Exelon Nuclear Generation, LLC
200 Exelon Way
Kennett Square, PA 19348

Braidwood Nuclear Power Station
Units 1 & 2

Commercial Service Dates:

Unit 1 – 7/29/88, Docket No. 50-456
Unit 2 – 10/17/88, Docket No. 50-457

35100 S. Rt. 53 Suite 84
Braidwood, Illinois 60407

Inservice Testing Program
Fourth Ten Year Interval
July 29, 2018- July 28, 2028

Revision 3

RESERVED

REVISION RECORD

Passport Revision	Effective Date	Revision Description	Sign & Date		
			Prepared; IST Program Engineer	Reviewed Corporate IST Engineer	Approved; Engr. Programs Manager
0	7/29/2018	Fourth Ten Year Interval Update	Carl McIlheran 7/19/18	Phil Kehoe 7/19/18	Donald Merkle 7/19/18
1	8/10/2018	Corrected Valve Tables to latest program intent			
2	6/8/2020	Minor edits per ATI 4302511-04. This included added Supplemental Position Verification description to Plan (3.1.1), updated Valve Tables to latest program intent (corrected applicable MOV full-stroke exercise frequencies from 2 years to 18 months, corrected 1SX005 and 0SX007 FSE frequencies from quarterly to 18 months, removed the diagnostic test for the 1/2SI8808A-D, re-inserted RJ-8), updated Plan and Tables to follow notation of latest version of ER-AA-321-1002. Also corrected CS-15 to note 18-month frequency, added CVCM table (Attachment 16). Removed exempt pumps 0FC03PA/B and 1/2FC01P from pump table per ATI 4343137-03.	Carl McIlheran 6/8/20	See E-mail Approval attached	See E-mail Approval attached
3	11/25/2020	Added OMN-26 Relief Request, RAI, and the applicable SER per ATI 04130629-24. Also performed minor corrections to valve table: 1) Re-inserted 1PS229A, 2) Removed PIT for 1(2)RY8010A/B/C	Carl McIlheran 12/2/20 McIlheran, Carl Digitally signed by McIlheran, Carl DN: cn=McIlheran, Carl Date: 2020.12.02 14:08:50 -06'00'	Weiss, Glenn D. Digitally signed by Weiss, Glenn D. DN: cn=Weiss, Glenn D. Date: 2020.12.02 16:27:46 -05'00'	Murray, Patrick Digitally signed by Murray, Patrick DN: cn=Murray, Patrick Date: 2020.12.03 07:07:47 -06'00'

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SECTION

1.0 INTRODUCTION

This IST Plan has been prepared for Braidwood Station Unit 1 and Unit 2. Both Units are Westinghouse Pressurized Water Reactor Nuclear Plant, with a generation of approximately 1242 MWe for Unit 1 and 1210 MWe for Unit 2. Both Braidwood Unit 1 and Unit 2 are licensed as a hot shutdown plant.

The Braidwood Station Unit 1 and Unit 2 are in their fourth 10 year Interval; the Code of Record for Braidwood is ASME OM Code 2012 Edition. The Interval started on July 29, 2018 and will end on July 28, 2028.

1.1 Purpose

To provide requirements for the performance and administration of assessing the operational readiness of those pumps and valves whose specific functions are required to:

- Shutdown the reactor to the safe shutdown condition,
- Maintaining the safe shutdown condition, or
- To mitigate the consequences of an accident.

Non-ASME components may be included as "augmented" components within the IST Program.

1.2 Scope

All references to the ASME OM Code within this document are intended to apply to the 2012 Code Edition. The program plan was prepared to meet the requirements of the following:

- Subsections of the American Society of Mechanical Engineers (ASME) Code for Operation and Maintenance of Nuclear Power Plants, 2012 Edition as follows:
  - ASME OM Code, Subsection ISTA, *"General Requirements"*

    ISTA contains the requirements directly applicable to inservice testing including the Owner's Responsibility and Records Requirements.

  - ASME OM Code, Subsection ISTB, *"Inservice Testing of Pumps in Light-Water Reactor Nuclear Power Plants – Pre-2000 Plants"*

    ISTB establishes the requirements for inservice testing of pumps in light-water reactor nuclear power plants. The pumps covered are those provided with an emergency power source, that are required in the shutting down the reactor to the safe shutdown condition, in maintaining the safe shutdown condition, or in mitigation of the consequences of an accident.

  - ASME OM Code, Subsection ISTC, *"Inservice Testing of Valves in Light-Water Reactor Nuclear Power Plants"*

ISTC establishes the requirements for inservice testing of valves in light-water reactor nuclear power plants. The valves covered include those that are required to perform a specific function, either active or passive, in shutting down a reactor to the safe shutdown condition, in maintaining the safe shutdown condition, or in mitigating the consequences of an accident. Valves that provide overpressure protection to systems or portions of system that are required to perform any of these functions are also included.

- ASME OM Code, Division 1, Mandatory Appendix I, *"Inservice Testing of Pressure Relief Devices in Light-Water Reactor Nuclear Power Plants"*

  Appendix I provides the requirements for performance testing and monitoring of nuclear plant pressure relief devices. Methods, intervals, and record requirements for monitoring and testing are established, as well as requirements for the evaluation of results.

- ASME OM Code, Division 1, Mandatory Appendix II, *"Check Valve Condition Monitoring Program"*

  Appendix II provides an alternative to the check valve testing or examination requirements of ISTC-3510, ISTC-3520, ISTC-3530, ISTC-3550, and ISTC-5221. The purpose of this program is both to improve valve performance and to optimize testing, examination, and preventive maintenance activities in order to maintain the continued acceptable performance of a select group of check valves.

- ASME OM Code, Division 1, Mandatory Appendix III, *"Preservice and Inservice Testing of Active Electric Motor Operated Valve Assemblies in Light-Water Reactor Power Plants"*

  Appendix III establishes the requirements for inservice testing to assess the operational readiness of active motor-operated valves (MOVs) in light-water reactor (LWR) power plants.

- ASME OM Code, Division 1, Mandatory Appendix V, *"Pump Periodic Verification Test Program"*

  Appendix V establishes the requirements for implementing a pump periodic verification test. As discussed in ISTB-1400, the Owner shall establish a pump periodic verification test program for certain applicable pumps that are tested in accordance with para. ISTA-1100.

- Additionally, ASME OM Code Cases that have been approved for use by the NRC per Regulatory Guide 1.192 and are adopted for use at Braidwood (subject to additional NRC approval where required) are identified below. These Code Cases

shall be used during the fourth 10-Year Interval IST Program implementation with all conditions, as applicable:

- Code Case OMN-20, "Inservice Test Frequency," Revision 0.

During the Third IST 10-Year Interval, OMN-20 was authorized for use by the USNRC per Agency wide Documents Access and Management System (ADAMS) No. ML17046A286, dated February 21, 2017.

On August 17, 2017 the NRC added a new condition as § 50.55a(b)(3)(x), "ASME OM Code Case OMN-20," to allow licensees to implement OM Code Case OMN-20, "Inservice Test Frequency," in the OM Code, 2012 Edition. This condition allows voluntary action initiated by the licensee to use the code case and is, therefore, not a backfit.

- Code Case OMN-26, "Alternate Risk-Informed and Margin Based Rules for Inservice Testing of Motor Operated Valves."

OMN-26 was authorized for use via approved Code Case by the USNRC. See SER (ADAMS # ML20232A171) dated September 1, 2020.

The Braidwood Nuclear Power Station Pump and Valve Inservice Testing Plan will be in effect through the fourth 120-month interval.

- Unit One: July, 29, 2018 through July 28, 2028
- Unit Two: July 29, 2018 through July 28, 2028

- This plan will be updated as required in accordance with 10 CFR50.55a(f).

The Braidwood Nuclear Power Station Inservice Testing Basis Document includes the justification for inclusion of components in the scope of IST and also the justifications for exclusion from the program. Administrative procedures, surveillance testing procedures, and other records required to define and execute the Inservice Testing Program are all retained and available at Braidwood Nuclear Power Station.

2.0 INSERVICE TESTING PLAN FOR PUMPS

2.1 Pump Inservice Testing Plan Description

The Braidwood Inservice Testing Plan for Pumps meets the requirements of Subsections ISTA and ISTB and Mandatory Appendix V of the ASME OM Code-2012, except where relief has been granted by the NRC. Relief requests, if any, would be provided in Attachment 2.

2.2 Pump Plan Table Description

The pumps included in the Braidwood Nuclear Power Station IST Plan are listed in Attachment 14. The information contained in that table identifies those pumps required to be tested to the requirements of ASME OM Code, the parameters measured, associated Relief Requests and comments, and other applicable information. The column headings for the Pump Table are listed below with an explanation of the content of each column.

Pump EPN — The unique Equipment Part Number (EPN) for the pump. Each EPN is preceded with a Unit designator for the pump:

0	Common
1	Unit 1
2	Unit 2

Pump Name — The descriptive name for the pump.

Safety Class — The ASME Safety Class (i.e. 1, 2, or 3) of the pump. Non-ASME Safety Class pumps are designated "NC." Non-Safety-Related pumps are designated "NS."

1	Class 1
2	Class 2
3	Class 3
NC	Non-Code, Safety Related
NS	Non-Safety Related

Pump Type — The type of pump.

C	Centrifugal
PDN	Positive Displacement - Non-Reciprocating
PDR	Positive Displacement - Reciprocating
VLS	Vertical Line Shaft

2.2 Pump Plan Table Description (Cont'd)

Pump Driver	The type of pump driver.	
	A	Air-motor
	D	Diesel
	M	Motor (electric)
	T	Turbine (steam)
	ENG	Combustion Engine (Diesel)
Pump Group	The pump group as defined in ISTB-2000	
	Group A	Continuous or routinely operated pumps
	Group B	Standby pumps not operated routinely
	Group A/B	(OMN-18)
	N/A	Skid mounted
P&ID	The Piping and Instrumentation Drawing on which the pump is represented.	
P&ID Coor.	The P&ID Coordinate location of the pump.	
Test Type	Measured test parameters.	
	N	Speed, measured only for variable speed pumps.
	dP	Differential pressure
	DIS-P	Discharge pressure, measured for positive displacement pumps.
	Q	Flow rate, measured using a rate or quantity meter installed in the pump test circuit.
	V	Pump bearing vibration, either by displacement or velocity as appropriate
	SKID	Skid mounted

2.2 Pump Plan Table Description (Cont'd)

Test Freq. — The frequency for performing the specified inservice test.

Q	Quarterly (92 Days)
Y2	Once every two years (Biennial)

NOTE: All tests are performed at the frequencies specified by Code unless specifically documented by a Relief Request.

RR# — A relief request number is listed when a specific code requirement is determined to be impracticable.

Tech Pos — A technical position number is listed when the requirements of the code are not easily interpreted and clarifying information is needed. The technical position is used to document how Code requirements are being implemented at the station. This provides the Technical Position identification number applicable to the pump or test.

3.0 INSERVICE TESTING PLAN FOR VALVES

3.1 Valve Inservice Testing Plan Description

The Inservice Testing Plan for Valves documents compliance with the requirements of Subsection ISTC of the ASME OM Code except where relief has been granted by the NRC. Relief requests are provided in Attachment 5.

Where the quarterly exercise testing requirement for various valves have been determined to be impracticable, Cold Shutdown or Refuel Outage Justifications have been identified and written. These justifications are provided in Attachments 9 and 11 respectively.

3.1.1 Supplemental Position Indication

On August 17, 2017, the Code of Federal Regulations was updated with a mandatory condition which emphasizes the critical nature of ensuring effective monitoring of valve obturator position and operational readiness as an integral part of performing ISTC-3700 testing. Mandatory Condition 12 for licensees intending to adopt the 2012 edition of the ASME OM Code reads as follows:

"(xi) OM condition: Valve Position Indication. When implementing paragraph ISTC–3700, "Position Verification Testing," in the ASME OM Code, 2012 Edition through the latest edition and addenda of the ASME OM Code incorporated by reference in paragraph (a)(1)(iv) of this section, licensees shall verify that valve operation is accurately indicated by supplementing valve position indicating lights with other indications, such as flow meters or other suitable instrumentation to provide assurance of proper obturator position for valves with remote position indication within the scope of Subsection ISTC including its mandatory appendices and their verification methods and frequencies."

In response to this new requirement, the Braidwood IST Program has identified, and in some cases developed, methods to verify valve obturator position is accurately indicated. The listing of the methodology used to verify Supplemental Position Indication (SPI) compliance for the applicable valves is maintained in the valve basis documentation.

3.2 Valve Plan Table Description

The valves included in the Braidwood Nuclear Station IST Plan are listed in Attachment 15. The information contained in these tables identify those valves that are required to be tested to the requirements of ASME OM Code, the test methods and frequency of testing, the associated relief requests, and other applicable information. The headings for the valve tables are delineated below.

Valve Name	The descriptive name of the valve.
Valve EPN	A unique identifier for the valve. Each EPN is preceded with a Unit designator for the valve:

0	Common
1	Unit 1
2	Unit 2

Safety Class

The ASME Safety Class (i.e. 1,2, or 3) of the valve. Non-ASME Safety Class valves are designated "NC". Non-Safety-Related valves are designated "NS". Augmented valves are designated as "0".

1	Class 1
2	Class 2
3	Class 3
NC	Non-Code, Safety Related
NS	Non-Safety Related
0	Augmented

3.2 Valve Plan Table Description (Cont'd)

Cat — The code category (or categories) as defined in 2012 ASME OM Code Subsection ISTC-1300.

A	Seat Leakage Limited.
B	Seat Leakage Not Required.
C	Self-Actuating Valves.
D	Single Use Valves.
A/C	Both Categories A and C
B/C	Both Categories B and C

Size — The nominal pipe size of the valve, in inches.

Valve Type — The valve body style abbreviation.

3W	3-Way Valve
4W	4-Way Valve
ANG	Angle Valve
BAL	Ball Valve
BTF	Butterfly Valve
CK	Check Valve
DAM	Damper
DIA	Diaphragm Valve
GA	Gate Valve
GL	Globe Valve
NDL	Needle Valve
PCV	Pressure Control Valve
PLT	Pilot Valve
PLG	Plug Valve
PPT	Poppet Valve
RV	Relief Valve
RPD	Rupture Disk
SV	Safety Valve
SCK	Stop Check Valve
SHR	Shear Valve/SQUIB Valve
TC	Testable Check Valve
VB	Vacuum Breaker Valve
XFC	Excess Flow Check Valve

3.2 Valve Plan Table Description (Cont'd)

Act. Type — The actuator type abbreviation.

AO	Air Operator
DF	Dual Function (Self Actuated and Power Operated)
EXP	Explosive Actuator
HO	Hydraulic Operator
M	Manual
MO	Motor Operator
SA	Self-Actuating
SAP	Self-Actuated Pilot
SO	Solenoid Operator

Active/Passive — Used to designate whether the valve is active or passive in fulfillment of its safety function. The terms "active valves" and "passive valves" are defined in the 2012 ASME OM Code.

A	Active
P	Passive

Positions Norm/Fail/Safety — Abbreviations used to identify the normal, fail, and safety-related positions for the valve. Abbreviations used are:

AI	As Is
C	Closed
CKL	Closed/Actuator Key Locked
D	De-energized
D/E	De-energized or Energized
E	Energized
LC	Locked Closed
LO	Locked Open
LT	Locked Throttled
N/A	No Safety Related Position
O	Open
O/C	Open or Closed
OKL	Open/Actuator Key Locked
SYS	System Condition Dependent
T	Throttled

3.2 Valve Plan Table Description (Cont'd)

P&ID — The Piping and Instrumentation Drawing (P&ID) number on which the valve appears. If the valve appears on multiple P&IDs, the primary P&ID will be listed.

P&ID Coor. — The coordinate location on the P&ID where the valve appears.

Test Type — The test type abbreviation. A listing of abbreviations used to designate the types of testing which are required to be performed on the valve based on its category and functional requirements. Abbreviations used are:

BDC	Bidirectional Check Valve test (non-safety related closure test)
BDO	Bidirectional Check Valve test (non-safety related open test)
CC[2]	Check Valve Exercise Test - Closed
CO[2]	Check Valve Exercise Test – Open
CP[2]	Check Valve Partial Exercise Test
DIAG	Diagnostic Test
DT	Category D Test
EC	Exercise Test – Closed (manual valve)
EO	Exercise Test – Open (manual valve)
FC	Fail-Safe Exercise Test - Closed
FO	Fail-Safe Exercise Test - Open
LT[1]	Leak Rate Test
OMN-C	OMN-1 Criteria Closed Test
OMN-O	OMN-1 Criteria Open Test
PI	Position Indication Verification Test
TRV	Replace Thermal Relief Valves
RT	Relief Valve Test
SC	Exercise Closed (without stroke-timing)
SD	Solenoid De-energize
SE	Solenoid Energize
SO	Exercise Open (without stroke-timing)
SPO	Partial Exercise Open (Cat. A or B)
SPC	Partial Exercise Close (Cat. A or B)
STC	Exercise/Stroke-Time Closed
STO	Exercise/Stroke-Time Open

[1] A third letter, following the "LT" designation for leakage rate test, may be used to differentiate between the tests.

For example, Appendix J leak tests will be designated as "LTJ", low pressure (non-Appendix J) leak tests as "LTL", high pressure leak tests as "LTH", and leak test other than containment isolation valves and high or low (i.e. ISTC 3630) "LTP".

[2] Three letter designations should be used for check valve tests to differentiate between the various methods of exercising check valves. The letter following "CC", "CO" or "CP" should be "A" for acoustics, "D" for disassembly and inspection, "F" for flow indication, "L" for leakage test, "M"for magnetics, "R" for radiography, "U" for ultrasonics, "T" for temperature, or "X" for manual exercise.

3.2 Valve Plan Table Description (Cont'd)

Test Freq. — The test frequency abbreviation.

AJ	Appendix J
CM	Condition Monitoring
CS	Cold Shutdown
M[n]	Once every n months
MOV	Per the MOV program or Relief Request RR-1
OP	Normal Operation
Q	Quarterly
RR	Refuel Outage
R[n]	Once every n Refuel Outages
SA	Sample Disassemble & Inspect
S2	1 Squibb 24 months / 100% in 120 months
TS	Per Technical Specification Requirements
TS1	50% each Refueling Outage per TS
Y[n]	Once every n years

RR — A relief request number is listed when a specific code requirement is determined to be impracticable. This identifies the number of the Relief Request applicable to the specific test

Just. — A cross-reference to the applicable Cold Shutdown Justification (CS) or Refuel Outage Justification (RJ) which describes the reasons why reduced-frequency exercise testing is necessary for the applicable valve.

Tech Pos	A technical position number is listed when the requirements of the code are not easily interpreted and clarifying information is needed. The technical position is used to document how Code requirements are being implemented at the station. This provides the Technical Position identification number applicable to the valve or test.

4.0 ATTACHMENTS

ATTACHMENT 1

SYSTEM AND P&ID Listing

P&ID's for each component are listed in the Pump and Valve tables, and not listed separately here

ATTACHMENT 2

PUMP RELIEF REQUEST INDEX

NONE USED

ATTACHMENT 3
PUMP RELIEF REQUESTS

NONE USED

ATTACHMENT 4

VALVE RELIEF REQUEST INDEX

Relief Request Number	Relief Request Title	Approval Date
RR-1	Proposed Alternative to Utilize Code Case OMN-26, Revision 1.	9/1/2020

ATTACHMENT 5

VALVE RELIEF REQUESTS

RR-1 (Proposed Alternative to Utilize Code Case OMN-26, Revision 1): The text of this Relief Request is shown in the RAI, which contains the applicable Revision 1 version of the Relief Request (ADAMS # ML20188A264).

ATTACHMENT 6

RELIEF REQUEST RAIs AND SERs

RAI (ADAMS # ML20188A264) on the following pages includes Revision 1 to the Relief Request

SER (ADAMS # ML20232A171) is also included on the following pages

Exelon Generation

200 Exelon Way
Kennett Square, PA 19348
www.exeloncorp.com

10 CFR 50.55a

July 6, 2020

U.S. Nuclear Regulatory Commission
Attn: Document Control Desk
Washington, DC 20555-0001

Braidwood Station, Units 1 and 2
Renewed Facility Operating License Nos. NPF-72 and NPF-77
NRC Docket Nos. STN 50-456 and STN 50-457

Calvert Cliffs Nuclear Power Plant, Units 1 and 2
Renewed Facility Operating License Nos. DPR-53 and DPR-69
NRC Docket Nos. 50-317 and 50-318

Clinton Power Station, Unit 1
Facility Operating License No. NPF-62
NRC Docket No. 50-461

R.E. Ginna Nuclear Power Plant
Renewed Facility Operating License No. DPR-18
NRC Docket No. 50-244

Limerick Generating Station, Units 1 and 2
Renewed Facility Operating License Nos. NPF-39 and NPF-85
NRC Docket Nos. 50-352 and 50-353

Nine Mile Point Nuclear Station, Units 1 and 2
Renewed Facility Operating License Nos. DPR-63 and NPF-69
NRC Docket Nos. 50-220 and 50-410

Peach Bottom Atomic Power Station, Units 2 and 3
Renewed Facility Operating License Nos. DPR-44 and DPR-56
NRC Docket Nos. 50-277 and 50-278

Subject: Proposed Alternative to Utilize Code Case OMN-26 – Response to Request for Additional Information

References:
1. Exelon letter to the NRC, "Proposed Alternative to Utilize Code Case OMN-26," dated January 31, 2020 (ADAMS Accession No. ML20034C819)
2. Email from J. Wiebe (USNRC) to D. Neff (Exelon), "Preliminary RAI for Fleet Request to Use Alternative OMN-26," dated June 1, 2020 (ADAMS Accession No. ML20153A704)

In accordance with 10 CFR 50.55a, "Codes and standards," paragraph (z)(1), Exelon Generation Company, LLC (Exelon), requested NRC approval of a proposed relief request associated with the Inservice Testing (IST) Programs for the cited Exelon Nuclear Power Plants (NPPs) (Reference 1). Specifically, the request proposes to implement the American Society of Mechanical Engineers (ASME) Code Case OMN-26, "Alternate Risk-Informed and Margin Based Rules for Inservice Testing of Motor Operated Valves." During their technical review of the application, the NRC Staff identified the need for additional information. Reference 2 provided the Request for Additional Information (RAI). Attachment 1 to this response provides the response to the RAI. Attachment 2 to this response provides a revision to the Relief Request to Utilize Code Case OMN-26 submitted in Reference 1 with the changes highlighted based on the RAI response provided in Attachment 1.

There are no regulatory commitments contained in this response.

If you have any questions, please contact Mr. David Neff at (267) 533-1132.

Respectfully,

D. P. Helker

David P. Helker
Sr. Manager - Licensing and Regulatory Affairs
Exelon Generation Company, LLC

Attachments:
1. Response to Request for Additional Information
2. Relief Request to Utilize Code Case OMN-26, Revision 1

cc: Regional Administrator - NRC Region I
Regional Administrator - NRC Region III
NRC Senior Resident Inspector - Braidwood Station
NRC Senior Resident Inspector - Calvert Cliffs Nuclear Power Plant
NRC Senior Resident Inspector - Clinton Power Station
NRC Senior Resident Inspector – R.E Ginna Nuclear Power Plant
NRC Senior Resident Inspector - Limerick Generating Station
NRC Senior Resident Inspector - Nine Mile Point Nuclear Station
NRC Senior Resident Inspector – Peach Bottom Atomic Power Station
NRC Project Manager - Braidwood Station
NRC Project Manager - Calvert Cliffs Nuclear Power Plant
NRC Project Manager - Clinton Power Station
NRC Project Manager – R.E. Ginna Nuclear Power Plant
NRC Project Manager - Limerick Generating Station
NRC Project Manager - Nine Mile Point Nuclear Station
NRC Project Manager – Peach Bottom Atomic Power Station
Illinois Emergency Management Agency - Department of Nuclear Safety
R. R. Janati - Bureau of Radiation Protection, Commonwealth of Pennsylvania
S. Seaman - State of Maryland
A. L. Peterson - NYSERDA

Attachment 1

Braidwood Station, Units 1 and 2
Calvert Cliffs Nuclear Power Plant, Units 1 and 2
Clinton Power Station, Unit No. 1
R.E. Ginna Nuclear Power Plant
Limerick Generating Station, Units 1 and 2
Nine Mile Point Nuclear Station, Units 1 and 2
Peach Bottom Atomic Power Station, Units 2 and 3

Proposed Alternative to Utilize Code Case OMN-26

Response to Request for Additional Information

Response to NRC Staff's Request for Additional Information

By application dated January 31, 2020 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML20034C819), Exelon Generation Company, LLC (Exelon) submitted a request in accordance with paragraph 50.55a(z)(1) of Title 10 of the Code of Federal Regulations (10 CFR) for a proposed alternative to the requirements of 10 CFR 50.55a and the American Society of Mechanical Engineers (ASME) Code for Operation and Maintenance of Nuclear Power Plants (OM Code) at Braidwood Station, Units 1 and 2, Calvert Cliffs Nuclear Power Plant, Units 1 and 2, Clinton Power Station, Unit No. 1, R.E. Ginna Nuclear Power Plant, Limerick Generating Station, Units 1 and 2, Nine Mile Point Nuclear Station, Units 1 and 2, and Peach Bottom Atomic Power Station, Units 2 and 3. The proposed alternative would provide a Risk-Margin based methodology that establishes limitations for maximum inservice test intervals for Motor Operated Valves (MOVs).

In an email dated June 1, 2020, from the NRC (Joel Wiebe) to Exelon (David Neff) (ADAMS Accession No. ML20153A704), the NRC provided a draft Request for Additional Information (RAI) seeking clarification of certain issues related to the RAI. A clarification call was conducted on June 8, 2020, with representatives from Exelon and the NRC where the draft RAI text was confirmed with no changes. Exelon agreed to provide the response to the RAI within 30 days of June 8, 2020. The response to the RAI is provided below. A revised version of the subject Relief Request is provided in Attachment 2 with changes highlighted based on the RAI response provided below.

RAI 1

In its submittal dated January 31, 2020, Exelon is requesting the implementation of American Society of Mechanical Engineers (ASME) Code Case OMN-26, "Alternate Risk-Informed and Margin Based Rules for Inservice Testing of Motor Operated Valves," for the diagnostic testing intervals for active motor-operated valves (MOVs) as an alternative to the provisions in ASME *Operation and Maintenance of Nuclear Power Plants*, Division 1, OM Code: Section IST (OM Code), 2012 Edition, Mandatory Appendix III, "Preservice and Inservice Testing of Active Electric Motor Operated Valve Assemblies in Light-Water Reactor Power Plants," as incorporated by reference in 10 CFR 50.55a, in accordance with 10 CFR 50.55a(z)(1). Code Case OMN-26 provides separate tables with notes for the diagnostic test intervals for the High Safety Significant Component (HSSC) MOVs and Low Safety Significant Component (LSSC) MOVs. In its submittal, Exelon has combined the OMN-26 tables into one table. It is not clear that the table in the Exelon submittal has accurately included all of the provisions specified in OMN-26 to allow the extended diagnostic test intervals. For example, the HSSC and LSSC tables in OMN-26 specify that to implement the extended diagnostic test intervals allowed in the code case, an MOV must be routinely operated at Design Basis Pressure Conditions with Note (A) in the OMN-26 tables specifying that this routine operation occurs at a periodicity no less frequent than once a refueling outage. The Exelon submittal as detailed in the proposed Exelon table does not appear to include these OMN-26 provisions. Exelon is requested to justify that all of the provisions in both of the OMN-26 tables have been accurately combined into the single table in its submittal, or specify in its submittal that the actual OMN-26 tables will be implemented.

RESPONSE

Exelon will implement the relief request (RR) in compliance with Code Case OMN-26 in its entirety, including all tables and associated notes. A complete review of the RR submittal versus the Code Case OMN-26 was performed and identified that all of the provisions in the code case were included in the RR submittal except for Notes A and D. Notes A and D were omitted from the RR submittal as both the design basis stroking frequency (Note A) and the inservice test intervals (Note D) are deemed to be covered by existing processes and procedures at Exelon. Minor editorial changes are also made to Notes 6 and 7 to align with the language in the corresponding OMN-26 Table notes.

In order to incorporate Code Case OMN-26 Note A from Tables 1 and 2, Note 6 of the Exelon Table in the RR submittal is revised as follows to include all the text in Note A. A clarification is added regarding the routine stroking of MOVs during normal operations. A second clarification is added regarding the periodicity of test strokes; once a refueling outage is replaced with once a refueling cycle. The stations included in this relief request are on either an 18- or a 24-month refueling cycle. The Code Case OMN-26 Note A language unnecessarily restricts the test strokes to occur during a refueling outage. Changes are shown with revision markers.

6. To utilize these intervals, **test** strokes at or exceeding design basis system conditions **must occur at a periodicity no less frequent than once a refueling ~~outage~~ cycle,** must be in the applicable safety function direction(s), **and the MOV** ~~and~~ must have no ~~known~~ applicable operating experience, degradation or diagnostic test anomaly **with the potential for adverse** ~~that potentially~~ impact**s on** MOV functional margin or the capability of the MOV to perform its design basis function. **These routine strokes during the inservice test interval are not required to be diagnostically monitored.**

In order to incorporate editorial changes, Note 7 is revised as follows with revision markers.

7. Operating plants that have acquired the requisite test data to satisfy **Appendix III, paragraphs** III-3310(b) or III 3722(c) must complete one cycle of collecting diagnostic test data at an extended test interval, minimum 9 and maximum 12 years, before extending the test interval by engineering evaluation to the maximum 16-year test interval.

In order to incorporate Code Case OMN-26 Note D from Tables 1 and 2, a new Note 8 to the Exelon Table in the RR submittal is added as follows to include all the text in Note D. A clarification is added regarding the inservice test interval for MOVs.

8. The MOV functional margin limits apply to the As-Left MOV condition at the start of the inservice test interval and includes applicable test uncertainties and allowance for service-related degradation. The inservice test interval is uniquely established for each MOV based on margin and risk classification of the MOV.

ATTACHMENT 2

Relief Request to Utilize Code Case OMN-26, Revision 1

EXELON GENERATION COMPANY, LLC
IST PROGRAM – RELIEF REQUEST
Proposed Alternative in Accordance with 10 CFR 50.55a(z)(1)
Relief Request to Utilize Code Case OMN-26, Revision 1

1. ASME Code Component(s) Affected:

Active safety related motor operated valves (MOVs) that are required by Subsection ISTC of the 2012 Edition of the American Society of Mechanical Engineers (ASME) Operation and Maintenance (OM) Code to be tested in accordance with ASME OM Code Mandatory Appendix III.

2. Applicable ASME OM Code Edition:

PLANT	INTERVAL	OM EDITION	START	END
Braidwood Station Units 1 and 2	Fourth	2012 Edition	July 29, 2018	July 28, 2028
Calvert Cliffs Nuclear Power Plant, Units 1 and 2	Fifth	2012 Edition	July 1, 2018	June 30, 2028
Nine Mile Point Nuclear Station, Unit 1 and 2	Fifth - U1 Fourth-U2	2012 Edition	January 1, 2019	December 31, 2028
Peach Bottom Atomic Power Station, Unit 2 and 3	Fifth	2012 Edition	November 16, 2018	August 14, 2028
R.E. Ginna Nuclear Power Plant Unit 1	Sixth	2012 Edition	January 1, 2020	December 31, 2029
Limerick Generating Station, Units 1 and 2	Fourth	2012 Edition	January 8, 2020	January 7, 2030
Clinton Power Station, Unit 1	Fourth	2012 Edition	July 1, 2020	June 30, 2030

3. Applicable Code Requirements:

The ASME OM Code Mandatory Appendix III, Preservice and Inservice testing of Active Electric Motor-Operated Valve Assemblies in Water Cooled Reactor Nuclear Power Plants.

The following Appendix III Paragraphs are affected by this Relief Request to adopt Code Case OMN-26, "Alternate Risk-Informed and Margin Based Rules for Inservice Testing of Motor Operated Valves."

III-3310 (c).

III-3700 Risk-Informed MOV Inservice Testing.

III-3721 HSSC MOVs.

III-3722 (d).

For each of these paragraphs, relief is being sought for alternative treatments described in Section 5 of this relief request based on the ASME Board of Nuclear Codes and Standards (BNCS) approved Code Case OMN-26.

4. Reason for Request:

In accordance with 10 CFR 50.55a(z)(1), Exelon Generation Company, LLC (Exelon) is requesting approval to adopt ASME OM Code Case OMN-26 in conjunction with implementing Mandatory Appendix III for all Exelon plants identified in Section 2.

Code Case OMN-26 better aligns OM Code Mandatory Appendix III to the Risk and Margin Based Licensee Motor Operated Valve (MOV) Programs developed in response to NRC Generic Letter 96-05, "Periodic Verification of Design-Basis Capability of Safety-Related Motor-Operated Valves," that have been in effect since 1998. The Appendix III ten-year maximum inservice test interval was originally established to align with the maximum test interval allowed under the Generic Letter 96-05 MOV Programs that, for most Licensees, was established by the Joint Owners Group (JOG) MOV Periodic Verification Program. There is no formal technical basis for the current Appendix III ten-year maximum interval that applies to all MOVs regardless of Risk and Margin. Over the past twenty years, Exelon MOV Programs have demonstrated many margin stable MOVs that can be readily justified to extend from their current MOV Program maximum inservice test intervals of six years (for High Risk) and ten years (for Low Risk).

5. Proposed Alternative and Basis for Use:

Proposed Alternative:
Exelon proposes to implement the ASME OM Code Case OMN-26 alternative risk and margin informed rules for inservice testing of MOVs in its entirety as described below:

Proposed Alternative to III-3310
(c) The maximum inservice test interval shall not exceed 10 years unless Risk Informed Inservice Testing applies under the provisions of para. III-3700. MOV inservice tests conducted per para. III-3400 may be used to satisfy this requirement.

Proposed Alternative to III-3700
Risk-informed MOV inservice testing that incorporate risk insights in conjunction with MOV Functional Margin to establish MOV grouping, acceptance criteria, exercising requirements and test interval may be implemented.

Proposed Alternative to III-3721

III-3721 HSSC MOVs. HSSC MOVs shall be tested in accordance with para. III-3300 and exercised in accordance with para. III-3600 while applying the following HSSC MOV Risk insights and limitations:

(a) HSSC MOVs that can be operated during plant operation shall be exercised quarterly, unless the potential increase in core damage frequency (CDF) and large early release (LER) associated with a longer exercise interval is small.

(b) For HSSC MOVs, the maximum inservice test interval shall be established in accordance with Table 1 of OMN-26 (see below)

OMN-26 Table 1
HSSC MOV – Margin Based Maximum Inservice Test Intervals

HSSC MOV Functional Margin[D]	Maximum Inservice Test Interval (Years)	If MOV is routinely[A] operated at Design Basis Pressure Conditions - Max Inservice Test Interval (Years) [B]
Low (< 5%)	2	4
Medium (≥ 5% and < 10%)	4	9
High (≥ 10% and < 20%)	9	9
Very High (≥ 20%)	9	12

OMN-26 Table 1 – Notes

(A) Occurs at a periodicity no less frequent than once a refueling outage.
(B) To utilize these intervals, test strokes at or exceeding design basis system conditions must be in the applicable safety function direction(s) and have no applicable operating experience, degradation or diagnostic test anomaly with the potential for adverse impact on MOV functional margin or the capability of the MOV to perform its design basis function.
(D) For the purpose of this code case, the MOV functional margin limits apply to the As-Left MOV condition at the start of the inservice test interval and include applicable test uncertainties and allowance for service- related degradation.

Proposed Alternative to III-3722 (d)

(d) For LSSC MOVs, the maximum inservice test interval shall be established in accordance with Table 2 of OMN-26 (see below)

OMN-26 Table 2
LSSC MOV – Margin Based Maximum Inservice Test Intervals

LSSC MOV Functional Margin[D]	Maximum Inservice Test Interval (Years)	If MOV is routinely[A] operated at Design Basis Pressure Conditions - Max Inservice Test Interval (Years) [B]
Low (< 5%)	4	9
Medium (≥ 5% and < 10%)	9	12
High (≥ 10% and < 20%)	12	12
Very High (≥ 20%)	12	16[C]

OMN-26 Table 2 Notes:

(A) Occurs at a periodicity no less frequent than once a refueling outage.
(B) To utilize these intervals, test strokes at or exceeding design basis system conditions must be in the applicable safety function direction(s) and have no applicable operating experience, degradation or diagnostic test anomaly with the potential for adverse impact on MOV functional margin or the capability of the MOV to perform its design basis function.
(C) Operating plants that have acquired the requisite test data to satisfy Appendix III, paragraphs III-3310(b) or III-3722(c) must complete one cycle of collecting diagnostic test data at an extended test interval, minimum 9 and maximum 12 years, before extending the test interval by engineering evaluation to the maximum 16-year test interval.
(D) For the purpose of this code case, the MOV functional margin limits apply to the As-Left MOV condition at the start of the inservice test interval and include applicable test uncertainties and allowance for service- related degradation.

Basis for Use:

The requested relief to adopt OMN-26 is in line with the current JOG MOV Periodic Verification Test Program that Exelon has implemented since the late 1990's in response to NRC Generic Letter 96-05. Both the JOG MOV PV Program and Code Case OMN-26 provide a Risk-Margin based methodology that establishes limitations for maximum inservice test intervals for MOVs. Code Case OMN-26 simply provides a reasonable extension of this Risk-Informed philosophy based on the lessons learned and accumulated MOV performance data gathered over more than 25 years of MOV Performance Verification Testing. Appendix III alone, in isolation from OMN-26, provides no such methodology other than a maximum limit for the inservice test interval regardless of Risk or Margin.

The requested allowed maximum inservice test intervals are modest extensions with many of the Low Risk MOVs extending from 10 to 12 years (20% increase). This test interval change can be readily adopted with no loss of MOV performance and/or safety system reliability provided that no adverse performance trends are indicated. Exelon's MOV Performance Trending Governance will ensure that only MOV's with good performance history, high stable margins and no adverse diagnostic trends would be candidates for the OMN-26 based inservice test interval extensions.

The requested High Margin Maximum interval changes afforded by OMN-26 align with Exelon's desire to adopt a divisional MOV outage testing strategy that reduces the implementation burden of MOV Inservice Testing and allows greater flexibility in optimizing safety system availability. The current six and ten-year JOG Program based High-Margin Maximum Intervals do not support this strategy.

The requested relief reduces the maximum test interval for High Safety Significant Component (HSSC) MOVs allowed by Appendix III from ten years to nine years

commensurate with Risk Informed Methodology. Further under this relief request, Exelon will treat MOVs currently classified as Medium Risk by the 3-Tier JOG Risk Ranking as High Risk (HSSC) thereby providing more rigorous periodic verification requirements for the applicable valves especially those with less than high margin.

The requested relief takes credit for routine design basis differential pressure testing (DBDPT) of MOVs to justify extending the maximum Inservice test interval to 12 Years for Very High Margin HSSC MOVs and 16 years for Very High Margin Low Safety Significant Component (LSSC) MOVs.

With the exception of Low Risk MOVs routinely operated at design basis differential pressure (D-P) conditions, Code Case OMN-26 does not allow maximum MOV Inservice Test intervals to exceed ten years unless the associated MOVs are classified as High Margin. Most High Risk MOVs are limited to four years or less for Low/Medium Margins and most Low Risk MOVs are limited to nine years or less for Low/Medium Margins. Code Case OMN-26 provides more rigorous requirements targeted specifically to Low/Medium Margin MOVs than currently allowed under Appendix III. This Risk/Margin approach is in line with accepted Risk-Informed Strategies such as the JOG MOV Periodic Verification Program.

Use of the proposed alternative is expected to result in improved MOV Margins at each Exelon station in order to attain higher margin status to allow use of the extended maximum inservice test intervals permitted by the OMN-26 Code Case.

For the majority of applicable MOVs (i.e., those MOVs not subject to periodic stroking under design basis D-P conditions), the Code Case limited the scope to only High Margin Valves for extending test intervals incrementally beyond current limits:

- Test intervals for High Risk MOVs go from six to nine years (Note: Nine years is aligned to Pressurized Water Reactor nuclear power plants (PWRs) on 18-month refueling cycles)
- Test intervals for Low Risk MOVs go from ten to 12 years (Note: 12 years is aligned for all Boiling Water Reactor nuclear power plants (BWRs) and PWRs with either 18- or 24-month refueling cycles)

The Table below provides a detailed comparison of the Maximum MOV Test Intervals for the JOG MOV Program, Mandatory Appendix III and Code Case OMN-26 that Exelon seeks to adopt via this relief request. MOVs identified with **Bold** type have maximum MOV inservice test intervals exceeding the current Appendix III ten-year limit.

Exelon Maximum MOV Test Intervals Based on Code Case OMN-26

	Maximum Inservice Test Intervals (Years)							
	HSSC MOVs				LSSC MOVs			
MOV Margin[8]	JOG MOV PV Program	Appendix III	OMN-26	OMN-26 w/DBDPT (6)	JOG MOV PV Program	Appendix III	OMN-26	OMN-26 w/DBDPT (6)
Low (<5%)	2	10	2 [1,2]	4 [5]	6	10	4 [1,3,5]	9 [5]
Medium (≥5% and <10%)	4	10	4 [1,2,5]	9 [5]	10	10	9 [1,3,5]	**12** [4,5]
High (≥10% and <20%)	6	10	9 [5]	9 [5]	10	10	**12** [4,5]	**12** [4,5]
Very High (≥ 20%)	N/A	10	9 [5]	**12** [4,5]	N/A	10	**12** [4,5]	**16** [4,5,7]
Description ->	Existing Industry Standard	Existing ASME OM Code	Relief Request	Relief Request	Existing Standard	Existing ASME OM Code	Relief Request	Relief Request

Table Notes

1. Code Case Maximum Inservice Test Intervals for all Low/Medium Margin MOVs are less than or equal to current ten-year Appendix III limit. (i.e., Code Case is more conservative than Appendix III for Low/Medium Margin MOVs).

2. Code Case Maximum Inservice Test Intervals for Low/Medium Margin HSSC MOVs are equal to the current JOG MOV PV Program limits of two/four years respectively. (Code Case intervals are aligned with JOG MOV).

3. Code Case Maximum Inservice Test Intervals for Low/Medium Margin LSSC MOVs (four/nine years) are less than the current JOG MOV PV Program limits of six/ten years respectively.

4. The following four categories of MOVs have maximum inservice test intervals that exceed the current ten-year limit:
   a. High Margin, LSSC MOVs. (12 Years)
   b. Very High Margin, HSSC MOVs that are periodically stroked at design basis DP conditions (DBDPT) (12 Years)
   c. Medium Margin, LSSC MOVs that are periodically DBDPT (12 Years)
   d. Very High Margin, LSSC MOVs that are periodically DBDPT (16 Years).

5. Except for Low Margin HSSC MOVs, the Maximum MOV Inservice Test Intervals are optimized for Divisional Outage Scheduling (i.e., 4, 9, 12, 16 years). Nine years is optimal for PWRs restricted to 18 month refueling outages. 12 years is optimal for both PWRs and BWRs and supports both 18-month and 24-month refueling outages.

6. To utilize these intervals, **test** strokes at or exceeding design basis system conditions **must occur at a periodicity no less frequent than once a refueling ~~outage~~ cycle,**

must be in the applicable safety function direction(s), **and the MOV must** ~~and~~ have no ~~known~~ applicable operating experience, degradation or diagnostic test anomaly **with the potential for adverse** ~~that potentially~~ impact**s on** MOV functional margin or the capability of the MOV to perform its design basis function. **These routine strokes during the inservice test interval are not required to be diagnostically monitored.**

7. Operating plants that have acquired the requisite test data to satisfy **Appendix III, paragraphs** III-3310(b) or III-3722(c) must complete one cycle of collecting diagnostic test data at an extended test interval, minimum 9 and maximum 12 years, before extending the test interval by engineering evaluation to the maximum 16-year test interval.

8. **The MOV functional margin limits apply to the As-Left MOV condition at the start of the inservice test interval and includes applicable test uncertainties and allowance for service-related degradation. The inservice test interval is uniquely established for each MOV based on margin and risk classification of the MOV.**

6. Duration of Proposed Alternative:

The proposed alternative is for use of the Code Case for the remainder of each plant's ten-year Inservice Testing interval as specified in Section 2.

7. Precedent:

None

8. References:

1. ASME OM Code Case OMN-26, Alternative Risk-Informed and Margin Based Rules for Inservice Testing of Motor Operated Valves, approved by ASME Board of Nuclear Codes and Standards (BNCS) December 2019.

UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

September 1, 2020

Mr. Bryan C. Hanson
Senior Vice President
Exelon Generation Company, LLC
President and Chief Nuclear Officer (CNO)
Exelon Nuclear
4300 Winfield Road
Warrenville, IL 60555

SUBJECT: BRAIDWOOD STATION, UNITS 1 AND 2; CALVERT CLIFFS NUCLEAR POWER PLANT, UNITS 1 AND 2; CLINTON POWER STATION, UNIT 1; R. E. GINNA NUCLEAR POWER PLANT; LIMERICK GENERATING STATION, UNITS 1 AND 2; NINE MILE POINT, UNITS 1 AND 2; AND PEACH BOTTOM ATOMIC POWER STATION, UNITS 2 AND 3 – REQUEST TO USE ALTERNATIVE CODE CASE OMN-26 (EPID L-2020-LLR-0012)

Dear Mr. Hanson:

By letter dated January 31, 2020 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML20034C819), as supplemented by letter dated July 6, 2020 (ADAMS Accession No. ML20188A264), Exelon Generation Company, LLC (Exelon) submitted a request in accordance with paragraph 50.55a(z)(1) of Title 10 of the *Code of Federal Regulations* (10 CFR) to implement the American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code Case OMN-26, "Alternate Risk-Informed and Margin Based Rules for Inservice Testing of Motor Operated Valves," at Braidwood Station, Units 1 and 2; Calvert Cliffs Nuclear Power Plant, Units 1 and 2; Clinton Power Station, Unit 1; R. E. Ginna Nuclear Power Plant; Limerick Generating Station, Units 1 and 2; Nine Mile Point, Units 1 and 2; and Peach Bottom Atomic Power Station, Units 2 and 3.

The U.S. Nuclear Regulatory Commission (NRC) staff has reviewed the subject request and concludes, as set forth in the enclosed safety evaluation, that the proposed alternative to implement ASME OM Code Case OMN-26, as described in Exelon's letters dated January 31, 2020, and July 6, 2020, provides an acceptable level of quality and safety. Accordingly, the NRC staff concludes that the licensee has adequately addressed all of the regulatory requirements set forth in 10 CFR 50.55a(z)(1).

Therefore, the NRC staff authorizes the proposed alternative for the implementation of ASME OM Code Case OMN-26, for the specified 10-year inservice testing program intervals.

All other ASME OM Code requirements for which relief or an alternative was not specifically requested and approved in the subject requests remain applicable.

If you have any questions, please contact Joel Wiebe at 301-415-6606 or via e-mail at Joel.Wiebe@nrc.gov .

Sincerely,

Nancy L. Salgado, Chief
Plant Licensing Branch III
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket Nos. STN 50-456, STN 50-457, 50-317, 50-318, 50-461, 50-244, 50-352, 50-353, 50-220, 50-410, 50-277, and 50-278

Enclosure:
Safety Evaluation

cc: Listserv

UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

ALTERNATIVE REQUEST TO USE ASME OM CODE CASE OMN-26

RELATED TO THE INSERVICE TESTING PROGRAMS FOR

BRAIDWOOD, UNITS 1 AND 2, CALVERT CLIFFS, UNITS 1 AND 2, CLINTON, UNIT 1,

R.E. GINNA, LIMERICK, UNITS 1 AND 2, NINE MILE POINT, UNITS 1 AND 2, AND

PEACH BOTTOM, UNITS 2 AND 3

DOCKET NOS. STN 50-456, STN 50-457, 50-317, 50-318, 50-461, 50-244

50-352, 50-353, 50-220, 50-410, 50-277, AND 50-278

1.0 INTRODUCTION

By a letter dated January 31, 2020 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML20034C819), as supplemented by letter dated July 6, 2020 (ADAMS Accession No. ML20188A264), Exelon Generation Company, LLC (Exelon, the licensee), submitted to the U.S. Nuclear Regulatory Commission (NRC) an alternative test plan in lieu of certain inservice testing (IST) requirements of the American Society of Mechanical Engineers (ASME) *Operation and Maintenance of Nuclear Power Plants*, Division 1, OM Code: Section IST [inservice testing] (OM Code) for the IST programs at the following plants:

Table 1

Plant	Docket	ASME Test Interval	ASME OM Code Edition	Interval Start Date	Interval End Date
Braidwood Station Unit 1	50-456	4th	2012	7/29/2018	7/28/2028
Braidwood Station Unit 2	50-457	4th	2012	7/29/2018	7/28/2029
Calvert Cliffs Nuclear Power Plant Unit 1	50-317	5th	2012	7/1/2018	6/30/2028
Calvert Cliffs Nuclear Power Plant Unit 2	50-318	5th	2012	7/1/2018	6/30/2028

Table 1					
Plant	**Docket**	**ASME Test Interval**	**ASME OM Code Edition**	**Interval Start Date**	**Interval End Date**
Clinton Power Station Unit 1	50-461	3rd	2012	7/1/2020	6/30/2030
R.E. Ginna Nuclear Power Plant	50-244	6th	2012	1/1/2020	12/31/2029
Limerick Generating Station Unit 1	50-352	4th	2012	1/8/2020	1/7/2030
Limerick Generation Station Unit 2	50-353	4th	2012	1/8/2020	1/7/2030
Nine Mile Point Nuclear Station Unit 1	50-220	5th	2012	1/1/2019	12/31/2028
Nine Mile Point Nuclear Station Unit 2	50-410	4th	2012	1/1/2019	12/31/2028
Peach Bottom Atomic Power Station Unit 2	50-277	5th	2012	11/16/2018	8/14/2028
Peach Bottom Atomic Power Station Unit 3	50-278	5th	2012	11/16/2018	8/14/2028

Specifically, pursuant to Title 10, of the *Code of Federal Regulations* (CFR), Part 50, Section 55a, paragraph (z), subparagraph (1) (10 CFR 50.55a(z)(1)), the licensee requested to implement ASME OM Code Case OMN-26 related to the testing of certain active motor-operated valves (MOVs) on the basis that the alternative provides an acceptable level of quality and safety.

2.0 REGULATORY EVALUATION

The NRC regulations in 10 CFR 50.55a(f), "Inservice Testing Requirements," require, in part, that IST of certain ASME Code Class 1, 2, and 3 components must meet the requirements of the ASME OM Code and applicable addenda, except where alternatives have been authorized pursuant to paragraph 10 CFR 50.55a(z)(1) or 10 CFR 50.55a(z)(2).

In proposing alternatives, a licensee must demonstrate that the proposed alternatives provide an acceptable level of quality and safety (10 CFR 50.55a(z)(1)) or compliance would result in hardship or unusual difficulty without a compensating increase in the level of quality and safety (10 CFR 50.55a(z)(2)).

3.0.1 Applicable ASME OM Code

The following request is an alternative test plan in lieu of certain IST requirements of the 2012 Edition of the ASME OM Code for the IST programs at the plants listed in Table 1 of this safety evaluation (SE) for the duration of their current 10-year IST program interval.

3.1.1 Licensee's Alternative Request

ASME OM Code Requirements:

Mandatory Appendix III, "Preservice and Inservice Testing of Active Electric Motor Operated Valve Assemblies in Light-Water Reactor Power Plants," paragraph III-3310, "Inservice Test Interval," subparagraph (c) states, in part, that "The maximum inservice test interval shall not exceed 10 yr."

Mandatory Appendix III, paragraph III-3700, "Risk-Informed MOV Inservice Testing," states that "Risk-informed MOV inservice testing that incorporates risk insights in conjunction with performance margin to establish MOV grouping, acceptance criteria, exercising requirements and testing interval may be implemented."

Mandatory Appendix III, paragraph III-3721, "[High Safety Significant Component] HSSC MOVs," states that "HSSC MOVs shall be tested in accordance with para. III-3300 and exercised in accordance with para. III-3600. HSSC MOVs that can be operated during plant operation shall be exercised quarterly, unless the potential increase in core damage frequency (CDF) and large early release (LER) associated with a longer exercise interval is small."

Mandatory Appendix III, paragraph III-3722, "[Low Safety Significant Component] LSSC MOVs," subparagraph (d), states that "LSSC MOVs shall be inservice tested at least every 10 yr in accordance with para. III-3310."

Alternative testing is requested for safety-related MOVs that are currently required to meet these ASME OM Code requirements.

The licensee states, in part:

Reason for Request

Code Case OMN-26 better aligns OM Code Mandatory Appendix III to the Risk and Margin Based Licensee Motor Operated Valve (MOV) Programs developed in response to NRC Generic Letter 96-05, "Periodic Verification of Design-Basis Capability of Safety-Related Motor-Operated Valves," that have been in effect since 1998. The Appendix III ten-year maximum inservice test interval was originally established to align with the maximum test interval allowed under the Generic Letter 96-05 MOV Programs that, for most Licensees, was established by the Joint Owners Group (JOG) MOV Periodic Verification Program. There is no formal technical basis for the current Appendix III ten-year maximum interval that applies to all MOVs regardless of Risk and Margin. Over the past twenty years, Exelon MOV Programs have demonstrated many margin stable MOVs that can be readily justified to extend from their current MOV Program maximum inservice test intervals of six years (for High Risk) and ten years (for Low Risk).

Proposed Alternative

Exelon proposes to implement the ASME OM Code Case OMN-26 alternative risk and margin informed rules for inservice testing of MOVs in its entirety.

HSSC MOVs shall be tested in accordance with para. III-3300 and exercised in accordance with para. III-3600 while applying the following HSSC MOV risk insights and limitations:

(a) HSSC MOVs that can be operated during plant operation shall be exercised quarterly, unless the potential increase in core damage frequency (CDF) and large early release (LER) associated with a longer exercise interval is small.
(b) For HSSC MOVs, the maximum inservice test interval shall be established in accordance with Table 1 of OMN-26

OMN-26 – Table 1
HSSC MOV – Margin Based Maximum Inservice Test Intervals

HSSC MOV Functional Margin(D)	Maximum Inservice Test Interval (Years)	If MOV is routinely(A) operated at Design Basis Pressure Conditions – Max Inservice Test Interval (Years)(B)
Low (< 5%)	2	4
Medium (≥ 5% and < 10%)	4	9
High (≥ 10% and < 20%)	9	9
Very High (≥ 20%)	9	12

OMN-26 Table 1 – Notes

(A) Occurs at a periodicity no less frequent than once a refueling outage.
(B) To utilize these intervals, test strokes at or exceeding design basis system conditions must be in the applicable safety function direction(s) and have no applicable operating experience, degradation or diagnostic test anomaly with the potential for adverse impact on MOV functional margin or the capability of the MOV to perform its design basis function.
(D) For the purpose of this code case, the MOV functional margin limits apply to the As-Left MOV conditions at the start of the inservice test interval and include applicable test uncertainties and allowance for service-related degradation.

For LSSC MOVs, the maximum inservice test interval shall be established in accordance with Table 2 of OMN-26

OMN-26 – Table 2
LSSC MOV – Margin Based Maximum Inservice Test Intervals

LSSC MOV Functional Margin(D)	Maximum Inservice Test Interval (Years)	If MOV is routinely(A) operated at Design Basis Pressure Conditions – Max Inservice Test Interval (Years)(B)
Low (< 5%)	4	9
Medium (≥ 5% and < 10%)	9	12
High (≥ 10% and < 20%)	12	12
Very High (≥ 20%)	12	16(C)

OMN-26 Table 2 – Notes

(A) Occurs at a periodicity no less frequent than once a refueling outage.
(B) To utilize these intervals, test strokes at or exceeding design basis system conditions

must be in the applicable safety function direction(s) and have no applicable operating experience, degradation or diagnostic test anomaly with the potential for adverse impact on MOV functional margin or the capability of the MOV to perform its design basis function.

(C) Operating plants that have acquired the requisite test data to satisfy Appendix III, paragraphs III-3310(b) or III-3722(c) must complete one cycle of collecting diagnostic test data at an extended test interval, minimum 9 and maximum 12 years, before extending the test interval by engineering evaluation to the maximum 16-year test interval.

(D) For the purpose of this code case, the MOV functional margin limits apply to the As-Left MOV conditions at the start of the inservice test interval and include applicable test uncertainties and allowance for service-related degradation.

Basis for Use

In its letters dated January 31 and July 6, 2020, the licensee describes the basis for its proposed alternative to implement ASME OM Code Case OMN-26 for the nuclear power plants listed in Table 1 of this SE. In summary, the licensee considers the requested alternative to adopt OMN-26 to be in line with the current JOG MOV periodic verification test program that Exelon has implemented since the late 1990's in response to Generic Letter(GL) 96-05. Both the JOG MOV periodic verification program and Code Case OMN-26 provide a risk-margin based methodology that establishes limitations for maximum IST intervals for MOVs. The licensee considers Code Case OMN-26 to provide a reasonable extension of this risk-Informed philosophy based on the lessons learned and accumulated MOV performance data gathered over more than 25 years of MOV performance verification testing. The licensee states that Appendix III alone, in isolation from Code Case OMN-26, provides no such methodology other than a maximum limit for the IST interval regardless of risk or margin.

In its letter dated July 6, 2020, the licensee clarifies the implementation of Code Case OMN-26 to be consistent with its plant operations. For example, the licensee states that to implement to extended intervals with MOV design-basis differential pressure testing, test strokes at or exceeding design basis system conditions must occur at a periodicity no less frequent than once a refueling cycle in the applicable safety function direction(s), and the MOV must have no applicable operating experience, degradation or diagnostic test anomaly with the potential for adverse impact on MOV functional margin or the capability of the MOV to perform its design basis function. The licensee notes that these routine strokes during the IST interval are not required to be diagnostically monitored. The licensee also states that the MOV functional margin limits apply to the As-Left MOV condition at the start of the IST interval and includes applicable test uncertainties and allowance for service-related degradation. The licensee notes that the IST interval is uniquely established for each MOV based on margin and risk classification of the MOV.

3.1.2 NRC Staff Evaluation

The NRC regulations in 10 CFR 50.55a(b)(3)(ii) require nuclear power plant licensees to comply with the provisions of the ASME OM Code incorporated by reference in 10 CFR 50.55a, and must establish a program to ensure that MOVs continue to be capable of performing their design-basis safety function. The NRC staff considers ASME OM Code testing specified in Mandatory Appendix III with the conditions in 10 CFR 50.55a(b)(3)(ii), and the MOV diagnostic test programs developed in response to NRC GL 89-10, "Safety-Related Motor-Operated Valve Testing and Surveillance" (ADAMS Accession No. ML031150300) and GL 96-05, "Periodic

Verification of Design-Basis Capability of Safety-Related Motor-Operated Valves" ADAMS Accession No. ML031110010), together will satisfy the regulatory requirements of 10 CFR 50.55a(b)(3)(ii).

In GL 89-10, the NRC staff requested that each nuclear power plant licensee establish a program to demonstrate that safety-related MOVs are capable of performing their design basis functions. During the implementation of GL 89-10, the NRC staff provided four acceptable methods a licensee could use to demonstrate the design basis capability of safety-related MOVs. The four methods for demonstrating capability in descending order of acceptability are:

1) Dynamic testing at or near design basis conditions with diagnostics of each MOV where practicable. Valves dynamically tested at less than design basis conditions may be extrapolated with proper justification.

2) Electric Power Research Institute (EPRI) MOV Performance Prediction Methodology (PPM). This method was developed for those valves that could not be dynamically tested. The PPM required internal valve measurements to provide assurance that the valve performance was predictable. The NRC staff began accepting the use of the PPM even where dynamic testing for an MOV was practicable.

3) MOV valve grouping. Where valve-specific dynamic testing was not performed and the PPM was not used, the staff accepted grouping of MOVs that were dynamic tested at the plant to apply the plant-specific test information to an MOV in the group.

4) The use of valve test data from other plants or research programs. The NRC ranks this as the least-preferred approach (with the most margin required) because the licensee would have minimal information regarding the tested valve and its history.

In superseding GL 89-10, GL 96-05 requested that each licensee establish a program, or ensure the effectiveness of its current program, to verify on a periodic basis that safety-related MOVs continue to be capable of performing their safety functions within the current licensing basis of the facility. The program should ensure that changes in required performance resulting from degradation (such as those caused by age) can be properly identified and addressed.

In response to GL 96-05, the nuclear industry joined together to form the JOG MOV periodic verification program. The JOG program consisted of three elements: (1) an "interim" MOV periodic verification program for licensees to use in response to GL 96-05 during development of a long-term program; (2) a 5-year MOV dynamic diagnostic test program; and (3) a long-term MOV periodic diagnostic test program to be based on the information from the dynamic testing program. The JOG effort was intended to answer the valve degradation question as it pertained to valve configuration, design, and system application. The JOG test program was not intended to provide data to the industry for the purpose of justifying valve performance. The final JOG program plan consisted of periodic diagnostic test program that is based on risk and margin. The NRC staff approved the JOG final program plan, with conditions, in an SE dated September 25, 2006 (ADAMS Accession No. ML061280315).

The ASME OM Code establishes the requirements for preservice and inservice testing and examination of certain components to assess their operational readiness in light-water reactor nuclear power plants. These requirements apply to pumps and valves that are required to perform a specific function in shutting down a reactor to the safe shutdown condition, in maintaining the safe shutdown condition, or in mitigating the consequences of an accident. The

ASME OM Code also applies to pressure relief devices and dynamic restraints.

Prior to the development of Mandatory Appendix III, the ASME OM Code testing for MOVs consisted of:

1) Valve exercising to include quarterly stroke time testing
2) Valve obturator movement verification during the exercise test
3) Valve leakage testing (only if the valve has a leakage limit requirement)
4) Remote position indication verification

In the past, these required tests were considered to be adequate to assess MOV operational readiness. However over the course of several years of operating experience and testing, it was determined that quarterly stroke time testing of MOVs was not an adequate indicator of valve degradation. As an alternative to MOV stroke-time testing, ASME developed Code Case OMN-1 to allow periodic exercising and diagnostic testing in assessing operational readiness of active MOVs in lieu of quarterly stroke-time testing. ASME provided additional guidance by developing Code Case OMN-11, "Risk-Informed Testing for Motor-Operated Valves," for MOVs in the IST program that are determined to have a high safety significance. The NRC staff has reviewed and accepted these Code Cases with certain conditions as noted in Regulatory Guide (RG) 1.192, "Operation and Maintenance Code Case Acceptability ASME OM Code" (ADAMS Accession No. ML19128A261), which is incorporated by reference in 10 CFR 50.55a. ASME merged these two Code Cases into an updated version of Code Case OMN-1 published in the 2006 Addenda of the ASME OM Code. This updated OMN-1 Code Case was later adopted into the 2009 Edition of ASME OM Code as Mandatory Appendix III. The NRC conditions for use of Mandatory Appendix III are specified in 10 CFR 50.55a(b)(3)(ii).

Most licensees of operating nuclear power plants committed to follow the JOG MOV periodic verification program as part of their response to GL 96-05. The NRC staff reviewed each licensee's GL 96-05 program and risk methodology (including implementation of the JOG program) and prepared an SE describing its review of each of those programs with conditions. Many licensees committed to the Boiling Water Reactor Owners Group (BWROG) risk methodology NEDC-32264A (Revision 2) approved by NRC staff on February 27, 1996, Westinghouse Owners Group (WOG) risk method V-EC-1658-A (Revision 2) approved by NRC staff on August 13, 1998, or a plant-specific risk methodology. The nuclear power plants listed in Table 1 of this SE committed to the following risk ranking method:

1) Limerick – committed to follow the BWROG risk method – SE dated November 17, 2000 (ADAMS Accession No. ML003755447)
2) Braidwood – committed to follow the WOG risk method – Response to Request for Additional Information (RAI) dated April 12, 1999 (ADAMS Accession No. ML17191B310)
3) Calvert Cliffs – committed to follow the WOG risk method – SE dated December 15, 1999 (ADAMS Accession No. ML993550374)
4) Clinton – committed to follow a plant-specific risk method – SE dated February 8, 2000 (ADAMS Accession No. ML003681570)
5) Ginna – committed to follow the WOG risk method – SE dated December 27, 1999 (ADAMS Accession No. ML003672670)
6) Nine Mile – committed to follow a plant-specific risk method – SE dated July 18, 2000 (ADAMS Accession No. ML003729304)
7) Peach Bottom – committed to follow the BWROG risk method – SE dated November 16, 2000 (ADAMS Accession No. ML003752691)

Licensees of operating nuclear power plants must meet the requirements of 10 CFR 50.55a(b)(3)(ii) to follow the ASME OM Code requirements, and have an MOV program that periodically verifies that MOVs will continue to perform their safety functions. The NRC staff considers the JOG program plan and Mandatory Appendix III to meet 10 CFR 50.55a(b)(3)(ii) with conditions. Both programs are similar but have differences such as:

1) The JOG program incorporates risk into its MOV diagnostic testing schedule, but Mandatory Appendix III does not require the implementation of a risk-informed program. Applying risk in Mandatory Appendix III relaxes valve grouping requirements which allows for more flexible testing.
2) The JOG program has specific test intervals based on risk and margin. High risk MOVs have shorter test intervals dependent on margin with a maximum test interval of 6 years for high margin MOVs and 2 years for low margin MOVs. Mandatory Appendix III relies on the plant MOV engineer to set the correct test interval not to exceed 10 years based on specific MOV diagnostic test data. High risk valves can be justified to extend the test interval to 10 years.
3) The licensee's implementation of the JOG program is a commitment, whereas the implementation of Mandatory Appendix III is a regulatory requirement.
4) The JOG program applies to valve performance, and the licensee is responsible for justifying the periodic verification of the actuator performance.

ASME developed Code Case OMN-26 to reduce the amount of programmatic changes for licensees incorporating Mandatory Appendix III for the first time when the licensees update their IST program plans. Code Case OMN-26 aligns those portions of Mandatory Appendix III to follow the JOG approach of the test interval being based on both margin and risk that has been successfully implemented for the last 20 years. In some instances, Code Case OMN-26 is more restrictive in that certain valves (without periodic design-basis testing) are not allowed to have test intervals up to the 10-year interval allowed in Mandatory Appendix III. On the other hand, Code Case OMN-26 will allow certain valves to have test intervals based on their risk and margin that are beyond the 10-year interval in Appendix III. The NRC staff considers the extensions of the test intervals in Code Case OMN-26 to be reasonable based on many years of successful test data in implementing the JOG program by nuclear power plant licensees.

Another improvement in Code Case OMN-26 is that for high-risk valves with very high margins that are successfully stroked at least once per operating cycle under full design pressure and flow, the test interval may be extended to 12 years. Similarly, the diagnostic test interval for low-risk valves with very high margins and that are successfully stroked at least once per operating cycle under full design pressure and flow, the test interval may be extended to 16 years. Essentially, each successful stroke under full design pressure and flow is a reasonable demonstration of a very high margin MOV being operationally ready to perform its safety function without diagnostic test equipment.

In its letter dated July 6, 2020, the licensee states that the provisions of Code Case OMN-26 will be implemented in their entirety, including all tables and associated notes. The licensee specifies minor clarifications of the notes in the tables in Code Case OMN-26 to be consistent with its normal plant operations. The NRC staff has determined that the licensee's proposed alternative to implement Code Case OMN-26, as described in the licensee's letters dated January 31, 2020, and July 6, 2020, at the nuclear power plants listed in Table 1 of this SE, provides an acceptable level of quality and safety for their current 10-year IST program intervals.

4.0 CONCLUSION

As described above, the NRC staff concludes that the proposed alternative to implement ASME OM Code Case OMN-26, as described in the licensee's letters dated January 31, 2020, and July 6, 2020, provides an acceptable level of quality and safety for the nuclear power plants listed in Table 1 of this SE. Accordingly, the NRC staff concludes that the licensee has adequately addressed all of the regulatory requirements set forth in 10 CFR 50.55a(z)(1).

Therefore, the NRC staff authorizes the proposed alternative for the implementation of ASME OM Code Case OMN-26, for the specified 10-year IST program intervals for the nuclear power plants listed in Table 1 of this SE.

All other ASME OM Code requirements for which relief or an alternative was not specifically requested and approved in the subject requests remain applicable.

Principal Contributor: Michael Farnan, NRR

Date of issuance: September 1, 2020

SUBJECT: BRAIDWOOD STATION, UNITS 1 AND 2; CALVERT CLIFFS NUCLEAR POWER PLANT, UNITS 1 AND 2; CLINTON POWER STATION, UNIT NO. 1; R. E. GINNA NUCLEAR POWER PLANT; LIMERICK GENERATING STATION, UNITS 1 AND 2; NINE MILE POINT, UNITS 1 AND 2; AND PEACH BOTTOM ATOMIC POWER STATION, UNITS 2 AND 3 – REQUEST TO USE ALTERNATIVE CODE CASE OMN-26 (EPID L-2020-LLR-0012) DATED SEPTEMBER 1, 2020

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ADAMS Accession No. ML20232A171 *by email

OFFICE	NRR/DORL/LPL3/PM*	NRR/DORL/LPL3/LA*	DEX/EMIB/BC(A)*
NAME	JWiebe	SRohrer	TScarbrough
DATE	8/19/2020	8/19/2020	7/22/2020
OFFICE	NRR/DORL/LPL3/BC*		
NAME	NSalgado		
DATE	9/1/2020		

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ATTACHMENT 7

CODE CASE INDEX

ASME OM Code Cases that have been approved for use by the NRC per Regulatory Guide 1.192 and are adopted for use at Braidwood (subject to additional NRC approval where required) are identified below. These Code Cases shall be used during the fourth 10-Year Interval IST Program implementation with all conditions, as applicable:

- Code Case OMN-20, "Inservice Test Frequency," Revision 0.

During the Third IST 10-Year Interval, OMN-20 was authorized for use by the USNRC per Agency wide Documents Access and Management System Accession No. ML17046A286, dated February 21, 2017.

On August 17, 2017 the NRC added a new condition as § 50.55a(b)(3)(x), "ASME OM Code Case OMN-20," to allow licensees to implement OM Code Case OMN-20, "Inservice Test Frequency," in the OM Code, 2012 Edition. This condition allows voluntary action initiated by the licensee to use the code case and is, therefore, not a backfit.

- Code Case OMN-26, "Alternate Risk-Informed and Margin Based Rules for Inservice Testing of Motor Operated Valves."

OMN-26 was authorized for use via approved Code Case by the USNRC. See SER (ADAMS # ML20232A171) dated September 1, 2020.

ATTACHMENT 8

COLD SHUTDOWN JUSTIFICATION INDEX

(Page 1 of 2)

Designator	Description	Revision Date
CS-1	(1/2MS001A-D) Stroke Time Test (SC) during Cold Shutdown	July 29, 2018
CS-2	RESERVED	
CS-3	(1/2FW009A-D) Stroke Time Test (SC) during Cold Shutdown	July 29, 2018
CS-4	1/2CV8152; 1/2CV8160) Stroke Time Test (SC) / Fail Safe Test Closed (FC) during Cold Shutdown	July 29, 2018
CS-5	RESERVED	
CS-6	(1/2RC014A-D) Stroke Time Test (SC) / Fail Safe Test Closed (FC) during Cold Shutdown	July 29, 2018
CS-7	(1/2RH8730A/B) Full Stroke Test (CO) / Close Stroke Test (CC) during Cold Shutdown.	July 29, 2018
CS-8	(1/2SI8818A-D; 1/2SI8958A/B) Full Stroke Test (CO) during Cold Shutdown	July 29, 2018
CS-9	(2FW039A-D) Stroke Time Test (SC) and Fail Safe Test Closed (FC) during Cold Shutdown	July 29, 2018
CS-10	(1/2CV459; 1/2CV460) Stroke Time Test (SC) and Fail Safe Test Closed (FC) during Cold Shutdown	July 29, 2018

COLD SHUTDOWN JUSTIFICATION INDEX

Designator	Description	Revision Date
CS-11	RESERVED	
CS-12	RESERVED	
CS-13	Pressure Isolation Valves (PIVs) and 1/2RH8705A/B and 1RH8706A Leak Test (LT) during Cold Shutdown for all per Technical Specifications and Close Stroke Test (CC) for Check Valves at the same frequency	July 29, 2018
CS-14	(2RH8716A/B) Exercised during Cold Shutdown	July 29, 2018
CS-15	1/2CC685, Exercised during Cold Shutdown with no RCPs running	June 8, 2020
CS-16	RESERVED	
CS-17	RESERVED	
CS-18	(1SD054A-H; 2SD054B,D,F,H) Stroke Time Test (SC) and Fail Safe Test Closed (FC) during Cold Shutdown	July 29, 2018

ATTACHMENT 9

COLD SHUTDOWN JUSTIFICATIONS

COLD SHUTDOWN JUSTIFICATION: CS-1

(Page 1 of 1)

Component Number	System	Code Class	Category
1/2MS001A	Main Steam	2	B
1/2MS001B	Main Steam	2	B
1/2MS001C	Main Steam	2	B
1/2MS001D	Main Steam	2	B

Component Function(s)

These are the Main Steam Isolation Valves (MSIVs). In the normally open position, steam is supplied to the turbine. The valves are required to close to isolate the main steam line to prevent: reverse flow into containment during a main steam line break, Steam Generator Blowdown during a major steamline break outside of containment, and secondary system contamination from a Steam Generator tube rupture.

Justification

Closure of the main steam isolation valves 1MS001A-D or 2MS001A-D during Unit operation would result in a significant steam generator transient and a manual reactor trip. Failure of these valves during partial stroke testing can result in valve closure and subsequent reactor trip.

Because stroke testing of these valves at power would result in a reactor trip, and because partial stroke testing at power presents the unwarranted risk of a potential reactor trip, testing of these valves during operation is not practical. Stroke time testing of the Main Steam Isolation Valves will be completed during cold shutdown, as conditions allow, in accordance with ISTC-3521(c). The actual test modes are Modes 3-6, but normally testing is performed in Modes 3 or 4 before or after cold shutdowns.

COLD SHUTDOWN JUSTIFICATION: CS-2

RESERVED

COLD SHUTDOWN JUSTIFICATION: CS-3

Component Number	System	Code Class	Category
1/2FW009A	Feed Water	2	B
1/2FW009B	Feed Water	2	B
1/2FW009C	Feed Water	2	B
1/2FW009D	Feed Water	2	B

Component Function(s)

These are the main feedwater isolation valves (FWIVs). They are open during normal operation to allow flow to the Steam Generator (non-IST function). They are required to close for Feedwater Isolation and Containment Isolation. (Not subject to Type C leakage testing per Tech Spec Table B.3.6.3-1.)

Justification

The main feedwater isolation valves cannot be fully stroked during operation as feedwater would be terminated causing a reactor trip. Failure of these valves during partial stroke testing can result in valve closure and subsequent reactor trip.

Because stroke testing of these valves at power would result in a reactor trip, and because partial stroke testing at power presents the unwarranted risk of a potential reactor trip, testing of these valves during operation is not practical. Stroke time testing of the Main Feedwater Isolation Valves will be completed during cold shutdown, as conditions allow, in accordance with ISTC-3521(c).

COLD SHUTDOWN JUSTIFICATION: CS-4

Component Number	System	Code Class	Category
1/2CV8152	Chemical And Volume Control	2	A
1/2CV8160	Chemical And Volume Control	2	A

Component Function(s)

The 1/2CV8152 and the 1/2CV8160 are the letdown line containment isolation valves. These valves are part of the chemical and volume control system (CVCS).

Justification

Closure of these letdown isolation valves 1/2CV8152, and 1/2CV8160 during normal Unit operation would cause a loss of charging flow which would result in a reactor coolant inventory transient, and possibly, a subsequent reactor trip. Additionally, isolating letdown during normal Unit operation would result in a thermal transient on the charging nozzle. Valves 1/2CV8152 and 1/2CV8160 will be stroke time tested during cold shutdown in accordance with ISTC-3521(c) (also covers fail-safe tests for 1/2CV8152 and 1/2CV8160). It is not the intent of this justification to require charging pump shutdown only to perform the exercise test for these valves. Valves 1/2CV8152 and 1/2CV8160 will be tested during Cold Shutdown in which the charging pumps are secured for sufficient duration to perform the tests, which is in accordance with ISTC-3521(c).

COLD SHUTDOWN JUSTIFICATION: CS-5

RESERVED

COLD SHUTDOWN JUSTIFICATION: CS-6

Component Number	System	Code Class	Category
1/2RC014A	Reactor Coolant	1	B
1/2RC014B	Reactor Coolant	1	B
1/2RC014C	Reactor Coolant	1	B
1/2RC014D	Reactor Coolant	1	B

Component Function(s)

These are the reactor head vent valves and are used to vent the reactor of hydrogen or other post-accident gases.

Justification

The Reactor Pressure Vessel Vent Valves 1RC014A-D and 2RC014A-D cannot be stroked during Unit operation, as they provide a pressure boundary between the Reactor Coolant system and containment atmosphere. Failure of one of these valves in the open position would result in leaving only one valve as the high pressure boundary. These valves will be full stroke exercised and fail safe tested when the RCS pressure is at a minimum during cold shutdown, in accordance with ISTC-3521 (c).

COLD SHUTDOWN JUSTIFICATION: CS-7

Component Number	System	Code Class	Category
1/2RH8730A	Residual Heat Removal	2	C
1/2RH8730B	Residual Heat Removal	2	C

Component Function(s)

These are the RHR pump discharge check valves. The open function of these valves is to provide an RHR pump flowpath. The closure function is to prevent back leakage while the opposite train is in operation during post-accident situations.

Justification

The Residual Heat Removal Pump discharge check valves 1RH8730A/B and 2RH8730A/B cannot be full stroke exercised during Unit operation due to the RCS pressure being greater than the RHR pumps are capable of delivering. Since the RH pumps cannot be run on full flow conditions during normal operation, the ability to pass design accident flow through the subject check valves is not possible. Although not required, these check valves will be partial stroke tested, however, on a quarterly basis during the mini-flow recirculation RHR pump tests and full stroke exercised during cold shutdown. This is in accordance with ISTC-3522 (b).

Additionally, it would be impractical to backflow test these valves during Unit operation. The methodology for testing these valves involves closing the mini-flow valve on the train being tested and subsequently cross-tying the RH pumps discharge headers and having the opposite train provide pressure against the check valve being tested. The test is satisfied by verifying that the pump on the same train as the check valve is not rotating backwards. However, this testing would put the plant in an undesirable condition as both trains of RH would be considered inoperable. During cold shutdowns, the train running on shutdown cooling may be used to pressurize against the opposite train's check valve. For this reason, these valves will be backflow tested during cold shutdown in accordance with ISTC-3522(b).

COLD SHUTDOWN JUSTIFICATION: CS-8

Component Number	System	Code Class	Category
1/2SI8818A	Safety Injection	1	A/C
1/2SI8818B	Safety Injection	1	A/C
1/2SI8818C	Safety Injection	1	A/C
1/2SI8818D	Safety Injection	1	A/C
1/2SI8958A	Safety Injection	2	C
1/2SI8958B	Safety Injection	2	C

Component Function(s)

The SI8818 valves are the safety injection RCS Loop 1 cold leg upstream check valves located in the flowpath from the Residual Heat Removal (RHR) pumps. The SI8958 valves are the safety injection RWST outlet check valves to the RHR pumps.

Justification

Due to the high RCS pressure during Unit operation (2235 psi), these valves cannot be full or partial stroke exercised during quarterly testing. The 1/2SI8958A/B check valves, although located at the suction of the RHR pumps, are not in the recirculation flow path to allow partial stroking each quarter. These valves will be full stroke exercised during cold shutdown, in accordance with ISTC-3522(b).

COLD SHUTDOWN JUSTIFICATION: CS-9

Component Number	System	Code Class	Category
2FW039A	Feed Water	2	B
2FW039B	Feed Water	2	B
2FW039C	Feed Water	2	B
2FW039D	Feed Water	2	B

Component Function(s)

These are the steam generator feedwater preheater bypass downstream isolation valves. They provide for Feedwater/Containment isolation in the closed position. (Not subject to Type C leakage testing per Tech Spec Table B.3.6.3-1.) They are normally open air operated valves located on the cross-tie lines connecting the main FW line to the tempering line.

Justification

It is not practical for the 2FW039A-D valves to be stroke tested during normal operation as closure of these valves would require a power reduction from full power to less than 80%. Stroking these valves closed above 80% would result in undesirable Steam Generator preheater tube vibrations thereby causing undue stress and potentially reducing the life expectancy of the Steam Generators. . These valves will be stroke timed and fail safe tested during cold shutdown, in accordance with ISTC-3521(c).

COLD SHUTDOWN JUSTIFICATION: CS-10

Component Number	System	Code Class	Category
1/2CV459	Chemical And Volume Control	1	B
1/2CV460	Chemical And Volume Control	1	B

Component Function(s)

1/2CV459 and 1/2CV460 valves are normally OPEN with the Unit at power, allowing letdown flow to occur. The valves auto close on low Pressurizer level and on letdown isolation due to an interlock with the orifice isolation valves.

Justification

It is impractical to full or partial stroke exercise and stroke time the above listed valves on a quarterly basis. Due to the interlocks between the 1/2CV459, 1/2CV460, & the 1/2CV8149A-C valves, exercising these valves during normal operation results in (multiple) total letdown flow isolation events. The impact of a letdown isolation with the Unit at power is a thermal transient to the RPV charging nozzle. A letdown isolation also results in some amount of pressurizer level fluctuation until equilibrium letdown and makeup is re-established. While the piping and components are designed for thermal transients, each cycle presents some additional stress to all of the affected equipment. As implied in section 2.4.5 of NUREG-1482, Revision 2, it is prudent to minimize the number of transients the equipment is required to undergo to prevent premature failures.

Due to the above, these valves will be stroke tested and failed safe tested in Cold Shutdowns in accordance with ISTC-3521(c).

COLD SHUTDOWN JUSTIFICATION: CS-11

RESERVED

COLD SHUTDOWN JUSTIFICATION: CS-12

RESERVED

COLD SHUTDOWN JUSTIFICATION: CS-13

Component Number	System	Category	Code Class
1/2RH8705A	Residual Heat Removal	A/C	2
1/2RH8705B	Residual Heat Removal	A/C	2
1RH8706A	Residual Heat Removal	A/C	2
1/2SI8815	Safety Injection	A/C	1
1/2SI8818A	Safety Injection	A/C	1
1/2SI8818B	Safety Injection	A/C	1
1/2SI8818C	Safety Injection	A/C	1
1/2SI8818D	Safety Injection	A/C	1
1/2SI8819A	Safety Injection	A/C	1
1/2SI8819B	Safety Injection	A/C	1
1/2SI8819C	Safety Injection	A/C	1
1/2SI8819D	Safety Injection	A/C	1
1/2SI8841A	Safety Injection	A/C	1
1/2SI8841B	Safety Injection	A/C	1
1/2SI8900A	Safety Injection	A/C	1
1/2SI8900B	Safety Injection	A/C	1
1/2SI8900C	Safety Injection	A/C	1
1/2SI8900D	Safety Injection	A/C	1
1/2SI8905A	Safety Injection	A/C	1
1/2SI8905B	Safety Injection	A/C	1
1/2SI8905C	Safety Injection	A/C	1
1/2SI8905D	Safety Injection	A/C	1
1/2SI8948A	Safety Injection	A/C	1
1/2SI8948B	Safety Injection	A/C	1
1/2SI8948C	Safety Injection	A/C	1
1/2SI8948D	Safety Injection	A/C	1
1/2SI8949A	Safety Injection	A/C	1
1/2SI8949B	Safety Injection	A/C	1
1/2SI8949C	Safety Injection	A/C	1
1/2SI8949D	Safety Injection	A/C	1
1/2SI8956A	Safety Injection	A/C	1
1/2SI8956B	Safety Injection	A/C	1
1/2SI8956C	Safety Injection	A/C	1
1/2SI8956D	Safety Injection	A/C	1

COLD SHUTDOWN JUSTIFICATION: CS-13 (Contd.)

Component Function(s)

The listed valves have been identified as intersystem LOCA valves. Only the closed function of these valves will be addressed in this justification. These valves form a pressure boundary between the RCS and the other essential components in order to protect these components from damage.

Justification

All of these valves are considered pressure isolation valves (PIVs) per the Technical Specifications, except for the 1/2RH8705A/B valves, which will be tested on the same frequency since they are tested in conjunction with the 1/2RH8701A/B valves. Online closure verification constitutes a leak test, which presents significant hardships such as the use of temporary test equipment inside containment, excessive radiation exposure to test personnel, and entry into multiple and simultaneous LCO's thereby making closure testing impracticable. The performance of the leak test also satisfies the test required for ASME OM Code, ISTC-3630. These valves will be backflow/leak tested during cold shutdowns, in accordance with ISTC-3521(c) and ISTC-3522(b).

Additionally, pressure isolation valves are required to be tested in accordance with Technical Specification SR 3.4.14.1. The Technical Specification requires that if the Unit is in cold shutdown for 7 days or more and the valves have not been tested in the past nine months, they will be leak tested prior to entry into Mode 2.

1/2SI8948A-D; 1/2SI8956A-D Note

Valves 1/2SI8948A-D and 1/2SI8956A-D are now in the Condition Monitoring Program. Should they be removed from that program they would require being tested to the "regular," valve Code – ISTC, in accordance with this deferral. These valves are surveillance tested with the above valves, at a Cold Shutdown frequency, as they are required to be by the Technical Specifications. They will continue to be listed in this Cold Shutdown Justification for these reasons.

COLD SHUTDOWN JUSTIFICATION: CS-14

Component Number	System	Code Class	Category
2RH8716A	Residual Heat Removal	2	B
2RH8716B	Residual Heat Removal	2	B

Component Function(s)

Valves 2RH8716A/B are the Residual Heat Removal system cross connect valves that are required to be open to allow injection into the RCS loops. These valves are required to be open for train operability of either train of RHR. The valves are required to be closed during cold leg recirculation and open during hot leg recirculation.

Justification

Technical Specifications require these valves to be open. Stroking this valve closed would make both trains of RH inoperable, which is a violation of the Technical Specification. This valve can only be exercised during cold shutdown or refuel. These high risk ranked valves will be exercise tested and, if applicable, stroke time tested during Cold Shutdown conditions.

COLD SHUTDOWN JUSTIFICATION: CS-15

Component Number	System	Code Class	Category
1/2CC685	Component Cooling	2	A

Component Function(s)

Motor operated valves 1/2CC685 function in the closed position to provide a limited leakage barrier between the containment atmosphere and the environment during accident conditions. These valves open to provide a return flow path from the RCP Thermal Barrier.

Justification

These valves cannot be full or partial stroke exercised during normal operations because closure would isolate flow to the Reactor Coolant Pumps. Failure of a CC valve in the closed position during an exercise test would result in a loss of cooling flow to the pumps and eventual pump damage and/or trip. Therefore, these high risk ranked valves will be stroke tested during cold shutdowns, in accordance with III-3620 provided all of the RCPs are shutdown. This test frequency will adequately maintain these valves in a state of operational readiness by testing them as often as safely possible.

This frequency is consistent with the guidelines presented in NUREG-1482, Revision 2, Section 3.1.1.4.

Note: Valves 1/2CC9413A, 1/2CC9413B, 1/2CC9414, 1/2CC9415, 1/2CC9416, 1/2CC9438, 1/2CV8100, and 1/2CV8112 have been removed from this CS deferral based on implementation of ASME OM Code Appendix III. These MOVs have a risk ranking of Low and are therefore only required to be exercise and/or stroke time tested once every 18 months.

COLD SHUTDOWN JUSTIFICATION: CS-16

RESERVED

COLD SHUTDOWN JUSTIFICATION: CS-17

RESERVED

COLD SHUTDOWN JUSTIFICATION: CS-18

Component Number	System	Code Class	Category
1SD054A	Steam Generator Blowdown	2	B
1/2SD054B	Steam Generator Blowdown	2	B
1SD054C	Steam Generator Blowdown	2	B
1/2SD054D	Steam Generator Blowdown	2	B
1SD054E	Steam Generator Blowdown	2	B
1/2SD054F	Steam Generator Blowdown	2	B
1SD054G	Steam Generator Blowdown	2	B
1/2SD054H	Steam Generator Blowdown	2	B

Component Function(s)

The SD054 valves are normal Steam Generator Blowdown throttle control valves. An additional function of the Unit 1, (A through H valves) and the Unit 2, (B train valves [B, D, F, & H]) is to isolate Blowdown in the event of a High Energy Line Break (HELB) in the SD system.

Justification

It is impractical to exercise and stroke time the above listed valves on a quarterly basis. The valves have no Open / Closed hand switch. They are normally operated by means of a potentiometer which ultimately controls an air signal to a positioner. Attainment of repeatable stroke time results requires the valves to be stroked by causing (or simulating) HELB relay actuation. This method of closure causes multiple valve actuations resulting in complete steam generator blowdown isolation. Furthermore, the remote position indicator, (a 0-100% indicator - not based on limit switch operation) may lag actual valve position. Therefore, the only repeatable method of stroke timing these valves involves stationing personnel locally at the valve(s) to witness actual valve movement.

Full stroke exercising the valves is a Unit operation concern in that closure of these valves during normal operation presents a thermal transient to the downstream piping and components including the blowdown condenser. While the valves, piping, and components are designed to withstand this thermal transient, each transient produce's stress which may lead to premature failure of the affected components. As implied in section 2.4.5 of NUREG-1482, Revision 2, it is prudent to minimize the number of thermal transients that these high energy lines are required to undergo.

COLD SHUTDOWN JUSTIFICATION: CS-18 (Contd.)

Personnel safety concerns exist with this stroking exercise during normal operation in that the valves are physically located in the Main Steam Isolation (MSIV) Valve Room, off the Steam Tunnel. This room contains the MSIVs, Feedwater Isolation Valves (FWIVs), Main Steam Safety Valves, Main Steam PORVs, and other miscellaneous piping and valves. The normal ambient temperature in this room with the Unit at power is greater than 110 °F. Almost all of the piping (most of which is insulated) and instrument tubing in the room are normally at temperatures of approximately 500 °F or more. The SD054 valves are located above the floor some 16 to 20 feet and are not visible from the floor being obscured by Main Steam and Feedwater Piping. Since personnel must be stationed locally at the valve to witness actual valve movement, it is necessary to climb around very hot piping in a hot and very noisy ambient atmosphere. In some cases it may be necessary to erect scaffolding to conduct this test with the Unit in normal operation.

Due to the above, these valves will be stroke time/fail safe tested during Cold Shutdowns of sufficient duration to allow safe access to the valves, including the erection of scaffolding, if required. This testing frequency is in accordance with ISTC-3521(c).

ATTACHMENT 10

REFUEL OUTAGE JUSTIFICATION INDEX

(Page 1 of 1)

Designator	Description	Revision Date
RJ- 1	(1/2SX007) Stroke Time Tested (SO) during Refueling	July 29, 2018
RJ-2	(1/2SI8811A/B) Exercised during Refueling	July 29, 2018
RJ-3	(1/2IA065; 1/2IA066) Stroke Time Test (SC) and Fail-Safe Test Closed (FC) during Refueling.	July 29, 2018
RJ-4	(1/2SI8819A-D; 1/2SI8905A-D; 1/2SI8922A/B; 1/2SI8949B,D) All Valves Full Stroke Tested (CO) during Refueling.	July 29, 2018
RJ-5	(1/2CV8481A/B; 1/2SI8815; 1/2SI8900A-D) All Valves Full Stroke Tested (CC) during Refueling.	July 29, 2018
RJ-6	(1/2SI8841A/B; 1/2SI8949A,C) Full Stroke Test (CO) during Refueling.	July 29, 2018
RJ-7	(1/2RH8705A/B, 1RH8706A) Full Stroke Test (CO) during Refueling.	July 29, 2018
RJ-8	(1/2FW510A; 1/2FW520A; 1/2FW530A; 1/2FW540A; 1/2FW510; 1/2FW520; 1/2FW530; 1/2FW540; 1/2FW034A-D) Augmented Fail-Safe Test Closed (FC) during Refueling per Braidwood Technical Specifications.	June 8, 2020
RJ-9	RESERVED	
RJ-10	1/2RF026-I/A-CHK Close Test (CC) during Refueling	July 29, 2018

ATTACHMENT 11

REFUEL OUTAGE JUSTIFICATIONS

REFUEL OUTAGE JUSTIFICATION
RJ-1

VALVE NUMBER	CATEGORY	CODE CLASS	DRAWING NUMBER	DRAWING COORDINATE
1/2SX007	B	3	M-42-2B	D4 (B3)

FUNCTION(S):

The normally open butterfly SX Outlet Throttle Valves for the respective unit's CC Heat Exchanger, which provides a flow path for SX through the associated CC Heat Exchanger.

JUSTIFICATION:

Full and Partial exercising the 1/2SX007 valves presents a concern for the equipment cooled by the CCW System. The 1/2SX007 flow control valves are normally throttled to provide proper flow to the applicable unit's CC heat exchanger. The Unit 0 CC heat exchanger is aligned to one unit at a time. Full stroke of the 1/2SX007 for the unit not aligned to the Unit 0 CC heat exchanger results in a loss of cooling to CC components on the applicable cooling loop. As a result, performance of the 1/2SX007 valve strokes requires swapping the Unit 0 CC heat exchanger to the applicable unit. Swapping the Unit 0 CC heat exchanger between Unit 1 and Unit 2 is a concern for equipment cooled by the CCW System.

TEST FREQUENCY:

The 1/2SX007 high risk ranked valves will be exercised during refueling outages in accordance with III-3620.

REFUEL OUTAGE JUSTIFICATION
RJ-2

VALVE NUMBER	CATEGORY	CODE CLASS	DRAWING NUMBER	DRAWING COORDINATE
1/2SI8811A	B	2	M-61-4(M-136-4)	C5 (C5)
1/2SI8811B	B	2	M-61-4(M-136-4)	A5 (A5)

FUNCTION(S):

The normally closed gate Containment recirculation sump isolation motor operated valves (MOV) provide an isolation boundary between the suctions of the residual heat removal (RH) and containment spray (CS) pumps, and the containment recirculation sumps. They are considered high safety significant components (HSSC) under ASME OM Code Appendix III.

ASME OM Code 2012 Edition, III-3610 "Normal Exercising Requirements states that all MOVs, within the scope of this Mandatory Appendix, shall be full cycle exercised at least once per refueling cycle with the maximum time between exercises to be not greater than 24 mo. Full cycle operation of an MOV, as a result of normal plant operations or Code requirements, may be considered an exercise of the MOV, if documented. If full stroke exercising of an MOV is not practical during plant operation or cold shutdown, full stroke exercising shall be performed during the plant's refueling outage.

Sub-section III-3721 states that "HSSC MOVs shall be tested in accordance with para. III-3300 and exercised in accordance with para. III-3600. HSSC MOVs that can be operated during plant operation shall be exercised quarterly, unless the potential increase in core damage frequency (CDF) and large early release (LER) associated with a longer exercise interval is small." This establishes the requirement that these particular MOVs should be tested quarterly unless there is adequate justification that they cannot be operated during plant operation and supporting documentation is available showing that the potential increase in core damage frequency (CDF) and large early release (LER) associated with a longer exercise interval is small.

JUSTIFICATION:

Under normal plant operating conditions, the RH and CS systems are filled with borated water and the containment recirculation sumps are maintained in a dry state. A stroke test of these valves requires the RH and CS pumps for a given train to be removed from service and the

suction lines drained to prevent water flow from the refueling water storage tank (RWST) and associated system piping into the normally empty containment recirculation sump. It takes approximately 24 hours to drain the RH and CS systems, perform the required valve tests, and refill

and restore the systems to their normal configuration. An estimated 600 gallons of radioactive, borated water are drained and must be processed by the radioactive waste systems.

This same amount of borated water must be used to refill the system. This sequence of events is required whether the testing is done online or during a refueling outage. In addition, this testing process would render a train of RH and CS simultaneously inoperable for a period of 24 hours each quarter. Based upon the complexity of the actions that are required to stroke test the valves, as well as the impact upon plant configuration and risk associated with the concurrent inoperability of an RH and CS train, it is not practical to perform these activities on a quarterly frequency during operation or during cold shutdowns.

TEST FREQUENCY:

Valves 1/2SI8811A and 1/2SI8811B will be exercise tested as required by ASME OM-2012 Code, Appendix III during every refuel outage.

REFUEL OUTAGE JUSTIFICATION
RJ-3

VALVE NUMBER	CATEGORY	CODE CLASS	DRAWING NUMBER	DRAWING COORDINATE
1/2IA065	A	2	M-55-4(M-55-5)	D3 (E6)
1/2IA066	A	2	M-55-4(M-55-5)	D6 (E4)

FUNCTION(S):

Air Operated Valves 1/2IA065 and 1/2IA066 are the outboard and inboard (respectively) containment isolation valves for Instrument Air supply lines to containment. The closed safety function of these valves is to provide a leak-tight barrier between the containment atmosphere and the environment during accident conditions.

JUSTIFICATION:

Stroke/fail-safe testing of the 1/2IA065 and 1/2IA066 valves during plant operation or cold shutdowns would, by design, isolate the air to air operated instruments inside the containment building. Additionally, the valve's control circuitry does not provide for partial stroke capability. Stroke/fail-safe testing would introduce the possibility of major operating perturbations and/or personnel safety concerns should these valves fail to re-open during testing activities. This would result in scenarios such as:

1. Loss of Pressurizer Pressure Control -

   The pressurizer spray valves 1/2RY455B & C and the pressurizer auxiliary spray valve 1/2CV8145 would fail closed and not be available for pressurizer pressure control.

2. Loss of Chemical Volume Control System Letdown Flow (both normal and excess) and Charging Flow -

   The loss of instrument air would cause a disruption in the Unit letdown flow paths resulting in pressurizer level increases. Such valves as the letdown orifice containment outlet header isolation valve 1/2CV8160, the letdown line isolation valves 1/2CV459 and 1/2CV460, the letdown orifice outlet isolation valves 1/2CV8149A, B & C, the excess letdown heat exchanger inlet isolation valves 1/2CV8153A & B, and the regenerative heat exchanger letdown inlet isolation valves 1/2CV8389A & B would go to their fail closed positions. Additionally, the ability to normally make-up reactor coolant inventory and adjust the reactor chemical shim (i.e. normal boration/dilution) would also be lost as the regenerative heat exchanger inlet isolation valves 1/2CV8324A & B would fail to their respective closed positions.

3. Loss of Component Cooling to Containment Penetrations -

   The loss of instrument air supply would cause the penetration cooling supply flow control valve 1/2CC053 to go to its fail closed position. The loss of penetration cooling would result in elevated temperatures being imposed on the penetrations being supported by the component cooling system.

4. Loss of Personnel Breathing Air -

   The loss of Instrument Air supply to the Service Air downstream isolation valve 1/2SA033 would cause this valve to go to its fail close position. This loss of Service Air in the containment building would eliminate the normal source of supplied breathing air needed to support numerous maintenance and component inspection activities in a contaminated environment.

TEST FREQUENCY:

Air Operated Valves 1/2IA065 and 1/2IA066 will be stroke tested and fail safe tested during refueling outages on the respective Unit in accordance with ISTC-3521(e).

REFUEL OUTAGE JUSTIFICATION
RJ-4

VALVE NUMBER	CATEGORY	CODE CLASS	DRAWING NUMBER	DRAWING COORDINATE
1/2SI8819A	A/C	1	M-61-3(M-136-3)	A5 (B4)
1/2SI8819B	A/C	1	M-61-3(M-136-3)	A7 (B2)
1/2SI8819C	A/C	1	M-61-3(M-136-3)	A6 (B2)
1/2SI8819D	A/C	1	M-61-3(M-136-3)	A6 (B3)
1/2SI8905A	A/C	1	M-61-3(M-136-3)	E4 (E4)
1/2SI8905B	A/C	1	M-61-3(M-136-3)	D7 (D2)
1/2SI8905C	A/C	1	M-61-3(M-136-3)	C7 (C2)
1/2SI8905D	A/C	1	M-61-3(M-136-3)	E4 (E5)
1/2SI8922A	C	2	M-61-1A(M-136-1)	E7 (D4)
1/2SI8922B	C	2	M-61-1A(M-136-1)	C7 (B4)
1/2SI8949B	A/C	1	M-61-3(M-136-3)	D8 (D1)
1/2SI8949D	A/C	1	M-61-3(M-136-3)	E8 (E1)

FUNCTION(S):

All of the "A/C" category valves in this refueling outage justification are pressure isolation valves (PIVs) and will be leak tested (and close stroke tested) per Braidwood Station Tech Specs (see CS-13). This refueling outage justification will only include the open functions of all the check valves listed above.

Check valves 1/2SI8819A-D are located in the lines going from the Safety Injection pumps to the reactor vessel cold legs. Their safety function in the open direction is to permit flow of coolant to the reactor vessel cold legs during a safety injection.

Check valves 1/2SI8905A-D and 1/2SI8949B/D are located in the lines going from the Safety Injection pumps to the reactor vessel hot legs. Their safety function in the open direction is to permit flow of coolant to the reactor vessel hot legs during the Hot Leg Recirculation portion of a safety injection.

Check valves 1/2SI8922A/B are located on the Safety Injection pumps discharge line. They are required to open for ECCS injection and recirculation phases.

JUSTIFICATION:

These valves cannot be full stroke exercised during operation as the shut-off head of the Safety Injection pumps is lower than the reactor coolant system pressure. These valves cannot be full stroke exercised during routine Mode 5 cold shutdowns due to the Braidwood Station Technical Specification requirement that all Safety Injection pumps and all but one Charging pump be inoperable during Modes 4, (temperature less than 330 F) 5, and 6, except when the reactor vessel head is removed. This requirement minimizes the possibility of low temperature over pressurization (LTOP) of the Reactor Coolant System (RCS). The alternate method of protecting against over-pressurization by partially draining the RCS to provide a surge volume is not considered a safe practice due to concerns of maintaining adequate water level above the reactor core. Full stroke exercising of these valves may only be safely performed in Mode 6 with the Reactor vessel head removed.

TEST FREQUENCY:

These valves will be full stroke exercised during refueling outages in accordance with ISTC - 3522(c).

REFUEL OUTAGE JUSTIFICATION
RJ-5

VALVE NUMBER	CATEGORY	CODE CLASS	DRAWING NUMBER	DRAWING COORDINATE
1/2CV8481A	C	2	M-64-3A(M-138-3A)	D6 (D6)
1/2CV8481B	C	2	M-64-3A(M-138-3A)	C6 (C7)
1/2SI8815	A/C	1	M-61-2(M-136-2)	D5 (D4)
1/2SI8900A	A/C	1	M-61-2(M-136-2)	E7 (E2)
1/2SI8900B	A/C	1	M-61-2(M-136-2)	D7 (D2)
1/2SI8900C	A/C	1	M-61-2(M-136-2)	C7 (C2)
1/2SI8900D	A/C	1	M-61-2(M-136-2)	B7 (B2)

FUNCTION(S):

All of the "A/C" category valves in this refueling outage justification are pressure isolation valves (PIVs) and will be leak tested (and backflow tested) per Braidwood Station Tech Specs (see CS-13). This refueling outage justification will only include the open functions of all the check valves listed above.

Check valves 1/2SI8815 are located in the lines from the Chemical and Volume Control (CV) Centrifugal Charging pump. Their safety function in the open direction is to permit flow of coolant from the centrifugal charging pumps to the four lines which branch off and provide flow to the reactor vessel cold legs during the high pressure injection phase of a safety injection.

Check Valves 1/2SI8900A-D are in the four lines which branch off from the lines containing the 1/2SI8815 valves. Their safety function in the open direction is to permit flow of coolant from the chemical and volume Control Centrifugal Charging Pumps to the reactor vessel cold legs during the high pressure injection phase of a safety injection.

Check valves 1/2CV8481A/B are located at the discharge of the Chemical and volume Control charging pumps. They are required to open to permit flow of coolant during a safety injection.

JUSTIFICATION:

The full stroke exercising of check valves 1/2SI8815 and 1/2SI8900A-D associated with the Emergency Core Cooling System during operation would induce thermal stresses on their respective reactor vessel nozzles as the Reactor Coolant System (maintained at greater than 500° F) is injected with water from the Refueling Water Storage Tank (maintained at approximately 65° F). The 1/2CV8481A/B check valves are in series and cannot be full stroke exercised without causing stroking of 1/2SI8815 and 1/2SI8900A-D check valves.

These valves cannot be full stroke exercised during routine Mode 5 cold shutdowns due to Braidwood Station Technical Specifications LCO 3.4.12 requirements that all Safety Injection pumps and all but one charging pump be inoperable during Modes 4, (temperature less than 330 F) 5, and 6, except when the reactor vessel head is removed. This requirement minimizes the possibility of low temperature over pressurization (LTOP) of the Reactor coolant System (RCS). The alternate method of protecting against over-pressurization by partially draining the RCS to provide a surge volume is not considered a safe practice due to concerns of maintaining adequate water level above the reactor core. In addition, injecting large quantities of highly borated water from the RWST would likely delay reactor start up and the cost of processing the reactor coolant to restore the optimum boron concentration is consequential. Full stroke exercising of these valves may only be safely performed in Mode 6 with the Reactor vessel head removed.

TEST FREQUENCY:

These valves will be full stroke exercised during refueling outages in accordance with ISTC-3522(c).

REFUEL OUTAGE JUSTIFICATION
RJ-6

VALVE NUMBER	CATEGORY	CODE CLASS	DRAWING NUMBER	DRAWING COORDINATE
1/2SI8841A	A/C	1	M-61-3(M-136-3)	E4 (E4)
1/2SI8841B	A/C	1	M-61-3(M-136-3)	C7 (C2)
1/2SI8949A	A/C	1	M-61-3(M-136-3)	E8 (E1)
1/2SI8949C	A/C	1	M-61-3(M-136-3)	C8 (C1)

FUNCTION(S):

All of the "A/C" category valves in this refueling outage justification are pressure isolation valves (PIVs) and will be leak tested (and backflow tested) per Braidwood Station Tech Specs (see CS-13). This refueling outage justification will only include the open functions of all the check valves listed above.

Check valves 1/2SI8841A/B are located in the lines from the Residual Heat Removal (RHR) pumps to the "A" and "C" Reactor Coolant System hot legs. Their safety function in the open direction is to permit flow of coolant from the RHR pumps to the reactor vessel hot legs during the Hot Leg Recirculation phase of a safety injection.

Check Valves 1/2SI8949A/C are located in an ECCS line to the RCS "A" and "C" hot legs. They are required to open to permit flow of makeup water upon a safety injection from: (1) the Safety Injection Pumps during the high pressure safety injection phase, or (2) the RHR pumps during the Hot Leg Recirculation phase, to the reactor vessel hot legs.

JUSTIFICATION:

The full stroke exercising of check valves 1/2SI8841A/B and 1/2SI8949A/C, associated with the Emergency Core Cooling System (ECCS) and the Residual Heat Removal (RHR) System cannot be accomplished during normal reactor operation because the low head developed by the RHR pumps (less than 250 psi) is not great enough to inject into the RCS (2235 psi). Similarly, the 1/2SI8949A/C check valves cannot be partial stroke tested during normal reactor operation with the Safety Injection (SI) pumps since the RCS pressure cannot be overcome by the SI pump developed head (1500 psi).

Full or partial stroke testing of these valves during cold shutdowns would induce thermal stresses on their respective reactor vessel nozzles as the Reactor Coolant System (maintained at approximately 180° F) is injected with water from the Refueling Water Storage Tank (maintained at approximately 65° F). Additionally, the margin of safety is reduced for brittle fracture prevention and an unacceptable reactivity excursion could be created (high boron concentration and low temperature water).

Finally, during cold shutdowns in which the Technical Specification leak rate testing is not to be performed, the partial or full stroking of these valves would necessitate the requirement to perform the leak test on these check valves, causing a delay in returning the plant to power in addition to causing unnecessary radiation exposure to test personnel.

TEST FREQUENCY:

These valves will be full stroke exercised during refueling outages in accordance with ISTC-3522 (c).

REFUEL OUTAGE JUSTIFICATION
RJ-7

VALVE NUMBER	CATEGORY	CODE CLASS	DRAWING NUMBER	DRAWING COORDINATE
1/2RH8705A	A/C	2	M-62(M-137)	D1 (D8)
1/2RH8705B	A/C	2	M-62(M-137)	C1 (C8)
1RH8706A	A/C	2	M-62	D1

FUNCTION(S):

These check valves are leak tested in conjunction with pressure isolation valves (PIVs) 1/2RH8701B and 1/2RH8702B and will be leak tested (and backflow tested) at the same frequency as the 1/2RH8702B valves (see CS-13). This refueling outage justification will only include the open functions of the check valves listed above.

These valves are located on the 3/4" branch line between the 1/2RH8701A/B and 1/2RH8702A/B suction isolation valves. Their safety function in the open direction is to relieve excess pressure due to thermal expansion back to the RCS when both suction isolation valves are closed in order to prevent over pressurization of the piping between the two valves.

JUSTIFICATION:

These valves are simple spring-loaded lift check valves and are not equipped with an external operator or disk position indicator. The only way to verify operability in the open direction is by verifying that the piping between the suction isolation valves is able to be depressurized through the applicable valve via a field test. It would be impractical to perform this testing during Unit operation due to the necessity to enter containment, hookup a pressurized water source to the piping via a test/vent valve, and slowly increase the pressure until the check valve opens to relieve the pressure. Additionally, the RCS must be depressurized in order to perform this test.

It would be impractical to perform this test during cold shutdowns as it requires placing the standby train of Residual Heat Removal (RHR) in an inoperable condition and the RCS must be depressurized (requires all reactor coolant pumps to be stopped). Then, due to the extensive field work involved, there is a potential for delaying reactor start up and return to power. Additionally, taking away the backup/redundant train of RHR reduces both the plant decay removal capability and the available safety margin regarding shutdown risk assessment.

Testing these valves each refueling, in Mode 6, is adequate to maintain this portion of RHR in a state of operational readiness, while not sacrificing the safety of the plant.

TEST FREQUENCY:

These valves will be full stroke exercised during refueling outages in accordance with ISTC-3522(c).

REFUEL OUTAGE JUSTIFICATION
RJ-8

VALVE NUMBER	CATEGORY	CODE CLASS	DRAWING NUMBER	DRAWING COORDINATE
1/2FW510A	B	None	M-36-1C(M-121-1B)	C2 (C2)
1/2FW520A	B	None	M-36-1A(M-121-1D)	C2 (C2)
1/2FW530A	B	None	M-36-1D(M-121-1A)	C2 (C2)
1/2FW540A	B	None	M-36-1B(M-121-1C)	C2 (C2)
1/2FW510	B	None	M-36-1C(M-121-1B)	D2 (D2)
1/2FW520	B	None	M-36-1A(M-121-1D)	D2 (D2)
1/2FW530	B	None	M-36-1D(M-121-1A)	D2 (D2)
1/2FW540	B	None	M-36-1B(M-121-1C)	D2 (D2)
1/2FW034A	B	None	M-36-1C(M-121-1B)	E2 (E2)
1/2FW034B	B	None	M-36-1A(M-121-1D)	E2 (E2)
1/2FW034C	B	None	M-36-1D(M-121-1A)	E2 (E2)
1/2FW034D	B	None	M-36-1B(M-121-1C)	E2 (E2)

FUNCTION(S):

The Feedwater Regulating Bypass Valves (1FW510A. 1FW520A, 1FW530A, and 1FW540A), the Feedwater Regulating Valves (1FW510, 1FW520, 1FW530, and 1FW540) and the Feedwater Tempering Flow Control Valves (1FW034A-D) are non-safety related valves which perform a backup function to isolate Feedwater. These valves are not considered to be Containment Isolation Valves per the Braidwood Station Technical Specifications, and are considered only Feedwater Control Valves that, additionally, serve as backup Feedwater Isolation Valves. They are not considered to be in the scope of the IST Program (per ISTA- 1100). This has always been Braidwood's position on these valves. However, since they do receive a Feedwater Isolation signal, an augmented test to verify the fail-safe test will be tracked within the IST Program.

JUSTIFICATION:

The augmented Fail-Safe test will be performed. These valves are all part of the surveillance executed to satisfy Technical Specifications, which manually simulates an SI signal, causing these valves to fail closed. These valves will be fail-safe tested to satisfy the requirements of this Technical Specification (Refueling Outage Frequency).

Additionally, the closure of the Main Feedwater Regulating Bypass Valves (1/2FW510A, 1/2FW520A, 1/2FW530A, and 1/2FW540A) during Unit operation would require the Main Feedwater Regulating Valves to correct for bypassed flow and could result in a plant transient with

a possible reactor trip as a result. The closure of the Main Feedwater Regulating Valves (1/2FW510, 1/2FW520, 1/2FW530, 1/2FW540) during Unit operation would cause a loss of feedwater to the steam generators, resulting in a plant transient with a possible reactor trip as a result. Finally, it would be impractical to fail-safe test any of these augmented valves on a more frequent basis than required by the Technical Specifications.

TEST FREQUENCY:

These valves will be fail-safe tested closed as an augmented IST test during refueling outages in accordance with Braidwood Station Technical Specifications.

REFUELING OUTAGE JUSTIFICATION
RJ-9

RESERVED

REFUELING OUTAGE JUSTIFICATION
RJ-10

VALVE NUMBER	CATEGORY	CODE CLASS	DRAWING NUMBER	DRAWING COORDINATE
1/2RF026-I/A-CHK	C	N/A	M-48-6B	E-2 (D-2)

FUNCTION(S):

These valves are the instrument air supply check valves to the RF pump discharge containment isolation valves. These valves must close to isolate the 1/2RF026 valve actuator air supply from the non-safety related instrument air system. This function assures that sufficient air is available in the accumulator to close the containment isolation valve on demand. This valve prevents discharging the accumulator in the event of a failed instrument air supply which is non-safety related.

The valve opens to provide air supply from the instrument air system to the containment isolation valve accumulator. The accumulator provides operating gas to the containment isolation valve. This is a safety function since the instrument air system is not considered safety related and not relied upon for safe shutdown or accident mitigation.

JUSTIFICATION:

Check valves 1/2RF026-I/A-CHK have been investigated for possible closure testing. The open function is verified during the quarterly stroke test of the 1/2RF026 valves.

The closure testing performed on these valves requires isolating the air supply and accumulator to perform a back-seat test. Performing this test involves opening an air fitting to bleed the air off locally. This would require a containment entry each quarter which would result in increased dose which is not consistent with ALARA principles. Additionally, should 1/2RF026 fail to re-open, there would be an impact inside missile barrier as the RF sump would have no path to pump down which could result in it overflowing. This would result in emergent work inside containment while on line.

The 1/2RF026 and 1/2RF027 valves serve as containment isolation valves, and are in series on penetration 47, with the 1/2RF026 valves inside containment and the 1/2RF027 valves in the aux building. Only one of these valves is required to function to maintain containment integrity. The 1/2RF027-I/A-CHK check valves will be tested quarterly, as there are no accessibility or dose issues associated with those.

TEST FREQUENCY:

Check valves 1/2RF026-I/A-CHK will be exercised open and closed during refueling outages in accordance with ISTC-3522(c).

ATTACHMENT 12

TECHNICAL POSITION INDEX

(Page 1 of 1)

Designator	Description	Revision Date
TP-PA-1	Categorization of IST Pumps as Group A or Group B	July 29, 2018
TP-PA-2	(0/1/2AB03P) Gives basis for the exclusion of the Boric Acid Transfer Pumps from the IST Program. However they will continue to be tested outside of the IST Program	July 29, 2018
TP-PA-3	Instrument Accuracy Requirements for Pump Testing	July 29, 2018
TP-PA-4	(1/2CS01PA/B 1/2RH01PA/B) Categorization of Containment Spray and Residual Heat Removal pumps as centrifugal pumps	July 29, 2018
TP-PA-5	Classification of Skid Mounted Components	July 29, 2018
TP-VA-1	(All Power-Operated Valves) Method of Stroke Timing Valves	July 29, 2018
TP-VA-2	(Valves with Fail-Safe Actuators) Method of Fail-Safe Testing Valves	July 29, 2018
TP-VA-3	Method of Remote Position Indication Testing	July 29, 2018
TP-VA-4	(Valves with Remote Position Indicators) Method of Position Indication Testing	July 29, 2018
TP-VA-5	Check Valve Disassembly and Examination to Verify Open and Closed Functions	July 29, 2018
TP-VA-6	(Valves with both Active and Passive Safety functions) Position for testing passive/active valves	July 29, 2018
TP-VA-7	Skid Mounted Valve Testing	July 29, 2018
TP-VA-8	Non-Safety function, Check Valve Exercise Testing by Normal Operations	July 29, 2018
TP-VA-12	1RH8705A, 1RH8706A Bases for Testing Series Check Valves	July 29, 2018
TP-NC-1	Deferral Justification Test Window	July 29, 2018
TP-NC-2	On-Line Maintenance	July 29, 2018

ATTACHMENT 13

TECHNICAL POSITIONS

PUMP TECHNICAL POSITION
TP-PA-1

TITLE:

Categorization of IST Pumps as Group A or Group B

CODE REQUIREMENTS/DISCUSSION:

Pumps required to be included in the Inservice Testing Program as either Group A or B in accordance with the requirements of Subsection ISTB-1400(b).

Group A pumps are pumps that are operated continuously or routinely during normal operation, cold shutdown, or refueling operations. The following pumps are categorized as Group A:

Pump No.	Group	Type	Function
0CC01P	A	Centrifugal	Component Cooling Pump
1CC01PA	A	Centrifugal	Component Cooling Pump 1A
1CC01PB	A	Centrifugal	Component Cooling Pump 1B
2CC01PA	A	Centrifugal	Component Cooling Pump 2A
2CC01PB	A	Centrifugal	Component Cooling Pump 2B
1CV01PA	A	Centrifugal	Centrifugal Charging Pump 1A
1CV01PB	A	Centrifugal	Centrifugal Charging Pump 1B
2CV01PA	A	Centrifugal	Centrifugal Charging Pump 2A
2CV01PB	A	Centrifugal	Centrifugal Charging Pump 2B
1DO01PA	A	PDN	Diesel Fuel Oil Transfer Pump 1A
1DO01PB	A	PDN	Diesel Fuel Oil Transfer Pump 1B
1DO01PC	A	PDN	Diesel Fuel Oil Transfer Pump 1C
1DO01PD	A	PDN	Diesel Fuel Oil Transfer Pump 1D
2DO01PA	A	PDN	Diesel Fuel Oil Transfer Pump 2A
2DO01PB	A	PDN	Diesel Fuel Oil Transfer Pump 2B
2DO01PC	A	PDN	Diesel Fuel Oil Transfer Pump 2C
2DO01PD	A	PDN	Diesel Fuel Oil Transfer Pump 2D
1RH01PA	A	Centrifugal	Residual Heat Removal Pump 1A
1RH01PB	A	Centrifugal	Residual Heat Removal Pump 1B
2RH01PA	A	Centrifugal	Residual Heat Removal Pump 2A
2RH01PB	A	Centrifugal	Residual Heat Removal Pump 2B
1SI01PA	A	Centrifugal	Safety Injection Pump 1A
1SI01PB	A	Centrifugal	Safety Injection Pump 1A
2SI01PA	A	Centrifugal	Safety Injection Pump 2A
2SI01PB	A	Centrifugal	Safety Injection Pump 2B
1SX01PA	A	Centrifugal	Essential Service Water Pump 1A
1SX01PB	A	Centrifugal	Essential Service Water Pump 1B
2SX01PA	A	Centrifugal	Essential Service Water Pump 2A
2SX01PB	A	Centrifugal	Essential Service Water Pump 2B
0WO01PA	A	Centrifugal	Control Room Chilled Water Pump A
0WO01PB	A	Centrifugal	Control Room Chilled Water Pump B

PUMP TECHNICAL POSITION (Contd.)
TP-PA-1

Group B pumps are those pumps in standby systems that are not operated routinely except for testing. The following pumps are categorized as Group B:

Pump No.	Group	Type	Function
1AF01PA	B	Centrifugal	Auxiliary Feedwater Pump 1A
1AF01PB	B	Centrifugal	Auxiliary Feedwater Pump 1B
2AF01PA	B	Centrifugal	Auxiliary Feedwater Pump 2A
2AF01PB	B	Centrifugal	Auxiliary Feedwater Pump 2B
1CS01PA	B	Centrifugal	Containment Spray Pump 1A
1CS01PB	B	Centrifugal	Containment Spray Pump 1B
2CS01PA	B	Centrifugal	Containment Spray Pump 2A
2CS01PB	B	Centrifugal	Containment Spray Pump 2B

The following summarizes the Group A, B, and Comprehensive Pump Test requirements as specified by the ASME OM Code Subsection ISTB and Pump Periodic Verification Test requirements as specified in ASME OM Code 2012 Edition, Division 1, Mandatory Appendix V.

Group A Pump Tests – Group A tests are performed quarterly for each pump categorized as A. The following inservice test parameters are measured for each Group A pump test:

- Speed (if pump is variable speed)
- Differential Pressure
- Discharge Pressure, (for positive displacement pumps)
- Flow Rate
- Vibration

Group B Pump Tests – Group B tests are performed quarterly for each pump categorized as B. The following inservice test parameters are measured for each Group B pump test.

- Speed (if pump is variable speed)
- Differential Pressure(1)
- Flow Rate(1)

(1) For positive displacement pumps, flow rate shall be measured or determined, for all other pumps, differential pressure or flow rate shall be measured or determined.

ASME OM Code 2012 Edition, Subsection ISTB-5000(a) states; "When a Group B test is required, a Group A, comprehensive, or preservice test may be substituted."

Therefore, for the Braidwood Unit 1 and Unit 2 Group B Auxiliary Feedwater Pumps, a Group A pump test will be performed in lieu of a Group B pump test. For the Unit 1 and Unit 2 Group B Containment Spray Pumps, a Comprehensive pump test will be performed in lieu of a Group B pump test.

Comprehensive Pump Tests – Comprehensive pump tests are performed biennially for all pumps in the Inservice Testing Program. Comprehensive pump test flow rates have been established which effectively detect mechanical and hydraulic degradation during subsequent testing. The best efficiency point, system flow rates, and any other plant-specific flow rates are considered (ISTB-2000). Accident condition flow rates for a single pump will be used as the pump design flow rates. The following Inservice Test parameters are measured for each Comprehensive pump test:

- Speed (if pump is variable speed)
- Differential Pressure, (for centrifugal pumps)
- Discharge Pressure, (for positive displacement pumps)
- Flow Rate
- Vibration

Pump Periodic Verification Tests – Pump Periodic Verification Tests (PPVT's) are performed biennially to verify that certain applicable pumps can meet the required (differential or discharge) pressure as applicable, at its highest design basis accident flow rate. A PPVT is not required if the design basis accident flow rate in the credited safety analysis (e.g., technical specifications, technical requirements program, or updated safety analysis report) is bounded by the Comprehensive Pump Test or Group A Test. The following Inservice test parameters are measured for each Pump Periodic Verification Test:

- Differential Pressure, (for centrifugal pumps)
- Discharge Pressure, (for positive displacement pumps)
- Flow Rate
- Speed, (if pump is variable speed)

PUMP TECHNICAL POSITION
TP-PA-2

PUMP NUMBER: 0AB03P, 1AB03P, 2AB03P

ASME CODE CLASS: 3

POSITION:

The Boric Acid Transfer Pumps fall outside the scope of the IST Pump Program statement of ISTB-1200(b) because they are not provided with an emergency power source (non-ESF buses supply/feed these pumps). Braidwood Station is analyzed as a "hot shutdown" plant, and these pumps are not required to maintain hot shutdown conditions. Also, the RWST (Refueling Water Storage Tank) is a Seismic Category I Structure as described in the UFSAR, Table 3.2-1. Paragraph 3.2.1.1 states that Seismic Category I Structures are designed to withstand design basis accidents including tornadoes; therefore, the Boric Acid Transfer Pumps are not required to be included in the IST Program to satisfy any Design Basis Accident. Engineering correspondence CHRON #161733 dated January 17, 1991 supports these conclusions. However, because of the operating significance of these pumps, Braidwood Station has developed a testing program for these pumps outside the IST Program.

PUMP TECHNICAL POSITION
TP-PA-3

TITLE:

Instrument Accuracy Requirements for Inservice Pump Testing

CODE REQUIREMENTS/DISCUSSION:

This position is only applicable to ASME OM Code Inservice Testing of pumps.

Position

- The accuracy requirements of ASME OM Code 2012 Edition, ISTB-3510 and Table ISTB-3500-1 apply to the accuracy to which installed instruments are calibrated.
- For instrument loops, the accuracy requirements apply to the accuracy to which the instrument loop is calibrated. If the instrument loop is not calibrated as a loop, then a loop accuracy calculation is performed.
- To calculate loop accuracy, either the greater of reference accuracies for individual components or the calibration tolerance for the individual components should be summed using square root of the sum of squares.

Justification

This position is based on a review of code interpretations and definitions in recent versions of the Code. Discussions with ASME Subgroup on Pumps members indicate that this position is consistent with industry practice and code intent. The purpose of the accuracy requirements in the code is to ensure that measurements can be used to trend pump performance and identify degradation. Calibration of instruments to the criteria in Table ISTB-3500-1 of ISTB provides the level of quality and assurance to fulfill this purpose.

Interpretation 91-3 states that Table 1 of Part 6 applies only to the calibration of the instrument. (This was in response to a question on whether the final indication of flow rate on an analog instrument must be within 2% of full scale of actual process flow rate, taking into account attributes such as orifice plate tolerances, tap locations, and process temperatures.)

Question 1 of Interpretation 95-07 states that it is the intent of Part 6 "to consider only the instrument's reference accuracy, such as supplied by the instrument manufacturer, in determination of instrument loop accuracy." An instrument loop is defined in the code as "two or more instruments or components working together to provide a single output." It was this interpretation that led to the assumption during the AE inspection that the only permissible way to determine loop accuracy was to combine reference accuracies of the individual loop components using square root of the sum of squares. However, discussions with OM-6 working group members indicate that the intent of this interpretation was to clarify that loop accuracy calculations did not need to consider

environmental effects, process effects, and vibration effects on loop accuracy (see Question 2 of Interpretation 95-07).

Section 5.5.4 of NUREG 1482, Revision 2, discusses the accuracy of flow rate instrument loops. It states that the accuracy for analog instruments specified in Subsection ISTB-3500 applies only to the calibration of the instruments.

Starting with the OM-1994 addendum of the code, the definition of instrument accuracy is clarified to read, "...the allowable inaccuracy of an instrument loop based on the square root of the sum of the square of the inaccuracies of each instrument or component in the loop when considered separately. Alternatively, the allowable inaccuracy of the instrument loop may be based on the output for a known input into the instrument loop." From this definition, it is clear that calibration of an instrument or instrument loop to the OM Code accuracy criteria meets the Code requirements.

PUMP TECHNICAL POSITION
TP-PA- 4

TITLE:

Categorization of RHR and CS pumps as centrifugal pumps

PUMPS AFFECTED:

1RH01PA, 1RH01PB, 2RH01PB, 2RH01PB,
1CS01PA, 1CS01PB, 2CS01PA, 2CS01PB

CODE REQUIREMENTS/DISCUSSION:

Pumps are tested in accordance with ASME OM Code 2012 Edition, Subsection ISTB, "Inservice Testing of Pumps in Light-Water Reactor Power Plants". Within this document, requirements for acceptance criteria and required action ranges are established in accordance with Table ISTB-5221-1, for Vertical Line Shaft and Centrifugal Pumps Test Acceptance Criteria. Subsection ISTB-2000 defines vertical line shaft pumps as, a vertically suspended pump where the pump driver and pump element are connected by a line shaft within an enclosed column.

The ASME OM Code directs vibration measurements for centrifugal pumps to be taken in a plane approximately perpendicular to the rotating shaft in two orthogonal directions on each accessible pump bearing housing. Measurements are also to be taken in the axial direction on each accessible pump thrust bearing housing. For vertical line shaft pumps vibration measurements are required to be taken on the upper motor bearing housing in three orthogonal directions, one of which is the axial direction.

Braidwood Station's RH and CS pumps do not meet the definitions of vertical line shaft pumps as provided in Subsection ISTB-2000. While the pumps are in a vertical configuration, the entire pump/motor is accessible and vibrations are being taken where needed. These pumps are single-stage centrifugal pumps with no bearings, and the pump impeller is mounted directly to the motor shaft. Braidwood meets the ISTB requirements for centrifugal pumps by recording vibrations on the lower motor bearing in three directions and upper motor bearing in two directions.

POSITION:

Braidwood Station categorized the RH and CS pumps as centrifugal pumps for testing in accordance with ASME OM Code 2012 Edition, Subsection ISTB, Inservice Testing of Pumps in Light-Water Nuclear Reactor Power Plants. This is in accordance with Table ISTB-5121-1, for Centrifugal Pumps Test Acceptance Criteria.

PUMP TECHNICAL POSITION
TP-PA-5

TITLE:

Classification of Skid Mounted Components

PURPOSE:

The purpose of this technical position is to clarify requirements for classification of various skid mounted components, and to clarify the testing requirements of these components.

BACKGROUND:

The ASME Code allows classification of some components as skid mounted when their satisfactory operation is demonstrated by the satisfactory performance of the associated major components. Testing of the major component is sufficient to satisfy Inservice Testing requirements for skid mounted components. In section 3.4 of NUREG 1482 Revision 2, the NRC supports the designation of components as skid mounted:

> "The staff has determined that the testing of the major component is an acceptable means to verify the operational readiness of the skid-mounted components and component subassemblies if the licensee documents this approach in the IST Program Document. Licensees should consider and document the specific measurements and attributes of major component testing which relate to the assessment of skid-mounted component condition. In addition, various continuous and periodic observations of the major components (such as System Monitoring Walkdowns or Operator Logs) may also support assurance of skid-mounted component readiness. This is acceptable for both Code class components and non-Code class components that are tested and tracked by the IST Program."

In the 1996a addenda to the ASME OM Code (endorsed by 10CFR50.55(a) in October 2000), the term skid-mounted was clarified by the addition of ISTA paragraph 1.7:

> ISTA 1.7 Definitions
>
> *Skid mounted components and component subassemblies* – components integral to or that support operation of major components, even though these components may not be located directly on the skid. In general, these components are supplied by the manufacturer of the major component. Examples include: diesel skid-mounted fuel oil pumps and valves, steam admission and trip throttle valves for high-pressure coolant injection or Auxiliary Feedwater turbine-driven pumps, and solenoid-operated valve provided to control the air-operated valve.

This definition was further clarified in the 1998 and later Editions of the ASME Code:

> ISTA-2000 DEFINITIONS

Skid mounted pumps and valves – pumps and valves integral to or that support operation of major components, even though these components may not be located directly on the skid. In general, these pumps and valves are supplied by the manufacturer of the major component.

Examples include:

(a) diesel fuel oil pumps and valves;
(b) steam admission and trip throttle valves for high-pressure coolant injection pumps;
(c) steam admission and trip throttle valves for Auxiliary Feedwater turbine driven pumps;
(d) solenoid-operated valves provided to control an air-operated valve.

Additionally the Subsections pertaining to pumps (ISTB) and valves (ISTC) includes exclusions/exemptions for skid mounted components;

ISTB-1200(c) Exclusions

Skid-mounted pumps that are tested as part of the major component and are justified by the Owner to be adequately tested.

ISTC-1200 Exemptions

Skid-mounted valves are excluded from this Subsection provided they are tested as part of the major component and are justified by the Owner to be adequately tested.

POSITION:

The ASME OM Code definition of skid mounted will be used for classification of components in the Braidwood Station Inservice Testing Program. In addition, for a component to be considered skid mounted:

- The major component associated with the skid mounted component must be surveillance tested at a frequency sufficient to meet ASME Code test frequency for the skid mounted component.

- Satisfactory operation of the skid mounted component must be demonstrated by satisfactory operation of the major component.

- The IST Bases Document should describe the bases for classifying a component as skid mounted, and the IST Program Plan should reference this technical position for the component.

Recognition and classification of components as skid mounted eliminates the need for the redundant testing of the sub component(s) as the testing of major (parent) component satisfactorily demonstrates operation of the "skid mounted" component(s).

VALVE TECHNICAL POSITION
TP-VA-1

TITLE:

Method of Stroke Timing Valves

VALVES AFFECTED:

Power Operated Valves Requiring Stroke Time Testing

CODE REQUIREMENT(S)/DISCUSSION:

The use of the control board open and closed lights to determine the stroke time of power-operated valves is the issue discussed in this Technical Position. ASME OM Code, Subsection ISTC-2000, defines "full-stroke time" as "the time interval from initiation of the actuating signal to the indication of the end of the operating stroke." It is common industry practice to measure stroke time as the time interval between placing the operator switch on the control board in the "close" or "open" position and indication that the valve is open or closed on the control board (switch to light).

POSITION:

The way in which the limit switches that operate the remote position indicator lights are set may result in "closed" or "open" indication before the valve obturator has actually completed its travel. This is not considered to be a problem, as the purpose of the test is to determine if degradation of the valve operator system is occurring, which is determined by observing changes in stroke time relative to the reference stroke time. Stroke time measurements may be rounded to the nearest tenth (0.1) of a second. Standard rounding techniques are to be used when rounding stop watch readings during valve stroke time testing (e.g., 10.45 rounds to 10.5 and 10.44 rounds to 10.4). Reference values will be established to the nearest tenth of a second although stroke times may be recorded to the hundredths place (0.01). This technique satisfies ISTC-5000 Specific Testing Requirements, in that all power operated valves will be measured to at least the nearest second.

For those specific cases in which a valve must be stroke timed locally, the stroke timing will begin with the initiation of the actuating signal and end with the completion of valve movement in the field.

VALVE TECHNICAL POSITION
TP-VA-2

TITLE:

Method of Fail Safe Testing Valves.

VALVES AFFECTED:

See IST Valve Tables (FC = Fail Safe Test closed; FO = Fail Safe Test open)

CODE REQUIREMENT(S)/ DISCUSSION:

Subsection ISTC-3560 states that "Valves with fail-safe actuators shall be tested by observing the operation of the actuator upon loss of valve actuator power in accordance with the exercising frequency of ISTC-3510.

POSITION:

Most valves with fail-safe positions have actuators that use the fail-safe mechanism to stroke the valve to the fail-safe position during normal operation. For example, an air-operated valve that fails closed may use air to open the valve against spring pressure. When the actuator is placed in the closed position, air is vented from the diaphragm and the spring moves the obturator to the closed position.

In the cases where normal valve operator action moves the valve to the closed position by de-energizing the operator electrically, by venting air or both (e.g., an electric solenoid in the air system of a valve operator moves to the vent position on loss of power), no additional fail-safe testing is required. Valves with fail-safe actuators that do not operate as part of normal actuator operation must be tested by other means.

Using a valve remote position indicator as verification of proper fail-safe operation is acceptable, provided the indicator is periodically verified to be operating properly as required by ISTC-3700.

The fail-safe test is generally performed at the same frequency as the stroke time exercise test. Where the exercise test is performed less frequent than every 3 months, a cold shutdown justification, refueling outage justification, or relief request has been written. The same justifications for the stroke timing would also apply to the fail-safe tests.

VALVE TECHNICAL POSITION
TP-VA-3

TITLE:

Method of Remote Position Indication Testing

VALVES AFFECTED:

All Motor-Operated Valves tested per Mandatory Appendix III

CODE REQUIREMENT(S) / DISCUSSION:

Subsection III-3300, states that "remote position indication shall be verified locally during inservice testing or maintenance activities."

POSITION:

Remote Position Indication (RPI) for Motor-Operated Valves (MOV) is "sensed" by limit switches (LS) located inside the closed MOV LS compartment. There are small sealed LS gearboxes gear-connected to the actuator wormshaft. Each LS gearbox drives an output rotor that makes/breaks the electrical contacts on the fingerboards. The III-3300 RPI test means to accomplish two things; that the RPI functions (i.e., no bad bulbs) AND that the RPI accurately reflects valve position.

Inservice Testing, also called Diagnostic Testing (DIAG), is performed on MOV's in accordance with III-6000. A MOV DIAG is required to be performed at intervals not to exceed 10 years.

Remote Position Indication (RPI) verification will be performed as part of all MOV Diagnostic Testing (DIAG). In addition, RPI verification will be performed as needed following applicable maintenance activities.

VALVE TECHNICAL POSITION
TP-VA-4

TITLE:

Method of Position Indication Testing

VALVES AFFECTED:

All valves with Remote Position Indicators

CODE REQUIREMENT(S) / DISCUSSION:

Subsection ISTC-3700, states that "valves with remote position indicators shall be observed locally at least once every 2 years to verify that valve operation is accurately indicated."

POSITION:

In reference to Steven Weinman (Boiler and Pressure Vessel Committee) reply letter to Russell J. Tamminga (ComEd), dated November 14, 1988, concerning Inquiry number IN88-015, the following question was answered:

> Question: Is it the intent of Section XI, IWV-3300 that for valves having remote position indicators at multiple locations (such as in the control room and also on a remote shutdown panel and/or sampling panel) that only the remote position indicator at the location utilized in exercising the valve (IWV-3412) and timing the stroke of the valve (IWV-3413) be verified that the valve operation is accurately indicated?
>
> Reply: Yes

This Inquiry also applies to the applicable sections in ASME OM Code ISTC:

1. ISTC-3520, Exercising Requirements
2. ISTC-3700, Position Verification Testing
3. ISTC-5000, Specific Testing Requirements

In summary, the remote position indicator utilized during valve exercising (ISTC-3520) and stroke timing (ISTC-5000) is the indicator which is used to verify that valve operation is accurately indicated (ISTC-3700).

The remote position indication test is to be performed as follows:

An individual is dispatched to the valve to locally observe the valve movement and he/she establishes communication with an individual at the remote position indicator. As the valve is exercised in both directions, the individual at the remote position indicator verifies that the indicator shows the proper position by communicating with the local observer, who is observing the valve stem movement. When the valve stem movement cannot be directly observed, indirect means may be employed to verify the change in valve position. These may include observations such as changes in system pressure or establishment/cessation of flow.

VALVE TECHNICAL POSITION
TP-VA-5

TITLE:

Disassembly and Examination of check valves to verify the open and closed exercise capability.

CODE REQUIREMENT(S)/DISCUSSION:

ASME OM Code 2012 Edition, "Code for Operation and Maintenance of Nuclear Power Plants," governs this issue. Subsection ISTC-5221(c), states the following:

> "If the test methods in ISTC-5221(a) and ISTC-5221(b) are impractical for certain check valves, or if sufficient flow cannot be achieved or verified, a sample disassembly examination program shall be used to verify valve obturator movement".

Subsection ISTC-5221(c)(2) further states that:

> "During the disassembly process, the full-stroke motion of the obturator shall be verified. Full-stroke motion of the obturator shall be reverified prior to completing reassembly".

In addition, ISTC-5221(c)(4) requires the following:

> "Before return to service, valves that were disassembled for examination or that received maintenance that could affect their performance, shall be exercised full- or part-stroke, if practicable, with flow..."

Background:

Generic Letter 89-04, Position 2, Alternative to Full-flow Testing of Check Valves was issued by the NRC to allow disassembly and examination of check valves as an alternative to the traditional Code requirements for exercising check valves. The NRC staff position in the GL is that valve disassembly and inspection can be used as a positive means of determining that a valve's disk will full-stoke exercise open or of verifying closure.

The 1995 and later editions of the ASME OM Code have incorporated an alternative to the traditional requirements for check valve testing by allowing Owners to establish a Check Valve Condition Monitoring Program. Once a check valve or group of check valves is placed in to the Condition Monitoring Program, the rules of ISTC-5221, Valve Obturator Movement, no longer apply. Activities and intervals are established within the Check Valve Condition Monitoring Program outside of the frequency requirements of ISTC. As a note, activities such as disassembly/examination may be used within this program for check valves which may be difficult or impossible to test. If a check valve or group of valves is removed from the Condition Monitoring Program for any reason, the valves shall be required to be tested in accordance with the ISTC requirements.

Braidwood Station has adopted this alternative for Check Valve Condition Monitoring. Typically, valves which are disassembled and examined for IST purposes are included in this program as well as other check valves which are difficult to test or have had poor performance.

POSITION:

When using disassembly and examination to determine the necessary check valve obturator movement in accordance with ISTB-5221, Braidwood station will determine the full stroke exercise open and closure capability of each check valve.

Braidwood station will verify the Open and Closed functions of each check valve which is disassembled and examined for IST purposes within the Check Valve Condition Monitoring Program or in accordance with ISTC-5221 if the valve is not included in the Condition Monitoring Program. The open and closed function satisfies the bi-directional test requirements for check valves whether they are in Condition Monitoring or not.

If an IST check valve is disassembled or if maintenance is performed outside of the Condition Monitoring program, the valve will be exercised with flow, if practicable prior to returning the valve to service. In this case, a justification for not performing a full or part-stroke of the valve following disassembly or maintenance is required to be documented in the appropriate IST Bases Document.

VALVE TECHNICAL POSITION
TP-VA-6

TITLE:

Testing of Valves with both active and passive safety functions

VALVES AFFECTED

Power operated valves requiring stroke time testing

CODE REQUIREMENT(S)/DISCUSSION:

The IST Program requires valves to be exercised to the position(s) required to fulfill their safety function(s). In addition, valves with remote position indication shall have their position indication verified. The Code does not restrict position indication verification to active valves only.

POSITION:

Several valves included in the plant are designed to perform passive safety functions during accident conditions and then based on plant accident response are designed to change positions to perform another (active) function. Once in their final position, there exists no conditions in which they would be required to be placed in their original passive position.

These valves are typically emergency core cooling system valves which require changing position during different phases of the accident. After the original source of injection water is depleted (RWST), the valves are positioned to allow injection from another source (containment sump). The valves are never returned to their original position.

Based on ASME Inquiry OMI 98-07, these valves with passive functions in one direction and active in the other, will be exercised to only their active position. If these valves have position indication, the position indication verification will include verification of both positions.

VALVE TECHNICAL POSITION
TP-VA-7

TITLE:
Classification of Skid Mounted Components

PURPOSE:
The purpose of this technical position is to clarify requirements for classification of various skid mounted components, and to clarify the testing requirements of these components.

BACKGROUND:
The ASME Code allows classification of some components as skid mounted when their satisfactory operation is demonstrated by the satisfactory performance of the associated major components. Testing of the major component is sufficient to satisfy Inservice Testing requirements for skid mounted components. In section 3.4 of NUREG 1482 Revision 2, the NRC supports the designation of components as skid mounted:

> "The staff has determined that the testing of the major component is an acceptable means to verify the operational readiness of the skid-mounted components and component subassemblies if the licensee documents this approach in the IST Program Document. This is acceptable for both Code class components and non-Code class components that are tested and tracked by the IST Program."

In the 1996a addenda to the ASME OM Code (endorsed by 10CFR50.55 (a) in October 2000), the term skid-mounted was clarified by the addition of ISTA paragraph 1.7:

> ISTA 1.7 Definitions
>
> *Skid mounted components and component subassemblies* – components integral to or that support operation of major components, even though these components may not be located directly on the skid. In general, these components are supplied by the manufacturer of the major component. Examples include: diesel skid-mounted fuel oil pumps and valves, steam admission and trip throttle valves for high-pressure coolant injection or Auxiliary Feedwater turbine-driven pumps, and solenoid-operated valve provided to control the air-operated valve.

This definition was further clarified in the 1998 and 2001 Editions of the ASME Code:

> ISTA-2000 DEFINITIONS
>
> *Skid mounted pumps and valves* – pumps and valves integral to or that support operation of major components, even though these components may not be located directly on the skid. In general, these pumps and valves are supplied by the manufacturer of the major component.

Examples include:

(e) diesel fuel oil pumps and valves;
(f) steam admission and trip throttle valves for high-pressure coolant injection pumps;
(g) steam admission and trip throttle valves for Auxiliary Feedwater turbine driven pumps;
(h) solenoid-operated valves provided to control an air-operated valve.

Additionally the Subsections pertaining to pumps (ISTB) and valves (ISTC) includes exclusions/exemptions for skid mounted components;

ISTB-1200(c) Exclusions

Skid-mounted pumps that are tested as part of the major component and are justified by the Owner to be adequately tested.

ISTC-1200 Exemptions

Skid-mounted valves are excluded from this Subsection provided they are tested as part of the major component and are justified by the Owner to be adequately tested.

POSITION:

The ASME OM Code definition of skid mounted will be used for classification of components in the Braidwood Station Inservice Testing Program. In addition, for a component to be considered skid mounted:

- The major component associated with the skid mounted component must be surveillance tested at a frequency sufficient to meet ASME Code test frequency for the skid mounted component.

- Satisfactory operation of the skid mounted component must be demonstrated by satisfactory operation of the major component.

- The IST Bases Document should describe the bases for classifying a component as skid mounted, and the IST Program Plan should reference this technical position for the component.

Recognition and classification of components as skid mounted eliminates the need for the redundant testing of the sub component(s) as the testing of major (parent) component satisfactorily demonstrates operation of the "skid mounted" component(s).

VALVE TECHNICAL POSITION
TP-VA-8

TITLE:

Non-Safety Function, Check Valve Exercise Testing By Normal Operations

PURPOSE:

The purpose of this Technical Position is to establish the position for the verification of the non-safety exercise testing of check valves by normal plant operations. This position is applicable to check valves in the Inservice Testing (IST) Program as related to the ASME OM Code 2012 Edition.

Applicability

This Technical Position is NOT applicable to testing the safety function (position) of IST Check Valves. Safety function here means the function of the valve that meets a scoping requirement to be in the IST Program. This Technical Position is applicable to testing the **non-safety function** (position) of IST check valves. This Technical Position is applicable to check valves tested under Subsection ISTC, and to Appendix II (Condition Monitoring), of the ASME OM Code 2012 Edition.

BACKGROUND:

The ASME OM Code 2012 Edition, Subsection ISTC, ISTC-3550, "Valves in Regular Use," states the following:

> "Valves that operate in the course of plant operation at a frequency that would satisfy the exercising requirements of this Subsection need not be additionally exercised, provided that the observations otherwise required for testing are made and analyzed during such operation and recorded in the plant record at intervals no greater than specified in ISTC-3510."

ISTC-3510 indicates that check valves shall be exercised nominally every 3 months with exceptions (for extended exercise periods) referenced.

ISTC-5221(a)(2) states that,

> "Check valves that have a safety function in only the open direction shall be exercised by initiating flow and observing that the obturator has traveled to either the full open position or to the position required to perform its intended function(s) (see ISTA-1100), and verify closure."

ISTC-5221(a)(3) states that,

> "Check valves that have a safety function in only the close direction shall be exercised by initiating flow and observing that the obturator has traveled to at least the partially open position[3], and verify that on cessation or reversal of flow, the obturator has traveled to the seat"

Footnote 3 to this section indicates that the partially open position should correspond to the normal or expected system flow. NOTE: "Normal or expected," system flow rate may vary with plant conditions and configurations. The open safety function of a check valve usually requires meeting a specified, required limiting accident flow rate. As Operators are trained in recognizing normal plant conditions, Operator judgment is acceptable in ascertaining whether the non-safety open check valve position is providing normal or expected flow rates or plant conditions.

As stated in these two sections the non-safety function is satisfactorily demonstrated by verifying closure, or passing normal or expected flow to verify opening, as applicable.

POSITION:

Verification of the non-safety position of IST check valves may be performed through the execution of a dedicated surveillance. Alternately this verification may be satisfied as follows:

- An appropriate means shall be determined which establishes how the open/closed non-safety function of the specified check valve is demonstrated during normal operations. The position determination may be by direct indicator, or by other positive means such as changes in system pressure, flow rate, level, temperature, seat leakage, etc. This determination shall be documented in the respective Condition Monitoring Plan in the "Bases for Testing and Inspection Strategy," for valves in the Condition Monitoring Program. For check valves governed by Subsection ISTC and not in Condition Monitoring this determination shall be documented in the respective IST Bases Document valve group in the "Bases Statement," section.

- Automated processes may be used to provide for the "observation and analysis," that a check valve is appropriately satisfying its non-safety position function. An example of this would be a check valve that has a safety function in only the close direction and normally has flow through it to maintain normal plant operations. If the check valve is not opening to pass flow, alarms or indications would identify the problem to the Operator who is trained to respond to such situations and take appropriate actions. Issue Reports are normally written for abnormal plant conditions attributable to material condition concerns such as check valve failures.

- The "observation and analysis," of logs and other such records is satisfied by Operator reviews. Operating personnel are trained to look for off-normal data and adverse trends and take actions as appropriate. This would effectively determine if a check valve were satisfactorily fulfilling its' non-safety function.

- The open/closed non-safety function shall be recorded at a periodicity required by ISTC-3510, with exceptions as provided, in plant records such as Operator logs, Electronic Rounds, chart recorders, automated data loggers, etc. NOTE: The safety function testing of these valves constitutes requiring a Quality Record. Records as indicated above are appropriate for the non-safety testing. Should any concerns arise regarding the material condition/operation of these check valves an Issue Report is written which is a Quality Record. The method in which the check valve position is recorded shall be included in the Condition Monitoring Plan or Bases Document sections as indicated above.

Justification

This Technical Position requires that the method of determining the non-safety position be established. The plant systems and Operator actions provide for the observations and analysis that the valve is satisfying its non-safety function. Finally, the recording and analyzing of parameters demonstrating valve position is satisfied at a frequency specified in ISTC-3510. These actions collectively satisfy demonstrating the non-safety position of IST check valves in regular use as required by ISTC-3550.

VALVE TECHNICAL POSITION
TP-VA-12

TITLE:

Bases for testing series check valves 1RH8705A and 1RH8706A as a unit.

VALVES AFFECTED:

1RH8705A
1RH8706A

CODE REQUIREMENT(S)/DISCUSSION:

ASME OM Code 2012 Edition, "Code for Operation and Maintenance of Nuclear Power Plants," governs this issue. Subsection ISTC- 5223, Series Valve Pairs, states the following:

> "If two check valves are in a series configuration without provisions to verify individual reverse flow closure (e.g., keepfill pressurization valves) and the plant safety analysis assumes closure of either valve (but not both), the valve pair may be operationally tested closed as a unit.
>
> If the plant safety analysis assumes that a specific valve or both valves of the pair close to perform the safety function(s), the required valve(s) shall be tested to demonstrate individual valve closure."

Subsection ISTC-9200, Test Plans, states the following:

> "The Owner shall maintain a record of test plans that shall include the following," (Subsection ISTC-9200 (d)), "bases for testing series check valve pairs as a unit in accordance with ISTC-5223."

Bases for series pair testing:

Valves 1RH8705A and 1RH8706A are tested as a series pair because they have no intermediate test taps. These valves were installed in Unit 1 under Engineering Change no. 359951. Valve 1RH8706A was added to the unit, upstream of 1RH8705A in lieu of repairing 1RH8705A in the A1R12 outage. The 1RH8706A provides assurance that backflow through the line will be prevented. In the Modification they were tested as a series pair in the closure test. There is no mention anywhere in the Modification indicating a design requirement to test the valves individually. If there were such a requirement it would need to have been prescribed in the

Modification and the test executed prior to accepting the Modification. As such, the design allows for the closure of either valve to perform the function of maintaining pressure integrity.

POSITION:

These check valves are in a series configuration without provisions to verify individual reverse flow closure. The Modification that installed the 1RH8706A valve allowed for the closure of either valve to perform the function of preventing backflow. The Modification acceptance test was a closure/leakage test, which tested these valves as a series pair. As such it is appropriate to test these valves as a series pair.

NON COMPONENT SPECIFIC TECHNICAL POSITION
TP-NC-1

TITLE:

Deferral Justification Test Window

CODE REQUIREMENT(S)/DISCUSSION:

Inservice Test (IST) Program components which are required to be tested during a refueling outage (RFO) may be tested in conjunction with plant "coast-down" (i.e. a period where a conscious deviation from normal operating temperature and power occurs in conjunction with reactor fuel depletion) as qualified below, or a planned load reduction (e.g. reduction in turbine load via a selected downward ramp rate) intended to take the plant from Mode 1, power operation, to an offline condition, and ultimately to Mode 6, refueling.

The period where the load reduction is accomplished via plant coast-down potentially can encompass a period of weeks before the actual start of an RFO. The existing regulatory guidance for allowing deferral of testing to an RFO is based on the impracticality of being able to perform the test on a quarterly basis. Performing tests which have been deferred to an RFO weeks in advance of the RFO is not in keeping with the spirit of the deferral latitude.

As such, testing being performed to satisfy various IST program deferrals, while in plant coast-down, should only take place when the projected end of the coast down window is 120 hours or less. Five working days affords adequate time to accomplish the anticipated limited test scope and is not considered excessive when compared to the intent of the Code deferral allowance.

All IST components required to be tested during a RFO shall have their prescribed test satisfactorily completed and demonstrated operable prior to resumption of power operation and before exceeding the associated Technical Specification Mode of applicability, unless specifically stated otherwise in the Technical Specifications.

NON COMPONENT SPECIFIC TECHNICAL POSITION
TP-NC-2

TITLE:

On-Line Maintenance

CODE REQUIREMENT(S)/DISCUSSION:

The advent of on-line plant maintenance to perform work on safety related components and systems outside of the traditional refueling outage (RFO) time frame, is designed to maximize component/system availability while favorably impacting RFO duration and the associated corporate financial impact. The practice of doing on-line maintenance represents a departure from the norm where the bulk of the maintenance was performed while engaged in an RFO. As such, the Inservice Test Program, which is directed by the ASME Code which does not take into account on-line maintenance practices, can experience implementation issues when on-line preventative maintenance or corrective maintenance is performed.

Typically, a number of Inservice Test Program components can't meet Code based quarterly test frequency due to the practicality of performing the testing. System alignments, operating conditions (pressure, flow, temperature, etc.) and other such restrictions often render the testing impracticable. The Code allows the affected testing to be deferred to a lower plant MODE, from MODE 5, cold shutdown to MODE 6, Refueling. The understanding between the Licensee and the NRC is that such testing will take place in the highest MODE deemed practicable by the Licensee with the assumption that sufficient basis to justify the deferred MODE exists. Contrary to what occurred in the past, the NRC is no longer required to approve such deferrals. As such, along with the deferral comes the expectation that testing can and should only be performed when in the applicable deferred MODE unless extenuating circumstances exist. Performance of on-line maintenance and the need to demonstrate post-maintenance operability for the component/system worked on clearly is an example of an extenuating circumstance given its prevalent implementation and widespread acceptance throughout the nuclear industry.

Inservice Test Program components which have had their associated Code required tests deferred from the normal "during operation at power" time frame, whether to cold shutdown (using a Cold Shutdown Justification (CSJ) or Refueling Shutdown (using a Refueling Outage Justification (ROJ)), *may revert back to the at power time frame, on a limited basis*, to accomplish post-maintenance operability testing (PMOT) following performance of on-line maintenance provided that:

NON COMPONENT SPECIFIC TECHNICAL POSITION (Contd.)
TP-NC-2

A). The testing that will occur during power operation will not expose plant personnel to unsafe working conditions nor place components or systems in alignments adverse to plant safety.

AND

B). One or more of the following maintenance scope activities are desired and serves to justify the performance of deferred testing at the normal at power time frame:

1) Corrective on-line maintenance is desired to be performed on the component to restore the component to the operable condition and testing required to demonstrate component/system post-maintenance operability is contained in the surveillance test(s) used to satisfy the associated IST Program Code requirements.

2) Preventative on-line maintenance is desired to be performed on the component to lessen or eliminate RFO time frame system/component unavailability (e.g. performing the maintenance in a plant MODE that poses a lesser or no adverse risk probability to plant safety) and the testing required to demonstrate component/system post-maintenance operability is contained in the surveillance test(s) used to satisfy the associated IST Program Code requirements.

The relaxation of the associated CSJ or ROJ is only to be exercised on a limited basis. Limited is defined as not more than once per 18 months (All Braidwood Station Technical Specification surveillance requirements which tie performance to a *fuel cycle frequency,* utilize an 18 month fuel cycle duration) unless additional documented justification is provided in advance of the proposed maintenance. The IST Program Engineer must review and concur with such justification before the proposed maintenance can proceed.

ATTACHMENT 14

INSERVICE TESTING PUMP TABLE

System Abbreviation	System Description
AF	Auxiliary Feedwater
CC	Component Cooling
CS	Containment Spray
CV	Chemical and Volume Control
DO	Diesel Oil
RH	Residual Heat Removal
SI	Safety Injection
SX	Essential Service Water
WO	Chilled Water

Auxiliary Feedwater

Pump EPN	Test Group	Safety Class	Pump Type	Pump Driver	Nominal Speed	P&ID	P&ID Coor.	Test Type	Test Freq.	Tech Pos.
1AF01PA	B	3	C	M	GE600	M-37	D-4	dP	Q	TP-PA-1
	B							Q	Q	
	B							dP	Y2	TP-PA-1
	B							Q	Y2	
	B							V	Y2	
	Pump Name		AUXILIARY FEEDWATER 1A PUMP (MOTOR)							
1AF01PB	B	3	C	D	GE600	M-37	B-4	dP	Q	TP-PA-1
	B							Q	Q	
	B							dP	Y2	TP-PA-1
	B							Q	Y2	
	B							V	Y2	
	Pump Name		AUXILIARY FEEDWATER 1B PUMP (DIESEL)							
2AF01PA	B	3	C	M	GE600	M-122	E-5	dP	Q	TP-PA-1
	B							Q	Q	
	B							dP	Y2	TP-PA-1
	B							Q	Y2	
	B							V	Y2	
	Pump Name		AUXILIARY FEEDWATER 2A PUMP (MOTOR)							
2AF01PB	B	3	C	D	GE600	M-122	B-5	dP	Q	TP-PA-1
	B							Q	Q	
	B							dP	Y2	TP-PA-1
	B							Q	Y2	
	B							V	Y2	
	Pump Name		AUXILIARY FEEDWATER 2B PUMP (DIESEL)							

Component Cooling Water

Pump EPN	Test Group	Safety Class	Pump Type	Pump Driver	Nominal Speed	P&ID	P&ID Coor.	Test Type	Test Freq.	Tech Pos.
0CC01P	B	3	C	M	GE600	M-66-3A	E-5	dP	Q	TP-PA-1
	B							Q	Q	
	B							dP	Y2	TP-PA-1
	B							Q	Y2	
	B							V	Y2	
	Pump Name		COMPONENT COOLING COMMON PUMP							
1CC01PA	A	3	C	M	GE600	M-66-3A	E-6	dP	Q	TP-PA-1
	A							Q	Q	
	A							V	Q	
	A							dP	Y2	TP-PA-1
	A							Q	Y2	
	A							V	Y2	
	Pump Name		COMPONENT COOLING PUMP 1A							
1CC01PB	A	3	C	M	GE600	M-66-3A	E-7	dP	Q	TP-PA-1
	A							Q	Q	
	A							V	Q	
	A							dP	Y2	TP-PA-1
	A							Q	Y2	
	A							V	Y2	
	Pump Name		COMPONENT COOLING PUMP 1B							
2CC01PA	A	3	C	M	GE600	M-66-3A	E-3	dP	Q	TP-PA-1
	A							Q	Q	
	A							V	Q	
	A							dP	Y2	TP-PA-1
	A							Q	Y2	
	A							V	Y2	
	Pump Name		COMPONENT COOLING PUMP 2A							
2CC01PB	A	3	C	M	GE600	M-66-3A	E-2	dP	Q	TP-PA-1
	A							Q	Q	
	A							V	Q	
	A							dP	Y2	TP-PA-1
	A							Q	Y2	
	A							V	Y2	
	Pump Name		COMPONENT COOLING PUMP 2B							

Containment Spray

Pump EPN	Test Group	Safety Class	Pump Type	Pump Driver	Nominal Speed	P&ID	P&ID Coor.	Test Type	Test Freq.	Tech Pos.
1CS01PA	B	2	C	M	GE600	M-46-1A	E-5	dP	Q	TP-PA-1; TP-PA-4
	B							Q	Q	TP-PA-4
	B							dP	Y2	TP-PA-1; TP-PA-4
	B							Q	Y2	TP-PA-4
	B							V	Y2	TP-PA-4
	Pump Name		CONTAINMENT SPRAY PUMP							
1CS01PB	B	2	C	M	GE600	M-46-1A	B-5	dP	Q	TP-PA-1; TP-PA-4
	B							Q	Q	TP-PA-4
	B							dP	Y2	TP-PA-1; TP-PA-4
	B							Q	Y2	TP-PA-4
	B							V	Y2	TP-PA-4
	Pump Name		CONTAINMENT SPRAY PUMP							
2CS01PA	B	2	C	M	GE600	M-129	E-5	dP	Q	TP-PA-1; TP-PA-4
	B							Q	Q	TP-PA-4
	B							dP	Y2	TP-PA-1; TP-PA-4
	B							Q	Y2	TP-PA-4
	B							V	Y2	TP-PA-4
	Pump Name		CONTAINMENT SPRAY PUMP							
2CS01PB	B	2	C	M	GE600	M-129	B-5	dP	Q	TP-PA-1; TP-PA-4
	B							Q	Q	TP-PA-4
	B							dP	Y2	TP-PA-1; TP-PA-4
	B							Q	Y2	TP-PA-4
	B							V	Y2	TP-PA-4
	Pump Name		CONTAINMENT SPRAY PUMP							

Chemical and Volume Control

Pump EPN	Test Group	Safety Class	Pump Type	Pump Driver	Nominal Speed	P&ID	P&ID Coor.	Test Type	Test Freq.	Tech Pos.
1CV01PA	A	2	C	M	GE600	M-64-3A	D-5	dP	Q	TP-PA-1
	A							Q	Q	
	A							V	Q	
	A							dP	Y2	TP-PA-1
	A							Q	Y2	
	A							V	Y2	
	Pump Name		CENTRIFUGAL CHARGING PUMP							
1CV01PB	A	2	C	M	GE600	M-64-3A	C-5	dP	Q	TP-PA-1
	A							Q	Q	
	A							V	Q	
	A							dP	Y2	TP-PA-1
	A							Q	Y2	
	A							V	Y2	
	Pump Name		CENTRIFUGAL CHARGING PUMP							
2CV01PA	A	2	C	M	GE600	M-138	D-5	dP	Q	TP-PA-1
	A							Q	Q	
	A							V	Q	
	A							dP	Y2	TP-PA-1
	A							Q	Y2	
	A							V	Y2	
	Pump Name		CENTRIFUGAL CHARGING PUMP							
2CV01PB	A	2	C	M	GE600	M-138	C-5	dP	Q	TP-PA-1
	A							Q	Q	
	A							V	Q	
	A							dP	Y2	TP-PA-1
	A							Q	Y2	
	A							V	Y2	
	Pump Name		CENTRIFUGAL CHARGING PUMP							

Diesel Fuel Oil

Pump EPN	Test Group	Safety Class	Pump Type	Pump Driver	Nominal Speed	P&ID	P&ID Coor.	Test Type	Test Freq.	Tech Pos.
1DO01PA	A	3	PDN	M	GE600	M-50-1B	E-4	DISP-P	Q	TP-PA-1
	A							Q	Q	
	A							V	Q	
	A							DISP-P	Y2	TP-PA-1
	A							Q	Y2	
	A							V	Y2	
	Pump Name	DIESEL FUEL OIL TRANSFER PUMP								
1DO01PB	A	3	PDN	M	GE600	M-50-1A	E-4	DISP-P	Q	TP-PA-1
	A							Q	Q	
	A							V	Q	
	A							DISP-P	Y2	TP-PA-1
	A							Q	Y2	
	A							V	Y2	
	Pump Name	DIESEL FUEL OIL TRANSFER PUMP								
1DO01PC	A	3	PDN	M	GE600	M-50-1B	E-4	DISP-P	Q	TP-PA-1
	A							Q	Q	
	A							V	Q	
	A							DISP-P	Y2	TP-PA-1
	A							Q	Y2	
	A							V	Y2	
	Pump Name	DIESEL FUEL OIL TRANSFER PUMP								
1DO01PD	A	3	PDN	M	GE600	M-50-1A	E-4	DISP-P	Q	TP-PA-1
	A							Q	Q	
	A							V	Q	
	A							DISP-P	Y2	TP-PA-1
	A							Q	Y2	
	A							V	Y2	
	Pump Name	DIESEL FUEL OIL TRANSFER PUMP								
2DO01PA	A	3	PDN	M	GE600	M-130-1A	C-5	DISP-P	Q	TP-PA-1
	A							Q	Q	
	A							V	Q	
	A							DISP-P	Y2	TP-PA-1
	A							Q	Y2	
	A							V	Y2	
	Pump Name	DIESEL FUEL OIL TRANSFER PUMP								
2DO01PB	A	3	PDN	M	GE600	M-130-1B	C-5	DISP-P	Q	TP-PA-1
	A							Q	Q	
	A							V	Q	
	A							DISP-P	Y2	TP-PA-1
	A							Q	Y2	
	A							V	Y2	
	Pump Name	DIESEL FUEL OIL TRANSFER PUMP								

Diesel Fuel Oil

Pump EPN	Test Group	Safety Class	Pump Type	Pump Driver	Nominal Speed	P&ID	P&ID Coor.	Test Type	Test Freq.	Tech Pos.
2DO01PC	A	3	PDN	M	GE600	M-130-1A	C-5	DISP-P	Q	TP-PA-1
	A							Q	Q	
	A							V	Q	
	A							DISP-P	Y2	TP-PA-1
	A							Q	Y2	
	A							V	Y2	
	Pump Name		DIESEL FUEL OIL TRANSFER PUMP							
2DO01PD	A	3	PDN	M	GE600	M-130-1B	C-5	DISP-P	Q	TP-PA-1
	A							Q	Q	
	A							V	Q	
	A							DISP-P	Y2	TP-PA-1
	A							Q	Y2	
	A							V	Y2	
	Pump Name		DIESEL FUEL OIL TRANSFER PUMP							

Residual Heat Removal

Pump EPN	Test Group	Safety Class	Pump Type	Pump Driver	Nominal Speed	P&ID	P&ID Coor.	Test Type	Test Freq.	Tech Pos.
1RH01PA	A	2	C	M	GE600	M-62	E-3	dP	Q	TP-PA-1; TP-PA-4
	A							Q	Q	TP-PA-4
	A							V	Q	TP-PA-4
	A							dP	Y2	TP-PA-1; TP-PA-4
	A							Q	Y2	TP-PA-4
	A							V	Y2	TP-PA-4
	Pump Name		RESIDUAL HEAT REMOVAL PUMP							
1RH01PB	A	2	C	M	GE600	M-62	B-3	dP	Q	TP-PA-1; TP-PA-4
	A							Q	Q	TP-PA-4
	A							V	Q	TP-PA-4
	A							dP	Y2	TP-PA-1; TP-PA-4
	A							Q	Y2	TP-PA-4
	A							V	Y2	TP-PA-4
	Pump Name		RESIDUAL HEAT REMOVAL PUMP							
2RH01PA	A	2	C	M	GE600	M-137	E-3	dP	Q	TP-PA-1; TP-PA-4
	A							Q	Q	TP-PA-4
	A							V	Q	TP-PA-4
	A							dP	Y2	TP-PA-1; TP-PA-4
	A							Q	Y2	TP-PA-4
	A							V	Y2	TP-PA-4
	Pump Name		RESIDUAL HEAT REMOVAL PUMP							
2RH01PB	A	2	C	M	GE600	M-137	B-3	dP	Q	TP-PA-1; TP-PA-4
	A							Q	Q	TP-PA-4
	A							V	Q	TP-PA-4
	A							dP	Y2	TP-PA-1; TP-PA-4
	A							Q	Y2	TP-PA-4
	A							V	Y2	TP-PA-4
	Pump Name		RESIDUAL HEAT REMOVAL PUMP							

Safety Injection

Pump EPN	Test Group	Safety Class	Pump Type	Pump Driver	Nominal Speed	P&ID	P&ID Coor.	Test Type	Test Freq.	Tech Pos.
1SI01PA	A	2	C	M	GE600	M-61	E-5	dP	Q	TP-PA-1
	A							Q	Q	
	A							V	Q	
	A							dP	Y2	TP-PA-1
	A							Q	Y2	
	A							V	Y2	
	Pump Name		SAFETY INJECTION PUMP							
1SI01PB	A	2	C	M	GE600	M-61	C-5	dP	Q	TP-PA-1
	A							Q	Q	
	A							V	Q	
	A							dP	Y2	TP-PA-1
	A							Q	Y2	
	A							V	Y2	
	Pump Name		SAFETY INJECTION PUMP							
2SI01PA	A	2	C	M	GE600	M-136	D-4	dP	Q	TP-PA-1
	A							Q	Q	
	A							V	Q	
	A							dP	Y2	TP-PA-1
	A							Q	Y2	
	A							V	Y2	
	Pump Name		SAFETY INJECTION PUMP							
2SI01PB	A	2	C	M	GE600	M-136	B-4	dP	Q	TP-PA-1
	A							Q	Q	
	A							V	Q	
	A							dP	Y2	TP-PA-1
	A							Q	Y2	
	A							V	Y2	
	Pump Name		SAFETY INJECTION PUMP							

Essential Service Water

Pump EPN	Test Group	Safety Class	Pump Type	Pump Driver	Nominal Speed	P&ID	P&ID Coor.	Test Type	Test Freq.	Tech Pos.
1SX01PA	A	3	C	M	GE600	M-42-1B	E-6	dP	Q	TP-PA-1
	A							Q	Q	
	A							V	Q	
	A							dP	Y2	TP-PA-1
	A							Q	Y2	
	A							V	Y2	
	Pump Name		ESSENTIAL SERVICE WATER PUMP							
1SX01PB	A	3	C	M	GE600	M-42-1A	E-6	dP	Q	TP-PA-1
	A							Q	Q	
	A							V	Q	
	A							dP	Y2	TP-PA-1
	A							Q	Y2	
	A							V	Y2	
	Pump Name		ESSENTIAL SERVICE WATER PUMP							
2SX01PA	A	3	C	M	GE600	M-42-1B	B-6	dP	Q	TP-PA-1
	A							Q	Q	
	A							V	Q	
	A							dP	Y2	TP-PA-1
	A							Q	Y2	
	A							V	Y2	
	Pump Name		ESSENTIAL SERVICE WATER PUMP							
2SX01PB	A	3	C	M	GE600	M-42-1A	B-6	dP	Q	TP-PA-1
	A							Q	Q	
	A							V	Q	
	A							dP	Y2	TP-PA-1
	A							Q	Y2	
	A							V	Y2	
	Pump Name		ESSENTIAL SERVICE WATER PUMP							

Chilled Water

Pump EPN	Test Group	Safety Class	Pump Type	Pump Driver	Nominal Speed	P&ID	P&ID Coor.	Test Type	Test Freq.	Tech Pos.
0WO01PA	B	3	C	M	GE600	M-118-1	D-7	dP	Q	TP-PA-1
	B							Q	Q	
	B							dP	Y2	TP-PA-1
	B							Q	Y2	
	B							V	Y2	
	Pump Name		CONTROL ROOM CHILLED WATER PUMP							
0WO01PB	B	3	C	M	GE600	M-118-1	B-7	dP	Q	TP-PA-1
	B							Q	Q	
	B							dP	Y2	TP-PA-1
	B							Q	Y2	
	B							V	Y2	
	Pump Name		CONTROL ROOM CHILLED WATER PUMP							

ATTACHMENT 15

INSERVICE TESTING VALVE TABLE

System Abbreviation	System Description
AF	Auxiliary Feedwater
CC	Component Cooling
CS	Containment Spray
CV	Chemical and Volume Control
DG	Diesel Generator Starting Air (includes select Service Air valves)
DO	Diesel Oil
FC	Fuel Pool Cooling
FP	Fire Protection
FW	Feedwater
GW	Radioactive Waste Gas
IA	Instrument Air
MS	Main Steam
OG	Off Gas
PR	Process Radiation Monitoring
PS	Process Sampling
RC	Reactor Coolant (includes select Pressurizer (RY) valves)
RE	Reactor Building and Containment Equipment Drains
RF	Reactor Building and Containment Floor Drains

ATTACHMENT 15

INSERVICE TESTING VALVE TABLE

System Abbreviation	System Description
RH	Residual Heat Removal
SA	Service Air
SD	Steam Generator Blowdown
SI	Safety Injection
SX	Essential Service Water
VQ	Primary Containment Purge
WM	Make-up Demineralizer
WO	Chilled Water

Auxiliary Feedwater

Valve EPN	Safety Class	Cat	Size	Vlv Type	Act. Type	Act/ Pass	Norm Pos	Safety Pos	P&ID	P&ID Coor.	Test Type	Test Freq.	Deferred Just.	Tech. Pos.
1AF001A	3	C	6	CK	SA	Active	SYS	C	M-37	D-2	CCA	CM		
											COA	CM		
			Valve Name			CST TO AUX FEEDWATER PUMP 1A SUCTION CHECK VALVE								
1AF001B	3	C	6	CK	SA	Active	SYS	C	M-37	B-2	CCA	CM		
											COA	CM		
			Valve Name			CST TO AUX FEEDWATER PUMP 1B SUCTION CHECK VALVE								
1AF003A	3	C	6	CK	SA	Active	SYS	O	M-37	D-4	CCA	CM		
											COA	CM		
			Valve Name			AUX FEEDWATER PUMP 1A DISCHARGE CHECK VALVE								
1AF003B	3	C	6	CK	SA	Active	SYS	O	M-37	B-4	CCA	CM		
											COA	CM		
			Valve Name			AUX FEEDWATER PUMP 1B DISCHARGE CHECK VALVE								
1AF004A	3	B	6	GL	AO	Passive	O	O	M-37	D-5	PI	Y2		TP-VA-4
			Valve Name			AUX FEEDWATER PUMP 1A DISCHARGE ISOLATION VALVE								
1AF004B	3	B	6	GL	AO	Passive	O	O	M-37	B-5	PI	Y2		TP-VA-4
			Valve Name			AUX FEEDWATER PUMP 1B DISCHARGE ISOLATION VALVE								
1AF005A	3	B	3	GL	AO	Active	O	O/C	M-37	D-6	FO	Q		TP-VA-2
											STC	Q		TP-VA-1
											STO	Q		TP-VA-1
											PI	Y2		TP-VA-4
			Valve Name			AUX FEEDWATER AIR OPERATED FLOW CONTROL VALVE								
1AF005B	3	B	3	GL	AO	Active	O	O/C	M-37	A-6	FO	Q		TP-VA-2
											STC	Q		TP-VA-1
											STO	Q		TP-VA-1
											PI	Y2		TP-VA-4
			Valve Name			AUX FEEDWATER AIR OPERATED FLOW CONTROL VALVE								
1AF005C	3	B	3	GL	AO	Active	O	O/C	M-37	E-6	FO	Q		TP-VA-2
											STC	Q		TP-VA-1
											STO	Q		TP-VA-1
											PI	Y2		TP-VA-4
			Valve Name			AUX FEEDWATER AIR OPERATED FLOW CONTROL VALVE								
1AF005D	3	B	3	GL	AO	Active	O	O/C	M-37	B-6	FO	Q		TP-VA-2
											STC	Q		TP-VA-1
											STO	Q		TP-VA-1
											PI	Y2		TP-VA-4
			Valve Name			AUX FEEDWATER AIR OPERATED FLOW CONTROL VALVE								
1AF005E	3	B	3	GL	AO	Active	O	O/C	M-37	D-6	FO	Q		TP-VA-2
											STC	Q		TP-VA-1
											STO	Q		TP-VA-1
											PI	Y2		TP-VA-4
			Valve Name			AUX FEEDWATER AIR OPERATED FLOW CONTROL VALVE								

Auxiliary Feedwater

Valve EPN	Safety Class	Cat	Size	Vlv Type	Act. Type	Act/ Pass	Norm Pos	Safety Pos	P&ID	P&ID Coor.	Test Type	Test Freq.	Deferred Just.	Tech. Pos.
1AF005F	3	B	3	GL	AO	Active	O	O/C	M-37	B-6	FO	Q		TP-VA-2
											STC	Q		TP-VA-1
											STO	Q		TP-VA-1
											PI	Y2		TP-VA-4
			Valve Name			AUX FEEDWATER AIR OPERATED FLOW CONTROL VALVE								
1AF005G	3	B	3	GL	AO	Active	O	O/C	M-37	E-6	FO	Q		TP-VA-2
											STC	Q		TP-VA-1
											STO	Q		TP-VA-1
											PI	Y2		TP-VA-4
			Valve Name			AUX FEEDWATER AIR OPERATED FLOW CONTROL VALVE								
1AF005H	3	B	3	GL	AO	Active	O	O/C	M-37	C-6	FO	Q		TP-VA-2
											STC	Q		
											STO	Q		
											PI	Y2		TP-VA-4
			Valve Name			AUX FEEDWATER AIR OPERATED FLOW CONTROL VALVE								
1AF006A	3	B	6	GA	MO	Active	C	O	M-37	E-3	SC	M18		
											SO	M18		
											DIAG	MOV		
											PI	MOV		
			Valve Name			AUX FEEDWATER PUMP 1A SX SUCT DWST ISOL VLV								
1AF006B	3	B	6	GA	MO	Active	C	O	M-37	B-3	SC	M18		
											SO	M18		
											DIAG	MOV		
											PI	MOV		
			Valve Name			AUX FEEDWATER PUMP 1B SX SUCT DWST ISOL VLV								
1AF013A	2	B	4	GL	MO	Active	O	O/C	M-37	D-7	SC	M18		
											SO	M18		
											DIAG	MOV		
											PI	MOV		
			Valve Name			AUX FEEDWATER PUMP DSCH HDR TO S/G 1A ISOL VLV								
1AF013B	2	B	4	GL	MO	Active	O	O/C	M-37	A-7	SC	M18		
											SO	M18		
											DIAG	MOV		
											PI	MOV		
			Valve Name			AUX FEEDWATER PUMP DSCH HDR TO S/G 1B ISOL VLV								
1AF013C	2	B	4	GL	MO	Active	O	O/C	M-37	E-7	SC	M18		
											SO	M18		
											DIAG	MOV		
											PI	MOV		
			Valve Name			AUX FEEDWATER PUMP DSCH HDR TO S/G 1C ISOL VLV								
1AF013D	2	B	4	GL	MO	Active	O	O/C	M-37	B-7	SC	M18		
											SO	M18		
											DIAG	MOV		
											PI	MOV		
			Valve Name			AUX FEEDWATER PUMP DSCH HDR TO S/G 1D ISOL VLV								

Auxiliary Feedwater

Valve EPN	Safety Class	Cat	Size	Vlv Type	Act. Type	Act/ Pass	Norm Pos	Safety Pos	P&ID	P&ID Coor.	Test Type	Test Freq.	Deferred Just.	Tech. Pos.
1AF013E	2	B	4	GL	MO	Active	O	O/C	M-37	D-7	SC	M18		
											SO	M18		
											DIAG	MOV		
											PI	MOV		
			Valve Name			AUX FEEDWATER PUMP DSCH HDR TO S/G 1A ISOL VLV								
1AF013F	2	B	4	GL	MO	Active	O	O/C	M-37	B-7	SC	M18		
											SO	M18		
											DIAG	MOV		
											PI	MOV		
			Valve Name			AUX FEEDWATER PUMP DSCH HDR TO S/G 1B ISOL VLV								
1AF013G	2	B	4	GL	MO	Active	O	O/C	M-37	E-7	SC	M18		
											SO	M18		
											DIAG	MOV		
											PI	MOV		
			Valve Name			AUX FEEDWATER PUMP DSCH HDR TO S/G 1C ISOL VLV								
1AF013H	2	B	4	GL	MO	Active	O	O/C	M-37	C-7	SC	M18		
											SO	M18		
											DIAG	MOV		
											PI	MOV		
			Valve Name			AUX FEEDWATER PUMP DSCH HDR TO S/G 1D ISOL VLV								
1AF014A	2	C	4	CK	SA	Active	C	O/C	M-37	D-2	CCD	CM		
											COD	CM		
			Valve Name			AUX FEEDWATER TO S/G 1A CHECK VALVE								
1AF014B	2	C	4	CK	SA	Active	C	O/C	M-37	A-2	CCD	CM		
											COD	CM		
			Valve Name			AUX FEEDWATER TO S/G 1B CHECK VALVE								
1AF014C	2	C	4	CK	SA	Active	C	O/C	M-37	E-2	CCD	CM		
											COD	CM		
			Valve Name			AUX FEEDWATER TO S/G 1C CHECK VALVE								
1AF014D	2	C	4	CK	SA	Active	C	O/C	M-37	C-2	CCD	CM		
											COD	CM		
			Valve Name			AUX FEEDWATER TO S/G 1D CHECK VALVE								
1AF014E	2	C	4	CK	SA	Active	C	O/C	M-37	E-2	CCD	CM		
											COD	CM		
			Valve Name			AUX FEEDWATER TO S/G 1A CHECK VALVE								
1AF014F	2	C	4	CK	SA	Active	C	O/C	M-37	B-2	CCD	CM		
											COD	CM		
			Valve Name			AUX FEEDWATER TO S/G 1B CHECK VALVE								
1AF014G	2	C	4	CK	SA	Active	C	O/C	M-37	F-2	CCD	CM		
											COD	CM		
			Valve Name			AUX FEEDWATER TO S/G 1C CHECK VALVE								
1AF014H	2	C	4	CK	SA	Active	C	O/C	M-37	C-2	CCD	CM		
											COD	CM		
			Valve Name			AUX FEEDWATER TO S/G 1D CHECK VALVE								

Auxiliary Feedwater

Valve EPN	Safety Class	Cat	Size	Vlv Type	Act. Type	Act/ Pass	Norm Pos	Safety Pos	P&ID	P&ID Coor.	Test Type	Test Freq.	Deferred Just.	Tech. Pos.
1AF017A	3	B	6	GA	MO	Active	C	O	M-37	F-3	SC	M18		
											SO	M18		
											DIAG	MOV		
											PI	MOV		
			Valve Name			AUX FEEDWATER PUMP 1A SX SUCT UPST ISOL VLV								
1AF017B	3	B	6	GA	MO	Active	C	O	M-37	C-3	SC	M18		
											SO	M18		
											DIAG	MOV		
											PI	MOV		
			Valve Name			AUX FEEDWATER PUMP 1B SX SUCT UPST ISOL VLV								
1AF029A	3	C	6	CK	SA	Active	SYS	O	M-37	E-5	CCA	CM		
											COA	CM		
			Valve Name			AUX FEEDWATER PUMP 1A TO S/G CHECK VALVE								
1AF029B	3	C	6	CK	SA	Active	SYS	O	M-37	B-4	CCA	CM		
											COA	CM		
			Valve Name			AUX FEEDWATER PUMP 1B TO S/G CHECK VALVE								
1AF049A	2	C	4	CK	SA	Passive	C	C	M-37	D8	CCD	CM		
											COD	CM		
			Valve Name			FX TO AF TO S/G 1A - CNTMT ISOL VLV								
1AF049B	2	C	4	CK	SA	Passive	C	C	M-37	B8	CCD	CM		
											COD	CM		
			Valve Name			FX TO AF TO S/G 1B - CNTMT ISOL VLV								
1AF049C	2	C	4	CK	SA	Passive	C	C	M-37	F8	CCD	CM		
											COD	CM		
			Valve Name			FX TO AF TO S/G 1C - CNTMT ISOL VLV								
1AF049D	2	C	4	CK	SA	Passive	C	C	M-37	C8	CCD	CM		
											COD	CM		
			Valve Name			FX TO AF TO S/G 1D - CNTMT ISOL VLV								
1AF053A	3	C	1.5x2.5	RV	SA	Active	C	O/C	M-55-8	F1	RT	Y10		
			Valve Name			AF005 ACCUM 1AF050A RLF VLV								
1AF053B	3	C	1.5x2.5	RV	SA	Active	C	O/C	M-55-8	E1	RT	Y10		
			Valve Name			AF005 ACCUM 1AF050B RLF VLV								
1AF058A	3	A/C	1	CK	SA	Active	SYS	C	M-55-8	F-6	CCF	CM		
											COF	CM		
			Valve Name			AF005 ACCUM 1AF050A IA INLET LINE 1ST CHECK VLV								
1AF058B	3	A/C	1	CK	SA	Active	SYS	C	M-55-8	F6	CCF	CM		
											COF	CM		
			Valve Name			AF005 ACCUM 1AF050B IA INLET LINE 1ST CHECK VLV								
1AF059A	3	A/C	1	CK	SA	Active	SYS	C	M-55-8	F6	CCF	CM		
											COF	CM		
			Valve Name			AF005 ACCUM 1AF050A IA INLET LINE 2ND CHECK VLV								

Auxiliary Feedwater

Valve EPN	Safety Class	Cat	Size	Vlv Type	Act. Type	Act/ Pass	Norm Pos	Safety Pos	P&ID	P&ID Coor.	Test Type	Test Freq.	Deferred Just.	Tech. Pos.
1AF059B	3	A/C	1	CK	SA	Active	SYS	C	M-55-8	F6	CCF	CM		
											COF	CM		
			Valve Name			AF005 ACCUM 1AF050B IA INLET LINE 2ND CHECK VLV								
2AF001A	3	C	6	CK	SA	Active	SYS	C	M-122	E-7	CCA	CM		
											COA	CM		
			Valve Name			CST TO AUX FEEDWATER PUMP 2A SUCTION CHECK VALVE								
2AF001B	3	C	6	CK	SA	Active	SYS	C	M-122	B-7	CCA	CM		
											COA	CM		
			Valve Name			CST TO AUX FEEDWATER PUMP 2B SUCTION CHECK VALVE								
2AF003A	3	C	6	CK	SA	Active	SYS	O	M-122	E-5	CCA	CM		
											COA	CM		
			Valve Name			AUX FEEDWATER PUMP 2A DISCHARGE CHECK VALVE								
2AF003B	3	C	6	CK	SA	Active	SYS	O	M-122	B-5	CCA	CM		
											COA	CM		
			Valve Name			AUX FEEDWATER PUMP 2B DISCHARGE CHECK VALVE								
2AF004A	3	B	6	GL	AO	Passive	O	O	M-122	E-5	PI	Y2		TP-VA-4
			Valve Name			AUX FEEDWATER PUMP 2A DISCHARGE ISOLATION VALVE								
2AF004B	3	B	6	GL	AO	Passive	O	O	M-122	B-5	PI	Y2		TP-VA-4
			Valve Name			AUX FEEDWATER PUMP 2B DISCHARGE ISOLATION VALVE								
2AF005A	3	B	3	GL	AO	Active	O	O/C	M-122	D-3	FO	Q		TP-VA-2
											STC	Q		TP-VA-1
											STO	Q		TP-VA-1
											PI	Y2		TP-VA-4
			Valve Name			AUX FEEDWATER AIR OPERATED FLOW CONTROL VALVE								
2AF005B	3	B	3	GL	AO	Active	O	O/C	M-122	A-3	FO	Q		TP-VA-2
											STC	Q		TP-VA-1
											STO	Q		TP-VA-1
											PI	Y2		TP-VA-4
			Valve Name			AUX FEEDWATER AIR OPERATED FLOW CONTROL VALVE								
2AF005C	3	B	3	GL	AO	Active	O	O/C	M-122	E-3	FO	Q		TP-VA-2
											STC	Q		TP-VA-1
											STO	Q		TP-VA-1
											PI	Y2		TP-VA-4
			Valve Name			AUX FEEDWATER AIR OPERATED FLOW CONTROL VALVE								
2AF005D	3	B	3	GL	AO	Active	O	O/C	M-122	C-3	FO	Q		TP-VA-2
											STC	Q		TP-VA-1
											STO	Q		TP-VA-1
											PI	Y2		TP-VA-4
			Valve Name			AUX FEEDWATER AIR OPERATED FLOW CONTROL VALVE								
2AF005E	3	B	3	GL	AO	Active	O	O/C	M-122	E-3	FO	Q		TP-VA-2
											STC	Q		TP-VA-1
											STO	Q		TP-VA-1
											PI	Y2		TP-VA-4
			Valve Name			AUX FEEDWATER AIR OPERATED FLOW CONTROL VALVE								

Auxiliary Feedwater

Valve EPN	Safety Class	Cat	Size	Vlv Type	Act. Type	Act/ Pass	Norm Pos	Safety Pos	P&ID	P&ID Coor.	Test Type	Test Freq.	Deferred Just.	Tech. Pos.
2AF005F	3	B	3	GL	AO	Active	O	O/C	M-122	B-3	FO	Q		TP-VA-2
											STC	Q		TP-VA-1
											STO	Q		TP-VA-1
											PI	Y2		TP-VA-4
			Valve Name			AUX FEEDWATER AIR OPERATED FLOW CONTROL VALVE								
2AF005G	3	B	3	GL	AO	Active	O	O/C	M-122	C-3	FO	Q		TP-VA-2
											STC	Q		TP-VA-1
											STO	Q		TP-VA-1
											PI	Y2		TP-VA-4
			Valve Name			AUX FEEDWATER AIR OPERATED FLOW CONTROL VALVE								
2AF005H	3	B	3	GL	AO	Active	O	O/C	M-122	F-3	FO	Q		TP-VA-2
											STC	Q		TP-VA-1
											STO	Q		TP-VA-1
											PI	Y2		TP-VA-4
			Valve Name			AUX FEEDWATER AIR OPERATED FLOW CONTROL VALVE								
2AF006A	3	B	6	GA	MO	Active	C	O	M-122	E-6	SC	M18		
											SO	M18		
											DIAG	MOV		
											PI	MOV		
			Valve Name			AUX FEEDWATER PUMP 2A SX SUCT DWST ISOL VLV								
2AF006B	3	B	6	GA	MO	Active	C	O	M-122	C-6	SC	M18		
											SO	M18		
											DIAG	MOV		
											PI	MOV		
			Valve Name			AUX FEEDWATER PUMP 2B SX SUCT DWST ISOL VLV								
2AF013A	2	B	4	GL	MO	Active	O	O/C	M-122	D-2	SC	M18		
											SO	M18		
											DIAG	MOV		
											PI	MOV		
			Valve Name			AUX FEEDWATER PUMP DSCH HDR TO S/G 2A ISOL VLV								
2AF013B	2	B	4	GL	MO	Active	O	O/C	M-122	A-2	SC	M18		
											SO	M18		
											DIAG	MOV		
											PI	MOV		
			Valve Name			AUX FEEDWATER PUMP DSCH HDR TO S/G 2B ISOL VLV								
2AF013C	2	B	4	GL	MO	Active	O	O/C	M-122	E-2	SC	M18		
											SO	M18		
											DIAG	MOV		
											PI	MOV		
			Valve Name			AUX FEEDWATER PUMP DSCH HDR TO S/G 2C ISOL VLV								
2AF013D	2	B	4	GL	MO	Active	O	O/C	M-122	C-2	SC	M18		
											SO	M18		
											DIAG	MOV		
											PI	MOV		
			Valve Name			AUX FEEDWATER PUMP DSCH HDR TO S/G 2D ISOL VLV								

Auxiliary Feedwater

Valve EPN	Safety Class	Cat	Size	Viv Type	Act. Type	Act/ Pass	Norm Pos	Safety Pos	P&ID	P&ID Coor.	Test Type	Test Freq.	Deferred Just.	Tech. Pos.
2AF013E	2	B	4	GL	MO	Active	O	O/C	M-122	E-2	SC	M18		
											SO	M18		
											DIAG	MOV		
											PI	MOV		
			Valve Name			AUX FEEDWATER PUMP DSCH HDR TO S/G 2A ISOL VLV								
2AF013F	2	B	4	GL	MO	Active	O	O/C	M-122	B-2	SC	M18		
											SO	M18		
											DIAG	MOV		
											PI	MOV		
			Valve Name			AUX FEEDWATER PUMP DSCH HDR TO S/G 2B ISOL VLV								
2AF013G	2	B	4	GL	MO	Active	O	O/C	M-122	F-2	SC	M18		
											SO	M18		
											DIAG	MOV		
											PI	MOV		
			Valve Name			AUX FEEDWATER PUMP DSCH HDR TO S/G 2C ISOL VLV								
2AF013H	2	B	4	GL	MO	Active	O	O/C	M-122	C-2	SC	M18		
											SO	M18		
											DIAG	MOV		
											PI	MOV		
			Valve Name			AUX FEEDWATER PUMP DSCH HDR TO S/G 2D ISOL VLV								
2AF014A	2	C	4	CK	SA	Active	C	O/C	M-122	D-2	CCD	CM		
											COD	CM		
			Valve Name			AUX FEEDWATER TO S/G 2A CHECK VALVE								
2AF014B	2	C	4	CK	SA	Active	C	O/C	M-122	A-2	CCD	CM		
											COD	CM		
			Valve Name			AUX FEEDWATER TO S/G 2B CHECK VALVE								
2AF014C	2	C	4	CK	SA	Active	C	O/C	M-122	E-2	CCD	CM		
											COD	CM		
			Valve Name			AUX FEEDWATER TO S/G 2C CHECK VALVE								
2AF014D	2	C	4	CK	SA	Active	C	O/C	M-122	C-2	CCD	CM		
											COD	CM		
			Valve Name			AUX FEEDWATER TO S/G 2D CHECK VALVE								
2AF014E	2	C	4	CK	SA	Active	C	O/C	M-122	E-2	CCD	CM		
											COD	CM		
			Valve Name			AUX FEEDWATER TO S/G 2A CHECK VALVE								
2AF014F	2	C	4	CK	SA	Active	C	O/C	M-122	B-2	CCD	CM		
											COD	CM		
			Valve Name			AUX FEEDWATER TO S/G 2B CHECK VALVE								
2AF014G	2	C	4	CK	SA	Active	C	O/C	M-122	F-2	CCD	CM		
											COD	CM		
			Valve Name			AUX FEEDWATER TO S/G 2C CHECK VALVE								
2AF014H	2	C	4	CK	SA	Active	C	O/C	M-122	C-2	CCD	CM		
											COD	CM		
			Valve Name			AUX FEEDWATER TO S/G 2D CHECK VALVE								

Auxiliary Feedwater

Valve EPN	Safety Class	Cat	Size	Vlv Type	Act. Type	Act/ Pass	Norm Pos	Safety Pos	P&ID	P&ID Coor.	Test Type	Test Freq.	Deferred Just.	Tech. Pos.
2AF017A	3	B	6	GA	MO	Active	C	O	M-122	F-6	SC	M18		
											SO	M18		
											DIAG	MOV		
											PI	MOV		
			Valve Name			AUX FEEDWATER PUMP 2A SX SUCT UPST ISOL VLV								
2AF017B	3	B	6	GA	MO	Active	C	O	M-122	C-6	SC	M18		
											SO	M18		
											DIAG	MOV		
											PI	MOV		
			Valve Name			AUX FEEDWATER PUMP 2B SX SUCT UPST ISOL VLV								
2AF029A	3	C	6	CK	SA	Active	SYS	O	M-122	E-5	CCA	CM		
											COA	CM		
			Valve Name			AUX FEEDWATER PUMP 2A TO S/G CHECK VALVE								
2AF029B	3	C	6	CK	SA	Active	SYS	O	M-122	B-4	CCA	CM		
											COA	CM		
			Valve Name			AUX FEEDWATER PUMP 2B TO S/G CHECK VALVE								
2AF049A	2	C	4	CK	SA	Passive	C	C	M-122	E1	CCD	CM		
											COD	CM		
			Valve Name			FX TO AF TO S/G 2A - CNTMT ISOL VLV								
2AF049B	2	C	4	CK	SA	Passive	C	C	M-122	B1	CCD	CM		
											COD	CM		
			Valve Name			FX TO AF TO S/G 2B - CNTMT ISOL VLV								
2AF049C	2	C	4	CK	SA	Passive	C	C	M-122	F1	CCD	CM		
											COD	CM		
			Valve Name			FX TO AF TO S/G 2C - CNTMT ISOL VLV								
2AF049D	2	C	4	CK	SA	Passive	C	C	M-122	D1	CCD	CM		
											COD	CM		
			Valve Name			FX TO AF TO S/G 2D - CNTMT ISOL VLV								
2AF053A	3	C	1.5x2.5	RV	SA	Active	C	O/C	M-55-8	A3	RT	Y10		
			Valve Name			AF005 ACCUM 2AF050A RLF VLV								
2AF053B	3	C	1.5x2.5	RV	SA	Active	C	O/C	M-55-8	D8	RT	Y10		
			Valve Name			AF005 ACCUM 2AF050B RLF VLV								
2AF058A	3	A/C	1	CK	SA	Active	SYS	C	M-55-8	B5	CCF	CM		
											COF	CM		
			Valve Name			AF005 ACCUM 2AF050A IA INLET LINE 1ST CHECK VLV								
2AF058B	3	A/C	1	CK	SA	Active	SYS	C	M-55-8	B5	CCF	CM		
											COF	CM		
			Valve Name			AF005 ACCUM 2AF050B IA INLET LINE 1ST CHECK VLV								
2AF059A	3	A/C	1	CK	SA	Active	SYS	C	M-55-8	B5	CCF	CM		
											COF	CM		
			Valve Name			AF005 ACCUM 2AF050A IA INLET LINE 2ND CHECK VLV								

Auxiliary Feedwater

Valve EPN	Safety Class	Cat	Size	Vlv Type	Act. Type	Act/ Pass	Norm Pos	Safety Pos	P&ID	P&ID Coor.	Test Type	Test Freq.	Deferred Just.	Tech. Pos.
2AF059B	3	A/C	1	CK	SA	Active	SYS	C	M-55-8	B5	CCF	CM		
											COF	CM		

Valve Name AF005 ACCUM 2AF050B IA INLET LINE 2ND CHECK VLV

Component Cooling Water

Valve EPN	Safety Class	Cat	Size	Vlv Type	Act. Type	Act/ Pass	Norm Pos	Safety Pos	P&ID	P&ID Coor.	Test Type	Test Freq.	Deferred Just.	Tech. Pos.
0CC9432	3	C	0.75	RV	SA	Active	C	O	M-66-3A	C-2	RT	Y10		
			Valve Name			CC RETURN HEADER FROM RH HX RELIEF VALVE								
0CC9464	3	C	12	CK	SA	Active	SYS	O/C	M-66-3B	B-4	CC	Q		
											CO	Q		
			Valve Name			CC PUMP DISCHARGE CHECK VALVE								
1CC070A	3	C	3	CK	SA	Active	SYS	C	M-66-4A	C-7	CCD	CM		
											COD	CM		
			Valve Name			WM MAKEUP SUPPLY TO CC SYSTEM CHECK VLV								
1CC070B	3	C	3	CK	SA	Active	SYS	C	M-66-4A	C-5	CCD	CM		
											COD	CM		
			Valve Name			PW MAKEUP SUPPLY TO CC SYSTEM CHECK VLV								
1CC201A	3	B	2.5	GL	MO	Active	C	O/C	M-66-3A	A-8	SC	M18		
											SO	M18		
											DIAG	MOV		
											PI	MOV		
			Valve Name			MOV 1A SX TO CC MAKEUP UPSTREAM ISOL VLV								
1CC201B	3	B	2.5	GL	MO	Active	C	O/C	M-66-3A	F-8	SC	M18		
											SO	M18		
											DIAG	MOV		
											PI	MOV		
			Valve Name			MOV 1B SX TO CC MAKEUP UPSTREAM ISOL VLV								
1CC202A	3	B	2.5	GL	MO	Active	C	O/C	M-66-3A	A-8	SC	M18		
											SO	M18		
											DIAG	MOV		
											PI	MOV		
			Valve Name			MOV 1A SX TO CC MAKEUP DOWNSTREAM ISOL VLV								
1CC202B	3	B	2.5	GL	MO	Active	C	O/C	M-66-3A	E-8	SC	M18		
											SO	M18		
											DIAG	MOV		
											PI	MOV		
			Valve Name			MOV 1B SX TO CC MAKEUP DOWNSTREAM ISOL VLV								
1CC685	2	A	3	GA	MO	Active	O	C	M-66-1A	B-4	LTJ	AJ		
											SC	CS	CS-15	
											SO	CS	CS-15	
											STC	CS	CS-15	TP-VA-1
											DIAG	MOV		
											PI	MOV		
			Valve Name			CC FROM RC PUMPS THERMAL BARRIER ISOL VLV								
1CC9412A	3	B	12	GA	MO	Active	O	C	M-66-2	D-2	SC	M18		
											SO	M18		
											DIAG	MOV		
											PI	MOV		
			Valve Name			CC FROM RH HEAT EXCHANGER 1A OUTLET ISOL VALVE								

Component Cooling Water

Valve EPN	Safety Class	Cat	Size	Vlv Type	Act. Type	Act/ Pass	Norm Pos	Safety Pos	P&ID	P&ID Coor.	Test Type	Test Freq.	Deferred Just.	Tech. Pos.
1CC9412B	3	B	12	GA	MO	Active	O	C	M-66-2	F-3	SC	M18		
											SO	M18		
											DIAG	MOV		
											PI	MOV		
			Valve Name			CC FROM RH HEAT EXCHANGER 1B OUTLET ISOL VALVE								
1CC9413A	2	A	6	GA	MO	Active	O	C	M-66-1A	E-3	LTJ	AJ		
											SC	M18		
											SO	M18		
											STC	M18		TP-VA-1
											DIAG	MOV		
											PI	MOV		
			Valve Name			CC SUPPLY TO RC PUMPS ISOLATION VALVE								
1CC9413B	2	B	6	GA	MO	Active	O	C	M-66-1A	E-3	SC	M18		
											SO	M18		
											DIAG	MOV		
											PI	MOV		
			Valve Name			CC SUPPLY TO RC PUMPS ISOLATION VALVE								
1CC9414	2	A	6	GA	MO	Active	O	C	M-66-1A	A-4	LTJ	AJ		
											SC	M18		
											SO	M18		
											STC	M18		TP-VA-1
											DIAG	MOV		
											PI	MOV		
			Valve Name			CC RETURN FROM RC PUMPS ISOLATION VALVE								
1CC9415	3	B	16	GA	MO	Active	O	C	M-66-4D	C-6	SC	M18		
											SO	M18		
											DIAG	MOV		
											PI	MOV		
			Valve Name			CC U-1 SERVICE LOOP ISOLATION VALVE								
1CC9416	2	A	6	GA	MO	Active	O	C	M-66-1A	A-6	LTJ	AJ		
											SC	M18		
											SO	M18		
											STC	M18		TP-VA-1
											DIAG	MOV		
											PI	MOV		
			Valve Name			CC RETURN FROM RC PUMPS ISOLATION VALVE								
1CC9422A	3	C	1	RV	SA	Active	C	O	M-66-2	C-3	RT	Y10		
			Valve Name			RHR HEAT EXCHANGER 1A OUTLET RELIEF VALVE								
1CC9422B	3	C	1	RV	SA	Active	C	O	M-66-2	E-3	RT	Y10		
			Valve Name			RHR HEAT EXCHANGER 1B OUTLET RELIEF VALVE								
1CC9426A	3	C	0.75	RV	SA	Active	C	O/C	M-66-1B	E-3	RT	Y10		
			Valve Name			RCP 1A THERMAL BARRRIER OUTLET RELIEF VALVE								
1CC9426B	3	C	0.75	RV	SA	Active	C	O/C	M-66-1B	D-3	RT	Y10		
			Valve Name			RCP 1B THERMAL BARRRIER OUTLET RELIEF VALVE								

Component Cooling Water

Valve EPN	Safety Class	Cat	Size	Vlv Type	Act. Type	Act/ Pass	Norm Pos	Safety Pos	P&ID	P&ID Coor.	Test Type	Test Freq.	Deferred Just.	Tech. Pos.
1CC9426C	3	C	0.75	RV	SA	Active	C	O/C	M-66-1B	C-3	RT	Y10		
			Valve Name			RCP 1C THERMAL BARRRIER OUTLET RELIEF VALVE								
1CC9426D	3	C	0.75	RV	SA	Active	C	O/C	M-66-1B	B-3	RT	Y10		
			Valve Name			RCP 1D THERMAL BARRRIER OUTLET RELIEF VALVE								
1CC9437A	2	B	3	GL	AO	Active	C	C	M-66-1A	E-2	FC	Q		TP-VA-2
											STC	Q		TP-VA-1
											PI	Y2		TP-VA-4
			Valve Name			CC TO EXCESS LETDOWN HX ISOL VLV								
1CC9437B	2	B	3	GL	AO	Active	C	C	M-66-1A	C-4	FC	Q		TP-VA-2
											STC	Q		TP-VA-1
											PI	Y2		TP-VA-4
			Valve Name			CC FROM EXCESS LETDOWN HX CC ISOL VALVE								
1CC9438	2	A	4	GA	MO	Active	O	C	M-66-1A	B-6	LTJ	AJ		
											SC	M18		
											SO	M18		
											STC	M18		TP-VA-1
											DIAG	MOV		
											PI	MOV		
			Valve Name			CC FROM RC PMPS THERMAL BARRIER ISOL VLV								
1CC9458	3	B	16	GA	M	Active	O	O/C	M-66-3B	C-6	SC	Y2		
											SO	Y2		
			Valve Name			CC PUMP 1A & 1B DISCHARGE HEADER CROSSTIE VLV								
1CC9459A	3	B	16	GA	M	Active	O	O/C	M-66-3A	D-6	SC	Y2		
											SO	Y2		
			Valve Name			CC PUMPS 1A & 1B SUCTION HEADER CROSSTIE VLV								
1CC9459B	3	B	16	GA	M	Active	O/C	O/C	M-66-3A	D-5	SC	Y2		
											SO	Y2		
			Valve Name			CC PUMP 1A & 0 SUCTION HEADER CROSSTIE VLV								
1CC9463A	3	C	12	CK	SA	Active	SYS	O/C	M-66-3B	B-5	CC	Q		
											CO	Q		
			Valve Name			CC PUMP 1A DISCHARGE CHECK VALVE								
1CC9463B	3	C	12	CK	SA	Active	SYS	O/C	M-66-3B	B-7	CC	Q		
											CO	Q		
			Valve Name			CC PUMP 1B DISCHARGE CHECK VALVE								
1CC9467A	3	B	16	GA	M	Active	O	O/C	M-66-4D	C-6	SC	Y2		
											SO	Y2		
			Valve Name			CC HX 1 TO 0 OUTLET ISOL VALVE								
1CC9467B	3	B	16	GA	M	Active	O/C	O/C	M-66-4D	C-5	SC	Y2		
											SO	Y2		
											SO	Y2		
			Valve Name			CC HX 0 TO 1 OUTLET ISOL VALVE								
1CC9467C	3	B	16	GA	M	Active	O	O/C	M-66-3B	D-6	SC	Y2		
											SO	Y2		
			Valve Name			1 & 0 CC HX INLET CROSSTIE ISOL VLV								

Component Cooling Water

Valve EPN	Safety Class	Cat	Size	Vlv Type	Act. Type	Act/ Pass	Norm Pos	Safety Pos	P&ID	P&ID Coor.	Test Type	Test Freq.	Deferred Just.	Tech. Pos.
1CC9473A	3	B	16	GA	MO	Active	O/C	O/C	M-66-3B	D-4	SC	M18		
											SO	M18		
											DIAG	MOV		
											PI	MOV		
			Valve Name			CC PUMP DISCHARGE HEADER CROSSTIE ISOL VLV								
1CC9473B	3	B	16	GA	MO	Active	O/C	O/C	M-66-3B	C-5	SC	M18		
											SO	M18		
											DIAG	MOV		
											PI	MOV		
			Valve Name			CC PUMP DISCHARGE HEADER CROSSTIE ISOL VLV								
1CC9486	2	A/C	6	CK	SA	Active	SYS	C	M-66-1A	E-6	LTJ	AJ		
											CCL	CM		
											COF	CM		
			Valve Name			CC TO REACTOR SUPPORT COOLING INLET CHECK VALVE								
1CC9495A	3	C	2	CK	SA	Active	SYS	C	M-66-1B	E-2	CCD	CM		
											COD	CM		
			Valve Name			RCP 1A THERMAL BARRIER INLET CHECK VLV								
1CC9495B	3	C	2	CK	SA	Active	SYS	C	M-66-1B	D-2	CCD	CM		
											COD	CM		
			Valve Name			RCP 1B THERMAL BARRIER INLET CHECK VLV								
1CC9495C	3	C	2	CK	SA	Active	SYS	C	M-66-1B	C-2	CCD	CM		
											COD	CM		
			Valve Name			RCP 1C THERMAL BARRIER INLET CHECK VLV								
1CC9495D	3	C	2	CK	SA	Active	SYS	C	M-66-1B	B-2	CCD	CM		
											COD	CM		
			Valve Name			RCP 1D THERMAL BARRIER INLET CHECK VLV								
1CC9507A	3	B	12	BTF	M	Active	T	T	M-66-2	D-2	SC	Y2		
											SO	Y2		
			Valve Name			RH HEAT EXCHANGER 1A CC OUTLET FLOW CONTROL VALVE								
1CC9507B	3	B	12	BTF	M	Active	T	T	M-66-2	F-2	SC	Y2		
											SO	Y2		
			Valve Name			RH HEAT EXCHANGER 1B CC OUTLET FLOW CONTROL VALVE								
1CC9518	2	A/C	0.75	CK	SA	Active	SYS	O/C	M-66-1A	B-6	LTJ	AJ		
											CCL	CM		
											CO	CM		
			Valve Name			CC FROM RCP THERMAL BARRIER ISOL BYPASS CHECK VLV								
1CC9520A	3	C	3	CK	SA	Active	SYS	C	M-66-4A	B-7	CCD	CM		
											COD	CM		
			Valve Name			WM M/U TO U-1 CC SURGE TK INLET UPSTRM CHK VLV								
1CC9520B	3	C	3	CK	SA	Active	SYS	C	M-66-4A	C-5	CCD	CM		
											COD	CM		
			Valve Name			PW M/U TO U-1 CC SURGE TK INLET DWNSTRM CHK VLV								

Component Cooling Water

Valve EPN	Safety Class	Cat	Size	Vlv Type	Act. Type	Act/ Pass	Norm Pos	Safety Pos	P&ID	P&ID Coor.	Test Type	Test Freq.	Deferred Just.	Tech. Pos.
1CC9534	2	A/C	0.75	CK	SA	Active	SYS	O/C	M-66-1A	B-6	LTJ	AJ		
											CCL	CM		
											CO	CM		
			Valve Name			CC FROM RCP MOTOR BEARING ISOL BYPASS CHECK VLV								
2CC070A	3	C	3	CK	SA	Active	SYS	C	M-66-4B	C-6	CCD	CM		
											COD	CM		
			Valve Name			WM MAKEUP SUPPLY TO CC SYSTEM CHECK VLV								
2CC070B	3	C	3	CK	SA	Active	SYS	C	M-66-4B	C-4	CCD	CM		
											COD	CM		
			Valve Name			PW MAKEUP SUPPLY TO CC SYSTEM CHECK VLV								
2CC201A	3	B	2.5	GL	MO	Active	C	O/C	M-66-3A	A-5	SC	M18		
											SO	M18		
											DIAG	MOV		
											PI	MOV		
			Valve Name			MOV 2A SX TO CC MAKEUP UPSTREAM ISOL VLV								
2CC201B	3	B	2.5	GL	MO	Active	C	O/C	M-66-3A	F-1	SC	M18		
											SO	M18		
											DIAG	MOV		
											PI	MOV		
			Valve Name			MOV 2B SX TO CC MAKEUP UPSTREAM ISOL VLV								
2CC202A	3	B	2.5	GL	MO	Active	C	O/C	M-66-3A	A-4	SC	M18		
											SO	M18		
											DIAG	MOV		
											PI	MOV		
			Valve Name			MOV 2A SX TO CC MAKEUP DOWNSTREAM ISOL VLV								
2CC202B	3	B	2.5	GL	MO	Active	C	O/C	M-66-3A	E-1	SC	M18		
											SO	M18		
											DIAG	MOV		
											PI	MOV		
			Valve Name			MOV 2B SX TO CC MAKEUP DOWNSTREAM ISOL VLV								
2CC685	2	A	3	GA	MO	Active	O	C	M-139-1	B-6	LTJ	AJ		
											SC	CS	CS-15	
											SO	CS	CS-15	
											STC	CS	CS-15	TP-VA-1
											DIAG	MOV		
											PI	MOV		
			Valve Name			CC FROM RC PUMPS THERMAL BARRIER ISOL VLV								
2CC9412A	3	B	12	GA	MO	Active	O	C	M-139-2	D-6	SC	M18		
											SO	M18		
											DIAG	MOV		
											PI	MOV		
			Valve Name			CC FROM RH HEAT EXCHANGER 2A OUTLET ISOL VALVE								

Component Cooling Water

Valve EPN	Safety Class	Cat	Size	Vlv Type	Act. Type	Act/ Pass	Norm Pos	Safety Pos	P&ID	P&ID Coor.	Test Type	Test Freq.	Deferred Just.	Tech. Pos.
2CC9412B	3	B	12	GA	MO	Active	O	C	M-139-2	F-6	SC	M18		
											SO	M18		
											DIAG	MOV		
											PI	MOV		
			Valve Name			CC FROM RH HEAT EXCHANGER 2B OUTLET ISOL VALVE								
2CC9413A	2	A	6	GA	MO	Active	O	C	M-139-1	E-7	LTJ	AJ		
											SC	M18		
											SO	M18		
											STC	M18		TP-VA-1
											DIAG	MOV		
											PI	MOV		
			Valve Name			CC SUPPLY TO RC PUMPS ISOLATION VALVE								
2CC9413B	2	B	6	GA	MO	Active	O	C	M-139-1	E-7	SC	M18		
											SO	M18		
											DIAG	MOV		
											PI	MOV		
			Valve Name			CC SUPPLY TO RC PUMPS ISOLATION VALVE								
2CC9414	2	A	6	GA	MO	Active	O	C	M-139-1	B-7	LTJ	AJ		
											SC	M18		
											SO	M18		
											STC	M18		TP-VA-1
											DIAG	MOV		
											PI	MOV		
			Valve Name			CC RETURN FROM RC PUMPS ISOLATION VALVE								
2CC9415	3	B	16	GA	MO	Active	O	C	M-66-4D	C-3	SC	M18		
											SO	M18		
											DIAG	MOV		
											PI	MOV		
			Valve Name			CC U-2 SERVICE LOOP ISOLATION VALVE								
2CC9416	2	A	6	GA	MO	Active	O	C	M-139-1	B-6	LTJ	AJ		
											SC	M18		
											SO	M18		
											STC	M18		TP-VA-1
											DIAG	MOV		
											PI	MOV		
			Valve Name			CC RETURN FROM RC PUMPS ISOLATION VALVE								
2CC9422A	3	C	1	RV	SA	Active	C	O	M-139-2	C-6	RT	Y10		
			Valve Name			RHR HEAT EXCHANGER 2A OUTLET RELIEF VALVE								
2CC9422B	3	C	1	RV	SA	Active	C	O	M-139-2	E-6	RT	Y10		
			Valve Name			RHR HEAT EXCHANGER 2B OUTLET RELIEF VALVE								
2CC9426A	3	C	0.75	RV	SA	Active	C	O/C	M-139-1	E-4	RT	Y10		
			Valve Name			RCP 2A THERMAL BARRRIER OUTLET RELIEF VALVE								
2CC9426B	3	C	0.75	RV	SA	Active	C	O/C	M-139-1	D-4	RT	Y10		
			Valve Name			RCP 2B THERMAL BARRRIER OUTLET RELIEF VALVE								

Component Cooling Water

Valve EPN	Safety Class	Cat	Size	Vlv Type	Act. Type	Act/ Pass	Norm Pos	Safety Pos	P&ID	P&ID Coor.	Test Type	Test Freq.	Deferred Just.	Tech. Pos.
2CC9426C	3	C	0.75	RV	SA	Active	C	O/C	M-139-1	C-4	RT	Y10		
			Valve Name			RCP 2C THERMAL BARRRIER OUTLET RELIEF VALVE								
2CC9426D	3	C	0.75	RV	SA	Active	C	O/C	M-139-1	B-4	RT	Y10		
			Valve Name			RCP 2D THERMAL BARRRIER OUTLET RELIEF VALVE								
2CC9437A	2	B	3	GL	AO	Active	C	C	M-139-1	E-8	FC	Q		TP-VA-2
											STC	Q		TP-VA-1
											PI	Y2		TP-VA-4
			Valve Name			CC TO EXCESS LETDOWN HX ISOL VLV								
2CC9437B	2	B	3	GL	AO	Active	C	C	M-139-1	C-6	FC	Q		TP-VA-2
											STC	Q		TP-VA-1
											PI	Y2		TP-VA-4
			Valve Name			CC FROM EXCESS LETDOWN HX CC ISOL VALVE								
2CC9438	2	A	4	GA	MO	Active	O	C	M-139-1	B-6	LTJ	AJ		
											SC	M18		
											SO	M18		
											STC	M18		TP-VA-1
											DIAG	MOV		
											PI	MOV		
			Valve Name			CC FROM RC PMPS THERMAL BARRIER ISOL VLV								
2CC9458	3	B	16	GA	M	Active	O	O/C	M-66-3B	C-3	SC	Y2		
											SO	Y2		
			Valve Name			CC PUMP 2A & 2B DISCHARGE HEADER CROSSTIE VLV								
2CC9459A	3	B	16	GA	M	Active	O	O/C	M-66-3A	D-3	SC	Y2		
											SO	Y2		
			Valve Name			CC PUMPS 2A & 2B SUCTION HEADER CROSSTIE VLV								
2CC9459B	3	B	16	GA	M	Active	O/C	O/C	M-66-3A	D-4	SC	Y2		
											SC	Y2		
											SO	Y2		
			Valve Name			CC PUMP 2A & 0 SUCTION HEADER CROSSTIE VLV								
2CC9463A	3	C	12	CK	SA	Active	SYS	O/C	M-66-3B	B-3	CC	Q		
											CO	Q		
			Valve Name			CC PUMP 2A DISCHARGE CHECK VALVE								
2CC9463B	3	C	12	CK	SA	Active	SYS	O/C	M-66-3B	B-2	CC	Q		
											CO	Q		
			Valve Name			CC PUMP 2B DISCHARGE CHECK VALVE								
2CC9467A	3	B	16	GA	M	Active	O	O/C	M-66-4D	C-3	SC	Y2		
											SO	Y2		
			Valve Name			CC HX 2 TO 0 OUTLET ISOL VALVE								
2CC9467B	3	B	16	GA	M	Active	O/C	O/C	M-66-4D	C-3	SC	Y2		
											SC	Y2		
											SO	Y2		
			Valve Name			CC HX 0 TO 2 OUTLET ISOL VALVE								

Component Cooling Water

Valve EPN	Safety Class	Cat	Size	Vlv Type	Act. Type	Act/ Pass	Norm Pos	Safety Pos	P&ID	P&ID Coor.	Test Type	Test Freq.	Deferred Just.	Tech. Pos.
2CC9467C	3	B	16	GA	M	Active	O	O/C	M-66-3B	D-2	SC	Y2		
											SO	Y2		
			Valve Name			2 & 0 CC HX INLET CROSSTIE ISOL VLV								
2CC9473A	3	B	16	GA	MO	Active	O/C	O/C	M-66-3B	D-4	SC	M18		
											SO	M18		
											DIAG	MOV		
											PI	MOV		
			Valve Name			CC PUMP DISCHARGE HEADER CROSSTIE ISOL VLV								
2CC9473B	3	B	16	GA	MO	Active	O/C	O/C	M-66-3B	C-3	SC	M18		
											SO	M18		
											DIAG	MOV		
											PI	MOV		
			Valve Name			CC PUMP DISCHARGE HEADER CROSSTIE ISOL VLV								
2CC9486	2	A/C	6	CK	SA	Active	SYS	C	M-139-1	E-6	LTJ	AJ		
											CCL	CM		
											COF	CM		
			Valve Name			CC TO REACTOR SUPPORT COOLING INLET CHECK VALVE								
2CC9495A	3	C	2	CK	SA	Active	SYS	C	M-139-1	E-5	CCD	CM		
											COD	CM		
			Valve Name			RCP 2A THERMAL BARRIER INLET CHECK VLV								
2CC9495B	3	C	2	CK	SA	Active	SYS	C	M-139-1	D-5	CCD	CM		
											COD	CM		
			Valve Name			RCP 2B THERMAL BARRIER INLET CHECK VLV								
2CC9495C	3	C	2	CK	SA	Active	SYS	C	M-139-1	D-5	CCD	CM		
											COD	CM		
			Valve Name			RCP 2C THERMAL BARRIER INLET CHECK VLV								
2CC9495D	3	C	2	CK	SA	Active	SYS	C	M-139-1	C-5	CCD	CM		
											COD	CM		
			Valve Name			RCP 2D THERMAL BARRIER INLET CHECK VLV								
2CC9507A	3	B	12	BTF	M	Active	T	T	M-139-2	D-7	SC	Y2		
											SO	Y2		
			Valve Name			RH HEAT EXCHANGER 2A CC OUTLET FLOW CONTROL VALVE								
2CC9507B	3	B	12	BTF	M	Active	T	T	M-139-2	F-7	SC	Y2		
											SO	Y2		
			Valve Name			RH HEAT EXCHANGER 2B CC OUTLET FLOW CONTROL VALVE								
2CC9518	2	A/C	0.75	CK	SA	Active	SYS	O/C	M-139-1	B-6	LTJ	AJ		
											CCL	CM		
											CO	CM		
			Valve Name			CC FROM RCP THERMAL BARRIER ISOL BYPASS CHECK VLV								
2CC9520A	3	C	3	CK	SA	Active	SYS	C	M-66-4B	B-6	CCD	CM		
											COD	CM		
			Valve Name			WM M/U TO U-2 CC SURGE TK INLET UPSTRM CHK VLV								

Component Cooling Water

Valve EPN	Safety Class	Cat	Size	Vlv Type	Act. Type	Act/ Pass	Norm Pos	Safety Pos	P&ID	P&ID Coor.	Test Type	Test Freq.	Deferred Just.	Tech. Pos.
2CC9520B	3	C	3	CK	SA	Active	SYS	C	M-66-4B	C-4	CCD	CM		
											COD	CM		
			Valve Name			PW M/U TO U-2 CC SURGE TK INLET DWNSTRM CHK VLV								
2CC9534	2	A/C	0.75	CK	SA	Active	SYS	O/C	M-139-1	A-6	LTJ	AJ		
											CCL	CM		
											CO	CM		
			Valve Name			CC FROM RCP MOTOR BEARING ISOL BYPASS CHECK VLV								

Containment Spray

Valve EPN	Safety Class	Cat	Size	Vlv Type	Act. Type	Act/ Pass	Norm Pos	Safety Pos	P&ID	P&ID Coor.	Test Type	Test Freq.	Deferred Just.	Tech. Pos.
1CS001A	2	B	14	GA	MO	Active	O	O/C	M-61-4	C4	SC	M18		
											SO	M18		
											DIAG	MOV		
											PI	MOV		
			Valve Name			CS PUMP 1A RWST SUCTION VALVE								
1CS001B	2	B	14	GA	MO	Active	O	O/C	M-61-4	A4	SC	M18		
											SO	M18		
											DIAG	MOV		
											PI	MOV		
			Valve Name			CS PUMP 1B RWST SUCTION VALVE								
1CS003A	2	C	10	CK	SA	Active	SYS	O	M-46-1A	E6	CCD	CM		
											COD	CM		
			Valve Name			CONTAINMENT SPRAY PUMP 2A DISCHARGE CHECK VALVE								
1CS003B	2	C	10	CK	SA	Active	SYS	O	M-46-1A	C6	CCD	CM		
											COD	CM		
			Valve Name			CONTAINMENT SPRAY PUMP 2B DISCHARGE CHECK VALVE								
1CS007A	2	A	10	GA	MO	Active	C	O/C	M-46-1C	D4	LTJ	AJ		
											SC	M18		
											SO	M18		
											STC	M18		TP-VA-1
											STO	M18		TP-VA-1
											DIAG	MOV		
											PI	MOV		
			Valve Name			CS PUMP 1A DISCHARGE HEADER ISOLATION VALVE								
1CS007B	2	A	10	GA	MO	Active	C	O/C	M-46-1C	B4	LTJ	AJ		
											SC	M18		
											SO	M18		
											STC	M18		TP-VA-1
											STO	M18		TP-VA-1
											DIAG	MOV		
											PI	MOV		
			Valve Name			CS PUMP 1B DISCHARGE HEADER ISOLATION VALVE								
1CS008A	2	A/C	10	CK	SA	Active	SYS	O/C	M-46-1C	D5	LTJ	AJ		
											CCD	CM		
											COD	CM		
			Valve Name			CS PUMP 2A DISCHARGE NOZZLE HEADER CHECK VALVE								
1CS008B	2	A/C	10	CK	SA	Active	SYS	O/C	M-46-1C	B5	LTJ	AJ		
											CCD	CM		
											COD	CM		
			Valve Name			CS PUMP 2B DISCHARGE NOZZLE HEADER CHECK VALVE								
1CS009A	2	B	16	GA	MO	Active	C	O/C	M-61-4	C3	SC	M18		
											SO	M18		
											DIAG	MOV		
											PI	MOV		
			Valve Name			CS PUMP 1A CONTAINMENT RECIRC SUMP SUCTION VALVE								

Containment Spray

Valve EPN	Safety Class	Cat	Size	Vlv Type	Act. Type	Act/ Pass	Norm Pos	Safety Pos	P&ID	P&ID Coor.	Test Type	Test Freq.	Deferred Just.	Tech. Pos.
1CS009B	2	B	16	GA	MO	Active	C	O/C	M-61-4	A3	SC	M18		
											SO	M18		
											DIAG	MOV		
											PI	MOV		
			Valve Name			CS PUMP 1B CONTAINMENT RECIRC SUMP SUCTION VALVE								
1CS010A	2	B	3	GL	AO	Passive	O	O	M-46-1A	D7	PI	Y2		TP-VA-4
			Valve Name			CS EDUCTOR 1A INLET ISOLATION VALVE								
1CS010B	2	B	3	GL	AO	Passive	O	O	M-46-1A	A7	PI	Y2		TP-VA-4
			Valve Name			CS EDUCTOR 1B INLET ISOLATION VALVE								
1CS011A	2	C	6	CK	SA	Active	SYS	O	M-46-1A	D2	CCD	CM		
											COD	CM		
			Valve Name			CS EDUCTOR 2A OUTLET CHECK VALVE								
1CS011B	2	C	6	CK	SA	Active	SYS	O	M-46-1A	B2	CCD	CM		
											COD	CM		
			Valve Name			CS EDUCTOR 2B OUTLET CHECK VALVE								
1CS019A	2	B	3	GA	MO	Active	C	O/C	M-46-1B	B3	SC	M18		
											SO	M18		
											DIAG	MOV		
											PI	MOV		
			Valve Name			CS EDUCTOR 1A SPRAY ADDITIVE TANK ISOLATION VALVE								
1CS019B	2	B	3	GA	MO	Active	C	O/C	M-46-1B	B6	SC	CM		
											SO	CM		
											DIAG	MOV		
											PI	MOV		
			Valve Name			CS EDUCTOR 1B SPRAY ADDITIVE TANK ISOLATION VALVE								
1CS020A	2	C	3	CK	SA	Active	C	O/C	M-46-1B	D2	CCD	CM		
											COD	CM		
			Valve Name			CS EDUCUCTOR 1A INLET CHECK VALVE								
1CS020B	2	C	3	CK	SA	Active	C	O/C	M-46-1B	B5	CCD	CM		
											COD	CM		
			Valve Name			CS EDUCUCTOR 1B INLET CHECK VALVE								
1CS08MA	2	C	1	RV	SA	Active	C	O	M-46-1B	F5	RT	Y10		
			Valve Name			SPRAY ADDITIVE TANK VACUUM RELIEF VALVE								
1CS08MB	2	C	1	RV	SA	Active	C	O	M-46-1B	F4	RT	Y10		
			Valve Name			SPRAY ADDITIVE TANK VACUUM RELIEF VALVE								
2CS001A	2	B	14	GA	MO	Active	O	O/C	M-136-4	B7	SC	M18		
											SO	M18		
											DIAG	MOV		
											PI	MOV		
			Valve Name			CS PUMP 2A RWST SUCTION VALVE								

Containment Spray

Valve EPN	Safety Class	Cat	Size	Vlv Type	Act. Type	Act/ Pass	Norm Pos	Safety Pos	P&ID	P&ID Coor.	Test Type	Test Freq.	Deferred Just.	Tech. Pos.
2CS001B	2	B	14	GA	MO	Active	O	O/C	M-136-4	A7	SC	M18		
											SO	M18		
											DIAG	MOV		
											PI	MOV		
			Valve Name			CS PUMP 2B RWST SUCTION VALVE								
2CS003A	2	C	10	CK	SA	Active	SYS	O	M-129-1A	E6	CCD	CM		
											COD	CM		
			Valve Name			CONTAINMENT SPRAY PUMP 1A DISCHARGE CHECK VALVE								
2CS003B	2	C	10	CK	SA	Active	SYS	O	M-129-1A	C6	CCD	CM		
											COD	CM		
			Valve Name			CONTAINMENT SPRAY PUMP 1B DISCHARGE CHECK VALVE								
2CS007A	2	A	10	GA	MO	Active	C	O/C	M-129-1C	D5	LTJ	AJ		
											SC	M18		
											SO	M18		
											STC	M18		TP-VA-1
											STO	M18		TP-VA-1
											DIAG	MOV		
											PI	MOV		
			Valve Name			CS PUMP 2A DISCHARGE HEADER ISOLATION VALVE								
2CS007B	2	A	10	GA	MO	Active	C	O/C	M-129-1C	B5	LTJ	AJ		
											SC	M18		
											SO	M18		
											STC	M18		TP-VA-1
											STO	M18		TP-VA-1
											DIAG	MOV		
											PI	MOV		
			Valve Name			CS PUMP 2B DISCHARGE HEADER ISOLATION VALVE								
2CS008A	2	A/C	10	CK	SA	Active	SYS	O/C	M-129-1C	D6	LTJ	AJ		
											CCD	CM		
											COD	CM		
			Valve Name			CS PUMP 1A DISCHARGE NOZZLE HEADER CHECK VALVE								
2CS008B	2	A/C	10	CK	SA	Active	SYS	O/C	M-129-1C	B6	LTJ	AJ		
											CCD	CM		
											COD	CM		
			Valve Name			CS PUMP 1B DISCHARGE NOZZLE HEADER CHECK VALVE								
2CS009A	2	B	16	GA	MO	Active	C	O/C	M-136-4	C7	SC	M18		
											SO	M18		
											DIAG	MOV		
											PI	MOV		
			Valve Name			CS PUMP 2A CONTAINMENT RECIRC SUMP SUCTION VALVE								
2CS009B	2	B	16	GA	MO	Active	C	O/C	M-136-4	A7	SC	M18		
											SO	M18		
											DIAG	MOV		
											PI	MOV		
			Valve Name			CS PUMP 2B CONTAINMENT RECIRC SUMP SUCTION VALVE								

Containment Spray

Valve EPN	Safety Class	Cat	Size	Vlv Type	Act. Type	Act/ Pass	Norm Pos	Safety Pos	P&ID	P&ID Coor.	Test Type	Test Freq.	Deferred Just.	Tech. Pos.
2CS010A	2	B	3	GL	AO	Passive	O	O	M-129-1A	D3	PI	Y2		TP-VA-4
			Valve Name			CS EDUCTOR 2A INLET ISOLATION VALVE								
2CS010B	2	B	3	GL	AO	Passive	O	O	M-129-1A	A3	PI	Y2		TP-VA-4
			Valve Name			CS EDUCTOR 2B INLET ISOLATION VALVE								
2CS011A	2	C	6	CK	SA	Active	SYS	O	M-129-1A	D2	CCD	CM		
											COD	CM		
			Valve Name			CS EDUCTOR 1A OUTLET CHECK VALVE								
2CS011B	2	C	6	CK	SA	Active	SYS	O	M-129-1A	B2	CCD	CM		
											COD	CM		
			Valve Name			CS EDUCTOR 1B OUTLET CHECK VALVE								
2CS019A	2	B	3	GA	MO	Active	C	O/C	M-129-1B	B6	SC	M18		
											SO	M18		
											DIAG	MOV		
											PI	MOV		
			Valve Name			CS EDUCTOR 2A SPRAY ADDITIVE TANK ISOLATION VALVE								
2CS019B	2	B	3	GA	MO	Active	C	O/C	M-129-1B	B3	SC	M18		
											SO	M18		
											DIAG	MOV		
											PI	MOV		
			Valve Name			CS EDUCTOR 2B SPRAY ADDITIVE TANK ISOLATION VALVE								
2CS020A	2	C	3	CK	SA	Active	C	O/C	M-129-1A	B2	CCD	CM		
											COD	CM		
			Valve Name			CS EDUCUCTOR 2A INLET CHECK VALVE								
2CS020B	2	C	3	CK	SA	Active	C	O/C	M-129-1A	B4	CCD	CM		
											COD	CM		
			Valve Name			CS EDUCUCTOR 2B INLET CHECK VALVE								
2CS08MA	2	C	1	RV	SA	Active	C	O	M-129-1B	F6	RT	Y10		
			Valve Name			SPRAY ADDITIVE TANK VACUUM RELIEF VALVE								
2CS08MB	2	C	1	RV	SA	Active	C	O	M-129-1B	F5	RT	Y10		
			Valve Name			SPRAY ADDITIVE TANK VACUUM RELIEF VALVE								

Chemical and Volume Control

Valve EPN	Safety Class	Cat	Size	Vlv Type	Act. Type	Act/ Pass	Norm Pos	Safety Pos	P&ID	P&ID Coor.	Test Type	Test Freq.	Deferred Just.	Tech. Pos.
1CV112B	2	B	4.000	GA	MO	Active	O	C	M-64-4A	B-4	SC	M18		
											SO	M18		
											STC	M18		TP-VA-1
											DIAG	MOV		
											PI	MOV		
			Valve Name			MOV VCT OUTLET UPST ISOL VLV								
1CV112C	2	B	4.000	GA	MO	Active	O	C	M-64-4A	B-3	SC	M18		
											SO	M18		
											STC	M18		TP-VA-1
											DIAG	MOV		
											PI	MOV		
			Valve Name			MOV VCT OUTLET DWST ISOL VLV								
1CV112D	2	B	8.000	GA	MO	Active	C	O/C	M-64-4B	B-5	SC	M18		
											SO	M18		
											STC	M18		TP-VA-1
											STO	M18		TP-VA-1
											DIAG	MOV		
											PI	MOV		
			Valve Name			MOV RWST TO CHG PPS SUCT ISOL VLV								
1CV112E	2	B	8.000	GA	MO	Active	C	O/C	M-64-4B	A-5	SC	M18		
											SO	M18		
											STC	M18		TP-VA-1
											STO	M18		TP-VA-1
											DIAG	MOV		
											PI	MOV		
			Valve Name			MOV RWST TO CHG PPS SUCT ISOL VLV								
1CV459	1	B	3.000	GL	AO	Active	O	C	M-64-5	E-7	FC	CS	CS-10	TP-VA-2
											STC	CS	CS-10	TP-VA-1
											PI	Y2		TP-VA-4
			Valve Name			LETDOWN LINE ISOLATION VALVE - AOV								
1CV460	1	B	3.000	GL	AO	Active	O	C	M-64-5	F-8	FC	CS	CS-10	TP-VA-2
											STC	CS	CS-10	TP-VA-1
											PI	Y2		TP-VA-4
			Valve Name			LETDOWN LINE ISOLATION VALVE - AOV								
1CV8100	2	A	2.000	GL	MO	Active	O	C	M-64-2	F-1	LTJ	AJ		
											SC	M18		
											SO	M18		
											STC	M18		TP-VA-1
											DIAG	MOV		
											PI	MOV		
			Valve Name			MOV RC PPS SEAL L/O HDR OUTSIDE CNMT ISOL								
1CV8104	2	B	2.000	GL	MO	Passive	C	C	M-64-4B	C-2	PI	Y2		TP-VA-4
			Valve Name			EMERGENCY BORATION ISOLATION VALVE								

Chemical and Volume Control

Valve EPN	Safety Class	Cat	Size	Vlv Type	Act. Type	Act/ Pass	Norm Pos	Safety Pos	P&ID	P&ID Coor.	Test Type	Test Freq.	Deferred Just.	Tech. Pos.
1CV8105	2	B	3.000	GA	MO	Active	O	C	M-64-3B	E-6	SC	M18		
											SO	M18		
											STC	M18		TP-VA-1
											DIAG	MOV		
											PI	MOV		
			Valve Name			MOV CV CHG PPS DSCH HDR DWST ISOL VLV								
1CV8106	2	B	3.000	GA	MO	Active	O	C	M-64-3B	E-5	SC	M18		
											SO	M18		
											STC	M18		TP-VA-1
											DIAG	MOV		
											PI	MOV		
			Valve Name			MOV CV CHG PPS DSCH HDR UPST ISOL VLV								
1CV8110	2	B	2.000	GL	MO	Active	O	O/C	M-64-3A	A-5	SC	M18		
											SC	M18		
											SO	M18		
											SO	M18		
											STC	M18		TP-VA-1
											STC	M18		
											DIAG	MOV		
											PI	MOV		
			Valve Name			CHARGING PUMP MIN FLOW RECIRCULATION MOV								
1CV8111	2	B	2.000	GL	MO	Active	O	O/C	M-64-3A	A-3	SC	M18		
											SO	M18		
											STC	M18		TP-VA-1
											DIAG	MOV		
											PI	MOV		
			Valve Name			CHARGING PUMP MIN FLOW RECIRCULATION MOV								
1CV8112	2	A	2.000	GL	MO	Active	O	C	M-64-2	F-2	LTJ	AJ		
											SC	M18		
											SO	M18		
											STC	M18		TP-VA-1
											DIAG	MOV		
											PI	MOV		
			Valve Name			MOV RC PPS SEAL L/O HDR INSIDE CNMT ISOL								
1CV8113	2	A/C	0.75	CK	SA	Active	SYS	O/C	M-64-2	F-2	LTJ	AJ		
											CCL	CM		
											CO	CM		
			Valve Name			RCP SEAL RETURN HEADER CHECK VALVE								
1CV8114	2	B	2	GL	SO	Active	O	O/C	M-64-3A	A-3	FO	Q		TP-VA-2
											STC	Q		TP-VA-1
											STO	Q		TP-VA-1
											PI	Y2		TP-VA-4
			Valve Name			CHARGING PUMP MIN FLOW RECIRCULATION SOV								

Chemical and Volume Control

Valve EPN	Safety Class	Cat	Size	Vlv Type	Act. Type	Act/ Pass	Norm Pos	Safety Pos	P&ID	P&ID Coor.	Test Type	Test Freq.	Deferred Just.	Tech. Pos.
1CV8116	2	B	2	GL	SO	Active	O	O/C	M-64-3A	B-5	FO	Q		TP-VA-2
											STC	Q		TP-VA-1
											STO	Q		TP-VA-1
											PI	Y2		TP-VA-4
			Valve Name			CHARGING PUMP MIN FLOW RECIRCULATION SOV								
1CV8117	2	C	2.0x3.0	RV	SA	Active	C	O	M-64-5	F-6	RT	Y10		
			Valve Name			LETDOWN RELIEF VALVE								
1CV8121	2	C	2.0x3.0	RV	SA	N/A	C	O	M-64-2	E-3	RT	Y10		
			Valve Name			SEAL WATER RETURN RELIEF VALVE								
1CV8124	2	C	0.75x1.0	RV	SA	Active	C	O	M-64-4B	C-5	RT	Y10		
			Valve Name			CHARGING PUMP SUCTION HEADER RELIEF VALVE								
1CV8152	2	A	3.000	GL	AO	Active	O	C	M-64-5	E-4	LTJ	AJ		
											FC	CS	CS-4	TP-VA-2
											STC	CS	CS-4	TP-VA-1
											PI	Y2		TP-VA-4
			Valve Name			LETDOWN HEADER CONTAINMENT ISOLATION VALVE								
1CV8153A	1	B	1.000	GL	AO	Passive	C	C	M-64-2	D-2	FC	Q		TP-VA-2
											STC	Q		
											PI	Y2		TP-VA-4
			Valve Name			AOV - EXCESS LETDOWN HEAT EXCHANGER INLET								
1CV8153B	1	B	1.000	GL	AO	Passive	C	C	M-64-2	C-2	FC	Q		TP-VA-2
											STC	Q		
											PI	Y2		TP-VA-4
			Valve Name			AOV - EXCESS LETDOWN HEAT EXCHANGER INLET								
1CV8160	2	A	3.000	GL	AO	Active	O	C	M-64-5	F-5	LTJ	AJ		
											FC	CS	CS-4	TP-VA-2
											STC	CS	CS-4	TP-VA-1
											PI	Y2		TP-VA-4
			Valve Name			LETDOWN HEADER CONTAINMENT ISOLATION VALVE								
1CV8348	2	C	2.000	CK	SA	Passive	SYS	C	M-64-3B	F-2	CCD	CM		
											COD	CM		
			Valve Name			CHECK - RCS LOOP FILL								
1CV8355A	2	B	2.000	GL	MO	Active	O	O/C	M-64-1	C-8	SC	M18		
											SO	M18		
											DIAG	MOV		
											PI	MOV		
			Valve Name			RCP SEAL INJECTION ISOLATION VALVE								
1CV8355B	2	B	2.000	GL	MO	Active	O	O/C	M-64-1	C-4	SC	M18		
											SO	M18		
											DIAG	MOV		
											PI	MOV		
			Valve Name			RCP SEAL INJECTION ISOLATION VALVE								

Chemical and Volume Control

Valve EPN	Safety Class	Cat	Size	Vlv Type	Act. Type	Act/ Pass	Norm Pos	Safety Pos	P&ID	P&ID Coor.	Test Type	Test Freq.	Deferred Just.	Tech. Pos.
1CV8355C	2	B	2.000	GL	MO	Active	O	O/C	M-64-2	B-8	SC	M18		
											SO	M18		
											DIAG	MOV		
											PI	MOV		
			Valve Name			RCP SEAL INJECTION ISOLATION VALVE								
1CV8355D	2	B	2.000	GL	MO	Active	O	O/C	M-64-2	B-5	SC	M18		
											SO	M18		
											DIAG	MOV		
											PI	MOV		
			Valve Name			RCP SEAL INJECTION ISOLATION VALVE								
1CV8367A	1	C	2.000	CK	SA	N/A	SYS	O	M-64-1	C-7	BDC	CM		
											CO	OP		
			Valve Name			RCP SEAL INJECTION INLET CHECK VALVE								
1CV8367B	1	C	2.000	CK	SA	N/A	SYS	O	M-64-1	C-3	BDC	CM		
											CO	OP		
			Valve Name			RCP SEAL INJECTION INLET CHECK VALVE								
1CV8367C	1	C	2.000	CK	SA	N/A	SYS	O	M-64-2	C-3	BDC	CM		
											CO	OP		
			Valve Name			RCP SEAL INJECTION INLET CHECK VALVE								
1CV8367D	1	C	2.000	CK	SA	N/A	SYS	O	M-64-2	C-7	BDC	CM		
											CO	OP		
			Valve Name			RCP SEAL INJECTION INLET CHECK VALVE								
1CV8368A	2	C	2.000	CK	SA	Active	SYS	C	M-64-1	C-5	CCD	CM		
											COD	CM		
			Valve Name			CHECK VALVE - SEAL INJECTION INLET								
1CV8368B	2	C	2.000	CK	SA	Active	SYS	C	M-64-1	B-8	CCD	CM		
											COD	CM		
			Valve Name			CHECK VALVE - SEAL INJECTION INLET								
1CV8368C	2	C	2.000	CK	SA	Active	SYS	C	M-64-2	C-4	CCD	CM		
											COD	CM		
			Valve Name			CHECK VALVE - SEAL INJECTION INLET								
1CV8368D	2	C	2.000	CK	SA	Active	SYS	C	M-64-2	B-8	CCD	CM		
											COD	CM		
			Valve Name			CHECK VALVE - SEAL INJECTION INLET								
1CV8372A	1	C	2.000	CK	SA	N/A	SYS	O	M-64-1	C-6	BDC	CM		
											CO	OP		
			Valve Name			RCP SEAL INJECTION INLET CHECK VALVE								
1CV8372B	1	C	2.000	CK	SA	N/A	SYS	N/A	M-64-1	C-3	BDC	CM		
											CO	OP		
			Valve Name			RCP SEAL INJECTION INLET CHECK VALVE								
1CV8372C	1	C	2.000	CK	SA	N/A	SYS	O	M-64-2	C-7	BDC	CM		
											CO	OP		
			Valve Name			RCP SEAL INJECTION INLET CHECK VALVE								

Chemical and Volume Control

Valve EPN	Safety Class	Cat	Size	Vlv Type	Act. Type	Act/ Pass	Norm Pos	Safety Pos	P&ID	P&ID Coor.	Test Type	Test Freq.	Deferred Just.	Tech. Pos.
1CV8372D	1	C	2.000	CK	SA	N/A	SYS	O	M-64-2	C-5	BDC	CM		
											CO	OP		
			Valve Name			RCP SEAL INJECTION INLET CHECK VALVE								
1CV8440	2	C	4.000	CK	SA	Active	SYS	O/C	M-64-4B	F-6	CCU	CM		
											CO	CM		
			Valve Name			VOLUME CONTROL TANK OUTLET CHECK VALVE								
1CV8480A	2	C	2.000	CK	SA	Active	SYS	O/C	M-64-3A	D-6	CC	Q		
											CO	Q		
			Valve Name			CV PP MINIFLOW CHK VLV								
1CV8480B	2	C	2.000	CK	SA	Active	SYS	O/C	M-64-3A	B-6	CC	Q		
											CO	Q		
			Valve Name			CV PP MINIFLOW CHK VLV								
1CV8481A	2	C	4.000	CK	SA	Active	SYS	O/C	M-64-3A	D-6	CC	Q		
											CO	RR	RJ-5	
			Valve Name			CV PP DSCH CHK VLV								
1CV8481B	2	C	4.000	CK	SA	Active	SYS	O/C	M-64-3A	C-7	CC	Q		
											CO	RR	RJ-5	
			Valve Name			CV PP DSCH CHK VLV								
1CV8546	2	C	8.000	CK	SA	Active	SYS	O/C	M-64-4B	B-5	CCU	CM		
											COF	CM		
			Valve Name			RWST TO CHARGING PUMP SUCTION CHECK VALVE								
1CV8804A	2	B	8.000	GA	MO	Active	C	O/C	M-64-4B	C-7	SC	M18		
											SO	M18		
											STO	M18		
											DIAG	MOV		
											PI	MOV		
			Valve Name			RHR TO CHARGING PUMP SUCTION ISOLATION VALVE								
2CV112B	2	B	4.000	GA	MO	Active	O	C	M-138-4	D-5	SC	M18		
											SO	M18		
											STC	M18		TP-VA-1
											DIAG	MOV		
											PI	MOV		
			Valve Name			MOV VCT OUTLET UPST ISOL VLV								
2CV112C	2	B	4.000	GA	MO	Active	O	C	M-138-4	D-5	SC	M18		
											SO	M18		
											STC	M18		TP-VA-1
											DIAG	MOV		
											PI	MOV		
			Valve Name			MOV VCT OUTLET DWST ISOL VLV								

Chemical and Volume Control

Valve EPN	Safety Class	Cat	Size	Vlv Type	Act. Type	Act/ Pass	Norm Pos	Safety Pos	P&ID	P&ID Coor.	Test Type	Test Freq.	Deferred Just.	Tech. Pos.
2CV112D	2	B	8.000	GA	MO	Active	C	O/C	M-138-4	B-4	SC	M18		
											SO	M18		
											STC	M18		TP-VA-1
											STO	M18		TP-VA-1
											DIAG	MOV		
											PI	MOV		
			Valve Name			MOV RWST TO CHG PPS SUCT ISOL VLV								
2CV112E	2	B	8.000	GA	MO	Active	C	O/C	M-138-4	A-4	SC	M18		
											SO	M18		
											STC	M18		TP-VA-1
											STO	M18		TP-VA-1
											DIAG	MOV		
											PI	MOV		
			Valve Name			MOV RWST TO CHG PPS SUCT ISOL VLV								
2CV459	1	B	3.000	GL	AO	Active	O	C	M-138-5B	F-5	FC	CS	CS-10	TP-VA-2
											STC	CS	CS-10	TP-VA-1
											PI	Y2		TP-VA-4
			Valve Name			LETDOWN LINE ISOLATION VALVE - AOV								
2CV460	1	B	3.000	GL	AO	Active	O	C	M-138-5B	F-7	FC	CS	CS-10	TP-VA-2
											STC	CS	CS-10	TP-VA-1
											PI	Y2		TP-VA-4
			Valve Name			LETDOWN LINE ISOLATION VALVE - AOV								
2CV8100	2	A	2.000	GL	MO	Active	O	C	M-138-2	F-1	LTJ	AJ		
											SC	M18		
											SO	M18		
											STC	M18		TP-VA-1
											DIAG	MOV		
											PI	MOV		
			Valve Name			MOV RC PPS SEAL L/O HDR OUTSIDE CNMT ISOL								
2CV8104	2	B	2.000	GL	MO	Passive	C	C	M-138-4A	B-2	PI	Y2		TP-VA-4
			Valve Name			EMERGENCY BORATION ISOLATION VALVE								
2CV8105	2	B	3.000	GA	MO	Active	O	C	M-138-3B	E-6	SC	M18		
											SO	M18		
											STC	M18		TP-VA-1
											DIAG	MOV		
											PI	MOV		
			Valve Name			MOV CV CHG PPS DSCH HDR DWST ISOL VLV								
2CV8106	2	B	3.000	GA	MO	Active	O	C	M-138-3B	E-5	SC	M18		
											SO	M18		
											STC	M18		TP-VA-1
											DIAG	MOV		
											PI	MOV		
			Valve Name			MOV CV CHG PPS DSCH HDR UPST ISOL VLV								

Chemical and Volume Control

Valve EPN	Safety Class	Cat	Size	Vlv Type	Act. Type	Act/ Pass	Norm Pos	Safety Pos	P&ID	P&ID Coor.	Test Type	Test Freq.	Deferred Just.	Tech. Pos.
2CV8110	2	B	2.000	GL	MO	Active	O	O/C	M-138-3A	B-5	SC	M18		
											SO	M18		
											STC	M18		TP-VA-1
											DIAG	MOV		
											PI	MOV		
			Valve Name			CHARGING PUMP MIN FLOW RECIRCULATION MOV								
2CV8111	2	B	2.000	GL	MO	Active	O	O/C	M-138-3A	B-3	SC	M18		
											SO	M18		
											STC	M18		TP-VA-1
											DIAG	MOV		
											PI	MOV		
			Valve Name			CHARGING PUMP MIN FLOW RECIRCULATION MOV								
2CV8112	2	A	2.000	GL	MO	Active	O	C	M-138-2	F-2	LTJ	AJ		
											SC	M18		
											SO	M18		
											STC	M18		TP-VA-1
											DIAG	MOV		
											PI	MOV		
			Valve Name			MOV RC PPS SEAL L/O HDR INSIDE CNMT ISOL								
2CV8113	2	A/C	0.75	CK	SA	Active	SYS	O/C	M-138-2	F-2	LTJ	AJ		
											CCL	CM		
											CO	CM		
			Valve Name			RCP SEAL WATER RETURN HEADER CHECK VALVE								
2CV8114	2	B	2	GL	SO	Active	O	O/C	M-138-3A	A-3	FO	Q		TP-VA-2
											STC	Q		TP-VA-1
											STO	Q		TP-VA-1
											PI	Y2		TP-VA-4
			Valve Name			SOV A CV PP ESF MINIFLOW ISOL VLV								
2CV8116	2	B	2	GL	SO	Active	O	O/C	M-138-3A	B-5	FO	Q		TP-VA-2
											STC	Q		TP-VA-1
											STO	Q		TP-VA-1
											PI	Y2		TP-VA-4
			Valve Name			CHARGING PUMP MIN FLOW RECIRCULATION SOV								
2CV8117	2	C	2.0x3.0	RV	SA	Active	C	O	M-138-5B	D-1	RT	Y10		
			Valve Name			LETDOWN RELIEF VALVE								
2CV8121	2	C	2.0x3.0	RV	SA	N/A	C	O	M-138-2	E-3	RT	Y10		
			Valve Name			SEAL WATER RETURN RELIEF VALVE								
2CV8124	2	C	0.75x1.0	RV	SA	Active	C	O	M-138-4	C-5	RT	Y10		
			Valve Name			CHARGING PUMP SUCTION HEADER RELIEF VALVE								
2CV8152	2	A	3.000	GL	AO	Active	O	C	M-138-5A	C-7	LTJ	AJ		
											FC	CS	CS-4	TP-VA-2
											STC	CS	CS-4	TP-VA-1
											PI	Y2		TP-VA-4
			Valve Name			LETDOWN HEADER CONTAINMENT ISOLATION VALVE								

Chemical and Volume Control

Valve EPN	Safety Class	Cat	Size	Viv Type	Act. Type	Act/ Pass	Norm Pos	Safety Pos	P&ID	P&ID Coor.	Test Type	Test Freq.	Deferred Just.	Tech. Pos.
2CV8153A	1	B	1.000	GL	AO	Passive	C	C	M-138-2	D-2	FC	Q		TP-VA-2
											STC	Q		
											PI	Y2		TP-VA-4
			Valve Name			AOV - EXCESS LETDOWN HEAT EXCHANGER INLET								
2CV8153B	1	B	1.000	GL	AO	Passive	C	C	M-138-2	C-2	FC	Q		TP-VA-2
											STC	Q		
											PI	Y2		TP-VA-4
			Valve Name			AOV - EXCESS LETDOWN HEAT EXCHANGER INLET								
2CV8160	2	A	3.000	GL	AO	Active	O	C	M-138-5A	B-8	LTJ	AJ		
											FC	CS	CS-4	TP-VA-2
											STC	CS	CS-4	TP-VA-1
											PI	Y2		TP-VA-4
			Valve Name			LETDOWN HEADER CONTAINMENT ISOLATION VALVE								
2CV8348	2	C	2.000	CK	SA	Passive	SYS	C	M-138-3B	E-2	CCD	CM		
											COD	CM		
			Valve Name			CHECK - RCS LOOP FILL								
2CV8355A	2	B	2.000	GL	MO	Active	O	O/C	M-138-1	B-8	SC	M18		
											SO	M18		
											DIAG	MOV		
											PI	MOV		
			Valve Name			RCP SEAL INJECTION ISOLATION VALVE								
2CV8355B	2	B	2.000	GL	MO	Active	O	O/C	M-138-1	C-4	SC	M18		
											SO	M18		
											DIAG	MOV		
											PI	MOV		
			Valve Name			RCP SEAL INJECTION ISOLATION VALVE								
2CV8355C	2	B	2.000	GL	MO	Active	O	O/C	M-138-2	B-8	SC	M18		
											SO	M18		
											DIAG	MOV		
											PI	MOV		
			Valve Name			RCP SEAL INJECTION ISOLATION VALVE								
2CV8355D	2	B	2.000	GL	MO	Active	O	O/C	M-138-2	B-5	SC	M18		
											SO	M18		
											DIAG	MOV		
											PI	MOV		
			Valve Name			RCP SEAL INJECTION ISOLATION VALVE								
2CV8367A	1	C	2.000	CK	SA	N/A	SYS	O	M-138-1	C-7	BDC	CM		
											CO	OP		
			Valve Name			RCP SEAL INJECTION INLET CHECK VALVE								
2CV8367B	1	C	2.000	CK	SA	N/A	SYS	O	M-138-2	C-3	BDC	CM		
											CO	OP		
			Valve Name			RCP SEAL INJECTION INLETCHECK VALVE								
2CV8367C	1	C	2.000	CK	SA	N/A	SYS	O	M-138-2	C-7	BDC	CM		
											CO	OP		
			Valve Name			RCP SEAL INJECTION INLET CHECK VALVE								

Chemical and Volume Control

Valve EPN	Safety Class	Cat	Size	Vlv Type	Act. Type	Act/ Pass	Norm Pos	Safety Pos	P&ID	P&ID Coor.	Test Type	Test Freq.	Deferred Just.	Tech. Pos.
2CV8367D	1	C	2.000	CK	SA	N/A	SYS	O	M-138-2	C-5	BDC	CM		
											CO	OP		
			Valve Name			RCP SEAL INJECTION INLET CHECK VALVE								
2CV8368A	2	C	2.000	CK	SA	Active	SYS	C	M-138-1	C-7	CCD	CM		
											COD	CM		
			Valve Name			CHECK VALVE - SEAL INJECTION INLET								
2CV8368B	2	C	2.000	CK	SA	Active	SYS	C	M-138-1	C-4	CCD	CM		
											COD	CM		
			Valve Name			CHECK VALVE - SEAL INJECTION INLET								
2CV8368C	2	C	2.000	CK	SA	Active	SYS	C	M-138-2	C-8	CCD	CM		
											COD	CM		
			Valve Name			CHECK VALVE - SEAL INJECTION INLET								
2CV8368D	2	C	2.000	CK	SA	Active	SYS	C	M-138-2	C-5	CCD	CM		
											COD	CM		
			Valve Name			CHECK VALVE - SEAL INJECTION INLET								
2CV8372A	1	C	2.000	CK	SA	N/A	SYS	O	M-138-1	C-6	BDC	CM		
											CO	OP		
			Valve Name			RCP SEAL INJECTION INLET CHECK VALVE								
2CV8372B	1	C	2.000	CK	SA	N/A	SYS	O	M-138-1	C-3	BDC	CM		
											CO	OP		
			Valve Name			RCP SEAL INJECTION INLET CHECK VALVE								
2CV8372C	1	C	2.000	CK	SA	N/A	SYS	O	M-138-2	C-7	BDC	CM		
											CO	OP		
			Valve Name			RCP SEAL INJECTION INLET CHECK VALVE								
2CV8372D	1	C	2.000	CK	SA	N/A	SYS	O	M-138-2	C-5	BDC	CM		
											CO	OP		
			Valve Name			RCP SEAL INJECTION INLET CHECK VALVE								
2CV8440	2	C	4.000	CK	SA	Active	SYS	O/C	M-138-4B	D-5	CCU	CM		
											CO	CM		
			Valve Name			CV VCT CV01T OUTLET CHK VLV								
2CV8480A	2	C	2.000	CK	SA	Active	SYS	O/C	M-138-3A	D-6	CC	Q		
											CO	Q		
			Valve Name			CV PP MINIFLOW CHK VLV								
2CV8480B	2	C	2.000	CK	SA	Active	SYS	O/C	M-138-3A	B-6	CC	Q		
											CO	Q		
			Valve Name			CV PP MINIFLOW CHK VLV								
2CV8481A	2	C	4.000	CK	SA	Active	SYS	O/C	M-138-3A	D-6	CC	Q		
											CO	RR	RJ-5	
			Valve Name			CV PP DSCH CHK VLV								
2CV8481B	2	C	4.000	CK	SA	Active	SYS	O/C	M-138-3A	C-7	CC	Q		
											CO	RR	RJ-5	
			Valve Name			CV PP DSCH CHK VLV								

Chemical and Volume Control

Valve EPN	Safety Class	Cat	Size	Viv Type	Act. Type	Act/ Pass	Norm Pos	Safety Pos	P&ID	P&ID Coor.	Test Type	Test Freq.	Deferred Just.	Tech. Pos.
2CV8546	2	C	8.000	CK	SA	Active	SYS	O/C	M-138-4	A-5	CCU	CM		
											COF	CM		
			Valve Name			RWST TO CHARGING PUMP SUCTION CHECK VALVE								
2CV8804A	2	B	8.000	GA	MO	Active	C	O/C	M-138-4	B-6	SC	M18		
											SO	M18		
											STO	M18		
											DIAG	MOV		
											PI	MOV		
			Valve Name			RHR TO CHARGING PUMP SUCTION ISOLATION VALVE								

Diesel Generator Starting Air

Valve EPN	Safety Class	Cat	Size	Vlv Type	Act. Type	Act/ Pass	Norm Pos	Safety Pos	P&ID	P&ID Coor.	Test Type	Test Freq.	Deferred Just.	Tech. Pos.
1DG5182A	NC	Skid-B	3.00	PLT	AO	Active	C	O	M-152-20	B-5	SO	Q		TP-VA-7
		Valve Name		DIESEL GENERATOR STARTING AIR CONTROL VALVE										
1DG5182B	NC	Skid-B	3.00	PLT	AO	Active	C	O	M-152-20	B-5	SO	Q		TP-VA-7
		Valve Name		DIESEL GENERATOR STARTING AIR CONTROL VALVE										
1DG5183A	NC	Skid-B	3.00	PLT	AO	Active	C	O	M-152-20	E-5	SO	Q		TP-VA-7
		Valve Name		DIESEL GENERATOR STARTING AIR CONTROL VALVE										
1DG5183B	NC	Skid-B	3.00	PLT	AO	Active	C	O	M-152-20	E-5	SO	Q		TP-VA-7
		Valve Name		DIESEL GENERATOR STARTING AIR CONTROL VALVE										
1DG5184A	NC	Skid-C	3.00	CK	SA	Active	C	O	M-152-20	B-6	CCD	CM		
											CO	Q		TP-VA-7
		Valve Name		DIESEL GENERATOR STARTING AIR CHECK VALVE										
1DG5184B	NC	Skid-C	3.00	CK	SA	Active	C	O	M-152-20	B-6	CCD	CM		
											CO	Q		TP-VA-7
		Valve Name		DIESEL GENERATOR STARTING AIR CHECK VALVE										
1DG5185A	NC	Skid-C	3.00	CK	SA	Active	C	O	M-152-20	E-6	CCD	CM		
											CO	Q		TP-VA-7
		Valve Name		DIESEL GENERATOR STARTING AIR CHECK VALVE										
1DG5185B	NC	Skid-C	3.00	CK	SA	Active	C	O	M-152-20	E-6	CCD	CM		
											CO	Q		TP-VA-7
		Valve Name		DIESEL GENERATOR STARTING AIR CHECK VALVE										
1DG5205A	NC	Skid-C		CK	SA	Active	C	O/C	M-152-20	C-5	CC	Q		TP-VA-7
											CO	Q		TP-VA-7
		Valve Name		DG AIR START CNTRL VLV SHUTTLE VALVE										
1DG5205B	NC	Skid-C		CK	SA	Active	C	O/C	M-152-20	C-5	CC	Q		TP-VA-7
											CO	Q		TP-VA-7
		Valve Name		DG AIR START CNTRL VLV SHUTTLE VALVE										
1DG5206A	NC	Skid-C		CK	SA	Active	C	O/C	M-152-20	D-6	CC	Q		TP-VA-7
											CO	Q		TP-VA-7
		Valve Name		DG AIR START CNTRL VLV SHUTTLE VALVE										
1DG5206B	NC	Skid-C		CK	SA	Active	C	O/C	M-152-20	D-6	CC	Q		TP-VA-7
											CO	Q		TP-VA-7
		Valve Name		DG AIR START CNTRL VLV SHUTTLE VALVE										
1DG5207A	NC	Skid-B		GA	SO	Active	C	O	M-152-20	C-6	SO	Q		TP-VA-7
		Valve Name		DIESEL GENERATOR AIR START SOLENOID VALVE										
1DG5207B	NC	Skid-B		GA	SO	Active	C	O	M-152-20	C-6	SO	Q		TP-VA-7
		Valve Name		DIESEL GENERATOR AIR START SOLENOID VALVE										
1DG5208A	NC	Skid-B		GA	SO	Active	C	O	M-152-20	D-6	SO	Q		TP-VA-7
		Valve Name		DIESEL GENERATOR AIR START SOLENOID VALVE										
1DG5208B	NC	Skid-B		GA	SO	Active	C	O	M-152-20	D-6	SO	Q		TP-VA-7
		Valve Name		DIESEL GENERATOR AIR START SOLENOID VALVE										
1DG5209A	NC	Skid-B		GA	SO	Active	C	O	M-152-20	C-5	SO	Q		TP-VA-7
		Valve Name		DIESEL GENERATOR AIR START SOLENOID VALVE										

Diesel Generator Starting Air

Valve EPN	Safety Class	Cat	Size	Vlv Type	Act. Type	Act/ Pass	Norm Pos	Safety Pos	P&ID	P&ID Coor.	Test Type	Test Freq.	Deferred Just.	Tech. Pos.
1DG5209B	NC	Skid-B		GA	SO	Active	C	O	M-152-20	C-5	SO	Q		TP-VA-7
			Valve Name			DIESEL GENERATOR AIR START SOLENOID VALVE								
1DG5210A	NC	Skid-B		GA	SO	Active	C	O	M-152-20	D-5	SO	Q		TP-VA-7
			Valve Name			DIESEL GENERATOR AIR START SOLENOID VALVE								
1DG5210B	NC	Skid-B		GA	SO	Active	C	O	M-152-20	D-5	SO	Q		TP-VA-7
			Valve Name			DIESEL GENERATOR AIR START SOLENOID VALVE								
1SA148A	3	C	0.75	RV	SA	Passive	C	O/C	M-54-4A	F-6	RT	Y10		
			Valve Name			DG STARTING AIR RECEIVER RELIEF VALVE								
1SA148B	3	C	0.75	RV	SA	Passive	C	O/C	M-54-4A	D-6	RT	Y10		
			Valve Name			DG STARTING AIR RECEIVER RELIEF VALVE								
1SA148C	3	C	0.75	RV	SA	Passive	C	O/C	M-54-4A	F-3	RT	Y10		
			Valve Name			DG STARTING AIR RECEIVER RELIEF VALVE								
1SA148D	3	C	0.75	RV	SA	Passive	C	O/C	M-54-4A	D-3	RT	Y10		
			Valve Name			DG STARTING AIR RECEIVER RELIEF VALVE								
1SA181A	3	C	1.000	CK	SA	Active	SYS	C	M-54-4A	E-7	CCD	CM		
											COD	CM		
			Valve Name			DG AIR RECEIVER TANK INLET CHECK VALVE								
1SA181B	3	C	1.000	CK	SA	Active	SYS	C	M-54-4A	B-7	CCD	CM		
											COD	CM		
			Valve Name			DG AIR RECEIVER TANK INLET CHECK VALVE								
1SA181C	3	C	1.000	CK	SA	Active	SYS	C	M-54-4A	E-2	CCD	CM		
											COD	CM		
			Valve Name			DG AIR RECEIVER TANK INLET CHECK VALVE								
1SA181D	3	C	1.000	CK	SA	Active	SYS	C	M-54-4A	B-2	CCD	CM		
											COD	CM		
			Valve Name			DG AIR RECEIVER TANK INLET CHECK VALVE								
2DG5182A	NC	Skid-B	3.00	PLT	AO	Active	C	O	M-152-20	B-5	SO	Q		TP-VA-7
			Valve Name			DIESEL GENERATOR STARTING AIR CONTROL VALVE								
2DG5182B	NC	Skid-B	3.00	PLT	AO	Active	C	O	M-152-20	B-5	SO	Q		TP-VA-7
			Valve Name			DIESEL GENERATOR STARTING AIR CONTROL VALVE								
2DG5183A	NC	Skid-B	3.00	PLT	AO	Active	C	O	M-152-20	E-5	SO	Q		TP-VA-7
			Valve Name			DIESEL GENERATOR STARTING AIR CONTROL VALVE								
2DG5183B	NC	Skid-B	3.00	PLT	AO	Active	C	O	M-152-20	E-5	SO	Q		TP-VA-7
			Valve Name			DIESEL GENERATOR STARTING AIR CONTROL VALVE								
2DG5184A	NC	Skid-C	3.00	CK	SA	Active	C	O	M-152-20	B-6	CCD	CM		
											CO	Q		TP-VA-7
			Valve Name			DIESEL GENERATOR STARTING AIR CHECK VALVE								
2DG5184B	NC	Skid-C	3.00	CK	SA	Active	C	O	M-152-20	B-6	CCD	CM		
											CO	Q		TP-VA-7
			Valve Name			DIESEL GENERATOR STARTING AIR CHECK VALVE								

Diesel Generator Starting Air

Valve EPN	Safety Class	Cat	Size	Vlv Type	Act. Type	Act/ Pass	Norm Pos	Safety Pos	P&ID	P&ID Coor.	Test Type	Test Freq.	Deferred Just.	Tech. Pos.
2DG5185A	NC	Skid-C	3.00	CK	SA	Active	C	O	M-152-20	E-6	CCD	CM		
											CO	Q		TP-VA-7
		Valve Name		DIESEL GENERATOR STARTING AIR CHECK VALVE										
2DG5185B	NC	Skid-C	3.00	CK	SA	Active	C	O	M-152-20	E-6	CCD	CM		
											CO	Q		TP-VA-7
		Valve Name		DIESEL GENERATOR STARTING AIR CHECK VALVE										
2DG5205A	NC	Skid-C		CK	SA	Active	C	O/C	M-152-20	C-5	CC	Q		TP-VA-7
											CO	Q		TP-VA-7
		Valve Name		DG AIR START CNTRL VLV SHUTTLE VALVE										
2DG5205B	NC	Skid-C		CK	SA	Active	C	O/C	M-152-20	C-5	CC	Q		TP-VA-7
											CO	Q		TP-VA-7
		Valve Name		DG AIR START CNTRL VLV SHUTTLE VALVE										
2DG5206A	NC	Skid-C		CK	SA	Active	C	O/C	M-152-20	D-6	CC	Q		TP-VA-7
											CO	Q		TP-VA-7
		Valve Name		DG AIR START CNTRL VLV SHUTTLE VALVE										
2DG5206B	NC	Skid-C		CK	SA	Active	C	O/C	M-152-20	D-6	CC	Q		TP-VA-7
											CO	Q		TP-VA-7
		Valve Name		DG AIR START CNTRL VLV SHUTTLE VALVE										
2DG5207A	NC	Skid-B		GA	SO	Active	C	O	M-152-20	C-6	SO	Q		TP-VA-7
		Valve Name		DIESEL GENERATOR AIR START SOLENOID VALVE										
2DG5207B	NC	Skid-B		GA	SO	Active	C	O	M-152-20	C-6	SO	Q		TP-VA-7
		Valve Name		DIESEL GENERATOR AIR START SOLENOID VALVE										
2DG5208A	NC	Skid-B		GA	SO	Active	C	O	M-152-20	D-6	SO	Q		TP-VA-7
		Valve Name		DIESEL GENERATOR AIR START SOLENOID VALVE										
2DG5208B	NC	Skid-B		GA	SO	Active	C	O	M-152-20	D-6	SO	Q		TP-VA-7
		Valve Name		DIESEL GENERATOR AIR START SOLENOID VALVE										
2DG5209A	NC	Skid-B		GA	SO	Active	C	O	M-152-20	C-5	SO	Q		TP-VA-7
		Valve Name		DIESEL GENERATOR AIR START SOLENOID VALVE										
2DG5209B	NC	Skid-B		GA	SO	Active	C	O	M-152-20	C-5	SO	Q		TP-VA-7
		Valve Name		DIESEL GENERATOR AIR START SOLENOID VALVE										
2DG5210A	NC	Skid-B		GA	SO	Active	C	O	M-152-20	D-5	SO	Q		TP-VA-7
		Valve Name		DIESEL GENERATOR AIR START SOLENOID VALVE										
2DG5210B	NC	Skid-B		GA	SO	Active	C	O	M-152-20	D-5	SO	Q		TP-VA-7
		Valve Name		DIESEL GENERATOR AIR START SOLENOID VALVE										
2SA148A	3	C	0.75	RV	SA	Passive	C	O/C	M-54-4B	F-6	RT	Y10		
		Valve Name		DG STARTING AIR RECEIVER RELIEF VALVE										
2SA148B	3	C	0.75	RV	SA	Passive	C	O/C	M-54-4B	D-6	RT	Y10		
		Valve Name		DG STARTING AIR RECEIVER RELIEF VALVE										
2SA148C	3	C	0.75	RV	SA	Passive	C	O/C	M-54-4B	F-3	RT	Y10		
		Valve Name		DG STARTING AIR RECEIVER RELIEF VALVE										
2SA148D	3	C	0.75	RV	SA	Passive	C	O/C	M-54-4B	D-3	RT	Y10		
		Valve Name		DG STARTING AIR RECEIVER RELIEF VALVE										

Diesel Generator Starting Air

Valve EPN	Safety Class	Cat	Size	Vlv Type	Act. Type	Act/ Pass	Norm Pos	Safety Pos	P&ID	P&ID Coor.	Test Type	Test Freq.	Deferred Just.	Tech. Pos.
2SA181A	3	C	1.000	CK	SA	Active	SYS	C	M-54-4B	E-7	CCD	CM		
											COD	CM		
			Valve Name			DG AIR RECEIVER TANK INLET CHECK VALVE								
2SA181B	3	C	1.000	CK	SA	Active	SYS	C	M-54-4B	B-7	CCD	CM		
											COD	CM		
			Valve Name			DG AIR RECEIVER TANK INLET CHECK VALVE								
2SA181C	3	C	1.000	CK	SA	Active	SYS	C	M-54-4B	E-2	CCD	CM		
											COD	CM		
			Valve Name			DG AIR RECEIVER TANK INLET CHECK VALVE								
2SA181D	3	C	1.000	CK	SA	Active	SYS	C	M-54-4B	B-2	CCD	CM		
											COD	CM		
			Valve Name			DG AIR RECEIVER TANK INLET CHECK VALVE								

Diesel Fuel Oil

Valve EPN	Safety Class	Cat	Size	Vlv Type	Act. Type	Act/ Pass	Norm Pos	Safety Pos	P&ID	P&ID Coor.	Test Type	Test Freq.	Deferred Just.	Tech. Pos.
1DO003A	3	C	1.5	CK	SA	Active	SYS	O/C	M-50-1B	F-2	CC	Q		
											CO	Q		
			Valve Name			DO TRANSFER PUMP DISCHARGE CHECK VALVE								
1DO003B	3	C	1.5	CK	SA	Active	SYS	O/C	M-50-1A	E-2	CC	Q		
											CO	Q		
			Valve Name			DO TRANSFER PUMP DISCHARGE CHECK VALVE								
1DO003C	3	C	1.5	CK	SA	Active	SYS	O/C	M-50-1B	E-2	CC	Q		
											CO	Q		
			Valve Name			DO TRANSFER PUMP DISCHARGE CHECK VALVE								
1DO003D	3	C	1.5	CK	SA	Active	SYS	O/C	M-50-1A	E-2	CC	Q		
											CO	Q		
			Valve Name			DO TRANSFER PUMP DISCHARGE CHECK VALVE								
1DO020A	3	C	1.5x2.5	RV	SA	Passive	C	O/C	M-50-1B	E-2	RT	Y10		
			Valve Name			DO TRANSFER PUMP DISCHARGE RELIEF VALVE								
1DO020B	3	C	1.5x2.5	RV	SA	Passive	C	O/C	M-50-1A	E-3	RT	Y10		
			Valve Name			DO TRANSFER PUMP DISCHARGE RELIEF VALVE								
1DO020C	3	C	1.5x2.5	RV	SA	Passive	C	O/C	M-50-1B	E-2	RT	Y10		
			Valve Name			DO TRANSFER PUMP DISCHARGE RELIEF VALVE								
1DO020D	3	C	1.5x2.5	RV	SA	Passive	C	O/C	M-50-1A	D-3	RT	Y10		
			Valve Name			DO TRANSFER PUMP DISCHARGE RELIEF VALVE								
2DO003A	3	C	1.5	CK	SA	Active	SYS	O/C	M-130-1A	C-3	CC	Q		
											CO	Q		
			Valve Name			DO TRANSFER PUMP DISCHARGE CHECK VALVE								
2DO003B	3	C	1.5	CK	SA	Active	SYS	O/C	M-130-1B	C-3	CC	Q		
											CO	Q		
			Valve Name			DO TRANSFER PUMP DISCHARGE CHECK VALVE								
2DO003C	3	C	1.5	CK	SA	Active	SYS	O/C	M-130-1A	C-2	CC	Q		
											CO	Q		
			Valve Name			DO TRANSFER PUMP DISCHARGE CHECK VALVE								
2DO003D	3	C	1.5	CK	SA	Active	SYS	O/C	M-130-1B	C-3	CC	Q		
											CO	Q		
			Valve Name			DO TRANSFER PUMP DISCHARGE CHECK VALVE								
2DO020A	3	C	1.5x2.5	RV	SA	Passive	C	O/C	M-130-1A	C-4	RT	Y10		
			Valve Name			DO TRANSFER PUMP DISCHARGE RELIEF VALVE								
2DO020B	3	C	1.5x2.5	RV	SA	Passive	C	O/C	M-130-1B	C-3	RT	Y10		
			Valve Name			DO TRANSFER PUMP DISCHARGE RELIEF VALVE								
2DO020C	3	C	1.5x2.5	RV	SA	Passive	C	O/C	M-130-1A	C-4	RT	Y10		
			Valve Name			DO TRANSFER PUMP DISCHARGE RELIEF VALVE								
2DO020D	3	C	1.5x2.5	RV	SA	Passive	C	O/C	M-130-1B	C-3	RT	Y10		
			Valve Name			DO TRANSFER PUMP DISCHARGE RELIEF VALVE								

Fuel Pool Cooling

Valve EPN	Safety Class	Cat	Size	Vlv Type	Act. Type	Act/ Pass	Norm Pos	Safety Pos	P&ID	P&ID Coor.	Test Type	Test Freq.	Deferred Just.	Tech. Pos.
1FC009	2	A	4	PLG	M	Passive	LC	C	M-63-1A	C-7	LTJ	AJ		
			Valve Name			REFUELING CAVITY TO PURIFIC PUMPS SUCTION ISOL VLV								
1FC010	2	A	4	BAL	M	Passive	LC	C	M-63-1A	C-6	LTJ	AJ		
			Valve Name			REFUELING CAVITY TO PURIFIC PUMPS SUCTION ISOL VLV								
1FC011	2	A	3	BAL	M	Passive	LC	C	M-63-1C	B-6	LTJ	AJ		
			Valve Name			SPENT FUEL PIT DEMIN TO REFUEL CAVITY MAN ISOL VLV								
1FC012	2	A	3	BAL	M	Passive	LC	C	M-63-1C	B-8	LTJ	AJ		
			Valve Name			SPENT FUEL PIT DEMIN TO REFUEL CAVITY MAN ISOL VLV								
2FC009	2	A	4	PLG	M	Passive	LC	C	M-63-1A	B-7	LTJ	AJ		
			Valve Name			REFUELING CAVITY TO PURIFIC PUMPS SUCTION ISOL VLV								
2FC010	2	A	4	BAL	M	Passive	LC	C	M-63-1A	B-6	LTJ	AJ		
			Valve Name			REFUELING CAVITY TO PURIFIC PUMPS SUCTION ISOL VLV								
2FC011	2	A	3	BAL	M	Passive	LC	C	M-63-1B	B-2	LTJ	AJ		
			Valve Name			SPENT FUEL PIT DEMIN TO REFUEL CAVITY MAN ISOL VLV								
2FC012	2	A	3	BAL	M	Passive	LC	C	M-63-1B	B-1	LTJ	AJ		
			Valve Name			SPENT FUEL PIT DEMIN TO REFUEL CAVITY MAN ISOL VLV								

Fire Protection

Valve EPN	Safety Class	Cat	Size	Vlv Type	Act. Type	Act/ Pass	Norm Pos	Safety Pos	P&ID	P&ID Coor.	Test Type	Test Freq.	Deferred Just.	Tech. Pos.
1FP010	2	B	4	GL	AO	Active	O	C	M-52-1	E6	FC	Q		TP-VA-2
											STC	Q		
											PI	Y2		TP-VA-4
			Valve Name			FIRE PROTECTION OUTBOARD CONTAINMENT ISOLATION VLV								
1FP345	2	C	6	CK	SA	Passive	C	C	M-52-1	E7	CCU	CM		
											CO	CM		TP-VA-8
			Valve Name			FIRE PROTECTION INBOARD CONTAINMENT ISOLATION VLV								
1FP450	3	C	0.75x1.0	RV	SA	Active	C	O/C	M-52-1	E-7	RT	Y10		
			Valve Name			FIRE PROTECTION RELIEF VALVE								
2FP010	2	B	4	GL	AO	Active	O	C	M-52-1	E3	FC	Q		TP-VA-2
											STC	Q		
											PI	Y2		TP-VA-4
			Valve Name			FIRE PROTECTION OUTBOARD CONTAINMENT ISOLATION VLV								
2FP345	2	C	6	CK	SA	Passive	C	C	M-52-1	E2	CCU	CM		
											CO	CM		TP-VA-8
			Valve Name			FIRE PROTECTION INBOARD CONTAINMENT ISOLATION VLV								
2FP450	3	C	0.75x1.0	RV	SA	Active	C	O/C	M-52-1	E2	RT	Y10		
			Valve Name			FIRE PROTECTION RELIEF VALVE								

Main Feedwater

Valve EPN	Safety Class	Cat	Size	Vlv Type	Act. Type	Act/ Pass	Norm Pos	Safety Pos	P&ID	P&ID Coor.	Test Type	Test Freq.	Deferred Just.	Tech. Pos.
1FW009A	2	B	16	GA	HO	Active	O	C	M-36-1C	C-5	STC	CS	CS-3	TP-VA-1
											PI	Y2		TP-VA-4
			Valve Name			HOV S/G FW ISOL VLV								
1FW009B	2	B	16	GA	HO	Active	O	C	M-36-1A	C-5	STC	CS	CS-3	TP-VA-1
											PI	Y2		TP-VA-4
			Valve Name			HOV S/G FW ISOL VLV								
1FW009C	2	B	16	GA	HO	Active	O	C	M-36-1D	C-5	STC	CS	CS-3	TP-VA-1
											PI	Y2		TP-VA-4
			Valve Name			HOV S/G FW ISOL VLV								
1FW009D	2	B	16	GA	HO	Active	O	C	M-36-1B	C-5	STC	CS	CS-3	TP-VA-1
											PI	Y2		TP-VA-4
			Valve Name			HOV S/G FW ISOL VLV								
1FW034A	NC	B	2	GL	AO	Passive	O	C	M-36-1C	E-2	FC	RR	RJ-8	
			Valve Name			S/G FEEDWATER TEMPERING FLOW CONTROL VALVE								
1FW034B	NC	B	2	GL	AO	Passive	O	C	M-36-1A	E-2	FC	RR	RJ-8	
			Valve Name			S/G FEEDWATER TEMPERING FLOW CONTROL VALVE								
1FW034C	NC	B	2	GL	AO	Passive	O	C	M-36-1D	E-2	FC	RR	RJ-8	
			Valve Name			S/G FEEDWATER TEMPERING FLOW CONTROL VALVE								
1FW034D	NC	B	2	GL	AO	Passive	O	C	M-36-1B	E-2	FC	RR	RJ-8	
			Valve Name			S/G FEEDWATER TEMPERING FLOW CONTROL VALVE								
1FW035A	2	B	3	GL	AO	Active	O	C	M-36-1C	E-3	FC	Q		TP-VA-2
											STC	Q		TP-VA-1
											PI	Y2		TP-VA-4
			Valve Name			S/G FEEDWATER TEMPERING ISOLATION VALVE								
1FW035B	2	B	3	GL	AO	Active	O	C	M-36-1A	E-3	FC	Q		TP-VA-2
											STC	Q		TP-VA-1
											PI	Y2		TP-VA-4
			Valve Name			S/G FEEDWATER TEMPERING ISOLATION VALVE								
1FW035C	2	B	3	GL	AO	Active	O	C	M-36-1D	E-3	FC	Q		TP-VA-2
											STC	Q		TP-VA-1
											PI	Y2		TP-VA-4
			Valve Name			S/G FEEDWATER TEMPERING ISOLATION VALVE								
1FW035D	2	B	3	GL	AO	Active	O	C	M-36-1B	E-3	FC	Q		TP-VA-2
											STC	Q		TP-VA-1
											PI	Y2		TP-VA-4
			Valve Name			S/G FEEDWATER TEMPERING ISOLATION VALVE								
1FW036A	2	C	3	CK	SA	Passive	SYS	C	M-36-1C	E-3	CCU	CM		
											CO	CM		TP-VA-8
			Valve Name			FEEDWATER TEMPERING LINE CHECK VALVE								
1FW036B	2	C	3	CK	SA	Passive	SYS	C	M-36-1A	E-3	CCU	CM		
											CO	CM		TP-VA-8
			Valve Name			FEEDWATER TEMPERING LINE CHECK VALVE								

Main Feedwater

Valve EPN	Safety Class	Cat	Size	Vlv Type	Act. Type	Act/ Pass	Norm Pos	Safety Pos	P&ID	P&ID Coor.	Test Type	Test Freq.	Deferred Just.	Tech. Pos.
1FW036C	2	C	3	CK	SA	Passive	SYS	C	M-36-1D	E-3	CCU	CM		
											CO	CM		TP-VA-8
			Valve Name			FEEDWATER TEMPERING LINE CHECK VALVE								
1FW036D	2	C	3	CK	SA	Passive	SYS	C	M-36-1B	E-3	CCU	CM		
											CO	CM		TP-VA-8
			Valve Name			FEEDWATER TEMPERING LINE CHECK VALVE								
1FW039A	2	B	6	GA	AO	Active	C	C	M-36-1C	C-4	FC	Q		TP-VA-2
											STC	Q		TP-VA-1
											PI	Y2		TP-VA-4
			Valve Name			S/G LOW FLOW FEEDWATER ISOLATION VALVE								
1FW039B	2	B	6	GA	AO	Active	C	C	M-36-1A	C-4	FC	Q		TP-VA-2
											STC	Q		TP-VA-1
											PI	Y2		TP-VA-4
			Valve Name			S/G LOW FLOW FEEDWATER ISOLATION VALVE								
1FW039C	2	B	6	GA	AO	Active	C	C	M-36-1D	C-4	FC	Q		TP-VA-2
											STC	Q		TP-VA-1
											PI	Y2		TP-VA-4
			Valve Name			S/G LOW FLOW FEEDWATER ISOLATION VALVE								
1FW039D	2	B	6	GA	AO	Active	C	C	M-36-1B	C-4	FC	Q		TP-VA-2
											STC	Q		TP-VA-1
											PI	Y2		TP-VA-4
			Valve Name			S/G LOW FLOW FEEDWATER ISOLATION VALVE								
1FW079A	2	B	16	CK	SA	Active	SYS	C	M-36-1C	C-4	CCD	CM		
											COD	CM		
			Valve Name			FEEDWATER ISOLATION CHECK VALVE								
1FW079B	2	B	16	CK	SA	Active	SYS	C	M-36-1A	C-4	CCD	CM		
											COD	CM		
			Valve Name			FEEDWATER ISOLATION CHECK VALVE								
1FW079C	2	B	16	CK	SA	Active	SYS	C	M-36-1D	C-4	CCD	CM		
											COD	CM		
			Valve Name			FEEDWATER ISOLATION CHECK VALVE								
1FW079D	2	B	16	CK	SA	Active	SYS	C	M-36-1B	C-3	CCD	CM		
											COD	CM		
			Valve Name			FEEDWATER ISOLATION CHECK VALVE								
1FW510	NC	B	16	ANG	AO	Passive	O	C	M-36-1C	D-2	FC	RR	RJ-8	
			Valve Name			FEEDWATER REGULATING VALVE								
1FW510A	NC	B	4	GA	AO	Passive	C	C	M-36-1C	C-2	FC	RR	RJ-8	
			Valve Name			FEEDWATER REGULATING BYPASS VALVE								
1FW520	NC	B	16	ANG	AO	Passive	O	C	M-36-1A	D-2	FC	RR	RJ-8	
			Valve Name			FEEDWATER REGULATING VALVE								
1FW520A	NC	B	4	GA	AO	Passive	C	C	M-36-1A	C-2	FC	RR	RJ-8	
			Valve Name			FEEDWATER REGULATING BYPASS VALVE								

Main Feedwater

Valve EPN	Safety Class	Cat	Size	Vlv Type	Act. Type	Act/ Pass	Norm Pos	Safety Pos	P&ID	P&ID Coor.	Test Type	Test Freq.	Deferred Just.	Tech. Pos.
1FW530	NC	B	16	ANG	AO	Passive	O	C	M-36-1D	D-2	FC	RR	RJ-8	
			Valve Name			FEEDWATER REGULATING VALVE								
1FW530A	NC	B	4	GA	AO	Passive	C	C	M-36-1D	C-2	FC	RR	RJ-8	
			Valve Name			FEEDWATER REGULATING BYPASS VALVE								
1FW540	NC	B	16	ANG	AO	Passive	O	C	M-36-1B	D-2	FC	RR	RJ-8	
			Valve Name			FEEDWATER REGULATING VALVE								
1FW540A	NC	B	4	GA	AO	Passive	C	C	M-36-1B	C-2	FC	RR	RJ-8	
			Valve Name			FEEDWATER REGULATING BYPASS VALVE								
2FW009A	2	B	16	GA	HO	Active	O	C	M-121-1B	C-5	STC	CS	CS-3	TP-VA-1
											PI	Y2		TP-VA-4
			Valve Name			HOV S/G FW ISOL VLV								
2FW009B	2	B	16	GA	HO	Active	O	C	M-121-1D	C-5	STC	CS	CS-3	TP-VA-1
											PI	Y2		TP-VA-4
			Valve Name			HOV S/G FW ISOL VLV								
2FW009C	2	B	16	GA	HO	Active	O	C	M-121-1A	C-5	STC	CS	CS-3	TP-VA-1
											PI	Y2		TP-VA-4
			Valve Name			HOV S/G FW ISOL VLV								
2FW009D	2	B	16	GA	HO	Active	O	C	M-121-1C	C-5	STC	CS	CS-3	TP-VA-1
											PI	Y2		TP-VA-4
			Valve Name			HOV S/G FW ISOL VLV								
2FW034A	NC	B	2	GL	AO	Passive	O	C	M-121-1B	E-2	FC	RR	RJ-8	
			Valve Name			S/G FEEDWATER TEMPERING FLOW CONTROL VALVE								
2FW034B	NC	B	2	GL	AO	Passive	O	C	M-121-1D	E-2	FC	RR	RJ-8	
			Valve Name			S/G FEEDWATER TEMPERING FLOW CONTROL VALVE								
2FW034C	NC	B	2	GL	AO	Passive	O	C	M-121-1A	E-2	FC	RR	RJ-8	
			Valve Name			S/G FEEDWATER TEMPERING FLOW CONTROL VALVE								
2FW034D	NC	B	2	GL	AO	Passive	O	C	M-121-1C	E-2	FC	RR	RJ-8	
			Valve Name			S/G FEEDWATER TEMPERING FLOW CONTROL VALVE								
2FW035A	2	B	3	GL	AO	Active	O	C	M-121-1B	E-3	FC	Q		TP-VA-2
											STC	Q		TP-VA-1
											STC-A	SK		
											STC-B	SK		
											PI	Y2		TP-VA-4
			Valve Name			S/G FEEDWATER TEMPERING ISOLATION VALVE								
2FW035B	2	B	3	GL	AO	Active	O	C	M-121-1D	E-3	FC	Q		TP-VA-2
											STC	Q		TP-VA-1
											PI	Y2		TP-VA-4
			Valve Name			S/G FEEDWATER TEMPERING ISOLATION VALVE								
2FW035C	2	B	3	GL	AO	Active	O	C	M-121-1A	E-3	FC	Q		TP-VA-2
											STC	Q		TP-VA-1
											PI	Y2		TP-VA-4
			Valve Name			S/G FEEDWATER TEMPERING ISOLATION VALVE								

Main Feedwater

Valve EPN	Safety Class	Cat	Size	Vlv Type	Act. Type	Act/ Pass	Norm Pos	Safety Pos	P&ID	P&ID Coor.	Test Type	Test Freq.	Deferred Just.	Tech. Pos.
2FW036A	2	C	3	CK	SA	Passive	SYS	C	M-121-1B	E-3	CCU	CM		
											CO	CM		TP-VA-8
			Valve Name			FEEDWATER TEMPERING LINE CHECK VALVE								
2FW036B	2	C	3	CK	SA	Passive	SYS	C	M-121-1D	E-3	CCU	CM		
											CO	CM		TP-VA-8
			Valve Name			FEEDWATER TEMPERING LINE CHECK VALVE								
2FW036C	2	C	3	CK	SA	Passive	SYS	C	M-121-1A	E-3	CCU	CM		
											CO	CM		TP-VA-8
			Valve Name			FEEDWATER TEMPERING LINE CHECK VALVE								
2FW036D	2	C	3	CK	SA	Passive	SYS	C	M-121-1C	E-3	CCU	CM		
											CO	CM		TP-VA-8
			Valve Name			FEEDWATER TEMPERING LINE CHECK VALVE								
2FW039A	2	B	6	GA	AO	Active	O	C	M-121-1B	C-4	FC	CS	CS-9	TP-VA-2
											STC	CS	CS-9	TP-VA-1
											PI	Y2		TP-VA-4
			Valve Name			S/G PREHEATER BYPASS ISOLATION VALVE								
2FW039B	2	B	6	GA	AO	Active	O	C	M-121-1D	C-4	FC	CS	CS-9	TP-VA-2
											STC	CS	CS-9	TP-VA-1
											PI	Y2		TP-VA-4
			Valve Name			S/G PREHEATER BYPASS ISOLATION VALVE								
2FW039C	2	B	6	GA	AO	Active	O	C	M-121-1A	C-4	FC	CS	CS-9	TP-VA-2
											STC	CS	CS-9	TP-VA-1
											PI	Y2		TP-VA-4
			Valve Name			S/G PREHEATER BYPASS ISOLATION VALVE								
2FW039D	2	B	6	GA	AO	Active	O	C	M-121-1C	C-4	FC	CS	CS-9	TP-VA-2
											STC	CS	CS-9	TP-VA-1
											PI	Y2		TP-VA-4
			Valve Name			S/G PREHEATER BYPASS ISOLATION VALVE								
2FW043A	2	B	3	GL	AO	Active	C	C	M-121-1B	B-5	FC	Q		TP-VA-2
											STC	Q		TP-VA-1
											PI	Y2		TP-VA-4
			Valve Name			FEEDWATER ISOLATION VALVE BYPASS VALVE								
2FW043B	2	B	3	GL	AO	Active	C	C	M-121-1D	B-5	FC	Q		TP-VA-2
											STC	Q		TP-VA-1
											PI	Y2		TP-VA-4
			Valve Name			FEEDWATER ISOLATION VALVE BYPASS VALVE								
2FW043C	2	B	3	GL	AO	Active	C	C	M-121-1A	B-5	FC	Q		TP-VA-2
											STC	Q		TP-VA-1
											PI	Y2		TP-VA-4
			Valve Name			FEEDWATER ISOLATION VALVE BYPASS VALVE								
2FW043D	2	B	3	GL	AO	Active	C	C	M-121-1C	B-5	FC	Q		TP-VA-2
											STC	Q		TP-VA-1
											PI	Y2		TP-VA-4
			Valve Name			FEEDWATER ISOLATION VALVE BYPASS VALVE								

Main Feedwater

Valve EPN	Safety Class	Cat	Size	Vlv Type	Act. Type	Act/ Pass	Norm Pos	Safety Pos	P&ID	P&ID Coor.	Test Type	Test Freq.	Deferred Just.	Tech. Pos.
2FW079A	2	B	16	CK	SA	Active	SYS	C	M-121-1B	C-4	CCD	CM		
											COD	CM		
			Valve Name			FEEDWATER ISOLATION CHECK VALVE								
2FW079B	2	B	16	CK	SA	Active	SYS	C	M-121-1D	C-4	CCD	CM		
											COD	CM		
			Valve Name			FEEDWATER ISOLATION CHECK VALVE								
2FW079C	2	B	16	CK	SA	Active	SYS	C	M-121-1A	C-4	CCD	CM		
											COD	CM		
			Valve Name			FEEDWATER ISOLATION CHECK VALVE								
2FW079D	2	B	16	CK	SA	Active	SYS	C	M-121-1C	C-4	CCD	CM		
											COD	CM		
			Valve Name			FEEDWATER ISOLATION CHECK VALVE								
2FW510	NC	B	16	ANG	AO	Passive	O	C	M-121-1B	D-2	FC	RR	RJ-8	
			Valve Name			FEEDWATER REGULATING VALVE								
2FW510A	NC	B	4	GA	AO	Passive	C	C	M-121-1B	C-2	FC	RR	RJ-8	
			Valve Name			FEEDWATER REGULATING BYPASS VALVE								
2FW520	NC	B	16	ANG	AO	Passive	O	C	M-121-1D	D-2	FC	RR	RJ-8	
			Valve Name			FEEDWATER REGULATING VALVE								
2FW520A	NC	B	4	GA	AO	Passive	C	C	M-121-1D	C-2	FC	RR	RJ-8	
			Valve Name			FEEDWATER REGULATING BYPASS VALVE								
2FW530	NC	B	16	ANG	AO	Passive	O	C	M-121-1A	D-2	FC	RR	RJ-8	
			Valve Name			FEEDWATER REGULATING VALVE								
2FW530A	NC	B	4	GA	AO	Passive	C	C	M-121-1A	C-2	FC	RR	RJ-8	
			Valve Name			FEEDWATER REGULATING BYPASS VALVE								
2FW540	NC	B	16	ANG	AO	Passive	O	C	M-121-1C	D-2	FC	RR	RJ-8	
			Valve Name			FEEDWATER REGULATING VALVE								
2FW540A	NC	B	4	GA	AO	Passive	C	C	M-121-1C	C-2	FC	RR	RJ-8	
			Valve Name			FEEDWATER REGULATING BYPASS VALVE								

Radioactive Waste Gas

Valve EPN	Safety Class	Cat	Size	Vlv Type	Act. Type	Act/ Pass	Norm Pos	Safety Pos	P&ID	P&ID Coor.	Test Type	Test Freq.	Deferred Just.	Tech. Pos.
0GW1036B	3	B	0.75	DIA	AO	Passive	C	C	M-69-1	C-7	PI	Y2		
			Valve Name			0A GAS DECAY TK TO AUTO GAS ANAL ISOL ASMBLY								
0GW1037B	3	B	0.75	DIA	AO	Passive	C	C	M-69-1	C-6	PI	Y2		
			Valve Name			0B GAS DECAY TK TO AUTO GAS ANAL ISOL ASMBLY								
0GW1038B	3	B	0.75	DIA	AO	Passive	C	C	M-69-1	C-5	PI	Y2		
			Valve Name			0C GAS DECAY TK AUTO GAS ANAL ISOL ASMBLY								
0GW1039B	3	B	0.75	DIA	AO	Passive	C	C	M-69-1	C-4	PI	Y2		
			Valve Name			SOL OD GAS DECAY TK AUTO GAS ANAL IS ASMBLY								
0GW1052B	3	B	0.75	DIA	AO	Passive	C	C	M-69-1	C-3	PI	Y2		
			Valve Name			0E GAS DECAY TK TO AUTO GAS ANAL ISOL ASMBLY								
0GW1053B	3	B	0.75	DIA	AO	Passive	C	C	M-69-1	C-1	PI	Y2		
			Valve Name			0F GAS DECAY TK TO AUTO GAS ANAL ISOL ASMBLY								
0GW9300A	3	C	1.0x2.0	RV	SA	Passive	C	O/C	M-69-1	D-8	RT	Y10		
			Valve Name			WASTE GAS DECAY TANK RELIEF VALVE								
0GW9300B	3	C	1.0x2.0	RV	SA	Passive	C	O/C	M-69-1	D-7	RT	Y10		
			Valve Name			WASTE GAS DECAY TANK RELIEF VALVE								
0GW9300C	3	C	1.0x2.0	RV	SA	Passive	C	O/C	M-69-1	D-6	RT	Y10		
			Valve Name			WASTE GAS DECAY TANK RELIEF VALVE								
0GW9300D	3	C	1.0x2.0	RV	SA	Passive	C	O/C	M-69-1	D-5	RT	Y10		
			Valve Name			WASTE GAS DECAY TANK RELIEF VALVE								
0GW9300E	3	C	1.0x2.0	RV	SA	Passive	C	O/C	M-69-1	D-4	RT	Y10		
			Valve Name			WASTE GAS DECAY TANK RELIEF VALVE								
0GW9300F	3	C	1.0x2.0	RV	SA	Passive	C	O/C	M-69-1	D-2	RT	Y10		
			Valve Name			WASTE GAS DECAY TANK RELIEF VALVE								

Instrument Air Supply

Valve EPN	Safety Class	Cat	Size	Viv Type	Act. Type	Act/ Pass	Norm Pos	Safety Pos	P&ID	P&ID Coor.	Test Type	Test Freq.	Deferred Just.	Tech. Pos.
1IA065	2	A	3	GL	AO	Active	O	C	M-55-10	C-1	LTJ	AJ		
											FC	RR	RJ-3	TP-VA-2
											STC	RR	RJ-3	TP-VA-1
											PI	Y2		TP-VA-4
			Valve Name			IA SUPPLY CONTAINMENT ISOLATION VALVE								
1IA066	2	A	3	GL	AO	Active	O	C	M-55-10	C-2	LTJ	AJ		
											FC	RR	RJ-3	TP-VA-2
											STC	RR	RJ-3	TP-VA-1
											PI	Y2		TP-VA-4
			Valve Name			IA SUPPLY CONTAINMENT ISOLATION VALVE								
1IA091	2	A/C	0.75	CK	SA	Active	SYS	C	M-55-10	D-1	LTJ	AJ		
											CCL	CM		
											COF	CM		
			Valve Name			IA SUPPLY CONTAINMENT ISOLATION CHECK VALVE								
2IA065	2	A	3	GL	AO	Active	O	C	M-55-15	D-8	LTJ	AJ		
											FC	RR	RJ-3	TP-VA-2
											STC	RR	RJ-3	TP-VA-1
											PI	Y2		TP-VA-4
			Valve Name			IA SUPPLY CONTAINMENT ISOLATION VALVE								
2IA066	2	A	3	GL	AO	Active	O	C	M-55-15	D-7	LTJ	AJ		
											FC	RR	RJ-3	TP-VA-2
											STC	RR	RJ-3	TP-VA-1
											PI	Y2		TP-VA-4
			Valve Name			IA SUPPLY CONTAINMENT ISOLATION VALVE								
2IA091	2	A/C	0.75	CK	SA	Active	SYS	C	M-55-15	D-7	LTJ	AJ		
											CCL	CM		
											COF	CM		
			Valve Name			IA SUPPLY CONTAINMENT ISOLATION CHECK VALVE								

Main Steam

Valve EPN	Safety Class	Cat	Size	Vlv Type	Act. Type	Act/ Pass	Norm Pos	Safety Pos	P&ID	P&ID Coor.	Test Type	Test Freq.	Deferred Just.	Tech. Pos.
1MS001A	2	B	30.25	GA	HO	Active	O	C	M-35-2	C-4	STC	CS	CS-1	TP-VA-1
											PI	Y2		TP-VA-4
			Valve Name			STEAM GENERATOR MAIN STEAM ISOLATION VALVE								
1MS001B	2	B	32.75	GA	HO	Active	O	C	M-35-1	E-5	STC	CS	CS-1	TP-VA-1
											PI	Y2		TP-VA-4
			Valve Name			STEAM GENERATOR MAIN STEAM ISOLATION VALVE								
1MS001C	2	B	32.75	GA	HO	Active	O	C	M-35-2	E-4	STC	CS	CS-1	TP-VA-1
											PI	Y2		TP-VA-4
			Valve Name			STEAM GENERATOR MAIN STEAM ISOLATION VALVE								
1MS001D	2	B	30.25	GA	HO	Active	O	C	M-35-1	B-5	STC	CS	CS-1	TP-VA-1
											PI	Y2		TP-VA-4
			Valve Name			STEAM GENERATOR MAIN STEAM ISOLATION VALVE								
1MS013A	2	C	6x10	RV	SA	Active	C	O/C	M-35-2	C-4	RT	Y10		
			Valve Name			STEAM GENERATOR SAFETY VALVE								
1MS013B	2	C	6x10	RV	SA	Active	C	O/C	M-35-1	F-4	RT	Y10		
			Valve Name			STEAM GENERATOR SAFETY VALVE								
1MS013C	2	C	6x10	RV	SA	Active	C	O/C	M-35-2	F-4	RT	Y10		
			Valve Name			STEAM GENERATOR SAFETY VALVE								
1MS013D	2	C	6x10	RV	SA	Active	C	O/C	M-35-1	C-4	RT	Y10		
			Valve Name			STEAM GENERATOR SAFETY VALVE								
1MS014A	2	C	6x10	RV	SA	Active	C	O/C	M-35-2	C-3	RT	Y10		
			Valve Name			STEAM GENERATOR SAFETY VALVE								
1MS014B	2	C	6x10	RV	SA	Active	C	O/C	M-35-1	F-4	RT	Y10		
			Valve Name			STEAM GENERATOR SAFETY VALVE								
1MS014C	2	C	6x10	RV	SA	Active	C	O/C	M-35-2	F-3	RT	Y10		
			Valve Name			STEAM GENERATOR SAFETY VALVE								
1MS014D	2	C	6x10	RV	SA	Active	C	O/C	M-35-1	C-4	RT	Y10		
			Valve Name			STEAM GENERATOR SAFETY VALVE								
1MS015A	2	C	6x10	RV	SA	Active	C	O/C	M-35-2	C-3	RT	Y10		
			Valve Name			STEAM GENERATOR SAFETY VALVE								
1MS015B	2	C	6x10	RV	SA	Active	C	O/C	M-35-1	F-3	RT	Y10		
			Valve Name			STEAM GENERATOR SAFETY VALVE								
1MS015C	2	C	6x10	RV	SA	Active	C	O/C	M-35-2	F-3	RT	Y10		
			Valve Name			STEAM GENERATOR SAFETY VALVE								
1MS015D	2	C	6x10	RV	SA	Active	C	O/C	M-35-1	C-3	RT	Y10		
			Valve Name			STEAM GENERATOR SAFETY VALVE								
1MS016A	2	C	6x10	RV	SA	Active	C	O/C	M-35-2	C-2	RT	Y10		
			Valve Name			STEAM GENERATOR SAFETY VALVE								
1MS016B	2	C	6x10	RV	SA	Active	C	O/C	M-35-1	F-3	RT	Y10		
			Valve Name			STEAM GENERATOR SAFETY VALVE								

Main Steam

Valve EPN	Safety Class	Cat	Size	Vlv Type	Act. Type	Act/ Pass	Norm Pos	Safety Pos	P&ID	P&ID Coor.	Test Type	Test Freq.	Deferred Just.	Tech. Pos.
1MS016C	2	C	6x10	RV	SA	Active	C	O/C	M-35-2	F-2	RT	Y10		
			Valve Name			STEAM GENERATOR SAFETY VALVE								
1MS016D	2	C	6x10	RV	SA	Active	C	O/C	M-35-1	C-3	RT	Y10		
			Valve Name			STEAM GENERATOR SAFETY VALVE								
1MS017A	2	C	6x10	RV	SA	Active	C	O/C	M-35-2	C-2	RT	Y10		
			Valve Name			STEAM GENERATOR SAFETY VALVE								
1MS017B	2	C	6x10	RV	SA	Active	C	O/C	M-35-1	F-2	RT	Y10		
			Valve Name			STEAM GENERATOR SAFETY VALVE								
1MS017C	2	C	6x10	RV	SA	Active	C	O/C	M-35-2	F-2	RT	Y10		
			Valve Name			STEAM GENERATOR SAFETY VALVE								
1MS017D	2	C	6x10	RV	SA	Active	C	O/C	M-35-1	C-2	RT	Y10		
			Valve Name			STEAM GENERATOR SAFETY VALVE								
1MS018A	2	B	6x6	RV	HO	Active	C	O/C	M-35-2	C-2	FC	Q		TP-VA-2
											STC	Q		TP-VA-1
											STO	Q		
											PI	Y2		TP-VA-4
			Valve Name			STEAM GENERATOR ATMOSPHERIC RELIEF VALVE								
1MS018B	2	B	6x6	RV	HO	Active	C	O/C	M-35-1	F-2	FC	Q		TP-VA-2
											STC	Q		TP-VA-1
											STO	Q		TP-VA-1
											PI	Y2		TP-VA-4
			Valve Name			STEAM GENERATOR ATMOSPHERIC RELIEF VALVE								
1MS018C	2	B	6x6	RV	HO	Active	C	O/C	M-35-2	F-2	FC	Q		TP-VA-2
											STC	Q		TP-VA-1
											STO	Q		TP-VA-1
											PI	Y2		TP-VA-4
			Valve Name			STEAM GENERATOR ATMOSPHERIC RELIEF VALVE								
1MS018D	2	B	6x6	RV	HO	Active	C	O/C	M-35-1	C-2	FC	Q		TP-VA-2
											STC	Q		TP-VA-1
											STO	Q		TP-VA-1
											PI	Y2		TP-VA-4
			Valve Name			STEAM GENERATOR ATMOSPHERIC RELIEF VALVE								
1MS019A	2	B	8	GA	M	Active	O	O/C	M-35-2	C-2	SC	Y2		
			Valve Name			SG PORV INLET ISOLATION MANUAL VALVES								
1MS019B	2	B	8	GA	M	Active	O	O/C	M-35-1	E-2	SC	Y2		
			Valve Name			SG PORV INLET ISOLATION MANUAL VALVES								
1MS019C	2	B	8	GA	M	Active	O	O/C	M-35-2	E-2	SC	Y2		
			Valve Name			SG PORV INLET ISOLATION MANUAL VALVES								
1MS019D	2	B	8	GA	M	Active	O	O/C	M-35-1	C-2	SC	Y2		
			Valve Name			SG PORV INLET ISOLATION MANUAL VALVES								

Main Steam

Valve EPN	Safety Class	Cat	Size	Vlv Type	Act. Type	Act/ Pass	Norm Pos	Safety Pos	P&ID	P&ID Coor.	Test Type	Test Freq.	Deferred Just.	Tech. Pos.
1MS101A	2	B	4	GL	AO	Active	C	C	M-35-2	B-4	FC	Q		TP-VA-2
											STC	Q		TP-VA-1
											PI	Y2		TP-VA-4
			Valve Name			MAIN STEAM ISOLATION VALVE BYPASS VALVE								
1MS101B	2	B	4	GL	AO	Active	C	C	M-35-1	D-4	FC	Q		TP-VA-2
											STC	Q		TP-VA-1
											PI	Y2		TP-VA-4
			Valve Name			MAIN STEAM ISOLATION VALVE BYPASS VALVE								
1MS101C	2	B	4	GL	AO	Active	C	C	M-35-2	E-4	FC	Q		TP-VA-2
											STC	Q		TP-VA-1
											PI	Y2		TP-VA-4
			Valve Name			MAIN STEAM ISOLATION VALVE BYPASS VALVE								
1MS101D	2	B	4	GL	AO	Active	C	C	M-35-1	B-5	FC	Q		TP-VA-2
											STC	Q		TP-VA-1
											PI	Y2		TP-VA-4
			Valve Name			MAIN STEAM ISOLATION VALVE BYPASS VALVE								
2MS001A	2	B	30.25	GA	HO	Active	O	C	M-120-2A	C-5	STC	CS	CS-1	TP-VA-1
											PI	Y2		TP-VA-4
			Valve Name			STEAM GENERATOR MAIN STEAM ISOLATION VALVE								
2MS001B	2	B	32.75	GA	HO	Active	O	C	M-120-1	E-5	STC	CS	CS-1	TP-VA-1
											PI	Y2		TP-VA-4
			Valve Name			STEAM GENERATOR MAIN STEAM ISOLATION VALVE								
2MS001C	2	B	32.75	GA	HO	Active	O	C	M-120-2B	D-5	STC	CS	CS-1	TP-VA-1
											PI	Y2		TP-VA-4
			Valve Name			STEAM GENERATOR MAIN STEAM ISOLATION VALVE								
2MS001D	2	B	30.25	GA	HO	Active	O	C	M-120-1	B-5	SC	Q		
											STC	Q		
											PI	Y2		TP-VA-4
			Valve Name			STEAM GENERATOR MAIN STEAM ISOLATION VALVE								
2MS013A	2	C	6x10	RV	SA	Active	C	O/C	M-120-2A	E-4	RT	Y10		
			Valve Name			STEAM GENERATOR SAFETY VALVE								
2MS013B	2	C	6x10	RV	SA	Active	C	O/C	M-120-1	E-4	RT	Y10		
			Valve Name			STEAM GENERATOR SAFETY VALVE								
2MS013C	2	C	6x10	RV	SA	Active	C	O/C	M-120-2B	E-5	RT	Y10		
			Valve Name			STEAM GENERATOR SAFETY VALVE								
2MS013D	2	C	6x10	RV	SA	Active	C	O/C	M-120-1	C-4	RT	Y10		
			Valve Name			STEAM GENERATOR SAFETY VALVE								
2MS014A	2	C	6x10	RV	SA	Active	C	O/C	M-120-2A	E-4	RT	Y10		
			Valve Name			STEAM GENERATOR SAFETY VALVE								
2MS014B	2	C	6x10	RV	SA	Active	C	O/C	M-120-1	E-4	RT	Y10		
			Valve Name			STEAM GENERATOR SAFETY VALVE								
2MS014C	2	C	6x10	RV	SA	Active	C	O/C	M-120-2B	E-4	RT	Y10		
			Valve Name			STEAM GENERATOR SAFETY VALVE								

Main Steam

Valve EPN	Safety Class	Cat	Size	Vlv Type	Act. Type	Act/ Pass	Norm Pos	Safety Pos	P&ID	P&ID Coor.	Test Type	Test Freq.	Deferred Just.	Tech. Pos.
2MS014D	2	C	6x10	RV	SA	Active	C	O/C	M-120-1	C-4	RT	Y10		
			Valve Name			STEAM GENERATOR SAFETY VALVE								
2MS015A	2	C	6x10	RV	SA	Active	C	O/C	M-120-2A	E-3	RT	Y10		
			Valve Name			STEAM GENERATOR SAFETY VALVE								
2MS015B	2	C	6x10	RV	SA	Active	C	O/C	M-120-1	E-3	RT	Y10		
			Valve Name			STEAM GENERATOR SAFETY VALVE								
2MS015C	2	C	6x10	RV	SA	Active	C	O/C	M-120-2B	E-3	RT	Y10		
			Valve Name			STEAM GENERATOR SAFETY VALVE								
2MS015D	2	C	6x10	RV	SA	Active	C	O/C	M-120-1	C-3	RT	Y10		
			Valve Name			STEAM GENERATOR SAFETY VALVE								
2MS016A	2	C	6x10	RV	SA	Active	C	O/C	M-120-2A	E-3	RT	Y10		
			Valve Name			STEAM GENERATOR SAFETY VALVE								
2MS016B	2	C	6x10	RV	SA	Active	C	O/C	M-120-1	E-3	RT	Y10		
			Valve Name			STEAM GENERATOR SAFETY VALVE								
2MS016C	2	C	6x10	RV	SA	Active	C	O/C	M-120-2B	E-3	RT	Y10		
			Valve Name			STEAM GENERATOR SAFETY VALVE								
2MS016D	2	C	6x10	RV	SA	Active	C	O/C	M-120-1	C-3	RT	Y10		
			Valve Name			STEAM GENERATOR SAFETY VALVE								
2MS017A	2	C	6x10	RV	SA	Active	C	O/C	M-120-2A	E-2	RT	Y10		
			Valve Name			STEAM GENERATOR SAFETY VALVE								
2MS017B	2	C	6x10	RV	SA	Active	C	O/C	M-120-1	E-2	RT	Y10		
			Valve Name			STEAM GENERATOR SAFETY VALVE								
2MS017C	2	C	6x10	RV	SA	Active	C	O/C	M-120-2B	E-2	RT	Y10		
			Valve Name			STEAM GENERATOR SAFETY VALVE								
2MS017D	2	C	6x10	RV	SA	Active	C	O/C	M-120-1	C-2	RT	Y10		
			Valve Name			STEAM GENERATOR SAFETY VALVE								
2MS018A	2	B	6x6	RV	HO	Active	C	O/C	M-120-2A	E-1	FC	Q		TP-VA-2
											STC	Q		TP-VA-1
											STO	Q		TP-VA-1
											PI	Y2		TP-VA-4
			Valve Name			STEAM GENERATOR ATMOSPHERIC RELIEF VALVE								
2MS018B	2	B	6x6	RV	HO	Active	C	O/C	M-120-1	E-2	FC	Q		TP-VA-2
											STC	Q		TP-VA-1
											STO	Q		TP-VA-1
											PI	Y2		TP-VA-4
			Valve Name			STEAM GENERATOR ATMOSPHERIC RELIEF VALVE								
2MS018C	2	B	6x6	RV	HO	Active	C	O/C	M-120-2B	E-1	FC	Q		TP-VA-2
											STC	Q		TP-VA-1
											STO	Q		TP-VA-1
											PI	Y2		TP-VA-4
			Valve Name			STEAM GENERATOR ATMOSPHERIC RELIEF VALVE								

Main Steam

Valve EPN	Safety Class	Cat	Size	Vlv Type	Act. Type	Act/ Pass	Norm Pos	Safety Pos	P&ID	P&ID Coor.	Test Type	Test Freq.	Deferred Just.	Tech. Pos.
2MS018D	2	B	6x6	RV	HO	Active	C	O/C	M-120-1	C-2	FC	Q		TP-VA-2
											STC	Q		TP-VA-1
											STO	Q		TP-VA-1
											PI	Y2		TP-VA-4
			Valve Name			STEAM GENERATOR ATMOSPHERIC RELIEF VALVE								
2MS019A	2	B	8	GA	M	Active	O	O/C	M-120-2A	D-2	SC	Y2		
			Valve Name			SG PORV INLET ISOLATION MANUAL VALVES								
2MS019B	2	B	8	GA	M	Active	O	O/C	M-120-1	E-2	SC	Y2		
			Valve Name			SG PORV INLET ISOLATION MANUAL VALVES								
2MS019C	2	B	8	GA	M	Active	O	O/C	M-120-2B	D-2	SC	Y2		
			Valve Name			SG PORV INLET ISOLATION MANUAL VALVES								
2MS019D	2	B	8	GA	M	Active	O	O/C	M-120-1	C-2	SC	Y2		
			Valve Name			SG PORV INLET ISOLATION MANUAL VALVES								
2MS101A	2	B	4	GL	AO	Active	C	C	M-120-2A	C-5	FC	Q		TP-VA-2
											STC	Q		TP-VA-1
											PI	Y2		TP-VA-4
			Valve Name			MAIN STEAM ISOLATION VALVE BYPASS VALVE								
2MS101B	2	B	4	GL	AO	Active	C	C	M-120-1	D-5	FC	Q		TP-VA-2
											STC	Q		TP-VA-1
											PI	Y2		TP-VA-4
			Valve Name			MAIN STEAM ISOLATION VALVE BYPASS VALVE								
2MS101C	2	B	4	GL	AO	Active	C	C	M-120-2B	C-5	FC	Q		TP-VA-2
											STC	Q		TP-VA-1
											PI	Y2		TP-VA-4
			Valve Name			MAIN STEAM ISOLATION VALVE BYPASS VALVE								
2MS101D	2	B	4	GL	AO	Active	C	C	M-120-1	B-5	FC	Q		TP-VA-2
											STC	Q		TP-VA-1
											PI	Y2		TP-VA-4
			Valve Name			MAIN STEAM ISOLATION VALVE BYPASS VALVE								

Valve EPN	Safety Class	Cat	Size	Vlv Type	Act. Type	Act/ Pass	Norm Pos	Off Gas Safety Pos	P&ID	P&ID Coor.	Test Type	Test Freq.	Deferred Just.	Tech. Pos.
1OG057A	2	A	3	BTF	MO	Passive	C	C	M-47-2	E-6	LTJ	AJ		
			Valve Name			H2 RECOMBINER DISCH CONTAINMENT ISOLATION VALVE								
1OG079	2	A	3	BTF	MO	Passive	C	C	M-47-2	E-6	LTJ	AJ		
			Valve Name			H2 RECOMBINER DISCH CONTAINMENT ISOLATION VALVE								
1OG080	2	A	3	BTF	MO	Passive	C	C	M-47-2	E-5	LTJ	AJ		
			Valve Name			H2 RECOMBINER SUCTION CONTAINMENT ISOLATION VALVE								
1OG081	2	A	3	BTF	MO	Passive	C	C	M-47-2	E-5	LTJ	AJ		
			Valve Name			H2 RECOMBINER SUCTION CONTAINMENT ISOLATION VALVE								
1OG082	2	A	3	BTF	MO	Passive	C	C	M-47-2	E-6	LTJ	AJ		
			Valve Name			H2 RECOMBINER DISCH CONTAINMENT ISOLATION VALVE								
1OG083	2	A	3	BTF	MO	Passive	C	C	M-47-2	E-6	LTJ	AJ		
			Valve Name			H2 RECOMBINER DISCH CONTAINMENT ISOLATION VALVE								
1OG084	2	A	3	BTF	MO	Passive	C	C	M-47-2	E-4	LTJ	AJ		
			Valve Name			H2 RECOMBINER SUCTION CONTAINMENT ISOLATION VALVE								
1OG085	2	A	3	BTF	MO	Passive	C	C	M-47-2	E-4	LTJ	AJ		
			Valve Name			H2 RECOMBINER SUCTION CONTAINMENT ISOLATION VALVE								
2OG057A	2	A	3	BTF	MO	Passive	C	C	M-150-2	E-7	LTJ	AJ		
			Valve Name			H2 RECOMBINER DISCH CONTAINMENT ISOLATION VALVE								
2OG079	2	A	3	BTF	MO	Passive	C	C	M-150-2	E-7	LTJ	AJ		
			Valve Name			H2 RECOMBINER DISCH CONTAINMENT ISOLATION VALVE								
2OG080	2	A	3	BTF	MO	Passive	C	C	M-150-2	E-6	LTJ	AJ		
			Valve Name			H2 RECOMBINER SUCTION CONTAINMENT ISOLATION VALVE								
2OG081	2	A	3	BTF	MO	Passive	C	C	M-150-2	E-6	LTJ	AJ		
			Valve Name			H2 RECOMBINER SUCTION CONTAINMENT ISOLATION VALVE								
2OG082	2	A	3	BTF	MO	Passive	C	C	M-150-2	E-7	LTJ	AJ		
			Valve Name			H2 RECOMBINER DISCH CONTAINMENT ISOLATION VALVE								
2OG083	2	A	3	BTF	MO	Passive	C	C	M-150-2	E-7	LTJ	AJ		
			Valve Name			H2 RECOMBINER DISCH CONTAINMENT ISOLATION VALVE								
2OG084	2	A	3	BTF	MO	Passive	C	C	M-150-2	E-5	LTJ	AJ		
			Valve Name			H2 RECOMBINER SUCTION CONTAINMENT ISOLATION VALVE								
2OG085	2	A	3	BTF	MO	Passive	C	C	M-150-2	E-5	LTJ	AJ		
			Valve Name			H2 RECOMBINER SUCTION CONTAINMENT ISOLATION VALVE								

Process Radiation Monitoring

Valve EPN	Safety Class	Cat	Size	Vlv Type	Act. Type	Act/ Pass	Norm Pos	Safety Pos	P&ID	P&ID Coor.	Test Type	Test Freq.	Deferred Just.	Tech. Pos.
1PR001A	2	A	1	GL	AO	Active	O	C	M-78-10	F8	LTJ	AJ		
											FC	Q		TP-VA-2
											STC	Q		TP-VA-1
											PI	Y2		TP-VA-4
			Valve Name			CONTAINMENT ATMOSPHERE TO PR OUTSIDE ISOL VALVE								
1PR001B	2	A	1	GL	AO	Active	O	C	M-78-10	F7	LTJ	AJ		
											FC	Q		TP-VA-2
											STC	Q		TP-VA-1
											PI	Y2		TP-VA-4
			Valve Name			CONTAINMENT ATMOSPHERE TO PR OUTSIDE ISOL VALVE								
1PR002E	2	A	2	GL	M	Passive	C	C	M-78-6	D5	LTJ	AJ		
			Valve Name			EQUIP HATCH AIR LOCK AIR MON OUTLT ISOL VLV								
1PR002F	2	A	2	GL	M	Passive	C	C	M-78-6	B7	LTJ	AJ		
			Valve Name			EMERGENCY HATCH AIR LOCK AIR MON OUTLT ISOL VLV								
1PR002G	2	A/C	2	CK	SA	Passive	SYS	C	M-78-6	D4	LTJ	AJ		
											CCL	CM		TP-VA-7
											CO	CM		TP-VA-7
			Valve Name			EQUIP HATCH PERSONNEL AIR LOCK AIR MON OUTLT CHECK								
1PR002H	2	A/C	2	CK	SA	Passive	SYS	C	M-78-6	B7	LTJ	AJ		
											CCL	CM		TP-VA-7
											CO	CM		TP-VA-7
			Valve Name			EMERGENCY HATCH AIR LOCK AIR MON OUTLT CHECK VLV								
1PR032	2	A/C	1	CK	SA	Active	SYS	C	M-78-10	E1	LTJ	AJ		
											CCL	CM		
											COF	CM		TP-VA-8
			Valve Name			CNMT PROCESS RAD MONITORING RTRN CHECK VLV								
1PR033A	2	A	2	GL	M	Passive	C	C	M-78-6	D8	LTJ	AJ		
			Valve Name			EQUIP HATCH AIR LOCK INSIDE AIR LOCK RAD MON ISOL								
1PR033B	2	A	2	GL	M	Passive	C	C	M-78-6	D7	LTJ	AJ		
			Valve Name			EQUIP HATCH AIR LOCK INSIDE AIR LOCK RAD MON ISOL								
1PR033C	2	A	2	GL	M	Passive	C	C	M-78-6	C6	LTJ	AJ		
			Valve Name			EMERGENCY HATCH AIR LOCK INSIDE LOCK RAD MON ISOL								
1PR033D	2	A	2	GL	M	Passive	C	C	M-78-6	C6	LTJ	AJ		
			Valve Name			EMERGENCY HATCH AIR LOCK INSIDE LOCK RAD MON ISOL								
1PR066	2	A	1	GL	AO	Active	O	C	M-78-10	E1	LTJ	AJ		
											FC	Q		TP-VA-2
											STC	Q		TP-VA-1
											PI	Y2		TP-VA-4
			Valve Name			CNMT ATMOSPHERE SAMPLE RETURN OUTSIDE ISOL VALVE								
2PR001A	2	A	1	GL	AO	Active	O	C	M-151-1	F8	LTJ	AJ		
											FC	Q		TP-VA-2
											STC	Q		TP-VA-1
											PI	Y2		TP-VA-4
			Valve Name			CONTAINMENT ATMOSPHERE TO PR OUTSIDE ISOL VALVE								

Process Radiation Monitoring

Valve EPN	Safety Class	Cat	Size	Vlv Type	Act. Type	Act/ Pass	Norm Pos	Safety Pos	P&ID	P&ID Coor.	Test Type	Test Freq.	Deferred Just.	Tech. Pos.
2PR001B	2	A	1	GL	AO	Active	O	C	M-151-1	F7	LTJ	AJ		
											FC	Q		TP-VA-2
											STC	Q		TP-VA-1
											PI	Y2		TP-VA-4
			Valve Name			CONTAINMENT ATMOSPHERE TO PR OUTSIDE ISOL VALVE								
2PR002E	2	A	2	GL	M	Passive	C	C	M-78-6	B7	LTJ	AJ		
			Valve Name			EQUIP HATCH AIR LOCK AIR MON OUTLT ISOL VLV								
2PR002F	2	A	2	GL	M	Passive	C	C	M-78-6	B7	LTJ	AJ		
			Valve Name			EMERGENCY HATCH AIR LOCK AIR MON OUTLT ISOL VLV								
2PR002G	2	A/C	2	CK	SA	Passive	SYS	C	M-78-6	B7	LTJ	AJ		
											CCL	CM		TP-VA-7
											CO	CM		TP-VA-7
			Valve Name			EQUIP HATCH PERSONNEL AIR LOCK AIR MON OUTLT CHECK								
2PR002H	2	A/C	2	CK	SA	Passive	SYS	C	M-78-6	B7	LTJ	AJ		
											CCL	CM		TP-VA-7
											CO	CM		TP-VA-7
			Valve Name			EMERGENCY HATCH AIR LOCK AIR MON OUTLT CHECK VLV								
2PR032	2	A/C	1	CK	SA	Active	SYS	C	M-151-1	E1	LTJ	AJ		
											CCL	CM		
											COF	CM		TP-VA-8
			Valve Name			CNMT PROCESS RAD MONITORING RTRN CHECK VLV								
2PR033A	2	A	2	GL	M	Passive	C	C	M-78-6	C6	LTJ	AJ		
			Valve Name			EQUIP HATCH AIR LOCK INSIDE AIR LOCK RAD MON ISOL								
2PR033B	2	A	2	GL	M	Passive	C	C	M-78-6	C6	LTJ	AJ		
			Valve Name			EQUIP HATCH AIR LOCK INSIDE AIR LOCK RAD MON ISOL								
2PR033C	2	A	2	GL	M	Passive	C	C	M-78-6	C6	LTJ	AJ		
			Valve Name			EMERGENCY HATCH AIR LOCK INSIDE LOCK RAD MON ISOL								
2PR033D	2	A	2	GL	M	Passive	C	C	M-78-6	C6	LTJ	AJ		
			Valve Name			EMERGENCY HATCH AIR LOCK INSIDE LOCK RAD MON ISOL								
2PR066	2	A	1	GL	AO	Active	O	C	M-151-1	E1	LTJ	AJ		
											FC	Q		TP-VA-2
											STC	Q		TP-VA-1
											PI	Y2		TP-VA-4
			Valve Name			CNMT ATMOSPHERE SAMPLE RETURN OUTSIDE ISOL VALVE								

Valve EPN	Safety Class	Cat	Size	Vlv Type	Act. Type	Act/ Pass	Norm Pos	Safety Pos	P&ID	P&ID Coor.	Test Type	Test Freq.	Deferred Just.	Tech. Pos.
							Process Sampling							
1PS228A	2	A	0.5	GA	SO	Active	O	O/C	M-68-7	E-7	STC	Q		TP-VA-1
											STO	Q		TP-VA-1
											LT	Y2		
											PI	Y2		TP-VA-4
			Valve Name			POST ACC. MONT 1A CNMT OUTSIDE SUCTION SOL VLV								
1PS228B	2	A	0.5	GA	SO	Active	O	O/C	M-68-7	C-7	FO	Q		TP-VA-2
											STC	Q		TP-VA-1
											STO	Q		TP-VA-1
											LT	Y2		
											PI	Y2		TP-VA-4
			Valve Name			POST ACC. MONT 1B CNMT OUTSIDE SUCTION SOL VLV								
1PS229A	2	A	0.5	GA	SO	Active	O	O/C	M-68-7	E-6	FO	Q		TP-VA-2
											STC	Q		TP-VA-1
											STO	Q		TP-VA-1
											LT	Y2		
											PI	Y2		TP-VA-4
			Valve Name			POST ACC. MONT 1A CNMT OUTSIDE SUCTION SOL VLV								
1PS229B	2	A	0.5	GA	SO	Active	O	O/C	M-68-7	C-6	STC	Q		TP-VA-1
											STO	Q		TP-VA-1
											LT	Y2		
											PI	Y2		TP-VA-4
			Valve Name			POST ACC. MONT 1B CNMT OUTSIDE SUCT SOL VLV								
1PS230A	2	A	0.5	GA	SO	Active	C	O/C	M-68-7	D-7	FC	Q		TP-VA-2
											STC	Q		TP-VA-1
											STO	Q		TP-VA-1
											LT	Y2		
											PI	Y2		TP-VA-4
			Valve Name			POST ACC. MONT 1A CNMT OUTSIDE DISCH SOL VLV								
1PS230B	2	A	0.5	GA	SO	Active	C	O/C	M-68-7	B-7	FC	Q		TP-VA-2
											STC	Q		TP-VA-1
											STO	Q		TP-VA-1
											LT	Y2		
											PI	Y2		TP-VA-4
			Valve Name			POST ACC. MONT 1B CNMT OUTSIDE DISCH SOL VLV								
1PS231A	2	A/C	0.75	CK	SA	Active	SYS	O/C	M-68-7	D-8	CC	CM		
											CO	Q		
											CO	Q		
											LT	Y2		
			Valve Name			POST LOCA H2 MON 1A RTRN CHECK VLV								
1PS231B	2	A/C	0.75	CK	SA	Active	SYS	O/C	M-68-7	B-8	CC	CM		
											CO	Q		
											CO	Q		
											CO	Q		
											LT	Y2		
			Valve Name			POST LOCA H2 MON 1B RTRN CHECK VLV								

Valve EPN	Safety Class	Cat	Size	Vlv Type	Act. Type	Act/ Pass	Process Sampling Norm Pos	Process Sampling Safety Pos	P&ID	P&ID Coor.	Test Type	Test Freq.	Deferred Just.	Tech. Pos.
1PS9354A	2	A	0.375	GL	AO	Active	C	C	M-68-1B	D-6	LTJ	AJ		
											FC	Q		
											STC	Q		
											PI	Y2		
			Valve Name			PZR STM SAMPLE INSIDE ISOL VLV								
1PS9354B	2	A	0.375	GL	AO	Active	C	C	M-68-1B	D-5	LTJ	AJ		
											FC	Q		
											STC	Q		
											PI	Y2		
			Valve Name			PZR STM SMPLE OUTSIDE ISOL VLV								
1PS9355A	2	A	0.375	GL	AO	Active	C	C	M-68-1B	B-6	LTJ	AJ		
											FC	Q		
											STC	Q		
											PI	Y2		
			Valve Name			PZR LIQUID SMPL INSIDE ISOL VLV								
1PS9355B	2	A	0.375	GL	AO	Active	C	C	M-68-1B	B-5	LTJ	AJ		
											FC	Q		
											STC	Q		
											PI	Y2		
			Valve Name			PZR LIQUID SAMPLE OUTSIDE ISOL VLV								
1PS9356A	2	A	0.375	GL	AO	Active	C	C	M-68-1A	D-5	LTJ	AJ		
											FC	Q		
											STC	Q		
											PI	Y2		
			Valve Name			RC LOOP SAMPLE INSIDE ISOL VLV								
1PS9356B	2	A	0.375	GL	AO	Active	C	C	M-68-1A	D-4	LTJ	AJ		
											FC	Q		
											STC	Q		
											PI	Y2		
			Valve Name			RC LOOP SAMPLE OUTSIDE ISOL VLV								
1PS9357A	2	A	0.375	GL	AO	Active	C	C	M-68-1B	A-6	LTJ	AJ		
											FC	Q		
											STC	Q		
											PI	Y2		
			Valve Name			SI ACCUM SAMPLE INSIDE ISOL VLV								
1PS9357B	2	A	0.375	GL	AO	Active	C	C	M-68-1B	A-5	LTJ	AJ		
											FC	Q		
											STC	Q		
											PI	Y2		
			Valve Name			SI ACCUM SAMPLE OUTSIDE ISOL VLV								
2PS228A	2	A	0.5	GA	SO	Active	O	O/C	M-140-6	E-7	STC	Q		TP-VA-1
											STO	Q		TP-VA-1
											LT	Y2		
											PI	Y2		TP-VA-4
			Valve Name			POST LOCA H2 MON 2A OUTSIDE SUCT VLV								

Valve EPN	Safety Class	Cat	Size	Vlv Type	Act. Type	Act/ Pass	Process Sampling Norm Pos	Safety Pos	P&ID	P&ID Coor.	Test Type	Test Freq.	Deferred Just.	Tech. Pos.
2PS228B	2	A	0.5	GA	SO	Active	O	O/C	M-140-6	C-7	FO	Q		TP-VA-2
											STC	Q		TP-VA-1
											STO	Q		TP-VA-1
											LT	Y2		
											PI	Y2		TP-VA-4
			Valve Name			POST LOCA H2 MON 2B OUTSIDE SUCT VLV								
2PS229A	2	A	0.5	GA	SO	Active	O	O/C	M-140-6	E-6	FO	Q		TP-VA-2
											STC	Q		TP-VA-1
											STO	Q		TP-VA-1
											LT	Y2		
											PI	Y2		TP-VA-4
			Valve Name			POST LOCA H2 MON 2A OUTSIDE SUCT VLV								
2PS229B	2	A	0.5	GA	SO	Active	O	O/C	M-140-6	C-6	STC	Q		TP-VA-1
											STO	Q		TP-VA-1
											LT	Y2		
											PI	Y2		TP-VA-4
			Valve Name			POST LOCA H2 MON 2B OUTSIDE SUCT VLV								
2PS230A	2	A	0.5	GA	SO	Active	C	O/C	M-140-6	D-7	FC	Q		TP-VA-2
											STC	Q		TP-VA-1
											STO	Q		TP-VA-1
											LT	Y2		
											PI	Y2		TP-VA-4
			Valve Name			POST LOCA H2 MON 2A OUTSIDE DISCH VLV								
2PS231A	2	A/C	0.75	CK	SA	Active	SYS	O/C	M-140-6	D-8	CC	CM		
											CO	Q		
											LT	Y2		
			Valve Name			POST LOCA HYDROGEN MONITOR 2A CHECK VALVE								
2PS231B	2	A/C	0.75	CK	SA	Active	SYS	O/C	M-140-6	B-8	CC	CM		
											CO	Q		
											LT	Y2		
			Valve Name			POST LOCA HYDROGEN MONITOR 2B CHECK VALVE								
2PS9354A	2	A	0.375	GL	AO	Active	C	C	M-140-1B	D-6	LTJ	AJ		
											FC	Q		
											STC	Q		
											PI	Y2		
			Valve Name			PZR STM SAMPLE INSIDE ISOL VLV								
2PS9354B	2	A	0.375	GL	AO	Active	C	C	M-140-1B	D-5	LTJ	AJ		
											FC	Q		
											STC	Q		
											PI	Y2		
			Valve Name			PZR STM SAMPLE OUTSIDE ISOL VLV								

Valve EPN	Safety Class	Cat	Size	Vlv Type	Act. Type	Act/ Pass	Process Sampling Norm Pos	Process Sampling Safety Pos	P&ID	P&ID Coor.	Test Type	Test Freq.	Deferred Just.	Tech. Pos.
2PS9355A	2	A	0.375	GL	AO	Active	C	C	M-140-1B	B-6	LTJ	AJ		
											FC	Q		
											STC	Q		
											PI	Y2		
			Valve Name			PZR LIQUID SAMPLE INSIDE ISOL VLV								
2PS9355B	2	A	0.375	GL	AO	Active	C	C	M-140-1B	B-5	LTJ	AJ		
											FC	Q		
											STC	Q		
											PI	Y2		
			Valve Name			PZR LIQUID SAMPLE OUTSIDE ISOL VLV								
2PS9356A	2	A	0.375	GL	AO	Active	C	C	M-140-1A	D-5	LTJ	AJ		
											FC	Q		
											STC	Q		
											PI	Y2		
			Valve Name			RC LOOP SAMPLE INSIDE ISOL VLV								
2PS9356B	2	A	0.375	GL	AO	Active	C	C	M-140-1A	D-4	LTJ	AJ		
											FC	Q		
											STC	Q		
											PI	Y2		
			Valve Name			RC LOOP SAMPLE OUTSIDE ISOL VLV								
2PS9357A	2	A	0.375	GL	AO	Active	C	C	M-140-1B	A-6	LTJ	AJ		
											FC	Q		
											STC	Q		
											PI	Y2		
			Valve Name			SI ACCUM SAMPLE INSIDE ISOL VLV								
2PS9357B	2	A	0.375	GL	AO	Active	C	C	M-140-1B	A-5	LTJ	AJ		
											FC	Q		
											STC	Q		
											PI	Y2		
			Valve Name			SI ACCUM SAMPLE OUTSIDE ISOL VLV								

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Valve EPN	Safety Class	Cat	Size	Vlv Type	Act. Type	Act/ Pass	Norm Pos	Safety Pos	P&ID	P&ID Coor.	Test Type	Test Freq.	Deferred Just.	Tech. Pos.
1RC014A	1	B	1.00	GL	SO	Active	C	O/C	M-60-1B	E-3	FC	CS	CS-6	TP-VA-2
											STC	CS	CS-6	TP-VA-1
											STO	CS	CS-6	TP-VA-1
											PI	Y2		TP-VA-4
			Valve Name			REACTOR HEAD VENT ISOLATION VALVE								
1RC014B	1	B	1.00	GL	SO	Active	C	O/C	M-60-1B	F-3	FC	CS	CS-6	TP-VA-2
											STC	CS	CS-6	TP-VA-1
											STO	CS	CS-6	TP-VA-1
											PI	Y2		TP-VA-4
			Valve Name			REACTOR HEAD VENT ISOLATION VALVE								
1RC014C	1	B	1.00	GL	SO	Active	C	O/C	M-60-1B	E-3	FC	CS	CS-6	TP-VA-2
											STC	CS	CS-6	TP-VA-1
											STO	CS	CS-6	TP-VA-1
											PI	Y2		TP-VA-4
			Valve Name			REACTOR HEAD VENT ISOLATION VALVE								
1RC014D	1	B	1.00	GL	SO	Active	C	O/C	M-60-1B	F-3	FC	CS	CS-6	TP-VA-2
											STC	CS	CS-6	TP-VA-1
											STO	CS	CS-6	TP-VA-1
											PI	Y2		TP-VA-4
			Valve Name			REACTOR HEAD VENT ISOLATION VALVE								
1RY030A	3	C	0.75x1.00	RV	SA	Active	C	O/C	M-60-8	F-7	RT	Y10		
			Valve Name			PORV ACCUMULATOR RELIEF VALVE								
1RY030B	3	C	0.75x1.00	RV	SA	Active	C	O/C	M-60-8	F-6	RT	Y10		
			Valve Name			PORV ACCUMULATOR RELIEF VALVE								
1RY075	2	A	0.50	GL	M	Passive	LC	C	M-2060-6	C-3	LTJ	AJ		
			Valve Name			DEAD WEIGHT TESTER ISOLATION VALVE								
1RY085A	3	C	2.00	CK	SA	Active	SYS	C	M-60-8	C-7	CCD	CM		
											CCL	CM		
			Valve Name			INSTR AIR SUPPLY TO PORV ACCUMULATOR CHECK VALVE								
1RY085B	3	C	2.00	CK	SA	Active	SYS	C	M-60-8	C-6	CCD	CM		
											COD	CM		
			Valve Name			INSTR AIR SUPPLY TO PORV ACCUMULATOR CHECK VALVE								
1RY086A	3	C	2.00	CK	SA	Active	SYS	C	M-60-8	C-7	CCD	CM		
											COD	CM		
			Valve Name			INSTR AIR SUPPLY TO PORV ACCUMULATOR CHECK VALVE								
1RY086B	3	C	2.00	CK	SA	Active	SYS	C	M-60-8	C-6	CCD	CM		
											COD	CM		
			Valve Name			INSTR AIR SUPPLY TO PORV ACCUMULATOR CHECK VALVE								
1RY160	NS	C	0.50	CK	SA	Active	SYS	O	M-60-6	D-4	TRV	Y10		
			Valve Name			PRIMARY WATER SUPPLY TO PRT CHECK VALVE								

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Valve EPN	Safety Class	Cat	Size	Viv Type	Act. Type	Act/ Pass	Norm Pos	Safety Pos	P&ID	P&ID Coor.	Test Type	Test Freq.	Deferred Just.	Tech. Pos.
1RY455A	1	B	3.00	GL	AO	Active	C	O/C	M-60-5	C-8	FC	RR		TP-VA-2
											STC	RR		TP-VA-1
											STO	RR		TP-VA-1
											PI	Y2		TP-VA-4
		Valve Name				PRESSURIZER POWER OPERATED RELIEF VALVE (PORV)								
1RY456	1	B	3.00	GL	AO	Active	C	O/C	M-60-5	D-8	FC	RR		TP-VA-2
											STC	RR		TP-VA-1
											STO	RR		TP-VA-1
											PI	Y2		TP-VA-4
		Valve Name				PRESSURIZER POWER OPERATED RELIEF VALVE (PORV)								
1RY8000A	1	B	3.00	GA	MO	Active	O/C	O/C	M-60-5	C-8	DIAG	MOV		
											PI	MOV		
											SC	Q		
											SO	Q		
											STC	Q		TP-VA-1, TP-VA-6
		Valve Name				PRESSURIZER PORV BLOCK VALVE								
1RY8000B	1	B	3.00	GA	MO	Active	O/C	O/C	M-60-5	D-8	DIAG	MOV		
											PI	MOV		
											SC	Q		
											SO	Q		
											STC	Q		TP-VA-1, TP-VA-6
		Valve Name				PRESSURIZER PORV BLOCK VALVE								
1RY8010A	1	B/C	6.00	RV	SA	Active	C	O/C	M-60-5	E-6	RT	Y10		
		Valve Name				PRESSURIZER SAFETY VALVE								
1RY8010B	1	B/C	6.00	RV	SA	Active	C	O/C	M-60-5	E-5	RT	Y10		
		Valve Name				PRESSURIZER SAFETY VALVE								
1RY8010C	1	B/C	6.00	RV	SA	Active	C	O/C	M-60-5	E-4	RT	Y10		
		Valve Name				PRESSURIZER SAFETY VALVE								
1RY8025	2	A	0.375	GL	AO	Active	C	C	M-60-6	F-2	LTJ	AJ		
											FC	Q		TP-VA-2
											STC	Q		TP-VA-1
											PI	Y2		TP-VA-4
		Valve Name				PRT GAS ANALYZER CONTAINMENT ISOLATION VALVE								
1RY8026	2	A	0.375	GL	AO	Active	O	C	M-60-6	F-3	LTJ	AJ		
											FC	Q		TP-VA-2
											STC	Q		TP-VA-1
											PI	Y2		TP-VA-4
		Valve Name				PRT GAS ANALYZER CONTAINMENT ISOLATION VALVE								
1RY8028	2	A	3.00	DIA	AO	Active	O	C	M-60-6	E-2	LTJ	AJ		
											FC	Q		TP-VA-2
											STC	Q		TP-VA-1
											PI	Y2		TP-VA-4
		Valve Name				PRIMARY WATER SUPPLY TO PRT CONT ISOLATION VALVE								

Reactor Coolant

Valve EPN	Safety Class	Cat	Size	Vlv Type	Act. Type	Act/ Pass	Norm Pos	Safety Pos	P&ID	P&ID Coor.	Test Type	Test Freq.	Deferred Just.	Tech. Pos.
1RY8033	2	A	0.75	DIA	AO	Active	O	C	M-60-6	E-2	LTJ	AJ		
											FC	Q		TP-VA-2
											STC	Q		TP-VA-1
											PI	Y2		TP-VA-4
			Valve Name			N2 SUPPLY TO PRT CONTAINMENT ISOLATION VALVE								
1RY8046	2	A/C	3.00	CK	SA	Active	SYS	C	M-60-6	E-3	LTJ	AJ		
											CCL	CM		
											COF	CM		
			Valve Name			PRIMARY WATER SUPPLY TO PRT CHECK VALVE								
1RY8047	2	A/C	0.75	CK	SA	Active	SYS	C	M-60-6	E-3	LTJ	AJ		
											CCL	CM		
											COF	CM		
			Valve Name			NITROGEN SUPPLY TO PRT CHECK VALVE								
2RC014A	1	B	1.00	GL	SO	Active	C	O/C	M-135-1B	F-2	FC	CS	CS-6	TP-VA-2
											STC	CS	CS-6	TP-VA-1
											STO	CS	CS-6	TP-VA-1
			Valve Name			REACTOR HEAD VENT ISOLATION VALVE								
2RC014B										E-2	FC	CS	CS-6	TP-VA-2
											STC	CS	CS-6	TP-VA-1
											STO	CS	CS-6	TP-VA-1
											PI	Y2		TP-VA-4
			Valve Name			REACTOR HEAD VENT ISOLATION VALVE								
2RC014C	1	B	1.00	GL	SO	Active	C	O/C	M-135-1B	F-2	FC	CS	CS-6	TP-VA-2
											STC	CS	CS-6	TP-VA-1
											STO	CS	CS-6	TP-VA-1
											PI	Y2		TP-VA-4
			Valve Name			REACTOR HEAD VENT ISOLATION VALVE								
2RC014D	1	B	1.00	GL	SO	Active	C	O/C	M-135-1B	E-2	FC	CS	CS-6	TP-VA-2
											STC	CS	CS-6	TP-VA-1
											STO	CS	CS-6	TP-VA-1
											PI	Y2		TP-VA-4
			Valve Name			REACTOR HEAD VENT ISOLATION VALVE								
2RY030A	3	C	0.75x1.00	RV	SA	Active	C	O/C	M-135-8	F-7	RT	Y10		
			Valve Name			PORV ACCUMULATOR RELIEF VALVE								
2RY030B	3	C	0.75x1.00	RV	SA	Active	C	O/C	M-135-8	F-6	RT	Y10		
			Valve Name			PORV ACCUMULATOR RELIEF VALVE								
2RY075	2	A	0.50	GL	M	Passive	LC	C	M-2135-6	E-6	LTJ	AJ		
			Valve Name			DEAD WEIGHT TESTER ISOLATION VALVE								
2RY085A	3	C	2.00	CK	SA	Active	SYS	C	M-135-8	C-7	CCD	CM		
											COD	CM		
			Valve Name			INSTR AIR SUPPLY TO PORV ACCUMULATOR CHECK VALVE								

Reactor Coolant

Valve EPN	Safety Class	Cat	Size	Vlv Type	Act. Type	Act/ Pass	Norm Pos	Safety Pos	P&ID	P&ID Coor.	Test Type	Test Freq.	Deferred Just.	Tech. Pos.
2RY085B	3	C	2.00	CK	SA	Active	SYS	C	M-135-8	D-6	CCD	CM		
											COD	CM		
		Valve Name		INSTR AIR SUPPLY TO PORV ACCUMULATOR CHECK VALVE										
2RY086A	3	C	2.00	CK	SA	Active	SYS	C	M-135-8	C-7	CCD	CM		
											COD	CM		
		Valve Name		INSTR AIR SUPPLY TO PORV ACCUMULATOR CHECK VALVE										
2RY086B	3	C	2.00	CK	SA	Active	SYS	C	M-135-8	D-6	CCD	CM		
											COD	CM		
		Valve Name		INSTR AIR SUPPLY TO PORV ACCUMULATOR CHECK VALVE										
2RY160	NS	C	0.50	CK	SA	Active	SYS	O	M-60-6	D-4	TRV	Y10		
		Valve Name		PRIMARY WATER SUPPLY TO PRT CHECK VALVE										
2RY455A	1	B	3.00	GL	AO	Active	C	O/C	M-135-5	C-8	FC	RR		TP-VA-2
											STC	RR		TP-VA-1
											STO	RR		TP-VA-1
											PI	Y2		TP-VA-4
		Valve Name		PRESSURIZER POWER OPERATED RELIEF VALVE (PORV)										
2RY456	1	B	3.00	GL	AO	Active	C	O/C	M-135-5	D-8	FC	RR		TP-VA-2
											STC	RR		TP-VA-1
											STO	RR		TP-VA-1
											PI	Y2		TP-VA-4
		Valve Name		PRESSURIZER POWER OPERATED RELIEF VALVE (PORV)										
2RY8000A	1	B	3.00	GA	MO	Active	O/C	O/C	M-135-5	C-8	DIAG	MOV		
											PI	MOV		
											SC	Q		
											SO	Q		
											STC	Q		TP-VA-1, TP-VA-6
		Valve Name		PRESSURIZER PORV BLOCK VALVE										
2RY8000B	1	B	3.00	GA	MO	Active	O/C	O/C	M-135-5	D-8	DIAG	MOV		
											PI	MOV		
											SC	Q		
											SO	Q		
											STC	Q		TP-VA-1, TP-VA-6
		Valve Name		PRESSURIZER PORV BLOCK VALVE										
2RY8010A	1	B/C	6.00	RV	SA	Active	C	O/C	M-135-5	E-6	RT	Y10		
		Valve Name		PRESSURIZER SAFETY VALVE										
2RY8010B	1	B/C	6.00	RV	SA	Active	C	O/C	M-135-5	E-5	RT	Y10		
		Valve Name		PRESSURIZER SAFETY VALVE										
2RY8010C	1	B/C	6.00	RV	SA	Active	C	O/C	M-135-5	E-4	RT	Y10		
		Valve Name		PRESSURIZER SAFETY VALVE										

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Valve EPN	Safety Class	Cat	Size	Viv Type	Act. Type	Act/ Pass	Norm Pos	Safety Pos	P&ID	P&ID Coor.	Test Type	Test Freq.	Deferred Just.	Tech. Pos.
2RY8025	2	A	0.375	GL	AO	Active	C	C	M-135-6	F-2	LTJ	AJ		
											FC	Q		TP-VA-2
											STC	Q		TP-VA-1
											PI	Y2		TP-VA-4
			Valve Name			PRT GAS ANALYZER CONTAINMENT ISOLATION VALVE								
2RY8026	2	A	0.375	GL	AO	Active	O	C	M-135-6	F-3	LTJ	AJ		
											FC	Q		TP-VA-2
											STC	Q		TP-VA-1
											PI	Y2		TP-VA-4
			Valve Name			PRT GAS ANALYZER CONTAINMENT ISOLATION VALVE								
2RY8028	2	A	3.00	DIA	AO	Active	O	C	M-135-6	E-2	LTJ	AJ		
											FC	Q		TP-VA-2
											STC	Q		TP-VA-1
											PI	Y2		TP-VA-4
			Valve Name			PRIMARY WATER SUPPLY TO PRT CONT ISOLATION VALVE								
2RY8033	2	A	0.75	DIA	AO	Active	O	C	M-135-6	E-2	LTJ	AJ		
											FC	Q		TP-VA-2
											STC	Q		TP-VA-1
											PI	Y2		TP-VA-4
			Valve Name			N2 SUPPLY TO PRT CONTAINMENT ISOLATION VALVE								
2RY8046	2	A/C	3.00	CK	SA	Active	SYS	C	M-135-6	E-3	LTJ	AJ		
											CCL	CM		
											COF	CM		
			Valve Name			PRIMARY WATER SUPPLY TO PRT CHECK VALVE								
2RY8047	2	A/C	0.75	CK	SA	Active	SYS	C	M-135-6	E-3	LTJ	AJ		
											CCL	CM		
											COF	CM		
			Valve Name			NITROGEN SUPPLY TO PRT CHECK VALVE								

Reactor Building and Containment Equipment Drains

Valve EPN	Safety Class	Cat	Size	Vlv Type	Act. Type	Act/ Pass	Norm Pos	Safety Pos	P&ID	P&ID Coor.	Test Type	Test Freq.	Deferred Just.	Tech. Pos.
1RE040	2	A/C	.75x1.0	RV	SA	Active	C	O/C	M-70-1	C-3	LTJ	AJ		
											RT	Y10		
			Valve Name			RE PUMPS DISCHARGE RELIEF VLV								
1RE1003	2	A	3	DIA	AO	Active	C	C	M-70-1	B-3	LTJ	AJ		
											FC	Q		TP-VA-2
											STC	Q		TP-VA-1
											PI	Y2		TP-VA-4
			Valve Name			RCDT PUMPS DISCHARGE CONTAINMENT ISOLATION VALVE								
1RE9157	2	A	1	DIA	AO	Active	O	C	M-70-1	C-2	LTJ	AJ		
											FC	Q		TP-VA-2
											STC	Q		TP-VA-1
											PI	Y2		TP-VA-4
			Valve Name			RCDT NITROGEN SUPPLY CONTAINMENT ISOLATION VALVE								
1RE9159A	2	A	0.75	DIA	AO	Active	O	C	M-70-1	E-3	LTJ	AJ		
											FC	Q		TP-VA-2
											STC	Q		
											PI	Y2		TP-VA-4
			Valve Name			RCDT TO AUTO GAS ANALYZER CONTAINMENT ISOL VALVE								
1RE9159B	2	A	0.75	DIA	AO	Active	C	C	M-70-1	E-2	LTJ	AJ		
											FC	Q		TP-VA-2
											STC	Q		TP-VA-1
											PI	Y2		TP-VA-4
			Valve Name			RCDT TO AUTO GAS ANALYZER CONTAINMENT ISOL VALVE								
1RE9160A	2	A	1	DIA	AO	Active	O	C	M-70-1	D-4	LTJ	AJ		
											FC	Q		TP-VA-2
											STC	Q		TP-VA-1
											PI	Y2		TP-VA-4
			Valve Name			RCDT TO WASTE GAS COMPRESSOR CONTAINMENT ISOL VLV								
1RE9160B	2	A	1	DIA	AO	Active	O	C	M-70-1	D-2	LTJ	AJ		
											FC	Q		TP-VA-2
											STC	Q		TP-VA-1
											PI	Y2		TP-VA-4
			Valve Name			RCDT TO WASTE GAS COMPRESSOR CONTAINMENT ISOL VLV								
1RE9170	2	A	3	DIA	AO	Active	O	C	M-70-1	B-2	LTJ	AJ		
											FC	Q		TP-VA-2
											STC	Q		TP-VA-1
											PI	Y2		TP-VA-4
			Valve Name			RCDT PUMPS DISCHARGE CONTAINMENT ISOLATION VALVE								
2RE040	2	A/C	.75x1.0	RV	SA	Active	C	O/C	M-141-1	C-6	LTJ	AJ		
											RT	Y10		
			Valve Name			RE PUMPS DISCHARGE RELIEF VLV								

Reactor Building and Containment Equipment Drains

Valve EPN	Safety Class	Cat	Size	Vlv Type	Act. Type	Act/ Pass	Norm Pos	Safety Pos	P&ID	P&ID Coor.	Test Type	Test Freq.	Deferred Just.	Tech. Pos.
2RE1003	2	A	3	DIA	AO	Active	C	C	M-141-1	C-6	LTJ	AJ		
											FC	Q		TP-VA-2
											STC	Q		TP-VA-1
											PI	Y2		TP-VA-4
			Valve Name			RCDT PUMPS DISCHARGE CONTAINMENT ISOLATION VALVE								
2RE9157	2	A	1	DIA	AO	Active	O	C	M-141-1	D-7	LTJ	AJ		
											FC	Q		TP-VA-2
											STC	Q		TP-VA-1
											PI	Y2		TP-VA-4
			Valve Name			RCDT NITROGEN SUPPLY CONTAINMENT ISOLATION VALVE								
2RE9159A	2	A	0.75	DIA	AO	Active	O	C	M-141-1	E-6	LTJ	AJ		
											FC	Q		TP-VA-2
											STC	Q		TP-VA-1
											PI	Y2		TP-VA-4
			Valve Name			RCDT TO AUTO GAS ANALYZER CONTAINMENT ISOL VALVE								
2RE9159B	2	A	0.75	DIA	AO	Active	C	C	M-141-1	E-7	LTJ	AJ		
											FC	Q		TP-VA-2
											STC	Q		TP-VA-1
											PI	Y2		TP-VA-4
			Valve Name			RCDT TO AUTO GAS ANALYZER CONTAINMENT ISOL VALVE								
2RE9160A	2	A	1	DIA	AO	Active	O	C	M-141-1	E-6	LTJ	AJ		
											FC	Q		TP-VA-2
											STC	Q		TP-VA-1
											PI	Y2		TP-VA-4
			Valve Name			RCDT TO WASTE GAS COMPRESSOR CONTAINMENT ISOL VLV								
2RE9160B	2	A	1	DIA	AO	Active	O	C	M-141-1	E-7	LTJ	AJ		
											FC	Q		TP-VA-2
											STC	Q		TP-VA-1
											PI	Y2		TP-VA-4
			Valve Name			RCDT TO WASTE GAS COMPRESSOR CONTAINMENT ISOL VLV								
2RE9170	2	A	3	DIA	AO	Active	O	C	M-141-1	C-7	LTJ	AJ		
											FC	Q		TP-VA-2
											STC	Q		TP-VA-1
											PI	Y2		TP-VA-4
			Valve Name			RCDT PUMPS DISCHARGE CONTAINMENT ISOLATION VALVE								

Reactor Building and Containment Floor Drains to R

Valve EPN	Safety Class	Cat	Size	Viv Type	Act. Type	Act/ Pass	Norm Pos	Safety Pos	P&ID	P&ID Coor.	Test Type	Test Freq.	Deferred Just.	Tech. Pos.
1RF026	2	A	2	PLG	AO	Active	O	C	M-48-6B	F-2	LTJ	AJ		
											FC	Q		TP-VA-2
											STC	Q		TP-VA-1
											PI	Y2		TP-VA-4
			Valve Name			RF PUMPS DISCHARGE CONTAINMENT ISOLATION VLV								
1RF026-I/A-CHK	NC	C	1	CK	SA	Active	C	C	M-48-6B	F-2	CO	Q		
											CC	RR	RJ-10	
			Valve Name			CHECK VALVE BETWEEN INSTR AIR SUPPLY AND ACCUMULATOR ON RF PUMPS DISCHARGE CONTAINMENT ISOLATION VLV								
1RF027	2	A	2	PLG	AO	Active	O	C	M-48-6A	E-7	LTJ	AJ		
											FC	Q		TP-VA-2
											STC	Q		TP-VA-1
											PI	Y2		TP-VA-4
			Valve Name			RF PUMPS DISCHARGE CONTAINMENT ISOLATION VLV								
1RF027-I/A-CHK	NC	C	1	CK	SA	Active	C	C	M-48-6A	E-7	CC	Q		
											CO	Q		
			Valve Name			CHECK VALVE BETWEEN INSTR AIR SUPPLY AND ACCUMULATOR ON RF PUMPS DISCHARGE CONTAINMENT ISOLATION VLV								
1RF060	2	A/C	.75x1.0	RV	SA	Active	C	O/C	M-48-6B	F-1	LTJ	AJ		
											RT	Y10		
			Valve Name			RF PUMPS DISCHARGE RELIEF VLV								
2RF026	2	A	2	PLG	AO	Active	O	C	M-48-6B	D-2	LTJ	AJ		
											FC	Q		TP-VA-2
											STC	Q		TP-VA-1
											PI	Y2		TP-VA-4
			Valve Name			RF PUMPS DISCHARGE CONTAINMENT ISOLATION VLV								
2RF026-I/A-CHK	NC	C	1	CK	SA	Active	C	C	M-48-6B	D-2	CO	Q		
											CC	RR	RJ-10	
			Valve Name			CHECK VALVE BETWEEN INSTR AIR SUPPLY AND ACCUMULATOR ON RF PUMPS DISCHARGE CONTAINMENT ISOLATION VLV								
2RF027	2	A	2	PLG	AO	Active	O	C	M-48-6A	B-7	LTJ	AJ		
											FC	Q		TP-VA-2
											STC	Q		TP-VA-1
											PI	Y2		TP-VA-4
			Valve Name			RF PUMPS DISCHARGE CONTAINMENT ISOLATION VLV								
2RF027-I/A-CHK	NC	C	1	CK	SA	Active	C	C	M-48-6A	B-7	CC	Q		
											CO	Q		
			Valve Name			CHECK VALVE BETWEEN INSTR AIR SUPPLY AND ACCUMULATOR ON RF PUMPS DISCHARGE CONTAINMENT ISOLATION VLV								
2RF060	2	A/C	.75x1.0	RV	SA	Active	C	O/C	M-48-6B	D-1	LTJ	AJ		
											RT	Y10		
			Valve Name			RF PUMPS DISCHARGE RELIEF VLV								

Residual Heat Removal

Valve EPN	Safety Class	Cat	Size	Vlv Type	Act. Type	Act/ Pass	Norm Pos	Safety Pos	P&ID	P&ID Coor.	Test Type	Test Freq.	Deferred Just.	Tech. Pos.
1RH610	2	B	3	GA	MO	Active	O	O/C	M-62	F-4	SC	M18		
											SO	M18		
											STC	M18		TP-VA-1
											STO	M18		TP-VA-1
											DIAG	MOV		
											PI	MOV		
			Valve Name			RHR PUMP MINIFLOW VALVE								
1RH611	2	B	3	GA	MO	Active	O	O/C	M-62	A-4	SC	M18		
											SO	M18		
											STC	M18		TP-VA-1
											STO	M18		TP-VA-1
											DIAG	MOV		
											PI	MOV		
			Valve Name			RHR PUMP MINIFLOW VALVE								
1RH8701A	1	A	12	GA	MO	Active	C	C	M-62	E-2	LT	CS	CS-13	
											SC	M18		
											SO	M18		
											DIAG	MOV		
											PI	MOV		
			Valve Name			MOV A RH PP SUCT FROM A HL DWST ISOL VLV								
1RH8701B	1	A	12	GA	MO	Active	C	C	M-62	E-1	LT	CS	CS-13	
											SC	M18		
											SO	M18		
											DIAG	MOV		
											PI	MOV		
			Valve Name			MOV A RH PP SUCT FROM A HL UPST ISOL VLV								
1RH8702A	1	A	12	GA	MO	Active	C	C	M-62	D-2	LT	CS	CS-13	
											SC	M18		
											SO	M18		
											DIAG	MOV		
											PI	MOV		
			Valve Name			MOV B RH PP SUCT FROM C HL DWST ISOL VLV								
1RH8702B	1	A	12	GA	MO	Active	C	C	M-62	D-1	LT	CS	CS-13	
											SC	M18		
											SO	M18		
											DIAG	MOV		
											PI	MOV		
			Valve Name			MOV B RH PP SUCT FROM C HL UPST ISOL VLV								
1RH8705A	2	A/C	0.75	CK	SA	Passive	SYS	O/C	M-62	D-1	CC	CS	CS-13	
											CO	RR	RJ-7	
											LT	Y2		
			Valve Name			RH SUCTION ISOLATION CHECK VALVE								
1RH8705B	2	A/C	0.75	CK	SA	Passive	SYS	O/C	M-62	C-1	CC	CS	CS-13	
											CO	RR	RJ-7	
											LT	Y2		
			Valve Name			RH SUCTION ISOLATION CHECK VALVE								

Residual Heat Removal

Valve EPN	Safety Class	Cat	Size	Vlv Type	Act. Type	Act/ Pass	Norm Pos	Safety Pos	P&ID	P&ID Coor.	Test Type	Test Freq.	Deferred Just.	Tech. Pos.
1RH8706A	2	A/C	0.75	CK	SA	Passive	SYS	O/C	M-62	D-1	CC	CS	CS-13	
											CO	RR	RJ-7	
											LT	Y2		
		Valve Name		RH SUCTION ISOLATION CHECK VALVE										
1RH8708A	2	C	3.0 x 4.0	RV	SA	Passive	C	O/C	M-62	E-2	RT	Y10		
		Valve Name		RH PP SUCT HDR RLF VLV										
1RH8708B	2	C	3.0 x 4.0	RV	SA	Passive	C	O/C	M-62	D-2	RT	Y10		
		Valve Name		RH PP SUCT HDR RLF VLV										
1RH8716A	2	B	8	GA	MO	Active	O	O/C	M-62	D-8	SC	M18		
											SO	M18		
											STC	M18		TP-VA-1
											STO	M18		TP-VA-1
											DIAG	MOV		
											PI	MOV		
		Valve Name		RHR PUMP DISCHARGE CROSSTIE ISOLATION VALVE										
1RH8716B	2	B	8	GA	MO	Active	O	O/C	M-62	C-8	SC	M18		
											SO	M18		
											STC	M18		TP-VA-1
											STO	M18		TP-VA-1
											DIAG	MOV		
											PI	MOV		
		Valve Name		RHR PUMP DISCHARGE CROSSTIE ISOLATION VALVE										
1RH8730A	2	C	8	CK	SA	Active	C	O/C	M-62	E-4	CCF	CS	CS-7	
											COF	CS	CS-7	
		Valve Name		RH PP RH01PA/B DSCH CHK VLV										
1RH8730B	2	C	8	CK	SA	Active	C	O/C	M-62	C-4	CCF	CS	CS-7	
											COF	CS	CS-7	
		Valve Name		RH PP RH01PA/B DSCH CHK VLV										
2RH610	2	B	3	GA	MO	Active	O	O/C	M-137	F-4	SC	M18		
											SO	M18		
											STC	M18		TP-VA-1
											STO	M18		TP-VA-1
											DIAG	MOV		
											PI	MOV		
		Valve Name		RHR PUMP MINIFLOW VALVE										
2RH611	2	B	3	GA	MO	Active	O	O/C	M-137	B-4	SC	M18		
											SO	M18		
											STC	M18		TP-VA-1
											STO	M18		TP-VA-1
											DIAG	MOV		
											PI	MOV		
		Valve Name		RHR PUMP MINIFLOW VALVE										

Residual Heat Removal

Valve EPN	Safety Class	Cat	Size	Vlv Type	Act. Type	Act/ Pass	Norm Pos	Safety Pos	P&ID	P&ID Coor.	Test Type	Test Freq.	Deferred Just.	Tech. Pos.
2RH8701A	1	A	12	GA	MO	Active	C	C	M-137	E-7	LT	CS	CS-13	
											SC	M18		
											SO	M18		
											DIAG	MOV		
											PI	MOV		
			Valve Name			MOV A RH PP SUCT FROM A HL DWST ISOL VLV								
2RH8701B	1	A	12	GA	MO	Active	C	C	M-137	E-8	LT	CS	CS-13	
											SC	M18		
											SO	M18		
											DIAG	MOV		
											PI	MOV		
			Valve Name			MOV A RH PP SUCT FROM A HL UPST ISOL VLV								
2RH8702A	1	A	12	GA	MO	Active	C	C	M-137	D-7	LT	CS	CS-13	
											SC	M18		
											SO	M18		
											DIAG	MOV		
											PI	MOV		
			Valve Name			MOV B RH PP SUCT FROM C HL DWST ISOL VLV								
2RH8702B	1	A	12	GA	MO	Active	C	C	M-137	D-8	LT	CS	CS-13	
											SC	M18		
											SO	M18		
											DIAG	MOV		
											PI	MOV		
			Valve Name			MOV B RH PP SUCT FROM C HL UPST ISOL VLV								
2RH8705A	2	A/C	0.75	CK	SA	Passive	SYS	O/C	M-137	D-8	CC	CS	CS-13	
											CO	RR	RJ-7	
											LT	Y2		
			Valve Name			RH SUCTION ISOLATION CHECK VALVE								
2RH8705B	2	A/C	0.75	CK	SA	Passive	SYS	O/C	M-137	C-8	CC	CS	CS-13	
											CO	RR	RJ-7	
											LT	Y2		
			Valve Name			RH SUCTION ISOLATION CHECK VALVE								
2RH8708A	2	C	3.0 x 4.0	RV	SA	Passive	C	O/C	M-137	E-7	RT	Y10		
			Valve Name			RH PP SUCT HDR RLF VLV								
2RH8708B	2	C	3.0 x 4.0	RV	SA	Passive	C	O/C	M-137	D-7	RT	Y10		
			Valve Name			RH PP SUCT HDR RLF VLV								
2RH8716A	2	B	8	GA	MO	Active	O	O/C	M-137	E-1	SC	CS	CS-14	
											SO	CS	CS-14	
											STC	CS	CS-14	TP-VA-1
											STO	CS	CS-14	TP-VA-1
											DIAG	MOV		
											PI	MOV		
			Valve Name			RHR PUMP DISCHARGE CROSSTIE ISOLATION VALVE								

Residual Heat Removal

Valve EPN	Safety Class	Cat	Size	Vlv Type	Act. Type	Act/ Pass	Norm Pos	Safety Pos	P&ID	P&ID Coor.	Test Type	Test Freq.	Deferred Just.	Tech. Pos.
2RH8716B	2	B	8	GA	MO	Active	O	O/C	M-137	C-1	SC	CS	CS-14	
											SO	CS	CS-14	
											STC	CS	CS-14	TP-VA-1
											STO	CS	CS-14	TP-VA-1
											DIAG	MOV		
											PI	MOV		
			Valve Name			RHR PUMP DISCHARGE CROSSTIE ISOLATION VALVE								
2RH8730A	2	C	8	CK	SA	Active	C	O/C	M-137	E-5	CCF	CS	CS-7	
											COF	CS	CS-7	
			Valve Name			RH PP RH01PA/B DSCH CHK VLV								
2RH8730B	2	C	8	CK	SA	Active	C	O/C	M-137	C-5	CCF	CS	CS-7	
											COF	CS	CS-7	
			Valve Name			RH PP RH01PA/B DSCH CHK VLV								

Valve EPN	Safety Class	Cat	Size	Vlv Type	Act. Type	Act/ Pass	Service Air Norm Pos	Service Air Safety Pos	P&ID	P&ID Coor.	Test Type	Test Freq.	Deferred Just.	Tech. Pos.
1SA032	2	A	1.5	GL	AO	Active	C	C	M-54-2	D6	LTJ	AJ		
											FC	Q		TP-VA-2
											STC	Q		TP-VA-1
											PI	Y2		TP-VA-4
			Valve Name			AOV CNMT SA SUP HDR OUTSIDE CNMT ISOL VLV								
1SA033	2	A	1.5	GL	AO	Active	C	C	M-54-2	D7	LTJ	AJ		
											FC	Q		TP-VA-2
											STC	Q		TP-VA-1
											PI	Y2		TP-VA-4
			Valve Name			AOV CNMT SA SUP HDR INSIDE CNMT ISOL VLV								
2SA032	2	A	1.5	GL	AO	Active	C	C	M-54-2	D3	LTJ	AJ		
											FC	Q		TP-VA-2
											STC	Q		TP-VA-1
											PI	Y2		TP-VA-4
			Valve Name			AOV CNMT SA SUP HDR OUTSIDE CNMT ISOL VLV								
2SA033	2	A	1.5	GL	AO	Active	C	C	M-54-2	D2	LTJ	AJ		
											FC	Q		TP-VA-2
											STC	Q		TP-VA-1
											PI	Y2		TP-VA-4
			Valve Name			AOV CNMT SA SUP HDR INSIDE CNMT ISOL VLV								

Steam Generator Blowdown

Valve EPN	Safety Class	Cat	Size	Vlv Type	Act. Type	Act/ Pass	Norm Pos	Safety Pos	P&ID	P&ID Coor.	Test Type	Test Freq.	Deferred Just.	Tech. Pos.
1SD002A	2	A	2	GL	AO	Active	O	C	M-48-5A	D-8	FC	Q		TP-VA-2
											STC	Q		TP-VA-1
											LT	Y2		
											PI	Y2		TP-VA-4
			Valve Name			STEAM GENERATOR 1A BLOWDOWN ISOL VALVE								
1SD002B	2	A	2	GL	AO	Active	O	C	M-48-5A	D-7	FC	Q		TP-VA-2
											STC	Q		TP-VA-1
											LT	Y2		
											PI	Y2		TP-VA-4
			Valve Name			STEAM GENERATOR 1A BLOWDOWN ISOL VALVE								
1SD002C	2	A	2	GL	AO	Active	O	C	M-48-5A	D-6	FC	Q		TP-VA-2
											STC	Q		TP-VA-1
											LT	Y2		
											PI	Y2		TP-VA-4
			Valve Name			STEAM GENERATOR 1D BLOWDOWN ISOL VALVE								
1SD002D	2	A	2	GL	AO	Active	O	C	M-48-5A	D-6	FC	Q		TP-VA-2
											STC	Q		TP-VA-1
											LT	Y2		
											PI	Y2		TP-VA-4
			Valve Name			STEAM GENERATOR 1D BLOWDOWN ISOL VALVE								
1SD002E	2	A	2	GL	AO	Active	O	C	M-48-5A	D-5	FC	Q		TP-VA-2
											STC	Q		TP-VA-1
											LT	Y2		
											PI	Y2		TP-VA-4
			Valve Name			STEAM GENERATOR 1B BLOWDOWN ISOL VALVE								
1SD002F	2	A	2	GL	AO	Active	O	C	M-48-5A	D-4	FC	Q		TP-VA-2
											STC	Q		TP-VA-1
											LT	Y2		
											PI	Y2		TP-VA-4
			Valve Name			STEAM GENERATOR 1B BLOWDOWN ISOL VALVE								
1SD002G	2	A	2	GL	AO	Active	O	C	M-48-5A	D-3	FC	Q		TP-VA-2
											STC	Q		TP-VA-1
											LT	Y2		
											PI	Y2		TP-VA-4
			Valve Name			STEAM GENERATOR 1C BLOWDOWN ISOL VALVE								
1SD002H	2	A	2	GL	AO	Active	O	C	M-48-5A	D-2	FC	Q		TP-VA-2
											STC	Q		TP-VA-1
											LT	Y2		
											PI	Y2		TP-VA-4
			Valve Name			STEAM GENERATOR 1C BLOWDOWN ISOL VALVE								
1SD005A	2	A	0.375	GL	AO	Active	O	C	M-68-8	F-7	FC	Q		TP-VA-2
											STC	Q		TP-VA-1
											LT	Y2		
											PI	Y2		TP-VA-4
			Valve Name			STEAM GENERATOR BLOWDOWN SAMPLE VALVE								

Steam Generator Blowdown

Valve EPN	Safety Class	Cat	Size	Vlv Type	Act. Type	Act/ Pass	Norm Pos	Safety Pos	P&ID	P&ID Coor.	Test Type	Test Freq.	Deferred Just.	Tech. Pos.
1SD005B	2	A	0.375	GL	AO	Active	O	C	M-68-8	D-7	FC	Q		TP-VA-2
											STC	Q		TP-VA-1
											LT	Y2		
											PI	Y2		TP-VA-4
			Valve Name			STEAM GENERATOR BLOWDOWN SAMPLE VALVE								
1SD005C	2	A	0.375	GL	AO	Active	O	C	M-68-8	F-4	FC	Q		TP-VA-2
											STC	Q		TP-VA-1
											LT	Y2		
											PI	Y2		TP-VA-4
			Valve Name			STEAM GENERATOR BLOWDOWN SAMPLE VALVE								
1SD005D	2	A	0.375	GL	AO	Active	O	C	M-68-8	D-4	FC	Q		TP-VA-2
											STC	Q		TP-VA-1
											LT	Y2		
											PI	Y2		TP-VA-4
			Valve Name			STEAM GENERATOR BLOWDOWN SAMPLE VALVE								
1SD054A	2	B	2	GA	AO	Active	O	C	M-48-5A	D-8	FC	CS	CS-18	TP-VA-2
											STC	CS	CS-18	TP-VA-1
			Valve Name			STEAM GENERATOR BLOWDOWN ISOLATION								
1SD054B	2	B	2	GA	AO	Active	O	C	M-48-5A	D-7	FC	CS	CS-18	TP-VA-2
											STC	CS	CS-18	TP-VA-1
			Valve Name			STEAM GENERATOR BLOWDOWN ISOLATION								
1SD054C	2	B	2	GA	AO	Active	O	C	M-48-5A	D-6	FC	CS	CS-18	TP-VA-2
											STC	CS	CS-18	TP-VA-1
			Valve Name			STEAM GENERATOR BLOWDOWN ISOLATION								
1SD054D	2	B	2	GA	AO	Active	O	C	M-48-5A	D-6	FC	CS	CS-18	TP-VA-2
											STC	CS	CS-18	TP-VA-1
			Valve Name			STEAM GENERATOR BLOWDOWN ISOLATION								
1SD054E	2	B	2	GA	AO	Active	O	C	M-48-5A	D-5	FC	CS	CS-18	TP-VA-2
											STC	CS		
			Valve Name			STEAM GENERATOR BLOWDOWN ISOLATION								
1SD054F	2	B	2	GA	AO	Active	O	C	M-48-5A	D-4	FC	CS	CS-18	TP-VA-2
											STC	CS	CS-18	TP-VA-1
			Valve Name			STEAM GENERATOR BLOWDOWN ISOLATION								
1SD054G	2	B	2	GA	AO	Active	O	C	M-48-5A	D-3	FC	CS	CS-18	TP-VA-2
											STC	CS	CS-18	TP-VA-1
			Valve Name			STEAM GENERATOR BLOWDOWN ISOLATION								
1SD054H	2	B	2	GA	AO	Active	O	C	M-48-5A	D-2	FC	CS	CS-18	TP-VA-2
											STC	CS	CS-18	TP-VA-1
			Valve Name			STEAM GENERATOR BLOWDOWN ISOLATION								
2SD002A	2	A	2	GL	AO	Active	O	C	M-48-5B	C-8	FC	Q		TP-VA-2
											STC	Q		TP-VA-1
											LT	Y2		
											PI	Y2		TP-VA-4
			Valve Name			STEAM GENERATOR BLOWDOWN UPPER/LOWER ISOL VALVE								

Steam Generator Blowdown

Valve EPN	Safety Class	Cat	Size	Vlv Type	Act. Type	Act/ Pass	Norm Pos	Safety Pos	P&ID	P&ID Coor.	Test Type	Test Freq.	Deferred Just.	Tech. Pos.
2SD002B	2	A	2	GL	AO	Active	O	C	M-48-5B	C-7	FC	Q		TP-VA-2
											STC	Q		TP-VA-1
											LT	Y2		
											PI	Y2		TP-VA-4
			Valve Name			STEAM GENERATOR BLOWDOWN UPPER/LOWER ISOL VALVE								
2SD002C	2	A	2	GL	AO	Active	O	C	M-48-5B	C-6	FC	Q		TP-VA-2
											STC	Q		TP-VA-1
											LT	Y2		
											PI	Y2		TP-VA-4
			Valve Name			STEAM GENERATOR BLOWDOWN UPPER/LOWER ISOL VALVE								
2SD002D	2	A	2	GL	AO	Active	O	C	M-48-5B	C-6	FC	Q		TP-VA-2
											STC	Q		TP-VA-1
											LT	Y2		
											PI	Y2		TP-VA-4
			Valve Name			STEAM GENERATOR BLOWDOWN UPPER/LOWER ISOL VALVE								
2SD002E	2	A	2	GL	AO	Active	O	C	M-48-5B	C-5	FC	Q		TP-VA-2
											STC	Q		TP-VA-1
											LT	Y2		
											PI	Y2		TP-VA-4
			Valve Name			STEAM GENERATOR BLOWDOWN UPPER/LOWER ISOL VALVE								
2SD002F	2	A	2	GL	AO	Active	O	C	M-48-5B	C-4	FC	Q		TP-VA-2
											STC	Q		TP-VA-1
											LT	Y2		
											PI	Y2		TP-VA-4
			Valve Name			STEAM GENERATOR BLOWDOWN UPPER/LOWER ISOL VALVE								
2SD002G	2	A	2	GL	AO	Active	O	C	M-48-5B	C-3	FC	Q		TP-VA-2
											STC	Q		TP-VA-1
											LT	Y2		
											PI	Y2		TP-VA-4
			Valve Name			STEAM GENERATOR BLOWDOWN UPPER/LOWER ISOL VALVE								
2SD002H	2	A	2	GL	AO	Active	O	C	M-48-5B	C-2	FC	Q		TP-VA-2
											STC	Q		TP-VA-1
											LT	Y2		
											PI	Y2		TP-VA-4
			Valve Name			STEAM GENERATOR BLOWDOWN UPPER/LOWER ISOL VALVE								
2SD005A	2	A	0.375	GL	AO	Active	O	C	M-48-5B	E-8	FC	Q		TP-VA-2
											STC	Q		TP-VA-1
											LT	Y2		
											PI	Y2		TP-VA-4
			Valve Name			STEAM GENERATOR BLOWDOWN SAMPLE VALVE								
2SD005B	2	A	0.375	GL	AO	Active	O	C	M-48-5B	E-6	FC	Q		TP-VA-2
											STC	Q		TP-VA-1
											LT	Y2		
											PI	Y2		TP-VA-4
			Valve Name			STEAM GENERATOR BLOWDOWN SAMPLE VALVE								

Steam Generator Blowdown

Valve EPN	Safety Class	Cat	Size	Vlv Type	Act. Type	Act/ Pass	Norm Pos	Safety Pos	P&ID	P&ID Coor.	Test Type	Test Freq.	Deferred Just.	Tech. Pos.
2SD005C	2	A	0.375	GL	AO	Active	O	C	M-48-5B	E-5	FC	Q		TP-VA-2
											STC	Q		TP-VA-1
											LT	Y2		
											PI	Y2		TP-VA-4
			Valve Name			STEAM GENERATOR BLOWDOWN SAMPLE VALVE								
2SD005D	2	A	0.375	GL	AO	Active	O	C	M-48-5B	E-3	FC	Q		TP-VA-2
											STC	Q		TP-VA-1
											LT	Y2		
											PI	Y2		TP-VA-4
			Valve Name			STEAM GENERATOR BLOWDOWN SAMPLE VALVE								
2SD054B	2	B	2	GL	AO	Active	O	C	M-48-5B	C-7	FC	CS	CS-18	TP-VA-2
											STC	CS	CS-18	TP-VA-1
			Valve Name			STEAM GENERATOR UPPER/LOWER BLOWDOWN ISOLATION								
2SD054D	2	B	2	GL	AO	Active	O	C	M-48-5B	C-6	FC	CS	CS-18	TP-VA-2
											STC	CS	CS-18	TP-VA-1
			Valve Name			STEAM GENERATOR UPPER/LOWER BLOWDOWN ISOLATION								
2SD054F	2	B	2	GL	AO	Active	O	C	M-48-5B	C-4	FC	CS	CS-18	TP-VA-2
											STC	CS	CS-18	TP-VA-1
			Valve Name			STEAM GENERATOR UPPER/LOWER BLOWDOWN ISOLATION								
2SD054H	2	B	2	GL	AO	Active	O	C	M-48-5B	C-2	FC	CS	CS-18	TP-VA-2
											STC	CS	CS-18	TP-VA-1
			Valve Name			STEAM GENERATOR UPPER/LOWER BLOWDOWN ISOLATION								

Safety Injection

Valve EPN	Safety Class	Cat	Size	Vlv Type	Act. Type	Act/ Pass	Norm Pos	Safety Pos	P&ID	P&ID Coor.	Test Type	Test Freq.	Deferred Just.	Tech. Pos.
1SI101A	2	B	4	GA	M	Active	LO	O/C	M-61-2	E-3	SC	Y2		
											SO	Y2		
			Valve Name			1SI8801A UPSTRM ISOL VLV								
1SI101B	2	B	4	GA	M	Active	LO	O/C	M-61-2	C-3	SC	Y2		
											SO	Y2		
			Valve Name			1SI8801B UPSTRM ISOL VLV								
1SI121A	2	C	0.75x1.0	RV	SA	Active	C	O	M-61-4	C-5	RT	Y10		
			Valve Name			CONTAINMENT SUMP ISOLATION VALVE RELIEF VALVE								
1SI121B	2	C	0.75x1.0	RV	SA	Active	C	O	M-61-4	B-4	RT	Y10		
			Valve Name			CONTAINMENT SUMP ISOLATION VALVE RELIEF VALVE								
1SI8801A	2	B	4.000	GA	MO	Active	C	O/C	M-61-2	D-3	SC	M18		
											SO	M18		
											STO	M18		TP-VA-1
											DIAG	MOV		
											PI	MOV		
			Valve Name			CHARGING TO COLD LEG INJECTION MOV								
1SI8801B	2	B	4.000	GA	MO	Active	C	O/C	M-61-2	C-3	SC	M18		
											SO	M18		
											STO	M18		TP-VA-1
											DIAG	MOV		
											PI	MOV		
			Valve Name			CHARGING TO COLD LEG INJECTION MOV								
1SI8802A	2	B	4	GA	MO	Active	C	O/C	M-61-3	E-3	SC	M18		
											SO	M18		
											STO	M18		TP-VA-1
											DIAG	MOV		
											PI	MOV		
			Valve Name			MOV SI PP DSCH OUTSIDE CNMT ISOL VLV								
1SI8802B	2	B	4	GA	MO	Active	C	O/C	M-61-3	D-3	SC	M18		
											SO	M18		
											STO	M18		TP-VA-1
											DIAG	MOV		
											PI	MOV		
			Valve Name			MOV SI PP DSCH OUTSIDE CNMT ISOL VLV								
1SI8804B	2	B	8	GA	MO	Active	C	O/C	M-61-1A	C-4	SC	M18		
											SO	M18		
											STO	M18		TP-VA-1, TP-VA-6
											DIAG	MOV		
											PI	MOV		
			Valve Name			RH HX TO SI PUMP SUCTION ISOLATION VALVE								

Safety Injection

Valve EPN	Safety Class	Cat	Size	Vlv Type	Act. Type	Act/ Pass	Norm Pos	Safety Pos	P&ID	P&ID Coor.	Test Type	Test Freq.	Deferred Just.	Tech. Pos.
1SI8806	2	B	8	GA	MO	Active	O	O/C	M-61-1A	D-2	SC	M18		
											SO	M18		
											STC	M18		TP-VA-1, TP-VA-6
											DIAG	MOV		
											PI	MOV		
			Valve Name			MOV RWST TO SI PPS SUCT HDR ISOL VLV								
1SI8807A	2	B	6.000	GA	MO	Active	C	O/C	M-61-1A	E-2	SC	M18		
											SO	M18		
											STO	M18		TP-VA-1, TP-VA-6
											DIAG	MOV		
											PI	MOV		
			Valve Name			MOV SI TO CV PPS SUCT HDR XTIE ISOL VL								
1SI8807B	2	B	6.000	GA	MO	Active	C	O/C	M-61-1A	E-2	SC	M18		
											SO	M18		
											STO	M18		TP-VA-1, TP-VA-6
											DIAG	MOV		
											PI	MOV		
			Valve Name			MOV SI TO CV PPS SUCT HDR XTIE ISOL VL								
1SI8808A	1	B	10	GA	MO	Passive	O	O/C	M-61-5	C-6	STC	M18		TP-VA-1, TP-VA-6
											PI	Y2		
			Valve Name			ACCUMULATOR DISCHARGE ISOLATION VALVE - MOV								
1SI8808B	1	B	10	GA	MO	Passive	O	O/C	M-61-5	C-3	STC	M18		TP-VA-1, TP-VA-6
											PI	Y2		
			Valve Name			ACCUMULATOR DISCHARGE ISOLATION VALVE - MOV								
1SI8808C	1	B	10	GA	MO	Passive	O	O/C	M-61-6	C-7	STC	M18		TP-VA-1, TP-VA-6
											PI	Y2		
			Valve Name			ACCUMULATOR DISCHARGE ISOLATION VALVE - MOV								
1SI8808D	1	B	10	GA	MO	Passive	O	O/C	M-61-6	C-4	STC	M18		TP-VA-1, TP-VA-6
											PI	Y2		
			Valve Name			ACCUMULATOR DISCHARGE ISOLATION VALVE - MOV								
1SI8809A	2	B	8	GA	MO	Active	O	O/C	M-61-4	E-4	SC	M18		
											SO	M18		
											STC	M18		TP-VA-1
											DIAG	MOV		
											PI	MOV		
			Valve Name			MOV RH HX SI OUTLET DWST ISOL VLV								

Safety Injection

Valve EPN	Safety Class	Cat	Size	Vlv Type	Act. Type	Act/ Pass	Norm Pos	Safety Pos	P&ID	P&ID Coor.	Test Type	Test Freq.	Deferred Just.	Tech. Pos.
1SI8809B	2	B	8	GA	MO	Active	O	O/C	M-61-4	D-4	SC	M18		
											SO	M18		
											STC	M18		TP-VA-1
											DIAG	MOV		
											PI	MOV		
			Valve Name			MOV RH HX SI OUTLET DWST ISOL VLV								
1SI8811A	2	B	24	GA	MO	Active	C	O/C	M-61-4	C-5	DIAG	MOV		
											PI	MOV		
											SC	RR	RJ-2	
											SO	RR	RJ-2	
											STO	RR	RJ-2	TP-VA-1
			Valve Name			MOV CNMT RECIRC SUMP OUTLET ISOL VLV								
1SI8811B	2	B	24	GA	MO	Active	C	O/C	M-61-4	A-5	DIAG	MOV		
											PI	MOV		
											SC	RR	RJ-2	
											SO	RR	RJ-2	
											STO	RR	RJ-2	TP-VA-1
			Valve Name			MOV CNMT RECIRC SUMP OUTLET ISOL VLV								
1SI8812A	2	B	12	GA	MO	Active	O	O/C	M-61-4	D-4	SC	M18		
											SO	M18		
											STC	M18		TP-VA-1, TP-VA-6
											DIAG	MOV		
											PI	MOV		
			Valve Name			MOV RH PP RWST SUCT ISOL VLV								
1SI8812B	2	B	12	GA	MO	Active	O	O/C	M-61-4	B-4	SC	M18		
											SO	M18		
											STC	M18		TP-VA-1, TP-VA-6
											DIAG	MOV		
											PI	MOV		
			Valve Name			MOV RH PP RWST SUCT ISOL VLV								
1SI8813	2	B	2	GL	MO	Active	O	O/C	M-61-1B	D-7	SC	M18		
											SO	M18		
											STC	M18		TP-VA-1, TP-VA-6
											DIAG	MOV		
											PI	MOV		
			Valve Name			SAFETY INJECTION PUMP MIN FLOW ISOLATION VALVE								
1SI8814	2	B	1.5	GL	MO	Active	O	O/C	M-61-1A	F-6	SC	M18		
											SO	M18		
											STC	M18		TP-VA-1, TP-VA-6
											DIAG	MOV		
											PI	MOV		
			Valve Name			SI PUMP MINIMUM FLOW ISOLATION VALVE								

Safety Injection

Valve EPN	Safety Class	Cat	Size	Vlv Type	Act. Type	Act/ Pass	Norm Pos	Safety Pos	P&ID	P&ID Coor.	Test Type	Test Freq.	Deferred Just.	Tech. Pos.
1SI8815	1	A/C	3	CK	SA	Active	SYS	O/C	M-61-2	D-5	CC	CS	CS-13	
											CO	RR	RJ-5	
											LT	Y2		
			Valve Name			COLD LEG HDR SI SUP CHK VLV								
1SI8818A	1	A/C	6.000	CK	SA	Active	C	O/C	M-61-4	F-7	CC	CS	CS-13	
											CO	CS	CS-8	
											LT	Y2		
			Valve Name			LOOP _ COLD LEG ACCUM INJ CHK VLV								
1SI8818B	1	A/C	6.000	CK	SA	Active	C	O/C	M-61-4	D-7	CC	CS	CS-13	
											CO	CS	CS-8	
											LT	Y2		
			Valve Name			LOOP _ COLD LEG ACCUM INJ CHK VLV								
1SI8818C	1	A/C	6.000	CK	SA	Active	C	O/C	M-61-4	D-7	CC	CS	CS-13	
											CO	CS	CS-8	
											LT	Y2		
			Valve Name			LOOP _ COLD LEG ACCUM INJ CHK VLV								
1SI8818D	1	A/C	6.000	CK	SA	Active	C	O/C	M-61-4	E-7	CC	CS	CS-13	
											CO	CS	CS-8	
											LT	Y2		
			Valve Name			LOOP _ COLD LEG ACCUM INJ CHK VLV								
1SI8819A	1	A/C	2	CK	SA	Active	SYS	O/C	M-61-3	A-5	CC	CS	CS-13	
											CO	RR	RJ-4	
											LT	Y2		
			Valve Name			LOOP 1 COLD LEG SI CHK VLV								
1SI8819B	1	A/C	2	CK	SA	Active	SYS	O/C	M-61-3	A-7	CC	CS	CS-13	
											CO	RR	RJ-4	
											LT	Y2		
			Valve Name			LOOP 2 COLD LEG SI CHK VLV								
1SI8819C	1	A/C	2	CK	SA	Active	SYS	O/C	M-61-3	A-7	CC	CS	CS-13	
											CO	RR	RJ-4	
											LT	Y2		
			Valve Name			LOOP 3 COLD LEG SI CHK VLV								
1SI8819D	1	A/C	2	CK	SA	Active	SYS	O/C	M-61-3	A-6	CC	CS	CS-13	
											CO	RR	RJ-4	
											LT	Y2		
			Valve Name			LOOP 4 COLD LEG SI CHK VLV								
1SI8821A	2	B	4	GA	MO	Active	O	O/C	M-61-3	D-3	SC	M18		
											SO	M18		
											STC	M18		TP-VA-1
											DIAG	MOV		
											PI	MOV		
			Valve Name			MOV SI PP DSCH XTIE TO CL ISOL VLV								

Safety Injection

Valve EPN	Safety Class	Cat	Size	Vlv Type	Act. Type	Act/ Pass	Norm Pos	Safety Pos	P&ID	P&ID Coor.	Test Type	Test Freq.	Deferred Just.	Tech. Pos.
1SI8821B	2	B	4	GA	MO	Active	O	O/C	M-61-3	D-3	SC	M18		
											SO	M18		
											STC	M18		TP-VA-1
											DIAG	MOV		
											PI	MOV		
			Valve Name			MOV SI PP DSCH XTIE TO CL ISOL VLV								
1SI8835	2	B	4	GA	MO	Active	O	O/C	M-61-3	C-4	SO	M18		
											STC	M18		TP-VA-1
											DIAG	MOV		
											PI	MOV		
			Valve Name			MOV SI PPS DSCH XTIE TO CL ISOL VLV								
1SI8840	2	B	12	GA	MO	Active	C	O/C	M-61-3	B-4	SC	M18		
											SO	M18		
											STO	M18		TP-VA-1
											DIAG	MOV		
											PI	MOV		
			Valve Name			MOV RH HXS TO 1A/1C LOOP HL ISOL VLV								
1SI8841A	1	A/C	8	CK	SA	Active	SYS	O/C	M-61-3	E-5	CC	CS	CS-13	
											CO	RR	RJ-6	
											LT	Y2		
			Valve Name			RHR HOT LEG INJECTION 1ST CHECK VALVE								
1SI8841B	1	A/C	8	CK	SA	Active	SYS	O/C	M-61-3	C-7	CC	CS	CS-13	
											CO	RR	RJ-6	
											LT	Y2		
			Valve Name			RHR HOT LEG INJECTION 1ST CHECK VALVE								
1SI8842	2	C	0.75x1.0	RV	SA	Passive	C	O/C	M-61-3	B-3	RT	Y10		
			Valve Name			RHR HX OUTLET RELIEF VALVE								
1SI8851	2	C	0.75x1.0	RV	SA	Passive	C	O/C	M-61-3	C-4	RT	Y10		
			Valve Name			SI TO COLD LEG RELIEF VALVE								
1SI8853A	2	C	0.75x1.0	RV	SA	Passive	C	O/C	M-61-3	F-3	RT	Y10		
			Valve Name			SI PUMP DISCHARGE RELIEF VALVE TO HOT LEG								
1SI8853B	2	C	0.75x1.0	RV	SA	Passive	C	O/C	M-61-3	B-3	RT	Y10		
			Valve Name			SI PUMP DISCHARGE RELIEF VALVE TO HOT LEG								
1SI8855A	2	C	1.0x2.0	RV	SA	Passive	C	O/C	M-61-5	E-6	RT	Y10		
			Valve Name			ACCUMULATOR RELIEF VALVE								
1SI8855B	2	C	1.0x2.0	RV	SA	Passive	C	O/C	M-61-5	E-3	RT	Y10		
			Valve Name			ACCUMULATOR RELIEF VALVE								
1SI8855C	2	C	1.0x2.0	RV	SA	Passive	C	O/C	M-61-6	E-7	RT	Y10		
			Valve Name			ACCUMULATOR RELIEF VALVE								

Safety Injection

Valve EPN	Safety Class	Cat	Size	Vlv Type	Act. Type	Act/ Pass	Norm Pos	Safety Pos	P&ID	P&ID Coor.	Test Type	Test Freq.	Deferred Just.	Tech. Pos.
1SI8855D	2	C	1.0x2.0	RV	SA	Passive	C	O/C	M-61-6	E-4	RT	Y10		
			Valve Name		ACCUMULATOR RELIEF VALVE									
1SI8856A	2	C	2.0x3.0	RV	SA	Passive	C	O/C	M-61-4	F-3	RT	Y10		
			Valve Name		RHR HX OUTLET HEADER RELIEF VALVE									
1SI8856B	2	C	2.0x3.0	RV	SA	Passive	C	O/C	M-61-4	E-3	RT	Y10		
			Valve Name		RHR HX OUTLET HEADER RELIEF VALVE									
1SI8858	2	C	1.0x0.75	RV	SA	Passive	C	O/C	M-61-1A	F-3	RT	Y10		
			Valve Name		SAFETY INJECTION SUCTION RELIEF VALVE									
1SI8871	2	A	0.750	GL	AO	Active	C	C	M-61-6	A-3	LTJ	AJ		
											FC	Q		TP-VA-2
											STC	Q		TP-VA-1
											PI	Y2		TP-VA-4
			Valve Name		AOV ACCUM FILL/TEST INSIDE CNMT ISOL VLV									
1SI8875A	2	B	1.000	GL	AO	Passive	C	C	M-61-5	F-6	PI	Y2		
			Valve Name		SAFETY INJECTION TANK N2 SUPPLY/VENT ISO VALVE									
1SI8875B	2	B	1.000	GL	AO	Passive	C	C	M-61-5	F-3	PI	Y2		
			Valve Name		SAFETY INJECTION TANK N2 SUPPLY/VENT ISO VALVE									
1SI8875C	2	B	1.000	GL	AO	Passive	C	C	M-61-6	E-7	PI	Y2		
			Valve Name		SAFETY INJECTION TANK N2 SUPPLY/VENT ISO VALVE									
1SI8875D	2	B	1.000	GL	AO	Passive	C	C	M-61-6	E-4	PI	Y2		
			Valve Name		SAFETY INJECTION TANK N2 SUPPLY/VENT ISO VALVE									
1SI8877A	2	B	0.750	GL	AO	Passive	C	C	M-61-5	B-6	PI	Y2		
			Valve Name		SI ACCUMULATOR TEST AND DRAIN ISOLATION VALVE									
1SI8877B	2	B	0.750	GL	AO	Passive	C	C	M-61-5	B-3	PI	Y2		
			Valve Name		SI ACCUMULATOR TEST AND DRAIN ISOLATION VALVE									
1SI8877C	2	B	0.750	GL	AO	Passive	C	C	M-61-6	B-7	PI	Y2		
			Valve Name		SI ACCUMULATOR TEST AND DRAIN ISOLATION VALVE									
1SI8877D	2	B	0.750	GL	AO	Passive	C	C	M-61-6	B-4	PI	Y2		
			Valve Name		SI ACCUMULATOR TEST AND DRAIN ISOLATION VALVE									
1SI8878A	2	B	1.000	GL	AO	Passive	C	C	M-61-5	C-5	PI	Y2		
			Valve Name		SI ACCUMULATOR FILL LINE ISOLATION VALVE									
1SI8878B	2	B	1.000	GL	AO	Passive	C	C	M-61-5	C-3	PI	Y2		
			Valve Name		SI ACCUMULATOR FILL LINE ISOLATION VALVE									
1SI8878C	2	B	1.000	GL	AO	Passive	C	C	M-61-6	C-6	PI	Y2		
			Valve Name		SI ACCUMULATOR FILL LINE ISOLATION VALVE									
1SI8878D	2	B	1.000	GL	AO	Passive	C	C	M-61-6	C-4	PI	Y2		
			Valve Name		SI ACCUMULATOR FILL LINE ISOLATION VALVE									
1SI8879A	2	B	0.750	GL	AO	Passive	C	C	M-61-5	B-6	PI	Y2		
			Valve Name		SI ACCUMULATOR TEST AND DRAIN ISOLATION VALVE									

Safety Injection

Valve EPN	Safety Class	Cat	Size	Vlv Type	Act. Type	Act/ Pass	Norm Pos	Safety Pos	P&ID	P&ID Coor.	Test Type	Test Freq.	Deferred Just.	Tech. Pos.
1SI8879B	2	B	0.750	GL	AO	Passive	C	C	M-61-5	B-3	PI	Y2		
			Valve Name		SI ACCUMULATOR TEST AND DRAIN ISOLATION VALVE									
1SI8879C	2	B	0.750	GL	AO	Passive	C	C	M-61-6	A-7	PI	Y2		
			Valve Name		SI ACCUMULATOR TEST AND DRAIN ISOLATION VALVE									
1SI8879D	2	B	0.750	GL	AO	Passive	C	C	M-61-6	A-4	PI	Y2		
			Valve Name		SI ACCUMULATOR TEST AND DRAIN ISOLATION VALVE									
1SI8880	2	A	1.000	GL	AO	Active	C	C	M-61-6	F-3	LTJ	AJ		
											FC	Q		TP-VA-2
											STC	Q		TP-VA-1
											PI	Y2		TP-VA-4
			Valve Name		AOV ACCUM N2 SUP OUTSIDE CNMT ISOL VLV									
1SI8882	2	B	0.750	GL	AO	Passive	C	C	M-61-2	B-5	PI	Y2		
			Valve Name		SAFETY INJECTION TEST LINE ISOLATION VALVE									
1SI8888	2	A	0.75	GL	AO	Active	C	C	M-61-3	E-3	LTJ	AJ		
											FC	Q		TP-VA-2
											STC	Q		TP-VA-1
											PI	Y2		TP-VA-4
			Valve Name		AOV SI PPS TO ACCUM FILL OUTSIDE CNMT ISO									
1SI8889A	2	B	0.750	GL	AO	Passive	C	C	M-61-3	F-6	PI	Y2		
			Valve Name		SAFETY INJECTION TEST LINE AOV									
1SI8889B	2	B	0.750	GL	AO	Passive	C	C	M-61-3	F-7	PI	Y2		
			Valve Name		SAFETY INJECTION TEST LINE AOV									
1SI8889C	2	B	0.750	GL	AO	Passive	C	C	M-61-3	F-7	PI	Y2		
			Valve Name		SAFETY INJECTION TEST LINE AOV									
1SI8889D	2	B	0.750	GL	AO	Passive	C	C	M-61-3	F-6	PI	Y2		
			Valve Name		SAFETY INJECTION TEST LINE AOV									
1SI8900A	1	A/C	1.5	CK	SA	Active	C	O/C	M-61-2	F-7	CC	CS	CS-13	
											CO	RR	RJ-5	
											LT	Y2		
			Valve Name		LOOP COLD LEG SI SUP CHK VLV									
1SI8900B	1	A/C	1.5	CK	SA	Active	C	O/C	M-61-2	D-7	CC	CS	CS-13	
											CO	RR	RJ-5	
											LT	Y2		
			Valve Name		LOOP COLD LEG SI SUP CHK VLV									
1SI8900C	1	A/C	1.5	CK	SA	Active	C	O/C	M-61-2	C-7	CC	CS	CS-13	
											CO	RR	RJ-5	
											LT	Y2		
			Valve Name		LOOP COLD LEG SI SUP CHK VLV									
1SI8900D	1	A/C	1.5	CK	SA	Active	C	O/C	M-61-2	B-7	CC	CS	CS-13	
											CO	RR	RJ-5	
											LT	Y2		
			Valve Name		LOOP COLD LEG SI SUP CHK VLV									

Safety Injection

Valve EPN	Safety Class	Cat	Size	Vlv Type	Act. Type	Act/ Pass	Norm Pos	Safety Pos	P&ID	P&ID Coor.	Test Type	Test Freq.	Deferred Just.	Tech. Pos.
1SI8905A	1	A/C	2	CK	SA	Active	SYS	O/C	M-61-3	E-4	CC	CS	CS-13	
											CO	RR	RJ-4	
											LT	Y2		
			Valve Name			LOOP HOT LEG SI CHK VLV								
1SI8905B	1	A/C	2	CK	SA	Active	SYS	O/C	M-61-3	D-7	CC	CS	CS-13	
											CO	RR	RJ-4	
											LT	Y2		
			Valve Name			LOOP HOT LEG SI CHK VLV								
1SI8905C	1	A/C	2	CK	SA	Active	SYS	O/C	M-61-3	C-7	CC	CS	CS-13	
											CO	RR	RJ-4	
											LT	Y2		
			Valve Name			LOOP HOT LEG SI CHK VLV								
1SI8905D	1	A/C	2	CK	SA	Active	SYS	O/C	M-61-3	E-4	CC	CS	CS-13	
											CO	RR	RJ-4	
											LT	Y2		
			Valve Name			LOOP HOT LEG SI CHK VLV								
1SI8919A	2	C	1.500	CK	SA	Active	SYS	O	M-61-1A	F-7	CC	CM		
											CO	Q		
			Valve Name			SAFETY INJECTION PUMP MINIMUM FLOW CHECK VALVE								
1SI8919B	2	C	1.500	CK	SA	Active	SYS	O	M-61-1A	E-6	CC	Q		
											CO	Q		
			Valve Name			SAFETY INJECTION PUMP MINIMUM FLOW CHECK VALVE								
1SI8920	2	B	1.5	GL	MO	Active	O	O/C	M-61-1A	E-6	SC	M18		
											SO	M18		
											STC	M18		TP-VA-1, TP-VA-6
											DIAG	MOV		
											PI	MOV		
			Valve Name			SI PUMP MINIMUM FLOW ISOLATION VALVE								
1SI8922A	2	C	4.000	CK	SA	Active	SYS	O/C	M-61-1A	E-7	CC	Q		
											CO	RR	RJ-4	
			Valve Name			SAFETY INJECTION PUMP DISCHARGE CHECK VALVE								
1SI8922B	2	C	4.000	CK	SA	Active	SYS	O/C	M-61-1A	C-6	CC	Q		
											CO	RR	RJ-4	
			Valve Name			SAFETY INJECTION PUMP DISCHARGE CHECK VALVE								
1SI8923A	2	B	6.000	GA	MO	Passive	O	O	M-61-1A	E-4	PI	Y2		TP-VA-4
			Valve Name			SI PUMP SUCTION FROM RWST ISOLATION VALVE								
1SI8923B	2	B	6.000	GA	MO	Passive	O	O	M-61-1A	C-3	PI	Y2		TP-VA-4
			Valve Name			SI PUMP SUCTION FROM RWST ISOLATION VALVE								
1SI8924	2	B	6	GA	MO	Active	O	O	M-61-1A	F-2	SC	M18		
											SO	M18		
											STO	M18		TP-VA-1
											DIAG	MOV		
											PI	MOV		
			Valve Name			MOV SI/CV PPS SUCT HDR XTIE ISOL VLV								

Safety Injection

Valve EPN	Safety Class	Cat	Size	Vlv Type	Act. Type	Act/ Pass	Norm Pos	Safety Pos	P&ID	P&ID Coor.	Test Type	Test Freq.	Deferred Just.	Tech. Pos.
1SI8926	2	C	8	CK	SA	Active	SYS	O/C	M-61-1A	D-2	CCU	CM		
											COF	CM		
			Valve Name			SI PPS SUCT CHK VLV								
1SI8948A	1	A/C	10	CK	SA	Active	C	O/C	M-61-5	B-8	COF	CM		
											CC	CS	CS-13	
											LT	Y2		
			Valve Name			ACCUM OUTLET TO RC LOOP 2ND CHK VLV								
1SI8948B	1	A/C	10	CK	SA	Active	C	O/C	M-61-5	B-5	COF	CM		
											CC	CS	CS-13	
											LT	Y2		
			Valve Name			ACCUM OUTLET TO RC LOOP 2ND CHK VLV								
1SI8948C	1	A/C	10	CK	SA	Active	C	O/C	M-61-6	B-8	COF	CM		
											CC	CS	CS-13	
											LT	Y2		
			Valve Name			ACCUM OUTLET TO RC LOOP 2ND CHK VLV								
1SI8948D	1	A/C	10	CK	SA	Active	C	O/C	M-61-6	B-5	COF	CM		
											CC	CS	CS-13	
											LT	Y2		
			Valve Name			ACCUM OUTLET TO RC LOOP 2ND CHK VLV								
1SI8949A	1	A/C	6	CK	SA	Active	SYS	O/C	M-61-3	E-8	CC	CS	CS-13	
											CO	RR	RJ-6	
											LT	Y2		
			Valve Name			HOT LEG RECIRCULATION CHECK VALVE								
1SI8949B	1	A/C	6	CK	SA	Active	C	O/C	M-61-3	D-8	CC	CS	CS-13	
											CO	RR	RJ-4	
											LT	Y2		
			Valve Name			HOT LEG RECIRCULATION CHECK VALVE								
1SI8949C	1	A/C	6	CK	SA	Active	SYS	O/C	M-61-3	C-8	CC	CS	CS-13	
											CO	RR	RJ-6	
											LT	Y2		
			Valve Name			HOT LEG RECIRCULATION CHECK VALVE								
1SI8949D	1	A/C	6	CK	SA	Active	C	O/C	M-61-3	E-8	CC	CS	CS-13	
											CO	RR	RJ-4	
											LT	Y2		
			Valve Name			HOT LEG RECIRCULATION CHECK VALVE								
1SI8956A	1	A/C	10.000	CK	SA	Active	SYS	O/C	M-61-5	B-7	COF	CM		
											CC	CS	CS-13	
											LT	Y2		
			Valve Name			ACCUM OUTLET TO RC LOOP 1ST CHK VLV								
1SI8956B	1	A/C	10.000	CK	SA	Active	SYS	O/C	M-61-5	B-4	COF	CM		
											CC	CS	CS-13	
											LT	Y2		
			Valve Name			ACCUM OUTLET TO RC LOOP 1ST CHK VLV								

Safety Injection

Valve EPN	Safety Class	Cat	Size	Vlv Type	Act. Type	Act/ Pass	Norm Pos	Safety Pos	P&ID	P&ID Coor.	Test Type	Test Freq.	Deferred Just.	Tech. Pos.
1SI8956C	1	A/C	10.000	CK	SA	Active	SYS	O/C	M-61-6	B-7	COF	CM		
											CC	CS	CS-13	
											LT	Y2		
			Valve Name			ACCUM OUTLET TO RC LOOP 1ST CHK VLV								
1SI8956D	1	A/C	10.000	CK	SA	Active	SYS	O/C	M-61-6	B-5	COF	CM		
											CC	CS	CS-13	
											LT	Y2		
			Valve Name			ACCUM OUTLET TO RC LOOP 1ST CHK VLV								
1SI8958A	2	C	12	CK	SA	Active	SYS	O/C	M-61-4	D-4	CO	CS	CS-8	
											CC	Q		
			Valve Name			RH PP SUCT CHK VLV								
1SI8958B	2	C	12	CK	SA	Active	SYS	O/C	M-61-4	B-4	CO	CS	CS-8	
											CC	Q		
			Valve Name			RH PP SUCT CHK VLV								
1SI8964	2	A	0.750	GL	AO	Active	C	C	M-61-6	D-3	LTJ	AJ		
											FC	Q		TP-VA-2
											STC	Q		TP-VA-1
											PI	Y2		TP-VA-4
			Valve Name			AOV ACCUM FILL/TEST TO RWST/RECY HUTS ISO								
1SI8968	2	A/C	1	CK	SA	Active	SYS	C	M-61-6	F-4	LTJ	AJ		
											CCL	CM		
											COF	CM		
			Valve Name			N2 SUP INSIDE CNMT CHK VLV								
2SI101A	2	B	4	GA	M	Active	LO	O/C	M-136-2	D6	SC	Y2		
											SO	Y2		
			Valve Name			2SI8801A UPSTRM ISOL VLV								
2SI101B	2	B	4	GA	M	Active	LO	O/C	M-136-2	C6	SC	Y2		
											SO	Y2		
			Valve Name			2SI8801B UPSTRM ISOL VLV								
2SI121A	2	C	0.75x1.0	RV	SA	Active	C	O	M-136-4	C-5	RT	Y10		
			Valve Name			CONTAINMENT SUMP ISOLATION VALVE RELIEF VALVE								
2SI121B	2	C	0.75x1.0	RV	SA	Active	C	O	M-136-4	A-5	RT	Y10		
			Valve Name			CONTAINMENT SUMP ISOLATION VALVE RELIEF VALVE								
2SI8801A	2	B	4.000	GA	MO	Active	C	O/C	M-136-2	D-6	SC	M18		
											SO	M18		
											STO	M18		TP-VA-1
											DIAG	MOV		
											PI	MOV		
			Valve Name			CHARGING TO COLD LEG INJECTION MOV								

Safety Injection

Valve EPN	Safety Class	Cat	Size	Vlv Type	Act. Type	Act/ Pass	Norm Pos	Safety Pos	P&ID	P&ID Coor.	Test Type	Test Freq.	Deferred Just.	Tech. Pos.
2SI8801B	2	B	4.000	GA	MO	Active	C	O/C	M-136-2	C-6	SC	M18		
											SO	M18		
											STO	M18		TP-VA-1
											DIAG	MOV		
											PI	MOV		
			Valve Name			CHARGING TO COLD LEG INJECTION MOV								
2SI8802A	2	B	4	GA	MO	Active	C	O/C	M-136-3	E-6	SC	M18		
											SO	M18		
											STO	M18		TP-VA-1
											DIAG	MOV		
											PI	MOV		
			Valve Name			MOV SI PP DSCH OUTSIDE CNMT ISOL VLV								
2SI8802B	2	B	4	GA	MO	Active	C	O/C	M-136-3	D-6	SC	M18		
											SO	M18		
											STO	M18		TP-VA-1
											DIAG	MOV		
											PI	MOV		
			Valve Name			MOV SI PP DSCH OUTSIDE CNMT ISOL VLV								
2SI8804B	2	B	8	GA	MO	Active	C	O/C	M-136-1	B-5	SC	M18		
											SO	M18		
											STO	M18		TP-VA-1, TP-VA-6
											DIAG	MOV		
											PI	MOV		
			Valve Name			MOV B RH HX TO B SI PP SUCT HDR ISOL VLV								
2SI8806	2	B	8	GA	MO	Active	O	O/C	M-136-1	C-6	SC	M18		
											SO	M18		
											STC	M18		TP-VA-1, TP-VA-6
											DIAG	MOV		
											PI	MOV		
			Valve Name			MOV RWST TO SI PPS SUCT HDR ISOL VLV								
2SI8807A	2	B	6.000	GA	MO	Active	C	O/C	M-136-1	D-6	SC	M18		
											SO	M18		
											STO	M18		TP-VA-1, TP-VA-6
											DIAG	MOV		
											PI	MOV		
			Valve Name			MOV SI TO CV PPS SUCT HDR XTIE ISOL VL								
2SI8807B	2	B	6.000	GA	MO	Active	C	O/C	M-136-1	D-5	SC	M18		
											SO	M18		
											STO	M18		TP-VA-1, TP-VA-6
											DIAG	MOV		
											PI	MOV		
			Valve Name			MOV SI TO CV PPS SUCT HDR XTIE ISOL VL								

Safety Injection

Valve EPN	Safety Class	Cat	Size	Vlv Type	Act. Type	Act/ Pass	Norm Pos	Safety Pos	P&ID	P&ID Coor.	Test Type	Test Freq.	Deferred Just.	Tech. Pos.
2SI8808A	1	B	10	GA	MO	Passive	O	O/C	M-136-5	C-3	STC	M18		TP-VA-1, TP-VA-6
											PI	Y2		
			Valve Name			ACCUMULATOR DISCHARGE ISOLATION VALVE - MOV								
2SI8808B	1	B	10	GA	MO	Passive	O	O/C	M-136-5	C-6	STC	M18		TP-VA-1, TP-VA-6
											PI	Y2		
			Valve Name			ACCUMULATOR DISCHARGE ISOLATION VALVE - MOV								
2SI8808C	1	B	10	GA	MO	Passive	O	O/C	M-136-6	D-2	STC	M18		TP-VA-1, TP-VA-6
											PI	Y2		
			Valve Name			ACCUMULATOR DISCHARGE ISOLATION VALVE - MOV								
2SI8808D	1	B	10	GA	MO	Passive	O	O/C	M-136-6	D-5	STC	M18		TP-VA-1, TP-VA-6
											PI	Y2		
			Valve Name			ACCUMULATOR DISCHARGE ISOLATION VALVE - MOV								
2SI8809A	2	B	8	GA	MO	Active	O	O/C	M-136-4	E-5	SC	M18		
											SO	M18		
											STC	M18		TP-VA-1
											DIAG	MOV		
											PI	MOV		
			Valve Name			MOV RH HX SI OUTLET DWST ISOL VLV								
2SI8809B	2	B	8	GA	MO	Active	O	O/C	M-136-4	D-5	SC	M18		
											SO	M18		
											STC	M18		TP-VA-1
											DIAG	MOV		
											PI	MOV		
			Valve Name			MOV RH HX SI OUTLET DWST ISOL VLV								
2SI8811A	2	B	24	GA	MO	Active	C	O/C	M-136-4	C-5	DIAG	MOV		
											PI	MOV		
											SC	RR	RJ-2	
											SO	RR	RJ-2	
											STO	RR	RJ-2	TP-VA-1
			Valve Name			MOV CNMT RECIRC SUMP OUTLET ISOL VLV								
2SI8811B	2	B	24	GA	MO	Active	C	O/C	M-136-4	A-5	DIAG	MOV		
											PI	MOV		
											SC	RR	RJ-2	
											SO	RR	RJ-2	
											STO	RR	RJ-2	TP-VA-1
			Valve Name			MOV CNMT RECIRC SUMP OUTLET ISOL VLV								
2SI8812A	2	B	12	GA	MO	Active	O	O/C	M-136-4	D-7	SC	M18		
											SO	M18		
											STC	M18		TP-VA-1, TP-VA-6
											DIAG	MOV		
											PI	MOV		
			Valve Name			MOV RH PP RWST SUCT ISOL VLV								

Safety Injection

Valve EPN	Safety Class	Cat	Size	Vlv Type	Act. Type	Act/ Pass	Norm Pos	Safety Pos	P&ID	P&ID Coor.	Test Type	Test Freq.	Deferred Just.	Tech. Pos.
2SI8812B	2	B	12	GA	MO	Active	O	O/C	M-136-4	B-7	SC	M18		
											SO	M18		
											STC	M18		TP-VA-1, TP-VA-6
											DIAG	MOV		
											PI	MOV		
			Valve Name			MOV RH PP RWST SUCT ISOL VLV								
2SI8813	2	B	2	GL	MO	Active	O	O/C	M-136-1	E-4	SC	M18		
											SO	M18		
											STC	M18		TP-VA-1, TP-VA-6
											DIAG	MOV		
											PI	MOV		
			Valve Name			SAFETY INJECTION PUMP MIN FLOW ISOLATION VALVE								
2SI8814	2	B	1.5	GL	MO	Active	O	O/C	M-136-1	D-4	SC	M18		
											SO	M18		
											STC	M18		TP-VA-1, TP-VA-6
											DIAG	MOV		
											PI	MOV		
			Valve Name			SI PUMP MINIMUM FLOW ISOLATION VALVE								
2SI8815	1	A/C	3	CK	SA	Active	SYS	O/C	M-136-2	D-4	CC	CS	CS-13	
											CO	RR	RJ-5	
											LT	Y2		
			Valve Name			COLD LEG HDR SI SUP CHK VLV								
2SI8818A	1	A/C	6.000	CK	SA	Active	C	O/C	M-136-4	F-2	CC	CS	CS-13	
											CO	CS	CS-8	
											LT	Y2		
			Valve Name			LOOP _ COLD LEG ACCUM INJ CHK VLV								
2SI8818B	1	A/C	6.000	CK	SA	Active	C	O/C	M-136-4	D-2	CC	CS	CS-13	
											CO	CS	CS-8	
											LT	Y2		
			Valve Name			LOOP _ COLD LEG ACCUM INJ CHK VLV								
2SI8818C	1	A/C	6.000	CK	SA	Active	C	O/C	M-136-4	E-2	CC	CS	CS-13	
											CO	CS	CS-8	
											LT	Y2		
			Valve Name			LOOP _ COLD LEG ACCUM INJ CHK VLV								
2SI8818D	1	A/C	6.000	CK	SA	Active	C	O/C	M-136-4	E-2	CC	CS	CS-13	
											CO	CS	CS-8	
											LT	Y2		
			Valve Name			LOOP _ COLD LEG ACCUM INJ CHK VLV								
2SI8819A	1	A/C	2	CK	SA	Active	SYS	O/C	M-136-3	B-4	CC	CS	CS-13	
											CO	RR	RJ-4	
											LT	Y2		
			Valve Name			LOOP _ COLD LEG SI CHK VLV								

Safety Injection

Valve EPN	Safety Class	Cat	Size	Vlv Type	Act. Type	Act/ Pass	Norm Pos	Safety Pos	P&ID	P&ID Coor.	Test Type	Test Freq.	Deferred Just.	Tech. Pos.
2SI8819B	1	A/C	2	CK	SA	Active	SYS	O/C	M-136-3	B-2	CC	CS	CS-13	
											CO	RR	RJ-4	
											LT	Y2		
			Valve Name			LOOP _ COLD LEG SI CHK VLV								
2SI8819C	1	A/C	2	CK	SA	Active	SYS	O/C	M-136-3	B-2	CC	CS	CS-13	
											CO	RR	RJ-4	
											LT	Y2		
			Valve Name			LOOP _ COLD LEG SI CHK VLV								
2SI8819D	1	A/C	2	CK	SA	Active	SYS	O/C	M-136-3	B-3	CC	CS	CS-13	
											CO	RR	RJ-4	
											LT	Y2		
			Valve Name			LOOP _ COLD LEG SI CHK VLV								
2SI8821A	2	B	4	GA	MO	Active	O	O/C	M-136-3	D-6	SC	M18		
											SO	M18		
											STC	M18		TP-VA-1
											DIAG	MOV		
											PI	MOV		
			Valve Name			MOV SI PP DSCH XTIE TO CL ISOL VLV								
2SI8821B	2	B	4	GA	MO	Active	O	O/C	M-136-3	D-6	SC	M18		
											SO	M18		
											STC	M18		TP-VA-1
											DIAG	MOV		
											PI	MOV		
			Valve Name			MOV SI PP DSCH XTIE TO CL ISOL VLV								
2SI8835	2	B	4	GA	MO	Active	O	O/C	M-136-3	C-5	SO	M18		
											STC	M18		TP-VA-1
											DIAG	MOV		
											PI	MOV		
			Valve Name			MOV SI PPS DSCH XTIE TO CL ISOL VLV								
2SI8840	2	B	12	GA	MO	Active	C	O/C	M-136-3	B-5	SC	M18		
											SO	M18		
											STO	M18		TP-VA-1
											DIAG	MOV		
											PI	MOV		
			Valve Name			MOV RH HXS TO 1A/1C LOOP HL ISOL VLV								
2SI8841A	1	A/C	8	CK	SA	Active	SYS	O/C	M-136-3	E-4	CC	CS	CS-13	
											CO	RR	RJ-6	
											LT	Y2		
			Valve Name			RHR HOT LEG INJECTION 1ST CHECK VALVE								
2SI8841B	1	A/C	8	CK	SA	Active	SYS	O/C	M-136-3	C-2	CC	CS	CS-13	
											CO	RR	RJ-6	
											LT	Y2		
			Valve Name			RHR HOT LEG INJECTION 1ST CHECK VALVE								

Safety Injection

Valve EPN	Safety Class	Cat	Size	Vlv Type	Act. Type	Act/ Pass	Norm Pos	Safety Pos	P&ID	P&ID Coor.	Test Type	Test Freq.	Deferred Just.	Tech. Pos.
2SI8842	2	C	0.75x1.0	RV	SA	Passive	C	O/C	M-136-3	B-6	RT	Y10		
			Valve Name			RHR HX OUTLET RELIEF VALVE								
2SI8851	2	C	0.75x1.0	RV	SA	Passive	C	O/C	M-136-3	C-5	RT	Y10		
			Valve Name			SI TO COLD LEG RELIEF VALVE								
2SI8853A	2	C	0.75x1.0	RV	SA	Passive	C	O/C	M-136-3	F-6	RT	Y10		
			Valve Name			SI PUMP DISCHARGE RELIEF VALVE TO HOT LEG								
2SI8853B	2	C	0.75x1.0	RV	SA	Passive	C	O/C	M-136-3	B-6	RT	Y10		
			Valve Name			SI PUMP DISCHARGE RELIEF VALVE TO HOT LEG								
2SI8855A	2	C	1.0x2.0	RV	SA	Passive	C	O/C	M-136-5	E-4	RT	Y10		
			Valve Name			ACCUMULATOR RELIEF VALVE								
2SI8855B	2	C	1.0x2.0	RV	SA	Passive	C	O/C	M-136-5	E-6	RT	Y10		
			Valve Name			ACCUMULATOR RELIEF VALVE								
2SI8855C	2	C	1.0x2.0	RV	SA	Passive	C	O/C	M-136-6	E-2	RT	Y10		
			Valve Name			ACCUMULATOR RELIEF VALVE								
2SI8855D	2	C	1.0x2.0	RV	SA	Passive	C	O/C	M-136-6	E-5	RT	Y10		
			Valve Name			ACCUMULATOR RELIEF VALVE								
2SI8856A	2	C	2.0x3.0	RV	SA	Passive	C	O/C	M-136-4	F-5	RT	Y10		
			Valve Name			RHR HX OUTLET HEADER RELIEF VALVE								
2SI8856B	2	C	2.0x3.0	RV	SA	Passive	C	O/C	M-136-4	E-5	RT	Y10		
			Valve Name			RHR HX OUTLET HEADER RELIEF VALVE								
2SI8858	2	C	1.0x0.75	RV	SA	Passive	C	O/C	M-136-1	D-5	RT	Y10		
			Valve Name			SAFETY INJECTION SUCTION RELIEF VALVE								
2SI8871	2	A	0.750	GL	AO	Active	C	C	M-136-6	B-6	LTJ	AJ		
											FC	Q		TP-VA-2
											STC	Q		TP-VA-1
											PI	Y2		TP-VA-4
			Valve Name			AOV ACCUM FILL/TEST INSIDE CNMT ISOL VLV								
2SI8875A	2	B	1.000	GL	AO	Passive	C	C	M-136-5	F-3	PI	Y2		
			Valve Name			SAFETY INJECTION TANK N2 SUPPLY/VENT ISO VALVE								
2SI8875B	2	B	1.000	GL	AO	Passive	C	C	M-136-5	F-6	PI	Y2		
			Valve Name			SAFETY INJECTION TANK N2 SUPPLY/VENT ISO VALVE								
2SI8875C	2	B	1.000	GL	AO	Passive	C	C	M-136-6	E-2	PI	Y2		
			Valve Name			SAFETY INJECTION TANK N2 SUPPLY/VENT ISO VALVE								
2SI8875D	2	B	1.000	GL	AO	Passive	C	C	M-136-6	E-5	PI	Y2		
			Valve Name			SAFETY INJECTION TANK N2 SUPPLY/VENT ISO VALVE								

Safety Injection

Valve EPN	Safety Class	Cat	Size	Vlv Type	Act. Type	Act/ Pass	Norm Pos	Safety Pos	P&ID	P&ID Coor.	Test Type	Test Freq.	Deferred Just.	Tech. Pos.
2SI8877A	2	B	0.750	GL	AO	Passive	C	C	M-136-5	C-3	PI	Y2		
			Valve Name			SI ACCUMULATOR TEST AND DRAIN ISOLATION VALVE								
2SI8877B	2	B	0.750	GL	AO	Passive	C	C	M-136-5	C-6	PI	Y2		
			Valve Name			SI ACCUMULATOR TEST AND DRAIN ISOLATION VALVE								
2SI8877C	2	B	0.750	GL	AO	Passive	C	C	M-136-6	C-2	PI	Y2		
			Valve Name			SI ACCUMULATOR TEST AND DRAIN ISOLATION VALVE								
2SI8877D	2	B	0.750	GL	AO	Passive	C	C	M-136-6	C-5	PI	Y2		
			Valve Name			SI ACCUMULATOR TEST AND DRAIN ISOLATION VALVE								
2SI8878A	2	B	1.000	GL	AO	Passive	C	C	M-136-5	C-4	PI	Y2		
			Valve Name			SI ACCUMULATOR FILL LINE ISOLATION VALVE								
2SI8878B	2	B	1.000	GL	AO	Passive	C	C	M-136-5	D-7	PI	Y2		
			Valve Name			SI ACCUMULATOR FILL LINE ISOLATION VALVE								
2SI8878C	2	B	1.000	GL	AO	Passive	C	C	M-136-6	D-3	PI	Y2		
			Valve Name			SI ACCUMULATOR FILL LINE ISOLATION VALVE								
2SI8878D	2	B	1.000	GL	AO	Passive	C	C	M-136-6	D-5	PI	Y2		
			Valve Name			SI ACCUMULATOR FILL LINE ISOLATION VALVE								
2SI8879A	2	B	0.750	GL	AO	Passive	C	C	M-136-5	B-3	PI	Y2		
			Valve Name			SI ACCUMULATOR TEST AND DRAIN ISOLATION VALVE								
2SI8879B	2	B	0.750	GL	AO	Passive	C	C	M-136-5	B-6	PI	Y2		
			Valve Name			SI ACCUMULATOR TEST AND DRAIN ISOLATION VALVE								
2SI8879C	2	B	0.750	GL	AO	Passive	C	C	M-136-6	B-2	PI	Y2		
			Valve Name			SI ACCUMULATOR TEST AND DRAIN ISOLATION VALVE								
2SI8879D	2	B	0.750	GL	AO	Passive	C	C	M-136-6	B-5	PI	Y2		
			Valve Name			SI ACCUMULATOR TEST AND DRAIN ISOLATION VALVE								
2SI8880	2	A	1.000	GL	AO	Active	C	C	M-136-6	F-6	LTJ	AJ		
											FC	Q		TP-VA-2
											STC	Q		TP-VA-1
											PI	Y2		TP-VA-4
			Valve Name			AOV ACCUM N2 SUP OUTSIDE CNMT ISOL VLV								
2SI8882	2	B	0.750	GL	AO	Passive	C	C	M-136-2	B-4	PI	Y2		
			Valve Name			SAFETY INJECTION TEST LINE ISOLATION VALVE								
2SI8888	2	A	0.75	GL	AO	Active	C	C	M-136-3	E-6	LTJ	AJ		
											FC	Q		TP-VA-2
											STC	Q		TP-VA-1
											PI	Y2		TP-VA-4
			Valve Name			AOV SI PPS TO ACCUM FILL OUTSIDE CNMT ISO								
2SI8889A	2	B	0.750	GL	AO	Passive	C	C	M-136-3	F-3	PI	Y2		
			Valve Name			SAFETY INJECTION TEST LINE AOV								
2SI8889B	2	B	0.750	GL	AO	Passive	C	C	M-136-3	F-2	PI	Y2		
			Valve Name			SAFETY INJECTION TEST LINE AOV								
2SI8889C	2	B	0.750	GL	AO	Passive	C	C	M-136-3	F-2	PI	Y2		
			Valve Name			SAFETY INJECTION TEST LINE AOV								

Safety Injection

Valve EPN	Safety Class	Cat	Size	Vlv Type	Act. Type	Act/ Pass	Norm Pos	Safety Pos	P&ID	P&ID Coor.	Test Type	Test Freq.	Deferred Just.	Tech. Pos.
2SI8889D	2	B	0.750	GL	AO	Passive	C	C	M-136-3	F-3	PI	Y2		
			Valve Name			SAFETY INJECTION TEST LINE AOV								
2SI8900A	1	A/C	1.5	CK	SA	Active	C	O/C	M-136-2	F-2	CC	CS	CS-13	
											CO	RR	RJ-5	
											LT	Y2		
			Valve Name			LOOP COLD LEG SI SUP CHK VLV								
2SI8900B	1	A/C	1.5	CK	SA	Active	C	O/C	M-136-2	D-2	CC	CS	CS-13	
											CO	RR	RJ-5	
											LT	Y2		
			Valve Name			LOOP COLD LEG SI SUP CHK VLV								
2SI8900C	1	A/C	1.5	CK	SA	Active	C	O/C	M-136-2	C-2	CC	CS	CS-13	
											CO	RR	RJ-5	
											LT	Y2		
			Valve Name			LOOP COLD LEG SI SUP CHK VLV								
2SI8900D	1	A/C	1.5	CK	SA	Active	C	O/C	M-136-2	B-2	CC	CS	CS-13	
											CO	Q		
											LT	Y2		
			Valve Name			LOOP COLD LEG SI SUP CHK VLV								
2SI8905A	1	A/C	2	CK	SA	Active	SYS	O/C	M-136-3	E-5	CC	CS	CS-13	
											CO	RR	RJ-4	
											LT	Y2		
			Valve Name			LOOP HOT LEG SI CHK VLV								
2SI8905B	1	A/C	2	CK	SA	Active	SYS	O/C	M-136-3	D-2	CC	CS	CS-13	
											CO	RR	RJ-4	
											LT	Y2		
			Valve Name			LOOP HOT LEG SI CHK VLV								
2SI8905C	1	A/C	2	CK	SA	Active	SYS	O/C	M-136-3	C-2	CC	CS	CS-13	
											CO	RR	RJ-4	
											LT	Y2		
			Valve Name			LOOP HOT LEG SI CHK VLV								
2SI8905D	1	A/C	2	CK	SA	Active	SYS	O/C	M-136-3	E-5	CC	CS	CS-13	
											CO	RR	RJ-4	
											LT	Y2		
			Valve Name			LOOP HOT LEG SI CHK VLV								
2SI8919A	2	C	1.500	CK	SA	Active	SYS	O	M-136-1	D-4	CC	Q		
											CO	Q		
			Valve Name			SAFETY INJECTION PUMP MINIMUM FLOW CHECK VALVE								
2SI8919B	2	C	1.500	CK	SA	Active	SYS	O	M-136-1	C-4	CC	Q		
											CO	Q		
			Valve Name			SAFETY INJECTION PUMP MINIMUM FLOW CHECK VALVE								

Safety Injection

Valve EPN	Safety Class	Cat	Size	Vlv Type	Act. Type	Act/ Pass	Norm Pos	Safety Pos	P&ID	P&ID Coor.	Test Type	Test Freq.	Deferred Just.	Tech. Pos.
2SI8920	2	B	1.5	GL	MO	Active	O	O/C	M-136-1	C-4	SC	M18		
											SO	M18		
											STC	M18		TP-VA-1, TP-VA-6
											DIAG	MOV		
											PI	MOV		
			Valve Name			MOV B SI PP DSCH RECIRC ISOL VLV								
2SI8922A	2	C	4.000	CK	SA	Active	SYS	O/C	M-136-1	D-3	CC	Q		
											CO	RR	RJ-4	
			Valve Name			SAFETY INJECTION PUMP DISCHARGE CHECK VALVE								
2SI8922B	2	C	4.000	CK	SA	Active	SYS	O/C	M-136-1	B-3	CC	Q		
											CO	RR	RJ-4	
			Valve Name			SAFETY INJECTION PUMP DISCHARGE CHECK VALVE								
2SI8923A	2	B	6.000	GA	MO	Passive	O	O	M-136-1	C-5	PI	Y2		TP-VA-4
			Valve Name			SI PUMP SUCTION FROM RWST ISOLATION VALVE								
2SI8923B	2	B	6.000	GA	MO	Passive	O	O	M-136-1	B-5	PI	Y2		TP-VA-4
			Valve Name			SI PUMP SUCTION FROM RWST ISOLATION VALVE								
2SI8924	2	B	6	GA	MO	Active	O	O	M-136-1	D-6	SC	M18		
											SO	M18		
											STO	M18		TP-VA-1
											DIAG	MOV		
											PI	MOV		
			Valve Name			MOV SI/CV PPS SUCT HDR XTIE ISOL VLV								
2SI8926	2	C	8	CK	SA	Active	SYS	O/C	M-136-1	C-6	CCU	CM		
											COF	CM		
			Valve Name			SI PPS SUCT CHK VLV								
2SI8948A	1	A/C	10	CK	SA	Active	C	O/C	M-136-5	B-2	COF	CM		
											CC	CS	CS-13	
											LT	Y2		
			Valve Name			ACCUM OUTLET TO RC LOOP 2ND CHK VLV								
2SI8948B	1	A/C	10	CK	SA	Active	C	O/C	M-136-5	B-5	COF	CM		
											CC	CS	CS-13	
											LT	Y2		
			Valve Name			ACCUM OUTLET TO RC LOOP 2ND CHK VLV								
2SI8948C	1	A/C	10	CK	SA	Active	C	O/C	M-136-6	B-1	COF	CM		
											CC	CS	CS-13	
											LT	Y2		
			Valve Name			ACCUM OUTLET TO RC LOOP 2ND CHK VLV								
2SI8948D	1	A/C	10	CK	SA	Active	C	O/C	M-136-6	B-4	COF	CM		
											CC	CS	CS-13	
											LT	Y2		
			Valve Name			ACCUM OUTLET TO RC LOOP 2ND CHK VLV								

Safety Injection

Valve EPN	Safety Class	Cat	Size	Vlv Type	Act. Type	Act/ Pass	Norm Pos	Safety Pos	P&ID	P&ID Coor.	Test Type	Test Freq.	Deferred Just.	Tech. Pos.
2SI8949A	1	A/C	6	CK	SA	Active	SYS	O/C	M-136-3	E-1	CC	CS	CS-13	
											CO	RR	RJ-6	
											LT	Y2		
			Valve Name			HOT LEG RECIRCULATION CHECK VALVE								
2SI8949B	1	A/C	6	CK	SA	Active	C	O/C	M-136-3	D-1	CC	CS	CS-13	
											CO	RR	RJ-4	
											LT	Y2		
			Valve Name			HOT LEG RECIRCULATION CHECK VALVE								
2SI8949C	1	A/C	6	CK	SA	Active	SYS	O/C	M-136-3	C-1	CC	CS	CS-13	
											CO	RR	RJ-6	
											LT	Y2		
			Valve Name			HOT LEG RECIRCULATION CHECK VALVE								
2SI8949D	1	A/C	6	CK	SA	Active	C	O/C	M-136-3	E-1	CC	CS	CS-13	
											CO	RR	RJ-4	
											LT	Y2		
			Valve Name			HOT LEG RECIRCULATION CHECK VALVE								
2SI8956A	1	A/C	10.000	CK	SA	Active	SYS	O/C	M-136-5	B-3	COF	CM		
											CC	CS	CS-13	
											LT	Y2		
			Valve Name			ACCUM OUTLET TO RC LOOP 1ST CHK VLV								
2SI8956B	1	A/C	10.000	CK	SA	Active	SYS	O/C	M-136-5	B-6	COF	CM		
											CC	CS	CS-13	
											LT	Y2		
			Valve Name			ACCUM OUTLET TO RC LOOP 1ST CHK VLV								
2SI8956C	1	A/C	10.000	CK	SA	Active	SYS	O/C	M-136-6	B-2	COF	CM		
											CC	CS	CS-13	
											LT	Y2		
			Valve Name			ACCUM OUTLET TO RC LOOP 1ST CHK VLV								
2SI8956D	1	A/C	10.000	CK	SA	Active	SYS	O/C	M-136-6	B-4	COF	CM		
											CC	CS	CS-13	
											LT	Y2		
			Valve Name			ACCUM OUTLET TO RC LOOP 1ST CHK VLV								
2SI8958A	2	C	12	CK	SA	Active	SYS	O/C	M-136-4	C-7	CO	CS	CS-8	
											CC	Q		
			Valve Name			RH PP SUCT CHK VLV								
2SI8958B	2	C	12	CK	SA	Active	SYS	O/C	M-136-4	B-7	CO	CS	CS-8	
											CC	Q		
			Valve Name			RH PP SUCT CHK VLV								

Safety Injection

Valve EPN	Safety Class	Cat	Size	Vlv Type	Act. Type	Act/ Pass	Norm Pos	Safety Pos	P&ID	P&ID Coor.	Test Type	Test Freq.	Deferred Just.	Tech. Pos.
2SI8964	2	A	0.750	GL	AO	Active	C	C	M-136-6	D-6	LTJ	AJ		
											FC	Q		TP-VA-2
											STC	Q		TP-VA-1
											PI	Y2		TP-VA-4
			Valve Name			AOV ACCUM FILL/TEST TO RWST/RECY HUTS ISO								
2SI8968	2	A/C	1	CK	SA	Active	SYS	C	M-136-6	F-5	LTJ	AJ		
											CCL	CM		
											COF	CM		
			Valve Name			N2 SUP INSIDE CNMT CHK VLV								

Essential Service Water

Valve EPN	Safety Class	Cat	Size	Vlv Type	Act. Type	Act/ Pass	Norm Pos	Safety Pos	P&ID	P&ID Coor.	Test Type	Test Freq.	Deferred Just.	Tech. Pos.
0SX007	3	B	24	BTF	MO	Active	O	O	M-42-2A	E-4	SC	M18		
											SO	M18		
											DIAG	MOV		
											PI	MOV		
			Valve Name			COMMON CCW HX OUTLET ISOLATION VALVE								
0SX063A	3	B	8	GA	MO	Active	O/C	O	M-42-4	E-8	SC	M18		
											SO	M18		
											DIAG	MOV		
											PI	MOV		
			Valve Name			CONTROL ROOM CHILLER CONDENSER INLET ISO VALVE								
0SX063B	3	B	8	GA	MO	Active	O/C	O	M-42-4	B-7	SC	M18		
											SO	M18		
											DIAG	MOV		
											PI	MOV		
			Valve Name			CONTROL ROOM CHILLER CONDENSER INLET ISO VALVE								
0SX146	3	B	30	BTF	MO	Active	O	O	M-42-2A	D-3	SC	M18		
											SO	M18		
											DIAG	MOV		
											PI	MOV		
			Valve Name			COMMON COMPONENT COOLING HX OUTLET ISOLATION								
0SX147	3	B	30	BTF	MO	Active	C	O	M-42-2A	D-3	SC	M18		
											SO	M18		
											DIAG	MOV		
											PI	MOV		
			Valve Name			COMMON COMPONENT COOLING HX OUTLET ISOLATION								
1SX002A	3	C	36	CK	SA	Active	SYS	O/C	M-42-1B	E-6	CC	Q		
											CO	Q		
			Valve Name			ESW PUMP DISCHARGE CHECK VALVE								
1SX002B	3	C	36	CK	SA	Active	SYS	O/C	M-42-1A	E-6	CC	Q		
											CO	Q		
			Valve Name			ESW PUMP DISCHARGE CHECK VALVE								
1SX004	3	B	30	BTF	MO	Passive	O	O	M-42-1B	E-2	PI	Y2		
			Valve Name			COMPONENT COOLING WATER HX INLET ISOLATION VALVE								
1SX005	3	B	30	BTF	MO	Active	O/C	O	M-42-1A	E-2	SC	M18		
											SO	M18		
											DIAG	MOV		
											PI	MOV		
			Valve Name			ESW SUPPLY VALVE TO THE COMMON CC HX								
1SX007	3	B	24	BTF	MO	Active	O	O	M-42-2B	D-4	DIAG	MOV		
											PI	MOV		
											SC	RR	RJ-1	
											SO	RR	RJ-1	
			Valve Name			UNIT 1 CCW HX OUTLET ISOLATION VALVE								
1SX010	3	B	42	BTF	MO	Passive	O	O	M-42-2B	E-1	PI	Y2		
			Valve Name			ESW TRAIN A RETURN HEADER ISOLATION VALVE								

Essential Service Water

Valve EPN	Safety Class	Cat	Size	Viv Type	Act. Type	Act/ Pass	Norm Pos	Safety Pos	P&ID	P&ID Coor.	Test Type	Test Freq.	Deferred Just.	Tech. Pos.
1SX011	3	B	42	BTF	MO	Passive	O	O	M-42-2B	C-1	PI	Y2		
			Valve Name			ESW TRAIN CROSS TIE ISOLATION VALVE								
1SX016A	2	B	16	BTF	MO	Active	O	O/C	M-42-5B	F-7	SC	M18		
											SO	M18		
											DIAG	MOV		
											PI	MOV		
			Valve Name			RCFC SX SUPPLY ISOLATION VALVE								
1SX016B	2	B	16	BTF	MO	Active	O	O/C	M-42-5A	F-2	SC	M18		
											SO	M18		
											DIAG	MOV		
											PI	MOV		
			Valve Name			RCFC SX SUPPLY ISOLATION VALVE								
1SX027A	2	B	16	BTF	MO	Active	O	O/C	M-42-5B	C-7	SC	M18		
											SO	M18		
											DIAG	MOV		
											PI	MOV		
			Valve Name			RCFC SX RETURN HEADER ISOLATION VALVE								
1SX027B	2	B	16	BTF	MO	Active	O	O/C	M-42-5A	C-2	SC	M18		
											SO	M18		
											DIAG	MOV		
											PI	MOV		
			Valve Name			RCFC SX RETURN HEADER ISOLATION VALVE								
1SX033	3	B	36	BTF	MO	Passive	O	O	M-42-1B	D-2	PI	Y2		
			Valve Name			ESW TRAIN B CROSS TIE ISOLATION VALVE								
1SX034	3	B	36	BTF	MO	Passive	O	O	M-42-1A	F-2	PI	Y2		
			Valve Name			ESW TRAIN A CROSS TIE ISOLATION VALVE								
1SX112A	3	B	12	BTF	AO	Active	O	C	M-42-3	E-5	FC	Q		TP-VA-2
											STC	Q		TP-VA-1
											PI	Y2		TP-VA-4
			Valve Name			CONTAINMENT CHILLER SX SUPPLY VALVE								
1SX112B	3	B	12	BTF	AO	Active	O	C	M-42-3	C-5	FC	Q		TP-VA-2
											STC	Q		TP-VA-1
											PI	Y2		TP-VA-4
			Valve Name			CONTAINMENT CHILLER SX SUPPLY VALVE								
1SX114A	3	B	12	BTF	AO	Active	O	C	M-42-3	E-4	FC	Q		TP-VA-2
											STC	Q		TP-VA-1
											PI	Y2		TP-VA-4
			Valve Name			CONTAINMENT CHILLER SX RETURN VALVE								
1SX114B	3	B	12	BTF	AO	Active	O	C	M-42-3	C-4	FC	Q		TP-VA-2
											STC	Q		TP-VA-1
											PI	Y2		TP-VA-4
			Valve Name			CONTAINMENT CHILLER SX RETURN VALVE								
1SX136	3	B	42	BTF	MO	Passive	O	O	M-42-2A	C-1	PI	Y2		
			Valve Name			TRAIN B ESW RETRUN HEADER ISOLATION VALVE								

Essential Service Water

Valve EPN	Safety Class	Cat	Size	Vlv Type	Act. Type	Act/ Pass	Norm Pos	Safety Pos	P&ID	P&ID Coor.	Test Type	Test Freq.	Deferred Just.	Tech. Pos.
1SX147A	3	B	16	BTF	AO	Active	O	O	M-42-3	E-4	FO	Q		TP-VA-2
											STO	Q		TP-VA-1
											PI	Y2		TP-VA-4
			Valve Name			ESW RCFC RETURN PRESSURE CONTROL VALVE								
1SX147B	3	B	16	BTF	AO	Active	O	O	M-42-3	B-4	FO	Q		TP-VA-2
											STO	Q		TP-VA-1
											PI	Y2		TP-VA-4
			Valve Name			ESW RCFC RETURN PRESSURE CONTROL VALVE								
1SX150A	3	B	3	BTF	MO	Active	C	O/C	M-42-1B	D-4	SC	M18		
											SO	M18		
											DIAG	MOV		
			Valve Name			ESW STRAINER 1A - WASTE TREATMENT ISO VALVE								
1SX150B	3	B	3	BTF	MO	Active	C	O/C	M-42-1A	D-4	SC	M18		
											SO	M18		
											DIAG	MOV		
			Valve Name			ESW STRAINER 1B - WASTE TREATMENT ISO VALVE								
1SX168	3	B	3	GL	AO	Active	SYS	O	M-42-3	B-3	FO	Q		TP-VA-2
			Valve Name			AFW PUMP 1B CUBICLE COOLER ESW TEMP. CONTROL VALVE								
1SX169A	3	B	10	BTF	AO	Active	C	O	M-42-3	F-8	FO	Q		TP-VA-2
											STO	Q		TP-VA-1
											PI	Y2		TP-VA-4
			Valve Name			ESW RETURN HEADER FROM DG JACKET WATER ISOL VALVE								
1SX169B	3	B	10	BTF	AO	Active	C	O	M-42-3	D-8	FO	Q		TP-VA-2
											STO	Q		TP-VA-1
											PI	Y2		TP-VA-4
			Valve Name			ESW RETURN HEADER FROM DG JACKET WATER ISOL VALVE								
1SX173	3	B	6	GA	M	Passive	O	O	M-42-3	C-3	NTR	NR		
			Valve Name			ENGINE DRIVEN COOLING WATER PUMP SX04P SUPPLY VLV								
1SX174	3	C	6	CK	SA	Active	SYS	O	M-42-3	C-2	CCD	CM		
											CO	CM		
											COD	CM		
			Valve Name			ENGINE DRIVEN CLG WTR PP SX04P OUTLET CHECK VALVE								
1SX178	3	B	6	GA	AO	Active	C	O	M-42-3	B-3	FO	Q		
											STO	Q		TP-VA-1
			Valve Name			AFW PUMP B ESW RETURN ISOLATION VALVE								
2SX002A	3	C	36	CK	SA	Active	SYS	O/C	M-42-1B	B-6	CC	Q		
											CO	Q		
			Valve Name			ESW PUMP DISCHARGE CHECK VALVE								
2SX002B	3	C	36	CK	SA	Active	SYS	O/C	M-42-1A	B-5	CC	Q		
											CO	Q		
			Valve Name			ESW PUMP DISCHARGE CHECK VALVE								
2SX004	3	B	30	BTF	MO	Passive	O	O	M-42-1B	B-2	PI	Y2		
			Valve Name			UNIT 2 CCW HX INLET ISOLATION VALVE								

Essential Service Water

Valve EPN	Safety Class	Cat	Size	Vlv Type	Act. Type	Act/ Pass	Norm Pos	Safety Pos	P&ID	P&ID Coor.	Test Type	Test Freq.	Deferred Just.	Tech. Pos.
2SX005	3	B	30	BTF	MO	Active	O/C	O	M-42-1A	B-2	DIAG	MOV		
											PI	MOV		
											SC	Q		
											SO	Q		
			Valve Name			ESW SUPPLY VALVE TO THE COMMON CC HX								
2SX007	3	B	24	BTF	MO	Active	O	O	M-42-2B	B-3	DIAG	MOV		
											PI	MOV		
											SC	RR	RJ-1	
											SO	RR	RJ-1	
			Valve Name			UNIT 2 CCW HX OUTLET ISOLATION VALVE								
2SX010	3	B	42	BTF	MO	Passive	O	O	M-42-2B	C-1	PI	Y2		
			Valve Name			ESW TRAIN A RETURN HEADER ISOLATION VALVE								
2SX011	3	B	42	BTF	MO	Passive	O	O	M-42-2A	D-1	PI	Y2		
			Valve Name			ESW TRAIN CROSS TIE ISOLATION VALVE								
2SX016A	2	B	16	BTF	MO	Active	O	O/C	M-126-3	D-8	SC	M18		
											SO	M18		
											DIAG	MOV		
											PI	MOV		
			Valve Name			RCFC SX SUPPLY ISOLATION VALVE								
2SX016B	2	B	16	BTF	MO	Active	O	O/C	M-126-3	D-1	SC	M18		
											SO	M18		
											DIAG	MOV		
											PI	MOV		
			Valve Name			RCFC SX SUPPLY ISOLATION VALVE								
2SX027A	2	B	16	BTF	MO	Active	O	O/C	M-126-3	B-8	SC	M18		
											SO	M18		
											DIAG	MOV		
											PI	MOV		
			Valve Name			RCFC SX RETURN HEADER ISOLATION VALVE								
2SX027B	2	B	16	BTF	MO	Active	O	O/C	M-126-3	C-1	SC	M18		
											SO	M18		
											DIAG	MOV		
											PI	MOV		
			Valve Name			RCFC SX RETURN HEADER ISOLATION VALVE								
2SX033	3	B	36	BTF	MO	Passive	O	O	M-42-1B	B-3	PI	Y2		
			Valve Name			ESW TRAIN B CROSS TIE ISOLATION VALVE								
2SX034	3	B	36	BTF	MO	Passive	O	O	M-42-1A	D-3	PI	Y2		
			Valve Name			ESW TRAIN A CROSS TIE ISOLATION VALVE								
2SX112A	3	B	12	BTF	AO	Active	O	C	M-126-1	E-4	FC	Q		TP-VA-2
											STC	Q		TP-VA-1
											PI	Y2		TP-VA-4
			Valve Name			CONTAINMENT CHILLER SX SUPPLY VALVE								

Essential Service Water

Valve EPN	Safety Class	Cat	Size	Vlv Type	Act. Type	Act/ Pass	Norm Pos	Safety Pos	P&ID	P&ID Coor.	Test Type	Test Freq.	Deferred Just.	Tech. Pos.
2SX112B	3	B	12	BTF	AO	Active	O	C	M-126-1	C-4	FC	Q		TP-VA-2
											STC	Q		TP-VA-1
											PI	Y2		TP-VA-4
			Valve Name			CONTAINMENT CHILLER SX SUPPLY VALVE								
2SX114A	3	B	12	BTF	AO	Active	O	C	M-126-1	E-6	FC	Q		TP-VA-2
											STC	Q		TP-VA-1
											PI	Y2		TP-VA-4
			Valve Name			CONTAINMENT CHILLER SX RETURN VALVE								
2SX114B	3	B	12	BTF	AO	Active	O	C	M-126-1	C-6	FC	Q		TP-VA-2
											STC	Q		TP-VA-1
											PI	Y2		TP-VA-4
			Valve Name			CONTAINMENT CHILLER SX RETURN VALVE								
2SX136	3	B	42	BTF	MO	Passive	O	O	M-42-2A	C-1	PI	Y2		
			Valve Name			TRAIN B ESW RETRUN HEADER ISOLATION VALVE								
2SX147A	3	B	16	BTF	AO	Active	O	O	M-126-1	E-5	FO	Q		TP-VA-2
											STO	Q		TP-VA-1
											PI	Y2		TP-VA-4
			Valve Name			ESW RCFC RETURN PRESSURE CONTROL VALVE								
2SX147B	3	B	16	BTF	AO	Active	O	O	M-126-1	C-5	FO	Q		TP-VA-2
											STO	Q		TP-VA-1
											PI	Y2		TP-VA-4
			Valve Name			ESW RCFC RETURN PRESSURE CONTROL VALVE								
2SX150A	3	B	3	BTF	MO	Active	C	O/C	M-42-1B	A-4	SC	M18		
											SO	M18		
											DIAG	MOV		
			Valve Name			ESW STRAINER 2A - WASTE TREATMENT ISO VALVE								
2SX150B	3	B	3	BTF	MO	Active	C	O/C	M-42-1A	A-4	SC	M18		
											SO	M18		
											DIAG	MOV		
			Valve Name			ESW STRAINER 2B - WASTE TREATMENT ISO VALVE								
2SX168	3	B	3	GL	AO	Active	SYS	O	M-126-1	B-6	FO	Q		TP-VA-2
			Valve Name			AFW PUMP 2B CUBICLE COOLER ESW TEMP. CONTROL VALVE								
2SX169A	3	B	10	BTF	AO	Active	C	O	M-126-1	F-1	FO	Q		TP-VA-2
											STO	Q		TP-VA-1
											PI	Y2		TP-VA-4
			Valve Name			ESW RETURN HEADER FROM DG JACKET WATER ISOL VALVE								
2SX169B	3	B	10	BTF	AO	Active	C	O	M-126-1	D-1	FO	Q		TP-VA-2
											STO	Q		TP-VA-1
											PI	Y2		TP-VA-4
			Valve Name			ESW RETURN HEADER FROM DG JACKET WATER ISOL VALVE								
2SX173	3	B	6	GA	M	Passive	C	O	M-126-1	C-6	NTR	NR		
			Valve Name			ENGINE DRIVEN COOLING WATER PUMP SX04P SUPPLY VLV								

Essential Service Water

Valve EPN	Safety Class	Cat	Size	Viv Type	Act. Type	Act/ Pass	Norm Pos	Safety Pos	P&ID	P&ID Coor.	Test Type	Test Freq.	Deferred Just.	Tech. Pos.
2SX174	3	C	6	CK	SA	Active	SYS	O	M-126-1	C-7	CCD	CM		
											CO	CM		
											COD	CM		
			Valve Name			ENGINE DRIVEN CLG WTR PP SX04P OUTLET CHECK VALVE								
2SX178	3	B	6	GA	AO	Active	C	O	M-126-1	A-6	FO	Q		TP-VA-2
											STO	Q		TP-VA-1
			Valve Name			AFW PUMP B ESW RETURN ISOLATION VALVE								

Primary Containment Purge

Valve EPN	Safety Class	Cat	Size	Vlv Type	Act. Type	Act/ Pass	Norm Pos	Safety Pos	P&ID	P&ID Coor.	Test Type	Test Freq.	Deferred Just.	Tech. Pos.
1VQ001A	2	A	48	BTF	HO	Passive	C	C	M-105-1	E-5	LTJ	AJ		
			Valve Name			CONTAINMENT PURGE ISOLATION VALVE								
1VQ001B	2	A	48	BTF	HO	Passive	C	C	M-105-1	E-6	LTJ	AJ		
			Valve Name			CONTAINMENT PURGE ISOLATION VALVE								
1VQ002A	2	A	48	BTF	HO	Passive	C	C	M-105-1	E-4	LTJ	AJ		
			Valve Name			CONTAINMENT PURGE ISOLATION VALVE								
1VQ002B	2	A	48	BTF	HO	Passive	C	C	M-105-1	E-3	LTJ	AJ		
			Valve Name			CONTAINMENT PURGE ISOLATION VALVE								
1VQ003	2	A	8	BTF	AO	Active	C	C	M-105-1	C-4	LTJ	AJ		
											FC	Q		TP-VA-2
											STC	Q		TP-VA-1
											PI	Y2		TP-VA-4
			Valve Name			POST LOCA PURGE INLET ISOLATION VALVE								
1VQ004A	2	A	8	BTF	AO	Active	C	C	M-105-1	D-5	LTJ	AJ		
											FC	Q		TP-VA-2
											STC	Q		TP-VA-1
											PI	Y2		TP-VA-4
			Valve Name			MINIFLOW PURGE SUPPLY ISOLATION VALVE								
1VQ004B	2	A	8	BTF	AO	Active	C	C	M-105-1	D-6	LTJ	AJ		
											FC	Q		TP-VA-2
											STC	Q		TP-VA-1
											PI	Y2		TP-VA-4
			Valve Name			MINIFLOW PURGE SUPPLY ISOLATION VALVE								
1VQ005A	2	A	8	BTF	AO	Active	C	C	M-105-1	F-4	LTJ	AJ		
											FC	Q		TP-VA-2
											STC	Q		TP-VA-1
											PI	Y2		TP-VA-4
			Valve Name			MINIFLOW PURGE EXHAUST ISOLATION VALVE								
1VQ005B	2	A	8	BTF	AO	Active	C	C	M-105-1	F-4	LTJ	AJ		
											FC	Q		TP-VA-2
											STC	Q		TP-VA-1
											PI	Y2		TP-VA-4
			Valve Name			MINIFLOW PURGE EXHAUST ISOLATION VALVE								
1VQ005C	2	A	8	BTF	AO	Active	C	C	M-105-1	F-4	LTJ	AJ		
											FC	Q		TP-VA-2
											STC	Q		TP-VA-1
											PI	Y2		TP-VA-4
			Valve Name			MINIFLOW PURGE EXHAUST ISOLATION VALVE								
1VQ016	2	A	0.5	GL	M	Passive	C	C	M-105-3	C-6	LTJ	AJ		
			Valve Name			INSTRUMENT PENETRATION ISOLATION VALVE								
1VQ017	2	A	0.5	GL	M	Passive	C	C	M-105-3	C-6	LTJ	AJ		
			Valve Name			INSTRUMENT PENETRATION ISOLATION VALVE								
1VQ018	2	A	0.5	GL	M	Passive	C	C	M-105-3	C-5	LTJ	AJ		
			Valve Name			INSTRUMENT PENETRATION ISOLATION VALVE								

Primary Containment Purge

Valve EPN	Safety Class	Cat	Size	Vlv Type	Act. Type	Act/ Pass	Norm Pos	Safety Pos	P&ID	P&ID Coor.	Test Type	Test Freq.	Deferred Just.	Tech. Pos.
1VQ019	2	A	0.5	GL	M	Passive	C	C	M-105-3	C-5	LTJ	AJ		
			Valve Name			INSTRUMENT PENETRATION ISOLATION VALVE								
2VQ001A	2	A	48	BTF	HO	Passive	C	C	M-106-1	E-5	LTJ	AJ		
			Valve Name			CONTAINMENT PURGE ISOLATION VALVE								
2VQ001B	2	A	48	BTF	HO	Passive	C	C	M-106-1	E-6	LTJ	AJ		
			Valve Name			CONTAINMENT PURGE ISOLATION VALVE								
2VQ002A	2	A	48	BTF	HO	Passive	C	C	M-106-1	E-4	LTJ	AJ		
			Valve Name			CONTAINMENT PURGE ISOLATION VALVE								
2VQ002B	2	A	48	BTF	HO	Passive	C	C	M-106-1	E-3	LTJ	AJ		
			Valve Name			CONTAINMENT PURGE ISOLATION VALVE								
2VQ003	2	A	8	BTF	AO	Active	C	C	M-106-1	C-4	LTJ	AJ		
											FC	Q		TP-VA-2
											STC	Q		TP-VA-1
											PI	Y2		TP-VA-4
			Valve Name			AOV POST LOCA PURGE FLTR INLET VLV								
2VQ004A	2	A	8	BTF	AO	Active	C	C	M-106-1	D-5	LTJ	AJ		
											FC	Q		TP-VA-2
											STC	Q		TP-VA-1
											PI	Y2		TP-VA-4
			Valve Name			MINIFLOW PURGE SUPPLY ISOLATION VALVE								
2VQ004B	2	A	8	BTF	AO	Active	C	C	M-106-1	E-6	LTJ	AJ		
											FC	Q		TP-VA-2
											STC	Q		TP-VA-1
											PI	Y2		TP-VA-4
			Valve Name			MINIFLOW PURGE SUPPLY ISOLATION VALVE								
2VQ005A	2	A	8	BTF	AO	Active	C	C	M-106-1	F-4	LTJ	AJ		
											FC	Q		TP-VA-2
											STC	Q		TP-VA-1
											PI	Y2		TP-VA-4
			Valve Name			MINIFLOW PURGE EXHAUST ISOLATION VALVE								
2VQ005B	2	A	8	BTF	AO	Active	C	C	M-106-1	F-4	LTJ	AJ		
											FC	Q		TP-VA-2
											STC	Q		TP-VA-1
											PI	Y2		TP-VA-4
			Valve Name			MINIFLOW PURGE EXHAUST ISOLATION VALVE								
2VQ005C	2	A	8	BTF	AO	Active	C	C	M-106-1	F-4	LTJ	AJ		
											FC	Q		TP-VA-2
											STC	Q		TP-VA-1
											PI	Y2		TP-VA-4
			Valve Name			MINIFLOW PURGE EXHAUST ISOLATION VALVE								
2VQ016	2	A	0.5	GL	M	Passive	C	C	M-105-3	C-3	LTJ	AJ		
			Valve Name			INSTRUMENT PENETRATION ISOLATION VALVE								
2VQ017	2	A	0.5	GL	M	Passive	C	C	M-105-3	C-3	LTJ	AJ		
			Valve Name			INSTRUMENT PENETRATION ISOLATION VALVE								

Primary Containment Purge

Valve EPN	Safety Class	Cat	Size	Vlv Type	Act. Type	Act/ Pass	Norm Pos	Safety Pos	P&ID	P&ID Coor.	Test Type	Test Freq.	Deferred Just.	Tech. Pos.
2VQ018	2	A	0.5	GL	M	Passive	C	C	M-105-3	C-4	LTJ	AJ		
			Valve Name			INSTRUMENT PENETRATION ISOLATION VALVE								
2VQ019	2	A	0.5	GL	M	Passive	C	C	M-105-3	C-5	LTJ	AJ		
			Valve Name			INSTRUMENT PENETRATION ISOLATION VALVE								

Make-Up Demineralizer

Valve EPN	Safety Class	Cat	Size	Vlv Type	Act. Type	Act/ Pass	Norm Pos	Safety Pos	P&ID	P&ID Coor.	Test Type	Test Freq.	Deferred Just.	Tech. Pos.
1WM190	2	A	2	GL	M	Passive	LC	C	M-49-1A	E-5	LTJ	AJ		
			Valve Name		MAKE UP DEMIN SUPPLY CONTAINMENT ISOL MANUAL VLV									
1WM191	2	A/C	2	CK	SA	Active	SYS	C	M-49-1A	E-6	LTJ	AJ		
											CCL	CM		
											COF	CM		
			Valve Name		MAKE UP DEMIN SUPPLY CONTAINMENT ISOL CHECK VLV									
2WM190	2	A	2	GL	M	Passive	LC	C	M-49-1B	E-4	LTJ	AJ		
			Valve Name		MAKE UP DEMIN SUPPLY CONTAINMENT ISOL MANUAL VLV									
2WM191	2	A/C	2	CK	SA	Active	SYS	C	M-49-1B	E-3	LTJ	AJ		
											CCL	CM		
											COF	CM		
			Valve Name		MAKE UP DEMIN SUPPLY CONTAINMENT ISOL CHECK VLV									

Chilled Water

Valve EPN	Safety Class	Cat	Size	Vlv Type	Act. Type	Act/ Pass	Norm Pos	Safety Pos	P&ID	P&ID Coor.	Test Type	Test Freq.	Deferred Just.	Tech. Pos.
0WO002A	3	C	6	CK	SA	Active	SYS	O	M-118-1	D-6	CCD	CM		
											COD	CM		
											COF	Q		
			Valve Name			CHILLED WATER PUMP DISCHARGE CHECK VALVE								
0WO002B	3	C	6	CK	SA	Active	SYS	O	M-118-1	B-6	CCD	CM		
											COD	CM		
											COF	Q		
			Valve Name			CHILLED WATER PUMP DISCHARGE CHECK VALVE								
0WO028A	3	C	1.5x2.5	RV	SA	Active	C	O/C	M-118-1	E-8	RT	Y10		
			Valve Name			CONTROL ROOM CHILLED WATER RELIEF VALVE								
0WO028B	3	C	1.5x2.5	RV	SA	Active	C	O/C	M-118-1	C-8	RT	Y10		
			Valve Name			CONTROL ROOM CHILLED WATER RELIEF VALVE								
0WO205A	3	C	1	CK	SA	Active	SYS	C	M-118-1	E-6	CCD	CM		
											COD	CM		
			Valve Name			DEMIN WATER MAKEUP TO CHILLED WATER CHECK VALVE								
0WO205B	3	C	1	CK	SA	Active	SYS	C	M-118-1	C-6	CCD	CM		
											COD	CM		
			Valve Name			DEMIN WATER MAKEUP TO CHILLED WATER CHECK VALVE								
1WO006A	2	A	10	GA	MO	Active	O	C	M-118-5	E-5	LTJ	AJ		
											SC	M18		
											SO	M18		
											STC	M18		TP-VA-1
											DIAG	MOV		
											PI	MOV		
			Valve Name			WO SUPPLY TO RCFC CLG COILS CONTAINMENT ISOL VLV								
1WO006B	2	A	10	GA	MO	Active	O	C	M-118-5	B-4	LTJ	AJ		
											SC	M18		
											SO	M18		
											STC	M18		TP-VA-1
											DIAG	MOV		
											PI	MOV		
			Valve Name			WO SUPPLY TO RCFC CLG COILS CONTAINMENT ISOL VLV								
1WO007A	2	A/C	10	CK	SA	Active	SYS	C	M-118-5	E-5	LTJ	AJ		
											CCL	CM		
											COF	CM		
			Valve Name			WO SUPPLY TO RCFC CLG COILS CONTAINMENT ISOL VLV								
1WO007B	2	A/C	10	CK	SA	Active	SYS	C	M-118-5	B-4	LTJ	AJ		
											CCL	CM		
											COF	CM		
			Valve Name			WO SUPPLY TO RCFC CLG COILS CONTAINMENT ISOL VLV								

Chilled Water

Valve EPN	Safety Class	Cat	Size	Vlv Type	Act. Type	Act/ Pass	Norm Pos	Safety Pos	P&ID	P&ID Coor.	Test Type	Test Freq.	Deferred Just.	Tech. Pos.
1WO020A	2	A	10	GA	MO	Active	O	C	M-118-5	D-5	LTJ	AJ		
											SC	M18		
											SO	M18		
											STC	M18		TP-VA-1
											DIAG	MOV		
											PI	MOV		
	Valve Name		WO SUPPLY TO RCFC CLG COILS CONTAINMENT ISOL VLV											
1WO020B	2	A	10	GA	MO	Active	O	C	M-118-5	A-4	LTJ	AJ		
											SC	M18		
											SO	M18		
											STC	M18		TP-VA-1
											DIAG	MOV		
											PI	MOV		
	Valve Name		WO SUPPLY TO RCFC CLG COILS CONTAINMENT ISOL VLV											
1WO056A	2	A	10	GA	MO	Active	O	C	M-118-5	D-5	LTJ	AJ		
											SC	M18		
											SO	M18		
											STC	M18		TP-VA-1
											DIAG	MOV		
											PI	MOV		
	Valve Name		WO SUPPLY TO RCFC CLG COILS CONTAINMENT ISOL VLV											
1WO056B	2	A	10	GA	MO	Active	O	C	M-118-5	A-3	LTJ	AJ		
											SC	M18		
											SO	M18		
											STC	M18		TP-VA-1
											DIAG	MOV		
											PI	MOV		
	Valve Name		WO SUPPLY TO RCFC CLG COILS CONTAINMENT ISOL VLV											
1WO090A	NS	C	1x1.5	RV	SA	Active	C	O	M-118-5 E5	E-5	RT	Y10		
	Valve Name		WO Relief Valve											
1WO090B	NS	C	1x1.5	RV	SA	Active	C	O	M-118-5 D3	D-3	RT	Y10		
	Valve Name		WO Relief Valve											
1WO091A	2	A/C	.75x1	RV	SA	Active	C	O/C	M-118-5	D-5	LTJ	AJ		
											RT	Y10		
	Valve Name		WO Relief Valve											
1WO091B	2	A/C	.75x1	RV	SA	Active	C	O/C	M-118-5	B-4	LTJ	AJ		
											RT	Y10		
	Valve Name		WO Relief Valve											
2WO006A	2	A	10	GA	MO	Active	O	C	M-118-7	E-5	LTJ	AJ		
											SC	M18		
											SO	M18		
											STC	M18		TP-VA-1
											DIAG	MOV		
											PI	MOV		
	Valve Name		WO SUPPLY TO RCFC CLG COILS CONTAINMENT ISOL VLV											

Chilled Water

Valve EPN	Safety Class	Cat	Size	Vlv Type	Act. Type	Act/ Pass	Norm Pos	Safety Pos	P&ID	P&ID Coor.	Test Type	Test Freq.	Deferred Just.	Tech. Pos.
2WO006B	2	A	10	GA	MO	Active	O	C	M-118-7	B-4	LTJ	AJ		
											SC	M18		
											SO	M18		
											STC	M18		TP-VA-1
											DIAG	MOV		
											PI	MOV		
			Valve Name			WO SUPPLY TO RCFC CLG COILS CONTAINMENT ISOL VLV								
2WO007A	2	A/C	10	CK	SA	Active	SYS	C	M-118-7	E-5	LTJ	AJ		
											CCL	CM		
											COF	CM		
			Valve Name			WO SUPPLY TO RCFC CLG COILS CONTAINMENT ISOL VLV								
2WO007B	2	A/C	10	CK	SA	Active	SYS	C	M-118-7	B-3	LTJ	AJ		
											CCL	CM		
											COF	CM		
			Valve Name			WO SUPPLY TO RCFC CLG COILS CONTAINMENT ISOL VLV								
2WO020A	2	A	10	GA	MO	Active	O	C	M-118-7	D-5	LTJ	AJ		
											SC	M18		
											SO	M18		
											STC	M18		TP-VA-1
											DIAG	MOV		
											PI	MOV		
			Valve Name			WO SUPPLY TO RCFC CLG COILS CONTAINMENT ISOL VLV								
2WO020B	2	A	10	GA	MO	Active	O	C	M-118-7	B-4	LTJ	AJ		
											SC	M18		
											SO	M18		
											STC	M18		TP-VA-1
											DIAG	MOV		
											PI	MOV		
			Valve Name			WO SUPPLY TO RCFC CLG COILS CONTAINMENT ISOL VLV								
2WO056A	2	A	10	GA	MO	Active	O	C	M-118-7	D-5	LTJ	AJ		
											SC	M18		
											SO	M18		
											STC	M18		TP-VA-1
											DIAG	MOV		
											PI	MOV		
			Valve Name			WO SUPPLY TO RCFC CLG COILS CONTAINMENT ISOL VLV								
2WO056B	2	A	10	GA	MO	Active	O	C	M-118-7	B-3	LTJ	AJ		
											SC	M18		
											SO	M18		
											STC	M18		TP-VA-1
											DIAG	MOV		
											PI	MOV		
			Valve Name			WO SUPPLY TO RCFC CLG COILS CONTAINMENT ISOL VLV								
2WO090A	NS	C	1x1.5	RV	SA	Active	C	O	M-118-7 E5	E-5	RT	Y10		
			Valve Name			WO Relief Valve								

Chilled Water

Valve EPN	Safety Class	Cat	Size	Vlv Type	Act. Type	Act/ Pass	Norm Pos	Safety Pos	P&ID	P&ID Coor.	Test Type	Test Freq.	Deferred Just.	Tech. Pos.
2WO090B	NS	C	1x1.5	RV	SA	Active	C	O	M-118-7 D3	D-3	RT	Y10		
			Valve Name			WO Relief Valve								
2WO091A	2	A/C	.75x1	RV	SA	Active	C	O/C	M-118-7	D-5	LTJ	AJ		
											RT	Y10		
			Valve Name			WO Relief Valve								
2WO091B	2	A/C	.75x1	RV	SA	Active	C	O/C	M-118-7	B-4	LTJ	AJ		
											RT	Y10		
			Valve Name			WO Relief Valve								

ATTACHMENT 16
CHECK VALVE CONDITION MONITORING PLAN INDEX

CVCM Plan Number	Major Rev Date (Requires Signatures)	Title
CV01S-1	3/23/2015	1/2AF001A/B
CV02S-1	3/23/2015	1/2AF003A/B
CV02S-2	3/29/2017	1/2AF014 A/B/C/D/E/F/G/H
CV03S-1	3/23/2015	1/2AF029A/B
CV04S-01	4/7/2016	1/2CV8113
CV05S-1	4/24/2020	1/2CC9486
CV07S-1	4/17/2016	1/2IA091
CV07B-1	7/31/2015	1/2CS011A/B
CV08B-1	7/31/2015	1/2CS020A/B
CV08S-01	4/17/2016	1/2PR002G/H
CV08S-2	4/17/2016	1/2PR032
CV09C-1	7/31/2015	1/2CC9495 A/B/C/D
CV09S-01	8/19/2011	1/2PS231A/B
CV10S-1	5/18/2012	1/2SI8956A/B/C/D
CV12S-1	7/3/2013	1/2RY8046
CV12S-2	4/17/2016	1/2RY8047
CV13S-1	8/31/2015	1/2CV8440
CV14R-1	8/31/2015	0WO002A/B
CV14S-6	4/17/2016	1/2SI8968
CV15R-1	4/24/2020	1/2WM191
CV16R-01	1/29/2015	1/2WO007A/B
CV16S-1	8/31/2015	1/2CV8546
CV18B-1	4/17/2016	1/2FW079A, B, C, D
CV18S-1	5/10/2016	1/2CV8348
CV19S-1	7/31/2015	1/2CV8368A/B/C/D
CV20R-1	10/6/2011	1/2FP345
CV20S-1	8/31/2015	1/2SI8926
CV21W-1	10/26/2015	0WO205A/B
CV22R-1	3/16/2018	1/2SX174
CV22S-1	7/31/2015	1/2SA181A/B/C/D
CV23R-1	8/19/2011	1/2RY085A/B
CV24R-1	8/19/2011	1/2RY086A/B
CV25R-1	10/18/2013	1/2AF058A/B
CV26R-1	2/8/2017	1/2AF049A-D
CV028	4/13/2020	1/2CV8367A/B/C/D, 1/2CV8372A/B/C/D
CV029	5/15/2019	1/2DG5184A/B, 1/2DG5185A/B
CVB04S-01	8/9/2011	1/2CC070A/B
CVB16-1	8/19/2011	1/2FW036A/B/C/D
CVC5S-1	8/6/2019	1/2CS008A/B
CVC10-1	7/31/2015	1/2CS003A/B
CVD8S-1	5/18/2012	1/2SI8948A/B/C/D
CVE3S-01	6/19/2013	1/2CC9518, 1/2CC9534