicable during plant operation, it may be limited to full-stroke exercising during cold shutdowns.

Justification: The GGNS UFSAR, in section 6.7.1, "Main Steam Isolation Valve Leakage Control System (MSIV-LCS)", states that these valves are not to be tested during power operation in order to preclude the inadvertent dumping of radioactive steam due to equipment malfunction or operator error. In addition to the UFSAR statement, failure of these valves in the open position, or gross leakage through the valves as a result of improper reseating, would highly contaminate the Auxiliary Building atmosphere. Contamination of the building atmosphere would pose substantial personnel radiation hazards and would also create a challenge to another safety system, i.e., the Standby Gas Treatment System.

Alternative Testing: Full-stroke exercise valves during cold shutdowns.

CSJ-014

System/Component, Category, Class: E38F001A, B, 2; E38F001B, B, 1

Function: Open for feedwater leakage control (FWLC) injection, close to isolate low pressure RHR and FWLC piping from feedwater pressure.

Code Requirements: Active Category B valves shall be tested nominally every 3 months.... If exercising is not practicable during plant operation, it may be limited to full-stroke exercising during cold shutdowns.

Justification: System interlocks prevent opening F001A and F001B except when feedwater line pressure is below set pressure (approximately 33 psig), and B21F065A and B21F065B are closed (affects F001A only). During power operation, the interlocks cannot be satisfied, therefore, full-stroke exercising of F001A and F001B is deferred to cold shutdown.

Alternative Testing: Full-stroke exercise valves during cold shutdowns.

COLD SHUTDOWN JUSTIFICATIONS (CSJ)

CSJ-015

System/Component, Category, Class: E51F063, A, 1; E51F064, A, 1; E51F076, A, 1

Function: E51F063 and E51F064 are open during normal power operation to supply steam for immediate startup of the RCIC turbine if needed. E51F076 is open during plant or system startup for gradual warmup of the RCIC steam supply line, is closed after F063 is opened, and is closed at all other times. All three valves are closed for containment isolation and for RCPB isolation whenever the RCIC system is not in service during Modes 1, 2 and 3.

Code Requirements: Active Category A valves shall be tested nominally every 3 months.... If exercising is not practicable during plant operation, it may be limited to full-stroke exercising during cold shutdowns.

Justification: E51F063, E51F064 and E51F076 are containment isolation valves and reactor coolant pressure isolation valves on the steam supply line from the reactor to the RCIC turbine. F063 and F076 are located in the drywell and F064 is located in the auxiliary building steam tunnel, both of which are high radiation areas during power operation. Failure of either F063 or F064 in the closed position would isolate the supply of steam to the RCIC turbine and result in a loss of system function. Failure of any of the three valves in the open position would compromise containment integrity and RCPB integrity. Plant shutdown would be required by Tech Specs if repairs could not be made. Therefore, full-stroke exercising of these valves is deferred to cold shutdowns.

Alternative Testing: Full-stroke exercise valves during cold shutdowns.

CSJ-016

System/Component, Category, Class: G33F001, A, 1; G33F004, A, 1; G33F039, A, 2; G33F040, A, 2; G33F053, A, 2; G33F054, A, 2; G33F252, A, 1

Function: Close automatically for containment isolation on a RWCU isolation signal. Close automatically to ensure against uncovering the core on a RWCU isolation signal. Close automatically to prevent boron removal on a SLC initiation signal (F001 and F004).

Code Requirements: Active Category A valves shall be tested nominally every 3 months.... If exercising is not practicable during plant operation, it may be limited to full-stroke exercising during cold shutdowns.

Justification: The Reactor Water Cleanup System is in continuous service (post-pump mode above 350 degrees F reactor coolant temperature) during normal plant operation for the purpose of maintaining reactor coolant chemistry within specified limits as required by Technical Specification 3.4.4. The system would be required to be removed from service in order to test these valves, creating the potential for exceeding coolant chemistry limits. Therefore, full-stroke exercising is deferred to cold shutdown.

Alternative Testing: Full-stroke exercise valves during cold shutdown.

CSJ-017

System/Component, Category, Class: G33F250, B, 1; G33F251, B, 1; G33F253, B, 2

Function: Close automatically for containment isolation on a RWCU isolation signal. Close automatically to ensure against uncovering the core on a RWCU isolation signal. Close automatically to prevent boron removal on a SLC initiation signal (F251).

COLD SHUTDOWN JUSTIFICATIONS (CSJ)

Code Requirements: Active Category B valves shall be tested nominally every 3 months.... If exercising is not practicable during plant operation, it may be limited to full-stroke exercising during cold shutdowns.

Justification: The Reactor Water Cleanup System is in continuous service (post-pump mode above 350 degrees F reactor coolant temperature) during normal plant operation for the purpose of maintaining reactor coolant chemistry within specified limits as required by Technical Specification 3.4.4. The system would be required to be removed from service in order to test these valves, creating the potential for exceeding coolant chemistry limits. Therefore, full-stroke exercising is deferred to cold shutdown.

Alternative Testing: Full-stroke exercise valves during cold shutdown.

CSJ-018

System/Component, Category, Class: P42F066, A, 2; P42F067, A, 2; P42F068, A, 2

Function: Close to provide containment isolation.

Code Requirements: Active Category A valves shall be tested nominally every 3 months.... If exercising is not practicable during plant operation, it may be limited to full-stroke exercising during cold shutdowns.

Justification: P42F066 is located in the CCW supply piping and F067 and F068 are located in the CCW return piping for the containment and drywell. Full-stroke exercising these valves would require interrupting the supply of cooling water to the reactor recirculation pump motor bearings and pump seals and the RWCU non-regenerative heat exchangers. During power operation, testing would require shutdown of both recirculation pumps and shutdown of the RWCU filter demineralizers. With no reactor recirculation pumps in operation, Technical Specifications require reactor shutdown. Therefore, full-stroke exercising is deferred to cold shutdown.

Alternative Testing: Full-stroke exercise valves during cold shutdown.

CSJ-019

System/Component, Category, Class: P42F114, B, 2; P42F116, B, 2; P42F117, B, 2

Function: Close to provide drywell isolation.

Code Requirements: Active Category B valves shall be tested nominally every 3 months.... If exercising is not practicable during plant operation, it may be limited to full-stroke exercising during cold shutdowns.

Justification: P42F114 is located in the CCW supply piping and F116 & F117 are located in the CCW return piping for the drywell. Full-stroke exercising these valves would require interrupting the supply of cooling water to the reactor recirculation pump motor bearings and pumps seals. During power operation, loss of cooling water to the recirculation pumps would require shutdown of the pumps. With no recirculation pumps operating, Technical Specifications require reactor shutdown. Therefore, full-stroke exercising is deferred to cold shutdown.

Alternative Testing: Full-stroke exercise valves during cold shutdown.

CSJ-020

System/Component, Category, Class: P44F067, B, 3

COLD SHUTDOWN JUSTIFICATIONS (CSJ)

Function: Closed to isolate interface between PSW and SSW systems.

Code Requirements: Active Category B valves shall be tested nominally every 3 months.... If exercising is not practicable during plant operation, it may be limited to full-stroke exercising during shutdowns.

Justification: F067 is interlocked with F068 (Auxiliary Building PSW Return Isolation Valve) such that F068 closes as soon as F067 begins to open, and F068 cannot be reopened until F067 is full closed. Exercising F067 would result in a loss of cooling water flow through the drywell chillers which, during power operation, would cause drywell temperature and pressure to increase, creating the potential for a reactor scram and ECCS initiation. Therefore, exercising of F067 is deferred to cold shutdown.

Alternative Testing: Full-stroke exercise valve during cold shutdowns.

CSJ-021

System/Component, Category, Class: P45F003, B, 2; P45F009, B, 2

Function: Closed for drywell isolation.

Code Requirements: Active Category B valves shall be tested nominally every 3 months.... If exercising is not practicable during plant operation, it may be limited to full-stroke exercising during cold shutdowns.

Justification: F003 and F009 are normally open air-operated valves in the drywell floor drain (F003) and equipment drain (F009) sump pump discharge piping. The valves are located inside the drywell which is a high radiation area during power operation and is inaccessible. If, during power operation, either valve failed in the closed position, a portion of the ability to monitor reactor coolant system identified and/or unidentified leakage would be lost. Valve repair would require a plant shutdown. Therefore, F003 and F009 full-stroke exercising is deferred to cold shutdown.

Alternative Testing: Full-stroke exercise F003 and F009 during cold shutdown.

CSJ-022

System/Component, Category, Class: P53F001, A, 2

Function: Open (passive) to provide initial stored air supply for relief valve operations. Close for containment isolation.

Code Requirements: Active Category A valves shall be tested nominally every 3 months.... If exercising is not practicable during plant operation, it may be limited to full-stroke exercising during cold shutdowns.

Justification: P53F001 is a containment isolation valve in the instrument air supply piping to the containment. Exercising this valve would isolate the supply of instrument air to various equipment including the Control Rod Drive flow control station, CRD scram valves and MSIV accumulators. Failure of the valve to re-open during power operation would result in a loss of cooling water flow to the CRD's, random individual control rod scrams and, eventually, MSIV's drifting closed. A reactor scram would result. Therefore, P53F001 full-stroke exercising is deferred to cold shutdown.

Alternative Testing: Full-stroke exercise P53F001 during cold shutdowns.

CSJ-023

System/Component, Category, Class: P53F007, B, 2

COLD SHUTDOWN JUSTIFICATIONS (CSJ)

Function: Open (passive) to provide initial stored air supply for relief valve operations. Close for drywell isolation.

Code Requirements: Active category B valves are to be tested nominally every 3 months.... If exercising is not practicable during plant operation, it may be limited to full-stroke exercising during cold shutdowns.

Justification: P53F007 is a motor operated valve in the instrument air supply piping to the drywell, supplying air to the MSIV accumulators, SRV accumulators (non-ADS), ECCS testable check valves, and drywell floor and equipment drain sump discharge valves. Full-stroke exercising of this valve would isolate the air supply to the listed equipment. Failure of the valve to re-open during power operation would result in a reactor scram due to MSIV's closing by spring force and steam flow assist as the accumulators bled down. Also, the ability to transfer water from the drywell sumps and monitor leakage would be lost, as well as the power-operation function of the non-ADS SRV's (after accumulators bled down). Therefore, P53F007 full-stroke exercising is deferred to cold shutdowns.

Alternative Testing: Full-stroke exercise P53F007 during cold shutdowns.

CSJ-024

System/Component, Category, Class: P72F121, A, 2; P72F122, A, 2; P72F123, A, 2

Function: Closed for containment isolation.

Code Requirements: Active Category A valves shall be tested nominally every 3 months.... If exercising is not practicable during plant operation, it may be limited to full-stroke exercising during cold shutdowns.

Justification: P72F121 is a normally open valve in the Drywell Chilled Water System supply piping to the steam tunnel and drywell coolers. P72F122 and F123 are normally open valves in the return piping from the same areas. Full-stroke exercising any of these valves would interrupt the flow of chilled water which, during power operation, would cause drywell temperature/pressure to increase and steam tunnel temperature to increase, creating the potential for a reactor scram and ECCS initiation. Therefore, full-stroke exercising these valves is deferred to cold shutdown.

Alternative Testing: Full-stroke exercise valves during cold shutdowns.

CSJ-025

System/Component, Category, Class: P72F124, B, 2; P72F125, B, 2; P72F126, B, 2

Function: Closed for drywell isolation.

Code Requirements: Active Category B valves shall be tested nominally every 3 months.... If exercising is not practicable during plant operation, it may be limited to full-stroke exercising during cold shutdowns.

Justification: P72F124 is a normally open valve in the Drywell Chilled Water System Supply piping to the drywell coolers. P72F125 and F126 are normally open valves in the return piping from the drywell. Full-stroke exercising any of these valves would interrupt the flow of chilled water which, during power operation, would cause drywell temperature/pressure to increase, creating the potential for a reactor scram and ECCS initiation. Therefore, full-stroke exercising these valves is deferred to cold shutdown.

Alternative Testing: Full-stroke exercise valves during cold shutdowns.

COLD SHUTDOWN JUSTIFICATIONS (CSJ)

CSJ-026

System/Component, Category, Class: Z51F007, B, 3; Z51F016, B, 3

Function: Close on control room isolation. Open (manually) following control room isolation after time delay to revitalize control room atmosphere.

Code Requirements: Active Category B valves shall be tested nominally every 3 months.... If exercising is not practicable during plant operation, it may be limited to full-stroke exercising during cold shutdowns.

Justification: The system design is such that, if either F007 or F016 are not fully closed, both standby fresh air units must be declared inoperable (SOI 04-S-01-Z51-1). These valves are designed to be manually opened and closed post-accident (after a time delay) and must be closed at all other times to ensure the ability to isolate the control room. F007 and F016 are interlocked such that they cannot be opened unless the associated standby fresh air unit recirculation fan is running. When F007 or F016 begin to open, the respective recirculation intake damper receives a signal to close. Considering a coincident loss-of-offsite-power and the single failure of a division of ESF power during this evolution, the associated recirculation fan would stop, and the recirculation damper on that train could be partially open with the standby fresh air valve partially closed. In this scenario, an unfiltered inleakage path to the control room would exist. GGNS Technical Specifications require the emergency filtration subsystems to be operable in all operational conditions. Since there is no time during which this system is not required to be operable, testing must be performed to appropriately minimize the consequences of potential accidents. Therefore, the only practical time to perform valve stroke surveillances is during cold shutdown conditions. Testing may also be scheduled during refueling outages for periods when core alterations, handling of irradiated fuel in the primary or secondary containments, and operations with a potential for draining the reactor vessel are suspended. Under these circumstances, design basis accidents and abnormal operational transients are not deemed credible, and the risks associated with an inoperable filtration system are negligible.

Alternative Testing: Full-stroke exercise valves during cold shutdowns. If any testing is performed during refueling outages, the testing will be scheduled such that it occurs when core alterations, handling of irradiated fuel in the primary or secondary containments, and operations with a potential for draining the reactor vessel have been suspended

REFUELING OUTAGE JUSTIFICATIONS (ROJ)

ROJ-001

System/Component, Category, Class: C11F083, A, 2

Function: Close for containment isolation.

Code Requirements: Active Category A valves shall be tested nominally every 3 months.... If exercising is not practicable during plant operation or cold shutdowns, it may be limited to full-stroke exercising during refueling outages.

Justification: F083 is a normally open valve in the CRD drive water supply piping to the containment. Exercising this valve would interrupt the supply of drive water and cooling water to the control rod drive hydraulic control units (HCUs) and the supply of seal injection water to the reactor recirculation pumps, resulting in potential equipment damage if tested during power operation. Additionally, the test cannot be performed during each cold shutdown since at least one of the reactor recirculation pumps is usually kept running. Therefore, F083 full-stroke exercising is deferred to refueling outages.

Alternative Testing: Full-stroke exercise valve during each refueling outage.

CONDITION MONITORING JUSTIFICATIONS

NOTE: CEP-IST-1, GGNS Appendix, Enclosure 1 provides the data collected, and the Advisory Panel review, that supports the following testing requirements.

Condition Monitoring Justification: **1B21F010A**

Valves in Grouping: 1B21F010A & 1B21F010B

CM Testing Requirements: Perform open flow testing and closed leak testing at a frequency that may be extended to one valve in the group being tested every three refueling cycles.

Condition Monitoring Justification: **1B21F010B**

Valves in Grouping: 1B21F010A & 1B21F010B

CM Testing Requirements: Perform open flow testing and closed leak testing at a frequency that may be extended to one valve in the group being tested every three refueling cycles.

Condition Monitoring Justification: **1B21F024A**

Valves in Grouping: B21F024A, B21F024B, B21F024C, B21F024D, B21F029A, B21F029B, B21F029C, & B21F029D.

CM Testing Requirements: Perform open verification using normal operations and close leak testing at a frequency that may be extended to two valves being tested every other refueling cycle.

Condition Monitoring Justification: **1B21F024B**

Valves in Grouping: B21F024A, B21F024B, B21F024C, B21F024D, B21F029A, B21F029B, B21F029C, & B21F029D.

CM Testing Requirements: Perform open verification using normal operations and close leak testing at a frequency that may be extended to two valves being tested every other refueling cycle.

Condition Monitoring Justification: **1B21F024C**

Valves in Grouping: B21F024A, B21F024B, B21F024C, B21F024D, B21F029A, B21F029B, B21F029C, & B21F029D.

CM Testing Requirements: Perform open verification using normal operations and close leak testing at a frequency that may be extended to two valves being tested every other refueling cycle.

Condition Monitoring Justification: **1B21F024D**

Valves in Grouping: B21F024A, B21F024B, B21F024C, B21F024D, B21F029A, B21F029B, B21F029C, & B21F029D.

CM Testing Requirements: Perform open verification using normal operations and close leak testing at a frequency that may be extended to two valves being tested every other refueling cycle.

IST PLAN GGNS APPENDIX	PROGRAM SECTION NO.: CEP-IST-2 REVISION NO. 307 PAGE 2 OF 34
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CONDITION MONITORING JUSTIFICATIONS

NOTE: CEP-IST-1, GGNS Appendix, Enclosure 1 provides the data collected, and the Advisory Panel review, that supports the following testing requirements.

Condition Monitoring Justification: 1B21F029A

Valves in Grouping: B21F024A, B21F024B, B21F024C, B21F024D, B21F029A, B21F029B, B21F029C, & B21F029D.

CM Testing Requirements: Perform open verification using normal operations and close leak testing at a frequency that may be extended to two valves being tested every other refueling cycle.

Condition Monitoring Justification: 1B21F029B

Valves in Grouping: B21F024A, B21F024B, B21F024C, B21F024D, B21F029A, B21F029B, B21F029C, & B21F029D.

CM Testing Requirements: Perform open verification using normal operations and close leak testing at a frequency that may be extended to two valves being tested every other refueling cycle.

Condition Monitoring Justification: 1B21F029C

Valves in Grouping: B21F024A, B21F024B, B21F024C, B21F024D, B21F029A, B21F029B, B21F029C, & B21F029D.

CM Testing Requirements: Perform open verification using normal operations and close leak testing at a frequency that may be extended to two valves being tested every other refueling cycle.

Condition Monitoring Justification: 1B21F029D

Valves in Grouping: B21F024A, B21F024B, B21F024C, B21F024D, B21F029A, B21F029B, B21F029C, & B21F029D.

CM Testing Requirements: Perform open verification using normal operations and close leak testing at a frequency that may be extended to two valves being tested every other refueling cycle.

Condition Monitoring Justification: 1B21F032A

Valves in Grouping: 1B21F032A

CM Testing Requirements: Perform open flow testing and close leak testing at a frequency aligned with Appendix J testing.

Condition Monitoring Justification: 1B21F032B

Valves in Grouping: 1B21F032B

CM Testing Requirements: Perform open flow testing and close leak testing at a frequency aligned with Appendix J testing.

Condition Monitoring Justification: 1B21F036A

Valves in Grouping: 1B21F036A

CM Testing Requirements: Perform open verification by flowing air through valve and closure test by performing a pressure drop test, which will determine the valves condition as well as closure, at a frequency aligned with Category A leak test.

CONDITION MONITORING JUSTIFICATIONS

NOTE: CEP-IST-1, GGNS Appendix, Enclosure 1 provides the data collected, and the Advisory Panel review, that supports the following testing requirements.

Condition Monitoring Justification: **1B21F036B**

Valves in Grouping: 1B21F036B

CM Testing Requirements: Perform open verification by flowing air through valve and closure test by performing a pressure drop test, which will determine the valves condition as well as closure, at a frequency aligned with Category A leak test.

Condition Monitoring Justification: **1B21F036C**

Valves in Grouping: 1B21F036C

CM Testing Requirements: Perform open verification by flowing air through valve and closure test by performing a pressure drop test, which will determine the valves condition as well as closure, at a frequency aligned with Category A leak test.

Condition Monitoring Justification: **1B21F036D**

Valves in Grouping: 1B21F036D

CM Testing Requirements: Perform open verification by flowing air through valve and closure test by performing a pressure drop test, which will determine the valves condition as well as closure, at a frequency aligned with Category A leak test.

Condition Monitoring Justification: **1B21F036E**

Valves in Grouping: 1B21F036E

CM Testing Requirements: Perform open verification by flowing air through valve and closure test by performing a pressure drop test, which will determine the valves condition as well as closure, at a frequency aligned with Category A leak test.

Condition Monitoring Justification: **1B21F036F**

Valves in Grouping: 1B21F036F

CM Testing Requirements: Perform open verification by flowing air through valve and closure test by performing a pressure drop test, which will determine the valves condition as well as closure, at a frequency aligned with Category A leak test.

Condition Monitoring Justification: **1B21F036G**

Valves in Grouping: 1B21F036G

CM Testing Requirements: Perform open verification by flowing air through valve and closure test by performing a pressure drop test, which will determine the valves condition as well as closure, at a frequency aligned with Category A leak test.

Condition Monitoring Justification: **1B21F036H**

Valves in Grouping: 1B21F036H

CM Testing Requirements: Perform open verification by flowing air through valve and closure test by performing a pressure drop test, which will determine the valves condition as well as closure, at a frequency aligned with Category A leak test.

CONDITION MONITORING JUSTIFICATIONS

NOTE: CEP-IST-1, GGNS Appendix, Enclosure 1 provides the data collected, and the Advisory Panel review, that supports the following testing requirements.

Condition Monitoring Justification: **1B21F036J**

Valves in Grouping: 1B21F036J

CM Testing Requirements: Perform open verification by flowing air through valve and closure test by performing a pressure drop test, which will determine the valves condition as well as closure, at a frequency aligned with Category A leak test.

Condition Monitoring Justification: **1B21F036K**

Valves in Grouping: 1B21F036K

CM Testing Requirements: Perform open verification by flowing air through valve and closure test by performing a pressure drop test, which will determine the valves condition as well as closure, at a frequency aligned with Category A leak test.

Condition Monitoring Justification: **1B21F036L**

Valves in Grouping: 1B21F036L

CM Testing Requirements: Perform open verification by flowing air through valve and closure test by performing a pressure drop test, which will determine the valves condition as well as closure, at a frequency aligned with Category A leak test.

Condition Monitoring Justification: **1B21F036M**

Valves in Grouping: 1B21F036M

CM Testing Requirements: Perform open verification by flowing air through valve and closure test by performing a pressure drop test, which will determine the valves condition as well as closure, at a frequency aligned with Category A leak test.

Condition Monitoring Justification: **1B21F036N**

Valves in Grouping: 1B21F036N

CM Testing Requirements: Perform open verification by flowing air through valve and closure test by performing a pressure drop test, which will determine the valves condition as well as closure, at a frequency aligned with Category A leak test.

Condition Monitoring Justification: **1B21F036P**

Valves in Grouping: 1B21F036P

CM Testing Requirements: Perform open verification by flowing air through valve and closure test by performing a pressure drop test, which will determine the valves condition as well as closure, at a frequency aligned with Category A leak test.

Condition Monitoring Justification: **1B21F036R**

Valves in Grouping: 1B21F036R

CM Testing Requirements: Perform open verification by flowing air through valve and closure test by performing a pressure drop test, which will determine the valves condition as well as closure, at a frequency aligned with Category A leak test.

IST PLAN GGNS APPENDIX	PROGRAM SECTION NO.: CEP-IST-2 REVISION NO. 307 PAGE 5 OF 34
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CONDITION MONITORING JUSTIFICATIONS

NOTE: CEP-IST-1, GGNS Appendix, Enclosure 1 provides the data collected, and the Advisory Panel review, that supports the following testing requirements.

Condition Monitoring Justification: 1B21F036S

Valves in Grouping: 1B21F036S

CM Testing Requirements: Perform open verification by flowing air through valve and closure test by performing a pressure drop test, which will determine the valves condition as well as closure, at a frequency aligned with Category A leak test.

Condition Monitoring Justification: 1B21F036T

Valves in Grouping: 1B21F036T

CM Testing Requirements: Perform open verification by flowing air through valve and closure test by performing a pressure drop test, which will determine the valves condition as well as closure, at a frequency aligned with Category A leak test.

Condition Monitoring Justification: 1B21F036U

Valves in Grouping: 1B21F036U

CM Testing Requirements: Perform open verification by flowing air through valve and closure test by performing a pressure drop test, which will determine the valves condition as well as closure, at a frequency aligned with Category A leak test.

Condition Monitoring Justification: 1B21F036V

Valves in Grouping: 1B21F036V

CM Testing Requirements: Perform open verification by flowing air through valve and closure test by performing a pressure drop test, which will determine the valves condition as well as closure, at a frequency aligned with Category A leak test.

Condition Monitoring Justification: 1B21F036W

Valves in Grouping: 1B21F036W

CM Testing Requirements: Perform open verification by flowing air through valve and closure test by performing a pressure drop test, which will determine the valves condition as well as closure, at a frequency aligned with Category A leak test.

Condition Monitoring Justification: 1B21F037A

Valves in Grouping: 1B21F037A, 1B21F037B, 1B21F037C, 1B21F037D, 1B21F037E, 1B21F037F, 1B21F037G, 1B21F037H, 1B21F037J, 1B21F037K, 1B21F037L, 1B21F037M, 1B21F037N, 1B21F037P, 1B21F037R, 1B21F037S, 1B21F037T, 1B21F037U, 1B21F037V, & 1B21F037W

CM Testing Requirements: Perform a manual stroke verifying that there is no binding or unusual movement, which would be an indication of wear. This test will provide open and closed requirements. The frequency may be extended to 3R.

IST PLAN GGNS APPENDIX	PROGRAM SECTION NO.: CEP-IST-2 REVISION NO. 307 PAGE 6 OF 34
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CONDITION MONITORING JUSTIFICATIONS

NOTE: CEP-IST-1, GGNS Appendix, Enclosure 1 provides the data collected, and the Advisory Panel review, that supports the following testing requirements.

Condition Monitoring Justification: 1B21F037B

Valves in Grouping: 1B21F037A, 1B21F037B, 1B21F037C, 1B21F037D, 1B21F037E, 1B21F037F, 1B21F037G, 1B21F037H, 1B21F037J, 1B21F037K, 1B21F037L, 1B21F037M, 1B21F037N, 1B21F037P, 1B21F037R, 1B21F037S, 1B21F037T, 1B21F037U, 1B21F037V, & 1B21F037W

CM Testing Requirements: Perform a manual stroke verifying that there is no binding or unusual movement, which would be an indication of wear. This test will provide open and closed requirements. The frequency may be extended to 3R.

Condition Monitoring Justification: 1B21F037C

Valves in Grouping: 1B21F037A, 1B21F037B, 1B21F037C, 1B21F037D, 1B21F037E, 1B21F037F, 1B21F037G, 1B21F037H, 1B21F037J, 1B21F037K, 1B21F037L, 1B21F037M, 1B21F037N, 1B21F037P, 1B21F037R, 1B21F037S, 1B21F037T, 1B21F037U, 1B21F037V, & 1B21F037W

CM Testing Requirements: Perform a manual stroke verifying that there is no binding or unusual movement, which would be an indication of wear. This test will provide open and closed requirements. The frequency may be extended to 3R.

Condition Monitoring Justification: 1B21F037D

Valves in Grouping: 1B21F037A, 1B21F037B, 1B21F037C, 1B21F037D, 1B21F037E, 1B21F037F, 1B21F037G, 1B21F037H, 1B21F037J, 1B21F037K, 1B21F037L, 1B21F037M, 1B21F037N, 1B21F037P, 1B21F037R, 1B21F037S, 1B21F037T, 1B21F037U, 1B21F037V, & 1B21F037W

CM Testing Requirements: Perform a manual stroke verifying that there is no binding or unusual movement, which would be an indication of wear. This test will provide open and closed requirements. The frequency may be extended to 3R.

Condition Monitoring Justification: 1B21F037E

Valves in Grouping: 1B21F037A, 1B21F037B, 1B21F037C, 1B21F037D, 1B21F037E, 1B21F037F, 1B21F037G, 1B21F037H, 1B21F037J, 1B21F037K, 1B21F037L, 1B21F037M, 1B21F037N, 1B21F037P, 1B21F037R, 1B21F037S, 1B21F037T, 1B21F037U, 1B21F037V, & 1B21F037W

CM Testing Requirements: Perform a manual stroke verifying that there is no binding or unusual movement, which would be an indication of wear. This test will provide open and closed requirements. The frequency may be extended to 3R.

Condition Monitoring Justification: 1B21F037F

Valves in Grouping: 1B21F037A, 1B21F037B, 1B21F037C, 1B21F037D, 1B21F037E, 1B21F037F, 1B21F037G, 1B21F037H, 1B21F037J, 1B21F037K, 1B21F037L, 1B21F037M, 1B21F037N, 1B21F037P, 1B21F037R, 1B21F037S, 1B21F037T, 1B21F037U, 1B21F037V, & 1B21F037W

CM Testing Requirements: Perform a manual stroke verifying that there is no binding or unusual movement, which would be an indication of wear. This test will provide open and closed requirements. The frequency may be extended to 3R.

CONDITION MONITORING JUSTIFICATIONS

NOTE: CEP-IST-1, GGNS Appendix, Enclosure 1 provides the data collected, and the Advisory Panel review, that supports the following testing requirements.

Condition Monitoring Justification: 1B21F037G

Valves in Grouping: 1B21F037A, 1B21F037B, 1B21F037C, 1B21F037D, 1B21F037E, 1B21F037F, 1B21F037G, 1B21F037H, 1B21F037J, 1B21F037K, 1B21F037L, 1B21F037M, 1B21F037N, 1B21F037P, 1B21F037R, 1B21F037S, 1B21F037T, 1B21F037U, 1B21F037V, & 1B21F037W

CM Testing Requirements: Perform a manual stroke verifying that there is no binding or unusual movement, which would be an indication of wear. This test will provide open and closed requirements. The frequency may be extended to 3R.

Condition Monitoring Justification: 1B21F037H

Valves in Grouping: 1B21F037A, 1B21F037B, 1B21F037C, 1B21F037D, 1B21F037E, 1B21F037F, 1B21F037G, 1B21F037H, 1B21F037J, 1B21F037K, 1B21F037L, 1B21F037M, 1B21F037N, 1B21F037P, 1B21F037R, 1B21F037S, 1B21F037T, 1B21F037U, 1B21F037V, & 1B21F037W

CM Testing Requirements: Perform a manual stroke verifying that there is no binding or unusual movement, which would be an indication of wear. This test will provide open and closed requirements. The frequency may be extended to 3R.

Condition Monitoring Justification: 1B21F037J

Valves in Grouping: 1B21F037A, 1B21F037B, 1B21F037C, 1B21F037D, 1B21F037E, 1B21F037F, 1B21F037G, 1B21F037H, 1B21F037J, 1B21F037K, 1B21F037L, 1B21F037M, 1B21F037N, 1B21F037P, 1B21F037R, 1B21F037S, 1B21F037T, 1B21F037U, 1B21F037V, & 1B21F037W

CM Testing Requirements: Perform a manual stroke verifying that there is no binding or unusual movement, which would be an indication of wear. This test will provide open and closed requirements. The frequency may be extended to 3R.

Condition Monitoring Justification: 1B21F037K

Valves in Grouping: 1B21F037A, 1B21F037B, 1B21F037C, 1B21F037D, 1B21F037E, 1B21F037F, 1B21F037G, 1B21F037H, 1B21F037J, 1B21F037K, 1B21F037L, 1B21F037M, 1B21F037N, 1B21F037P, 1B21F037R, 1B21F037S, 1B21F037T, 1B21F037U, 1B21F037V, & 1B21F037W

CM Testing Requirements: Perform a manual stroke verifying that there is no binding or unusual movement, which would be an indication of wear. This test will provide open and closed requirements. The frequency may be extended to 3R.

Condition Monitoring Justification: 1B21F037L

Valves in Grouping: 1B21F037A, 1B21F037B, 1B21F037C, 1B21F037D, 1B21F037E, 1B21F037F, 1B21F037G, 1B21F037H, 1B21F037J, 1B21F037K, 1B21F037L, 1B21F037M, 1B21F037N, 1B21F037P, 1B21F037R, 1B21F037S, 1B21F037T, 1B21F037U, 1B21F037V, & 1B21F037W

CM Testing Requirements: Perform a manual stroke verifying that there is no binding or unusual movement, which would be an indication of wear. This test will provide open and closed requirements. The frequency may be extended to 3R.

IST PLAN GGNS APPENDIX	PROGRAM SECTION NO.: CEP-IST-2 REVISION NO. 307 PAGE 8 OF 34
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CONDITION MONITORING JUSTIFICATIONS

NOTE: CEP-IST-1, GGNS Appendix, Enclosure 1 provides the data collected, and the Advisory Panel review, that supports the following testing requirements.

Condition Monitoring Justification: 1B21F037M

Valves in Grouping: 1B21F037A, 1B21F037B, 1B21F037C, 1B21F037D, 1B21F037E, 1B21F037F, 1B21F037G, 1B21F037H, 1B21F037J, 1B21F037K, 1B21F037L, 1B21F037M, 1B21F037N, 1B21F037P, 1B21F037R, 1B21F037S, 1B21F037T, 1B21F037U, 1B21F037V, & 1B21F037W

CM Testing Requirements: Perform a manual stroke verifying that there is no binding or unusual movement, which would be an indication of wear. This test will provide open and closed requirements. The frequency may be extended to 3R.

Condition Monitoring Justification: 1B21F037N

Valves in Grouping: 1B21F037A, 1B21F037B, 1B21F037C, 1B21F037D, 1B21F037E, 1B21F037F, 1B21F037G, 1B21F037H, 1B21F037J, 1B21F037K, 1B21F037L, 1B21F037M, 1B21F037N, 1B21F037P, 1B21F037R, 1B21F037S, 1B21F037T, 1B21F037U, 1B21F037V, & 1B21F037W

CM Testing Requirements: Perform a manual stroke verifying that there is no binding or unusual movement, which would be an indication of wear. This test will provide open and closed requirements. The frequency may be extended to 3R.

Condition Monitoring Justification: 1B21F037P

Valves in Grouping: 1B21F037A, 1B21F037B, 1B21F037C, 1B21F037D, 1B21F037E, 1B21F037F, 1B21F037G, 1B21F037H, 1B21F037J, 1B21F037K, 1B21F037L, 1B21F037M, 1B21F037N, 1B21F037P, 1B21F037R, 1B21F037S, 1B21F037T, 1B21F037U, 1B21F037V, & 1B21F037W

CM Testing Requirements: Perform a manual stroke verifying that there is no binding or unusual movement, which would be an indication of wear. This test will provide open and closed requirements. The frequency may be extended to 3R.

Condition Monitoring Justification: 1B21F037R

Valves in Grouping: 1B21F037A, 1B21F037B, 1B21F037C, 1B21F037D, 1B21F037E, 1B21F037F, 1B21F037G, 1B21F037H, 1B21F037J, 1B21F037K, 1B21F037L, 1B21F037M, 1B21F037N, 1B21F037P, 1B21F037R, 1B21F037S, 1B21F037T, 1B21F037U, 1B21F037V, & 1B21F037W

CM Testing Requirements: Perform a manual stroke verifying that there is no binding or unusual movement, which would be an indication of wear. This test will provide open and closed requirements. The frequency may be extended to 3R.

Condition Monitoring Justification: 1B21F037S

Valves in Grouping: 1B21F037A, 1B21F037B, 1B21F037C, 1B21F037D, 1B21F037E, 1B21F037F, 1B21F037G, 1B21F037H, 1B21F037J, 1B21F037K, 1B21F037L, 1B21F037M, 1B21F037N, 1B21F037P, 1B21F037R, 1B21F037S, 1B21F037T, 1B21F037U, 1B21F037V, & 1B21F037W

CM Testing Requirements: Perform a manual stroke verifying that there is no binding or unusual movement, which would be an indication of wear. This test will provide open and closed requirements. The frequency may be extended to 3R.

IST PLAN GGNS APPENDIX	PROGRAM SECTION NO.: CEP-IST-2 REVISION NO. 307 PAGE 9 OF 34
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CONDITION MONITORING JUSTIFICATIONS

NOTE: CEP-IST-1, GGNS Appendix, Enclosure 1 provides the data collected, and the Advisory Panel review, that supports the following testing requirements.

Condition Monitoring Justification: 1B21F037T

Valves in Grouping: 1B21F037A, 1B21F037B, 1B21F037C, 1B21F037D, 1B21F037E, 1B21F037F, 1B21F037G, 1B21F037H, 1B21F037J, 1B21F037K, 1B21F037L, 1B21F037M, 1B21F037N, 1B21F037P, 1B21F037R, 1B21F037S, 1B21F037T, 1B21F037U, 1B21F037V, & 1B21F037W

CM Testing Requirements: Perform a manual stroke verifying that there is no binding or unusual movement, which would be an indication of wear. This test will provide open and closed requirements. The frequency may be extended to 3R.

Condition Monitoring Justification: 1B21F037U

Valves in Grouping: 1B21F037A, 1B21F037B, 1B21F037C, 1B21F037D, 1B21F037E, 1B21F037F, 1B21F037G, 1B21F037H, 1B21F037J, 1B21F037K, 1B21F037L, 1B21F037M, 1B21F037N, 1B21F037P, 1B21F037R, 1B21F037S, 1B21F037T, 1B21F037U, 1B21F037V, & 1B21F037W

CM Testing Requirements: Perform a manual stroke verifying that there is no binding or unusual movement, which would be an indication of wear. This test will provide open and closed requirements. The frequency may be extended to 3R.

Condition Monitoring Justification: 1B21F037V

Valves in Grouping: 1B21F037A, 1B21F037B, 1B21F037C, 1B21F037D, 1B21F037E, 1B21F037F, 1B21F037G, 1B21F037H, 1B21F037J, 1B21F037K, 1B21F037L, 1B21F037M, 1B21F037N, 1B21F037P, 1B21F037R, 1B21F037S, 1B21F037T, 1B21F037U, 1B21F037V, & 1B21F037W

CM Testing Requirements: Perform a manual stroke verifying that there is no binding or unusual movement, which would be an indication of wear. This test will provide open and closed requirements. The frequency may be extended to 3R.

Condition Monitoring Justification: 1B21F037W

Valves in Grouping: 1B21F037A, 1B21F037B, 1B21F037C, 1B21F037D, 1B21F037E, 1B21F037F, 1B21F037G, 1B21F037H, 1B21F037J, 1B21F037K, 1B21F037L, 1B21F037M, 1B21F037N, 1B21F037P, 1B21F037R, 1B21F037S, 1B21F037T, 1B21F037U, 1B21F037V, & 1B21F037W

CM Testing Requirements: Perform a manual stroke verifying that there is no binding or unusual movement, which would be an indication of wear. This test will provide open and closed requirements. The frequency may be extended to 3R.

Condition Monitoring Justification: 1B21F078A

Valves in Grouping: 1B21F078A, 1B21F078B, 1B21F078C, 1B21F078D, 1B21F078E, 1B21F078F, 1B21F078G, 1B21F078H, 1B21F078J, 1B21F078K, 1B21F078L, 1B21F078M, 1B21F078N, 1B21F078P, 1B21F078R, 1B21F078S, 1B21F078T, 1B21F078U, 1B21F078V, & 1B21F078W

CM Testing Requirements: Perform a manual stroke verifying that there is no binding or unusual movement, which would be an indication of wear. This test will provide open and closed requirements. The frequency may be extended to 3R.

CONDITION MONITORING JUSTIFICATIONS

NOTE: CEP-IST-1, GGNS Appendix, Enclosure 1 provides the data collected, and the Advisory Panel review, that supports the following testing requirements.

Condition Monitoring Justification: 1B21F078B

Valves in Grouping: 1B21F078A, 1B21F078B, 1B21F078C, 1B21F078D, 1B21F078E, 1B21F078F, 1B21F078G, 1B21F078H, 1B21F078J, 1B21F078K, 1B21F078L, 1B21F078M, 1B21F078N, 1B21F078P, 1B21F078R, 1B21F078S, 1B21F078T, 1B21F078U, 1B21F078V, & 1B21F078W

CM Testing Requirements: Perform a manual stroke verifying that there is no binding or unusual movement, which would be an indication of wear. This test will provide open and closed requirements. The frequency may be extended to 3R.

Condition Monitoring Justification: 1B21F078C

Valves in Grouping: 1B21F078A, 1B21F078B, 1B21F078C, 1B21F078D, 1B21F078E, 1B21F078F, 1B21F078G, 1B21F078H, 1B21F078J, 1B21F078K, 1B21F078L, 1B21F078M, 1B21F078N, 1B21F078P, 1B21F078R, 1B21F078S, 1B21F078T, 1B21F078U, 1B21F078V, & 1B21F078W

CM Testing Requirements: Perform a manual stroke verifying that there is no binding or unusual movement, which would be an indication of wear. This test will provide open and closed requirements. The frequency may be extended to 3R.

Condition Monitoring Justification: 1B21F078D

Valves in Grouping: 1B21F078A, 1B21F078B, 1B21F078C, 1B21F078D, 1B21F078E, 1B21F078F, 1B21F078G, 1B21F078H, 1B21F078J, 1B21F078K, 1B21F078L, 1B21F078M, 1B21F078N, 1B21F078P, 1B21F078R, 1B21F078S, 1B21F078T, 1B21F078U, 1B21F078V, & 1B21F078W

CM Testing Requirements: Perform a manual stroke verifying that there is no binding or unusual movement, which would be an indication of wear. This test will provide open and closed requirements. The frequency may be extended to 3R.

Condition Monitoring Justification: 1B21F078E

Valves in Grouping: 1B21F078A, 1B21F078B, 1B21F078C, 1B21F078D, 1B21F078E, 1B21F078F, 1B21F078G, 1B21F078H, 1B21F078J, 1B21F078K, 1B21F078L, 1B21F078M, 1B21F078N, 1B21F078P, 1B21F078R, 1B21F078S, 1B21F078T, 1B21F078U, 1B21F078V, & 1B21F078W

CM Testing Requirements: Perform a manual stroke verifying that there is no binding or unusual movement, which would be an indication of wear. This test will provide open and closed requirements. The frequency may be extended to 3R.

Condition Monitoring Justification: 1B21F078F

Valves in Grouping: 1B21F078A, 1B21F078B, 1B21F078C, 1B21F078D, 1B21F078E, 1B21F078F, 1B21F078G, 1B21F078H, 1B21F078J, 1B21F078K, 1B21F078L, 1B21F078M, 1B21F078N, 1B21F078P, 1B21F078R, 1B21F078S, 1B21F078T, 1B21F078U, 1B21F078V, & 1B21F078W

CM Testing Requirements: Perform a manual stroke verifying that there is no binding or unusual movement, which would be an indication of wear. This test will provide open and closed requirements. The frequency may be extended to 3R.

IST PLAN GGNS APPENDIX	PROGRAM SECTION NO.: CEP-IST-2 REVISION NO. 307 PAGE 11 OF 34
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CONDITION MONITORING JUSTIFICATIONS

NOTE: CEP-IST-1, GGNS Appendix, Enclosure 1 provides the data collected, and the Advisory Panel review, that supports the following testing requirements.

Condition Monitoring Justification: 1B21F078G

Valves in Grouping: 1B21F078A, 1B21F078B, 1B21F078C, 1B21F078D, 1B21F078E, 1B21F078F, 1B21F078G, 1B21F078H, 1B21F078J, 1B21F078K, 1B21F078L, 1B21F078M, 1B21F078N, 1B21F078P, 1B21F078R, 1B21F078S, 1B21F078T, 1B21F078U, 1B21F078V, & 1B21F078W

CM Testing Requirements: Perform a manual stroke verifying that there is no binding or unusual movement, which would be an indication of wear. This test will provide open and closed requirements. The frequency may be extended to 3R.

Condition Monitoring Justification: 1B21F078H

Valves in Grouping: 1B21F078A, 1B21F078B, 1B21F078C, 1B21F078D, 1B21F078E, 1B21F078F, 1B21F078G, 1B21F078H, 1B21F078J, 1B21F078K, 1B21F078L, 1B21F078M, 1B21F078N, 1B21F078P, 1B21F078R, 1B21F078S, 1B21F078T, 1B21F078U, 1B21F078V, & 1B21F078W

CM Testing Requirements: Perform a manual stroke verifying that there is no binding or unusual movement, which would be an indication of wear. This test will provide open and closed requirements. The frequency may be extended to 3R.

Condition Monitoring Justification: 1B21F078J

Valves in Grouping: 1B21F078A, 1B21F078B, 1B21F078C, 1B21F078D, 1B21F078E, 1B21F078F, 1B21F078G, 1B21F078H, 1B21F078J, 1B21F078K, 1B21F078L, 1B21F078M, 1B21F078N, 1B21F078P, 1B21F078R, 1B21F078S, 1B21F078T, 1B21F078U, 1B21F078V, & 1B21F078W

CM Testing Requirements: Perform a manual stroke verifying that there is no binding or unusual movement, which would be an indication of wear. This test will provide open and closed requirements. The frequency may be extended to 3R.

Condition Monitoring Justification: 1B21F078K

Valves in Grouping: 1B21F078A, 1B21F078B, 1B21F078C, 1B21F078D, 1B21F078E, 1B21F078F, 1B21F078G, 1B21F078H, 1B21F078J, 1B21F078K, 1B21F078L, 1B21F078M, 1B21F078N, 1B21F078P, 1B21F078R, 1B21F078S, 1B21F078T, 1B21F078U, 1B21F078V, & 1B21F078W

CM Testing Requirements: Perform a manual stroke verifying that there is no binding or unusual movement, which would be an indication of wear. This test will provide open and closed requirements. The frequency may be extended to 3R.

Condition Monitoring Justification: 1B21F078L

Valves in Grouping: 1B21F078A, 1B21F078B, 1B21F078C, 1B21F078D, 1B21F078E, 1B21F078F, 1B21F078G, 1B21F078H, 1B21F078J, 1B21F078K, 1B21F078L, 1B21F078M, 1B21F078N, 1B21F078P, 1B21F078R, 1B21F078S, 1B21F078T, 1B21F078U, 1B21F078V, & 1B21F078W

CM Testing Requirements: Perform a manual stroke verifying that there is no binding or unusual movement, which would be an indication of wear. This test will provide open and closed requirements. The frequency may be extended to 3R.

CONDITION MONITORING JUSTIFICATIONS

NOTE: CEP-IST-1, GGNS Appendix, Enclosure 1 provides the data collected, and the Advisory Panel review, that supports the following testing requirements.

Condition Monitoring Justification: 1B21F078M

Valves in Grouping: 1B21F078A, 1B21F078B, 1B21F078C, 1B21F078D, 1B21F078E, 1B21F078F, 1B21F078G, 1B21F078H, 1B21F078J, 1B21F078K, 1B21F078L, 1B21F078M, 1B21F078N, 1B21F078P, 1B21F078R, 1B21F078S, 1B21F078T, 1B21F078U, 1B21F078V, & 1B21F078W

CM Testing Requirements: Perform a manual stroke verifying that there is no binding or unusual movement, which would be an indication of wear. This test will provide open and closed requirements. The frequency may be extended to 3R.

Condition Monitoring Justification: 1B21F078N

Valves in Grouping: 1B21F078A, 1B21F078B, 1B21F078C, 1B21F078D, 1B21F078E, 1B21F078F, 1B21F078G, 1B21F078H, 1B21F078J, 1B21F078K, 1B21F078L, 1B21F078M, 1B21F078N, 1B21F078P, 1B21F078R, 1B21F078S, 1B21F078T, 1B21F078U, 1B21F078V, & 1B21F078W

CM Testing Requirements: Perform a manual stroke verifying that there is no binding or unusual movement, which would be an indication of wear. This test will provide open and closed requirements. The frequency may be extended to 3R.

Condition Monitoring Justification: 1B21F078P

Valves in Grouping: 1B21F078A, 1B21F078B, 1B21F078C, 1B21F078D, 1B21F078E, 1B21F078F, 1B21F078G, 1B21F078H, 1B21F078J, 1B21F078K, 1B21F078L, 1B21F078M, 1B21F078N, 1B21F078P, 1B21F078R, 1B21F078S, 1B21F078T, 1B21F078U, 1B21F078V, & 1B21F078W

CM Testing Requirements: Perform a manual stroke verifying that there is no binding or unusual movement, which would be an indication of wear. This test will provide open and closed requirements. The frequency may be extended to 3R.

Condition Monitoring Justification: 1B21F078R

Valves in Grouping: 1B21F078A, 1B21F078B, 1B21F078C, 1B21F078D, 1B21F078E, 1B21F078F, 1B21F078G, 1B21F078H, 1B21F078J, 1B21F078K, 1B21F078L, 1B21F078M, 1B21F078N, 1B21F078P, 1B21F078R, 1B21F078S, 1B21F078T, 1B21F078U, 1B21F078V, & 1B21F078W

CM Testing Requirements: Perform a manual stroke verifying that there is no binding or unusual movement, which would be an indication of wear. This test will provide open and closed requirements. The frequency may be extended to 3R.

Condition Monitoring Justification: 1B21F078S

Valves in Grouping: 1B21F078A, 1B21F078B, 1B21F078C, 1B21F078D, 1B21F078E, 1B21F078F, 1B21F078G, 1B21F078H, 1B21F078J, 1B21F078K, 1B21F078L, 1B21F078M, 1B21F078N, 1B21F078P, 1B21F078R, 1B21F078S, 1B21F078T, 1B21F078U, 1B21F078V, & 1B21F078W

CM Testing Requirements: Perform a manual stroke verifying that there is no binding or unusual movement, which would be an indication of wear. This test will provide open and closed requirements. The frequency may be extended to 3R.

IST PLAN GGNS APPENDIX	PROGRAM SECTION NO.: CEP-IST-2 REVISION NO. 307 PAGE 13 OF 34
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CONDITION MONITORING JUSTIFICATIONS

NOTE: CEP-IST-1, GGNS Appendix, Enclosure 1 provides the data collected, and the Advisory Panel review, that supports the following testing requirements.

Condition Monitoring Justification: 1B21F078T

Valves in Grouping: 1B21F078A, 1B21F078B, 1B21F078C, 1B21F078D, 1B21F078E, 1B21F078F, 1B21F078G, 1B21F078H, 1B21F078J, 1B21F078K, 1B21F078L, 1B21F078M, 1B21F078N, 1B21F078P, 1B21F078R, 1B21F078S, 1B21F078T, 1B21F078U, 1B21F078V, & 1B21F078W

CM Testing Requirements: Perform a manual stroke verifying that there is no binding or unusual movement, which would be an indication of wear. This test will provide open and closed requirements. The frequency may be extended to 3R.

Condition Monitoring Justification: 1B21F078U

Valves in Grouping: 1B21F078A, 1B21F078B, 1B21F078C, 1B21F078D, 1B21F078E, 1B21F078F, 1B21F078G, 1B21F078H, 1B21F078J, 1B21F078K, 1B21F078L, 1B21F078M, 1B21F078N, 1B21F078P, 1B21F078R, 1B21F078S, 1B21F078T, 1B21F078U, 1B21F078V, & 1B21F078W

CM Testing Requirements: Perform a manual stroke verifying that there is no binding or unusual movement, which would be an indication of wear. This test will provide open and closed requirements. The frequency may be extended to 3R.

Condition Monitoring Justification: 1B21F078V

Valves in Grouping: 1B21F078A, 1B21F078B, 1B21F078C, 1B21F078D, 1B21F078E, 1B21F078F, 1B21F078G, 1B21F078H, 1B21F078J, 1B21F078K, 1B21F078L, 1B21F078M, 1B21F078N, 1B21F078P, 1B21F078R, 1B21F078S, 1B21F078T, 1B21F078U, 1B21F078V, & 1B21F078W

CM Testing Requirements: Perform a manual stroke verifying that there is no binding or unusual movement, which would be an indication of wear. This test will provide open and closed requirements. The frequency may be extended to 3R.

Condition Monitoring Justification: 1B21F078W

Valves in Grouping: 1B21F078A, 1B21F078B, 1B21F078C, 1B21F078D, 1B21F078E, 1B21F078F, 1B21F078G, 1B21F078H, 1B21F078J, 1B21F078K, 1B21F078L, 1B21F078M, 1B21F078N, 1B21F078P, 1B21F078R, 1B21F078S, 1B21F078T, 1B21F078U, 1B21F078V, & 1B21F078W

CM Testing Requirements: Perform a manual stroke verifying that there is no binding or unusual movement, which would be an indication of wear. This test will provide open and closed requirements. The frequency may be extended to 3R.

Condition Monitoring Justification: 1B21F100A

Valves in Grouping: 1B21F100A, 1B21F100B, 1B21F100C, 1B21F100D, 1B21F100E, 1B21F100F, 1B21F100G, 1B21F100H, 1B21F100J, 1B21F100K, 1B21F100L, 1B21F100M, 1B21F100N, 1B21F100P, 1B21F100R, 1B21F100S, 1B21F100T, 1B21F100U, 1B21F100V, & 1B21F100W

CM Testing Requirements: Perform a manual stroke verifying that there is no binding, unusual movement, or FME, which would be an indication of wear. This test will provide open and closed requirements. The frequency may be extended to 3R.

CONDITION MONITORING JUSTIFICATIONS

NOTE: CEP-IST-1, GGNS Appendix, Enclosure 1 provides the data collected, and the Advisory Panel review, that supports the following testing requirements.

Condition Monitoring Justification: 1B21F100B

Valves in Grouping: 1B21F100A, 1B21F100B, 1B21F100C, 1B21F100D, 1B21F100E, 1B21F100F, 1B21F100G, 1B21F100H, 1B21F100J, 1B21F100K, 1B21F100L, 1B21F100M, 1B21F100N, 1B21F100P, 1B21F100R, 1B21F100S, 1B21F100T, 1B21F100U, 1B21F100V, & 1B21F100W

CM Testing Requirements: Perform a manual stroke verifying that there is no binding, unusual movement, or FME, which would be an indication of wear. This test will provide open and closed requirements. The frequency may be extended to 3R.

Condition Monitoring Justification: 1B21F100C

Valves in Grouping: 1B21F100A, 1B21F100B, 1B21F100C, 1B21F100D, 1B21F100E, 1B21F100F, 1B21F100G, 1B21F100H, 1B21F100J, 1B21F100K, 1B21F100L, 1B21F100M, 1B21F100N, 1B21F100P, 1B21F100R, 1B21F100S, 1B21F100T, 1B21F100U, 1B21F100V, & 1B21F100W

CM Testing Requirements: Perform a manual stroke verifying that there is no binding, unusual movement, or FME, which would be an indication of wear. This test will provide open and closed requirements. The frequency may be extended to 3R.

Condition Monitoring Justification: 1B21F100D

Valves in Grouping: 1B21F100A, 1B21F100B, 1B21F100C, 1B21F100D, 1B21F100E, 1B21F100F, 1B21F100G, 1B21F100H, 1B21F100J, 1B21F100K, 1B21F100L, 1B21F100M, 1B21F100N, 1B21F100P, 1B21F100R, 1B21F100S, 1B21F100T, 1B21F100U, 1B21F100V, & 1B21F100W

CM Testing Requirements: Perform a manual stroke verifying that there is no binding, unusual movement, or FME, which would be an indication of wear. This test will provide open and closed requirements. The frequency may be extended to 3R.

Condition Monitoring Justification: 1B21F100E

Valves in Grouping: 1B21F100A, 1B21F100B, 1B21F100C, 1B21F100D, 1B21F100E, 1B21F100F, 1B21F100G, 1B21F100H, 1B21F100J, 1B21F100K, 1B21F100L, 1B21F100M, 1B21F100N, 1B21F100P, 1B21F100R, 1B21F100S, 1B21F100T, 1B21F100U, 1B21F100V, & 1B21F100W

CM Testing Requirements: Perform a manual stroke verifying that there is no binding, unusual movement, or FME, which would be an indication of wear. This test will provide open and closed requirements. The frequency may be extended to 3R.

Condition Monitoring Justification: 1B21F100F

Valves in Grouping: 1B21F100A, 1B21F100B, 1B21F100C, 1B21F100D, 1B21F100E, 1B21F100F, 1B21F100G, 1B21F100H, 1B21F100J, 1B21F100K, 1B21F100L, 1B21F100M, 1B21F100N, 1B21F100P, 1B21F100R, 1B21F100S, 1B21F100T, 1B21F100U, 1B21F100V, & 1B21F100W

CM Testing Requirements: Perform a manual stroke verifying that there is no binding, unusual movement, or FME, which would be an indication of wear. This test will provide open and closed requirements. The frequency may be extended to 3R.

CONDITION MONITORING JUSTIFICATIONS

NOTE: CEP-IST-1, GGNS Appendix, Enclosure 1 provides the data collected, and the Advisory Panel review, that supports the following testing requirements.

Condition Monitoring Justification: 1B21F100G

Valves in Grouping: 1B21F100A, 1B21F100B, 1B21F100C, 1B21F100D, 1B21F100E, 1B21F100F, 1B21F100G, 1B21F100H, 1B21F100J, 1B21F100K, 1B21F100L, 1B21F100M, 1B21F100N, 1B21F100P, 1B21F100R, 1B21F100S, 1B21F100T, 1B21F100U, 1B21F100V, & 1B21F100W

CM Testing Requirements: Perform a manual stroke verifying that there is no binding, unusual movement, or FME, which would be an indication of wear. This test will provide open and closed requirements. The frequency may be extended to 3R.

Condition Monitoring Justification: 1B21F100H

Valves in Grouping: 1B21F100A, 1B21F100B, 1B21F100C, 1B21F100D, 1B21F100E, 1B21F100F, 1B21F100G, 1B21F100H, 1B21F100J, 1B21F100K, 1B21F100L, 1B21F100M, 1B21F100N, 1B21F100P, 1B21F100R, 1B21F100S, 1B21F100T, 1B21F100U, 1B21F100V, & 1B21F100W

CM Testing Requirements: Perform a manual stroke verifying that there is no binding, unusual movement, or FME, which would be an indication of wear. This test will provide open and closed requirements. The frequency may be extended to 3R.

Condition Monitoring Justification: 1B21F100J

Valves in Grouping: 1B21F100A, 1B21F100B, 1B21F100C, 1B21F100D, 1B21F100E, 1B21F100F, 1B21F100G, 1B21F100H, 1B21F100J, 1B21F100K, 1B21F100L, 1B21F100M, 1B21F100N, 1B21F100P, 1B21F100R, 1B21F100S, 1B21F100T, 1B21F100U, 1B21F100V, & 1B21F100W

CM Testing Requirements: Perform a manual stroke verifying that there is no binding, unusual movement, or FME, which would be an indication of wear. This test will provide open and closed requirements. The frequency may be extended to 3R.

Condition Monitoring Justification: 1B21F100K

Valves in Grouping: 1B21F100A, 1B21F100B, 1B21F100C, 1B21F100D, 1B21F100E, 1B21F100F, 1B21F100G, 1B21F100H, 1B21F100J, 1B21F100K, 1B21F100L, 1B21F100M, 1B21F100N, 1B21F100P, 1B21F100R, 1B21F100S, 1B21F100T, 1B21F100U, 1B21F100V, & 1B21F100W

CM Testing Requirements: Perform a manual stroke verifying that there is no binding, unusual movement, or FME, which would be an indication of wear. This test will provide open and closed requirements. The frequency may be extended to 3R.

Condition Monitoring Justification: 1B21F100L

Valves in Grouping: 1B21F100A, 1B21F100B, 1B21F100C, 1B21F100D, 1B21F100E, 1B21F100F, 1B21F100G, 1B21F100H, 1B21F100J, 1B21F100K, 1B21F100L, 1B21F100M, 1B21F100N, 1B21F100P, 1B21F100R, 1B21F100S, 1B21F100T, 1B21F100U, 1B21F100V, & 1B21F100W

CM Testing Requirements: Perform a manual stroke verifying that there is no binding, unusual movement, or FME, which would be an indication of wear. This test will provide open and closed requirements. The frequency may be extended to 3R.

CONDITION MONITORING JUSTIFICATIONS

NOTE: CEP-IST-1, GGNS Appendix, Enclosure 1 provides the data collected, and the Advisory Panel review, that supports the following testing requirements.

Condition Monitoring Justification: 1B21F100T

Valves in Grouping: 1B21F100A, 1B21F100B, 1B21F100C, 1B21F100D, 1B21F100E, 1B21F100F, 1B21F100G, 1B21F100H, 1B21F100J, 1B21F100K, 1B21F100L, 1B21F100M, 1B21F100N, 1B21F100P, 1B21F100R, 1B21F100S, 1B21F100T, 1B21F100U, 1B21F100V, & 1B21F100W

CM Testing Requirements: Perform a manual stroke verifying that there is no binding, unusual movement, or FME, which would be an indication of wear. This test will provide open and closed requirements. The frequency may be extended to 3R.

Condition Monitoring Justification: 1B21F100U

Valves in Grouping: 1B21F100A, 1B21F100B, 1B21F100C, 1B21F100D, 1B21F100E, 1B21F100F, 1B21F100G, 1B21F100H, 1B21F100J, 1B21F100K, 1B21F100L, 1B21F100M, 1B21F100N, 1B21F100P, 1B21F100R, 1B21F100S, 1B21F100T, 1B21F100U, 1B21F100V, & 1B21F100W

CM Testing Requirements: Perform a manual stroke verifying that there is no binding, unusual movement, or FME, which would be an indication of wear. This test will provide open and closed requirements. The frequency may be extended to 3R.

Condition Monitoring Justification: 1B21F100V

Valves in Grouping: 1B21F100A, 1B21F100B, 1B21F100C, 1B21F100D, 1B21F100E, 1B21F100F, 1B21F100G, 1B21F100H, 1B21F100J, 1B21F100K, 1B21F100L, 1B21F100M, 1B21F100N, 1B21F100P, 1B21F100R, 1B21F100S, 1B21F100T, 1B21F100U, 1B21F100V, & 1B21F100W

CM Testing Requirements: Perform a manual stroke verifying that there is no binding, unusual movement, or FME, which would be an indication of wear. This test will provide open and closed requirements. The frequency may be extended to 3R.

Condition Monitoring Justification: 1B21F100W

Valves in Grouping: 1B21F100A, 1B21F100B, 1B21F100C, 1B21F100D, 1B21F100E, 1B21F100F, 1B21F100G, 1B21F100H, 1B21F100J, 1B21F100K, 1B21F100L, 1B21F100M, 1B21F100N, 1B21F100P, 1B21F100R, 1B21F100S, 1B21F100T, 1B21F100U, 1B21F100V, & 1B21F100W

CM Testing Requirements: Perform a manual stroke verifying that there is no binding, unusual movement, or FME, which would be an indication of wear. This test will provide open and closed requirements. The frequency may be extended to 3R.

Condition Monitoring Justification: 1B21F130A

Valves in Grouping: 1B21F130A

CM Testing Requirements: Perform open verification using normal operations and close leak testing at a frequency aligned with the Category A leak test.

IST PLAN GGNS APPENDIX	PROGRAM SECTION NO.: CEP-IST-2 REVISION NO. 307 PAGE 16 OF 34
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CONDITION MONITORING JUSTIFICATIONS

NOTE: CEP-IST-1, GGNS Appendix, Enclosure 1 provides the data collected, and the Advisory Panel review, that supports the following testing requirements.

Condition Monitoring Justification: 1B21F100M

Valves in Grouping: 1B21F100A, 1B21F100B, 1B21F100C, 1B21F100D, 1B21F100E, 1B21F100F, 1B21F100G, 1B21F100H, 1B21F100J, 1B21F100K, 1B21F100L, 1B21F100M, 1B21F100N, 1B21F100P, 1B21F100R, 1B21F100S, 1B21F100T, 1B21F100U, 1B21F100V, & 1B21F100W

CM Testing Requirements: Perform a manual stroke verifying that there is no binding, unusual movement, or FME, which would be an indication of wear. This test will provide open and closed requirements. The frequency may be extended to 3R.

Condition Monitoring Justification: 1B21F100N

Valves in Grouping: 1B21F100A, 1B21F100B, 1B21F100C, 1B21F100D, 1B21F100E, 1B21F100F, 1B21F100G, 1B21F100H, 1B21F100J, 1B21F100K, 1B21F100L, 1B21F100M, 1B21F100N, 1B21F100P, 1B21F100R, 1B21F100S, 1B21F100T, 1B21F100U, 1B21F100V, & 1B21F100W

CM Testing Requirements: Perform a manual stroke verifying that there is no binding, unusual movement, or FME, which would be an indication of wear. This test will provide open and closed requirements. The frequency may be extended to 3R.

Condition Monitoring Justification: 1B21F100P

Valves in Grouping: 1B21F100A, 1B21F100B, 1B21F100C, 1B21F100D, 1B21F100E, 1B21F100F, 1B21F100G, 1B21F100H, 1B21F100J, 1B21F100K, 1B21F100L, 1B21F100M, 1B21F100N, 1B21F100P, 1B21F100R, 1B21F100S, 1B21F100T, 1B21F100U, 1B21F100V, & 1B21F100W

CM Testing Requirements: Perform a manual stroke verifying that there is no binding, unusual movement, or FME, which would be an indication of wear. This test will provide open and closed requirements. The frequency may be extended to 3R.

Condition Monitoring Justification: 1B21F100R

Valves in Grouping: 1B21F100A, 1B21F100B, 1B21F100C, 1B21F100D, 1B21F100E, 1B21F100F, 1B21F100G, 1B21F100H, 1B21F100J, 1B21F100K, 1B21F100L, 1B21F100M, 1B21F100N, 1B21F100P, 1B21F100R, 1B21F100S, 1B21F100T, 1B21F100U, 1B21F100V, & 1B21F100W

CM Testing Requirements: Perform a manual stroke verifying that there is no binding, unusual movement, or FME, which would be an indication of wear. This test will provide open and closed requirements. The frequency may be extended to 3R.

Condition Monitoring Justification: 1B21F100S

Valves in Grouping: 1B21F100A, 1B21F100B, 1B21F100C, 1B21F100D, 1B21F100E, 1B21F100F, 1B21F100G, 1B21F100H, 1B21F100J, 1B21F100K, 1B21F100L, 1B21F100M, 1B21F100N, 1B21F100P, 1B21F100R, 1B21F100S, 1B21F100T, 1B21F100U, 1B21F100V, & 1B21F100W

CM Testing Requirements: Perform a manual stroke verifying that there is no binding, unusual movement, or FME, which would be an indication of wear. This test will provide open and closed requirements. The frequency may be extended to 3R.

CONDITION MONITORING JUSTIFICATIONS

NOTE: CEP-IST-1, GGNS Appendix, Enclosure 1 provides the data collected, and the Advisory Panel review, that supports the following testing requirements.

Condition Monitoring Justification: **1B21F130B**

Valves in Grouping: 1B21F130B

CM Testing Requirements: Perform open verification using normal operations and close leak testing at a frequency aligned with the Category A leak test.

Condition Monitoring Justification: **1B21F152A**

Valves in Grouping: 1B21F152A

CM Testing Requirements: Perform open verification using normal operations and close leak testing at a frequency aligned with the Category A leak test.

Condition Monitoring Justification: **1B21F152B**

Valves in Grouping: 1B21F152B

CM Testing Requirements: Perform open verification using normal operations and close leak testing at a frequency aligned with the Category A leak test.

Condition Monitoring Justification: **1B21F152C**

Valves in Grouping: 1B21F152C

CM Testing Requirements: Perform open verification using normal operations and close leak testing at a frequency aligned with the Category A leak test.

Condition Monitoring Justification: **1B21F152D**

Valves in Grouping: 1B21F152D

CM Testing Requirements: Perform open verification using normal operations and close leak testing at a frequency aligned with the Category A leak test.

Condition Monitoring Justification: **1B21F154A**

Valves in Grouping: 1B21F154A

CM Testing Requirements: Perform open verification using normal operations and close leak testing at a frequency aligned with the Category A leak test.

Condition Monitoring Justification: **1B21F154B**

Valves in Grouping: 1B21F154B

CM Testing Requirements: Perform open verification using normal operations and close leak testing at a frequency aligned with the Category A leak test.

Condition Monitoring Justification: **1B21F154C**

Valves in Grouping: 1B21F154C

CM Testing Requirements: Perform open verification using normal operations and close leak testing at a frequency aligned with the Category A leak test.

IST PLAN GGNS APPENDIX	PROGRAM SECTION NO.: CEP-IST-2 REVISION NO. 307 PAGE 19 OF 34
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CONDITION MONITORING JUSTIFICATIONS

NOTE: CEP-IST-1, GGNS Appendix, Enclosure 1 provides the data collected, and the Advisory Panel review, that supports the following testing requirements.

Condition Monitoring Justification: **1B21F154D**

Valves in Grouping: 1B21F154D

CM Testing Requirements: Perform open flow testing and close leak testing at a frequency that may be extended to two valves being tested every other refueling cycle.

Condition Monitoring Justification: **1B21F803**

Valves in Grouping: B21F803

CM Testing Requirements: Perform open verification using normal operations and close leak testing at a frequency that may be extended to every two refueling cycles.

Condition Monitoring Justification: **1B33F013A**

Valves in Grouping: B33F13A & B33F13B

CM Testing Requirements: Perform open flow testing and non-intrusive closure testing at a frequency that may be extended to one valve being tested every three refueling cycles.

Condition Monitoring Justification: **1B33F013B**

Valves in Grouping: B33F13A & B33F13B

CM Testing Requirements: Perform open flow testing and non-intrusive closure testing at a frequency that may be extended to one valve being tested every three refueling cycles.

Condition Monitoring Justification: **1B33F017A**

Valves in Grouping: B33F017A & B33F017B

CM Testing Requirements: Perform open flow testing and non-intrusive closure testing at a frequency that may be extended to one valve being tested every three refueling cycles.

Condition Monitoring Justification: **1B33F017B**

Valves in Grouping: B33F017A & B33F017B

CM Testing Requirements: Perform open flow testing and non-intrusive closure testing at a frequency that may be extended to one valve being tested every three refueling cycles.

Condition Monitoring Justification: **1C11F122**

Valves in Grouping: 1C11F122

CM Testing Requirements: Perform open flow testing by taking credit for normal operations and closure testing at a frequency aligned with Appendix J testing.

Condition Monitoring Justification: **1C41F006**

Valves in Grouping: 1C41F006 & 1C41F007

CM Testing Requirements: Perform open flow testing and non-intrusive closure testing starting at baseline then at a frequency of every 1R.

CONDITION MONITORING JUSTIFICATIONS

NOTE: CEP-IST-1, GGNS Appendix, Enclosure 1 provides the data collected, and the Advisory Panel review, that supports the following testing requirements.

Condition Monitoring Justification: **1C41F007**

Valves in Grouping: 1C41F006 & 1C41F007

CM Testing Requirements: Perform open flow testing and non-intrusive closure testing starting at baseline then at a frequency of every 1R.

Condition Monitoring Justification: **1C41F033A**

Valves in Grouping: 1C41F033A & 1C41F033B

CM Testing Requirements: Perform open flow testing and non-intrusive closure testing at a frequency for one valve in the group every 2R.

Condition Monitoring Justification: **1C41F033B**

Valves in Grouping: 1C41F033A & 1C41F033B

CM Testing Requirements: Perform open flow testing and non-intrusive closure testing at a frequency for one valve in the group every 2R.

Condition Monitoring Justification: **1C41F151**

Valves in Grouping: 1C41F151

CM Testing Requirements: Perform open flow testing and closed leak testing starting at baseline then 1R, then 2R, then align the test frequency with Appendix J testing.

Condition Monitoring Justification: **1C41F222**

Valves in Grouping: C41F222

CM Testing Requirements: Perform open flow testing and non-intrusive closure testing at a frequency of every refueling cycle.

Condition Monitoring Justification: **1E12F031A**

Valves in Grouping: 1E12F031A, 1E12F031B, & 1E12F031C

CM Testing Requirements: Perform open verification using normal operations and continue using non-intrusive testing or disassembly for determining the valves condition and verifying closure. The frequency may be extended to one valve in the group every 4 years.

Condition Monitoring Justification: **1E12F031B**

Valves in Grouping: 1E12F031A, 1E12F031B, & 1E12F031C

CM Testing Requirements: Perform open verification using normal operations and continue using non-intrusive testing or disassembly for determining the valves condition and verifying closure. The frequency may be extended to one valve in the group every 4 years.

IST PLAN GGNS APPENDIX	PROGRAM SECTION NO.: CEP-IST-2 REVISION NO. 307 PAGE 21 OF 34
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CONDITION MONITORING JUSTIFICATIONS

NOTE: CEP-IST-1, GGNS Appendix, Enclosure 1 provides the data collected, and the Advisory Panel review, that supports the following testing requirements.

Condition Monitoring Justification: 1E12F031C

Valves in Grouping: 1E12F031A, 1E12F031B, & 1E12F031C

CM Testing Requirements: Perform open verification using normal operations and continue using non-intrusive testing or disassembly for determining the valves condition and verifying closure. The frequency may be extended to one valve in the group every 4 years.

Condition Monitoring Justification: 1E12F041A

Valves in Grouping: 1E12F041A

CM Testing Requirements: Perform open observing the valve stroke when exercising the valve using the actuator and close leak testing at a frequency aligned with Category A leak test.

Condition Monitoring Justification: 1E12F041B

Valves in Grouping: 1E12F041B

CM Testing Requirements: Perform open observing the valve stroke when exercising the valve using the actuator and close leak testing at a frequency aligned with Category A leak test.

Condition Monitoring Justification: 1E12F041C

Valves in Grouping: 1E12F041C

CM Testing Requirements: Perform open observing the valve stroke when exercising the valve using the actuator and close leak testing at a frequency aligned with Category A leak test.

Condition Monitoring Justification: 1E12F046A

Valves in Grouping: 1E12F046A, 1E12F046B, & 1E12F046C

CM Testing Requirements: Perform non-intrusive open, closure, and condition testing at a frequency that may be extended to one valve of the group being tested every 4 years.

Condition Monitoring Justification: 1E12F046B

Valves in Grouping: 1E12F046A, 1E12F046B, & 1E12F046C

CM Testing Requirements: Perform non-intrusive open, closure, and condition testing at a frequency that may be extended to one valve of the group being tested every 4 years.

Condition Monitoring Justification: 1E12F046C

Valves in Grouping: 1E12F046A, 1E12F046B, & 1E12F046C

CM Testing Requirements: Perform non-intrusive open, closure, and condition testing at a frequency that may be extended to one valve of the group being tested every 4 years.

CONDITION MONITORING JUSTIFICATIONS

NOTE: CEP-IST-1, GGNS Appendix, Enclosure 1 provides the data collected, and the Advisory Panel review, that supports the following testing requirements.

Condition Monitoring Justification: **1E12F050A**

Valves in Grouping: 1E12F050A

CM Testing Requirements: Perform open flow testing and close leak testing at a frequency aligned with the Category A leak test.

Condition Monitoring Justification: **1E12F050B**

Valves in Grouping: 1E12F050B

CM Testing Requirements: Perform open flow testing and close leak testing at a frequency aligned with the Category A leak test.

Condition Monitoring Justification: **1E12F084A**

Valves in Grouping: 1E12F084A, 1E12F084B, & 1E12F084C

CM Testing Requirements: Perform open flow testing and non-intrusive closure testing or disassembly at a frequency that may be extended to one valve in the group being tested every 4 years.

Condition Monitoring Justification: **1E12F084B**

Valves in Grouping: 1E12F084A, 1E12F084B, & 1E12F084C

CM Testing Requirements: Perform open flow testing and non-intrusive closure testing or disassembly at a frequency that may be extended to one valve in the group being tested every 4 years.

Condition Monitoring Justification: **1E12F084C**

Valves in Grouping: 1E12F084A, 1E12F084B, & 1E12F084C

CM Testing Requirements: Perform open flow testing and non-intrusive closure testing or disassembly at a frequency that may be extended to one valve in the group being tested every 4 years.

Condition Monitoring Justification: **1E12F085A**

Valves in Grouping: 1E12F085A, 1E12F085B, & 1E12F085C

CM Testing Requirements: Perform open flow testing and non-intrusive closure testing or disassembly at a frequency that may be extended to one valve in the group being tested every 4 years.

Condition Monitoring Justification: **1E12F085B**

Valves in Grouping: 1E12F085A, 1E12F085B, & 1E12F085C

CM Testing Requirements: Perform open flow testing and non-intrusive closure testing or disassembly at a frequency that may be extended to one valve in the group being tested every 4 years.

IST PLAN GGNS APPENDIX	PROGRAM SECTION NO.: CEP-IST-2 REVISION NO. 307 PAGE 23 OF 34
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CONDITION MONITORING JUSTIFICATIONS

NOTE: CEP-IST-1, GGNS Appendix, Enclosure 1 provides the data collected, and the Advisory Panel review, that supports the following testing requirements.

Condition Monitoring Justification: 1E12F085C

Valves in Grouping: 1E12F085A, 1E12F085B, & 1E12F085C

CM Testing Requirements: Perform open flow testing and non-intrusive closure testing or disassembly at a frequency that may be extended to one valve in the group being tested every 4 years.

Condition Monitoring Justification: 1E12F103A

Valves in Grouping: 1E12F103A, 1E12F103B, 1E12F104A, & 1E12F104B

CM Testing Requirements: Valves E12F103A and E12F104A will be tested as a pair and valves E12F103B and E12F104B will be tested as a pair, due to being in series. Perform non-intrusive open and closed testing, and Appendix J testing starting at baseline, then one pair in the group every 1R, then align test frequency with Appendix J testing.

Condition Monitoring Justification: 1E12F103B

Valves in Grouping: 1E12F103A, 1E12F103B, 1E12F104A, & 1E12F104B

CM Testing Requirements: Valves E12F103A and E12F104A will be tested as a pair and valves E12F103B and E12F104B will be tested as a pair, due to being in series. Perform non-intrusive open and closed testing, and Appendix J testing starting at baseline, then one pair in the group every 1R, then align test frequency with Appendix J testing.

Condition Monitoring Justification: 1E12F104A

Valves in Grouping: 1E12F103A, 1E12F103B, 1E12F104A, & 1E12F104B

CM Testing Requirements: Valves E12F103A and E12F104A will be tested as a pair and valves E12F103B and E12F104B will be tested as a pair, due to being in series. Perform non-intrusive open and closed testing, and Appendix J testing starting at baseline, then one pair in the group every 1R, then align test frequency with Appendix J testing.

Condition Monitoring Justification: 1E12F104B

Valves in Grouping: 1E12F103A, 1E12F103B, 1E12F104A, & 1E12F104B

CM Testing Requirements: Valves E12F103A and E12F104A will be tested as a pair and valves E12F103B and E12F104B will be tested as a pair, due to being in series. Perform non-intrusive open and closed testing, and Appendix J testing starting at baseline, then one pair in the group every 1R, then align test frequency with Appendix J testing.

Condition Monitoring Justification: 1E12F273

Valves in Grouping: 1E12F273, 1E12F274, & 1E12F278

CM Testing Requirements: Perform non-intrusive open, closure, and condition testing at a frequency, starting at baseline then it may be extended to one valve of the group being tested every 2 years.

CONDITION MONITORING JUSTIFICATIONS

NOTE: CEP-IST-1, GGNS Appendix, Enclosure 1 provides the data collected, and the Advisory Panel review, that supports the following testing requirements.

Condition Monitoring Justification: **1E12F274**

Valves in Grouping: 1E12F273, 1E12F274, & 1E12F278

CM Testing Requirements: Perform non-intrusive open, closure, and condition testing at a frequency, starting at baseline then it may be extended to one valve of the group being tested every 2 years.

Condition Monitoring Justification: **1E12F278**

Valves in Grouping: 1E12F273, 1E12F274, & 1E12F278

CM Testing Requirements: Perform non-intrusive open, closure, and condition testing at a frequency, starting at baseline then it may be extended to one valve of the group being tested every 2 years.

Condition Monitoring Justification: **1E12F308**

Valves in Grouping: 1E12F308

CM Testing Requirements: Perform open verification using normal operations and close leak testing at a frequency aligned with the Category A leak test.

Condition Monitoring Justification: **1E12F406**

Valves in Grouping: 1E12F406

CM Testing Requirements: Perform open verification using normal operations and close leak testing starting at baseline, then 24 months, then 48 months, then align the test frequency with Appendix J testing.

Condition Monitoring Justification: **1E12F416**

Valves in Grouping: E12F416

CM Testing Requirements: Perform open verification using normal operations and close leak testing at a frequency that may be extended to every three refueling cycles.

Condition Monitoring Justification: **1E21F003**

Valves in Grouping: 1E21F003

CM Testing Requirements: Perform open flow testing and close leak testing at a frequency that may be extended to every 4 years.

Condition Monitoring Justification: **1E21F006**

Valves in Grouping: 1E21F006

CM Testing Requirements: Perform open observing the valve stroke when exercising the valve using the actuator and close leak testing at a frequency aligned with the Category A leak test.

Condition Monitoring Justification: **1E21F034**

Valves in Grouping: 1E21F034

CM Testing Requirements: Perform open flow testing and close leak testing at a frequency that may be extended to every 3R.

CONDITION MONITORING JUSTIFICATIONS

NOTE: CEP-IST-1, GGNS Appendix, Enclosure 1 provides the data collected, and the Advisory Panel review, that supports the following testing requirements.

Condition Monitoring Justification: **1E22F002**

Valves in Grouping: E22F002

CM Testing Requirements: Perform open, close, and visual examination testing at a frequency that may be extended to every two refueling cycles.

Condition Monitoring Justification: **1E22F005**

Valves in Grouping: 1E22F005

CM Testing Requirements: Perform open by observing the valve stroke when exercising the valve using the actuator and close leak testing at a frequency aligned with the Category A leak test.

Condition Monitoring Justification: **1E22F006**

Valves in Grouping: 1E22F006

CM Testing Requirements: Perform open flow testing and close leak testing at a frequency that may be extended to every 3R.

Condition Monitoring Justification: **1E22F016**

Valves in Grouping: 1E22F016

CM Testing Requirements: Perform open flow testing and close leak testing at a frequency that may be extended to every 3R.

Condition Monitoring Justification: **1E22F024**

Valves in Grouping: 1E22F024

CM Testing Requirements: Perform open flow testing and close leak testing at a frequency that may be extended to every 3R.

Condition Monitoring Justification: **1E22F039**

Valves in Grouping: 1E22F039

CM Testing Requirements: Perform open flow testing and close leak testing starting at baseline then at a frequency that may be extended to 2 years.

Condition Monitoring Justification: **1E30F003A**

Valves in Grouping: E30F003A & E30F003B

CM Testing Requirements: Perform non-intrusive bi-directional testing at a frequency that may be extended to every three refueling cycles.

Condition Monitoring Justification: **1E30F003B**

Valves in Grouping: E30F003A & E30F003B

CM Testing Requirements: Perform non-intrusive bi-directional testing at a frequency that may be extended to every three refueling cycles.

CONDITION MONITORING JUSTIFICATIONS

NOTE: CEP-IST-1, GGNS Appendix, Enclosure 1 provides the data collected, and the Advisory Panel review, that supports the following testing requirements.

Condition Monitoring Justification: **1E32F010**

Valves in Grouping: 1E32F010 & 1E32F011

CM Testing Requirements: Perform disassembly and inspection starting with a baseline then at a frequency that may be extended to one valve being tested every 2 years.

Condition Monitoring Justification: **1E32F011**

Valves in Grouping: 1E32F010 & 1E32F011

CM Testing Requirements: Perform disassembly and inspection starting with a baseline then at a frequency that may be extended to one valve being tested every 2 years.

Condition Monitoring Justification: **1E38F002A**

Valves in Grouping: E38F002A, E38F002B, E38F003A, & E38F003B

CM Testing Requirements: Perform open flow testing and close leak testing at a frequency that may be extended to every three refueling cycles.

Condition Monitoring Justification: **1E38F002B**

Valves in Grouping: E38F002A, E38F002B, E38F003A, & E38F003B

CM Testing Requirements: Perform open flow testing and close leak testing at a frequency that may be extended to every three refueling cycles.

Condition Monitoring Justification: **1E38F003A**

Valves in Grouping: E38F002A, E38F002B, E38F003A, & E38F003B

CM Testing Requirements: Perform open flow testing and close leak testing at a frequency that may be extended to every three refueling cycles.

Condition Monitoring Justification: **1E38F003B**

Valves in Grouping: E38F002A, E38F002B, E38F003A, & E38F003B

CM Testing Requirements: Perform open flow testing and close leak testing at a frequency that may be extended to every three refueling cycles.

Condition Monitoring Justification: **1E51F011**

Valves in Grouping: 1E51F011

CM Testing Requirements: Perform open flow testing and close leak testing starting at a frequency that may be extended to 2 years.

Condition Monitoring Justification: **1E51F030**

Valves in Grouping: 1E51F030

CM Testing Requirements: Perform disassembly and inspection at a frequency that may be extended to every 6 years.

IST PLAN GGNS APPENDIX	PROGRAM SECTION NO.: CEP-IST-2 REVISION NO. 307 PAGE 27 OF 34
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CONDITION MONITORING JUSTIFICATIONS

NOTE: CEP-IST-1, GGNS Appendix, Enclosure 1 provides the data collected, and the Advisory Panel review, that supports the following testing requirements. CEP-IST-PCN-141 provides the changes

Condition Monitoring Justification: 1E51F040

Valves in Grouping: 1E51F040

CM Testing Requirements: Perform open flow testing and close leak testing starting at baseline then at a frequency that may be extended to 1R, then move out to 2R, then align with Appendix J testing.

Condition Monitoring Justification: 1E51F047

Valves in Grouping: 1E51F047

CM Testing Requirements: Perform disassembly and inspection at a frequency that may be extended to every 3R.

Condition Monitoring Justification: 1E51F065

Valves in Grouping: 1E51F065

CM Testing Requirements: Perform open verification using normal operations and close leak testing at a frequency aligned with the Category A leak test.

Condition Monitoring Justification: 1E51F079

Valves in Grouping: 1E51F079

CM Testing Requirements: Perform open flow testing and close leak testing starting at baseline then at a frequency that may be extended to every 2 years.

Condition Monitoring Justification: 1E51F081

Valves in Grouping: 1E51F081

CM Testing Requirements: Perform open flow testing and close leak testing starting at baseline then at a frequency that may be extended to every 2 years.

Condition Monitoring Justification: 1E51F204

Valves in Grouping: 1E51F204

CM Testing Requirements: Perform open flow testing and close leak testing starting at baseline then at a frequency that may be extended to every 2 years.

Condition Monitoring Justification: 1G33F052A

Valves in Grouping: 1G33F052A & 1G33F052B

CM Testing Requirements: Perform open verification using normal operations and non-intrusive close testing at a frequency of 3R for one valve in the group.

Condition Monitoring Justification: 1G33F052B

Valves in Grouping: 1G33F052A & 1G33F052B

CM Testing Requirements: Perform open verification using normal operations and non-intrusive close testing at a frequency of 3R for one valve in the group.

CONDITION MONITORING JUSTIFICATIONS

NOTE: CEP-IST-1, GGNS Appendix, Enclosure 1 provides the data collected, and the Advisory Panel review, that supports the following testing requirements.

Condition Monitoring Justification: **1G41F010A**

Valves in Grouping: 1G41F010A & 1G41F010B

CM Testing Requirements: Perform open flow testing and close leak testing at a frequency that may be extended to every 6 years. (Note this testing will still be performed quarterly for Tech Spec requirements).

Condition Monitoring Justification: **1G41F010B**

Valves in Grouping: 1G41F010A & 1G41F010B

CM Testing Requirements: Perform open flow testing and close leak testing at a frequency that may be extended to every 6 years. (Note this testing will still be performed quarterly for Tech Spec requirements).

Condition Monitoring Justification: **1G41F022**

Valves in Grouping: G41F048 & G41F022

CM Testing Requirements: Perform open verification using normal operations and close leak testing at a frequency that may be extended to being tested every three refueling cycles.

Condition Monitoring Justification: **1G41F040**

Valves in Grouping: 1G41F040

CM Testing Requirements: Perform open verification using normal operations and close leak testing at a frequency aligned with Appendix J testing.

Condition Monitoring Justification: **1G41F048**

Valves in Grouping: G41F048 & G41F022

CM Testing Requirements: Perform open verification using normal operations and close leak testing at a frequency that may be extended to being tested every three refueling cycles.

Condition Monitoring Justification: **1G41F268**

Valves in Grouping: 1G41F268

CM Testing Requirements: Perform open flow testing and close leak testing at a frequency that may be extended to 2R.

Condition Monitoring Justification: **1P11F004**

Valves in Grouping: 1P11F004

CM Testing Requirements: Perform open flow testing and closed leak testing at a frequency that may be extended to every 3R.

Condition Monitoring Justification: **1P41F008A**

Valves in Grouping: 1P41F008A & 1P41F008B

CM Testing Requirements: Perform disassembly and inspection at a frequency that may be extended to one valve in the group being tested every 3R.

CONDITION MONITORING JUSTIFICATIONS

NOTE: CEP-IST-1, GGNS Appendix, Enclosure 1 provides the data collected, and the Advisory Panel review, that supports the following testing requirements.

Condition Monitoring Justification: **1P41F008B**

Valves in Grouping: 1P41F008A & 1P41F008B

CM Testing Requirements: Perform disassembly and inspection at a frequency that may be extended to one valve in the group being tested every 3R.

Condition Monitoring Justification: **1P41F012**

Valves in Grouping: 1P41F012

CM Testing Requirements: Perform disassembly and inspection at a frequency that may be extended to one valve in the group being tested every 3R.

Condition Monitoring Justification: **1P41F019**

Valves in Grouping: 1P41F019

CM Testing Requirements: Perform open flow testing and closed leak testing at a frequency starting with baseline and then may be extended to every 24 months.

Condition Monitoring Justification: **1P41F111A**

Valves in Grouping: 1P41F111A & 1P41F111B

CM Testing Requirements: Perform open flow testing and closed leak testing at a frequency starting with baseline and then may be extended to one valve in the group every 24 months.

Condition Monitoring Justification: **1P41F111B**

Valves in Grouping: 1P41F111A & 1P41F111B

CM Testing Requirements: Perform open flow testing and closed leak testing at a frequency starting with baseline and then may be extended to one valve in the group every 24 months.

Condition Monitoring Justification: **1P41F169A**

Valves in Grouping: 1P41F169A & 1P41F169B

CM Testing Requirements: Perform open flow testing and closed leak testing at a frequency that may be extended to one valve in the group every 2R.

Condition Monitoring Justification: **1P41F169B**

Valves in Grouping: 1P41F169A & 1P41F169B

CM Testing Requirements: Perform open flow testing and closed leak testing at a frequency that may be extended to one valve in the group every 2R.

Condition Monitoring Justification: **1P41F174**

Valves in Grouping: 1P41F174 / SP41F174 (shown in passport)

CM Testing Requirements: Perform disassembly and inspection baseline then the frequency may be extended to 1R.

CONDITION MONITORING JUSTIFICATIONS

NOTE: CEP-IST-1, GGNS Appendix, Enclosure 1 provides the data collected, and the Advisory Panel review, that supports the following testing requirements.

Condition Monitoring Justification: **1P41F236**

Valves in Grouping: 1P41F236

CM Testing Requirements: Perform disassembly and inspection at a frequency that may be extended to every 1R.

Condition Monitoring Justification: **1P42F035**

Valves in Grouping: 1P42F035

CM Testing Requirements: Perform open verification using normal operations and close leak testing at a frequency aligned with Appendix J testing.

Condition Monitoring Justification: **1P42F115**

Valves in Grouping: P42F115

CM Testing Requirements: Perform open verification using normal operations and continue using non-intrusive testing for determining the valves condition and verifying closure. The frequency may be extended to three refueling cycles.

Condition Monitoring Justification: **1P52F122**

Valves in Grouping: 1P52F122

CM Testing Requirements: Perform open flow testing and closed leak testing at a frequency aligned with Appendix J testing.

Condition Monitoring Justification: **1P53F002**

Valves in Grouping: 1P53F002

CM Testing Requirements: Perform open flow testing and closed leak testing at a frequency aligned with Appendix J testing.

Condition Monitoring Justification: **1P53F006**

Valves in Grouping: 1P53F006

CM Testing Requirements: Perform open flow testing and closed leak testing at a frequency aligned with Appendix J testing.

Condition Monitoring Justification: **1P53F008**

Valves in Grouping: 1P53F008

CM Testing Requirements: Perform open flow testing and closed leak testing at a frequency that may be extended to every 3R.

Condition Monitoring Justification: **1P71F151**

Valves in Grouping: 1P71F151

CM Testing Requirements: Perform open flow testing by taking credit for normal operations and close leak testing at a frequency aligned with Appendix J testing.

CONDITION MONITORING JUSTIFICATIONS

NOTE: CEP-IST-1, GGNS Appendix, Enclosure 1 provides the data collected, and the Advisory Panel review, that supports the following testing requirements.

Condition Monitoring Justification: **1P72F147**

Valves in Grouping: P72F147

CM Testing Requirements: Perform open flow testing by taking credit for normal operations and close leak testing at a frequency that may be extended to being tested every three refueling cycles.

Condition Monitoring Justification: **1P72F165**

Valves in Grouping: 1P72F165

CM Testing Requirements: Perform open flow testing by taking credit for normal operations and close leak testing at a frequency aligned with Appendix J testing.

Condition Monitoring Justification: **1P75F003A**

Valves in Grouping: 1P75F003A, 1P75F003B, & 1P81F007

CM Testing Requirements: Perform open flow testing and closed leak testing starting with baseline then at a frequency that may be extended to one valve every 1R.

Condition Monitoring Justification: **1P75F003B**

Valves in Grouping: 1P75F003A, 1P75F003B, & 1P81F007

CM Testing Requirements: Perform open flow testing and closed leak testing starting with baseline then at a frequency that may be extended to one valve every 1R.

Condition Monitoring Justification: **1P75F006A**

Valves in Grouping: 1P75F006A & 1P75F006B

CM Testing Requirements: Perform open verification using normal operations and close testing using NIT starting at baseline then at a frequency that may be extended to one in the group every 2 years.

Condition Monitoring Justification: **1P75F006B**

Valves in Grouping: 1P75F006A & 1P75F006B

CM Testing Requirements: Perform open verification using normal operations and close testing using NIT starting at baseline then at a frequency that may be extended to one in the group 2 years.

Condition Monitoring Justification: **1P75F009A**

Valves in Grouping: 1P75F009A, 1P75F009B, 1P75F009C, 1P75F009D, 1P75F011A, 1P75F011B, 1P75F011C, & 1P75F011D

CM Testing Requirements: Perform disassembly and inspection at a frequency that may be extended to two valves in the group every 3 years.

IST PLAN GGNS APPENDIX	PROGRAM SECTION NO.: CEP-IST-2 REVISION NO. 307 PAGE 32 OF 34
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CONDITION MONITORING JUSTIFICATIONS

NOTE: CEP-IST-1, GGNS Appendix, Enclosure 1 provides the data collected, and the Advisory Panel review, that supports the following testing requirements.

Condition Monitoring Justification: 1P75F009B

Valves in Grouping: 1P75F009A, 1P75F009B, 1P75F009C, 1P75F009D, 1P75F011A, 1P75F011B, 1P75F011C, & 1P75F011D

CM Testing Requirements: Perform disassembly and inspection at a frequency that may be extended to two valves in the group every 3 years.

Condition Monitoring Justification: 1P75F009C

Valves in Grouping: 1P75F009A, 1P75F009B, 1P75F009C, 1P75F009D, 1P75F011A, 1P75F011B, 1P75F011C, & 1P75F011D

CM Testing Requirements: Perform disassembly and inspection at a frequency that may be extended to two valves in the group every 3 years.

Condition Monitoring Justification: 1P75F009D

Valves in Grouping: 1P75F009A, 1P75F009B, 1P75F009C, 1P75F009D, 1P75F011A, 1P75F011B, 1P75F011C, & 1P75F011D

CM Testing Requirements: Perform disassembly and inspection at a frequency that may be extended to two valves in the group every 3 years.

Condition Monitoring Justification: 1P75F011A

Valves in Grouping: 1P75F009A, 1P75F009B, 1P75F009C, 1P75F009D, 1P75F011A, 1P75F011B, 1P75F011C, & 1P75F011D

CM Testing Requirements: Perform disassembly and inspection at a frequency that may be extended to two valves in the group every 3 years.

Condition Monitoring Justification: 1P75F011B

Valves in Grouping: 1P75F009A, 1P75F009B, 1P75F009C, 1P75F009D, 1P75F011A, 1P75F011B, 1P75F011C, & 1P75F011D

CM Testing Requirements: Perform disassembly and inspection at a frequency that may be extended to two valves in the group every 3 years.

Condition Monitoring Justification: 1P75F011C

Valves in Grouping: 1P75F009A, 1P75F009B, 1P75F009C, 1P75F009D, 1P75F011A, 1P75F011B, 1P75F011C, & 1P75F011D

CM Testing Requirements: Perform disassembly and inspection at a frequency that may be extended to two valves in the group every 3 years.

Condition Monitoring Justification: 1P75F011D

Valves in Grouping: 1P75F009A, 1P75F009B, 1P75F009C, 1P75F009D, 1P75F011A, 1P75F011B, 1P75F011C, & 1P75F011D

CM Testing Requirements: Perform disassembly and inspection at a frequency that may be extended to two valves in the group every 3 years.

CONDITION MONITORING JUSTIFICATIONS

NOTE: CEP-IST-1, GGNS Appendix, Enclosure 1 provides the data collected, and the Advisory Panel review, that supports the following testing requirements.

Condition Monitoring Justification: **1P75F079A**

Valves in Grouping: 1P75F079A, 1P75F079B, 1P75F079C, 1P75F079D, 1P75F079E, 1P75F079F, 1P75F079G, & 1P75F079H

CM Testing Requirements: Perform disassembly and inspection on two valves in the group at a frequency that may be extended every 3 years.

Condition Monitoring Justification: **1P75F079B**

Valves in Grouping: 1P75F079A, 1P75F079B, 1P75F079C, 1P75F079D, 1P75F079E, 1P75F079F, 1P75F079G, & 1P75F079H

CM Testing Requirements: Perform disassembly and inspection on two valves in the group at a frequency that may be extended every 3 years.

Condition Monitoring Justification: **1P75F079C**

Valves in Grouping: 1P75F079A, 1P75F079B, 1P75F079C, 1P75F079D, 1P75F079E, 1P75F079F, 1P75F079G, & 1P75F079H

CM Testing Requirements: Perform disassembly and inspection on two valves in the group at a frequency that may be extended every 3 years.

Condition Monitoring Justification: **1P75F079D**

Valves in Grouping: 1P75F079A, 1P75F079B, 1P75F079C, 1P75F079D, 1P75F079E, 1P75F079F, 1P75F079G, & 1P75F079H

CM Testing Requirements: Perform disassembly and inspection on two valves in the group at a frequency that may be extended every 3 years.

Condition Monitoring Justification: **1P75F079E**

Valves in Grouping: 1P75F079A, 1P75F079B, 1P75F079C, 1P75F079D, 1P75F079E, 1P75F079F, 1P75F079G, & 1P75F079H

CM Testing Requirements: Perform disassembly and inspection on two valves in the group at a frequency that may be extended every 3 years.

Condition Monitoring Justification: **1P75F079F**

Valves in Grouping: 1P75F079A, 1P75F079B, 1P75F079C, 1P75F079D, 1P75F079E, 1P75F079F, 1P75F079G, & 1P75F079H

CM Testing Requirements: Perform disassembly and inspection on two valves in the group at a frequency that may be extended every 3 years.

Condition Monitoring Justification: **1P75F079G**

Valves in Grouping: 1P75F079A, 1P75F079B, 1P75F079C, 1P75F079D, 1P75F079E, 1P75F079F, 1P75F079G, & 1P75F079H

CM Testing Requirements: Perform disassembly and inspection on two valves in the group at a frequency that may be extended every 3 years.

IST PLAN GGNS APPENDIX	PROGRAM SECTION NO.: CEP-IST-2 REVISION NO. 307 PAGE 34 OF 34
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CONDITION MONITORING JUSTIFICATIONS

NOTE: CEP-IST-1, GGNS Appendix, Enclosure 1 provides the data collected, and the Advisory Panel review, that supports the following testing requirements.

Condition Monitoring Justification: 1P75F079H

Valves in Grouping: 1P75F079A, 1P75F079B, 1P75F079C, 1P75F079D, 1P75F079E, 1P75F079F, 1P75F079G, & 1P75F079H

CM Testing Requirements: Perform disassembly and inspection on two valves in the group at a frequency that may be extended every 3 years.

Condition Monitoring Justification: 1P81F007

Valves in Grouping: 1P75F003A, 1P75F003B, & 1P81F007

CM Testing Requirements: Perform open flow testing and closed leak testing starting with baseline then at a frequency that may be extended to one valve every 1R.

Condition Monitoring Justification: 1P81F067A

Valves in Grouping: 1P81F067A, 1P81F067B, 1P81F068A & 1P81F068B

CM Testing Requirements: Perform disassembly and inspection on one valve in the group at a frequency of every 2R.

Condition Monitoring Justification: 1P81F067B

Valves in Grouping: 1P81F067A, 1P81F067B, 1P81F068A & 1P81F068B

CM Testing Requirements: Perform disassembly and inspection on one valve in the group at a frequency of every 2R.

Condition Monitoring Justification: 1P81F068A

Valves in Grouping: 1P81F067A, 1P81F067B, 1P81F068A & 1P81F068B

CM Testing Requirements: Perform disassembly and inspection on one valve in the group at a frequency of every 2R.

Condition Monitoring Justification: 1P81F068B

Valves in Grouping: 1P81F067A, 1P81F067B, 1P81F068A & 1P81F068B

CM Testing Requirements: Perform disassembly and inspection on one valve in the group at a frequency of every 2R.

IST PLAN
GGNS APPENDIX
VALVE SUMMARY LISTING

PROGRAM SECTION NO. CEP-IST-2
REVISION NO. 307
PAGE 1 OF 83

SYSTEM: B21 - Nuclear Boiler System

VALVE NO.	VALVE SIZE (in.) TYPE ACT.	P & ID NO., COORD.	IST PASS	IST CODE CLASS	CODE CAT.	SAFETY POS.	REQUIRED TESTS AND FREQUENCY										RELIEF REQUEST (VRR)	OTHER (CSJ/ROJ/ CMJ/VPS)	NOTES:
							FS	PS	LT	LJ	ST	FT	PI	RV	EX	CM			
B21F010A	24	M-1077A B 7		1	C, A	O										V		CMJ	
	C SA					C				J						V			
B21F010B	24	M-1077D C 7		1	C, A	O										V		CMJ	
	C SA					C				J						V			
B21F016	3	M-1077A D 5		1	A													CSJ-007	
	G M					C	C			J	C		2Y						
B21F019	3	M-1077A D 4		1	A													CSJ-007	
	G M					C	C			J	C		2Y						
B21F022A	28	M-1077A G 6		1	A													CSJ-001	
	GL A					C	C	Q		J	C	C	2Y						
B21F022B	28	M-1077A B 6		1	A													CSJ-001	
	GL A					C	C	Q		J	C	C	2Y						
B21F022C	28	M-1077D F 5		1	A													CSJ-001	
	GL A					C	C	Q		J	C	C	2Y						
B21F022D	28	M-1077D B 5		1	A													CSJ-001	
	GL A					C	C	Q		J	C	C	2Y						
B21F024A	1	M-1077A H 6		3	C											V		CMJ	
	C SA					C										V			
B21F024B	1	M-1077A D 5		3	C											V		CMJ	
	C SA					C										V			
B21F024C	1	M-1077D H 5		3	C											V		CMJ	
	C SA					C										V			
B21F024D	1	M-1077D D 5		3	C											V		CMJ	
	C SA					C										V			
B21F025A	3/4	M-1077A G 3	P	2	A														
	GL H					C				J									
B21F025B	3/4	M-1077A A 3	P	2	A														
	GL H					C				J									
B21F025C	3/4	M-1077D E 4	P	2	A														
	GL H					C				J									
B21F025D	3/4	M-1077D B 4	P	2	A														
	GL H					C				J									

IST PLAN
GGNS APPENDIX
VALVE SUMMARY LISTING

PROGRAM SECTION NO. CEP-IST-2
REVISION NO. 307
PAGE 2 OF 83

SYSTEM: B21 - Nuclear Boiler System

VALVE NO.	VALVE SIZE (in.) TYPE ACT.	P & ID NO., COORD.	IST PASS	IST CODE CLASS	CODE CAT.	SAFETY POS.	REQUIRED TESTS AND FREQUENCY										RELIEF REQUEST (VRR)	OTHER (CSJ/ROJ/ CMJ/VPS)	NOTES:
							FS	PS	LT	LJ	ST	FT	PI	RV	EX	CM			
B21F028A	28	M-1077A G 4		1	A	C												CSJ-001	
	GL A						C	C	Q	J	C	C	2Y						
B21F028B	28	M-1077A B 4		1	A	C												CSJ-001	
	GL A						C	C	Q	J	C	C	2Y						
B21F028C	28	M-1077D F 4		1	A	C												CSJ-001	
	GL A						C	C	Q	J	C	C	2Y						
B21F028D	28	M-1077D B 4		1	A	C												CSJ-001	
	GL A						C	C	Q	J	C	C	2Y						
B21F029A	1	M-1077A H 4		2	C	C										V		CMJ	
	C SA															V			
B21F029B	1	M-1077A C 3		2	C	C										V		CMJ	
	C SA															V			
B21F029C	1	M-1077D H 4		2	C	C										V		CMJ	
	C SA															V			
B21F029D	1	M-1077D D 3		2	C	C										V		CMJ	
	C SA															V			
B21F030A	3/4	M-1077A D 8	P	2	A	C				J									
	GL H																		
B21F030B	3/4	M-1077D F 8	P	2	A	C				J									
	GL H																		
B21F032A	24	M-1077A C 8		1	C, A	O										V		CMJ	
	C A/SA									J						V			
B21F032B	24	M-1077D D 8		1	C, A	O										V		CMJ	
	C A/SA									J						V			
B21F036A	1	M-1077C B 5		3	C, A	O										V		CMJ	
	C SA								2Y							V			
B21F036B	1	M-1077C B 3		3	C, A	O										V		CMJ	
	C SA								2Y							V			
B21F036C	1	M-1077C B 6		3	C, A	O										V		CMJ	
	C SA								2Y							V			
B21F036D	1	M-1077C E 2		3	C, A	O										V		CMJ	
	C SA								2Y							V			

IST PLAN
GGNS APPENDIX
VALVE SUMMARY LISTING

PROGRAM SECTION NO. CEP-IST-2
REVISION NO. 307
PAGE 3 OF 83

SYSTEM: B21 - Nuclear Boiler System

VALVE NO.	VALVE SIZE (in.) TYPE ACT.	P & ID NO. , COORD.	IST PASS	IST CODE CLASS	CODE CAT.	SAFETY POS.	REQUIRED TESTS AND FREQUENCY										RELIEF REQUEST (VRR)	OTHER (CSJ/ROJ/ CMJ/VPS)	NOTES:
							FS	PS	LT	LJ	ST	FT	PI	RV	EX	CM			
B21F036E	1	M-1077C B 7		3	C, A	O										V		CMJ	
	C SA					C			2Y							V			
B21F036F	1	M-1077C E 5		3	C, A	O										V		CMJ	
	C SA					C			2Y							V			
B21F036G	1	M-1077C B 6		3	C, A	O										V		CMJ	
	C SA					C			2Y							V			
B21F036H	1	M-1077C E 3		3	C, A	O										V		CMJ	
	C SA					C			2Y							V			
B21F036J	1	M-1077C G 3		3	C, A	O										V		CMJ	
	C SA					C			2Y							V			
B21F036K	1	M-1077C B 8		3	C, A	O										V		CMJ	
	C SA					C			2Y							V			
B21F036L	1	M-1077C B 4		3	C, A	O										V		CMJ	
	C SA					C			2Y							V			
B21F036M	1	M-1077C B 7		3	C, A	O										V		CMJ	
	C SA					C			2Y							V			
B21F036N	1	M-1077C B 5		3	C, A	O										V		CMJ	
	C SA					C			2Y							V			
B21F036P	1	M-1077C G 5		3	C, A	O										V		CMJ	
	C SA					C			2Y							V			
B21F036R	1	M-1077C G 4		3	C, A	O										V		CMJ	
	C SA					C			2Y							V			
B21F036S	1	M-1077C E 7		3	C, A	O										V		CMJ	
	C SA					C			2Y							V			
B21F036T	1	M-1077C G 7		3	C, A	O										V		CMJ	
	C SA					C			2Y							V			
B21F036U	1	M-1077C G 1		3	C, A	O										V		CMJ	
	C SA					C			2Y							V			
B21F036V	1	M-1077C B 3		3	C, A	O										V		CMJ	
	C SA					C			2Y							V			
B21F036W	1	M-1077C B 4		3	C, A	O										V		CMJ	
	C SA					C			2Y							V			

IST PLAN
GGNS APPENDIX
VALVE SUMMARY LISTING

PROGRAM SECTION NO. CEP-IST-2
REVISION NO. 307
PAGE 4 OF 83

SYSTEM: B21 - Nuclear Boiler System

VALVE NO.	VALVE SIZE (in.) TYPE ACT.	P & ID NO., COORD.	IST PASS	IST CODE CLASS	CODE CAT.	SAFETY POS.	REQUIRED TESTS AND FREQUENCY										RELIEF REQUEST (VRR)	OTHER (CSJ/ROJ/ CMJ/VPS)	NOTES:
							FS	PS	LT	LJ	ST	FT	PI	RV	EX	CM			
B21F037A	10	M-1077E		3	C	O										V		CMJ	
	C SA	F 6				C										V			
B21F037B	10	M-1077E		A	C	O										V		CMJ	
	C SA	C 5				C										V			
B21F037C	10	M-1077E		A	C	O										V		CMJ	
	C SA	C 5				C										V			
B21F037D	10	M-1077E		3	C	O										V		CMJ	
	C SA	F 6				C										V			
B21F037E	10	M-1077E		A	C	O										V		CMJ	
	C SA	C 5				C										V			
B21F037F	10	M-1077E		3	C	O										V		CMJ	
	C SA	F 6				C										V			
B21F037G	10	M-1077E		A	C	O										V		CMJ	
	C SA	C 5				C										V			
B21F037H	10	M-1077E		3	C	O										V		CMJ	
	C SA	F 6				C										V			
B21F037J	10	M-1077E		A	C	O										V		CMJ	
	C SA	C 5				C										V			
B21F037K	10	M-1077E		A	C	O										V		CMJ	
	C SA	C 5				C										V			
B21F037L	10	M-1077E		3	C	O										V		CMJ	
	C SA	F 6				C										V			
B21F037M	10	M-1077E		A	C	O										V		CMJ	
	C SA	C 5				C										V			
B21F037N	10	M-1077E		3	C	O										V		CMJ	
	C SA	F 6				C										V			
B21F037P	10	M-1077E		A	C	O										V		CMJ	
	C SA	C 5				C										V			
B21F037R	10	M-1077E		3	C	O										V		CMJ	
	C SA	F 6				C										V			
B21F037S	10	M-1077E		A	C	O										V		CMJ	
	C SA	C 5				C										V			

IST PLAN
GGNS APPENDIX
VALVE SUMMARY LISTING

PROGRAM SECTION NO. CEP-IST-2
REVISION NO. 307
PAGE 5 OF 83

SYSTEM: B21 - Nuclear Boiler System

VALVE NO.	VALVE SIZE (in.)		P & ID NO., COORD.	IST PASS	IST CODE CLASS	CODE CAT.	SAFETY POS.	REQUIRED TESTS AND FREQUENCY										RELIEF REQUEST (VRR)	OTHER (CSJ/ROJ/CMJ/VPS)	NOTES:
	TYPE	ACT.						FS	PS	LT	LJ	ST	FT	PI	RV	EX	CM			
B21F037T	10		M-1077E		A	C	O										V		CMJ	
	C	SA	C 5				C										V			
B21F037U	10		M-1077E		3	C	O										V		CMJ	
	C	SA	F 6				C										V			
B21F037V	10		M-1077E		A	C	O										V		CMJ	
	C	SA	C 5				C										V			
B21F037W	10		M-1077E		A	C	O										V		CMJ	
	C	SA	C 5				C										V			
B21F041A	8		M-1077E		1	C, B	O	5Y				5Y			5Y					
	RV	A/SA	D 6				C	5Y				5Y			5Y					
B21F041B	8		M-1077E		1	C, B	O	5Y				5Y			5Y					
	RV	A/SA	D 6				C	5Y				5Y			5Y					
B21F041C	8		M-1077E		1	C, B	O	5Y				5Y			5Y					
	RV	A/SA	D 6				C	5Y				5Y			5Y					
B21F041D	8		M-1077E		1	C, B	O	5Y				5Y			5Y					
	RV	A/SA	G 6				C	5Y				5Y			5Y					
B21F041E	8		M-1077E		1	C, B	O	5Y				5Y			5Y					
	RV	A/SA	D 6				C	5Y				5Y			5Y					
B21F041F	8		M-1077E		1	C, B	O	5Y				5Y			5Y					
	RV	A/SA	G 6				C	5Y				5Y			5Y					
B21F041G	8		M-1077E		1	C, B	O	5Y				5Y			5Y					
	RV	A/SA	D 6				C	5Y				5Y			5Y					
B21F041K	8		M-1077E		1	C, B	O	5Y				5Y			5Y					
	RV	A/SA	G 6				C	5Y				5Y			5Y					
B21F047A	8		M-1077E		1	C, B	O	5Y				5Y			5Y					
	RV	A/SA	G 6				C	5Y				5Y			5Y					
B21F047C	8		M-1077E		1	C, B	O	5Y				5Y			5Y					
	RV	A/SA	D 6				C	5Y				5Y			5Y					
B21F047D	8		M-1077E		1	C, B	O	5Y				5Y			5Y					
	RV	A/SA	D 6				C	5Y				5Y			5Y					
B21F047G	8		M-1077E		1	C, B	O	5Y				5Y			5Y					
	RV	A/SA	D 6				C	5Y				5Y			5Y					

IST PLAN
GGNS APPENDIX
VALVE SUMMARY LISTING

PROGRAM SECTION NO. CEP-IST-2
REVISION NO. 307
PAGE 6 OF 83

SYSTEM: B21 - Nuclear Boiler System

VALVE NO.	VALVE SIZE (in.) TYPE ACT.	P & ID NO., COORD.	IST PASS	IST CODE CLASS	CODE CAT.	SAFETY POS.	REQUIRED TESTS AND FREQUENCY										RELIEF REQUEST (VRR)	OTHER (CSJ/ROJ/ CMJ/VPS)	NOTES:
							FS	PS	LT	LJ	ST	FT	PI	RV	EX	CM			
B21F047H	8	M-1077E D 6		1	C, B	O	5Y				5Y			5Y					
	RV A/SA					C	5Y				5Y			5Y					
B21F047L	8	M-1077E G 6		1	C, B	O	5Y				5Y			5Y					
	RV A/SA					C	5Y				5Y			5Y					
B21F051A	8	M-1077E G 6		1	C, B	O	5Y				5Y			5Y					
	RV A/SA					C	5Y				5Y			5Y					
B21F051B	8	M-1077E G 6		1	C, B	O	5Y				5Y			5Y					
	RV A/SA					C	5Y				5Y			5Y					
B21F051C	8	M-1077E G 6		1	C, B	O	5Y				5Y			5Y					
	RV A/SA					C	5Y				5Y			5Y					
B21F051D	8	M-1077E D 6		1	C, B	O	5Y				5Y			5Y					
	RV A/SA					C	5Y				5Y			5Y					
B21F051F	8	M-1077E D 6		1	C, B	O	5Y				5Y			5Y					
	RV A/SA					C	5Y				5Y			5Y					
B21F051K	8	M-1077E D 6		1	C, B	O	5Y				5Y			5Y					
	RV A/SA					C	5Y				5Y			5Y					
B21F063A	3/4	M-1077A C 7	P	2	A														
	GL H					C				J									
B21F063B	3/4	M-1077D D 7	P	2	A														
	GL H					C				J									
B21F065A	24	M-1077A E 8		2	A													CSJ-002	
	G M					C	C			J	C		2Y						
B21F065B	24	M-1077D F 8		2	A													CSJ-002	
	G M					C	C			J	C		2Y						
B21F067A	1 1/2	M-1077A F 3		1	A													CSJ-006	
	GL M					C	C			J	C		2Y						
B21F067B	1 1/2	M-1077A A 2		1	A													CSJ-006	
	GL M					C	C			J	C		2Y						
B21F067C	1 1/2	M-1077D E 3		1	A													CSJ-006	
	GL M					C	C			J	C		2Y						
B21F067D	1 1/2	M-1077D A 2		1	A													CSJ-006	
	GL M					C	C			J	C		2Y						

**IST PLAN
GGNS APPENDIX
VALVE SUMMARY LISTING**

**PROGRAM SECTION NO. CEP-IST-2
REVISION NO. 307
PAGE 7 OF 83**

SYSTEM: B21 - Nuclear Boiler System

VALVE NO.	VALVE SIZE (in.) TYPE ACT.	P & ID NO., COORD.	IST PASS	IST CODE CLASS	CODE CAT.	SAFETY POS.	REQUIRED TESTS AND FREQUENCY										RELIEF REQUEST (VRR)	OTHER (CSJ/ROJ/ CMJ/VPS)	NOTES:
							FS	PS	LT	LJ	ST	FT	PI	RV	EX	CM			
B21F078A	10	M-1077E F 5		3	C	O										V		CMJ	
	C SA					C										V			
B21F078B	10	M-1077E B 6		A	C	O										V		CMJ	
	C SA					C										V			
B21F078C	10	M-1077E B 6		A	C	O										V		CMJ	
	C SA					C										V			
B21F078D	10	M-1077E F 5		3	C	O										V		CMJ	
	C SA					C										V			
B21F078E	10	M-1077E B 6		A	C	O										V		CMJ	
	C SA					C										V			
B21F078F	10	M-1077E F 5		3	C	O										V		CMJ	
	C SA					C										V			
B21F078G	10	M-1077E B 6		A	C	O										V		CMJ	
	C SA					C										V			
B21F078H	10	M-1077E F 5		3	C	O										V		CMJ	
	C SA					C										V			
B21F078J	10	M-1077E B 6		A	C	O										V		CMJ	
	C SA					C										V			
B21F078K	10	M-1077E B 6		A	C	O										V		CMJ	
	C SA					C										V			
B21F078L	10	M-1077E F 5		3	C	O										V		CMJ	
	C SA					C										V			
B21F078M	10	M-1077E B 6		A	C	O										V		CMJ	
	C SA					C										V			
B21F078N	10	M-1077E F 5		3	C	O										V		CMJ	
	C SA					C										V			
B21F078P	10	M-1077E B 6		A	C	O										V		CMJ	
	C SA					C										V			
B21F078R	10	M-1077E F 5		3	C	O										V		CMJ	
	C SA					C										V			
B21F078S	10	M-1077E B 6		A	C	O										V		CMJ	
	C SA					C										V			

IST PLAN
GGNS APPENDIX
VALVE SUMMARY LISTING

PROGRAM SECTION NO. CEP-IST-2
REVISION NO. 307
PAGE 8 OF 83

SYSTEM: B21 - Nuclear Boiler System

VALVE NO.	VALVE SIZE (in.) TYPE ACT.		P & ID NO., COORD.	IST PASS	IST CODE CLASS	CODE CAT.	SAFETY POS.	REQUIRED TESTS AND FREQUENCY									RELIEF REQUEST (VRR)	OTHER (CSJ/ROJ/CMJ/VPS)	NOTES:
								FS	PS	LT	LJ	ST	FT	PI	RV	EX	CM		
B21F078T	10		M-1077E		A	C	O										V	CMJ	
	C	SA	B 6				C										V		
B21F078U	10		M-1077E		3	C	O										V	CMJ	
	C	SA	F 5				C										V		
B21F078V	10		M-1077E		A	C	O										V	CMJ	
	C	SA	B 6				C										V		
B21F078W	10		M-1077E		A	C	O										V	CMJ	
	C	SA	B 6				C										V		
B21F098A	28		M-1077A		2	B												CSJ-003	
	G	M	G 2				C	C				C		2Y					
B21F098B	28		M-1077A		2	B												CSJ-003	
	G	M	B 2				C	C				C		2Y					
B21F098C	28		M-1077D		2	B												CSJ-003	
	G	M	F 2				C	C				C		2Y					
B21F098D	28		M-1077D		2	B												CSJ-003	
	G	M	B 2				C	C				C		2Y					
B21F100A	3		M-1077E		3	C	O										V	CMJ	
	C	SA	C 6				C										V		
B21F100B	3		M-1077E		3	C	O										V	CMJ	
	C	SA	C 6				C										V		
B21F100C	3		M-1077E		3	C	O										V	CMJ	
	C	SA	C 6				C										V		
B21F100D	2 1/2		M-1077E		3	C	O										V	CMJ	
	C	SA	F 6				C										V		
B21F100E	2 1/2		M-1077E		3	C	O										V	CMJ	
	C	SA	C 6				C										V		
B21F100F	2 1/2		M-1077E		3	C	O										V	CMJ	
	C	SA	F 6				C										V		
B21F100G	2 1/2		M-1077E		3	C	O										V	CMJ	
	C	SA	C 6				C										V		
B21F100H	2 1/2		M-1077E		3	C	O										V	CMJ	
	C	SA	F 6				C										V		

IST PLAN
GGNS APPENDIX
VALVE SUMMARY LISTING

PROGRAM SECTION NO. CEP-IST-2
REVISION NO. 307
PAGE 9 OF 83

SYSTEM: B21 - Nuclear Boiler System

VALVE NO.	VALVE SIZE (in.) TYPE ACT.	P & ID NO., COORD.	IST PASS	IST CODE CLASS	CODE CAT.	SAFETY POS.	REQUIRED TESTS AND FREQUENCY										RELIEF REQUEST (VRR)	OTHER (CSJ/ROJ/ CMJ/VPS)	NOTES:
							FS	PS	LT	LJ	ST	FT	PI	RV	EX	CM			
B21F100J	2 1/2	M-1077E		3	C	O										V		CMJ	
	C SA	F 6				C										V			
B21F100K	2 1/2	M-1077E		3	C	O										V		CMJ	
	C SA	C 6				C										V			
B21F100L	2 1/2	M-1077E		3	C	O										V		CMJ	
	C SA	C 6				C										V			
B21F100M	2 1/2	M-1077E		3	C	O										V		CMJ	
	C SA	C 6				C										V			
B21F100N	2 1/2	M-1077E		3	C	O										V		CMJ	
	C SA	C 6				C										V			
B21F100P	2 1/2	M-1077E		3	C	O										V		CMJ	
	C SA	F 6				C										V			
B21F100R	2 1/2	M-1077E		3	C	O										V		CMJ	
	C SA	F 6				C										V			
B21F100S	2 1/2	M-1077E		3	C	O										V		CMJ	
	C SA	F 6				C										V			
B21F100T	2 1/2	M-1077E		3	C	O										V		CMJ	
	C SA	F 6				C										V			
B21F100U	2 1/2	M-1077E		3	C	O										V		CMJ	
	C SA	C 6				C										V			
B21F100V	2 1/2	M-1077E		3	C	O										V		CMJ	
	C SA	C 6				C										V			
B21F100W	2 1/2	M-1077E		3	C	O										V		CMJ	
	C SA	C 6				C										V			
B21F113	4	M-1077A		A	B													VPS-004	
	G A	E 1				C	C				C	C	2Y						
B21F114	4	M-1077A		A	B													VPS-004	
	G A	F 1				C	C				C	C	2Y						
B21F125A	1	M-1077C		3	C, A	O								10Y					
	RV SA	D 2				C			2Y					10Y					
B21F125B	1	M-1077C		3	C, A	O								10Y					
	RV SA	D 5				C			2Y					10Y					

**IST PLAN
GGNS APPENDIX
VALVE SUMMARY LISTING**

**PROGRAM SECTION NO. CEP-IST-2
REVISION NO. 307
PAGE 10 OF 83**

SYSTEM: B21 - Nuclear Boiler System

VALVE NO.	VALVE SIZE (in.) TYPE ACT.	P & ID NO., COORD.	IST PASS	IST CODE CLASS	CODE CAT.	SAFETY POS.	REQUIRED TESTS AND FREQUENCY										RELIEF REQUEST (VRR)	OTHER (CSJ/ROJ/ CMJ/VPS)	NOTES:
							FS	PS	LT	LJ	ST	FT	PI	RV	EX	CM			
B21F125C	1	M-1077C D 3		3	C, A	O								10Y					
	RV SA					C			2Y					10Y					
B21F125D	1	M-1077C G 3		3	C, A	O								10Y					
	RV SA					C			2Y					10Y					
B21F125E	1	M-1077C G 5		3	C, A	O								10Y					
	RV SA					C			2Y					10Y					
B21F125F	1	M-1077C G 4		3	C, A	O								10Y					
	RV SA					C			2Y					10Y					
B21F125G	1	M-1077C E 7		3	C, A	O								10Y					
	RV SA					C			2Y					10Y					
B21F125H	1	M-1077C G 7		3	C, A	O								10Y					
	RV SA					C			2Y					10Y					
B21F125J	1	M-1077C G 1		3	C, A	O								10Y					
	RV SA					C			2Y					10Y					
B21F130A	2	M-1077C G 8		3	C, A	O										V		CMJ	
	C SA					C			2Y							V			
B21F130B	2	M-1077C E 8		3	C, A	O										V		CMJ	
	C SA					C			2Y							V			
B21F147A	3/4	M-1077A E 2		3	B	O	C				C		2Y					CSJ-004	
	GL M																		
B21F147B	3/4	M-1077A E 2		3	B	O	C				C		2Y					CSJ-004	
	GL M																		
B21F152A	3/8	M-1077B H 2		2	C, A											V		CMJ	
	C SA					C			2Y							V			
B21F152B	3/8	M-1077B H 6		2	C, A											V		CMJ	
	C SA					C			2Y							V			
B21F152C	3/8	M-1077B G 2		2	C, A											V		CMJ	
	C SA					C			2Y							V			
B21F152D	3/8	M-1077B F 6		2	C, A											V		CMJ	
	C SA					C			2Y							V			
B21F154A	3/8	M-1077B H 2		2	C, A											V		CMJ	
	C SA					C			2Y							V			

IST PLAN
GGNS APPENDIX
VALVE SUMMARY LISTING

PROGRAM SECTION NO. CEP-IST-2
REVISION NO. 307
PAGE 11 OF 83

SYSTEM: B21 - Nuclear Boiler System

VALVE NO.	VALVE SIZE (in.) TYPE ACT.		P & ID NO., COORD.	IST PASS	IST CODE CLASS	CODE CAT.	SAFETY POS.	REQUIRED TESTS AND FREQUENCY									RELIEF REQUEST (VRR)	OTHER (CSJ/ROJ/CMJ/VPS)	NOTES:
								FS	PS	LT	LJ	ST	FT	PI	RV	EX	CM		
B21F154B	3/8		M-1077B H 6		2	C, A											V	CMJ	
	C	SA					C			2Y							V		
B21F154C	3/8		M-1077B G 3		2	C, A											V	CMJ	
	C	SA					C			2Y							V		
B21F154D	3/8		M-1077B F 6		2	C, A											V	CMJ	
	C	SA					C			2Y							V		
B21F501AA			Later		A	B												VPS-002	
	T	S					C	C				C	C						
B21F501AB			Later		A	B												VPS-002	
	T	S					C	C				C	C						
B21F501BA			Later		A	B												VPS-002	
	T	S					C	C				C	C						
B21F501BB			Later		A	B												VPS-002	
	T	S					C	C				C	C						
B21F501CA			Later		A	B												VPS-002	
	T	S					C	C				C	C						
B21F501CB			Later		A	B												VPS-002	
	T	S					C	C				C	C						
B21F501DA			Later		A	B												VPS-002	
	T	S					C	C				C	C						
B21F501DB			Later		A	B												VPS-002	
	T	S					C	C				C	C						
B21F502AA			Later		A	B												VPS-002	
	T	S					C	C				C	C						
B21F502AB			Later		A	B												VPS-002	
	T	S					C	C				C	C						
B21F502BA			Later		A	B												VPS-002	
	T	S					C	C				C	C						
B21F502BB			Later		A	B												VPS-002	
	T	S					C	C				C	C						
B21F502CA			Later		A	B												VPS-002	
	T	S					C	C				C	C						

**IST PLAN
GGNS APPENDIX
VALVE SUMMARY LISTING**

**PROGRAM SECTION NO. CEP-IST-2
REVISION NO. 307
PAGE 12 OF 83**

SYSTEM: B21 - Nuclear Boiler System

VALVE NO.	VALVE SIZE (in.) TYPE ACT.	P & ID NO., COORD.	IST PASS	IST CODE CLASS	CODE CAT.	SAFETY POS.	REQUIRED TESTS AND FREQUENCY										RELIEF REQUEST (VRR)	OTHER (CSJ/ROJ/ CMJ/VPS)	NOTES:
							FS	PS	LT	LJ	ST	FT	PI	RV	EX	CM			
B21F502CB		Later		A	B													VPS-002	
	T S					C	C				C	C							
B21F502DA		Later		A	B													VPS-002	
	T S					C	C				C	C							
B21F502DB		Later		A	B													VPS-002	
	T S					C	C				C	C							
B21F505A		M-1077E C 7		A	B	O	5Y				5Y							VPS-003	
	T S					C	5Y				5Y	5Y							
B21F505B		M-1077E C 7		A	B	O	5Y				5Y							VPS-003	
	T S					C	5Y				5Y	5Y							
B21F505C		M-1077E C 7		A	B	O	5Y				5Y							VPS-003	
	T S					C	5Y				5Y	5Y							
B21F505D		M-1077E F 8		A	B	O	5Y				5Y							VPS-003	
	T S					C	5Y				5Y	5Y							
B21F505E		M-1077E C 7		A	B	O	5Y				5Y							VPS-003	
	T S					C	5Y				5Y	5Y							
B21F505F		M-1077E F 8		A	B	O	5Y				5Y							VPS-003	
	T S					C	5Y				5Y	5Y							
B21F505G		M-1077E C 7		A	B	O	5Y				5Y							VPS-003	
	T S					C	5Y				5Y	5Y							
B21F505H		M-1077E F 8		A	B	O	5Y				5Y							VPS-003	
	T S					C	5Y				5Y	5Y							
B21F505J		M-1077E F 8		A	B	O	5Y				5Y							VPS-003	
	T S					C	5Y				5Y	5Y							
B21F505K		M-1077E C 7		A	B	O	5Y				5Y							VPS-003	
	T S					C	5Y				5Y	5Y							
B21F505L		M-1077E C 7		A	B	O	5Y				5Y							VPS-003	
	T S					C	5Y				5Y	5Y							
B21F505M		M-1077E C 7		A	B	O	5Y				5Y							VPS-003	
	T S					C	5Y				5Y	5Y							
B21F505N		M-1077E C 7		A	B	O	5Y				5Y							VPS-003	
	T S					C	5Y				5Y	5Y							

IST PLAN
GGNS APPENDIX
VALVE SUMMARY LISTING

PROGRAM SECTION NO. CEP-IST-2
REVISION NO. 307
PAGE 13 OF 83

SYSTEM: B21 - Nuclear Boiler System

VALVE NO.	VALVE SIZE (in.) TYPE ACT.		P & ID NO., COORD.	IST PASS	IST CODE CLASS	CODE CAT.	SAFETY POS.	REQUIRED TESTS AND FREQUENCY									RELIEF REQUEST (VRR)	OTHER (CSJ/ROJ/CMJ/VPS)	NOTES:
								FS	PS	LT	LJ	ST	FT	PI	RV	EX	CM		
B21F505P			M-1077E		A	B	O	5Y				5Y						VPS-003	
	T	S	F 8				C	5Y				5Y	5Y						
B21F505R			M-1077E		A	B	O	5Y				5Y						VPS-003	
	T	S	F 8				C	5Y				5Y	5Y						
B21F505S			M-1077E		A	B	O	5Y				5Y						VPS-003	
	T	S	F 8				C	5Y				5Y	5Y						
B21F505T			M-1077E		A	B	O	5Y				5Y						VPS-003	
	T	S	F 8				C	5Y				5Y	5Y						
B21F505U			M-1077E		A	B	O	5Y				5Y						VPS-003	
	T	S	C 7				C	5Y				5Y	5Y						
B21F505V			M-1077E		A	B	O	5Y				5Y						VPS-003	
	T	S	C 7				C	5Y				5Y	5Y						
B21F505W			M-1077E		A	B	O	5Y				5Y						VPS-003	
	T	S	C 7				C	5Y				5Y	5Y						
B21F506A			M-1077E		A	B	O	5Y				5Y						VPS-003	
	T	S	C 8				C	5Y				5Y	5Y						
B21F506B			M-1077E		A	B	O	5Y				5Y						VPS-003	
	T	S	C 8				C	5Y				5Y	5Y						
B21F506C			M-1077E		A	B	O	5Y				5Y						VPS-003	
	T	S	C 8				C	5Y				5Y	5Y						
B21F506D			M-1077E		A	B	O	5Y				5Y						VPS-003	
	T	S	G 7				C	5Y				5Y	5Y						
B21F506E			M-1077E		A	B	O	5Y				5Y						VPS-003	
	T	S	C 8				C	5Y				5Y	5Y						
B21F506F			M-1077E		A	B	O	5Y				5Y						VPS-003	
	T	S	G 7				C	5Y				5Y	5Y						
B21F506G			M-1077E		A	B	O	5Y				5Y						VPS-003	
	T	S	C 8				C	5Y				5Y	5Y						
B21F506H			M-1077E		A	B	O	5Y				5Y						VPS-003	
	T	S	G 7				C	5Y				5Y	5Y						
B21F506J			M-1077E		A	B	O	5Y				5Y						VPS-003	
	T	S	G 7				C	5Y				5Y	5Y						

IST PLAN GGNS APPENDIX VALVE SUMMARY LISTING

PROGRAM SECTION NO. CEP-IST-2
REVISION NO. 307
PAGE 14 OF 83

SYSTEM: B21 - Nuclear Boiler System

VALVE NO.	VALVE SIZE (in.) TYPE ACT.		P & ID NO., COORD.	IST PASS	IST CODE CLASS	CODE CAT.	SAFETY POS.	REQUIRED TESTS AND FREQUENCY									RELIEF REQUEST (VRR)	OTHER (CSJ/ROJ/ CMJ/VPS)	NOTES:	
	FS	PS						LT	LJ	ST	FT	PI	RV	EX	CM					
B21F506K			M-1077E		A	B	O	5Y				5Y							VPS-003	
	T	S	C 8				C	5Y				5Y	5Y							
B21F506L			M-1077E		A	B	O	5Y				5Y							VPS-003	
	T	S	C 8				C	5Y				5Y	5Y							
B21F506M			M-1077E		A	B	O	5Y				5Y							VPS-003	
	T	S	C 8				C	5Y				5Y	5Y							
B21F506N			M-1077E		A	B	O	5Y				5Y							VPS-003	
	T	S	C 8				C	5Y				5Y	5Y							
B21F506P			M-1077E		A	B	O	5Y				5Y							VPS-003	
	T	S	G 7				C	5Y				5Y	5Y							
B21F506R			M-1077E		A	B	O	5Y				5Y							VPS-003	
	T	S	G 7				C	5Y				5Y	5Y							
B21F506S			M-1077E		A	B	O	5Y				5Y							VPS-003	
	T	S	G 7				C	5Y				5Y	5Y							
B21F506T			M-1077E		A	B	O	5Y				5Y							VPS-003	
	T	S	G 7				C	5Y				5Y	5Y							
B21F506U			M-1077E		A	B	O	5Y				5Y							VPS-003	
	T	S	C 8				C	5Y				5Y	5Y							
B21F506V			M-1077E		A	B	O	5Y				5Y							VPS-003	
	T	S	C 8				C	5Y				5Y	5Y							
B21F506W			M-1077E		A	B	O	5Y				5Y							VPS-003	
	T	S	C 8				C	5Y				5Y	5Y							
B21F803	24		M-1077D		2	C											V	CMJ		
	C	SA	F 8				C										V			

IST PLAN
GGNS APPENDIX
VALVE SUMMARY LISTING

PROGRAM SECTION NO. CEP-IST-2
REVISION NO. 307
PAGE 15 OF 83

SYSTEM: B33 - Reactor Recirculation System

VALVE NO.	VALVE SIZE (in.) TYPE ACT.	P & ID NO., COORD.	IST PASS	IST CODE CLASS	CODE CAT.	SAFETY POS.	REQUIRED TESTS AND FREQUENCY										RELIEF REQUEST (VRR)	OTHER (CSJ/ROJ/ CMJ/VPS)	NOTES:
							FS	PS	LT	LJ	ST	FT	PI	RV	EX	CM			
B33F013A	3/4	M-1078A D 6		2	C	O										V		CMJ	
	SC H/SA					C										V			
B33F013B	3/4	M-1078E D 4		2	C	O										V		CMJ	
	SC H/SA					C										V			
B33F017A	3/4	M-1078A D 7		2	C											V		CMJ	
	SC H/SA					C										V			
B33F017B	3/4	M-1078E D 3		2	C											V		CMJ	
	SC H/SA					C										V			
B33F019	3/4	M-1078A G 5		2	B														
	GL M					C	Q				Q		2Y						
B33F020	3/4	M-1078A G 7		2	B														
	GL M					C	Q				Q		2Y						
B33F125	3/4	M-1078B D 7		2	A														
	GL M					C	Q			J	Q		2Y						
B33F126	3/4	M-1078B D 7		2	A														
	GL M					C	Q			J	Q		2Y						
B33F127	3/4	M-1078A H 7		2	A														
	GL M					C	Q			J	Q		2Y						
B33F128	3/4	M-1078A H 7		2	A														
	GL M					C	Q			J	Q		2Y						
B33F259	1/2	M-1078A H7		2	C	O													Replace every 10-years
	RV SA					C													
B33F260	1/2	M-1078A H7		2	C	O													Replace every 10-years
	RV SA					C													

IST PLAN
GGNS APPENDIX
VALVE SUMMARY LISTING

PROGRAM SECTION NO. CEP-IST-2
REVISION NO. 307
PAGE 16 OF 83

SYSTEM: C11 - Control Rod Drive Hydraulic System

VALVE NO.	VALVE SIZE (in.) TYPE ACT.	P & ID NO., COORD.	IST PASS	IST CODE CLASS	CODE CAT.	SAFETY POS.	REQUIRED TESTS AND FREQUENCY										RELIEF REQUEST (VRR)	OTHER (CSJ/ROJ/ CMJ/VPS)	NOTES:
							FS	PS	LT	LJ	ST	FT	PI	RV	EX	CM			
C11-126	1/2	M-1081B		A	B	O	R				R	R						VPS-005	Note 6
	GL A	G 5																	
C11-127	3/4	M-1081B		A	B	O	R				R	R						VPS-005	Note 6
	GL A	G 3																	
C11F010	1	M-1081A		2	B														
	GL A	H 4				C	Q				Q	Q	2Y						
C11F011	2	M-1081A		2	B														
	GL A	E 6				C	Q				Q	Q	2Y						
C11F025A	3/4	M-1081B		A	C	O													Replace every 10-years
	RV SA	B7				C													
C11F083	2	M-1081A		2	A													ROJ-001	
	GL M	C 2				C	R			J	R		2Y						
C11F122	2	M-1081A		2	C, A	O										V		CMJ	
	SC H/SA	C 2				C				J						V			
C11F128	3/4	M-1081A	P	2	A														
	GL H	C 2				C				J									
C11F180	1	M-1081A		2	B														
	G A	H 5				C	Q				Q	Q	2Y						
C11F181	2	M-1081A		2	B														
	GL A	E 7				C	Q				Q	Q	2Y						
C11F322	6	M-1081A		A	B													VPS-006	
	G M	A 8				C	R				R		2Y						

**IST PLAN
GGNS APPENDIX
VALVE SUMMARY LISTING**

**PROGRAM SECTION NO. CEP-IST-2
REVISION NO. 307
PAGE 17 OF 83**

SYSTEM: C41 - Standby Liquid Control System

VALVE NO.	VALVE SIZE (in.) TYPE ACT.	P & ID NO. , COORD.	IST PASS	IST CODE CLASS	CODE CAT.	SAFETY POS.	REQUIRED TESTS AND FREQUENCY										RELIEF REQUEST (VRR)	OTHER (CSJ/ROJ/ CMJ/VPS)	NOTES:
							FS	PS	LT	LJ	ST	FT	PI	RV	EX	CM			
C41F001A	3	M-1082 F 4		2	B	O	Q				Q		2Y						Close position passive
	GL M					C							2Y						
C41F001B	3	M-1082 C 4		2	B	O	Q				Q		2Y						Close position passive
	GL M					C							2Y						
C41F004A	1 1/2	M-1082 F 6		2	D	O									2Y				
	X EXP																		
C41F004B	1 1/2	M-1082 D 6		2	D	O									2Y				
	X EXP																		
C41F006	1 1/2	M-1082 E 7		1	C	O										V		CMJ	
	SC H/SA					C										V			
C41F007	1 1/2	M-1082 E 7		1	C	O										V		CMJ	Valve handwheel was removed
	SC SA					C										V			
C41F029A	1 1/2	M-1082 F 6		2	C	O								10Y					
	RV SA					C								10Y					
C41F029B	1 1/2	M-1082 D 6		2	C	O								10Y					
	RV SA					C								10Y					
C41F033A	1 1/2	M-1082 F 6		2	C	O										V		CMJ	
	C SA					C										V			
C41F033B	1 1/2	M-1082 D 6		2	C	O										V		CMJ	
	C SA					C										V			
C41F150	3	M-1082 G 1	P	2	A														
	G H					C				J									
C41F151	2	M-1082 G 2	P	2	C, A											V		CMJ	
	SC H/SA					C				J						V			
C41F152	3/4	M-1082 F 2	P	2	A														
	GL H					C				J									
C41F222	1 1/2	M-1082 E 7		1	C	O										V		CMJ	Valve handwheel was removed
	SC SA															V			

**IST PLAN
GGNS APPENDIX
VALVE SUMMARY LISTING**

**PROGRAM SECTION NO. CEP-IST-2
REVISION NO. 307
PAGE 18 OF 83**

SYSTEM: D23 - Drywell Monitoring System

VALVE NO.	VALVE SIZE (in.) TYPE ACT.	P & ID NO., COORD.	IST PASS	IST CODE CLASS	CODE CAT.	SAFETY POS.	REQUIRED TESTS AND FREQUENCY										RELIEF REQUEST (VRR)	OTHER (CSJ/ROJ/ CMJ/VPS)	NOTES:
							FS	PS	LT	LJ	ST	FT	PI	RV	EX	CM			
D23F591	3/4	M-1110A E 6		2	A														
	GL M					C	Q			J	Q		2Y						
D23F592	3/4	M-1110A E 6		2	A														
	GL M					C	Q			J	Q		2Y						
D23F593	3/4	M-1110A D 6		2	A														
	GL M					C	Q			J	Q		2Y						
D23F594	3/4	M-1110A D 6		2	A														
	GL M					C	Q			J	Q		2Y						

IST PLAN
GGNS APPENDIX
VALVE SUMMARY LISTING

PROGRAM SECTION NO. CEP-IST-2
REVISION NO. 307
PAGE 19 OF 83

SYSTEM: E12 - Residual Heat Removal System

VALVE NO.	VALVE SIZE (in.)		P & ID NO., COORD.	IST PASS	IST CODE CLASS	CODE CAT.	SAFETY POS.	REQUIRED TESTS AND FREQUENCY										RELIEF REQUEST (VRR)	OTHER (CSJ/ROJ/CMJ/VPS)	NOTES:
	TYPE	ACT.						FS	PS	LT	LJ	ST	FT	PI	RV	EX	CM			
E12F002	3/4		M-1085B	P	2	A														
	GL	H	F 4				C				J									
E12F003A	18		M-1085B		2	B	O	Q				Q		2Y						
	GL	M	E 8																	
E12F003B	18		M-1085A		2	B	O	Q				Q		2Y						
	GL	M	E 3																	
E12F004A	24		M-1085B		2	A	O	Q				Q		2Y						
	G	M	D 4				C	Q			J	Q		2Y						
E12F004B	24		M-1085A		2	A	O	Q				Q		2Y						
	G	M	D 7				C	Q			J	Q		2Y						
E12F004C	24		M-1085C		2	A	O	Q				Q		2Y						
	G	M	D 6				C	Q			J	Q		2Y						
E12F005	1		M-1085B		2	C, A	O								10Y					
	RV	SA	E 4				C				J				10Y					
E12F006A	18		M-1085B		2	B														
	G	M	D 4				C	Q				Q		2Y						
E12F006B	18		M-1085A		2	B														
	G	M	D 6				C	Q				Q		2Y						
E12F008	20		M-1085B		1	A													CSJ-008	
	G	M	F 4				C	C		2Y	J	C		2Y						
E12F009	20		M-1085B		1	A													CSJ-008	
	G	M	F 2				C	C		2Y	J	C		2Y						
E12F011A	4		M-1085B	P	2	A														
	GL	M	E 7				C				J			2Y						
E12F011B	4		M-1085A	P	2	A														
	GL	M	E 3				C				J			2Y						
E12F017A	1		M-1085B		2	C, A	O								10Y					
	RV	SA	D 4				C				J				10Y					
E12F017B	1		M-1085A		2	C, A	O								10Y					
	RV	SA	D 6				C				J				10Y					
E12F017C	1		M-1085C		2	C, A	O								10Y					
	RV	SA	C 6				C				J				10Y					

IST PLAN
GGNS APPENDIX
VALVE SUMMARY LISTING

PROGRAM SECTION NO. CEP-IST-2
REVISION NO. 307
PAGE 20 OF 83

SYSTEM: E12 - Residual Heat Removal System

VALVE NO.	VALVE SIZE (in.) TYPE ACT.	P & ID NO., COORD.	IST PASS	IST CODE CLASS	CODE CAT.	SAFETY POS.	REQUIRED TESTS AND FREQUENCY										RELIEF REQUEST (VRR)	OTHER (CSJ/ROJ/ CMJ/VPS)	NOTES:
							FS	PS	LT	LJ	ST	FT	PI	RV	EX	CM			
E12F021	14	M-1085C		2	A														
	GL M	F 4				C	Q			J	Q		2Y						
E12F024A	18	M-1085B		2	A	O	Q				Q		2Y						
	G M	F 6				C	Q			J	Q		2Y						
E12F024B	18	M-1085A		2	A	O	Q				Q		2Y						
	G M	F 3				C	Q			J	Q		2Y						
E12F025A	1	M-1085B		2	C, A	O								10Y					
	RV SA	G 3				C				J				10Y					
E12F025B	1	M-1085A		2	C, A	O								10Y					
	RV SA	G 5				C				J				10Y					
E12F025C	1	M-1085C		2	C, A	O								10Y					
	RV SA	G 4				C				J				10Y					
E12F027A	18	M-1085B		2	A	O	Q				Q		2Y						
	G M	G 4				C	Q			J	Q		2Y						
E12F027B	18	M-1085A		2	A	O	Q				Q		2Y						
	G M	G 5				C	Q			J	Q		2Y						
E12F028A	18	M-1085B		2	A	O	Q				Q		2Y						
	G M	H 3				C	Q			J	Q		2Y						
E12F028B	18	M-1085A		2	A	O	Q				Q		2Y						
	G M	H 6				C	Q			J	Q		2Y						
E12F031A	18	M-1085B		2	C	O										V		CMJ	
	C SA	B 5				C										V			
E12F031B	18	M-1085A		2	C	O										V		CMJ	
	C SA	B 6				C										V			
E12F031C	18	M-1085C		2	C	O										V		CMJ	
	C SA	C 5				C										V			
E12F036	4	M-1085A		2	A														Permanently gagged closed per ER 2002-0426-001
	RV SA	A 4				C				J									
E12F037A	12	M-1085B		2	A														
	GL M	H 3				C	Q			J	Q		2Y						
E12F037B	12	M-1085A		2	A														
	GL M	H 6				C	Q			J	Q		2Y						

IST PLAN
GGNS APPENDIX
VALVE SUMMARY LISTING

PROGRAM SECTION NO. CEP-IST-2
REVISION NO. 307
PAGE 21 OF 83

SYSTEM: E12 - Residual Heat Removal System

VALVE NO.	VALVE SIZE (in.) TYPE ACT.		P & ID NO., COORD.	IST PASS	IST CODE CLASS	CODE CAT.	SAFETY POS.	REQUIRED TESTS AND FREQUENCY									RELIEF REQUEST (VRR)	OTHER (CSJ/ROJ/CMJ/VPS)	NOTES:
								FS	PS	LT	LJ	ST	FT	PI	RV	EX	CM		
E12F040	4		M-1085B		2	B													
	GL	M	H 7				C	Q				Q		2Y					
E12F041A	14		M-1085B		1	C, A	O										V	CMJ	
	C	A/SA	G 2				C			2Y							V		
E12F041B	14		M-1085A		1	C, A	O							2Y			V	CMJ	
	C	A/SA	G 7				C			2Y				2Y			V		
E12F041C	12		M-1085C		1	C, A	O							2Y			V	CMJ	
	C	A/SA	G 7				C			2Y	J			2Y			V		
E12F042A	14		M-1085B		1	A	O	C				C		2Y				CSJ-009	
	G	M	G 3				C	C		2Y	J	C		2Y					
E12F042B	14		M-1085A		1	A	O	C				C		2Y				CSJ-009	
	G	M	G 6				C	C		2Y	J	C		2Y					
E12F042C	12		M-1085C		1	A	O	C				C		2Y				CSJ-009	
	G	M	G 4				C	C		2Y	J	C		2Y					
E12F044A	4		M-1085B	P	2	A													
	G	H	H 2				C				J								
E12F044B	4		M-1085A	P	2	A													
	G	H	H 7				C				J								
E12F046A	4		M-1085B		2	C	O										V	CMJ	
	C	SA	E 5														V		
E12F046B	4		M-1085A		2	C	O										V	CMJ	
	C	SA	E 6														V		
E12F046C	4		M-1085C		2	C	O										V	CMJ	
	C	SA	D 5														V		
E12F047A	18		M-1085B	P	2	B	O							2Y					
	G	M	C 6																
E12F047B	18		M-1085A	P	2	B	O							2Y					
	G	M	C 5																
E12F048A	18		M-1085B		2	B	O	Q				Q		2Y					
	GL	M	E 7				C	Q				Q		2Y					
E12F048B	18		M-1085A		2	B	O	Q				Q		2Y					
	GL	M	E 2				C	Q				Q		2Y					

IST PLAN
GGNS APPENDIX
VALVE SUMMARY LISTING

PROGRAM SECTION NO. CEP-IST-2
REVISION NO. 307
PAGE 22 OF 83.

SYSTEM: E12 - Residual Heat Removal System

VALVE NO.	VALVE SIZE (in.) TYPE ACT.		P & ID NO., COORD.	IST PASS	IST CODE CLASS	CODE CAT.	SAFETY POS.	REQUIRED TESTS AND FREQUENCY									RELIEF REQUEST (VRR)	OTHER (CSJ/ROJ/CMJ/VPS)	NOTES:
								FS	PS	LT	LJ	ST	FT	PI	RV	EX	CM		
E12F049	4		M-1085B		2	B													
	G	M	G 8				C	Q				Q		2Y					
E12F050A	12		M-1085B		2	C, A											V	CMJ	
	C	SA	F 3				C			2Y							V		
E12F050B	12		M-1085A		2	C, A											V	CMJ	
	C	SA	F 5				C			2Y							V		
E12F053A	12		M-1085B		2	A												CSJ-010	
	GL	M	F 4				C	C		2Y		C		2Y					
E12F053B	12		M-1085A		2	A												CSJ-010	
	GL	M	F 5				C	C		2Y		C		2Y					
E12F055A	6		M-1085B		2	C, A	O								10Y				
	RV	SA	C 7				C				J				10Y				
E12F055B	6		M-1085A		2	C, A	O								10Y				
	RV	SA	C 3				C				J				10Y				
E12F056C	3/4		M-1085C	P	2	A													
	GL	H	G 5				C				J								
E12F060A	3/8		M-1085B		2	B													
	GL	S	E 8				C	Q				Q		2Y					
E12F060B	3/4		M-1085A		2	B													
	GL	S	F 1				C	Q				Q		2Y					
E12F061	3/4		M-1085A	P	2	A													
	GL	H	G 3				C				J								
E12F064A	4		M-1085B		2	A	O	Q				Q		2Y					
	G	M	C 5				C	Q			J	Q		2Y					
E12F064B	4		M-1085A		2	A	O	Q				Q		2Y					
	G	M	C 6				C	Q			J	Q		2Y					
E12F064C	4		M-1085C		2	A	O	Q				Q		2Y					
	G	M	C 5				C	Q			J	Q		2Y					
E12F066A	18		M-1085B		2	B	O	C				C		2Y				CSJ-011	Note 7
	G	M	C 3				C	C				C		2Y					
E12F066B	18		M-1085A		2	B	O	C				C		2Y				CSJ-011	Note 7
	G	M	C 8				C	C				C		2Y					

IST PLAN
GGNS APPENDIX
VALVE SUMMARY LISTING

PROGRAM SECTION NO. CEP-IST-2
REVISION NO. 307
PAGE 23 OF 83

SYSTEM: E12 - Residual Heat Removal System

VALVE NO.	VALVE SIZE (in.) TYPE ACT.	P & ID NO. , COORD.	IST PASS	IST CODE CLASS	CODE CAT.	SAFETY POS.	REQUIRED TESTS AND FREQUENCY										RELIEF REQUEST (VRR)	OTHER (CSJ/ROJ/ CMJ/VPS)	NOTES:
							FS	PS	LT	LJ	ST	FT	PI	RV	EX	CM			
E12F073A	2	M-1085B		2	A														
	GL M	C 7				C	Q			J	Q		2Y						
E12F073B	2	M-1085A		2	A														
	GL M	B 3				C	Q			J	Q		2Y						
E12F074A	2	M-1085B		2	B														
	GL M	C 6				C	Q				Q		2Y						
E12F074B	2	M-1085A		2	B														
	GL M	B 4				C	Q				Q		2Y						
E12F075A	3/4	M-1085B		2	B														
	GL S	F 8				C	Q				Q		2Y						
E12F075B	3/4	M-1085A		2	B														
	GL S	F 1				C	Q				Q		2Y						
E12F082A	1 1/2	M-1085B		2	B														
	GL M	C 4				O	Q				Q		2Y						
E12F082B	1 1/2	M-1085A		2	B														
	GL M	C 7				O	Q				Q		2Y						
E12F084A	1 1/2	M-1085B		2	C		O									V		CMJ	
	SC H/SA	C 5				C										V			
E12F084B	1 1/2	M-1085A		2	C		O									V		CMJ	
	SC H/SA	C 5				C										V			
E12F084C	1 1/2	M-1085C		2	C		O									V		CMJ	
	SC H/SA	A 4				C										V			
E12F085A	1 1/2	M-1085B		2	C		O									V		CMJ	
	SC H/SA	C 5				C										V			
E12F085B	1 1/2	M-1085A		2	C		O									V		CMJ	
	SC H/SA	C 5				C										V			
E12F085C	1 1/2	M-1085C		2	C		O									V		CMJ	
	SC H/SA	A 3				C										V			
E12F094	18	M-1061D	P	2	B														Note 2
	G M	G 4				C							2Y						
E12F096	18	M-1061D	P	2	B														Note 2
	G M	G 5				C							2Y						

IST PLAN
GGNS APPENDIX
VALVE SUMMARY LISTING

PROGRAM SECTION NO. CEP-IST-2
REVISION NO. 307
PAGE 24 OF 83

SYSTEM: E12 - Residual Heat Removal System

VALVE NO.	VALVE SIZE (in.) TYPE ACT.	P & ID NO., COORD.	IST PASS	IST CODE CLASS	CODE CAT.	SAFETY POS.	REQUIRED TESTS AND FREQUENCY										RELIEF REQUEST (VRR)	OTHER (CSJ/ROJ/ CMJ/VPS)	NOTES:
							FS	PS	LT	LJ	ST	FT	PI	RV	EX	CM			
E12F099A	14	M-1085B		A	B	O													FS-Open 2Y; 06-1G41-Q-0001
	G H	G 6																	
E12F099B	14	M-1085A		A	B	O													FS-Open 2Y; 06-1G41-Q-0001
	G H	G3																	
E12F103A	1 1/2	M-1085B	P	2	C, A											V		CMJ	
	SC H/SA	B 7							J						V				
E12F103B	1 1/2	M-1085A	P	2	C, A											V		CMJ	
	SC H/SA	B 4							J					V					
E12F104A	1 1/2	M-1085B	P	2	C, A											V		CMJ	
	SC H/SA	B 7							J					V					
E12F104B	1 1/2	M-1085A	P	2	C, A											V		CMJ	
	SC H/SA	B 4							J					V					
E12F107A	3/4	M-1085B	P	2	A														
	GL H	H 3							J										
E12F107B	3/4	M-1085A	P	2	A														
	GL H	H 5							J										
E12F203	4	M-1085B		A	B														
	G A	G 6					C	Q				Q	Q	2Y					
E12F212	1	M-1085A	P	2	A														
	GL H	F 3							J										
E12F213	1	M-1085A	P	2	A														
	GL H	F 3							J										
E12F227	1	M-1085B	P	2	A														
	GL H	D 5							J										
E12F228	1	M-1085B	P	2	A														
	GL H	D 5							J										
E12F234	1	M-1085C	P	1	A														
	GL H	G 6							J										
E12F249	3/4	M-1085A	P	2	A														
	GL H	D 5							J										
E12F250	3/4	M-1085A	P	2	A														
	GL H	D 5							J										

IST PLAN
GGNS APPENDIX
VALVE SUMMARY LISTING

PROGRAM SECTION NO. CEP-IST-2
REVISION NO. 307
PAGE 25 OF 83

SYSTEM: E12 - Residual Heat Removal System

VALVE NO.	VALVE SIZE (in.) TYPE ACT.	P & ID NO. , COORD.	IST PASS	IST CODE CLASS	CODE CAT.	SAFETY POS.	REQUIRED TESTS AND FREQUENCY										RELIEF REQUEST (VRR)	OTHER (CSJ/ROJ/ CMJ/VPS)	NOTES:
							FS	PS	LT	LJ	ST	FT	PI	RV	EX	CM			
E12F259	1	M-1085B	P	2	A														
	GL H	E 6				C				J									
E12F260	1	M-1085B	P	2	A														
	GL H	E 6				C				J									
E12F261	1	M-1085B	P	2	A														
	GL H	F 6				C				J									
E12F262	1	M-1085B	P	2	A														
	GL H	F 6				C				J									
E12F273	1 1/2	M-1085A		2	C	O										V		CMJ	
	SC H/SA	D 5													V				
E12F274	1 1/2	M-1085B		2	C	O										V		CMJ	
	SC H/SA	D 5												V					
E12F276	1	M-1085A	P	2	A														
	GL H	E 3				C				J									
E12F277	1	M-1085A	P	2	A														
	GL H	E 3				C				J									
E12F278	1 1/2	M-1085C		2	C	O										V		CMJ	
	SC H/SA	B 2													V				
E12F280	1	M-1085C	P	2	A														
	GL H	E 5				C				J									
E12F281	1	M-1085C	P	2	A														
	GL H	E 4				C				J									
E12F290A	1 1/2	M-1085B		2	A	O	Q			Q		2Y							
	GL M	D 5				C	Q			J	Q		2Y						
E12F290B	1 1/2	M-1085A		2	A	O	Q			Q		2Y							
	GL M	D 5				C	Q			J	Q		2Y						
E12F304	1/2	M-1085C	P	2	A														
	GL H	F 5				C				J									
E12F308	1/2	M-1085B		2	C, A	O										V		CMJ	
	SC H/SA	F 2				C				2Y	J					V			
E12F311	1/2	M-1085C	P	2	A														
	GL H	F 6				C				J									

IST PLAN
GGNS APPENDIX
VALVE SUMMARY LISTING

PROGRAM SECTION NO. CEP-IST-2
REVISION NO. 307
PAGE 26 OF 83

SYSTEM: E12 - Residual Heat Removal System

VALVE NO.	VALVE SIZE (in.) TYPE ACT.		P & ID NO., COORD.	IST PASS	IST CODE CLASS	CODE CAT.	SAFETY POS.	REQUIRED TESTS AND FREQUENCY									RELIEF REQUEST (VRR)	OTHER (CSJ/ROJ/CMJ/VPS)	NOTES:
								FS	PS	LT	LJ	ST	FT	PI	RV	EX	CM		
E12F321	3/4		M-1085A E 6	P	2	A													
	GL	H					C				J								
E12F322	3/4		M-1085B E 5	P	2	A													
	GL	H					C				J								
E12F331	3/4		M-1085A D 5	P	2	A													
	GL	H					C				J								
E12F334	1		M-1085A D 5	P	2	A													
	GL	H					C				J								
E12F335	1		M-1085A D 5	P	2	A													
	GL	H					C				J								
E12F336	3/4		M-1085B D 5	P	2	A													
	GL	H					C				J								
E12F338	1		M-1085B D 5	P	2	A													
	GL	H					C				J								
E12F339	1		M-1085B D 5	P	2	A													
	GL	H					C				J								
E12F342	3/4		M-1085A G 3	P	2	A													
	GL	H					C				J								
E12F346	1		M-1085C F 3		2	A													
	GL	M					C	Q			J	Q		2Y					
E12F348	3/4		M-1085B E 5	P	2	A													
	GL	H					C				J								
E12F349	3/4		M-1085B D 5	P	2	A													
	GL	H					C				J								
E12F350	3/4		M-1085A D 5	P	2	A													
	GL	H					C				J								
E12F351	3/4		M-1085A E 6	P	2	A													
	GL	H					C				J								
E12F406	1		M-1085C F 3		2	C, A											V	CMJ	
	SC	H/SA					C				J						V		
E12F408	3/4		M-1085C F 3	P	2	A													
	GL	H					C				J								

PROGRAM SECTION NO. CEP-IST-2
REVISION NO. 307
PAGE 27 OF 83

VALVE NO.	VALVE SIZE (in.) TYPE ACT.		P & ID NO., COORD.	IST PASS	IST CODE CLASS	CODE CAT.	SAFETY POS.	REQUIRED TESTS AND FREQUENCY									RELIEF REQUEST (VRR)	OTHER (CSJ/ROJ/ CMJ/VPS)	NOTES:	
	FS	PS						LT	LJ	ST	FT	PI	RV	EX	CM					
E12F409	3/4		M-1085C F 3	P	2	A														
	GL	H					C				J									
E12F416	8		M-1085D H 4		2	C											V		CMJ	
	C	SA					C									V				
E12F423A	3/4		M-1085D F 3		3	C	O								10Y					
	RV	SA					C							10Y						
E12F423B	3/4		M-1085D C 3		3	C	O								10Y					
	RV	SA					C						10Y							
E12F430B	3/4		M-1085A F 2	P	2	A														
	G	H					C				J									
E12F432B	3/4		M-1085A F 2	P	2	A														
	G	H					C				J									
E12F434B	3/4		M-1085A C6	P	2	A														
	G	H					C				J									
E12F436B	3/4		M-1085A C6	P	2	A														
	G	H					C				J									
E12F439C	3/4		M-1085C	P	2	A														
	G	H					C				J									
E12F440C	3/4		M-1085C	P	2	A														
	GL	H					C				J									
E12F441C	3/4		M-1085C	P	2	A														
	G	H					C				J									
E12F442C	3/4		M-1085C	P	2	A														
	GL	H					C				J									
E12F445	3/4		M-1085B F5	P	2	A														
	GL	H					C				J									
E12F446	3/4		M-1085B F5	P	2	A														
	GL	H					C				J									

IST PLAN
GGNS APPENDIX
VALVE SUMMARY LISTING

PROGRAM SECTION NO. CEP-IST-2
REVISION NO. 307
PAGE 28 OF 83

SYSTEM: E21 - Low Pressure Core Spray System

VALVE NO.	VALVE SIZE (in.) TYPE ACT.	P & ID NO., COORD.	IST PASS	IST CODE CLASS	CODE CAT.	SAFETY POS.	REQUIRED TESTS AND FREQUENCY										RELIEF REQUEST (VRR)	OTHER (CSJ/ROJ/ CMJ/VPS)	NOTES:
							FS	PS	LT	LJ	ST	FT	PI	RV	EX	CM			
E21F001	24	M-1087		2	A	O							2Y						Open position passive
	G M	D 6				C	Q			J	Q		2Y						
E21F003	16	M-1087		2	C	O										V		CMJ	See Note 8
	C SA	E 2				C								V					
E21F005	14	M-1087		1	A	O	C				C		2Y					CSJ-012 CSJ-012	
	G M	F 5				C	C		2Y	J	C		2Y						
E21F006	14	M-1087		1	C, A	O							2Y			V		CMJ	
	C A/SA	F 6				C			2Y	J			2Y		V				
E21F011	4	M-1087		2	A	O	Q				Q		2Y						
	G M	E 3				C	Q			J	Q		2Y						
E21F012	14	M-1087	P	2	A														
	GL M	E 5				C				J			2Y						
E21F013	3/4	M-1087	P	2	A														
	GL H	E 6				C				J									
E21F018	1 1/2	M-1087		2	C, A	O								10Y					
	RV SA	G 5				C				J				10Y					
E21F031	3/4	M-1087		2	C, A	O								10Y					
	RV SA	D 6				C				J				10Y					
E21F034	1	M-1087		2	C	O										V		CMJ	See Note 8.
	SC H/SA	F 2				C								V					
E21F200	3/4	M-1087	P	2	A														
	GL H	F 6				C				J									
E21F207	1	M-1087	P	1	A														
	GL H	F 6				C				J									
E21F217	3/4	M-1087	P	2	A														
	GL H	E 5				C				J									
E21F218	3/4	M-1087	P	2	A														
	GL H	E 6				C				J									
E21F221	1/2	M-1087	P	2	A														
	GL H	E 6				C				J									
E21F222	1/2	M-1087	P	2	A														
	GL H	E 7				C				J									

IST PLAN
GGNS APPENDIX
VALVE SUMMARY LISTING

PROGRAM SECTION NO. CEP-IST-2
REVISION NO. 307
PAGE 29 OF 83

SYSTEM: E22 - High Pressure Core Spray System

VALVE NO.	VALVE SIZE (in.) TYPE ACT.		P & ID NO., COORD.	IST PASS	IST CODE CLASS	CODE CAT.	SAFETY POS.	REQUIRED TESTS AND FREQUENCY									RELIEF REQUEST (VRR)	OTHER (CSJ/ROJ/ CMJ/VPS)	NOTES:	
								FS	PS	LT	LJ	ST	FT	PI	RV	EX				CM
E22F001	18		M-1086		2	B	O	Q				Q		2Y						
	G	M	E 8				C	Q				Q		2Y						
E22F002	18		M-1086		2	C	O										V		CMJ	
	C	SA	E 7				C									V				
E22F004	12		M-1086		1	A	O	Q				Q		2Y						
	G	M	E 4				C	Q		2Y	J	Q		2Y						
E22F005	14		M-1086		1	C, A	O							2Y			V		CMJ	
	C	A/SA	E 2				C			2Y	J			2Y			V			
E22F006	1		M-1086		2	C	O										V		CMJ	
	SC	H/SA	C 5				C										V			
E22F010	10		M-1086		2	B														
	GL	M	F 4				C	Q				Q		2Y						
E22F011	10		M-1086		2	B														
	GL	M	G 6				C	Q				Q		2Y						
E22F012	4		M-1086		2	A	O	Q				Q		2Y						
	G	M	D 5				C	Q			J	Q		2Y						
E22F014	3/4		M-1086		2	C, A	O								10Y					
	RV	SA	B 5				C				J				10Y					
E22F015	24		M-1086		2	A	O	Q				Q		2Y						
	G	M	C 4				C	Q			J	Q		2Y						
E22F016	24		M-1086		2	C	O										V		CMJ	
	C	SA	C 4				C										V			
E22F021	3/4		M-1086	P	2	A														
	GL	H	D 3				C				J									
E22F023	12		M-1086		2	A														
	GL	M	D 4				C	Q			J	Q		2Y						
E22F024	16		M-1086		2	C	O										V		CMJ	
	C	SA	E 5				C										V			
E22F035	1		M-1086		2	C, A	O								10Y					
	RV	SA	E 5				C				J				10Y					
E22F039	1		M-1086		2	C											V		CMJ	
	SC	H/SA	F 4				C										V			

IST PLAN
GGNS APPENDIX
VALVE SUMMARY LISTING

PROGRAM SECTION NO. CEP-IST-2
REVISION NO. 307
PAGE 30 OF 83

SYSTEM: E22 - High Pressure Core Spray System

VALVE NO.	VALVE SIZE (in.) TYPE ACT.		P & ID NO., COORD.	IST PASS	IST CODE CLASS	CODE CAT.	SAFETY POS.	REQUIRED TESTS AND FREQUENCY								RELIEF REQUEST (VRR)	OTHER (CSJ/ROJ/ CMJ/VPS)	NOTES:
								FS	PS	LT	LJ	ST	FT	PI	RV	EX	CM	
E22F201	3/4		M-1086 E 2	P	2	A												
	GL	H					C				J							
E22F218	1		M-1086 D 2	P	1	A												
	GL	H					C				J							
E22F301	1		M-1086 D 4	P	2	A												
	GL	H					C				J							
E22F302	1		M-1086 D 4	P	2	A												
	GL	H					C				J							
E22F303	1/2		M-1086 D 4	P	2	A												
	GL	H					C				J							
E22F304	1/2		M-1086 D 3	P	2	A												
	GL	H					C				J							
E22F800	3/4		M-1086 B 4	P	2	A												
	G	H					C				J							
E22F801	3/4		M-1086 B 4	P	2	A												
	GL	H					C				J							

IST PLAN
GGNS APPENDIX
VALVE SUMMARY LISTING

PROGRAM SECTION NO. CEP-IST-2
REVISION NO. 307
PAGE 31 OF 83

SYSTEM: E30 - Suppression Pool Makeup System

VALVE NO.	VALVE SIZE (in.)		P & ID NO. , COORD.	IST PASS	IST CODE CLASS	CODE CAT.	SAFETY POS.	REQUIRED TESTS AND FREQUENCY									RELIEF REQUEST (VRR)	OTHER (CSJ/ROJ/ CMJ/VPS)	NOTES:	
	TYPE	ACT.						FS	PS	LT	LJ	ST	FT	PI	RV	EX				CM
E30F001A	30		M-1096 E 7		2	B	O	Q				Q		2Y						
	B	M																		
E30F001B	30		M-1096 E 3		2	B	O	Q				Q		2Y						
	B	M																		
E30F002A	30		M-1096 D 7		2	B	O	Q				Q		2Y						
	B	M																		
E30F002B	30		M-1096 D 3		2	B	O	Q				Q		2Y						
	B	M																		
E30F003A	3/4		M-1096 E 6		2	C	O										V		CMJ	
	SC	H/SA														V				
E30F003B	3/4		M-1096 E 4		2	C	O										V		CMJ	
	SC	H/SA														V				
E30F591A	3/4		M-1096 C 6		2	A	O							2Y						Open position passive
	GL	M					C	Q			J	Q		2Y						
E30F591B	3/4		M-1096 C 4		2	A	O							2Y						Open position passive
	GL	M					C	Q			J	Q		2Y						
E30F592A	3/4		M-1096 C 6		2	A	O							2Y						Open position passive
	GL	M					C	Q			J	Q		2Y						
E30F592B	3/4		M-1096 C 4		2	A	O							2Y						Open position passive
	GL	M					C	Q			J	Q		2Y						
E30F593A	3/4		M-1096 A 6		2	A	O							2Y						Open position passive
	GL	M					C	Q			J	Q		2Y						
E30F593B	3/4		M-1096 A 4		2	A	O							2Y						Open position passive
	GL	M					C	Q			J	Q		2Y						
E30F594A	3/4		M-1096 A 6		2	A	O							2Y						Open position passive
	GL	M					C	Q			J	Q		2Y						
E30F594B	3/4		M-1096 A 4		2	A	O							2Y						Open position passive
	GL	M					C	Q			J	Q		2Y						

IST PLAN
GGNS APPENDIX
VALVE SUMMARY LISTING

PROGRAM SECTION NO. CEP-IST-2
REVISION NO. 307
PAGE 32 OF 83

SYSTEM: E32 - MSIV Leakage Control System

VALVE NO.	VALVE SIZE (in.) TYPE ACT.		P & ID NO., COORD.	IST PASS	IST CODE CLASS	CODE CAT.	SAFETY POS.	REQUIRED TESTS AND FREQUENCY									RELIEF REQUEST (VRR)	OTHER (CSJ/ROJ/CMJ/VPS)	NOTES:
								FS	PS	LT	LJ	ST	FT	PI	RV	EX	CM		
E32F001A	1 1/2		M-1097		1	A	O	C				C		2Y				CSJ-013	
	GL M		B 5				C	C			J	C		2Y					
E32F001E	1 1/2		M-1097		1	A	O	C				C		2Y				CSJ-013	
	GL M		G 5				C	C			J	C		2Y					
E32F001J	1 1/2		M-1097		1	A	O	C				C		2Y				CSJ-013	
	GL M		D 5				C	C			J	C		2Y					
E32F001N	1 1/2		M-1097		1	A	O	C				C		2Y				CSJ-013	
	GL M		E 5				C	C			J	C		2Y					
E32F002A	1 1/2		M-1097		2	B	O	C				C		2Y				CSJ-013	
	GL M		B 5				C	C				C		2Y					
E32F002E	1 1/2		M-1097		2	B	O	C				C		2Y				CSJ-013	
	GL M		G 5				C	C				C		2Y					
E32F002J	1 1/2		M-1097		2	B	O	C				C		2Y				CSJ-013	
	GL M		D 5				C	C				C		2Y					
E32F002N	1 1/2		M-1097		2	B	O	C				C		2Y				CSJ-013	
	GL M		E 5				C	C				C		2Y					
E32F006	2		M-1097		2	B	O	C				C		2Y				CSJ-013	
	GL M		F 2				C	C				C		2Y					
E32F007	2		M-1097		2	B	O	C				C		2Y				CSJ-013	
	GL M		F 2				C	C				C		2Y					
E32F008	2		M-1097		2	B	O	C				C		2Y				CSJ-013	
	GL M		F 2				C	C				C		2Y					
E32F009	2		M-1097		2	B	O	C				C		2Y				CSJ-013	
	GL M		F 2				C	C				C		2Y					
E32F010	3/4		M-1097		2	C	O										V	CMJ	
	SC H/SA		F 7														V		
E32F011	3/4		M-1097		2	C	O										V	CMJ	
	SC H/SA		E 3				C										V		

IST PLAN
GGNS APPENDIX
VALVE SUMMARY LISTING

PROGRAM SECTION NO. CEP-IST-2
REVISION NO. 307
PAGE 33 OF 83

SYSTEM: E38 - Feedwater Leakage Control System

VALVE NO.	VALVE SIZE (in.) TYPE ACT.	P & ID NO., COORD.	IST PASS	IST CODE CLASS	CODE CAT.	SAFETY POS.	REQUIRED TESTS AND FREQUENCY										RELIEF REQUEST (VRR)	OTHER (CSJ/ROJ/ CMJ/VPS)	NOTES:
							FS	PS	LT	LJ	ST	FT	PI	RV	EX	CM			
E38F001A	1 1/2	M-1112 B 4		2	B	O	C				C		2Y					CSJ-014	
	GL M					C	C				C		2Y						
E38F001B	1 1/2	M-1112 G 4		1	B	O	C				C		2Y					CSJ-014	
	GL M					C	C				C		2Y						
E38F002A	1 1/2	M-1112 G 6		1	C	O										V		CMJ	
	SC H/SA					C										V			
E38F002B	1 1/2	M-1112 E 6		1	C	O										V		CMJ	
	SC H/SA					C										V			
E38F003A	1 1/2	M-1112 C 6		2	C	O										V		CMJ	
	SC H/SA					C										V			
E38F003B	1 1/2	M-1112 B 6		2	C	O										V		CMJ	
	SC H/SA					C										V			

IST PLAN
GGNS APPENDIX
VALVE SUMMARY LISTING

PROGRAM SECTION NO. CEP-IST-2
REVISION NO. 307
PAGE 34 OF 83

SYSTEM: E51 - Reactor Core Isolation Cooling System

VALVE NO.	VALVE SIZE (in.) TYPE ACT.		P & ID NO., COORD.	IST PASS	IST CODE CLASS	CODE CAT.	SAFETY POS.	REQUIRED TESTS AND FREQUENCY									RELIEF REQUEST (VRR)	OTHER (CSJ/ROJ/CMJ/VPS)	NOTES:	
	FS	PS						LT	LJ	ST	FT	PI	RV	EX	CM					
E51D001	16		M-1083B		2	D	O													Replace every 5 years.
	RD	SA	D 7																	
E51D002	16		M-1083B		2	D	O													Replace every 5 years.
	RD	SA	D7																	
E51F004	1		M-1083B		2	B	O							2Y						Open position passive
	GL	A	B 6				C	Q			Q	Q	2Y							
E51F005	1		M-1083B		2	B	O													
	GL	A	B 7				C	Q			Q	Q	2Y							
E51F010	6		M-1083A		2	B	O							2Y						Open position passive
	G	M	D 4				C	Q			Q		2Y							
E51F011	6		M-1083A		2	C	O										V		CMJ	
	C	SA	D 2				C									V				
E51F013	6		M-1083A		2	A	O	Q				Q		2Y						
	G	M	G 5				C	Q		2Y		Q		2Y						
E51F017	3/4		M-1083A		2	C	O								10Y					
	RV	SA	E 2				C							10Y						
E51F018	1 1/2		M-1083B		2	C	O								10Y					
	RV	SA	G 4				C							10Y						
E51F019	2		M-1083A		2	A	O	Q				Q		2Y						
	GL	M	E 4				C	Q			J	Q		2Y						
E51F022	4		M-1083A		2	B														
	GL	M	F 5				C	Q				Q		2Y						
E51F025	1 1/2		M-1083B		2	B	O							2Y						Open position passive
	GL	A	E 3				C	Q				Q	Q	2Y						
E51F026	1 1/2		M-1083B		2	B	O							2Y						Open position passive
	GL	A	D 3				C	Q				Q	Q	2Y						
E51F030	6		M-1083A		2	C	O										V		CMJ	
	C	SA	B 5				C									V				
E51F031	6		M-1083A		2	A	O	Q				Q		2Y						
	G	M	B 6				C	Q			J	Q		2Y						
E51F040	20		M-1083A		2	C, A	O										V		CMJ	
	C	SA	C 4				C				J					V				

IST PLAN
GGNS APPENDIX
VALVE SUMMARY LISTING

PROGRAM SECTION NO. CEP-IST-2
REVISION NO. 307
PAGE 35 OF 83

SYSTEM: E51 - Reactor Core Isolation Cooling System

VALVE NO.	VALVE SIZE (in.) TYPE ACT.	P & ID NO., COORD.	IST PASS	IST CODE CLASS	CODE CAT.	SAFETY POS.	REQUIRED TESTS AND FREQUENCY										RELIEF REQUEST (VRR)	OTHER (CSJ/ROJ/ CMJ/VPS)	NOTES:
							FS	PS	LT	LJ	ST	FT	PI	RV	EX	CM			
E51F045	6	M-1083B E 4		2	B	O	Q				Q		2Y						
	GL M					C	Q				Q		2Y						
E51F046	2	M-1083B F 6		2	B	O	Q				Q		2Y						
	GL M																		
E51F047	2	M-1083B B 6		2	C	O										V	CMJ		
	SC H/SA															V			
E51F059	4	M-1083A D 5		2	B														
	G M					C	Q				Q		2Y						
E51F063	10	M-1083B G 5		1	A	O							2Y					CSJ-015	Open position passive
	G M					C	C		2Y	J	C		2Y						
E51F064	10	M-1083B G 4		1	A	O							2Y					CSJ-015	Open position passive
	G M					C	C		2Y	J	C		2Y						
E51F065	6	M-1083A G 6		2	C, A	O										V	CMJ		
	C SA					C			2Y							V			
E51F068	20	M-1083A C 4		2	A	O							2Y						Open position passive
	G M					C	Q			J	Q		2Y						
E51F072	3/4	M-1083B G 4	P	2	A														
	GL H					C				J									
E51F076	1	M-1083B G 5		1	A													CSJ-015	
	GL M					C	C		2Y	J	C		2Y						
E51F077	2 1/2	M-1083A C 5		2	A	O							2Y						Open position passive
	G M					C	Q			J	Q		2Y						
E51F078	1 1/2	M-1083A C 6		2	A	O							2Y						Open position passive
	GL M					C	Q			J	Q		2Y						
E51F079	2 1/2	M-1083A C 5		2	C	O										V	CMJ		
	C SA					C										V			
E51F081	2 1/2	M-1083A C 6		2	C	O										V	CMJ		
	C SA					C										V			
E51F090	1	M-1083A E 5		2	C	O								10Y					
	RV SA					C								10Y					
E51F095	2	M-1083B E 4		2	B	O	Q				Q		2Y						
	GL M																		

IST PLAN
GGNS APPENDIX
VALVE SUMMARY LISTING

PROGRAM SECTION NO. CEP-IST-2
REVISION NO. 307
PAGE 36 OF 83

SYSTEM: E51 - Reactor Core Isolation Cooling System

VALVE NO.	VALVE SIZE (in.) TYPE ACT.	P & ID NO., COORD.	IST PASS	IST CODE CLASS	CODE CAT.	SAFETY POS.	REQUIRED TESTS AND FREQUENCY										RELIEF REQUEST (VRR)	OTHER (CSJ/ROJ/ CMJ/VPS)	NOTES:
							FS	PS	LT	LJ	ST	FT	PI	RV	EX	CM			
E51F204	6	M-1083A G 3		2	C	O										V		CMJ	
	C SA															V			
E51F212	3/4	M-1083A C 4	P	2	A														
	GL H						C			J									
E51F251	1	M-1083A E 6	P	2	A														
	GL H						C			J									
E51F252	1	M-1083A E 6	P	2	A														
	GL H						C			J									
E51F257	1/2	M-1083A C 5	P	2	A														
	GL H						C			J									
E51F258	3/4	M-1083A C 4	P	2	A														
	GL H						C			J									
E51F269	3/4	M-1083A B 6	P	2	A														
	G H						C			J									
E51F270	3/4	M-1083A B 6	P	2	A														
	GL H						C			J									
E51F272	3/4	M-1083A B 6	P	2	A														
	G H						C			J									
E51F273	3/4	M-1083A B 6	P	2	A														
	GL H						C			J									
E51TT&T	4	M-1083B E 5		A	B	O							2Y						Turbine Trip & Throttle Valve; Passive Open
	G M						C	Q			Q		2Y						

IST PLAN
GGNS APPENDIX
VALVE SUMMARY LISTING

PROGRAM SECTION NO. CEP-IST-2
REVISION NO. 307
PAGE 37 OF 83

SYSTEM: E61 - Combustible Gas Control Systems

VALVE NO.	VALVE SIZE (in.)		P & ID NO., COORD.	IST PASS	IST CODE CLASS	CODE CAT.	SAFETY POS.	REQUIRED TESTS AND FREQUENCY								RELIEF REQUEST (VRR)	OTHER (CSJ/ROJ/CMJ/VPS)	NOTES:
	TYPE	ACT.						FS	PS	LT	LJ	ST	FT	PI	RV	EX	CM	
E61F001A	10		M-1091 E 7		2	C	O	Q						2Y				See Note 9.
	C	SA					C	Q						2Y				
E61F001B	10		M-1091 D 7		2	C	O	Q						2Y				See Note 9.
	C	SA					C	Q						2Y				
E61F002A	10		M-1091 F 6		2	C	O	Q						2Y				See Note 9.
	C	SA					C	Q						2Y				
E61F002B	10		M-1091 D 6		2	C	O	Q						2Y				See Note 9.
	C	SA					C	Q						2Y				
E61F003A	10		M-1091 F 6		2	B	O	Q				Q		2Y				
	B	M					C	Q				Q		2Y				
E61F003B	10		M-1091 D 6		2	B	O	Q				Q		2Y				
	B	M					C	Q				Q		2Y				
E61F004A	10		M-1091 E 4		2	C	O	Q						2Y				See Note 9.
	C	SA					C	Q						2Y				
E61F004B	10		M-1091 E 2		2	C	O	Q						2Y				See Note 9.
	C	SA					C	Q						2Y				
E61F005A	10		M-1091 E 4		2	B	O	Q				Q		2Y				
	B	M					C	Q				Q		2Y				
E61F005B	10		M-1091 E 3		2	B	O	Q				Q		2Y				
	B	M					C	Q				Q		2Y				
E61F007	8		M-1091 B 7		2	B												
	B	A					C	Q				Q	Q	2Y				
E61F009	6		M-1091 B 3		2	A												
	B	A					C	Q			J	Q	Q	2Y				
E61F010	6		M-1091 B 3		2	A												
	B	A					C	Q			J	Q	Q	2Y				
E61F017	3/4		M-1091 B 3	P	2	A												
	GL	H					C				J							
E61F020	8		M-1091 B 7		2	B												
	G	A					C	Q				Q	Q	2Y				
E61F056	6		M-1100B E 7		2	A												
	B	A					C	Q			J	Q	Q	2Y				

IST PLAN
GGNS APPENDIX
VALVE SUMMARY LISTING

PROGRAM SECTION NO. CEP-IST-2
REVISION NO. 307
PAGE 38 OF 83

SYSTEM: E61 - Combustible Gas Control Systems

VALVE NO.	VALVE SIZE (in.) TYPE ACT.	P & ID NO., COORD.	IST PASS	IST CODE CLASS	CODE CAT.	SAFETY POS.	REQUIRED TESTS AND FREQUENCY										RELIEF REQUEST (VRR)	OTHER (CSJ/ROJ/ CMJ/VPS)	NOTES:
							FS	PS	LT	LJ	ST	FT	PI	RV	EX	CM			
E61F057	6	M-1100B		2	A														
	B A	E 6				C	Q			J	Q	Q	2Y						
E61F595A	3/4	M-1091		2	A	O							2Y						Open position passive
	GL M	H 4				C	Q			J	Q		2Y						
E61F595B	3/4	M-1091		2	A	O							2Y						Open position passive
	GL M	H 4				C	Q			J	Q		2Y						
E61F595C	3/4	M-1091		2	A	O							2Y						Open position passive
	GL M	H 2				C	Q			J	Q		2Y						
E61F595D	3/4	M-1091		2	A	O							2Y						Open position passive
	GL M	H 3				C	Q			J	Q		2Y						
E61F596A	3/4	M-1091		2	A	O							2Y						Open position passive
	GL M	G 4				C	Q			J	Q		2Y						
E61F596B	3/4	M-1091		2	A	O							2Y						Open position passive
	GL M	G 4				C	Q			J	Q		2Y						
E61F596C	3/4	M-1091		2	A	O							2Y						Open position passive
	GL M	G 2				C	Q			J	Q		2Y						
E61F596D	3/4	M-1091		2	A	O							2Y						Open position passive
	GL M	G 3				C	Q			J	Q		2Y						
E61F597A	3/4	M-1091		2	A	O							2Y						Open position passive
	GL M	H 4				C	Q			J	Q		2Y						
E61F597B	3/4	M-1091		2	A	O							2Y						Open position passive
	GL M	H 4				C	Q			J	Q		2Y						
E61F597C	3/4	M-1091		2	A	O							2Y						Open position passive
	GL M	H 2				C	Q			J	Q		2Y						
E61F597D	3/4	M-1091		2	A	O							2Y						Open position passive
	GL M	H 3				C	Q			J	Q		2Y						
E61F598A	3/4	M-1091		2	A	O							2Y						Open position passive
	GL M	G 4				C	Q			J	Q		2Y						
E61F598B	3/4	M-1091		2	A	O							2Y						Open position passive
	GL M	G 4				C	Q			J	Q		2Y						
E61F598C	3/4	M-1091		2	A	O							2Y						Open position passive
	GL M	G 2				C	Q			J	Q		2Y						

**IST PLAN
GGNS APPENDIX
VALVE SUMMARY LISTING**

**PROGRAM SECTION NO. CEP-IST-2
REVISION NO. 307
PAGE 39 OF 83**

SYSTEM: E61 - Combustible Gas Control Systems

VALVE NO.	VALVE SIZE (in.) TYPE ACT.	P & ID NO., COORD.	IST PASS	IST CODE CLASS	CODE CAT.	SAFETY POS.	REQUIRED TESTS AND FREQUENCY									RELIEF REQUEST (VRR)	OTHER (CSJ/ROJ/ CMJ/VPS)	NOTES:
							FS	PS	LT	LJ	ST	FT	PI	RV	EX			
E61F598D	3/4	M-1091		2	A	O						2Y						Open position passive
	GL M	G 3				C	Q			J	Q		2Y					

IST PLAN
GGNS APPENDIX
VALVE SUMMARY LISTING

PROGRAM SECTION NO. CEP-IST-2
REVISION NO. 307
PAGE 40 OF 83

SYSTEM: G33 - Reactor Water Cleanup System

VALVE NO.	VALVE SIZE (in.) TYPE ACT.	P & ID NO., COORD.	IST PASS	IST CODE CLASS	CODE CAT.	SAFETY POS.	REQUIRED TESTS AND FREQUENCY										RELIEF REQUEST (VRR)	OTHER (CSJ/ROJ/ CMJ/VPS)	NOTES:
							FS	PS	LT	LJ	ST	FT	PI	RV	EX	CM			
G33F001	6	M-1079 F 5		1	A	C												CSJ-016	
	G M						C	C		J	C		2Y						
G33F002	3/4	M-1079 F 4	P	1	A	C													
	GL H						C			J									
G33F004	6	M-1079 F 4		1	A	C												CSJ-016	
	G M						C	C		J	C		2Y						
G33F028	4	M-1079 C 6		2	A	C													
	G M						C	Q		J	Q		2Y						
G33F034	4	M-1079 C 7		2	A	C													
	G M						C	Q		J	Q		2Y						
G33F039	6	M-1079 G 5		2	A	C												CSJ-016	
	G M						C	C		J	C		2Y						
G33F040	6	M-1079 G 4		2	A	C												CSJ-016	
	G M						C	C		J	C		2Y						
G33F052A	6	M-1079 G 7		2	C	C										V		CMJ	
	C SA						C									V			
G33F052B	6	M-1079 H 7		2	C	C										V		CMJ	
	C SA						C									V			
G33F053	4	M-1079 E 2		2	A	C												CSJ-016	
	G M						C	C		J	C		2Y						
G33F054	4	M-1079 F 2		2	A	C												CSJ-016	
	G M						C	C		J	C		2Y						
G33F055	3/4	M-1079 H 4	P	2	A	C													
	GL H						C			J									
G33F061	3/4	M-1079 E 2	P	2	A	C													
	GL H						C			J									
G33F070	3/4	M-1079 C 7	P	2	A	C													
	GL H						C			J									
G33F075	3/4	M-1079 G 4	P	2	A	C													
	GL						C			J									
G33F077	3/4	M-1079 E 2	P	2	A	C													
	GL						C			J									

IST PLAN

GGNS APPENDIX

VALVE SUMMARY LISTING

PROGRAM SECTION NO. CEP-IST-2
REVISION NO. 307
PAGE 41 OF 83

SYSTEM: G33 - Reactor Water Cleanup System

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IST PLAN
GGNS APPENDIX
VALVE SUMMARY LISTING

PROGRAM SECTION NO. CEP-IST-2
REVISION NO. 307
PAGE 42 OF 83

SYSTEM: G36 - RWCU Filter/Demineralizer System

VALVE NO.	VALVE SIZE (in.) TYPE ACT.		P & ID NO., COORD.	IST PASS	IST CODE CLASS	CODE CAT.	SAFETY POS.	REQUIRED TESTS AND FREQUENCY								RELIEF REQUEST (VRR)	OTHER (CSJ/ROJ/CMJ/VPS)	NOTES:
								FS	PS	LT	LJ	ST	FT	PI	RV			
G36D060	1		M-1080B H2	P	A	D	O										VPS-001	Replace every 5 years
	RD	SA																
G36F101	4		M-1080B G 3		2	A												
	G	A					C	Q			J	Q	Q	2Y				
G36F106	4		M-1080B G 2		2	A												
	G	A					C	Q			J	Q	Q	2Y				
G36F108	4		M-1080B G 3		A	B												
	G	A					C	Q				Q	Q	2Y				
G36F109	4		M-1080B G 4		A	B												
	G	A					C	Q				Q	Q	2Y				

IST PLAN
GGNS APPENDIX
VALVE SUMMARY LISTING

PROGRAM SECTION NO. CEP-IST-2
REVISION NO. 307
PAGE 43 OF 83

SYSTEM: G41 - Fuel Pool Cooling and Cleanup System

VALVE NO.	VALVE SIZE (in.) TYPE ACT.	P & ID NO., COORD.	IST PASS	IST CODE CLASS	CODE CAT.	SAFETY POS.	REQUIRED TESTS AND FREQUENCY										RELIEF REQUEST (VRR)	OTHER (CSJ/ROJ/ CMJ/VPS)	NOTES:
							FS	PS	LT	LJ	ST	FT	PI	RV	EX	CM			
G41F002	3	M-1088E G 5		A	B														
	G A						C	Q			Q		2Y						
G41F010A	8	M-1088E C 5		A	C		O									V		CMJ	
	C SA						C									V			
G41F010B	8	M-1088E A 5		A	C		O									V		CMJ	
	C SA						C									V			
G41F017	8	M-1088E B 4		A	B		O												FS-Open & Close 2Y; 06-OP-1G41-Q-0001
	B H						C												
G41F019	10	M-1088E D 3		A	B														
	B A						C	Q			Q		2Y						
G41F021	10	M-1088E E 5		A	B		O	Q			Q		2Y						
	GL M																		
G41F022	10	M-1088E D 1		A	C											V		CMJ	Note 5 (with G41F048)
	C SA						C									V			
G41F028	8	M-1088E H 6		2	A														
	GL M						C	Q		J	Q		2Y						
G41F029	8	M-1088E A 8		2	A														
	G M						C	Q		J	Q		2Y						
G41F032	12	M-1088E E 1		3	B														
	G A						C	Q			Q	Q	2Y						
G41F033	12	M-1088E E 1		3	B														
	G A						C	Q			Q	Q	2Y						
G41F035	12	M-1088E G 4		A	B		O												FS-Open 2Y; 06-OP-1G41-Q-0001
	G H																		
G41F040	8	M-1088C H 3		2	C, A		O									V		CMJ	
	C SA						C			J						V			
G41F043	10	M-1088E D 5		A	B		O	Q			Q		2Y						
	GL M																		
G41F044	8	M-1088C B 6		2	A														
	G M						C	Q		J	Q		2Y						
G41F045	10	M-1088E D 3		A	B														
	B A						C	Q			Q		2Y						

IST PLAN
GGNS APPENDIX
VALVE SUMMARY LISTING

PROGRAM SECTION NO. CEP-IST-2
REVISION NO. 307
PAGE 44 OF 83

SYSTEM: G41 - Fuel Pool Cooling and Cleanup System

VALVE NO.	VALVE SIZE (in.) TYPE ACT.	P & ID NO., COORD.	IST PASS	IST CODE CLASS	CODE CAT.	SAFETY POS.	REQUIRED TESTS AND FREQUENCY										RELIEF REQUEST (VRR)	OTHER (CSJ/ROJ/ CMJ/VPS)	NOTES:
							FS	PS	LT	LJ	ST	FT	PI	RV	EX	CM			
G41F047	3	M-1088C G 3		3	B	C													
	G A						Q				Q	Q	2Y						
G41F048	10	M-1088E D 1		A	C	C										V	CMJ	Note 5 (with G41F022)	
	C SA															V			
G41F053	12	M-1088C B 8	P	2	A	C													
	G H									J									
G41F059	18	M-1088E E 6		A	B	O													FS-Open 2Y; 06-OP-1G41-Q-0001
	B H																		
G41F201	12	M-1088C B 8	P	2	A	C													
	G H									J									
G41F226	18	M-1088E F 5		A	B	O													Closed position passive; FS-Open 2Y; 06-OP-1G41-Q-0001
	B H																		
G41F268	3	M-1088C F 4		3	C	C										V	CMJ		
	C SA															V			
G41F300A	1/2	M-1088E C 6		3	C	O								10Y					
	RV SA													10Y					
G41F300B	1/2	M-1088E A 6		3	C	O								10Y					
	RV SA													10Y					
G41F301A	3/4	M-1088E C 3		3	C	O								10Y					
	RV SA													10Y					
G41F301B	3/4	M-1088E A 3		3	C	O								10Y					
	RV SA													10Y					
G41F340	3/4	M-1088C H 2	P	2	A	C													
	GL H									J									
G41F348	18	M-1088E F 5		A	B	O													Close position passive; FS-Open 2Y; 06-OP-1G41-Q-0001
	B H																		

IST PLAN
GGNS APPENDIX
VALVE SUMMARY LISTING

PROGRAM SECTION NO. CEP-IST-2
REVISION NO. 307
PAGE 45 OF 83

SYSTEM: G46 - FPCCU Filter/Demineralizer System

VALVE NO.	VALVE SIZE (in.) TYPE ACT.	P & ID NO., COORD.	IST PASS	IST CODE CLASS	CODE CAT.	SAFETY POS.	REQUIRED TESTS AND FREQUENCY									RELIEF REQUEST (VRR)	OTHER (CSJ/ROJ/ CMJ/VPS)	NOTES:
							FS	PS	LT	LJ	ST	FT	PI	RV	EX			
G46F253	3	M-1089 E 4		A	B													
	G A					C	Q				Q	Q	2Y					

PROGRAM SECTION NO. CEP-IST-2
REVISION NO. 307
PAGE 46 OF 83

VALVE NO.	VALVE SIZE (in.) TYPE ACT.	P & ID NO., COORD.	IST PASS	IST CODE CLASS	CODE CAT.	SAFETY POS.	REQUIRED TESTS AND FREQUENCY										RELIEF REQUEST (VRR)	OTHER (CSJ/ROJ/ CMJ/VPS)	NOTES:
							FS	PS	LT	LJ	ST	FT	PI	RV	EX	CM			
M23F014A	1/2	M-1124C		2	B														NOTE 10
	CL H	E6				C	Q												
M23F014B	1/2	M-1124C		2	B														NOTE 10
	CL H	E5				C	Q												
M23F014C	1/2	M-1124B		2	B														NOTE 10
	CL H	E6				C	Q												
M23F014D	1/2	M-1124B		2	B														NOTE 10
	CL H	E5				C	Q												
M23F018A	1	M-1124B		2	A														
	CL H	C7				C		J											
M23F018B	1	M-1124B		2	A														
	CL H	C3				C		J											
M23F018C	1	M-1124C		2	A														
	CL H	C7				C		J											
M23F018D	1	M-1124C		2	A														
	CL H	C3				C		J											
M23FX001	3/8	M-1124B	P	2	A														
	GL H	F6				C		2Y											
M23FX002	3/8	M-1124B	P	2	A														
	GL H	F5				C		2Y											
M23FX003	3/8	M-1124C	P	2	A														
	GL H	F6				C		2Y											
M23FX004	3/8	M-1124C	P	2	A														
	GL H	F5				C		2Y											
M23FX007	3/8	M-1124B	P	2	A														
	GL H	G6				C		2Y											
M23FX008	3/8	M-1124B	P	2	A														
	GL H	G5				C		2Y											
M23FX009	3/8	M-1124C	P	2	A														
	GL H	G6				C		2Y											
M23FX010	3/8	M-1124C	P	2	A														
	GL H	G5				C		2Y											

IST PLAN
GGNS APPENDIX
VALVE SUMMARY LISTING

PROGRAM SECTION NO. CEP-IST-2
REVISION NO. 307
PAGE 47 OF 83

SYSTEM: M23 - Containment and Drywell Airlock

VALVE NO.	VALVE SIZE (in.) TYPE ACT.	P & ID NO. , COORD.	IST PASS	IST CODE CLASS	CODE CAT.	SAFETY POS.	REQUIRED TESTS AND FREQUENCY										RELIEF REQUEST (VRR)	OTHER (CSJ/ROJ/ CMJ/VPS)	NOTES:
							FS	PS	LT	LJ	ST	FT	PI	RV	EX	CM			
M23FX011	3/8	M-1124B	P	2	A														
	GL H	D3				C				J									
M23FX012	3/8	M-1124B	P	2	A														
	GL H	D3				C				J									
M23FX013	3/8	M-1124B	P	2	A														
	GL H	D3				C				J									
M23FX014	3/8	M-1124B	P	2	A														
	GL H	D3				C				J									
M23FX015	3/8	M-1124C	P	2	A														
	GL H	D3				C				J									
M23FX016	3/8	M-1124C	P	2	A														
	GL H	D3				C				J									
M23FX017	3/8	M-1124C	P	2	A														
	GL H	D3				C				J									
M23FX018	3/8	M-1124C	P	2	A														
	GL H	D3				C				J									

IST PLAN
GGNS APPENDIX
VALVE SUMMARY LISTING

PROGRAM SECTION NO. CEP-IST-2
REVISION NO. 307
PAGE 48 OF 83

SYSTEM: M41 - Containment Cooling System

VALVE NO.	VALVE SIZE (in.) TYPE ACT.	P & ID NO., COORD.	IST PASS	IST CODE CLASS	CODE CAT.	SAFETY POS.	REQUIRED TESTS AND FREQUENCY										RELIEF REQUEST (VRR)	OTHER (CSJ/ROJ/ CMJ/VPS)	NOTES:
							FS	PS	LT	LJ	ST	FT	PI	RV	EX	CM			
M41F007	20	M-1100A		A	B														
	B A	D 2				C	Q			Q	Q	2Y							
M41F008	20	M-1100A		A	B														
	B A	C 2				C	Q			Q	Q	2Y							
M41F011	20	M-1100A		2	A														
	B A	B 6				C	Q			J	Q	Q	2Y						
M41F012	20	M-1100A		2	A														
	B A	B 6				C	Q			J	Q	Q	2Y						
M41F013	20	M-1101		2	B														
	B A	D 1				C	Q			Q	Q	2Y							
M41F015	20	M-1101		2	B														
	B A	D 2				C	Q			Q	Q	2Y							
M41F016	20	M-1101		2	B														
	B A	G 8				C	Q			Q	Q	2Y							
M41F017	20	M-1101		2	B														
	B A	H 8				C	Q			Q	Q	2Y							
M41F034	20	M-1100A		2	A														
	B A	F 1				C	Q			J	Q	Q	2Y						
M41F035	20	M-1100A		2	A														
	B A	F 1				C	Q			J	Q	Q	2Y						
M41F036	20	M-1100A		A	B														
	B A	G 2				C	Q			Q	Q	2Y							
M41F037	20	M-1100A		A	B														
	B A	G 2				C	Q			Q	Q	2Y							
M41F042	3/4	M-1100A	P	2	A														
	GL H	B 6				C			J										
M41F051	3/4	M-1100A	P	2	A														
	GL H	G 1				C			J										
M41F054	3/4	M-1100B	P	2	A														
	GL H	E 6				C			J										

IST PLAN
GGNS APPENDIX
VALVE SUMMARY LISTING

PROGRAM SECTION NO. CEP-IST-2
REVISION NO. 307
PAGE 50 OF 83

SYSTEM: M71 - Containment and Drywell Instrumentation and Control System

VALVE NO.	VALVE SIZE (in.) TYPE ACT.	P & ID NO., COORD.	IST PASS	IST CODE CLASS	CODE CAT.	SAFETY POS.	REQUIRED TESTS AND FREQUENCY										RELIEF REQUEST (VRR)	OTHER (CSJ/ROJ/ CMJ/VPS)	NOTES:
							FS	PS	LT	LJ	ST	FT	PI	RV	EX	CM			
M71F591A	3/4	M-1110A C 7		2	A	O							2Y						Open position passive
	GL M					C	Q			J	Q		2Y						
M71F591B	3/4	M-1110A C 3		2	A	O							2Y						Open position passive
	GL M					C	Q			J	Q		2Y						
M71F592A	3/4	M-1110A C 7		2	A	O							2Y						Open position passive
	GL M					C	Q			J	Q		2Y						
M71F592B	3/4	M-1110A C 3		2	A	O							2Y						Open position passive
	GL M					C	Q			J	Q		2Y						
M71F593	3/4	M-1110A D 3		2	A														
	GL M					C	Q			J	Q		2Y						
M71F594	3/4	M-1110A E 3		2	A														
	GL M					C	Q			J	Q		2Y						
M71F595	1	M-1110A E 3		2	A														
	GL M					C	Q			J	Q		2Y						

IST PLAN
GGNS APPENDIX
VALVE SUMMARY LISTING

PROGRAM SECTION NO. CEP-IST-2
REVISION NO. 307
PAGE 51 OF 83

SYSTEM: P11 - Condensate and Refueling Water Storage and Transfer System

VALVE NO.	VALVE SIZE (in.) TYPE ACT.	P & ID NO., COORD.	IST PASS	IST CODE CLASS	CODE CAT.	SAFETY POS.	REQUIRED TESTS AND FREQUENCY										RELIEF REQUEST (VRR)	OTHER (CSJ/ROJ/ CMJ/VPS)	NOTES:
							FS	PS	LT	LJ	ST	FT	PI	RV	EX	CM			
P11F004	6	M-1065 E 8		2	C, A	O										V		CMJ	
	C SA					C				J						V			
P11F047	12	M-1065 B 5		A	B														
	G A					C	Q				Q	Q	2Y						
P11F061	12	M-1065 B 4		A	B														
	G A					C	Q				Q	Q	2Y						
P11F062	8	M-1065 G 6		A	B														
	G A					C	Q				Q	Q	2Y						
P11F063	8	M-1065 G 6		A	B														
	G A					C	Q				Q	Q	2Y						
P11F064	12	M-1065 D 5		A	B														
	G A					C	Q				Q	Q	2Y						
P11F065	12	M-1065 D 4		A	B														
	G A					C	Q				Q	Q	2Y						
P11F066	12	M-1065 C 5		A	B														
	G A					C	Q				Q	Q	2Y						
P11F067	12	M-1065 C 4		A	B														
	G A					C	Q				Q	Q	2Y						
P11F075	6	M-1065 D 7		2	A														
	G A					C	Q			J	Q	Q	2Y						
P11F095	3/4	M-1065 D 8	P	2	A														
	GL H					C				J									
P11F130	12	M-1065 A 7		2	A														
	B A					C	Q			J	Q	Q	2Y						
P11F131	12	M-1065 A 6		2	A														
	B A					C	Q			J	Q	Q	2Y						
P11F132	3/4	M-1065 A 7	P	2	A														
	GL H					C				J									
P11F151	1/2	M-1065 E8		2	C	O													Replace every 10-years
	RV SA					C				J									
P11F152	3/4	M-1065 A5		3	C	O								10Y					
	RV SA					C								10Y					

IST PLAN
GGNS APPENDIX
VALVE SUMMARY LISTING

PROGRAM SECTION NO. CEP-IST-2
REVISION NO. 307
PAGE 52 OF 83

SYSTEM: P11 - Condensate and Refueling Water Storage and Transfer System

VALVE NO.	VALVE SIZE (in.) TYPE ACT.	P & ID NO., COORD.	IST PASS	IST CODE CLASS	CODE CAT.	SAFETY POS.	REQUIRED TESTS AND FREQUENCY										RELIEF REQUEST (VRR)	OTHER (CSJ/ROJ/ CMJ/VPS)	NOTES:
							FS	PS	LT	LJ	ST	FT	PI	RV	EX	CM			
P11F153	3/4	M-1065 A5		3	C	O								10Y					
	RV SA					C								10Y					
P11F425	3/4	M-1065 A 7	P	2	A														
	GL H					C				J									

**IST PLAN
GGNS APPENDIX
VALVE SUMMARY LISTING**

**PROGRAM SECTION NO. CEP-IST-2
REVISION NO. 307
PAGE 53 OF 83**

SYSTEM: P21 - Makeup Water Treatment System

VALVE NO.	VALVE SIZE (in.) TYPE ACT.	P & ID NO., COORD.	IST PASS	IST CODE CLASS	CODE CAT.	SAFETY POS.	REQUIRED TESTS AND FREQUENCY										RELIEF REQUEST (VRR)	OTHER (CSJ/ROJ/ CMJ/VPS)	NOTES:
							FS	PS	LT	LJ	ST	FT	PI	RV	EX	CM			
P21F017	2	M-0033B E 2		2	A														
	GL M					C	Q			J	Q		2Y						
P21F018	2	M-0033B E 2		2	A														
	GL M					C	Q			J	Q		2Y						
P21F024	4	M-0033B F 2		A	B														
	G A					C	Q				Q	Q	2Y						
P21F390	1/2	M-0033B E2		2	C, A	O													Replace every 10-years
	RV SA					C				J									
P21F391	1/2	M-0033B F2		2	C	O													Replace every 10-years
	RV SA					C													

IST PLAN
GGNS APPENDIX
VALVE SUMMARY LISTING

PROGRAM SECTION NO. CEP-IST-2
REVISION NO. 307
PAGE 54 OF 83

SYSTEM: P41 - Standby Service Water System

VALVE NO.	VALVE SIZE (in.) TYPE ACT.		P & ID NO., COORD.	IST PASS	IST CODE CLASS	CODE CAT.	SAFETY POS.	REQUIRED TESTS AND FREQUENCY										RELIEF REQUEST (VRR)	OTHER (CSJ/ROJ/CMJ/VPS)	NOTES:
								FS	PS	LT	LJ	ST	FT	PI	RV	EX	CM			
P41F001A	24		M-1061A H 2		3	B	O	Q				Q		2Y						
	B	M					C	Q				Q		2Y						
P41F001B	24		M-1061A C 4		3	B	O	Q				Q		2Y						
	B	M					C	Q				Q		2Y						
P41F005A	24		M-1061A G 8		3	B	O	Q				Q		2Y						
	B	M					C	Q				Q		2Y						
P41F005B	24		M-1061A C 7		3	B	O	Q				Q		2Y						
	B	M					C	Q				Q		2Y						
P41F006A	20		M-1061A G 2		3	B	O	Q				Q		2Y						
	B	M					C	Q				Q		2Y						
P41F006B	20		M-1061A A 5		3	B	O	Q				Q		2Y						
	B	M					C	Q				Q		2Y						
P41F007A	4		M-1061A G 4	P	3	B														
	G	M					C							2Y						
P41F007B	4		M-1061A A 4	P	3	B								2Y						
	G	M					C							2Y						
P41F008A	24		M-1061A F 4		3	C	O										V		CMJ	Note 1
	C	SA															V			
P41F008B	24		M-1061A B 5		3	C	O										V		CMJ	Note 1
	C	SA															V			
P41F011	10		M-1061A E 6		3	B	O	Q				Q		2Y						
	B	M					C	Q				Q		2Y						
P41F012	10		M-1061A F 5		3	C	O										V		CMJ	Note 1
	C	SA															V			
P41F014A	18		M-1061C C 5		3	B	O	Q				Q		2Y						
	B	M																		
P41F014B	18		M-1061D F 4		3	B	O	Q				Q		2Y						
	B	M																		
P41F015A	4		M-1061A F 2		3	B														
	G	M					C	Q				Q		2Y						
P41F015B	4		M-1061A C 4		3	B														
	G	M					C	Q				Q		2Y						

PROGRAM SECTION NO. CEP-IST-2
REVISION NO. 307
PAGE 55 OF 83

VALVE NO.	VALVE SIZE (in.) TYPE ACT.		P & ID NO., COORD.	IST PASS	IST CODE CLASS	CODE CAT.	SAFETY POS.	REQUIRED TESTS AND FREQUENCY									RELIEF REQUEST (VRR)	OTHER (CSJ/ROJ/CMJ/VPS)	NOTES:
								FS	PS	LT	LJ	ST	FT	PI	RV	EX			
P41F016A	4		M-1061A		3	B													
	G	M	G 2				C	Q				Q		2Y					
P41F016B	4		M-1061A		3	B													
	G	M	C 4				C	Q				Q		2Y					
P41F018A	10		M-1061B		3	B	O	Q				Q		2Y					
	B	M	C 5																
P41F018B	10		M-1061B		3	B	O	Q				Q		2Y					
	B	M	G 3																
P41F019	1 1/2		M-1061B		3	C										V		CMJ	
	SC	H/SA	G 6				C									V			
P41F024A	1/2		M-1061B		3	C	O								10Y				
	RV	SA	B 5				C								10Y				
P41F024B	1/2		M-1061B		3	C	O								10Y				
	RV	SA	F 4				C								10Y				
P41F031A	1/2		M-1061B		3	C	O								10Y				
	RV	SA	F 8				C								10Y				
P41F031B	1/2		M-1061B		3	C	O								10Y				
	RV	SA	F 7				C								10Y				
P41F036	1/2		M-1061B		3	C	O								10Y				
	RV	SA	D 4				C								10Y				
P41F041	1/2		M-1061B		3	C	O								10Y				
	RV	SA	E 4				C								10Y				
P41F046	1/2		M-1061B		3	C	O								10Y				
	RV	SA	F 1				C								10Y				
P41F049	1/2		M-1061B		3	C	O								10Y				
	RV	SA	E 1				C								10Y				
P41F055	1/2		M-1061B		3	C	O								10Y				
	RV	SA	G 5				C								10Y				
P41F061	1/2		M-1061D		3	C	O								10Y				
	RV	SA	E 2				C								10Y				
P41F064A	3		M-1061C		3	B	O	Q				Q		2Y					Valve No. prefix - "S"
	G	M	E 2																

IST PLAN
GGNS APPENDIX
VALVE SUMMARY LISTING

PROGRAM SECTION NO. CEP-IST-2
REVISION NO. 307
PAGE 56 OF 83

SYSTEM: P41 - Standby Service Water System

VALVE NO.	VALVE SIZE (in.) TYPE ACT.	P & ID NO. , COORD.	IST PASS	IST CODE CLASS	CODE CAT.	SAFETY POS.	REQUIRED TESTS AND FREQUENCY								RELIEF REQUEST (VRR)	OTHER (CSJ/ROJ/ CMJ/VPS)	NOTES:
							FS	PS	LT	LJ	ST	FT	PI	RV	EX	CM	
P41F064B	3	M-1061D		3	B	O	Q				Q		2Y				Valve No. prefix - "S"
	G M	G 8															
P41F065A	1 1/2	M-1061C		3	C	O								10Y			
	RV SA	G 3				C								10Y			
P41F065B	1 1/2	M-1061D		3	C	O								10Y			
	RV SA	F 7				C								10Y			
P41F066A	3	M-1061C		3	B												Valve No. prefix - "S"
	G M	F 2				C	Q				Q		2Y				
P41F066B	3	M-1061D		3	B												Valve No. prefix - "S"
	G M	G 7				C	Q				Q		2Y				
P41F068A	18	M-1061C		3	B	O	Q				Q		2Y				
	B M	C 8															
P41F068B	18	M-1061D		3	B	O	Q				Q		2Y				
	B M	F 6															
P41F074A	3	M-1061C		3	B												Valve No. prefix - "S"
	G M	H 2				C	Q				Q		2Y				
P41F074B	3	M-1061D		3	B												Valve No. prefix - "S"
	G M	D 7				C	Q				Q		2Y				
P41F081A	3	M-1061C		3	B	O	Q				Q		2Y				Valve No. prefix - "S"
	G M	H 2															
P41F081B	3	M-1061D		3	B	O	Q				Q		2Y				Valve No. prefix - "S"
	G M	D 6															
P41F084A	1/2	M-1061C		3	C	O								10Y			
	RV SA	D 4				C								10Y			
P41F084B	1/2	M-1061D		3	C	O								10Y			
	RV SA	G 2				C								10Y			
P41F097A	1/2	M-1061C		3	C	O								10Y			
	RV SA	C 4				C								10Y			
P41F097B	1/2	M-1061D		3	C	O								10Y			
	RV SA	E 2				C								10Y			
P41F100A	3/4	M-1061C		3	C	O								10Y			
	RV SA	C 7				C								10Y			

IST PLAN
GGNS APPENDIX
VALVE SUMMARY LISTING

PROGRAM SECTION NO. CEP-IST-2
REVISION NO. 307
PAGE 57 OF 83

SYSTEM: P41 - Standby Service Water System

VALVE NO.	VALVE SIZE (in.) TYPE ACT.	P & ID NO. , COORD.	IST PASS	IST CODE CLASS	CODE CAT.	SAFETY POS.	REQUIRED TESTS AND FREQUENCY										RELIEF REQUEST (VRR)	OTHER (CSJ/ROJ/ CMJ/VPS)	NOTES:
							FS	PS	LT	LJ	ST	FT	PI	RV	EX	CM			
P41F100B	3/4	M-1061D		3	C	O								10Y					
	RV SA	F 5				C								10Y					
P41F104	1/2	M-1061C		3	C	O								10Y					
	RV SA	E 3				C								10Y					
P41F111A	2	M-1061B		3	C											V	CMJ		
	SC H/SA	B 7				C										V			
P41F111B	2	M-1061B		3	C											V	CMJ		
	SC H/SA	G 5				C										V			
P41F113	2	M-1061B		3	B														
	GL M	C 6				C	Q				Q		2Y						
P41F125	6	M-1061C		3	B													Valve No. prefix - "S"	
	G M	E 1				C	Q				Q		2Y						
P41F127A	1/2	M-1061C		3	C	O								10Y					
	RV SA	F 4				C								10Y					
P41F127B	1/2	M-1061D		3	C	O								10Y					
	RV SA	B 6				C								10Y					
P41F138A	1/2	M-1061C		3	C	O								10Y					
	RV SA	F 5				C								10Y					
P41F138B	1/2	M-1061D		3	C	O								10Y					
	RV SA	B 5				C								10Y					
P41F151A	1/2	M-1061C		3	C	O								10Y					
	RV SA	F 7				C								10Y					
P41F151B	1/2	M-1061D		3	C	O								10Y					
	RV SA	B 3				C								10Y					
P41F154	3	M-1061D		3	B													Valve No. prefix - "S"	
	G M	H 2				C	Q				Q		2Y						
P41F155A	3	M-1061D		3	B													Valve No. prefix - "S"	
	G M	G 1				C	Q				Q		2Y						
P41F155B	3	M-1061D		3	B													Valve No. prefix - "S"	
	G M	G 2				C	Q				Q		2Y						
P41F157A	1/2	M-1061C		3	C	O								10Y					
	RV SA	F 6				C								10Y					

IST PLAN
GGNS APPENDIX
VALVE SUMMARY LISTING

PROGRAM SECTION NO. CEP-IST-2
REVISION NO. 307
PAGE 58 OF 83

SYSTEM: P41 - Standby Service Water System

VALVE NO.	VALVE SIZE (in.) TYPE ACT.	P & ID NO., COORD.	IST PASS	IST CODE CLASS	CODE CAT.	SAFETY POS.	REQUIRED TESTS AND FREQUENCY										RELIEF REQUEST (VRR)	OTHER (CSJ/ROJ/ CMJ/VPS)	NOTES:
							FS	PS	LT	LJ	ST	FT	PI	RV	EX	CM			
P41F157B	1/2	M-1061D B 4		3	C	O								10Y					
	RV SA					C								10Y					
P41F159A	2	M-1061B E 4		2	A	O	Q				Q		2Y						
	GL M					C	Q			J	Q		2Y						
P41F159B	2	M-1061D D 2		2	A	O	Q				Q		2Y						
	GL M					C	Q			J	Q		2Y						
P41F160A	2	M-1061B D 2		2	A	O	Q				Q		2Y						
	GL M					C	Q			J	Q		2Y						
P41F160B	2	M-1061D D 4		2	A	O	Q				Q		2Y						
	GL M					C	Q			J	Q		2Y						
P41F163A	3/4	M-1061B E 4	P	2	A														
	GL H					C				J									
P41F163B	3/4	M-1061D D 2	P	2	A														
	GL H					C				J									
P41F168A	2	M-1061B E 3		2	A	O	Q				Q		2Y						
	GL M					C	Q			J	Q		2Y						
P41F168B	2	M-1061D E 3		2	A	O	Q				Q		2Y						
	GL M					C	Q			J	Q		2Y						
P41F169A	2	M-1061B E 4		2	C, A	O										V		CMJ	
	C SA					C				J						V			
P41F169B	2	M-1061D D 2		2	C, A	O										V		CMJ	
	C SA					C				J						V			
P41F174	3	M-1061D H 3		3	C											V		CMJ	
	C SA					C										V			
P41F189	6	M-1061D C 8		3	B														Valve No. prefix - "S"
	G M					C	Q				Q		2Y						
P41F194A	1/2	M-1061C F 8		3	C	O								10Y					
	RV SA					C								10Y					
P41F194B	1/2	M-1061D B 2		3	C	O								10Y					
	RV SA					C								10Y					
P41F236	3	M-1061C E 4		3	C											V		CMJ	
	C SA					C										V			

**IST PLAN
GGNS APPENDIX
VALVE SUMMARY LISTING**

**PROGRAM SECTION NO. CEP-IST-2
REVISION NO. 307
PAGE 59 OF 83**

SYSTEM: P41 - Standby Service Water System

VALVE NO.	VALVE SIZE (in.) TYPE ACT.	P & ID NO., COORD.	IST PASS	IST CODE CLASS	CODE CAT.	SAFETY POS.	REQUIRED TESTS AND FREQUENCY										RELIEF REQUEST (VRR)	OTHER (CSJ/ROJ/ CMJ/VPS)	NOTES:
							FS	PS	LT	LJ	ST	FT	PI	RV	EX	CM			
P41F237	3	M-1061C E 5		3	B	O	Q				Q		2Y						
	G M																		
P41F238	3	M-1061C G 3		3	B	O	Q				Q		2Y						
	G M																		
P41F239	3	M-1061C F 3		3	B														
	G A						C	Q			Q	Q	2Y						
P41F240	3	M-1061C H 3		3	B														
	G A						C	Q			Q	Q	2Y						
P41F241	3	M-1061C H 3		3	B														
	G M						C	Q			Q		2Y						
P41F293A	1	M-1061B C 4		3	C	O								10Y					
	RV SA						C							10Y					
P41F293B	1	M-1061B G 1		3	C	O								10Y					
	RV SA						C							10Y					
P41F299A	6	M-1061A G 3		3	C	O								10Y					
	RV SA						C							10Y					
P41F299B	6	M-1061A C 5		3	C	O								10Y					
	RV SA						C							10Y					

PROGRAM SECTION NO. CEP-IST-2
REVISION NO. 307
PAGE 60 OF 83

VALVE NO.	VALVE SIZE (in.) TYPE ACT.		P & ID NO., COORD.	IST PASS	IST CODE CLASS	CODE CAT.	SAFETY POS.	REQUIRED TESTS AND FREQUENCY									RELIEF REQUEST (VRR)	OTHER (CSJ/ROJ/CMJ/VPS)	NOTES:	
	FS	PS						LT	LJ	ST	FT	PI	RV	EX	CM					
P42F028A	8		M-1063A H 6	P	3	B	O							2Y						
	B	M																		
P42F028B	8		M-1063A G 4		3	B														
	B	M					C	Q				Q		2Y						
P42F029A	3/4		M-1063A H 7		3	C	O								10Y					
	RV	SA					C							10Y						
P42F029B	3/4		M-1063A F 5		3	C	O								10Y					
	RV	SA					C							10Y						
P42F032A	8		M-1063A G 7	P	3	B	O							2Y						
	B	M																		
P42F032B	8		M-1063A E 7		3	B														
	B	M					C	Q				Q		2Y						
P42F035	10		M-1063B H 7		2	C, A	O										V		CMJ	
	C	SA					C				J						V			
P42F066	10		M-1063B H 7		2	A													CSJ-018	
	G	M					C	C			J	C		2Y						
P42F067	10		M-1063B E 8		2	A													CSJ-018	
	G	M					C	C			J	C		2Y						
P42F068	10		M-1063B D 8		2	A													CSJ-018	
	G	M					C	C			J	C		2Y						
P42F105	10		M-1063A H 3		3	B														
	B	M					C	Q				Q		2Y						
P42F114	8		M-1063B H 5		2	B													CSJ-019	
	G	M					C	C				C		2Y						
P42F115	8		M-1063B H 5		2	C	O										V		CMJ	
	C	SA					C									V				
P42F116	8		M-1063B C 5		2	B													CSJ-019	
	G	M					C	C				C		2Y						
P42F117	8		M-1063B C 5		2	B													CSJ-019	
	G	M					C	C				C		2Y						
P42F161	3/4		M-1063B H 7	P	2	A														
	GL	H					C				J									

IST PLAN
GGNS APPENDIX
VALVE SUMMARY LISTING

PROGRAM SECTION NO. CEP-IST-2
REVISION NO. 307
PAGE 61 OF 83

SYSTEM: P42 - Component Cooling Water System

VALVE NO.	VALVE SIZE (in.) TYPE ACT.	P & ID NO., COORD.	IST PASS	IST CODE CLASS	CODE CAT.	SAFETY POS.	REQUIRED TESTS AND FREQUENCY									RELIEF REQUEST (VRR)	OTHER (CSJ/ROJ/ CMJ/VPS)	NOTES:
							FS	PS	LT	LJ	ST	FT	PI	RV	EX			
P42F162	3/4	M-1063B	P	2	A													
	GL H	D 8				C			J									
P42F200A	8	M-1063A		3	B	O	Q			Q		2Y						
	B M	G 3				C	Q			Q		2Y						
P42F200B	8	M-1063A		3	B	O	Q			Q		2Y						
	B M	F 4				C	Q			Q		2Y						
P42F201A	8	M-1063A		3	B	O	Q			Q		2Y						
	B M	F 8				C	Q			Q		2Y						
P42F201B	8	M-1063A		3	B	O	Q			Q		2Y						
	B M	E 7				C	Q			Q		2Y						
P42F203	8	M-1063A		3	B													
	B M	G 4				C	Q			Q		2Y						
P42F204	8	M-1063A		3	B													
	B M	E 8				C	Q			Q		2Y						
P42F205	10	M-1063A		3	B													
	B M	E 8				C	Q			Q		2Y						
P42F225	3/4	M-1063B		A	C	O												Replace every 10-years
	RV SA	G8				C												
P42F255	1/2	M-1063B		A	C	O												Replace every 10-years
	RV SA	C2				C												
P42F263	1/2	M-1063B		2	C	O												Replace every 10-years
	RV SA	E5				C												
P42F264	1/2	M-1063B		2	C	O												Replacc every 10-years
	RV SA	B7				C												

IST PLAN
GGNS APPENDIX
VALVE SUMMARY LISTING

PROGRAM SECTION NO. CEP-IST-2
REVISION NO. 307
PAGE 62 OF 83

SYSTEM: P44 - Plant Service Water System

VALVE NO.	VALVE SIZE (in.) TYPE ACT.	P & ID NO. , COORD.	IST PASS	IST CODE CLASS	CODE CAT.	SAFETY POS.	REQUIRED TESTS AND FREQUENCY										RELIEF REQUEST (VRR)	OTHER (CSJ/ROJ/ CMJ/VPS)	NOTES:
							FS	PS	LT	LJ	ST	FT	PI	RV	EX	CM			
P44F042	8	M-1072F G 4		3	B														
	B M						C	Q			Q		2Y						
P44F045C	1/2	M-1072B F4		A	C		O												Replace every 10-years
	RV SA						C												
P44F054	8	M-1072F G 3		3	B														
	B M						C	Q			Q		2Y						
P44F067	8	M-1072A A 6		3	B													CSJ-020	
	B M						C	C			C		2Y						
P44F106A	1/2	M-1072B G6		A	C		O												Replace every 10-years
	RV SA						C												
P44F495A	3/4	M-1072H E 5		3	C		O							10Y					
	RV SA						C							10Y					
P44F495B	3/4	M-1072H E 4		3	C		O							10Y					
	RV SA						C							10Y					

IST PLAN
GGNS APPENDIX
VALVE SUMMARY LISTING

PROGRAM SECTION NO. CEP-IST-2
REVISION NO. 307
PAGE 63 OF 83

SYSTEM: P45 - Floor and Equipment Drains System

VALVE NO.	VALVE SIZE (in.) TYPE ACT.		P & ID NO., COORD.	IST PASS	IST CODE CLASS	CODE CAT.	SAFETY POS.	REQUIRED TESTS AND FREQUENCY									RELIEF REQUEST (VRR)	OTHER (CSJ/ROJ/CMJ/VPS)	NOTES:
								FS	PS	LT	LJ	ST	FT	PI	RV	EX	CM		
P45D044	1		M-1094A H4	P	A	D	O											VPS-001	Replace every 5 years
	RD	SA																	
P45D045	1		M-1094B G3	P	A	D	O											VPS-001	Replace every 5 years
	RD	SA																	
P45D046	1		M-1094E G2	P	A	D	O											VPS-001	Replace every 5 years
	RD	SA																	
P45F003	3		M-1094A H 6		2	B	C	C				C	C	2Y				CSJ-021	
	G	A																	
P45F004	3		M-1094A H 5		2	B	C	Q				Q	Q	2Y					
	G	A																	
P45F009	3		M-1094A D 6		2	B	C	C				C	C	2Y				CSJ-021	
	G	A																	
P45F010	3		M-1094A D 5		2	B	C	Q				Q	Q	2Y					
	G	A																	
P45F061	6		M-1094B D 3		2	A	C	Q			J	Q	Q	2Y					
	G	A																	
P45F062	6		M-1094B D 2		2	A	C	Q			J	Q	Q	2Y					
	G	A																	
P45F067	6		M-1094B F 3		2	A	C	Q			J	Q	Q	2Y					
	G	A																	
P45F068	6		M-1094B F 2		2	A	C	Q			J	Q	Q	2Y					
	G	A																	
P45F096	1 1/2		M-1094E H 6		2	B	C	Q				Q		2Y					
	GL	M																	
P45F097	1 1/2		M-1094E H 5		2	B	C	Q				Q		2Y					
	GL	M																	
P45F098	3		M-1094E G 2		2	A	C	Q			J	Q	Q	2Y					
	G	A																	
P45F099	3		M-1094E G 1		2	A	C	Q			J	Q	Q	2Y					
	G	A																	
P45F158	8		M-1094C F 1		A	B	C	Q				Q	Q	2Y					
	G	A																	

PROGRAM SECTION NO. CEP-IST-2
REVISION NO. 307
PAGE 64 OF 83

VALVE NO.	VALVE SIZE (in.) TYPE ACT.		P & ID NO., COORD.	IST PASS	IST CODE CLASS	CODE CAT.	SAFETY POS.	REQUIRED TESTS AND FREQUENCY								RELIEF REQUEST (VRR)	OTHER (CSJ/ROJ/CMJ/VPS)	NOTES:
								FS	PS	LT	LJ	ST	FT	PI	RV			
P45F159	8		M-1094C G 1		A	B												
	G	A					C	Q				Q	Q	2Y				
P45F160	8		M-1094C C 2		A	B												
	G	A					C	Q				Q	Q	2Y				
P45F161	8		M-1094C C 2		A	B												
	G	A					C	Q				Q	Q	2Y				
P45F163	3		M-1094C E 6		A	B												
	G	A					C	Q				Q	Q	2Y				
P45F273	4		M-1094C B 1	P	2	A												
	G	M					C				J			2Y				
P45F274	4		M-1094C C 1	P	2	A												
	G	M					C				J			2Y				
P45F275	3/4		M-1094C D 1	P	2	A												
	GL	H					C				J							
P45F290	3/4		M-1094C D 1	P	2	A												
	GL	H					C				J							

SYSTEM: P47 -

VALVE NO.	VALVE SIZE (in.) TYPE ACT.	P & ID NO., COORD.	IST PASS	IST CODE CLASS	CODE CAT.	SAFETY POS.	REQUIRED TESTS AND FREQUENCY										RELIEF REQUEST (VRR)	OTHER (CSJ/ROJ/ CMJ/VPS)	NOTES:
							FS	PS	LT	LJ	ST	FT	PI	RV	EX	CM			
P47F025A	8	M-0052A G6		A	D	O								5Y					
	RV SA					C								5Y					
P47F025C	8	M-0052A C6		A	D	O								5Y					
	RV SA					C								5Y					
P47F025E	8	M-0052A G2		A	D	O								5Y					
	RV SA					C								5Y					
P47F025J	6	M-0052A C4		A	D	O								5Y					
	RV SA					C								5Y					

IST PLAN GGNS APPENDIX VALVE SUMMARY LISTING	PROGRAM SECTION NO. CEP-IST-2 REVISION NO. 307 PAGE 66 OF 83
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SYSTEM: P48 - Suspended Floor and Equipment Drain System

VALVE NO.	VALVE SIZE (in.) TYPE ACT.		P & ID NO., COORD.	IST PASS	IST CODE CLASS	CODE CAT.	SAFETY POS.	REQUIRED TESTS AND FREQUENCY									RELIEF REQUEST (VRR)	OTHER (CSJ/ROJ/CMJ/VPS)	NOTES:
								FS	PS	LT	LJ	ST	FT	PI	RV	EX			
P48F009	0.75		M-1098F	P	2	A													
	GL	H	C8				C				J								
P48F010	0.75		M-1098F	P	2	A													
	GL	H	D6				C				J								

**IST PLAN
GGNS APPENDIX
VALVE SUMMARY LISTING**

**PROGRAM SECTION NO. CEP-IST-2
REVISION NO. 307
PAGE 67 OF 83**

SYSTEM: P52 - Service Air System

VALVE NO.	VALVE SIZE (in.) TYPE ACT.	P & ID NO. , COORD.	IST PASS	IST CODE CLASS	CODE CAT.	SAFETY POS.	REQUIRED TESTS AND FREQUENCY										RELIEF REQUEST (VRR)	OTHER (CSJ/ROJ/ CMJ/VPS)	NOTES:
							FS	PS	LT	LJ	ST	FT	PI	RV	EX	CM			
P52F105	3	M-1068A E 6		2	A														
	G A						C	Q		J	Q	Q	2Y						
P52F122	3	M-1068A E 5		2	C, A											V	CMJ		
	C SA						C			J						V			
P52F160A	4	M-1068A F 8		A	B														
	G A						C	Q			Q	Q	2Y						
P52F160B	4	M-1068C D 3		A	B														
	G A						C	Q			Q	Q	2Y						
P52F195	2	M-1068A D 4	P	2	B														
	GL M						C						2Y						
P52F221A	4	M-1068A B 8		A	B														
	G A						C	Q			Q	Q	2Y						
P52F221B	4	M-1068C A 3		A	B														
	G A						C	Q			Q	Q	2Y						
P52F258	3/4	M-1068A D 6	P	2	A														
	GL H						C			J									

IST PLAN
GGNS APPENDIX
VALVE SUMMARY LISTING

PROGRAM SECTION NO. CEP-IST-2
REVISION NO. 307
PAGE 68 OF 83

SYSTEM: P53 - Instrument Air System

VALVE NO.	VALVE SIZE (in.) TYPE ACT.	P & ID NO. , COORD.	IST PASS	IST CODE CLASS	CODE CAT.	SAFETY POS.	REQUIRED TESTS AND FREQUENCY										RELIEF REQUEST (VRR)	OTHER (CSJ/ROJ/ CMJ/VPS)	NOTES:
							FS	PS	LT	LJ	ST	FT	PI	RV	EX	CM			
P53F001	2 1/2	M-1067M F 5		2	A	O							2Y					CSJ-022	Open position passive
	G A					C	C			J	C	C	2Y						
P53F002	2 1/2	M-1067A B 6		2	C, A	O										V		CMJ	
	C SA					C				J						V			
P53F003	1	M-1067M E 4		2	A	O							2Y						Open position passive
	GL M					C	Q			J	Q		2Y						
P53F006	3/4	M-1067A A 3		2	C, A	O										V		CMJ	
	C SA					C				J						V			
P53F007	2	M-1067A B 4		2	B	O							2Y					CSJ-023	Open position passive
	GL M					C	C				C		2Y						
P53F008	2	M-1067A B 3		2	C	O										V		CMJ	
	SC H/SA					C										V			
P53F036	3/4	M-1067M F 5	P	2	A														
	GL H					C				J									
P53F043	3/4	M-1067M E 4		2	A	O													FS-Open & Close 2Y; 06-OP-1P52-Q-0001
	GL H					C				J									
P53FA01	3/4	M-1067M D 4		2	B	O													FS-Open 2Y; 06-OP-1P53-Q-0001
	GL H																		

IST PLAN
GGNS APPENDIX
VALVE SUMMARY LISTING

PROGRAM SECTION NO. CEP-IST-2
REVISION NO. 307
PAGE 69 OF 83

SYSTEM: P60 - Suppression Pool Cleanup System

VALVE NO.	VALVE SIZE (in.) TYPE ACT.	P & ID NO., COORD.	IST PASS	IST CODE CLASS	CODE CAT.	SAFETY POS.	REQUIRED TESTS AND FREQUENCY										RELIEF REQUEST (VRR)	OTHER (CSJ/ROJ/ CMJ/VPS)	NOTES:
							FS	PS	LT	LJ	ST	FT	PI	RV	EX	CM			
P60F001	12	M-1099 D 4		2	B														
	G A						C	Q			Q	Q	2Y						
P60F003	12	M-1099 D 3		A	B														
	G A						C	Q			Q	Q	2Y						
P60F004	12	M-1099 E 3		A	B														
	G A						C	Q			Q	Q	2Y						
P60F007	12	M-1099 F 6		A	B														
	G A						C	Q			Q	Q	2Y						
P60F008	12	M-1099 F 6		A	B														
	G A						C	Q			Q	Q	2Y						
P60F009	12	M-1099 F 6		2	A														
	G A						C	Q		J	Q	Q	2Y						
P60F010	12	M-1099 F 7		2	A														
	G A						C	Q		J	Q	Q	2Y						
P60F011	3/4	M-1099 E 6	P	2	A														
	GL H						C			J									
P60F021	12	M-1099 D 5		2	B														
	G A						C	Q			Q	Q	2Y						
P60F034	3/4	M-1099 F 7	P	2	A														
	GL H						C			J									

**IST PLAN
GGNS APPENDIX
VALVE SUMMARY LISTING**

**PROGRAM SECTION NO. CEP-IST-2
REVISION NO. 307
PAGE 70 OF 83**

SYSTEM: P66 - Domestic Water System

VALVE NO.	VALVE SIZE (in.) TYPE ACT.	P & ID NO. , COORD.	IST PASS	IST CODE CLASS	CODE CAT.	SAFETY POS.	REQUIRED TESTS AND FREQUENCY								RELIEF REQUEST (VRR)	OTHER (CSJ/ROJ/ CMJ/VPS)	NOTES:
							FS	PS	LT	LJ	ST	FT	PI	RV	EX	CM	
P66F029A	3	M-0034B		A	B												Valve No. prefix - "S"
	G A	E 3				C	Q				Q	Q	2Y				

IST PLAN
GGNS APPENDIX
VALVE SUMMARY LISTING

PROGRAM SECTION NO. CEP-IST-2
REVISION NO. 307
PAGE 71 OF 83

SYSTEM: P71 - Plant Chilled Water System

VALVE NO.	VALVE SIZE (in.) TYPE ACT.		P & ID NO., COORD.	IST PASS	IST CODE CLASS	CODE CAT.	SAFETY POS.	REQUIRED TESTS AND FREQUENCY										RELIEF REQUEST (VRR)	OTHER (CSJ/ROJ/ CMJ/VPS)	NOTES:
								FS	PS	LT	LJ	ST	FT	PI	RV	EX	CM			
P71D021	1		M-1109D F7	P	A	D	O											VPS-001	Replace every 5 years	
	RD	SA																		
P71F148	4		M-1109D F 8		2	A														
	G	A					C	Q			J	Q	Q	2Y						
P71F149	4		M-1109D F 7		2	A														
	G	A					C	Q			J	Q	Q	2Y						
P71F150	4		M-1109D E 7		2	A														
	G	A					C	Q			J	Q	Q	2Y						
P71F151	4		M-1109D E 6		2	C, A	O										V	CMJ		
	C	SA					C				J						V			
P71F232	3/4		M-1109D E 7	P	2	A														
	GL	H					C				J									
P71F246	3/4		M-1109D F 8	P	2	A														
	GL	H					C				J									

IST PLAN
GGNS APPENDIX
VALVE SUMMARY LISTING

PROGRAM SECTION NO. CEP-IST-2
REVISION NO. 307
PAGE 72 OF 83

SYSTEM: P72 - Drywell Chilled Water System

VALVE NO.	VALVE SIZE (in.) TYPE ACT.	P & ID NO., COORD.	IST PASS	IST CODE CLASS	CODE CAT.	SAFETY POS.	REQUIRED TESTS AND FREQUENCY										RELIEF REQUEST (VRR)	OTHER (CSJ/ROJ/ CMJ/VPS)	NOTES:
							FS	PS	LT	LJ	ST	FT	PI	RV	EX	CM			
P72F121	4	M-1072B H 5		2	A													CSJ-024	
	G M					C	C			J	C		2Y						
P72F122	4	M-1072B H 8		2	A													CSJ-024	
	G M					C	C			J	C		2Y						
P72F123	4	M-1072B G 8		2	A													CSJ-024	
	G M					C	C			J	C		2Y						
P72F124	4	M-1072B F 5		2	B													CSJ-025	
	G M					C	C				C		2Y						
P72F125	4	M-1072B E 8		2	B													CSJ-025	
	G M					C	C				C		2Y						
P72F126	4	M-1072B F 8		2	B													CSJ-025	
	G M					C	C				C		2Y						
P72F147	4	M-1072B E 5		2	C	O										V		CMJ	
	C SA					C										V			
P72F165	4	M-1072B G 5		2	C, A	O										V		CMJ	
	C SA					C				J						V			
P72F167	3/4	M-1072B G 4	P	2	A														
	GL H					C				J									
P72F209	1	M-1072B F 8		2	C	O													Replace every 10-years
	RV SA					C													

IST PLAN
GGNS APPENDIX
VALVE SUMMARY LISTING

PROGRAM SECTION NO. CEP-IST-2
REVISION NO. 307
PAGE 73 OF 83

SYSTEM: P75 - Standby Diesel Generator System

VALVE NO.	VALVE SIZE (in.) TYPE ACT.	P & ID NO., COORD.	IST PASS	IST CODE CLASS	CODE CAT.	SAFETY POS.	REQUIRED TESTS AND FREQUENCY										RELIEF REQUEST (VRR)	OTHER (CSJ/ROJ/ CMJ/VPS)	NOTES:
							FS	PS	LT	LJ	ST	FT	PI	RV	EX	CM			
P75F003A	2	M-1070A H 7		3	C	O										V		CMJ	
	SC H/SA															V			
P75F003B	2	M-1070B H 8		3	C	O										V		CMJ	
	SC H/SA															V			
P75F006A	2	M-1070A G 6		3	C	O										V		CMJ	
	SC H/SA															V			
P75F006B	2	M-1070B G 6		3	C	O										V		CMJ	
	SC H/SA															V			
P75F009A	3	M-1070A F 6		3	C											V		CMJ	
	C SA						C									V			
P75F009B	3	M-1070A A 8		3	C											V		CMJ	
	C SA						C									V			
P75F009C	3	M-1070B F 6		3	C											V		CMJ	
	C SA						C									V			
P75F009D	3	M-1070B A 8		3	C											V		CMJ	
	C SA						C									V			
P75F011A	3	M-1070A E 6		3	C	O										V		CMJ	
	C SA															V			
P75F011B	3	M-1070A B 8		3	C	O										V		CMJ	
	C SA															V			
P75F011C	3	M-1070B E 6		3	C	O										V		CMJ	
	C SA															V			
P75F011D	3	M-1070B B 8		3	C	O										V		CMJ	
	C SA															V			
P75F025A	1	M-1070A E 5		3	C	O								10Y					
	RV SA						C							10Y					
P75F025B	1	M-1070A A 8		3	C	O								10Y					
	RV SA						C							10Y					
P75F025C	1	M-1070B E 5		3	C	O								10Y					
	RV SA						C							10Y					
P75F025D	1	M-1070B A 8		3	C	O								10Y					
	RV SA						C							10Y					

IST PLAN
GGNS APPENDIX
VALVE SUMMARY LISTING

PROGRAM SECTION NO. CEP-IST-2
REVISION NO. 307
PAGE 74 OF 83

SYSTEM: P75 - Standby Diesel Generator System

VALVE NO.	VALVE SIZE (in.) TYPE ACT.	P & ID NO., COORD.	IST PASS	IST CODE CLASS	CODE CAT.	SAFETY POS.	REQUIRED TESTS AND FREQUENCY										RELIEF REQUEST (VRR)	OTHER (CSJ/ROJ/ CMJ/VPS)	NOTES:
							FS	PS	LT	LJ	ST	FT	PI	RV	EX	CM			
P75F026A	1 1/2	M-1070A H 7		3	C	O								10Y					
	RV SA					C								10Y					
P75F026B	1 1/2	M-1070B H 7		3	C	O								10Y					
	RV SA					C								10Y					
P75F028A	1	M-1070A G 3		3	C	O								10Y					
	RV SA					C								10Y					
P75F028B	1	M-1070B G 3		3	C	O								10Y					
	RV SA					C								10Y					
P75F031A	4	M-1070A F 3		A	C	O								10Y					
	RV SA					C								10Y					
P75F031B	4	M-1070B F 2		A	C	O								10Y					
	RV SA					C								10Y					
P75F066A	2	M-1070A F 4		3	C	O								10Y					
	RV SA					C								10Y					
P75F066B	2	M-1070B F 3		3	C	O								10Y					
	RV SA					C								10Y					
P75F067A	1 1/2	M-1070A F 4		3	C	O								10Y					
	RV SA					C								10Y					
P75F067B	1 1/2	M-1070B F 4		3	C	O								10Y					
	RV SA					C								10Y					
P75F079A	3	M-1070C D 6		A	C	O										V		CMJ	
	C SA					C										V			
P75F079B	3	M-1070C D 6		A	C	O										V		CMJ	
	C SA					C										V			
P75F079C	3	M-1070C D 6		A	C	O										V		CMJ	
	C SA					C										V			
P75F079D	3	M-1070C D 5		A	C	O										V		CMJ	
	C SA					C										V			
P75F079E	3	M-1070D D 6		A	C	O										V		CMJ	
	C SA					C										V			
P75F079F	3	M-1070D D 6		A	C	O										V		CMJ	
	C SA					C										V			

IST PLAN
GGNS APPENDIX
VALVE SUMMARY LISTING

PROGRAM SECTION NO. CEP-IST-2
REVISION NO. 307
PAGE 75 OF 83

SYSTEM: P75 - Standby Diesel Generator System

VALVE NO.	VALVE SIZE (in.) TYPE ACT.	P & ID NO. , COORD.	IST PASS	IST CODE CLASS	CODE CAT.	SAFETY POS.	REQUIRED TESTS AND FREQUENCY										RELIEF REQUEST (VRR)	OTHER (CSJ/ROJ/ CMJ/VPS)	NOTES:
							FS	PS	LT	LJ	ST	FT	PI	RV	EX	CM			
P75F079G	3	M-1070D		A	C	O										V		CMJ	
	C SA	D 6				C										V			
P75F079H	3	M-1070D		A	C	O										V		CMJ	
	C SA	D 5				C										V			
P75F507A	3	M-1070C		A	B	O	Q				Q							VPS-007	
	GL S	D 5				C	Q				Q								
P75F507B	3	M-1070C		A	B	O	Q				Q							VPS-007	
	GL S	D 6				C	Q				Q								
P75F507C	3	M-1070D		A	B	O	Q				Q							VPS-007	
	GL S	D 5				C	Q				Q								
P75F507D	3	M-1070D		A	B	O	Q				Q							VPS-007	
	GL S	D 6				C	Q				Q								
P75F508A	3	M-1070C		A	B	O	Q				Q							VPS-007	
	GL S	C 5				C	Q				Q								
P75F508B	3	M-1070C		A	B	O	Q				Q							VPS-007	
	GL S	D 6				C	Q				Q								
P75F508C	3	M-1070D		A	B	O	Q				Q							VPS-007	
	GL S	C 5				C	Q				Q								
P75F508D	3	M-1070D		A	B	O	Q				Q							VPS-007	
	GL S	D 6				C	Q				Q								

IST PLAN
GGNS APPENDIX
VALVE SUMMARY LISTING

PROGRAM SECTION NO. CEP-IST-2
REVISION NO. 307
PAGE 76 OF 83

SYSTEM: P81 - HPCS Diesel Generator System

VALVE NO.	VALVE SIZE (in.) TYPE ACT.	P & ID NO. , COORD.	IST PASS	IST CODE CLASS	CODE CAT.	SAFETY POS.	REQUIRED TESTS AND FREQUENCY										RELIEF REQUEST (VRR)	OTHER (CSJ/ROJ/ CMJ/VPS)	NOTES:
							FS	PS	LT	LJ	ST	FT	PI	RV	EX	CM			
P81F007	2	M-1093A B 4		3	C	O										V		CMJ	
	SC H/SA															V			
P81F047A		M-1093B D 5		A	C	O												VPS-011	Skid-mounted
	RV SA																		
P81F047B		M-1093C D 5		A	C	O												VPS-011	Skid-mounted
	RV SA																		
P81F048A	3/4	M-1093B G 5		3	C	O								10Y					
	RV SA													10Y					
P81F048B	3/4	M-1093C G 5		3	C	O								10Y					
	RV SA													10Y					
P81F049A	3/4	M-1093B F 4		3	C	O								10Y					
	RV SA													10Y					
P81F049B	3/4	M-1093C G 6		3	C	O								10Y					
	RV SA													10Y					
P81F052A		M-1093B B 5		A	C	O												VPS-012	Skid-mounted
	RV SA																		
P81F052B		M-1093C C 5		A	C	O												VPS-012	Skid-mounted
	RV SA																		
P81F053A		M-1093B D 4		A	B	O	Q				Q							VPS-009	
	T A						Q				Q								
P81F053B		M-1093C D 6		A	B	O	Q				Q							VPS-009	
	T A						Q				Q								
P81F054A		M-1093B C 4		A	B	O	Q				Q							VPS-009	
	T A						Q				Q								
P81F054B		M-1093C C 6		A	B	O	Q				Q							VPS-009	
	T A						Q				Q								
P81F067A	3/4	M-1093B G 5		A	C											V		CMJ	
	C SA															V			
P81F067B	3/4	M-1093C G 5		A	C											V		CMJ	
	C SA															V			
P81F068A	3/4	M-1093B F 4		A	C											V		CMJ	
	C SA															V			

IST PLAN
GGNS APPENDIX
VALVE SUMMARY LISTING

PROGRAM SECTION NO. CEP-IST-2
REVISION NO. 307
PAGE 77 OF 83

SYSTEM: P81 - HPCS Diesel Generator System

VALVE NO.	VALVE SIZE (in.) TYPE ACT.	P & ID NO., COORD.	IST PASS	IST CODE CLASS	CODE CAT.	SAFETY POS.	REQUIRED TESTS AND FREQUENCY										RELIEF REQUEST (VRR)	OTHER (CSJ/ROJ/ CMJ/VPS)	NOTES:
							FS	PS	LT	LJ	ST	FT	PI	RV	EX	CM			
P81F068B	3/4	M-1093C F 6		A	C											V		CMJ	
	C SA					C										V			
P81F103A	2.25	M-1093B D-6		A	C	O								5Y				VPS-010	
	RV SA					C								5Y					
P81F103B	2.25	M-1093C D-4		A	C	O								5Y				VPS-010	
	RV SA					C								5Y					
P81F503A	1/2	M-1093B D 4		A	B	O	Q				Q							VPS-008	
	GL S					C	Q				Q								
P81F503B	1/2	M-1093C D 6		A	B	O	Q				Q							VPS-008	
	GL S					C	Q				Q								
P81F504A	1/2	M-1093B B 4		A	B	O	Q				Q							VPS-008	
	GL S					C	Q				Q								
P81F504B	1/2	M-1093C C 6		A	B	O	Q				Q							VPS-008	
	GL S					C	Q				Q								

IST PLAN GGNS APPENDIX VALVE SUMMARY LISTING	PROGRAM SECTION NO. CEP-IST-2 REVISION NO. 307 PAGE 78 OF 83
---	---

SYSTEM: T41 - Auxiliary Building Ventilation System

VALVE NO.	VALVE SIZE (in.) TYPE ACT.	P & ID NO., COORD.	IST PASS	IST CODE CLASS	CODE CAT.	SAFETY POS.	REQUIRED TESTS AND FREQUENCY										RELIEF REQUEST (VRR)	OTHER (CSJ/ROJ/ CMJ/VPS)	NOTES:
							FS	PS	LT	LJ	ST	FT	PI	RV	EX	CM			
T41F006	24	M-1103A H 2		A	B														
	B A					C	Q				Q	Q	2Y						
T41F007	24	M-1103A G 2		A	B														
	B A					C	Q				Q	Q	2Y						

IST PLAN
GGNS APPENDIX
VALVE SUMMARY LISTING

PROGRAM SECTION NO. CEP-IST-2
REVISION NO. 307
PAGE 79 OF 83

SYSTEM: T42 - Fuel Handling Area Ventilation System

VALVE NO.	VALVE SIZE (in.) TYPE ACT.		P & ID NO., COORD.	IST PASS	IST CODE CLASS	CODE CAT.	SAFETY POS.	REQUIRED TESTS AND FREQUENCY									RELIEF REQUEST (VRR)	OTHER (CSJ/ROJ/ CMJ/VPS)	NOTES:
								FS	PS	LT	LJ	ST	FT	PI	RV	EX			
T42F003	44		M-1104A F 8		A	B													
	B	A					C	Q				Q	Q	2Y					
T42F004	44		M-1104A E 8		A	B													
	B	A					C	Q				Q	Q	2Y					
T42F011	8		M-1104A D 2		A	B													
	B	A					C	Q				Q	Q	2Y					
T42F012	8		M-1104A D 2		A	B													
	B	A					C	Q				Q	Q	2Y					
T42F019	36		M-1104A G 3		A	B													
	B	A					C	Q				Q	Q	2Y					
T42F020	36		M-1104A G 2		A	B													
	B	A					C	Q				Q	Q	2Y					

IST PLAN
GGNS APPENDIX
VALVE SUMMARY LISTING

PROGRAM SECTION NO. CEP-IST-2
REVISION NO. 307
PAGE 80 OF 83

SYSTEM: T48 - Standby Gas Treatment System

VALVE NO.	VALVE SIZE (in.) TYPE ACT.	P & ID NO., COORD.	IST PASS	IST CODE CLASS	CODE CAT.	SAFETY POS.	REQUIRED TESTS AND FREQUENCY										RELIEF REQUEST (VRR)	OTHER (CSJ/ROJ/ CMJ/VPS)	NOTES:
							FS	PS	LT	LJ	ST	FT	PI	RV	EX	CM			
T48F005	6	M-1102B E 3		2	B	O	Q				Q		2Y						
	B M																		
T48F006	6	M-1102B D3		2	B	O	Q				Q		2Y						
	B M																		
T48F023	18	M-1102A E 6		2	B	O	Q				Q		2Y						
	B M					C	Q				Q		2Y						
T48F024	18	M-1102A B 6		2	B	O	Q				Q		2Y						
	B M					C	Q				Q		2Y						
T48F025	18	M-1102A E 2		2	B	O	Q				Q		2Y						
	B M					C	Q				Q		2Y						
T48F026	18	M-1102A B 2		2	B	O	Q				Q		2Y						
	B M					C	Q				Q		2Y						

PROGRAM SECTION NO. CEP-IST-2
REVISION NO. 307
PAGE 81 OF 83

[illegible]

PROGRAM SECTION NO. CEP-IST-2
REVISION NO. 307
PAGE 82 OF 83

[illegible]

Valve Summary Listing Notes

No.

- 01 To meet the requirements of IE Bulletin 83-03, valves P41-F008A/B and F012 will be disassembled and inspected during the first refueling outage following installation of valve, and every 5 years thereafter.
- 02 Valves E12F094 and E12F096 are closed during all modes of plant operation. However, these valves have switches on the remote shutdown panel, and the circuits are required to be demonstrated OPERABLE at least once per 18 months, by Technical Specifications. Remote valve position indicators will be verified to accurately reflect valve disc position at least once every two years.
- 03 Deleted
- 04 Deleted.
- 05 These check valves are tested closed as a pair per NUREG-1482, 4.1.1, "Closure Verification for Series Check Valves without Intermediate Test Connections".
- 06 Valves in system C11, "Control Rod Drive Hydraulic System", are tested as required by GGNS Technical Specifications.
- 07 Exercising valves E12F066A and F066B to the open position is an "Augmented" function associated with the Spent Fuel Pool Cooling System, which is considered an "Augmented" system. The closed position of F066A and F066B is associated with the E12 (RHR) System.
- 08 Relief Request GGNS-PRR-E21-02 (ref. GNRI-2004-00099 dated July 21, 2004), provides for alternative testing frequency on a one-time basis; such that Inservice Testing of the LPCS pup E21C001 is not required from July 21, 2004, to Refueling Outage 14. After Refueling Outage 14, the testing frequency will be returned to the original testing frequency (quarterly). Additionally, the relief provided by the NRC for LPCS pump E21C001 provides a basis for justifying a "one time only" alternative testing of check valves E21F003 (to the Open position) and E21F034 (to the Closed position) on a refuel basis until RF14, and will then revert to original test frequencies (quarterly) after RF14.
- 09 CNRI-2005-00011 requires check valves not placed in the Check Valve Condition Monitoring Program to be bi-directionally tested in accordance with Subsection ISTC of the 2001 Edition with 2003 Addenda of ASME Operation and Maintenance Code.
- 10 Successful inflation of the door seals and insertion of the door latch pins, as indicated by the green panel lights illuminating at the end of the door closing cycle, is an adequate exercise test of the safety related functions of the clevis valves. Since this operation is performed several times daily during plant operation, specific quarterly testing is not required.

**IST PLAN
GGNS APPENDIX
PUMP SUMMARY LISTING**

**PROGRAM SECTION NO. CEP-IST-2
REVISION NO. 307
PAGE 1 OF 4**

PUMP NO.	PUMP DESCRIPTION	PUMP TYPE	DRIVER	P & ID NO., COORD.	IST CODE CLASS	REQUIRED TESTS AND FREQUENCY					RELIEF REQUESTS:	NOTES:
						S	dP	FR	Pd	V		
C41C001A	SLC INJECTION	Reciprocating	Motor	M-1082 E 5	2			Q				Group B Test
C41C001A*								2Y	2Y	2Y		* Comprehensive Test
C41C001B	SLC INJECTION	Reciprocating	Motor	M-1082 C 5	2			Q				Group B Test
C41C001B*								2Y	2Y	2Y		* Comprehensive Test
E12C002A	RHR	Vertical Line Shaft	Motor	M-1085B B 4	2		Q	Q		Q		Group A Test
E12C002A*							2Y	2Y		2Y		* Comprehensive Test
E12C002B	RHR	Vertical Line Shaft	Motor	M-1085A B 6	2		Q	Q		Q		Group A Test
E12C002B*							2Y	2Y		2Y		* Comprehensive Test
E12C002C	RHR	Vertical Line Shaft	Motor	M-1085C B 7	2			Q				Group B Test
E12C002C*							2Y	2Y		2Y		* Comprehensive Test
E12C003A	RHR Jockey	Centrifugal	Motor	M-1085B C 3	2		PRR	PRR		Q	PRR-07-1	Group A Test
E12C003A*							PRR	PRR		2Y	PRR-07-1	* Comprehensive Test
E12C003B	RHR Jockey	Centrifugal	Motor	M-1085A C 6	2		PRR	PRR		Q	PRR-07-1	Group A Test
E12C003B*							PRR	PRR		2Y	PRR-07-1	* Comprehensive Test
E12C003C	RHR Jockey	Centrifugal	Motor	M-1085C A 4	2		PRR	PRR		Q	PRR-07-1	Group A Test
E12C003C*							PRR	PRR		2Y	PRR-07-1	* Comprehensive Test

**IST PLAN
GGNS APPENDIX
PUMP SUMMARY LISTING**

**PROGRAM SECTION NO. CEP-IST-2
REVISION NO. 307
PAGE 2 OF 4**

PUMP NO.	PUMP DESCRIPTION	PUMP TYPE	DRIVER	P & ID NO., COORD.	IST CODE CLASS	REQUIRED TESTS AND FREQUENCY					RELIEF REQUESTS:	NOTES:
						S	dP	FR	Pd	V		
E21C001	LPCS	Vertical Line Shaft	Motor	M-1087 C 2	2			Q				Group B Test
E21C001*							2Y	2Y		2Y		* Comprehensive Test
E21C002	LPCS Jockey	Centrifugal	Motor	M-1087 D 5	2		PRR	PRR		Q	PRR-07-2	Group A Test
E21C002*							PRR	PRR		2Y	PRR-07-2	* Comprehensive Test
E22C001	HPCS	Vertical Line Shaft	Motor	M-1086 D 6	2			Q				Group B Test
E22C001*							2Y	2Y		2Y		* Comprehensive Test
E22C003	HPCS Jockey	Centrifugal	Motor	M-1086 C 6	2		PRR	PRR		Q	PRR-07-3	Group A Test
E22C003*							PRR	PRR		2Y	PRR-07-3	* Comprehensive Test
E51C001	RCIC	Centrifugal	Turbine	M-1083A G 2	2	Q		Q				Group B Test
E51C001*						2Y	2Y	2Y		2Y		* Comprehensive Test
G41C001A	Fuel Pool Cooling Pump A	Centrifugal	Motor	M-1088E C 5	A		Q	Q		Q		Group A Test
G41C001A*							2Y	2Y		2Y		* Comprehensive Test
G41C001B	Fuel Pool Cooling Pump B	Centrifugal	Motor	M-1088E A 5	A		Q	Q		Q		Group A Test
G41C001B*							2Y	2Y		2Y		* Comprehensive Test
P41C001A	SSW A LOOP	Vertical Line Shaft	Motor	M-1061A F 4	3		Q	Q		Q		Group A Test
P41C001A*							2Y	2Y		2Y		* Comprehensive Test

**IST PLAN
GGNS APPENDIX
PUMP SUMMARY LISTING**

**PROGRAM SECTION NO. CEP-IST-2
REVISION NO. 307
PAGE 3 OF 4**

PUMP NO.	PUMP DESCRIPTION	PUMP TYPE	DRIVER	P & ID NO., COORD.	IST CODE CLASS	REQUIRED TESTS AND FREQUENCY					RELIEF REQUESTS:	NOTES:
						S	dP	FR	Pd	V		
P41C001B	SSW B LOOP	Vertical Line Shaft	Motor	M-1061A G 5	3		Q	Q		Q		Group A Test
P41C001B*							2Y	2Y		2Y		* Comprehensive Test
P41C002	HPCS SW	Vertical Line Shaft	Motor	M-1061A F 4	3			Q				Group B Test
P41C002*							2Y	2Y		2Y		* Comprehensive Test

Pump Summary Table Notes

No.

1 NONE

IST PLAN RBS APPENDIX	PROGRAM SECTION NO.: CEP-IST-2 REVISION: 307 PAGE: 1 OF 26
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RBS APPENDIX

INSERVICE TESTING PLAN

ENTERGY NUCLEAR

ENGINEERING PROGRAMS

TABLE OF CONTENTS

<u>SECTION</u>	<u>PAGE NUMBER</u>
Table of Contents.....	2
Valve Relief Requests.....	3
Valve Position Statements.....	4
Pump Relief Requests.....	9
Pump Position Statements.....	12
Cold Shutdown Justifications.....	13
Refueling Outage Justifications.....	25
Database Report – Condition Monitoring Justifications	
Database Report - Valve Summary Listings	
Database Report - Pump Summary Listings	

IST PLAN
RBS APPENDIX

PROGRAM SECTION NO.: CEP-IST-2
REVISION: 307
PAGE: 3 OF 26

VALVE RELIEF REQUESTS (VRR)

NONE

VALVE POSITION STATEMENTS (VPS)

VPS-001

Component ID	Code Class	Category	Description
SYSTEM: 109 - MSS - MAIN STEAM			GE CODE: B21
B21-RVF041A	1	BC	MAIN STEAM LINE A PRESSURE RELIEF VALVE
B21-RVF041B	1	BC	MAIN STEAM LINE B AUTO DEPRESSURIZATION SYSTEM PRESSURE RELIEF VALVE
B21-RVF041C	1	BC	MAIN STEAM LINE C AUTO DEPRESSURIZATION SYSTEM PRESSURE RELIEF VALVE
B21-RVF041D	1	BC	MAIN STEAM LINE D AUTO DEPRESSURIZATION SYSTEM PRESSURE RELIEF VALVE
B21-RVF041F	1	BC	MAIN STEAM LINE B PRESSURE RELIEF VALVE
B21-RVF041G	1	BC	MAIN STEAM LINE C PRESSURE RELIEF VALVE
B21-RVF041L	1	BC	MAIN STEAM LINE C PRESSURE RELIEF VALVE
B21-RVF047A	1	BC	MAIN STEAM LINE A AUTO DEPRESSURIZATION SYSTEM PRESSURE RELIEF VALVE
B21-RVF047B	1	BC	MAIN STEAM LINE B PRESSURE RELIEF VALVE
B21-RVF047C	1	BC	MAIN STEAM LINE C AUTO DEPRESSURIZATION SYSTEM PRESSURE RELIEF VALVE
B21-RVF047D	1	BC	MAIN STEAM LINE D PRESSURE RELIEF VALVE
B21-RVF047F	1	BC	MAIN STEAM LINE B PRESSURE RELIEF VALVE
B21-RVF051B	1	BC	MAIN STEAM LINE B PRESSURE RELIEF VALVE
B21-RVF051C	1	BC	MAIN STEAM LINE C PRESSURE RELIEF VALVE
B21-RVF051D	1	BC	MAIN STEAM LINE D PRESSURE RELIEF VALVE
B21-RVF051G	1	BC	MAIN STEAM LINE C AUTO DEPRESSURIZATION SYSTEM PRESSURE RELIEF VALVE

TEST REQUIREMENT: Per the Code, all valve testing required to be performed during a refueling outage shall be completed prior to returning the plant to operation.

ALTERNATE TESTING: The exercise testing of the valves will be performed following every refueling outage with steam pressure greater than 100 psig as delineated by the Technical Specifications for the ADS valve stroking.

VALVE POSITION STATEMENTS (VPS)

BASIS: These valves must be exercised while the reactor is at power because reactor steam warms the valve seating surfaces and aids in preventing seat damage and leakage by providing a cushion between the seats and reducing the closing forces produced by the spring. These valves should not be exercised when the reactor is at a low pressure during cold shutdowns because no reactor steam is available to provide a cushion between the seating surfaces. Full-stroke exercising of these valves after refueling outages on the return to power with steam pressure greater than one hundred pounds per square inch gives adequate assurance of operational readiness and provides an acceptable level of safety.

REFERENCES: NUREG-1482, Section 3.1.1.2

APPROVAL: This position meets the guidance provided in NUREG-1482, Section 3.1.1.2.

VPS-002

Component ID	Code Class	Category	Description
SYSTEM: 052 - RDS - CONTROL ROD DRIVE HYDRAULIC (CRD)			GE CODE: C11
C11-AOV126-XXXX 2 (typical for 145 valves)	B	CRD CHARGING WTR RISER INLT SCRAM AIR	OPERATED VLV
C11-AOV127-XXXX 2 (typical for 145 valves)	B	SCRAM DISCHARGE RISER OUTLET AIR	OPERATED ISOL VLV

TEST REQUIREMENT: Stroke time measurement in accordance with the Code.

ALTERNATE TESTING: Acceptable scram insertion times will be the full stroke exercise acceptance criteria for valves C11-AOV126-XXXX and C11-AOV127-XXXX.

BASIS: Valves C11-AOV126-XXXX and C11-AOV127-XXXX are air operated valves that full-stroke in milliseconds and are not equipped with indication for both positions; therefore, measuring their full-stroke time as required by the Code is impractical. Trending the stroke times of these valves is impractical and unnecessary since they are indirectly stroke timed by the control rod scram time and no meaningful correlation between the scram time and valve stroke time may be obtained.

REFERENCES: NUREG-1482, Section 4.4.6

APPROVAL: This position meets the guidance provided in NUREG-1482, Section 4.4.6 addressing testing of individual scram valves for control rods in boiling water reactors.

VALVE POSITION STATEMENTS (VPS)

VPS-003

Component ID	Code Class	Category	Description
SYSTEM: 610 - SSR - REACTOR PLANT SAMPLING (PASS)			GE CODE:
SSR-SOV133	2	A	REACTOR SAMPLING SYSTEM SAMPLE STATION CNTMNT ATMOSPHERE & LEAK MONIT SMPL LINE ISOL VALVE
SSR-SOV134	2	A	REACTOR SAMPLING SYSTEM SAMPLE STATION CNTMNT ATMOSPHERE & LEAK MONIT SMPL LINE ISOL VALVE
SSR-SOV140	2	A	REACTOR SAMPLING SYSTEM SAMPLE STATION CONTAINMENT ATMOSPHERE & LEAK MONIT SMPL LINE ISOL VLV

TEST REQUIREMENT: Leakage rate testing in accordance with the Code at a 2 Year frequency.

ALTERNATE TESTING: Leakage rate testing in accordance with the Code at a frequency governed by the 10CFR50, Appendix J program.

BASIS: The listed valves perform a containment isolation function and are required to be tested in accordance with 10CFR, Appendix J as stipulated in Tech. Spec. Surveillance Requirement SR 3.6.1.3.12. The Code states that "Category A valves, which perform a function other than containment isolation, shall be tested to verify their leak-tight integrity at a frequency of two years". Since these valves are category A valves due to their containment isolation function, they meet the requirements of Containment Isolation Valves in accordance with the Code, even though they are not listed on TRM Table 3.6.1.3-1 and USAR Table 6.2-40. Therefore, they should be tested in accordance with the 10CFR50, Appendix J program.

REFERENCES: ER 99-0257

APPROVAL: Not Applicable

VPS-004

Component ID	Code Class	Category	Description
SYSTEM: 609 - DFR – FLOOR DRAINS – REACTOR BUILDING			GE CODE:
DFR-AOV144	NC		AUXILIARY BUILDING FLOOR DRAIN SUMP 5B DISCHARGE HEADER TO RADWASTE ISOLATION VALVE

VALVE POSITION STATEMENTS (VPS)

DFR-AOV145 NC AUXILIARY BUILDING FLOOR DRAIN SUMP 5A DISCHARGE
HEADER TO RADWASTE ISOLATION VALVE

TEST REQUIREMENT: The Code

ALTERNATE TESTING: A functional test of each Suppression Pool Pumpback System valve will be performed to verify the flow path can be aligned to the suppression pool every 18 months in accordance with TRM Surveillance Requirement TSR 3.5.4.2.

BASIS: The above listed valves are safety-related, non-ASME valves. They were not designed and constructed in accordance with ASME Section III and are not required to be tested in accordance with the requirements of the Code as delineated in 10CFR50.55a.

10CFR50.55a, Appendix A, General Design Criterion – 1 and 10CFR50, Appendix B, Criterion XI, require that components important to safety be tested commensurate with the required safety function. These valves are tested commensurate with their safety function in accordance with TSR 3.5.4.2.

REFERENCES: NUREG-1482, Section 2.2

APPROVAL: These components are non-ASME. NRC approval is not required per NUREG-1482.

VPS-005

Component ID	Code Class	Category	Description
SYSTEM: 055 – SFT - REFUELING EQUIPMENT			
GE CODE: F42			
F42-MOVF003	NC		INCLINE TUBE TRANSFER TUBE DRAIN VALVE

TEST REQUIREMENT: Stroke time measurement in accordance with the Code

ALTERNATE TESTING: A manual exercise of the valve will be performed prior to removal of the Incline Fuel Transfer System (IFTS) blind flange during modes 1, 2, or 3, and biannually thereafter until either the blind flange is reinstalled, or the plant is placed in a condition where Primary Containment is no longer required.

BASIS: The above listed valve is a safety-related, non-ASME valve. It was not designed and constructed in accordance with ASME Section III, and does not have a safety-related power supply. This valve provides a drain path during operation of IFTS. With the IFTS blind flange removed, this valve is considered a Primary Containment Isolation valve, and is maintained in accordance with the Primary Containment Leakage Rate Testing Program to ensure leak tightness of the valve. The normal method of closure is for the motor-operated valve to be electrically closed by the operator from the

VALVE POSITION STATEMENTS (VPS)

IFTS panel. However, because the power is non-safety related, a dedicated operator will be stationed in a low dose area in the vicinity of the valve whenever the valve is opened with the blind flange removed during modes 1, 2, or 3. The dedicated operator is to manually close the drain valve if it fails to close properly, or either at the direction of the control room or upon a LOOP. Because of this committed operator action, it is appropriate to exercise this valve as a manual valve to ensure it can be closed by the operator to meet the above commitment. Because it was not constructed to ASME Section III requirements, it is not required to be tested in accordance with the requirements of the Code as delineated in 10CFR50.55a.

10CFR50, Appendix A, General Design Criterion - 1 and 10CFR50, Appendix B, Criterion XI, require that components 'important to safety' be tested commensurate with the required safety function. This valve is tested commensurate with its safety function.

REFERENCES:

NUREG-1482, Section 2.2

APPROVAL:

This component is non-ASME. NRC approval is not required per NUREG-1482.

PUMP RELIEF REQUESTS (PRR)

10 CFR 50.55a Request Number PRR-RBS-2007-1	
Proposed Alternative in Accordance with 10 CFR 50.55a(a)(3)(ii)	
10 CFR 50.55a Request Title: Service Water Pumps Alternative Request	
PLANT/UNIT:	River Bend Station
INTERVAL:	Third 120 Month Inservice Testing Interval
COMPONENTS AFFECTED:	<p>SWP-P2A Standby Service Water Pump A</p> <p>SWP-P2B Standby Service Water Pump B</p> <p>SWP-P2C Standby Service Water Pump C</p> <p>SWP-P2D Standby Service Water Pump D</p> <p>(The above pumps are ASME Code Class 3, Vertical Line Shaft, Motor Driven, OM Code Category A pumps.)</p>
CODE EDITION AND ADDENDA:	ASME OM Code-2001 Edition with addenda through OMB Code-2003 Addenda
REQUIREMENTS:	ASME OM Code-2001 Edition with addenda through OMB Code-2003 Addenda ISTB-3540(b) requires that vibration measurements on vertical line shaft pumps be taken on the upper motor-bearing housing in three orthogonal directions, one of which is in the axial direction.
REASON FOR RELIEF REQUEST:	<p>Pursuant to 10 CFR 50.55a, "Codes and Standards", paragraph (a)(3)(ii), an alternative is requested when using the requirements of ASME OM Code-2001 Edition with addenda through OMB Code-2003 Addenda ISTB (as listed above).</p> <p>This alternative is a re-submittal of NRC approved 2nd Interval PRR-006 that was based on the ASME OM Code 1987 Edition with addenda through OMA-1988. This 3rd Interval alternative request is based on the ASME OM Code-2001 Edition with addenda through OMB Code-2003 Addenda. There have been no substantive changes to this alternative, to the OM Code requirements or to the basis for use, which would alter the previous NRC Safety Evaluation conclusions.</p> <p>The Code-required vibration measurements on the upper motor bearing housing on these vertical line shaft pumps are impractical because the</p>

PUMP RELIEF REQUESTS (PRR)

10 CFR 50.55a Request Number PRR-RBS-2007-1	
Proposed Alternative in Accordance with 10 CFR 50.55a(a)(3)(ii)	
10 CFR 50.55a Request Title: Service Water Pumps Alternative Request	
	standby service water pump motors are totally enclosed, weather-proof induction motors that are equipped with housing covers which completely enshroud the upper motor bearing housing. The housing cover precludes vibration measurements from being taken directly on the upper bearing housing.
PROPOSED ALTERNATIVE AND BASIS:	<p>Vibration measurements will be taken in three orthogonal directions in a location that provides valid indication of motor vibratory motion in close proximity of the upper motor bearing housing.</p> <p>On the standby service water pumps the upper measurements will be taken on a lifting lug that is integral to the motor stator housing. The lifting lug is structurally rigid and provides transmissibility of the motor vibratory motion. The vibration measurements will be taken in three orthogonal directions on the lifting lug. This location has demonstrated the ability to provide repeatable vibration data and will provide readings that are at least as representative of pump mechanical condition as those required by the ASME OM Code-2001 Edition with addenda through OMB Code-2003 Addenda. Therefore, application of the ASME OM Code-2001 Edition with addenda through OMB Code-2003 Addenda hydraulic testing criteria along with radial and axial vibration monitoring on the lifting lug should provide adequate data for assessing the condition of the subject pumps and for monitoring for degradation.</p> <p>The above proposed alternative provides reasonable assurance of the operational readiness since vibration measurements will be taken in three orthogonal directions on the lifting lug. These readings will provide information as to the mechanical integrity of the pumps</p> <p>Based on the determination that compliance with the ASME OM Code-2001 Edition with addenda through OMB Code-2003 Addenda requirements results in a hardship without a compensating increase in the level of quality or safety, this proposed alternative should be granted pursuant to 10 CFR 50.55a(a)(3)(ii).</p>
DURATION:	River Bend Station's 3 rd 120-month Inservice Testing Interval (December 2, 2007, through December 1, 2017 based on TAC No. M97705).
PRECEDENTS:	Use of an alternative for similar requirements was previously granted as

IST PLAN RBS APPENDIX	PROGRAM SECTION NO.: CEP-IST-2 REVISION: 307 PAGE: 11 OF 26
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PUMP RELIEF REQUESTS (PRR)

10 CFR 50.55a Request Number PRR-RBS-2007-1	
Proposed Alternative in Accordance with 10 CFR 50.55a(a)(3)(ii)	
10 CFR 50.55a Request Title: Service Water Pumps Alternative Request	
	PRR-006 for River Bend's 2 nd 120-month Inservice Testing Interval (TAC No. M97705).
REFERENCES:	USAR 9.2.7, Technical Specification 5.5.6
STATUS:	Submitted for Nuclear Regulatory Commission review and approval by CNRO-2007-00042.

PUMP POSITION STATEMENTS (PPS)

PPS-001

Component ID	Code Class	Category	Description
SYSTEM: 609 - DFR - FLOOR DRAINS - REACTOR BUILDING			GE CODE:
DFR-P5A	NC	AUXILIARY BUILDING FLOOR DRAIN SUMP PUMP 5A	
DFR-P5B	NC	AUXILIARY BUILDING FLOOR DRAIN SUMP PUMP 5B	
DFR-P5D	NC	AUXILIARY BUILDING FLOOR DRAIN SUMP PUMP 5D	
DFR-P5E	NC	AUXILIARY BUILDING FLOOR DRAIN SUMP PUMP 5E	

TEST REQUIREMENT: The Code

ALTERNATE TESTING: A functional test of each crescent area sump pump will be performed once every 18 months in accordance with TRM Surveillance Requirement TSR 3.5.4.1.

BASIS: The above listed pumps are safety-related, non-ASME pumps. They were not designed and constructed in accordance with ASME Section III and are not required to be tested in accordance with the requirements of the Code as delineated in 10CFR50.55a.

10CFR50, Appendix A, General Design Criterion - 1 and 10CFR50, Appendix B, Criterion XI, require that components 'important to safety' be tested commensurate with the required safety function. These pumps are tested commensurate with their safety function in accordance with TSR 3.5.4.1

REFERENCES: NUREG-1482, Section 2.2

APPROVAL: These components are non-ASME. NRC approval is not required per NUREG-1482.

COLD SHUTDOWN JUSTIFICATIONS (CSJ)

CSJ-001

Component ID	Code Class	Category	Description
SYSTEM: 107 - FWS – FEEDWATER			GE CODE: B21
FWS-MOV7A	2	A	REACTOR FEEDWATER LOOP A OUTBOARD CONTAINMENT ISOLATION VALVE
FWS-MOV7B	2	A	REACTOR FEEDWATER LOOP B OUTBOARD CONTAINMENT ISOLATION VALVE

TEST REQUIREMENT: Quarterly exercise testing in accordance with the Code.

ALTERNATE TESTING: An exercise test of each valve during cold shutdown if not performed within the previous 92 days.

BASIS:

Full-stroke close exercise testing of the listed valves during normal operation would require interrupting feedwater flow to the reactor through the valve being tested.

Isolation of a single line above 5% power is not recommended by GE due to thermal stress to the RPV. Additionally, an isolation of both feedwater lines during power operation will scram the reactor on low water level.

NUREG-1482 defines impractical conditions which are a basis for deferral of testing. Two of these conditions are testing which could "...place undue stress on components ...,and...unnecessarily reduce the life expectancy of plant systems and components...".

Partial-stroke exercising of the power operated valves is precluded by valve control circuitry which does not allow partial-stroke operation.

REFERENCES: NUREG-1482 Section 2.4.5

APPROVAL: Not Applicable.

CSJ-002

Component ID	Code Class	Category	Description
SYSTEM: 109 - MSS - MAIN STEAM			GE CODE: B21
B21-MOVF098A	2	A	MAIN STEAM LINE A SHUT-OFF VALVE
B21-MOVF098B	2	A	MAIN STEAM LINE B SHUT-OFF VALVE
B21-MOVF098C	2	A	MAIN STEAM LINE C SHUT-OFF VALVE

COLD SHUTDOWN JUSTIFICATIONS (CSJ)

B21-MOVF098D 2 A MAIN STEAM LINE D SHUT-OFF VALVE

TEST REQUIREMENT: Quarterly exercise testing in accordance with the Code.

ALTERNATE TESTING: An exercise test of each valve during cold shutdown if not performed within the previous 92 days.

BASIS: Reactor power would have to be substantially reduced to exercise the listed valves to the closed position. Closing one valve at full power would cause high steam flow on the other three lines and trip the reactor.

NUREG-1482 defines impractical conditions which are a basis for deferral of testing. One of these conditions is testing which could '... result in an unnecessary plant shutdown...'.
Partial-stroke exercising is precluded by valve control circuitry which does not allow partial-stroke operation.

REFERENCES: NUREG-1482 Section 2.4.5

APPROVAL: Not Applicable.

CSJ-003

Component ID	Code Class	Category	Description
SYSTEM: 122 - IAS - AIR INSTRUMENT			
GE CODE:			
IAS-MOV106	2	A	DRYWELL & CONTAINMENT INSTR AIR SUPPLY HEADER ISOLATION MOV

TEST REQUIREMENT: Quarterly exercise testing in accordance with the Code.

ALTERNATE TESTING: An exercise test of each valve during cold shutdown if not performed within the previous 92 days.

BASIS: Exercising this valve to the closed position during normal operation would cause an interruption of instrument air supply to the Main Steam Isolation Valves causing them to shut resulting in a reactor trip.

NUREG-1482 defines impractical conditions which are a basis for deferral of testing. Three of these conditions are testing which could 'result in an unnecessary plant shutdown ,...place undue stress on components ...and...unnecessarily reduce the life expectancy of plant systems and components..'.
Partial-stroke exercising of the power operated valves is precluded by valve control circuitry which does not allow partial-stroke operation.

COLD SHUTDOWN JUSTIFICATIONS (CSJ)

REFERENCES: NUREG-1482 Section 2.4.5

APPROVAL: Not Applicable.

CSJ-004

Component ID	Code Class	Category	Description
SYSTEM: 115 - CCP - CLOSED COOLING WATER - REACTOR PLANT			GE CODE:
CCP-MOV138	2	A	CCP CONTAINMENT SUPPLY HEADER OUTBOARD ISOLATION VALVE
CCP-MOV142	2	B	CCP DRYWELL SUPPLY HEADER OUTBOARD ISOLATION VALVE
CCP-MOV143	2	B	CCP DRYWELL RETURN HEADER OUTBOARD MOTOR OPERATED ISOLATION VALVE
CCP-MOV144	2	B	CCP DRYWELL RETURN HEADER INBOARD MOTOR OPERATED ISOLATION VALVE
CCP-MOV158	2	A	CCP CONTAINMENT RETURN HEADER INBOARD ISOLATION VALVE
CCP-MOV159	2	A	CCP CONTAINMENT RETURN HEADER OUTBOARD ISOLATION VALVE

TEST REQUIREMENT: Quarterly exercise testing in accordance with the Code.

ALTERNATE TESTING: An exercise test of each valve during cold shutdown if not performed within the previous 92 days.

BASIS: Performance of the required testing would necessitate isolating cooling water to components essential for plant operation. The exercise testing of the valves during normal operation could cause overheating and damage of the Reactor Recirculation Pump motor and bearings or the Control Rod Drive pump bearings.

Because of the complexity of the required test procedure, the cooling water to the CRD Pump bearings would have to be secured for an extended period of time and damage to the CRD Pumps could result from testing.

NUREG-1482 defines impractical conditions which are a basis for deferral of testing. Two of these conditions are testing which could'... place undue stress on components... , and...unnecessarily reduce the life expectancy of plant systems and components..'.

COLD SHUTDOWN JUSTIFICATIONS (CSJ)

Partial-stroke exercising of the power operated valves is precluded by valve control circuitry which does not allow partial-stroke operation.

REFERENCES: NUREG-1482 Section 2.4.5.

APPROVAL: Not Applicable.

CSJ-005

Component ID	Code Class	Category	Description
SYSTEM: 203 - CSH - HIGH PRESSURE CORE SPRAY (HPCS)			GE CODE: E22
E22-MOVF004	1	A	HIGH PRESSURE CORE SPRAY PUMP DISCHARGE LINE MAIN ISOLATION VALVE

Component ID	Code Class	Category	Description
SYSTEM: 204 - RHS - RESIDUAL HEAT REMOVAL - LPCI (RHR)			GE CODE: E12
E12-MOVF008	1	A	RESIDUAL HEAT REMOVAL PUMP SHUTDOWN COOLING OUTBOARD ISOLATION VALVE
E12-MOVF009	1	A	RESIDUAL HEAT REMOVAL PUMP SHUTDOWN COOLING INBOARD ISOLATION VALVE
E12-MOVF042A	1	A	RESIDUAL HEAT REMOVAL PUMP A INJECTION RETURN LINE ISOLATION VALVE
E12-MOVF042B	1	A	RESIDUAL HEAT REMOVAL PUMP B INJECTION RETURN LINE ISOLATION VALVE
E12-MOVF042C	1	A	RESIDUAL HEAT REMOVAL PUMP C INJECTION RETURN LINE ISOLATION VALVE
E12-MOVF053A	2	A	RHR HEAT EXCHANGER A SHUTDOWN COOLING RETURN LINE ISOLATION VALVE
E12-MOVF053B	2	A	RHR HEAT EXCHANGER B SHUTDOWN COOLING RETURN LINE ISOLATION VALVE

Component ID	Code Class	Category	Description
SYSTEM: 205 - CSL - LOW PRESSURE CORE SPRAY (LPCS)			GE CODE: E21
E21-MOVF005	1	A	LOW PRESSURE CORE SPRAY PUMP LPCS INJECTION SHUT OFF VALVE

COLD SHUTDOWN JUSTIFICATIONS (CSJ)

Component ID	Code Class	Category	Description
SYSTEM: 209 - ICS - REACTOR CORE ISOLATION COOLING (RCIC)			GE CODE: E51
E51-MOVF013	2	A	REACTOR CORE ISOL COOLING PUMP INJECTION ISOLATION VALVE

TEST REQUIREMENT: Quarterly exercise testing in accordance with the Code.

ALTERNATE TESTING: An exercise test for each-valve during cold shutdown if not performed within the previous 92 days.

BASIS: The exercise testing of the listed valves during normal operation could subject the system piping to pressures and temperatures greater than the design bases. It is assumed for the purpose of the exercise testing that one or more upstream check valves leak by their seats.

Valves E12-MOVF008 and 9 are interlocked with reactor pressure and can not be opened during normal operation.

Valves E12-MOVF042A/B/C, and E21-MOVF005 are also interlocked with a pressure permissive which precludes opening unless the pressure between the listed valve and the associated downstream check valve is considerably lower than normal reactor pressure. Any seat leakage through the downstream check valves (including leakage within acceptable limits) could subject the low pressure system piping to pressures in excess of design basis if the subject valves were opened.

Valves E12-MOVF053A/B are not interlocked but could also subject the upstream system piping to pressures beyond the design basis if opened during normal power operation. No indication is provided between the subject valves and their associated downstream check valves to verify pressure conditions.

NUREG-1482 defines impractical conditions which are a basis for deferral of testing. One of these conditions is testing of valves "...which when cycled, could subject a system to pressures in excess of their design pressure."

Valves E22-MOVF004 and E51-MOVF013 are not interlocked with a pressure permissive as the upstream system piping between the pump discharge and the RPV is designed for pressure conditions exceeding normal reactor pressure. However, the upstream system piping is not designed for temperature conditions above 170E (E51) and 212E (E22). Opening the subject valves during normal power operation could cause thermal stratification that could subject the piping to thermal stresses beyond the design basis. No indication is provided between the subject valves and their associated downstream check valves to verify the presence of high temperature back leakage.

COLD SHUTDOWN JUSTIFICATIONS (CSJ)

Partial-stroke exercising of the listed valves is precluded by the same conditions as full-stroke exercising.

REFERENCES: NUREG-1482, Section 3.1.1(3).

APPROVAL: Not Applicable.

CSJ-006

Component ID	Code Class	Category	Description
SYSTEM: 109 - MSS - MAIN STEAM			GE CODE: B21
B21-AOVF022A	1	A	MAIN STEAM LINE INBOARD ISOLATION VALVE A
B21-AOVF022B	1	A	MAIN STEAM LINE INBOARD ISOLATION VALVE B
B21-AOVF022C	1	A	MAIN STEAM LINE INBOARD ISOLATION VALVE C
B21-AOVF022D	1	A	MAIN STEAM LINE INBOARD ISOLATION VALVE D
B21-AOVF028A	1	A	MAIN STEAM LINE A OUTBOARD ISOLATION VALVE
B21-AOVF028B	1	A	MAIN STEAM LINE B OUTBOARD ISOLATION VALVE
B21-AOVF028C	1	A	MAIN STEAM LINE C OUTBOARD ISOLATION VALVE
B21-AOVF028D	1	A	MAIN STEAM LINE D OUTBOARD ISOLATION VALVE

TEST REQUIREMENT: Quarterly exercise testing in accordance with the Code.

ALTERNATE TESTING: A full stroke exercise test of each valve during cold shutdown if not performed within the previous 92 days.

BASIS: The listed valves are partial stroke exercised during operation every 92 days. A full stroke time test on each MSIV is required only at least once per 18 months by the RBS Technical Specifications SR 3.6.1.3.6.

Undesirable pressure transients are created in the RPV which challenge the Reactor Protection System and activate High Neutron Alarms during fast closure of the MSIVs. Also, the limits placed upon the associated main steam high flow trip set point will not allow closure of even one of these valves at full power without initiating a scram.

NUREG-1482 defines impractical conditions which are a basis for deferral of testing. One of these conditions is testing which could '...result in an unnecessary plant shutdown...'.

REFERENCES: NUREG-1482 Section 2.4.5

COLD SHUTDOWN JUSTIFICATIONS (CSJ)

APPROVAL: Not Applicable.

CSJ-007

Component ID	Code Class	Category	Description
SYSTEM: 601 - WCS - REACTOR WATER CLEANUP & FILTER (RWCU)			GE CODE: G33
G33-MOVF001	1	A	REACTOR WATER CLEANUP PUMPS SUCTION HEADER INBOARD CONTAINMENT ISOL VALVE
G33-MOVF004	1	A	REACTOR WATER CLEANUP PUMPS SUCTION HEADER OUTBOARD CONTAINMENT ISOL VALVE
G33-MOVF039	2	A	REACTOR WATER CLEANUP REGEN HTEXCHGRS OUTLET LINE OUTBOARD CONTAINMENT ISOLATION VALVE
G33-MOVF040	2	A	REACTOR WATER CLEANUP REGEN HTEXCHGRS OUTLET LINE INBOARD CONTAINMENT ISOLATION VALVE
G33-MOVF053	2	A	REACTOR WATER CLEANUP PUMPS DISCHARGE HEADER INBOARD CONTAINMENT ISOL VALVE
G33-MOVF054	2	A	REACTOR WATER CLEANUP PUMPS DISCHARGE HEADER OUTBOARD CONTAINMENT ISOL VALVE

TEST REQUIREMENT: Quarterly exercise testing in accordance with ASME/ANSI OMa-1988, Part 10, Paragraphs 4.2.1.1. and 4.3.2.1.

ALTERNATE TESTING: An exercise test of each valve during cold shutdown if not performed within the previous 92 days.

BASIS: Closure of the listed valves during operation would cause the Reactor Water Cleanup System (RWCU) to trip on low flow. This system is necessary to maintain reactor water chemistry within Technical Specification limits.

NUREG-1482 defines impractical conditions which are a basis for deferral of testing. Two of these conditions are testing which could "... result in an unnecessary plant shutdown ...and...cause unnecessary cycling of equipment...".

Partial-stroke exercising is precluded by valve control circuitry which does not allow partial-stroke operation.

REFERENCES: NUREG-1482 Section 2.4.5

APPROVAL: Not Applicable.

COLD SHUTDOWN JUSTIFICATIONS (CSJ)

CSJ-008

Component ID	Code Class	Category	Description
SYSTEM: 209 - ICS - REACTOR CORE ISOLATION COOLING (RCIC)			GE CODE: E51
E51-MOVF063	1	A	RCIC & RHR SYSTEMS STEAM SUPPLY ISOLATION VALVE
E51-MOVF064	1	A	REACTOR CORE ISOL COOLING STEAM SUPPLY LINE OUTBOARD CONTAINMENT ISOLATION VALVE
E51-MOVF076	2	A	REACTOR CORE ISOL COOLING WARM-UP LINE ISOLATION VALVE

TEST REQUIREMENT: Quarterly exercise testing in accordance with the Code.

ALTERNATE TESTING: An exercise test of each valve during cold shutdown if not performed within the last 92 days.

BASIS: Failure of either F063 or F064 during the exercise test would result in a complete loss of system function (i.e. RCIC system would be inoperable).

Failure of F076 in the non-conservative position during full or partial stroke exercising would require entry into an LCO for Containment isolation. The LCO action statement would require that valve F064 be isolated. Isolation of valve F064 would cause the complete loss of RCIC system function.

NUREG-1482, provides examples of valves to be excluded from exercising tests during plant operation. One of these examples is "...All valves whose failure in a non-conservative position during cycling test would cause a loss of system function,...".

Partial-stroke exercising of the valves is precluded by valve control circuitry which does not allow partial-stroke operation.

REFERENCES: NUREG-1482 Section 3.1.1(1).

APPROVAL: Not Applicable.

COLD SHUTDOWN JUSTIFICATIONS (CSJ)

CSJ-009

Component ID	Code Class	Category	Description
SYSTEM: 256 - SWP - SERVICE WATER - STANDBY (SSW)			GE CODE:
SWP-MOV57A	3	B	SERVICE WATER NORMAL SUPPLY HEADER A INLET ISOLATION VALVE
SWP-MOV57B	3	B	SERVICE WATER NORMAL SUPPLY HEADER B INLET ISOLATION VALVE

TEST REQUIREMENT: Quarterly exercise testing in accordance with the Code.

ALTERNATE TESTING: An exercise test of each valve during cold shutdown if not performed within the previous 92 days.

BASIS: Full stroke close exercising of the listed valves during normal power operation would result in the low pressure initiation of the Standby Service Water System, a subsequent loss of Normal Service Water (a few seconds), and a turbine trip/reactor scram.

NUREG-1482 defines impractical conditions which are a basis for deferral of testing. One of these conditions is testing which could "... result in an unnecessary plant shutdown..."

Partial-stroke exercising is precluded by valve control circuitry which does not allow partial-stroke operation.

REFERENCES: NUREG-1482 Section 2.4.5.

APPROVAL: Not Applicable.

CSJ-010

Component ID	Code Class	Category	Description
SYSTEM: 254 - CPM - HYDROGEN MIXING			GE CODE:
CPM-MOV1A	2	B	DRYWELL HYDROGEN MIXING TRAIN A OUTLET LINE DRYWELL OUTBOARD ISOLATION VALVE
CPM-MOV1 B	2	B	DRYWELL HYDROGEN MIXING TRAIN B OUTLET LINE DRYWELL OUTBOARD ISOLATION VALVE
CPM-MOV2A	2	B	DRYWELL HYDROGEN MIXING TRAIN A INLET LINE DRYWELL OUTBOARD ISOLATION VALVE

IST PLAN RBS APPENDIX	PROGRAM SECTION NO.: CEP-IST-2 REVISION: 307 PAGE: 22 OF 26
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COLD SHUTDOWN JUSTIFICATIONS (CSJ)

CPM-MOV2B	2	B	DRYWELL HYDROGEN MIXING TRAIN B INLET LINE DRYWELL OUTBOARD ISOLATION VALVE
CPM-MOV3A	2	B	DRYWELL HYDROGEN MIXING TRAIN A OUTLET LINE DRYWELL INBOARD ISOLATION VALVE
CPM-MOV3B	2	B	DRYWELL HYDROGEN MIXING TRAIN B OUTLET LINE DRYWELL INBOARD ISOLATION VALVE
CPM-MOV4A	2	B	DRYWELL HYDROGEN MIXING TRAIN A INLET LINE DRYWELL INBOARD ISOLATION VALVE
CPM-MOV4B	2	B	DRYWELL HYDROGEN MIXING TRAIN B INLET LINE DRYWELL INBOARD ISOLATION VALVE

TEST REQUIREMENT: Quarterly exercise testing in accordance with the Code.

ALTERNATE TESTING: An exercise test of each valve during cold shutdown if not performed within the previous 92 days.

BASIS: The test frequency for the listed valves is restricted to cold shutdown conditions to limit the opening of the hydrogen mixing inlet and outlet valves during MODES 1, 2, and 3, because these valves have never been demonstrated capable of closing during accident conditions in the drywell. Technical Specification Surveillance Requirement SR 3.6.3.3.1 restricts testing to 'Every cold shutdown, if not performed within the previous 92 days.' The SR ensures that the hydrogen mixing valves remain closed during Modes 1, 2, and 3, or, if open, are only open for a limited period of time over a 365 day cycle.

Partial-stroke exercising is precluded by valve control circuitry which does not allow partial-stroke operation.

NUREG-1482 defines extenuating circumstances where extension of the test interval is justified. One of the extenuating circumstances is testing where '...the system design makes compliance impractical...'

REFERENCES: NUREG-1482 Section 3.1(2).

APPROVAL: Not Applicable.

CSJ-011

Component ID	Code Class	Category	Description
SYSTEM: 256 - SWP - SERVICE WATER - STANDBY (SSW)			GE CODE:
SWP-MOV502A	3	B	CONTAINMENT UNIT COOLER A SUPPLY HEADER INBOARD CONTAINMENT ISOLATION VALVE

COLD SHUTDOWN JUSTIFICATIONS (CSJ)

SWP-MOV502B	3	B	CONTAINMENT UNIT COOLER B SUPPLY HEADER INBOARD CONTAINMENT ISOLATION VALVE
SWP-MOV503A	2	A	CONTAINMENT UNIT COOLER A RETURN HEADER INBOARD CONTAINMENT ISOLATION VALVE
SWP-MOV503B	2	A	CONTAINMENT UNIT COOLER B RETURN HEADER INBOARD CONTAINMENT ISOLATION VALVE
SWP-MOV504A	3	B	FUEL POOL COOLER A SERVICE WATER RETURN LINE ISOLATION VALVE
SWP-MOV504B	3	B	FUEL POOL COOLER B SERVICE WATER RETURN LINE ISOLATION VALVE
SWP-MOV51 0A	3	B	FUEL POOL COOLER A SERVICE WATER SUPPLY LINE ISOLATION VALVE
SWP-MOV510B	3	B	FUEL POOL COOLER B SERVICE WATER SUPPLY LINE ISOLATION VALVE

TEST REQUIREMENT: Quarterly exercise testing in accordance with the Code.

ALTERNATE TESTING: An exercise test of each valve during cold shutdown if not performed within the previous 92 days.

BASIS: Exercising the valves during normal plant operations would result in impurities from the Standby Service Water System being introduced into the essentially pure Reactor Plant Component Cooling Water System and Ventilation Chilled Water System.

Testing during cold shutdown will allow sufficient time to restore normal water purity if cross contamination does occur.

Partial-stroke exercising of the power-operated valves is precluded by valve control circuitry which does not allow partial-stroke operation.

REFERENCES: Reference RBC - 40430.

APPROVAL: Previously approved as Valve Relief Request VRR-11 in NRC Safety Evaluation Report (TAC No. 64829). SER Approval: January 2, 1991

COLD SHUTDOWN JUSTIFICATIONS (CSJ)

CSJ-012

Component ID	Code Class	Category	Description
SYSTEM: 201 - SLS - STANDBY LIQUID CONTROL (SLC)			GE CODE: C41
C41-MOVF001A	2	B	STANDBY LIQUID CONTROL STORAGE TANK A1 OUTLET VALVE A TO STANDBY LIQUID CONTROL PUMP A
C41-MOVF001B	2	B	STANDBY LIQUID CONTROL STORAGE TANK A1 OUTLET VALVE B TO STANDBY LIQUID CONTROL PUMP B

TEST REQUIREMENT: Quarterly exercise testing in accordance with the Code.

ALTERNATE TESTING: An exercise test of each valve during cold shutdown if not performed within the previous 92 days.

BASIS: The exercise testing of the valves during normal plant operation will require that the entire system be declared inoperable during the testing and entry into the applicable LCO.

In order to exercise the MOVF001A & B valves, both Standby Liquid Control pumps are required to be isolated at the manual suction isolation valves (simultaneously) due to system cross tie piping configuration.

Opening F001A/B (>20 second valves) would allow some Sodium Pentaborate to mix with the clean water in the pump suction. After exercising the valves, the contaminated water would have to be flushed, and chemical analysis performed on the flushed system water until acceptable system water chemistry is achieved. This procedure could generate a large volume of sodium pentaborate contaminated water which can not be processed by normal radwaste. During this entire time the system would be inoperable and in an 8 hour LCO condition.

NUREG-1482 defines impractical conditions which are a basis for deferral of testing. One of these conditions is testing which could '...involve a hardship; i.e., a limiting condition of operation for operation of 3 to 4 hours in length...'. NUREG-1482 also defines extenuating circumstances where extension of the test interval is justified. One of the extenuating circumstances is testing where '...compliance would result in hardship or unusual difficulty without a compensating increase in level of quality and safety..'.

Partial-stroke exercising of the power operated valves is precluded by valve control circuitry which does not allow partial-stroke operation.

REFERENCES: NUREG-1482 Section s 3.1(1) and 3.1.1(3).

APPROVAL: Not Applicable

IST PLAN RBS APPENDIX	PROGRAM SECTION NO.: CEP-IST-2 REVISION: 307 PAGE: 25 OF 26
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REFUELING OUTAGE JUSTIFICATIONS (ROJ)

ROJ-001

Component ID	Code Class	Category	Description
SYSTEM: 052 - RDS - CONTROL ROD DRIVE HYDRAULIC (CRD)			GE CODE: C11
C11-MOVF083	2	A	CONTROL ROD DRIVE PUMP DISCHARGE HEADER CONTAINMENT ISOLATION VALVE

TEST REQUIREMENT: Quarterly exercise testing in accordance with the Code.

ALTERNATE TESTING: An exercise test of each valve during every refueling outage.

BASIS: Exercising this valve quarterly or at Cold Shutdown would interrupt seal water flow to the recirculation pump shaft seals, and could result in damage to the seals. Additionally, shutting down CRD to the HCUs at low reactor pressure requires venting of the 145 HCUs per the SOP, which could delay plant startup.

NUREG-1482 defines impractical conditions which are a basis for deferral of testing. One of these conditions is testing of valves "...in support systems that perform a function vital to the continued operation of the reactor coolant pumps, such as component cooling and the supply and return of seal water. Exercising this valve when the pumps are operating could result in pump damage..."

Partial-stroke exercising of the power operated valve is precluded by valve control circuitry which does not allow partial-stroke operation.

REFERENCES: NUREG-1482, Section 3.1.1.4.

APPROVAL: Not Applicable.

ROJ-002

Component ID	Code Class	Category	Description
SYSTEM: 052 - RDS - CONTROL ROD DRIVE HYDRAULIC (CRD)			GE CODE: C11
C11-AOV126-XXXX (typical for 145 valves)	2	B	CRD CHARGING WTR RISER INLT SCRAM AIR OPERATED VLV
C11-AOV127-XXXX (typical for 145 valves)	2	B	SCRAM DISCHARGE RISER OUTLET AIR OPERATED ISOL VLV

TEST REQUIREMENT: Quarterly exercise testing in accordance with the Code.

REFUELING OUTAGE JUSTIFICATIONS (ROJ)

ALTERNATE TESTING: Exercise testing of the listed valves will be performed as required by Technical Specifications after every refueling. Acceptable rod insertion times will be the acceptance criteria for these valves.

BASIS: These valves are part of the control rod drive control unit and perform an active safety function in scramming the reactor.

Exercising these valves quarterly during power operations could result in the rapid insertion of one or more control rods more frequently than desired, which would result in rapid reactivity transients and unnecessary wear of the control rod drive mechanisms.

REFERENCES: NUREG-1482, Section 4.4.6

APPROVAL: Not applicable

CONDITION MONITORING JUSTIFICATIONS

NOTE: CEP-IST-1, RBS Appendix, Enclosure 1 provides the data collected, and the Advisory Panel review, that supports the following testing requirements.

Condition Monitoring Justification: **B21-AOVF032A**

Valves in Grouping: B21-AOVF032A

CM Testing Requirements: Perform open flow testing and closed leak testing at a frequency aligned with the Appendix J testing.

Condition Monitoring Justification: **B21-AOVF032B**

Valves in Grouping: B21-AOVF032B

CM Testing Requirements: Perform open flow testing and closed leak testing at a frequency aligned with the Appendix J testing.

Condition Monitoring Justification: **B21-VF010A**

Valves in Grouping: B21-VF010A

CM Testing Requirements: Perform open flow testing and closed leak testing at a frequency aligned with the Appendix J testing.

Condition Monitoring Justification: **B21-VF010B**

Valves in Grouping: B21-VF010B

CM Testing Requirements: Perform open flow testing and closed leak testing at a frequency aligned with the Appendix J testing.

Condition Monitoring Justification: **B21-VF024A**

Valves in Grouping: B21-VF024A, B21-VF024B, B21-VF024C, & B21-VF024D

CM Testing Requirements: Perform open flow testing and closed testing at a frequency that may be extended to one valve in the group every 2R.

Condition Monitoring Justification: **B21-VF024B**

Valves in Grouping: B21-VF024A, B21-VF024B, B21-VF024C, & B21-VF024D

CM Testing Requirements: Perform open flow testing and closed testing at a frequency that may be extended to one valve in the group every 2R.

Condition Monitoring Justification: **B21-VF024C**

Valves in Grouping: B21-VF024A, B21-VF024B, B21-VF024C, & B21-VF024D

CM Testing Requirements: Perform open flow testing and closed testing at a frequency that may be extended to one valve in the group every 2R.

Condition Monitoring Justification: **B21-VF024D**

Valves in Grouping: B21-VF024A, B21-VF024B, B21-VF024C, & B21-VF024D

CM Testing Requirements: Perform open flow testing and closed testing at a frequency that may be extended to one valve in the group every 2R.

IST PLAN RBS APPENDIX	PROGRAM SECTION NO.: CEP-IST-2 REVISION NO. 307 PAGE 2 OF 36
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CONDITION MONITORING JUSTIFICATIONS

NOTE: CEP-IST-1, RBS Appendix, Enclosure 1 provides the data collected, and the Advisory Panel review, that supports the following testing requirements.

Condition Monitoring Justification: **B21-VF029A**

Valves in Grouping: B21-VF029A

CM Testing Requirements: Perform open flow testing and closed testing at a frequency that may be extended to every 3R.

Condition Monitoring Justification: **B21-VF029B**

Valves in Grouping: B21-VF029B

CM Testing Requirements: Perform open flow testing and closed testing at a frequency that may be extended to every 3R.

Condition Monitoring Justification: **B21-VF029C**

Valves in Grouping: B21-VF029C

CM Testing Requirements: Perform open flow testing and closed testing at a frequency that may be extended to every 3R.

Condition Monitoring Justification: **B21-VF029D**

Valves in Grouping: B21-VF029D

CM Testing Requirements: Perform open flow testing and closed testing at a frequency that may be extended to every 3R.

Condition Monitoring Justification: **B21-VF036A**

Valves in Grouping: B21-VF036A

CM Testing Requirements: Perform open verification using system restoration following close test and close leak testing at a frequency aligned with the Category A leak test.

Condition Monitoring Justification: **B21-VF036F**

Valves in Grouping: B21-VF036F

CM Testing Requirements: Perform open verification using system restoration following close test and close leak testing at a frequency aligned with the Category A leak test.

Condition Monitoring Justification: **B21-VF036G**

Valves in Grouping: B21-VF036G

CM Testing Requirements: Perform open verification using system restoration following close test and close leak testing at a frequency aligned with the Category A leak test.

Condition Monitoring Justification: **B21-VF036J**

Valves in Grouping: B21-VF036J

CM Testing Requirements: Perform open verification using system restoration following close test and close leak testing at a frequency aligned with the Category A leak test.

CONDITION MONITORING JUSTIFICATIONS

NOTE: CEP-IST-1, RBS Appendix, Enclosure 1 provides the data collected, and the Advisory Panel review, that supports the following testing requirements.

Condition Monitoring Justification: **B21-VF036L**

Valves in Grouping: B21-VF036L

CM Testing Requirements: Perform open verification using system restoration following close test and close leak testing at a frequency aligned with the Category A leak test.

Condition Monitoring Justification: **B21-VF036M**

Valves in Grouping: B21-VF036M

CM Testing Requirements: Perform open verification using system restoration following close test and close leak testing at a frequency aligned with the Category A leak test.

Condition Monitoring Justification: **B21-VF036N**

Valves in Grouping: B21-VF036N

CM Testing Requirements: Perform open verification using system restoration following close test and close leak testing at a frequency aligned with the Category A leak test.

Condition Monitoring Justification: **B21-VF036P**

Valves in Grouping: B21-VF036P

CM Testing Requirements: Perform open verification using system restoration following close test and close leak testing at a frequency aligned with the Category A leak test.

Condition Monitoring Justification: **B21-VF036R**

Valves in Grouping: B21-VF036R

CM Testing Requirements: Perform open verification using system restoration following close test and close leak testing at a frequency aligned with the Category A leak test.

Condition Monitoring Justification: **B21-VF037A**

Valves in Grouping: B21-VF037A, B21-VF037B, B21-VF037C, B21-VF037D, B21-VF037E, B21-VF037F, B21-VF037G, B21-VF037H, B21-VF037J, B21-VF037K, B21-VF037L, B21-VF037M, B21-VF037N, B21-VF037P, B21-VF037R, & B21-VF037S

CM Testing Requirements: Perform a manual stroke verifying that there is no binding or unusual movement, which would be an indication of wear. This test will provide open and closed requirements. The frequency may be extended to four valves in the group every 2R.

IST PLAN RBS APPENDIX	PROGRAM SECTION NO.: CEP-IST-2 REVISION NO. 307 PAGE 4 OF 36
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CONDITION MONITORING JUSTIFICATIONS

NOTE: CEP-IST-1, RBS Appendix, Enclosure 1 provides the data collected, and the Advisory Panel review, that supports the following testing requirements.

Condition Monitoring Justification: B21-VF037B

Valves in Grouping: B21-VF037A, B21-VF037B, B21-VF037C, B21-VF037D, B21-VF037E, B21-VF037F, B21-VF037G, B21-VF037H, B21-VF037J, B21-VF037K, B21-VF037L, B21-VF037M, B21-VF037N, B21-VF037P, B21-VF037R, & B21-VF037S

CM Testing Requirements: Perform a manual stroke verifying that there is no binding or unusual movement, which would be an indication of wear. This test will provide open and closed requirements. The frequency may be extended to four valves in the group every 2R.

Condition Monitoring Justification: B21-VF037C

Valves in Grouping: B21-VF037A, B21-VF037B, B21-VF037C, B21-VF037D, B21-VF037E, B21-VF037F, B21-VF037G, B21-VF037H, B21-VF037J, B21-VF037K, B21-VF037L, B21-VF037M, B21-VF037N, B21-VF037P, B21-VF037R, & B21-VF037S

CM Testing Requirements: Perform a manual stroke verifying that there is no binding or unusual movement, which would be an indication of wear. This test will provide open and closed requirements. The frequency may be extended to four valves in the group every 2R.

Condition Monitoring Justification: B21-VF037D

Valves in Grouping: B21-VF037A, B21-VF037B, B21-VF037C, B21-VF037D, B21-VF037E, B21-VF037F, B21-VF037G, B21-VF037H, B21-VF037J, B21-VF037K, B21-VF037L, B21-VF037M, B21-VF037N, B21-VF037P, B21-VF037R, & B21-VF037S

CM Testing Requirements: Perform a manual stroke verifying that there is no binding or unusual movement, which would be an indication of wear. This test will provide open and closed requirements. The frequency may be extended to four valves in the group every 2R.

Condition Monitoring Justification: B21-VF037E

Valves in Grouping: B21-VF037A, B21-VF037B, B21-VF037C, B21-VF037D, B21-VF037E, B21-VF037F, B21-VF037G, B21-VF037H, B21-VF037J, B21-VF037K, B21-VF037L, B21-VF037M, B21-VF037N, B21-VF037P, B21-VF037R, & B21-VF037S

CM Testing Requirements: Perform a manual stroke verifying that there is no binding or unusual movement, which would be an indication of wear. This test will provide open and closed requirements. The frequency may be extended to four valves in the group every 2R.

IST PLAN RBS APPENDIX	PROGRAM SECTION NO.: CEP-IST-2 REVISION NO. 307 PAGE 5 OF 36
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CONDITION MONITORING JUSTIFICATIONS

NOTE: CEP-IST-1, RBS Appendix, Enclosure 1 provides the data collected, and the Advisory Panel review, that supports the following testing requirements.

Condition Monitoring Justification: B21-VF037F

Valves in Grouping: B21-VF037A, B21-VF037B, B21-VF037C, B21-VF037D, B21-VF037E, B21-VF037F, B21-VF037G, B21-VF037H, B21-VF037J, B21-VF037K, B21-VF037L, B21-VF037M, B21-VF037N, B21-VF037P, B21-VF037R, & B21-VF037S

CM Testing Requirements: Perform a manual stroke verifying that there is no binding or unusual movement, which would be an indication of wear. This test will provide open and closed requirements. The frequency may be extended to four valves in the group every 2R.

Condition Monitoring Justification: B21-VF037G

Valves in Grouping: B21-VF037A, B21-VF037B, B21-VF037C, B21-VF037D, B21-VF037E, B21-VF037F, B21-VF037G, B21-VF037H, B21-VF037J, B21-VF037K, B21-VF037L, B21-VF037M, B21-VF037N, B21-VF037P, B21-VF037R, & B21-VF037S

CM Testing Requirements: Perform a manual stroke verifying that there is no binding or unusual movement, which would be an indication of wear. This test will provide open and closed requirements. The frequency may be extended to four valves in the group every 2R.

Condition Monitoring Justification: B21-VF037H

Valves in Grouping: B21-VF037A, B21-VF037B, B21-VF037C, B21-VF037D, B21-VF037E, B21-VF037F, B21-VF037G, B21-VF037H, B21-VF037J, B21-VF037K, B21-VF037L, B21-VF037M, B21-VF037N, B21-VF037P, B21-VF037R, & B21-VF037S

CM Testing Requirements: Perform a manual stroke verifying that there is no binding or unusual movement, which would be an indication of wear. This test will provide open and closed requirements. The frequency may be extended to four valves in the group every 2R.

Condition Monitoring Justification: B21-VF037J

Valves in Grouping: B21-VF037A, B21-VF037B, B21-VF037C, B21-VF037D, B21-VF037E, B21-VF037F, B21-VF037G, B21-VF037H, B21-VF037J, B21-VF037K, B21-VF037L, B21-VF037M, B21-VF037N, B21-VF037P, B21-VF037R, & B21-VF037S

CM Testing Requirements: Perform a manual stroke verifying that there is no binding or unusual movement, which would be an indication of wear. This test will provide open and closed requirements. The frequency may be extended to four valves in the group every 2R.

IST PLAN RBS APPENDIX	PROGRAM SECTION NO.: CEP-IST-2 REVISION NO. 307 PAGE 6 OF 36
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CONDITION MONITORING JUSTIFICATIONS

NOTE: CEP-IST-1, RBS Appendix, Enclosure 1 provides the data collected, and the Advisory Panel review, that supports the following testing requirements.

Condition Monitoring Justification: B21-VF037K

Valves in Grouping: B21-VF037A, B21-VF037B, B21-VF037C, B21-VF037D, B21-VF037E, B21-VF037F, B21-VF037G, B21-VF037H, B21-VF037J, B21-VF037K, B21-VF037L, B21-VF037M, B21-VF037N, B21-VF037P, B21-VF037R, & B21-VF037S

CM Testing Requirements: Perform a manual stroke verifying that there is no binding or unusual movement, which would be an indication of wear. This test will provide open and closed requirements. The frequency may be extended to four valves in the group every 2R.

Condition Monitoring Justification: B21-VF037L

Valves in Grouping: B21-VF037A, B21-VF037B, B21-VF037C, B21-VF037D, B21-VF037E, B21-VF037F, B21-VF037G, B21-VF037H, B21-VF037J, B21-VF037K, B21-VF037L, B21-VF037M, B21-VF037N, B21-VF037P, B21-VF037R, & B21-VF037S

CM Testing Requirements: Perform a manual stroke verifying that there is no binding or unusual movement, which would be an indication of wear. This test will provide open and closed requirements. The frequency may be extended to four valves in the group every 2R.

Condition Monitoring Justification: B21-VF037M

Valves in Grouping: B21-VF037A, B21-VF037B, B21-VF037C, B21-VF037D, B21-VF037E, B21-VF037F, B21-VF037G, B21-VF037H, B21-VF037J, B21-VF037K, B21-VF037L, B21-VF037M, B21-VF037N, B21-VF037P, B21-VF037R, & B21-VF037S

CM Testing Requirements: Perform a manual stroke verifying that there is no binding or unusual movement, which would be an indication of wear. This test will provide open and closed requirements. The frequency may be extended to four valves in the group every 2R.

Condition Monitoring Justification: B21-VF037N

Valves in Grouping: B21-VF037A, B21-VF037B, B21-VF037C, B21-VF037D, B21-VF037E, B21-VF037F, B21-VF037G, B21-VF037H, B21-VF037J, B21-VF037K, B21-VF037L, B21-VF037M, B21-VF037N, B21-VF037P, B21-VF037R, & B21-VF037S

CM Testing Requirements: Perform a manual stroke verifying that there is no binding or unusual movement, which would be an indication of wear. This test will provide open and closed requirements. The frequency may be extended to four valves in the group every 2R.

IST PLAN RBS APPENDIX	PROGRAM SECTION NO.: CEP-IST-2 REVISION NO. 307 PAGE 7 OF 36
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CONDITION MONITORING JUSTIFICATIONS

NOTE: CEP-IST-1, RBS Appendix, Enclosure 1 provides the data collected, and the Advisory Panel review, that supports the following testing requirements.

Condition Monitoring Justification: B21-VF037P

Valves in Grouping: B21-VF037A, B21-VF037B, B21-VF037C, B21-VF037D, B21-VF037E, B21-VF037F, B21-VF037G, B21-VF037H, B21-VF037J, B21-VF037K, B21-VF037L, B21-VF037M, B21-VF037N, B21-VF037P, B21-VF037R, & B21-VF037S

CM Testing Requirements: Perform a manual stroke verifying that there is no binding or unusual movement, which would be an indication of wear. This test will provide open and closed requirements. The frequency may be extended to four valves in the group every 2R.

Condition Monitoring Justification: B21-VF037R

Valves in Grouping: B21-VF037A, B21-VF037B, B21-VF037C, B21-VF037D, B21-VF037E, B21-VF037F, B21-VF037G, B21-VF037H, B21-VF037J, B21-VF037K, B21-VF037L, B21-VF037M, B21-VF037N, B21-VF037P, B21-VF037R, & B21-VF037S

CM Testing Requirements: Perform a manual stroke verifying that there is no binding or unusual movement, which would be an indication of wear. This test will provide open and closed requirements. The frequency may be extended to four valves in the group every 2R.

Condition Monitoring Justification: B21-VF037S

Valves in Grouping: B21-VF037A, B21-VF037B, B21-VF037C, B21-VF037D, B21-VF037E, B21-VF037F, B21-VF037G, B21-VF037H, B21-VF037J, B21-VF037K, B21-VF037L, B21-VF037M, B21-VF037N, B21-VF037P, B21-VF037R, & B21-VF037S

CM Testing Requirements: Perform a manual stroke verifying that there is no binding or unusual movement, which would be an indication of wear. This test will provide open and closed requirements. The frequency may be extended to four valves in the group every 2R.

Condition Monitoring Justification: B21-VF039B

Valves in Grouping: B21-VF039B

CM Testing Requirements: Perform open verification using normal operations and close leak testing at a frequency aligned with the Category A leak test.

Condition Monitoring Justification: B21-VF039C

Valves in Grouping: B21-VF039C

CM Testing Requirements: Perform open verification using normal operations and close leak testing at a frequency aligned with the Category A leak test.

Condition Monitoring Justification: B21-VF039D

Valves in Grouping: B21-VF039D

CM Testing Requirements: Perform open verification using normal operations and close leak testing at a frequency aligned with the Category A leak test.

CONDITION MONITORING JUSTIFICATIONS

NOTE: CEP-IST-1, RBS Appendix, Enclosure 1 provides the data collected, and the Advisory Panel review, that supports the following testing requirements.

Condition Monitoring Justification: **B21-VF039E**

Valves in Grouping: B21-VF039E

CM Testing Requirements: Perform open verification using normal operations and close leak testing at a frequency aligned with the Category A leak test.

Condition Monitoring Justification: **B21-VF039H**

Valves in Grouping: B21-VF039H

CM Testing Requirements: Perform open verification using normal operations and close leak testing at a frequency aligned with the Category A leak test.

Condition Monitoring Justification: **B21-VF039K**

Valves in Grouping: B21-VF039K

CM Testing Requirements: Perform open verification using normal operations and close leak testing at a frequency aligned with the Category A leak test.

Condition Monitoring Justification: **B21-VF039S**

Valves in Grouping: B21-VF039S

CM Testing Requirements: Perform open verification using normal operations and close leak testing at a frequency aligned with the Category A leak test.

Condition Monitoring Justification: **B21-VF078A**

Valves in Grouping: B21-VF078A through B21-VF078S (Except I,O, and Q) (16 in Total)

CM Testing Requirements: Perform a manual stroke verifying that there is no binding or unusual movement, which would be an indication of wear. This test will provide open and closed requirements. The frequency may be extended to four valves in the group every 2R.

Condition Monitoring Justification: **B21-VF078B**

Valves in Grouping: B21-VF078A through B21-VF078S (Except I,O, and Q) (16 in Total)

CM Testing Requirements: Perform a manual stroke verifying that there is no binding or unusual movement, which would be an indication of wear. This test will provide open and closed requirements. The frequency may be extended to four valves in the group every 2R.

Condition Monitoring Justification: **B21-VF078C**

Valves in Grouping: B21-VF078A through B21-VF078S (Except I,O, and Q) (16 in Total)

CM Testing Requirements: Perform a manual stroke verifying that there is no binding or unusual movement, which would be an indication of wear. This test will provide open and closed requirements. The frequency may be extended to four valves in the group every 2R.

IST PLAN RBS APPENDIX	PROGRAM SECTION NO.: CEP-IST-2 REVISION NO. 307 PAGE 9 OF 36
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CONDITION MONITORING JUSTIFICATIONS

NOTE: CEP-IST-1, RBS Appendix, Enclosure 1 provides the data collected, and the Advisory Panel review, that supports the following testing requirements.

Condition Monitoring Justification: B21-VF078D

Valves in Grouping: B21-VF078A through B21-VF078S (Except I,O, and Q) (16 in Total)

CM Testing Requirements: Perform a manual stroke verifying that there is no binding or unusual movement, which would be an indication of wear. This test will provide open and closed requirements. The frequency may be extended to four valves in the group every 2R.

Condition Monitoring Justification: B21-VF078E

Valves in Grouping: B21-VF078A through B21-VF078S (Except I,O, and Q) (16 in Total)

CM Testing Requirements: Perform a manual stroke verifying that there is no binding or unusual movement, which would be an indication of wear. This test will provide open and closed requirements. The frequency may be extended to four valves in the group every 2R.

Condition Monitoring Justification: B21-VF078F

Valves in Grouping: B21-VF078A through B21-VF078S (Except I,O, and Q) (16 in Total)

CM Testing Requirements: Perform a manual stroke verifying that there is no binding or unusual movement, which would be an indication of wear. This test will provide open and closed requirements. The frequency may be extended to four valves in the group every 2R.

Condition Monitoring Justification: B21-VF078G

Valves in Grouping: B21-VF078A through B21-VF078S (Except I,O, and Q) (16 in Total)

CM Testing Requirements: Perform a manual stroke verifying that there is no binding or unusual movement, which would be an indication of wear. This test will provide open and closed requirements. The frequency may be extended to four valves in the group every 2R.

Condition Monitoring Justification: B21-VF078H

Valves in Grouping: B21-VF078A through B21-VF078S (Except I,O, and Q) (16 in Total)

CM Testing Requirements: Perform a manual stroke verifying that there is no binding or unusual movement, which would be an indication of wear. This test will provide open and closed requirements. The frequency may be extended to four valves in the group every 2R.

Condition Monitoring Justification: B21-VF078J

Valves in Grouping: B21-VF078A through B21-VF078S (Except I,O, and Q) (16 in Total)

CM Testing Requirements: Perform a manual stroke verifying that there is no binding or unusual movement, which would be an indication of wear. This test will provide open and closed requirements. The frequency may be extended to four valves in the group every 2R.

IST PLAN RBS APPENDIX	PROGRAM SECTION NO.: CEP-IST-2 REVISION NO. 307 PAGE 10 OF 36
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CONDITION MONITORING JUSTIFICATIONS

NOTE: CEP-IST-1, RBS Appendix, Enclosure 1 provides the data collected, and the Advisory Panel review, that supports the following testing requirements.

Condition Monitoring Justification: B21-VF078K

Valves in Grouping: B21-VF078A through B21-VF078S (Except I,O, and Q) (16 in Total)

CM Testing Requirements: Perform a manual stroke verifying that there is no binding or unusual movement, which would be an indication of wear. This test will provide open and closed requirements. The frequency may be extended to four valves in the group every 2R.

Condition Monitoring Justification: B21-VF078L

Valves in Grouping: B21-VF078A through B21-VF078S (Except I,O, and Q) (16 in Total)

CM Testing Requirements: Perform a manual stroke verifying that there is no binding or unusual movement, which would be an indication of wear. This test will provide open and closed requirements. The frequency may be extended to four valves in the group every 2R.

Condition Monitoring Justification: B21-VF078M

Valves in Grouping: B21-VF078A through B21-VF078S (Except I,O, and Q) (16 in Total)

CM Testing Requirements: Perform a manual stroke verifying that there is no binding or unusual movement, which would be an indication of wear. This test will provide open and closed requirements. The frequency may be extended to four valves in the group every 2R.

Condition Monitoring Justification: B21-VF078N

Valves in Grouping: B21-VF078A through B21-VF078S (Except I,O, and Q) (16 in Total)

CM Testing Requirements: Perform a manual stroke verifying that there is no binding or unusual movement, which would be an indication of wear. This test will provide open and closed requirements. The frequency may be extended to four valves in the group every 2R.

Condition Monitoring Justification: B21-VF078P

Valves in Grouping: B21-VF078A through B21-VF078S (Except I,O, and Q) (16 in Total)

CM Testing Requirements: Perform a manual stroke verifying that there is no binding or unusual movement, which would be an indication of wear. This test will provide open and closed requirements. The frequency may be extended to four valves in the group every 2R.

Condition Monitoring Justification: B21-VF078R

Valves in Grouping: B21-VF078A through B21-VF078S (Except I,O, and Q) (16 in Total)

CM Testing Requirements: Perform a manual stroke verifying that there is no binding or unusual movement, which would be an indication of wear. This test will provide open and closed requirements. The frequency may be extended to four valves in the group every 2R.

CONDITION MONITORING JUSTIFICATIONS

NOTE: CEP-IST-1, RBS Appendix, Enclosure 1 provides the data collected, and the Advisory Panel review, that supports the following testing requirements.

Condition Monitoring Justification: **B21-VF078S**

Valves in Grouping: B21-VF078A through B21-VF078S (Except I,O, and Q) (16 in Total)

CM Testing Requirements: Perform a manual stroke verifying that there is no binding or unusual movement, which would be an indication of wear. This test will provide open and closed requirements. The frequency may be extended to four valves in the group every 2R.

Condition Monitoring Justification: **B33-VF013A**

Valves in Grouping: B33-VF013A, B33-VF013B, B33-VF017A, & B33-VF017B

CM Testing Requirements: Perform open verification using normal operations and close leak testing at a frequency that may be extended to one valve in the group every 2R.

Condition Monitoring Justification: **B33-VF013B**

Valves in Grouping: B33-VF013A, B33-VF013B, B33-VF017A, & B33-VF017B

CM Testing Requirements: Perform open verification using normal operations and close leak testing at a frequency that may be extended to one valve in the group every 2R.

Condition Monitoring Justification: **B33-VF017A**

Valves in Grouping: B33-VF013A, B33-VF013B, B33-VF017A, & B33-VF017B

CM Testing Requirements: Perform open verification using normal operations and close leak testing at a frequency that may be extended to one valve in the group every 2R.

Condition Monitoring Justification: **B33-VF017B**

Valves in Grouping: B33-VF013A, B33-VF013B, B33-VF017A, & B33-VF017B

CM Testing Requirements: Perform open verification using normal operations and close leak testing at a frequency that may be extended to one valve in the group every 2R.

Condition Monitoring Justification: **C11-VF122**

Valves in Grouping: C11-VF122

CM Testing Requirements: Perform open flow testing and closed leak testing at a frequency aligned with the Appendix J testing.

Condition Monitoring Justification: **C41-VF006**

Valves in Grouping: C41-VF006 & C41-VF007

CM Testing Requirements: Perform open flow testing and close leak testing starting at a frequency that may be extended to one valve in the group every 3R.

Condition Monitoring Justification: **C41-VF007**

Valves in Grouping: C41-VF006 & C41-VF007

CM Testing Requirements: Perform open flow testing and close leak testing starting at a frequency that may be extended to one valve in the group every 3R.

IST PLAN RBS APPENDIX	PROGRAM SECTION NO.: CEP-IST-2 REVISION NO. 307 PAGE 12 OF 36
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CONDITION MONITORING JUSTIFICATIONS

NOTE: CEP-IST-1, RBS Appendix, Enclosure 1 provides the data collected, and the Advisory Panel review, that supports the following testing requirements.

Condition Monitoring Justification: **C41-VF033A**

Valves in Grouping: C41-VF033A & C41-VF033B

CM Testing Requirements: Perform open flow verification and close testing using NIT starting at a frequency that may be extended to one valve in the group every 2R.

Condition Monitoring Justification: **C41-VF033B**

Valves in Grouping: C41-VF033A & C41-VF033B

CM Testing Requirements: Perform open flow verification and close testing using NIT starting at a frequency that may be extended to one valve in the group every 2R.

Condition Monitoring Justification: **CCP-V118**

Valves in Grouping: CCP-V118

CM Testing Requirements: Perform open flow testing and closed leak testing at a frequency aligned with the Appendix J testing.

Condition Monitoring Justification: **CCP-V119**

Valves in Grouping: CCP-V119

CM Testing Requirements: Perform open verification using normal operations and close testing using NIT starting at a frequency that may be extended to every 2R.

Condition Monitoring Justification: **CCP-V133**

Valves in Grouping: CCP-V133

CM Testing Requirements: Perform open verification using open flow test and close testing using NIT starting at a frequency that may be extended to every 2R.

Condition Monitoring Justification: **CCP-V160**

Valves in Grouping: CCP-V160

CM Testing Requirements: Perform open flow testing and closed leak testing at a frequency aligned with the Appendix J testing.

Condition Monitoring Justification: **CCP-V204**

Valves in Grouping: CCP-V204 & CCP-V209

CM Testing Requirements: After performing baseline NIT closure / CM test and forward flow test, one valve in the group will be tested every 1R.

Condition Monitoring Justification: **CCP-V209**

Valves in Grouping: CCP-V204 & CCP-V209

CM Testing Requirements: After performing baseline NIT closure / CM test and forward flow test, one valve in the group will be tested every 1R.

IST PLAN RBS APPENDIX	PROGRAM SECTION NO.: CEP-IST-2 REVISION NO. 307 PAGE 13 OF 36
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CONDITION MONITORING JUSTIFICATIONS

NOTE: CEP-IST-1, RBS Appendix, Enclosure 1 provides the data collected, and the Advisory Panel review, that supports the following testing requirements.

Condition Monitoring Justification: CCP-V300

Valves in Grouping: CCP-V300, CCP-V83 & CCP-V92

CM Testing Requirements: Perform open verification using flow and close testing using NIT starting at baseline then at a frequency that may be extended to one valve in the group every 1R. For grouping purposes, CCP-V300 and CCP-V92 are considered one valve.

Condition Monitoring Justification: CCP-V337

Valves in Grouping: CCP-V337 & CCP-V338

CM Testing Requirements: Perform open flow testing and closed leak testing at a frequency that may be extended to one valve in the group every 2R.

Condition Monitoring Justification: CCP-V338

Valves in Grouping: CCP-V337 & CCP-V338

CM Testing Requirements: Perform open flow testing and closed leak testing at a frequency that may be extended to one valve in the group every 2R.

Condition Monitoring Justification: CCP-V72

Valves in Grouping: CCP-V72 & CCP-V73

CM Testing Requirements: Perform open flow testing and closed leak testing at a frequency that may be extended to one valve in the group every 2R.

Condition Monitoring Justification: CCP-V73

Valves in Grouping: CCP-V72 & CCP-V73

CM Testing Requirements: Perform open flow testing and closed leak testing at a frequency that may be extended to one valve in the group every 2R.

Condition Monitoring Justification: CCP-V83

Valves in Grouping: CCP-V300, CCP-V83 & CCP-V92

CM Testing Requirements: Perform open verification using flow and close testing using NIT starting at baseline then at a frequency that may be extended to one valve in the group every 1R. For grouping purposes, CCP-V300 and CCP-V92 are considered one valve.

Condition Monitoring Justification: CCP-V92

Valves in Grouping: CCP-V300, CCP-V83 & CCP-V92

CM Testing Requirements: Perform open verification using flow and close testing using NIT starting at baseline then at a frequency that may be extended to one valve in the group every 1R. For grouping purposes, CCP-V300 and CCP-V92 are considered one valve.

IST PLAN RBS APPENDIX	PROGRAM SECTION NO.: CEP-IST-2 REVISION NO. 307 PAGE 14 OF 36
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CONDITION MONITORING JUSTIFICATIONS

NOTE: CEP-IST-1, RBS Appendix, Enclosure 1 provides the data collected, and the Advisory Panel review, that supports the following testing requirements.

Condition Monitoring Justification: CNS-V86

Valves in Grouping: CNS-V86

CM Testing Requirements: Perform open flow testing and closed leak testing at a frequency aligned with the Appendix J testing.

Condition Monitoring Justification: CSH-V12

Valves in Grouping: CSH-V12 & E22-VF007

CM Testing Requirements: Perform open verification using flow and close testing using NIT starting at baseline then at a frequency of one valve in the group every 1R.

Condition Monitoring Justification: CSL-V10

Valves in Grouping: CSL-V10, E12-VF046A, E12-VF046B, & E12-VF046C

CM Testing Requirements: Perform open verification using flow and close testing using NIT starting at baseline then at a frequency of one valve in the group every 1R.

Condition Monitoring Justification: DER-V14

Valves in Grouping: DER-V14 & DER-V15

CM Testing Requirements: Perform flow test and NIT inspection at a frequency that may be extended to one valve in the group every 2R.

Condition Monitoring Justification: DER-V15

Valves in Grouping: DER-V14 & DER-V15

CM Testing Requirements: Perform flow test and NIT inspection at a frequency that may be extended to one valve in the group every 2R.

Condition Monitoring Justification: DER-V16

Valves in Grouping: DER-V16 & DER-V17

CM Testing Requirements: Perform flow test and NIT inspection at a frequency that may be extended to one valve in the group every 2R.

Condition Monitoring Justification: DER-V17

Valves in Grouping: DER-V16 & DER-V17

CM Testing Requirements: Perform flow test and NIT inspection at a frequency that may be extended to one valve in the group every 2R.

Condition Monitoring Justification: DER-V4

Valves in Grouping: DER-V4

CM Testing Requirements: Perform open flow testing and closed leak testing at a frequency aligned with the Appendix J testing.

IST PLAN RBS APPENDIX	PROGRAM SECTION NO.: CEP-IST-2 REVISION NO. 307 PAGE 15 OF 36
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CONDITION MONITORING JUSTIFICATIONS

NOTE: CEP-IST-1, RBS Appendix, Enclosure 1 provides the data collected, and the Advisory Panel review, that supports the following testing requirements.

Condition Monitoring Justification: DFR-V1

Valves in Grouping: DFR-V1, DFR-V2, DFR-V3, and DFR-V4

CM Testing Requirements: Perform flow test and NIT inspection at a frequency that may be extended to one valve in the group every 2R.

Condition Monitoring Justification: DFR-V107

Valves in Grouping: DFR-V78, DFR-V79, DFR-V87, DFR-V88, DFR-V97, DFR-V98, DFR-V107, DFR-V108, DFR-V117, DFR-V118, DFR-V127, & DFR-V128

CM Testing Requirements: Perform disassembly and inspection at a frequency that may be extended to two valves in the group every 2 years.

Condition Monitoring Justification: DFR-V108

Valves in Grouping: DFR-V78, DFR-V79, DFR-V87, DFR-V88, DFR-V97, DFR-V98, DFR-V107, DFR-V108, DFR-V117, DFR-V118, DFR-V127, & DFR-V128

CM Testing Requirements: Perform disassembly and inspection at a frequency that may be extended to two valves in the group every 2 years.

Condition Monitoring Justification: DFR-V117

Valves in Grouping: DFR-V78, DFR-V79, DFR-V87, DFR-V88, DFR-V97, DFR-V98, DFR-V107, DFR-V108, DFR-V117, DFR-V118, DFR-V127, & DFR-V128

CM Testing Requirements: Perform disassembly and inspection at a frequency that may be extended to two valves in the group every 2 years.

Condition Monitoring Justification: DFR-V118

Valves in Grouping: DFR-V78, DFR-V79, DFR-V87, DFR-V88, DFR-V97, DFR-V98, DFR-V107, DFR-V108, DFR-V117, DFR-V118, DFR-V127, & DFR-V128

CM Testing Requirements: Perform disassembly and inspection at a frequency that may be extended to two valves in the group every 2 years.

Condition Monitoring Justification: DFR-V127

Valves in Grouping: DFR-V78, DFR-V79, DFR-V87, DFR-V88, DFR-V97, DFR-V98, DFR-V107, DFR-V108, DFR-V117, DFR-V118, DFR-V127, & DFR-V128

CM Testing Requirements: Perform disassembly and inspection at a frequency that may be extended to two valves in the group every 2 years.

Condition Monitoring Justification: DFR-V128

Valves in Grouping: DFR-V78, DFR-V79, DFR-V87, DFR-V88, DFR-V97, DFR-V98, DFR-V107, DFR-V108, DFR-V117, DFR-V118, DFR-V127, & DFR-V128

CM Testing Requirements: Perform disassembly and inspection at a frequency that may be extended to two valves in the group every 2 years.

IST PLAN RBS APPENDIX	PROGRAM SECTION NO.: CEP-IST-2 REVISION NO. 307 PAGE 16 OF 36
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CONDITION MONITORING JUSTIFICATIONS

NOTE: CEP-IST-1, RBS Appendix, Enclosure 1 provides the data collected, and the Advisory Panel review, that supports the following testing requirements.

Condition Monitoring Justification: DFR-V130

Valves in Grouping: DFR-V130, DFR-V131, DFR-V140, & DFR-V141

CM Testing Requirements: Perform open flow testing and closed leak testing at a frequency that may be extended to 2 valves in the group every 2R.

Condition Monitoring Justification: DFR-V131

Valves in Grouping: DFR-V130, DFR-V131, DFR-V140, & DFR-V141

CM Testing Requirements: Perform open flow testing and closed leak testing at a frequency that may be extended to 2 valves in the group every 2R.

Condition Monitoring Justification: DFR-V140

Valves in Grouping: DFR-V130, DFR-V131, DFR-V140, & DFR-V141

CM Testing Requirements: Perform open flow testing and closed leak testing at a frequency that may be extended to 2 valves in the group every 2R.

Condition Monitoring Justification: DFR-V141

Valves in Grouping: DFR-V130, DFR-V131, DFR-V140, & DFR-V141

CM Testing Requirements: Perform open flow testing and closed leak testing at a frequency that may be extended to 2 valves in the group every 2R.

Condition Monitoring Justification: DFR-V180

Valves in Grouping: DFR-V180

CM Testing Requirements: Perform open flow testing and closed leak testing at a frequency aligned with the Appendix J testing.

Condition Monitoring Justification: DFR-V181

Valves in Grouping: DFR-V181 & DFR-V182

CM Testing Requirements: Perform open flow testing and close leak testing on one valve in the group at a frequency that may be extended to every 3R.

Condition Monitoring Justification: DFR-V182

Valves in Grouping: DFR-V181 & DFR-V182

CM Testing Requirements: Perform open flow testing and close leak testing on one valve in the group at a frequency that may be extended to every 3R.

Condition Monitoring Justification: DFR-V2

Valves in Grouping: DFR-V1, DFR-V2, DFR-V3, and DFR-V4

CM Testing Requirements: Perform flow test and NIT inspection at a frequency that may be extended to one valve in the group every 2R.

IST PLAN RBS APPENDIX	PROGRAM SECTION NO.: CEP-IST-2 REVISION NO. 307 PAGE 17 OF 36
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CONDITION MONITORING JUSTIFICATIONS

NOTE: CEP-IST-1, RBS Appendix, Enclosure 1 provides the data collected, and the Advisory Panel review, that supports the following testing requirements.

Condition Monitoring Justification: DFR-V3

Valves in Grouping: DFR-V1, DFR-V2, DFR-V3, and DFR-V4

CM Testing Requirements: Perform flow test and NIT inspection at a frequency that may be extended to one valve in the group every 2R.

Condition Monitoring Justification: DFR-V4

Valves in Grouping: DFR-V1, DFR-V2, DFR-V3, and DFR-V4

CM Testing Requirements: Perform flow test and NIT inspection at a frequency that may be extended to one valve in the group every 2R.

Condition Monitoring Justification: DFR-V78

Valves in Grouping: DFR-V78, DFR-V79, DFR-V87, DFR-V88, DFR-V97, DFR-V98, DFR-V107, DFR-V108, DFR-V117, DFR-V118, DFR-V127, & DFR-V128

CM Testing Requirements: Perform flow test and NIT inspection at a frequency that may be extended to one valve in the group every 2R.

Condition Monitoring Justification: DFR-V79

Valves in Grouping: DFR-V78, DFR-V79, DFR-V87, DFR-V88, DFR-V97, DFR-V98, DFR-V107, DFR-V108, DFR-V117, DFR-V118, DFR-V127, & DFR-V128

CM Testing Requirements: Perform disassembly and inspection at a frequency that may be extended to two valves in the group every 2 years.

Condition Monitoring Justification: DFR-V87

Valves in Grouping: DFR-V78, DFR-V79, DFR-V87, DFR-V88, DFR-V97, DFR-V98, DFR-V107, DFR-V108, DFR-V117, DFR-V118, DFR-V127, & DFR-V128

CM Testing Requirements: Perform disassembly and inspection at a frequency that may be extended to two valves in the group every 2 years.

Condition Monitoring Justification: DFR-V88

Valves in Grouping: DFR-V78, DFR-V79, DFR-V87, DFR-V88, DFR-V97, DFR-V98, DFR-V107, DFR-V108, DFR-V117, DFR-V118, DFR-V127, & DFR-V128

CM Testing Requirements: Perform disassembly and inspection at a frequency that may be extended to two valves in the group every 2 years.

Condition Monitoring Justification: DFR-V97

Valves in Grouping: DFR-V78, DFR-V79, DFR-V87, DFR-V88, DFR-V97, DFR-V98, DFR-V107, DFR-V108, DFR-V117, DFR-V118, DFR-V127, & DFR-V128

CM Testing Requirements: Perform disassembly and inspection at a frequency that may be extended to two valves in the group every 2 years.

IST PLAN RBS APPENDIX	PROGRAM SECTION NO.: CEP-IST-2 REVISION NO. 307 PAGE 18 OF 36
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CONDITION MONITORING JUSTIFICATIONS

NOTE: CEP-IST-1, RBS Appendix, Enclosure 1 provides the data collected, and the Advisory Panel review, that supports the following testing requirements.

Condition Monitoring Justification: DFR-V98

Valves in Grouping: DFR-V78, DFR-V79, DFR-V87, DFR-V88, DFR-V97, DFR-V98, DFR-V107, DFR-V108, DFR-V117, DFR-V118, DFR-V127, & DFR-V128

CM Testing Requirements: Perform disassembly and inspection at a frequency that may be extended to two valves in the group every 2 years.

Condition Monitoring Justification: E12-AOVF041A

Valves in Grouping: E12-AOVF041A

CM Testing Requirements: Perform open flow testing and closed leak testing at a frequency aligned with the Category A leak test.

Condition Monitoring Justification: E12-AOVF041B

Valves in Grouping: E12-AOVF041B

CM Testing Requirements: Perform open flow testing and closed leak testing at a frequency aligned with the Category A leak test.

Condition Monitoring Justification: E12-AOVF041C

Valves in Grouping: E12-AOVF041C

CM Testing Requirements: Perform open flow testing and closed leak testing at a frequency aligned with the Category A leak test.

Condition Monitoring Justification: E12-VF031A

Valves in Grouping: E12-VF031A, E12-VF031B, & E12-VF031C

CM Testing Requirements: Perform open flow testing and closed leak testing at a frequency that may be extended to one valve in the group every 2R.

Condition Monitoring Justification: E12-VF031B

Valves in Grouping: E12-VF031A, E12-VF031B, & E12-VF031C

CM Testing Requirements: Perform open flow testing and closed leak testing at a frequency that may be extended to one valve in the group every 2R.

Condition Monitoring Justification: E12-VF031C

Valves in Grouping: E12-VF031A, E12-VF031B, & E12-VF031C

CM Testing Requirements: Perform open flow testing and closed leak testing at a frequency that may be extended to one valve in the group every 2R.

Condition Monitoring Justification: E12-VF046A

Valves in Grouping: CSL-V10, E12-VF046A, E12-VF046B, & E12-VF046C

CM Testing Requirements: Perform open flow and closed test starting at baseline then at a frequency of one valve in the group every 1R.

IST PLAN RBS APPENDIX	PROGRAM SECTION NO.: CEP-IST-2 REVISION NO. 307 PAGE 19 OF 36
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CONDITION MONITORING JUSTIFICATIONS

NOTE: CEP-IST-1, RBS Appendix, Enclosure 1 provides the data collected, and the Advisory Panel review, that supports the following testing requirements.

Condition Monitoring Justification: E12-VF046B

Valves in Grouping: CSL-V10, E12-VF046A, E12-VF046B, & E12-VF046C

CM Testing Requirements: Perform open flow and closed test starting at baseline then at a frequency of one valve in the group every 1R.

Condition Monitoring Justification: E12-VF046C

Valves in Grouping: CSL-V10, E12-VF046A, E12-VF046B, & E12-VF046C

CM Testing Requirements: Perform open flow and closed test starting at baseline then at a frequency of one valve in the group every 1R.

Condition Monitoring Justification: E12-VF050A

Valves in Grouping: E12-VF050A & E12-VF050B

CM Testing Requirements: Perform open flow testing and close leak testing at a frequency that may be extended to one valve in the group every 3R.

Condition Monitoring Justification: E12-VF050B

Valves in Grouping: E12-VF050A & E12-VF050B

CM Testing Requirements: Perform open flow testing and close leak testing at a frequency that may be extended to one valve in the group every 3R.

Condition Monitoring Justification: E12-VF084A

Valves in Grouping: E12-VF084A, E12-VF084B, E12-VF084C, E12-VF085A, E12-VF085B, & E12-VF085C

CM Testing Requirements: Perform open flow testing and closed leak testing starting at a frequency that may be extended to two valves in the group every 2 cycles.

Condition Monitoring Justification: E12-VF084B

Valves in Grouping: E12-VF084A, E12-VF084B, E12-VF084C, E12-VF085A, E12-VF085B, & E12-VF085C

CM Testing Requirements: Perform open flow testing and closed leak testing starting at a frequency that may be extended to two valves in the group every 2 cycles.

Condition Monitoring Justification: E12-VF084C

Valves in Grouping: E12-VF084A, E12-VF084B, E12-VF084C, E12-VF085A, E12-VF085B, & E12-VF085C

CM Testing Requirements: Perform open flow testing and closed leak testing starting at a frequency that may be extended to two valves in the group every 2 cycles.

Condition Monitoring Justification: E12-VF085A

Valves in Grouping: E12-VF084A, E12-VF084B, E12-VF084C, E12-VF085A, E12-VF085B, & E12-VF085C

CM Testing Requirements: Perform open flow testing and closed leak testing starting at a frequency that may be extended to two valves in the group every 2 cycles.

IST PLAN RBS APPENDIX	PROGRAM SECTION NO.: CEP-IST-2 REVISION NO. 307 PAGE 20 OF 36
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CONDITION MONITORING JUSTIFICATIONS

NOTE: CEP-IST-1, RBS Appendix, Enclosure 1 provides the data collected, and the Advisory Panel review, that supports the following testing requirements.

Condition Monitoring Justification: E12-VF085B

Valves in Grouping: E12-VF084A, E12-VF084B, E12-VF084C, E12-VF085A, E12-VF085B, & E12-VF085C

CM Testing Requirements: Perform open flow testing and closed leak testing starting at a frequency that may be extended to two valves in the group every 2 cycles.

Condition Monitoring Justification: E12-VF085C

Valves in Grouping: E12-VF084A, E12-VF084B, E12-VF084C, E12-VF085A, E12-VF085B, & E12-VF085C

CM Testing Requirements: Perform open flow testing and closed leak testing starting at a frequency that may be extended to two valves in the group every 2 cycles.

Condition Monitoring Justification: E21-AOVF006

Valves in Grouping: E21-AOVF006

CM Testing Requirements: Perform open flow testing and closed leak testing at a frequency aligned with the Category A leak test.

Condition Monitoring Justification: E21-VF003

Valves in Grouping: E21-VF003

CM Testing Requirements: Perform open flow testing and closed leak testing starting with at a frequency that may be extended to every 2 cycles.

Condition Monitoring Justification: E21-VF033

Valves in Grouping: E21-VF033

CM Testing Requirements: Perform open flow testing and closed leak testing starting with at a frequency that may be extended to every cycle.

Condition Monitoring Justification: E22-AOVF005

Valves in Grouping: E22-AOVF005

CM Testing Requirements: Perform open flow test and close leak testing at a frequency aligned with the Category A leak test.

Condition Monitoring Justification: E22-VF002

Valves in Grouping: E22-VF002

CM Testing Requirements: Perform open flow testing and closed leak testing that may be extended to every 3 cycles.

Condition Monitoring Justification: E22-VF007

Valves in Grouping: E22-VF007 & CSH-V12

CM Testing Requirements: Perform open verification using flow and close testing using NIT or leak test starting at baseline then at a frequency that may be extended to one valve in the group every 1R.

IST PLAN RBS APPENDIX	PROGRAM SECTION NO.: CEP-IST-2 REVISION NO. 307 PAGE 21 OF 36
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CONDITION MONITORING JUSTIFICATIONS

NOTE: CEP-IST-1, RBS Appendix, Enclosure 1 provides the data collected, and the Advisory Panel review, that supports the following testing requirements

Condition Monitoring Justification: **E22-VF016**

Valves in Grouping: E22-VF016

CM Testing Requirements: Perform open verification using flow and close leak test starting at baseline then at a frequency that may be extended to every 1R.

Condition Monitoring Justification: **E22-VF024**

Valves in Grouping: E22-VF024

CM Testing Requirements: Perform open verification using flow and close leak test starting at baseline then at a frequency that may be extended to every 1R.

Condition Monitoring Justification: **E33-VF004**

Valves in Grouping: E33-VF024 & E33-VF004

CM Testing Requirements: Perform forward flow and leak test starting at baseline then at a frequency that may be extended to one valve in the group every 1R.

Condition Monitoring Justification: **E33-VF024**

Valves in Grouping: E33-VF024 & E33-VF004

CM Testing Requirements: Perform forward flow and leak test starting at baseline then at a frequency that may be extended to one valve in the group every 1R.

Condition Monitoring Justification: **E51-VF011**

Valves in Grouping: E51-VF011

CM Testing Requirements: Perform open verification using flow and close leak test at a frequency that may be extended to every 2R.

Condition Monitoring Justification: **E51-VF030**

Valves in Grouping: E51-VF030

CM Testing Requirements: Perform disassembly and inspection at a frequency that may be extended to every 3R.

Condition Monitoring Justification: **E51-VF040**

Valves in Grouping: E51-VF040

CM Testing Requirements: Perform disassembly and inspection at a frequency that may be extended to every 2R.

Condition Monitoring Justification: **E51-VF061**

Valves in Grouping: E51-VF061

CM Testing Requirements: Perform open flow testing and close leak testing at a frequency that may be extended to every 2R.

CONDITION MONITORING JUSTIFICATIONS

NOTE: CEP-IST-1, RBS Appendix, Enclosure 1 provides the data collected, and the Advisory Panel review, that supports the following testing requirements.

Condition Monitoring Justification: **E51-VF079**

Valves in Grouping: E51-VF079 & E51-VF081

CM Testing Requirements: Perform open flow testing and close leak testing at a frequency that may be extended to one valve in the group every 3R.

Condition Monitoring Justification: **E51-VF081**

Valves in Grouping: E51-VF079 & E51-VF081

CM Testing Requirements: Perform open flow testing and close leak testing at a frequency that may be extended to one valve in the group every 3R.

Condition Monitoring Justification: **EGA-V102**

Valves in Grouping: EGA-V102, EGA-V115, EGA-V126, & EGA-V137

CM Testing Requirements: Perform open flow testing and closed leak testing starting at a frequency that may be extended to one valve in the group every 2R.

Condition Monitoring Justification: **EGA-V115**

Valves in Grouping: EGA-V102, EGA-V115, EGA-V126, & EGA-V137

CM Testing Requirements: Perform open flow testing and closed leak testing starting at a frequency that may be extended to one valve in the group every 2R.

Condition Monitoring Justification: **EGA-V126**

Valves in Grouping: EGA-V102, EGA-V115, EGA-V126, & EGA-V137

CM Testing Requirements: Perform open flow testing and closed leak testing starting at a frequency that may be extended to one valve in the group every 2R.

Condition Monitoring Justification: **EGA-V137**

Valves in Grouping: EGA-V102, EGA-V115, EGA-V126, & EGA-V137

CM Testing Requirements: Perform open flow testing and closed leak testing starting at a frequency that may be extended to one valve in the group every 2R.

Condition Monitoring Justification: **EGA-V147**

Valves in Grouping: EGA-V147, EGA-V148, EGA-V151, & EGA-V152

CM Testing Requirements: Perform open verification using normal operations and close testing using NIT starting at baseline then at a frequency that may be extended to one valve in the group every cycle.

Condition Monitoring Justification: **EGA-V148**

Valves in Grouping: EGA-V147, EGA-V148, EGA-V151, & EGA-V152

CM Testing Requirements: Perform open verification using normal operations and close testing using NIT starting at baseline then at a frequency that may be extended to one valve in the group every cycle.

CONDITION MONITORING JUSTIFICATIONS

NOTE: CEP-IST-1, RBS Appendix, Enclosure 1 provides the data collected, and the Advisory Panel review, that supports the following testing requirements.

Condition Monitoring Justification: **EGA-V151**

Valves in Grouping: EGA-V147, EGA-V148, EGA-V151, & EGA-V152

CM Testing Requirements: Perform open verification using normal operations and close testing using NIT starting at baseline then at a frequency that may be extended to one valve in the group every cycle.

Condition Monitoring Justification: **EGA-V152**

Valves in Grouping: EGA-V147, EGA-V148, EGA-V151, & EGA-V152

CM Testing Requirements: Perform open verification using normal operations and close testing using NIT starting at baseline then at a frequency that may be extended to one valve in the group every cycle.

Condition Monitoring Justification: **EGF-V3**

Valves in Grouping: EGF-V3, EGF-V33, & EGF-V63

CM Testing Requirements: Perform open flow verification and close testing using NIT starting at baseline then at a frequency that may be extended to one valve in the group every cycle.

Condition Monitoring Justification: **EGF-V33**

Valves in Grouping: EGF-V3, EGF-V33, & EGF-V63

CM Testing Requirements: Perform open flow verification and close testing using NIT starting at baseline then at a frequency that may be extended to one valve in the group every cycle.

Condition Monitoring Justification: **EGF-V63**

Valves in Grouping: EGF-V3, EGF-V33, & EGF-V63

CM Testing Requirements: Perform open flow verification and close testing using NIT starting at baseline then at a frequency that may be extended to one valve in the group every cycle.

Condition Monitoring Justification: **FPW-V263**

Valves in Grouping: FPW-V263

CM Testing Requirements: Perform open flow testing and closed leak testing at a frequency aligned with the Appendix J testing.

Condition Monitoring Justification: **FWS-V3052**

Valves in Grouping: FWS-V3052

CM Testing Requirements: Perform open by taking credit for normal operating flow and close leak testing at a frequency aligned with the Category A leak test.

IST PLAN RBS APPENDIX	PROGRAM SECTION NO.: CEP-IST-2 REVISION NO. 307 PAGE 24 OF 36
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CONDITION MONITORING JUSTIFICATIONS

NOTE: CEP-IST-1, RBS Appendix, Enclosure 1 provides the data collected, and the Advisory Panel review, that supports the following testing requirements.

Condition Monitoring Justification: **G33-VF051**

Valves in Grouping: G33-VF051

CM Testing Requirements: Perform open flow testing and close leak testing or NIT at a frequency that may be extended to every 3R.

Condition Monitoring Justification: **G33-VF052A**

Valves in Grouping: G33-VF052A & G33-VF052B

CM Testing Requirements: Perform open flow verification testing and close leak testing or NIT starting at baseline (used to confirm past open flow conditions) then at a frequency that may be extended to one valve in the group every 3R.

Condition Monitoring Justification: **G33-VF052B**

Valves in Grouping: G33-VF052A & G33-VF052B

CM Testing Requirements: Perform open flow verification testing and close leak testing or NIT starting at baseline (used to confirm past open flow conditions) then at a frequency that may be extended to one valve in the group every 3R.

Condition Monitoring Justification: **HVK-V33**

Valves in Grouping: HVK-V33, HVK-V34, HVK-V82 & HVK-V83

CM Testing Requirements: Perform open flow verification and close testing using NIT starting at baseline then at a frequency that may be extended to one valve in the group every cycle.

Condition Monitoring Justification: **HVK-V34**

Valves in Grouping: HVK-V33, HVK-V34, HVK-V82 & HVK-V83

CM Testing Requirements: Perform open flow verification and close testing using NIT starting at baseline then at a frequency that may be extended to one valve in the group every cycle.

Condition Monitoring Justification: **HVK-V48**

Valves in Grouping: HVK-V48 & HVK-V97

CM Testing Requirements: Perform disassembly and inspection at a frequency of one valve in the group every 2R.

Condition Monitoring Justification: **HVK-V49**

Valves in Grouping: HVK-V98 & HVK-V49

CM Testing Requirements: Perform open flow verification and close testing using NIT starting at baseline then at a frequency that may be extended to one valve in the group every cycle.

CONDITION MONITORING JUSTIFICATIONS

NOTE: CEP-IST-1, RBS Appendix, Enclosure 1 provides the data collected, and the Advisory Panel review, that supports the following testing requirements.

Condition Monitoring Justification: **HVK-V82**

Valves in Grouping: HVK-V33, HVK-V34, HVK-V82 & HVK-V83

CM Testing Requirements: Perform open flow verification using normal operations and close testing using NIT starting at baseline then at a frequency that may be extended to one valve in the group every cycle.

Condition Monitoring Justification: **HVK-V83**

Valves in Grouping: HVK-V33, HVK-V34, HVK-V82 & HVK-V83

CM Testing Requirements: Perform open flow verification using normal operations and close testing using NIT starting at baseline then at a frequency that may be extended to one valve in the group every cycle.

Condition Monitoring Justification: **HVK-V97**

Valves in Grouping: HVK-V97 & HVK-V48

CM Testing Requirements: Perform disassembly and inspection at a frequency of one valve in the group every 2R.

Condition Monitoring Justification: **HVK-V98**

Valves in Grouping: HVK-V49 & HVK-V98

CM Testing Requirements: Perform open flow verification and close testing using NIT starting at baseline then at a frequency that may be extended to one valve in the group every cycle.

Condition Monitoring Justification: **HVN-V1316**

Valves in Grouping: HVN-V1316

CM Testing Requirements: Perform open flow testing and closed leak testing at a frequency aligned with the Appendix J testing.

Condition Monitoring Justification: **HVN-V541**

Valves in Grouping: HVN-V541

CM Testing Requirements: Perform open flow testing and closed leak testing at a frequency aligned with the Appendix J testing.

Condition Monitoring Justification: **HVN-V544**

Valves in Grouping: HVN-V544 & HVN-V545

CM Testing Requirements: Perform open flow testing and close leak testing at a frequency that may be extended to one valve in the group every 3R.

Condition Monitoring Justification: **HVN-V545**

Valves in Grouping: HVN-V544 & HVN-V545

CM Testing Requirements: Perform open flow testing and close leak testing at a frequency that may be extended to one valve in the group every 3R.

IST PLAN RBS APPENDIX	PROGRAM SECTION NO.: CEP-IST-2 REVISION NO. 307 PAGE 26 OF 36
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CONDITION MONITORING JUSTIFICATIONS

NOTE: CEP-IST-1, RBS Appendix, Enclosure 1 provides the data collected, and the Advisory Panel review, that supports the following testing requirements.

Condition Monitoring Justification: HVN-V546

Valves in Grouping: HVN-V546 & HVN-V547

CM Testing Requirements: Perform forward flow and leak or NIT testing starting at baseline that may be extended to one valve in the group every 1R.

Condition Monitoring Justification: HVN-V547

Valves in Grouping: HVN-V546 & HVN-V547

CM Testing Requirements: Perform forward flow and leak or NIT testing starting at baseline that may be extended to one valve in the group every 1R.

Condition Monitoring Justification: IAS-V3095

Valves in Grouping: IAS-V3095, IAS-V3096, IAS-V3097 & IAS-V3098

CM Testing Requirements: Perform open verification using flow and close leak test starting at baseline then at a frequency that may be extended to one valve in the group every 1R.

Condition Monitoring Justification: IAS-V3096

Valves in Grouping: IAS-V3095, IAS-V3096, IAS-V3097 & IAS-V3098

CM Testing Requirements: Perform open verification using flow and close leak test starting at baseline then at a frequency that may be extended to one valve in the group every 1R.

Condition Monitoring Justification: IAS-V3097

Valves in Grouping: IAS-V3095, IAS-V3096, IAS-V3097 & IAS-V3098

CM Testing Requirements: Perform open verification using flow and close leak test starting at baseline then at a frequency that may be extended to one valve in the group every 1R.

Condition Monitoring Justification: IAS-V3098

Valves in Grouping: IAS-V3095, IAS-V3096, IAS-V3097 & IAS-V3098

CM Testing Requirements: Perform open verification using flow and close leak test starting at baseline then at a frequency that may be extended to one valve in the group every 1R.

Condition Monitoring Justification: IAS-V514

Valves in Grouping: IAS-V514 & IAS-V515

CM Testing Requirements: Perform open flow testing and closed leak testing at a frequency that may be extended to one valve in the group every 3R.

Condition Monitoring Justification: IAS-V515

Valves in Grouping: IAS-V514 & IAS-V515

CM Testing Requirements: Perform open flow testing and closed leak testing at a frequency that may be extended to one valve in the group every 3R.

IST PLAN RBS APPENDIX	PROGRAM SECTION NO.: CEP-IST-2 REVISION NO. 307 PAGE 27 OF 36
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CONDITION MONITORING JUSTIFICATIONS

NOTE: CEP-IST-1, RBS Appendix, Enclosure 1 provides the data collected, and the Advisory Panel review, that supports the following testing requirements.

Condition Monitoring Justification: **IAS-V78**

Valves in Grouping: IAS-V78

CM Testing Requirements: Perform open flow testing and NIT at a frequency that may be extended to every 3R.

Condition Monitoring Justification: **IAS-V80**

Valves in Grouping: IAS-V80

CM Testing Requirements: Perform open flow testing and closed leak testing at a frequency aligned with the Appendix J testing.

Condition Monitoring Justification: **ICS-V21**

Valves in Grouping: ICS-V21

CM Testing Requirements: Perform open verification using normal operations and close testing using NIT starting at baseline then at a frequency that may be extended to every 1R.

Condition Monitoring Justification: **ICS-V3004**

Valves in Grouping: ICS-V3004

CM Testing Requirements: Perform open flow testing and closed leak testing at a frequency that may be extended to every 2R.

Condition Monitoring Justification: **LSV-V112**

Valves in Grouping: LSV-V112 & LSV-V118

CM Testing Requirements: Perform open flow testing and closed leak testing at a frequency that may be extended to one valve in the group every 3R.

Condition Monitoring Justification: **LSV-V114**

Valves in Grouping: LSV-V114 & LSV-V120

CM Testing Requirements: Perform open flow testing and RT at a frequency that may be extended to one valve in the group every 3R.

Condition Monitoring Justification: **LSV-V118**

Valves in Grouping: LSV-V112 & LSV-V118

CM Testing Requirements: Perform open flow testing and closed leak testing at a frequency that may be extended to one valve in the group every 3R.

Condition Monitoring Justification: **LSV-V120**

Valves in Grouping: LSV-V114 & LSV-V120

CM Testing Requirements: Perform open flow testing and RT at a frequency that may be extended to one valve in the group every 3R.

IST PLAN RBS APPENDIX	PROGRAM SECTION NO.: CEP-IST-2 REVISION NO. 307 PAGE 28 OF 36
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CONDITION MONITORING JUSTIFICATIONS

NOTE: CEP-IST-1, RBS Appendix, Enclosure 1 provides the data collected, and the Advisory Panel review, that supports the following testing requirements.

Condition Monitoring Justification: **LSV-V82**

Valves in Grouping: LSV-V82 & LSV-V98

CM Testing Requirements: Perform open verification using normal operations and close testing using NIT starting at baseline then at a frequency that may be extended to one valve in the group every cycle.

Condition Monitoring Justification: **LSV-V98**

Valves in Grouping: LSV-V82 & LSV-V98

CM Testing Requirements: Perform open verification using normal operations and close testing using NIT starting at baseline then at a frequency that may be extended to one valve in the group every cycle.

Condition Monitoring Justification: **RHS-V240**

Valves in Grouping: RHS-V240

CM Testing Requirements: Perform open flow testing and closed leak testing at a frequency aligned with the Category A leak test.

Condition Monitoring Justification: **SAS-V486**

Valves in Grouping: SAS-V486

CM Testing Requirements: Perform open flow testing and closed leak testing at a frequency aligned with the Appendix J testing.

Condition Monitoring Justification: **SFC-V101**

Valves in Grouping: SFC-V101

CM Testing Requirements: Perform open flow testing and closed leak testing at a frequency aligned with the Appendix J testing.

Condition Monitoring Justification: **SFC-V350**

Valves in Grouping: SFC-V350

CM Testing Requirements: Perform open flow testing and closed leak testing at a frequency aligned with the Appendix J testing.

Condition Monitoring Justification: **SFC-V351**

Valves in Grouping: SFC-V351

CM Testing Requirements: Perform open flow testing and closed leak testing at a frequency aligned with the Appendix J testing.

Condition Monitoring Justification: **SFC-V39**

Valves in Grouping: SFC-V39 & SFC-V40

CM Testing Requirements: Perform open flow verification and close testing using NIT starting at baseline then at a frequency that may be extended to one valve in the group every cycle.

IST PLAN RBS APPENDIX	PROGRAM SECTION NO.: CEP-IST-2 REVISION NO. 307 PAGE 29 OF 36
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CONDITION MONITORING JUSTIFICATIONS

NOTE: CEP-IST-1, RBS Appendix, Enclosure 1 provides the data collected, and the Advisory Panel review, that supports the following testing requirements.

Condition Monitoring Justification: SFC-V40

Valves in Grouping: SFC-V39 & SFC-V40

CM Testing Requirements: Perform open flow verification and close testing using NIT starting at baseline then at a frequency that may be extended to one valve in the group every cycle.

Condition Monitoring Justification: SFC-V59

Valves in Grouping: SFC-V59, SFC-V60, SFC-V61, & SFC-V62

CM Testing Requirements: Perform open verification using normal operations and close testing using NIT or leak test starting at baseline then at a frequency that may be extended to one valve in the group every cycle.

Condition Monitoring Justification: SFC-V60

Valves in Grouping: SFC-V59, SFC-V60, SFC-V61, & SFC-V62

CM Testing Requirements: Perform open verification using normal operations and close testing using NIT or leak test starting at baseline then at a frequency that may be extended to one valve in the group every cycle.

Condition Monitoring Justification: SFC-V61

Valves in Grouping: SFC-V59, SFC-V60, SFC-V61, & SFC-V62

CM Testing Requirements: Perform open verification using normal operations and close testing using NIT or leak test starting at baseline then at a frequency that may be extended to one valve in the group every cycle.

Condition Monitoring Justification: SFC-V62

Valves in Grouping: SFC-V59, SFC-V60, SFC-V61, & SFC-V62

CM Testing Requirements: Perform open verification using normal operations and close testing using NIT or leak test starting at baseline then at a frequency that may be extended to one valve in the group every cycle.

Condition Monitoring Justification: SSR-V706

Valves in Grouping: SSR-V706

CM Testing Requirements: Perform open flow testing and closed leak testing at a frequency aligned with the Category A leak test.

Condition Monitoring Justification: SVV-V121

Valves in Grouping: SVV-V121 & SVV-128

CM Testing Requirements: Perform open verification using open flow test and close testing using NIT starting at baseline then at a frequency that may be extended to one valve in the group every cycle.

IST PLAN RBS APPENDIX	PROGRAM SECTION NO.: CEP-IST-2 REVISION NO. 307 PAGE 30 OF 36
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CONDITION MONITORING JUSTIFICATIONS

NOTE: CEP-IST-1, RBS Appendix, Enclosure 1 provides the data collected, and the Advisory Panel review, that supports the following testing requirements.

Condition Monitoring Justification: SVV-V122

Valves in Grouping: SVV-V122, SVV-V123, SVV-V129 & SVV-V130

CM Testing Requirements: Perform open verification using normal operations and close testing using NIT at a frequency that may be extended to two valves in the group every 3R.

Condition Monitoring Justification: SVV-V123

Valves in Grouping: SVV-V122, SVV-V123, SVV-V129 & SVV-V130

CM Testing Requirements: Perform open verification using normal operations and close testing using NIT at a frequency that may be extended to two valves in the group every 3R.

Condition Monitoring Justification: SVV-V128

Valves in Grouping: SVV-V121 & SVV-128

CM Testing Requirements: Perform open verification using open flow test and close testing using NIT starting at baseline then at a frequency that may be extended to one valve in the group every cycle.

Condition Monitoring Justification: SVV-V129

Valves in Grouping: SVV-V122, SVV-V123, SVV-V129 & SVV-V130

CM Testing Requirements: Perform open verification using normal operations and close testing using NIT at a frequency that may be extended to two valves in the group every 3R.

Condition Monitoring Justification: SVV-V130

Valves in Grouping: SVV-V122, SVV-V123, SVV-V129 & SVV-V130

CM Testing Requirements: Perform open verification using normal operations and close testing using NIT at a frequency that may be extended to two valves in the group every 3R.

Condition Monitoring Justification: SVV-V31

Valves in Grouping: SVV-V31

CM Testing Requirements: Perform open flow testing and closed leak testing at a frequency aligned with the Appendix J testing.

Condition Monitoring Justification: SVV-V9

Valves in Grouping: SVV-V9

CM Testing Requirements: Perform open flow testing and closed leak testing at a frequency aligned with the Appendix J testing.

Condition Monitoring Justification: SWP-V1086

Valves in Grouping: SWP-V1086 & SWP-V1087

CM Testing Requirements: Perform open flow test and leak testing at a frequency that may be extended to one valve in the group every 2 cycles.

CONDITION MONITORING JUSTIFICATIONS

NOTE: CEP-IST-1, RBS Appendix, Enclosure 1 provides the data collected, and the Advisory Panel review, that supports the following testing requirements.

Condition Monitoring Justification: **SWP-V1087**

Valves in Grouping: SWP-V1086 & SWP-V1087

CM Testing Requirements: Perform open flow test and leak testing at a frequency that may be extended to one valve in the group every 2 cycles.

Condition Monitoring Justification: **SWP-V1091**

Valves in Grouping: SWP-V1091, SWP-V1092, SWP-V1095, & SWP-V1098

CM Testing Requirements: Perform open flow testing and close leak testing at a frequency starting at baseline then it may be extended to one valve in the group every cycle.

Condition Monitoring Justification: **SWP-V1092**

Valves in Grouping: SWP-V1091, SWP-V1092, SWP-V1095, & SWP-V1098

CM Testing Requirements: Perform open flow testing and close leak testing at a frequency starting at baseline then it may be extended to one valve in the group every cycle.

Condition Monitoring Justification: **SWP-V1095**

Valves in Grouping: SWP-V1091, SWP-V1092, SWP-V1095, & SWP-V1098

CM Testing Requirements: Perform open flow testing and close leak testing at a frequency starting at baseline then it may be extended to one valve in the group every cycle.

Condition Monitoring Justification: **SWP-V1098**

Valves in Grouping: SWP-V1091, SWP-V1092, SWP-V1095, & SWP-V1098

CM Testing Requirements: Perform open flow testing and close leak testing at a frequency starting at baseline then it may be extended to one valve in the group every cycle.

Condition Monitoring Justification: **SWP-V1102**

Valves in Grouping: SWP-V1102 & SWP-V1103

CM Testing Requirements: Perform open flow testing and close leak testing at a frequency starting at baseline then it may be extended to one valve in the group every cycle.

Condition Monitoring Justification: **SWP-V1103**

Valves in Grouping: SWP-V1102 & SWP-V1103

CM Testing Requirements: Perform open flow testing and close leak testing at a frequency starting at baseline then it may be extended to one valve in the group every cycle.

Condition Monitoring Justification: **SWP-V1224**

Valves in Grouping: SWP-V1224, SWP-V1225, SWP-V1226, & SWP-V1227

CM Testing Requirements: Perform disassembly at baseline then at a frequency that may be extended to one valve in the group every 1R.

IST PLAN RBS APPENDIX	PROGRAM SECTION NO.: CEP-IST-2 REVISION NO. 307 PAGE 32 OF 36
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CONDITION MONITORING JUSTIFICATIONS

NOTE: CEP-IST-1, RBS Appendix, Enclosure 1 provides the data collected, and the Advisory Panel review, that supports the following testing requirements.

Condition Monitoring Justification: SWP-V1225

Valves in Grouping: SWP-V1224, SWP-V1225, SWP-V1226, & SWP-V1227

CM Testing Requirements: Perform disassembly at baseline then at a frequency that may be extended to one valve in the group every 1R.

Condition Monitoring Justification: SWP-V1226

Valves in Grouping: SWP-V1224, SWP-V1225, SWP-V1226, & SWP-V1227

CM Testing Requirements: Perform disassembly at baseline then at a frequency that may be extended to one valve in the group every 1R.

Condition Monitoring Justification: SWP-V1227

Valves in Grouping: SWP-V1224, SWP-V1225, SWP-V1226, & SWP-V1227

CM Testing Requirements: Perform disassembly at baseline then at a frequency that may be extended to one valve in the group every 1R.

Condition Monitoring Justification: SWP-V135

Valves in Grouping: SWP-V135, SWP-V136, SWP-V143, & SWP-V144

CM Testing Requirements: Perform open flow testing and closed NIT at a frequency that may be extended to one valve in the group every 2 cycles.

Condition Monitoring Justification: SWP-V136

Valves in Grouping: SWP-V135, SWP-V136, SWP-V143, & SWP-V144

CM Testing Requirements: Perform open flow testing and closed NIT at a frequency that may be extended to one valve in the group every 2 cycles.

Condition Monitoring Justification: SWP-V143

Valves in Grouping: SWP-V135, SWP-V136, SWP-V143, & SWP-V144

CM Testing Requirements: Perform open flow testing and closed NIT at a frequency that may be extended to one valve in the group every 2 cycles.

Condition Monitoring Justification: SWP-V144

Valves in Grouping: SWP-V135, SWP-V136, SWP-V143, & SWP-V144

CM Testing Requirements: Perform open flow testing and closed NIT at a frequency that may be extended to one valve in the group every 2 cycles.

Condition Monitoring Justification: SWP-V147

Valves in Grouping: SWP-V147, SWP-V148, SWP-V149, & SWP-V150

CM Testing Requirements: Perform open flow testing and closed leak testing at a frequency that may be extended to one valve in the group every 1R.

IST PLAN RBS APPENDIX	PROGRAM SECTION NO.: CEP-IST-2 REVISION NO. 307 PAGE 33 OF 36
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CONDITION MONITORING JUSTIFICATIONS

NOTE: CEP-IST-1, RBS Appendix, Enclosure 1 provides the data collected, and the Advisory Panel review, that supports the following testing requirements.

Condition Monitoring Justification: SWP-V148

Valves in Grouping: SWP-V147, SWP-V148, SWP-V149, & SWP-V150

CM Testing Requirements: Perform open flow testing and closed leak testing at a frequency that may be extended to one valve in the group every 1R.

Condition Monitoring Justification: SWP-V149

Valves in Grouping: SWP-V147, SWP-V148, SWP-V149, & SWP-V150

CM Testing Requirements: Perform open flow testing and closed leak testing at a frequency that may be extended to one valve in the group every 1R.

Condition Monitoring Justification: SWP-V150

Valves in Grouping: SWP-V147, SWP-V148, SWP-V149, & SWP-V150

CM Testing Requirements: Perform open flow testing and closed leak testing at a frequency that may be extended to one valve in the group every 1R.

Condition Monitoring Justification: SWP-V153

Valves in Grouping: SWP-V153, SWP-V154, SWP-V155, & SWP-V156

CM Testing Requirements: Perform open flow verification and close testing using NIT starting at baseline then at a frequency that may be extended to one valve in the group every 1R.

Condition Monitoring Justification: SWP-V154

Valves in Grouping: SWP-V153, SWP-V154, SWP-V155, & SWP-V156

CM Testing Requirements: Perform open flow verification and close testing using NIT starting at baseline then at a frequency that may be extended to one valve in the group every 1R.

Condition Monitoring Justification: SWP-V155

Valves in Grouping: SWP-V153, SWP-V154, SWP-V155, & SWP-V156

CM Testing Requirements: Perform open flow verification and close testing using NIT starting at baseline then at a frequency that may be extended to one valve in the group every 1R.

Condition Monitoring Justification: SWP-V156

Valves in Grouping: SWP-V153, SWP-V154, SWP-V155, & SWP-V156

CM Testing Requirements: Perform open flow verification and close testing using NIT starting at baseline then at a frequency that may be extended to one valve in the group every 1R.

Condition Monitoring Justification: SWP-V172

Valves in Grouping: SWP-V172 & SWP-V173

CM Testing Requirements: Perform open flow testing and operational leak testing starting at baseline then at a frequency that may be extended to one valve in the group every 1R.

IST PLAN RBS APPENDIX	PROGRAM SECTION NO.: CEP-IST-2 REVISION NO. 307 PAGE 34 OF 36
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CONDITION MONITORING JUSTIFICATIONS

NOTE: CEP-IST-1, RBS Appendix, Enclosure 1 provides the data collected, and the Advisory Panel review, that supports the following testing requirements.

Condition Monitoring Justification: SWP-V173

Valves in Grouping: SWP-V172 & SWP-V173

CM Testing Requirements: Perform open flow testing and operational leak testing starting at baseline then at a frequency that may be extended to one valve in the group every 1R.

Condition Monitoring Justification: SWP-V174

Valves in Grouping: SWP-V174

CM Testing Requirements: Perform open flow testing and closed leak testing at a frequency aligned with the Appendix J testing.

Condition Monitoring Justification: SWP-V175

Valves in Grouping: SWP-V175

CM Testing Requirements: Perform open flow testing and closed leak testing at a frequency aligned with the Appendix J testing.

Condition Monitoring Justification: SWP-V199

Valves in Grouping: SWP-V199 & SWP-V200

CM Testing Requirements: Perform open verification using normal operations and close testing using NIT starting at baseline then at a frequency that may be extended to one valve in the group every 1R.

Condition Monitoring Justification: SWP-V200

Valves in Grouping: SWP-V199 & SWP-V200

CM Testing Requirements: Perform open verification using normal operations and close testing using NIT starting at baseline then at a frequency that may be extended to one valve in the group every 1R.

Condition Monitoring Justification: SWP-V201

Valves in Grouping: SWP-V201 & SWP-V202

CM Testing Requirements: Perform open flow test and close leakage test starting at baseline then at a frequency that may be extended to one valve in the group every 1R.

Condition Monitoring Justification: SWP-V202

Valves in Grouping: SWP-V201 & SWP-V202

CM Testing Requirements: Perform open flow test and close leakage test starting at baseline then at a frequency that may be extended to one valve in the group every 1R.

Condition Monitoring Justification: SWP-V203

Valves in Grouping: SWP-V203 & SWP-V204

CM Testing Requirements: Perform open verification using forward flow test and close testing using NIT starting at baseline then at a frequency that may be extended to one valve in the group every 1R.

IST PLAN RBS APPENDIX	PROGRAM SECTION NO.: CEP-IST-2 REVISION NO. 307 PAGE 35 OF 36
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CONDITION MONITORING JUSTIFICATIONS

NOTE: CEP-IST-1, RBS Appendix, Enclosure 1 provides the data collected, and the Advisory Panel review, that supports the following testing requirements.

Condition Monitoring Justification: SWP-V204

Valves in Grouping: SWP-V203 & SWP-V204

CM Testing Requirements: Perform open verification using forward flow test and close testing using NIT starting at baseline then at a frequency that may be extended to one valve in the group every 1R.

Condition Monitoring Justification: SWP-V326

Valves in Grouping: SWP-V326 & SWP-V327

CM Testing Requirements: Perform open flow testing and close leak testing at a frequency that may be extended to one valve in the group every 2R.

Condition Monitoring Justification: SWP-V327

Valves in Grouping: SWP-V326 & SWP-V327

CM Testing Requirements: Perform open flow testing and close leak testing at a frequency that may be extended to one valve in the group every 2R.

Condition Monitoring Justification: SWP-V437

Valves in Grouping: SWP-V437 & SWP-V516

CM Testing Requirements: Perform open flow testing and NIT at a frequency that may be extended to one valve in the group every 2R.

Condition Monitoring Justification: SWP-V516

Valves in Grouping: SWP-V437 & SWP-V516

CM Testing Requirements: Perform open flow testing and NIT at a frequency that may be extended to one valve in the group every 2R.

Condition Monitoring Justification: SWP-V650

Valves in Grouping: SWP-V650 & SWP-V651

CM Testing Requirements: Perform open flow testing and closed leak testing starting at a frequency that may be extended to one valve in the group every 2 cycles.

Condition Monitoring Justification: SWP-V651

Valves in Grouping: SWP-V650 & SWP-V651

CM Testing Requirements: Perform open flow testing and closed leak testing starting at a frequency that may be extended to one valve in the group every 2 cycles.

Condition Monitoring Justification: SWP-V77

Valves in Grouping: SWP-V77, SWP-V78, SWP-V79, & SWP-V80

CM Testing Requirements: Perform open flow verification and close testing using NIT starting at baseline then at a frequency that may be extended to one valve in the group every 1R.

IST PLAN RBS APPENDIX	PROGRAM SECTION NO.: CEP-IST-2 REVISION NO. 307 PAGE 36 OF 36
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CONDITION MONITORING JUSTIFICATIONS

NOTE: CEP-IST-1, RBS Appendix, Enclosure 1 provides the data collected, and the Advisory Panel review, that supports the following testing requirements.

Condition Monitoring Justification: SWP-V78

Valves in Grouping: SWP-V77, SWP-V78, SWP-V79, & SWP-V80

CM Testing Requirements: Perform open flow verification and close testing using NIT starting at baseline then at a frequency that may be extended to one valve in the group every 1R.

Condition Monitoring Justification: SWP-V79

Valves in Grouping: SWP-V77, SWP-V78, SWP-V79, & SWP-V80

CM Testing Requirements: Perform open flow verification and close testing using NIT starting at baseline then at a frequency that may be extended to one valve in the group every 1R.

Condition Monitoring Justification: SWP-V80

Valves in Grouping: SWP-V77, SWP-V78, SWP-V79, & SWP-V80

CM Testing Requirements: Perform open flow verification and close testing using NIT starting at baseline then at a frequency that may be extended to one valve in the group every 1R.

**IST PLAN
RBS APPENDIX
VALVE SUMMARY LISTING**

**PROGRAM SECTION NO. CEP-IST-2
REVISION NO. 307
PAGE 1 OF 67**

SYSTEM: 052 RDS - CONTROL ROD DRIVE HYDRAULIC (CRD)

VALVE NO.	VALVE SIZE (in.) TYPE ACT.	P & ID NO. , COORD.	IST PASS	IST CODE CLASS	CODE CAT.	SAFETY POS.	REQUIRED TESTS AND FREQUENCY										RELIEF REQUEST (VRR)	OTHER (CSJ/ROJ/ CMJ/VPS)	NOTES:
							FS	PS	LT	LJ	ST	FT	PI	RV	EX	CM			
C11-AOV126-XXXX	1	36-01C E-07	A	2	B	O	TS					TS						VPS-002 ROJ-002	
	GL A																		
C11-AOV127-XXXX	0.75	36-01C F-09	A	2	B	O	TS					TS						VPS-002 ROJ-002	
	GL A																		
C11-AOVF010	1	36-01C H-16	A	2	B														
	GL A						C	Q			Q	Q							
C11-AOVF011	2	36-01C A-17	A	2	B														
	GL A						C	Q			Q	Q							
C11-AOVF180	1	36-01C H-17	A	2	B														
	GL A						C	Q			Q	Q							
C11-AOVF181	2	36-01C A-18	A	2	B														
	GL A						C	Q			Q	Q							
C11-MOVF083	2	36-01A L-02	A	2	A													ROJ-001	
	GL M						C	R		J	R		2Y						
C11-VF122	2	36-01A F-16	A	2	C, A	O										V		CMJ	
	C SA						C			J						V			

**IST PLAN
RBS APPENDIX
VALVE SUMMARY LISTING**

**PROGRAM SECTION NO. CEP-IST-2
REVISION NO. 307
PAGE 2 OF 67**

SYSTEM: 053 RCS - REACTOR RECIRCULATION

VALVE NO.	VALVE SIZE (in.) TYPE ACT.	P & ID NO. , COORD.	IST PASS	IST CODE CLASS	CODE CAT.	SAFETY POS.	REQUIRED TESTS AND FREQUENCY										RELIEF REQUEST (VRR)	OTHER (CSJ/ROJ/ CMJ/VPS)	NOTES:
							FS	PS	LT	LJ	ST	FT	PI	RV	EX	CM			
B33-AOVF019	0.75	25-01C	A	2	B														
	GL A	L-09				C	Q				Q	Q	2Y						
B33-AOVF020	0.75	25-01C	A	2	B														
	GL A	L-08				C	Q				Q	Q	2Y						
B33-VF013A	0.75	25-01C	A	2	C	O										V		CMJ	
	C SA	F-05				C										V			
B33-VF013B	0.75	25-01C	A	2	C	O										V		CMJ	
	C SA	F-17				C										V			
B33-VF017A	0.75	25-01C	A	2	C											V		CMJ	
	C SA	E-07				C										V			
B33-VF017B	0.75	25-01C	A	2	C											V		CMJ	
	C SA	E-16				C										V			

**IST PLAN
RBS APPENDIX
VALVE SUMMARY LISTING**

**PROGRAM SECTION NO. CEP-IST-2
REVISION NO. 307
PAGE 3 OF 67**

SYSTEM: 055 SFT - REFUELING EQUIPMENT

VALVE NO.	VALVE SIZE (in.) TYPE ACT.		P & ID NO. , COORD.	IST PASS	IST CODE CLASS	CODE CAT.	SAFETY POS.	REQUIRED TESTS AND FREQUENCY								RELIEF REQUEST (VRR)	OTHER (CSJ/ROJ/CMJ/VPS)	NOTES:
								FS	PS	LT	LJ	ST	FT	PI	RV			
F42-MOVF003	4		34-04A	A	A	C, A											VPS-005	
	BA	M	H-13				C	2Y			J			2Y				

PROGRAM SECTION NO. CEP-IST-2
REVISION NO. 307
PAGE 4 OF 67

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**IST PLAN
RBS APPENDIX
VALVE SUMMARY LISTING**

**PROGRAM SECTION NO. CEP-IST-2
REVISION NO. 307
PAGE 5 OF 67**

SYSTEM: 057 JRB - CONTAINMENT AND DRYWELL AIRLOCKS

VALVE NO.	VALVE SIZE (in.) TYPE ACT.	P & ID NO. , COORD.	IST PASS	IST CODE CLASS	CODE CAT.	SAFETY POS.	REQUIRED TESTS AND FREQUENCY										RELIEF REQUEST (VRR)	OTHER (CSJ/ROJ/ CMJ/VPS)	NOTES:
							FS	PS	LT	LJ	ST	FT	PI	RV	EX	CM			
JRB-V3E	1	NONE	A	2	A														
	BA H					C			2Y										
JRB-V3F	1	NONE	A	2	A														
	BA H					C			2Y										
JRB-V3H	0.5	NONE	A	2	B	O	2Y												
	BA H																		
JRB-V3J	0.5	NONE	A	2	B	O	2Y												
	BA H																		
JRB-V3K	0.5	NONE	A	2	B	O	2Y												
	BA H																		
JRB-V3L	0.5	NONE	A	2	B	O	2Y												
	BA H																		
JRB-V4C	0.5	NONE	A	2	B	O	2Y												
	BA H																		
JRB-V4D	0.5	NONE	A	2	B	O	2Y												
	BA H																		

**IST PLAN
RBS APPENDIX
VALVE SUMMARY LISTING**

**PROGRAM SECTION NO. CEP-IST-2
REVISION NO. 307
PAGE 6 OF 67**

SYSTEM: 106 CNS - CONDENSATE MAKEUP, STORAGE, & TRANSFER

VALVE NO.	VALVE SIZE (in.) TYPE ACT.		P & ID NO. , COORD.	IST PASS	IST CODE CLASS	CODE CAT.	SAFETY POS.	REQUIRED TESTS AND FREQUENCY										RELIEF REQUEST (VRR)	OTHER (CSJ/ROJ/ CMJ/VPS)	NOTES:
								FS	PS	LT	LJ	ST	FT	PI	RV	EX	CM			
CNS-MOV125	4		04-03C	A	2	A														
	G	M	G-15				C	Q			J	Q		18M						
CNS-RV140	0.75		04-03C	A	2	C	O								10Y					
	RV	SA	J-21																	
CNS-V86	4		04-03C	A	2	C, A	O										V		CMJ	
	C	SA	G-18				C				J						V			

**IST PLAN
RBS APPENDIX
VALVE SUMMARY LISTING**

**PROGRAM SECTION NO. CEP-IST-2
REVISION NO. 307
PAGE 7 OF 67**

SYSTEM: 107 FWS - FEEDWATER

VALVE NO.	VALVE SIZE (in.) TYPE ACT.	P & ID NO. , COORD.	IST PASS	IST CODE CLASS	CODE CAT.	SAFETY POS.	REQUIRED TESTS AND FREQUENCY										RELIEF REQUEST (VRR)	OTHER (CSJ/ROJ/ CMJ/VPS)	NOTES:
							FS	PS	LT	LJ	ST	FT	PI	RV	EX	CM			
B21-AOVF032A	20	06-01B J-12	A	1	C, A	O							2Y			V		CMJ	
	C SA					C				J			2Y			V			
B21-AOVF032B	20	06-01B N-15	A	1	C, A	O							2Y			V		CMJ	
	C SA					C				J			2Y			V			
B21-VF010A	20	06-01B J-10	A	1	C, A	O										V		CMJ	
	C SA					C				J						V			
B21-VF010B	20	06-01B N-13	A	1	C, A	O										V		CMJ	
	C SA					C				J						V			
FWS-MOV7A	20	06-01B J-14	A	2	A													CSJ-001	
	G M					C	C			J	C		2Y						
FWS-MOV7B	20	06-01B N-17	A	2	A													CSJ-001	
	G M					C	C			J	C		2Y						
FWS-V3052	20	06-01B J-14	A	2	C, A											V		CMJ	
	C SA					C			2Y							V			

PROGRAM SECTION NO. CEP-IST-2
REVISION NO. 307
PAGE 8 OF 67

[illegible]

**IST PLAN
RBS APPENDIX
VALVE SUMMARY LISTING**

**PROGRAM SECTION NO. CEP-IST-2
REVISION NO. 307
PAGE 9 OF 67**

SYSTEM: 109 MSS - MAIN STEAM

VALVE NO.	VALVE SIZE (in.) TYPE ACT.		P & ID NO. , COORD.	IST PASS	IST CODE CLASS	CODE CAT.	SAFETY POS.	REQUIRED TESTS AND FREQUENCY										RELIEF REQUEST (VRR)	OTHER (CSJ/ROJ/ CMJ/VPS)	NOTES:
								FS	PS	LT	LJ	ST	FT	PI	RV	EX	CM			
B21-MOVF067A	1.5		32-05B K-14	A	1	A														
	GL	M					C	Q			J	Q		18M						
B21-MOVF067B	1.5		32-05B K-19	A	1	A														
	GL	M					C	Q			J	Q		18M						
B21-MOVF067C	1.5		32-05B K-12	A	1	A														
	GL	M					C	Q			J	Q		18M						
B21-MOVF067D	1.5		32-05B K-17	A	1	A														
	GL	M					C	Q			J	Q		18M						
B21-MOVF085	3		32-05B D-10	A	2	A														Leak rate test for valve sealed by PVLCS
	G	M					C	Q		2Y		Q		2Y						
B21-MOVF086	3		32-05B K-11	A	2	A														Leak rate test for valve sealed by PVLCS
	G	M					C	Q		2Y		Q		2Y						
B21-MOVF098A	24		03-01C J-12	A	2	A													CSJ-002	Leak rate test for valve sealed by PVLCS
	G	M					C	C		2Y		C		2Y						
B21-MOVF098B	24		03-01C M-12	A	2	A													CSJ-002	Leak rate test for valve sealed by PVLCS
	G	M					C	C		2Y		C		2Y						
B21-MOVF098C	24		03-01C G-12	A	2	A													CSJ-002	Leak rate test for valve sealed by PVLCS
	G	M					C	C		2Y		C		2Y						
B21-MOVF098D	24		03-01C L-12	A	2	A													CSJ-002	Leak rate test for valve sealed by PVLCS
	G	M					C	C		2Y		C		2Y						
B21-RVF041A	8		03-01B F-13	A	1	C, B	O	R						2Y	5Y				VPS-001	
	RV	A					C	R						2Y	5Y					
B21-RVF041B	8		03-01B F-07	A	1	C, B	O	R						2Y	5Y				VPS-001	
	RV	A					C	R						2Y	5Y					
B21-RVF041C	8		03-01B H-14	A	1	C, B	O	R						2Y	5Y				VPS-001	
	RV	A					C	R						2Y	5Y					
B21-RVF041D	8		03-01B H-10	A	1	C, B	O	R						2Y	5Y				VPS-001	
	RV	A					C	R						2Y	5Y					
B21-RVF041F	8		03-01B F-04	A	1	C, B	O	R						2Y	5Y				VPS-001	
	RV	A					C	R						2Y	5Y					
B21-RVF041G	8		03-01B H-17	A	1	C, B	O	R						2Y	5Y				VPS-001	
	RV	A					C	R						2Y	5Y					

IST PLAN
RBS APPENDIX
VALVE SUMMARY LISTING

PROGRAM SECTION NO. CEP-IST-2
REVISION NO. 307
PAGE 10 OF 67

SYSTEM: 109 MSS - MAIN STEAM

VALVE NO.	VALVE SIZE (in.) TYPE ACT.		P & ID NO. , COORD.	IST PASS	IST CODE CLASS	CODE CAT.	SAFETY POS.	REQUIRED TESTS AND FREQUENCY									RELIEF REQUEST (VRR)	OTHER (CSJ/ROJ/ CMJ/VPS)	NOTES:	
								FS	PS	LT	LJ	ST	FT	PI	RV	EX				CM
B21-RVF041L	8		03-01B H-19	A	1	C, B	O	R							2Y	5Y			VPS-001	
	RV	A					C	R							2Y	5Y				
B21-RVF047A	8		03-01B F-14	A	1	C, B	O	R							2Y	5Y			VPS-001	
	RV	A					C	R							2Y	5Y				
B21-RVF047B	8		03-01B F-09	A	1	C, B	O	R							2Y	5Y			VPS-001	
	RV	A					C	R							2Y	5Y				
B21-RVF047C	8		03-01B H-18	A	1	C, B	O	R							2Y	5Y			VPS-001	
	RV	A					C	R							2Y	5Y				
B21-RVF047D	8		03-01B H-08	A	1	C, B	O	R							2Y	5Y			VPS-001	
	RV	A					C	R							2Y	5Y				
B21-RVF047F	8		03-01B F-03	A	1	C, B	O	R							2Y	5Y			VPS-001	
	RV	A					C	R							2Y	5Y				
B21-RVF051B	8		03-01B F-06	A	1	C, B	O	R							2Y	5Y			VPS-001	
	RV	A					C	R							2Y	5Y				
B21-RVF051C	8		03-01B H-16	A	1	C, B	O	R							2Y	5Y			VPS-001	
	RV	A					C	R							2Y	5Y				
B21-RVF051D	8		03-01B H-05	A	1	C, B	O	R							2Y	5Y			VPS-001	
	RV	A					C	R							2Y	5Y				
B21-RVF051G	8		03-01B H-20	A	1	C, B	O	R							2Y	5Y			VPS-001	
	RV	A					C	R							2Y	5Y				
B21-VF024A	2		03-01A F-14	A	3	C											V	CMJ		
	C	SA					C										V			
B21-VF024B	2		03-01A L-07	A	3	C											V	CMJ		
	C	SA					C										V			
B21-VF024C	2		03-01A L-15	A	3	C											V	CMJ		
	C	SA					C										V			
B21-VF024D	2		03-01A G-07	A	3	C											V	CMJ		
	C	SA					C										V			
B21-VF029A	2		03-01C K-17	A	3	C											V	CMJ		
	C	SA					C										V			
B21-VF029B	2		03-01C N-17	A	3	C											V	CMJ		
	C	SA					C										V			

**IST PLAN
RBS APPENDIX
VALVE SUMMARY LISTING**

**PROGRAM SECTION NO. CEP-IST-2
REVISION NO. 307
PAGE 11 OF 67**

SYSTEM: 109 MSS - MAIN STEAM

VALVE NO.	VALVE SIZE (in.) TYPE ACT.	P & ID NO. , COORD.	IST PASS	IST CODE CLASS	CODE CAT.	SAFETY POS.	REQUIRED TESTS AND FREQUENCY										RELIEF REQUEST (VRR)	OTHER (CSJ/ROJ/ CMJ/VPS)	NOTES:
							FS	PS	LT	LJ	ST	FT	PI	RV	EX	CM			
B21-VF029C	2	03-01C H-17	A	3	C											V		CMJ	
	C SA					C										V			
B21-VF029D	2	03-01C L-17	A	3	C											V		CMJ	
	C SA					C										V			
B21-VF037A	10	03-01B E-13	A	3	C	O										V		CMJ	
	C SA					C										V			
B21-VF037B	10	03-01B E-07	A	3	C	O										V		CMJ	
	C SA					C										V			
B21-VF037C	10	03-01B F-16	A	3	C	O										V		CMJ	
	C SA					C										V			
B21-VF037D	10	03-01B G-09	A	3	C	O										V		CMJ	
	C SA					C										V			
B21-VF037E	10	03-01B E-04	A	3	C	O										V		CMJ	
	C SA					C										V			
B21-VF037F	10	03-01B F-17	A	3	C	O										V		CMJ	
	C SA					C										V			
B21-VF037G	10	03-01B F-20	A	3	C	O										V		CMJ	
	C SA					C										V			
B21-VF037H	10	03-01B E-14	A	3	C	O										V		CMJ	
	C SA					C										V			
B21-VF037J	10	03-01B E-09	A	3	C	O										V		CMJ	
	C SA					C										V			
B21-VF037K	10	03-01B G-18	A	3	C	O										V		CMJ	
	C SA					C										V			
B21-VF037L	10	03-01B G-08	A	3	C	O										V		CMJ	
	C SA					C										V			
B21-VF037M	10	03-01B E-03	A	3	C	O										V		CMJ	
	C SA					C										V			
B21-VF037N	10	03-01B E-05	A	3	C	O										V		CMJ	
	C SA					C										V			
B21-VF037P	10	03-01B E-17	A	3	C	O										V		CMJ	
	C SA					C										V			

IST PLAN
RBS APPENDIX
VALVE SUMMARY LISTING

PROGRAM SECTION NO. CEP-IST-2
REVISION NO. 307
PAGE 12 OF 67

SYSTEM: 109 MSS - MAIN STEAM

VALVE NO.	VALVE SIZE (in.) TYPE ACT.		P & ID NO. , COORD.	IST PASS	IST CODE CLASS	CODE CAT.	SAFETY POS.	REQUIRED TESTS AND FREQUENCY								RELIEF REQUEST (VRR)	OTHER (CSJ/ROJ/ CMJ/VPS)	NOTES:	
								FS	PS	LT	LJ	ST	FT	PI	RV				EX
B21-VF037R	10		03-01B G-02	A	3	C	O									V		CMJ	
	C	SA					C									V			
B21-VF037S	10		03-01B G-21	A	3	C	O									V		CMJ	
	C	SA					C									V			
B21-VF078A	10		03-01B E-13	A	3	C	O									V		CMJ	
	C	SA					C									V			
B21-VF078B	10		03-01B E-07	A	3	C	O									V		CMJ	
	C	SA					C									V			
B21-VF078C	10		03-01B F-16	A	3	C	O									V		CMJ	
	C	SA					C									V			
B21-VF078D	10		03-01B G-09	A	3	C	O									V		CMJ	
	C	SA					C									V			
B21-VF078E	10		03-01B E-04	A	3	C	O									V		CMJ	
	C	SA					C									V			
B21-VF078F	10		03-01B F-17	A	3	C	O									V		CMJ	
	C	SA					C									V			
B21-VF078G	10		03-01B F-20	A	3	C	O									V		CMJ	
	C	SA					C									V			
B21-VF078H	10		03-01B E-14	A	3	C	O									V		CMJ	
	C	SA					C									V			
B21-VF078J	10		03-01B E-09	A	3	C	O									V		CMJ	
	C	SA					C									V			
B21-VF078K	10		03-01B F-18	A	3	C	O									V		CMJ	
	C	SA					C									V			
B21-VF078L	10		03-01B G-08	A	3	C	O									V		CMJ	
	C	SA					C									V			
B21-VF078M	10		03-01B E-03	A	3	C	O									V		CMJ	
	C	SA					C									V			
B21-VF078N	10		03-01B E-05	A	3	C	O									V		CMJ	
	C	SA					C									V			
B21-VF078P	10		03-01B E-17	A	3	C	O									V		CMJ	
	C	SA					C									V			

**IST PLAN
RBS APPENDIX
VALVE SUMMARY LISTING**

**PROGRAM SECTION NO. CEP-IST-2
REVISION NO. 307
PAGE 13 OF 67**

SYSTEM: 109 MSS - MAIN STEAM

VALVE NO.	VALVE SIZE (in.) TYPE ACT.	P & ID NO. , COORD.	IST PASS	IST CODE CLASS	CODE CAT.	SAFETY POS.	REQUIRED TESTS AND FREQUENCY									RELIEF REQUEST (VRR)	OTHER (CSJ/ROJ/ CMJ/VPS)	NOTES:
							FS	PS	LT	LJ	ST	FT	PI	RV	EX	CM		
B21-VF078R	10	03-01B G-02	A	3	C	O										V	CMJ	
	C SA					C										V		
B21-VF078S	10	03-01B F-21	A	3	C	O										V	CMJ	
	C SA					C										V		

PROGRAM SECTION NO. CEP-IST-2
REVISION NO. 307
PAGE 14 OF 67

[illegible]

IST PLAN
RBS APPENDIX
VALVE SUMMARY LISTING

PROGRAM SECTION NO. CEP-IST-2
REVISION NO. 307
PAGE 15 OF 67

SYSTEM: 115 CCP - CLOSED COOLING WATER - REACTOR PLANT

VALVE NO.	VALVE SIZE (in.) TYPE ACT.		P & ID NO. , COORD.	IST PASS	IST CODE CLASS	CODE CAT.	SAFETY POS.	REQUIRED TESTS AND FREQUENCY									RELIEF REQUEST (VRR)	OTHER (CSJ/ROJ/ CMJ/VPS)	NOTES:	
								FS	PS	LT	LJ	ST	FT	PI	RV	EX				CM
CCP-RV57A	0.75		09-01B K-13	A	3	C	O								10Y					
	RV	SA					C								10Y					
CCP-RV57B	0.75		09-01B P-13	A	3	C	O								10Y					
	RV	SA					C								10Y					
CCP-RV60A	0.75		09-01B H-12	A	3	C	O								10Y					
	RV	SA					C								10Y					
CCP-RV60B	0.75		09-01B K-15	A	3	C	O								10Y					
	RV	SA					C								10Y					
CCP-V118	10		09-01A B-17	A	2	C, A	O										V	CMJ		
	C	SA					C				J						V			
CCP-V119	6		09-01A B-15	A	2	C	O										V	CMJ		
	C	SA					C										V			
CCP-V133	1.5		09-01A H-09	A	2	C	O										V	CMJ		
	C	SA					C										V			
CCP-V160	1.5		09-01A K-17	A	2	C, A	O										V	CMJ		
	C	SA					C				J						V			
CCP-V204	10		09-01B N-13	A	3	C	O										V	CMJ		
	C	SA															V			
CCP-V206	2		09-01B P-08	A	3	B	O	2Y												
	GL	H					C	2Y												
CCP-V208	2		09-01B K-08	A	3	B	O	2Y												
	GL	H					C	2Y												
CCP-V209	10		09-01B J-13	A	3	C	O										V	CMJ		
	C	SA															V			
CCP-V300	1.5		09-01B J-08	A	3	C	O										V	CMJ		
	C	SA															V			
CCP-V337	2		09-01B M-13	A	3	C											V	CMJ		
	C	SA					C										V			
CCP-V338	2		09-01B M-13	A	3	C											V	CMJ		
	C	SA					C										V			
CCP-V72	12		09-01B L-08	A	3	C											V	CMJ		
	C	SA					C										V			

**IST PLAN
RBS APPENDIX
VALVE SUMMARY LISTING**

**PROGRAM SECTION NO. CEP-IST-2
REVISION NO. 307
PAGE 16 OF 67**

SYSTEM: 115 CCP - CLOSED COOLING WATER - REACTOR PLANT

VALVE NO.	VALVE SIZE (in.) TYPE ACT.	P & ID NO. , COORD.	IST PASS	IST CODE CLASS	CODE CAT.	SAFETY POS.	REQUIRED TESTS AND FREQUENCY										RELIEF REQUEST (VRR)	OTHER (CSJ/ROJ/ CMJ/VPS)	NOTES:
							FS	PS	LT	LJ	ST	FT	PI	RV	EX	CM			
CCP-V73	12	09-01B J-03	A	3	C											V		CMJ	
	C SA					C										V			
CCP-V83	1.5	09-01B L-15	A	3	C	O										V		CMJ	
	C SA															V			
CCP-V92	1.5	09-01B H-13	A	3	C	O										V		CMJ	
	C SA															V			

**IST PLAN
RBS APPENDIX
VALVE SUMMARY LISTING**

**PROGRAM SECTION NO. CEP-IST-2
REVISION NO. 307
PAGE 17 OF 67**

SYSTEM: 121 SAS - AIR SERVICE & BREATHING

VALVE NO.	VALVE SIZE (in.) TYPE ACT.		P & ID NO. , COORD.	IST PASS	IST CODE CLASS	CODE CAT.	SAFETY POS.	REQUIRED TESTS AND FREQUENCY								RELIEF REQUEST (VRR)	OTHER (CSJ/ROJ/ CMJ/VPS)	NOTES:
								FS	PS	LT	LJ	ST	FT	PI	RV			
SAS-MOV102	4		12-02C	A	2	A												
	G	M	B-16				C	Q			J	Q		18M				
SAS-V486	4		12-02C	A	2	C, A										V		
	C	SA	C-15				C				J					V	CMJ	

**IST PLAN
RBS APPENDIX
VALVE SUMMARY LISTING**

**PROGRAM SECTION NO. CEP-IST-2
REVISION NO. 307
PAGE 18 OF 67**

SYSTEM: 122 IAS - AIR INSTRUMENT

VALVE NO.	VALVE SIZE (in.) TYPE ACT.	P & ID NO. , COORD.	IST PASS	IST CODE CLASS	CODE CAT.	SAFETY POS.	REQUIRED TESTS AND FREQUENCY										RELIEF REQUEST (VRR)	OTHER (CSJ/ROJ/ CMJ/VPS)	NOTES:
							FS	PS	LT	LJ	ST	FT	PI	RV	EX	CM			
IAS-MOV106	3	12-01C	A	2	A												CSJ-003		
	G M	G-04				C	C			J	C		18M						
IAS-RV38A	0.75	12-01B	A	3	C	O								10Y					
	RV SA	J-04				C							10Y						
IAS-RV38B	0.75	12-01B	A	3	C	O								10Y					
	RV SA	J-06				C							10Y						
IAS-SOV36A	2	12-01B	A	3	B														
	G S	H-03				C	Q				Q	Q	2Y						
IAS-SOV36B	2	12-01B	A	3	B														
	G S	H-05				C	Q				Q	Q	2Y						
IAS-V3055	0.75	12-01B	A	3	B	O	2Y												
	GL H	E-02				C	2Y												
IAS-V3056	0.75	12-01B	A	3	B	O	2Y												
	GL H	E-04				C	2Y												
IAS-V3060	0.75	12-01B	A	3	B	O	2Y												
	GL H	B-05				C	2Y												
IAS-V3061	0.75	12-01B	A	3	B	O	2Y												
	GL H	B-06				C	2Y												
IAS-V3065	0.75	12-01B	A	3	B	O	2Y												
	GL H	F-03				C	2Y												
IAS-V3066	0.75	12-01B	A	3	B	O	2Y												
	GL H	F-04				C	2Y												
IAS-V3069	0.75	12-01B	A	3	B	O	2Y												
	GL H	C-05				C	2Y												
IAS-V3070	0.75	12-01B	A	3	B	O	2Y												
	GL H	C-06				C	2Y												
IAS-V3095	0.75	12-01B	A	3	C	O										V	CMJ		
	C SA	F-02													V				
IAS-V3096	0.75	12-01B	A	3	C	O										V	CMJ		
	C SA	F-04													V				
IAS-V3097	0.75	12-01B	A	3	C	O										V	CMJ		
	C SA	C-05													V				

**IST PLAN
RBS APPENDIX
VALVE SUMMARY LISTING**

**PROGRAM SECTION NO. CEP-IST-2
REVISION NO. 307
PAGE 19 OF 67**

SYSTEM: 122 IAS - AIR INSTRUMENT

VALVE NO.	VALVE SIZE (in.) TYPE ACT.	P & ID NO. , COORD.	IST PASS	IST CODE CLASS	CODE CAT.	SAFETY POS.	REQUIRED TESTS AND FREQUENCY										RELIEF REQUEST (VRR)	OTHER (CSJ/ROJ/ CMJ/VPS)	NOTES:
							FS	PS	LT	LJ	ST	FT	PI	RV	EX	CM			
IAS-V3098	0.75	12-01B	A	3	C	O										V		CMJ	
	C SA	C-06														V			
IAS-V514	2	12-01B	A	3	C											V		CMJ	
	C SA	J-05				C										V			
IAS-V515	2	12-01B	A	3	C											V		CMJ	
	C SA	J-03				C										V			
IAS-V78	3	12-01C	A	2	C											V		CMJ	
	C SA	H-08				C										V			
IAS-V80	3	12-01C	A	2	C, A											V		CMJ	
	C SA	G-04				C				J						V			

**IST PLAN
RBS APPENDIX
VALVE SUMMARY LISTING**

**PROGRAM SECTION NO. CEP-IST-2
REVISION NO. 307
PAGE 20 OF 67**

SYSTEM: 201 SLS - STANDBY LIQUID CONTROL (SLC)

VALVE NO.	VALVE SIZE (in.) TYPE ACT.	P & ID NO. , COORD.	IST PASS	IST CODE CLASS	CODE CAT.	SAFETY POS.	REQUIRED TESTS AND FREQUENCY										RELIEF REQUEST (VRR)	OTHER (CSJ/ROJ/ CMJ/VPS)	NOTES:
							FS	PS	LT	LJ	ST	FT	PI	RV	EX	CM			
C41-MOVF001A	3	27-16A H-15	A	2	B	O	C				C		2Y					CSJ-012	
	GL M																		
C41-MOVF001B	3	27-16A D-15	A	2	B	O	C				C		2Y					CSJ-012	
	GL M																		
C41-RVF029A	0.75	27-16A J-11	A	2	C	O								10Y					
	RV SA						C							10Y					
C41-RVF029B	0.75	27-16A E-11	A	2	C	O								10Y					
	RV SA						C							10Y					
C41-VEXF004A	1.5	27-16A J-07	A	1	D	O									2Y				
	X EXP						C								2Y				
C41-VEXF004B	1.5	27-16A E-07	A	1	D	O									2Y				
	X EXP						C								2Y				
C41-VF006	1.5	27-16A F-05	A	1	C	O										V		CMJ	
	C SA						C									V			
C41-VF007	1.5	27-16A F-03	A	1	C	O										V		CMJ	
	C SA						C									V			
C41-VF008	1.5	27-16A G-03	P	1	B	O							2Y						
	GL H																		
C41-VF031	3	27-16A M-13	P	2	B														
	G H						C						2Y						
C41-VF033A	1.5	27-16A J-10	A	2	C	O										V		CMJ	
	C SA						C									V			
C41-VF033B	1.5	27-16A E-10	A	2	C	O										V		CMJ	
	C SA						C									V			

**IST PLAN
RBS APPENDIX
VALVE SUMMARY LISTING**

**PROGRAM SECTION NO. CEP-IST-2
REVISION NO. 307
PAGE 21 OF 67**

SYSTEM: 202 SVV - SVV COMPRESSORS/DRYERS

VALVE NO.	VALVE SIZE (in.) TYPE ACT.	P & ID NO. , COORD.	IST PASS	IST CODE CLASS	CODE CAT.	SAFETY POS.	REQUIRED TESTS AND FREQUENCY										RELIEF REQUEST (VRR)	OTHER (CSJ/ROJ/ CMJ/VPS)	NOTES:
							FS	PS	LT	LJ	ST	FT	PI	RV	EX	CM			
B21-VF036A	1.5	03-01B L-12	A	2	C, A											V		CMJ	
	C SA					C			2Y							V			
B21-VF036F	1.5	03-01B K-17	A	2	C, A											V		CMJ	
	C SA					C			2Y							V			
B21-VF036G	1.5	03-01B K-19	A	2	C, A											V		CMJ	
	C SA					C			2Y							V			
B21-VF036J	1.5	03-01B K-09	A	2	C, A											V		CMJ	
	C SA					C			2Y							V			
B21-VF036L	1.5	03-01B K-08	A	2	C, A											V		CMJ	
	C SA					C			2Y							V			
B21-VF036M	1.5	03-01B K-02	A	2	C, A											V		CMJ	
	C SA					C			2Y							V			
B21-VF036N	1.5	03-01B K-05	A	2	C, A											V		CMJ	
	C SA					C			2Y							V			
B21-VF036P	1.5	03-01B K-16	A	2	C, A											V		CMJ	
	C SA					C			2Y							V			
B21-VF036R	1.5	03-01B K-04	A	2	C, A											V		CMJ	
	C SA					C			2Y							V			
B21-VF039B	1.5	03-01B K-07	A	2	C, A	O										V		CMJ	
	C SA					C			2Y							V			
B21-VF039C	1.5	03-01B K-15	A	2	C, A	O										V		CMJ	
	C SA					C			2Y							V			
B21-VF039D	1.5	03-01B K-10	A	2	C, A	O										V		CMJ	
	C SA					C			2Y							V			
B21-VF039E	1.5	03-01B K-03	A	2	C, A	O										V		CMJ	
	C SA					C			2Y							V			
B21-VF039H	1.5	03-01B L-13	A	2	C, A	O										V		CMJ	
	C SA					C			2Y							V			
B21-VF039K	1.5	03-01B K-18	A	2	C, A	O										V		CMJ	
	C SA					C			2Y							V			
B21-VF039S	1.5	03-01B K-20	A	2	C, A	O										V		CMJ	
	C SA					C			2Y							V			

**IST PLAN
RBS APPENDIX
VALVE SUMMARY LISTING**

**PROGRAM SECTION NO. CEP-IST-2
REVISION NO. 307
PAGE 22 OF 67**

SYSTEM: 202 SVV - SVV COMPRESSORS/DRYERS

VALVE NO.	VALVE SIZE (in.) TYPE ACT.		P & ID NO. , COORD.	IST PASS	IST CODE CLASS	CODE CAT.	SAFETY POS.	REQUIRED TESTS AND FREQUENCY								RELIEF REQUEST (VRR)	OTHER (CSJ/ROJ/ CMJ/VPS)	NOTES:
								FS	PS	LT	LJ	ST	FT	PI	RV	EX	CM	
SVV-MOV1A	1.5		03-01B M-17	A	2	A	O	Q				Q		2Y				
	GL	M					C	Q			J	Q		2Y				
SVV-MOV1B	1.5		03-01B M-07	A	2	A	O	Q				Q		2Y				
	GL	M					C	Q			J	Q		2Y				
SVV-V121	1.5		03-01B N-20	A	2	C	O										V	CMJ
	C	SA															V	
SVV-V122	1.5		03-01B L-13	A	2	C											V	CMJ
	C	SA					C										V	
SVV-V123	1.5		03-01B L-13	A	2	C											V	CMJ
	C	SA					C										V	
SVV-V128	1.5		03-01B N-10	A	2	C	O										V	CMJ
	C	SA															V	
SVV-V129	1.5		03-01B L-11	A	2	C											V	CMJ
	C	SA					C										V	
SVV-V130	1.5		03-01B L-11	A	2	C											V	CMJ
	C	SA					C										V	
SVV-V31	1.5		03-01B M-16	A	2	C, A	O										V	CMJ
	C	SA					C				J						V	
SVV-V9	1.5		03-01B M-06	A	2	C, A	O										V	CMJ
	C	SA					C				J						V	

**IST PLAN
RBS APPENDIX
VALVE SUMMARY LISTING**

**PROGRAM SECTION NO. CEP-IST-2
REVISION NO. 307
PAGE 23 OF 67**

SYSTEM: 203 CSH - HIGH PRESSURE CORE SPRAY (HPCS)

VALVE NO.	VALVE SIZE (in.) TYPE ACT.		P & ID NO. , COORD.	IST PASS	IST CODE CLASS	CODE CAT.	SAFETY POS.	REQUIRED TESTS AND FREQUENCY									RELIEF REQUEST (VRR)	OTHER (CSJ/ROJ/ CMJ/VPS)	NOTES:
								FS	PS	LT	LJ	ST	FT	PI	RV	EX			
CSH-V12	1.5		27-04A	A	2	C	O										V	CMJ	
	C	SA	D-15														V		
E22-AOVF005	10		27-04A	A	1	C, A	O										V	CMJ	Leak rate test for pressure isolation valve
	C	SA	H-05				C			2Y	J						V		
E22-MOVF001	16		27-04A	A	2	B	O	Q				Q		2Y					
	G	M	H-19				C	Q				Q		2Y					
E22-MOVF004	10		27-04A	A	1	A	O	C				C		2Y				CSJ-005	Leak rate test for pressure isolation valve
	G	M	H-08				C	C		2Y	J	C		2Y					
E22-MOVF010	10		27-04A	A	2	A													Other owner defined leak rate test
	GL	M	L-10				C	Q		2Y		Q		2Y					
E22-MOVF011	10		27-04A	A	2	A													Other owner defined leak rate test
	GL	M	N-12				C	Q		2Y		Q		2Y					
E22-MOVF012	4		27-04A	A	2	B	O	Q				Q		2Y					
	G	M	F-14				C	Q				Q		2Y					
E22-MOVF015	20		27-04A	A	2	B	O	Q				Q		2Y					
	G	M	A-09				C	Q				Q		2Y					
E22-MOVF023	10		27-04A	A	2	B													
	GL	M	F-10				C	Q				Q		18M					
E22-RVF014	1		27-04A	A	2	C	O								10Y				
	RV	SA	B-17				C								10Y				
E22-RVF035	0.75		27-04A	A	2	C	O								10Y				
	RV	SA	K-13				C								10Y				
E22-RVF039	0.75		27-04A	A	2	C	O								10Y				
	RV	SA	M-11				C								10Y				
E22-VF002	16		27-04A	A	2	C	O										V	CMJ	
	C	SA	K-19				C										V		
E22-VF007	1.5		27-04A	A	2	C	O										V	CMJ	
	C	SA	D-15				C										V		
E22-VF016	20		27-04A	A	2	C	O										V	CMJ	
	C	SA	A-11														V		
E22-VF024	14		27-04A	A	2	C	O										V	CMJ	
	C	SA	H-14				C										V		

PROGRAM SECTION NO. CEP-IST-2
REVISION NO. 307
PAGE 24 OF 67

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IST PLAN
RBS APPENDIX
VALVE SUMMARY LISTING

PROGRAM SECTION NO. CEP-IST-2
REVISION NO. 307
PAGE 25 OF 67

SYSTEM: 204 RHS - RESIDUAL HEAT REMOVAL - LPCI (RHR)

VALVE NO.	VALVE SIZE (in.) TYPE ACT.		P & ID NO. , COORD.	IST PASS	IST CODE CLASS	CODE CAT.	SAFETY POS.	REQUIRED TESTS AND FREQUENCY										RELIEF REQUEST (VRR)	OTHER (CSJ/ROJ/ CMJ/VPS)	NOTES:
								FS	PS	LT	LJ	ST	FT	PI	RV	EX	CM			
E12-AOVF041A	10		27-07A	A	1	C, A	O							2Y			V		CMJ	Leak rate test for pressure isolation valve
	C	SA	M-03				C			2Y				2Y			V			
E12-AOVF041B	10		27-07B	A	1	C, A	O							2Y			V		CMJ	Leak rate test for pressure isolation valve
	C	SA	N-04				C			2Y				2Y			V			
E12-AOVF041C	10		27-07C	A	1	C, A	O							2Y			V		CMJ	Leak rate test for pressure isolation valve
	C	SA	K-05				C			2Y	J			2Y			V			
E12-MOVF003A	14		27-07A	A	2	B	O	Q					Q	2Y						
	GL	M	L-11																	
E12-MOVF003B	14		27-07B	A	2	B	O	Q					Q	2Y						
	GL	M	E-06																	
E12-MOVF004A	20		27-07A	A	2	B	O	Q					Q	2Y						
	G	M	B-17				C	Q					Q	2Y						
E12-MOVF004B	20		27-07B	A	2	B	O	Q					Q	2Y						
	G	M	B-19				C	Q					Q	2Y						
E12-MOVF006A	16		27-07A	A	2	B	O	Q					Q	2Y						
	G	M	B-11				C	Q					Q	2Y						
E12-MOVF006B	16		27-07A	A	2	B	O	Q					Q	2Y						
	G	M	D-07				C	Q					Q	2Y						
E12-MOVF008	18		27-07A	A	1	A	O	C					C	18M					CSJ-005	Leak rate test for pressure isolation valve
	G	M	D-18				C	C			2Y	J	C	18M						
E12-MOVF009	18		27-07A	A	1	A	O	C					C	18M					CSJ-005	Leak rate test for pressure isolation valve
	G	M	F-20				C	C			2Y	J	C	18M						
E12-MOVF011A	4		27-07A	A	2	B														
	GL	M	M-11				C	Q					Q	18M						
E12-MOVF011B	4		27-07B	A	2	B														
	GL	M	H-07				C	Q					Q	18M						
E12-MOVF021	14		27-07C	A	2	B														
	GL	M	F-08				C	Q					Q	18M						
E12-MOVF023	4		27-07A	P	2	A														
	GL	H	J-20				C					J								
E12-MOVF024A	14		27-07A	A	2	B	O	Q					Q	18M						
	B	M	E-18				C	Q					Q	18M						

**IST PLAN
RBS APPENDIX
VALVE SUMMARY LISTING**

**PROGRAM SECTION NO. CEP-IST-2
REVISION NO. 307
PAGE 26 OF 67**

SYSTEM: 204 RHS - RESIDUAL HEAT REMOVAL - LPCI (RHR)

VALVE NO.	VALVE SIZE (in.) TYPE ACT.	P & ID NO. , COORD.	IST PASS	IST CODE CLASS	CODE CAT.	SAFETY POS.	REQUIRED TESTS AND FREQUENCY								RELIEF REQUEST (VRR)	OTHER (CSJ/ROJ/ CMJ/VPS)	NOTES:
							FS	PS	LT	LJ	ST	FT	PI	RV	EX	CM	
E12-MOVF024B	14	27-07B	A	2	B	O	Q				Q		18M				
	B M	L-07				C	Q				Q		18M				
E12-MOVF027A	10	27-07A	A	2	A	O	Q				Q		2Y				
	G M	M-06				C	Q			J	Q		2Y				
E12-MOVF027B	10	27-07B	A	2	A	O	Q				Q		2Y				
	G M	M-01				C	Q			J	Q		2Y				
E12-MOVF037A	10	27-07A	A	2	A												
	GL M	N-05				C	Q			J	Q		18M				
E12-MOVF037B	10	27-07B	A	2	A												
	GL M	N-01				C	Q			J	Q		18M				
E12-MOVF040	6	27-07A	A	2	B												
	GL M	N-18				C	Q				Q		2Y				
E12-MOVF042A	10	27-07A	A	1	A	O	C				C		2Y				CSJ-005 Leak rate test for pressure isolation valve
	G M	M-04				C	C		2Y	J	C		2Y				
E12-MOVF042B	10	27-07B	A	1	A	O	C				C		2Y				CSJ-005 Leak rate test for pressure isolation valve
	G M	N-03				C	C		2Y	J	C		2Y				
E12-MOVF042C	10	27-07C	A	1	A	O	C				C		2Y				CSJ-005 Leak rate test for pressure isolation valve
	G M	K-03				C	C		2Y	J	C		2Y				
E12-MOVF047A	14	27-07A	A	2	B	O	Q				Q		2Y				
	G M	H-04															
E12-MOVF047B	14	27-07B	A	2	B	O	Q				Q		2Y				
	G M	F-11															
E12-MOVF048A	14	27-07A	A	2	B	O	Q				Q		2Y				
	GL M	K-15				C	Q				Q		2Y				
E12-MOVF048B	14	27-07B	A	2	B	O	Q				Q		2Y				
	GL M	G-09				C	Q				Q		2Y				
E12-MOVF049	6	27-07A	A	2	B												
	G M	M-19				C	Q				Q		2Y				
E12-MOVF053A	10	27-07A	A	2	A	O	C				C		18M				CSJ-005
	GL M	G-18				C	C			J	C		18M				
E12-MOVF053B	10	27-07B	A	2	A	O	C				C		18M				CSJ-005
	GL M	N-09				C	C			J	C		18M				

**IST PLAN
RBS APPENDIX
VALVE SUMMARY LISTING**

**PROGRAM SECTION NO. CEP-IST-2
REVISION NO. 307
PAGE 27 OF 67**

SYSTEM: 204 RHS - RESIDUAL HEAT REMOVAL - LPCI (RHR)

VALVE NO.	VALVE SIZE (in.) TYPE ACT.	P & ID NO. , COORD.	IST PASS	IST CODE CLASS	CODE CAT.	SAFETY POS.	REQUIRED TESTS AND FREQUENCY										RELIEF REQUEST (VRR)	OTHER (CSJ/ROJ/ CMJ/VPS)	NOTES:
							FS	PS	LT	LJ	ST	FT	PI	RV	EX	CM			
E12-MOVF064A	4	27-07A	A	2	B	O	Q				Q		2Y						
	G M	E-15				C	Q				Q		2Y						
E12-MOVF064B	4	27-07B	A	2	B	O	Q				Q		2Y						
	G M	C-15				C	Q				Q		2Y						
E12-MOVF064C	4	27-07C	A	2	B	O	Q				Q		2Y						
	G M	E-10				C	Q				Q		2Y						
E12-MOVF068A	18	09-10F	A	3	B	O	Q				Q		2Y						
	B M	K-06																	
E12-MOVF068B	18	09-10F	A	3	B	O	Q				Q		2Y						
	B M	H-03																	
E12-MOVF073A	2	27-07A	A	2	B														
	GL M	H-09				C	Q				Q		2Y						
E12-MOVF073B	2	27-07B	A	2	B														
	GL M	E-10				C	Q				Q		2Y						
E12-MOVF094	10	27-07B	P	3	B														
	G M	G-03				C							2Y						
E12-MOVF096	10	27-07B	P	2	B														
	G M	G-04				C							2Y						
E12-MOVF105	20	27-07C	A	2	B	O	Q				Q		2Y						
	G M	B-20				C	Q				Q		2Y						
E12-RVF005	0.75	27-07A	A	2	C	O								10Y					
	RV SA	B-11				C								10Y					
E12-RVF017A	0.75	27-07A	A	2	C	O								10Y					
	RV SA	B-15				C								10Y					
E12-RVF017B	0.75	27-07B	A	2	C	O								10Y					
	RV SA	C-18				C								10Y					
E12-RVF025A	1.5	27-07A	A	2	C	O								10Y					
	RV SA	F-16				C								10Y					
E12-RVF025B	1.5	27-07B	A	2	C	O								10Y					
	RV SA	G-15				C								10Y					
E12-RVF025C	1.5	27-07C	A	2	C	O								10Y					
	RV SA	G-06				C								10Y					

**IST PLAN
RBS APPENDIX
VALVE SUMMARY LISTING**

**PROGRAM SECTION NO. CEP-IST-2
REVISION NO. 307
PAGE 28 OF 67**

SYSTEM: 204 RHS - RESIDUAL HEAT REMOVAL - LPCI (RHR)

VALVE NO.	VALVE SIZE (in.) TYPE ACT.		P & ID NO. , COORD.	IST PASS	IST CODE CLASS	CODE CAT.	SAFETY POS.	REQUIRED TESTS AND FREQUENCY								RELIEF REQUEST (VRR)	OTHER (CSJ/ROJ/ CMJ/VPS)	NOTES:		
								FS	PS	LT	LJ	ST	FT	PI	RV				EX	CM
E12-RVF030	0.75		27-07B	A	2	C	O								10Y					
	RV	SA	B-15				C							10Y						
E12-RVF101	0.75		27-07C	A	2	C	O								10Y					
	RV	SA	J-12				C						10Y							
E12-SOVF060A	0.75		27-07A	A	2	B														
	GL	S	L-08				C	Q			Q	Q	2Y							
E12-SOVF060B	0.75		27-07B	A	2	B														
	GL	S	D-05				C	Q			Q	Q	2Y							
E12-SOVF075A	0.75		27-07A	A	2	B														
	GL	S	M-08				C	Q			Q	Q	2Y							
E12-SOVF075B	0.75		27-07B	A	2	B														
	GL	S	D-05				C	Q			Q	Q	2Y							
E12-VF010	18		27-07C	P	1	B	O								2Y					
	G	H	H-07																	
E12-VF031A	14		27-07A	A	2	C	O										V		CMJ	
	C	SA	D-14				C									V				
E12-VF031B	14		27-07B	A	2	C	O										V		CMJ	
	C	SA	B-13				C									V				
E12-VF031C	14		27-07C	A	2	C	O										V		CMJ	
	C	SA	D-11				C									V				
E12-VF039A	10		27-07A	P	1	B	O							2Y						
	G	H	N-02																	
E12-VF039B	10		27-07B	P	1	B	O							2Y						
	G	H	N-05																	
E12-VF039C	10		27-07C	P	1	B	O							2Y						
	G	H	K-07																	
E12-VF044A	4		04-03C	P	2	A														
	G	H	J-20				C				J									
E12-VF044B	4		04-03C	P	2	A														
	G	H	K-20				C				J									
E12-VF046A	4		27-07A	A	2	C	O										V		CMJ	
	C	SA	F-15													V				

**IST PLAN
RBS APPENDIX
VALVE SUMMARY LISTING**

**PROGRAM SECTION NO. CEP-IST-2
REVISION NO. 307
PAGE 29 OF 67**

SYSTEM: 204 RHS - RESIDUAL HEAT REMOVAL - LPCI (RHR)

VALVE NO.	VALVE SIZE (in.) TYPE ACT.		P & ID NO. , COORD.	IST PASS	IST CODE CLASS	CODE CAT.	SAFETY POS.	REQUIRED TESTS AND FREQUENCY									RELIEF REQUEST (VRR)	OTHER (CSJ/ROJ/ CMJ/VPS)	NOTES:
								FS	PS	LT	LJ	ST	FT	PI	RV	EX			
E12-VF046B	4		27-07B D-15	A	2	C	O									V		CMJ	
	C	SA														V			
E12-VF046C	4		27-07C E-09	A	2	C	O									V		CMJ	
	C	SA														V			
E12-VF050A	10		27-07A H-18	A	2	C	O									V		CMJ	
	C	SA														C			
E12-VF050B	10		27-07B N-09	A	2	C	O									V		CMJ	
	C	SA														C			
E12-VF084A	1.5		27-07A E-13	A	2	C	O									V		CMJ	
	C	SA																	
E12-VF084B	1.5		27-07B B-14	A	2	C	O									V		CMJ	
	C	SA																	
E12-VF084C	1.5		27-07C E-13	A	2	C	O									V		CMJ	
	C	SA																	
E12-VF085A	1.5		27-07A E-13	A	2	C	O									V		CMJ	
	SC	SA																	
E12-VF085B	1.5		27-07B B-13	A	2	C	O									V		CMJ	
	SC	SA																	
E12-VF085C	1.5		27-07C E-12	A	2	C	O									V		CMJ	
	SC	SA																	
E12-VF099A	8		27-07A N-05	P	2	A													
	GL	H																	
E12-VF099B	8		27-07B P-02	P	2	A													
	GL	H																	
E12-VF102	0.75		27-07B J-17	P	2	A													
	GL	H																	
RHS-AOV62	10		27-07C K-14	A	2	A													
	B	A						Q				Q	Q	18M					
RHS-AOV63	10		27-07C K-16	A	2	A													
	B	A						Q				Q	Q	18M					
RHS-AOV64	10		27-07C G-04	A	2	A													
	B	A						Q				Q	Q	18M					

**IST PLAN
RBS APPENDIX
VALVE SUMMARY LISTING**

**PROGRAM SECTION NO. CEP-IST-2
REVISION NO. 307
PAGE 30 OF 67**

SYSTEM: 204 RHS - RESIDUAL HEAT REMOVAL - LPCI (RHR)

VALVE NO.	VALVE SIZE (in.) TYPE ACT.		P & ID NO. , COORD.	IST PASS	IST CODE CLASS	CODE CAT.	SAFETY POS.	REQUIRED TESTS AND FREQUENCY										RELIEF REQUEST (VRR)	OTHER (CSJ/ROJ/ CMJ/VPS)	NOTES:
								FS	PS	LT	LJ	ST	FT	PI	RV	EX	CM			
RHS-RV65	0.75		27-07C	A	2	C, A	O								10Y					
	RV	SA	L-15				C								10Y					
RHS-RV66	0.75		27-07C	A	2	C, A	O								10Y					
	RV	SA	G-05				C								10Y					
RHS-RV67A	1.5		27-07A	A	2	C	O								10Y					
	RV	SA	K-13				C								10Y					
RHS-RV67B	1.5		27-07B	A	2	C	O								10Y					
	RV	SA	H-12				C								10Y					
RHS-V240	1		27-07A	A	1	C, A	O										V			
	C	SA	E-20				C			2Y	J						V		Leak rate test for pressure isolation valve	

**IST PLAN
RBS APPENDIX
VALVE SUMMARY LISTING**

**PROGRAM SECTION NO. CEP-IST-2
REVISION NO. 307
PAGE 31 OF 67**

SYSTEM: 205 CSL - LOW PRESSURE CORE SPRAY (LPCS)

VALVE NO.	VALVE SIZE (in.) TYPE ACT.	P & ID NO. , COORD.	IST PASS	IST CODE CLASS	CODE CAT.	SAFETY POS.	REQUIRED TESTS AND FREQUENCY										RELIEF REQUEST (VRR)	OTHER (CSJ/ROJ/ CMJ/VPS)	NOTES:
							FS	PS	LT	LJ	ST	FT	PI	RV	EX	CM			
CSL-V10	4	27-05A	A	2	C	O										V		CMJ	
	C SA	H-16														V			
E21-AOVF006	10	27-05A	A	1	C, A	O							2Y			V		CMJ	Leak rate test for pressure isolation valve
	C SA	M-08				C			2Y	J			2Y			V			
E21-MOVF001	20	27-05A	A	2	B	O	Q				Q		2Y						
	G M	C-11				C	Q				Q		2Y						
E21-MOVF005	10	27-05A	A	1	A	O	C				C		2Y					CSJ-005	Leak rate test for pressure isolation valve
	G M	M-12				C	C		2Y	J	C		2Y						
E21-MOVF011	4	27-05A	A	2	B	O	Q				Q		2Y						
	G M	H-16				C	Q				Q		2Y						
E21-MOVF012	10	27-05A	A	2	B														
	GL M	K-15				C	Q				Q		18M						
E21-RVF018	1.5	27-05A	A	2	C	O								10Y					
	RV SA	K-13				C								10Y					
E21-RVF031	1.5	27-05A	A	2	C	O								10Y					
	RV SA	D-12				C								10Y					
E21-VF003	12	27-05A	A	2	C	O										V		CMJ	
	C SA	J-21				C										V			
E21-VF007	10	27-05A	P	1	B	O							2Y						
	G H	M-06																	
E21-VF033	1.5	27-05A	A	2	C	O										V		CMJ	
	C SA	G-17				C										V			

**IST PLAN
RBS APPENDIX
VALVE SUMMARY LISTING**

**PROGRAM SECTION NO. CEP-IST-2
REVISION NO. 307
PAGE 32 OF 67**

SYSTEM: 208 MSI - MSIV POSITIVE LEAKAGE CONTROL (MS-PLCS)

VALVE NO.	VALVE SIZE (in.) TYPE ACT.	P & ID NO. , COORD.	IST PASS	IST CODE CLASS	CODE CAT.	SAFETY POS.	REQUIRED TESTS AND FREQUENCY										RELIEF REQUEST (VRR)	OTHER (CSJ/ROJ/ CMJ/VPS)	NOTES:
							FS	PS	LT	LJ	ST	FT	PI	RV	EX	CM			
E33-MOVF005	2	27-20A M-16	A	2	B	O	Q				Q		2Y						
	GL M					C	Q				Q		2Y						
E33-MOVF006	2	27-20A L-16	A	2	B														
	GL M					C	Q				Q		2Y						
E33-MOVF007	2	27-20A L-15	A	2	B	O	Q				Q		2Y						
	GL M					C	Q				Q		2Y						
E33-MOVF008	2	27-20A K-15	A	1	B	O	Q				Q		18M						
	GL M					C	Q				Q		18M						
E33-MOVF025	2	27-20A M-08	A	2	B	O	Q				Q		2Y						
	GL M					C	Q				Q		2Y						
E33-MOVF026	2	27-20A L-07	A	2	B														
	GL M					C	Q				Q		2Y						
E33-MOVF027	2	27-20A L-06	A	2	B	O	Q				Q		2Y						
	GL M					C	Q				Q		2Y						
E33-MOVF028	2	27-20A L-06	A	2	B	O	Q				Q		2Y						
	GL M					C	Q				Q		2Y						
E33-PVF002	2	27-20A M-18	A	2	B														
	GL E/H					C	Q				Q	Q							
E33-PVF022	2	27-20A M-09	A	2	B														
	GL E/H					C	Q				Q	Q							
E33-RVF003	0.75	27-20A M-17	A	2	C	O								10Y					
	RV SA					C								10Y					
E33-RVF023	0.75	27-20A M-09	A	2	C	O								10Y					
	RV SA					C								10Y					
E33-SOVF014	2	27-20A L-18	A	2	B	O	Q				Q		2Y						
	GL S					C	Q				Q	Q	2Y						
E33-SOVF034	2	27-20A L-09	A	2	B	O	Q				Q		2Y						
	GL S					C	Q				Q	Q	2Y						
E33-VF004	2	27-20A M-17	A	2	C	O										V		CMJ	
	C SA															V			
E33-VF024	2	27-20A M-08	A	2	C	O										V		CMJ	
	C SA															V			

**IST PLAN
RBS APPENDIX
VALVE SUMMARY LISTING**

**PROGRAM SECTION NO. CEP-IST-2
REVISION NO. 307
PAGE 33 OF 67**

SYSTEM: 209 ICS - REACTOR CORE ISOLATION COOLING (RCIC)

VALVE NO.	VALVE SIZE (in.) TYPE ACT.	P & ID NO. , COORD.	IST PASS	IST CODE CLASS	CODE CAT.	SAFETY POS.	REQUIRED TESTS AND FREQUENCY										RELIEF REQUEST (VRR)	OTHER (CSJ/ROJ/ CMJ/VPS)	NOTES:
							FS	PS	LT	LJ	ST	FT	PI	RV	EX	CM			
E51-AOVF004	1	32-09J K-09	A	2	B														
	GL A					C	Q				Q	Q	2Y						
E51-AOVF005	1	32-09J K-09	A	2	B														
	GL A					C	Q				Q	Q	2Y						
E51-AOVF025	1	32-05B D-18	A	2	B	O	Q				Q		2Y						
	GL A					C	Q				Q	Q	2Y						
E51-AOVF026	1	32-05B C-18	A	2	B	O	Q				Q		2Y						
	GL A					C	Q				Q	Q	2Y						
E51-AOVF054	1	32-05B B-18	A	2	B	O	Q				Q		2Y						
	GL A					C	Q				Q	Q	2Y						
E51-MOVC002	4	27-06A K-08	A	2	B														
	G M					C	Q				Q		2Y						
E51-MOVF010	6	27-06A B-13	A	2	B	O	Q				Q		2Y						
	G M					C	Q				Q		2Y						
E51-MOVF013	6	27-06A N-11	A	2	A	O	C				C		2Y					CSJ-005	
	G M					C	C			J	C		2Y						
E51-MOVF019	2	27-06A M-13	A	2	A	O	Q				Q		2Y						
	GL M					C	Q				Q		2Y						
E51-MOVF022	4	27-06A L-07	A	2	B														
	GL M					C	Q				Q		2Y						
E51-MOVF031	6	27-06A A-13	A	2	A	O	Q				Q		18M						
	G M					C	Q				Q		18M						
E51-MOVF045	4	27-06A K-08	A	2	B	O	Q				Q		2Y						
	GL M					C	Q				Q		2Y						
E51-MOVF059	4	27-06A L-05	A	2	B														
	G M					C	Q				Q		2Y						
E51-MOVF063	8	27-06A K-15	A	1	A	O	C				C		18M					CSJ-008	
	G M					C	C			J	C		18M						
E51-MOVF064	8	27-06A K-13	A	1	A	O	C				C		18M					CSJ-008	
	G M					C	C			J	C		18M						
E51-MOVF068	12	27-06A F-11	A	2	A	O	Q				Q		2Y						
	G M					C	Q			J	Q		2Y						

**IST PLAN
RBS APPENDIX
VALVE SUMMARY LISTING**

**PROGRAM SECTION NO. CEP-IST-2
REVISION NO. 307
PAGE 34 OF 67**

SYSTEM: 209 ICS - REACTOR CORE ISOLATION COOLING (RCIC)

VALVE NO.	VALVE SIZE (in.) TYPE ACT.		P & ID NO. , COORD.	IST PASS	IST CODE CLASS	CODE CAT.	SAFETY POS.	REQUIRED TESTS AND FREQUENCY									RELIEF REQUEST (VRR)	OTHER (CSJ/ROJ/ CMJ/VPS)	NOTES:
								FS	PS	LT	LJ	ST	FT	PI	RV	EX			
E51-MOVF076	0.75		27-06A	A	2	A												CSJ-008	
	GL	M	J-15				C	C			J	C		18M					
E51-MOVF077	1.5		27-06A	A	2	A													
	GL	M	G-11				O	Q				Q		18M					
E51-MOVF078	2.5		27-06A	A	2	A													
	GL	M	G-13				O	Q				Q		18M					
E51-PSED001	12		27-06A	A	A	D													Replace every 5 years.
	RD	SA	G-05				O												
E51-PSED002	12		27-06A	A	A	D													Replace every 5 years.
	RD	SA	G-04				O												
E51-RVF017	0.75		27-06A	A	2	C									10Y				
	RV	SA	M-02				O								10Y				
E51-RVF018	1.5		27-06A	A	2	C									10Y				
	RV	SA	P-02				O								10Y				
E51-RVF090	0.75		27-06A	A	2	C									10Y				
	RV	SA	M-07				O								10Y				
E51-VF011	6		27-06A	A	2	C											V	CMJ	
	C	SA	B-09				O										V		
E51-VF030	6		27-06A	A	2	C											V	CMJ	
	C	SA	A-11				O										V		
E51-VF040	12		27-06A	A	2	C											V	CMJ	
	C	SA	F-10				O										V		
E51-VF061	1.5		27-06A	A	2	C											V	CMJ	
	C	SA	C-09				O										V		
E51-VF079	1.5		27-06A	A	2	C											V	CMJ	
	C	SA	G-11				O										V		
E51-VF081	1.5		27-06A	A	2	C											V	CMJ	
	C	SA	G-12				O										V		
ICS-V21	2		27-06A	A	2	C											V	CMJ	
	C	SA	M-11														V		
ICS-V3004	6		27-06A	A	2	C											V	CMJ	
	C	SA	N-12				O										V		

**IST PLAN
RBS APPENDIX
VALVE SUMMARY LISTING**

**PROGRAM SECTION NO. CEP-IST-2
REVISION NO. 307
PAGE 35 OF 67**

SYSTEM: 251 FPW - FIRE PROTECTION - WATER & ENG PUMP

VALVE NO.	VALVE SIZE (in.) TYPE ACT.	P & ID NO. , COORD.	IST PASS	IST CODE CLASS	CODE CAT.	SAFETY POS.	REQUIRED TESTS AND FREQUENCY										RELIEF REQUEST (VRR)	OTHER (CSJ/ROJ/ CMJ/VPS)	NOTES:
							FS	PS	LT	LJ	ST	FT	PI	RV	EX	CM			
FPW-MOV121	6	15-01C	A	2	A														
	G M	P-16				C	Q			J	Q		18M						
FPW-RV40	0.75	15-01C	A	2	C	O								10Y					
	RV SA	P-14																	
FPW-V263	6	15-01C	A	2	C, A	O										V		CMJ	
	C SA	P-14				C				J						V			

**IST PLAN
RBS APPENDIX
VALVE SUMMARY LISTING**

**PROGRAM SECTION NO. CEP-IST-2
REVISION NO. 307
PAGE 36 OF 67**

SYSTEM: 254 CPM - HYDROGEN MIXING

VALVE NO.	VALVE SIZE (in.)		P & ID NO. , COORD.	IST PASS	IST CODE CLASS	CODE CAT.	SAFETY POS.	REQUIRED TESTS AND FREQUENCY									RELIEF REQUEST (VRR)	OTHER (CSJ/ROJ/ CMJ/VPS)	NOTES:
	TYPE	ACT.						FS	PS	LT	LJ	ST	FT	PI	RV	EX			
CPM-MOV1A	6		27-21A	A	2	B	O	C				C		2Y				CSJ-010	
	B	M	J-18				C	C				C		2Y					
CPM-MOV1B	6		27-21A	A	2	B	O	C				C		2Y				CSJ-010	
	B	M	J-14				C	C				C		2Y					
CPM-MOV2A	6		27-21A	A	2	B	O	C				C		2Y				CSJ-010	
	B	M	G-14				C	C				C		2Y					
CPM-MOV2B	6		27-21A	A	2	B	O	C				C		2Y				CSJ-010	
	B	M	G-18				C	C				C		2Y					
CPM-MOV3A	6		27-21A	A	2	B	O	C				C		2Y				CSJ-010	
	B	M	J-17				C	C				C		2Y					
CPM-MOV3B	6		27-21A	A	2	B	O	C				C		2Y				CSJ-010	
	B	M	J-15				C	C				C		2Y					
CPM-MOV4A	6		27-21A	A	2	B	O	C				C		2Y				CSJ-010	
	B	M	G-14				C	C				C		2Y					
CPM-MOV4B	6		27-21A	A	2	B	O	C				C		2Y				CSJ-010	
	B	M	G-17				C	C				C		2Y					

**IST PLAN
RBS APPENDIX
VALVE SUMMARY LISTING**

**PROGRAM SECTION NO. CEP-IST-2
REVISION NO. 307
PAGE 37 OF 67**

SYSTEM: 254 CPP - HYDROGEN PURGE

VALVE NO.	VALVE SIZE (in.) TYPE ACT.		P & ID NO. , COORD.	IST PASS	IST CODE CLASS	CODE CAT.	SAFETY POS.	REQUIRED TESTS AND FREQUENCY								RELIEF REQUEST (VRR)	OTHER (CSJ/ROJ/ CMJ/VPS)	NOTES:	
								FS	PS	LT	LJ	ST	FT	PI	RV				EX
CPP-MOV104	3		27-21A	A	2	A													
	G	M	F-03				C	Q			J	Q		2Y					
CPP-MOV105	3		27-21A	A	2	A													
	G	M	H-02				C	Q			J	Q		2Y					
CPP-SOV140	1		27-21A	A	2	A													
	GL	S	H-10				C	Q			J	Q	Q	2Y					

IST PLAN
RBS APPENDIX
VALVE SUMMARY LISTING

PROGRAM SECTION NO. CEP-IST-2
REVISION NO. 307
PAGE 38 OF 67

SYSTEM: 255 LSV - PENETRATION VALVE LEAKAGE CONTROL (PVLCS)

VALVE NO.	VALVE SIZE (in.) TYPE ACT.	P & ID NO. , COORD.	IST PASS	IST CODE CLASS	CODE CAT.	SAFETY POS.	REQUIRED TESTS AND FREQUENCY										RELIEF REQUEST (VRR)	OTHER (CSJ/ROJ/ CMJ/VPS)	NOTES:
							FS	PS	LT	LJ	ST	FT	PI	RV	EX	CM			
LSV-AOV44A	0.75	27-20C M-16	A	2	B														
	G A					C	Q				Q	Q							
LSV-AOV44B	0.75	27-20D M-16	A	2	B														
	G A					C	Q				Q	Q							
LSV-RV8A	1	27-20B E-14	A	2	C	O								10Y					
	RV SA					C								10Y					
LSV-RV8B	1	27-20B P-14	A	2	C	O								10Y					
	RV SA					C								10Y					
LSV-SOVX26A	0.75	27-20B E-16	A	2	B	O	Q				Q	Q							
	GL S																		
LSV-SOVX26B	0.75	27-20B P-16	A	2	B	O	Q				Q	Q							
	GL S																		
LSV-SOVY26A	0.75	27-20B E-18	A	2	B														
	GL S					C	Q				Q	Q							
LSV-SOVY26B	0.75	27-20B P-18	A	2	B														
	GL S					C	Q				Q	Q							
LSV-V112	0.75	27-20B E-18	A	2	C											V		CMJ	
	C SA					C										V			
LSV-V114	1	27-20B D-15	A	2	C	O										V		CMJ	
	C SA					C										V			
LSV-V118	0.75	27-20B P-18	A	2	C											V		CMJ	
	C SA					C										V			
LSV-V120	1	27-20B N-14	A	2	C	O										V		CMJ	
	C SA					C										V			
LSV-V82	2	27-20B N-12	A	2	C	O										V		CMJ	
	C SA															V			
LSV-V98	2	27-20B D-12	A	2	C	O										V		CMJ	
	C SA															V			

PROGRAM SECTION NO. CEP-IST-2
REVISION NO. 307
PAGE 39 OF 67

VALVE NO.	VALVE SIZE (in.) TYPE ACT.		P & ID NO. , COORD.	1ST PASS	IST CODE CLASS	CODE CAT.	SAFETY POS.	REQUIRED TESTS AND FREQUENCY								RELIEF REQUEST (VRR)	OTHER (CSJ/ROJ/CMJ/VPS)	NOTES:
	FS	PS						LT	LJ	ST	FT	PI	RV	EX	CM			
E12-RVF100A	0.75		09-10F J-06	A	3	C	O								10Y			
	RV	SA					C								10Y			
E12-RVF100B	0.75		09-10F J-03	A	3	C	O								10Y			
	RV	SA					C								10Y			
SWP-AOV51A	2		09-10C K-18	A	3	B	O	Q				Q	Q	2Y				
	GL	A																
SWP-AOV51B	2		09-10F E-21	A	3	B	O	Q				Q	Q	2Y				
	GL	A																
SWP-MOV171	8		09-10F G-06	P	3	B	O							2Y				
	B	M																
SWP-MOV172	8		09-10F G-07	P	3	B	O							2Y				
	B	M																
SWP-MOV173	8		09-10F G-02	P	3	B	O							2Y				
	B	M																
SWP-MOV174	8		09-10F G-04	P	3	B	O							2Y				
	B	M																
SWP-MOV27A	6		09-10B M-19	A	3	B	O	Q				Q		2Y				
	B	M					C	Q				Q		2Y				
SWP-MOV27B	6		09-10B J-20	A	3	B	O	Q				Q		2Y				
	B	M					C	Q				Q		2Y				
SWP-MOV27C	6		09-10B L-19	A	3	B	O	Q				Q		2Y				
	B	M					C	Q				Q		2Y				
SWP-MOV27D	6		09-10B H-20	A	3	B	O	Q				Q		2Y				
	B	M					C	Q				Q		2Y				
SWP-MOV40A	18		09-10E G-10	A	3	B	O	Q				Q		2Y				
	B	M																
SWP-MOV40B	18		09-10E G-07	A	3	B	O	Q				Q		2Y				
	B	M																
SWP-MOV40C	18		09-10E G-09	A	3	B	O	Q				Q		2Y				
	B	M																
SWP-MOV40D	18		09-10E G-08	A	3	B	O	Q				Q		2Y				
	B	M																

**IST PLAN
RBS APPENDIX
VALVE SUMMARY LISTING**

**PROGRAM SECTION NO. CEP-IST-2
REVISION NO. 307
PAGE 40 OF 67**

SYSTEM: 256 SWP - SERVICE WATER - STANDBY (SSW)

VALVE NO.	VALVE SIZE (in.) TYPE ACT.		P & ID NO. , COORD.	IST PASS	IST CODE CLASS	CODE CAT.	SAFETY POS.	REQUIRED TESTS AND FREQUENCY									RELIEF REQUEST (VRR)	OTHER (CSJ/ROJ/ CMJ/VPS)	NOTES:	
								FS	PS	LT	LJ	ST	FT	PI	RV	EX				CM
SWP-MOV4A	10		09-10D B-17	A	3	B														
	G	M					C	Q			Q		2Y							
SWP-MOV4B	10		09-10D D-17	A	3	B														
	G	M					C	Q			Q		2Y							
SWP-MOV501A	18		09-10D N-02	A	3	B														
	B	M					C	Q			Q		2Y							
SWP-MOV501B	18		09-10D N-03	A	3	B														
	B	M					C	Q			Q		2Y							
SWP-MOV502A	6		09-10D B-18	A	3	B	O	C				C		2Y					CSJ-011	
	G	M					C	C			C		2Y							
SWP-MOV502B	6		09-10D E-18	A	3	B	O	C				C		2Y					CSJ-011	
	G	M					C	C			C		2Y							
SWP-MOV503A	6		09-10D L-18	A	2	A	O	C				C		2Y					CSJ-011	
	G	M					C	C			J	C		2Y						
SWP-MOV503B	6		09-10D H-18	A	2	A	O	C				C		2Y					CSJ-011	
	G	M					C	C			J	C		2Y						
SWP-MOV504A	12		09-10D N-19	A	3	B	O	C				C		2Y					CSJ-011	
	G	M																		
SWP-MOV504B	12		09-10D J-20	A	3	B	O	C				C		2Y					CSJ-011	
	G	M																		
SWP-MOV505A	30		09-10E K-09	P	3	B														
	B	M					C							2Y						
SWP-MOV505B	30		09-10E K-07	P	3	B														
	B	M					C						2Y							
SWP-MOV506A	8		09-10B N-05	A	3	B	O	Q				Q		2Y						
	B	M					C	Q			Q		2Y							
SWP-MOV506B	8		09-10B N-02	A	3	B	O	Q				Q		2Y						
	B	M					C	Q			Q		2Y							
SWP-MOV507A	12		09-10D B-20	A	2	A	O	Q				Q		2Y						
	G	M					C	Q			J	Q		2Y						
SWP-MOV507B	12		09-10D D-19	A	2	A	O	Q				Q		2Y						
	G	M					C	Q			J	Q		2Y						

**IST PLAN
RBS APPENDIX
VALVE SUMMARY LISTING**

**PROGRAM SECTION NO. CEP-IST-2
REVISION NO. 307
PAGE 41 OF 67**

SYSTEM: 256 SWP - SERVICE WATER - STANDBY (SSW)

VALVE NO.	VALVE SIZE (in.) TYPE ACT.		P & ID NO. , COORD.	IST PASS	IST CODE CLASS	CODE CAT.	SAFETY POS.	REQUIRED TESTS AND FREQUENCY										RELIEF REQUEST (VRR)	OTHER (CSJ/ROJ/ CMJ/VPS)	NOTES:
								FS	PS	LT	LJ	ST	FT	PI	RV	EX	CM			
SWP-MOV510A	12		09-10D C-21	A	3	B	O	C				C		2Y				CSJ-011		
	G	M																		
SWP-MOV510B	12		09-10D E-20	A	3	B	O	C				C		2Y				CSJ-011		
	G	M																		
SWP-MOV511A	18		09-10D G-02	A	3	B														
	B	M					C	Q			Q		2Y							
SWP-MOV511B	18		09-10D G-03	A	3	B														
	B	M					C	Q			Q		2Y							
SWP-MOV55A	30		09-10E G-16	A	3	B	O	Q				Q		2Y						
	B	M																		
SWP-MOV55B	30		09-10E G-17	A	3	B	O	Q				Q		2Y						
	B	M																		
SWP-MOV57A	30		09-10B A-15	A	3	B												CSJ-009		
	B	M					C	C			C		2Y							
SWP-MOV57B	30		09-10B C-15	A	3	B												CSJ-009		
	B	M					C	C			C		2Y							
SWP-MOV5A	10		09-10D L-18	A	3	A														
	G	M					C	Q			J	Q		18M						
SWP-MOV5B	10		09-10D H-18	A	3	A														
	G	M					C	Q			J	Q		18M						
SWP-MOV73A	4		09-10C F-08	A	3	B	O	Q				Q		2Y						
	G	M																		
SWP-MOV73B	4		09-10F D-16	A	3	B	O	Q				Q		2Y						
	G	M																		
SWP-MOV74A	4		09-10C K-06	A	3	B	O	Q				Q		2Y						
	G	M					C	Q			Q		2Y							
SWP-MOV74B	4		09-10F K-14	A	3	B	O	Q				Q		2Y						
	G	M					C	Q			Q		2Y							
SWP-MOV77A	8		09-10B P-07	A	3	B	O	Q				Q		2Y						
	B	M																		
SWP-MOV77B	8		09-10B P-05	A	3	B	O	Q				Q		2Y						
	B	M																		

**IST PLAN
RBS APPENDIX
VALVE SUMMARY LISTING**

**PROGRAM SECTION NO. CEP-IST-2
REVISION NO. 307
PAGE 42 OF 67**

SYSTEM: 256 SWP - SERVICE WATER - STANDBY (SSW)

VALVE NO.	VALVE SIZE (in.) TYPE ACT.		P & ID NO. , COORD.	IST PASS	IST CODE CLASS	CODE CAT.	SAFETY POS.	REQUIRED TESTS AND FREQUENCY									RELIEF REQUEST (VRR)	OTHER (CSJ/ROJ/ CMJ/VPS)	NOTES:	
								FS	PS	LT	LJ	ST	FT	PI	RV	EX				CM
SWP-MOV81A	12		09-10D N-20	A	2	A	O	Q				Q		2Y						
	G	M					C	Q			J	Q		2Y						
SWP-MOV81B	12		09-10D H-20	A	2	A	O	Q				Q		2Y						
	G	M					C	Q			J	Q		2Y						
SWP-MOV96A	30		09-10B E-18	A	3	B														
	B	M					C	Q				Q		2Y						
SWP-MOV96B	30		09-10B E-17	A	3	B														
	B	M					C	Q				Q		2Y						
SWP-RV119	0.75		09-10D C-16	A	2	C	O								10Y					
	RV	SA																		
SWP-RV133	0.75		09-10B N-04	A	3	C	O								10Y					
	RV	SA					C								10Y					
SWP-RV140	0.75		09-10D N-17	A	2	C	O								10Y					
	RV	SA																		
SWP-RV1A	0.75		09-100 K-20	A	3	C	O								10Y					
	RV	SA					C								10Y					
SWP-RV1B	0.75		09-100 F-18	A	3	C	O								10Y					
	RV	SA					C								10Y					
SWP-RV49A	0.75		09-10C H-21	A	3	C	O								10Y					
	RV	SA					C								10Y					
SWP-RV49B	0.75		09-10F D-18	A	3	C	O								10Y					
	RV	SA					C								10Y					
SWP-RV79A	0.75		09-10B M-07	A	3	C	O								10Y					
	RV	SA					C								10Y					
SWP-RV79B	0.75		09-10B M-01	A	3	C	O								10Y					
	RV	SA					C								10Y					
SWP-RV91A	0.75		09-10B M-13	A	3	C	O								10Y					
	RV	SA					C								10Y					
SWP-RV91B	0.75		09-10B J-15	A	3	C	O								10Y					
	RV	SA					C								10Y					
SWP-RV91C	0.75		09-10B L-13	A	3	C	O								10Y					
	RV	SA					C								10Y					

**IST PLAN
RBS APPENDIX
VALVE SUMMARY LISTING**

**PROGRAM SECTION NO. CEP-IST-2
REVISION NO. 307
PAGE 43 OF 67**

SYSTEM: 256 SWP - SERVICE WATER - STANDBY (SSW)

VALVE NO.	VALVE SIZE (in.) TYPE ACT.	P & ID NO. , COORD.	IST PASS	IST CODE CLASS	CODE CAT.	SAFETY POS.	REQUIRED TESTS AND FREQUENCY										RELIEF REQUEST (VRR)	OTHER (CSJ/ROJ/ CMJ/VPS)	NOTES:
							FS	PS	LT	LJ	ST	FT	PI	RV	EX	CM			
SWP-RV91D	0.75	09-10B G-14	A	3	C	O								10Y					
	RV SA					C								10Y					
SWP-SOV220A	0.5	09-10C J-20	A	3	B	O	Q				Q		2Y						
	GL S					C	Q				Q		2Y						
SWP-SOV220B	0.5	09-10F E-19	A	3	B	O	Q				Q		2Y						
	GL S					C	Q				Q		2Y						
SWP-SOV522A	1	09-10F B-18	A	2	A	O	Q				Q		2Y						
	GL S					C	Q			J	Q		2Y						
SWP-SOV522B	1	09-10F B-13	A	2	A	O	Q				Q		2Y						
	GL S					C	Q			J	Q		2Y						
SWP-SOV522C	1	09-10F B-17	A	2	A	O	Q				Q		2Y						
	GL S					C	Q			J	Q		2Y						
SWP-SOV522D	1	09-10F B-12	A	2	A	O	Q				Q		2Y						
	GL S					C	Q			J	Q		2Y						
SWP-SOV523A	0.75	09-10C M-13	A	3	B	O	Q				Q		2Y						
	GL S					C	Q				Q		2Y						
SWP-SOV523B	0.75	09-10F N-12	A	3	B	O	Q				Q		2Y						
	GL S					C	Q				Q		2Y						
SWP-SOV523C	0.75	09-10C M-13	A	3	B	O	Q				Q		2Y						
	GL S					C	Q				Q		2Y						
SWP-SOV523D	0.75	09-10F N-11	A	3	B	O	Q				Q		2Y						
	GL S					C	Q				Q		2Y						
SWP-V1086	0.75	09-10F C-16	A	3	C											V		CMJ	
	C SA					C										V			
SWP-V1087	0.75	09-10F C-11	A	3	C											V		CMJ	
	C SA					C										V			
SWP-V1091	1	09-10F B-17	A	2	C	O										V		CMJ	
	C SA															V			
SWP-V1092	1	09-10F B-12	A	2	C	O										V		CMJ	
	C SA															V			
SWP-V1095	1	09-10F B-18	A	2	C	O										V		CMJ	
	C SA															V			

**IST PLAN
RBS APPENDIX
VALVE SUMMARY LISTING**

**PROGRAM SECTION NO. CEP-IST-2
REVISION NO. 307
PAGE 44 OF 67**

SYSTEM: 256 SWP - SERVICE WATER - STANDBY (SSW)

VALVE NO.	VALVE SIZE (in.) TYPE ACT.	P & ID NO. , COORD.	IST PASS	IST CODE CLASS	CODE CAT.	SAFETY POS.	REQUIRED TESTS AND FREQUENCY										RELIEF REQUEST (VRR)	OTHER (CSJ/ROJ/ CMJ/VPS)	NOTES:
							FS	PS	LT	LJ	ST	FT	PI	RV	EX	CM			
SWP-V1098	1	09-10F B-13	A	2	C	O										V		CMJ	
	C SA															V			
SWP-V1102	1.5	09-10C M-13	A	3	C	O										V		CMJ	
	C SA															V			
SWP-V1103	1.5	09-10F M-11	A	3	C	O										V		CMJ	
	C SA															V			
SWP-V1224	1	09-10E D-10	A	3	C											V		CMJ	
	C SA					C										V			
SWP-V1225	1	09-10E D-09	A	3	C											V		CMJ	
	C SA					C										V			
SWP-V1226	1	09-10E D-06	A	3	C											V		CMJ	
	C SA					C										V			
SWP-V1227	1	09-10E D-04	A	3	C											V		CMJ	
	C SA					C										V			
SWP-V135	8	09-10B P-06	A	3	C	O										V		CMJ	
	C SA					C										V			
SWP-V136	8	09-10B P-05	A	3	C	O										V		CMJ	
	C SA					C										V			
SWP-V143	8	09-10B N-04	A	3	C	O										V		CMJ	
	C SA					C										V			
SWP-V144	8	09-10B N-03	A	3	C	O										V		CMJ	
	C SA					C										V			
SWP-V147	18	09-10E F-10	A	3	C	O										V		CMJ	
	C SA					C										V			
SWP-V148	18	09-10E F-09	A	3	C	O										V		CMJ	
	C SA					C										V			
SWP-V149	18	09-10E F-07	A	3	C	O										V		CMJ	
	C SA					C										V			
SWP-V150	18	09-10E F-08	A	3	C	O										V		CMJ	
	C SA					C										V			
SWP-V153	6	09-10B M-17	A	3	C	O										V		CMJ	
	C SA					C										V			

**IST PLAN
RBS APPENDIX
VALVE SUMMARY LISTING**

**PROGRAM SECTION NO. CEP-IST-2
REVISION NO. 307
PAGE 45 OF 67**

SYSTEM: 256 SWP - SERVICE WATER - STANDBY (SSW)

VALVE NO.	VALVE SIZE (in.) TYPE ACT.	P & ID NO. , COORD.	IST PASS	IST CODE CLASS	CODE CAT.	SAFETY POS.	REQUIRED TESTS AND FREQUENCY										RELIEF REQUEST (VRR)	OTHER (CSJ/ROJ/ CMJ/VPS)	NOTES:
							FS	PS	LT	LJ	ST	FT	PI	RV	EX	CM			
SWP-V154	6	09-10B L-17	A	3	C	O										V		CMJ	
	C SA					C										V			
SWP-V155	6	09-10B J-18	A	3	C	O										V		CMJ	
	C SA					C										V			
SWP-V156	6	09-10B H-18	A	3	C	O										V		CMJ	
	C SA					C										V			
SWP-V172	30	09-10D P-05	A	3	C	O										V		CMJ	
	C SA															V			
SWP-V173	30	09-10D N-05	A	3	C	O										V		CMJ	
	C SA															V			
SWP-V174	12	09-10D B-18	A	2	C, A	O										V		CMJ	
	C SA					C				J						V			
SWP-V175	12	09-10D D-18	A	2	C, A	O										V		CMJ	
	C SA					C				J						V			
SWP-V199	18	09-10F J-06	A	3	C	O										V		CMJ	
	C SA															V			
SWP-V200	18	09-10F J-02	A	3	C	O										V		CMJ	
	C SA															V			
SWP-V201	8	09-10B M-06	A	3	C	O										V		CMJ	
	C SA															V			
SWP-V202	8	09-10B M-01	A	3	C	O										V		CMJ	
	C SA															V			
SWP-V203	6	09-10D F-18	A	3	C	O										V		CMJ	
	C SA															V			
SWP-V204	6	09-10D C-18	A	3	C	O										V		CMJ	
	C SA															V			
SWP-V326	30	09-10B A-16	A	3	C											V		CMJ	
	C SA					C										V			
SWP-V327	30	09-10B C-16	A	3	C											V		CMJ	
	C SA					C										V			
SWP-V437	4	09-10C G-08	A	3	C	O										V		CMJ	
	C SA					C										V			

**IST PLAN
RBS APPENDIX
VALVE SUMMARY LISTING**

**PROGRAM SECTION NO. CEP-IST-2
REVISION NO. 307
PAGE 46 OF 67**

SYSTEM: 256 SWP - SERVICE WATER - STANDBY (SSW)

VALVE NO.	VALVE SIZE (in.) TYPE ACT.	P & ID NO. , COORD.	IST PASS	IST CODE CLASS	CODE CAT.	SAFETY POS.	REQUIRED TESTS AND FREQUENCY										RELIEF REQUEST (VRR)	OTHER (CSJ/ROJ/ CMJ/VPS)	NOTES:
							FS	PS	LT	LJ	ST	FT	PI	RV	EX	CM			
SWP-V516	4	09-10F D-14	A	3	C	O										V		CMJ	
	C SA					C										V			
SWP-V650	10	09-10D L-18	A	2	C											V		CMJ	
	C SA					C										V			
SWP-V651	10	09-10D H-17	A	2	C											V		CMJ	
	C SA					C										V			
SWP-V77	6	09-10B M-17	A	3	C	O										V		CMJ	
	C SA															V			
SWP-V78	6	09-10B L-17	A	3	C	O										V		CMJ	
	C SA															V			
SWP-V79	6	09-10B J-19	A	3	C	O										V		CMJ	
	C SA															V			
SWP-V80	6	09-10B G-19	A	3	C	O										V		CMJ	
	C SA															V			

**IST PLAN
RBS APPENDIX
VALVE SUMMARY LISTING**

**PROGRAM SECTION NO. CEP-IST-2
REVISION NO. 307
PAGE 47 OF 67**

SYSTEM: 309 EGA - DIESEL GENERATOR STARTING AIR

VALVE NO.	VALVE SIZE (in.) TYPE ACT.	P & ID NO. , COORD.	IST PASS	IST CODE CLASS	CODE CAT.	SAFETY POS.	REQUIRED TESTS AND FREQUENCY										RELIEF REQUEST (VRR)	OTHER (CSJ/ROJ/ CMJ/VPS)	NOTES:
							FS	PS	LT	LJ	ST	FT	PI	RV	EX	CM			
EGA-RV5A	0.75	08-09B J-13	A	3	C	O								10Y					
	RV SA					C								10Y					
EGA-RV5B	0.75	08-09B C-13	A	3	C	O								10Y					
	RV SA					C								10Y					
EGA-RV6C	0.75	08-09B N-10	A	3	C	O								10Y					
	RV SA					C								10Y					
EGA-RV6D	0.75	08-09B G-01	A	3	C	O								10Y					
	RV SA					C								10Y					
EGA-V102	1.5	08-09B J-12	A	3	C											V		CMJ	
	C SA					C										V			
EGA-V115	1.5	08-09B M-01	A	3	C											V		CMJ	
	C SA					C										V			
EGA-V126	1.5	08-09B B-12	A	3	C											V		CMJ	
	C SA					C										V			
EGA-V137	1.5	08-09B F-12	A	3	C											V		CMJ	
	C SA					C										V			
EGA-V147	6	08-09B M-08	A	3	C	O										V		CMJ	
	C SA					C										V			
EGA-V148	6	08-09B L-08	A	3	C	O										V		CMJ	
	C SA					C										V			
EGA-V151	6	08-09B E-08	A	3	C	O										V		CMJ	
	C SA					C										V			
EGA-V152	6	08-09B D-08	A	3	C	O										V		CMJ	
	C SA					C										V			

IST PLAN RBS APPENDIX VALVE SUMMARY LISTING	PROGRAM SECTION NO. CEP-IST-2 REVISION NO. 307 PAGE 48 OF 67
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SYSTEM: 309 EGF - DIESEL GENERATOR FUEL OIL

VALVE NO.	VALVE SIZE (in.) TYPE ACT.	P & ID NO. , COORD.	IST PASS	IST CODE CLASS	CODE CAT.	SAFETY POS.	REQUIRED TESTS AND FREQUENCY										RELIEF REQUEST (VRR)	OTHER (CSJ/ROJ/ CMJ/VPS)	NOTES:
							FS	PS	LT	LJ	ST	FT	PI	RV	EX	CM			
EGF-RV3A	1	08-09A M-02	A	3	C	O								10Y					
	RV SA					C								10Y					
EGF-RV3B	1	08-09A H-02	A	3	C	O								10Y					
	RV SA					C								10Y					
EGF-V3	2	08-09A M-14	A	3	C	O										V		CMJ	
	C SA															V			
EGF-V33	2	08-09A J-14	A	3	C	O										V		CMJ	
	C SA															V			
EGF-V63	2	08-09A E-14	A	3	C	O										V		CMJ	
	C SA															V			

**IST PLAN
RBS APPENDIX
VALVE SUMMARY LISTING**

**PROGRAM SECTION NO. CEP-IST-2
REVISION NO. 307
PAGE 49 OF 67**

SYSTEM: 309 EGT - DIESEL GENERATOR COOLING WATER

VALVE NO.	VALVE SIZE (in.) TYPE ACT.	P & ID NO. , COORD.	IST PASS	IST CODE CLASS	CODE CAT.	SAFETY POS.	REQUIRED TESTS AND FREQUENCY										RELIEF REQUEST (VRR)	OTHER (CSJ/ROJ/ CMJ/VPS)	NOTES:
							FS	PS	LT	LJ	ST	FT	PI	RV	EX	CM			
CSH-RV230	0.75	08-09D J-19	A	A	C	O								10Y					
	RV SA					C								10Y					
CSH-RV245	0.75	08-09D J-15	A	A	C	O								10Y					
	RV SA					C								10Y					

**IST PLAN
RBS APPENDIX
VALVE SUMMARY LISTING**

**PROGRAM SECTION NO. CEP-IST-2
REVISION NO. 307
PAGE 50 OF 67**

SYSTEM: 402 HVC - HVAC - CONTROL BUILDING

VALVE NO.	VALVE SIZE (in.) TYPE ACT.		P & ID NO. , COORD.	IST PASS	IST CODE CLASS	CODE CAT.	SAFETY POS.	REQUIRED TESTS AND FREQUENCY								RELIEF REQUEST (VRR)	OTHER (CSJ/ROJ/ CMJ/VPS)	NOTES:
								FS	PS	LT	LJ	ST	FT	PI	RV			
HVC-MOV1A	24		22-09A	A	3	B												
	B	M	J-12				C	Q				Q		2Y				
HVC-MOV1B	24		22-09A	A	3	B												
	B	M	J-12				C	Q				Q		2Y				

**IST PLAN
RBS APPENDIX
VALVE SUMMARY LISTING**

**PROGRAM SECTION NO. CEP-IST-2
REVISION NO. 307
PAGE 51 OF 67**

SYSTEM: 403 HVR - HVAC - CONTAINMENT BUILDING

VALVE NO.	VALVE SIZE (in.) TYPE ACT.	P & ID NO. , COORD.	IST PASS	IST CODE CLASS	CODE CAT.	SAFETY POS.	REQUIRED TESTS AND FREQUENCY										RELIEF REQUEST (VRR)	OTHER (CSJ/ROJ/ CMJ/VPS)	NOTES:
							FS	PS	LT	LJ	ST	FT	PI	RV	EX	CM			
HVR-AOV123	36	22-01B C-11	A	2	A														
	B A					C	Q			J	Q	Q	18M						
HVR-AOV125	24	22-01B D-09	P	2	B														
	B A					C							2Y						
HVR-AOV126	24	22-01B N-18	P	2	B														
	B A					C							2Y						
HVR-AOV128	36	22-01B N-17	A	2	A														
	B A					C	Q			J	Q	Q	18M						
HVR-AOV147	24	22-01B D-09	P	2	B														
	B A					C							2Y						
HVR-AOV148	24	22-01B N-19	P	2	B														
	B A					C							2Y						
HVR-AOV165	36	22-01B D-12	A	2	A														
	B A					C	Q			J	Q	Q	18M						
HVR-AOV166	36	22-01B N-14	A	2	A														
	B A					C	Q			J	Q	Q	18M						

PROGRAM SECTION NO. CEP-IST-2
REVISION NO. 307
PAGE 52 OF 67

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IST PLAN RBS APPENDIX VALVE SUMMARY LISTING	PROGRAM SECTION NO. CEP-IST-2 REVISION NO. 307 PAGE 53 OF 67
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SYSTEM: 410 HVK - HVAC - CHILLED WATER (CONTROL BUILDING)

VALVE NO.	VALVE SIZE (in.) TYPE ACT.	P & ID NO. , COORD.	IST PASS	IST CODE CLASS	CODE CAT.	SAFETY POS.	REQUIRED TESTS AND FREQUENCY										RELIEF REQUEST (VRR)	OTHER (CSJ/ROJ/ CMJ/VPS)	NOTES:
							FS	PS	LT	LJ	ST	FT	PI	RV	EX	CM			
HVK-V97	2	22-14H K-14	A	3	C	O										V		CMJ	
	C SA															V			
HVK-V98	2	22-14H M-14	A	3	C											V		CMJ	
	C SA					C										V			

**IST PLAN
RBS APPENDIX
VALVE SUMMARY LISTING**

**PROGRAM SECTION NO. CEP-IST-2
REVISION NO. 307
PAGE 55 OF 67**

SYSTEM: 552 CMS - CONTAINMENT ATMOSPHERE MONITORING

VALVE NO.	VALVE SIZE (in.) TYPE ACT.	P & ID NO. , COORD.	IST PASS	IST CODE CLASS	CODE CAT.	SAFETY POS.	REQUIRED TESTS AND FREQUENCY								RELIEF REQUEST (VRR)	OTHER (CSJ/ROJ/ CMJ/VPS)	NOTES:
							FS	PS	LT	LJ	ST	FT	PI	RV	EX	CM	
CMS-SOV31A	0.75	32-02B	A	2	A	O	Q				Q		2Y				
	GL S	G-19				C	Q			J	Q		2Y				
CMS-SOV31B	0.75	32-02A	A	2	A	O	Q				Q		2Y				
	GL S	G-05				C	Q			J	Q		2Y				
CMS-SOV31C	0.75	32-02B	A	2	A	O	Q				Q		2Y				
	GL S	G-19				C	Q			J	Q		2Y				
CMS-SOV31D	0.75	32-02A	A	2	A	O	Q				Q		2Y				
	GL S	F-05				C	Q			J	Q		2Y				
CMS-SOV32A	0.75	32-02B	A	2	B	O	Q				Q		2Y				
	GL S	H-07				C	Q				Q		2Y				
CMS-SOV32G	0.75	32-02B	A	2	B	O	Q				Q		2Y				
	GL S	F-07				C	Q				Q		2Y				
CMS-SOV33A	0.75	32-02B	A	2	B	O	Q				Q		2Y				
	GL S	K-15				C	Q				Q	Q	2Y				
CMS-SOV33AA	0.75	32-02B	A	2	B	O	Q				Q		2Y				
	GL S	K-07				C	Q				Q	Q	2Y				
CMS-SOV33B	0.75	32-02A	A	2	B	O	Q				Q		2Y				
	GL S	J-13				C	Q				Q	Q	2Y				
CMS-SOV33BB	0.75	32-02A	A	2	B	O	Q				Q		2Y				
	GL S	K-06				C	Q				Q	Q	2Y				
CMS-SOV33C	0.75	32-02B	A	2	B	O	Q				Q		2Y				
	GL S	K-16				C	Q				Q	Q	2Y				
CMS-SOV33D	0.75	32-02A	A	2	B	O	Q				Q		2Y				
	GL S	K-13				C	Q				Q	Q	2Y				
CMS-SOV33E	0.75	32-02B	A	2	B	O	Q				Q		2Y				
	GL S	K-17				C	Q				Q	Q	2Y				
CMS-SOV33F	0.75	32-02A	A	2	B	O	Q				Q		2Y				
	GL S	J-14				C	Q				Q	Q	2Y				
CMS-SOV33G	0.75	32-02B	A	2	B	O	Q				Q		2Y				
	GL S	K-14				C	Q				Q	Q	2Y				
CMS-SOV33H	0.75	32-02A	A	2	B	O	Q				Q		2Y				
	GL S	K-12				C	Q				Q	Q	2Y				

**IST PLAN
RBS APPENDIX
VALVE SUMMARY LISTING**

**PROGRAM SECTION NO. CEP-IST-2
REVISION NO. 307
PAGE 56 OF 67**

SYSTEM: 552 CMS - CONTAINMENT ATMOSPHERE MONITORING

VALVE NO.	VALVE SIZE (in.) TYPE ACT.	P & ID NO. , COORD.	IST PASS	IST CODE CLASS	CODE CAT.	SAFETY POS.	REQUIRED TESTS AND FREQUENCY								RELIEF REQUEST (VRR)	OTHER (CSJ/ROJ/ CMJ/VPS)	NOTES:
							FS	PS	LT	LJ	ST	FT	PI	RV	EX	CM	
CMS-SOV33J	0.75	32-02B K-13	A	2	B	O	Q				Q		2Y				
	GL S					C	Q				Q	Q	2Y				
CMS-SOV33K	0.75	32-02A J-11	A	2	B	O	Q				Q		2Y				
	GL S					C	Q				Q	Q	2Y				
CMS-SOV33S	0.75	32-02B K-12	A	2	B	O	Q				Q		2Y				
	GL S					C	Q				Q	Q	2Y				
CMS-SOV33T	0.75	32-02A K-10	A	2	B	O	Q				Q		2Y				
	GL S					C	Q				Q	Q	2Y				
CMS-SOV33U	0.75	32-02B K-11	A	2	B	O	Q				Q		2Y				
	GL S					C	Q				Q	Q	2Y				
CMS-SOV33V	0.75	32-02A J-09	A	2	B	O	Q				Q		2Y				
	GL S					C	Q				Q	Q	2Y				
CMS-SOV33W	0.75	32-02B K-10	A	2	B	O	Q				Q		2Y				
	GL S					C	Q				Q	Q	2Y				
CMS-SOV33X	0.75	32-02A K-08	A	2	B	O	Q				Q		2Y				
	GL S					C	Q				Q	Q	2Y				
CMS-SOV33Y	0.75	32-02B K-09	A	2	B	O	Q				Q		2Y				
	GL S					C	Q				Q	Q	2Y				
CMS-SOV33Z	0.75	32-02A J-07	A	2	B	O	Q				Q		2Y				
	GL S					C	Q				Q	Q	2Y				
CMS-SOV34A	0.75	32-02B G-07	A	2	B	O	Q				Q		2Y				
	GL S					C	Q				Q	Q	2Y				
CMS-SOV34B	0.75	32-02A G-15	A	2	B	O	Q				Q		2Y				
	GL S					C	Q				Q	Q	2Y				
CMS-SOV34C	0.75	32-02B G-07	A	2	B	O	Q				Q		2Y				
	GL S					C	Q				Q	Q	2Y				
CMS-SOV34D	0.75	32-02A H-15	A	2	B	O	Q				Q		2Y				
	GL S					C	Q				Q	Q	2Y				
CMS-SOV35A	0.75	32-02B G-16	A	2	A	O	Q				Q		2Y				
	GL S					C	Q			J	Q		2Y				
CMS-SOV35B	0.75	32-02A F-06	A	2	A	O	Q				Q		2Y				
	GL S					C	Q			J	Q		2Y				

**IST PLAN
RBS APPENDIX
VALVE SUMMARY LISTING**

**PROGRAM SECTION NO. CEP-IST-2
REVISION NO. 307
PAGE 57 OF 67**

SYSTEM: 552 CMS - CONTAINMENT ATMOSPHERE MONITORING

VALVE NO.	VALVE SIZE (in.) TYPE ACT.	P & ID NO. , COORD.	IST PASS	IST CODE CLASS	CODE CAT.	SAFETY POS.	REQUIRED TESTS AND FREQUENCY										RELIEF REQUEST (VRR)	OTHER (CSJ/ROJ/ CMJ/VPS)	NOTES:
							FS	PS	LT	LJ	ST	FT	PI	RV	EX	CM			
CMS-SOV35C	0.75	32-02B G-16	A	2	A	O	Q				Q		2Y						
	GL S					C	Q			J	Q		2Y						
CMS-SOV35D	0.75	32-02A G-06	A	2	A	O	Q				Q		2Y						
	GL S					C	Q			J	Q		2Y						

**IST PLAN
RBS APPENDIX
VALVE SUMMARY LISTING**

**PROGRAM SECTION NO. CEP-IST-2
REVISION NO. 307
PAGE 58 OF 67**

SYSTEM: 552 LMS - CONTAINMENT LEAKAGE MONITORING

VALVE NO.	VALVE SIZE (in.) TYPE ACT.		P & ID NO. , COORD.	IST PASS	IST CODE CLASS	CODE CAT.	SAFETY POS.	REQUIRED TESTS AND FREQUENCY									RELIEF REQUEST (VRR)	OTHER (CSJ/ROJ/ CMJ/VPS)	NOTES:
								FS	PS	LT	LJ	ST	FT	PI	RV	EX			
LMS-V12	0.75		32-02C N-12	P	2	A													
	G	H					C				J								
LMS-V14	0.75		32-02C L-15	P	2	A													
	G	H					C				J								
LMS-V16	0.75		32-02C J-13	P	2	A													
	G	H					C				J								
LMS-V7	0.75		32-02C J-15	P	2	A													
	G	H					C				J								

IST PLAN
RBS APPENDIX
VALVE SUMMARY LISTING

PROGRAM SECTION NO. CEP-IST-2
REVISION NO. 307
PAGE 59 OF 67

SYSTEM: 601 WCS - REACTOR WATER CLEANUP & FILTER (RWCU)

VALVE NO.	VALVE SIZE (in.) TYPE ACT.		P & ID NO. , COORD.	IST PASS	IST CODE CLASS	CODE CAT.	SAFETY POS.	REQUIRED TESTS AND FREQUENCY										RELIEF REQUEST (VRR)	OTHER (CSJ/ROJ/ CMJ/VPS)	NOTES:
								FS	PS	LT	LJ	ST	FT	PI	RV	EX	CM			
G33-MOVF001	6		26-03A K-10	A	1	A												CSJ-007		
	G	M					C	C			J	C		18M						
G33-MOVF004	6		26-03A K-12	A	1	A												CSJ-007		
	G	M					C	C			J	C		18M						
G33-MOVF028	4		26-03A F-16	A	2	A														
	G	M					C	Q			J	Q		18M						
G33-MOVF034	4		26-03A F-15	A	2	A														
	G	M					C	Q			J	Q		18M						
G33-MOVF039	6		26-03A H-03	A	2	A												CSJ-007		
	G	M					C	C			J	C		18M						
G33-MOVF040	6		26-03A H-04	A	2	A												CSJ-007		
	G	M					C	C			J	C		18M						
G33-MOVF053	4		26-03A J-21	A	2	A												CSJ-007		
	G	M					C	C			J	C		18M						
G33-MOVF054	4		26-03A L-20	A	2	A												CSJ-007		
	G	M					C	C			J	C		18M						
G33-VF051	4		26-03A F-03	A	2	C										V		CMJ		
	C	SA					C									V				
G33-VF052A	4		26-03A E-02	A	2	C										V		CMJ		
	C	SA					C									V				
G33-VF052B	4		26-03A E-04	A	2	C										V		CMJ		
	C	SA					C									V				
WCS-MOV172	2.5		26-03B D-04	A	2	A														
	G	M					C	Q			J	Q		18M						
WCS-MOV178	2.5		26-03B D-02	A	2	A														
	G	M					C	Q			J	Q		18M						
WCS-RV144	0.75		26-03A G-16	A	2	C, A	O								10Y					
	RV	SA					C				J				10Y					
WCS-RV154	0.75		26-03B D-02	A	2	C, A	O								10Y					
	RV	SA					C				J				10Y					
WCS-RV31A	0.5		36-01A P-05	A	3	C	O								10Y					
	RV	SA																		

PROGRAM SECTION NO. CEP-IST-2
REVISION NO. 307
PAGE 60 OF 67

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IST PLAN
RBS APPENDIX
VALVE SUMMARY LISTING

PROGRAM SECTION NO. CEP-IST-2
REVISION NO. 307
PAGE 61 OF 67

SYSTEM: 602 SFC - FUEL POOL COOLING

VALVE NO.	VALVE SIZE (in.) TYPE ACT.	P & ID NO. , COORD.	IST PASS	IST CODE CLASS	CODE CAT.	SAFETY POS.	REQUIRED TESTS AND FREQUENCY										RELIEF REQUEST (VRR)	OTHER (CSJ/ROJ/ CMJ/VPS)	NOTES:
							FS	PS	LT	LJ	ST	FT	PI	RV	EX	CM			
SFC-MOV119	12	34-02A	A	2	A														
	G M	J-11				C	Q			J	Q		18M						
SFC-MOV120	12	34-02A	A	2	A														
	G M	L-09				C	Q			J	Q		18M						
SFC-MOV121	8	34-02A	A	2	A														
	G M	N-10				C	Q			J	Q		18M						
SFC-MOV122	12	34-02A	A	2	A														
	G M	M-11				C	Q			J	Q		18M						
SFC-MOV139	8	34-02A	A	2	A														
	G M	N-09				C	Q			J	Q		18M						
SFC-V101	12	34-02A	A	2	C, A	O										V		CMJ	
	C SA	J-09				C				J						V			
SFC-V35	12	34-02A	A	3	B	O	2Y												
	G H	D-19																	
SFC-V350	0.75	34-02A	A	2	C, A	O										V		CMJ	
	C SA	L-09				C				J						V			
SFC-V351	0.75	34-02A	A	2	C, A	O										V		CMJ	
	C SA	N-09				C				J						V			
SFC-V37	12	34-02A	A	3	B														
	G H	D-19				C	2Y												
SFC-V39	12	34-02A	A	3	C	O										V		CMJ	
	C SA	H-18														V			
SFC-V40	12	34-02A	A	3	C	O										V		CMJ	
	C SA	E-19														V			
SFC-V51	10	34-02A	A	3	B														
	G H	E-09				C	2Y												
SFC-V55	10	34-02A	A	3	B	O	2Y												
	G H	D-09																	
SFC-V59	10	34-02A	A	3	C	O										V		CMJ	
	C SA	D-13														V			
SFC-V60	10	34-02A	A	3	C	O										V		CMJ	
	C SA	D-10														V			

**IST PLAN
RBS APPENDIX
VALVE SUMMARY LISTING**

**PROGRAM SECTION NO. CEP-IST-2
REVISION NO. 307
PAGE 62 OF 67**

SYSTEM: 602 SFC - FUEL POOL COOLING

VALVE NO.	VALVE SIZE (in.) TYPE ACT.	P & ID NO. , COORD.	IST PASS	IST CODE CLASS	CODE CAT.	SAFETY POS.	REQUIRED TESTS AND FREQUENCY										RELIEF REQUEST (VRR)	OTHER (CSJ/ROJ/ CMJ/VPS)	NOTES:
							FS	PS	LT	LJ	ST	FT	PI	RV	EX	CM			
SFC-V61	10	34-02A G-13	A	3	C	O										V		CMJ	
	C SA															V			
SFC-V62	10	34-02A G-09	A	3	C	O										V		CMJ	
	C SA															V			

IST PLAN
RBS APPENDIX
VALVE SUMMARY LISTING

PROGRAM SECTION NO. CEP-IST-2
REVISION NO. 307
PAGE 63 OF 67

SYSTEM: 609 DER - EQUIPMENT DRAINS - REACTOR BUILDING

VALVE NO.	VALVE SIZE (in.) TYPE ACT.		P & ID NO. , COORD.	IST PASS	IST CODE CLASS	CODE CAT.	SAFETY POS.	REQUIRED TESTS AND FREQUENCY								RELIEF REQUEST (VRR)	OTHER (CSJ/ROJ/ CMJ/VPS)	NOTES:
								FS	PS	LT	LJ	ST	FT	PI	RV	EX	CM	
DER-AOV126	4		32-09B B-09	A	2	A												
	GL	A					C	Q			J	Q	Q	18M				
DER-AOV127	4		32-09B B-08	A	2	A												
	GL	A					C	Q			J	Q	Q	18M				
DER-RV180	1		32-05B C-14	A	2	C	O								10Y			
	RV	SA																
DER-V14	8		32-09G F-19	A	2	C	O										V	
	C	SA					C										V	CMJ
DER-V15	8		32-09G F-18	A	2	C	O										V	
	C	SA					C										V	CMJ
DER-V16	8		32-09B H-02	A	2	C	O										V	
	C	SA					C										V	CMJ
DER-V17	8		32-09B H-03	A	2	C											V	
	C	SA					C										V	CMJ
DER-V4	0.75		32-09B B-09	A	2	C, A	O										V	
	C	SA					C				J						V	

PROGRAM SECTION NO. CEP-IST-2
REVISION NO. 307
PAGE 64 OF 67

VALVE NO.	VALVE SIZE (in.) TYPE ACT.		P & ID NO. , COORD.	IST PASS	IST CODE CLASS	CODE CAT.	SAFETY POS.	REQUIRED TESTS AND FREQUENCY									RELIEF REQUEST (VRR)	OTHER (CSJ/ROJ/ CMJ/VPS)	NOTES:	
	FS	PS						LT	LJ	ST	FT	PI	RV	EX	CM					
DFR-AOV101	4		32-09F C-08	A	2	A														
	GL	A					C	Q			J	Q	Q	18M						
DFR-AOV102	4		32-09K F-08	A	2	A														
	GL	A					C	Q			J	Q	Q	18M						
DFR-AOV144	3		32-09P M-03	A	A	B													VPS-004	
	G	A					C	18M				18M	18M	2Y						
DFR-AOV145	3		32-09P D-12	A	A	B													VPS-004	
	G	A					C	18M				18M	18M	2Y						
DFR-MOV146	4		32-09P D-11	A	2	B	O	Q			Q		2Y							
	G	M					C	Q			Q		2Y							
DFR-RV21	0.75		32-09F D-10	A	2	C	O							10Y						
	RV	SA																		
DFR-V1	8		32-09A C-20	A	2	C											V		CMJ	
	C	SA					C									V				
DFR-V107	4		32-09J L-13	A	3	C											V		CMJ	
	C	SA					C								V					
DFR-V108	4		32-09J L-12	A	3	C											V		CMJ	
	C	SA					C							V						
DFR-V117	4		32-09K K-02	A	3	C											V		CMJ	
	C	SA					C						V							
DFR-V118	4		32-09K K-01	A	3	C											V		CMJ	
	C	SA					C						V							
DFR-V127	4		32-09K G-13	A	3	C											V		CMJ	
	C	SA					C						V							
DFR-V128	4		32-09K G-12	A	3	C											V		CMJ	
	C	SA					C						V							
DFR-V130	2		32-09P C-15	A	A	C	O										V		CMJ	
	C	SA					C						V							
DFR-V131	2		32-09P C-14	A	A	C	O										V		CMJ	
	C	SA					C						V							
DFR-V140	2		32-09P L-06	A	A	C	O										V		CMJ	
	C	SA					C						V							

**IST PLAN
RBS APPENDIX
VALVE SUMMARY LISTING**

**PROGRAM SECTION NO. CEP-IST-2
REVISION NO. 307
PAGE 65 OF 67**

SYSTEM: 609 DFR - FLOOR DRAINS - REACTOR BUILDING

VALVE NO.	VALVE SIZE (in.) TYPE ACT.	P & ID NO. , COORD.	IST PASS	IST CODE CLASS	CODE CAT.	SAFETY POS.	REQUIRED TESTS AND FREQUENCY										RELIEF REQUEST (VRR)	OTHER (CSJ/ROJ/ CMJ/VPS)	NOTES:
							FS	PS	LT	LJ	ST	FT	PI	RV	EX	CM			
DFR-V141	2	32-09P L-05	A	A	C	O										V		CMJ	
	C SA					C										V			
DFR-V180	0.5	32-09F B-08	A	2	C, A	O										V		CMJ	
	C SA					C				J						V			
DFR-V181	4	32-09P C-10	A	2	C	O										V		CMJ	
	C SA					C										V			
DFR-V182	4	32-09P C-12	A	2	C	O										V		CMJ	
	C SA					C										V			
DFR-V2	8	32-09A C-20	A	2	C	O										V		CMJ	
	C SA					C										V			
DFR-V3	8	32-09A C-13	A	2	C	O										V		CMJ	
	C SA					C										V			
DFR-V4	8	32-09A C-12	A	2	C											V		CMJ	
	C SA					C										V			
DFR-V78	4	32-09K C-06	A	3	C											V		CMJ	
	C SA					C										V			
DFR-V79	4	32-09K C-06	A	3	C											V		CMJ	
	C SA					C										V			
DFR-V87	4	32-09J D-07	A	3	C											V		CMJ	
	C SA					C										V			
DFR-V88	4	32-09J D-07	A	3	C											V		CMJ	
	C SA					C										V			
DFR-V97	4	32-09J L-02	A	3	C											V		CMJ	
	C SA					C										V			
DFR-V98	4	32-09J L-01	A	3	C											V		CMJ	
	C SA					C										V			

**IST PLAN
RBS APPENDIX
VALVE SUMMARY LISTING**

**PROGRAM SECTION NO. CEP-IST-2
REVISION NO. 307
PAGE 66 OF 67**

SYSTEM: 610 SSR - REACTOR PLANT SAMPLING (PASS)

VALVE NO.	VALVE SIZE (in.) TYPE ACT.	P & ID NO. , COORD.	IST PASS	IST CODE CLASS	CODE CAT.	SAFETY POS.	REQUIRED TESTS AND FREQUENCY										RELIEF REQUEST (VRR)	OTHER (CSJ/ROJ/ CMJ/VPS)	NOTES:
							FS	PS	LT	LJ	ST	FT	PI	RV	EX	CM			
SSR-SOV130	0.5	21-02B	A	2	A														
	GL S	L-19				C	Q			J	Q	Q	18M						
SSR-SOV131	0.5	21-02B	A	2	A														
	GL S	L-17				C	Q			J	Q	Q	18M						
SSR-SOV133	0.75	21-02B	A	2	A													VPS-003	Leak rate test for annulus bypass leakage
	GL S	N-18				C	Q		V		Q	Q	2Y						
SSR-SOV134	0.75	21-02B	A	2	A													VPS-003	Leak rate test for annulus bypass leakage
	GL S	N-17				C	Q		V		Q	Q	2Y						
SSR-SOV139	1	21-02B	A	2	B														
	GL S	G-01				C	Q				Q	Q	2Y						
SSR-SOV140	1	21-02B	A	2	A													VPS-003	Leak rate test for annulus bypass leakage
	GL S	F-16				C	Q		V		Q	Q	2Y						
SSR-V706	1	21-02B	A	2	C, A											V		CMJ	Leak rate test for annulus bypass leakage
	C SA	F-17				C			V							V			

IST PLAN
RBS APPENDIX
VALVE SUMMARY LISTING

PROGRAM SECTION NO. CEP-IST-2
REVISION NO. 307
PAGE 67 OF 67

Valve Summary Listing Notes

No.

1 None

**IST PLAN
RBS APPENDIX
PUMP SUMMARY LISTING**

**PROGRAM SECTION NO. CEP-IST-2
REVISION NO. 307
PAGE 1 OF 5**

PUMP NO.	PUMP DESCRIPTION	PUMP TYPE	DRIVER	P & ID NO., COORD.	IST CODE CLASS	REQUIRED TESTS AND FREQUENCY					PRR/PPS	NOTES:
						S	dP	FR	Pd	V		
C41-PC001A	STANDBY LIQUID CONTROL PUMP 1A	Reciprocating	Motor	27-16A H-11	2			Q				Group B Test
C41-PC001A*								2Y	2Y	2Y		* Comprehensive Test
C41-PC001B	STANDBY LIQUID CONTROL PUMP 1B	Reciprocating	Motor	27-16A D-11	2			Q				Group B Test
C41-PC001B*								2Y	2Y	2Y		* Comprehensive Test
E22-PC001	HIGH PRESSURE CORE SPRAY PUMP	Vertical Line Shaft	Motor	27-04A G-16	2			Q				Group B Test
E22-PC001*							2Y	2Y		2Y		* Comprehensive Test
E22-PC003	HPCS PUMP DISCHARGE LINE FILL PUMP	Centrifugal	Motor	27-04A D-16	2		Q	Q		Q		Group A Test
E22-PC003*							2Y	2Y		2Y		* Comprehensive Test
E12-PC002A	RESIDUAL HEAT REMOVAL PUMP 2A	Vertical Line Shaft	Motor	27-07A B-13	2		Q	Q		Q		Group A Test
E12-PC002A*							2Y	2Y		2Y		* Comprehensive Test
E12-PC002B	RESIDUAL HEAT REMOVAL PUMP 2B	Vertical Line Shaft	Motor	27-07B B-16	2		Q	Q		Q		Group A Test
E12-PC002B*							2Y	2Y		2Y		* Comprehensive Test
E12-PC002C	RESIDUAL HEAT REMOVAL PUMP 2C	Vertical Line Shaft	Motor	27-07C H-11	2			Q				Group B Test
E12-PC002C*							2Y	2Y		2Y		* Comprehensive Test
E12-PC003	RESIDUAL HEAT REMOVAL PUMP DISCHARGE LINE FILL PUMP	Centrifugal	Motor	27-07C G-15	2		Q	Q		Q		Group A Test
E12-PC003*							2Y	2Y		2Y		* Comprehensive Test

**IST PLAN
RBS APPENDIX
PUMP SUMMARY LISTING**

**PROGRAM SECTION NO. CEP-IST-2
REVISION NO. 307
PAGE 2 OF 5**

PUMP NO.	PUMP DESCRIPTION	PUMP TYPE	DRIVER	P & ID NO., COORD.	IST CODE CLASS	REQUIRED TESTS AND FREQUENCY					PRR/PPS	NOTES:
						S	dP	FR	Pd	V		
E21-PC001	LOW PRESSURE CORE SPRAY PUMP	Vertical Line Shaft	Motor	27-05A C-19	2			Q				Group B Test
E21-PC001*							2Y	2Y		2Y		* Comprehensive Test
E21-PC002	LOW PRESSURE CORE SPRAY PUMP DISCHARGE LINE FILL PUMP	Centrifugal	Motor	27-05A G-13	2		Q	Q		Q		Group A Test
E21-PC002*							2Y	2Y		2Y		* Comprehensive Test
E51-PC001	REACTOR CORE ISOL COOLING PUMP	Centrifugal	Turbine	27-06A N-04	2	Q		Q				Group B Test
E51-PC001*						2Y	2Y	2Y		2Y		* Comprehensive Test
E51-PC003	REACTOR CORE ISOL COOLING SUB SYSTEM FILL PUMP	Centrifugal	Motor	27-06A C-10	2		Q	Q		Q		Group A Test
E51-PC003*							2Y	2Y		2Y		* Comprehensive Test
SWP-P2A	STANDBY SERVICE WATER PUMP A	Vertical Line Shaft	Motor	09-10E D-10	3			Q			PRR-2007-1	Group B Test
SWP-P2A*							2Y	2Y		2Y		* Comprehensive Test
SWP-P2B	STANDBY SERVICE WATER PUMP B	Vertical Line Shaft	Motor	09-10E D-04	3			Q			PRR-2007-1	Group B Test
SWP-P2B*							2Y	2Y		2Y		* Comprehensive Test
SWP-P2C	STANDBY SERVICE WATER PUMP C	Vertical Line Shaft	Motor	09-10E D-08	3			Q			PRR-2007-1	Group B Test
SWP-P2C*							2Y	2Y		2Y		* Comprehensive Test
SWP-P2D	STANDBY SERVICE WATER PUMP D	Vertical Line Shaft	Motor	09-10E D-07	3			Q			PRR-2007-1	Group B Test
SWP-P2D*							2Y	2Y		2Y		* Comprehensive Test

**IST PLAN
RBS APPENDIX
PUMP SUMMARY LISTING**

**PROGRAM SECTION NO. CEP-IST-2
REVISION NO. 307
PAGE 3 OF 5**

PUMP NO.	PUMP DESCRIPTION	PUMP TYPE	DRIVER	P & ID NO., COORD.	IST CODE CLASS	REQUIRED TESTS AND FREQUENCY					PRR/PPS	NOTES:
						S	dP	FR	Pd	V		
SWP-P3A	CNTRL BLDG CHILLED WATER RECIRC PUMP A	Centrifugal	Motor	09-10B M-16	3		Q	Q		Q		Group A Test
SWP-P3A*							2Y	2Y		2Y		* Comprehensive Test
SWP-P3B	CNTRL BLDG CHILLED WATER RECIRC PUMP B	Centrifugal	Motor	09-10B H-17	3		Q	Q		Q		Group A Test
SWP-P3B*							2Y	2Y		2Y		* Comprehensive Test
SWP-P3C	CNTRL BLDG CHILLED WATER RECIRC PUMP C	Centrifugal	Motor	09-10B K-16	3		Q	Q		Q		Group A Test
SWP-P3C*							2Y	2Y		2Y		* Comprehensive Test
SWP-P3D	CNTRL BLDG CHILLED WATER RECIRC PUMP D	Centrifugal	Motor	09-10B G-17	3		Q	Q		Q		Group A Test
SWP-P3D*							2Y	2Y		2Y		* Comprehensive Test
HVK-P1A	CONTROL BLDG CHILLED WATER PUMP 1A	Centrifugal	Motor	22-14J K-12	3		Q	Q		Q		Group A Test
HVK-P1A*							2Y	2Y		2Y		* Comprehensive Test
HVK-P1B	CONTROL BLDG CHILLED WATER PUMP 1B	Centrifugal	Motor	22-14H K-12	3		Q	Q		Q		Group A Test
HVK-P1B*							2Y	2Y		2Y		* Comprehensive Test
HVK-P1C	CONTROL BLDG CHILLED WATER PUMP 1C	Centrifugal	Motor	22-14J H-11	3		Q	Q		Q		Group A Test
HVK-P1C*							2Y	2Y		2Y		* Comprehensive Test
HVK-P1D	CONTROL BLDG CHILLED WATER PUMP 1D	Centrifugal	Motor	22-14H H-11	3		Q	Q		Q		Group A Test
HVK-P1D*							2Y	2Y		2Y		* Comprehensive Test

**IST PLAN
RBS APPENDIX
PUMP SUMMARY LISTING**

**PROGRAM SECTION NO. CEP-IST-2
REVISION NO. 307
PAGE 4 OF 5**

PUMP NO.	PUMP DESCRIPTION	PUMP TYPE	DRIVER	P & ID NO., COORD.	IST CODE CLASS	REQUIRED TESTS AND FREQUENCY					PRR/PPS	NOTES:
						S	dP	FR	Pd	V		
SFC-P1A	FUEL POOL COOLING PUMP A	Centrifugal	Motor	34-02A G-16	3		Q	Q		Q		Group A Test
SFC-P1A*							2Y	2Y		2Y		* Comprehensive Test
SFC-P1B	FUEL POOL COOLING PUMP B	Centrifugal	Motor	34-02A D-16	3		Q	Q		Q		Group A Test
SFC-P1B*							2Y	2Y		2Y		* Comprehensive Test
DFR-P5A	AUXILIARY BUILDING FLOOR DRAIN SUMP PUMP 5A	Centrifugal	Motor	32-09P B-16	NC			18M			PPS-001	
DFR-P5B	AUXILIARY BUILDING FLOOR DRAIN SUMP PUMP 5B	Centrifugal	Motor	32-09P K-06	NC			18M			PPS-001	
DFR-P5D	AUXILIARY BUILDING FLOOR DRAIN SUMP PUMP 5D	Centrifugal	Motor	32-09P B-15	NC			18M			PPS-001	
DFR-P5E	AUXILIARY BUILDING FLOOR DRAIN SUMP PUMP 5E	Centrifugal	Motor	32-09P K-05	NC			18M			PPS-001	

Pump Summary Table Notes

No.

1 None

W3 APPENDIX

INSERVICE TESTING PLAN

ENTERGY NUCLEAR

ENGINEERING PROGRAMS

TABLE OF CONTENTS

<u>SECTION</u>	<u>PAGE NUMBER</u>
Table of Contents.....	2
Valve Relief Requests.....	3
Valve Position Statements.....	4
Pump Relief Requests.....	7
Pump Position Statements.....	10
Cold Shutdown Justifications.....	12
Refueling Outage Justifications.....	22
Database Report – Condition Monitoring Justifications	
Database Report - Valve Summary Listings	
Database Report - Pump Summary Listings	

IST PLAN W3 APPENDIX	PROGRAM SECTION NO.: CEP-IST-2 REVISION: 307 PAGE: 3 OF 22
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VALVE RELIEF REQUESTS

NONE

VALVE POSITION STATEMENTS

VPS-001

Component(s) Affected

HRA-0109A	HRA-0110A	HRA-0126A
HRA-0109B	HRA-0110B	HRA-0126B

Clarification

A common control switch located in the Control Room controls the three valves in each train. They also share common open and closed indicating lights located in the Control Room and at the Hydrogen Analyzer Control Panel A (B).

The open and closed position limit switches are wired such that all three valves in a train must attain the demanded position for the appropriate position indicating light for that train (red or green) to illuminate. Should one or more of the three valves in the group fail to attain the demanded position, both indicating lights (red and green) remain illuminated which confirms that at least one valve did not complete its stroke.

These valves are stroke-tested quarterly in accordance with the requirements of the Code. They are fast-acting solenoid valves and as such, are assigned a maximum allowed stroke time of 2 seconds in accordance with the Code. The three valves in each train are stroke-time tested simultaneously as a group using the position indicating lights for reference. Based on the limit switch wiring logic, the stroke-time data obtained is that of the slowest valve. Therefore, if the stroke time of the group is less than or equal to 2 seconds, it is assured that all three valves meet the acceptance criteria. Failure of the group to attain the demanded position in the required time will result in a test failure for all three valves.

VPS-002

Component(s) Affected

HRA-0201A	HRA-0201B
HRA-0202A	HRA-0202B

Clarification

The above valve pairs are controlled by the same actuating relay from the respective Hydrogen Analyzer Control Panel A (B). These valves are not equipped with position indication. During performance of quarterly stroke testing of these valves, travel to the open and closed position is verified by monitoring system flow. However, the indication of low flow can be obtained by the closure of one valve.

Further assurance of valve closure is obtained during the performance of leak rate testing each refueling in accordance with Technical Specification 6.8.4(a).

VPS-003

Component(s) Affected

MS-417

VALVE POSITION STATEMENTS

Clarification

The above listed component is adequately tested during surveillance tests of the Turbine Driven Emergency Feedwater Pump.

VPS-004

Component(s) Affected

ACC-138A ACC-138B

Clarification

The performance of the FSE-0, 2Y manual valve stroke is in support of the requirement to manually stroke the valve open during a tornado accident event.

VPS-005

Component(s) Affected

NG-609	NG-809
NG-610	NG-810
NG-709	NG-909
NG-710	NG-910

Clarification

As described in ER-W3-97-0547-00-01, these solenoid valves and their respective pressure regulating valves function together to limit leakage of nitrogen into the instrument air headers serving various safety-related valves. Leakage is limited to ensure that an adequate inventory of nitrogen is available in the accumulators consistent with accident analysis assumptions.

The Code states:

“Category A valves shall be leakage tested, except that valves which function in the course of plant operation in a manner that demonstrates functionally adequate leak-tightness need not be additionally leakage tested. In such cases, the valve record shall provide the basis for the conclusion that operational observations constitute satisfactory demonstration.”

On a quarterly basis, during exercising tests of the solenoid valves, observations of header pressure are made and recorded. Leak-tightness of the valve pair (solenoid valve and pressure regulating valve) is verified by confirming that header pressure is in the normal range of instrument air pressure. If leakage through the valve pair is greater than leakage out of the header, a higher than normal header pressure will be observed and the header relief valve will relieve if pressure reaches 125 psig.

VALVE POSITION STATEMENTS

VPS-006

Component(s) Affected

CHW-1182A CHW-1182C
CHW-1182B

Clarification

The above listed components are adequately tested during surveillance tests of their respective Essential Chiller units.

VPS-007

Component(s) Affected

CVR-101 CVR-201
CVR-102 CVR-202

Clarification

These components perform a primary containment vacuum relief function and are subject to testing in accordance with the Code, which specifies operability and seat leakage test requirements. The Code frequency for operability testing is at each refueling outage. Seat leakage testing is performed on a two-year frequency. The Code operability tests include actuation to the open and closed position, set-point verification, and verification of the proper operation of pressure and position sensing accessories.

PUMP RELIEF REQUESTS

10 CFR 50.55a Request Number PRR-WF3-2007-1	
Proposed Alternative in Accordance with 10 CFR 50.55a(a)(3)(i)	
10 CFR 50.55a Request Title: Instrument Range Alternative Request	
PLANT/UNIT:	Waterford Steam Electric Station Unit 3
INTERVAL:	Third 120 Month Inservice Testing Interval
COMPONENTS AFFECTED:	<p>CVC-MPMP-0001A, Charging Pump A</p> <p>CVC-MPMP-0001A/B, Charging Pump AB</p> <p>CVC-MPMP-0001B, Charging Pump B</p> <p>(The above are ASME Code Class 2, Positive Displacement, Motor Driven, OM Code Category A pumps.)</p>
CODE EDITION AND ADDENDA:	ASME OM Code-2001 Edition with addenda through OMb Code-2003 Addenda
REQUIREMENTS:	<p>ASME OM Code-2001 Edition with addenda through OMb Code-2003 Addenda Subsection ISTB-3510</p> <p>(b) Range</p> <p>(1) The full-scale range of each analog instrument shall be not greater than three times the reference value.</p> <p>(The above requirement is the same as that provided in the ASME OM Code-1998 Edition with addenda through OMb Code-2000 Addenda, which is discussed in Revision 1 of NUREG 1482, Section 5.5.1.)</p>
REASON FOR RELIEF REQUEST:	<p>Pursuant to 10 CFR 50.55a, "Codes and Standards", paragraph (a)(3)(i), an alternative is requested when using the requirement of ASME OM Code ISTB-3510(b)(1).</p> <p>This alternative is a re-submittal of NRC approved 2nd Interval PRR – 01 that was based on the ASME OM Code 1987 Edition with addenda through OMa-1988 Addenda. This 3rd Interval alternative request is based on the ASME OM Code-2001 Edition with addenda through OMb Code-2003 Addenda. There have been no substantive changes to this alternative, to the OM Code requirements or to the basis for use, which we believe would alter the previous NRC Safety Evaluation conclusions.</p>

PUMP RELIEF REQUESTS

10 CFR 50.55a Request Number PRR-WF3-2007-1

	<p>The Charging Pumps' discharge flow indicator does not comply with this requirement. Each of the three pumps produces a flow of 44 gpm. The flow gage has a full-scale range of 150 gpm in order to accommodate three-pump flow, such as during safety injection operations. The full-scale range is approximately 3.4 times the reference value.</p>
PROPOSED ALTERNATIVE AND BASIS:	<p>The existing, installed flow indicator will be used for the Group A and Comprehensive pump testing per ASME OM Code-2001 Edition with addenda through OMB Code-2003 Addenda ISTB requirements.</p> <p>According to Revision 1 of NUREG 1482, Section 5.5.1, when the range of a permanently installed analog instrument is greater than three times the reference value, but the accuracy of the instrument is more conservative than that required by the Code, the staff may grant approval to use an alternative when the combination of the range and accuracy yields a reading that is at least equivalent to that achieved using instruments that meet the Code requirements (i.e., up to $\pm 6.0\%$).</p> <p>The accuracy of the instrument used for measuring charging pump discharge flow is $\pm 0.7\%$. This accuracy is more conservative than the $\pm 2.0\%$ required by Subsection ISTB 3510 of the ASME OM Code-2001 Edition with addenda through OMB Code-2003 Addenda.</p> <p>The combination of range and accuracy for the charging pump discharge flow instrument is 2.39% which is more conservative than the combined range and accuracy of instruments that meet the minimum code requirements (i.e. up to $\pm 6\%$). An alternative is requested in accordance with Revision 1 of NUREG-1482 section 5.5.1 (Range and Accuracy of Analog Instruments).</p> <p>Based on the determination that the alternative provides an acceptable level of quality and safety, this proposed alternative should be granted pursuant to 10 CFR 50.55a(a)(3)(i).</p>
DURATION:	<p>3rd 120-month interval Pump and Valve Inservice Testing Plan (December 1, 2007, through November 30, 2017 based on TAC NO. M94473).</p>
PRECEDENTS:	<p>Relief from this requirement was previously granted as PRR-01 during Waterford's second 120 month Inservice Testing Interval (TAC NO. MA0264).</p>
REFERENCES:	<p>Revision 1 of NUREG-1482, Guidelines for Inservice testing at Nuclear Power Plants, Final Report, Published January 2005</p>

IST PLAN W3 APPENDIX	PROGRAM SECTION NO.: CEP-IST-2 REVISION: 307 PAGE: 9 OF 22
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PUMP RELIEF REQUESTS

10 CFR 50.55a Request Number PRR-WF3-2007-1	
STATUS:	Submitted for Nuclear Regulatory Commission review and approval by CNRO-2007-00042.

PUMP POSITION STATEMENTS

PPS-001

Component(s) Affected

SI-MPMP-0001A, Low Pressure Safety Injection Pump A

SI-MPMP-0001B, Low Pressure Safety Injection Pump B

Clarification

The Test Circuits for LPSI Pumps A & B were modified to include the minimum flow recirculation path along with the previous long cycle flow path. This modification was necessary to allow any pressure increase due to long cycle loop warm-up to relieve back to the RWSP. Test flow rate is adjusted such that the sum of both flow paths equals the reference flow rate.

PPS-002

Component(s) Affected

SI-MPMP-0002A, High Pressure Safety Injection Pump A

SI-MPMP-0002B, High Pressure Safety Injection Pump B

SI-MPMP-0002AB, High Pressure Safety Injection Pump AB

Clarification

Two sets of reference values are maintained for high pressure safety injection pump. In order to test pumps at a significant flow rate, the long cycle recirculation flow test is performed to satisfy inservice testing requirements when the reactor coolant system (RCS) is greater than or equal to 1750 PSIA. However, the long cycle recirculation flow test path would cause the injection of HPSI pump flow into the RCS when the RCS is at reduced pressure. Therefore, when the reactor coolant system (RCS) is less than 1750 PSIA, the mini-flow test is performed.

PPS-003

Component(s) Affected

EFW-MPMP-0001AB, Emergency Feed Water Pump AB

Clarification

EFW AB Pump is driven by a Terry Turbine. This turbine has a single setpoint governor control system. There are no controls to vary the turbine speed during operation. The turbine speed does vary slightly due to temperature changes in the governor oil system. This results in the discharge pressure changing slightly. The speed has been within a 2% band during the 2nd ten year interval.

The EFW system does not have the capability to perform a full flow test during plant operation. The IST surveillance is performed with the EFW AB Pump on recirculation flow. This is a fixed resistance system;

PUMP POSITION STATEMENTS

flow is set by an orifice in the recirculation line. The design limits of EFW AB Pump bound the discharge pressure to a range of ~7%; maximum discharge pressure is 1413 psig and the minimum discharge pressure is 1317 psig. The speed, flow rate, discharge pressure and differential pressure are recorded for the pump during the surveillance test.

When the speed of this specific pump varies from the exact reference speed, an adjustment is made to the differential pressure reading to prevent actual degradation from being masked by higher turbine speeds and to prevent false low or unacceptable data when data is collected at less than reference speed. Although this differential pressure adjustment is neither required nor prohibited by the code, it is seen as an acceptable and necessary action to obtain differential pressure readings that meet code intent. The adjustment provides for testing values considered to be more useful and appropriate.

COLD SHUTDOWN JUSTIFICATIONS

CSJ-001

Component(s) Affected

CVC-216A	CVC-216B	SI-323A	SI-323B
SI-324A	SI-324B	SI-325A	SI-325B
SI-326A	SI-326B		

Test Requirement

The Code requires that valves be exercised and stroked timed at a Quarterly frequency.

Basis for Deferral of Testing

CVC-216A and B, are air operated isolation valves in the auxiliary pressurizer spray lines. These valves cannot be exercised during power operation since opening these valves would initiate auxiliary pressurizer spray which would result in primary pressure transients and thermal shock to the pressurizer and associated piping and nozzles. These valves cannot be partial stroke exercised during power operations for the same reasons.

Valves SI-323A, SI-323B, SI-324A, SI-324B, SI-325A, SI-325B, SI-326A and SI-326B are air operated Safety Injection Tank vent valves. These valves cannot be exercised during power operation since opening any of these valves would result in a decrease in pressure in the associated safety injection tank which could render that tank unable to perform its safety function. A failure of a vent valve in the open position during testing would render the associated safety injection tank inoperable. These valves cannot be partial stroke exercised for the same reasons.

Alternate Testing

These valves will be full stroke tested during cold shutdowns/refueling outages in accordance with the IST Program.

CSJ-002

Component(s) Affected

RC-1014	RC-1015	RC-1017
RC-3183	RC-3184	RC-3186

Test Requirement

The Code requires that Active Category A and B valves be tested nominally every three months.

Basis for Deferral of Testing

Operability testing (full-stroke) of these normally-closed valves during power operation would cause a loss of reactor coolant which would produce unwanted pressure and level changes in the Reactor Coolant System. These pilot-operated solenoid valves, which are installed with RCS pressure under the pilot disc, have historically had a "burping" problem at other nuclear plants. With the RCS pressurized, opening either valve

COLD SHUTDOWN JUSTIFICATIONS

produces a pressure surge in the line which causes the other valve to pop open, thereby opening a line from the RCS to the Quench Tank. The valves can generally be closed after flow stabilizes in the vent line.

Operability testing (full-stroke) during cold shutdown with the RCS pressurized produces the same effects as testing at power except that the amount of water lost would be less. Plant Technical Specification 4.4.10, which is based on NUREG-0737 and Generic Letter No. 83-37, requires that these valves be stroked and flow be verified at least once per 18 months during cold shutdown or refueling. Testing these valves more frequently, such as during each cold shutdown with the RCS pressurized, produces some undesirable effects. For example, the water and gases vented from the RCS to the Quench Tank are contaminated with radioactive material. Routinely venting the RCS would cause an increase in radiation and contamination levels inside containment, particularly if the Quench Tank rupture disc pressure is exceeded. In addition, due to valve design, routinely opening these valves greatly increases the probability of them sticking open which will overfill the Quench Tank and dump contaminated water on the containment floor. However, these valves can be safely exercised during cold shutdown if the RCS is depressurized. Valve design does not facilitate partial-stroke testing.

Alternate Testing

The valves will be full-stroke tested for operability during each cold shutdown if the Reactor Coolant System is depressurized below 200psia. Otherwise, these valves will be full stroked at cold shutdown or refueling at least once per 18 months per plant Technical Specification 4.4.10.

CSJ-003

Components Affected

BAM-113A BAM-113B
CVC-507

Test Requirement

The Code requires that Active Category A and B valves be tested nominally every three months.

Basis for Deferral of Testing

Operability testing (full-stroke) of these normally closed valves during power operation could cause concentrated boric acid to be made available to the suction of the charging pumps. The charging pumps would inject the boric acid into the Reactor Coolant System causing overboration and possibly causing a plant shutdown. The design of the valves will not facilitate a partial-stroke test. The testing of BAM-113A(B) during ESFAS subgroup relay testing is also exempted during power operation. Reference Technical Specification Table 4.3-2 Table Notation (3).

Alternate Testing

These valves will be full stroke tested during cold shutdowns and refueling outages in accordance with the IST Program.

COLD SHUTDOWN JUSTIFICATIONS

CSJ-004

Components Affected

CVC-401 RC-606

Test Requirement

The Code requires that Active Category A and B valves be tested nominally every three months.

Basis for Deferral of Testing

CVC-401, isolation valve for the RC Pump seal leak-off return to the volume control tank, and RC-606, isolation valve on the seal water line from the RC Pumps to the Volume Control Tank, cannot be exercised during power operation since failure of the valve in the closed position would cause a loss of the seal water cooling function for the reactor coolant pumps which could damage the pumps and result in a reactor trip.

Alternate Testing

These valves will be full-stroke tested during cold shutdowns and refueling outages in accordance with the IST Program.

CSJ-005

Components Affected

CVC-101 CVC-103
CVC-109

Test Requirement

The Code requires that Active Category A and B valves be tested nominally every three months.

Basis for Deferral of Testing

These valves are isolation valves in the charging line to the reactor coolant system and the letdown line from the reactor coolant system. They cannot be exercised during power operation since failure of any of these valves in the closed position would isolate letdown or charging flow which would result in loss of pressurizer level control which could result in a reactor trip. Exercising these valves during power operation could also result in thermal shock to the regenerative heat exchanger.

Alternate Testing

These valves will be full-stroke tested during cold shutdowns and refueling outages in accordance with the IST Program.

CSJ-006

Components Affected

CVC-183

COLD SHUTDOWN JUSTIFICATIONS

Test Requirement

The Code requires that Active Category A and B valves be tested nominally every three months.

Basis for Deferral of Testing

CVC-183, the isolation valve in the line from the Volume Control Tank (VCT) to the charging pump suction header, cannot be exercised during power operation since failure of the valve in the closed position during testing would isolate charging pump suction from the VCT which would cause a loss of pressurizer level control which could result in a reactor trip. Exercising this valve during power operation could also result in thermal shock to the regenerative heat exchanger.

Alternate Testing

This valve will be full-stroke exercised during cold shutdowns and refueling outages in accordance with the IST Program.

CSJ-007

Components Affected

ACC-112A	ACC-112B	ACC-139A	ACC-139B
CC-301A	CC-301B	CC-322A	CC-322B

Test Requirement

The Code requires that Active Category A and B valves be tested nominally every three months.

Basis for Deferral of Testing

Exercising these valves during normal operation is impractical. Opening verification for the check valves requires that cooling flow to the essential chiller heat exchangers be provided by the ACCW system utilizing supply and return flow paths which are partially common to both the CCW and ACCW systems. The CCW process stream contains tritium and cesium activity and the ACCW process stream contains high chloride levels resulting from treatment with a biocide used to control biological fouling. When the source of cooling for the chillers is switched to ACCW for testing, the CCW fluid in the common sections of the flow path is mixed with the ACCW fluid, thereby introducing tritium and cesium into the ACCW system. After testing is complete and the systems are realigned for normal operation, the ACCW fluid in the common sections of the flow path is mixed with the CCW fluid resulting in bacteria and chlorides (from biocides used to treat ACCW) being introduced into the essentially pure CCW system. This necessitates treatment of CCW with biocides (to control biological fouling CCW) which further increases chloride levels in CCW which is undesirable. In addition, the corrosion inhibitor used in CCW can be consumed by certain bacteria causing by products which can be damaging to system components.

While stroking the air-operated butterfly valves can be performed independently of the check valves and without flow in the common flow paths, experience has shown that other problems are encountered. Specifically, a hydraulic transient has occurred because the piping which comprises the common flow paths does not remain full when the chillers are aligned and subsequently realigned during testing. To prevent this, an attempt was made to conduct the test by isolating the return flow path from the chillers and operating the ACCW pump during the test by isolating the return flow path from the chillers and operating the ACCW pump during the test to maintain the header full. This effort eliminated the hydraulic transient problem, but

COLD SHUTDOWN JUSTIFICATIONS

sufficient mixing between the CCW System and the ACCW System still occurs causing the cross contamination problem described above.

Alignment of the Essential Chillers to the WCT during normal operations is not allowed. If allowed during normal operations, an accident would have to be postulated in this system alignment. Following an accident with a LOOP, significant voiding and/or air intrusion would occur in the Chiller cooling water outlet piping because of draindown via the open WCT spray nozzles and an idle ACCW pump. Upon pump restart, a waterhammer would occur in this section of piping.

Quarterly testing requires long-term cleanup activities (feed and bleed) to remove the impurities from the CCW system and generates enormous amounts of waste water which must be processed for disposal. In addition, the contamination of ACCW with tritium and cesium creates radiological hazards. ACCW basin water overflows into the dry cooling tower sumps and out to storm drains. This undiluted release path accounts for the majority of Waterford's offsite dose during normal operations. Cold shutdown testing of the subject valves will allow sufficient time and operational flexibility to establish provisions to minimize the effects of cross contamination.

Alternate Testing

These valves will be full stroke tested during cold shutdowns/refueling outages in accordance with the IST Program.

CSJ-008

Components Affected

FW-173A FW-173B

Test Requirement

The Code requires that Active Category A and B valves be tested nominally every three months.

Basis for Deferral of Testing

FW-173A and FW-173B are the main feedwater regulating valves. They cannot be full stroke tested during power operation since stroking these valves will affect the steam generator water level control system and could disturb the steam generator level sufficiently to cause a turbine and reactor trip.

Part-stroke exercising of these valves quarterly increases the risk of a valve closure when the unit is generating power.

Valves FW-173A and B are not ASME Code Class components and because of this their current testing by the IST Program is beyond the scope of 10CFR50.55a(f).

Alternate Testing

These valves will be full stroke tested during cold shutdowns and refueling outages in accordance with the IST Program.

COLD SHUTDOWN JUSTIFICATIONS

CSJ-009

Components Affected

FW-184A FW-184B

Test Requirement

The Code requires that Active Category A and B valves be tested nominally every three months.

Basis for Deferral of Testing

The feedwater isolation valves, cannot be full-stroke tested during power operation since closing these valves would interrupt feedwater flow to the steam generators which would cause a loss of steam generator water level control and possibly a plant shutdown.

Part-stroke exercising of these valves quarterly increases the risk of a valve closure when the unit is generating power.

Alternate Testing

These valves will be full stroke tested during cold shutdowns and refueling outages in accordance with the IST Program.

CSJ-010

Components Affected

SI-401A SI-405A
SI-401B SI-405B

Test Requirement

The Code requires that Active Category A and B valves be tested nominally every three months.

Basis for Deferral of Testing

These valves are isolation valves in the shutdown cooling suction lines from the reactor coolant system. They cannot be exercised during power operation since there is an interlock associated with reactor coolant system pressure which prevents the valves from opening when reactor coolant system pressure is greater than 400 psig in order to prevent over pressurization of the shutdown cooling system.

Alternate Testing

These valves will be full stroke exercised during cold shutdowns and refueling outages in accordance with the IST Program.

COLD SHUTDOWN JUSTIFICATIONS

CSJ-011

Components Affected

FW-166A FW-166B

Test Requirement

The Code requires that Active Category A and B valves be tested nominally every three months.

Basis for Deferral of Testing

FW-166A and FW-166B are the bypass valves for the main feedwater control valves. They cannot be full stroke tested during power operation since stroking these valves will affect the steam generator water level control system and could disturb the steam generator level sufficiently to cause a turbine and reactor trip.

Part-stroke exercising of these valves quarterly increases the risk of a valve closure when the unit is generating power.

Valves FW-166A and B are not ASME Code Class components and because of this their current testing by the IST Program is beyond the scope of 10CFR50.55a(f).

Alternate Testing

These valves will be full stroke tested during cold shutdowns and refueling outages in accordance with the IST Program.

CSJ-012

Components Affected

MS-124A MS-124B

Test Requirement

The Code requires that Active Category A and B valves be tested nominally every three months.

Basis for Deferral of Testing

MS-124A and MS-124B, the main steam isolation valves, cannot be full-stroke tested during power operations since closing one of these valves would interrupt steam flow from the associated steam generator which would result in a plant shutdown.

Part-stroke exercising of these valves quarterly increases the risk of a valve closure when the unit is generating power.

Alternate Testing

These valves will be full stroke tested during cold shutdowns and refueling outages in accordance with the IST Program.

COLD SHUTDOWN JUSTIFICATIONS

CSJ-013

Components Affected

CC-641 CC-710 CC-713

Test Requirement

The Code requires that Active Category A and B valves be tested nominally every three months.

Basis for Deferral of Testing

These valves are isolation valves in the component cooling water lines to the reactor coolant pumps and the control element drive mechanisms (CEDMs). They cannot be exercised during power operations since cycling of these valves would interrupt the cooling water supply to the reactor coolant pumps and failure of a valve in the closed position during testing would result in the loss of cooling water to the reactor cooling pumps and the CEDMs.

Alternate Testing

These valves will be full stroke tested during cold shutdowns and refueling outages in accordance with the IST Program.

CSJ-014

Component Affected

IA-909

Test Requirement

The Code requires that Active Category A and B valves be tested nominally every three months.

Basis for Deferral of Testing

IA-909 cannot be exercised during power operation since cycling this valve would cause an interruption of instrument air to instruments and equipment inside containment and failure of the valve in the closed position during testing would cause a complete loss of instrument air to equipment inside containment.

Alternate Testing

This valve will be full stroke tested during cold shutdowns and refueling outages in accordance with the IST Program.

CSJ-015

Components Affected

RC-301A RC-301B

COLD SHUTDOWN JUSTIFICATIONS

Test Requirement

The Code requires that Active Category A and B valves be tested nominally every three months.

Basis for Deferral of Testing

RC-301A and RC-301B, the pressurizer normal spray control valves, are sized such that fully opening these valves would depressurize the reactor coolant system at a rate greater than the pressurizer heaters can offset which would result in unwanted pressure transients.

Alternate Testing

These valves will be full stroke tested during cold shutdowns and refueling outages in accordance with the IST Program.

CSJ-016

Components Affected

SI-407A SI-407B

Test Requirement

The Code requires that Active Category A and B valves be tested nominally every three months.

Basis for Deferral of Testing

These valves are isolation valves in the shutdown cooling suction lines from the reactor coolant system. The piping upstream of SI-407A(B) is at a higher elevation than the Refueling Water Storage Pool (RWSP), the normally aligned suction source of the Low Pressure Safety Injection Pump during power operation. When SI-407A(B) is opened during plant operation, water is drained from the upstream piping to the RWSP forming a void in the shutdown cooling suction piping. When this void is refilled, thermal binding may occur with SI-405A(B), the shutdown Cooling Suction Inside Containment Isolation Valve.

Alternate Testing

These valves will be full stroke exercised during cold shutdowns and refueling outages in accordance with the IST Program.

CSJ-017

Component(s) Affected

SA-9082

Test Requirement

The Code requires that Active Category A and B valves be tested nominally every three months.

COLD SHUTDOWN JUSTIFICATIONS

Basis for Deferral of Testing

SA-9082, CC-710 Instrument Air Backup Supply Outside Containment Stop, is a solenoid operated containment isolation valve that provides back-up air to CC-710, Containment CCW Return Header Inside Containment Isolation Valve, another containment isolation valve. If SA-9082 is declared inoperable, the valve would be required to be isolated within four hours per Technical Specification 3.6.3. Once Essential Air is isolated, CC-710, also a containment isolation valve, would be inoperable and would be required to be isolated within four hours. This would require a plant shutdown.

SA-9082 is in the essential air supply line to the air accumulator for CC-710. SA-9082 is locked closed during normal operations by key switch at CP-8. OP-901-511, Instrument Air Malfunction, directs the operators to place the Essential Air System in service to automatically supply makeup pressure to the instrument air valve accumulators 10 hours after normal Instrument Air is lost. SA-9082 must be capable of opening whenever CC-710 closure for containment isolation is required and the instrument air supply to the accumulator is unavailable. SA-9082 is a Containment Isolation Valve and must close when containment isolation is required and the CC-710 air accumulator is not being recharged from the essential air supply. Essential Air was installed to CC-710 to provide backup air to maintain CC-710 closed for at least thirty days post accident. SA-9084, the upstream manual isolation valve, is in the -4 RAB Wing Area and may not be accessible following an accident.

CC-710 is a 10" air operated butterfly valve that is the inside Containment Isolation valve for CC return from reactor coolant pumps and control element drive mechanisms. This valve is normally open for cooling water return from RCPs/CEDM Coolers, which are not required for safety functions. The valve is designed to fail open on loss of air or power to protect against inadvertent damage to the RC pumps, but the fail action is retarded by addition of an Air Accumulator. Since these components are not required to operate or be supplied with cooling water to support safe shutdown or to mitigate accident consequences, this valve has no open safety function. This valve shuts on a containment spray actuation signal (CSAS) to perform a containment isolation function. This valve is tested only during cold shutdowns and refueling outages.

SA-9082 is time tested by observing position indication while the valve is stroked. The position indication is tested at a 2 year interval as required by the Code by using leak rate test equipment. Position indication testing is impractical during power operation due to setup and performance limitations of leak rate testing. There have been several problems associated with SA-9082 position indication. Reoccurrence of problems associated with position indication during surveillance testing may result in misdiagnosing the valve of failing to perform it's intended safety function and an unnecessary plant transient since reactor coolant pumps must be secured within the 4 hour time period. The 4 hour time frame is too restrictive to troubleshoot for position indication failure. A Technical Specification change is being considered to extend the allowed outage time from 4 hours to 7 days for the associated containment isolation valves.

SA-9082 is normally closed and only operated for surveillance testing. There are no automatic features associated with the valve. The alternative testing that is performed during cold shutdown refueling outages will be the only time that the valve is expected to experience any wear. Based on the valve's performance history of consistent stroke times there is no reason to expect that the extended frequency between testing will result in any new degradation of this valve. Therefore, the restrictive troubleshooting time frame addressed above combined with the expectation of continued satisfactory stroke performance provides justification for the determination that it is not practical to perform full stroke testing of this valve on a quarterly basis. Adequate time exists at cold shutdown and refueling outages to full stroke test this valve.

Alternate Testing

These valves will be full stroke tested during cold shutdown and refueling outages in accordance with the IST Program.

REFUEL OUTAGE JUSTIFICATIONS

ROJ-001

Components Affected

HRA-0101A
HRA-0101B

Test Requirement

The Code requires these valves to be exercised and stroke timed at a quarterly frequency.

Basis for Deferral of Testing

Stroke timing these valves can be accomplished using non-intrusive test equipment that has to be attached to the valves while they stroke. Since these valves are located inside the Containment building, and scaffolding is required to be installed/removed to support testing, it is not practical to stroke time these valves quarterly at power.

Alternate Testing

Verification of normal sample flow through the appropriate Hydrogen Analyzer demonstrates that the valves move from the closed position to the open position. For HRA-0201A(B) and HRA-0202A(B) which also have closed safety functions, subsequent verification of low flow indication after sampling is secured demonstrates that the valves move from the open position to the closed position. Valve stroke time measurement will be performed during refuel outages using non-intrusive test equipment.

CONDITION MONITORING JUSTIFICATIONS

NOTE: CEP-IST-1, W3 Appendix, Enclosure 1 provides the data collected, and the Advisory Panel review, that supports the following testing requirements.

Condition Monitoring Justification: **ACCMVAAA1045-A**

Valves in Grouping: ACCMVAAA1045-A & ACCMVAAA1045-B

CM Testing Requirements Perform disassembly at a frequency that may be extended to one valve in the group every 2R. Change soft seats on a 5R frequency.

Condition Monitoring Justification: **ACCMVAAA1045-B**

Valves in Grouping: ACCMVAAA1045-A & ACCMVAAA1045-B

CM Testing Requirements Perform disassembly at a frequency that may be extended to one valve in the group every 2R. Change soft seats on a 5R frequency.

Condition Monitoring Justification: **ACCMVAAA1051-A**

Valves in Grouping: ACCMVAAA1051-A & ACCMVAAA1051-B

CM Testing Requirements Perform disassembly at a frequency that may be extended to one valve in the group every 2 years.

Condition Monitoring Justification: **ACCMVAAA1051-B**

Valves in Grouping: ACCMVAAA1051-A & ACCMVAAA1051-B

CM Testing Requirements Perform disassembly at a frequency that may be extended to one valve in the group every 2 years.

Condition Monitoring Justification: **ACCMVAAA108-A**

Valves in Grouping: ACCMVAAA108-A

CM Testing Requirements Perform open flow and close leak testing at a frequency aligned with Category A leak test.

Condition Monitoring Justification: **ACCMVAAA108-B**

Valves in Grouping: ACCMVAAA108-B

CM Testing Requirements Perform open flow and close leak testing at a frequency aligned with Category A leak test.

Condition Monitoring Justification: **ACCMVAAA113-A**

Valves in Grouping: ACCMVAAA113-A, ACCMVAAA113-B, ACCMVAAA140-A, ACCMVAAA140-B, CC MVAAA302-A, CC MVAAA302-B, CC MVAAA323-A & CC MVAAA323-B

CM Testing Requirements Perform an open verification using flow and close test using NIT starting at baseline then at a frequency that may be extended to one valve in the group every 1R.

Condition Monitoring Justification: **ACCMVAAA113-B**

Valves in Grouping: ACCMVAAA113-A, ACCMVAAA113-B, ACCMVAAA140-A, ACCMVAAA140-B, CC MVAAA302-A, CC MVAAA302-B, CC MVAAA323-A & CC MVAAA323-B

CM Testing Requirements Perform an open verification using flow and close test using NIT starting at baseline then at a frequency that may be extended to one valve in the group every 1R.

IST PLAN W3 APPENDIX	PROGRAM SECTION NO.: CEP-IST-2 REVISION NO. 307 PAGE 2 OF 20
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CONDITION MONITORING JUSTIFICATIONS

NOTE: CEP-IST-1, W3 Appendix, Enclosure 1 provides the data collected, and the Advisory Panel review, that supports the following testing requirements.

Condition Monitoring Justification: **ACCMVAAA140-A**

Valves in Grouping: ACCMVAAA113-A, ACCMVAAA113-B, ACCMVAAA140-A, ACCMVAAA140-B, CC MVAAA302-A, CC MVAAA302-B, CC MVAAA323-A & CC MVAAA323-B

CM Testing Requirements Perform an open verification using flow and close test using NIT starting at baseline then at a frequency that may be extended to one valve in the group every 1R.

Condition Monitoring Justification: **ACCMVAAA140-B**

Valves in Grouping: ACCMVAAA113-A, ACCMVAAA113-B, ACCMVAAA140-A, ACCMVAAA140-B, CC MVAAA302-A, CC MVAAA302-B, CC MVAAA323-A & CC MVAAA323-B

CM Testing Requirements Perform an open verification using flow and close test using NIT starting at baseline then at a frequency that may be extended to one valve in the group every 1R.

Condition Monitoring Justification: **ARMMVAAA104**

Valves in Grouping: ARMMVAAA104

CM Testing Requirements Perform open flow testing and closed leak testing at a frequency aligned with the Appendix J testing.

Condition Monitoring Justification: **BAMMVAAA115**

Valves in Grouping: BAMMVAAA115

CM Testing Requirements Perform open flow testing and close leak testing at a frequency that may be extended to every 3R.

Condition Monitoring Justification: **BAMMVAAA129-A**

Valves in Grouping: BAMMVAAA129-A & BAMMVAAA129-B

CM Testing Requirements Perform open flow testing and closed leak testing starting with baseline then at a frequency that may be extended to one valve in the group every 1R.

Condition Monitoring Justification: **BAMMVAAA129-B**

Valves in Grouping: BAMMVAAA129-A & BAMMVAAA129-B

CM Testing Requirements Perform open flow testing and closed leak testing starting with baseline then at a frequency that may be extended to one valve in the group every 1R.

Condition Monitoring Justification: **BAMMVAAA135**

Valves in Grouping: BAMMVAAA135

CM Testing Requirements Perform open flow testing and closed leak testing starting with baseline then at a frequency that may be extended to 1R.

Condition Monitoring Justification: **CARMVAAA102-A**

Valves in Grouping: CARMVAAA102-A

CM Testing Requirements Perform open stroke testing and closed leak testing at a frequency aligned with the Appendix J testing.

IST PLAN W3 APPENDIX	PROGRAM SECTION NO.: CEP-IST-2 REVISION NO. 307 PAGE 3 OF 20
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CONDITION MONITORING JUSTIFICATIONS

NOTE: CEP-IST-1, W3 Appendix, Enclosure 1 provides the data collected, and the Advisory Panel review, that supports the following testing requirements.

Condition Monitoring Justification: **CARMVAAA102-B**

Valves in Grouping: CARMVAAA102-B

CM Testing Requirements Perform open stroke testing and closed leak testing at a frequency aligned with the Appendix J testing.

Condition Monitoring Justification: **CC MVAAA123-A**

Valves in Grouping: CC MVAAA123-A, CC MVAAA123-B, & CC MVAAA123-AB

CM Testing Requirements Perform disassembly at a frequency that may be extended to one valve in the group every 2R.

Condition Monitoring Justification: **CC MVAAA123-AB**

Valves in Grouping: CC MVAAA123-A, CC MVAAA123-B, & CC MVAAA123-AB

CM Testing Requirements Perform disassembly at a frequency that may be extended to one valve in the group every 2R.

Condition Monitoring Justification: **CC MVAAA123-B**

Valves in Grouping: CC MVAAA123-A, CC MVAAA123-B, & CC MVAAA123-AB

CM Testing Requirements Perform disassembly at a frequency that may be extended to one valve in the group every 2R.

Condition Monitoring Justification: **CC MVAAA181-A**

Valves in Grouping: CC MVAAA181-A & CC MVAAA181-B

CM Testing Requirements Perform open flow testing and closed leak testing at a frequency that may be extended to one valve in the group every 2R.

Condition Monitoring Justification: **CC MVAAA181-B**

Valves in Grouping: CC MVAAA181-A & CC MVAAA181-B

CM Testing Requirements Perform open flow testing and closed leak testing at a frequency that may be extended to one valve in the group every 2R.

Condition Monitoring Justification: **CC MVAAA302-A**

Valves in Grouping: ACCMVAAA113-A, ACCMVAAA113-B, ACCMVAAA140-A, ACCMVAAA140-B, CC MVAAA302-A, CC MVAAA302-B, CC MVAAA323-A & CC MVAAA323-B

CM Testing Requirements Perform an open verification using flow and close test using NIT starting at baseline then at a frequency that may be extended to one valve in the group every 1R.

Condition Monitoring Justification: **CC MVAAA302-B**

Valves in Grouping: ACCMVAAA113-A, ACCMVAAA113-B, ACCMVAAA140-A, ACCMVAAA140-B, CC MVAAA302-A, CC MVAAA302-B, CC MVAAA323-A & CC MVAAA323-B

CM Testing Requirements Perform an open verification using flow and close test using NIT starting at baseline then at a frequency that may be extended to one valve in the group every 1R.

CONDITION MONITORING JUSTIFICATIONS

NOTE: CEP-IST-1, W3 Appendix, Enclosure 1 provides the data collected, and the Advisory Panel review, that supports the following testing requirements.

Condition Monitoring Justification: **CC MVAAA323-A**

Valves in Grouping: ACCMVAAA113-A, ACCMVAAA113-B, ACCMVAAA140-A, ACCMVAAA140-B, CC MVAAA302-A, CC MVAAA302-B, CC MVAAA323-A & CC MVAAA323-B

CM Testing Requirements Perform an open verification using flow and close test using NIT starting at baseline then at a frequency that may be extended to one valve in the group every 1R.

Condition Monitoring Justification: **CC MVAAA323-B**

Valves in Grouping: ACCMVAAA113-A, ACCMVAAA113-B, ACCMVAAA140-A, ACCMVAAA140-B, CC MVAAA302-A, CC MVAAA302-B, CC MVAAA323-A & CC MVAAA323-B

CM Testing Requirements Perform an open verification using flow and close test using NIT starting at baseline then at a frequency that may be extended to one valve in the group every 1R.

Condition Monitoring Justification: **CC MVAAA644**

Valves in Grouping: CC MVAAA644

CM Testing Requirements Perform open flow testing and closed leak testing at a frequency aligned with the Appendix J testing.

Condition Monitoring Justification: **CC MVAAA80312-B**

Valves in Grouping: CC MVAAA80312-B

CM Testing Requirements Perform an open verification using flow and close test by performing a pressure test starting at baseline then at a frequency that may be extended to 1R.

Condition Monitoring Justification: **CC MVAAA8068**

Valves in Grouping: CC MVAAA8068

CM Testing Requirements Perform an open verification using flow and close test by performing a pressure test starting at baseline then at a frequency that may be extended to 1R.

Condition Monitoring Justification: **CHWMVAAA114-A**

Valves in Grouping: CHWMVAAA114-A, CHWMVAAA114-B, & CHWMVAAA114-AB

CM Testing Requirements Perform open verification using normal operations and close testing using NIT starting at baseline then at a frequency that may be extended to one valve in the group every cycle.

Condition Monitoring Justification: **CHWMVAAA114-AB**

Valves in Grouping: CHWMVAAA114-A, CHWMVAAA114-B, & CHWMVAAA114-AB

CM Testing Requirements Perform open verification using normal operations and close testing using NIT starting at baseline then at a frequency that may be extended to one valve in the group every cycle.

IST PLAN W3 APPENDIX	PROGRAM SECTION NO.: CEP-IST-2 REVISION NO. 307 PAGE 5 OF 20
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CONDITION MONITORING JUSTIFICATIONS

NOTE: CEP-IST-1, W3 Appendix, Enclosure 1 provides the data collected, and the Advisory Panel review, that supports the following testing requirements.

Condition Monitoring Justification: CHWMVAAA114-B

Valves in Grouping: CHWMVAAA114-A, CHWMVAAA114-B, & CHWMVAAA114-AB

CM Testing Requirements Perform open verification using normal operations and close testing using NIT starting at baseline then at a frequency that may be extended to one valve in the group every cycle.

Condition Monitoring Justification: CMUMVAAA21312-A

Valves in Grouping: CMUMVAAA21312-A

CM Testing Requirements Perform open flow testing and close leak testing at a frequency of every 3R.

Condition Monitoring Justification: CMUMVAAA21312-B

Valves in Grouping: CMUMVAAA21312-B

CM Testing Requirements Perform open flow testing and close leak testing at a frequency of every 3R.

Condition Monitoring Justification: CMUMVAAA245

Valves in Grouping: CMUMVAAA245

CM Testing Requirements Perform open flow testing and closed leak testing in 2R then align the test frequency with Appendix J testing.

Condition Monitoring Justification: CMUMVAAA508-A

Valves in Grouping: CMUMVAAA508-A & CMUMVAAA508-B

CM Testing Requirements Perform disassembly and inspection at a frequency that may be extended to one valve in the group every 6 years.

Condition Monitoring Justification: CMUMVAAA508-B

Valves in Grouping: CMUMVAAA508-A & CMUMVAAA508-B

CM Testing Requirements Perform disassembly and inspection at a frequency that may be extended to one valve in the group every 6 years.

Condition Monitoring Justification: CMUMVAAA510-A

Valves in Grouping: CMUMVAAA510-A & CMUMVAAA510-B

CM Testing Requirements Perform disassembly and inspection at a frequency that may be extended to one valve in the group every 4 1/2 years.

Condition Monitoring Justification: CMUMVAAA510-B

Valves in Grouping: CMUMVAAA510-A & CMUMVAAA510-B

CM Testing Requirements Perform disassembly and inspection at a frequency that may be extended to one valve in the group every 4 1/2 years.

IST PLAN W3 APPENDIX	PROGRAM SECTION NO.: CEP-IST-2 REVISION NO. 307 PAGE 6 OF 20
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CONDITION MONITORING JUSTIFICATIONS

NOTE: CEP-IST-1, W3 Appendix, Enclosure 1 provides the data collected, and the Advisory Panel review, that supports the following testing requirements.

Condition Monitoring Justification: CS MVAAA111-A

Valves in Grouping: CS MVAAA111-A, CS MVAAA111-B, CS MVAAA117-A & CS MVAAA117-B

CM Testing Requirements Perform a manual stroke verifying that there is no binding or unusual movement, which would be an indication of wear. This test will provide open and closed requirements. The frequency may be extended to one valve in the group every cycle.

Condition Monitoring Justification: CS MVAAA111-B

Valves in Grouping: CS MVAAA111-A, CS MVAAA111-B, CS MVAAA117-A & CS MVAAA117-B

CM Testing Requirements Perform a manual stroke verifying that there is no binding or unusual movement, which would be an indication of wear. This test will provide open and closed requirements. The frequency may be extended to one valve in the group every cycle.

Condition Monitoring Justification: CS MVAAA117-A

Valves in Grouping: CS MVAAA111-A, CS MVAAA111-B, CS MVAAA117-A & CS MVAAA117-B

CM Testing Requirements Perform a manual stroke verifying that there is no binding or unusual movement, which would be an indication of wear. This test will provide open and closed requirements. The frequency may be extended to one valve in the group every cycle.

Condition Monitoring Justification: CS MVAAA117-B

Valves in Grouping: CS MVAAA111-A, CS MVAAA111-B, CS MVAAA117-A & CS MVAAA117-B

CM Testing Requirements Perform a manual stroke verifying that there is no binding or unusual movement, which would be an indication of wear. This test will provide open and closed requirements. The frequency may be extended to one valve in the group every cycle.

Condition Monitoring Justification: CS MVAAA128-A

Valves in Grouping: CS MVAAA128-A & CS MVAAA128-B

CM Testing Requirements Perform disassembly and inspection at a frequency that may be extended to one valve in the group every 4R.

Condition Monitoring Justification: CS MVAAA128-B

Valves in Grouping: CS MVAAA128-A & CS MVAAA128-B

CM Testing Requirements Perform disassembly and inspection at a frequency that may be extended to one valve in the group every 4R.

Condition Monitoring Justification: CVCMVAAA184

Valves in Grouping: CVCMVAAA184

CM Testing Requirements Perform open flow testing and close leak testing at a frequency that may be extended to 3R.

IST PLAN W3 APPENDIX	PROGRAM SECTION NO.: CEP-IST-2 REVISION NO. 307 PAGE 7 OF 20
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CONDITION MONITORING JUSTIFICATIONS

NOTE: CEP-IST-1, W3 Appendix, Enclosure 1 provides the data collected, and the Advisory Panel review, that supports the following testing requirements.

Condition Monitoring Justification: **CVCMVAAA194-A**

Valves in Grouping: CVCMVAAA194-A

CM Testing Requirements Perform open verification using normal operations and close testing using NIT starting at baseline then at a frequency that may be extended to every 2 years.

Condition Monitoring Justification: **CVCMVAAA194-AB**

Valves in Grouping: CVCMVAAA194-B & CVCMVAAA194-AB

CM Testing Requirements Perform open verification using normal operations and close testing using NIT starting at baseline then at a frequency that may be extended to one valve in the group every 2 years.

Condition Monitoring Justification: **CVCMVAAA194-B**

Valves in Grouping: CVCMVAAA194-B & CVCMVAAA194-AB

CM Testing Requirements Perform open verification using normal operations and close testing using NIT starting at baseline then at a frequency that may be extended to one valve in the group every 2 years.

Condition Monitoring Justification: **CVCMVAAA217-A**

Valves in Grouping: CVCMVAAA217-A & CVCMVAAA217-B

CM Testing Requirements Perform open flow testing and closed leak testing at a frequency of one valve in the group every 3R.

Condition Monitoring Justification: **CVCMVAAA217-B**

Valves in Grouping: CVCMVAAA217-A & CVCMVAAA217-B

CM Testing Requirements Perform open flow testing and closed leak testing at a frequency of one valve in the group every 3R.

Condition Monitoring Justification: **CVCMVAAA219**

Valves in Grouping: CVCMVAAA219

CM Testing Requirements Perform open verification using normal operations and close testing using NIT starting at baseline then at a frequency that may be extended to every 1R.

Condition Monitoring Justification: **CVCMVAAA221-A**

Valves in Grouping: CVCMVAAA221-A

CM Testing Requirements Perform open verification using normal operations and close testing using NIT starting at baseline then at a frequency that may be extended to every 1R.

Condition Monitoring Justification: **CVCMVAAA221-B**

Valves in Grouping: CVCMVAAA221-B

CM Testing Requirements Perform open flow and leak testing at a frequency that may be extended to every 3R.

IST PLAN W3 APPENDIX	PROGRAM SECTION NO.: CEP-IST-2 REVISION NO. 307 PAGE 8 OF 20
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CONDITION MONITORING JUSTIFICATIONS

NOTE: CEP-IST-1, W3 Appendix, Enclosure 1 provides the data collected, and the Advisory Panel review, that supports the following testing requirements.

Condition Monitoring Justification: **CVCMVAAA508**

Valves in Grouping: CVCMVAAA508

CM Testing Requirements Perform open flow and leak testing at a frequency that may be extended to every 3R.

Condition Monitoring Justification: **CVRMVAAA302-A**

Valves in Grouping: CVRMVAAA302-A & CVRMVAAA302-B

CM Testing Requirements Perform disassembly and inspection at a frequency that may be extended to one valve in the group every 3R.

Condition Monitoring Justification: **CVRMVAAA302-B**

Valves in Grouping: CVRMVAAA302-A & CVRMVAAA302-B

CM Testing Requirements Perform disassembly and inspection at a frequency that may be extended to one valve in the group every 3R.

Condition Monitoring Justification: **EFWMVAAA204A**

Valves in Grouping: EFWMVAAA204A & EFWMVAAA204B

CM Testing Requirements Perform open flow verification and close testing using NIT starting at baseline then at a frequency that may be extended to one valve in the group every 1R.

Condition Monitoring Justification: **EFWMVAAA204AB**

Valves in Grouping: EFWMVAAA204AB

CM Testing Requirements Perform open flow verification and close testing using NIT starting at baseline then at a frequency that may be extended to every 1R.

Condition Monitoring Justification: **EFWMVAAA204B**

Valves in Grouping: EFWMVAAA204A & EFWMVAAA204B

CM Testing Requirements Perform open flow verification and close testing using NIT starting at baseline then at a frequency that may be extended to one valve in the group every 1R.

Condition Monitoring Justification: **EFWMVAAA207A**

Valves in Grouping: EFWMVAAA207A, & EFWMVAAA207B

CM Testing Requirements Perform open flow verification and a closed leak test for one valve in the group every 3R.

Condition Monitoring Justification: **EFWMVAAA207AB**

Valves in Grouping: EFWMVAAA207AB

CM Testing Requirements Perform open flow verification and a closed leak test every 3R.

CONDITION MONITORING JUSTIFICATIONS

NOTE: CEP-IST-1, W3 Appendix, Enclosure 1 provides the data collected, and the Advisory Panel review, that supports the following testing requirements.

Condition Monitoring Justification: **EFWMVAAA207B**

Valves in Grouping: EFWMVAAA207A & EFWMVAAA207B

CM Testing Requirements Perform open flow verification and a closed leak test for one valve in the group every 3R.

Condition Monitoring Justification: **EFWMVAAA2191A**

Valves in Grouping: EFWMVAAA2191A & EFWMVAAA2191B

CM Testing Requirements Perform open flow testing and closed leak testing starting at a frequency that may be extended to one valve in the group every 3R.

Condition Monitoring Justification: **EFWMVAAA2191B**

Valves in Grouping: EFWMVAAA2191A & EFWMVAAA2191B

CM Testing Requirements Perform open flow testing and closed leak testing starting at a frequency that may be extended to one valve in the group every 3R.

Condition Monitoring Justification: **EGAMVAAA136-A**

Valves in Grouping: EGAMVAAA136-A, EGAMVAAA136-B, EGAMVAAA137-A, & EGAMVAAA137-B

CM Testing Requirements Perform open flow testing and close leak testing that may be extended to one valve in the group every year.

Condition Monitoring Justification: **EGAMVAAA136-B**

Valves in Grouping: EGAMVAAA136-A, EGAMVAAA136-B, EGAMVAAA137-A, & EGAMVAAA137-B

CM Testing Requirements Perform open flow testing and close leak testing that may be extended to one valve in the group every year.

Condition Monitoring Justification: **EGAMVAAA137-A**

Valves in Grouping: EGAMVAAA136-A, EGAMVAAA136-B, EGAMVAAA137-A, & EGAMVAAA137-B

CM Testing Requirements Perform open flow testing and close leak testing that may be extended to one valve in the group every year.

Condition Monitoring Justification: **EGAMVAAA137-B**

Valves in Grouping: EGAMVAAA136-A, EGAMVAAA136-B, EGAMVAAA137-A, & EGAMVAAA137-B

CM Testing Requirements Perform open flow testing and close leak testing that may be extended to one valve in the group every year.

IST PLAN W3 APPENDIX	PROGRAM SECTION NO.: CEP-IST-2 REVISION NO. 307 PAGE 10 OF 20
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CONDITION MONITORING JUSTIFICATIONS

NOTE: CEP-IST-1, W3 Appendix, Enclosure 1 provides the data collected, and the Advisory Panel review, that supports the following testing requirements.

Condition Monitoring Justification: EGFMVAAA109-A

Valves in Grouping: EGFMVAAA109-A & EGFMVAAA109-B

CM Testing Requirements Perform open verification using flow and close testing using NIT starting at baseline then at a frequency that may be extended to one valve in the group every 2 years.

Condition Monitoring Justification: EGFMVAAA109-B

Valves in Grouping: EGFMVAAA109-A & EGFMVAAA109-B

CM Testing Requirements Perform open verification using flow and close testing using NIT starting at baseline then at a frequency that may be extended to one valve in the group every 2 years.

Condition Monitoring Justification: FP MVAAA602-A

Valves in Grouping: FP MVAAA602-A

CM Testing Requirements Perform open flow testing and closed leak testing starting at baseline, then 24 months, then 48 months, then align the test frequency with Appendix J testing.

Condition Monitoring Justification: FP MVAAA602-B

Valves in Grouping: FP MVAAA602-B

CM Testing Requirements Perform open flow testing and closed leak testing starting at baseline, then 24 months, then 48 months, then align the test frequency with Appendix J testing.

Condition Monitoring Justification: FW MVAAA1763-A

Valves in Grouping: FW MVAAA1763-A & FW MVAAA1763-B

CM Testing Requirements Perform disassembly and inspection at a frequency that may be extended to one valve in the group every 3R.

Condition Monitoring Justification: FW MVAAA1763-B

Valves in Grouping: FW MVAAA1763-A & FW MVAAA1763-B

CM Testing Requirements Perform disassembly and inspection at a frequency that may be extended to one valve in the group every 3R.

Condition Monitoring Justification: FW MVAAA181-A

Valves in Grouping: FW MVAAA181-A & FW MVAAA181-B

CM Testing Requirements Perform disassembly and inspection at a frequency that may be extended to one valve in the group every 3R.

Condition Monitoring Justification: FW MVAAA181-B

Valves in Grouping: FW MVAAA181-A & FW MVAAA181-B

CM Testing Requirements Perform disassembly and inspection at a frequency that may be extended to one valve in the group every 3R.

IST PLAN W3 APPENDIX	PROGRAM SECTION NO.: CEP-IST-2 REVISION NO. 307 PAGE 11 OF 20
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CONDITION MONITORING JUSTIFICATIONS

NOTE: CEP-IST-1, W3 Appendix, Enclosure 1 provides the data collected, and the Advisory Panel review, that supports the following testing requirements.

Condition Monitoring Justification: **HRAMVAAA128-A**

Valves in Grouping: HRAMVAAA128-A

CM Testing Requirements Perform open flow testing and closed leak testing starting at baseline, then 24 months, then 48 months, then align the test frequency with Appendix J testing.

Condition Monitoring Justification: **HRAMVAAA128-B**

Valves in Grouping: HRAMVAAA128-B

CM Testing Requirements Perform open flow testing and closed leak testing starting at baseline, then 24 months, then 48 months, then align the test frequency with Appendix J testing.

Condition Monitoring Justification: **IA ICHK0209**

Valves in Grouping: IA ICHK0209

CM Testing Requirements Perform open flow verification and close leak testing at a frequency aligned with Category A leak test.

Condition Monitoring Justification: **IA MVAAA520212**

Valves in Grouping: IA MVAAA520212

CM Testing Requirements Perform open flow verification and close leak testing at a frequency aligned with Category A leak test.

Condition Monitoring Justification: **IA MVAAA520242**

Valves in Grouping: IA MVAAA520242

CM Testing Requirements Perform open flow verification and close leak testing at a frequency aligned with Category A leak test.

Condition Monitoring Justification: **IA MVAAA552182**

Valves in Grouping: IA MVAAA552182

CM Testing Requirements Perform open flow verification and close leak testing at a frequency aligned with Category A leak test.

Condition Monitoring Justification: **IA MVAAA552202**

Valves in Grouping: IA MVAAA552202

CM Testing Requirements Perform open flow verification and close leak testing at a frequency aligned with Category A leak test.

Condition Monitoring Justification: **IA MVAAA57212**

Valves in Grouping: IA MVAAA57212

CM Testing Requirements Perform open flow verification and close leak testing at a frequency aligned with Category A leak test.

IST PLAN W3 APPENDIX	PROGRAM SECTION NO.: CEP-IST-2 REVISION NO. 307 PAGE 12 OF 20
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CONDITION MONITORING JUSTIFICATIONS

NOTE: CEP-IST-1, W3 Appendix, Enclosure 1 provides the data collected, and the Advisory Panel review, that supports the following testing requirements.

Condition Monitoring Justification: **IA MVAAA573132**

Valves in Grouping: IA MVAAA573132

CM Testing Requirements Perform open flow verification and close leak testing at a frequency aligned with Category A leak test.

Condition Monitoring Justification: **IA MVAAA902112**

Valves in Grouping: IA MVAAA902112

CM Testing Requirements Perform open flow verification and close leak testing at a frequency aligned with Category A leak test.

Condition Monitoring Justification: **IA MVAAA90232**

Valves in Grouping: IAMVAAA90232

CM Testing Requirements Perform open flow verification and close leak testing at a frequency aligned with Category A leak test.

Condition Monitoring Justification: **IA MVAAA910**

Valves in Grouping: IA MVAAA910

CM Testing Requirements Perform open flow testing by taking credit for normal operations and closure testing at a frequency aligned with Appendix J testing.

Condition Monitoring Justification: **MS MVAAA402-A**

Valves in Grouping: MS MVAAA402-A & MS MVAAA402-B

CM Testing Requirements Perform disassembly and inspection at a frequency that may be extended to one valve in the group every 3R.

Condition Monitoring Justification: **MS MVAAA402-B**

Valves in Grouping: MS MVAAA402-A & MS MVAAA402-B

CM Testing Requirements Perform disassembly and inspection at a frequency that may be extended to one valve in the group every 3R.

Condition Monitoring Justification: **NG MVAAA158**

Valves in Grouping: NG MVAAA158

CM Testing Requirements Perform open flow testing and closed leak testing at a frequency aligned with Appendix J testing.

Condition Monitoring Justification: **NG MVAAA603**

Valves in Grouping: NG MVAAA603

CM Testing Requirements Perform open flow verification and close leak testing at a frequency aligned with Category A leak test.

IST PLAN W3 APPENDIX	PROGRAM SECTION NO.: CEP-IST-2 REVISION NO. 307 PAGE 13 OF 20
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CONDITION MONITORING JUSTIFICATIONS

NOTE: CEP-IST-1, W3 Appendix, Enclosure 1 provides the data collected, and the Advisory Panel review, that supports the following testing requirements.

Condition Monitoring Justification: NG MVAAA604

Valves in Grouping: NG MVAAA604

CM Testing Requirements Perform open flow verification and close leak testing at a frequency aligned with Category A leak test.

Condition Monitoring Justification: NG MVAAA703

Valves in Grouping: NG MVAAA703

CM Testing Requirements Perform open flow verification and close leak testing at a frequency aligned with Category A leak test.

Condition Monitoring Justification: NG MVAAA704

Valves in Grouping: NG MVAAA704

CM Testing Requirements Perform open flow verification and close leak testing at a frequency aligned with Category A leak test.

Condition Monitoring Justification: NG MVAAA803

Valves in Grouping: NG MVAAA803

CM Testing Requirements Perform open flow verification and close leak testing at a frequency aligned with Category A leak test.

Condition Monitoring Justification: NG MVAAA804

Valves in Grouping: NG MVAAA804

CM Testing Requirements Perform open flow verification and close leak testing at a frequency aligned with Category A leak test.

Condition Monitoring Justification: NG MVAAA903

Valves in Grouping: NG MVAAA903

CM Testing Requirements Perform open flow verification and close leak testing at a frequency aligned with Category A leak test.

Condition Monitoring Justification: NG MVAAA904

Valves in Grouping: NG MVAAA904

CM Testing Requirements Perform open flow verification and close leak testing at a frequency aligned with Category A leak test.

Condition Monitoring Justification: PMUMVAAA146

Valves in Grouping: PMUMVAAA146

CM Testing Requirements Perform open flow testing and close leak testing at a frequency that may be extended to every 3R.

IST PLAN W3 APPENDIX	PROGRAM SECTION NO.: CEP-IST-2 REVISION NO. 307 PAGE 14 OF 20
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CONDITION MONITORING JUSTIFICATIONS

NOTE: CEP-IST-1, W3 Appendix, Enclosure 1 provides the data collected, and the Advisory Panel review, that supports the following testing requirements.

Condition Monitoring Justification: **PMUMVAAA152**

Valves in Grouping: PMUMVAAA152

CM Testing Requirements Perform open flow testing and closed leak testing at a frequency aligned with Appendix J testing.

Condition Monitoring Justification: **PMUMVAAA154**

Valves in Grouping: PMUMVAAA154

CM Testing Requirements Augmented valve and will be tested along with PMUMVAAA152.

Condition Monitoring Justification: **SA MVAAA9085**

Valves in Grouping: SA MVAAA9085

CM Testing Requirements Perform open flow testing and closed leak testing at a frequency aligned with Appendix J testing.

Condition Monitoring Justification: **SBVMVAAA112-A**

Valves in Grouping: SBVMVAAA112-A & SBVMVAAA112-B

CM Testing Requirements Perform open verification using normal operations and close testing using NIT starting at baseline then at a frequency that may be extended to one valve in the group every 2 years.

Condition Monitoring Justification: **SBVMVAAA112-B**

Valves in Grouping: SBVMVAAA112-A & SBVMVAAA112-B

CM Testing Requirements Perform open verification using normal operations and close testing using NIT starting at baseline then at a frequency that may be extended to one valve in the group every 2 years.

Condition Monitoring Justification: **SI MVAAA1071-A**

Valves in Grouping: SI MVAAA1071-A & SI MVAAA1071-B

CM Testing Requirements Perform open flow verification and closed leak testing that may be extended to one valve in the group every 2R.

Condition Monitoring Justification: **SI MVAAA1071-B**

Valves in Grouping: SI MVAAA1071-A & SI MVAAA1071-B

CM Testing Requirements Perform open flow verification and closed leak testing that may be extended to one valve in the group every 2R.

Condition Monitoring Justification: **SI MVAAA107-A**

Valves in Grouping: SI MVAAA107-A & SI MVAAA107-B

CM Testing Requirements Perform disassembly and inspection or NIT with a forward flow test at a frequency that may be extended to one valve in the group every 3R.

IST PLAN W3 APPENDIX	PROGRAM SECTION NO.: CEP-IST-2 REVISION NO. 307 PAGE 15 OF 20
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CONDITION MONITORING JUSTIFICATIONS

NOTE: CEP-IST-1, W3 Appendix, Enclosure 1 provides the data collected, and the Advisory Panel review, that supports the following testing requirements.

Condition Monitoring Justification: **SI MVAAA107-B**

Valves in Grouping: SI MVAAA107-A & SI MVAAA107-B

CM Testing Requirements Perform disassembly and inspection or NIT with a forward flow test at a frequency that may be extended to one valve in the group every 3R.

Condition Monitoring Justification: **SI MVAAA108-A**

Valves in Grouping: SI MVAAA108-A & SI MVAAA108-B

CM Testing Requirements Perform open flow verification and closed leak test that may be extended to one valve in the group every 2R.

Condition Monitoring Justification: **SI MVAAA108-B**

Valves in Grouping: SI MVAAA108-A & SI MVAAA108-B

CM Testing Requirements Perform open flow verification and closed leak test that may be extended to one valve in the group every 2R.

Condition Monitoring Justification: **SI MVAAA116-A**

Valves in Grouping: SI MVAAA116-A & SI MVAAA116-B

CM Testing Requirements Perform a manual stroke verifying that there is no binding or unusual movement, which would be an indication of wear. This test will provide open and closed requirements. Following baseline the frequency may be extended to one valve in the group 1R.

Condition Monitoring Justification: **SI MVAAA116-B**

Valves in Grouping: SI MVAAA116-A & SI MVAAA116-B

CM Testing Requirements Perform a manual stroke verifying that there is no binding or unusual movement, which would be an indication of wear. This test will provide open and closed requirements. Following baseline the frequency may be extended to one valve in the group 1R.

Condition Monitoring Justification: **SI MVAAA122-A**

Valves in Grouping: SI MVAAA122-A

CM Testing Requirements Perform open flow verification and close testing using NIT starting at baseline then at a frequency that may be extended to every 18 months.

Condition Monitoring Justification: **SI MVAAA122-B**

Valves in Grouping: SI MVAAA122-A

CM Testing Requirements Perform open flow verification and close testing using NIT starting at baseline then at a frequency that may be extended to every 18 months.

Condition Monitoring Justification: **SI MVAAA142-A**

Valves in Grouping: SI MVAAA142-A

CM Testing Requirements Perform open flow verification and close leak testing at a frequency aligned with Category A leak test.

IST PLAN W3 APPENDIX	PROGRAM SECTION NO.: CEP-IST-2 REVISION NO. 307 PAGE 16 OF 20
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CONDITION MONITORING JUSTIFICATIONS

NOTE: CEP-IST-1, W3 Appendix, Enclosure 1 provides the data collected, and the Advisory Panel review, that supports the following testing requirements.

Condition Monitoring Justification: **SI MVAAA142-B**

Valves in Grouping: SI MVAAA142-B

CM Testing Requirements Perform open flow verification and close leak testing at a frequency aligned with Category A leak test.

Condition Monitoring Justification: **SI MVAAA143-A**

Valves in Grouping: SI MVAAA143-A

CM Testing Requirements Perform open flow verification and close leak testing at a frequency aligned with Category A leak test.

Condition Monitoring Justification: **SI MVAAA143-B**

Valves in Grouping: SI MVAAA143-B

CM Testing Requirements Perform open flow verification and close leak testing at a frequency aligned with Category A leak test.

Condition Monitoring Justification: **SI MVAAA201-A**

Valves in Grouping: SI MVAAA201-A & SI MVAAA201-B

CM Testing Requirements Perform open flow verification and close testing using NIT starting at baseline then at a frequency that may be extended to one valve in the group every 2 years.

Condition Monitoring Justification: **SI MVAAA201-B**

Valves in Grouping: SI MVAAA201-A & SI MVAAA201-B

CM Testing Requirements Perform open flow verification and close testing using NIT starting at baseline then at a frequency that may be extended to one valve in the group every 2 years.

Condition Monitoring Justification: **SI MVAAA205-A**

Valves in Grouping: SI MVAAA205-A, SI MVAAA205-B, & SI MVAAA205-AB

CM Testing Requirements Perform open flow testing and closed position testing starting with baseline then at a frequency that may be extended to one valve in the group every cycle

Condition Monitoring Justification: **SI MVAAA205-AB**

Valves in Grouping: SI MVAAA205-A, SI MVAAA205-B, & SI MVAAA205-AB

CM Testing Requirements Perform open flow testing and closed position testing starting with baseline then at a frequency that may be extended to one valve in the group every cycle

Condition Monitoring Justification: **SI MVAAA205-B**

Valves in Grouping: SI MVAAA205-A, SI MVAAA205-B, & SI MVAAA205-AB

CM Testing Requirements Perform open flow testing and closed position testing starting with baseline then at a frequency that may be extended to one valve in the group every cycle

CONDITION MONITORING JUSTIFICATIONS

NOTE: CEP-IST-1, W3 Appendix, Enclosure 1 provides the data collected, and the Advisory Panel review, that supports the following testing requirements.

Condition Monitoring Justification: **SI MVAAA207-A**

Valves in Grouping: SI MVAAA207-A, SI MVAAA207-B, & SI MVAAA207-AB

CM Testing Requirements Perform open verification using normal operations and close testing using NIT starting at baseline then at a frequency that may be extended to one valve in the group every 2 years.

Condition Monitoring Justification: **SI MVAAA207-AB**

Valves in Grouping: SI MVAAA207-A, SI MVAAA207-B, & SI MVAAA207-AB

CM Testing Requirements Perform open verification using normal operations and close testing using NIT starting at baseline then at a frequency that may be extended to one valve in the group every 2 years.

Condition Monitoring Justification: **SI MVAAA207-B**

Valves in Grouping: SI MVAAA207-A, SI MVAAA207-B, & SI MVAAA207-AB

CM Testing Requirements Perform open verification using normal operations and close testing using NIT starting at baseline then at a frequency that may be extended to one valve in the group every 2 years.

Condition Monitoring Justification: **SI MVAAA216**

Valves in Grouping: SI MVAAA216

CM Testing Requirements Perform open verification using normal operations and close testing using NIT starting at baseline then at a frequency that may be extended to every 2 years.

Condition Monitoring Justification: **SI MVAAA241**

Valves in Grouping: SI MVAAA241

CM Testing Requirements Perform open flow testing and close leak testing at a frequency aligned with Category A leak test.

Condition Monitoring Justification: **SI MVAAA242**

Valves in Grouping: SI MVAAA242

CM Testing Requirements Perform open flow testing and close leak testing at a frequency aligned with Category A leak test.

Condition Monitoring Justification: **SI MVAAA243**

Valves in Grouping: SI MVAAA243

CM Testing Requirements Perform open flow testing and close leak testing at a frequency aligned with Category A leak test.

Condition Monitoring Justification: **SI MVAAA244**

Valves in Grouping: SI MVAAA244

CM Testing Requirements Perform open flow testing and close leak testing at a frequency aligned with Category A leak test.

IST PLAN W3 APPENDIX	PROGRAM SECTION NO.: CEP-IST-2 REVISION NO. 307 PAGE 18 OF 20
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CONDITION MONITORING JUSTIFICATIONS

NOTE: CEP-IST-1, W3 Appendix, Enclosure 1 provides the data collected, and the Advisory Panel review, that supports the following testing requirements.

Condition Monitoring Justification: **SI MVAAA245**

Valves in Grouping: SI MVAAA245

CM Testing Requirements Perform open flow testing and closed position testing starting with baseline then at a frequency that may be extended to every 18 months.

Condition Monitoring Justification: **SI MVAAA329-A**

Valves in Grouping: SI MVAAA329-A

CM Testing Requirements Perform open flow testing and close leak testing at a frequency aligned with Category A leak test.

Condition Monitoring Justification: **SI MVAAA329-B**

Valves in Grouping: SI MVAAA329-B

CM Testing Requirements Perform open flow testing and close leak testing at a frequency aligned with Category A leak test.

Condition Monitoring Justification: **SI MVAAA330-A**

Valves in Grouping: SI MVAAA330-A

CM Testing Requirements Perform open flow testing and close leak testing at a frequency aligned with Category A leak test.

Condition Monitoring Justification: **SI MVAAA330-B**

Valves in Grouping: SI MVAAA330-B

CM Testing Requirements Perform open flow testing and close leak testing at a frequency aligned with Category A leak test.

Condition Monitoring Justification: **SI MVAAA335-A**

Valves in Grouping: SI MVAAA335-A

CM Testing Requirements Perform open flow testing and close leak testing at a frequency aligned with Category A leak test.

Condition Monitoring Justification: **SI MVAAA335-B**

Valves in Grouping: SI MVAAA335-B

CM Testing Requirements Perform open flow testing and close leak testing at a frequency aligned with Category A leak test.

Condition Monitoring Justification: **SI MVAAA336-A**

Valves in Grouping: SI MVAAA336-A

CM Testing Requirements Perform open flow testing and close leak testing at a frequency aligned with Category A leak test.

CONDITION MONITORING JUSTIFICATIONS

NOTE: CEP-IST-1, W3 Appendix, Enclosure 1 provides the data collected, and the Advisory Panel review, that supports the following testing requirements.

Condition Monitoring Justification: **SI MVAAA336-B**

Valves in Grouping: SI MVAAA336-B

CM Testing Requirements Perform open flow testing and close leak testing at a frequency aligned with Category A leak test.

Condition Monitoring Justification: **SI MVAAA510-A**

Valves in Grouping: SI MVAAA510-A

CM Testing Requirements Perform open flow testing and close leak testing at a frequency aligned with Category A leak test.

Condition Monitoring Justification: **SI MVAAA510-B**

Valves in Grouping: SI MVAAA510-B

CM Testing Requirements Perform open flow testing and close leak testing at a frequency aligned with Category A leak test.

Condition Monitoring Justification: **SI MVAAA512-A**

Valves in Grouping: SI MVAAA512-A

CM Testing Requirements Perform open flow testing and close leak testing at a frequency aligned with Category A leak test.

Condition Monitoring Justification: **SI MVAAA512-B**

Valves in Grouping: SI MVAAA512-B

CM Testing Requirements Perform open flow testing and close leak testing at a frequency aligned with Category A leak test.

Condition Monitoring Justification: **SI MVAAA604-A**

Valves in Grouping: SI MVAAA604-A & SI MVAAA604-B

CM Testing Requirements Perform disassembly and inspection at a frequency that may be extended to one valve in the group every 3R.

Condition Monitoring Justification: **SI MVAAA604-B**

Valves in Grouping: SI MVAAA604-A & SI MVAAA604-B

CM Testing Requirements Perform disassembly and inspection at a frequency that may be extended to one valve in the group every 3R.

Condition Monitoring Justification: **SI MVAAA717-A**

Valves in Grouping: SI MVAAA717-A & SI MVAAA717-B

CM Testing Requirements Perform a manual stroke verifying that there is no binding or unusual movement at a frequency of one valve in the group every 2 years.

IST PLAN W3 APPENDIX	PROGRAM SECTION NO.: CEP-IST-2 REVISION NO. 307 PAGE 20 OF 20
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CONDITION MONITORING JUSTIFICATIONS

NOTE: CEP-IST-1, W3 Appendix, Enclosure 1 provides the data collected, and the Advisory Panel review, that supports the following testing requirements.

Condition Monitoring Justification: SI MVAAA717-B

Valves in Grouping: SI MVAAA717-A & SI MVAAA717-B

CM Testing Requirements Perform a manual stroke verifying that there is no binding or unusual movement at a frequency of one valve in the group every 2 years.

**IST PLAN
W3 APPENDIX
VALVE SUMMARY LISTING**

**PROGRAM SECTION NO. CEP-IST-2
REVISION NO. 307
PAGE 1 OF 62**

SYSTEM: ACC - AUXILIARY COMPONENT COOLING WATER

VALVE NO.	VALVE SIZE (in.) TYPE ACT.	P & ID NO., COORD.	IST PASS	IST CODE CLASS	CODE CAT.	SAFETY POS.	REQUIRED TESTS AND FREQUENCY										RELIEF REQUEST (VRR)	OTHER (CSJ/ROJ/ CMJ/VPS)	NOTES:
							FS	PS	LT	LJ	ST	FT	PI	RV	EX	CM			
ACC-1012A	0.25	G-160 - SH 2	A	3	C	O								10Y					
	PR SA													10Y					
ACC-1012B	0.25	G-160 - SH 2	A	3	C	O								10Y					
	PR SA													10Y					
ACC-1045A	2	G-160 - SH 2 G-3	A	3	C, A											V		CMJ	
	CK SA								2Y							V			
ACC-1045B	2	G-160 - SH 5 G-13	A	3	C, A											V		CMJ	
	CK SA								2Y							V			
ACC-1051A	3	G-160 - SH 2 G-05	A	3	C	O										V		CMJ	
	CK SA															V			
ACC-1051B	3	G-160 - SH 5 G-10	A	3	C	O										V		CMJ	
	CK SA															V			
ACC-108A	16	G-160 - SH 2 G-04	A	3	C, A	O										V		CMJ	
	CK SA								2Y							V			
ACC-108B	16	G-160 - SH 5 G-11	A	3	C, A	O										V		CMJ	
	CK SA								2Y							V			
ACC-110A	16	G-160 - SH 2 G-04	A	3	B	O	Q				Q		2Y						CCW Pump A to HX A, EFW A
	B MO						C	Q			Q		2Y						
ACC-110B	16	G-160 - SH 5 G-11	A	3	B	O	Q				Q		2Y						CCW Pump A to HX B, EFW B
	B MO						C	Q			Q		2Y						
ACC-112A	6	G-160 - SH 6 B-03	A	3	B	O	C				C		2Y					CSJ-007	ACCW supply to Essential Chiller
	B AO						C	C			C		2Y						
ACC-112B	6	G-160 - SH 6 B-08	A	3	B	O	C				C		2Y					CSJ-007	ACCW supply to Essential Chiller
	B AO						C	C			C		2Y						
ACC-113A	6	G-160 - SH 6 C-04	A	3	C	O										V		CMJ	ACCW supply to Essential Chiller
	CK SA															V			
ACC-113B	6	G-160 - SH 6 B-07	A	3	C	O										V		CMJ	ACCW supply to Essential Chiller
	CK SA															V			
ACC-114A	6	G-160 - SH 6 I-13	A	3	A	O	2Y												Closed pos is passive. ACC Wet Twr A Inventory to supply EFW
	B M						C		2Y										
ACC-114B	6	G-160 - SH 6 I-12	A	3	A	O	2Y												Closed pos is passive. ACC Wet Twr B Inventory to supply EFW
	B M						C		2Y										

**IST PLAN
W3 APPENDIX
VALVE SUMMARY LISTING**

**PROGRAM SECTION NO. CEP-IST-2
REVISION NO. 307
PAGE 2 OF 62**

SYSTEM: ACC - AUXILIARY COMPONENT COOLING WATER

VALVE NO.	VALVE SIZE (in.) TYPE ACT.		P & ID NO. , COORD.	IST PASS	IST CODE CLASS	CODE CAT.	SAFETY POS.	REQUIRED TESTS AND FREQUENCY									RELIEF REQUEST (VRR)	OTHER (CSJ/ROJ/ CMJ/VPS)	NOTES:
	FS	PS						LT	LJ	ST	FT	PI	RV	EX	CM				
ACC-115A	1		G-160 - SH 6 I-12	A	3	B													
	GL	M					C	2Y											
ACC-115B	1		G-160 - SH 6 I-13	A	3	B													
	GL	M					C	2Y											
ACC-116A	6		G-160 - SH 6 I-13	A	3	B	O	2Y						2Y					ACC Wet Tower A Inventory to supply EFW
	GA	M																	
ACC-116B	6		G-160 - SH 6 I-14	A	3	B	O	2Y						2Y					ACC Wet Tower B Inventory to supply EFW
	GA	M																	
ACC-121A	0.75		G-160 - SH 2 H-06	A	3	C	O								10Y				
	PR	SA					C									10Y			
ACC-121B	0.75		G-160 - SH 5 H-10	A	3	C	O								10Y				
	PR	SA					C								10Y				
ACC-126A	12		G-160 - SH 2 G-08	A	3	B	O	Q				Q							
	B	AO					C	Q				Q							
ACC-126B	12		G-160 - SH 5 G-08	A	3	B	O	Q				Q							
	B	AO					C	Q				Q							
ACC-138A	4		G-160 - SH 2 E-07	A	3	B	O	2Y						2Y					VPS-004 Closed position is passive. FSE-O, Q requires manual valve stroke
	B	AO					C							2Y					
ACC-138B	4		G-160 - SH 5 E-08	A	3	B	O	2Y						2Y					VPS-004 Closed position is passive. FSE-O, Q requires manual valve stroke
	B	AO					C							2Y					
ACC-139A	6		G-160 - SH 6 E-02	A	3	B	O	C				C		2Y					CSJ-007 ACCW Supply to Essential Chiller
	B	AO					C	C				C		2Y					
ACC-139B	6		G-160 - SH 6 G-02	A	3	B	O	C				C		2Y					CSJ-007 ACCW Supply to Essental Chiller
	B	AO					C	C				C		2Y					
ACC-140A	6		G-160 - SH 6 D-02	A	3	C	O										V		CMJ
	CK	SA															V		
ACC-140B	6		G-160 - SH 6 G-02	A	3	C	O										V		CMJ
	CK	SA															V		

**IST PLAN
W3 APPENDIX
VALVE SUMMARY LISTING**

**PROGRAM SECTION NO. CEP-IST-2
REVISION NO. 307
PAGE 3 OF 62**

SYSTEM: ANP - ANNULUS NEGATIVE PRESSURE

VALVE NO.	VALVE SIZE (in.) TYPE ACT.	P & ID NO., COORD.	IST PASS	IST CODE CLASS	CODE CAT.	SAFETY POS.	REQUIRED TESTS AND FREQUENCY										RELIEF REQUEST (VRR)	OTHER (CSJ/ROJ/ CMJ/VPS)	NOTES:
							FS	PS	LT	LJ	ST	FT	PI	RV	EX	CM			
ANP-101	6	G-853 - SH 1 J-12	A	3	B														
	B AO					C	Q				Q		2Y						
ANP-102	6	G-853 - SH 1 K-12	A	3	B														
	B AO					C	Q				Q		2Y						

IST PLAN W3 APPENDIX VALVE SUMMARY LISTING	PROGRAM SECTION NO. CEP-IST-2 REVISION NO. 307 PAGE 4 OF 62
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SYSTEM: ARM - AREA RADIATION MONITORING

VALVE NO.	VALVE SIZE (in.) TYPE ACT.		P & ID NO., COORD.	IST PASS	IST CODE CLASS	CODE CAT.	SAFETY POS.	REQUIRED TESTS AND FREQUENCY									RELIEF REQUEST (VRR)	OTHER (CSJ/ROJ/ CMJ/VPS)	NOTES:
								FS	PS	LT	LJ	ST	FT	PI	RV	EX			
ARM-103	0.75		G-164 - SH 2 J-16	A	2	A													
	GL	SO					C	Q			J	Q		2Y					
ARM-104	1		G-164 - SH 2 J-15	A	2	C, A										V	CMJ		
	CK	SA					C				J					V			
ARM-109	0.75		G-164 - SH 2 J-15	A	2	A													
	GL	SO					C	Q			J	Q		2Y					
ARM-110	0.75		G-164 - SH 2 J-16	A	2	A													
	GL	SO					C	Q			J	Q		2Y					

**IST PLAN
W3 APPENDIX
VALVE SUMMARY LISTING**

**PROGRAM SECTION NO. CEP-IST-2
REVISION NO. 307
PAGE 5 OF 62**

SYSTEM: BAM - BORIC ACID MAKEUP

VALVE NO.	VALVE SIZE (in.) TYPE ACT.	P & ID NO., COORD.	IST PASS	IST CODE CLASS	CODE CAT.	SAFETY POS.	REQUIRED TESTS AND FREQUENCY										RELIEF REQUEST (VRR)	OTHER (CSJ/ROJ/ CMJ/VPS)	NOTES:
							FS	PS	LT	LJ	ST	FT	PI	RV	EX	CM			
BAM-113A	3	G-168 - SH 3 I-05	A	3	B	O	C				C		2Y					CSJ-003	Closed position is passive.
	GA MO					C							2Y						
BAM-113B	3	G-168 - SH 3 H-07	A	3	B	O	C				C		2Y					CSJ-003	Closed position is passive.
	GA MO					C							2Y						
BAM-115	3	G-168 - SH 2 G-08	A	2	C	O										V		CMJ	
	CK SA					C										V			
BAM-126A	1	G-168 - SH 3 F-02	A	3	B														
	GL AO					C	Q				Q		2Y						
BAM-126B	1	G-168 - SH 3 E-10	A	3	B														
	GL AO					C	Q				Q		2Y						
BAM-129A	3	G-168 - SH 3 J-10	A	3	C	O										V		CMJ	
	CK SA															V			
BAM-129B	3	G-168 - SH 3 I-10	A	3	C	O										V		CMJ	
	CK SA															V			
BAM-133	3	G-168 - SH 3 G-11	A	3	B	O	Q				Q		2Y						Closed position is passive.
	GA MO					C							2Y						
BAM-135	3	G-168 - SH 2 E-05	A	2	C	O										V		CMJ	
	CK SA															V			
BAM-141	1	G-168 - SH 3 I-17	A	3	B														
	GL AO					C	Q				Q		2Y						
BAM-143	1	G-168 - SH 2 C-02	P	3	B														
	GL AO					C							2Y						

**IST PLAN
W3 APPENDIX
VALVE SUMMARY LISTING**

**PROGRAM SECTION NO. CEP-IST-2
REVISION NO. 307
PAGE 6 OF 62**

SYSTEM: BD - BLOWDOWN

VALVE NO.	VALVE SIZE (in.) TYPE ACT.	P & ID NO., COORD.	IST PASS	IST CODE CLASS	CODE CAT.	SAFETY POS.	REQUIRED TESTS AND FREQUENCY										RELIEF REQUEST (VRR)	OTHER (CSJ/ROJ/ CMJ/VPS)	NOTES:
							FS	PS	LT	LJ	ST	FT	PI	RV	EX	CM			
BD-102A	4	G-164 - SH 5 G-02	A	2	B														
	GA AO					C	Q				Q		2Y						
BD-102B	4	G-164 - SH 5 G-06	A	2	B														
	GA AO					C	Q				Q		2Y						
BD-103A	4	G-164 - SH 5 H-02	A	2	B														
	GL AO					C	Q				Q		2Y						
BD-103B	4	G-164 - SH 5 H-05	A	2	B														
	GL AO					C	Q				Q		2Y						

**IST PLAN
W3 APPENDIX
VALVE SUMMARY LISTING**

**PROGRAM SECTION NO. CEP-IST-2
REVISION NO. 307
PAGE 7 OF 62**

SYSTEM: BM - BORON MANAGEMENT

VALVE NO.	VALVE SIZE (in.) TYPE ACT.		P & ID NO., COORD.	IST PASS	IST CODE CLASS	CODE CAT.	SAFETY POS.	REQUIRED TESTS AND FREQUENCY									RELIEF REQUEST (VRR)	OTHER (CSJ/ROJ/ CMJ/VPS)	NOTES:
								FS	PS	LT	LJ	ST	FT	PI	RV	EX			
BM-109	3		G-171 - SH 1 F-07	A	2	A													
	D	AO					C	Q			J	Q		2Y					
BM-1091	0.5		G-171 - SH 1 F-07	A	2	C	O							10Y					
	PR	SA					C						10Y						
BM-110	3		G-171 - SH 1 F-06	A	2	A													
	D	AO					C	Q			J	Q		2Y					

**IST PLAN
W3 APPENDIX
VALVE SUMMARY LISTING**

**PROGRAM SECTION NO. CEP-IST-2
REVISION NO. 307
PAGE 8 OF 62**

SYSTEM: CAP - CONTAINMENT ATMOSPHERIC PURGE

VALVE NO.	VALVE SIZE (in.) TYPE ACT.	P & ID NO., COORD.	IST PASS	IST CODE CLASS	CODE CAT.	SAFETY POS.	REQUIRED TESTS AND FREQUENCY										RELIEF REQUEST (VRR)	OTHER (CSJ/ROJ/ CMJ/VPS)	NOTES:
							FS	PS	LT	LJ	ST	FT	PI	RV	EX	CM			
CAP-103	48	G-853 - SH 1 I-15	A	2	A														T.S. 4.6.1.7.2 requires LR-CIV, Q
	B AO					C	Q			Q	Q		2Y						
CAP-104	48	G-853 - SH 1 H-15	A	2	A														T.S. 4.6.1.7.2 requires LR-CIV, Q
	B AO					C	Q			Q	Q		2Y						
CAP-203	48	G-853 - SH 1 I-09	A	2	A														T.S. 4.6.1.7.2 requires LR-CIV, Q
	B AO					C	Q			Q	Q		2Y						
CAP-204	48	G-853 - SH 1 J-09	A	2	A														T.S. 4.6.1.7.2 requires LR-CIV, Q
	B AO					C	Q			Q	Q		2Y						

PROGRAM SECTION NO. CEP-IST-2
REVISION NO. 307
PAGE 9 OF 62

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IST PLAN
W3 APPENDIX
VALVE SUMMARY LISTING

PROGRAM SECTION NO. CEP-IST-2
REVISION NO. 307
PAGE 10 OF 62

SYSTEM: CC - COMPONENT COOLING WATER

VALVE NO.	VALVE SIZE (in.) TYPE ACT.	P & ID NO., COORD.	IST PASS	IST CODE CLASS	CODE CAT.	SAFETY POS.	REQUIRED TESTS AND FREQUENCY									RELIEF REQUEST (VRR)	OTHER (CSJ/ROJ/ CMJ/VPS)	NOTES:
							FS	PS	LT	LJ	ST	FT	PI	RV	EX			
CC-111A	6	G-160 - SH 1 F-08	P	3	B	O							2Y					
	B M																	
CC-111B	6	G-160 - SH 1 F-09	P	3	B	O							2Y					
	B M																	
CC-114A	20	G-160 - SH 2 J-12	A	3	B	O							2Y					Open position is passive.
	B AO					C	Q			Q		2Y						
CC-114B	20	G-160 - SH 2 I-13	A	3	B	O							2Y					Open position is passive.
	B AO					C	Q			Q		2Y						
CC-115A	20	G-160 - SH 2 I-12	A	3	B	O							2Y					Open position is passive.
	B AO					C	Q			Q		2Y						
CC-115B	20	G-160 - SH 2 I-13	A	3	B	O							2Y					Open position is passive.
	B AO					C	Q			Q		2Y						
CC-123A	20	G-160 - SH 2 D-12	A	3	C	O										V	CMJ	
	CK SA					C									V			
CC-123AB	20	G-160 - SH 2 D-13	A	3	C	O										V	CMJ	
	CK SA													V				
CC-123B	20	G-160 - SH 2 D-13	A	3	C	O										V	CMJ	
	CK SA					C								V				
CC-126A	20	G-160 - SH 2 B-12	A	3	B	O							2Y					Open position is passive.
	B AO					C	Q			Q		2Y						
CC-126B	20	G-160 - SH 2 B-13	A	3	B	O							2Y					Open position is passive.
	B AO					C	Q			Q		2Y						
CC-127A	20	G-160 - SH 2 B-12	A	3	B	O							2Y					Open position is passive.
	B AO					C	Q			Q		2Y						
CC-127B	20	G-160 - SH 2 B-13	A	3	B	O							2Y					Open position is passive.
	B AO					C	Q			Q		2Y						
CC-134A	16	G-160 - SH 2 A-08	A	3	B	O	Q				Q		2Y					
	B AO					C	Q			Q		2Y						
CC-134B	16	G-160 - SH 5 B-06	A	3	B	O	Q				Q		2Y					
	B AO					C	Q			Q		2Y						
CC-135A	20	G-160 - SH 2 A-11	A	3	B	O	Q				Q		2Y					
	B AO					C	Q			Q		2Y						

**IST PLAN
W3 APPENDIX
VALVE SUMMARY LISTING**

**PROGRAM SECTION NO. CEP-IST-2
REVISION NO. 307
PAGE 12 OF 62**

SYSTEM: CC - COMPONENT COOLING WATER

VALVE NO.	VALVE SIZE (in.) TYPE ACT.	P & ID NO., COORD.	IST PASS	IST CODE CLASS	CODE CAT.	SAFETY POS.	REQUIRED TESTS AND FREQUENCY										RELIEF REQUEST (VRR)	OTHER (CSJ/ROJ/ CMJ/VPS)	NOTES:
							FS	PS	LT	LJ	ST	FT	PI	RV	EX	CM			
CC-179B	8	G-160 - SH 5 B-10	A	3	B	O													Open position is passive.
	B M					C	Q												
CC-1811A	2	G-160 - SH 5 A-05	A	3	B	O	Q												Closed position is passive.
	GL M					C													
CC-1811B	2	G-160 - SH 5 B-11	A	3	B	O	Q												Closed position is passive.
	GL M					C													
CC-181A	20	G-160 - SH 2 A-05	A	3	C	O										V		CMJ	
	CK SA					C										V			
CC-181B	20	G-160 - SH 5 B-11	A	3	C	O										V		CMJ	
	CK SA					C										V			
CC-190A	0.75	G-160 - SH 2 H-04	A	3	C	O								10Y					
	PR SA					C								10Y					
CC-190B	0.75	G-160 - SH 5 H-11	A	3	C	O								10Y					
	PR SA					C								10Y					
CC-200A	16	G-160 - SH 2 I-08	A	3	B														
	B AO					C	Q				Q		2Y						
CC-200B	16	G-160 - SH 2 I-10	A	3	B														
	B AO					C	Q				Q		2Y						
CC-301A	6	G-160 - SH 6 B-04	A	3	B	O	C				C		2Y					CSJ-007	
	B AO					C	C				C		2Y						
CC-301B	6	G-160 - SH 6 B-06	A	3	B	O	C				C		2Y					CSJ-007	
	B AO					C	C				C		2Y						
CC-302A	6	G-160 - SH 6 B-05	A	3	C	O										V		CMJ	
	CK SA															V			
CC-302B	6	G-160 - SH 6 B-06	A	3	C	O										V		CMJ	
	CK SA															V			
CC-322A	6	G-160 - SH 6 E-02	A	3	B	O	C				C		2Y					CSJ-007	
	B AO					C	C				C		2Y						
CC-322B	6	G-160 - SH 3 K-07	A	3	B	O	C				C		2Y					CSJ-007	
	B AO					C	C				C		2Y						
CC-323A	6	G-160 - SH 6 D-03	A	3	C	O										V		CMJ	
	CK SA															V			

IST PLAN
W3 APPENDIX
VALVE SUMMARY LISTING

PROGRAM SECTION NO. CEP-IST-2
REVISION NO. 307
PAGE 13 OF 62

SYSTEM: CC - COMPONENT COOLING WATER

VALVE NO.	VALVE SIZE (in.) TYPE ACT.	P & ID NO., COORD.	IST PASS	IST CODE CLASS	CODE CAT.	SAFETY POS.	REQUIRED TESTS AND FREQUENCY										RELIEF REQUEST (VRR)	OTHER (CSJ/ROJ/ CMJ/VPS)	NOTES:
							FS	PS	LT	LJ	ST	FT	PI	RV	EX	CM			
CC-323B	6	G-160 - SH 6 C-09	A	3	C	O										V	CMJ		
	CK SA															V			
CC-413A	6	G-160 - SH 3 M-05	A	3	B	O	Q				Q								
	B AO																		
CC-413B	6	G-160 - SH 3 L-10	A	3	B	O	Q				Q								
	B AO																		
CC-501	12	G-160 - SH 2 K-09	A	3	B	C													
	B AO						Q				Q		2Y						
CC-562	12	G-160 - SH 2 J-12	A	3	B	C													
	B AO						Q				Q		2Y						
CC-563	16	G-160 - SH 2 J-10	A	3	B	C													
	B AO						Q				Q		2Y						
CC-6057	1.5	G-160 - SH 1 E-14	A	3	C	O								10Y					
	PR SA													10Y					
CC-611	1	G-160 - SH 4 H-03	A	3	C	O								10Y					
	PR SA													10Y					
CC-620	12	G-160 - SH 4 K-03	A	3	B	C													
	B AO						Q				Q	Q	2Y						
CC-629	1	G-160 - SH 1 G-05	A	3	C	O								10Y					
	PR SA													10Y					
CC-636	6	G-160 - SH 1 G-03	A	3	B	C													
	GL AO						Q				Q		2Y						
CC-641	10	G-160 - SH 4 H-06	A	2	A	C											CSJ-013		
	B AO						C	C		J	C		2Y						
CC-644	10	G-160 - SH 4 F-06	A	2	C, A	O										V	CMJ		
	CK SA									J						V			
CC-6443	0.5	G-160-SH4 D-7	A	2	C	O								10Y					
	PR SA													10Y					
CC-710	10	G-160 - SH 4 G-02	A	2	A	C											CSJ-013		
	B AO						C	C		J	C		2Y						
CC-7102	0.5	G-160 - SH 4 G-2	A	2	C	O								10Y					
	PR SA													10Y					

**IST PLAN
W3 APPENDIX
VALVE SUMMARY LISTING**

**PROGRAM SECTION NO. CEP-IST-2
REVISION NO. 307
PAGE 14 OF 62**

SYSTEM: CC - COMPONENT COOLING WATER

VALVE NO.	VALVE SIZE (in.) TYPE ACT.	P & ID NO., COORD.	IST PASS	IST CODE CLASS	CODE CAT.	SAFETY POS.	REQUIRED TESTS AND FREQUENCY										RELIEF REQUEST (VRR)	OTHER (CSJ/ROJ/ CMJ/VPS)	NOTES:
							FS	PS	LT	LJ	ST	FT	PI	RV	EX	CM			
CC-713	10	G-160 - SH 4 H-02	A	2	A													CSJ-013	
	B AO					C	C			J	C		2Y						
CC-727	16	G-160 - SH 2 J-11	A	3	B														
	B AO					C	Q				Q		2Y						
CC-80312B	1	G-160 - SH 4 K-12	A	3	C											V		CMJ	
	CK SA					C										V			
CC-8068	1	G-160 - SH 4 L-07	A	3	C											V		CMJ	
	CK SA					C										V			
CC-807A	8	G-160 - SH 4 H-07	A	2	B	O	Q				Q		2Y						
	B AO																		
CC-807B	8	G-160 - SH 4 H-15	A	2	B	O	Q				Q		2Y						
	B AO																		
CC-808A	8	G-160 - SH 4 H-11	A	2	B	O	Q				Q		2Y						
	B AO																		
CC-808B	8	G-160 - SH 4 H-12	A	2	B	O	Q				Q		2Y						
	B AO																		
CC-811A	1	G-160 - SH 4 F-07	A	2	C	O								10Y					
	PR SA					C								10Y					
CC-811B	1	G-160 - SH 4 G-15	A	2	C	O								10Y					
	PR SA					C								10Y					
CC-812A	1	G-160 - SH 4 G-10	A	2	C	O								10Y					
	PR SA					C								10Y					
CC-812B	1	G-160 - SH 4 F-12	A	2	C	O								10Y					
	PR SA					C								10Y					
CC-822A	8	G-160 - SH 4 H-09	A	2	B	O	Q				Q		2Y						
	B AO																		
CC-822B	8	G-160 - SH 4 H-13	A	2	B	O	Q				Q		2Y						
	B AO																		
CC-823A	8	G-160 - SH 4 H-08	A	2	B	O	Q				Q		2Y						
	B AO																		
CC-823B	8	G-160 - SH 4 H-14	A	2	B	O	Q				Q		2Y						
	B AO																		

IST PLAN
W3 APPENDIX
VALVE SUMMARY LISTING

PROGRAM SECTION NO. CEP-IST-2
REVISION NO. 307
PAGE 15 OF 62

SYSTEM: CC - COMPONENT COOLING WATER

VALVE NO.	VALVE SIZE (in.) TYPE ACT.	P & ID NO., COORD.	IST PASS	IST CODE CLASS	CODE CAT.	SAFETY POS.	REQUIRED TESTS AND FREQUENCY										RELIEF REQUEST (VRR)	OTHER (CSJ/ROJ/ CMJ/VPS)	NOTES:
							FS	PS	LT	LJ	ST	FT	PI	RV	EX	CM			
CC-835A	8	G-160 - SH 4 J-07	A	3	B	O	Q				Q		2Y						
	B AO																		
CC-835B	8	G-160 - SH 4 J-10	A	3	B	O	Q				Q		2Y						
	B AO																		
CC-958A	1	G-160 - SH 3 D-02	A	3	C	O								10Y					
	PR SA					C								10Y					
CC-958B	1	G-160 - SH 3 H-03	A	3	C	O								10Y					
	PR SA					C								10Y					
CC-963A	10	G-160 - SH 3 E-05	A	3	B	O	Q				Q		2Y						Closed position is passive.
	B AO					C							2Y						
CC-963B	10	G-160 - SH 3 H-05	A	3	B	O	Q				Q		2Y						Closed position is passive.
	B AO																		

**IST PLAN
W3 APPENDIX
VALVE SUMMARY LISTING**

**PROGRAM SECTION NO. CEP-IST-2
REVISION NO. 307
PAGE 16 OF 62**

SYSTEM: CHW - CHILLED WATER

VALVE NO.	VALVE SIZE (in.) TYPE ACT.	P & ID NO., COORD.	IST PASS	IST CODE CLASS	CODE CAT.	SAFETY POS.	REQUIRED TESTS AND FREQUENCY										RELIEF REQUEST (VRR)	OTHER (CSJ/ROJ/ CMJ/VPS)	NOTES:
							FS	PS	LT	LJ	ST	FT	PI	RV	EX	CM			
CHW-114A	6	G-853 - SH 3 H-01	A	3	C	O										V		CMJ	
	CK SA															V			
CHW-114AB	6	G-853 - SH 3 H-06	A	3	C	O										V		CMJ	
	CK SA															V			
CHW-114B	6	G-853 - SH 3 H-14	A	3	C	O										V		CMJ	
	CK SA															V			
CHW-1182A	1	1564 - 3308 J-45	A	3	B	O	SK											VPS-006	
	BL SO					C	SK												
CHW-1182B	1	1564 - 3308 J-45	A	3	B	O	SK											VPS-006	
	BL SO					C	SK												
CHW-1182C	1	1564 - 3308 J-45	A	3	B	O	SK											VPS-006	
	BL SO					C	SK												
CHW-132A	6	G-853 - SH 3 J-02	P	3	B														
	B M					C							2Y						
CHW-132B	6	G-853 - SH 3 J-13	P	3	B														
	B M					C							2Y						
CHW-578	2	G-853 - SH 6 I-13	A	3	B	O	Q				Q								
	GL HO																		
CHW-591	4	G-853 - SH 6 E-19	A	3	B	O	Q				Q								
	GL HO																		
CHW-603	4	G-853 - SH 6 C-06	A	3	B	O	Q				Q								
	GL HO																		
CHW-786A	6	G-853 - SH 3 M-04	P	3	B	O							2Y						
	B M																		
CHW-786B	6	G-853 - SH 3 M-11	P	3	B	O							2Y						
	B M																		
CHW-887	2	G-853 - SH 5 H-10	A	3	B	O	Q				Q								
	GL HO																		
CHW-900	4	G-853 - SH 6 B-19	A	3	B	O	Q				Q								
	GL HO																		
CHW-919	4	G-853 - SH 6 A-19	A	3	B	O	Q				Q								
	GL HO																		

**IST PLAN
W3 APPENDIX
VALVE SUMMARY LISTING**

**PROGRAM SECTION NO. CEP-IST-2
REVISION NO. 307
PAGE 17 OF 62**

SYSTEM: CMU - CONDENSATE MAKEUP & STORAGE

VALVE NO.	VALVE SIZE (in.) TYPE ACT.	P & ID NO., COORD.	IST PASS	IST CODE CLASS	CODE CAT.	SAFETY POS.	REQUIRED TESTS AND FREQUENCY										RELIEF REQUEST (VRR)	OTHER (CSJ/ROJ/ CMJ/VPS)	NOTES:
							FS	PS	LT	LJ	ST	FT	PI	RV	EX	CM			
CMU-0524A	1	G-164 - SH 2	A	3	B	O	Q				Q								
	GL SO					C	Q				Q								
CMU-0524B	1	G-164 - SH 2 L-06	A	3	B	O	Q				Q								
	GL SO					C	Q				Q								
CMU-0532A	1	G-853 - SH 3 E-02	A	3	B	O	Q				Q		2Y						
	GL SO					C	Q				Q		2Y						
CMU-0532AB	1	G-853 - SH 3 E-06	A	3	B	O	Q				Q		2Y						
	GL SO					C	Q				Q		2Y						
CMU-0532B	1	G-853 - SH 3 E-13	A	3	B	O	Q				Q		2Y						
	GL SO					C	Q				Q		2Y						
CMU-135	3	G-163 B-07	P	3	B														
	GA M					C							2Y						
CMU-21312A	1	G-160 - SH 6 L-05	A	3	C											V	CMJ		
	CK SA					C										V			
CMU-21312B	1	G-160 - SH 6 L-05	A	3	C											V	CMJ		
	CK SA					C										V			
CMU-244	1.5	G-161 - SH 2 E-12	P	2	A														
	GL M					C				J			2Y						
CMU-245	1.5	G-161 - SH 2 E-12	A	2	C, A	O										V	CMJ		
	CK SA					C				J						V			
CMU-508A	1	G-160 - SH 6 J-08	A	3	C	O										V	CMJ		
	CK SA															V			
CMU-508B	1	G-160 - SH 6 J-11	A	3	C	O										V	CMJ		
	CK SA															V			
CMU-510A	4	G-160 - SH 6 J-08	A	3	C	O										V	CMJ		
	CK SA					C										V			
CMU-510B	4	G-160 - SH 6 J-11	A	3	C	O										V	CMJ		
	CK SA					C										V			
CMU-523A	1	G-160 - SH 6 L-08	A	3	B	O													Open position is passive.
	GL M					C	2Y												
CMU-523B	1	G-160 - SH 6 L-09	A	3	N	O													Open position is passive.
	GL M					C	2Y												

**IST PLAN
W3 APPENDIX
VALVE SUMMARY LISTING**

**PROGRAM SECTION NO. CEP-IST-2
REVISION NO. 307
PAGE 18 OF 62**

SYSTEM: CMU - CONDENSATE MAKEUP & STORAGE

VALVE NO.	VALVE SIZE (in.) TYPE ACT.	P & ID NO., COORD.	IST PASS	IST CODE CLASS	CODE CAT.	SAFETY POS.	REQUIRED TESTS AND FREQUENCY										RELIEF REQUEST (VRR)	OTHER (CSJ/ROJ/ CMJ/VPS)	NOTES:
							FS	PS	LT	LJ	ST	FT	PI	RV	EX	CM			
CMU-527A	2	G-160 - SH 6 M-05	A	3	B	O													Open position is passive.
	GL M					C	2Y												
CMU-527B	2	G-160 - SH 6 L-10	A	3	B	O													Open position is passive.
	GL M					C	2Y												
CMU-536A	4	G-160 - SH 6 M-07	A	3	B	O													Open position is passive.
	GL M					C	2Y												
CMU-536B	4	G-160 - SH 6 M-10	A	3	B	O													Open position is passive.
	GL M					C	2Y												
CMU-538A	4	G-160 - SH 6 M-07	A	3	B	O	Q				Q		2Y						
	GL AO																		
CMU-538B	4	G-160 - SH 6 M-11	A	3	B	O	Q				Q		2Y						
	GL AO																		

**IST PLAN
W3 APPENDIX
VALVE SUMMARY LISTING**

**PROGRAM SECTION NO. CEP-IST-2
REVISION NO. 307
PAGE 19 OF 62**

SYSTEM: CS - CONTAINMENT SPRAY

VALVE NO.	VALVE SIZE (in.) TYPE ACT.		P & ID NO., COORD.	IST PASS	IST CODE CLASS	CODE CAT.	SAFETY POS.	REQUIRED TESTS AND FREQUENCY									RELIEF REQUEST (VRR)	OTHER (CSJ/ROJ/ CMJ/VPS)	NOTES:
								FS	PS	LT	LJ	ST	FT	PI	RV	EX			
CS-101A	14		G-163 L-03	P	2	B	O							2Y					
	GA	M																	
CS-101B	14		G-163 L-03	P	2	B	O							2Y					
	GA	M																	
CS-1031B	0.75		G-163 F-03	A	2	C	O								10Y				
	PR	SA														10Y			
CS-1041A	0.75		G-163 J-04	A	2	C	O								10Y				
	PR	SA														10Y			
CS-111A	10		G-163 J-05	A	2	C	O							2Y			V	CMJ	
	CK	SA/M												2Y			V		
CS-111B	10		G-163 F-05	A	2	C	O							2Y			V	CMJ	
	CK	SA/M												2Y			V		
CS-117A	10		G-163 K-09	A	2	C	O							2Y			V	CMJ	
	CK	SA/M												2Y			V		
CS-117B	10		G-163 G-09	A	2	C	O							2Y			V	CMJ	
	CK	SA/M												2Y			V		
CS-125A	10		G-163 H-13	A	2	B	O	Q				Q		2Y					
	GA	AO																	
CS-125B	10		G-163 G-12	A	2	B	O	Q				Q		2Y					
	GA	AO																	
CS-128A	10		G-163 G-14	A	2	C	O										V	CMJ	
	CK	SA															V		
CS-128B	10		G-163 G-13	A	2	C	O										V	CMJ	
	CK	SA															V		
CS-129A	0.5		G-163 G-14	A	2	B													
	GL	SO					C	Q			Q		2Y						
CS-129B	0.5		G-163 G-13	A	2	B													
	GL	SO					C	Q			Q		2Y						

IST PLAN
W3 APPENDIX
VALVE SUMMARY LISTING

PROGRAM SECTION NO. CEP-IST-2
REVISION NO. 307
PAGE 20 OF 62

SYSTEM: CVC - CHEMICAL AND VOLUME CONTROL

VALVE NO.	VALVE SIZE (in.) TYPE ACT.	P & ID NO., COORD.	IST PASS	IST CODE CLASS	CODE CAT.	SAFETY POS.	REQUIRED TESTS AND FREQUENCY										RELIEF REQUEST (VRR)	OTHER (CSJ/ROJ/ CMJ/VPS)	NOTES:
							FS	PS	LT	LJ	ST	FT	PI	RV	EX	CM			
CVC-101	2	G-168 - SH 1 D-07	A	1	B													CSJ-005	
	GL AO					C	C				C		2Y						
CVC-103	2	G-168 - SH 1 D-07	A	1	A													CSJ-005	
	GL AO					C	C			J	C		2Y						
CVC-1081	1.0	G-168 - SH 1 E-7	A	2	C	O								10Y					
	PR SA					C						10Y							
CVC-109	2	G-168 - SH 1 E-07	A	2	A													CSJ-005	
	GL AO					C	C			J	C		2Y						
CVC-183	4	G-168 - SH 2 F-07	A	2	B													CSJ-006	
	GA MO					C	C				C		2Y						
CVC-184	4	G-168 - SH 2 F-05	A	2	C											V		CMJ	
	CK SA					C									V				
CVC-185	0.75	G-168 - SH 2 E-07	A	2	C	O								10Y					
	PR SA					C							10Y						
CVC-192A	1.5	G-168 - SH 2 I-05	A	2	C	O								10Y					
	PR SA					C							10Y						
CVC-192AB	1.5	G-168 - SH 2 K-05	A	2	C	O								10Y					
	PR SA					C							10Y						
CVC-192B	1.5	G-168 - SH 2 F-03	A	2	C	O								10Y					
	PR SA					C							10Y						
CVC-194A	2	G-168 - SH 2 J-06	A	2	C	O										V		CMJ	
	CK SA															V			
CVC-194AB	2	G-168 - SH 2 F-03	A	2	C	O										V		CMJ	
	CK SA															V			
CVC-194B	2	G-168 - SH 2 E-03	A	2	C	O										V		CMJ	
	CK SA															V			
CVC-209	2	G-168 - SH 1 B-06	P	2	B	O							2Y						
	GA AO																		
CVC-216A	2	G-168 - SH 1	A	1	B	O	C				C		2Y					CSJ-001	
	GL SO					C	C				C		2Y						
CVC-216B	2	G-168 - SH 1 C-07	A	1	B	O	C				C		2Y					CSJ-001	
	GL SO					C	C				C		2Y						

**IST PLAN
W3 APPENDIX
VALVE SUMMARY LISTING**

**PROGRAM SECTION NO. CEP-IST-2
REVISION NO. 307
PAGE 21 OF 62**

SYSTEM: CVC - CHEMICAL AND VOLUME CONTROL

VALVE NO.	VALVE SIZE (in.) TYPE ACT.	P & ID NO., COORD.	IST PASS	IST CODE CLASS	CODE CAT.	SAFETY POS.	REQUIRED TESTS AND FREQUENCY										RELIEF REQUEST (VRR)	OTHER (CSJ/ROJ/ CMJ/VPS)	NOTES:
							FS	PS	LT	LJ	ST	FT	PI	RV	EX	CM			
CVC-217A	2	G-168 - SH 1 C-08	A	1	C	O										V		CMJ	
	CK SA					C										V			
CVC-217B	2	G-168 - SH 1 C-08	A	1	C	O										V		CMJ	
	CK SA					C										V			
CVC-218A	2	G-168 - SH 1 B-08	A	1	B	O	Q				Q		2Y						
	GL SO					C	Q				Q		2Y						
CVC-218B	2	G-168 - SH 1 B-07	A	1	B	O	Q				Q		2Y						
	GL SO					C	Q				Q		2Y						
CVC-219	2	G-168 - SH 1 A-07	A	1	C	O										V		CMJ	
	CK SA															V			
CVC-221A	2	G-168 - SH 1 B-08	A	1	C	O										V		CMJ	
	CK SA					C										V			
CVC-221B	2	G-168 - SH 1 B-08	A	1	C	O										V		CMJ	
	CK SA					C										V			
CVC-401	0.75	G-168 - SH 2 B-11	A	2	A													CSJ-004	
	GL AO					C	C			J	C		2Y						
CVC-507	3	G-168 - SH 2 F-16	A	3	B	O	C				C		2Y					CSJ-003	Closed position is passive.
	GA MO					C							2Y						
CVC-508	3	G-168 - SH 2 F-13	A	2	C	O										V		CMJ	
	CK SA					C										V			
CVC-510	3	G-168 - SH 2 E-03	A	3	B														
	GL AO					C	Q				Q		2Y						

**IST PLAN
W3 APPENDIX
VALVE SUMMARY LISTING**

**PROGRAM SECTION NO. CEP-IST-2
REVISION NO. 307
PAGE 22 OF 62**

SYSTEM: CVR - CONTAINMENT VACUUM RELIEF

VALVE NO.	VALVE SIZE (in.) TYPE ACT.	P & ID NO., COORD.	IST PASS	IST CODE CLASS	CODE CAT.	SAFETY POS.	REQUIRED TESTS AND FREQUENCY										RELIEF REQUEST (VRR)	OTHER (CSJ/ROJ/ CMJ/VPS)	NOTES:
							FS	PS	LT	LJ	ST	FT	PI	RV	EX	CM			
CVR-101	24	G-853 - SH 1 E-17	A	2	C, A	O	Q				Q		2Y	R				VPS-007	Closed pos is passive. Vac Relief, Power-Operated
	B AO					C				J			2Y	R					
CVR-102	24	G-853 - SH 1 E-17	A	2	C, A	O								R				VPS-007	Vacuum Relief
	CK SA					C				J				R					
CVR-201	24	G-853 - SH 1 K-13	A	2	C, A	O	Q				Q		2Y	R				VPS-007	Closed pos is passive. Vac Relief, Power-Operated
	B AO					C				J			2Y	R					
CVR-202	24	G-853 - SH 1 J-13	A	2	C, A	O								R				VPS-007	Vacuum Relief
	CK SA					C				J				R					
CVR-301A	0.5	B-430-SH DP-26	P	2	B	O							2Y						
	GL M																		
CVR-301B	0.5	B-430-SH DP-26	P	2	B	O							2Y						
	GL M																		
CVR-302A	0.5	B-430-SH DP-26	A	2	C	O										V		CMJ	Augmented FSE-C
	CK SA					C										V			
CVR-302B	0.5	B-430-SH DP-26	A	2	C	O										V		CMJ	Augmented FSE-C
	CK SA					C										V			
CVR-400	0.375	B-430 - DP031	A	2	A														LLRT required each refueling
	GL SO					C	Q			J	Q		2Y						
CVR-401	0.375	B-430 - DP031	A	2	A														LLRT required each refueling
	GL SO					C	Q			J	Q		2Y						

PROGRAM SECTION NO. CEP-IST-2
REVISION NO. 307
PAGE 23 OF 62

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**IST PLAN
W3 APPENDIX
VALVE SUMMARY LISTING**

**PROGRAM SECTION NO. CEP-IST-2
REVISION NO. 307
PAGE 24 OF 62**

SYSTEM: EFW - EMERGENCY FEEDWATER

VALVE NO.	VALVE SIZE (in.) TYPE ACT.	P & ID NO., COORD.	IST PASS	IST CODE CLASS	CODE CAT.	SAFETY POS.	REQUIRED TESTS AND FREQUENCY										RELIEF REQUEST (VRR)	OTHER (CSJ/ROJ/ CMJ/VPS)	NOTES:
							FS	PS	LT	LJ	ST	FT	PI	RV	EX	CM			
EFW-211B	4	G-153 - SH 4 I-12	P	3	B	O							2Y						
	GA M																		
EFW-215A	6	G-153 - SH 4 I-07	P	3	B	O							2Y						
	GA M																		
EFW-215B	6	G-153 - SH 4 I-12	P	3	B	O							2Y						
	GA M																		
EFW-2191A	6	G-153 - SH 4 H-07	A	3	C	O										V		CMJ	
	CK SA					C										V			
EFW-2191B	6	G-153 - SH 4 H-12	A	3	C	O										V		CMJ	
	CK SA					C										V			
EFW-223A	4	G-153 - SH 4 C-09	A	2	B	O	Q				Q		2Y						
	GL AO					C	Q				Q		2Y						
EFW-223B	4	G-153 - SH 4 F-11	A	2	B	O	Q				Q		2Y						
	GL AO					C	Q				Q		2Y						
EFW-224A	4	G-153 - SH 4 C-11	A	2	B	O	Q				Q		2Y						
	GL AO					C	Q				Q		2Y						
EFW-224B	4	G-153 - SH 4 F-12	A	2	B	O	Q				Q		2Y						
	GL AO					C	Q				Q		2Y						
EFW-228A	4	G-153 - SH 4 B-11	A	2	B	O	Q				Q		2Y						
	GL AO					C	Q				Q		2Y						
EFW-228B	4	G-153 - SH 4 B-11	A	2	B	O	Q				Q		2Y						
	GL AO					C	Q				Q		2Y						
EFW-229A	4	G-153 - SH 4 B-09	A	2	B	O	Q				Q		2Y						
	GL AO					C	Q				Q		2Y						
EFW-229B	4	G-153 - SH 4 D-11	A	2	B	O	Q				Q		2Y						
	GL AO					C	Q				Q		2Y						

**IST PLAN
W3 APPENDIX
VALVE SUMMARY LISTING**

**PROGRAM SECTION NO. CEP-IST-2
REVISION NO. 307
PAGE 25 OF 62**

SYSTEM: EGA - EMERGENCY DIESEL GENERATOR AIR

VALVE NO.	VALVE SIZE (in.) TYPE ACT.	P & ID NO., COORD.	IST PASS	IST CODE CLASS	CODE CAT.	SAFETY POS.	REQUIRED TESTS AND FREQUENCY										RELIEF REQUEST (VRR)	OTHER (CSJ/ROJ/ CMJ/VPS)	NOTES:
							FS	PS	LT	LJ	ST	FT	PI	RV	EX	CM			
EGA-136A	1	G-164 - SH 2 I-02	A	3	C											V		CMJ	
	CK SA					C										V			
EGA-136B	1	G-164 - SH 2 M-02	A	3	C											V		CMJ	
	CK SA					C										V			
EGA-137A	1	G-164 - SH 2 F-02	A	3	C											V		CMJ	
	CK SA					C										V			
EGA-137B	1	G-164 - SH 2 K-02	A	3	C											V		CMJ	
	CK SA					C										V			
EGA-140A	0.75	G-164 - SH 2 I-02	A	3	C	O								10Y					
	PR SA					C								10Y					
EGA-140B	0.75	G-164 - SH 2 M-02	A	3	C	O								10Y					
	PR SA					C								10Y					
EGA-141A	0.75	G-164 - SH 2 F-02	A	3	C	O								10Y					
	PR SA					C								10Y					
EGA-141B	0.75	G-164 - SH 2 K-02	A	3	C	O								10Y					
	PR SA					C								10Y					

**IST PLAN
W3 APPENDIX
VALVE SUMMARY LISTING**

**PROGRAM SECTION NO. CEP-IST-2
REVISION NO. 307
PAGE 26 OF 62**

SYSTEM: EGF - EMERGENCY DIESEL GENERATOR FUEL

VALVE NO.	VALVE SIZE (in.) TYPE ACT.	P & ID NO., COORD.	IST PASS	IST CODE CLASS	CODE CAT.	SAFETY POS.	REQUIRED TESTS AND FREQUENCY									RELIEF REQUEST (VRR)	OTHER (CSJ/ROJ/ CMJ/VPS)	NOTES:
							FS	PS	LT	LJ	ST	FT	PI	RV	EX	CM		
EGF-109A	2	G-164 - SH 1 D-05	A	3	C	O										V	CMJ	
	CK SA															V		
EGF-109B	2	G-164 - SH 1 H-05	A	3	C	O										V	CMJ	
	CK SA															V		

**IST PLAN
W3 APPENDIX
VALVE SUMMARY LISTING**

**PROGRAM SECTION NO. CEP-IST-2
REVISION NO. 307
PAGE 27 OF 62**

SYSTEM: EGL - EMERGENCY DIESEL GENERATOR LUBE OIL

VALVE NO.	VALVE SIZE (in.) TYPE ACT.	P & ID NO., COORD.	IST PASS	IST CODE CLASS	CODE CAT.	SAFETY POS.	REQUIRED TESTS AND FREQUENCY								RELIEF REQUEST (VRR)	OTHER (CSJ/ROJ/ CMJ/VPS)	NOTES:	
							FS	PS	LT	LJ	ST	FT	PI	RV				EX
EGL-202A	2	5817-9519	A	3	C	O							10Y					
	PR SA					C							10Y					
EGL-202B	2	1564-2044	A	3	C	O							10Y					
	PR SA					C							10Y					

**IST PLAN
W3 APPENDIX
VALVE SUMMARY LISTING**

**PROGRAM SECTION NO. CEP-IST-2
REVISION NO. 307
PAGE 28 OF 62**

SYSTEM: FP - FIRE PROTECTION

VALVE NO.	VALVE SIZE (in.) TYPE ACT.		P & ID NO., COORD.	IST PASS	IST CODE CLASS	CODE CAT.	SAFETY POS.	REQUIRED TESTS AND FREQUENCY								RELIEF REQUEST (VRR)	OTHER (CSJ/ROJ/ CMJ/VPS)	NOTES:
								FS	PS	LT	LJ	ST	FT	PI	RV			
FP-601A	3		G-161 - SH 1 E-07	A	2	A												
	GL	AO					C	Q			J	Q		2Y				
FP-601B	3		G-161 - SH 1 E-10	A	2	A												
	GL	AO					C	Q			J	Q		2Y				
FP-602A	3		G-161 - SH 1 E-08	A	2	C, A										V	CMJ	
	CK	SA					C				J					V		
FP-602B	3		G-161 - SH 1 E-10	A	2	C, A										V	CMJ	
	CK	SA					C				J					V		

**IST PLAN
W3 APPENDIX
VALVE SUMMARY LISTING**

**PROGRAM SECTION NO. CEP-IST-2
REVISION NO. 307
PAGE 30 OF 62**

SYSTEM: FW - FEEDWATER

VALVE NO.	VALVE SIZE (in.) TYPE ACT.		P & ID NO., COORD.	IST PASS	IST CODE CLASS	CODE CAT.	SAFETY POS.	REQUIRED TESTS AND FREQUENCY										RELIEF REQUEST (VRR)	OTHER (CSJ/ROJ/ CMJ/VPS)	NOTES:
								FS	PS	LT	LJ	ST	FT	PI	RV	EX	CM			
FW-166A	6		G-153 - SH 4 B-05	A	N	B												CSJ-011	Augmented ST-C, PI	
	GA	AO					C	C				C		2Y						
FW-166B	6		G-153 - SH 4 F-05	A	N	B												CSJ-011	Augmented ST-C, PI	
	GA	AO					C	C				C		2Y						
FW-173A	16		G-153 - SH 4 C-05	A	N	B												CSJ-008	Augmented ST-C, PI	
	ANG	AO					C	C				C		2Y						
FW-173B	16		G-153 - SH 4 C-05	A	N	B												CSJ-008	Augmented ST-C, PI	
	ANG	AO					C	C				C		2Y						
FW-1763A	1		G-153 - SH 4 C-07	A	3	C	O										V	CMJ		
	CK	SA					C										V			
FW-1763B	1		G-153 - SH 4 F-07	A	3	C	O										V	CMJ		
	CK	SA					C										V			
FW-179A	4		G-153 - SH 4 B-08	P	3	B														
	GA	MO					C							2Y						
FW-179B	4		G-153 - SH 4 E-08	P	3	B														
	GA	MO					C							2Y						
FW-181A	20		G-153 - SH 4 D-09	A	2	C											V	CMJ		
	CK	SA					C										V			
FW-181B	20		G-153 - SH 4 D-10	A	2	C											V	CMJ		
	CK	SA					C										V			
FW-184A	20		G-153 - SH 4 A-09	A	2	B												CSJ-009		
	GA	HP					C	C			J	C		2Y						
FW-184B	20		G-153 - SH 4 D-10	A	2	B												CSJ-009		
	GA	HP					C	C			J	C		2Y						

**IST PLAN
W3 APPENDIX
VALVE SUMMARY LISTING**

**PROGRAM SECTION NO. CEP-IST-2
REVISION NO. 307
PAGE 31 OF 62**

SYSTEM: GWM- GASEOUS WASTE MANAGEMENT

VALVE NO.	VALVE SIZE (in.) TYPE ACT.		P & ID NO., COORD.	IST PASS	IST CODE CLASS	CODE CAT.	SAFETY POS.	REQUIRED TESTS AND FREQUENCY								RELIEF REQUEST (VRR)	OTHER (CSJ/ROJ/ CMJ/VPS)	NOTES:
								FS	PS	LT	LJ	ST	FT	PI	RV			
GWM-104	1		G-170 - SH 4 H-02	A	2	A												
	D	AO					C	Q			J	Q		2Y				
GWM-105	1		G-170 - SH 4 G-03	A	2	A												
	D	AO					C	Q			J	Q		2Y				

**IST PLAN
W3 APPENDIX
VALVE SUMMARY LISTING**

**PROGRAM SECTION NO. CEP-IST-2
REVISION NO. 307
PAGE 32 OF 62**

SYSTEM: HRA - HYDROGEN RECOMBINER ANALYZER

VALVE NO.	VALVE SIZE (in.) TYPE ACT.	P & ID NO. , COORD.	IST PASS	IST CODE CLASS	CODE CAT.	SAFETY POS.	REQUIRED TESTS AND FREQUENCY										RELIEF REQUEST (VRR)	OTHER (CSJ/ROJ/ CMJ/VPS)	NOTES:
							FS	PS	LT	LJ	ST	FT	PI	RV	EX	CM			
HRA-0101A	0.375	B-430 SH SP-01A	A	2	B	O	Q				R							ROJ-001	
	GL SO																		
HRA-0101B	0.375	B-430 SH SP-01B	A	2	B	O	Q				R							ROJ-001	
	GL SO																		
HRA-0109A	0.375	B-430 SH SP-01A	A	2	A	O	Q				Q		2Y					VPS-001	
	GL SO					C	Q			J	Q		2Y						
HRA-0109B	0.375	B-430 SH SP-01B	A	2	A	O	Q				Q		2Y					VPS-001	
	GL SO					C	Q			J	Q		2Y						
HRA-0110A	0.375	B-430 SH SP-01A	A	2	A	O	Q				Q		2Y					VPS-001	
	GL SO					C	Q			J	Q		2Y						
HRA-0110B	0.375	B-430 SH SP-01B	A	2	A	O	Q				Q		2Y					VPS-001	
	GL SO					C	Q			J	Q		2Y						
HRA-0126A	0.375	B-430 SH SP-01A	A	2	A	O	Q				Q		2Y					VPS-001	
	GL SO					C	Q			J	Q		2Y						
HRA-0126B	0.375	B-430 SH SP-01B	A	2	A	O	Q				Q		2Y					VPS-001	
	GL SO					C	Q			J	Q		2Y						
HRA-0201A	0.375	B-430 SH SP-01A	A	2	B	O	Q				Q							VPS-002	
	GL SO					C	Q				Q								
HRA-0201B	0.375	B-430 SH SP-01B	A	2	B	O	Q				Q							VPS-002	
	GL SO					C	Q				Q								
HRA-0202A	0.375	B-430 SH SP-01A	A	2	B	O	Q				Q							VPS-002	
	GL SO					C	Q				Q								
HRA-0202B	0.375	B-430 SH SP-01B	A	2	B	O	Q				Q							VPS-002	
	GL SO					C	Q				Q								
HRA-128A	0.375	B-430 SH SP-01A	A	2	C, A	O										V		CMJ	
	CK SA					C				J						V			
HRA-128B	0.375	B-430 SH SP-01B	A	2	C, A	O										V		CMJ	
	CK SA					C				J						V			
HRA-2011	0.375	B-430 SH SP-01B	P	2	A														T.S. 6.8.4(a) Requires LR each refueling. LR-BYP
	GL SO					C			R				2Y						
HRA-20121	0.375	B-430 SH SP-01B	P	2	A														T.S. 6.8.4(a) Requires LR each refueling. LR-BYP
	GL SO					C			R				2Y						

PROGRAM SECTION NO. CEP-IST-2
REVISION NO. 307
PAGE 33 OF 62

[illegible]

**IST PLAN
W3 APPENDIX
VALVE SUMMARY LISTING**

**PROGRAM SECTION NO. CEP-IST-2
REVISION NO. 307
PAGE 34 OF 62**

SYSTEM: HVC - CONTROL ROOM HVAC

VALVE NO.	VALVE SIZE (in.) TYPE ACT.	P & ID NO., COORD.	IST PASS	IST CODE CLASS	CODE CAT.	SAFETY POS.	REQUIRED TESTS AND FREQUENCY								RELIEF REQUEST (VRR)	OTHER (CSJ/ROJ/ CMJ/VPS)	NOTES:
							FS	PS	LT	LJ	ST	FT	PI	RV	EX	CM	
HVC-101	16	G-853 - SH 23 A-04	A	3	B												
	B AO					C	Q				Q		2Y				
HVC-102	16	G-853 - SH 23 A-04	A	3	B												
	B AO					C	Q				Q		2Y				
HVC-201A	8	G-853 - SH 23 D-05	A	3	B	O	Q				Q		2Y				
	B MO					C	Q				Q		2Y				
HVC-201B	8	G-853 - SH 23 D-05	A	3	B	O	Q				Q		2Y				
	B MO					C	Q				Q		2Y				
HVC-202A	8	G-853 - SH 23 D-04	A	3	B	O							2Y				Open position is passive.
	B MO					C	Q				Q		2Y				
HVC-202B	8	G-853 - SH 23 D-04	A	3	B	O							2Y				Open position is passive.
	B MO					C	Q				Q		2Y				
HVC-203A	8	G-853 - SH 23 K-05	A	3	B	O	Q				Q		2Y				
	B MO					C	Q				Q		2Y				
HVC-203B	8	G-853 - SH 23 K-04	A	3	B	O	Q				Q		2Y				
	B MO					C	Q				Q		2Y				
HVC-204A	8	G-853 - SH 23 K-05	A	3	B	O							2Y				Open position is passive.
	B MO					C	Q				Q		2Y				
HVC-204B	8	G-853 - SH 23 K-05	A	3	B	O							2Y				Open position is passive.
	B MO					C	Q				Q		2Y				
HVC-306	12	G-853 - SH 23 F-13	A	3	B												
	B AO					C	Q				Q		2Y				
HVC-307	12	G-853 - SH 23 E-13	A	3	B												
	B AO					C	Q				Q		2Y				
HVC-313	12	G-853 - SH 23 D-14	A	3	B												
	B AO					C	Q				Q		2Y				
HVC-314	12	G-853 - SH 1 D-13	A	3	B												
	B AO					C	Q				Q		2Y				

PROGRAM SECTION NO. CEP-IST-2
REVISION NO. 307
PAGE 35 OF 62

[illegible]

PROGRAM SECTION NO. CEP-IST-2
REVISION NO. 307
PAGE 36 OF 62

[illegible]

**IST PLAN
W3 APPENDIX
VALVE SUMMARY LISTING**

**PROGRAM SECTION NO. CEP-IST-2
REVISION NO. 307
PAGE 37 OF 62**

SYSTEM: IA - INSTRUMENT AIR

VALVE NO.	VALVE SIZE (in.) TYPE ACT.	P & ID NO., COORD.	IST PASS	IST CODE CLASS	CODE CAT.	SAFETY POS.	REQUIRED TESTS AND FREQUENCY										RELIEF REQUEST (VRR)	OTHER (CSJ/ROJ/ CMJ/VPS)	NOTES:
							FS	PS	LT	LJ	ST	FT	PI	RV	EX	CM			
IA-209	0.25	B430-V66	A	3	C, A											V		CMJ	Other owner defined leak rate test
	CK SA					C			2Y							V			
IA-520212	1	G-166 - SH 2 M-02	A	3	C, A											V		CMJ	Other owner defined leak rate test
	CK SA					C			2Y							V			
IA-520242	1	G-166 - SH 2 M-03	A	3	C, A											V		CMJ	Other owner defined leak rate test
	CK SA					C			2Y							V			
IA-552182	1	G-166 - SH 2 M-03	A	3	C, A											V		CMJ	Other owner defined leak rate test
	CK SA					C			2Y							V			
IA-552202	1	G-166 - SH 2 M-03	A	3	C, A											V		CMJ	Other owner defined leak rate test
	CK SA					C			2Y							V			
IA-57212	1	G-166 - SH 2 M-02	A	3	C, A											V		CMJ	Other owner defined leak rate test
	CK SA					C			2Y							V			
IA-573132	1	G-166 - SH 2 M-01	A	3	C, A											V		CMJ	Other owner defined leak rate test
	CK SA					C			2Y							V			
IA-902112	1	G-166 - SH 2 M-05	A	3	C, A											V		CMJ	Other owner defined leak rate test
	CK SA					C			2Y							V			
IA-90232	1	G-166 - SH 2 M-04	A	3	C, A											V		CMJ	Other owner defined leak rate test
	CK SA					C			2Y							V			
IA-909	2	G-152 - SH 4 B-11	A	2	A													CSJ-014	
	GL AO					C	C			J	C		2Y						
IA-910	2	G-152 - SH 6 K-12	A	2	C, A											V		CMJ	
	CK SA					C				J						V			
IA-965	0.375	G-152 - Sh 9 C-03	A	3	B	O	2Y												
	GL M																		
IA-967	0.75	G-152 - SH 9 C-05	A	3	C	O								10Y					
	PR SA					C								10Y					
IA-968	0.375	G-152 - SH 9 C-05	A	3	B	O	2Y												
	GL M																		
IA-969	0.375	G-152 - SH 9 C-06	A	3	B	O	2Y												Closed position is passive.
	GL M					C													
IA-975	0.375	G-152 - SH 9 C-09	A	3	B	O	2Y												
	GL M																		

PROGRAM SECTION NO. CEP-IST-2
REVISION NO. 307
PAGE 38 OF 62

[illegible]

PROGRAM SECTION NO. CEP-IST-2
REVISION NO. 307
PAGE 39 OF 62

VALVE NO.	VALVE SIZE (in.) TYPE ACT.	P & ID NO., COORD.	IST PASS	IST CODE CLASS	CODE CAT.	SAFETY POS.	REQUIRED TESTS AND FREQUENCY									RELIEF REQUEST (VRR)	OTHER (CSJ/ROJ/ CMJ/VPS)	NOTES:	
							FS	PS	LT	LJ	ST	FT	PI	RV	EX				CM
LRT-109	10	G-164 - SH 1 L-10	P	2	A														
	GA M					C			J										
LRT-201	1	G-164 - SH 1 L-12	P	2	A														
	GL M					C			J										
LRT-202	1	G-164 - SH 1 L-12	P	2	A														
	GL M					C			J										
LRT-203	1	G-164 - SH 1 M-14	P	2	A														
	GL M					C			J										
LRT-204	1	G-164 - SH 1 L-12	P	2	A														
	GL M					C			J										
LRT-400	0.5	B-430 - DP031	P	2	A														
	GL M					C			J										

**IST PLAN
W3 APPENDIX
VALVE SUMMARY LISTING**

**PROGRAM SECTION NO. CEP-IST-2
REVISION NO. 307
PAGE 40 OF 62**

SYSTEM: MS - MAIN STEAM

VALVE NO.	VALVE SIZE (in.) TYPE ACT.	P & ID NO., COORD.	IST PASS	IST CODE CLASS	CODE CAT.	SAFETY POS.	REQUIRED TESTS AND FREQUENCY										RELIEF REQUEST (VRR)	OTHER (CSJ/ROJ/ CMJ/VPS)	NOTES:
							FS	PS	LT	LJ	ST	FT	PI	RV	EX	CM			
MS-106A	8	G-151 - SH 1 C-06	A	2	C	O								5Y					
	PR SA					C								5Y					
MS-106B	8	G-151 - SH 1 G-06	A	2	C	O								5Y					
	PR SA					C								5Y					
MS-108A	8	G-151 - SH 1 B-07	A	2	C	O								5Y					
	PR SA					C								5Y					
MS-108B	8	G-151 - SH 1 G-06	A	2	C	O								5Y					
	PR SA					C								5Y					
MS-110A	8	G-151 - SH 1 B-07	A	2	C	O								5Y					
	PR SA					C								5Y					
MS-110B	8	G-151 - SH 1 G-07	A	2	C	O								5Y					
	PR SA					C								5Y					
MS-112A	8	G-151 - SH 1 B-08	A	2	C	O								5Y					
	PR SA					C								5Y					
MS-112B	8	G-151 - SH 1 G-08	A	2	C	O								5Y					
	PR SA					C								5Y					
MS-113A	8	G-151 - SH 1 B-09	A	2	C	O								5Y					
	PR SA					C								5Y					
MS-113B	8	G-151 - SH 1 G-09	A	2	C	O								5Y					
	PR SA					C								5Y					
MS-114A	8	G-151 - SH 1 B-10	A	2	C	O								5Y					
	PR SA					C								5Y					
MS-114B	8	G-151 - SH 1 G-10	A	2	C	O								5Y					
	PR SA					C								5Y					
MS-116A	8	G-151 - SH 1 C-10	A	2	B	O	Q				Q		2Y						
	ANG AO					C	Q				Q		2Y						
MS-116B	8	G-151 - SH 1 G-10	A	2	B	O	Q				Q		2Y						
	ANG AO					C	Q				Q		2Y						
MS-119A	2	G-165 - SH 3 C-17	A	2	B														
	GL MO					C	Q				Q		2Y						
MS-119B	2	G-165 - SH 3 F-18	A	2	B														
	GL MO					C	Q				Q		2Y						

**IST PLAN
W3 APPENDIX
VALVE SUMMARY LISTING**

**PROGRAM SECTION NO. CEP-IST-2
REVISION NO. 307
PAGE 42 OF 62**

SYSTEM: NG - NITROGEN GAS

VALVE NO.	VALVE SIZE (in.) TYPE ACT.		P & ID NO., COORD.	IST PASS	IST CODE CLASS	CODE CAT.	SAFETY POS.	REQUIRED TESTS AND FREQUENCY								RELIEF REQUEST (VRR)	OTHER (CSJ/ROJ/ CMJ/VPS)	NOTES:	
								FS	PS	LT	LJ	ST	FT	PI	RV				EX
NG-1523	0.75		G-166 - SH 1 E-06	A	2	C	O							10Y					
	PR	SA					C							10Y					
NG-157	1		G-166 - SH 1 G-08	A	2	A													
	GL	AO					C	Q			J	Q		2Y					
NG-158	1		G-166 - SH 1 F-09	A	2	C, A										V		CMJ	
	CK	SA					C				J								
NG-161A	1		G-167 - SH 4 F-12	A	2	B													
	BL	AO					C	Q				Q		2Y					
NG-161B	1		G-167 - SH 4 F-16	A	2	B													
	BL	AO					C	Q				Q		2Y					
NG-162A	1		G-167 - SH 2 G-10	A	2	B													
	BL	AO					C	Q				Q		2Y					
NG-162B	1		G-167 - SH 2 G-18	A	2	B													
	BL	AO					C	Q				Q		2Y					
NG-412A	1		G-151 - SH 1 C-04	P	2	B													
	GL	MO					C							2Y					
NG-412B	1		G-151 - SH 1 I-07	P	2	B													
	GL	MO					C							2Y					
NG-603	1		G-166 - SH 2 E-05	A	3	C, A										V		CMJ	Other owner defined leak rate test
	CK	SA					C			2Y									
NG-604	1		G-166 - SH 2 E-05	A	3	C, A										V		CMJ	Other owner defined leak rate test
	CK	SA					C			2Y									
NG-609	1		G-166 - SH 2 E-07	A	3	A	O	Q					2Y					VPS-005	Other owner defined leak rate test
	GL	SO					C	Q		2Y				2Y					
NG-610	1		G-166 - SH 2 E-07	A	3	A	O	Q					2Y					VPS-005	Other owner defined leak rate test
	GL	SO					C	Q		2Y				2Y					
NG-621	1		G-166 - SH 2 E-09	A	3	C	O							10Y					
	PR	SA					C								10Y				
NG-622	1		G-166 - SH 2 E-09	A	3	C	O							10Y					
	PR	SA					C								10Y				
NG-703	1		G-166 - SH 2 E-05	A	3	C, A										V		CMJ	Other owner defined leak rate test
	CK	SA					C			2Y									

**IST PLAN
W3 APPENDIX
VALVE SUMMARY LISTING**

**PROGRAM SECTION NO. CEP-IST-2
REVISION NO. 307
PAGE 43 OF 62**

SYSTEM: NG - NITROGEN GAS

VALVE NO.	VALVE SIZE (in.) TYPE ACT.	P & ID NO., COORD.	IST PASS	IST CODE CLASS	CODE CAT.	SAFETY POS.	REQUIRED TESTS AND FREQUENCY										RELIEF REQUEST (VRR)	OTHER (CSJ/ROJ/ CMJ/VPS)	NOTES:
							FS	PS	LT	LJ	ST	FT	PI	RV	EX	CM			
NG-704	1	G-166 - SH 2 E-05	A	3	C, A											V		CMJ	Other owner defined leak rate test
	CK SA					C			2Y							V			
NG-709	1	G-166 - SH 2 E-07	A	3	A	O	Q						2Y					VPS-005	Other owner defined leak rate test
	GL SO					C	Q		2Y				2Y						
NG-710	1	G-166 - SH 2 E-07	A	3	A	O	Q						2Y					VPS-005	Other owner defined leak rate test
	GL SO					C	Q		2Y				2Y						
NG-721	1	G-166 - SH 2 E-09	A	3	C	O								10Y					
	PR SA					C								10Y					
NG-722	1	G-166 - SH 2 E-09	A	3	C	O								10Y					
	PR SA					C								10Y					
NG-803	1	G-166 - SH 2 E-05	A	3	C, A											V		CMJ	Other owner defined leak rate test
	CK SA					C			2Y							V			
NG-804	1	G-166 - SH 2 E-05	A	3	C, A											V		CMJ	Other owner defined leak rate test
	CK SA					C			2Y							V			
NG-809	1	G-166 - SH 2 E-07	A	3	A	O	Q						2Y					VPS-005	Other owner defined leak rate test
	GL SO					C	Q		2Y				2Y						
NG-810	1	G-166 - SH 2 E-07	A	3	A	O	Q						2Y					VPS-005	Other owner defined leak rate test
	GL SO					C	Q		2Y				2Y						
NG-821	1	G-166 - SH 2 E-09	A	3	C	O								10Y					
	PR SA					C								10Y					
NG-822	1	G-166 - SH 2 E-09	A	3	C	O								10Y					
	PR SA					C								10Y					
NG-903	1	G-166 - SH 2 E-05	A	3	C, A											V		CMJ	Other owner defined leak rate test
	CK SA					C			2Y							V			
NG-904	1	G-166 - SH 2 E-05	A	3	C, A											V		CMJ	Other owner defined leak rate test
	CK SA					C			2Y							V			
NG-909	1	G-166 - SH 2 E-07	A	3	A	O	Q						2Y					VPS-005	Other owner defined leak rate test
	GL SO					C	Q		2Y				2Y						
NG-910	1	G-166 - SH 2 E-07	A	3	A	O	Q						2Y					VPS-005	Other owner defined leak rate test
	GL SO					C	Q		2Y				2Y						
NG-921	1	G-166 - SH 2 E-09	A	3	C	O								10Y					
	PR SA					C								10Y					

IST PLAN
W3 APPENDIX
VALVE SUMMARY LISTING

PROGRAM SECTION NO. CEP-IST-2
REVISION NO. 307
PAGE 44 OF 62

SYSTEM: NG - NITROGEN GAS

VALVE NO.	VALVE SIZE (in.) TYPE ACT.	P & ID NO., COORD.	IST PASS	IST CODE CLASS	CODE CAT.	SAFETY POS.	REQUIRED TESTS AND FREQUENCY										RELIEF REQUEST (VRR)	OTHER (CSJ/ROJ/ CMJ/VPS)	NOTES:
							FS	PS	LT	LJ	ST	FT	PI	RV	EX	CM			
NG-922	1	G-166 - SH 2 E-09	A	3	C	O								10Y					
	PR SA					C								10Y					

**IST PLAN
W3 APPENDIX
VALVE SUMMARY LISTING**

**PROGRAM SECTION NO. CEP-IST-2
REVISION NO. 307
PAGE 45 OF 62**

SYSTEM: PMU - PRIMARY MAKEUP WATER

VALVE NO.	VALVE SIZE (in.) TYPE ACT.	P & ID NO., COORD.	IST PASS	IST CODE CLASS	CODE CAT.	SAFETY POS.	REQUIRED TESTS AND FREQUENCY										RELIEF REQUEST (VRR)	OTHER (CSJ/ROJ/ CMJ/VPS)	NOTES:
							FS	PS	LT	LJ	ST	FT	PI	RV	EX	CM			
PMU-146	3	G-168 - SH 2 G-17	A	3	C											V		CMJ	
	CK SA					C										V			
PMU-151	2	G-161 - SH 2 E-14	P	2	A														
	GL M					C				J			2Y						
PMU-152	2	G-161 - SH 2 E-14	A	2	C, A	O										V		CMJ	
	CK SA					C				J						V			
PMU-154	2	G-172 G-2	A	N		O										V		CMJ	
	CK SA															V			

**IST PLAN
W3 APPENDIX
VALVE SUMMARY LISTING**

**PROGRAM SECTION NO. CEP-IST-2
REVISION NO. 307
PAGE 46 OF 62**

SYSTEM: PSL - PRIMARY SAMPLING

VALVE NO.	VALVE SIZE (in.) TYPE ACT.	P & ID NO., COORD.	IST PASS	IST CODE CLASS	CODE CAT.	SAFETY POS.	REQUIRED TESTS AND FREQUENCY										RELIEF REQUEST (VRR)	OTHER (CSJ/ROJ/ CMJ/VPS)	NOTES:
							FS	PS	LT	LJ	ST	FT	PI	RV	EX	CM			
PSL-105	0.5	G-162 - SH 2 B-04	A	2	A														
	GL AO					C	Q			J	Q		2Y						
PSL-107	0.5	G-162 - SH 2 B-05	A	2	A														
	GL AO					C	Q			J	Q		2Y						
PSL-203	0.5	G-162 - SH 2 B-05	A	2	A														
	GL AO					C	Q			J	Q		2Y						
PSL-204	0.5	G-162 - SH 2 B-05	A	2	A														
	GL AO					C	Q			J	Q		2Y						
PSL-303	0.5	G-162 - SH 2 B-05	A	2	A														
	GL AO					C	Q			J	Q		2Y						
PSL-304	0.5	G-162 - SH 2 B-05	A	2	A														
	GL AO					C	Q			J	Q		2Y						

**IST PLAN
W3 APPENDIX
VALVE SUMMARY LISTING**

**PROGRAM SECTION NO. CEP-IST-2
REVISION NO. 307
PAGE 47 OF 62**

SYSTEM: RC - REACTOR COOLANT

VALVE NO.	VALVE SIZE (in.) TYPE ACT.	P & ID NO., COORD.	IST PASS	IST CODE CLASS	CODE CAT.	SAFETY POS.	REQUIRED TESTS AND FREQUENCY										RELIEF REQUEST (VRR)	OTHER (CSJ/ROJ/ CMJ/VPS)	NOTES:
							FS	PS	LT	LJ	ST	FT	PI	RV	EX	CM			
RC-1014	1	G-172 E-07	A	2	B	O	C				C		2Y					CSJ-002	
	GL SO					C	C				C		2Y						
RC-1015	1	G-172 E-07	A	2	B	O	C				C		2Y					CSJ-002	
	GL SO					C	C				C		2Y						
RC-1017	1	G-172 E-08	A	2	B	O	C				C		2Y					CSJ-002	
	GL SO					C	C				C		2Y						
RC-301A	3	G-172 E-04	A	1	B													CSJ-015	
	ANG AO					C	C				C		2Y						
RC-301B	3	G-172 E-04	A	1	B													CSJ-015	
	ANG AO					C	C				C		2Y						
RC-317A	6	G-172 G-06	A	1	C	O								5Y					
	PR SA					C								5Y					
RC-317B	6	G-172 G-06	A	1	C	O								5Y					
	PR SA					C								5Y					
RC-3183	1	G-172 G-08	A	2	B	O	C				C		2Y					CSJ-002	
	GL SO					C	C				C		2Y						
RC-3184	1	G-172 G-07	A	2	B	O	C				C		2Y					CSJ-002	
	GL SO					C	C				C		2Y						
RC-3186	1	G-172 F-08	A	2	B	O	C				C		2Y					CSJ-002	
	GL SO					C	C				C		2Y						
RC-602	0.75	G-168 - SH 2 B-14	P	2	B	O							2Y						
	GL AO																		
RC-603	1.5	G-168 - SH 2 G-05	A	2	C	O								10Y					
	PR SA					C								10Y					
RC-606	0.75	G-168 - SH 2 B-13	A	2	A													CSJ-004	
	GL AO					C	C			J	C		2Y						
RC-6061	1.0	G-168 - SH 2 A-13	A	2	C	O								10Y					
	PR SA					C								10Y					

PROGRAM SECTION NO. CEP-IST-2
REVISION NO. 307
PAGE 48 OF 62

VALVE NO.	VALVE SIZE (in.) TYPE ACT.	P & ID NO., COORD.	IST PASS	IST CODE CLASS	CODE CAT.	SAFETY POS.	REQUIRED TESTS AND FREQUENCY										RELIEF REQUEST (VRR)	OTHER (CSJ/ROJ/ CMJ/VPS)	NOTES:
							FS	PS	LT	LJ	ST	FT	PI	RV	EX	CM			
SA-908	2	G-157	P	2	A														
	GA M	E-12				C													
SA-9082	0.375	G-157	A	2	A	O	C				C		2Y					CSJ-017	LLRT required each refueling
	GA SO	D-12				C	C			J	C		2Y						
SA-9085	0.5	G-157	A	2	C, A	O										V		CMJ	
	CK SA	D-12				C					J				V				
SA-909	2	G-157	P	2	A														
	GA M	D-11				C						J							

IST PLAN
W3 APPENDIX
VALVE SUMMARY LISTING

PROGRAM SECTION NO. CEP-IST-2
REVISION NO. 307
PAGE 49 OF 62

SYSTEM: SBV - SHIELD BUILDING VENTILATION

VALVE NO.	VALVE SIZE (in.) TYPE ACT.	P & ID NO., COORD.	IST PASS	IST CODE CLASS	CODE CAT.	SAFETY POS.	REQUIRED TESTS AND FREQUENCY										RELIEF REQUEST (VRR)	OTHER (CSJ/ROJ/ CMJ/VPS)	NOTES:
							FS	PS	LT	LJ	ST	FT	PI	RV	EX	CM			
SBV-101A	30	G-853 - SH 1 I-07	A	2	B	O	Q				Q		2Y						
	B MO																		
SBV-101B	30	G-853 - SH 1 J-07	A	2	B	O	Q				Q		2Y						
	B MO																		
SBV-109	6	G-853 - SH 1 K-05	P	2	B	O							2Y						
	B M																		
SBV-110A	30	G-853 - SH 2 F-15	A	2	B	O	Q				Q		2Y						
	B MO																		
SBV-110B	30	G-853 - SH 1 M-05	A	2	B	O	Q				Q		2Y						
	B MO																		
SBV-112A	30	G-853 - SH 1 I-02	A	2	C	O										V		CMJ	
	CK SA															V			
SBV-112B	30	G-853 - SH 1 I-02	A	2	C	O										V		CMJ	
	CK SA															V			
SBV-113A	30	G-853 - SH 1 G-06	A	2	B	O	Q				Q		2Y						
	B MO						C	Q			Q		2Y						
SBV-113B	30	G-853 - SH 1 G-06	A	2	B	O	Q				Q		2Y						
	B MO						C	Q			Q		2Y						
SBV-114A	30	G-853 - SH 21 I-16	A	2	B	O	Q				Q		2Y						
	B MO						C	Q			Q		2Y						
SBV-114B	30	G-853 - SH 1 I-18	A	2	B	O	Q				Q		2Y						
	B MO						C	Q			Q		2Y						

**IST PLAN
W3 APPENDIX
VALVE SUMMARY LISTING**

**PROGRAM SECTION NO. CEP-IST-2
REVISION NO. 307
PAGE 50 OF 62**

SYSTEM: SI - SAFETY INJECTION

VALVE NO.	VALVE SIZE (in.) TYPE ACT.		P & ID NO., COORD.	IST PASS	IST CODE CLASS	CODE CAT.	SAFETY POS.	REQUIRED TESTS AND FREQUENCY									RELIEF REQUEST (VRR)	OTHER (CSJ/ROJ/ CMJ/VPS)	NOTES:	
								FS	PS	LT	LJ	ST	FT	PI	RV	EX				CM
SI-106A	24		G-167 - SH 3 C-05	A	2	B	O	Q				Q		2Y						Augmented ST-C
	B	AO					C	Q				Q		2Y						
SI-106B	24		G-167 - SH 3 B-01	A	2	B	O	Q				Q		2Y						Augmented ST-C
	B	AO					C	Q				Q		2Y						
SI-1071A	20		G-167 - SH 3 G-02	A	2	C	O										V		CMJ	
	CK	SA					C										V			
SI-1071B	20		G-167 - SH 3 K-03	A	2	C	O										V		CMJ	
	CK	SA					C										V			
SI-107A	24		G-167 - SH 3 D-04	A	2	C	O										V		CMJ	
	CK	SA					C										V			
SI-107B	24		G-167 - SH 3 D-03	A	2	C	O										V		CMJ	
	CK	SA					C										V			
SI-108A	20		G-167 - SH 3 G-03	A	2	C	O										V		CMJ	
	CK	SA					C										V			
SI-108B	20		G-167 - SH 3 K-03	A	2	C	O										V		CMJ	
	CK	SA					C										V			
SI-109A	20		G-167 - SH 3 G-04	P	2	B	O							2Y						
	B	M																		
SI-109B	20		G-167 - SH 3 K-04	P	2	B	O							2Y						
	B	M																		
SI-1161A	2		G-167 - SH 3 H-07	A	2	B	O							2Y						Open position is passive.
	GL	SO					C	Q				Q		2Y						
SI-1161B	2		G-167 - SH 3 G-08	A	2	B	O							2Y						Open position is passive.
	GL	SO					C	Q				Q		2Y						
SI-116A	2		G-167 - SH 3 G-07	A	2	C	O										V		CMJ	T-handle locked open
	CK	SA															V			
SI-116B	2		G-167 - SH 3 H-08	A	2	C	O										V		CMJ	T-handle locked open
	CK	SA															V			
SI-119A	1		G-167 - SH 3 E-07	P	2	B														
	GL	AO					C								2Y					
SI-119B	1		G-167 - SH 3 E-08	P	2	B														
	GL	AO					C								2Y					

**IST PLAN
W3 APPENDIX
VALVE SUMMARY LISTING**

**PROGRAM SECTION NO. CEP-IST-2
REVISION NO. 307
PAGE 51 OF 62**

SYSTEM: SI - SAFETY INJECTION

VALVE NO.	VALVE SIZE (in.) TYPE ACT.		P & ID NO., COORD.	IST PASS	IST CODE CLASS	CODE CAT.	SAFETY POS.	REQUIRED TESTS AND FREQUENCY								RELIEF REQUEST (VRR)	OTHER (CSJ/ROJ/ CMJ/VPS)	NOTES:
								FS	PS	LT	LJ	ST	FT	PI	RV			
SI-120A	4		G-167 - SH 3 D-08	A	2	B	O							2Y				Open position is passive.
	GA	MO					C	Q				Q		2Y				
SI-120B	4		G-167 - SH 3 D-09	A	2	B	O							2Y				Open position is passive.
	GA	MO					C	Q				Q		2Y				
SI-121A	4		G-167 - SH 3 D-08	A	2	B	O							2Y				Open position is passive.
	GA	MO					C	Q				Q		2Y				
SI-121B	4		G-167 - SH 3 D-09	A	2	B	O							2Y				Open position is passive.
	GA	MO					C	Q				Q		2Y				
SI-122A	8		G-167 - SH 3 G-08	A	2	C	O									V	CMJ	
	CK	SA														V		
SI-122B	8		G-167 - SH 3 I-08	A	2	C	O									V	CMJ	
	CK	SA													V			
SI-124A	18		G-167 - SH 3 G-09	P	2	B	O							2Y				
	GA	M																
SI-124B	18		G-167 - SH 3 H-09	P	2	B	O							2Y				
	GA	M																
SI-125A	10		G-167 - SH 3 G-10	A	2	B	O	Q				Q		2Y				Closed position is passive.
	GA	MO					C						2Y					
SI-125B	10		G-167 - SH 3 I-12	A	2	B	O	Q				Q		2Y				Closed position is passive.
	GA	MO					C						2Y					
SI-129A	10		G-167 - SH 3 G-10	A	2	B	O							2Y				Open position is passive.
	B	AO					C	Q				Q		2Y				
SI-129B	10		G-167 - SH 3 I-12	A	2	B	O							2Y				Open position is passive.
	B	AO					C	Q				Q		2Y				
SI-132A	1		G-167 - SH 3 G-13	A	2	C	O								10Y			
	PR	SA					C							10Y				
SI-132B	1		G-167 - SH 3 K-14	A	2	C	O								10Y			
	PR	SA					C							10Y				
SI-135A	8		G-167 - SH 2 C-04	A	2	B												
	GA	MO					C	Q				Q		2Y				
SI-135B	8		G-167 - SH 2 C-02	A	2	B												
	GA	MO					C	Q				Q		2Y				

**IST PLAN
W3 APPENDIX
VALVE SUMMARY LISTING**

**PROGRAM SECTION NO. CEP-IST-2
REVISION NO. 307
PAGE 52 OF 62**

SYSTEM: SI - SAFETY INJECTION

VALVE NO.	VALVE SIZE (in.) TYPE ACT.		P & ID NO. , COORD.	IST PASS	IST CODE CLASS	CODE CAT.	SAFETY POS.	REQUIRED TESTS AND FREQUENCY									RELIEF REQUEST (VRR)	OTHER (CSJ/ROJ/ CMJ/VPS)	NOTES:	
								FS	PS	LT	LJ	ST	FT	PI	RV	EX				CM
SI-138A	6		G-167 - SH 2 B-07	A	2	B	O	Q				Q		2Y						
	GL	MO																		
SI-138B	6		G-167 - SH 2 F-07	A	2	B	O	Q				Q		2Y						
	GL	MO																		
SI-139A	6		G-167 - SH 2 D-07	A	2	B	O	Q				Q		2Y						
	GL	MO																		
SI-139B	6		G-167 - SH 4 D-03	A	2	B	O	Q				Q		2Y						
	GL	MO																		
SI-14023A	0.75		G-167 - SH 2 H-04	A	2	A	O							2Y						Open position is passive
	GL	SO					C	Q		2Y	J	Q		2Y						
SI-14024A	0.75		G - 167 SH 2 H-04	A	2	A	O							2Y						Open position is passive
	GL	SO					C	Q		2Y		Q		2Y						
SI-142A	8		G-167 - SH 2 I-05	A	1	C, A	O										V		CMJ	PIV leak test
	CK	SA					C			2Y							V			
SI-142B	8		G-167 - SH 4 H-05	A	1	C, A	O										V		CMJ	PIV leak test
	CK	SA					C			2Y							V			
SI-143A	8		G-167 - SH 2 E-06	A	1	C, A	O										V		CMJ	PIV leak test
	CK	SA					C			2Y							V			
SI-143B	8		G-167 - SH 4 D-05	A	1	C, A	O										V		CMJ	PIV leak test
	CK	SA					C			2Y							V			
SI-201A	10		G-167 - SH 1 D-08	A	2	C	O										V		CMJ	
	CK	SA															V			
SI-201B	10		G-167 - SH 1 B-08	A	2	C	O										V		CMJ	
	CK	SA															V			
SI-202A	10		G-167 - SH 1 E-04	P	2	B	O							2Y						
	GA	M					C							2Y						
SI-202B	10		G-167 - SH 1 H-04	P	2	B	O							2Y						
	GA	M					C							2Y						
SI-2034A	0.75		G-167 - SH 1 D-05	A	2	C	O								10Y					
	PR	SA					C								10Y					
SI-2034AB	0.75		G-167 - SH 1 F-05	A	2	C	O								10Y					
	PR	SA					C								10Y					

**IST PLAN
W3 APPENDIX
VALVE SUMMARY LISTING**

**PROGRAM SECTION NO. CEP-IST-2
REVISION NO. 307
PAGE 53 OF 62**

SYSTEM: SI - SAFETY INJECTION

VALVE NO.	VALVE SIZE (in.) TYPE ACT.		P & ID NO., COORD.	IST PASS	IST CODE CLASS	CODE CAT.	SAFETY POS.	REQUIRED TESTS AND FREQUENCY								RELIEF REQUEST (VRR)	OTHER (CSJ/ROJ/ CMJ/VPS)	NOTES:		
								FS	PS	LT	LJ	ST	FT	PI	RV				EX	CM
SI-2034B	0.75		G-167 - SH 1 I-06	A	2	C	O								10Y					
	PR	SA					C								10Y					
SI-203A	10		G-167 - SH 1 D-04	P	2	B	O							2Y						
	GA	M																		
SI-203B	10		G-167 - SH 1 J-05	P	2	B	O							2Y						
	GA	M																		
SI-205A	2		G-167 - SH 1 C-09	A	2	C	O										V		CMJ	
	CK	SA														V				
SI-205AB	2		G-167 - SH 1 C-09	A	2	C	O										V		CMJ	
	CK	SA														V				
SI-205B	2		G-167 - SH 1 E-10	A	2	C	O										V		CMJ	
	CK	SA														V				
SI-207A	4		G-167 - SH 1 D-10	A	2	C	O										V		CMJ	
	CK	SA					C									V				
SI-207AB	4		G-167 - SH 1 G-10	A	2	C	O										V		CMJ	
	CK	SA					C									V				
SI-207B	4		G-167 - SH 1 J-10	A	2	C	O										V		CMJ	
	CK	SA					C									V				
SI-208A	4		G-167 - SH 1 D-11	P	2	B	O							2Y						
	GA	M																		
SI-208B	4		G-167 - SH 1 J-11	P	2	B	O							2Y						
	GA	M																		
SI-212A	4		G-167 - SH 1 E-11	P	2	B	O							2Y						
	GA	M					C							2Y						
SI-212B	4		G-167 - SH 1 H-11	P	2	B	O							2Y						
	GA	M					C						2Y							
SI-214	1		G-167 - SH 1 D-11	A	2	C	O								10Y					
	PR	SA					C								10Y					
SI-216	4		G-167 - SH 1 E-12	A	2	C	O										V		CMJ	
	CK	SA														V				
SI-219A	4		G-167 - SH 1 E-13	A	2	B	O							2Y						Open position is passive.
	GA	MO					C	Q			Q		2Y							

**IST PLAN
W3 APPENDIX
VALVE SUMMARY LISTING**

**PROGRAM SECTION NO. CEP-IST-2
REVISION NO. 307
PAGE 54 OF 62**

SYSTEM: SI - SAFETY INJECTION

VALVE NO.	VALVE SIZE (in.) TYPE ACT.	P & ID NO., COORD.	IST PASS	IST CODE CLASS	CODE CAT.	SAFETY POS.	REQUIRED TESTS AND FREQUENCY										RELIEF REQUEST (VRR)	OTHER (CSJ/ROJ/ CMJ/VPS)	NOTES:
							FS	PS	LT	LJ	ST	FT	PI	RV	EX	CM			
SI-219B	4	G-167 - SH 1 J-11	A	2	B	O							2Y						Open position is passive.
	GA MO					C	Q				Q		2Y						
SI-220A	1.5	G-167 - SH 1 D-13	A	2	C	O								10Y					
	PR SA					C								10Y					
SI-220B	1	G-167 - SH 1 G-13	A	2	C	O								10Y					
	PR SA					C								10Y					
SI-225A	2	G-167 - SH 4 E-03	A	2	B	O	Q				Q		2Y						
	GL MO																		
SI-225B	2	G-167 - SH 4 G-03	A	2	B	O	Q				Q		2Y						
	GL MO																		
SI-226A	2	G-167 - SH 4 J-03	A	2	B	O	Q				Q		2Y						
	GL MO																		
SI-226B	2	G-167 - SH 4 J-03	A	2	B	O	Q				Q		2Y						
	GL MO																		
SI-227A	2	G-167 - SH 2 F-03	A	2	B	O	Q				Q		2Y						
	GL MO																		
SI-227B	2	G-167 - SH 2 G-02	A	2	B	O	Q				Q		2Y						
	GL MO																		
SI-228A	2	G-167 - SH 2 L-02	A	2	B	O	Q				Q		2Y						
	GL MO																		
SI-228B	2	G-167 - SH 2 J-02	A	2	B	O	Q				Q		2Y						
	GL MO																		
SI-241	3	G-167 - SH 4 E-05	A	1	C, A	O										V		CMJ	PIV leak test
	CK SA					C			2Y							V			
SI-242	3	G-167 - SH 4 J-05	A	1	C, A	O										V		CMJ	PIV leak test
	CK SA					C			2Y							V			
SI-243	3	G-167 - SH 2 G-05	A	1	C, A	O										V		CMJ	PIV leak test
	CK SA					C			2Y							V			
SI-244	3	G-167 - SH 2 K-05	A	1	C, A	O										V		CMJ	PIV leak test
	CK SA					C			2Y							V			
SI-245	2	G-167 - SH 1 D-05	A	2	C	O										V		CMJ	
	CK SA															V			

**IST PLAN
W3 APPENDIX
VALVE SUMMARY LISTING**

**PROGRAM SECTION NO. CEP-IST-2
REVISION NO. 307
PAGE 55 OF 62**

SYSTEM: SI - SAFETY INJECTION

VALVE NO.	VALVE SIZE (in.) TYPE ACT.	P & ID NO., COORD.	IST PASS	IST CODE CLASS	CODE CAT.	SAFETY POS.	REQUIRED TESTS AND FREQUENCY								RELIEF REQUEST (VRR)	OTHER (CSJ/ROJ/ CMJ/VPS)	NOTES:
							FS	PS	LT	LJ	ST	FT	PI	RV	EX	CM	
SI-301	1	G-167 - SH 4 C-07	A	1	B												
	GA AO					C	Q				Q		2Y				
SI-302	1	G-167 - SH 2 L-06	A	1	B												
	GA AO					C	Q				Q		2Y				
SI-303A	1	G-167 - SH 4 H-08	A	1	B												
	GA AO					C	Q				Q		2Y				
SI-303B	1	G-167 - SH 4 I-15	A	1	B												
	GA AO					C	Q				Q		2Y				
SI-304A	1	G-167 - SH 2 I-07	A	1	B												
	GA AO					C	Q				Q		2Y				
SI-304B	1	G-167 - SH 2 I-14	A	1	B												
	GA AO					C	Q				Q		2Y				
SI-307A	2	G-167 - SH 4 G-08	A	2	B												
	GL AO					C	Q				Q		2Y				
SI-307B	2	G-167 - SH 4 G-15	A	2	B												
	GL AO					C	Q				Q		2Y				
SI-308A	2	G-167 - SH 2 H-08	A	2	B												
	GL AO					C	Q				Q		2Y				
SI-308B	2	G-167 - SH 2 H-14	A	2	B												
	GL AO					C	Q				Q		2Y				
SI-323A	1	G-167 - SH 4 D-11	A	2	B	O	C				C		2Y				CSJ-001 Closed position is passive.
	GL SO					C							2Y				
SI-323B	1	G-167 - SH 4 E-17	A	2	B	O	C				C		2Y				CSJ-001 Closed position is passive.
	GL SO					C							2Y				
SI-324A	1	G-167 - SH 2 F-10	A	2	B	O	C				C		2Y				CSJ-001 Closed position is passive.
	GL SO					C							2Y				
SI-324B	1	G-167 - SH 2 F-17	A	2	B	O	C				C		2Y				CSJ-001 Closed position is passive.
	GL SO					C							2Y				
SI-325A	1	G-167 - SH 4 D-12	A	2	B	O	C				C		2Y				CSJ-001 Closed position is passive.
	GL SO					C							2Y				
SI-325B	1	G-167 - SH 4 E-18	A	2	B	O	C				C		2Y				CSJ-001 Closed position is passive.
	GL SO					C							2Y				

**IST PLAN
W3 APPENDIX
VALVE SUMMARY LISTING**

**PROGRAM SECTION NO. CEP-IST-2
REVISION NO. 307
PAGE 56 OF 62**

SYSTEM: SI - SAFETY INJECTION

VALVE NO.	VALVE SIZE (in.) TYPE ACT.		P & ID NO., COORD.	IST PASS	IST CODE CLASS	CODE CAT.	SAFETY POS.	REQUIRED TESTS AND FREQUENCY										RELIEF REQUEST (VRR)	OTHER (CSJ/ROJ/ CMJ/VPS)	NOTES:
								FS	PS	LT	LJ	ST	FT	PI	RV	EX	CM			
SI-326A	1		G-167 - SH 2 F-11	A	2	B	O	C				C		2Y					CSJ-001	Closed position is passive.
	GL	SO					C						2Y							
SI-326B	1		G-167 - SH 2 F-17	A	2	B	O	C				C		2Y					CSJ-001	Closed position is passive.
	GL	SO					C						2Y							
SI-327A	0.75		G-167 - SH 4 D-10	A	2	C	O							10Y						
	PR	SA					C						10Y							
SI-327B	0.75		G-167 - SH 4 D-16	A	2	C	O							10Y						
	PR	SA					C						10Y							
SI-328A	0.75		G-167 - SH 2 E-09	A	2	C	O							10Y						
	PR	SA					C						10Y							
SI-328B	0.75		G-167 - SH 2 E-15	A	2	C	O							10Y						
	PR	SA					C						10Y							
SI-329A	12		G-167 - SH 4 H-10	A	1	C, A	O									V		CMJ		
	CK	SA					C			2Y						V				
SI-329B	12		G-167 - SH 4 H-17	A	1	C, A	O									V		CMJ		
	CK	SA					C			2Y						V				
SI-330A	12		G-167 - SH 2 I-09	A	1	C, A	O									V		CMJ		
	CK	SA					C			2Y						V				
SI-330B	12		G-167 - SH 2 I-16	A	1	C, A	O									V		CMJ		
	CK	SA					C			2Y						V				
SI-331A	12		G-167 - SH 4 I-10	P	1	B	O						2Y							
	GA	MO																		
SI-331B	12		G-167 - SH 4 I-16	P	1	B	O						2Y							
	GA	MO																		
SI-332A	12		G-167 - SH 2 J-09	P	1	B	O						2Y							
	GA	MO																		
SI-332B	12		G-167 - SH 2 J-16	P	1	B	O						2Y							
	GA	MO																		
SI-335A	12		G-167 - SH 4 I-12	A	1	C, A	O									V		CMJ		
	CK	SA					C			2Y						V				
SI-335B	12		G-167 - SH 4 J-17	A	1	C, A	O									V		CMJ		
	CK	SA					C			2Y						V				

**IST PLAN
W3 APPENDIX
VALVE SUMMARY LISTING**

**PROGRAM SECTION NO. CEP-IST-2
REVISION NO. 307
PAGE 57 OF 62**

SYSTEM: SI - SAFETY INJECTION

VALVE NO.	VALVE SIZE (in.) TYPE ACT.	P & ID NO., COORD.	IST PASS	IST CODE CLASS	CODE CAT.	SAFETY POS.	REQUIRED TESTS AND FREQUENCY										RELIEF REQUEST (VRR)	OTHER (CSJ/ROJ/ CMJ/VPS)	NOTES:
							FS	PS	LT	LJ	ST	FT	PI	RV	EX	CM			
SI-336A	12	G-167 - SH 2 J-11	A	1	C, A	O										V		CMJ	
	CK SA					C			2Y							V			
SI-336B	12	G-167 - SH 2 I-18	A	1	C, A	O										V		CMJ	
	CK SA					C			2Y							V			
SI-343	2	G-167 - SH 4 M-04	A	2	A														
	GA AO					C	Q			J	Q		2Y						
SI-3434	1.0	G-167 - SH 4 M-05	A	2	C	O								10Y					
	PR SA					C								10Y					
SI-344	2	G-167 - SH 3 B-15	P	2	A														
	GL M					C				J			2Y						
SI-401A	14	G-167 - SH 2 B-11	A	1	A	O	C				C		2Y					CSJ-010	Closed position is passive. PIV leak test.
	GA MO					C			2Y				2Y						
SI-401B	14	G-167 - SH 2 E-11	A	1	A	O	C				C		2Y					CSJ-010	Closed position is passive. PIV leak test.
	GA MO					C			2Y				2Y						
SI-404A	1	G-167 - SH 2 A-09	A	1	C	O								5Y					
	PR SA					C								5Y					
SI-404B	1	G-167 - SH 2 C-09	A	1	C	O								5Y					
	PR SA					C								5Y					
SI-405A	14	G-167 - SH 2 B-09	A	1	A	O	C				C		2Y					CSJ-010	Closed position is passive. PIV leak test.
	GA HP					C			2Y	J			2Y						
SI-405B	14	G-167 - SH 2 E-09	A	1	A	O	C				C		2Y					CSJ-010	Closed position is passive. PIV leak test.
	GA HP					C			2Y	J			2Y						
SI-406A	6	G-167 - SH 2 C-06	A	2	C	O								10Y					T.S.4.4.8.3.1(b)
	PR SA					C				J				10Y					
SI-406B	6	G-167 - SH 2 D-06	A	2	C	O								10Y					T.S.4.4.8.3.1(b)
	PR SA					C				J				10Y					
SI-407A	14	G-167 - SH 2 C-04	A	2	A	O	C				C		2Y					CSJ-016	Closed position is passive.
	GA MO					C			2Y	J			2Y						
SI-407B	14	G-167 - SH 2 D-04	A	2	A	O	C				C		2Y					CSJ-016	Closed position is passive.
	GA MO					C			2Y	J			2Y						
SI-408A	0.75	G-167 - SH 3 M-02	A	2	C	O								10Y					
	PR SA					C								10Y					

**IST PLAN
W3 APPENDIX
VALVE SUMMARY LISTING**

**PROGRAM SECTION NO. CEP-IST-2
REVISION NO. 307
PAGE 58 OF 62**

SYSTEM: SI - SAFETY INJECTION

VALVE NO.	VALVE SIZE (in.) TYPE ACT.	P & ID NO., COORD.	IST PASS	IST CODE CLASS	CODE CAT.	SAFETY POS.	REQUIRED TESTS AND FREQUENCY								RELIEF REQUEST (VRR)	OTHER (CSJ/ROJ/ CMJ/VPS)	NOTES:
							FS	PS	LT	LJ	ST	FT	PI	RV	EX	CM	
SI-408B	0.75	G-167 - SH 3 M-01	A	2	C	O								10Y			
	PR SA					C								10Y			
SI-410A	14	G-167 - SH 3 H-05	P	2	B	O							2Y				
	GA M																
SI-410B	14	G-167 - SH 3 J-04	P	2	B	O							2Y				
	GA M																
SI-411A	1	G-152 - SH 3 G-14	P	2	B												
	GL AO					C							2Y				
SI-411B	1	G-152 - SH 3 F-14	P	2	B												
	GL AO					C							2Y				
SI-412A	10	G-167 - SH 3 E-15	A	2	B	O	Q				Q		2Y				Closed position is passive.
	GA MO					C							2Y				
SI-412B	10	G-163 H-09	A	2	B	O	Q				Q		2Y				Closed position is passive.
	GA MO					C							2Y				
SI-415A	10	G-167 - SH 3 G-15	A	2	B	O	Q				Q		2Y				
	B MO					C	Q				Q		2Y				
SI-415B	10	G-167 - SH 3 K-16	A	2	B	O	Q				Q		2Y				
	B MO					C	Q				Q		2Y				
SI-417A	6	G-167 - SH 3 E-15	P	2	B												
	GA M					C							2Y				
SI-417B	6	G-167 - SH 3 D-15	P	2	B												
	GA M					C							2Y				
SI-418A	3	G-167 - SH 3 E-16	P	2	B												
	GA M					C							2Y				
SI-418B	3	G-167 - SH 3 D-16	P	2	B												
	GA M					C							2Y				
SI-502A	3	G-167 - SH 1 B-13	A	2	B	O	Q				Q		2Y				
	GA MO																
SI-502B	3	G-167 - SH 1 K-12	A	2	B	O	Q				Q		2Y				
	GA MO																
SI-503A	1.5	G-167 - SH 1 D-14	A	2	C	O								10Y			
	PR SA					C								10Y			

**IST PLAN
W3 APPENDIX
VALVE SUMMARY LISTING**

**PROGRAM SECTION NO. CEP-IST-2
REVISION NO. 307
PAGE 59 OF 62**

SYSTEM: SI - SAFETY INJECTION

VALVE NO.	VALVE SIZE (in.) TYPE ACT.	P & ID NO., COORD.	IST PASS	IST CODE CLASS	CODE CAT.	SAFETY POS.	REQUIRED TESTS AND FREQUENCY								RELIEF REQUEST (VRR)	OTHER (CSJ/ROJ/ CMJ/VPS)	NOTES:
							FS	PS	LT	LJ	ST	FT	PI	RV	EX	CM	
SI-503B	1.5	G-167 - SH 1 J-13	A	2	C	O								10Y			
	PR SA					C								10Y			
SI-506A	3	G-167 - SH 1 B-14	A	2	B	O	Q				Q		2Y				Closed position is passive.
	GL MO					C							2Y				
SI-506B	3	G-167 - SH 1 K-13	A	2	B	O	Q				Q		2Y				Closed position is passive.
	GL MO					C							2Y				
SI-510A	3	G-167 - SH 4 B-05	A	1	C, A	O										V	CMJ PIV leak test.
	CK SA					C			2Y							V	
SI-510B	3	G-167 - SH 2 M-05	A	1	C, A	O										V	CMJ PIV leak test.
	CK SA					C			2Y							V	
SI-512A	3	G-167 - SH 4 B-10	A	1	C, A	O										V	CMJ PIV leak test.
	CK SA					C			2Y							V	
SI-512B	3	G-167 - SH 2 N-08	A	1	C, A	O										V	CMJ PIV leak test.
	CK SA					C			2Y							V	
SI-6011	1.5	G-167 - SH 1 L-03	A	2	A	O							2Y				Open position is passive
	GL SO					C	Q		2Y				2Y				
SI-6012	1.5	G-167 - SH 1 L-03	A	2	A	O							2Y				Open position is passive
	GL SO					C	Q		2Y				2Y				
SI-602A	24	G-167 - SH 1 J-03	A	2	A	O	Q				Q		2Y				
	B MO					C	Q		2Y		Q		2Y				
SI-602B	24	G-167 - SH 1 K-03	A	2	A	O	Q				Q		2Y				
	B MO					C	Q		2Y		Q		2Y				
SI-604A	24	G-167 - SH 1 B-08	A	2	C	O										V	CMJ
	CK SA															V	
SI-604B	24	G-167 - SH 1 A-08	A	2	C	O										V	CMJ
	CK SA															V	
SI-717A	16	G-163 B-05	A	3	C	O										V	CMJ
	CK SA															V	
SI-717B	16	G-163 C-05	A	3	C	O										V	CMJ
	CK SA															V	

**IST PLAN
W3 APPENDIX
VALVE SUMMARY LISTING**

**PROGRAM SECTION NO. CEP-IST-2
REVISION NO. 307
PAGE 60 OF 62**

SYSTEM: SP - SUMP PUMPS

VALVE NO.	VALVE SIZE (in.) TYPE ACT.	P & ID NO., COORD.	IST PASS	IST CODE CLASS	CODE CAT.	SAFETY POS.	REQUIRED TESTS AND FREQUENCY								RELIEF REQUEST (VRR)	OTHER (CSJ/ROJ/ CMJ/VPS)	NOTES:
							FS	PS	LT	LJ	ST	FT	PI	RV	EX	CM	
SP-105	1.5	G-173 - SH 3 J-09	A	2	A												
	D AO					C	Q			J	Q		2Y				
SP-1051	0.5	G-173 - SH 3 J-09	A	2	C	O								10Y			
	PR SA					C								10Y			
SP-106	1.5	G-173 - SH 3 K-10	A	2	A												
	D AO					C	Q			J	Q		2Y				

**IST PLAN
W3 APPENDIX
VALVE SUMMARY LISTING**

**PROGRAM SECTION NO. CEP-IST-2
REVISION NO. 307
PAGE 61 OF 62**

SYSTEM: SSL - SECONDARY SAMPLING

VALVE NO.	VALVE SIZE (in.) TYPE ACT.	P & ID NO., COORD.	IST PASS	IST CODE CLASS	CODE CAT.	SAFETY POS.	REQUIRED TESTS AND FREQUENCY										RELIEF REQUEST (VRR)	OTHER (CSJ/ROJ/ CMJ/VPS)	NOTES:
							FS	PS	LT	LJ	ST	FT	PI	RV	EX	CM			
SSL-301A	1	G-151 - SH 1 D-08	A	2	B														
	GL AO					C	Q				Q		2Y						
SSL-301B	1	G-151 - SH 1 I-07	A	2	B														
	GL AO					C	Q				Q		2Y						
SSL-8004A	0.5	G-162 - SH 2 E-01	A	2	B														
	GL AO					C	Q				Q		2Y						
SSL-8004B	0.5	G-162 - SH 2 E-01	A	2	B														
	GL AO					C	Q				Q		2Y						
SSL-8006A	0.5	G-162 - SH 2 F-01	A	2	B														
	GL AO					C	Q				Q		2Y						
SSL-8006B	0.5	G-162 - SH 2 DF-04	A	2	B														
	GL AO					C	Q				Q		2Y						

Valve Summary Listing Notes

No.

1 None

**IST PLAN
W3 APPENDIX
PUMP SUMMARY LISTING**

**PROGRAM SECTION NO. CEP-IST-2
REVISION NO. 307
PAGE 1 OF 5**

PUMP NO.	PUMP DESCRIPTION	PUMP TYPE	DRIVER	P & ID NO., COORD.	IST CODE CLASS	REQUIRED TESTS AND FREQUENCY					PRR/PPS	NOTES:
						S	dP	FR	Pd	V		
ACC-MPMP-0001A	AUXILIARY COMPONENT COOLING WATER PUMP A	Centrifugal	Motor	G-160 Sh 2 G-5	3		Q	Q		Q		Group A Test. Measure Vv Peak.
ACC-MPMP-0001A*							2Y	2Y		2Y		* Comprehensive Test
ACC-MPMP-0001B	AUXILIARY COMPONENT COOLING WATER PUMP B	Centrifugal	Motor	G-160 Sh 5 G-10	3		Q	Q		Q		Group A Test. Measure Vv Peak.
ACC-MPMP-0001B*							2Y	2Y		2Y		* Comprehensive Test
BAM-MPMP-0001A	BORIC ACID PUMP A	Centrifugal	Motor	G-168 Sh 3 J-9	3		Q	Q		Q		Group A Test. Measure Vv Peak.
BAM-MPMP-0001A*							2Y	2Y		2Y		* Comprehensive Test
BAM-MPMP-0001B	BORIC ACID PUMP B	Centrifugal	Motor	G-168 Sh 3 I-9	3		Q	Q		Q		Group A Test. Measure Vv Peak.
BAM-MPMP-0001B*							2Y	2Y		2Y		* Comprehensive Test
CC-MPMP-0001A	COMPONENT COOLING WATER PUMP A	Centrifugal	Motor	G-160 Sh 2 F-11	3		Q	Q		Q		Group A Test. Measure Vv Peak.
CC-MPMP-0001A*							2Y	2Y		2Y		* Comprehensive Test
CC-MPMP-0001AB	COMPONENT COOLING WATER PUMP AB	Centrifugal	Motor	G-160 Sh 2 F-12	3		Q	Q		Q		Group A Test. Measure Vv Peak.
CC-MPMP-0001AB*							2Y	2Y		2Y		* Comprehensive Test
CC-MPMP-0001B	COMPONENT COOLING WATER PUMP B	Centrifugal	Motor	G-160 Sh 2 F-13	3		Q	Q		Q		Group A Test. Measure Vv Peak.
CC-MPMP-0001B*							2Y	2Y		2Y		* Comprehensive Test
CHW-MPMP-0001A	CHILLED WATER PUMP A	Centrifugal	Motor	G-853 Sh 3 I-1	3		Q	Q		Q		Group A Test. Measure Vv Peak.
CHW-MPMP-0001A*							2Y	2Y		2Y		* Comprehensive Test

**IST PLAN
W3 APPENDIX
PUMP SUMMARY LISTING**

**PROGRAM SECTION NO. CEP-IST-2
REVISION NO. 307
PAGE 2 OF 5**

PUMP NO.	PUMP DESCRIPTION	PUMP TYPE	DRIVER	P & ID NO., COORD.	IST CODE CLASS	REQUIRED TESTS AND FREQUENCY					PRR/PPS	NOTES:
						S	dP	FR	Pd	V		
CHW-MPMP0001AB	CHILLED WATER PUMP AB	Centrifugal	Motor	G-853 Sh 3 I-6	3		Q	Q		Q		Group A Test. Measure Vv Peak.
CHW-MPMP0001AB*							2Y	2Y		2Y		* Comprehensive Test
CHW-MPMP-0001B	CHILLED WATER PUMP B	Centrifugal	Motor	G-853 Sh 3 I-14	3		Q	Q		Q		Group A Test. Measure Vv Peak.
CHW-MPMP-0001B*							2Y	2Y		2Y		* Comprehensive Test
CMU-MPMP-0004A	COMPONENT COOLING WATER MAKEUP PUMP A	Centrifugal	Motor	G-160 Sh 6	3		Q					Group B Test. Measure Vv Peak.
CMU-MPMP-0004A*							2Y	2Y		2Y		* Comprehensive Test
CMU-MPMP-0004B	COMPONENT COOLING WATER MAKEUP PUMP B	Centrifugal	Motor	G-160 Sh 6	3		Q					Group B Test. Measure Vv Peak.
CMU-MPMP-0004B*							2Y	2Y		2Y		* Comprehensive Test
CS-MPMP-0001A	CONTAINMENT SPRAY PUMP A	Centrifugal	Motor	G-163 J-4	2		Q					Group B Test. Measure Vv Peak.
CS-MPMP-0001A*							2Y	2Y		2Y		* Comprehensive Test
CS-MPMP-0001B	CONTAINMENT SPRAY PUMP B	Centrifugal	Motor	G-163 F-4	2		Q					Group B Test. Measure Vv Peak.
CS-MPMP-0001B*							2Y	2Y		2Y		* Comprehensive Test
CVC-MPMP-0001A	CHEMICAL VOLUME CONTROL CHARGING PUMP A	Positive Displacement	Motor	G-168 Sh 2 J-4	2			Q	Q	Q	PRR-07-1	Group A Test. Measure Vv Peak to Peak.
CVC-MPMP-0001A*								2Y	2Y	2Y		* Comprehensive Test
CVC-MPMP0001AB	CHEMICAL VOLUME CONTROL CHARGING PUMP AB	Positive Displacement	Motor	G-168 Sh 2 K-4	2			Q	Q	Q	PRR-07-1	Group A Test. Measure Vv Peak to Peak.
CVC-MPMP0001AB*								2Y	2Y	2Y		* Comprehensive Test

**IST PLAN
W3 APPENDIX
PUMP SUMMARY LISTING**

**PROGRAM SECTION NO. CEP-IST-2
REVISION NO. 307
PAGE 3 OF 5**

PUMP NO.	PUMP DESCRIPTION	PUMP TYPE	DRIVER	P & ID NO., COORD.	IST CODE CLASS	REQUIRED TESTS AND FREQUENCY					PRR/PPS	NOTES:
						S	dP	FR	Pd	V		
CVC-MPMP-0001B	CHEMICAL VOLUME CONTROL CHARGING PUMP B	Positive Displacement	Motor	G-168 Sh 2 M-4	2			Q	Q	Q	PRR-07-1	Group A Test. Measure Vv Peak to Peak.
CVC-MPMP-0001B*								2Y	2Y	2Y		* Comprehensive Test
EFW-MPMP-0001A	EMERGENCY FEEDWATER PUMP A	Centrifugal	Motor	G-153 Sh 4 K-6	3		Q					Group B Test. Measure Vv Peak.
EFW-MPMP-0001A*							2Y	2Y		2Y		* Comprehensive Test
EFW-MPMP0001AB	EMERGENCY FEEDWATER PUMP AB	Centrifugal	Turbine	G-153 Sh 4 K-9	3	Q	Q				PPS-003	Group B Test. Measure speed 1st.
EFW-MPMP0001AB*						2Y	2Y	2Y		2Y		* Comprehensive Test
EFW-MPMP-0001B	EMERGENCY FEEDWATER PUMP B	Centrifugal	Motor	G-153 Sh 4 K-11	3		Q					Group B Test. Measure Vv Peak.
EFW-MPMP-0001B*							2Y	2Y		2Y		* Comprehensive Test
SI-MPMP-0001A	LOW PRESSURE SAFETY INJECTION PUMP A	Centrifugal	Motor	G-167 Sh 3 G-6	2		Q	Q		Q	PPS-001	Group A Test. Measure Vv Peak.
SI-MPMP-0001A*							2Y	2Y		2Y		* Comprehensive Test
SI-MPMP-0001B	LOW PRESSURE SAFETY INJECTION PUMP B	Centrifugal	Motor	G-167 Sh 3 K-6	2		Q	Q		Q	PPS-001	Group A Test. Measure Vv Peak.
SI-MPMP-0001B*							2Y	2Y		2Y		* Comprehensive Test
SI-MPMP-0002A	HIGH PRESSURE SAFETY INJECTION PUMP A	Centrifugal	Motor	G-167 Sh 1 D-8	2		Q				PPS-002	Group B Test. Measure Vv Peak.
SI-MPMP-0002A*							2Y	2Y		2Y		* Comprehensive Test
SI-MPMP-0002AB	HIGH PRESSURE SAFETY INJECTION PUMP AB	Centrifugal	Motor	G-167 Sh 1 F-8	2		Q				PPS-002	Group B Test. Measure Vv Peak.
SI-MPMP-0002AB*							2Y	2Y		2Y		* Comprehensive Test

**IST PLAN
W3 APPENDIX
PUMP SUMMARY LISTING**

**PROGRAM SECTION NO. CEP-IST-2
REVISION NO. 307
PAGE 4 OF 5**

PUMP NO.	PUMP DESCRIPTION	PUMP TYPE	DRIVER	P & ID NO., COORD.	IST CODE CLASS	REQUIRED TESTS AND FREQUENCY					PRR/PPS	NOTES:
						S	dP	FR	Pd	V		
SI-MPMP-0002B	HIGH PRESSURE SAFETY INJECTION PUMP B	Centrifugal	Motor	G-167 Sh 1 J-8	2		Q				PPS-002	Group B Test. Measure Vv Peak.
SI-MPMP-0002B*							2Y	2Y		2Y		* Comprehensive Test

Pump Summary Table Notes

No.

1 None