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10CFR50.55a

TMI-15-048
April 13, 2015

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

Three Mile Island Nuclear Station, Unit 1
Renewed Facility Operating License No. DPR-50
NRC Docket No. 50-289

Subject: Submittal of the Update to the Fifth Ten-Year Interval Inservice Testing Program

In accordance with the ASME OM Code-2004 Edition, with Addenda through OMb Code-2006 (ISTA-3200(a)), attached for your information is a copy of the updated Fifth Ten-Year Interval Inservice Testing (IST) Program Plan for the Three Mile Island Nuclear Station, Unit 1. This copy of the program plan is being supplied for information only.

There are no regulatory commitments contained within this letter.

If you have any questions or require additional information, please contact Tom Loomis (610-765-5510).

Sincerely,

James Barstow
Director - Licensing & Regulatory Affairs
Exelon Generation Company, LLC

Attachment: Three Mile Island Nuclear Station, Unit 1, Inservice Testing (IST) Program Plan
Fifth Ten-Year Interval

cc: Regional Administrator, Region I, USNRC
USNRC Senior Resident Inspector, TMI
USNRC Project Manager, TMI

ATTACHMENT

Three Mile Island Nuclear Station, Unit 1
Inservice Testing (IST) Program Plan
Fifth Ten-Year Interval

Exelon Nuclear Generation, LLC

200 Exelon Way
Kennett Square, PA 19348

Three Mile Island Unit #1
NRC Docket Number 50-289

Three Mile Island Unit #1
Route 441 South
Middletown, Pennsylvania 17057-0480

Commercial Service Date:
September 2, 1974

Inservice Testing (IST) Program Program Plan

Fifth Ten-Year Interval

October 25, 2013 – September 22, 2024

TMI-IST-PLAN-INT5
Revision 1
March 24, 2015

SRRS: 3A.132

REVISION RECORD

Effective Date	Revision Description	Sign & Date		
		Prepared: Site IST Engineer	Reviewed: Corporate IST Engineer	Approved: Engr. Programs Manager
10/25/2013	Revision 0: Program revised in its entirety for fifth 10-year interval to comply with ASME OM Code-2004, including OMa Code-2005 and OMb Code-2006 Addenda's.	/S/ Robert Masoero 10/23/2013	/S/ Marcellus Ruff 10/24/2013	/S/ Mark Torborg 10/25/2013
03/24/2015	Revision 1: • Add BS-V-1103...-1108 quarterly Bi-Directional Closed (BDC) testing • Reduce CA-P-1A/B testing to quarterly Group B including vibration data (augmented scope pumps) • Revise CO-V-25A/B category from 'C' to 'A/C' and revise RJ-25 to characterize the leak test as required • Add IA-V-1621A/B to RJ-08 and correct Fail-Open (FO) test interval from 3M to RR. Also correct Safety Classifications in RJ-08 from NC to N/A. • Add Technical Position IST-014 to IA-V-1631A • Correct IC-V-6 valve type from Gate to Globe • Add MS-V-8A/B to test plan with PI test requirement • Replace MS-V-89's with MS-V-88's for the OTSG isolation safety function and testing • Eliminate MU-V-26 Fail-Open (FO) test • Eliminate the Fail-Open (FO) test from all Spent Fuel system Air-Operated Valves	Robert Masoero 3/16/15	Marcellus Ruff 3/23/15	Mark Torborg 3/24/15

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1.0 INTRODUCTION

1.1 Purpose

The purpose of this Inservice Testing (IST) Program Plan is to provide a summary description of the Three Mile Island Unit #1 IST Program in order to document its compliance with the requirements of 10 CFR 50.55a(f) for the 5th 10-year IST interval.

1.2 Scope

This Inservice Testing Program Plan identifies all of the testing performed on the components included in the Three Mile Island Unit #1Inservice Testing (IST) Program for the 5th ten-year IST interval, which will begin on October 25, 2013 and is scheduled to end on September 22, 2024. (Note: The Fourth Ten-Year Interval began on September 23, 2004, and was originally scheduled to conclude on September 22, 2014. The Fifth Ten-Year Interval scheduled end date maintains the original 10-year pattern of intervals in accordance with ISTA-3120(d).)

The Code of Federal Regulations, 10 CFR 50.55a(f)(4), requires that throughout the service life of a boiling or pressurized water-cooled nuclear power facility, pumps and valves which are classified as ASME Code Class 1, Class 2, and Class 3 must meet the inservice test requirements set forth in the ASME OM Code and addenda that are incorporated by reference in paragraph 10 CFR 50.55a(b)(3) for the initial and each subsequent 120-month interval.

Based on the start date identified above, the IST Program for the 5th ten-year interval is required by 10 CFR 50.55a(f)(4)(ii) to comply with the requirements of the ASME OM Code-2004, Code for Operation and Maintenance of Nuclear Power Plants, including addenda through the OMb-2006, except where relief from such requirements has been granted in writing by the NRC.

The scope of the OM Code is defined in paragraph ISTA-1100 as applying to:

(a) 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;
(b) pressure relief devices that protect systems or portions of systems that perform one or more of the functions listed in (a), above; and
(c) dynamic restraints (snubbers) used in systems that perform one or more of the functions listed in (a).

NOTE: This IST Program Plan addresses only those components included in (a) and (b) above. Dynamic restraints (snubbers) are addressed in a separate test program.

In order to determine the scope of the IST Program at Three Mile Island Unit #1, an extensive scope evaluation was performed. This scope evaluation determined all of the functions required to be performed by all ASME Class 1, 2 and 3 systems in shutting down the reactor to the safe shutdown condition, in maintaining the safe shutdown condition or in mitigating the consequences of an accident. The

determination of those functions was accomplished by a thorough review of licensing bases documents such as the UFSAR/FSAR, Plant Technical Specifications and Technical Specification Bases documents, etc. Next, a component-by-component review was performed to determine what function each pump and valve in the system was required to perform in order to support the safety function(s) of the system or subsystem. The results of these efforts are documented in the Station's IST Bases Document. In addition to a description of each component's safety function(s), the Bases Document identifies the tests and examinations that are performed on each component to provide assurance that they will be operationally ready to perform those safety function(s). The Bases Document identifies those ASME Class 1, 2, and 3 pumps and valves that are in the scope of the IST Program, including those that do and those that do not have required testing. It also identifies those ASME Class 1, 2 and 3 pumps and valves that are outside the scope of the IST Program on the basis that they are not required to perform any specific safety function.

As stated at the beginning of this Section, the scope of this IST Program Plan is to identify all of the testing performed on those components within the scope of the IST Program. This is accomplished primarily by means of the IST Pump and IST Valve Tables contained in Attachments 14 and 15. The remaining Sections and Attachments of this document provide support information to that contained in the Tables. Components that do not require testing are not included in the IST Program Plan document.

In addition to those components that are required to perform specific safety function(s), the scope evaluation often determines that there are also ASME Safety Class 1, 2 and 3 components that are not required to perform a licensing-based safety function but which, nonetheless, may be relied upon to operate to perform a function with some significance to safety. It may also identify non-ASME Safety Class pumps or valves that have a safety function or may be relied upon to operate to perform a function with some significance to safety. None of these components are required by 10 CFR 50.55a to be included in the IST Program. However, such components may require testing in a manner which demonstrates their ability to perform their functions commensurate with their importance to safety per the applicable portions of 10 CFR 50, Appendix A or B. One option is to include pumps or valves that fit these conditions in the IST Program as augmented components.

Three Mile Island Unit #1 is licensed with the Hot Standby condition as the safe shutdown condition. Therefore, the scope of the IST Program must include, as a minimum, all of those ASME Class 1, 2, and 3 pumps and valves which are required to shut down the Reactor to the Hot Standby condition, maintain the Hot Standby condition, or mitigate the consequences of an accident.

1.3 Discussion

A summary listing of all the pumps and valves that are tested in accordance with the IST Program is provided in the IST Pump and IST Valve Tables contained in Attachments 14 and 15. The Pump and Valve Tables also identify each test that is performed on each component, the frequency at which the test is performed, and any Relief Request or Technical Position applicable to the test. For valves, the Valve

Table also identifies any Cold Shutdown Justification or Refueling Outage Justification that is applicable to the required exercise tests. Additional information is provided for both pumps and valves. All of the data fields included in the IST Pump and Valve Tables are listed and described in Sections 2 and 3 of this document.

Following Sections 2 and 3 are several Attachments which provide information referenced in the Pump and Valve Tables.

Attachment 1 includes a listing of P&ID's on which a depiction of the pump or valve may be located.

Attachment 2 provides an index of the Pump Relief Requests that apply to any of the pumps in the IST Program for this ten-year interval.

Attachment 3 includes a copy of each of those Relief Requests.

Attachment 4 provides an index of the Valve Relief Requests that apply to any of the valves in the IST Program for this ten-year interval.

Attachment 5 includes a copy of each of those Relief Requests.

Attachment 6 contains the Safety Evaluation Report(s) (SER) that document approval of the Relief Requests contained in Attachments 3 and 5.

Attachment 7 includes a list of the ASME OM Code Cases that are being invoked for this ten-year interval.

Attachment 8 provides an index of Cold Shutdown Justifications that apply to the exercise testing of any valves in the IST Program for this ten-year interval.

Attachment 9 includes a copy of each of those Cold Shutdown Justifications.

Attachment 10 provides an index of Refueling Outage Justifications that apply to the exercise testing of any valves in the IST Program for this ten-year interval.

Attachment 11 includes a copy of each of those Refueling Outage Justifications.

Attachment 12 provides an index of Technical Positions that apply to the IST Program for this ten-year interval. Technical Positions provide detailed information regarding how Exelon satisfies certain ASME OM Code requirements, particularly when the Code requirement may be ambiguous or when multiple options for implementation may be available. Technical Positions do not take exception to or provide alternatives to Code requirements.

Attachment 13 includes a copy of each Technical Position listed in Attachment 12.

As described previously, Attachments 14 and 15 include the IST Pump and Valve Tables.

Attachment 16 provides a listing of Check Valve Condition Monitoring (CVCM) Program Plans. These condition monitoring plans are generated from information contained in the IST Program database - Inservice Testing Program Assistant (ISTPa-2003). Implementation and Maintenance of the Condition Monitoring Program is addressed in T&RM procedure ER-AA-321-1005, "Condition Monitoring for Inservice Testing of Check Valves.".

This IST Program Plan is a quality-related document and is controlled and maintained in accordance with approved Exelon Corporate Engineering and Records Management procedures.

1.4 References

1.4.1 Title 10, Code of Federal Regulations, Part 50, Section 55a (10 CFR 50.55a)

1.4.2 ASME OM Code-2004, Code for Operation and Maintenance of Nuclear Power Plant Components, including Addenda through OMb-2006.

1.4.3 Three Mile Island Unit #1Technical Specification

1.4.4 Exelon Corporation Administrative Procedure ER-AA-321, Administrative Requirements for Inservice Testing

2.0 INSERVICE TESTING PLAN FOR PUMPS

2.1 Pump Inservice Testing Plan

The Three Mile Island Unit #1 Inservice Testing Program for Pumps meets the requirements of Subsections ISTA and ISTB of the ASME OM Code-2004 with OMb-2006 addenda, with the exception of those specific applications identified in the Relief Requests contained in Attachment 3.

2.2 IST Plan Pump Table Description

The pumps included in the Three Mile Island Unit #1 Inservice Testing Program are listed in Attachment 14. The information contained in that table identifies those pumps required to be tested to the requirements of the 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 identification number for the pump, as designated on the System P&ID or Flow Diagram
Test Group	A or B, as defined in Reference 1.4.2 (or applicable Relief)
Safety Class	The ASME Safety Class (i.e., 1, 2 or 3) of the pump. Non-ASME Safety Class pumps are designated "N/A".
Pump Type	An abbreviation used to designate the type of pump: C Centrifugal PDN Positive Displacement - Non-Reciprocating PDR Positive Displacement - Reciprocating VLS Vertical Line Shaft
Pump Driver	The type of driver with which the pump is equipped: A Air-motor D Diesel M Motor (electric) T Turbine (steam)
Nominal Speed	The normal rotational speed of the pump at IST reference conditions.
P&ID	The Piping and Instrumentation Diagram or Flow Drawing on which the pump is shown

P&ID Coor. — Coordinates on the P&ID or Flow Diagram where the pump is shown

Test Type — Lists each of the test parameters which are required to be measured for the specific pump. These include:

- N — Speed (for variable speed pumps, only)
- ΔP — Differential Pressure
- P — Discharge Pressure (positive displacement pumps)
- Q — Flow Rate
- V_d — Vibration (displacement)
- V_v — Vibration (velocity)

Test Freq. — An abbreviation which designates the frequency at which the associated test is performed:

- Q — Quarterly
- Y2 — Once every 2 years

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

Relief Request — Identifies the number of the Relief Request applicable to the specified test.

Tech. Pos. — Provides the Technical Position identification number applicable to the pump or test.

Comments — Any appropriate reference or explanatory information (e.g., technical positions, etc.)

Pump Name — The descriptive name of the pump shown on the bottom line for each pump entry. [use PIMS, Passport, etc. names for consistency]

3.0 INSERVICE TESTING PLAN FOR VALVES

3.1 Valve Inservice Testing Plan

The Three Mile Island Unit #1Inservice Testing Program for Valves meets the requirements of Subsections ISTA and ISTC of the ASME OM Code-2004 with OMb-2006 addenda, with the exception of those specific applications identified in the Relief Requests contained in Attachment 5.

3.2 IST Plan Valve Table Description

The valves included in the Three Mile Island Unit #1Inservice Testing Program are listed in Attachment 15. The information contained in that table identifies those valves required to be tested to the requirements of the ASME OM Code, the testing methods and frequency of testing, associated Relief Requests, comments, and other applicable information. The column headings for the Valve Table are delineated below with an explanation of the content of each column.

Valve EPN — The unique identification number for the valve, as designated on the System P&ID or Flow Diagram.

Safety Class — The ASME Safety Class (i.e., 1, 2 or 3) of the valve. Non-ASME Safety Class valves are designated by "N/A".

Categroy — The ASME Code category or categories of the valve as defined in Reference 1.4.2.

Size — The nominal size of the valve in inches.

Valve Type — An abbreviation used to designate the body style of the valve:

3W	3-Way
4W	4-Way
BAL	Ball
BTF	Butterfly
CK	Check
DIA	Diaphragm
GA	Gate
GL	Globe
PLG	Plug
RPD	Rupture Disk
RV	Relief
SCK	Stop-Check
SHR	Shear (SQUIB)
XFC	Excess Flow Check

Act. Type

An abbreviation which designates the type of actuator on the valve. Abbreviations used are:

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

Active/Passive

"A" or "P", 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 Reference 1.4.2.

Valve Normal and Safety Positions

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
O	Open
O/C	Open or Closed
OKL	Open/Actuator Key Locked
SYS	System Condition Dependent
T	Throttled

P&ID

The Piping and Instrumentation Diagram or Flow Drawing on which the valve is shown.

P&ID Coord.

The Sheet coordinates on the P&ID or Flow Diagram where the valve is shown.

Test Type

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
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
PI	Position Indication Verification Test
RT	Relief Valve Test
SC	Exercise Closed (without stroke-timing)
SO	Exercise Open (without stroke-timing)
SP	Partial Exercise (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", and high pressure leak tests as "LTH".

[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, "M" for magnetics, "R" for radiography, "U" for ultrasonics, or "X" for manual exercise.

Test Freq — An abbreviation which designates the frequency at which the associated test is performed. Abbreviations used are:

AJ	Per Appendix J
CM	Per Check Valve Condition Monitoring Program
CS	Cold Shutdown
M[*n*]	Once Every *n* Months
Q	Quarterly
RR	Refuel Outage
R[*n*]	Once Every *n* Refuel Outages
SA	Sample Disassemble & Inspect
TS	Per Technical Specification Requirements
Y[*n*]	Once Every *n* Years
OP	Operational Frequency

Relief Request — Identifies the number of the Relief Request applicable to the specified test.

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

Tech. Pos. — Provides the Technical Position identification number applicable to the pump or test.

Valve Name — The descriptive name for the valve [use PIMS, Passport, etc. names for consistency].

SECTION 4.0
ATTACHMENTS

ATTACHMENT 1
SYSTEM AND P&ID LISTING

System	System Name	P&ID
AH	Reactor Building Purge	302-831, 847
BS	Reactor Building Spray	302-712
CA	Reactor Plant Chemical Addition	302-671
CF	Core Flood	302-711
CH	Control Building Chilled Water	302-847
CM	Containment Monitoring	302-721
CO	Condensate	302-101
DC	Decay Heat Closed Cycle Cooling Water	302-645
DF	Emergency Diesel Generators Fuel Systems	302-283, 351
DH	Decay Heat Removal	302-640
DR	Decay Heat River Water	302-202, 645
EF/AS	Emergency Feedwater/Auxiliary Steam	302-011, 082, 611
EG	Emergency Diesel Generator Support Systems	302-351, 353, 354
FS	Fire Service Water	302-231
FW	Main Feedwater	302-081
HM	Containment Hydrogen Monitoring	302-674
HP	Hydrogen Purge Discharge	302-721
HR	Post LOCA Hydrogen Recombiner	302-722
IA	Instrument Air	302-271, 273
IC	Intermediate Closed Cooling Water	302-620
MS	Main Steam	302-011
MU	Makeup & Purification	302-660, 661
NI	Nuclear Plant Nitrogen Supply	302-720
NR	Nuclear Services River Water	302-202
NS	Nuclear Services Closed Cooling Water	302-610, 645
PP	Penetration Pressurization	302-706
RB/RR	Reactor Building Emergency Cooling Water/Reactor River	302-611
RC	Reactor Coolant	302-650
SA	Station Service Air	302-271
SF	Spent Fuel Pool Cooling	302-630
WDG	Gaseous Waste Disposal	302-694
WDL	Liquid Waste Disposal	302-196, 690

ATTACHMENT 2
PUMP RELIEF REQUEST INDEX

RELIEF REQUEST NUMBER	RELIEF REQUEST TITLE	APPROVAL DATE
PR-01	Nuclear Services Closed Cooling Water Flow Rate Measurement During Group A Tests	08/15/2013
PR-02	Proposed Alternative to Utilize Code Case OMN-18 In Accordance with 10 CFR 50.55a(a)(3)(i). Note: The ASME Code committee has approved Code Case OMN-18, "Alternate Testing Requirements for Pumps Tested Quarterly within ± 20% of Design Flow." However, this Code Case has not been approved for use in Regulatory Guide 1.192, Operation and Maintenance Code Case Acceptability, ASME OM Code, June 2003 and therefore, requires NRC relief.	08/15/2013

ATTACHMENT 3
PUMP RELIEF REQUESTS

10 CFR 50.55a Request Number: PR-01

Revision 0

Relief Request Concerning Nuclear Services Closed Cooling Water Flow Rate Measurement During Group A Tests In Accordance with 10 CFR 50.55a(f)(5)(iii)

1. ASME Code Component(s) Affected

   NS-P-1A, Nuclear Services Closed Cooling Water (NSCCW) Pump 1A, (Centrifugal / Group A / Class 3)

   NS-P-1B, Nuclear Services Closed Cooling Water Pump 1B, (Centrifugal / Group A / Class 3)

   NS-P-1C, Nuclear Services Closed Cooling Water Pump 1C, (Centrifugal / Group A / Class 3)

   Component/System Function

   The NSCCW system includes four 33.33 percent capacity nuclear services coolers, and three 50-percent capacity NSCCW pumps. This system, along with the intermediate cooling system, satisfies the cooling requirements of all nuclear-oriented services other than decay heat and reactor building emergency cooling. In the event of a loss-of-coolant accident, 100-percent redundancy of all nuclear services equipment may be obtained by isolating non-essential items so that flow requirements are reduced to approximately half that of normal operation.

2. Applicable Code Edition and Addenda

   ASME OM Code-2004 Edition, with Addenda through OMb-2006

3. Applicable Code Requirement(s)

   ISTB-5121(b) - "Group A Test Procedure" – "The resistance of the system shall be varied until the flow rate equals the reference point... ...Alternatively, the flow rate shall be varied until the differential pressure equals the reference point..."

4. Impracticality of Compliance

   Pursuant to 10 CFR 50.55a(f)(5)(iii), relief is requested from the requirement of ASME OM Code ISTB-5121(b). Due to system design and plant operating requirements, it is not practical to reduce the number of pumps in service to one to allow for single-pump testing during power operation. Also, individual pump flow rates cannot be measured during the Group A test. The flow instrumentation for this system is located in the common discharge header for all three of the subject pumps. The piping configuration does not contain, nor would the system design permit the installation of accurate individual pump flow measuring devices due to the turbulence caused by the valving and elbow configuration on the discharge of the pumps. There were no provisions originally designed in the system to measure individual pump flow rate.

5. Burden Caused by Compliance

Individual pump flow cannot be measured during normal quarterly operations since individual flow instrumentation does not exist. Also, two pumps are normally required to be in service to provide adequate cooling for system components.

To comply with the ISTB requirement for measuring individual pump flow rates on a quarterly basis, a modification of the system would be required.

6. Proposed Alternative and Basis for Use

Individual suction and discharge pressure gauges are installed at each pump allowing for measurement of differential pressure for inservice testing. A flow instrument is installed in the common discharge header.

The proposed test would test (as approved previously in PR-02 for the fourth interval) NSCCW pumps in pump pairs. As stated previously, individual pump flow cannot be measured during quarterly operations since individual flow instrumentation does not exist. Also, two (2) pumps are normally required to be inservice to provide adequate cooling for system components. The NSCCW pumps are centrifugal pumps (not vertical line shaft). The current quarterly inservice procedure tests all combinations of paired-pumps (A-B, B-C, A-C). During these tests, pump dP [differential pressure] is set and combined pump flow rate is measured.

Individual pump flow rates will be calculated and compared against individual pump flow rate reference values. Corrective actions will be taken in accordance with ISTB-6200, "Corrective Action," in the event that these criteria are not met. The pumps will continue to be tested individually in accordance with ISTB-5123, "Comprehensive Test Procedure," during refueling outages.

Additionally, vibration data on the pump will be recorded and compared to the reference values. Any deviation from the reference value will be compared to the Code acceptance criteria. The current testing methodology of testing paired–combinations of pumps near two-pump design flow rate provides an adequate basis for identifying and evaluating degraded pump performance. Therefore, this testing method provides reasonable assurance of pump operational readiness.

Summary of proposed alternative testing:

a. TMI, Unit 1 will continue to perform quarterly testing using a modified Group A test procedure as described above. With two paired-pumps in service, the required group A test parameters will be measured except for individual pump flow rate. Individual pump flow rates will be calculated and compared against calculated individual pump flow rate reference values. During this test the differential pressure for each pump will be throttled to the reference value.

b. Vibration measurements will be recorded and compared to their reference values. Deviations from the reference value will be compared with the ranges specified in Table ISTB-5121-1 for Group A tests. Corrective actions will be taken in accordance with ISTB-6200.

c. During testing of the subject pumps (quarterly and refueling), TMI, Unit 1 will perform full spectrum vibration analysis, which is above Code required vibration testing.

d. The pumps will continue to be tested individually in accordance with ISTB-5123, "Comprehensive Test Procedure," during refueling outages.

Using the provisions of this relief request as an alternative to the specific requirements of ISTB-5121(b) will provide reasonable assurance of pump operational readiness. Therefore, pursuant to 10 CFR 50.55a(f)(5)(iii), TMI, Unit 1 requests relief from the specific ISTB requirements identified in this request.

7. Duration of Proposed Alternative

The proposed alternative identified will be utilized during the fifth IST interval which is scheduled to begin October 15, 2013 and conclude on October 14, 2023.

8. Precedents

A similar Relief Request (P5) was approved for TMI, Unit 1 for the third 10-year interval as documented in the US Nuclear Regulatory Commission's Safety Evaluation Report dated July 2, 2004 (ML041670196).

A similar Relief Request (PR-02) was approved for TMI, Unit 1 for the fourth 10-year interval, as documented in the U.S. Nuclear Regulatory Commission's Safety Evaluation Report dated July 7, 2005 (ML051530406).

10 CFR 50.55a Request Number: PR-02

Revision 0

Proposed Alternative to Utilize Code Case OMN-18
In Accordance with 10 CFR 50.55a(a)(3)(i)

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1. ASME Code Component(s) Affected

   AH-P-3A&B, Control Building Chilled Water Supply Pumps (Centrifugal / Group A / Class 3)

   BS-P-1A&B, Reactor Building Spray Pumps (Centrifugal / Group AB / Class 2)

   DC-P-1A&B, Decay Heat Closed Cooling Water Pumps (Centrifugal / Group A / Class 3)

   DR-P-1A&B, Decay Heat River Water Pumps (Vertical Line Shaft / Group A / Class 3)

   SF-P-1A&B, Spent Fuel Cooling Pumps (Centrifugal / Group A / Class 3)

   Component/System Function

   Provide minimum flow to meet system requirements under accident conditions

2. Applicable Code Edition and Addenda

   ASME OM Code-2004 Edition, with Addenda through OMb-2006

3. Applicable Code Requirement(s)

   - ISTB-3300, "Reference Values," states, in part, that "Reference values shall be established within ±20 percent of pump design flow rate for the comprehensive test," and "Reference values shall be established within ±20 percent of pump design flow for the Group A and Group B tests, if practicable."
   - ISTB-3400, "Frequency of Inservice Tests", states that an inservice test shall be run on each pump as specified in Table ISTB-3400-1.
   - Table ISTB-3400-1 requires Group A and Group B tests to be performed quarterly and a comprehensive test to be performed biennially.
   - Table ISTB-3510-1, "Required Instrument Accuracy," specifies the instrument accuracies for Group A, Group B, comprehensive, and preservice tests.
   - Table ISTB-5121-1 "Centrifugal Pump Test Acceptance Criteria" defines the required acceptance criteria for Group A, Group B, and Comprehensive tests for centrifugal pumps.
   - Table ISTB-5221-1 "Vertical Line Shaft Centrifugal Pumps Test Acceptance Criteria" defines the required acceptance criteria for Group A, Group B, and Comprehensive tests for Vertical Line Shaft centrifugal pumps.

4. Reason for Request

   The ASME Code committees have approved Code Case OMN-18, "Alternate Testing Requirements for Pumps Tested Quarterly within ± 20% of Design Flow." This Code Case

has not been approved for use in Regulatory Guide 1.192, "Operation and Maintenance Code Case Acceptability, ASME OM Code," June 2003.

This Code Case allows the Owner to not perform the Comprehensive Pump Test (CPT) with the associated acceptance criteria, if the quarterly test is performed at ± 20% of design flow and the instrumentation meets the accuracy requirements of Table ISTB-3510-1 for the comprehensive and preservice tests. The basis for the testing strategy in this Code Case is that a quarterly Group A pump test, performed at the CPT flow rate with more accurate instrumentation, is more effective in assessing a pump's operational readiness, through trending, than a standard Group A test in conjunction with a biennial CPT.

Additionally, ISTB allows the Owner to categorize the pumps in their program. As such, an Owner could categorize a pump that otherwise meets the requirements of Group B, as a Group A (or AB) pump, and test according to the provisions of Code Case OMN-18. In doing this, they are obtaining additional data (vibration and flow or differential pressure) quarterly, rather than once every two years.

As a result of the increased requirements on the parameters imposed by the proposed alternative during applicable quarterly tests, there is no added value in performing the biennial comprehensive test on the subject pumps.

5. Proposed Alternative and Basis for Use

TMI, Unit 1 is proposing to utilize the provisions of Code Case OMN-18 and performing a modified Group A test in lieu of performing the Code-required CPT. The modified Group A test will be run at ±20% of the pump's design flow rate using ±½% accurate gauges to determine the pump differential pressure. Vibration tests will be performed and the vibration acceptance criteria for the proposed alternative test will remain identical to the standard Group A test. Additionally, TMI, Unit 1 will utilize an Acceptable Range High limit of 106% or lower for quarterly testing, which is also consistent with the planned Code change applicable to CPT.

The use of more accurate pressure gauges and a more limiting Acceptable Range during every modified quarterly Group A test compensates for the elimination of the CPT (with its more limiting Acceptable Range upper bound for differential pressure or flow of 103%). Regular testing with more accurate instrumentation and tighter acceptance criteria will provide for better trending of pump performance. Instead of performing seven tests with pressure instruments with ±2% accuracy and then performing the eighth test with pressure instruments with ±1/2% accuracy, all eight tests will be performed with the same ±1/2% accurate instruments. Due to the improved accuracy, consistent testing methodology, and the addition of quarterly vibration monitoring on Group AB pumps, deviations in actual pump performance indicative of impending degradation are more easily recognized during quarterly performance trending activities.

Using the provisions of this request as an alternative to the requirements of ISTB-3400 and Tables ISTB-3400-1, ISTB-5121-1, & ISTB-5221-1 provides a reasonable alternative to the Code requirements based on the determination that the proposed alternative will provide adequate indication of pump performance, permit detection of component degradation, and continue to provide an acceptable level of quality and safety. Therefore, pursuant to 10 CFR 50.55a(a)(3)(i), TMI, Unit 1 requests approval of this alternative to the specific ISTB requirements identified in this request.

6. Duration of Proposed Alternative

The proposed alternative identified will be utilized during the fifth IST interval which is scheduled to begin October 15, 2013 and conclude on October 14, 2023.

7. Precedents

A similar Relief Request (PR-01) was approved for the Oyster Creek Nuclear Generating Station as discussed in the U.S. Nuclear Regulatory Commission's Safety Evaluation Report dated June 21, 2012 (ML120050329).

A similar Relief Request (PR-9) was approved for the St. Lucie, Units 1 and 2 as discussed in the U.S. Nuclear Regulatory Commission's Safety Evaluation Report dated July 1, 2011 (ML11143A077).

A similar Relief Request (PR-3) was approved for the Perry Nuclear Power Plant, Unit 1, as discussed in the U.S. Nuclear Regulatory Commission's Safety Evaluation Report dated October 8, 2009 (ML092640690).

ATTACHMENT 4
VALVE RELIEF REQUEST INDEX

RELIEF REQUEST NUMBER	RELIEF REQUEST TITLE	APPROVAL DATE
VR-01	Proposed Alternative Concerning Testing of the Pressurizer Pilot operated Relief Valve (PORV) in Accordance with 10 CFR 50.55a(a)(3)(i)	8/28/2013
VR-02	Proposed Alternative Concerning ASME OM Code Test Frequencies In Accordance with 10 CFR 50.55a(a)(3)(ii)	8/15/2013

ATTACHMENT 5
VALVE RELIEF REQUESTS

10 CFR 50.55a Request Number: VR-01

Revision 0

Proposed Alternative Concerning Testing of the Pressurizer Pilot operated Relief Valve (PORV) in Accordance with 10 CFR 50.55a(a)(3)(i)

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1. ASME Code Component(s) Affected

   1-RC-RV-2, Pressurizer Pilot Operated Relief Valve (PORV), Class 1, Category B/C

   Component/System Function

   The PORV is used to control Reactor Coolant System (RCS) pressure as discussed in Three Mile Island Generating Station (TMI), Unit 1 Updated Final Safety Analysis Report, Section 4.2.4 ("Pressure Control and Protection").

2. Applicable Code Edition and Addenda

   ASME OM Code-2004 Edition, with Addenda through OMb-2006

3. Applicable Code Requirement(s)

   - ISTC-3310, Effects of Valve Repair, Replacement, or Maintenance on Reference Values" – This section requires post-maintenance valve exercising following replacement.
   - ISTC-3510, "Exercising Test Frequency" - "Power operated relief valves shall be exercise tested once per fuel cycle."

4. Reason for Request

   Pursuant to 10 CFR 50.55a(a)(3)(i), approval of a proposed alternative is requested to the above listed requirements of the OM Code. During the current fourth IST interval, the OM Code required testing for the PORV is satisfied by manually stroking the valve once every operating cycle. This is performed during plant startup following a refueling outage. The valve must be stroke timed during this exercise test. TMI, Unit 1 is proposing an alternative to this required in-situ testing for several reasons.

   There are several disadvantages to the in-situ testing of the PORV. The PORV is a 2.5 inch Dresser Electromatic, solenoid actuated, pilot operated relief valve. Operation of the pilot valve vents the chamber under the main valve disc which causes the main valve to open. The PORV requires steam pressure for the main disc to open. Stroke testing the PORV during cold shutdown conditions would not exercise the main valve disc, which would not satisfy the ASME OM Code requirements. To test the PORV in-place, the RCS must be pressurized to supply the necessary fluid (steam) pressure to open the main valve disc.

   Also, since the PORV design does not provide direct obturator position indication, the valve disc position must be inferred from alternate indications (tailpipe ΔT, acoustic monitor, RCS pressure decrease, or quench tank pressure or level rise).

In-situ testing of the PORV would also result in an in-surge of cooler water from the hot leg of the RCS into the pressurizer. The resulting thermal cycle on the pressurizer surge line would be a thermal stress concern, as described in NRC Bulletin 88-08 ("Thermal Stresses in Piping Connected to Reactor Coolant Systems") and should be avoided.

Requiring that the PORV be tested in-place prevents plant personnel from verifying proper reseating of the main valve disc because its discharge is not accessible as it is during bench testing. Minor leakage would not be readily evident before it would cause damage to the main valve disc/seat. Excessive leakage from the pilot valve can lead to inadvertent opening of the main valve, and impair its ability to re-close.

The proposed alternative will allow testing of the PORV that is appropriate to demonstrate functionality without cycling the valve in place using reactor steam pressure. This is consistent with NUREG-0737, "Clarification of TMI Action Plan Requirements," Item II.K.3.16, "Reduction of Challenges and Failures of Relief Valves," which recommended that the number of relief valve openings be reduced as much as possible and that unnecessary challenges should be avoided.

5. Proposed Alternative and Basis for Use

The following alternatives to the requirements stated above are proposed.

1) Bench testing of the PORV to satisfy valve exercise and stroke time requirements is performed at the vendor test facility prior to installation. Exercising of the valve at both the normal power operation set point and the Low Temperature Overpressure Protection (LTOP) set point (as provided in Technical Specification 3.1.12, "Pressurizer Power Operated Relief Valve (PORV), Block Valve, and Low Temperature Overpressure Protection (LTOP)") will be verified during this testing. Measured stroke time will be based on the pressure response indication of main disc opening.

2) The installed valve will be removed and replaced each refueling outage, with a spare valve that has been previously bench tested.

3) The removed valve will be bench tested within one year of removal from the system.

4) In-situ exercising of the PORV will be performed only as necessary to reestablish operational readiness after maintenance on an installed valve.

Requiring in-situ testing of the PORV unnecessarily increases the number of challenges to the PORV and results in an overall reduction in plant safety. Bench testing is preferable over in-situ testing for several reasons. Bench testing is performed at normal steam inlet conditions. Both the power operation set point and the Low Temperature Overpressure Protection (LTOP) set point (as provided in Technical Specification 3.1.12, "Pressurizer Power Operated Relief Valve (PORV), Block Valve, and Low Temperature Overpressure Protection (LTOP)") are verified. The measurement of PORV stroke time, verification of main disc movement, and seat leakage check can be verified more precisely under bench testing conditions.

Performing a bench test under controlled conditions allows the opportunity for accomplishing repairs to the valve while there is sufficient time for any needed repairs or additional testing without these activities affecting the unit's operating/outage schedule and without the additional dose that could result by having to remove or perform work on the valve while it is attached to the RCS. If a test failure during plant startup were to occur that required cold

shutdown conditions, this would result in an additional thermal cycle on the unit and additional personnel radiation exposure that could otherwise have been avoided.

Valve testing will be performed at a steam test facility, where the entire valve assembly (i.e., main valve, pilot valve, and solenoid) will be installed on a steam header in the same (vertical) orientation as the plant installation. The test conditions in the test facility will be similar to those in the plant installation, including ambient temperature, valve insulation, and steam conditions. The valve will then be leak tested, and functionally exercised at the normal power operation set point and the LTOP pressure limit to ensure the valve is capable of opening and closing (including stroke timing), and leak tested a final time. Valve seat tightness will be verified by a cold bar test, and if not free of fog, leakage will be measured and verified to be below design limits. If required, based on the results of "As-found" testing, the valve will be refurbished and recertified ("As-left" tested). The valve will then be shipped to the plant. If "As-found" testing is satisfactory and refurbishment is not necessary, the valve will be returned without any disassembly or alteration of the main valve or pilot valve components. A receipt inspection will be performed in accordance with the requirements of the Exelon Quality Assurance Program. The storage requirements in effect at TMI, Unit 1 ensure the valve is protected from moisture and physical damage. Prior to installation, the valve will again be inspected for foreign material and damage. The valve will be installed, and electrically connected in accordance with a TMI, Unit 1 maintenance procedure. The procedure ensures proper reinstallation of the PORV and proper connection of controls. The post-maintenance testing then verifies operation of the solenoid-actuated pilot valve.

The proposed alternative also provides adequate assurance that the valve stroke time will be consistently measured at the test facility. The test facility replicates the control signals to the pilot solenoid allowing it to be actuated at the pressures corresponding to when it would be actuated in the plant. Stroke timing of the solenoid-actuated pilot valve will start with the initiation of the signal to the solenoid and be based on the initial main valve obturator movement as determined by the change in steam pressure when exercised at both the normal reactor coolant system pressure limit and the lower LTOP pressure. Stroke timing will be used to ensure that the valve performs acceptably compared to its baseline and design requirements. Observation of the main disc movement at the test facility is indirect, based on evidence of steam pressure response, as it is in-situ at the plant, since here is no direct indication of the main valve position. Although this difference may result in minor differences in measured stroke time compared to those measured when installed in the plant, the stroke times measured at the test facility will be under conditions identical to when the reference values were established, making the results comparable and trendable for detecting any abnormality in valve performance. The IST reference values for the PORV stroke time are less than 2 seconds, and the stroke timing will be measured to at least tenths of a second even though the OM Code only requires it to be measured to the nearest second.

The following is a review of PORV test history from the steam test facility which demonstrates that the PORV pilot valve opens well within the 2-second limiting stroke time allowed by ASME OM Code Section ISTC-5 114(c) for rapid-acting valves:

RC-RV-2 Serial #	Test Date	First and Second LTOP Pressure Stroke times (seconds)	First and Second Normal RCS Pressure Stroke times (seconds)
BS03989	11/04/2011	0.182, 0.196	0.095, 0.108
BS03989	11/11/2009	0.188, 0.232	0.128, 0.130
BS03989	10/28/2007	0.126, 0.142	0.130, 0.124
BL08905	10/22/2007	0.116, 0.176	0.132, 0.172
BL08905	08/10/2006	0.144, 0.146	0.116, 0.118
BS03839	05/07/2004	0.158, 0.156	0.094, 0.110
BL08905	05/24/2002	0.166, 0.160	0.110, 0.100
BS03989	08/31/2000	0.182, 0.176	0.084, 0.076

As demonstrated above, using the provisions of this relief request as an alternative to the listed ISTC requirements will provide: 1) assurance of PORV functional capability; 2) permit detection of component degradation, and; 3) continue to provide an acceptable level of quality and safety.

6. Duration of Proposed Alternative

The proposed alternative identified will be utilized during the fifth IST interval which is scheduled to begin October 15, 2013 and conclude on October 14, 2023.

7. Precedents

None

10 CFR 50.55a Request Number: VR-02

Revision 0

Proposed Alternative Concerning ASME OM Code Test Frequencies In Accordance with 10 CFR 50.55a(a)(3)(ii)

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1. ASME Code Component(s) Affected

   All Pumps and Valves contained within the Inservice Testing Program (IST) scope.

2. Applicable Code Edition and Addenda

   ASME OM Code-2004 Edition, with Addenda through OMb-2006

3. Applicable Code Requirement(s)

   This request applies to the frequency specifications of the ASME OM Code. The frequencies for tests given in the ASME OM Code do not include a tolerance band (grace period).

   - ISTA-3120(a) - "The frequency for the inservice testing shall be in accordance with the requirements of Section IST."
   - ISTB-3400 - "Frequency of Inservice Tests" - "An inservice test shall be run on each pump as specified in Table ISTB-3400-1." Table ISTB-3400-1 lists two frequencies – quarterly and biennially.
   - ISTC-3510 - "Exercising Test Frequency" - "Active Category A, Category B, and Category C check valves shall be exercised nominally every 3 months,..."
   - ISTC-3540 - "Manual Valves" - "Manual Valves shall be full-stroke exercised at least once every 2 years, except where adverse conditions may require the valve to be tested more frequently to ensure operational readiness."
   - ISTC-3630(a) - "Frequency" - "Tests shall be conducted at least once every 2 years."
   - ISTC-3700 - "Position Verification Testing" - "Valves with remote position indicators shall be observed locally at least once every 2 years to verify that valve operation is accurately indicated."
   - ISTC-5221(c)(3) - "At least one valve from each group shall be disassembled and examined at each refueling outage; all valves in a group shall be disassembled and examined at least once every 8 years."
   - Appendix I, I-1320 - "Test Frequencies, Class 1 Pressure Relief Valves" - "Class 1 pressure relief valves shall be tested at least once every 5 years..."
   - Appendix I, I-1330 - "Test Frequency, Class 1 Nonreclosing Pressure Relief Devices" - "Class 1 nonreclosing pressure relief devices shall be replaced every 5 years..."

- Appendix I, I-1340 - "Test Frequency, Class 1 Pressure Relief Valves that are used for Thermal Relief Application" – This section refers to I-1320 for test frequency.
- Appendix I, I-1350 - "Test Frequency, Classes 2 and 3 Pressure Relief Valves" - "Classes 2 and 3 pressure relief valves, with the exception of PWR main steam safety valves, shall be tested every 10 years, ..."
- Appendix I, I-1360 - "Test Frequency, Classes 2 and 3 Nonreclosing Pressure Relief Devices" - "Classes 2 and 3 nonreclosing pressure relief devices shall be replaced every 5 years, ..."
- Appendix I, I-1370 - "Test Frequency, Classes 2 and 3 Primary Containment Vacuum Relief Valves" - "Tests shall be performed on all Classes 2 and 3 containment vacuum relief valves at each refueling outage or every 2 years, ..."
- Appendix I, I-1380 - "Test Frequency, Classes 2 and 3 Vacuum Relief Valves Except for Primary Containment Vacuum Relief Valves" - "All Classes 2 and 3 vacuum relief valves shall be tested every 2 years, ..."
- Appendix I, I-1390 - "Test Frequency, Classes 2 and 3 Pressure Relief Devices that are used for Thermal Relief Application" - "Tests shall be performed on all Classes 2 and 3 relief devices used in thermal relief application every 10 years, ..."
- Appendix II, II-4000(a)(1)(e) - "Performance Improvement Activities" - Subparagraph (1)(e) requires the identification of the interval for each activity.
- Appendix II, II-4000(b)(1)(e) - "Optimization of Condition Monitoring Activities" - Subparagraph (1)(e) requires the identification of the interval for each activity.

4. Reason for Request

Pursuant to 10 CFR 50.55a(a)(3)(ii), an alternative is requested from the frequency specifications of the ASME OM Code. The basis of the relief request is that the Code requirement presents an undue hardship without a compensating increase in the level of quality or safety.

ASME OM Code Section IST establishes the inservice test frequency for all components within the scope of the Code. The frequencies (e.g., quarterly) have always been interpreted as "nominal" frequencies (generally as defined in the Table 3.2 of NUREG 1482, Revision 1) and Owners routinely applied the surveillance extension time period (i.e., grace period) contained in the plant Technical Specifications (TS) Surveillance Requirements (SRs). The TS typically allow for a less than or equal to 25% extension of the surveillance test interval to accommodate plant conditions that may not be suitable for conducting the surveillance. However, regulatory issues have been raised concerning the applicability of the TS "Grace Period" to ASME OM Code required inservice test frequencies.

The lack of a tolerance band (grace period) on the ASME OM Code inservice test frequency restricts operational flexibility. There may be a conflict where a surveillance test could be required (i.e., its Frequency could expire), but where it is not possible or not desired that it be performed until sometime after a plant condition or associated Technical Specification is applicable. Therefore, to avoid this conflict, the surveillance test should be performed when it can be and should be performed.

The NRC recognized this potential issue in the TS by allowing a frequency tolerance as described in the TMI, Unit 1 TS SR 4.0.1. The lack of a similar tolerance applied to OM Code testing places an unusual hardship on the plant to adequately schedule work tasks without operational flexibility.

Thus, just as with TS required surveillance testing, some tolerance is needed to allow adjusting OM Code testing intervals to suit the plant conditions and other maintenance and testing activities. This assures operational flexibility when scheduling surveillance tests that minimize the conflicts between the need to complete the surveillance and plant conditions.

5. Proposed Alternative and Basis for Use

ASME OM Code establishes component test frequencies that are based either on elapsed time periods (e.g., quarterly, 2 years, etc.) or on the occurrence of plant conditions or events (e.g., cold shutdown, refueling outage, upon detection of a sample failure, following maintenance, etc.).

a. Components whose test frequencies are based on elapsed time periods shall be tested at the frequencies specified in ASME OM Code Section IST with a specified time period between tests as shown in the table below and as defined in TMI, Unit 1 TS Section 1.25.

b. The specified time period between tests may be reduced or extended as follows:

1) For periods specified as less than 2 years, the period may be extended by up to 25% for any given test. This is consistent with TMI, Unit 1 TS Section 1.25, "FREQUENCY NOTATION."

2) For periods specified as greater than or equal to 2 years, the period may be extended by up to 6 months for any given test.

3) All periods specified may be reduced at the discretion of the owner (i.e., there is no minimum period requirement).

4) Period extensions may also be applied to accelerated test frequencies (e.g., pumps in Alert Range).

Frequency	Specified Time Period Between Tests (all values are 'not to exceed'; no minimum periods are specified)
Quarterly (or every 3 months)	92 days
Semiannually (or every 6 months)	184 days
Annually (or every year)	366 days
x Years	x calendar years where 'x' is a whole number of years ≥ 2

c. Components whose test frequencies are based on the occurrence of plant conditions or events (e.g., cold shutdown, refueling outage, upon detection of a sample failure, following maintenance, etc.) may not have their period between tests extended except as allowed by the ASME OM Code.

Period extension is to facilitate test scheduling and considers plant operating conditions that may not be suitable for performance of the required testing (e.g., performance of the test would cause an unacceptable increase in the plant risk profile due to transient conditions or other ongoing surveillance test or maintenance activities). Period extensions are not intended to be used repeatedly merely as an operational convenience to extend test intervals beyond those specified. This request is not applicable to frequencies in Subsection ISTD.

Using the provisions of this request as an alternative to the specific frequency requirements of the OM Code identified above will provide operational flexibility and still continue to provide an acceptable level of quality and safety. Therefore, pursuant to 10 CFR 50.55a(a)(3)(ii) TMI, Unit 1 requests approval of the alternative to the specific OM Code frequency requirements identified in this request.

6. Duration of Proposed Alternative

The proposed alternative identified will be utilized during the fifth IST interval which is scheduled to begin October 15, 2013 and conclude on October 14, 2023.

7. Precedents

A similar Relief Request was submitted to the U.S. Nuclear Regulatory Commission for Quad Cities Nuclear Power Station, Units 1 and 2 for the fifth 10-year interval, as documented in Letter RS-12-026 dated February 15, 2012.

8. References

TMI, Unit 1 TS Section 1.25 – "FREQUENCY NOTATION"
TMI, Unit 1 TS Section 4.2 – "Reactor Coolant System Inservice and Testing"

ATTACHMENT 6
RELIEF REQUEST RAI RESPONSES AND SERs

Exelon Generation

10 CFR 50.55a

TMI-13-043

March 18, 2013

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

Three Mile Island Nuclear Station, Unit 1
Renewed Facility Operating License No. DPR-50
NRC Docket No. 50-289

Subject: Response to Request for Additional Information - Relief Request VR-01 Associated with the Fifth Inservice Testing (IST) Interval

References:
1) Letter from M. Jesse (Exelon Generation Company, LLC) to U.S. Nuclear Regulatory Commission, "Submittal of Relief Request VR-01 Associated with the Fifth Inservice Testing (IST) Interval," dated October 18, 2012

2) Letter from P. Bamford (U.S. Nuclear Regulatory Commission) to M. Pacilio (Exelon Generation Company, LLC), "Three Mile Island Nuclear Station, Unit 1 - Request for Additional Information Regarding Relief Request VR-01, Associated with the Fifth Inservice Testing Interval (TAC No. ME9819)," dated February 25, 2013

In the Reference 1 letter, Exelon Generation Company, LLC (Exelon) submitted for your review and approval Relief Request VR-01 associated with the Fifth Inservice Testing (IST) interval for Three Mile Island Nuclear Station (TMI), Unit 1. In the Reference 2 letter, the U.S. Nuclear Regulatory Commission Staff requested additional information. Attached is our response.

There are no regulatory commitments in this letter.

If you have any questions concerning this letter, please contact Tom Loomis at (610) 765-5510.

Respectfully,

Michael D. Jesse
Director - Licensing & Regulatory Affairs
Exelon Generation Company, LLC

Exelon Generation

10 CFR 50.55a

TMI-13-068
April 17, 2013

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

Three Mile Island Nuclear Station, Unit 1
Renewed Facility Operating License No. DPR-50
NRC Docket No. 50-289

Subject: Response to Request for Additional Information - Relief Request PR-01 Associated with the Fifth Inservice Testing (IST) Interval

References:
1) Letter from M. Jesse (Exelon Generation Company, LLC) to U.S. Nuclear Regulatory Commission, "Submittal of Relief Requests Associated with the Fifth Inservice Testing (IST) Interval," dated November 7, 2012

2) Letter from P. Bamford (U.S. Nuclear Regulatory Commission) to M. Pacilio (Exelon Generation Company, LLC), "Three Mile Island Nuclear Station, Unit 1 - Request for Additional Information Regarding Fifth Inservice Test Interval Relief Request PR-01 Nuclear Services Closed Cooling Water Flow Measurement (TAC No. MF0046)," dated March 19, 2013

In the Reference 1 letter, Exelon Generation Company, LLC (Exelon) submitted for your review and approval Relief Request PR-01 associated with the fifth Inservice Testing (IST) interval for Three Mile Island Nuclear Station (TMI), Unit 1. In the Reference 2 letter, the U.S. Nuclear Regulatory Commission Staff requested additional information. Attached is our response.

There are no regulatory commitments in this letter.

If you have any questions concerning this letter, please contact Tom Loomis at (610) 765-5510.

Respectfully,

David P. Helker
Manager - Licensing
Exelon Generation Company, LLC

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

August 15, 2013

Mr. Michael J. Pacilio
President and Chief Nuclear Officer
Exelon Nuclear
4300 Winfield Road
Warrenville, IL 60555

SUBJECT: THREE MILE ISLAND NUCLEAR STATION, UNIT 1 - RELIEF REQUESTS PR-01, PR-02, AND VR-02, ASSOCIATED WITH THE FIFTH 10-YEAR INSERVICE TEST INTERVAL (TAC NOS. MF0046, MF0047 AND MF0048)

Dear Mr. Pacilio:

By letter dated November 7, 2012 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML12313A344), supplemented by letter dated April 17, 2013 (ADAMS Accession No. ML13108A003), Exelon Generation Company, LLC (the licensee) submitted proposed alternative requests PR-01, PR-02, and VR-02, associated with the fifth 10-year inservice test (IST) interval, at Three Mile Island, Unit 1 (TMI-1). These proposed alternatives apply to certain requirements of the American Society of Mechanical Engineers (ASME) Code for Operation and Maintenance of Nuclear Power Plants (OM Code). PR-01 relates to a proposed alternative method for flow measurement during testing of the Nuclear Services Closed Cooling Water Pumps, submitted pursuant to Title 10 of the *Code of Federal Regulations* (10 CFR), Part 50, Section 55a(a)(3)(i). PR-02 requests approval for the use of ASME OM Code Case OMN-18, "Alternate Testing Requirements for Pumps Tested Quarterly Within ±20 percent of Design Flow," for various pumps in the TMI-1 IST program, also submitted pursuant to 10 CFR 50.55a(a)(3)(i). OMN-18 would allow the licensee to not perform the Comprehensive Pump Test under certain conditions, and for certain pumps, as specified in the request. VR-02 requests approval for the licensee to utilize a tolerance band (grace period) for the intervals specified in the ASME OM Code, similar to the tolerance band allowed for surveillances in the plant technical specifications. This request was submitted pursuant to 10 CFR 50.55a(a)(3)(ii).

The U.S. Nuclear Regulatory Commission (NRC) staff has completed its review of the proposed alternatives as discussed in the enclosed safety evaluation. The NRC staff review concludes that for alternative requests PR-01 and PR-02 the proposed alternatives provide an acceptable level of quality and safety. For proposed alternative VR-02, the proposed alternative provides reasonable assurance that the components are operationally ready. Therefore, the NRC staff authorizes proposed alternative requests PR-01, PR-02 and VR-02, as proposed, at TMI-1, for the fifth 10-year IST program interval, which begins on October 15, 2013, and is scheduled to end on October 14, 2023.

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

August 28, 2013

Mr. Michael J. Pacilio
President and Chief Nuclear Officer
Exelon Nuclear
4300 Winfield Road
Warrenville, IL 60555

SUBJECT: THREE MILE ISLAND NUCLEAR STATION, UNIT 1 - RELIEF REQUEST VR-01, PROPOSED ALTERNATIVE TESTING OF THE PRESSURIZER PILOT OPERATED RELIEF VALVE (TAC NO. ME9819)

Dear Mr. Pacilio:

By letter dated October 18, 2012 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML12292A585), supplemented by letter dated March 15, 2013 (ADAMS Accession No. ML13074A700), Exelon Generation Company, LLC (the licensee) submitted proposed alternative request VR-01, associated with the fifth 10-year inservice test (IST) interval at Three Mile Island, Unit 1 (TMI-1). This proposed alternative applies to certain requirements of the American Society of Mechanical Engineers (ASME) Code for Operation and Maintenance of Nuclear Power Plants (OM Code). VR-01 proposes an alternative method for testing of the Pressurizer Pilot Operated Relief Valve (PORV), submitted pursuant to Title 10 of the *Code of Federal Regulations*, Part 50, Section 55a(a)(3)(i).

The U.S. Nuclear Regulatory Commission (NRC) staff has completed its review of the proposed alternative, as discussed in the enclosed safety evaluation. The NRC staff review concludes that alternative request VR-01 provides an acceptable level of quality and safety, and that it provides reasonable assurance that the PORV is operationally ready. Therefore, the NRC staff authorizes proposed alternative request VR-01, as proposed, for the fifth 10-year IST program interval at TMI-1, which begins on October 15, 2013, and is scheduled to end on October 14, 2023.

ATTACHMENT 7
CODE CASE INDEX

CODE CASE NUMBER	TITLE
OMN-18	The ASME Code committee has approved Code Case OMN-18, "Alternate Testing Requirements for Pumps Tested Quarterly within ± 20% of Design Flow".

ATTACHMENT 8
COLD SHUTDOWN JUSTIFICATION INDEX

ATTACHMENT 8
COLD SHUTDOWN JUSTIFICATION INDEX

Designator	Rev	Title/Description
CSJ-01		Intermediate Cooling Water Valves (IC-V-2,3,4,6) Exercise Close, Fail Close
CSJ-02		Decay Heat Suction Isolation Valve (DH-V-1/2) Exercise Open/Close
CSJ-03		Charging Line Iso Valve (MU-V-18) Exercise Close and Fail Close
CSJ-04		RCP Seal Water Iso Valve (MU-V-20) Exercise Close and Fail Close
CSJ-05		RCP Seal Water Return Iso Valves (MU-V-25/26) Exercise Close and Fail Close
CSJ-06		Letdown Iso Valves (MU-V-2A/B, 3) Exercise Close and Fail Close
CSJ-07		RC Motor Return Iso Valve (NS-V-15) Exercise Close
CSJ-08		RC Motor Return Iso Valves (NS-V-35/4) Exercise Close
CSJ-09		Reactor Building Cooling Water Iso Valves (RB-2A/7) Exercise Close
CSJ-10		FW Isolation Valves (FW-V-16A/B,17A/B,5A/B,92A/B) Exercise Close
CSJ-11		Pressurizer Vent Valves (RC-V-28/44) Exercise Close and Fail Close
CSJ-12		RC Vent Valves (RC-V-40A/B, 41A/B) Exercise Close and Fail Close
CSJ-13		Reactor Vessel Vent Valves (RC-V-42/43) Exercise Close and Fail Close
CSJ-14		DH Discharge Isolation Valves (DH-V-4A/B) Exercise Open/Close
CSJ-15		CA-T-1 To Makeup System Check Valve (CA-V-177) Exercise Open/Close
CSJ-16		Main Steam Isolation Valves (MS-V-1A-D) Exercise Close
CSJ-17		Pressurizer Spray Line Isolation Valve (RC-V-3) Exercise Close
CSJ-18		Decay Heat Pressurizer Spray Line Isolation Valve (RC-V-4) Exercise Open/Close

ATTACHMENT 9
COLD SHUTDOWN JUSTIFICATIONS

ATTACHMENT 9

COLD SHUTDOWN JUSTIFICATION CSJ-01

Valve Number	System	Safety Class	Category
IC-V-2	IC	2	A
IC-V-3	IC	2	A
IC-V-4	IC	2	A
IC-V-6	IC	2	A

Function

These power operated valves close to isolate containment from the IC System on 1) receipt of any ESAS signal concurrent with a IC Surge Tank low level signal or 2) on a 30 psig Reactor Building pressure ESAS signal, regardless of IC Surge Tank level. These air-operated valves (IC-V-3, 4, and 6) also fail closed on loss of electrical power or pneumatic supply.

These valves have no safety function to open. The IC System inside the Reactor Building is non-ASME Safety Class, Seismic Category II and does not serve any components which are required for the safe shutdown of the reactor or for the mitigation of any Design Basis accidents.

Test Requirement

Exercise test to the closed position in accordance with ISTC-3510.

Justification

It is not practical to full stroke exercise or fail safe test these valves closed during normal power operation since closure testing at normal power imposes a significant risk of equipment damage.

Exercising these valves closed during power operation will isolate the cooling water supply to the Control Rod Drive Cooling Coils, Primary Letdown Coolers and Reactor Coolant Pump Heat Exchangers. Interruption of cooling water flow to these components would cause equipment damage and a potential trip of the reactor.

Alternative Test

These valves will be exercised closed (IC-V-2, 3, 4, 6) and fail safe tested closed (IC-V-6) during cold shutdowns when cooling water supplied to the Control Rod Drive Cooling Coils, Primary Letdown Coolers and Reactor Coolant Pump Heat Exchangers is not required. These valves will be partial stroke exercised quarterly during normal power operations.

ATTACHMENT 9

COLD SHUTDOWN JUSTIFICATION CSJ-02

Valve Number	System	Safety Class	Category
DH-V-1	DH	1	A
DH-V-2	DH	1	A

Function

These normally-closed motor-operated valves are required to open to allow use of the drop line to circulate water through the Core following a cold-leg LOCA in order to prevent the concentration of boron from exceeding its solubility limit. Precipitation of boron could result in clogged flow channels, limiting the ability to remove heat.

These valves are also opened in order to use the DH System as the normal and preferred method of placing and maintaining the Reactor in the Cold Shutdown condition, including those times when it is necessary to do so in response to a Technical Specification required-action statement.

These valves receive an automatic signal to close and cannot be reopened if RCS pressure exceeds 400 psig in order to prevent over-pressurization of the lower pressure-rated DH System pump suction piping.

Test Requirement

Full-stroke exercise to the open and closed positions in accordance with ISTC-3510.

Justification

It is not practical to full stroke exercise or partial stroke exercise these valves open or closed during normal power operation since opening the valves during normal power operation would cause over pressurization of the lower pressure DH system. Additionally, these valves are interlocked with reactor coolant system pressure such that they can not be opened while reactor coolant system pressure is greater than 400 psig.

Alternative Test

These valves will be exercised open and closed during cold shutdowns when the reactor coolant system is depressurized.

ATTACHMENT 9

COLD SHUTDOWN JUSTIFICATION CSJ-03

Valve Number	System	Safety Class	Category
MU-V-18	MU	2	A

Function

This normally-open, air-operated valve is required to close on an ESAS actuation signal of 1600 psig RCS pressure or 4 psig Reactor Building pressure to 1) assure adequate, balanced HPI flow to the RCS and to isolate containment. An ESAS backup initiation signal is also provided at 500 psig RCS pressure. Closure of this valve prevents HPI flow from bypassing the cavitating venturi at the B HPI nozzle. The valve fails closed on loss of air and open on loss of power. Loss of DC power is the identified limiting single failure associated with the closing safety function of this valve.

This valve is normally in the open (i.e., throttled) position to provide makeup flow to the RCS. This open function is not required for safe shutdown or accident mitigation.

Test Requirement

Exercise test to the closed position in accordance with ISTC-3510.

Justification

It is not practical to full stroke exercise or fail safe test this valve closed during normal power operation since closure testing at normal power operations would lead to a potential loss of reactor coolant system inventory control and potential trip of the reactor.

Closing this valve for testing during normal power operations would interrupt makeup flow to the reactor coolant system which could cause a loss of inventory control and subsequent trip of the reactor. This valve is required to be open for throttling and maintaining RCS inventory control during power operations.

Alternative Test

This valve will be exercised closed and fail safe tested during cold shutdowns when the reactor coolant system makeup control is not required. The valve will be partial stroke exercised quarterly during normal power operations.

ATTACHMENT 9

COLD SHUTDOWN JUSTIFICATION CSJ-04

Valve Number	System	Safety Class	Category
MU-V-20	MU	2	A

Function

This valve is normally-open providing shaft seal injection for the reactor coolant (RC) pumps. This air-operated valve is closed by remote manual operation to isolate the Reactor Building (containment) following an accident. It does not receive an ESAS signal to close because of the importance of seal injection to the integrity of the RC pumps shaft seals. Loss of seal injection due to an erroneous actuation of ESAS or by a non-LOCA event such as RCS overcooling could cause significant damage to the associated shaft seal or pump shaft. The valve fails closed on loss of electrical power or pneumatic supply.

Test Requirement

Exercise test to the closed position in accordance with ISTC-3510.

Justification

It is not practical to full stroke exercise or fail safe test this valve closed during normal power operation since closure testing at normal power operations could cause significant damage to the reactor coolant pumps shafts and shaft seals.

Closing this valve for testing during normal power operations would interrupt seal injection flow to the reactor coolant pumps shaft seals and risk permanent damage to the reactor coolant pump seals and cause subsequent Reactor Coolant system leakage.

Additionally, partial stroke exercising of the valve during operation would involve manipulation of the manual hand-wheel to position the "block" so that adequate RC pump seal injection is maintained. The air operator design is such that excessive use of the hand-wheel tends to wear the shaft seals, resulting in increased leakage of the air that's required to maintain the valve open upon failure of the air source. Therefore, quarterly partial stroke exercising of the valve presents a premature failure vulnerability without a significant benefit in monitoring valve performance.

Alternative Test

This valve will be exercised closed and fail safe tested during cold shutdowns when the reactor coolant pumps are not in service and seal injection is not required.

ATTACHMENT 9

COLD SHUTDOWN JUSTIFICATION CSJ-05

Valve Number	System	Safety Class	Category
MU-V-25	MU	2	A
MU-V-26	MU	2	A

Function

These normally open valves close automatically on a 30 psig Reactor Building ESAS signal to isolate the Reactor Building makeup and purification system. The high pressure signal is used to ensure that sealing water flow remains available through the mechanical seals of the Reactor Coolant Pumps for those events in which continued operation of the pumps provides an advantage in maintaining flow through the Core. Valve MU-V-26 also fails open on loss of electrical power and closed on loss of pneumatic supply.

These valves are normally open to provide a return flow path for the seal leakoff of the Reactor Coolant Pumps. This function is not required for safe shutdown or accident mitigation.

Test Requirement

Exercise test to the closed position in accordance with ISTC-3510.

Justification

It is not practical to full stroke exercise or fail safe test these valves closed during normal power operation since closure testing at normal power operations could cause significant damage to the reactor coolant pump seals.

Closing these valves for testing during normal power operations would disrupt seal leakoff flow from the reactor coolant pumps and would present an inventory management issue since upstream relief valve, MU-V-180, will lift and pass seal return flow to the RC drain tank. This creates a significant risk of permanent damage to the reactor coolant pump seals, with the potential to cause subsequent Reactor Coolant system leakage.

Alternative Test

These valves will be exercised closed (MU-V-25/26) and failsafe tested closed (MU-V-26) during cold shutdowns when the reactor coolant pumps are not in service and seal leakoff flow is not required. The valves will be partial stroke exercised quarterly during normal power operations.

ATTACHMENT 9

COLD SHUTDOWN JUSTIFICATION CSJ-06

Valve Number	System	Safety Class	Category
MU-V-2A	MU	1	A
MU-V-2B	MU	1	A
MU-V-3	MU	2	A

Function

These normally open valves receive an ESAS signal to close automatically on HPI initiation at 1600 psig RCS pressure or 4 psig Reactor Building pressure in order to isolate the MU System letdown line. Valve MU-V-3 also fails closed on loss of electrical power or pneumatic supply.

The valves are open during normal Plant operation to provide letdown flow from the RCS to the MU System for chemical and radiological control. This function is not required for safe shutdown or accident mitigation.

Test Requirement

Exercise test to the closed position in accordance with ISTC-3510.

Justification

Closing these valves for testing during normal power operations would interrupt letdown flow from the reactor coolant system.

It is not practical to full stroke exercise or fail safe test these valves closed during normal power operation since closure testing at normal power operations would cause: (1) a minor transient in pressurizer level control, and (2) thermal cycling of the letdown coolers. The letdown coolers are a unique "helicoil" design, and avoiding transients is necessary to prolong their life. Unnecessary cycling would lead to premature damage of the letdown coolers, whose repair would also become a significant ALARA concern.

Alternative Test

These valves will be exercised closed (MU-V-2A/B and MU-V-3) and fail safe tested (MU-V-3) during cold shutdowns when the letdown coolers are not in service and RCS letdown flow may be isolated. The valves will be partial stroke exercised quarterly during normal power operations.

ATTACHMENT 9

COLD SHUTDOWN JUSTIFICATION CSJ-07

Valve Number	System	Safety Class	Category
NS-V-15	NS	2	A

Function

This normally open motor operated valve closes on receipt of any ESAS signal coincident with a low level signal in Nuclear Services Closed Cooling Water Surge Tank (NS-T-1), or on a 30 psig Reactor Building pressure signal to isolate the NS supply header to the Reactor Coolant Pump Motor Air and Oil Coolers.

Cooling water to the components listed above is required during normal plant operation. ESAS initiation circuitry is set up to keep this valve open during initial actuation, unless there is a low level Surge Tank signal concurrent with the ESAS signal, or until Reactor Building pressure reaches 30 psig. This open function allows for the continuous supply of cooling water to the RCP motors in the event that the pumps continue to run. This open function is not required for safe shutdown or accident mitigation.

Test Requirement

Exercise test to the closed position in accordance with ISTC-3510.

Justification

It is not practical to full stroke exercise this valve closed during normal power operation since closure testing at normal power operations would lead to eventual damage of the Reactor Coolant Pump Motor Air and Oil Coolers.

Closing this valve for testing during normal power operations would interrupt cooling water flow to the Reactor Coolant Pump Motor Air and Oil Coolers and would cause a brief temperature transient, and ultimately eventual damage, to the associated coolers. Quarterly partial stroking of the valve verifies that it will perform its function to close.

Alternative Test

This valve will be exercised closed during cold shutdowns when the Reactor Coolant Pump Motor Air and Oil Coolers are not in service and Nuclear Services cooling water flow may be isolated. The valve will be partial stroke exercised quarterly during normal power operations.

ATTACHMENT 9

COLD SHUTDOWN JUSTIFICATION CSJ-08

Valve Number	System	Safety Class	Category
NS-V-35	NS	3	A
NS-V-4	NS	3	A

Function

These normally open motor operated valves close automatically upon receipt of any ESAS signal coincident with a low level signal in Nuclear Services Closed Cooling Water Surge Tank NS-T-1, or on a 30 psig Reactor Building pressure signal to isolate the NS return header from the Reactor Coolant Pump Motor Air and Oil Coolers.

Cooling water to the components listed above is required during normal plant operation. ESAS initiation circuitry is set up to keep this valve open during initial actuation, unless there is a low level Surge Tank signal concurrent with the ESAS signal, or until Reactor Building pressure reaches 30 psig. This open function allows for the continuous supply of cooling water to the RCP motors in the event that the pumps continue to run. This open function is not required for safe shutdown or accident mitigation.

Test Requirement

Exercise test to the closed position in accordance with ISTC-3510.

Justification

It is not practical to full stroke exercise these valves closed during normal power operation since closure testing at normal power operations would lead to eventual damage of the Reactor Coolant Pump Motor Air and Oil Coolers.

Closing these valves for testing during normal power operations would interrupt cooling water flow to the Reactor Coolant Pump Motor Air and Oil Coolers and would cause a brief temperature transient, and ultimately eventual damage, to the associated coolers. Quarterly partial stroking of the valves verifies that they will perform their function to close.

Alternative Test

These valves will be exercised closed during cold shutdowns when the Reactor Coolant Pump Motor Air and Oil Coolers are not in service and Nuclear Services cooling water flow may be isolated. The valves will be partial stroke exercised quarterly during normal power operations.

ATTACHMENT 9

COLD SHUTDOWN JUSTIFICATION CSJ-09

Valve Number	System	Safety Class	Category
RB-V-2A	RB	2	A
RB-V-7	NS	2	A

Function

These normally open motor operated valves close on receipt of an ESAS Reactor Building isolation signal on high Reactor Building Pressure (4 psig) or low RCS pressure (1600 psig or 500 psig backup) to isolate the non-safety, non-seismically qualified normal Reactor Building Industrial Cooling Water System and allow for shifting to the Reactor Building Emergency Cooling Water System.

These valves are open to allow cooling water to be supplied to the non-safety related Reactor Building Industrial Cooling Coils during normal operation. This function is not required for safe shutdown or accident mitigation.

Test Requirement

Exercise test to the closed position in accordance with ISTC-3510.

Justification

It is not practical to full stroke exercise these valves closed during normal power operation since closure testing at normal power operations would isolate cooling to the Reactor Building normal cooling coils. Isolation of the RB cooling coils at any time of the year would challenge the plant's ability to maintain compliance with Reactor Building Temperature Limits (Tech Spec 3.17). Additionally, if either of these valves were to fail in the closed position during the cycling test, this would cause a loss of the system function and likely require a plant shutdown to avoid exceeding temperature limits within containment. This justifies deferral of testing to cold shutdown. Quarterly partial stroking of the valves verifies that they will perform their function to close.

Alternative Test

These valves will be exercised closed during cold shutdowns when the Reactor Building Industrial Cooling Coils are not required to be in service and reactor building emergency cooling water may be isolated. The valves will be partial stroke exercised quarterly during normal power operations.

ATTACHMENT 9

COLD SHUTDOWN JUSTIFICATION CSJ-10

Valve Number	System	Safety Class	Category
FW-V-5A	FW	N/A	B
FW-V-5B	FW	N/A	B
FW-V-16A	FW	N/A	B
FW-V-16B	FW	N/A	B
FW-V-17A	FW	N/A	B
FW-V-17B	FW	N/A	B
FW-V-92A	FW	N/A	B
FW-V-92B	FW	N/A	B

Function

These normally open valves must close to isolate the OTSG's from the feedwater system in the event of a main steam line break. The valves are powered from an Engineered Safeguards Control Center (Class 1E) and receive an HSPS signal to close on Hi-Hi OTSG level or a Feedwater or Main Steam line break (low OTSG pressure). Downstream check valves FW-V-12A/B are relied upon for closure during a feedwater line break and for containment isolation.

The valves are open during normal power operation to provide a flow path from the feedwater system to the OTSG's. This function is not required for safe shutdown or accident mitigation.

Test Requirement

Exercise test to the closed position in accordance with ISTC-3510.

Justification

It is not practical to full stroke or partial stroke exercise these valves closed during normal power operation since closure of any of these valves would interrupt feedwater flow which would result in a plant transient due to a mismatch in feedwater/main steam line flow. This transient would result in a subsequent trip of the reactor and potentially injection of emergency feedwater.

Injection of emergency feedwater would result in an unacceptable thermal shock to the steam generators which could result in a degradation of the primary containment system boundary (OTSG tubes).

Alternative Test

These valves will be exercised closed during cold shutdowns when the feedwater system is not required to be in service.

ATTACHMENT 9

COLD SHUTDOWN JUSTIFICATION CSJ-11

Valve Number	System	Safety Class	Category
RC-V-28	RC	1	B
RC-V-44	RC	1	B

Function

These normally closed valves are opened to vent steam and noncondensible gases from the pressurizer steam space to the reactor coolant drain tank. This function assures that the pressurizer is available for pressure and volume control. This venting capability supports core cooling for events beyond the design basis. The ability to vent post accident increases the ability of the plant to deal with large quantities of noncondensible gas which could interfere with natural circulation (i.e., core cooling). The valve is also used during an OTSG tube rupture to minimize sub cooling margin and during RCS superheat conditions. These functions mitigate the consequences of a design basis SGTR accident.

When the required venting is completed, the valves are closed by remote manual operation to maintain the RCS pressure boundary and inventory. These valves do not receive any automatic actuation or isolation signals.

The individual vent path lines are sized such that an inadvertent opening of any valve will not constitute a LOCA. This design feature provides a high degree of assurance that the vents will be available when needed, and that inadvertent operation or failures will not significantly hamper the safe operation of the plant [TS 3.1.13].

Test Requirement

Full-stroke exercise to the open and closed positions in accordance with ISTC-3510.

Justification

It is not practical to full or partial stroke exercise or fail safe test these valves during normal power operation. Exercising either of these valves during power operations places the plant in an undesirable configuration by reducing the reactor coolant system isolation barrier to only a single valve. Exercising either valve during normal power operations leaves only the other valve as a single valve isolation barrier. During normal operation these valves are maintained closed at all times, they also fail closed.

Alternative Test

These valves will be full stroke exercised closed (RC-V-28/44) and fail safe tested closed (RC-V-44) during cold shutdowns when the Pressurizer and Reactor Coolant system is depressurized below 200 psig.

ATTACHMENT 9

COLD SHUTDOWN JUSTIFICATION CSJ-12

Valve Number	System	Safety Class	Category
RC-V-40A	RC	1	B
RC-V-40B	RC	1	B
RC-V-41A	RC	1	B
RC-V-41B	RC	1	B

Function

These normally closed solenoid operated valves are opened to vent steam and noncondensible gases from the reactor coolant system hot leg high points which cannot be vented through the reactor vessel or pressurizer steam space vents. These vents relieve to the reactor building atmosphere through a rupture disk. Technical Specification 3.1.13.1.c requires the RCS high point vent flow paths to be operable when the reactor is critical. This venting capability supports core cooling for events beyond the design basis. The ability to vent post accident increases the ability of the plant to deal with large quantities of noncondensible gas which could interfere with natural circulation (i.e., core cooling).

When the required venting is completed, the valves are closed by remote manual operation to maintain the RCS pressure boundary and inventory. These valves do not receive any automatic actuation or isolation signals however they fail closed on loss of electrical power.

The individual vent path lines are sized such that an inadvertent opening of any valve will not constitute a LOCA. This design feature provides a high degree of assurance that the vents will be available when needed, and that inadvertent operation or failures will not significantly hamper the safe operation of the plant [TS 3.1.13].

Test Requirement

Full-stroke exercise to the open and closed positions in accordance with ISTC-3510.

Justification

It is not practical to full or partial stroke exercise or fail safe test closed these valves during normal power operation. Exercising either of these valves during power operations places the plant in an undesirable configuration by reducing the reactor coolant system isolation barrier to only a single valve in the respective path. Exercising either valve during normal power operations leaves only the other valve as a single valve isolation barrier. During normal operation these valves are maintained closed at all times, they also fail closed.

Alternative Test

These valves will be full stroke exercised to the open and closed positions and fail-safe tested closed during cold shutdowns when the Reactor Coolant system is depressurized below 200 psig.

ATTACHMENT 9

COLD SHUTDOWN JUSTIFICATION CSJ-13

Valve Number	System	Safety Class	Category
RC-V-42	RC	1	B
RC-V-43	RC	1	B

Function

These normally closed solenoid operated valves are opened to vent steam and noncondensible gases from the reactor vessel head and hot and cold legs to the reactor building. Technical Specification 3.1.13.1.a requires the associated reactor vessel head vent (RC-V-42/43) flow path to be operable when the reactor is critical. This venting capability supports core cooling for events beyond the design basis. The ability to vent post accident increases the ability of the plant to deal with large quantities of noncondensible gas which could interfere with natural circulation (i.e., core cooling).

When the required venting is completed, the valves are closed by remote manual operation to maintain the RCS pressure boundary and inventory. These valves do not receive any automatic actuation or isolation signals however they fail closed on loss of electrical power.

The individual vent path lines are sized such that an inadvertent opening of any valve will not constitute a LOCA. This design feature provides a high degree of assurance that the vents will be available when needed, and that inadvertent operation or failures will not significantly hamper the safe operation of the plant [TS 3.1.13].

Test Requirement

Full-stroke exercise to the open and closed positions in accordance with ISTC-3510.

Justification

It is not practical to full or partial stroke exercise or fail safe test closed these valves during normal power operation. Exercising either of these valves during power operations places the plant in an undesirable configuration by reducing the reactor coolant system isolation barrier to only a single valve. Exercising either valve during normal power operations leaves only the other valve as a single valve isolation barrier. During normal operation these valves are maintained closed at all times, they also fail closed.

Alternative Test

These valves will be full stroke exercised to the open and closed positions and fail-safe tested closed during cold shutdowns when the Reactor Coolant system is depressurized below 200 psig.

ATTACHMENT 9

COLD SHUTDOWN JUSTIFICATION CSJ-14

Valve Number	System	Safety Class	Category
DH-V-166A	DH	2	C
DH-V-166B	DH	2	C

Function

These check valves must open to allow pressure between the seats and portions of piping of certain valves to equalize with downstream (RCS) pressure in order to prevent pressure-locking of the boundary valves allowing them to be opened when required.

The valves close to prevent back flow of RCS fluid into the area between the seats and portions of piping to prevent pressure-locking of the respective valves. However, the ability of the check valves to close is not required to achieve or maintain safe shutdown or for accident mitigation.

Test Requirement:

Exercise test to the open and closed positions in accordance with ISTC-3522.

Justification

It is not practical to full flow open exercise these valves during normal power operation since the open test requires the DH system in service and also requires partially opening isolation valves DH-V-4A/B. Opening the isolation valves (DH-V-4A/B), with the DH pumps in service during normal power operation, could disturb the downstream check valves and cause over pressurization of the lower pressure DH system, subjecting the system to pressures in excess of its design pressure.

Exercising these valves closed requires a hydro pump to pressurize downstream of the check valves to verify the bi-directional closure capability of the subject valves. This test is essentially a leakage rate test which requires significant test setup. This justifies deferral of testing to cold shutdown.

Alternative Test

These valves will be exercised open and verified to close during cold shutdowns when the reactor coolant system is depressurized and the DH system can be placed inservice. As permitted by ASME OM Code ISTC-3522(a) both the open and closed check valve exercise tests will be performed during cold shutdowns when it is practicable to perform both tests.

ATTACHMENT 9

COLD SHUTDOWN JUSTIFICATION CSJ-15

Valve Number	System	Safety Class	Category
CA-V-177	CA	3	C

Function

This valve performs a safety function in the open position to provide a flow path for alternate emergency boration of the RCS from the Boric Acid Mix Tank, CA-T-1, via Boric Acid Injection Pump, CA-P-1A or CA-P-1B, to the Makeup (MU) System. In the open position, this valve also provides a flow path for addition of boron to the Reactor Coolant System for reactivity control during normal operation.

This valve performs no safety function in the closed position. In the closed position, this valve isolates the non-nuclear, Seismic II portion of the CA System from the ASME Class 3, Seismic I portion. However, downstream manual isolation valve MU-V-51 also performs the same function. It is normally closed isolating this flow path when not in use.

Test Requirement

Exercise test to the open position in accordance with ISTC-3522.

Justification

It is not practical to full stroke exercise or partial stroke exercise this valve open during normal power operation since this results in injection of concentrated boric acid into the RCS. Opening the valve during normal power operation requires running a boric acid pump to put flow through the valve. This evolution adds concentrated boric acid from Boric Acid Mix Tank CA-T-1 to Makeup Tank MU-T-1, the suction source of the running makeup pump. Changing MU tank boron concentration during normal power operation in this manner is not practical due to the negative reactivity added to the RCS and the significant effect it will have on RCS reactivity control. This justifies deferral of testing to cold shutdown.

Alternative Test

This valve will be exercised open during cold shutdowns when the addition of concentrated boric acid to the reactor coolant system is not a concern.

ATTACHMENT 9

COLD SHUTDOWN JUSTIFICATION CSJ-16

Valve Number	System	Safety Class	Category
MS-V-1A	MS	2	B/C
MS-V-1B	MS	2	B/C
MS-V-1C	MS	2	B/C
MS-V-1D	MS	2	B/C

Function

These normally open motor operated stop check valves receive no automatic isolation signal in order to allow for optimum RCS heat removal during most accidents and non-accident reactor trips. These valves are required to be closed from the Control Room following a large-break LOCA, small-break LOCA, Main Steam line break, Steam Generator tube rupture, or if a loss of OTSG integrity results in Containment pressure above OTSG pressure. In these cases, the valve would be closed by the motor operator, resulting in the Category B classification. These valves function as check valves in closing to prevent blowdown of both OTSG's in the event of a Main Steam line break upstream. Therefore, they are also classified as Category C.

Although the open position is preferred under most accident and normal shutdown conditions (and is required for Plant operation), these valves do not have any safety function in the open position. These valves are considered Containment Isolation Valves: however, they are exempt from Type C testing since they are connected to a closed loop inside containment (OTSG).

Test Requirement

Exercise test to the closed position in accordance with ISTC-3510.

Justification

It is not practical to full stroke exercise or partial stroke exercise these valves closed during normal power operation (see TSCR 246) since closure testing at normal power operations could cause a plant trip.

Closing these valves for testing during normal power operations would interrupt steam flow from the steam generator to the main steam/turbine systems. Exercising these valves closed would isolate the steam generator which would result in a severe power transient in the steam and reactor coolant systems which would lead to a subsequent trip of the plant. To perform this testing quarterly would create a condition with a high potential to cause a reactor trip (NUREG-1482, revision 1, section 2.4.5). This justifies deferral of testing to cold shutdowns.

Alternative Test

These valves will be exercised closed (Category B) and stroke timed during cold shutdowns (see TSCR 246) when the main steam system is not required to be in operation.

ATTACHMENT 9

COLD SHUTDOWN JUSTIFICATION CSJ-17

Valve Number	System	Safety Class	Category
RC-V-3	RC	1	B

Function

This valve provides a backup means of securing flow in the event that the spray valve should stick open. This valve also provides a backup means of post LOCA boron precipitation control for the normal method using the decay heat drop line.

Test Requirement

Exercise test to the closed position in accordance with ISTC-3510.

Justification

It is not practical to full stroke exercise this valve during power operation because closing this valve isolates the minimum flow used to prevent thermal shock to the piping nozzle. This justifies deferral of testing to cold shutdown.

Alternative Test

This valve will be exercised closed during cold shutdowns when there is not a concern of thermal shock to the piping nozzle.

ATTACHMENT 9

COLD SHUTDOWN JUSTIFICATION CSJ-18

Valve Number	System	Safety Class	Category
RC-V-4	RC	1	A

Function

This valve is opened by remote manual operation to initiate auxiliary spray to provide further pressure reduction or complete depressurization of the RCS after the OTSG's and RC Pumps have been removed from service. The auxiliary spray system cannot be placed in service until the reactor coolant system is below 200 psig. Auxiliary spray is an alternate method to DH drop-line flow to prevent boron precipitation post-LOCA. It is a backup to the drop leg method, which is not single-failure proof.

In the closed position, this valve is one of two valves in series that isolate the RCS from the lower design pressure Decay Heat Removal System. The valve must close / remain closed to isolate the reactor coolant system from the DH System. The valve is a Reactor Coolant Pressure Boundary (RCPB) Pressure Isolation Valve (PIV).

Test Requirement:

Exercise test to the open and closed positions in accordance with ISTC-3510.

Justification

It is not practical to full stroke exercise this valve open and closed during normal power operation since injection into the RCS through this line is not possible with the RCS pressurized, and opening of RC-V-4 during operation would leave only a single check valve as the isolation protecting low-pressure injection piping from RCS pressure. The Decay Heat discharge pressure is approximately 200 psig while the normal RCS pressure is greater than 2100 psig. RC-V-4 is procedurally required to be closed when the RCS is >400 psig. To perform this testing quarterly would require major plant or hardware modifications (NUREG-1482, revision 1, section 2.4.5). This justifies deferral of testing to cold shutdown.

Alternative Test

This valve will be exercised open and closed during cold shutdowns when the reactor coolant system is depressurized.

ATTACHMENT 10
REFUELING OUTAGE JUSTIFICATION INDEX

ATTACHMENT 10

REFUEL OUTAGE JUSTIFICATION INDEX

Designator	Rev	Title/Description
RJ-01		DH Pump Discharge Check Valves (DH-V-16A/B) Exercise Open
RJ-02		**DELETED**
RJ-03		**DELETED** (Replaced by Cold Shutdown Justification CSJ-16)
RJ-04		DH to CFT Check Valves (DH-V-22A/B) Exercise Open/Closed
RJ-05		EF Pump Discharge Check Valves (EF-V-11A/B) and EF to OTSG Check Valves (EF-V-12A/B) Exercise Open/Closed
RJ-06		IA Check Valves (IA-V-1628A/B and 1631A/B) Exercise Open/Closed
RJ-07		EF Pump 1 Discharge Check Valve (EF-V-13) Exercise Open/Closed
RJ-08		2-Hour Backup Air Valves (IA-V-1621A/B, 1625A/B, 1626A/B) Exercise and/or Fail Open
RJ-09		**DELETED**
RJ-10		MS Isolation Check Valves (MS-V-1A-D) Exercise Closed
RJ-11		RB Emergency Cooling Water Valves (RR-9A/B/C) Exercise Open/Closed
RJ-12		MU Tank Outlet Check Valve (MU-V-112) Exercise Closed
RJ-13		MU Pump BWST Check Valves (MU-V-14A/B) Exercise Open/Closed
RJ-14		RB Emergency Cooling Water Valves (RR-8A/B) Exercise Open
RJ-15		MU Pump Discharge Check Valves (MU-V-73A-C) Exercise Open/Closed
RJ-16		**DELETED**
RJ-17		**DELETED**
RJ-18		RB Emergency Cooling Water Valves (RR-7A/B) Exercise Open/Closed
RJ-19		**DELETED**
RJ-20		DH Pump from BWST Check Valve (DH-V-14A/B) Exercise Open/Closed
RJ-21		RB Sump to DH Pump Suction Valves (DH-V-6A/B) Exercise Open/Closed
RJ-22		DH Equalizing Check Valves (DH-V-170/171,172) Exercise Open/Closed
RJ-23		DH Pressurizer Spray Line Check Valve (RC-V-23) Exercise Open

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REFUEL OUTAGE JUSTIFICATION INDEX

Designator	Rev	Title/Description
RJ-24		Spent Fuel Return Check Valve (DH-V-50) Exercise Open/Closed
RJ-25		CST De-Icing Supply Check Valves (CO-V-25A/B) Exercise Open/Closed
RJ-26		**DELETED**
RJ-27		MU Pump Minimum Flow Valves (MU-V-193A/B/C) Exercise Open / Closed
RJ-28		Reactor Vessel Internal Vent Valves (RC-V-144A thru 144H) Exercise Open

ATTACHMENT 11
REFUELING OUTAGE JUSTIFICATIONS

ATTACHMENT 11

REFUELING OUTAGE JUSTIFICATION RJ-01

Valve Number	System	Safety Class	Category
DH-V-16A	DH	2	C
DH-V-16B	DH	2	C

Function

These check valves are required to open to permit flow from the Decay Heat Removal Pumps to the reactor coolant system or makeup pumps suction when required during accident conditions.

In the event of a Core Flood System line break, DH Pump discharge cross-connect valves DH-V-38A and DH-V-38B would need to be opened to provide balanced flow to the Core. If the corresponding DH pump fails to start, the associated check valve must close in order to prevent bypassing flow back to the Reactor Building Sump through the idle train.

Test Requirement:

Exercise test to the open and closed positions in accordance with ISTC-3522.

Justification

It is not practical to full stroke exercise these valves open during operations or during cold shutdown. The open exercise requires a full flow test. Performance of a full stroke forward flow test is not possible during normal operations since the decay heat removal pumps cannot overcome reactor coolant system pressure. A part stroke open test is performed as part of the pump quarterly operability test using the recirculation line to the RWST. A forward flow test during cold shutdowns is not always possible since the reactor coolant system pressure may still be at a level which prevents exercising the valves full open. Additionally, the injection of DH system flow into the reactor coolant system during normal operations or cold shutdowns would effect boron concentration and reactivity.

It is not practical to exercise these valves closed during normal power operations. The closure test of these valves requires a reverse flow or leakage test. A reverse flow test can only be performed when the cross tie isolation valves DH-V-38A/B are both open and one pump is in operation. The corresponding idle pump discharge check valve can then be reverse flow tested. This test can only be performed during cold shutdown periods when the cross tie isolation valve may be opened. These valves are maintained closed during normal power operation to maintain train separation.

Alternative Test

These check valves will be exercised open and closed during refueling outages. The valves are verified to open with full flow during refueling outages when the DH pump can deliver the required flow rates into the reactor coolant system and closed when the cross-tie isolation valves may be opened. As permitted by ASME OM Code ISTC-3522(a) both

the open and closed check valve tests will be performed during refueling outages when it is practicable to perform both tests.

ATTACHMENT 11

REFUELING OUTAGE JUSTIFICATION RJ-02 - DELETED

Valve Number	System	Safety Class	Category
CA-V-448A	CA	2	C
CA-V-448B	CA	2	C

Function

The steam generator blowdown/sampling modification, ECR TM 07-00259, installed separate relief valves on the 2 penetrations, thereby eliminating the need for these check valves. Therefore, CA-V-448A/B have been removed from the plant and from the IST and 10CFR50 Appendix J programs.

ATTACHMENT 11

REFUELING OUTAGE JUSTIFICATION RJ-03

Valve Number	System	Safety Class	Category
MS-V-1A	MS	2	B/C
MS-V-1B	MS	2	B/C
MS-V-1C	MS	2	B/C
MS-V-1D	MS	2	B/C

This Refueling Outage Justification has been replaced by Cold Shutdown Justification CSJ-16.

ATTACHMENT 11

REFUELING OUTAGE JUSTIFICATION RJ-04

Valve Number	System	Safety Class	Category
CF-V-5A	CF	1	A/C
CF-V-5B	CF	1	A/C
DH-V-22A	DH	1	A/C
DH-V-22B	DH	1	A/C

Function

These check valves are Reactor Coolant Pressure Boundary Pressure Isolation Valves (RCPB PIV). In the closed position, the valves prevent leakage from the high pressure RCS to the lower pressure rated Core Flood and Decay Heat Removal Systems. Two of the valves are considered containment isolation valves; however, they are exempt from Appendix J Type C testing since no potential atmospheric leakage path from containment exists.

The valves are required to open to admit borated water from the discharge of the Core Flood Tanks or the Decay Heat Removal Pumps to the Reactor Coolant System during the injection and recirculation phases following an intermediate to large-break LOCA.

Test Requirement:

Exercise test to the open and closed positions in accordance with ISTC-3522.

Justification

It is not practical to exercise these valves during normal power operation or during cold shutdown conditions. Exercising these valves requires the performance of a leakage test to verify the closed position and forward flow test to verify the open position.

Performance of a forward flow test is not possible during normal operations since the core flood tanks and the decay heat removal pumps cannot overcome reactor coolant system pressure. This forward flow test during cold shutdowns is not always possible since the reactor coolant system pressure may still be at a level which prevents exercising the valves open. Additionally, injection into the reactor coolant system during normal operations or cold shutdowns would effect boron concentration and reactivity.

To perform a leakage test to verify closure during normal operations or cold shutdowns, requires temporary test equipment to be installed inside containment to establish a differential pressure across the valve to verify closure. This test is not practical to be performed during normal power operations or during cold shutdowns since the DH system would be required to be out of service. Additionally, containment entry to perform the necessary test setup, performance and restoration would cause an increase in personnel radiation exposure. To perform this testing quarterly would require major plant or hardware

ATTACHMENT 11

REFUELING OUTAGE JUSTIFICATION RJ-04 (Cont.)

modifications (NUREG-1482, revision 1, section 2.4.5). This justifies deferral of testing to refueling outages.

Alternative Test

These check valves will be exercised closed during refueling outages in conjunction with their respective Pressure Isolation Valve seat leakage test. This test is performed when the CF and DH systems are not required to be in service, the reactor coolant system is depressurized, and containment entry is possible. The valves are verified to open with full flow during refueling outages when the CF tanks and the DH pumps can deliver the required flow rates into the reactor coolant system.

ATTACHMENT 11

REFUELING OUTAGE JUSTIFICATION RJ-05

Valve Number	System	Safety Class	Category
EF-V-11A	EF	3	C
EF-V-11B	EF	3	C
EF-V-12A	EF	2	C
EF-V-12B	EF	2	C

Function

These check valves open to permit the Emergency Feedwater Pump to deliver Emergency Feedwater to either or both OTSG's when Emergency Feedwater is required.

Valves EF-V-11A/B must close to prevent diversion of flow through an idle or faulted emergency feedwater pump. Valves EF-V-12A/B must close to prevent reverse flow thereby maintaining OTSG inventory.

Test Requirement:

Exercise test to the open and closed positions in accordance with ISTC-3522.

Justification

It is not practical to exercise these valves open or closed during normal power operation or during cold shutdown conditions. Exercising these valves requires the performance of a leakage test to verify the closed position and forward flow test to verify the open position.

Performance of a forward flow test is not possible during normal operations since flow through the valves during power operation would inject cold water into a hot steam generator. This is impractical because injecting cold water from the Condensate Storage Tank into the hot Steam Generator during operations would thermally cycle the tubes and Emergency Feedwater nozzles. Further, injection from the Condensate Storage Tank will introduce oxygenated water into the Steam Generators. The exposure of the Steam Generator tubes to oxygenated water, especially during short shutdowns, must be minimized.

To perform a leakage test to verify closure during normal operations or cold shutdowns, requires temporary test equipment to be installed to establish a differential pressure across the valve to verify closure. This closed test requires isolation of one injection line to the OTSG and the cross connecting of two of the three Emergency Feedwater Pumps. This effectively removes two pumps from service. This configuration is not desirable nor is it permitted by the Tech Specs when the plant is operating. During short duration or unplanned Cold Shutdowns, the test could extend the outage due to the amount of time necessary for test setup, performance and restoration. To perform this testing quarterly would require major plant or hardware modifications (NUREG-1482, revision 1, section 2.4.5). This justifies deferral of testing to refueling outages.

ATTACHMENT 11

REFUELING OUTAGE JUSTIFICATION RJ-05 (Cont.)

Alternative Test

These check valves will be exercised open and closed during refueling outages when the EF pumps are able to deliver the required flow to the OTSG. The closure test performed by a differential pressure leakage test will be performed during refueling outages when the EF system and OTSG's are not required to be in service.

ATTACHMENT 11

REFUELING OUTAGE JUSTIFICATION RJ-06

Valve Number	System	Safety Class	Category
IA-V-1628A	IA	NA	C
IA-V-1628B	IA	NA	C
IA-V-1631A	IA	NA	C
IA-V-1631B	IA	NA	C

Function

The IA-V-1628A/B check valves must close to isolate the non-safety related instrument air supply from the 2-Hour Backup Air system.

Check valve IA-V-1631A is required to open to provide air from the 2-Hour Backup Air system to be supplied to the essential equipment in the event of a loss of the Instrument Air Compressors. This valve closes to prevent backflow when the A train is out of service while the B train is required to supply PC-5 and MS-V-6.

Check valve IA-V-1631B is required to open to provide a flow path from the 2-Hour Backup Air system to MS-V-6 and the PC-5 Controller.

Test Requirement:

Exercise test to the open and closed positions in accordance with ISTC-3522.

Justification

It is not practical to full stroke exercise these valves open or closed during normal power operation or during cold shutdowns since the closure test requires a backflow leakage test. This testing would require rendering all of the associated essential components inoperable while performing the back flow leakage or respective forward flow tests. The required full flow and backflow leakage tests can only be performed during refueling outages when it is possible to declare the associated instrument air supplied components inoperable. To perform this testing quarterly would require major plant or hardware modifications (NUREG-1482, revision 1, section 2.4.5). This justifies deferral of testing to refueling outages.

Alternative Test

These check valves will be exercised open and closed during refueling outages when the Instrument Air System is not required to be in service. As permitted by ASME OM Code ISTC-3522(a) both the open and closed check valve tests will be performed during refueling outages when it is practicable to perform both tests.

ATTACHMENT 11

REFUELING OUTAGE JUSTIFICATION RJ-07

Valve Number	System	Safety Class	Category
EF-V-13	EF	3	C

Function

This check valve opens to permit the turbine-driven Emergency Feedwater Pump EF-P1 to deliver Emergency Feedwater to either or both OTSG's when emergency feedwater is required to be in operation. The valve must open to provide a minimum of 350 gpm during design accident conditions.

This valve closes to prevent diversion of flow by recirculation through EF-P1 if idle or faulted.

Test Requirement:

Exercise test to the open and closed positions in accordance with ISTC-3522.

Justification

It is not practical to exercise this valve open or closed during normal power operation or during cold shutdown conditions. Exercising the valve requires the performance of a pump full flow test to verify the open position.

Performance of a forward flow test is not possible during normal operations since flow through the valves during power operation would inject cold water into a hot steam generator. This is impractical because injecting cold water from the Condensate Storage Tank into the hot Steam Generator during operations would thermally cycle the tubes and Emergency Feedwater nozzles. Further, injection from the Condensate Storage Tank will introduce oxygenated water into the Steam Generators. The exposure of the Steam Generator tubes to oxygenated water, especially during short shutdowns, must be minimized.

The closed test requires that part of the EF system is inoperable and removes redundancy for providing Emergency Feedwater to each Steam Generator. This configuration is not permitted by the Technical Specifications when the plant is operating. To perform this testing quarterly would require major plant or hardware modifications (NUREG-1482, revision 1, section 2.4.5). This justifies deferral of testing to refueling outages.

Alternative Test

This check valve will be exercised open during refueling outages when the EF pump is able to deliver the required flow to the OTSG. The closure test, performed by a differential pressure test, will be performed during refueling outages when the EF system and OTSG's are not required to be in service. As permitted by ASME OM Code ISTC-3522(a) both the open and closed check valve tests will be performed during refueling outages when it is practicable to perform both tests.

ATTACHMENT 11

REFUELING OUTAGE JUSTIFICATION RJ-08

Valve Number	System	Safety Class	Category
IA-V-1621A	IA	NA	B
IA-V-1621B	IA	NA	B
IA-V-1625A	IA	NA	B
IA-V-1625B	IA	NA	B
IA-V-1626A	IA	NA	B
IA-V-1626B	IA	NA	B

Function

IA-V-1621A/B
These control valves reduce pressure from the 2-Hour Backup Air System Bottle Racks to approximately 100 psig for supplying emergency operating air to various essential components. This is a control function that does not require testing. Their safety function is to fail open, which could expose the downstream piping to up to 2500 psig of air pressure, causing relief valve IA-V1624B to lift.

IA-V-1625A/B
These normally open air operated 3-way valves must remain open to provide a flow path from the 2-Hr Backup Supply Air Bottle Rack to the essential EF and MS air actuators and positioners. The valves are normally aligned in their safety-related position from the Train A 2-Hr Backup Supply Air Bottle Rack to the supply header to assure a 2 hour supply of actuating air in the event of a loss of the IA Compressors. In the event of a loss of supply pressure, the valves fail to the vented position, causing the downstream valves to fail to their safe position.

IA-V-1626A/B
These normally open 3-Way valves must open to provide a flow path from the 2-Hr Backup Supply Air Bottle Rack to the essential EF and MS air actuators and positioners. The valves are normally aligned from the discharge of the Instrument Air Compressors (normal supply) to the supply header for EF-V 030A, EF-V 030C, MS-V 004A, MS-V 006 and the PC-5 Controller. Upon a loss of IA System pressure, they shift to the safety-related supply source from the 2-Hr Backup Supply Air Bottle Rack.

Test Requirement:

Exercise test to the open position in accordance with ISTC-3510/3521 and Fail-Safe exercising in accordance with ISTC-3560.

Justification

It is not practical to exercise open or fail open these valves during normal power operations or during cold shutdowns. To exercise these valves requires the normal instrument air supply to be isolated to the Emergency Feedwater and Main Steam valves actuators and positioners thereby rendering them inoperable. The components supplied by the 2-Hr

Backup Air Bottles are required to be operable during normal operations and during cold shutdowns when the EF and MS systems are still required to be inservice. To perform this testing quarterly would require major plant or hardware modifications (NUREG-1482, revision 1, section 2.4.5). This justifies deferral of testing to refueling outages.

Alternative Test

These valves will be exercised and fail-safe tested open during refueling outages when the EF and MS systems are not required to be inservice and the 2-Hour backup air system is not required.

ATTACHMENT 11

REFUELING OUTAGE JUSTIFICATION RJ-09 - DELETED

Valve Number	System	Safety Class	Category
MU-V-79	MU	2	

Function

This check valve has been classified as a passive valve based on upstream manual valve MU-V-78 being administratively maintained in the locked closed position and relied upon for isolation of the letdown/purification system. The valve has been determined to not perform a safety function and has been removed from the IST Program.

ATTACHMENT 11

REFUELING OUTAGE JUSTIFICATION RJ-10

Valve Number	System	Safety Class	Category
MS-V-1A	MS	2	B/C
MS-V-1B	MS	2	B/C
MS-V-1C	MS	2	B/C
MS-V-1D	MS	2	B/C

Function

These normally open motor operated stop check valves receive no automatic isolation signal in order to allow for optimum RCS heat removal during most accidents and non-accident reactor trips. These valves are required to be closed from the Control Room following a large-break LOCA, small-break LOCA, Main Steam line break, or Steam Generator tube rupture, or if a loss of OTSG integrity results in Containment pressure above OTSG pressure. In these cases, the valve would be closed by the motor operator, resulting in the Category B classification. These valves function as check valves in closing to prevent blowdown of both OTSG's in the event of a Main Steam line break upstream. Therefore, they are also classified as Category C.

Although the open position is preferred under most accident and normal shutdown conditions and is required for Plant operation, the valves do not have any safety function in the open position. These valves are considered Containment Isolation Valves; however, they are exempt from Type C testing since it is connected to a closed loop inside containment (OTSG).

Test Requirement:

Exercise test to the closed position in accordance with ISTC-3522.

Justification

It is not practical to exercise these valves closed with flow (category C function) during normal power operation or during cold shutdowns.

Closing these valves for testing during normal power operations would interrupt steam flow from the steam generator to the main steam/turbine systems. Exercising these valves closed would isolate the steam generator which would result in a severe power transient in the steam and reactor coolant systems which would lead to a subsequent trip of the plant.

The closure test of the check valve function requires that one OTSG be depressurized while pressure on the other is monitored. Effectively, the closed function is verified by a differential pressure test to verify closure. This test can only be done during refueling outages when the steam generators may be isolated. To perform this testing quarterly would create a condition with a high potential to cause a reactor trip (NUREG-1482, revision 1, section 2.4.5). This justifies deferral of testing to refueling outages.

ATTACHMENT 11

REFUELING OUTAGE JUSTIFICATION RJ-10 (Cont.)

Alternative Test

These valves will be exercised closed (Category C) during refueling outages when the main steam system is not required to be in operation. The open (Category C) check valve function is verified during normal operations with system flow.

ATTACHMENT 11

REFUELING OUTAGE JUSTIFICATION RJ-11

Valve Number	System	Safety Class	Category
RR-V-9A	RR	3	C
RR-V-9B	RR	3	C
RR-V-9C	RR	3	C

Function

These check valves must open to provide a return flow path to the River from the Emergency RB Cooling Coil for post-accident cooling and pressure control of the Reactor Building.

The valves close to prevent reverse flow through a faulted cooling coil, however downstream motor operated valves RR-V-4A-D are relied upon for isolation of the cooling coil. Therefore this closed function is not required for safe shutdown or accident mitigation.

Test Requirement:

Exercise test to the open position in accordance with ISTC-3522.

Justification

It is not practical to exercise these check valves open or closed during normal power operation or during cold shutdowns. Exercising the valves open requires the performance of a full flow test to verify the open position. Exercising the valves closed requires a leakage or reverse flow test.

Performance of a full flow test through these valves requires the RBEC pump to introduce river water into the Reactor Building Emergency Cooling Coils. Since river water contains silt and microorganisms, the system must be drained to the Reactor Building sump and refilled with Nuclear Services Closed Cooling Water. Approximately 5,000 gallons of water must be processed through the Liquid Waste Disposal System. This is not practical for a quarterly or cold shutdown frequency. Additionally, test performance will discharge a quantity of corrosion inhibitor to the river, an environmental release that should be minimized.

To perform a leakage test or reverse flow test to verify closure during normal operations or during cold shutdown, requires temporary test equipment to be setup to establish a differential pressure across the valve to verify closure. This test is not practical to be performed during normal power operations or during cold shutdowns since the RB Emergency Cooling Water system would be required to be vented and out of service. Additionally, the necessary test setup, performance and restoration could cause an increase in personnel radiation exposure and delay startup from a cold shutdown condition. To perform this testing quarterly would require major plant or hardware modifications (NUREG-1482, revision 1, section 2.4.5). This justifies deferral of testing to refueling outages.

ATTACHMENT 11

REFUELING OUTAGE JUSTIFICATION RJ-11 (Cont.)

Alternative Test

These check valves will be exercised open and verified to close (bi-directional test) during refueling outages when full forward and reverse flow testing can be performed and the reactor building emergency cooling coils are not required to be in service.

ATTACHMENT 11

REFUELING OUTAGE JUSTIFICATION RJ-12

Valve Number	System	Safety Class	Category
MU-V-112	MU	2	A/C

Function

This check valve is required to close to prevent pumping post-accident liquid from the RB Sump into the Makeup Tank when operating the DH and MU Systems in the "piggyback" mode. This valve is located in the outlet line of Makeup Tank MU-T-1 and forms a boundary between the portion of the MU System which is required for safe shutdown/accident mitigation and the non-safety related makeup tank.

This valve opens to allow makeup flow from Makeup Tank MU-T-1 to the suction of the operating Makeup Pump (normally MU-P-1B) during normal operation. It also opens to allow flow from Makeup Tank MU-T-1 to the suction of the operating Makeup Pump to support alternate emergency boration requirements. Downstream motor-operated isolation valve, MU-V12, does not receive any signal to close in the event of an accident.

Test Requirement:

Exercise test to the closed position in accordance with ISTC-3522.

Justification

It is not practical to exercise this valve closed during normal power operation or during cold shutdowns. Exercising the valve requires the performance of a leakage or reverse flow test to verify the closed position.

To perform a leakage test or reverse flow test to verify closure during normal operations or cold shutdowns, requires temporary test equipment to be installed to establish a differential pressure across the valve to verify closure. This test is not practical to be performed during normal power operations or during cold shutdowns since the MU system and DH system would be required to be vented and out of service to perform a leakage test. To perform a reverse flow test using the DH system to pressurize the valve would require removing both the MU and DH system from service. Removing both systems is not practical during normal power operations or during cold shutdown conditions. To perform this testing quarterly would require major plant or hardware modifications (NUREG-1482, revision 1, section 2.4.5). This justifies deferral of testing to refueling outages.

Alternative Test

This valve will be exercised closed during refueling outages when the MU and DH systems are not required to be in service. The open direction is verified using normal system flow during normal power operations.

ATTACHMENT 11

REFUELING OUTAGE JUSTIFICATION RJ-13

Valve Number	System	Safety Class	Category
MU-V-14A	MU	2	A/C
MU-V-14B	MU	2	A/C

Function

These motor operated stop check valves are required to open on an ESAS actuation signal of 1600 psig RCS pressure or 4 psig Reactor Building pressure to provide suction from the BWST to the MU Pumps for HPI initiation. An ESAS backup initiation signal is also provided at 500 psig RCS pressure.

The valves are required to close following the post-LOCA injection phase to isolate the BWST during the recirculation phase. In the "piggyback" mode, this is the only valve that separates the BWST from the discharge of the DH Pumps.

Test Requirement:

Exercise test to the open and closed positions in accordance with ISTC-3522.

Justification

It is not practical to exercise these valves open or closed during normal power operation or during cold shutdowns. Exercising the valves requires the performance of a leakage or reverse flow test to verify the closed position and full flow test to verify the open position.

To perform a leakage test or reverse flow test to verify closure during normal operations or cold shutdowns, requires temporary test equipment to be installed to establish a differential pressure across the valve to verify closure. This test is not practical to be performed during normal power operations or during cold shutdowns since the test lineup requires isolation of the Makeup Tank and observation of level decrease over time. This procedure can significantly lengthen an unplanned Cold Shutdown. To verify the full open position, a full flow test using the BWST as a suction source is required. Injection of highly borated water from the BWST into the reactor coolant system is not practical during normal operations or during cold shutdown due the significant effect it will have on reactivity and RCS inventory control. Additionally, performance of this full flow test may lengthen the time to reach criticality. The delay would occur because the boron concentration would need to be diluted by water from a Reactor Coolant Bleed Tank. To perform this testing quarterly would require major plant or hardware modifications (NUREG-1482, revision 1, section 2.4.5). This justifies deferral of testing to refueling outages.

ATTACHMENT 11

REFUELING OUTAGE JUSTIFICATION RJ-13 (Cont.)

Alternative Test

These valves will be exercised closed during refueling outages in conjunction with the respective leakage test when the MU system is not required to be in service. The valves will be exercised open during refueling outages with flow by injecting BWST water into the reactor coolant system.

ATTACHMENT 11

REFUELING OUTAGE JUSTIFICATION RJ-14

Valve Number	System	Safety Class	Category
RR-V-8A	RR	3	C
RR-V-8B	RR	3	C

Function

These check valves must open to provide flow from the RBEC Pumps to the Reactor Building Emergency Cooling Coils for post-accident cooling and pressure control. The valves may also be required to open to provide a safety-related, seismically-qualified backup suction source to the Emergency Feedwater Pumps.

These valves are required to close to prevent diversion of flow in the event of a failure of the RBEC Pump to start or continue running or in the event of an upstream pipe break.

Test Requirement:

Exercise test to the open position in accordance with ISTC-3522.

Justification

It is not practical to exercise these check valves open during normal power operation or during cold shutdowns. Exercising the valves open requires the performance of a full flow test to verify the open position.

Performance of a full flow test through these valves requires the RBEC pump to introduce river water into the Reactor Building Emergency Cooling Coils. Since river water contains silt and microorganisms, the system must be drained to the Reactor Building sump and refilled with Nuclear Services Closed Cooling Water. Approximately 5,000 gallons of water must be processed through the Liquid Waste Disposal System. This is not practical for a quarterly or cold shutdown frequency. Additionally, test performance will discharge a quantity of corrosion inhibitor to the river, an environmental release that should be minimized. To perform this testing quarterly would require major plant or hardware modifications (NUREG-1482, revision 1, section 2.4.5). This justifies deferral of testing to refueling outages.

Alternative Test

These check valves will be exercised open during refueling outages when full flow testing can be performed and the reactor building emergency cooling coils are not required to be in service. The closure test is performed quarterly using reverse flow from the Nuclear Services Closed Cooling Water system.

ATTACHMENT 11

REFUELING OUTAGE JUSTIFICATION RJ-15

Valve Number	System	Safety Class	Category
MU-V-73A	MU	2	C
MU-V-73B	MU	2	C
MU-V-73C	MU	2	C

Function

In the open position, these check valves allow required HPI flow to be supplied by the Makeup Pumps to the Reactor Coolant System (RCS) in response to an ESAS initiation at 1600 psig RCS pressure or 4 psig Reactor Building pressure, or by a backup signal at 500 psig RCS pressure.

In the closed position, the valves prevent diversion of flow by recirculation through the pump in the event that the pump fails to start or is secured by the operator during the later stages of the accident or for post-accident recirculation (i.e., "piggyback") operation.

Test Requirement:

Exercise test to the open and closed positions in accordance with ISTC-3522.

Justification

It is not practical to exercise these check valves open during normal power operation or during cold shutdowns. Exercising the valves open requires the performance of a full flow test to verify the open position.

Full flow testing of these valves requires injection into the RCS. During normal power operations or during cold shutdowns the injection flow into the RCS is limited to avoid pressure transients in the RCS. Attaining full flow requires that additional injection valves be opened. Tech Spec 3.1.12.3 will not permit opening of the injection valves (MU-V16A, B, C, D) when RCS temperature is below 275 degrees F with the Reactor Head in place. This means testing at Cold Shutdown is not possible and that the test must be performed as the plant shuts down or restarts. To perform this testing quarterly would require major plant or hardware modifications (NUREG-1482, revision 1, section 2.4.5). This justifies deferral of testing to refueling outages.

Due to the design of the MU pumps (9 stage high pressure centrifugal), positive verification of closure of the discharge check valves cannot be ascertained during quarterly testing of the pumps on minimum recirculation flow.

Alternative Test

These check valves will be exercised open and closed during refueling outages when injection to the reactor coolant system is possible and the system alignment allows for positive verification that the valves are exercised closed by reverse flow.

ATTACHMENT 11

REFUELING OUTAGE JUSTIFICATION RJ-16 - DELETED

Valve Number	System	Safety Class	Category
NR-V-20A	NR	3	C
NR-V-20B	NR	3	C
NR-V-20C	NR	3	C

Deleted this justification after revising the quarterly testing in 2008 to use a flow that satisfies design basis requirements.

ATTACHMENT 11

REFUELING OUTAGE JUSTIFICATION RJ-17 - DELETED

Valve Number	System	Safety Class	Category
RC-V-2	RC	1	B

This Refueling Outage Justification has been determined to not be necessary and has been deleted.

ATTACHMENT 11

REFUELING OUTAGE JUSTIFICATION RJ-18

Valve Number	System	Safety Class	Category
RR-V-7A	RR	3	C
RR-V-7B	RR	3	C

Function

These check valves must open to provide a flow path from the RBEC Pumps to the Reactor Building Emergency Cooling Coils for post-accident cooling and pressure control. The valves may also be required to open to provide a safety-related, seismically-qualified backup suction source to the Emergency Feedwater Pumps.

These valves close to prevent reverse flow through a faulted or idle RBEC pump, however, downstream valves RR-V-8A/B and RR-V-1A/B are relied upon for this function. Therefore the closed function is not required for safe shutdown or accident mitigation.

Test Requirement:

Exercise test to the open position in accordance with ISTC-3522.

Justification

It is not practical to exercise these check valves open during normal power operation or during cold shutdowns. Exercising the valves open requires the performance of a full flow test to verify the open position.

Performance of a full flow test through these valves requires the RBEC pump to introduce river water into the Reactor Building Emergency Cooling Coils. Since river water contains silt and microorganisms, the system must be drained to the Reactor Building sump and refilled with Nuclear Services Closed Cooling Water. Approximately 5,000 gallons of water must be processed through the Liquid Waste Disposal System. This is not practical for a quarterly or cold shutdown frequency. Additionally, test performance will discharge a quantity of corrosion inhibitor to the river, an environmental release that should be minimized. To perform this testing quarterly would place undue stress on components and cause unnecessary cycling of equipment (NUREG-1482, revision 1, section 2.4.5). This justifies deferral of testing to refueling outages.

Alternative Test

These check valves will be exercised open during refueling outages when full flow testing can be performed and the reactor building emergency cooling coils are not required to be in service. Bi-directional closure testing is performed each refueling using non-intrusive equipment (ultrasonic instrumentation) to verify water in the piping on the downstream side of the valve.

ATTACHMENT 11

REFUELING OUTAGE JUSTIFICATION RJ-19 – DELETED

Valve Number	System	Safety Class	Category
RC-RV-2	RC	1	B/C

This Refueling Outage Justification has been determined to not be necessary and has been deleted.

ATTACHMENT 11

REFUELING OUTAGE JUSTIFICATION RJ-20

Valve Number	System	Safety Class	Category
DH-V-14A	DH	2	A/C
DH-V-14B	DH	2	A/C

Function

These check valves open to permit the Decay Heat Removal Pumps to take suction from the BWST.

The valves are required to close to prevent potential flow from the Reactor Building Sump into the BWST in the event that DH-V 005A/B fail to close following an accident while the Reactor Building is under pressure.

Test Requirement:

Exercise test to the open and closed positions in accordance with ISTC-3522.

Justification

It is not practical to exercise these valves during normal power operations or cold shutdown when DH system is required to be in service.

To exercise the valves open requires full flow injection from the BWST into the reactor coolant system. This test is not practical to perform during plant operation or during cold shutdown since full flow injection of borated water into the reactor coolant system would result in severe reactor power oscillations and subsequent reactor trip during plant operations. During cold shutdown, this test would result in delaying unit startup due to the amount time necessary to clean up the DH and RC systems along with refilling the BWST.

To exercise the valve closed would require a leakage test. This test would require one train of DH suction piping to be isolated and vented. The test would render the associated train of the DH system inoperable during plant operations and during cold shutdown periods. To perform this testing quarterly would require major plant or hardware modifications (NUREG-1482, revision 1, section 2.4.5). This justifies deferral of testing to refueling outages.

Alternative Test

These valves will be exercised open and closed during refueling outages when the DH and RC systems are not required to be inservice to allow for full flow injection and leakage testing of the subject valves.

ATTACHMENT 11

REFUELING OUTAGE JUSTIFICATION RJ-21

Valve Number	System	Safety Class	Category
DH-V-6A	DH	2	B
DH-V-6B	DH	2	B

Function

These valves must be capable of closure to provide long term Containment isolation following an accident. However, since the Decay Heat Removal (DH) System is filled with water and is a closed system outside Containment, it is very improbable that leakage would occur through these valves. Furthermore, the valves will be opened and may remain open indefinitely following an accident. The valves are exempt from Type C leakage testing since they are in penetrations which are continuously submerged in water during accident conditions (water-sealed).

The valves must be opened to shift suction of the DH Pumps from the BWST to the Reactor Building Sump when the BWST inventory is depleted following a LOCA in order to initiate the post-LOCA recirculation mode. The valves are closed by remote manual operation.

Test Requirement:

Exercise test to the open and closed positions in accordance with ISTC-3510.

Justification

It is not practical to exercise these valves during normal power operations or cold shutdown.

Exercising these valves would require blanking the reactor building ECCS sump suction piping and would render the associated DH and Building Spray trains inoperable. This testing would require containment entry to install blank flanges on the DH system suction piping to perform the necessary testing. This would render the DH and BS systems inoperable during normal operations and potentially delay unit startup from a cold shutdown to perform the necessary blank installation and removal.. To perform this testing quarterly would require major plant or hardware modifications (NUREG-1482, revision 1, section 2.4.5). This justifies deferral of testing to refueling outages.

Alternative Test

These valves will be exercised open and closed during refueling outages when the DH and RC systems are not required to be inservice and the reactor building sump level is such that radioactive fluid is not introduced into the DH system suction piping.

ATTACHMENT 11

REFUELING OUTAGE JUSTIFICATION RJ-22

Valve Number	System	Safety Class	Category
DH-V-170	DH	2	C
DH-V-171	DH	2	C
DH-V-172	DH	2	C

Function

These check valves must open to allow pressure between the seats and portions of piping of certain valves to equalize with downstream (RCS) pressure in order to prevent pressure-locking of the boundary valves allowing them to be opened when required.

The valves close to prevent back flow of RCS fluid into the area between the seats and portions of piping to prevent pressure-locking of the respective valves. However, the ability of the check valves to close is not required to achieve or maintain safe shutdown or for accident mitigation.

Test Requirement:

Exercise test to the open and closed positions in accordance with ISTC-3522.

Justification

It is not practical to exercise these valves open or closed during normal power operations or cold shutdown.

Exercising these valves closed requires venting of reactor coolant system fluid to perform backflow testing to verify closure capability of the subject check valves. This test is essentially a leakage rate test which would require isolating and venting of the associated portions of the reactor coolant system. Additionally, increased personnel radiation exposure would be realized due to the location of these valves inside the reactor building. The full flow open test of these check valves is also not practical to perform during normal power operations due to the need to partially open the associated main process line isolation valve. Opening either of these valves (DH-V-1, DH-V-2) during normal power operation could cause over pressurization of the lower pressure DH system. To perform this testing quarterly would require major plant or hardware modifications (NUREG-1482, revision 1, section 2.4.5). This justifies deferral of testing to refueling outages.

Alternative Test

These valves will be exercised open and verified to close during refueling outages when the DH and RC systems are not required to be inservice. As permitted by ASME OM Code ISTC-3522(a) both the open and closed check valve exercise tests will be performed during refueling outages when it is practicable to perform both tests.

ATTACHMENT 11

REFUELING OUTAGE JUSTIFICATION RJ-23

Valve Number	System	Safety Class	Category
RC-V-23	RC	1	A/C

Function

This check valve opens on initiation of flow from the DH System to allow circulation of water through the auxiliary spray line to prevent the concentration of boron in the Core from exceeding its solubility limit. The auxiliary spray system cannot be placed in service until the reactor coolant system is below 200 psig. Auxiliary spray is an alternate method to DH drop-line flow to prevent boron precipitation post-LOCA. It is a backup to the drop leg method, which is not single-failure proof.

In the closed position, this valve is one of two valves in series that isolate the RCS from the lower design pressure Decay Heat Removal System. This valve would remain closed as long as RCS pressure is higher than DH System pressure or would close for any condition which caused flow to reverse. The valve is a Reactor Coolant Pressure Boundary (RCPB) Pressure Isolation Valve (PIV).

Test Requirement:

Exercise test to the open and closed positions in accordance with ISTC-3522.

Justification

It is not practical to full stroke exercise this valve open or closed during normal power operation since injection in to the RCS through this line is not possible with the RCS pressurized. The Decay Heat discharge pressure is approximately 200 psig while the normal RCS pressure is greater than 2100 psig. The closure test of this check valve is performed by using a back flow leakage test to verify disk closure. This test requires entry in to the reactor building to perform the necessary test setup and restoration. It is not practical to perform this leakage test during normal power operations or during cold shutdowns. Entry in to the reactor building is not possible during normal power operations due to the elevated dose. Performance of a leakage test during cold shutdowns is not practical since a significant amount of piping would be required to be vented along with an increase to personnel radiation exposure. To perform this testing quarterly would require major plant or hardware modifications (NUREG-1482, revision 1, section 2.4.5). This justifies deferral of testing to refueling outages.

Alternative Test

This valve will be exercised open and closed during refueling outages when the reactor coolant system is depressurized and radiation levels are reduced.

ATTACHMENT 11

REFUELING OUTAGE JUSTIFICATION RJ-24

Valve Number	System	Safety Class	Category
DH-V-50	DH	2	A/C

Function

Closure of this valve is important to ECCS bypass leakage. This valve is a potential leakage path from the reactor building sump or associated system when contaminated water is circulated following a LOCA [C-1101-210-E270-014].

This valve closes to prevent diversion of flow from the Decay Heat Removal Pump DH-P-1A suction in the event of a loss of upstream piping, however, upstream manual isolation valve, SF-V-44 is maintained closed and is also classified as Seismic Class I. Additionally, the cleanup supply line from the spent fuel pool is maintained closed during normal power operations.

This valve opens to provide a flow path from the spent fuel pool cleanup system to the suction of the decay heat removal pump. This function is not required for safe shutdown or accident mitigation.

Test Requirement:

Exercise test to the closed position in accordance with ISTC-3522.

Justification

It is not practical to full stroke exercise this valve open or closed during normal power operation or during cold shutdowns. An open exercise requires the spent fuel pool cleanup line to be opened and flow established from the spent fuel pool to the suction of the DH pumps. This evolution can only be performed during refueling outages when the DH system is in cleanup mode. The closure test of this valve requires pressurization of the DH suction piping. This test can not be performed during normal power operations without rendering the DH system inoperable. To perform this testing quarterly would require major plant or hardware modifications (NUREG-1482, revision 1, section 2.4.5). This justifies deferral of testing to refueling outages.

Alternative Test

This valve will be exercised open (bi-directional test) and closed during refueling outages when the DH system can be lined up for spent fuel pool cooling. As permitted by ASME OM Code ISTC-3522(a) both the open and closed check valve tests will be performed during refueling outages when it is practicable to perform both tests.

ATTACHMENT 11

REFUELING OUTAGE JUSTIFICATION RJ-25

Valve Number	System	Safety Class	Category
CO-V-25A	CO	3	A/C
CO-V-25B	CO	3	A/C

Function

These check valves must close to prevent backflow from the associated condensate storage tank to the non-safety related de-icing piping in the event that a pipe or alternate condensate storage tank rupture occurs. This function ensures that the contents of the respective condensate storage tank will be available to the suction of the EFW pumps.

The valve opens when the system is in the de-ice mode to provide a warm water flow path from the suction of the condensate booster pumps to the condensate storage tank. This function is not required for safe shutdown or accident mitigation since the condensate and de-icing piping is non-safety related.

Test Requirement:

Exercise test to the closed position in accordance with ISTC-3522.

Justification

It is not practical to full stroke exercise these valves closed during normal power operation. The de-icing line manual valves from the condensate booster pumps (CO-V-26A/B) are throttled during de-icing operations, and they also are not completely leak-tight when di-icing is secured. As such, they do not provide a zero leakage boundary from the condensate booster pump suction pressure, which is supplied by the main condensate pumps. During refueling outages with the condensate system out of service, the closed safety function of CO-V-25A/B can be verified by the required leakage test. To perform this testing every quarter would require major plant or hardware modifications (NUREG-1482, revision 1, section 2.4.5). This justifies deferral of testing to refueling outages.

Alternative Test

These valves will be exercised closed during refueling outages using the head of the condensate storage tanks. As permitted by ASME OM Code ISTC-3522(a) both the closed and non-safety (bi-directional) open check valve tests will be performed during refueling outages when it is practicable to perform both tests.

ATTACHMENT 11

REFUELING OUTAGE JUSTIFICATION RJ-26 - DELETED

Valve Number	System	Safety Class	Category
NR-V-19	NR	3	B

This Refueling Outage Justification has been determined to not be necessary and has been deleted.

ATTACHMENT 11

REFUELING OUTAGE JUSTIFICATION RJ-27

Valve Number	System	Safety Class	Category
MU-V-193A	MU	2	C
MU-V-193B	MU	2	C
MU-V-193C	MU	2	C

Function

These check valves must open to allow recirculation of flow from the discharge of the makeup and purification pumps during low system flow conditions through the Seal Return Coolers and back to the Makeup (MU) Tank in order to prevent overheating and potential damage to the pumps.

The valves close to ensure full MU Pump discharge flow is directed to the RCS for accident mitigation on HPI initiation by preventing diversion of flow back through the makeup and purification pumps in the event that a pump failed to start.

Test Requirement:

Exercise test to the open and closed positions in accordance with ISTC-3522.

Justification

It is not practical to full stroke exercise these check valves open during normal power operation or during cold shutdowns. The Makeup pump minimum flow lines are not instrumented to allow flow measurement during quarterly testing.

Check valve closure verification requires isolation of the pump suction, Due to the design of the MU pumps (9 stage high pressure centrifugal), positive verification of closure of the minimum flow line check valves (and discharge check valves) cannot be ascertained during quarterly testing of the pumps on minimum recirculation flow.

Alternative Test

These check valves will be exercised open and closed during refueling outages when injection to the reactor coolant system is possible (full forward flow testing can be performed) and system alignment will allow the pump suctions to be isolated for positive verification that the valves are exercised closed by reverse flow. These valves are partial stroked open during pump testing quarterly.

ATTACHMENT 11

ATTACHMENT 11

REFUELING OUTAGE JUSTIFICATION RJ-28

Valve Number	System	Safety Class	Category
RC-V-144A	RC	1	C
RC-V-144B	RC	1	C
RC-V-144C	RC	1	C
RC-V-144D	RC	1	C
RC-V-144E	RC	1	C
RC-V-144F	RC	1	C
RC-V-144G	RC	1	C
RC-V-144H	RC	1	C

Function

The RC-V-144 series internals vent valves have an open safety function to ensure adequate core cooling in the event of a reactor coolant cold leg piping LOCA. The normally closed position is passive and not a safety function.

The RC-V-144 series valves consist of eight 14 inch inside diameter vent valve assemblies installed in the cylindrical wall of the reactor internals core support shield. The internals vent valves are normally closed check valves with a safety function to open, in the event of a pipe rupture in the reactor coolant cold leg piping, to permit steam generated in the core to flow directly to the leak. This will permit the core to be rapidly recovered and adequately cooled after emergency core coolant has been supplied to the reactor vessel.

Test Requirement:

Exercise test to the open position in accordance with ISTC-3522.

Justification

It is not practical to exercise these valves open during normal power operation or during cold shutdowns since these valves are located inside the reactor vessel. Exercising the valves open requires removing the reactor vessel head and the upper plenum assembly to allow access to the valves. This is only practical during refueling outages.

Alternative Test

The check valves will be exercised open during refueling outages when the reactor vessel head and the upper plenum assembly can be removed to allow access to the valves.

ATTACHMENT 12
TECHNICAL POSITION INDEX

ATTACHMENT 12

TECHNICAL POSITION INDEX

Technical Position Number	Revision	Title/Description
CTP-IST-001	1	Preconditioning of IST Program Components
CTP-IST-002	1	Quarterly Pump Testing Under Full-Flow Conditions
CTP-IST-003	0	Quarterly Testing of Group B Pumps
CTP-IST-004	1	Classification of Pumps: Centrifugal vs. Vertical Line Shaft
CTP-IST-005	1	Preservice Testing of Pumps
CTP-IST-006	1	Classification and Testing of Class 1 Safety/Relief Valves With Auxiliary Actuating Devices
CTP-IST-007	1	Skid-Mounted Components
CTP-IST-008	1	Position Verification Testing
CTP-IST-009	0	ASME Class 2 & 3 Relief Valve Testing Requirements
CTP-IST-010	0	ERV and PORV Testing Requirements
CTP-IST-011	0	Extension of Exercise Testing Frequencies to Cold Shutdown or Refueling Outage
CTP-IST-012	0	Use of ASME OM Code Cases for Inservice Testing
CTP-IST-013	0	Exercise Testing Requirements for Valves with Fail-Safe Actuators
CTP-IST-014	0	Bi-directional Testing of Check Valves to Their Safety and Non-Safety Related Positions

ATTACHMENT 13
TECHNICAL POSITIONS

ATTACHMENT 13

Number: **CTP-IST-001, Rev. 1**

Title: **Preconditioning of IST Program Components**

Applicability: All Exelon IST Programs. This issue also applies to other Technical Specification surveillance testing where preconditioning may affect the results of the test. This Technical Position may be adopted optionally by other Exelon organizations.

Background: There are no specified ASME Code requirements regarding preconditioning or the necessity to perform as-found testing, with the exception of setpoint testing of relief valves and MOV testing performed in accordance with Code Case OMN-1 or Mandatory Appendix III. Nevertheless, there has been significant concern raised by the NRC, and documented in numerous publications, over this issue. Section 3.5 of Reference 2 provides guidance on preconditioning as it relates to IST; Section 3.6 provides additional guidance on as-found testing. It is the intent of this Technical Position to provide a unified, consistent approach to the issue of preconditioning as it applies to IST Programs throughout the Exelon fleet.

The purpose of IST is to confirm the operational readiness of pumps and valves within the scope of the IST Program to perform their intended safety functions whenever called upon. This is generally accomplished by testing using quantifiable parameters which provide an indication of degradation in the performance of the component. Preconditioning can diminish or eradicate the ability to obtain any meaningful measurement of component degradation, thus defeating the purpose of the testing.

Preconditioning is defined as the alteration, variation, manipulation, or adjustment of the physical condition of a system, structure, or component before Technical Specification surveillance or ASME Code testing. Since IST is a component-level program, this Technical Position will address preconditioning on a component-level basis. Preconditioning may be acceptable or unacceptable..

- Acceptable preconditioning is defined as preconditioning which is necessary for the protection of personnel or equipment, which has been evaluated as having insufficient impact to invalidate the results of the surveillance test, or which provides performance data or information which is equivalent or superior to that which would be provided by the surveillance test.
- Unacceptable preconditioning is preconditioning that could potentially mask degradation of a component and allow it to be returned to or remain in service in a degraded condition.

In most cases, the best means to eliminate preconditioning concerns is to perform testing in the as-found condition. When this is not practical, an evaluation must be performed to determine if the preconditioning is acceptable. Appendix 1 to this Technical Position may be used to document this evaluation.

The acceptability or unacceptability of preconditioning must be evaluated on a case-by-case basis due to the extensive variability in component design, operation, and performance requirements. Preconditioning of pumps may include filling and venting of pump casings, venting of discharge piping, speed adjustments, lubrication, adjustment of seals or packing, etc. Preconditioning of

valves may include stem lubrication, cycling of the valve prior to the "test" stroke, charging of accumulators, attachment of electrical leads or jumpers, etc.

Factors to be considered in the evaluation of preconditioning acceptability include component size and type, actuator or driver type, design requirements, required safety functions, safety significance, the nature, benefit, and consequences of the preconditioning activity, the frequencies of the test and preconditioning activities, applicable service and environmental conditions, previous performance data and trends, etc.

Lubrication of a valve stem provides an example of the variability of whether or not a preconditioning activity is acceptable. For example, lubrication of the valve stem of an AC-powered MOV during refueling outages for a valve that is exercise tested quarterly would normally be considered acceptable, unless service or environmental conditions could cause accelerated degradation of its performance. Lubrication of a valve stem each refueling outage for an MOV that is exercise tested on a refueling outage frequency may be unacceptable if the lubrication is always performed prior to the exercise test. Lubrication of a valve stem for an AOV prior to exercise testing is likely to be unacceptable, unless it can be documented that the preconditioning (i.e., maintenance or diagnostic testing) can provide equal or better information regarding the as-found condition of the valve. Manipulation of a check valve or a vacuum breaker that uses a mechanical exerciser to measure breakaway force prior to surveillance testing would be unacceptable preconditioning. Additional information regarding preconditioning of MOVs may be found in Reference 4.

Position:

1. Preconditioning **SHALL** be avoided unless an evaluation has been performed to determine that the preconditioning is acceptable. Appendix 1 to this Technical Position may be used to document this evaluation. In cases where the same information applies to more than one component, a single acceptability evaluation may be performed and documented.

2. Evaluations **SHALL** be prepared, reviewed and approved by persons with the appropriate level of knowledge and responsibility. For example, persons preparing an evaluation should hold a current certification in the area related to the activity. Reviewers should be certified in a related area.

3. The evaluation **SHALL** be approved by a Manager or designee.

4. If it is determined that an instance of preconditioning has occurred without prior evaluation, the evaluation **SHALL** be performed as soon as practicable following discovery. If the evaluation concludes that the preconditioning is unacceptable, an IR shall be written to evaluate the condition and identify corrective actions.

References:

1. NRC Information Notice 97-16, "Preconditioning of Plant Structures, Systems, and Components before ASME Code Inservice Testing or Technical Specification Surveillance Testing".
2. NUREG-1482, Revision 1 (January, 2005), Section 3.5 "Pre-Conditioning of Pumps and Valves".
3. NRC Inspection Manual Part 9900: Technical Guidance, "Maintenance – Preconditioning of Structures, Systems and Components Before Determining Operability".
4. ER-AA-302-1006, "Generic Letter 96-05 Program Motor-Operated Valve Maintenance and Testing Guidelines"
5. ER-AA-321, "Administrative Requirements for Inservice Testing"

CTP-IST-001 APPENDIX 1
EVALUATION OF PRECONDITIONING ACCEPTABILITY

Description of activity:

Section 1: NRC Inspection Manual Part 9900 Review:

Answer the following questions to determine the acceptability of the preconditioning activity based on Section D.2 of Reference 3.

Question	*Yes*	*No*	*Not Determined*
1. Does the alteration, variation, manipulation or adjustment ensure that the component will meet the surveillance test acceptance criteria?	☐	☐	☐
2. Would the component have failed the surveillance without the alteration, variation, manipulation or adjustment?	☐	☐	☐
3. Does the practice bypass or mask the as-found condition?	☐	☐	
4. Is the alteration, variation, manipulation or adjustment routinely performed just before the testing?	☐	☐	
5. Is the alteration, variation, manipulation or adjustment performed only for scheduling convenience?	☐	☐	

If all the answers to Questions 1 thru 5 are No, the activity is acceptable; go to Section 3. Otherwise, continue to Section 2.

Section 2: Additional Evaluation

The following questions may be used to determine if preconditioning activities that do not meet the screening criteria of Section 1 are acceptable

Question	*Yes*	*No*
6. Is the alteration, variation, manipulation or adjustment required to prevent personnel injury or equipment damage? If yes, explain below.	☐	☐
7. Does the alteration, variation, manipulation or adjustment provide performance data or information that is equivalent or superior to that provided by the surveillance test? If yes, explain below.	☐	☐
8. Is the alteration, variation, manipulation or adjustment being performed to repair, replace, inspect or test an SSC that is inoperable or is otherwise unable to meet the surveillance test acceptance criteria? If yes, explain below.	☐	☐
9. Is there other justification to support classification of the alteration, variation, manipulation or adjustment as acceptable preconditioning? If yes, explain below and provide references.	☐	☐

Explanation / Details: (attach additional sheets as necessary)

Conclusion: The preconditioning evaluated herein **(is / is not)** acceptable. (Circle one)

Section 3: Review / Approve

Prepared by:	Date:
Reviewed by:	Date:
Approved by:	Date:

ATTACHMENT 13

Number: **CTP-IST-002, Rev. 1**

Title: **Quarterly Pump Testing Under Full Flow Conditions**

Applicability: ASME OM-1995 Code and Later, Subsection ISTB

Background: Pumps included in the scope of the IST Program are classified as Group A or Group B. The OM Code defines a Group A pump as a pump that is operated continuously or routinely during normal operation, cold shutdown, or refueling operations. A Group B pump is defined as a pump in a standby system that is not operated routinely except for testing.

Testing of pumps in the IST Program is performed in accordance with Group A, Group B, comprehensive or preservice test procedures. In general, a Group A test procedure is intended to satisfy quarterly testing requirements for Group A pumps, a Group B test procedure is intended to satisfy quarterly testing requirements for Group B pumps and a comprehensive test procedure is required to be performed on a frequency of once every two years for all Group A and Group B pumps. The Code states that when a Group A test is required a comprehensive test may be substituted; when a Group B test is required a comprehensive test or a Group A test may be substituted. A preservice test may be substituted for any inservice test. The Corporate Exelon position on preservice testing requirements for pumps in the IST Program is provided in CTP-IST-005.

Subsection ISTB provides different acceptance, alert and required action ranges for centrifugal, vertical line shaft, non-reciprocating positive displacement and reciprocating positive displacement pumps, for Group A, Group B and comprehensive pump tests. In each case, the acceptance bands for flow and differential or discharge pressure for the comprehensive test are narrower than those for the Group A and Group B tests. Since comprehensive pump test requirements did not exist prior to the OM-1995 Code, and since the frequency of comprehensive tests is once every two years, most stations have a limited history of comprehensive pump test performance. Thus, pumps that have demonstrated satisfactory results during quarterly testing over a period of several years may fail a comprehensive test while continuing to operate at the same performance level.

Position: The following points summarize the Exelon position on full-flow testing of pumps:

1. Any specific pump is either Group A or Group B; it cannot be both. Any pump that is operated routinely for any purpose, except for the performance of inservice testing, is a Group A pump. A pump cannot be classified as Group A for certain modes of operation and Group B for other modes of operation (e.g., pumps used for shutdown cooling are Group A pumps), unless authorized by means of an NRC-approved Relief Request.
2. Under certain circumstances, similar or redundant pumps may be classified differently. For example, if a station has four identical RHR pumps with two used for shutdown cooling and two dedicated to ECCS service, the shutdown cooling pumps would be Group A, whereas the dedicated ECCS pumps would be Group B provided they were maintained in standby except when performing inservice testing.

3. Quarterly testing of Group A pumps shall be performed in accordance with a Group A or comprehensive test procedure. Post-maintenance testing of Group A pumps shall be performed in accordance with a Group A, a comprehensive, or a preservice test procedure.
4. Quarterly testing of Group B pumps shall be performed in accordance with a Group B, Group A, or comprehensive test procedure. Post-maintenance testing of Group B pumps shall be performed in accordance with a Group A, a comprehensive, or a preservice test procedure.
5. Credit can only be taken for a comprehensive test if all of the OM Code requirements for a comprehensive test are met, including flow, instrument range and accuracy, and acceptance limits.

Regardless of test conditions, quarterly pump testing is required to meet the acceptance criteria specified for Group A or Group B pumps, as applicable, in the edition/addenda of the OM Code in effect at the Plant. More restrictive acceptance criteria may be applied optionally if desired to improve trending or administrative control.

The ASME OM Code has identified quarterly and comprehensive pump testing as distinctly separate tests with separate frequency and instrumentation requirements and separate acceptance criteria. When performing a quarterly (Group A or Group B) test under full flow conditions, it may be apparent that a comprehensive test limit was exceeded. In such cases, **ISSUE** an IR to describe and evaluate the condition and potential compensatory measures (e.g., establishing new reference values) prior to the next scheduled comprehensive test. No additional corrective actions are required.

References:

1. ASME OM Code, Code for Operation and Maintenance of Nuclear Power Plants, 1995 Edition and later, Subsection ISTB.

ATTACHMENT 13

Number: **CTP-IST-003, Rev. 0**

Title: **Quarterly Testing of Group B Pumps**

Applicability: ASME OM-1995 Code and Later

Background: Pumps included in IST Programs that must comply with the 1995 Edition of the ASME OM Code and later are required to be classified as either Group A or Group B pumps. The OM Code defines a Group A pump as a pump that is operated continuously or routinely during normal operation, cold shutdown, or refueling operations. A Group B pump is defined as a pump in a standby system that is not operated routinely except for testing.

Testing of pumps is performed in accordance with Group A, Group B, comprehensive or preservice test procedures. In general, a Group A test procedure is intended to satisfy quarterly testing requirements for a Group A pump, a Group B test procedure is intended to satisfy quarterly testing requirements for a Group B pump, and a comprehensive test procedure is required to be performed on a frequency of once every two years for all Group A and Group B pumps. A Group A test procedure may be substituted for a Group B procedure and a comprehensive or preservice test procedure may be substituted for a Group A or a Group B procedure at any time.

A Group A test procedure is essentially identical to the quarterly pump test that was performed in accordance with OM-6 and earlier Code requirements. Group B testing was introduced to the nuclear industry when the NRC endorsed the OM-1995 Edition with OMa-1996 Addenda in 10 CFR 50.55a(b)(3). The intent of the Group B test was to provide assurance that safety related-pumps that sit idle essentially all of the time (e.g. ECCS pumps) would be able to start on demand and achieve a pre-established reference condition. The requirements for Group B testing were significantly relaxed when compared with the Group A (traditional) pump test requirements based on the assumption that there were no mechanisms or conditions that would result in pump degradation while the pump sat idle.

Strong differences of opinion regarding the intent and requirements for Group B testing developed and have persisted since the beginning. These differences span the industry, the NRC, and even members of the OM Code Subgroup-ISTB who created them. One opinion is that the Group B test is intended to be a "bump" test in which the pump is started, brought up to reference flow or pressure, and then stopped. The opposing opinion is that the Group B test requires the pump to be brought to the reference flow or pressure followed by recording and evaluation of both the flow and pressure readings. Both opinions can be supported by the applicable OM Code verbiage. However, NRC personnel have expressed a reluctance to accept the "bump" test interpretation.

Position: Group B pump testing should be performed as follows:

1. When performing a Group B pump test, both hydraulic test parameters (i.e., flow and differential pressure OR flow and discharge pressure) shall be

measured and evaluated in accordance with the applicable Code requirements for the pump type.

2. Vibration measurements are not required for Group B pump tests. Vibration measurements may continue to be taken optionally. In the event that a vibration reading exceeds an alert or required action limit for the comprehensive test for the pump being tested, an IR shall be written and corrective action taken in accordance with the CAP process.

References:

1. ASME OM Code, Code for Operation and Maintenance of Nuclear Power Plants, 1995 Edition and later, Subsection ISTB

ATTACHMENT 13

Number: **CTP-IST-004, Rev. 1**

Title: **Classification of Pumps: Centrifugal vs. Vertical Line Shaft**

Applicability: All Exelon IST Programs

Background: Early Code documents that provided requirements for inservice testing of pumps did not differentiate between pump types. Subsection IWP of the ASME Boiler and Pressure Vessel Code, Section XI, required the measurement of flow, differential pressure and vibration and comparison of the measured data with reference values, similar to the way in which centrifugal pump testing is currently performed. Some additional measurements were required (e.g., bearing temperature, lubrication level or pressure) which were later determined to be of minimal value to IST. A major limitation in the earlier Code was that the same parameters and acceptance criteria were specified for all pumps.

With the development of the OM Standards (OM-1, OM-6, OM-10, etc.), it was recognized that pumps of different design performed differently and required different measurement criteria to determine acceptable performance. For example, discharge pressure was determined to be a more representative measurement of performance for a positive displacement pump than differential pressure. Part 6 of the OM Standards (OM-6), also introduced different criteria for inservice testing of centrifugal and vertical line shaft pumps. Unfortunately, it did not provide any definition for a vertical line shaft pump.

The definition of "vertical line shaft" pump was first incorporated into the OM-1998 Edition of the OM Code as "a vertically suspended pump where the pump driver and pump element are connected by a line shaft within an enclosed column." This definition failed to eliminate much of the uncertainty in determining whether certain pumps were vertically-oriented centrifugal pumps or vertical line shaft pumps. Further confusion was created by the choice of wording used in the OM Code Tables that specify the acceptance criteria for centrifugal and vertical line shaft pumps.

Position: Code requirements for vibration measurement provide the clearest indication of the difference between a centrifugal pump and a vertical line shaft pump. On centrifugal pumps, vibration measurements are required to be taken in a plane approximately perpendicular to the rotating shaft in two approximately orthogonal directions on each accessible pump-bearing housing and in the axial direction on each accessible pump thrust bearing housing. On vertical line shaft pumps, measurements are required to be taken on the upper motor-bearing housing in three approximately orthogonal directions, one of which is the axial direction.
Therefore, a pump which is connected to its driver by a vertically-oriented shaft in which vibration measurements must be taken on the pump motor due to the inaccessibility of the pump bearings will be classified as a vertical line shaft pump.
For plants using the 1998 Edition of the OM Code through the OMb-2003 addenda, Table ISTB-5100-1 applies to all horizontally and vertically-oriented centrifugal pumps; Table ISTB-5200-1 applies to vertical line shaft pumps. For plants using the 2004 Edition of the OM Code and later, Table ISTB-5121-1

applies to all horizontally and vertically-oriented centrifugal pumps; Table ISTB-5221-1 applies to vertical line shaft pumps.

References:

1. ASME OMa-1988, ASME/ANSI Operation and Maintenance of Nuclear Power Plants, Part 6, Inservice Testing of Pumps in Light-Water Reactor Power Plants.
2. ASME OM Code, Code for Operation and Maintenance of Nuclear Power Plants, 1995 Edition and later, Subsection ISTB.

ATTACHMENT 13

Number: **CTP-IST-005, Rev. 1**

Title: **Preservice Testing of Pumps**

Applicability: OM-1995 Code and Later

Background: Requirements for preservice testing of pumps have been stated in ASME Code documents since the beginning. However, the 1995 Edition of the OM Code significantly expanded the scope of preservice testing by introducing the requirement that centrifugal and vertical line shaft pumps in systems where resistance can be varied establish a pump curve by measuring flow and differential pressure at a minimum of five points. These points are required to be from pump minimum flow to at least design flow, if practicable. At least one point is to be designated as the reference point for future inservice tests.

The OM Codes further state that it is the responsibility of the Owner to determine if preservice testing requirements apply when reference values may have been affected by repair, replacement, or maintenance on a pump. A new reference value or set of values is required to be determined or the previous reference value(s) reconfirmed by a comprehensive or Group A test prior to declaring the pump operable.

Position: Whenever a pump's [hydraulic] reference values may have been affected by repair, replacement, or maintenance, a preservice test **SHALL** be performed in accordance with the preservice test requirements of Reference 1 of this CTP for the applicable pump design. If it is determined through evaluation that the maintenance activity did not affect the existing reference values, then the previous reference value(s) **SHALL** be reconfirmed by a comprehensive or Group A test prior to declaring the pump operable. Evaluation that the maintenance activity did not affect the pump's reference values **SHALL BE DOCUMENTED**.

Since a preservice test may be substituted for any other required inservice test, this test could be performed in place of any quarterly or comprehensive test. Performing it in lieu of a comprehensive test would have minimal impact on test scope or schedule and would provide valuable information for subsequent evaluations of pump performance.

For centrifugal and vertical line shaft pumps in systems with variable resistance, one of the five points on the preservice test curve (preferably one between 100% and 120% of design flow but in no case less than 80% of design flow) **SHALL** be selected as the reference point for the comprehensive tests. If quarterly testing will be performed at full flow, then the same point should be selected for the quarterly pump tests. If quarterly testing cannot be performed at full flow, then another point on the preservice test curve **SHALL** be selected as the reference point for the quarterly tests.

References:

1. ASME OM Code, Code for Operation and Maintenance of Nuclear Power Plants, 1995 Edition and later, Subsection ISTB.

ATTACHMENT 13

Number: **CTP-IST-006, Rev. 0**

Title: **Classification and Testing of Class 1 Safety/Relief Valves With Auxiliary Actuating Devices**

Applicability: All Exelon IST Programs

Background: he definition for valve categories in the ASME Codes has been consistent since the beginning. Category A, B, C and D valves are basically defined the same now as they were in early editions/addenda of Section XI of the ASME Boiler and Pressure Vessel Code. Likewise, the requirement that valves meeting the definition for more than one category be tested in accordance with all the applicable categories has been consistent over time.

Due to a lack of clear testing requirements for Class 1 Safety/Relief Valves With Auxiliary Actuating Devices in early ASME Codes, these valves were historically classified as Category B/C. As relief valves, they were required to meet the Category C testing requirements; and since the auxiliary operators essentially put them in the classification of power-operated valves, Category B requirements were imposed to address stroke-time and position indication testing considerations.

Position: The B/C categorization of these valves was initially made due to a lack of specific Code requirements. However, with the publication of ASME OM Standard OM-1 in 1981, which identified specific requirements for these valves, it became irrelevant. All applicable testing requirements for these valves were specified in OM-1, which has been superseded by Appendix I of the ASME OM Code. Efforts of the Code to exempt these valves from Category B testing requirements further demonstrate their inapplicability. Therefore, these valves should be classified as Category C.

References:

1. ASME OM-1987, ASME/ANSI Operation and Maintenance of Nuclear Power Plants, Part 1, Requirements for Inservice Performance Testing of Nuclear Power Plant Pressure Relief Devices.
2. ASME OM Code, Code for Operation and Maintenance of Nuclear Power Plants, 1995 Edition and later, Subsection ISTC and Appendix I.

ATTACHMENT 13

Number: **CTP-IST-007, Rev. 1**

Title: **Skid-Mounted Components**

Applicability: All Exelon IST Programs

Background: The term "skid-mounted component" was coined to describe support components, such as pumps and valves for the purposes of IST, that function in the operation of a supported component in such a way that their proper functioning is confirmed by the operation of the supported component. For example, the successful operation of an emergency diesel-generator set confirms that essential support equipment, such as cooling water and lube oil pumps and valves, are functioning as required. The concept of "skid-mounted" is actually irrespective of physical location.

Position: Components 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 are required to tested in accordance with the ASME Code-in-effect for the station's IST Program. It is not the intent of the skid-mounted exemption that it be used in cases where the specific testing requirements of the Code for testing of pumps and valves can be met. For example, if adequate instrumentation is provided to measure a pump's flow and differential pressure, and if required points for vibration measurement can be accessed, then invoking the skid-mounted exemption would be inappropriate.

The "skid-mounted" exclusion as stated in references 2 and 3, below, may be applied to pumps or valves classified as "skid-mounted" in the IST Program provided that they are tested as part of the major component and are justified to be adequately tested. Such components **SHALL** be listed in the Program Plan document and identified as skid-mounted. Pump or Valve Data Sheets which contain the justification regarding the adequacy of their testing **SHALL** be provided in the IST Bases Document.

References:

1. NUREG-1482 (Rev.0 and Rev.1), Section 3.4, Skid-Mounted Components and Component Subassemblies
2. ASME OM Code, Code for Operation and Maintenance of Nuclear Power Plants, 1995 Edition OMa-1996 Addenda, ISTA 1.7, ISTC 1.2.
3. ASME OM Code, Code for Operation and Maintenance of Nuclear Power Plants, 1998 Edition and later, ISTA-2000 and ISTC-1200.

ATTACHMENT 13

Number: **CTP-IST-008, Rev. 0**

Title: **Position Verification Testing**

Applicability: All Exelon IST Programs

Background: Valves with remote position indicators are required to be observed locally at least once every two years to verify that valve operation is accurately indicated. This local observation should be supplemented by other indications to verify obturator position. Where local observation is not possible, other indications shall be used for verification of valve operation.

Position: All valves within the scope of the IST Program that are equipped with remote position indicators, shall be tested. The testing shall clearly demonstrate that the position indicators operate as required and are indicative of obturator position. For example, a valve that has open and closed indication shall be cycled to demonstrate that both the open and closed indicators perform as designed, including both or neither providing indication when the valve is in mid-position. Valves that have indication in one position only shall be cycled to ensure that the indicator is energized/de-energized when appropriate. These requirements apply to all IST valves, regardless of whether they are classified as active or passive.

References:

1. ASME OM Code, Code for Operation and Maintenance of Nuclear Power Plants, 1995 Edition with OMa-1996 Addenda, para ISTC 4.1.
2. ASME OM Code, Code for Operation and Maintenance of Nuclear Power Plants, 1998 Edition and later, para ISTC-3700.
3. NUREG-1482, Rev. 1, Section 4.2.8

ATTACHMENT 13

Number: **CTP-IST-009, Rev. 0**

Title: **ASME Class 2 & 3 Relief Valve Testing Requirements**

Applicability: All Exelon IST Programs

Background: The ASME OM Code, Appendix I, provides requirements for Inservice Testing of ASME Class 1, 2, and 3 Pressure Relief Devices. The requirements for Class 1 pressure relief devices are identified separately from those for Classes 2 and 3. The requirements for Class 2 and 3 pressure relief devices are identified together.

This Technical Position applies only to ASME Class 2 and 3 safety and relief valves. It does not include vacuum breakers or rupture discs. Class 2 PWR Main Steam Safety Valves are also not included in this Technical Position because they are required to be tested in accordance with ASME Class 1 safety valve requirements.

Position: This Technical Position applies to the classification, selection, scheduling and testing of ASME Class 2 and 3 safety and relief valves only. For the purposes of this Technical Position, the term "relief valve" will be used to apply to both types.

Classification

DETERMINE whether or not the valve may be classified as a thermal relief. A thermal relief valve is one whose only over-pressure protection function is to protect isolated components, systems, or portions of systems from fluid expansion caused by changes in fluid temperature. If a relief valve is required to perform any other function in protecting a system or a portion of a system that is required to place the reactor in the safe shutdown condition, to maintain the safe shutdown condition, or to mitigate the consequences of an accident, it cannot be classified as a thermal relief valve.

Class 2 and Class 3 thermal relief valves are required to be **TESTED** or **REPLACED** every 10 years unless performance data indicates the need for more frequent testing or replacement. Details regarding whether a Class 2 or Class 3 thermal relief valve is tested or replaced and the bases for the associated frequency **SHALL** be documented in the IST Bases Document.

Grouping, sample expansion and the requirement to test 20% of the valves within any 48-month period do not apply to Class 2 and Class 3 thermal relief valves. Class 2 and 3 thermal relief valves may be optionally tested in accordance with the more conservative requirements for non-thermal relief valves if desired.

Non-thermal relief valves shall be grouped in accordance with the grouping criteria of Appendix I (same manufacturer, type, system application, and service media). Groups may range in size from one valve to all of the valves meeting the grouping criteria. Grouping criteria **SHALL** be documented in the IST Bases Document or other document that controls Class 2 and 3 IST relief valve testing.

If two valves are manufactured at the same facility to the same specifications, dimensions, and materials of construction but under a different manufacturer's name due to a merger or acquisition, the valves may be considered to meet the requirement for same manufacturer.

Valves in systems containing air or nitrogen may be considered to have the same service media.

Selection

Valves **SHALL** be selected for testing such that the valve(s) in each group with the longest duration since the previous test are chosen first. This **SHALL INCLUDE** any valves selected due to sample expansion.

IF an exception to this requirement is necessary due to accessibility or scheduling considerations, **DOCUMENT** the reason and that the valves that should have been selected will not come due prior to the next opportunity to test them (e.g., the next outage).

Scheduling

Grace is **NOT** permitted for relief valve testing, unless authorized by an NRC-approved relief request.

All frequency requirements are test-to-test (i.e., they begin on the most recent date on which the valve was tested per Appendix I requirements and end on the date of the next Appendix I test).

All Class 2 or Class 3 relief valves in any group must be tested at least once every 10 years.

Valves within each group must be tested such that a minimum of 20% of the valves are tested within any given 48-month period.

If all of the valves in a group are removed for testing and replaced with pretested valves, the removed valves shall be tested within 12 months of removal from the system.

If less than all of the valves in a group are removed for testing and replaced with pretested valves, the removed valves shall be tested within 3 months of removal from the system or before resumption of electric power generation, whichever is later.

Testing of pretested valves must have been performed such that they will meet the 10 year and 20% / 48-month requirements for the entire time they are in service.

Testing of relief valves that is required to be performed during an outage **SHALL BE PERFORMED** as early in the outage as practicable in order to allow for contingency testing of additional valves in the event a scheduled valve fails its as-found test.

Testing

Testing **SHALL BE PERFORMED** using the same service media wherein the valve was installed.

Testing of additional valves due to failure of a scheduled valve to meet its as-found setpoint acceptance criteria **SHALL BE PERFORMED** in accordance with all applicable OM Code and Technical Specification requirements.

References:

1. ASME OM Code, 1995 Edition and later, Mandatory Appendix I, Inservice Testing of Pressure Relief Devices in Light-Water Reactor Nuclear Power Plants

ATTACHMENT 13

Number: **CTP-IST-010, Rev. 0**

Title: **ERV and PORV Testing Requirements**

Applicability: Exelon Stations with Electromatic Relief Valves or Power-Operated Relief Valves

Background: Electromatic Relief Valves (ERVs) and Power-Operated Relief Valves (PORVs) are used at nuclear plants to protect the Reactor Coolant pressure boundary from overpressure under various conditions. This may include preventing excessive challenges to BWR Main Steam Safety Valves and PWR Pressurizer Safety Valves during operation at power or preventing low temperature overpressure (LTOP) conditions from exceeding brittle fracture limits when the plant is cooled down.

ERVs and PORVs come in a variety of designs, which can make their categorization and testing in accordance with OM Code requirements challenging. Some are actual relief valves that are equipped with air operators to open the valves against spring force upon actuation by some pressure-sensing apparatus in the primary coolant system. Others may be motor-operated gate valves that open and close as a result of signals generated at predetermined pressure settings. The key to determining the proper category of the ERV or PORV is not the nomenclature of the valve (i.e., "relief valve"), but the actual physical design of the valve and its actuator.

Power-operated relief valves were not addressed by the ASME Codes until the OMa-1996 Addenda. Even then, they were only alluded to by the addition of an exclusion to paragraph ISTC 1.2 which stated: "Category A and B safety and relief valves are excluded from the requirements of ISTC 4.1, Valve Position Verification and ISTC 4.2, Inservice Exercising Test." Up to this point, Owners typically categorized these valves as Category B/C, assigned the position verification and exercise test requirements for the Category B portion, and then obtained Relief from the NRC to not perform them due to their impracticability. The Relief Requests provided a detailed description of the proposed alternative techniques, which generally matched Category C requirements for valves with auxiliary actuators.

Paragraph ISTC-5110 was introduced in the OM-1998 Edition of the OM Code which stated: "Power-operated relief valves shall meet the requirements of ISTC-5100 for the specific Category B valve type and ISTC-5240 for Category C valves." This essentially added no value, since this was already the practice.

OMb-2000 added the following definition of a power-operated relief valve to paragraph ISTC-2000, Supplemental Definitions: "a power-operated valve that can perform a pressure relieving function and is remotely actuated by either a signal from a pressure sensing device or a control switch. A power-operated relief valve is not capacity certified under ASME Section III overpressure protection requirements." In addition, OMb-2000 added the following to paragraph ISTC-3510: "Power-operated relief valves shall be exercise tested once per fuel cycle."

The addition of exclusions, definitions and test requirements to the Code for these valves has only tended to make actual testing requirements more conflicting or confusing. These valves are still being categorized as Category B, C or B/C (with

a few A's or A/C's) throughout the industry with testing requirements assigned accordingly and relief still being sought where deemed appropriate.

Position: Each Station **MUST DETERMINE** the proper valve category or categories for its ERVs and/or PORVs based on valve and actuator design, and **IDENTIFY** appropriate testing requirements and methodologies appropriate to that categorization. The following table summarizes the possible categories that can be applied to an ERV or PORV, whether or not the valve meets the definition of a PORV as defined in ISTC-2000, and the associated test requirements:

Category		Meets PORV Def.	Test Requirements		Comments
B	C		B	C	
X		No	**ISTC-3700** **ISTC-5120*** **ISTC-5130*** **ISTC-5140***		Valve is not a safety or relief valve; actuator is MO, AO or HO. Does **not** meet Code definition of PORV (ISTC-2000). Exercise test quarterly per ISTC-3510, or defer to Cold Shutdown or RFO per ISTC-3521.
X		Yes	**ISTC-3700** **ISTC-5110**		Valve meets Code definition of PORV (ISTC-2000). Exercise test once per fuel cycle per ISTC-3510 and ISTC-5110.
	X	No		**STC-5240 App. I**	Valve is a relief valve with AO or HO actuator. Does **not** meet Code definition of PORV (ISTC-2000). Exempt from Cat B testing (ISTC-3500/ISTC-3700) per ISTC-1200.
X	X	No		**ISTC-5240 App. I**	Valve is a relief valve with AO or HO actuator. Does **not** meet Code definition of PORV (ISTC-2000). Exempt from Cat B testing (ISTC-3500/ISTC-3700) per ISTC-1200.
X	X	Yes	**ISTC-3700** **ISTC-5110**		Should not be classified Category C. Relief valves do not meet the Code definition of PORV (ISTC-2000).

*** As applicable**

A Relief Request **SHALL BE SUBMITTED** for any ERV or PORV that does not meet the applicable test requirements specified in the above table.

A detailed description of the rationale behind the category designation, the assignment of testing requirements, and how they are satisfied **SHALL BE PROVIDED** on the applicable IST Bases Document Valve Data Sheets.

References:

1. ASME OM Code, 1995 Edition and later, Subsection ISTC, Inservice Testing of Valves in Light-Water Reactor Nuclear Power Plants
2. ASME OM Code, 1995 Edition and later, Mandatory Appendix I, Inservice Testing of Pressure Relief Devices in Light-Water Reactor Nuclear Power Plants

ATTACHMENT 13

Number: **CTP-IST-011, Rev. 0**

Title: **Extension of Valve Exercise Test Frequencies to Cold Shutdown or Refueling Outage**

Applicability: All Exelon IST Programs

Background: Requirements for exercise testing of Category A and B power-operated valves and check valves (Category C) are stipulated in the OM Code as follows:

ISTC-3510 states: "Active Category A, Category B and Category C check valves shall be exercised nominally every 3 mo, except as provided by paras. ISTC-3520, ISTC-3540, ISTC-3550, ISTC-3570, ISTC-5221 and ISTC-5222." Plant Technical Specifications for IST identify the 3 month frequency as once per 92 days with allowance for a 25% extension.

ISTC-3520 is divided into ISTC-3521 for Category A and Category B valves, and ISTC-3522 for Category C check valves. ISTC-3521 states: "Category A and B valves shall be tested as follows:

(a) full-stroke exercising of Category A and Category B valves during operation at power to the position(s) required to fulfill its function(s).
(b) if full-stroke exercising during operation at power is not practicable, it may be limited to part-stroke during operation at power and full-stroke during cold shutdowns.
(c) if exercising is not practicable during operation at power, it may be limited to full-stroke exercising during cold shutdowns.
(d) if exercising is not practicable during operation at power and full-stroke during cold shutdowns is also not practicable, it may be limited to part-stroke during cold shutdowns and full-stroke during refueling outages.
(e) if exercising is not practicable during operation at power or cold shutdowns, it may be limited to full-stroke during refueling outages.

Paragraphs (f) through (h) provide additional limitations on cold shutdown and refueling outage exercise testing.
ISTC-3522 provides essentially the same requirements for check valves except that the requirement to consider partial-stroke exercising is not included.

ISTC-3540 stipulates exercise testing frequency requirements for manual valves. ISTC-3550 discusses valves in regular use, ISTC-3570 addresses valves in systems out-of-service, ISTC-5221 addresses special frequency considerations for check valves in a sample disassembly and inspection program, and ISTC-5222 addresses check valves in a condition monitoring program.

ISTC-3521 makes it clear that the intent of the Code is for valves to be exercised quarterly unless it is impracticable to do so. When it is impracticable, the graduated approach of ISTC-3521 through cold shutdown and refueling frequencies and partial and full-stroke exercising impose an obligation on the owner to perform at least some testing as frequently as practicable.

The determination of "practicability" is left to the owner. The industry has universally adopted the practice of writing Cold Shutdown and Refueling Outage

Justifications to document conditions that they believe to be "impracticable". There are no Code or regulatory definitions of impracticability nor are there any Code or regulatory requirements to prepare Cold Shutdown or Refueling Outage Justifications. However, Reference 2 provides a good deal of useful guidance regarding a regulatory opinion of what constitutes it. Merriam-Webster defines "impracticable" as (1) impassable or (2) not practicable; incapable of being performed or accomplished by the means employed or at command".

Position: The following direction **SHALL BE IMPLEMENTED** when establishing exercise test frequencies for power-operated Category A and B valves and Category C check valves:

1. Stations **SHALL DETERMINE** the practicability of performing exercise testing of all valves in their IST Programs in accordance with the Code.
2. When preparing or performing a technical revision to a Cold Shutdown or Refueling Outage Justification, the Station IST Engineer **SHALL OBTAIN** a peer review from the Corporate IST Engineer and at least one other Site IST Program Engineer.
3. Cold Shutdown and Refueling Outage Justifications **SHALL PROVIDE** a strong, clear technical case for the testing deferral. References to NUREG-1482 may be made to support the justification; however, it is not to be cited as the justification itself.

References:

1. ASME OM Code, 1995 Edition and later, Subsection ISTC, Inservice Testing of Valves in Light-Water Reactor Nuclear Power Plants
2. NUREG 1482, Revision 1, Guidelines for Inservice Testing at Nuclear Power Plants, Sections 2.4.5 and 3.1.

ATTACHMENT 13

Number: **CTP-IST-012, Rev. 0**

Title: **Use of ASME OM Code Cases for Inservice Testing**

Applicability: All Exelon IST Programs

Background: Code Cases are issued to clarify the intent of existing Code requirements or to provide alternatives to those requirements. Adoption of the alternative requirements provided by Code Cases are optional; they only become mandatory when an owner commits to them. Code Cases are included as a separate section at the end of published editions/addenda of the OM Code for the user's convenience. They are not a part of any Code edition or addenda and endorsement of specific editions/ addenda of the OM Code by the NRC does not constitute endorsement of the Code Cases.

If the Code Committee desires to make the requirements of a Code Case mandatory, those requirements are incorporated into the Code at a later date. For example, Code Case OMN-1, Alternative Rules for Preservice and Inservice Testing of Active Electric Motor Operated Valve Assemblies in Light-Water Reactor Power Plants, was incorporated into the 2009 Edition of the OM Code as Mandatory Appendix III. Appendix III will become mandatory for IST Programs when 10 CFR 50.55a imposes the requirement that 10-year interval updates meet the requirements of the 2009 Edition of the ASME Code or later. Until such time, plants may optionally implement OMN-1 or may continue to perform stroke-time testing and position indication verification in accordance with Subsection ISTC requirements.

In order for an OM Code Case to be used in an Inservice Testing Program at a nuclear power plant, it must be authorized by ASME and approved by the NRC. A Code Case is authorized for use by ASME as soon as it is published, provided certain limitations included in the Code Case, such as the applicability statement, are met. OM Code Cases are published on the ASME Web site at http:// cstools.asme.org and in Mechanical Engineering magazine as they are issued.

Efforts to clarify or simplify the use of Code Cases have instead created conflicting requirements which need to be addressed in order to avoid noncompliance with the Code or CFR. These include:

- The Code of Federal Regulations, paragraph 10 CFR 50.55a(b)(6) states that Licensees may apply ASME OM Code Cases listed in Regulatory Guide 1.192 without prior NRC approval subject to certain conditions. One condition states that when a licensee initially applies a listed Code case, the licensee shall apply the most recent version of the Code case "incorporated by reference in this paragraph". A second condition states that if a licensee has previously applied a Code case and a later version of the Code case is "incorporated by reference in this paragraph", the licensee may continue to apply, to the end of the current 120-month interval, the previous version of the Code case or may apply the later version of the Code case, including any NRC-specified conditions placed on its use. A third condition restricts the use of annulled Code cases to those that were in use prior to their annulment.

It is not clear what "incorporated by reference in this paragraph" is referring to. If "this paragraph" means 10 CFR 50.55a(b)(6), this would refer to Reg Guide 1.192. If it refers more broadly to 10 CFR 50.55a(b), this would also include 10CFR 50.55a(b)(3), which contains the endorsement of the latest edition/addenda of the OM Code approved for use by the NRC. In the first case, Reg Guide 1.192 was published in June 2003 with no revisions to date. Versions of the Code cases referenced therein have all exceeded their expiration dates and are not applicable to current Code editions. In the latter case, since Code Cases are independent of Code editions/addenda, there is a disconnect between approval of Code versus Code Cases.

- Requirements for the use of Code Cases are stipulated in the body of the OM Code. In all cases from the OM-1995 Edition through the OMa-2011 Addenda, it is required that "Code Cases shall be applicable to the edition and addenda specified in the inservice test plan" and " Code Cases shall be in effect at the time the inservice test plan is filed". These requirements are almost never met.
- Code Cases provided as attachments up to and including the OMb-2006 Addenda contained expiration dates. These dates are usually prior to the time it is desired to use the Code Case.
- Each Code Case contains an applicability statement. Even in the latest Edition/addenda of the Code incorporated by reference in 10 CFR 50.55a, these statements usually indicate that the Code Case applies to earlier versions of the Code than what is required to be used.

Despite the inconveniences in implementing Code Cases, they often provide alternatives to the Code that are technically superior and highly desirable from a cost-efficiency perspective. Therefore, each plant should review the potential use of Code Cases with Corporate Engineering, particularly when in the process of performing 10-year updates.

Position: The following requirements **SHALL BE IMPLEMENTED** in order to use ASME OM Code Cases at Exelon stations:

1. All Code Cases used by a Station for their IST Program **SHALL BE LISTED** in the IST Program Plan.
2. Code Case expiration dates, applicability statements, and the Edition/ addenda of the Code-in-effect for a Station's IST Program **SHALL** all be compatible for Code Cases implemented in an IST Program **OR** a Relief Request **SHALL BE SUBMITTED** to use the Code Case in accordance with Reference 2 of this CTP.

References:

1. ASME OM Code, 1995 Edition and later, Subsection ISTA, General Requirements
2. ER-AA-321, Administrative Requirements for Inservice Testing.

ATTACHMENT 13

Number: **CTP-IST-013, Rev. 0**

Title: **Exercise Testing Requirements for Valves with Fail-Safe Actuators**

Applicability: All Exelon IST Programs

Background: Valves with fail-safe positions usually 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.

The fail-safe test is generally an integral part of the stroke time exercise test and is thus performed at the same frequency. Where the exercise test is performed less frequent than every 3 months, a cold shutdown justification, refueling outage justification, or relief request is required. The same justification for the stroke time exercise test would also apply to the fail-safe test.

Position: In cases where normal valve operation moves the valve to the fail-safe position by de-energizing the operator electrically, by venting air, or both (e.g., a solenoid valve in the air supply system of a valve operator moves to the vent position on loss of power), no additional fail-safe testing is required.

In cases where a fail-safe actuator does not operate as an integral part of normal actuator operation, the fail-safe feature(s) must be tested in a manner that demonstrates proper operation of each component that contributes to the fail-safe operation. The means used to meet this requirement shall be described in the IST Bases Document.

References:

1. ASME OM Code, Code for Operation and Maintenance of Nuclear Power Plants, 1995 Edition and later, Subsection ISTC.

ATTACHMENT 13

Number: **CTP-IST-014, Rev. 0**

Title: **Bi-directional Testing of Check Valves to Their Safety and Non-Safety Related Positions**

Applicability: All Exelon IST Programs

Background: This CTP addresses those cases in which inservice testing of check valves is performed in accordance with the requirements of ISTC-5221. It does not address these issues for check valves that are included in a Condition Monitoring Program. References 2 and 3 of this CTP provide additional information regarding check valve testing and Condition Monitoring.

The OM Code changed the focus of inservice testing of check valves from the ability to demonstrate that a check valve was capable of being in its safety-related position to demonstrating that the obturator was capable of free, unobstructed movement in both directions. This was accomplished by introducing a bidirectional testing requirement to inservice testing of check valves. Confirmation of this change in focus is evidenced by the fact that the Code required frequency for bi-directional testing of check valves is the lesser of the frequencies that the open direction and close direction tests can be performed. In other words, if a check valve is capable of being tested in the open direction quarterly but can only be tested closed during refueling outages, the Code required frequency for the bidirectional test is every refueling outage irrespective of the valve's safety position(s).

Condition Monitoring is the preferred method for check valve testing and inspection. For check valves that are not in a Condition Monitoring Program, the OM Code provides three options: flow/flow reversal, use of an external mechanical exerciser, and sample disassembly/examination. Of these, the flow and mechanical exerciser methods are preferred; the Code limits sample disassembly/ examination to those cases where the others are impractical. In all of these non-Condition Monitoring methods, demonstration of unobstructed obturator travel in the open and closed directions is required.

Position: The following requirements **SHALL BE MET** when implementing this CTP:

1. When using flow to demonstrate opening of a check valve with an open safety function, **OBSERVE** that the obturator has traveled to **EITHER** the full open position **OR** to the position required to perform its intended safety function(s).
   Travel to the position required to perform its intended safety function(s) is defined as the minimum flow required to mitigate the system's most limiting accident requirements. For example, if three different accident scenarios called for flows of 300, 600 and 1000 gpm respectively, the required test flow would be 1000 gpm.
   The full open position is defined as the point at which the obturator is restricted from further travel (e.g., hits the backstop). Methods for demonstrating travel to the full open position must be qualified if less than required accident flow is used.

2. When using flow to demonstrate that the obturator of a valve that does not have an open safety function has traveled open, the test **MUST DEMONSTRATE** that the obturator is unimpeded.
3. Tests for check valve closure **MUST DEMONSTRATE** that the check valve has travelled to the closed position, not merely that it is in the closed position.
4. Whenever design requirements are used for IST acceptance criteria, instrument accuracy **MUST BE CONSIDERED**. This can be accomplished by determining that sufficient margin was included in the design calculation or by adding a correction to the IST acceptance criteria.
5. Non-intrusive methods used to credit obturator position **SHALL BE QUALIFIED**. Documentation of the means used to qualify the test method(s) shall be documented in the IST Bases Document.
6. The Code requirement satisfied for each check valve, identification of the method used to satisfy the Code requirement, and a description of how the method satisfies the requirement **SHALL BE PROVIDED OR REFERENCED** on the Valve Data Sheet in the IST Bases Document for each check valve..

References:

1. ASME OM Code, Code for Operation and Maintenance of Nuclear Power Plants, 1995 Edition and later, Subsection ISTC.
2. ER-AA-321, Administrative Requirements for Inservice Testing
3. ER-AA-321-1005, Condition Monitoring for Inservice Testing of Check Valves

ATTACHMENT 14
INSERVICE TESTING PUMP TABLE

Attachment 14
Inservice Testing Pump Table

REACTOR BUILDING SPRAY (Page 1)

Pump EPN	Test Group	Safety Class	Pump Type	Pump Driver	Nominal Speed	P&ID	P&ID Coor.	Test Type	Test Freq.	Relief Request	Tech. Pos.	Comments
1-BS-P-1A	AB	2	C	M	3600	302-712	A-6	Differential Pressure - Grp A	Q	PR-02		
	AB							Flow Rate - Grp A	Q	PR-02		
	AB							Vibration - Grp A	Q	PR-02		
		Pump Name REACTOR BUILDING SPRAY PUMP "A"										
1-BS-P-1B	AB	2	C	M	3600	302-712	B-6	Differential Pressure - Grp A	Q	PR-02		
	AB							Flow Rate - Grp A	Q	PR-02		
	AB							Vibration - Grp A	Q	PR-02		
		Pump Name REACTOR BUILDING SPRAY PUMP "B"										

Attachment 14
Inservice Testing Pump Table

REACTOR PLANT CHEMICAL ADDITION (Page 1)

Pump EPN	Test Group	Safety Class	Pump Type	Pump Driver	Nominal Speed	P&ID	P&ID Coor.	Test Type	Test Freq.	Relief Request	Tech. Pos.	Comments
1-CA-P-1A	B	3	PDR	M	1725	302-670	E-6	Discharge Pressure – Grp B	Q			
	B							Flow Rate - Grp B	Q			
	B							Vibration – Grp B	Q			
		Pump Name BORIC ACID INJECTION PUMP "A"										
1-CA-P-1B	B	3	PDR	M	1725	302-670	E-5	Discharge Pressure – Grp B	Q			
	B							Flow Rate - Grp B	Q			
	B							Vibration – Grp B	Q			
		Pump Name BORIC ACID INJECTION PUMP "B"										

Attachment 14
Inservice Testing Pump Table

CONTROL BUILDING CHILLED WATER (Page 1)

Pump EPN	Test Group	Safety Class	Pump Type	Pump Driver	Nominal Speed	P&ID	P&ID Coor.	Test Type	Test Freq.	Relief Request	Tech. Pos.	Comments
1-AH-P-3A	A	3	C	M	1750	302-847	C-5	Differential Pressure - Grp A	Q	PR-02		
	A							Flow Rate - Grp A	Q	PR-02		
	A							Vibration - Grp A	Q	PR-02		
		Pump Name CONTROL BUILDING CHILLED WATER SUPPLY PUMP "A"										
1-AH-P-3B	A	3	C	M	1750	302-847	A-5	Differential Pressure - Grp A	Q	PR-02		
	A							Flow Rate - Grp A	Q	PR-02		
	A							Vibration - Grp A	Q	PR-02		
		Pump Name CONTROL BUILDING CHILLED WATER SUPPLY PUMP "B"										

Attachment 14
Inservice Testing Pump Table

DECAY HEAT CLOSED CYCLE COOLING WATER (Page 1)

Pump EPN	Test Group	Safety Class	Pump Type	Pump Driver	Nominal Speed	P&ID	P&ID Coor.	Test Type	Test Freq.	Relief Request	Tech. Pos.	Comments
1-DC-P-1A	A	3	C	M	1150	302-645	D-3	Differential Pressure - Grp A	Q	PR-02		
	A							Flow Rate - Grp A	Q	PR-02		
	A							Vibration - Grp A	Q	PR-02		
		Pump Name DH CLOSED COOLING WATER PUMP "A"										
1-DC-P-1B	A	3	C	M	1150	302-645	D-2	Differential Pressure - Grp A	Q	PR-02		
	A							Flow Rate - Grp A	Q	PR-02		
	A							Vibration - Grp A	Q	PR-02		
		Pump Name DH CLOSED COOLING WATER PUMP "B"										

Attachment 14
Inservice Testing Pump Table

EMERGENCY DIESEL GENERATORS FUEL SYSTEMS (Page 1)

Pump EPN	Test Group	Safety Class	Pump Type	Pump Driver	Nominal Speed	P&ID	P&ID Coor.	Test Type	Test Freq.	Relief Request	Tech. Pos.	Comments
1-DF-P-1A		N/A	PDN	M	1750	302-351	D-7	Flow Rate	Q		IST-007	
		Pump Name DIESEL FUEL OIL PUMP "A"										
1-DF-P-1B		N/A	PDN	M	1750	302-351	D-6	Flow Rate	Q		IST-007	
		Pump Name DIESEL FUEL OIL PUMP "B"										
1-DF-P-1C		N/A	PDN	M	1750	302-351	D-3	Flow Rate	Q		IST-007	
		Pump Name DIESEL FUEL OIL PUMP "C"										
1-DF-P-1D		N/A	PDN	M	1750	302-351	D-2	Flow Rate	Q		IST-007	
		Pump Name DIESEL FUEL OIL PUMP "D"										

Attachment 14
Inservice Testing Pump Table

DECAY HEAT REMOVAL (Page 1)

Pump EPN	Test Group	Safety Class	Pump Type	Pump Driver	Nominal Speed	P&ID	P&ID Coor.	Test Type	Test Freq.	Relief Request	Tech. Pos.	Comments
1-DH-P-1A	A	2	C	M	1800	302-640	D-5	Differential Pressure - Comp	Y2			
	A							Differential Pressure - Grp A	Q			
	A							Flow Rate - Comp	Y2			
	A							Flow Rate - Grp A	Q			
	A							Vibration - Comp	Y2			
	A							Vibration - Grp A	Q			
		Pump Name DECAY HEAT REMOVAL PUMP "A"										
1-DH-P-1B	A	2	C	M	1800	302-640	D-3	Differential Pressure - Comp	Y2			
	A							Differential Pressure - Grp A	Q			
	A							Flow Rate - Comp	Y2			
	A							Flow Rate - Grp A	Q			
	A							Vibration - Comp	Y2			
	A							Vibration - Grp A	Q			
		Pump Name DECAY HEAT REMOVAL PUMP "B"										

Attachment 14
Inservice Testing Pump Table

DECAY HEAT RIVER WATER (Page 1)

Pump EPN	Test Group	Safety Class	Pump Type	Pump Driver	Nominal Speed	P&ID	P&ID Coor.	Test Type	Test Freq.	Relief Request	Tech. Pos.	Comments
1-DR-P-1A	A	3	VLS	M	1175	302-202	A-7	Differential Pressure - Grp A	Q	PR-02		
	A							Flow Rate - Grp A	Q	PR-02		
	A							Vibration - Grp A	Q	PR-02		
		Pump Name DECAY HEAT RIVER WATER PUMP "A"										
1-DR-P-1B	A	3	VLS	M	1175	302-202	A-6	Differential Pressure - Grp A	Q	PR-02		
	A							Flow Rate - Grp A	Q	PR-02		
	A							Vibration - Grp A	Q	PR-02		
		Pump Name DECAY HEAT RIVER WATER PUMP "B"										

Attachment 14
Inservice Testing Pump Table

EMERGENCY FEEDWATER (Page 1)

Pump EPN	Test Group	Safety Class	Pump Type	Pump Driver	Nominal Speed	P&ID	P&ID Coor.	Test Type	Test Freq.	Relief Request	Tech. Pos.	Comments
1-EF-P-1	B	3	C	T	3800	302-082	D-7	Differential Pressure - Comp	Y2			
	B							Differential Pressure - Grp B	Q			
	B							Flow Rate - Comp	Y2			
	B							Flow Rate - Grp B	Q			
	B							Speed - Comp	Y2			
	B							Speed - Grp B	Q			
	B							Vibration - Comp	Y2			
		Pump Name	Steam Driven Emergency Feed Water Pump									
1-EF-P-2A	B	3	C	M	3570	302-082	F-6	Differential Pressure - Comp	Y2			
	B							Differential Pressure - Grp B	Q			
	B							Flow Rate - Comp	Y2			
	B							Flow Rate - Grp B	Q			
	B							Vibration - Comp	Y2			
		Pump Name	Electric Driven Emergency Feed Pump									
1-EF-P-2B	B	3	C	M	3570	302-082	B-6	Differential Pressure - Comp	Y2			
	B							Differential Pressure - Grp B	Q			
	B							Flow Rate - Comp	Y2			
	B							Flow Rate - Grp B	Q			
	B							Vibration - Comp	Y2			
		Pump Name	Electric Driven Emergency Feed Pump									

Attachment 14
Inservice Testing Pump Table

MAKEUP & PURIFICATION (Page 1)

Pump EPN	Test Group	Safety Class	Pump Type	Pump Driver	Nominal Speed	P&ID	P&ID Coor.	Test Type	Test Freq.	Relief Request	Tech. Pos.	Comments
1-MU-P-1A	B	2	C	M	6800	302-661	C-5	Differential Pressure - Comp	Y2			
	B							Differential Pressure - Grp B	Q			
	B							Flow Rate - Comp	Y2			
	B							Vibration - Comp	Y2			
		Pump Name	MAKEUP & PURIFICATION PUMP "A"									
1-MU-P-1B	A	2	C	M	6800	302-661	C-4	Differential Pressure - Comp	Y2			
	A							Differential Pressure - Grp A	Q			
	A							Flow Rate - Comp	Y2			
	A							Flow Rate - Grp A	Q			
	A							Vibration - Comp	Y2			
	A							Vibration - Grp A	Q			
		Pump Name	MAKEUP & PURIFICATION PUMP "B"									
1-MU-P-1C	B	2	C	M	6800	302-661	C-3	Differential Pressure - Comp	Y2			
	B							Differential Pressure - Grp B	Q			
	B							Flow Rate - Comp	Y2			
	B							Vibration - Comp	Y2			
		Pump Name	MAKEUP & PURIFICATION PUMP "C"									

Attachment 14
Inservice Testing Pump Table

NUCLEAR SERVICES RIVER WATER (Page 1)

Pump EPN	Test Group	Safety Class	Pump Type	Pump Driver	Nominal Speed	P&ID	P&ID Coor.	Test Type	Test Freq.	Relief Request	Tech. Pos.	Comments
1-NR-P-1A	A	3	VLS	M	1200	302-202	A-10	Differential Pressure - Comp	Y2			
	A							Differential Pressure - Grp A	Q			
	A							Flow Rate - Comp	Y2			
	A							Flow Rate - Grp A	Q			
	A							Vibration - Comp	Y2			
	A							Vibration - Grp A	Q			
		Pump Name NUCLEAR SERVICE RIVER WATER PUMP "A"										
1-NR-P-1B	A	3	VLS	M	1200	302-202	A-9	Differential Pressure - Comp	Y2			
	A							Differential Pressure - Grp A	Q			
	A							Flow Rate - Comp	Y2			
	A							Flow Rate - Grp A	Q			
	A							Vibration - Comp	Y2			
	A							Vibration - Grp A	Q			
		Pump Name NUCLEAR SERVICE RIVER WATER PUMP "B"										
1-NR-P-1C	A	3	VLS	M	1200	302-202	A-9	Differential Pressure - Comp	Y2			
	A							Differential Pressure - Grp A	Q			
	A							Flow Rate - Comp	Y2			
	A							Flow Rate - Grp A	Q			
	A							Vibration - Comp	Y2			
	A							Vibration - Grp A	Q			
		Pump Name NUCLEAR SERVICE RIVER WATER PUMP "C"										

Attachment 14
Inservice Testing Pump Table

NUCLEAR SERVICES CLOSED COOLING WATER (Page 1)

Pump EPN	Test Group	Safety Class	Pump Type	Pump Driver	Nominal Speed	P&ID	P&ID Coor.	Test Type	Test Freq.	Relief Request	Tech. Pos.	Comments
1-NS-P-1A	A	3	C	M	1770	302-610	G-3	Differential Pressure - Comp	Y2			
	A							Differential Pressure - Grp A	Q	PR-01		
	A							Flow Rate - Comp	Y2			
	A							Flow Rate - Grp A	Q	PR-01		
	A							Vibration - Comp	Y2			
	A							Vibration - Grp A	Q	PR-01		
		Pump Name NUCLEAR SERVICE CLOSED COOLING WATER PUMP "A"										
1-NS-P-1B	A	3	C	M	1770	302-610	G-3	Differential Pressure - Comp	Y2			
	A							Differential Pressure - Grp A	Q	PR-01		
	A							Flow Rate - Comp	Y2			
	A							Flow Rate - Grp A	Q	PR-01		
	A							Vibration - Comp	Y2			
	A							Vibration - Grp A	Q	PR-01		
		Pump Name NUCLEAR SERVICE CLOSED COOLING WATER PUMP "B"										
1-NS-P-1C	A	3	C	M	1770	302-610	G-2	Differential Pressure - Comp	Y2			
	A							Differential Pressure - Grp A	Q	PR-01		
	A							Flow Rate - Comp	Y2			
	A							Flow Rate - Grp A	Q	PR-01		
	A							Vibration - Comp	Y2			
	A							Vibration - Grp A	Q	PR-01		
		Pump Name NUCLEAR SERVICE CLOSED COOLING WATER PUMP "C"										

Attachment 14
Inservice Testing Pump Table

REACTOR BUILDING EMERGENCY COOLING WATER (Page 1)

Pump EPN	Test Group	Safety Class	Pump Type	Pump Driver	Nominal Speed	P&ID	P&ID Coor.	Test Type	Test Freq.	Relief Request	Tech. Pos.	Comments
1-RR-P-1A	B	3	VLS	M	1200	302-611	D-2	Differential Pressure - Comp	Y2			
	B							Differential Pressure - Grp B	Q			
	B							Flow Rate - Comp	Y2			
	B							Vibration - Comp	Y2			
		Pump Name RB EMERGENCY COOLING RIVER WATER PUMP "A"										
1-RR-P-1B	B	3	VLS	M	1200	301-611	D-2	Differential Pressure - Comp	Y2			
	B							Differential Pressure - Grp B	Q			
	B							Flow Rate - Comp	Y2			
	B							Vibration - Comp	Y2			
		Pump Name RB EMERGENCY COOLING RIVER WATER PUMP "B"										

Attachment 14
Inservice Testing Pump Table

SPENT FUEL COOLING (Page 1)

Pump EPN	Test Group	Safety Class	Pump Type	Pump Driver	Nominal Speed	P&ID	P&ID Coor.	Test Type	Test Freq.	Relief Request	Tech. Pos.	Comments
1-SF-P-1A	A	3	C	M	1800	302-630	F-6	Differential Pressure - Grp A	Q	PR-02		
	A							Flow Rate - Grp A	Q	PR-02		
	A							Vibration - Grp A	Q	PR-02		
		Pump Name SPENT FUEL COOLING PUMP "A"										
1-SF-P-1B	A	3	C	M	1800	302-630	D-6	Differential Pressure - Grp A	Q	PR-02		
	A							Flow Rate - Grp A	Q	PR-02		
	A							Vibration - Grp A	Q	PR-02		
		Pump Name SPENT FUEL COOLING PUMP "B"										

ATTACHMENT 15
INSERVICE TESTING VALVE TABLE

Attachment 15
Inservice Testing Valve Table

REACTOR BUILDING PURGE (Page 1)

Valve EPN	Safety Class	Category	Size	Valve Type	Act. Type	Active / Passive	Normal Position	Safety Position	P&&ID	P&&ID Coor.	Test Type	Test Freq.	Relief Request	Deferred Just.	Tech. Pos.
1-AH-V-11A	3	B	5	3W	AO	A	T	O	302-847	G-7	FO	M3			IST-013
											STO	M3			
		Valve Name	CONTROL BLDG VENT UNIT "A" COOLING COIL DISCH VLV												
1-AH-V-11B	3	B	5	3W	AO	A	T	O	302-847	G-4	FO	M3			IST-013
											STO	M3			
		Valve Name	CONTROL BLDG VENT UNIT "B" COOLING COIL DISCH VLV												
1-AH-V-1A	2	A	48	BTF	AO	A	C	C	302-831	G-6	FC	M3			IST-013
											LTJ	AJ			
											PI	Y2			
											STC	M3			
		Valve Name	CONTAINMENT ISOLATION - RB PURGE OUTLET ISOL VALVE												
1-AH-V-1B	2	A	48	BTF	MO	A	C	C	302-831	F-6	LTJ	AJ			
											PI	Y2			
											STC	M3			
		Valve Name	CONTAINMENT ISOLATION - RB PURGE OUTLET ISOL VALVE												
1-AH-V-1C	2	A	48	BTF	MO	A	C	C	302-831	C-6	LTJ	AJ			
											PI	Y2			
											STC	M3			
		Valve Name	CONTAINMENT ISOLATION - RB PURGE INLET ISOL VALVE												
1-AH-V-1D	2	A	48	BTF	AO	A	C	C	302-831	C-6	FC	M3			IST-013
											LTJ	AJ			
											PI	Y2			
											STC	M3			
		Valve Name	CONTAINMENT ISOLATION - RB PURGE INLET ISOL VALVE												

Attachment 15
Inservice Testing Valve Table

EMERGENCY FEEDWATER (Page 1)

Valve EPN	Safety Class	Category	Size	Valve Type	Act. Type	Active / Passive	Normal Position	Safety Position	P&&ID	P&&ID Coor.	Test Type	Test Freq.	Relief Request	Deferred Just.	Tech. Pos.
1-AS-V-4	3	B/C	4	SCK	MO	P	C	C	302-011	E-5	PI	Y2			
Valve Name AUX STEAM STOP CHECK VALVE SUPPLY TO EF-U1															

Attachment 15
Inservice Testing Valve Table

REACTOR BUILDING SPRAY (Page 1)

Valve EPN	Safety Class	Category	Size	Valve Type	Act. Type	Active / Passive	Normal Position	Safety Position	P&ID	P&ID Coor.	Test Type	Test Freq.	Relief Request	Deferred Just.	Tech. Pos.
1-BS-V-1103	2	C	0.5	XFC	SA	A	O	O	302-712	G-8	CO	M3			
											BDC	M3			
			Valve Name	RB PRESSURE INSTRUMENT EXCESS FLOW CHECK											
1-BS-V-1104	2	C	0.5	XFC	SA	A	O	O	302-712	G-6	CO	M3			
											BDC	M3			
			Valve Name	RB PRESSURE INSTRUMENT EXCESS FLOW CHECK											
1-BS-V-1105	2	C	0.5	XFC	SA	A	O	O	302-712	F-8	CO	M3			
											BDC	M3			
			Valve Name	RB PRESSURE INSTRUMENT EXCESS FLOW CHECK											
1-BS-V-1106	2	C	0.5	XFC	SA	A	O	O	302-712	F-6	CO	M3			
											BDC	M3			
			Valve Name	RB PRESSURE INSTRUMENT EXCESS FLOW CHECK											
1-BS-V-1107	2	C	0.5	XFC	SA	A	O	O	302-712	D-8	CO	M3			
											BDC	M3			
			Valve Name	RB PRESSURE INSTRUMENT EXCESS FLOW CHECK											
1-BS-V-1108	2	C	0.5	XFC	SA	A	O	O	302-712	D-6	CO	M3			
											BDC	M3			
			Valve Name	RB PRESSURE INSTRUMENT EXCESS FLOW CHECK											
1-BS-V-1A	2	B	8	GL	MO	A	C	O/C	302-712	A-7	PI	Y2			
											STC	M3			
											STO	M3			
			Valve Name	BS-P1A DISCHARGE ISOLATION VALVE											
1-BS-V-1B	2	B	8	GL	MO	A	C	O/C	302-712	B-7	PI	Y2			
											STC	M3			
											STO	M3			
			Valve Name	BS-P1B DISCHARGE ISOLATION VALVE											
1-BS-V-30A	2	C	8	CK	SA	A	C	O/C	302-712	A-7	CCD	CM			
											COD	CM			
			Valve Name	CONTAINMENT ISOLATION - BS NOZZLE INLET CHECK VLV											
1-BS-V-30B	2	C	8	CK	SA	A	C	O/C	302-712	B-7	CCD	CM			
											COD	CM			
			Valve Name	CONTAINMENT ISOLATION - BS NOZZLE INLET CHECK VLV											
1-BS-V-3A	2	B	10	GA	MO	A	C	O/C	302-712	A-3	PI	Y2			
											STC	M3			
											STO	M3			
			Valve Name	BS-P1A SUCTION VALVE											
1-BS-V-3B	2	B	10	GA	MO	A	C	O/C	302-712	B-3	PI	Y2			
											STC	M3			
											STO	M3			
			Valve Name	BS-P1B SUCTION VALVE											
1-BS-V-45A	2	C	1	RV	SA	A	C	O/C	302-712	B-5	RT	Y10			
			Valve Name	BS-P1A SUCTION RELIEF											
1-BS-V-45B	2	C	1	RV	SA	A	C	O/C	302-712	C-5	RT	Y10			
			Valve Name	BS-P1B SUCTION RELIEF											

1-BS-V-59	2	A	6	GA	M	P	LC	C	302-712	B-6	LTH	Y2

Valve Name TEST LINE ISOLATION VALVE TO BWST

Attachment 15
Inservice Testing Valve Table

REACTOR PLANT CHEMICAL ADDITION (Page 1)

Valve EPN	Safety Class	Category	Size	Valve Type	Act. Type	Active / Passive	Normal Position	Safety Position	P&ID	P&ID Coor.	Test Type	Test Freq.	Relief Request	Deferred Just.	Tech. Pos.
1-CA-V-13	1	A	0.5	GL	MO	A	O/C	C	302-671	D-7	LTJ	AJ			
											PI	Y2			
											STC	M3			
			Valve Name	CONTAINMENT ISOLATION - RCS LETDOWN SAMPLE VALVE											
1-CA-V-177	3	C	1	CK	SA	A	SYS	O	302-670	D-3	CC	CS		CSJ-15	
											CO	CS		CSJ-15	
			Valve Name	CA-T1 TO MAKEUP SYSTEM CHECK VALVE											
1-CA-V-189	2	A	2	GA	AO	P	C	C	302-669	G-4	LTJ	AJ			
											PI	Y2			
			Valve Name	CONTAINMENT INTEGRITY - RECLAIMED WATER TO RB VLV											
1-CA-V-192	2	A/C	2	CK	SA	P	C	C	302-669	G-3	BDO	CM			
											CCL	CM			
											LTJ	AJ			
			Valve Name	CONTAINMENT ISOLATION - RECLAIMED FEED TO RB CHK											
1-CA-V-2	1	A	1	GA	AO	A	O/C	C	302-671	D-7	FC	M3			IST-013
											LTJ	AJ			
											PI	Y2			
											STC	M3			
			Valve Name	CONTAINMENT ISOLATION - RC SAMPLE ISOLATION VALVE											
1-CA-V-443	2	A/C	0.25	RV	SA	A	C	O/C	302-669	F-3	LTJ	AJ			
											RT	Y10			
			Valve Name	RECLAIMED WATER TO RB CONTAINMENT ISOL AND RELIEF											
1-CA-V-446	2	A/C	0.5	RV	SA	A	C	O/C	302-671	D-7	LTJ	AJ			
											RT	Y10			
			Valve Name	RC SAMPLE CONTAINMENT ISOLATION AND RELIEF											
1-CA-V-449A	2	A/C	0.25	RV	SA	A	C	O/C	302710	G-4	LTJ	AJ			
											RT	Y10			
			Valve Name	PENETRATION 211 RELIEF VALVE											
1-CA-V-449B	2	A/C	0.25	RV	SA	A	C	O/C	302710	F-4	LTJ	AJ			
											RT	Y10			
			Valve Name	PENETRATION 210 RELIEF VALVE											
1-CA-V-4A	2	A	2	GL	MO	A	C	C	302-701	G-5	LTJ	AJ			
											PI	Y2			
											STC	M3			
			Valve Name	CONTAINMENT ISOLATION - OTSG "A" FW SAMPLE VALVE											
1-CA-V-4B	2	A	2	GL	MO	A	C	C	302-701	F-5	LTJ	AJ			
											PI	Y2			
											STC	M3			
			Valve Name	CONTAINMENT ISOLATION - OTSG "B" FW SAMPLE VALVE											

Attachment 15
Inservice Testing Valve Table

REACTOR PLANT CHEMICAL ADDITION (Page 2)

Valve EPN	Safety Class	Category	Size	Valve Type	Act. Type	Active / Passive	Normal Position	Safety Position	P&&ID	P&&ID Coor.	Test Type	Test Freq.	Relief Request	Deferred Just.	Tech. Pos.
1-CA-V-5A	2	A	2	GL	AO	A	C	C	302-701	G-4	FC	M3			IST-013
											LTJ	AJ			
											PI	Y2			
											STC	M3			
			Valve Name CONTAINMENT ISOLATION - OTSG "A" FW SAMPLE VALVE												
1-CA-V-5B	2	A	2	GL	AO	A	C	C	302-701	F-4	FC	M3			IST-013
											LTJ	AJ			
											PI	Y2			
											STC	M3			
			Valve Name CONTAINMENT ISOLATION - OTSG "B" FW SAMPLE VALVE												

Attachment 15
Inservice Testing Valve Table

CORE FLOOD (Page 1)

Valve EPN	Safety Class	Category	Size	Valve Type	Act. Type	Active / Passive	Normal Position	Safety Position	P&ID	P&ID Coor.	Test Type	Test Freq.	Relief Request	Deferred Just.	Tech. Pos.
1-CF-V-12A	2	A/C	1	CK	SA	A	O/C	C	302-711	F-7	BDO	CM			
											CCL	CM			
											LTJ	AJ			
			Valve Name	CONTAINMENT ISOLATION - CF-T1A MAKEUP CHECK VLV											
1-CF-V-12B	2	A/C	1	CK	SA	A	O/C	C	302-711	F-3	BDO	CM			
											CCL	CM			
											LTJ	AJ			
			Valve Name	CONTAINMENT ISOLATION - CF-T1B MAKEUP CHECK VLV											
1-CF-V-19A	2	A	1	GA	AO	A	O/C	C	302-711	F-8	FC	M3			IST-013
											LTJ	AJ			
											PI	Y2			
											STC	M3			
			Valve Name	CONTAINMENT ISOLATION - MU TO CF-T1A											
1-CF-V-19B	2	A	1	GA	AO	A	O/C	C	302-711	F-3	FC	M3			IST-013
											LTJ	AJ			
											PI	Y2			
											STC	M3			
			Valve Name	CONTAINMENT ISOLATION - MU TO CF-T1B											
1-CF-V-1A	2	B	14	GA	MO	P	O	O	302-711	C-7	PI	Y2			
			Valve Name	CORE FLOOD TANK "A" - DISCHARGE ISOLATION VALVE											
1-CF-V-1B	2	B	14	GA	MO	P	O	O	302-711	C-3	PI	Y2			
			Valve Name	CORE FLOOD TANK "B" - DISCHARGE ISOLATION VALVE											
1-CF-V-20A	2	A	1	GA	AO	A	O/C	C	302-711	D-6	FC	M3			IST-013
											LTJ	AJ			
											PI	Y2			
											STC	M3			
			Valve Name	CONTAINMENT ISOLATION - CF-T1A SAMPLE ISOL VLV											
1-CF-V-20B	2	A	1	GA	AO	A	O/C	C	302-711	D-5	FC	M3			IST-013
											LTJ	AJ			
											PI	Y2			
											STC	M3			
			Valve Name	CONTAINMENT ISOLATION - CF-T1B SAMPLE ISOL VLV											
1-CF-V-21A	2	C	2	RV	SA	A	C	O/C	302-711	G-7	RT	Y8			
			Valve Name	CORE FLOOD TANK CF-T-1A RELIEF											
1-CF-V-21B	2	C	2	RV	SA	A	C	O/C	302-711	G-3	RT	Y8			
			Valve Name	CORE FLOOD TANK CF-T-1B RELIEF											

Attachment 15
Inservice Testing Valve Table

CORE FLOOD (Page 2)

Valve EPN	Safety Class	Category	Size	Valve Type	Act. Type	Active / Passive	Normal Position	Safety Position	P&ID	P&ID Coor.	Test Type	Test Freq.	Relief Request	Deferred Just.	Tech. Pos.
1-CF-V-2A	2	A	1	GL	MO	A	O/C	C	302-711	D-7	LTJ	AJ			
											PI	Y2			
											STC	M3			
			Valve Name	CONTAINMENT ISOLATION - CF-T1A SAMPLE ISO VLV											
1-CF-V-2B	2	A	1	GL	MO	A	C	C	302-711	D-4	LTJ	AJ			
											PI	Y2			
											STC	M3			
			Valve Name	CONTAINMENT ISOLATION - CF-T1B SAMPLE ISO VLV											
1-CF-V-3A	2	B	1	GL	MO	P	C	C	302-711	F-6	PI	Y2			
			Valve Name	CORE FLOOD TANK CF-T-1A REMOTE VENT											
1-CF-V-3B	2	B	1	GL	MO	P	C	C	302-711	F-4	PI	Y2			
			Valve Name	CORE FLOOD TANK CF-T-1B REMOTE VENT											
1-CF-V-46A	2	A/C	0.25	RV	SA	A	C	O/C	302-711	D-6	LTJ	AJ			
											RT	Y10			
			Valve Name	CONTAINMENT PENETRATION 348 RELIEF											
1-CF-V-46B	2	A/C	0.25	RV	SA	A	C	O/C	302-711	D-4	LTJ	AJ			
											RT	Y10			
			Valve Name	CONTAINMENT PENETRATION 349 RELIEF											
1-CF-V-4A	1	A/C	14	CK	SA	A	C	O/C	302-711	B-4	CCL	CM			
											CPF	CM			
											LTH	Y2			
			Valve Name	CORE FLOOD TANK "A" OUTLET CHECK VALVE											
1-CF-V-4B	1	A/C	14	CK	SA	A	C	O/C	302-711	B-7	CCL	CM			
											CPF	CM			
											LTH	Y2			
			Valve Name	CORE FLOOD TANK "B" OUTLET CHECK VALVE											
1-CF-V-5A	1	A/C	14	CK	SA	A	C	O/C	302-711	B-4	CCL	RR		RJ-04	
											COF	RR		RJ-04	
											LTH	Y2			
			Valve Name	CF-T1A & DH PUMP DISCH CHECK VALVE											
1-CF-V-5B	1	A/C	14	CK	SA	A	C	O/C	302-711	B-6	CCL	RR		RJ-04	
											COF	RR		RJ-04	
											LTH	Y2			
			Valve Name	CF-T1B & DH PUMP DISCH CHECK VALVE											

Attachment 15
Inservice Testing Valve Table

CONTROL BUILDING CHILLED WATER (Page 1)

Valve EPN	Safety Class	Category	Size	Valve Type	Act. Type	Active / Passive	Normal Position	Safety Position	P&ID	P&ID Coor.	Test Type	Test Freq.	Relief Request	Deferred Just.	Tech. Pos.
1-CH-V-22A	3	C	4	CK	SA	A	O/C	O/C	302-847	C-4	CC	M3			
											CO	M3			
			Valve Name	AH-3CB CHILLED WATER DISCHARGE CHECK VALVE											
1-CH-V-22B	3	C	4	CK	SA	A	O/C	O/C	302-847	B-4	CC	M3			
											CO	M3			
			Valve Name	AH-3CB CHILLED WATER DISCHARGE CHECK VALVE											
1-CH-V-24	3	C	1	CK	SA	A	C	C	302-847	A-7	CC	M3			
											CO	M3			
			Valve Name	NS SUPPLY TO RBCW CHECK											

Attachment 15
Inservice Testing Valve Table

CONTAINMENT MONITORING (Page 1)

Valve EPN	Safety Class	Category	Size	Valve Type	Act. Type	Active / Passive	Normal Position	Safety Position	P&&ID	P&&ID Coor.	Test Type	Test Freq.	Relief Request	Deferred Just.	Tech. Pos.
1-CM-V-1	2	A	1	BALL	AO	A	O	C	302-721	F-7	FC	M3			IST-013
											LTJ	AJ			
											PI	Y2			
											STC	M3			
			Valve Name	CONTAINMENT ISOLATION - RB ATMOSPHERE SAMPLE VALVE											
1-CM-V-2	2	A	1	BALL	AO	A	O	C	302-721	F-7	FC	M3			IST-013
											LTJ	AJ			
											PI	Y2			
											STC	M3			
			Valve Name	CONTAINMENT ISOLATION - RB ATMOS SAMPLE RETURN VLV											
1-CM-V-3	2	A	1	BALL	AO	A	O	C	302-721	H-7	FC	M3			IST-013
											LTJ	AJ			
											PI	Y2			
											STC	M3			
			Valve Name	CONTAINMENT ISOLATION - RB ATMOSPHERE SAMPLE VALVE											
1-CM-V-4	2	A	1	BALL	AO	A	O	C	302-721	H-7	FC	M3			IST-013
											LTJ	AJ			
											PI	Y2			
											STC	M3			
			Valve Name	CONTAINMENT ISOLATION - RB ATMOS SAMPLE ISOL VLV											

Attachment 15
Inservice Testing Valve Table

CONDENSATE (Page 1)

Valve EPN	Safety Class	Category	Size	Valve Type	Act. Type	Active / Passive	Normal Position	Safety Position	P&ID	P&ID Coor.	Test Type	Test Freq.	Relief Request	Deferred Just.	Tech. Pos.
1-CO-V-111A	3	B	4	GA	MO	A	O	C	302-101	E-6	PI	Y2			
											STC	M3			
			Valve Name	CONDENSATE STORAGE TANK "A" ISOLATION TIE VALVE											
1-CO-V-111B	3	B	4	GA	MO	A	O	C	302-101	E-6	PI	Y2			
											STC	M3			
			Valve Name	CONDENSATE STORAGE TANK "B" ISOLATION TIE VALVE											
1-CO-V-14A	3	B	12	GA	MO	A	O	C	302-101	E-5	PI	Y2			
											STC	M3			
			Valve Name	CONDENSATE STORAGE TANK "A" ISOLATION VALVE											
1-CO-V-14B	3	B	12	GA	MO	A	O	C	302-101	F-5	PI	Y2			
											STC	M3			
			Valve Name	CONDENSATE STORAGE TANK "B" ISOLATION VALVE											
1-CO-V-16A	3	C	10	CK	SA	A	SYS	O/C	302-082	C-8	CCD	CM			
											COD	CM			
											COF	Y2			
			Valve Name	CONDENSATE CHECK VALVE - SUPPLY TO EFW PUMPS											
1-CO-V-16B	3	C	10	CK	SA	A	SYS	O/C	302-082	F-8	CCD	CM			
											COD	CM			
											COF	Y2			
			Valve Name	CONDENSATE CHECK VALVE - SUPPLY TO EFW PUMPS											
1-CO-V-175A	3	C	2	CK	SA	A	SYS	O/C	302-101	E-6	CCD	CM			
											COD	CM			
			Valve Name	EFW PUMP BEARING COOLING RETURN CHECK VALVE											
1-CO-V-175B	3	C	2	CK	SA	A	SYS	O/C	302-101	E-6	CCD	CM			
											COD	CM			
			Valve Name	EFW PUMP BEARING COOLING RETURN CHECK VALVE											
1-CO-V-25A	3	A/C	2	CK	SA	A	C	C	302-101	C-4	BDO	RR		RJ-25	IST-014
											CC	RR		RJ-25	
			Valve Name	CST-A DE-ICE LINE INLET CHECK											
1-CO-V-25B	3	A/C	4	CK	SA	A	C	C	302-101	E-5	BDO	RR		RJ-25	IST-014
											CC	RR		RJ-25	
			Valve Name	CST-B DE-ICE LINE INLET CHECK											

Attachment 15
Inservice Testing Valve Table

DECAY HEAT CLOSED CYCLE COOLING WATER (Page 1)

Valve EPN	Safety Class	Category	Size	Valve Type	Act. Type	Active / Passive	Normal Position	Safety Position	P&&ID	P&&ID Coor.	Test Type	Test Freq.	Relief Request	Deferred Just.	Tech. Pos.
1-DC-V-15A	3	C	0.5	RV	SA	A	C	O/C	302-645	A-8	RT	Y10			
			Valve Name DH REMOVAL COOLER DH-C-1A SHELL SIDE RELIEF												
1-DC-V-15B	3	C	0.5	RV	SA	A	C	O/C	302-645	C-9	RT	Y10			
			Valve Name DH REMOVAL COOLER DH-C-1B SHELL SIDE RELIEF												
1-DC-V-16A	3	C	0.5	RV	SA	A	C	O/C	302-645	C-6	RT	Y10			
			Valve Name BS-P-1A MOTOR AND BEARING COOLING WATER RELIEF												
1-DC-V-16B	3	C	0.5	RV	SA	A	C	O/C	302-645	C-7	RT	Y10			
			Valve Name BS-P-1B MOTOR AND BEARING COOLING WATER RELIEF												
1-DC-V-17A	3	C	0.5	RV	SA	A	C	O/C	302-645	E-6	RT	Y10			
			Valve Name DH-P-1A MOTOR AND BEARING COOLING WATER RELIEF												
1-DC-V-17B	3	C	0.5	RV	SA	A	C	O/C	302-645	E-7	RT	Y10			
			Valve Name DH-P-1B MOTOR AND BEARING COOLING WATER RELIEF												
1-DC-V-18A	3	C	0.5	RV	SA	A	C	O/C	302-645	D-3	RT	Y10			
			Valve Name DC-P-1A BEARING COOLING WATER RELIEF												
1-DC-V-18B	3	C	0.5	RV	SA	A	C	O/C	302-645	D-2	RT	Y10			
			Valve Name DC-P-1B BEARING COOLING WATER RELIEF												
1-DC-V-52A	3	C	0.75	RV	SA	A	C	O/C	302-645	F-10	RT	Y10			
			Valve Name DH SERVICE COOLER DC-C-2A RELIEF												
1-DC-V-52B	3	C	0.75	RV	SA	A	C	O/C	302-645	F-8	RT	Y10			
			Valve Name DH SERVICE COOLER DC-C-2B RELIEF												

Attachment 15
Inservice Testing Valve Table

EMERGENCY DIESEL GENERATORS FUEL SYSTEMS (Page 1)

Valve EPN	Safety Class	Category	Size	Valve Type	Act. Type	Active / Passive	Normal Position	Safety Position	P&&ID	P&&ID Coor.	Test Type	Test Freq.	Relief Request	Deferred Just.	Tech. Pos.
1-DF-V-23A	N/A	C	2	SCK	SA	A	C	O/C	302-283	D-7	CC	M3			IST-007
											CO	M3			IST-007
			Valve Name DF-T1 FOOT VALVE												
1-DF-V-23B	N/A	C	2	SCK	SA	A	C	O/C	302-283	D-7	CC	M3			IST-007
											CO	M3			IST-007
			Valve Name DF-T1 FOOT VALVE												
1-DF-V-7A	N/A	C	1	CK	SA	A	C	O/C	302-351	D-7	CO	M3			IST-007
			Valve Name DF-P1A DISCHARGE CHECK VALVE												
1-DF-V-7B	N/A	C	1	CK	SA	A	C	O/C	302-351	D-6	CO	M3			IST-007
			Valve Name DF-P1B DISCHARGE CHECK VALVE												
1-DF-V-7C	N/A	C	1	CK	SA	A	C	O/C	302-351	D-3	CO	M3			IST-007
			Valve Name DF-P1C DISCHARGE CHECK VALVE												
1-DF-V-7D	N/A	C	1	CK	SA	A	C	O/C	302-351	D-3	CO	M3			IST-007
			Valve Name DF-P1D DISCHARGE CHECK VALVE												

Attachment 15
Inservice Testing Valve Table

DECAY HEAT REMOVAL (Page 1)

Valve EPN	Safety Class	Category	Size	Valve Type	Act. Type	Active / Passive	Normal Position	Safety Position	P&ID	P&ID Coor.	Test Type	Test Freq.	Relief Request	Deferred Just.	Tech. Pos.
1-DH-V-1	1	A	12	GA	MO	A	C	O/C	302-640	E-7	LTH	Y2			
											PI	Y2			
											STC	CS		CSJ-02	
											STO	CS		CSJ-02	
			Valve Name	DECAY HEAT SUCTION ISOLATION FROM "B" HOT LEG											
1-DH-V-13A	2	C	0.75	RV	SA	A	C	O/C	302-640	C-6	RT	Y10			
			Valve Name	DH-P-1A SUCTION RELIEF											
1-DH-V-13B	2	C	0.75	RV	SA	A	C	O/C	302-640	C-4	RT	Y10			
			Valve Name	DH-P-1B SUCTION RELIEF											
1-DH-V-14A	2	A/C	14	CK	SA	A	C	O/C	302-640	C-3	CCL	RR		RJ-20	
											COF	RR		RJ-20	
											LT	Y2			
			Valve Name	DH PUMP SUCTION FROM BWST CHECK VALVE											
1-DH-V-14B	2	A/C	14	CK	SA	A	C	O/C	302-640	B-4	CCL	RR		RJ-20	
											COF	RR		RJ-20	
											LT	Y2			
			Valve Name	DH PUMP SUCTION FROM BWST CHECK VALVE											
1-DH-V-166A	2	C	0.5	CK	SA	A	C	O/C	302-640	G-7	CC	CS		CSJ-14	
											CO	CS		CSJ-14	
			Valve Name	DH-V 004A INLET DISC PRESSURE EQUALIZATION CHECK											
1-DH-V-166B	2	C	0.5	CK	SA	A	C	O/C	302-640	H-7	CC	CS		CSJ-14	
											CO	CS		CSJ-14	
			Valve Name	DH-V 004B INLET DISC PRESSURE EQUALIZATION CHECK											
1-DH-V-16A	2	C	10	CK	SA	A	SYS	O/C	302-640	D-5	CC	RR		RJ-01	
											CO	RR		RJ-01	
			Valve Name	DH-P1A DISCHARGE CHECK VALVE											
1-DH-V-16B	2	C	10	CK	SA	A	SYS	O/C	302-640	D-3	CC	RR		RJ-01	
											CO	RR		RJ-01	
			Valve Name	DECAY HEAT PUMP "B" DISCHARGE CHECK VALVE											
1-DH-V-170	2	C	0.5	CK	SA	A	C	O	302-640	E-7	BDC	RR		RJ-22	
											CO	RR		RJ-22	
			Valve Name	DH-V 001 INTERDISC OVERPRESSURE RELIEF CHECK											
1-DH-V-171	2	C	0.5	CK	SA	A	C	O	302-640	D-7	BDC	RR		RJ-22	
											CO	RR		RJ-22	
			Valve Name	DH-V 002 INTERDISC OVERPRESSURE RELIEF CHECK											
1-DH-V-172	2	C	0.5	CK	SA	A	C	O	302-640	D-7	BDC	RR		RJ-22	
											CO	RR		RJ-22	
			Valve Name	DH-V1/V2 DEAD LEG PRESSURE EQUALIZATION RELIEF CHK											

Attachment 15
Inservice Testing Valve Table

DECAY HEAT REMOVAL (Page 2)

Valve EPN	Safety Class	Category	Size	Valve Type	Act. Type	Active / Passive	Normal Position	Safety Position	P&ID	P&ID Coor.	Test Type	Test Freq.	Relief Request	Deferred Just.	Tech. Pos.
1-DH-V-18A	2	C	0.75	RV	SA	A	C	O/C	302-640	F-5	RT	Y10			
			Valve Name	DH LOOP A INJECTION HEADER RELIEF											
1-DH-V-18B	2	C	0.75	RV	SA	A	C	O/C	302-640	F-4	RT	Y10			
			Valve Name	DH LOOP B INJECTION HEADER RELIEF											
1-DH-V-2	1	A	12	GA	MO	A	C	O/C	302-640	E-7	LTH	Y2			
											PI	Y2			
											STC	CS		CSJ-02	
											STO	CS		CSJ-02	
			Valve Name	CONTAINMENT ISOLATION - DH DROP LINE/PUMP SUCTION											
1-DH-V-21	3	A	3	GL	M	P	LC	LC	302-640	H-5	LT	Y2			
			Valve Name	DH PUMPS DISCHARGE TEST ISOLATION VALVE											
1-DH-V-22A	1	A/C	10	CK	SA	A	C	O/C	302-640	G-8	CCL	RR		RJ-04	
											COF	RR		RJ-04	
											LTH	Y2			
			Valve Name	CONTAINMENT ISOLATION - DH-P1A DISCHARGE CHK TO CF											
1-DH-V-22B	1	A/C	10	CK	SA	A	C	O/C	302-640	G-8	CCL	RR		RJ-04	
											COF	RR		RJ-04	
											LTH	Y2			
			Valve Name	CONTAINMENT ISOLATION - DH-P1B DISCH CHK TO CF											
1-DH-V-3	2	B	12	GA	MO	A	C	O/C	302-640	E-6	PI	Y2			
											STC	M3			
											STO	M3			
			Valve Name	CONTAINMENT ISOLATION - DH DROP LINE VLV											
1-DH-V-37	2	C	0.75	RV	SA	A	C	O/C	302-640	E-7	RT	Y10			
			Valve Name	DECAY HEAT DROP LEG INTERVALVE RELIEF											
1-DH-V-38A	2	B	6	GA	M	A	LC	O/C	302-640	F-5	EO	Y2			
			Valve Name	DECAY HEAT CROSSOVER VALVE											
1-DH-V-38B	2	B	6	GA	M	A	LC	O/C	302-640	F-5	EO	Y2			
			Valve Name	DECAY HEAT CROSSOVER VALVE											
1-DH-V-4A	2	B	10	GA	MO	A	C	O/C	302-640	G-6	PI	Y2			
											STC	M3			
											STO	M3			
			Valve Name	CONTAINMENT ISOLATION - DH-P1A DISCHARGE ISOL VLV											
1-DH-V-4B	2	B	10	GA	MO	A	C	O/C	302-640	G-6	PI	Y2			
											STC	M3			
											STO	M3			
			Valve Name	CONTAINMENT ISOLATION - DH-P1B DISCHARGE ISOL VLV											
1-DH-V-50	2	A/C	4	CK	SA	A	C	C	302-640	B-5	BDO	RR		RJ-24	IST-014
											CC	RR		RJ-24	
											LT	Y2			
			Valve Name	SPENT FUEL RETURN CLEANUP CHECK VALVE											

Attachment 15
Inservice Testing Valve Table

DECAY HEAT REMOVAL (Page 3)

Valve EPN	Safety Class	Category	Size	Valve Type	Act. Type	Active / Passive	Normal Position	Safety Position	P&ID	P&ID Coor.	Test Type	Test Freq.	Relief Request	Deferred Just.	Tech. Pos.
1-DH-V-57A	2	C	0.75	RV	SA	A	C	O/C	302-640	D-3	RT	Y10			
			Valve Name	DH-P-1A SUCTION FROM BWST RELIEF											
1-DH-V-57B	2	C	0.75	RV	SA	A	C	O/C	302-640	B-3	RT	Y10			
			Valve Name	DH-P-1B SUCTION FROM BWST RELIEF											
1-DH-V-5A	2	B	14	GA	MO	A	O	O/C	302-640	C-2	PI	Y2			
											STC	M3			
			Valve Name	DECAY HEAT SUCTION VALVE FROM BWST											
1-DH-V-5B	2	B	14	GA	MO	A	O	O/C	302-640	B-3	PI	Y2			
											STC	M3			
			Valve Name	DH PUMP SUCTION FROM BWST											
1-DH-V-60A	NA	C	0.5	RV	SA	A	C	O/C	302-640	C-5	RT	Y10			
			Valve Name	CA SYSTEM TO DH-P-1A SUCTION RELIEF											
1-DH-V-60B	NA	C	0.5	RV	SA	A	C	O/C	302-640	C-3	RT	Y10			
			Valve Name	CA SYSTEM TO DH-P-1B SUCTION RELIEF											
1-DH-V-64	2	A	2	GL	M	A	LC	O/C	302-640	F-6	EC	Y2			
											EO	Y2			
											LTJ	AJ			
			Valve Name	CONTAINMENT ISOLATION - DH TO PZR SPRAY ISOL VLV											
1-DH-V-67	2	C	0.75	RV	SA	A	C	O/C	302-640	F-7	RT	Y10			
			Valve Name	PRESSURIZER SPRAY LINE RELIEF											
1-DH-V-69	2	A/C	1.5	CK	SA	A	C	O/C	302-640	F-7	CCL	CM			
											COF	CM			
											LTJ	AJ			
			Valve Name	CONTAINMENT ISOLATION - DH TO PZR AUX SPRAY LINE											
1-DH-V-6A	2	B	14	GA	MO	A	C	O/C	302-640	C-7	PI	Y2			
											STC	RR		RJ-21	
											STO	RR		RJ-21	
			Valve Name	CONTAINMENT ISOLATION - RB SUMP RECIRC SUCTION VLV											
1-DH-V-6B	2	B	14	GA	MO	A	C	O/C	302-640	B-7	PI	Y2			
											STC	RR		RJ-21	
											STO	RR		RJ-21	
			Valve Name	CONTAINMENT ISOLATION - RB SUMP RECIRC SUCTION											
1-DH-V-7A	2	B	4	GA	MO	A	C	O	302-640	G-3	PI	Y2			
											STO	M3			
			Valve Name	DH-C1A DISCHARGE VALVE TO MAKEUP SYSTEM											
1-DH-V-7B	2	B	4	GA	MO	A	C	O	302-640	G-3	PI	Y2			
											STO	M3			
			Valve Name	DH-C1B DISCHARGE VALVE TO MAKEUP SYSTEM											

Attachment 15
Inservice Testing Valve Table

DECAY HEAT RIVER WATER (Page 1)

Valve EPN	Safety Class	Category	Size	Valve Type	Act. Type	Active / Passive	Normal Position	Safety Position	P&&ID	P&&ID Coor.	Test Type	Test Freq.	Relief Request	Deferred Just.	Tech. Pos.
1-DR-V-1A	3	B	20	BTF	MO	A	C	O	302-202	C-7	PI	Y2			
											STO	M3			
			Valve Name DR-P1A DISCHARGE VALVE												
1-DR-V-1B	3	B	20	BTF	MO	A	C	O	302-202	C-6	PI	Y2			
											STO	M3			
			Valve Name DR-P1B DISCHARGE VALVE												
1-DR-V-24A	3	B	3	BALL	MO	P	O	O	302-203	A-4	PI	Y2			
			Valve Name DR-S-1A BACKWASH VALVE												
1-DR-V-24B	3	B	3	BALL	MO	P	O	O	302-203	A-4	PI	Y2			
			Valve Name DR-S-1B BACKWASH VALVE												
1-DR-V-7A	3	C	2	CK	SA	A	C	O/C	302-202	B-7	CC	M3			
											CO	M3			
			Valve Name DR-P1A COLUMN VACUUM BREAKER (Check Valve)												
1-DR-V-7B	3	C	2	CK	SA	A	C	O/C	302-202	B-6	CC	M3			
											CO	M3			
			Valve Name DR-P1B COLUMN VACUUM BREAKER (Check Valve)												
1-DR-V-8A	3	C	1.5	RV	SA	A	C	O/C	302-202	G-7	RT	Y10			
			Valve Name DECAY HEAT SERVICE COOLER DC-C-2A RELIEF												
1-DR-V-8B	3	C	1.5	RV	SA	A	C	O/C	302-202	F-7	RT	Y10			
			Valve Name DECAY HEAT SERVICE COOLER DC-C-2B RELIEF												

Attachment 15
Inservice Testing Valve Table

EMERGENCY FEEDWATER (Page 1)

Valve EPN	Safety Class	Category	Size	Valve Type	Act. Type	Active / Passive	Normal Position	Safety Position	P&ID	P&ID Coor.	Test Type	Test Freq.	Relief Request	Deferred Just.	Tech. Pos.
1-EF-V-11A	3	C	4	CK	SA	A	SYS	O/C	302-082	F-6	CC	RR		RJ-05	
											COF	RR		RJ-05	
			Valve Name EF-P2A DISCHARGE CHECK VALVE												
1-EF-V-11B	3	C	4	CK	SA	A	SYS	O/C	302-082	B-6	CC	RR		RJ-05	
											COF	RR		RJ-05	
			Valve Name EF-P2B DISCHARGE CHECK VALVE												
1-EF-V-12A	2	C	6	CK	SA	A	SYS	O/C	302-082	D-4	CCF	RR		RJ-05	
											COF	RR		RJ-05	
			Valve Name CONTAINMENT ISOLATION - EFW TO OTSG "A" CHECK VLV												
1-EF-V-12B	2	C	6	CK	SA	A	SYS	O/C	302-082	B-3	CCF	RR		RJ-05	
											COF	RR		RJ-05	
			Valve Name CONTAINMENT ISOLATION - EFW TO OTSG "B" CHECK VLV												
1-EF-V-13	3	C	6	CK	SA	A	SYS	O/C	302-082	E-6	CC	RR		RJ-07	
											CO	RR		RJ-07	
			Valve Name EF-P1 DISCHARGE CHECK VALVE												
1-EF-V-19A	3	C	1.5	CK	SA	A	SYS	O/C	302-082	F-6	CC	M3			
											CO	M3			
			Valve Name EF-P2A RECIRC LINE CHECK VALVE												
1-EF-V-19B	3	C	1.5	CK	SA	A	SYS	O/C	302-082	B-6	CC	M3			
											CO	M3			
			Valve Name EF-P2B RECIRC LINE CHECK VALVE												
1-EF-V-21	3	C	2	CK	SA	A	SYS	O/C	302-082	D-6	CC	M3			
											CO	M3			
			Valve Name EF-P1 RECIRCULATION CHECK VALVE												
1-EF-V-2A	3	B	6	GA	MO	A	O	O/C	302-082	F-5	PI	Y2			
											STC	M3			
			Valve Name EFW PUMP DISCHARGE HEADER CROSS CONNECT VALVE												
1-EF-V-2B	3	B	6	GA	MO	A	O	O/C	302-082	D-5	PI	Y2			
											STC	M3			
			Valve Name EFW PUMP DISCHARGE HEADER CROSS CONNECT VALVE												
1-EF-V-30A	2	B	3	PLG	AO	A	C	O/C	302-082	F-4	EC	Y2			
											EO	Y2			
											FC	M3			IST-013
											STC	M3			
											STO	M3			
			Valve Name EFW TO OTSG "A" FLOW CONTROL VALVE												

Attachment 15
Inservice Testing Valve Table

EMERGENCY FEEDWATER (Page 2)

Valve EPN	Safety Class	Category	Size	Valve Type	Act. Type	Active / Passive	Normal Position	Safety Position	P&ID	P&ID Coor.	Test Type	Test Freq.	Relief Request	Deferred Just.	Tech. Pos.
1-EF-V-30B	2	B	3	PLG	AO	A	C	O/C	302-082	B-5	EC	Y2			
											EO	Y2			
											FC	M3			IST-013
											STC	M3			
											STO	M3			
			Valve Name	EFW TO OTSG "B" FLOW CONTROL VALVE											
1-EF-V-30C	2	B	3	PLG	AO	A	C	O/C	302-082	B-5	EC	Y2			
											EO	Y2			
											FC	M3			IST-013
											STC	M3			
											STO	M3			
			Valve Name	EFW TO OTSG "A" FLOW CONTROL VALVE											
1-EF-V-30D	2	B	3	PLG	AO	A	C	O/C	302-082	G-5	EC	Y2			
											EO	Y2			
											FC	M3			IST-013
											STC	M3			
											STO	M3			
			Valve Name	EFW TO OTSG "B" FLOW CONTROL VALVE											
1-EF-V-35	3	C	2	RV	SA	A	C	O/C	302-082	F-1	RT	Y4			
			Valve Name	EF-P1 BEARING COOLING WTR RETURN RELIEF											
1-EF-V-39A	3	C	1	RV	SA	A	C	O/C	302-082	F-3	RT	Y8			
			Valve Name	EF-P2A BEARING COOLING WTR RETURN RELIEF											
1-EF-V-39B	3	C	1	RV	SA	A	C	O/C	302-082	F-2	RT	Y8			
			Valve Name	EF-P2B BEARING COOLING WTR RETURN RELIEF											
1-EF-V-4	3	B	6	GA	MO	A	C	O/C	302-611	E-1	PI	Y2			
											STO	M3			
			Valve Name	EMERGENCY RIVER WATER SUPPLY TO EFW PUMPS											
1-EF-V-5	3	B	6	GA	MO	A	C	O/C	302-611	F-1	PI	Y2			
											STO	M3			
			Valve Name	EMERGENCY RIVER WATER SUPPLY TO EFW PUMPS											

Attachment 15
Inservice Testing Valve Table

EMERGENCY DIESEL GENERATORS SUPPORT SYST (Page 1)

Valve EPN	Safety Class	Category	Size	Valve Type	Act. Type	Active / Passive	Normal Position	Safety Position	P&&ID	P&&ID Coor.	Test Type	Test Freq.	Relief Request	Deferred Just.	Tech. Pos.
1-EG-V-10A	NA	C	0.75	CK	SA	A	C	C	302-351	F-8	BDO	M3			IST-014
											CC	M3			IST-007
		Valve Name	EG-T1A-1 AIR START SYS. RECEIVER INLET CHECK												
1-EG-V-10B	NA	C	0.75	CK	SA	A	C	C	302-351	F-1	BDO	M3			IST-014
											CC	M3			IST-007
		Valve Name	EG-T1B-1 AIR START SYS. RECEIVER INLET CHECK												
1-EG-V-10C	NA	C	0.75	CK	SA	A	C	C	302-351	D-8	BDO	M3			IST-014
											CC	M3			IST-007
		Valve Name	EG-T1A-2 AIR START SYS. RECEIVER INLET CHECK												
1-EG-V-10D	NA	C	0.75	CK	SA	A	C	C	302-351	D-1	BDO	M3			IST-014
											CC	M3			IST-007
		Valve Name	EG-T1B-2 AIR START RECEIVER INLET CHECK												
1-EG-V-16A	N/A	B	1.5	DIA	SO	A	C	O/C	302-351	F-6	STO	M3			IST-007
		Valve Name	AIR START FOR DIESEL GENERATOR 1A												
1-EG-V-16B	N/A	B	1.5	DIA	SO	A	C	O/C	302-351	F-3	STO	M3			IST-007
		Valve Name	AIR START FOR DIESEL GENERATOR 1B												
1-EG-V-16C	N/A	B	1.5	DIA	SO	A	C	O/C	302-351	E-6	STO	M3			IST-007
		Valve Name	AIR START FOR EG-Y1A												
1-EG-V-16D	N/A	B	1.5	DIA	SO	A	C	O/C	302-351	E-3	STO	M3			IST-007
		Valve Name	AIR START FOR EG-Y1B												
1-EG-V-2A	N/A	C	0.5	RV	SA	A	C	O/C	302-351	G-8	RT	Y10			
		Valve Name	STARTING AIR RECEIVER EG-T-1A-1 RELIEF												
1-EG-V-2B	N/A	C	0.5	RV	SA	A	C	O/C	302-351	G-1	RT	Y10			
		Valve Name	STARTING AIR RECEIVER EG-T-1B-1 RELIEF												
1-EG-V-32A	N/A	C	4	CK	SA	A	SYS	O	302-354	C-6	D&I	Y8			
		Valve Name	EG-C3A/A COOL RADIATOR OUTLET CHECK VALVE												
1-EG-V-32B	N/A	C	4	CK	SA	A	SYS	O	302-354	C-3	D&I	Y8			
		Valve Name	EG-C3B/A COOL RADIATOR OUTLET CHECK VALVE												

Attachment 15
Inservice Testing Valve Table

EMERGENCY DIESEL GENERATORS SUPPORT SYST (Page 2)

Valve EPN	Safety Class	Category	Size	Valve Type	Act. Type	Active / Passive	Normal Position	Safety Position	P&&ID	P&&ID Coor.	Test Type	Test Freq.	Relief Request	Deferred Just.	Tech. Pos.
1-EG-V-32C	N/A	C	4	CK	SA	A	SYS	O	302-354	C-5	D&I	Y8			
			Valve Name EG-C3A/B COOL RADIATOR OUTLET CHECK VALVE												
1-EG-V-32D	N/A	C	4	CK	SA	A	SYS	O	302-354	C-2	D&I	Y8			
			Valve Name EG-C3B/B COOL RADIATOR OUTLET CHECK VALVE												
1-EG-V-34A	N/A	C	5	CK	SA	A	SYS	C	302-354	E-5	D&I	Y8			
			Valve Name JACKET COOLANT RADIATOR BYPASS CHECK VALVE												
1-EG-V-34B	N/A	C	5	CK	SA	A	SYS	C	302-354	E-1	D&I	Y8			
			Valve Name JACKET COOLANT RADIATOR BYPASS CHECK VALVE												
1-EG-V-3A	N/A	C	0.5	RV	SA	A	C	O/C	302-351	E-8	RT	Y10			
			Valve Name STARTING AIR RECEIVER EG-T-1A-2 RELIEF												
1-EG-V-3B	N/A	C	0.5	RV	SA	A	C	O/C	302-351	E-1	RT	Y10			
			Valve Name STARTING AIR RECEIVER EG-T-1B-2 RELIEF												
1-EG-V-48A	N/A	C	4	CK	SA	A	C	O/C	302-354	F-6	D&I	Y8			
			Valve Name AIR COOLING PUMP "A" DISCHARGE CHECK VALVE												
1-EG-V-48B	N/A	C	4	CK	SA	A	C	O/C	302-354	F-3	D&I	Y8			
			Valve Name AIR COOLING PUMP "B" DISCHARGE CHECK VALVE												
1-EG-V-77A	N/A	C	0.5	CK	SA	A	SYS	O/C	302-353	G-7	D&I	Y8			
			Valve Name EG-Y-1A TURBO-CHARGER LUBE OIL SUPPLY CHECK												
1-EG-V-77B	N/A	C	0.5	CK	SA	A	SYS	O/C	302-353	G-3	D&I	Y8			
			Valve Name EG-Y-1B TURBO-CHARGER LUBE OIL SUPPLY CHECK												
1-EG-V-7A	N/A	C		RV	SA	A	C	O/C	302-353	G-10	RT	Y10			
			Valve Name EG-Y-1A ENGINE-DRIVEN FO PUMP EG-P-9A DISCH RELIEF												
1-EG-V-7B	N/A	C		RV	SA	A	C	O/C	302-353	G-5	RT	Y10			
			Valve Name EG-Y-1B ENGINE-DRIVEN FO PUMP EG-P-9B DISCH RELIEF												

Attachment 15
Inservice Testing Valve Table

FIRE SERVICE WATER (Page 1)

Valve EPN	Safety Class	Category	Size	Valve Type	Act. Type	Active / Passive	Normal Position	Safety Position	P&&ID	P&&ID Coor.	Test Type	Test Freq.	Relief Request	Deferred Just.	Tech. Pos.
1-FS-V-401	2	A	4	GL	M	P	LC	C	302-231-2	D-5	LTJ	AJ			
			Valve Name	CONTAINMENT ISOLATION - FIRE SERVICE WATER											

Attachment 15
Inservice Testing Valve Table

FEEDWATER (Page 1)

Valve EPN	Safety Class	Category	Size	Valve Type	Act. Type	Active / Passive	Normal Position	Safety Position	P&ID	P&ID Coor.	Test Type	Test Freq.	Relief Request	Deferred Just.	Tech. Pos.
1-FW-V-12A	2	C	20	CK	SA	A	O	C	302-081	B-6	BDO	CM			
											CCD	CM			
			Valve Name	CONTAINMENT ISOLATION - OTSG "A" INLET CHECK VALVE											
1-FW-V-12B	2	C	20	CK	SA	A	O	C	302-081	B-3	BDO	CM			
											CCD	CM			
			Valve Name	CONTAINMENT ISOLATION - OTSG "B" INLET CHECK VALVE											
1-FW-V-16A	NA	B	6	ANG	AO	A	O	C	302-081	B-6	PI	Y2			
											STC	CS		CSJ-10	
			Valve Name	MAIN FEEDWATER STARTUP FLOW CONTROL VALVE											
1-FW-V-16B	NA	B	6	ANG	AO	A	O	C	302-081	B-3	PI	Y2			
											STC	CS		CSJ-10	
			Valve Name	MAIN FEEDWATER STARTUP FLOW CONTROL VALVE											
1-FW-V-17A	NA	B	16	ANG	AO	A	O	C	302-081	C-6	PI	Y2			
											STC	CS		CSJ-10	
			Valve Name	MAIN FEEDWATER CONTROL VALVE											
1-FW-V-17B	NA	B	16	ANG	AO	A	O	C	302-081	C-3	PI	Y2			
											STC	CS		CSJ-10	
			Valve Name	MAIN FEEDWATER CONTROL VALVE											
1-FW-V-5A	NA	B	20	GA	MO	A	O	C	302-081	C-6	PI	Y2			
											STC	CS		CSJ-10	
			Valve Name	MAIN FEEDWATER "A" BLOCK VALVE											
1-FW-V-5B	NA	B	20	GA	MO	A	O	C	302-081	C-3	PI	Y2			
											STC	CS		CSJ-10	
			Valve Name	MAIN FEEDWATER "B" BLOCK VALVE											
1-FW-V-92A	NA	B	6	GA	MO	A	O	C	302-081	B-6	PI	Y2			
											STC	CS		CSJ-10	
			Valve Name	OTSG "A" STARTUP FEEDWATER BLOCK VALVE											
1-FW-V-92B	NA	B	6	GA	MO	A	O	C	302-081	B-3	PI	Y2			
											STC	CS		CSJ-10	
			Valve Name	OTSG "B" STARTUP FEEDWATER BLOCK VALVE											

Attachment 15
Inservice Testing Valve Table

CONTAIMENT HYDROGEN MONITORING (Page 1)

Valve EPN	Safety Class	Category	Size	Valve Type	Act. Type	Active / Passive	Normal Position	Safety Position	P&ID	P&ID Coor.	Test Type	Test Freq.	Relief Request	Deferred Just.	Tech. Pos.
1-HM-V-1A	2	A	1	GL	SO	A	C	O/C	302-674	F-5	FC	M3			IST-013
											LTJ	AJ			
											PI	Y2			
											STC	M3			
											STO	M3			
			Valve Name	CONTAINMENT ISOLATION - H2 MONITOR "A" OUTLET ISOL											
1-HM-V-1B	2	A	1	GL	SO	A	C	O/C	302-674	C-5	FC	M3			IST-013
											LTJ	AJ			
											PI	Y2			
											STC	M3			
											STO	M3			
			Valve Name	CONTAINMENT ISOLATION - H2 MONITOR "B" OUTLET ISOL											
1-HM-V-2A	2	A	1	GL	SO	A	C	O/C	302-674	E-5	FC	M3			IST-013
											LTJ	AJ			
											PI	Y2			
											STC	M3			
											STO	M3			
			Valve Name	CONTAINMENT ISOLATION - "A" H2 MONITOR INLET ISOL											
1-HM-V-2B	2	A	1	GL	SO	A	C	O/C	302-674	C-5	FC	M3			IST-013
											LTJ	AJ			
											PI	Y2			
											STC	M3			
											STO	M3			
			Valve Name	CONTAINMENT ISOLATION - "B" H2 MONITOR INLET ISOL											
1-HM-V-3A	2	A	1	GL	SO	A	C	O/C	302-674	F-5	FC	M3			IST-013
											LTJ	AJ			
											PI	Y2			
											STC	M3			
											STO	M3			
			Valve Name	CONTAINMENT ISOLATION - "A" H2 MONITOR OUTLET ISOL											
1-HM-V-3B	2	A	1	GL	SO	A	C	O/C	302-674	C-5	FC	M3			IST-013
											LTJ	AJ			
											PI	Y2			
											STC	M3			
											STO	M3			
			Valve Name	CONTAINMENT ISOLATION - "B" H2 MONITOR INLET ISOL											

Attachment 15
Inservice Testing Valve Table

CONTAIMENT HYDROGEN MONITORING (Page 2)

Valve EPN	Safety Class	Category	Size	Valve Type	Act. Type	Active / Passive	Normal Position	Safety Position	P&&ID	P&&ID Coor.	Test Type	Test Freq.	Relief Request	Deferred Just.	Tech. Pos.
1-HM-V-4A	2	A	1	GL	SO	A	C	O/C	302-674	E-5	FC	M3			IST-013
											LTJ	AJ			
											PI	Y2			
											STC	M3			
											STO	M3			
			Valve Name CONTAINMENT ISOLATION - "A" H2 MONITOR INLET ISOL												
1-HM-V-4B	2	A	1	GL	SO	A	C	O/C	302-674	C-5	FC	M3			IST-013
											LTJ	AJ			
											PI	Y2			
											STC	M3			
											STO	M3			
			Valve Name CONTAINMENT ISOLATION - "B" H2 MONITOR INLET ISOL												

Attachment 15
Inservice Testing Valve Table

HYDROGEN PURGE DISCHARGE SYSTEM (Page 1)

Valve EPN	Safety Class	Category	Size	Valve Type	Act. Type	Active / Passive	Normal Position	Safety Position	P&&ID	P&&ID Coor.	Test Type	Test Freq.	Relief Request	Deferred Just.	Tech. Pos.
1-HP-V-1	2	A	6	GA	M	P	LC	C	302-721	B-7	LTJ	AJ			
			Valve Name	CONTAINMENT ISOLATION - H2 PURGE ISOLATION VALVE											
1-HP-V-6	2	A	6	GA	M	P	LC	C	302-721	B-7	LTJ	AJ			
			Valve Name	CONTAINMENT ISOLATION - H2 PURGE RB ISOL VALVE											

Attachment 15
Inservice Testing Valve Table

POST LOCA HYDROGEN RECOMBINER SYSTEM (Page 1)

Valve EPN	Safety Class	Category	Size	Valve Type	Act. Type	Active / Passive	Normal Position	Safety Position	P&ID	P&ID Coor.	Test Type	Test Freq.	Relief Request	Deferred Just.	Tech. Pos.
1-HR-V-22A	2	A	2	GL	SO	P	C	C	302-722	D-7	LTJ	AJ			
											PI	Y2			
			Valve Name	CONTAINMENT ISOLATION - RB EXHAUST TO H2 RECOMB											
1-HR-V-22B	2	A	2	GL	SO	P	C	C	302-722	C-7	LTJ	AJ			
											PI	Y2			
			Valve Name	CONTAINMENT ISOLATION - RB EXHAUST TO H2 RECOMB											
1-HR-V-23A	2	A	2	GL	SO	P	C	C	302-722	C-7	LTJ	AJ			
											PI	Y2			
			Valve Name	CONTAINMENT ISOLATION - H2 RECOMB RETURN ISOL VLV											
1-HR-V-23B	2	A	2	GL	SO	P	C	C	302-722	B-7	LTJ	AJ			
											PI	Y2			
			Valve Name	CONTAINMENT ISOLATION - H2 RECOMB RETURN ISOL VLV											
1-HR-V-2A	2	A	2	GL	M	P	LC	C	302-722	E-5	LTJ	AJ			
			Valve Name	CONTAINMENT ISOLATION - HR-R1A/B RB SUPPLY VALVE											
1-HR-V-2B	2	A	2	GL	M	P	LC	C	302-722	E-5	LTJ	AJ			
			Valve Name	CONTAINMENT ISOLATION - HR-R1A/B RB SUPPLY											
1-HR-V-4A	2	A	2	GL	M	P	LC	C	302-722	F-5	LTJ	AJ			
			Valve Name	CONTAINMENT ISOLATION - HR-R1A/B RB RETURN VALVE											
1-HR-V-4B	2	A	2	GL	M	P	LC	C	302-722	F-5	LTJ	AJ			
			Valve Name	CONTAINMENT ISOLATION - HR-R1A/B RB RETURN VALVE											

Attachment 15
Inservice Testing Valve Table

INSTRUMENT AIR (Page 1)

Valve EPN	Safety Class	Category	Size	Valve Type	Act. Type	Active / Passive	Normal Position	Safety Position	P&&ID	P&&ID Coor.	Test Type	Test Freq.	Relief Request	Deferred Just.	Tech. Pos.
1-IA-V-1621A	N/A	B	1	GA	AO	A	T	T	302-273	C-7	FO	RR		RJ-08	
			Valve Name 2-HR BACKUP AIR SYSTEM "A" PRESSURE REDUCER												
1-IA-V-1621B	N/A	B	1	GA	AO	A	T	T	302-273	C-3	FO	RR		RJ-08	
			Valve Name 2-HR BACKUP AIR SYSTEM "B" PRESSURE REDUCER												
1-IA-V-1624A	N/A	C	1.5	RV	SA	A	C	O/C	302-273	C-7	RT	Y8			
			Valve Name 2-HR BACKUP AIR SYSTEM "A" RELIEF												
1-IA-V-1624B	N/A	C	1.5	RV	SA	A	C	O/C	302-273	C-4	RT	Y8			
			Valve Name 2-HR BACKUP AIR SYSTEM "B" RELIEF												
1-IA-V-1625A	N/A	B	0.75	3W	AO	A	O	O	302-273	C-6	FO	RR		RJ-08	IST-013
											SO	RR		RJ-08	
			Valve Name 2-HR BACKUP AIR SYSTEM "A" HEADER VENT VALVE												
1-IA-V-1625B	N/A	B	0.75	3W	AO	A	O	O	302-273	C-4	FO	RR		RJ-08	IST-013
											SO	RR		RJ-08	
			Valve Name 2-HR BACKUP AIR SYSTEM "B" HEADER VENT VALVE												
1-IA-V-1626A	N/A	B	0.75	3W	AO	A	O	O	302-273	C-6	FO	RR		RJ-08	IST-013
											SO	RR		RJ-08	
			Valve Name 2-HR BACKUP AIR SYSTEM HEADER SUPPLY VALVE												
1-IA-V-1626B	N/A	B	0.75	3W	AO	A	O	O	302-273	C-4	FO	RR		RJ-08	IST-013
											SO	RR		RJ-08	
			Valve Name 2-HR BACKUP AIR SYSTEM HEADER SUPPLY VALVE												
1-IA-V-1628A	NA	C	1	CK	SA	A	SYS	C	302-273	C-6	BDO	RR		RJ-06	IST-014
											CC	RR		RJ-06	
			Valve Name 2-HR BACKUP AIR SYSTEM "A" INST AIR SUPPLY CHECK												
1-IA-V-1628B	NA	C	1	CK	SA	A	SYS	C	302-273	C-5	BDO	RR		RJ-06	IST-014
											CC	RR		RJ-06	
			Valve Name 2-HR BACKUP AIR SYSTEM "B" INST AIR SUPPLY CHECK												
1-IA-V-1631A	N/A	C	1	CK	SA	A	C	O/C	302-273	D-6	CC	RR		RJ-06	IST-014
											CO	RR		RJ-06	
			Valve Name 2-HR BACKUP AIR SYSTEM "A" SUPPLY CHECK												
1-IA-V-1631B	N/A	C	1	CK	SA	A	C	O	302-273	E-5	BDC	RR		RJ-06	IST-014
											CO	RR		RJ-06	
			Valve Name 2-HR BACKUP AIR SYSTEM CROSSOVER CHECK												
1-IA-V-1632	N/A	B	1	BALL	M	A	C	O/C	302-273	E-5	EO	Y2			
			Valve Name 2-HR BACKUP AIR SYSTEM CROSSOVER CHECK												
1-IA-V-20	2	A	2	GL	M	P	LC	LC	302-271	F-1	LTJ	AJ			
			Valve Name CONTAINMENT ISOLATION - IA INNER RB ISOL VALVE												
1-IA-V-6	2	A	2	GL	M	P	LC	LC	302-271	F-1	LTJ	AJ			
			Valve Name CONTAINMENT ISOLATION - RB INST AIR CONN VALVE												

Attachment 15
Inservice Testing Valve Table

INTERMEDIATE COOLING WATER SYSTEM (Page 1)

Valve EPN	Safety Class	Category	Size	Valve Type	Act. Type	Active / Passive	Normal Position	Safety Position	P&ID	P&ID Coor.	Test Type	Test Freq.	Relief Request	Deferred Just.	Tech. Pos.
1-IC-V-10	3	C	0.5	RV	SA	A	C	O	302-620		RT	Y10			
			Valve Name	INTER CLG - RCDT COOLER RELIEF VALVE											
1-IC-V-102	2	A/C	0.25	RV	SA	A	C	O/C	302-620	C-5	LTJ	AJ			
											RT	Y10			
			Valve Name	CONTAINMENT PENETRATION RELIEF VALVE											
1-IC-V-16	2	A/C	3	CK	SA	A	O	O/C	302-620	G-6	CCL	CM			
											COF	CM			
											LTJ	AJ			
			Valve Name	CONTAINMENT ISOLATION - CRD COOLING CHECK VALVE											
1-IC-V-18	2	A/C	6	CK	SA	A	O	O/C	302-620	H-6	CCL	CM			
											COF	CM			
											LTJ	AJ			
			Valve Name	CONTAINMENT ISOLATION - LETDOWN SUPPLY CHECK VLV											
1-IC-V-2	2	A	6	GA	MO	A	O	C	302-620	C-6	LTJ	AJ			
											PI	Y2			
											SP	M3		CSJ-01	
											STC	CS		CSJ-01	
			Valve Name	CONTAINMENT ISOLATION - ICCW COOLANT RETURN VALVE											
1-IC-V-3	2	A	6	PLG	AO	A	O	C	302-620	C-5	LTJ	AJ			
											PI	Y2			
											SP	M3		CSJ-01	
											STC	CS		CSJ-01	
			Valve Name	CONTAINMENT ISOLATION - ICCW COOLANT RETURN VALVE											
1-IC-V-4	2	A	6	PLG	AO	A	O	C	302-620	H-5	LTJ	AJ			
											PI	Y2			
											SP	M3		CSJ-01	
											STC	CS		CSJ-01	
			Valve Name	CONTAINMENT ISOLATION - IC ISOL COOLANT SUPPLY											
1-IC-V-6	2	A	3	GL	AO	A	O	C	302-620	G-5	FC	CS		CSJ-01	IST-013
											LTJ	AJ			
											PI	Y2			
											SP	M3		CSJ-01	
											STC	CS		CSJ-01	
			Valve Name	CONTAINMENT ISOLATION - IC COOLANT SUPPLY TO CRDM											
1-IC-V-76	2	C	0	RV	SA	A	C	O/C	302-620	D-6	RT	Y10			
			Valve Name	CRD COOLING COIL RELIEF VALVE											
1-IC-V-90A	3	C	0.75	RV	SA	A	C	O/C	302-620	E-8	RT	Y10			
			Valve Name	RC PUMP 1A COOLER RELIEF VALVE											
1-IC-V-90B	3	C	0.75	RV	SA	A	C	O/C	302-620	D-8	RT	Y10			
			Valve Name	RC PUMP 1B COOLER RELIEF VALVE											
1-IC-V-90C	3	C	0.75	RV	SA	A	C	O/C	302-620	D-8	RT	Y10			
			Valve Name	RC PUMP 1A COOLER RELIEF VALVE											
1-IC-V-90D	3	C	0.75	RV	SA	A	C	O/C	302-620	C-8	RT	Y10			
			Valve Name	RC PUMP 1A COOLER RELIEF VALVE											

Attachment 15
Inservice Testing Valve Table

MAIN STEAM (Page 1)

Valve EPN	Safety Class	Category	Size	Valve Type	Act. Type	Active / Passive	Normal Position	Safety Position	P&&ID	P&&ID Coor.	Test Type	Test Freq.	Relief Request	Deferred Just.	Tech. Pos.
1-MS-V-10A	3	B	6	GA	MO	A	C	C	302-011	F-3	PI	Y2			
											STO	RR			
			Valve Name	OTSG "A" TO EF-P1 JOG/THROTTLE VALVE											
1-MS-V-10B	3	B	6	GA	MO	A	C	C	302-011	F-3	PI	Y2			
											STO	RR			
			Valve Name	OTSG "B" TO EF-P1 JOG/THROTTLE VALVE											
1-MS-V-13A	3	B	2	GL	AO	A	C	O	302-011	F-3	FO	M3			IST-013
											PI	Y2			
											STO	M3			
											STC	M3			
			Valve Name	MAIN STEAM SUPPLY TO EF-P1 FROM OTSG "A"											
1-MS-V-13B	3	B	2	GL	AO	A	C	O	302-011	F-3	FO	M3			IST-013
											PI	Y2			
											STO	M3			
											STC	M3			
			Valve Name	MAIN STEAM SUPPLY TO EF-P1 FROM OTSG "B"											
1-MS-V-17A	2	C	6	RV	SA	A	C	O/C	302-011	G-8	RT	Y5			
			Valve Name	OTSG "A" MS RELIEF VALVE											
1-MS-V-17B	2	C	6	RV	SA	A	C	O/C	302-011	G-8	RT	Y5			
			Valve Name	OTSG "A" MS RELIEF VALVE											
1-MS-V-17C	2	C	6	RV	SA	A	C	O/C	302-011	H-8	RT	Y5			
			Valve Name	OTSG "B" MS RELIEF VALVE											
1-MS-V-17D	2	C	10	RV	SA	A	C	O/C	302-011	H-8	RT	Y5			
			Valve Name	OTSG MS RELIEF VALVE											
1-MS-V-18A	2	C	6	RV	SA	A	C	O/C	302-011	G-9	RT	Y5			
			Valve Name	OTSG "A" MS RELIEF VALVE											
1-MS-V-18B	2	C	6	RV	SA	A	C	O/C	302-011	G-9	RT	Y5			
			Valve Name	OTSG "A" MS RELIEF VALVE											
1-MS-V-18C	2	C	6	RV	SA	A	C	O/C	302-011	H-9	RT	Y5			
			Valve Name	OTSG "B" MS RELIEF VALVE											
1-MS-V-18D	2	C	6	RV	SA	A	C	O/C	302-011	H-9	RT	Y5			
			Valve Name	OTSG "B" MS RELIEF VALVE											
1-MS-V-19A	2	C	6	RV	SA	A	C	O/C	302-011	G-9	RT	Y5			
			Valve Name	OTSG "A" MS RELIEF VALVE											
1-MS-V-19B	2	C	6	RV	SA	A	C	O/C	302-011	G-9	RT	Y5			
			Valve Name	OTSG "A" MS RELIEF VALVE											
1-MS-V-19C	2	C	6	RV	SA	A	C	O/C	302-011	H-9	RT	Y5			
			Valve Name	OTSG "B" MS RELIEF VALVE											
1-MS-V-19D	2	C	6	RV	SA	A	C	O/C	302-011	H-9	RT	Y5			
			Valve Name	OTSG "B" MS RELIEF VALVE											

Attachment 15
Inservice Testing Valve Table

MAIN STEAM (Page 2)

Valve EPN	Safety Class	Category	Size	Valve Type	Act. Type	Active / Passive	Normal Position	Safety Position	P&ID	P&ID Coor.	Test Type	Test Freq.	Relief Request	Deferred Just.	Tech. Pos.
1-MS-V-1A	2	B/C	24	SCK	MO	A	O	C	302-011	G-10	BDO	M3			IST-014
											CC	RR		RJ-10	
											PI	Y2			
											STC	CS		CSJ-16	
			Valve Name CONTAINMENT ISOLATION - OTSG "A" MS ISOL VALVE												
1-MS-V-1B	2	B/C	24	SCK	MO	A	O	C	302-011	G-10	BDO	M3			IST-014
											CC	RR		RJ-10	
											PI	Y2			
											STC	CS		CSJ-16	
			Valve Name CONTAINMENT ISOLATION - OTSG "A" MS ISOL VALVE												
1-MS-V-1C	2	B/C	24	SCK	MO	A	O	C	302-011	G-10	BDO	M3			IST-014
											CC	RR		RJ-10	
											PI	Y2			
											STC	CS		CSJ-16	
			Valve Name CONTAINMENT ISOLATION - OTSG "B" MS ISOL VALVE												
1-MS-V-1D	2	B/C	24	SCK	MO	A	O	C	302-011	H-10	BDO	M3			IST-014
											CC	RR		RJ-10	
											PI	Y2			
											STC	CS		CSJ-16	
			Valve Name CONTAINMENT ISOLATION - OTSG "B" MS ISOL VALVE												
1-MS-V-20A	2	C	6	RV	SA	A	C	O/C	302-011	G-9	RT	Y5			
			Valve Name OTSG "A" MS RELIEF VALVE												
1-MS-V-20B	2	C	6	RV	SA	A	C	O/C	302-011	G-9	RT	Y5			
			Valve Name OTSG "A" MS RELIEF VALVE												
1-MS-V-20C	2	C	6	RV	SA	A	C	O/C	302-011	H-9	RT	Y5			
			Valve Name OTSG "B" MS RELIEF VALVE												
1-MS-V-20D	2	C	6	RV	SA	A	C	O/C	302-011	H-9	RT	Y5			
			Valve Name OTSG "B" MS RELIEF VALVE												
1-MS-V-21A	2	C	3	RV	SA	A	C	O/C	302-011	G-9	RT	Y5			
			Valve Name OTSG "A" MS RELIEF VALVE												
1-MS-V-21B	2	C	3	RV	SA	A	C	O/C	302-011	H-9	RT	Y5			
			Valve Name OTSG "B" MS RELIEF VALVE												
1-MS-V-22A	3	C	4	RV	SA	A	C	O/C	302-011	F-5	RT	Y8			
			Valve Name EMERGENCY FW PUMP EF-P1 STEAM SUPPLY RELIEF												
1-MS-V-22B	3	C	4	RV	SA	A	C	O/C	302-011	F-5	RT	Y8			
			Valve Name EMERGENCY FW PUMP EF-P1 STEAM SUPPLY RELIEF												
1-MS-V-2A	2	B	12	GA	MO	A	O	O/C	302-011	F-4	PI	Y2			
											STC	M3			
			Valve Name OTSG "A" MS TO EF-P1 & TURBINE BYPASS VALVES												
1-MS-V-2B	2	B	12	GA	MO	A	O	O/C	302-011	G-4	PI	Y2			
											STC	M3			
			Valve Name OTSG "B" MS TO EF-P1 & TURBINE BYPASS VALVES												

Attachment 15
Inservice Testing Valve Table

MAIN STEAM (Page 3)

Valve EPN	Safety Class	Category	Size	Valve Type	Act. Type	Active / Passive	Normal Position	Safety Position	P&ID	P&ID Coor.	Test Type	Test Freq.	Relief Request	Deferred Just.	Tech. Pos.
1-MS-V-33A	2	B	1	GL	M	A	O	C	302-121	D-6	EC	Y2			
			Valve Name MS LINE A TRAP INLET ISOLATION												
1-MS-V-33B	2	B	1	GL	M	A	O	C	302-121	D-6	EC	Y2			
			Valve Name MS LINE B TRAP INLET ISOLATION												
1-MS-V-33C	2	B	1	GL	M	A	O	C	302-121	D-6	EC	Y2			
			Valve Name MS LINE C TRAP INLET ISOLATION												
1-MS-V-33D	2	B	1	GL	M	A	O	C	302-121	D-6	EC	Y2			
			Valve Name MS LINE D TRAP INLET ISOLATION												
1-MS-V-42A	2	B	1	GL	M	A	O	C	302-121	D-5	EC	Y2			
			Valve Name MS HEADAER A TRAP INLET ISOLATION												
1-MS-V-42B	2	B	1	GL	M	A	O	C	302-121	D-5	EC	Y2			
			Valve Name MS HEADAER B TRAP INLET ISOLATION												
1-MS-V-4A	3	B	6	GL	AO	A	C	C	302-011	F-4	FC	M3			
											PI	Y2			
											STC	M3			
			Valve Name ATMOSPHERIC DUMP VALVE FOR OTSG "A"												
1-MS-V-4B	3	B	6	GL	AO	A	C	C	302-011	G-3	FC	M3			
											PI	Y2			
											STC	M3			
			Valve Name ATMOSPHERIC DUMP VALVE FOR OTSG "B"												
1-MS-V-6	3	B	4	GL	AO	A	O	O	302-011	F-5	EC	Y2			
											EO	Y2			
											FO	M3			IST-013
											STO	M3			IST-007
			Valve Name EF-P1 MS PRESSURE REGULATOR CONTROL VALVE												
1-MS-V-8A	3	B	12	GA	MO	P	O	O	302-011	E-4	PI	Y2			
			Valve Name OTSG "A" TO MS-V3D, 3E & 3F ISOLATION VALVE												
1-MS-V-8B	3	B	12	GA	MO	P	O	O	302-011	E-4	PI	Y2			
			Valve Name OTSG "B" TO MS-V3A, 3B & 3C ISOLATION VALVE												
1-MS-V-88A	2	B	0.5	GL	M	A	O	C	302-012	F-4	EC	Y2			
			Valve Name MS LINE A POST HEATING TRAP ISOLATION												
1-MS-V-88B	2	B	0.5	GL	M	A	O	C	302-012	D-4	EC	Y2			
			Valve Name MS LINE B POST HEATING TRAP ISOLATION												
1-MS-V-88C	2	B	0.5	GL	M	A	O	C	302-012	E-4	EC	Y2			
			Valve Name MS LINE C POST HEATING TRAP ISOLATION												
1-MS-V-88D	2	B	0.5	GL	M	A	O	C	302-012	B-4	EC	Y2			
			Valve Name MS LINE D POST HEATING TRAP ISOLATION												
1-MS-V-92	2	B	2	GL	M	A	O	C	302-012	C-3	EC	Y2			
			Valve Name COMMON POST HEATING DRAIN ISOLATION												
1-MS-V-9A	3	C	6	CK	SA	A	SYS	O/C	302-011	F-3	CCD	CM			
											COD	CM			
											CP	CM			
			Valve Name MAIN STEAM SUPPLY CHECK VALVE TO EF-U1												

MAIN STEAM (Page 4)

Valve EPN	Safety Class	Category	Size	Valve Type	Act. Type	Active / Passive	Normal Position	Safety Position	P&ID	P&ID Coor.	Test Type	Test Freq.	Relief Request	Deferred Just.	Tech. Pos.
1-MS-V-9B	3	C	6	CK	SA	A	SYS	O/C	302-011	F-3	CCD	CM			
											COD	CM			
											CP	CM			

Valve Name MAIN STEAM SUPPLY CHECK VALVE TO EF-U1

Attachment 15
Inservice Testing Valve Table

MAKEUP & PURIFICATION (Page 1)

Valve EPN	Safety Class	Category	Size	Valve Type	Act. Type	Active / Passive	Normal Position	Safety Position	P&ID	P&ID Coor.	Test Type	Test Freq.	Relief Request	Deferred Just.	Tech. Pos.
1-MU-RV-1	3	C	2	RV	SA	A	C	O/C	302-660	A-7	RT	Y4			
			Valve Name MAKEUP TANK MU-T-1 RELIEF												
1-MU-V-107A	1	C	2.5	CK	SA	A	C	O/C	302-661	H-2	CCD	CM			
											COD	CM			
											COF	CM			
			Valve Name CONTAINMENT ISOLATION - HPI TO RC "A" SUPPLY CHECK												
1-MU-V-107B	1	C	2.5	CK	SA	A	C	O/C	302-661	G-2	CCD	CM			
											COD	CM			
											COF	CM			
			Valve Name CONTAINMENT ISOLATION - HPI TO RC "B" SUPPLY CHECK												
1-MU-V-107C	1	C	2.5	CK	SA	A	C	O/C	302-661	D-2	CCD	CM			
											COD	CM			
											COF	CM			
			Valve Name CONTAINMENT ISOLATION - HPI TO RC "C" SUPPLY CHECK												
1-MU-V-107D	1	C	2.5	CK	SA	A	C	O/C	302-661	D-2	CCD	CM			
											COD	CM			
											COF	CM			
			Valve Name CONTAINMENT ISOLATION - HPI TO RC "D" SUPPLY CHECK												
1-MU-V-112	2	A/C	4	CK	SA	A	O	C	302-661	B-5	CC	RR		RJ-12	
											CO	M3			
											LT	Y2			
			Valve Name MAKEUP TANK OUTLET CHECK VALVE												
1-MU-V-116	1	A/C	1.5	CK	SA	A	O	C	302-661	F-3	BDO	CM			
											CCL	CM			
											LTJ	AJ			
			Valve Name CONTAINMENT ISOLATION - SEAL INJ SPRY/RC CHK												
1-MU-V-14A	2	A/C	6	SCK	MO	A	C	O/C	302-661	B-4	CC	RR		RJ-13	
											CO	RR		RJ-13	
											LT	Y2			
											PI	Y2			
											STO	M3			
			Valve Name MU PUMP SUCTION FROM BWST STOP CHECK VALVE												
1-MU-V-14B	2	A/C	6	SCK	MO	A	C	O/C	302-661	B-2	CC	RR		RJ-13	
											CO	RR		RJ-13	
											LT	Y2			
											PI	Y2			
											STO	M3			
			Valve Name MU PUMP SUCTION FROM BWST STOP CHECK VALVE												

Attachment 15
Inservice Testing Valve Table

MAKEUP & PURIFICATION (Page 2)

Valve EPN	Safety Class	Category	Size	Valve Type	Act. Type	Active / Passive	Normal Position	Safety Position	P&ID	P&ID Coor.	Test Type	Test Freq.	Relief Request	Deferred Just.	Tech. Pos.
1-MU-V-16A	2	B	2.5	GL	MO	A	C	O/C	302-661	H-4	PI	Y2			
											STC	M3			
											STO	M3			
			Valve Name	CONTAINMENT ISOLATION - HPI "A" CONTROL VALVE											
1-MU-V-16B	2	B	2.5	GL	MO	A	C	O/C	302-661	G-4	PI	Y2			
											STC	M3			
											STO	M3			
			Valve Name	CONTAINMENT ISOLATION - HPI "B" CONTROL VALVE											
1-MU-V-16C	2	B	2.5	GL	MO	A	C	O/C	302-661	D-2	PI	Y2			
											STC	M3			
											STO	M3			
			Valve Name	CONTAINMENT ISOLATION - HPI "C" CONTROL VALVE											
1-MU-V-16D	2	B	2.5	GL	MO	A	C	O/C	302-661	D-2	PI	Y2			
											STC	M3			
											STO	M3			
			Valve Name	CONTAINMENT ISOLATION - HPI "D" CONTROL VALVE											
1-MU-V-18	2	A	2.5	GA	AO	A	O	C	302-661	G-4	FC	CS		CSJ-03	IST-013
											LTJ	AJ			
											PI	Y2			
											SP	M3			
											STC	CS		CSJ-03	
			Valve Name	CONTAINMENT ISOLATION - CHARGE LINE ISOL VALVE											
1-MU-V-193A	2	C	2	SCK	SA	A	SYS	O/C	302-661	D-5	CC	RR		RJ-27	
											CO	RR		RJ-27	
											CP	M3			
			Valve Name	MU-P1A RECIRC STOP CHECK VALVE											
1-MU-V-193B	2	C	2	SCK	SA	A	SYS	O/C	302-661	D-4	CC	RR		RJ-27	
											CO	RR		RJ-27	
											CP	M3			
			Valve Name	MU-P1B RECIRC STOP CHECK VALVE											
1-MU-V-193C	2	C	2	SCK	SA	A	SYS	O/C	302-661	D-3	CC	RR		RJ-27	
											CO	RR		RJ-27	
											CP	M3			
			Valve Name	MU-P1C RECIRC STOP CHECK VALVE											
1-MU-V-20	2	A	4	GA	AO	A	O	C	302-661	F-3	FC	CS		CSJ-04	IST-013
											LTJ	AJ			
											PI	Y2			
											STC	CS		CSJ-04	
			Valve Name	CONTAINMENT ISOLATION - RCP SEAL WATER ISOL VLV											
1-MU-V-219	1	A/C	2.5	CK	SA	A	O	C	302-661	H-2	BDO	CM			
											CCL	CM			
											LTJ	AJ			
			Valve Name	NORMAL MAKEUP LINE TO HPI LINE B CHECK											

Attachment 15
Inservice Testing Valve Table

MAKEUP & PURIFICATION (Page 3)

Valve EPN	Safety Class	Category	Size	Valve Type	Act. Type	Active / Passive	Normal Position	Safety Position	P&ID	P&ID Coor.	Test Type	Test Freq.	Relief Request	Deferred Just.	Tech. Pos.
1-MU-V-220	1	C	2.5	CK	SA	A	C	O	302-661	G-2	BDC	CM			
											COD	CM			
			Valve Name	HPI LOOP "B" BACK FLOW FROM MAKEUP - CHECK VALVE											
1-MU-V-238	2	C	0.25	RV	SA	A	C	O/C	302-660	F-5	LTJ	AJ			
											RT	Y10			
			Valve Name	RCS LETDOWN CONTAINMENT PENETRATION RELIEF											
1-MU-V-25	2	A	4	GL	MO	A	O	C	302-660	C-3	LTJ	AJ			
											PI	Y2			
											SP	M3		CSJ-05	
											STC	CS		CSJ-05	
			Valve Name	CONTAINMENT ISOLATION RCP SEAL RETURN ISOL VALVE											
1-MU-V-26	2	A	4	GA	AO	A	O	C	302-660	C-4	FC	CS		CSJ-05	IST-013
											LTJ	AJ			
											PI	Y2			
											SP	M3		CSJ-05	
											STC	CS		CSJ-05	
			Valve Name	CONTAINMENT ISOLATION RCP SEAL RETURN LETDOWN ISOL											
1-MU-V-2A	1	A	2.5	GL	MO	A	O	C	302-660	G-4	LTJ	AJ			
											PI	Y2			
											SP	M3		CSJ-06	
											STC	CS		CSJ-06	
			Valve Name	CONTAINMENT ISOLATION - LETDOWN CLR "A" OUTLET VLV											
1-MU-V-2B	1	A	2.5	GL	MO	A	O	C	302-660	F-4	LTJ	AJ			
											PI	Y2			
											SP	M3		CSJ-06	
											STC	CS		CSJ-06	
			Valve Name	CONTAINMENT ISOLATION - LETDOWN CLR "B" OUTLET VLV											
1-MU-V-3	2	A	2.5	GA	AO	A	O	C	302-660	G-5	FC	CS		CSJ-06	IST-013
											LTJ	AJ			
											PI	Y2			
											SP	M3		CSJ-06	
											STC	CS		CSJ-06	
			Valve Name	CONTAINMENT ISOLATION - LETDOWN COOLER ISOL VALVE											
1-MU-V-36	2	A	2	GA	MO	A	O	O/C	302-661	D-6	LT	Y2			
											PI	Y2			
											STC	M3			
											STO	M3			
			Valve Name	MU PUMPS RECIRC ISOLATION VALVE											

Attachment 15
Inservice Testing Valve Table

MAKEUP & PURIFICATION (Page 4)

Valve EPN	Safety Class	Category	Size	Valve Type	Act. Type	Active / Passive	Normal Position	Safety Position	P&ID	P&ID Coor.	Test Type	Test Freq.	Relief Request	Deferred Just.	Tech. Pos.
1-MU-V-37	3	A	2	GA	MO	A	O	O/C	302-661	D-7	LT	Y2			
											PI	Y2			
											STC	M3			
											STO	M3			
			Valve Name MU PUMPS RECIRC ISOL VALVE												
1-MU-V-51	3	B	1	DIA	AO	A	C	O	302-660	C-10	PI	Y2			
											STO	M3			
			Valve Name EMERGENCY BORIC ACID ADD VALVE TO MAKEUP TANK												
1-MU-V-54A	3	C	0.75	CK	SA	A	C	c	302-660	D-10	CCP	CM			
											CO	CM			
			Valve Name LITHIUM HYDROXIDE PUMP TO MU SYSTEM CHECK												
1-MU-V-54B	3	C	0.75	CK	SA	A	C	C	302-660	D-10	CCP	CM			
											CO	CM			
			Valve Name HYDRAZINE PUMP TO MU SYSTEM CHECK												
1-MU-V-73A	2	C	3	CK	SA	A	SYS	O/C	302-661	C-5	CC	RR		RJ-15	
											CO	RR		RJ-15	
			Valve Name MU-P1A DISCHARGE CHECK VALVE												
1-MU-V-73B	2	C	3	CK	SA	A	SYS	O/C	302-661	C-4	CC	RR		RJ-15	
											CO	RR		RJ-15	
			Valve Name MU-P1B DISCHARGE CHECK VALVE												
1-MU-V-73C	2	C	3	CK	SA	A	SYS	O/C	302-661	C-3	CC	RR		RJ-15	
											CO	RR		RJ-15	
			Valve Name MU-P1C DISCHARGE CHECK VALVE												
1-MU-V-86A	1	C	2.5	CK	SA	A	C	O	302-661	D-1	BDC	CM			
											COD	CM			
			Valve Name LOOP "D" RCS HPI INLET CHECK VALVE												
1-MU-V-86B	1	C	2.5	CK	SA	A	C	O	302-661	D-1	BDC	CM			
											COD	CM			
			Valve Name LOOP "C" RCS HPI INLET CHECK VALVE												
1-MU-V-94	1	C	2.5	CK	SA	A	SYS	O	302-661	G-1	BDC	CM			
											COD	CM			
			Valve Name LOOP "B" RCS HPI INLET CHECK VALVE												
1-MU-V-95	1	C	2.5	CK	SA	A	C	O	302-661	H-1	BDC	CM			
											COD	CM			
			Valve Name LOOP "A" RCS HPI INLET CHECK VALVE												

Attachment 15
Inservice Testing Valve Table

NUCLEAR PLANT NITROGEN SUPPLY (Page 1)

Valve EPN	Safety Class	Category	Size	Valve Type	Act. Type	Active / Passive	Normal Position	Safety Position	P&&ID	P&&ID Coor.	Test Type	Test Freq.	Relief Request	Deferred Just.	Tech. Pos.
1-NI-V-26	2	A	1	GL	M	P	LC	C	302-720	D-9	LTJ	AJ			
			Valve Name	CONTAINMENT ISOLATION - 650# N2 SUPPLY TO RB											
1-NI-V-27	2	A	1	GL	M	P	LC	C	302-720	D-9	LTJ	AJ			
			Valve Name	CONTAINMENT ISOLATION - 650# N2 SUPPLY TO RB											

Attachment 15
Inservice Testing Valve Table

NUCLEAR SERVICES RIVER WATER (Page 1)

Valve EPN	Safety Class	Category	Size	Valve Type	Act. Type	Active / Passive	Normal Position	Safety Position	P&ID	P&ID Coor.	Test Type	Test Freq.	Relief Request	Deferred Just.	Tech. Pos.
1-NR-V-16B	3	B	12	BTF	MO	P	O/C/T	AI	302-202	G-9	PI	Y2			
		Valve Name	NUCLEAR SERVICES HX NS-C-1B OUTLET ISOLATION												
1-NR-V-16C	3	B	12	BTF	MO	P	O/C/T	AI	302-202	F-9	PI	Y2			
		Valve Name	NUCLEAR SERVICES HX NS-C-1C OUTLET ISOLATION												
1-NR-V-16D	3	B	12	BTF	MO	P	O/C/T	AI	302-202	F-9	PI	Y2			
		Valve Name	NUCLEAR SERVICES HX NS-C-1D OUTLET ISOLATION												
1-NR-V-19	3	B	24	BTF	MO	A	C	O	302-202	E-5	EO	Y2			
											PI	Y2			
		Valve Name	NR SYSTEM OUTLET TO SCREEN WASH HEADER												
1-NR-V-1A	3	B	16	BTF	MO	A	O/C	O	302-202	C-10	PI	Y2			
											STO	M3			
		Valve Name	NUC RIVER PUMP "A" DISCH VALVE												
1-NR-V-1B	3	B	16	BTF	MO	A	O/C	O	302-202	C-9	PI	Y2			
											STO	M3			
		Valve Name	NUC RIVER PUMP "B" DISCH VALVE												
1-NR-V-1C	3	B	16	BTF	MO	A	O/C	O	302-202	C-9	PI	Y2			
											STO	M3			
		Valve Name	NR-P1C DISCH VALVE												
1-NR-V-2	3	A	30	BTF	MO	P	C	C	302-202	C-9	LT	Y2			
											PI	Y2			
		Valve Name	NR TO SR HEADER ISOLATION VALVE												
1-NR-V-20A	3	C	16	CK	SA	A	SYS	O/C	302-202	B-10	CC	M3			
											CO	M3			
		Valve Name	NR-P1A DISCHARGE CHECK VALVE												
1-NR-V-20B	3	C	16	CK	SA	A	SYS	O/C	302-202	B-9	CC	M3			
											CO	M3			
		Valve Name	NR-P1B DISCHARGE CHECK VALVE												
1-NR-V-20C	3	C	16	CK	SA	A	SYS	O/C	302-202	B-9	CC	M3			
											CO	M3			
		Valve Name	NR-P1C DISCHARGE CHECK VALVE												
1-NR-V-21A	3	C	0.5	RV	SA	A	C	O/C	302-202	G-8	RT	Y10			
		Valve Name	INTERMEDIATE SERVICE COOLER IC-C-1A RELIEF												
1-NR-V-21B	3	C	0.5	RV	SA	A	C	O/C	302-202	F-8	RT	Y10			
		Valve Name	INTERMEDIATE SERVICE COOLER IC-C-1B RELIEF												

Attachment 15
Inservice Testing Valve Table

NUCLEAR SERVICES RIVER WATER (Page 2)

Valve EPN	Safety Class	Category	Size	Valve Type	Act. Type	Active / Passive	Normal Position	Safety Position	P&ID	P&ID Coor.	Test Type	Test Freq.	Relief Request	Deferred Just.	Tech. Pos.
1-NR-V-22A	3	C	2	CK	SA	A	C	O/C	302-202	B-10	CC	M3			
											CO	M3			
			Valve Name	NR-P1A VACUUM BREAKER (Check Valve)											
1-NR-V-22B	3	C	2	CK	SA	A	C	O/C	302-202	B-10	CC	M3			
											CO	M3			
			Valve Name	NR-P1B VACUUM BREAKER (Check Valve)											
1-NR-V-22C	3	C	2	CK	SA	A	C	O/C	302-202	B-9	CC	M3			
											CO	M3			
			Valve Name	NR-P1C VACUUM BREAKER (Check Valve)											
1-NR-V-25A	3	C	1.5	RV	SA	A	C	O/C	302-202	H-10	RT	Y10			
			Valve Name	NUCLEAR SERVICES HX NS-C-1A TUBE SIDE RELIEF											
1-NR-V-25B	3	C	1.5	RV	SA	A	C	O/C	302-202	G-10	RT	Y10			
			Valve Name	NUCLEAR SERVICES HX NS-C-1B TUBE SIDE RELIEF											
1-NR-V-25C	3	C	1.5	RV	SA	A	C	O/C	302-202	G-10	RT	Y10			
			Valve Name	NUCLEAR SERVICES HX NS-C-1C TUBE SIDE RELIEF											
1-NR-V-25D	3	C	1.5	RV	SA	A	C	O/C	302-202	F-10	RT	Y10			
			Valve Name	NUCLEAR SERVICES HX NS-C-1D TUBE SIDE RELIEF											
1-NR-V-4A	3	A	30	BTF	MO	A	C	C	302-202	E-10	LT	Y2			
											PI	Y2			
											STC	M3			
			Valve Name	DEICING MAKEUP VALVE "A"											
1-NR-V-4B	3	A	30	BTF	MO	A	C	C	302-202	E-10	LT	Y2			
											PI	Y2			
											STC	M3			
			Valve Name	DEICING MAKEUP VALVE "B"											
1-NR-V-53A	3	B	2	BALL	MO	P	O	O	302-203	A-5	PI	Y2			
			Valve Name	NR-S-1A BACKWASH VALVE											
1-NR-V-53B	3	B	2	BALL	MO	P	O	O	302-203	A-5	PI	Y2			
			Valve Name	NR-S-1B BACKWASH VALVE											
1-NR-V-53C	3	B	2	BALL	MO	P	O	O	302-203	A-5	PI	Y2			
			Valve Name	NR-S-1C BACKWASH VALVE											
1-NR-V-6	3	A	30	BTF	MO	P	C	C	302-202	E-8	LT	Y2			
											PI	Y2			
			Valve Name	HX VAULT CROSS CONNECT BETWEEN NR & SR											
1-NR-V-8B	3	B	12	BTF	MO	P	O	O	302-202	G-10	PI	Y2			
			Valve Name	NUCLEAR SERVICES HX NS-C-1B INLET ISOLATION											
1-NR-V-8C	3	B	12	BTF	MO	P	O	O	302-202	F-10	PI	Y2			
			Valve Name	NUCLEAR SERVICES HX NS-C-1C INLET ISOLATION											
1-NR-V-8D	3	B	12	BTF	MO	P	O	O	302-202	F-10	PI	Y2			
			Valve Name	NUCLEAR SERVICES HX NS-C-1D INLET ISOLATION											

Attachment 15
Inservice Testing Valve Table

NUCLEAR SERVICES CLOSED COOLING WATER (Page 1)

Valve EPN	Safety Class	Category	Size	Valve Type	Act. Type	Active / Passive	Normal Position	Safety Position	P&ID	P&ID Coor.	Test Type	Test Freq.	Relief Request	Deferred Just.	Tech. Pos.
1-NS-V-10A	3	C	12	CK	SA	A	SYS	O/C	302-610	G-3	CCF	CM			
											COD	CM			
											CPF	CM			
			Valve Name	NUC SVCS PUMP "A" DISCHARGE CHECK VALVE											
1-NS-V-10B	3	C	12	CK	SA	A	SYS	O/C	302-610	G-3	CCF	CM			
											COD	CM			
											CPF	CM			
			Valve Name	NS-P1B DISCHARGE CHECK VALVE											
1-NS-V-10C	3	C	12	CK	SA	A	SYS	O/C	302-610	G-2	CCF	CM			
											COD	CM			
											CPF	CM			
			Valve Name	NS-P1C DISCHARGE CHECK VALVE											
1-NS-V-11	2	A/C	8	CK	SA	A	O	C	302-610	D-9	BDO	CM			
											CCL	CM			
											LTJ	AJ			
			Valve Name	RCP MOTOR COOLER SUPPLY VALVE											
1-NS-V-135	3	C	0.5	XFC	SA	A	O	C	302-610	E-9	BDO	M3			IST-014
											CC	M3			
			Valve Name	NS/RR CROSS-CONN EXCESS FLOW VALVE											
1-NS-V-15	2	A	8	GA	MO	A	O	C	302-610	D-8	LTJ	AJ			
											PI	Y2			
											SP	M3		CSJ-07	
											STC	CS		CSJ-07	
			Valve Name	RC MOTOR COOLER RETURN VALVE											
1-NS-V-16A	3	B	8	GA	MO	A	O/C	O	302-610	D-3	PI	Y2			
											STO	M3			
			Valve Name	SPENT FUEL POOL COOLER SF-C-1A COOLING WATER INLET											
1-NS-V-16B	3	B	8	GA	MO	A	O/C	O	302-610	D-2	PI	Y2			
											STO	M3			
			Valve Name	SPENT FUEL POOL COOLER SF-C-1B COOLING WATER INLET											
1-NS-V-205	3	C	2	CK	SA	A	SYS	C	302-610	H-6	BDO	M3			IST-014
											CC	M3			
			Valve Name	NSCCW SURGE TANK DEMIN WATER SUPPLY CHECK VALVE											
1-NS-V-211	2	A/C	0.25	RV	SA	A	C	O/C	302-610	A-8	LTJ	AJ			
											RT	Y10			
			Valve Name	RB RETURN HEADER PENETRATION RELIEF											

Attachment 15
Inservice Testing Valve Table

NUCLEAR SERVICES CLOSED COOLING WATER (Page 2)

Valve EPN	Safety Class	Category	Size	Valve Type	Act. Type	Active / Passive	Normal Position	Safety Position	P&ID	P&ID Coor.	Test Type	Test Freq.	Relief Request	Deferred Just.	Tech. Pos.
1-NS-V-35	2	A	8	GA	MO	A	O	C	302-610	A-9	LTJ	AJ			
											PI	Y2			
											SP	M3		CSJ-08	
											STC	CS		CSJ-08	
			Valve Name	RC MOTOR COOLER RETURN VALVE											
1-NS-V-36A	2	C	0.5	RV	SA	A	C	O/C	302-610	F-8	RT	Y10			
			Valve Name	RB FAN MOTOR COOLER 1A RELIEF											
1-NS-V-36B	2	C	0.5	RV	SA	A	C	O/C	302-610	F-7	RT	Y10			
			Valve Name	RB FAN MOTOR COOLER 1B RELIEF											
1-NS-V-36C	2	C	0.5	RV	SA	A	C	O/C	302-610	F-7	RT	Y10			
			Valve Name	RB FAN MOTOR COOLER 1C RELIEF											
1-NS-V-37A	3	C	0.5	RV	SA	A	C	O/C	302-610	F-5	RT	Y10			
			Valve Name	STEAM GENERATOR SAMPLE COOLER CA-C-2A RELIEF											
1-NS-V-37B	3	C	0.5	RV	SA	A	C	O/C	302-610	F-5	RT	Y10			
			Valve Name	STEAM GENERATOR SAMPLE COOLER CA-C-2B RELIEF											
1-NS-V-38	3	C	0.5	RV	SA	A	C	O/C	302-610	F-5	RT	Y10			
			Valve Name	PRESSURIZER SAMPLE COOLER CA-C-1 RELIEF											
1-NS-V-39A	3	C	0.5	RV	SA	A	C	O/C	302-610	C-2	RT	Y10			
			Valve Name	SPENT FUEL POOL COOLER SF-C-1A TUBE SIDE RELIEF											
1-NS-V-39B	3	C	0.5	RV	SA	A	C	O/C	302-610	C-1	RT	Y10			
			Valve Name	SPENT FUEL POOL COOLER SF-C-1B TUBE SIDE RELIEF											
1-NS-V-4	2	A	8	GA	MO	A	O	C	302-610	A-8	LTJ	AJ			
											PI	Y2			
											SP	M3		CSJ-08	
											STC	CS		CSJ-08	
			Valve Name	RCP MOTOR COOLER RETURN VALVE											
1-NS-V-40A	3	C	0.5	RV	SA	A	C	O/C	302-610	B-8	RT	Y10			
			Valve Name	RC WASTE EVAP DISTILLATE COOLER WDL-C-3A RELIEF											
1-NS-V-40B	3	C	0.5	RV	SA	A	C	O/C	302-610	B-7	RT	Y10			
			Valve Name	RC WASTE EVAP. DISTILLATE COOLER WDL-C-3B RELIEF											
1-NS-V-41A	3	C	0.5	RV	SA	A	C	O/C	302-610	C-8	RT	Y10			
			Valve Name	RC WASTE EVAPORATOR CONDENSER WDL-C-2A RELIEF											
1-NS-V-41B	3	C	0.5	RV	SA	A	C	O/C	302-610	B-8	RT	Y10			
			Valve Name	RC WASTE EVAPORATOR CONDENSER WDL-C-2B RELIEF											
1-NS-V-42A	3	C	0.5	RV	SA	A	C	O/C	302-610	B-6	RT	Y10			
			Valve Name	WASTE GAS COMPRESSOR COOLER WDG-P-1A RELIEF											

Attachment 15
Inservice Testing Valve Table

NUCLEAR SERVICES CLOSED COOLING WATER (Page 3)

Valve EPN	Safety Class	Category	Size	Valve Type	Act. Type	Active / Passive	Normal Position	Safety Position	P&ID	P&ID Coor.	Test Type	Test Freq.	Relief Request	Deferred Just.	Tech. Pos.
1-NS-V-42B	3	C	0.5	RV	SA	A	C	O/C	302-610	B-6	RT	Y10			
			Valve Name	WASTE GAS COMPRESSOR COOLER WDG-P-1B RELIEF											
1-NS-V-43A	3	C	0.5	RV	SA	A	C	O/C	302-610	B-6	RT	Y10			
			Valve Name	RC PUMP SEAL RETURN COOLER MU-C-2A RELIEF											
1-NS-V-43B	3	C	0.5	RV	SA	A	C	O/C	302-610	B-5	RT	Y10			
			Valve Name	RC PUMP SEAL RETURN COOLER MU-C-2B RELIEF											
1-NS-V-44A	3	C	0.5	RV	SA	A	C	O/C	302-645	B-6	RT	Y10			
			Valve Name	MU-P-1A MOTOR AND BEARING COOLING WATER RELIEF											
1-NS-V-44B	3	C	0.5	RV	SA	A	C	O/C	302-610	D-4	RT	Y10			
			Valve Name	MU-P-1B MOTOR AND BEARING COOLING WATER RELIEF											
1-NS-V-44C	3	C	0.5	RV	SA	A	C	O/C	302-645	B-7	RT	Y10			
			Valve Name	MU-P-1C MOTOR AND BEARING COOLING WATER RELIEF											
1-NS-V-45A	3	C	0.5	RV	SA	A	C	O/C	302-610	D-10	RT	Y10			
			Valve Name	RC-P-1A MOTOR COOLER RELIEF											
1-NS-V-45B	3	C	0.5	RV	SA	A	C	O/C	302-610	D-10	RT	Y10			
			Valve Name	RC-P-1B MOTOR COOLER RELIEF											
1-NS-V-45C	3	C	0.5	RV	SA	A	C	O/C	302-610	C-10	RT	Y10			
			Valve Name	RC-P-1C MOTOR COOLER RELIEF											
1-NS-V-45D	3	C	0.5	RV	SA	A	C	O/C	302-610	B-10	RT	Y10			
			Valve Name	RC-P-1D MOTOR COOLER RELIEF											
1-NS-V-46A	3	C	0.5	RV	SA	A	C	O/C	302-610	F-6	RT	Y10			
			Valve Name	CONTROL BLDG AC HEAT EXCHANGER AH-C-4A RELIEF											
1-NS-V-46B	3	C	0.5	RV	SA	A	C	O/C	302-610	F-6	RT	Y10			
			Valve Name	CONTROL BLDG AC HEAT EXCHANGER AH-C-4B RELIEF											
1-NS-V-47	3	C	2	RV	SA	A	C	O/C	302-610	H-7	RT	Y4			
			Valve Name	NS SURGE TANK NS-T-1 RELIEF											
1-NS-V-48A	3	C	0.5	RV	SA	A	C	O/C	302-610	G-2	RT	Y10			
			Valve Name	NS & DC PUMP AREA COOLER AH-E-15A RELIEF											
1-NS-V-48B	3	C	0.5	RV	SA	A	C	O/C	302-610	G-1	RT	Y10			
			Valve Name	NS & DC PUMP AREA COOLER AH-E-15B RELIEF											
1-NS-V-49A	3	C	1	RV	SA	A	C	O/C	302-610	F-9	RT	Y10			
			Valve Name	EFW PUMP AND IA COMPR ROOM COOLER AH-E-24A RELIEF											
1-NS-V-49B	3	C	0.5	RV	SA	A	C	O/C	302-610	F-8	RT	Y10			
			Valve Name	EFW PUMP AND IA COMPR ROOM COOLER AH-E-24B RELIEF											

Attachment 15
Inservice Testing Valve Table

NUCLEAR SERVICES CLOSED COOLING WATER (Page 4)

Valve EPN	Safety Class	Category	Size	Valve Type	Act. Type	Active / Passive	Normal Position	Safety Position	P&ID	P&ID Coor.	Test Type	Test Freq.	Relief Request	Deferred Just.	Tech. Pos.
1-NS-V-51A	3	C	0.5	RV	SA	A	C	O/C	302-610	C-3	RT	Y10			
			Valve Name SPENT FUEL PUMP ROOM COOLER AH-E-8A RELIEF												
1-NS-V-51B	3	C	1	RV	SA	A	C	O/C	302-610	C-3	RT	Y10			
			Valve Name SPENT FUEL PUMP ROOM COOLER AH-E-8B RELIEF												
1-NS-V-52A	2	B	1	GA	AO	P	O	O	302-610	E-8	PI	Y2			
			Valve Name CONTAINMENT ISOLATION - AH-E1A MOTOR COOLER SUPPLY												
1-NS-V-52B	2	B	1	GA	AO	P	O	O	302-610	E-7	PI	Y2			
			Valve Name CONTAINMENT ISOLATION - AH-E1B MTR COOLER SUPPLY												
1-NS-V-52C	2	B	1	GA	AO	P	O	O	302-610	E-7	PI	Y2			
			Valve Name CONTAINMENT ISOLATION - AH-E1C MTR COOLER SUPPLY												
1-NS-V-53A	2	B	1	GA	AO	P	O	O	302-610	F-8	PI	Y2			
			Valve Name CONTAINMENT ISOLATION - AH-E1A MTR COOLER RETURN												
1-NS-V-53B	2	B	1	GA	AO	P	O	O	302-610	F-7	PI	Y2			
			Valve Name CONTAINMENT ISOLATION - AH-E1B MTR COOLER RETURN												
1-NS-V-53C	2	B	1	GA	AO	P	O	O	302-610	F-7	PI	Y2			
			Valve Name CONTAINMENT ISOLATION - AH-E1C MTR COOLER RETURN												
1-NS-V-54A	3	B	1.5	GL	AO	A	T	O	302-610	C-4	FO	M3			IST-013
											STO	M3			
			Valve Name SPENT FUEL PUMP ROOM COOLING COIL FLOW CONTROL												
1-NS-V-54B	3	B	1.5	GL	AO	A	T	O	302-610	C-3	FO	M3			IST-013
											STO	M3			
			Valve Name SPENT FUEL PUMP ROOM COOLING COIL FLOW CONTROL VLV												
1-NS-V-85	3	A	0.5	GL	M	A	O	C	302-610	E-9	EC	Y2			
			Valve Name NS-FI-76 ROTOMETER OUTLET ISOL VALVE												
1-NS-V-96A	3	C	0.75	RV	SA	A	C	O/C	302-610	G-10	RT	Y10			
			Valve Name NUCLEAR SERVICES HX NS-C-1A SHELL SIDE RELIEF												
1-NS-V-96B	3	C	0.75	RV	SA	A	C	O/C	302-610	G-9	RT	Y10			
			Valve Name NUCLEAR SERVICES HX NS-C-1B SHELL SIDE RELIEF												
1-NS-V-96C	3	C	0.75	RV	SA	A	C	O/C	302-610	G-9	RT	Y10			
			Valve Name NUCLEAR SERVICES HX NS-C-1C SHELL SIDE RELIEF												
1-NS-V-96D	3	C	0.75	RV	SA	A	C	O/C	302-610	G-8	RT	Y10			
			Valve Name NUCLEAR SERVICES HX NS-C-1D SHELL SIDE RELIEF												

Attachment 15
Inservice Testing Valve Table

PENETRATION PRESSURIZATION SYSTEM (Page 1)

Valve EPN	Safety Class	Category	Size	Valve Type	Act. Type	Active / Passive	Normal Position	Safety Position	P&ID	P&ID Coor.	Test Type	Test Freq.	Relief Request	Deferred Just.	Tech. Pos.
1-PP-V-210	2	A	1	GL	M	P	C	C	302-706	E-8	LTJ	AJ			
			Valve Name	CONTAINMENT INTEGRITY BACKUP SUPPLY AH-V1A/B											
1-PP-V-211	2	A	1	GL	M	P	C	C	302-706	G-10	LTJ	AJ			
			Valve Name	CONTAINMENT INTEGRITY - BACKUP SUPPLY TO AH-V1C/D											
1-PP-V-212	2	A	2	GL	M	P	C	C	302-706	F-7	LTJ	AJ			
			Valve Name	CONTAINMENT INTEGRITY - PP-T1B SUPPLY TO AH-V1A/B											
1-PP-V-213	2	A	2	GL	M	P	C	C	302-706	G-9	LTJ	AJ			
			Valve Name	CONTAINMENT INTEGRITY - PP-T1A SUPPLY TO AH-V1C/D											

Attachment 15
Inservice Testing Valve Table

REACTOR BUILDING EMERGENCY COOLING WATER (Page 1)

Valve EPN	Safety Class	Category	Size	Valve Type	Act. Type	Active / Passive	Normal Position	Safety Position	P&ID	P&ID Coor.	Test Type	Test Freq.	Relief Request	Deferred Just.	Tech. Pos.
1-RB-V-1A	NA	C	0.5	RV	SA	A	C	O/C	302-611	G-6	RT	Y10			
			Valve Name	RB NORMAL COOLING COIL 1A RELIEF VLV											
1-RB-V-1B	NA	C	0.5	RV	SA	A	C	O/C	302-611	G-6	RT	Y10			
			Valve Name	RB NORMAL COOLING COIL 1B RELIEF VLV											
1-RB-V-1C	NA	C	0.5	RV	SA	A	C	O/C	302-611	G-6	RT	Y10			
			Valve Name	RB NORMAL COOLING COIL 1C RELIEF VLV											
1-RB-V-1D	NA	C	0.5	RV	SA	A	C	O/C	302-611	G-6	RT	Y10			
			Valve Name	RX COMPARTMENT COOLING COIL AH-C-3A RELIEF VLV											
1-RB-V-1E	NA	C	0.5	RV	SA	A	C	O/C	302-611	G-6	RT	Y10			
			Valve Name	RX COMPARTMENT COOLING COIL AH-C-3B RELIEF VLV											
1-RB-V-2A	2	A	8	GA	MO	A	O	C	302-611	F-8	LTJ	AJ			
											PI	Y2			
											SP	M3		CSJ-09	
											STC	CS		CSJ-09	
			Valve Name	CONTAINMENT ISOLATION - RB NORMAL AIR COOL SUP VLV											
1-RB-V-7	2	A	8	GA	MO	A	O	C	302-611	F-8	LTJ	AJ			
											PI	Y2			
											SP	M3		CSJ-09	
											STC	CS		CSJ-09	
			Valve Name	CONTAINMENT ISOLATION - RB NORMAL COOL RETURN ISOL											

Attachment 15
Inservice Testing Valve Table

REACTOR COOLANT (Page 1)

Valve EPN	Safety Class	Category	Size	Valve Type	Act. Type	Active / Passive	Normal Position	Safety Position	P&ID	P&ID Coor.	Test Type	Test Freq.	Relief Request	Deferred Just.	Tech. Pos.
1-RC-RD-1	2	D	2	RPD	SA	A	C	O	302-650	D-8	DT	Y5			
			Valve Name	RCS HOT LEG VENT LINE RUPTURE DISK RD-1											
1-RC-RD-2	2	D	2	RPD	SA	A	C	O	302-650	D-2	DT	Y5			
			Valve Name	RCS HOT LEG VENT LINE RUPTURE DISK RD-2											
1-RC-RV-1A	1	C	2.5	RV	SA	A	C	O/C	302-650	G-6	RT	Y5			
			Valve Name	PRESSURIZER CODE SAFETY VALVE											
1-RC-RV-1B	1	C	2.5	RV	SA	A	C	O/C	302-650	G-6	RT	Y5			
			Valve Name	PRESSURIZER CODE SAFETY VALVE											
1-RC-RV-2	1	B/C	4	RV	SO	A	C	O/C	302-650	G-6	FC	RR	VR-01		IST-013
											RT	Y5	VR-01		
											STC	RR	VR-01		
											STO	RR	VR-01		
			Valve Name	PZR PILOT OPERATED RELIEF VALVE (PORV)											
1-RC-V-144A	1	C	14	CK	SA	A	C	O			CC	RR		RJ-28	
											CO	RR		RJ-28	
			Valve Name	REACTOR VESSEL INTERNAL VENT VALVE											
1-RC-V-144B	1	C	14	CK	SA	A	C	O			CC	RR		RJ-28	
											CO	RR		RJ-28	
			Valve Name	REACTOR VESSEL INTERNAL VENT VALVE											
1-RC-V-144C	1	C	14	CK	SA	A	C	O			CC	RR		RJ-28	
											CO	RR		RJ-28	
			Valve Name	REACTOR VESSEL INTERNAL VENT VALVE											
1-RC-V-144D	1	C	14	CK	SA	A	C	O			CC	RR		RJ-28	
											CO	RR		RJ-28	
			Valve Name	REACTOR VESSEL INTERNAL VENT VALVE											
1-RC-V-144E	1	C	14	CK	SA	A	C	O			CC	RR		RJ-28	
											CO	RR		RJ-28	
			Valve Name	REACTOR VESSEL INTERNAL VENT VALVE											
1-RC-V-144F	1	C	14	CK	SA	A	C	O			CC	RR		RJ-28	
											CO	RR		RJ-28	
			Valve Name	REACTOR VESSEL INTERNAL VENT VALVE											
1-RC-V-144G	1	C	14	CK	SA	A	C	O			CC	RR		RJ-28	
											CO	RR		RJ-28	
			Valve Name	REACTOR VESSEL INTERNAL VENT VALVE											
1-RC-V-144H	1	C	14	CK	SA	A	C	O			CC	RR		RJ-28	
											CO	RR		RJ-28	
			Valve Name	REACTOR VESSEL INTERNAL VENT VALVE											
1-RC-V-2	1	B	3	GA	MO	A	O	O/C	302-650	G-6	PI	Y2			
											STC	M3			
											STO	M3			
			Valve Name	PORV (RC-RV2) ISOLATION VALVE											

Attachment 15
Inservice Testing Valve Table

REACTOR COOLANT (Page 2)

Valve EPN	Safety Class	Category	Size	Valve Type	Act. Type	Active / Passive	Normal Position	Safety Position	P&ID	P&ID Coor.	Test Type	Test Freq.	Relief Request	Deferred Just.	Tech. Pos.
1-RC-V-23	1	A/C	1.5	CK	SA	A	C	O/C	302-650	G-6	CC	RR		RJ-23	
											COF	RR		RJ-23	
											LTH	Y2			
			Valve Name	DH PRESSURIZER SPRAY LINE CHECK VALVE											
1-RC-V-28	1	B	1	GL	MO	A	C	O/C	302-650	G-8	PI	Y2			
											STC	CS		CSJ-11	
											STO	CS		CSJ-11	
			Valve Name	PZR VENT TO RCDT ISOLATION VALVE											
1-RC-V-3	1	B	2.5	GL	MO	A	O	C	302-650	E-6	PI	Y2			
											STC	CS		CSJ-17	
			Valve Name	PRESSURIZER SPRAY LINE ISOLATION VALVE											
1-RC-V-4	1	A	1.5	GL	MO	A	C	O/C	302-650	G-6	LTH	Y2			
											PI	Y2			
											STC	CS		CSJ-18	
											STO	CS		CSJ-18	
			Valve Name	DECAY HEAT PRESSURIZER SPRAY LINE ISOLATION VALVE											
1-RC-V-40A	1	B	0.5	GL	SO	A	C	O/C	302-650	E-8	FC	CS		CSJ-12	IST-013
											PI	Y2			
											STC	CS		CSJ-12	
											STO	CS		CSJ-12	
			Valve Name	"A" HOT LEG HIGH POINT VENT TO RCDT AND ATMOSPHERE											
1-RC-V-40B	1	B	0.5	GL	SO	A	C	O/C	302-650	E-2	FC	CS		CSJ-12	IST-013
											PI	Y2			
											STC	CS		CSJ-12	
											STO	CS		CSJ-12	
			Valve Name	"B" HOT LEG VENT TO RCDT AND ATMOSPHERE											
1-RC-V-41A	1	B	0.5	GL	SO	A	C	C	302-650	E-8	FC	CS		CSJ-12	IST-013
											PI	Y2			
											STC	CS		CSJ-12	
											STO	CS		CSJ-12	
			Valve Name	"A" HOT LEG VENT TO RCDT AND ATMOSPHERE											
1-RC-V-41B	1	B	0.5	GL	SO	A	C	C	302-650	E-2	FC	CS		CSJ-12	IST-013
											PI	Y2			
											STC	CS		CSJ-12	
											STO	CS		CSJ-12	
			Valve Name	"B" HOT LEG VENT TO RCDT AND ATMOSPHERE											
1-RC-V-42	1	B	0.5	GL	SO	A	C	O/C	302-650	G-4	FC	CS		CSJ-13	IST-013
											PI	Y2			
											STC	CS		CSJ-13	
											STO	CS		CSJ-13	
			Valve Name	REACTOR VESSEL VENT TO REACTOR BLDG ATMOSPHERE											

Attachment 15
Inservice Testing Valve Table

REACTOR COOLANT (Page 3)

Valve EPN	Safety Class	Category	Size	Valve Type	Act. Type	Active / Passive	Normal Position	Safety Position	P&&ID	P&&ID Coor.	Test Type	Test Freq.	Relief Request	Deferred Just.	Tech. Pos.
1-RC-V-43	1	B	0.5	GL	SO	A	C	C	302-650	G-4	FC	CS		CSJ-13	IST-013
											PI	Y2			
											STC	CS		CSJ-13	
											STO	CS		CSJ-13	
			Valve Name	REACTOR VESSEL VENT TO REACTOR BLDG ATMOSPHERE											
1-RC-V-44	1	B	1	GL	SO	A	C	O/C	302-650	G-7	FC	CS		CSJ-11	IST-013
											PI	Y2			
											STC	CS		CSJ-11	
											STO	CS		CSJ-11	
			Valve Name	PRESSURIZER HIGH POINT VENT ISOLATION VALVE											

Attachment 15
Inservice Testing Valve Table

REACTOR BUILDING EMERGENCY COOLING WATER (Page 1)

Valve EPN	Safety Class	Category	Size	Valve Type	Act. Type	Active / Passive	Normal Position	Safety Position	P&ID	P&ID Coor.	Test Type	Test Freq.	Relief Request	Deferred Just.	Tech. Pos.
1-RR-V-10A	3	B	2	GL	AO	A	C	O/C	302-611	E-3	FC	M3			IST-013
											PI	Y2			
											STC	M3			
											STO	M3			
			Valve Name RR-P1A RECIRCULATION MINIMUM FLOW BYPASS VALVE												
1-RR-V-10B	3	B	2	GL	AO	A	C	O/C	302-611	E-2	FC	M3			IST-013
											PI	Y2			
											STC	M3			
											STO	M3			
			Valve Name RR-P1B RECIRCULATION MINIMUM FLOW BYPASS VALVE												
1-RR-V-11A	2	C	0.5	RV	SA	A	C	O/C	302-611	F-4	RT	Y10			
			Valve Name RBEC COIL "A" RELIEF												
1-RR-V-11B	2	C	0.5	RV	SA	A	C	O/C	302-611	E-4	RT	Y10			
			Valve Name RBEC COIL "B" RELIEF												
1-RR-V-11C	2	C	0.5	RV	SA	A	C	O/C	302-611	D-4	RT	Y10			
			Valve Name RBEC COIL "C" RELIEF												
1-RR-V-12A	3	C	2	CK	SA	A	C	O/C	302-611	D-3	CC	M3			
											CO	M3			
			Valve Name RIVER WATER PUMP "A" VACUUM BREAKER (Check Valve)												
1-RR-V-12B	3	C	2	CK	SA	A	C	O/C	302-611	D-2	CC	M3			
											CO	M3			
			Valve Name RIVER WATER PUMP "B" VACUUM BREAKER (Check Valve)												
1-RR-V-1A	3	B	16	BTF	MO	A	C	O	302-611	E-2	PI	Y2			
											STO	M3			
			Valve Name RR-P1A DISCHARGE VALVE												
1-RR-V-1B	3	B	16	BTF	MO	A	C	O	302-611	E-2	PI	Y2			
											STO	M3			
			Valve Name RR-P1B DISCHARGE VALVE												
1-RR-V-33A	3	B	2	BALL	MO	P	O	O	302-203	A-6	PI	Y2			
			Valve Name RR-S-1A BLOWDOWN VALVE												
1-RR-V-33B	3	B	2	BALL	MO	P	O	O	302-203	A-8	PI	Y2			
			Valve Name RR-S-1B BLOWDOWN VALVE												
1-RR-V-3A	2	B	12	GA	MO	A	O	O/C	302-611	H-4	PI	Y2			
											STC	M3			
											STO	M3			
			Valve Name CONTAINMENT ISOLATION - RBEC COIL "A" INLET VALVE												
1-RR-V-3B	2	B	12	GA	MO	A	O	O/C	302-611	G-4	PI	Y2			
											STC	M3			
											STO	M3			
			Valve Name CONTAINMENT ISOLATION - RBEC COIL "B" INLET VALVE												
1-RR-V-3C	2	B	12	GA	MO	A	O	O/C	302-611	F-4	PI	Y2			
											STC	M3			
											STO	M3			
			Valve Name CONTAINMENT ISOLATION - RBEC COIL "C" INLET VALVE												

Attachment 15
Inservice Testing Valve Table

REACTOR BUILDING EMERGENCY COOLING WATER (Page 2)

Valve EPN	Safety Class	Category	Size	Valve Type	Act. Type	Active / Passive	Normal Position	Safety Position	P&ID	P&ID Coor.	Test Type	Test Freq.	Relief Request	Deferred Just.	Tech. Pos.
1-RR-V-4A	2	B	12	GA	MO	A	C	O/C	302-611	E-3	PI	Y2			
											STC	M3			
											STO	M3			
			Valve Name	CONTAINMENT ISOLATION - RBEC COIL "1A" OUTLET VLV											
1-RR-V-4B	2	B	12	GA	MO	A	C	O/C	302-611	E-3	PI	Y2			
											STC	M3			
											STO	M3			
			Valve Name	CONTAINMENT ISOLATION - RBEC COIL "1B" OUTLET VLV											
1-RR-V-4C	2	B	12	GA	MO	A	C	O/C	302-611	D-3	PI	Y2			
											STC	M3			
											STO	M3			
			Valve Name	CONTAINMENT ISOLATION - RBEC COIL "1C" OUTLET VLV											
1-RR-V-4D	2	B	12	GA	MO	A	C	O/C	302-611	D-3	PI	Y2			
											STC	M3			
											STO	M3			
			Valve Name	CONTAINMENT ISOLATION - RBEC COIL "1C" OUTLET VLV											
1-RR-V-5	3	B	10	BTF	MO	A	C	O	302-611	B-3	PI	Y2			
											STO	M3			
			Valve Name	RR-V6 RB COOLING COIL DISCHARGE BYPASS VALVE											
1-RR-V-6	3	B	10	BTF	DIA	A	T	O	302-611	B-3	FO	M3			IST-013
											STO	M3			
			Valve Name	RB EMERG COOLING COIL BACK PRESSURE REGULATOR											
1-RR-V-7A	3	C	16	CK	SA	A	C	O	302-611	D-2	BDC	RR		RJ-18	IST-014
											COF	RR		RJ-18	
			Valve Name	RB EMERG COOL PUMP "A" DISCHARGE CHECK VALVE											
1-RR-V-7B	3	C	16	CK	SA	A	C	O	302-611	D-2	BDC	RR		RJ-18	IST-014
											COF	RR		RJ-18	
			Valve Name	RB EMERG COOL PUMP "B" DISCHARGE CHECK VALVE											
1-RR-V-8A	3	C	20	CK	SA	A	C	O/C	302-611	F-2	CC	M3			
											COF	RR		RJ-14	
			Valve Name	RIVER WATER TO RB COOL UNITS CHECK VALVE											
1-RR-V-8B	3	C	20	CK	SA	A	C	O/C	302-611	F-2	CC	M3			
											COF	RR		RJ-14	
			Valve Name	RIVER WATER TO RB COOL UNITS CHECK VALVE											
1-RR-V-9A	3	C	12	CK	SA	A	C	O	302-611	E-4	BDC	RR		RJ-11	IST-014
											COF	RR		RJ-11	
			Valve Name	CONTAINMENT ISOLATION - AH-E1A EMERG COOL OUTLET											
1-RR-V-9B	3	C	12	CK	SA	A	C	O	302-611	E-4	BDC	RR		RJ-11	IST-014
											COF	RR		RJ-11	
			Valve Name	CONTAINMENT ISOLATION - AH-E1B EMERG COOL OUTLET											
1-RR-V-9C	3	C	12	CK	SA	A	C	O	302-611	D-4	BDC	RR		RJ-11	IST-014
											COF	RR		RJ-11	
			Valve Name	CONTAINMENT ISOLATION - AH-E1C EMERG COOL OUTLET											

Attachment 15
Inservice Testing Valve Table

STATION SERVICE AIR (Page 1)

Valve EPN	Safety Class	Category	Size	Valve Type	Act. Type	Active / Passive	Normal Position	Safety Position	P&&ID	P&&ID Coor.	Test Type	Test Freq.	Relief Request	Deferred Just.	Tech. Pos.
1-SA-V-2	2	A	2	GL	M	P	LC	C	302-271	E-1	LTJ	AJ			
			Valve Name	CONTAINMENT ISOLATION - SERVICE AIR TURB BLDG											
1-SA-V-3	2	A	2	GL	M	P	LC	C	302-271	E-1	LTJ	AJ			
			Valve Name	CONTAINMENT ISOLATION - RB 1ST FL SVC AIR ISOL											

Attachment 15
Inservice Testing Valve Table

SPENT FUEL COOLING (Page 1)

Valve EPN	Safety Class	Category	Size	Valve Type	Act. Type	Active / Passive	Normal Position	Safety Position	P&ID	P&ID Coor.	Test Type	Test Freq.	Relief Request	Deferred Just.	Tech. Pos.
1-SF-V-1	3	B	8	DIA	AO	A	O/C	O	302-630	F-6	PI	Y2			
											STO	M3			
			Valve Name SF-P-1A SUCTION FROM SF POOL "B"												
1-SF-V-11	3	B	8	DIA	AO	A	O/C	O	302-630	E-4	PI	Y2			
											STO	M3			
			Valve Name COOLER SF-C1A RETURN TO SF POOL "B"												
1-SF-V-12	3	B	8	DIA	AO	A	O/C	O	302-630	E-4	PI	Y2			
											STO	M3			
			Valve Name COOLER SF-C1A RETURN TO SF POOL "A"												
1-SF-V-14	3	B	8	DIA	AO	A	O/C	O	302-630	D-4	PI	Y2			
											STO	M3			
			Valve Name COOLER SF-C1B RETURN TO SF POOL "B"												
1-SF-V-15	3	B	8	DIA	AO	A	O/C	O	302-630	D-4	PI	Y2			
											STO	M3			
			Valve Name COOLER SF-C1B RETURN TO SF POOL "A"												
1-SF-V-2	3	B	8	DIA	AO	A	O/C	O	302-630	F-6	PI	Y2			
											STO	M3			
			Valve Name SF-P-1A SUCTION FROM SF POOL "A"												
1-SF-V-22	2	A	8	GA	M	P	LC	C	302-630	E-7	LTJ	AJ			
			Valve Name FUEL TRANSFER CANAL FILL & DRAIN LINE VALVE												
1-SF-V-23	2	A	8	GA	M	P	LC	C	302-630	E-7	LTJ	AJ			
			Valve Name FUEL TRANSFER CANAL FILL & DRAIN LINE VALVE												
1-SF-V-4	3	B	8	DIA	AO	A	O/C	O	302-630	D-6	PI	Y2			
											STO	M3			
			Valve Name SF-P-1B SUCTION FROM SF POOL "B"												
1-SF-V-5	3	B	8	DIA	AO	A	O/C	O	302-630	D-6	PI	Y2			
											STO	M3			
			Valve Name SF-P-1B SUCTION FROM SF POOL "A"												
1-SF-V-50	3	C	8	CK	SA	A	O	O/C	302-630	H-4	CCR	CM			
											COF	CM			
			Valve Name SF POOL "A" COOLING RETURN CHECK VALVE												
1-SF-V-51	3	C	8	CK	SA	A	O	O/C	302-630	H-1	CCR	CM			
											COF	CM			
			Valve Name SF POOL "B" COOLING RETURN CHECK VALVE												

Attachment 15
Inservice Testing Valve Table

SPENT FUEL COOLING (Page 2)

Valve EPN	Safety Class	Category	Size	Valve Type	Act. Type	Active / Passive	Normal Position	Safety Position	P&ID	P&ID Coor.	Test Type	Test Freq.	Relief Request	Deferred Just.	Tech. Pos.
1-SF-V-7	3	C	8	CK	SA	A	SYS	O/C	302-630	F-5	CC	M3			
											CO	M3			
			Valve Name SF-P1A DISCHARGE CHECK VALVE												
1-SF-V-8	3	C	8	CK	SA	A	SYS	O/C	302-630	D-5	CC	M3			
											CO	M3			
			Valve Name SF-P1B DISCHARGE CHECK VALVE												

Attachment 15
Inservice Testing Valve Table

GASEOUS WASTE DISPOSAL (Page 1)

Valve EPN	Safety Class	Category	Size	Valve Type	Act. Type	Active / Passive	Normal Position	Safety Position	P&ID	P&ID Coor.	Test Type	Test Freq.	Relief Request	Deferred Just.	Tech. Pos.
1-WDG-V-3	2	A	2	GL	MO	A	O	C	302-694	G-6	LTJ	AJ			
											PI	Y2			
											STC	M3			
			Valve Name CONTAINMENT ISOLATION - RB VENT HEADER VALVE												
1-WDG-V-4	2	A	2	GA	SO	A	O	C	302-694	G-5	FC	M3			IST-013
											LTJ	AJ			
											PI	Y2			
											STC	M3			
			Valve Name CONTAINMENT ISOLATION - RB VENT HEADER VALVE												

Attachment 15
Inservice Testing Valve Table

LIQUID RADWASTE DISPOSAL (Page 1)

Valve EPN	Safety Class	Category	Size	Valve Type	Act. Type	Active / Passive	Normal Position	Safety Position	P&ID	P&ID Coor.	Test Type	Test Freq.	Relief Request	Deferred Just.	Tech. Pos.
1-WDL-V-303	2	A	3	GA	MO	A	C	C	302-690	F-8	LTJ	AJ			
											PI	Y2			
											STC	M3			
			Valve Name CONTAINMENT ISOLATION - RC DRAIN PUMP DISCH VALVE												
1-WDL-V-304	2	A	3	GL	AO	A	C	C	302-690	E-8	FC	M3			IST-013
											LTJ	AJ			
											PI	Y2			
											STC	M3			
			Valve Name CONTAINMENT ISOLATION - RC DRAIN PUMP DISCH ISOL												
1-WDL-V-534	2	A	6	GA	AO	A	C	C	302-719	B-6	FC	M3			IST-013
											LTJ	AJ			
											PI	Y2			
											STC	M3			
			Valve Name CONTAINMENT ISOLATION - RB SUMP DRAIN TO AUX BLDG												
1-WDL-V-535	2	A	6	GA	AO	A	C	C	302-719	B-6	FC	M3			IST-013
											LTJ	AJ			
											PI	Y2			
											STC	M3			
			Valve Name CONTAINMENT ISOLATION - RB SUMP DRAIN TO AUX BLDG												
1-WDL-V-727	2	A/C	0.25	RV	SA	A	C	O/C	302-690	F-8	LTJ	AJ			
											RT	Y10			
			Valve Name CONTAINMENT PENETRATION NO. 331 RELIEF												

ATTACHMENT 16
CHECK VALVE CONDITION MONITORING PLAN INDEX

ATTACHMENT 16

Valves in Check Valve Condition Monitoring Program

Valves shown in this table are monitored in the Check Valve Condition Monitoring (CVCM) Program. The details for each valve, including individual valve testing information, can be found in Attachment 15 of this Program Plan. The Test Plan and Test Analysis review for the valves are maintained in the individual Check Valve Condition Monitoring Plans.

Item	CVCM Plan	Valve EPNs	Description
1	CMP-BS-01	1-BS-V-30A/B	Containment Isolation - RB Spray Header Check Valves
2	CMP-CA-01	1-CA-V-192	Containment Isolation - Reclaimed Feed To RB Check
3	CMP-CF-01	1-CF-V-12A/B	Containment Isolation - CFT Makeup Check Valves
4	CMP-CF-02	1-CF-V-4A/B	Core Flood Tanks Outlet Check Valves
5	CMP-CO-01	1-CO-V-16A/B	Condensate Check Valve - Supply To EFW Pumps
6	CMP-CO-02	1-CO-V-175A/B	EFW Pump Bearing Cooling Return Check Valves
7	CMP-DH-01	1-DH-V-69	Containment Isolation - DH To PZR Aux Spray Line
8	CMP-FW-01	1-FW-V-12A/B	Containment Isolation - OTSG Inlet Check Valves
9	CMP-IC-01	1-IC-V-16	Containment Isol - CRD Cooling Inlet Check Valve
10	CMP-IC-02	1-IC-V-18	Containment Isol - Inter Clg Inlet to RB Check Valve
11	CMP-MS-01	1-MS-V-9A/B	Main Steam Supply Check Valve To EF-U1
12	CMP-MU-01	1-MU-V-107A/B/C/D	Containment Isolation - HPI To RC Supply Checks
13	CMP-MU-02	1-MU-V-54A/B	Lithium Hydroxide Pump To MU System Checks
14	CMP-MU-03	1-MU-V-116	Containment Isolation - Seal Inj Spray/RC Check
15	CMP-MU-04	1-MU-V-219	Normal Makeup Line To HPI Line B Check
16	CMP-MU-05	1-MU-V-220	HPI Loop "B" Back Flow From Makeup - Check Valve
17	CMP-MU-06	1-MU-V-86A/B, 1-MU-V-95	RCS HPI Inlet Check Valves
18	CMP-MU-07	1-MU-V-94	Loop RCS HPI Inlet Check Valve
19	CMP-NS-01	1-NS-V-11	RCP Motor Cooler Supply Valve
20	CMP-NS-02	1-NS-V-10A/B/C	Nuc Svcs Pump Discharge Check Valves
21	CMP-SF-01	1-SF-V-50/51	SF Pool Cooling Return Check Valve