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March 23, 2021

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

Ref 10 CFR 50.55a

Subject: Comanche Peak Nuclear Power Plant (CPNPP)
Docket Nos. 50-445 and 50-446
CPNPP UNITS 1 & 2 INSERVICE TESTING PLAN
FOR PUMPS & VALVES THIRD INTERVAL, REVISION 4

Dear Sir or Madam:

Pursuant to 10 CFR 50.55a, Vistra Operations Company LLC (Vistra OpCo) the operator of Comanche Peak Nuclear Power Plant Units 1 and 2 (herein referred to as CPNPP), herewith submits CPNPP Units 1 and 2 Inservice Testing Plan for Pumps and Valves, Third Interval, Revision 4 "For Information Only."

The start date of the third interval of the Inservice Testing Plan for CPNPP, Units 1 and 2 is August 3, 2013 with an end date of August 2, 2023. Revision 4 was effective March 23, 2021.

This communication contains no new commitments regarding CPNPP Units 1 and 2.

Should you have any questions, please contact Garry Struble at (254) 897-6628 or garry.struble@luminant.com.

Sincerely,

Jack C. Hicks

Jack C. Hicks

Enclosure: CPNPP Inservice Testing Plan, Third Interval, Revision 4

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COMANCHE PEAK NUCLEAR POWER PLANT UNITS 1 & 2
INSERVICE TESTING PLAN FOR PUMPS & VALVES
THIRD INTERVAL

ADDRESS:

COMANCHE PEAK NUCLEAR POWER PLANT
6322 NORTH FM 56
GLEN ROSE, TEXAS 76043

COMMERCIAL DATES:

UNIT 1 - AUGUST 13, 1990
UNIT 2 - AUGUST 3, 1993

COMANCHE PEAK NUCLEAR POWER PLANT
INSERVICE TESTING PLAN FOR PUMPS & VALVES
THIRD INTERVAL
EFFECTIVE LISTING FOR SECTIONS, TABLES, AND FIGURES

BELOW IS A LEGEND FOR THE EFFECTIVE LISTING OF SECTIONS, TABLES, AND FIGURES:

Revision 0	August 3, 2013
Revision 1	February 24, 2014
Revision 2	February 26, 2015
Revision 3	October 31, 2019
Revision 4	March 23, 2021

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COMANCHE PEAK NUCLEAR POWER PLANT UNIT 1 & 2
INSERVICE TESTING PLAN FOR PUMPS & VALVES
THIRD INTERVAL

1.0 GENERAL INFORMATION

1.1 Introduction

Inservice Testing Plan for Pumps & Valves, hereafter referred to as the IST Plan, has been prepared to summarize the test program for certain pumps and valves pursuant to the requirements of the Code of Federal Regulations, 10CFR50.55a(f)(4); and as modified by Relief Request A-1, "Request for Alternative from 10CFR50.55a(f)(4)(i) and (ii) for Inservice Testing Frequency Under 10CFR50.55a(a)(3)(i)", and by the Nuclear Regulator Commission (NRC) Safety Evaluation Report (SER) on the CPNPP RI-IST Program. This testing plan is applicable to CPNPP Units 1 & 2. The content and distribution of the IST Plan are controlled and users are cautioned to verify the control status of their copy prior to use. To obtain a copy of this document, contact Distribution Control at the Main Document Control Center. An electronic copy can be accessed via CPNPP Electronic License Basis Documents (CPNPP ELBD).

1.2 Code Edition and Addenda

This IST Plan meets the requirements of the ASME OM Code 2004 Edition through 2006 Addenda, except in specifically identified instances where an alternative to the Code requirements is proposed or where it has been determined that conformance with certain Code requirements is impractical. In these instances, a request for relief from the Code requirement(s), including proposed alternatives to the requirement(s), has been prepared for Nuclear Regulatory Commission review and approval pursuant to 10CFR50.55a(a)(3) or (f)(5).

See Section 2.0, "Inservice Pump Testing Plan", and Section 3.0, "Inservice Valve Testing Plan" for a more detailed discussion of Code edition.

1.3 Dates of Test Interval

Implementation of the 1989 Edition IST Plan was completed on CPNPP Unit 1 before that unit was returned to power following the third refueling outage. This superceded the original Unit 1 Inservice Testing Plan for Pumps and Valves developed for the first inspection interval. The original Unit 1 IST Plan was implemented per the requirements of the 1986 Edition of Section XI. This 1989 Edition IST Plan constituted an update of the original Unit 1 IST Plan to a later approved Code edition as allowed by 10CFR50.55a(f)(4)(iv) and as approved by the NRC staff. This IST Plan was to remain in effect for Unit 1 for the 120 month interval following the date of the Unit 1 commercial operation (August 13, 1990). An exemption from regulation 10CFR50.55a(f)(4)(ii) to the ten year test interval for Unit 1 was granted by the NRC on June 21, 1995. The extension allowed Unit 1 to remain under the 1989 Edition until the conclusion of the ten year test interval for Unit 2 (August 3, 2003).

This IST Plan was in effect for Unit 2 for the 120 month interval following the date of the Unit 2 commercial operation (August 3, 1993 to August 2, 2003).

The IST Plan for Unit 1 and 2 first interval end date was extended from August 2, 2003 to not later than August 2, 2004 (see TXX-03075, dated April 11, 2003).

The risk informed inservice testing (RI-IST) was approved by the NRC on August 14, 1998 (Reference 10). The RI-IST Program was incorporated in the first interval program plan Rev. 15, and was implemented on December 4, 2000.

The start date IST Plan second interval for Unit 1 and 2 was August 3, 2004, and the end date for the second interval is August 2, 2013 (see TXX-04134).

The current start date of the third interval IST Plan for Unit 1 and Unit 2 is August 3, 2013, and the end date for the third interval is August 2, 2023.

1.4 Approval Status

The first interval IST Plan was submitted to the NRC staff on July 2, 1992 via TXX-92302 requesting:

1. Approval to update the Unit 1 IST program to the requirements of the 1989 Edition of ASME Section XI as described in this IST Plan;

2. Approval of a proposed schedule for phasing in the implementation of this IST Plan for Unit 1; and,

3. Approval of the Relief Requests contained in Appendix A of this IST Plan for use in the testing of Unit 1 and Unit 2.

Relief Request A-1 and V-8 were submitted to the NRC for final approval Via TXX-98153. These relief requests allowed for risk informing IST.

By safety evaluation dated January 29, 1993 for Unit 1 and NUREG-0797, Supplemental Safety Evaluation Report (SSER) No. 26 dated February, 1993 for Unit 2, the NRC staff granted the following approvals.

1. Approval to update the Unit 1 IST program to the requirements of the 1989 Edition of ASME Section XI and approval to test Unit 2 to the requirements of the Code. (Approval had not specifically been requested to test Unit 2 to the requirements of the 1989 Code since regulation 10CFR50.55a already seemed to permit it; approval was granted nonetheless.)

2. Approval of the schedule described in Section 1.3 above for phasing in the implementation of this IST Plan for Unit 1.

3. Approval of the Relief Requests contained in Appendix A of this IST Plan for use in the testing of Unit 1 and Unit 2 with the exception of Relief Request V5 which was denied. (See Appendix A for specific information.)

As pointed out in the safety evaluation and SSER, the NRC staff review of this IST Plan did not include verification that all pumps and valves within the scope of 10CFR50.55a and ASME Section XI (Now ASME OM Code) are contained in the IST program. Additionally, for the components included in the IST program, all applicable testing requirements were not verified.

1.5 References

1. Code of Federal Regulations, 10CFR50.55a, "Codes and Standards".

2. ASME OM Code 2004 Edition, through 2006 Addenda "Code for Operation and Maintenance of Nuclear Power Plants".

3. USNRC Generic Letter No. 89-04, "Guidance on Developing Acceptable Inservice Testing Programs", April 3, 1989.

4. USNRC, "Minutes of the Public Meetings on Generic Letter 89-04", October 25, 1989.

5. USNRC Staff Guidance Letter, "NRC Staff Guidance for Complying with Certain Provisions of 10CFR50.55a(g), Inservice Inspection Requirements", November 1976.

6. USNRC Staff Guidance Letter, "NRC Staff Guidance for Preparing Pump and Valve Testing Program Descriptions and Associated Relief Requests Pursuant to 10CFR50.55a(g)", January 1978.

7. NUREG-0800, "USNRC Standard Review Plan", July 1981. (Section 3.9.6, Inservice Testing of Pumps and Valves)

8. Karassik, Igor J., et al. Pump Handbook, second edition. New York: McGraw-Hill Book Company, 1986.

9. NUREG-1482, Revision 1 "Guidelines for Inservice Testing at Nuclear Power Plants".

10. USNRC Letter dated August 14, 1998, "Approval of Risk-Informed Inservice Testing (RI-IST) Program for Comanche Peak Steam Electric Station, Unit 1 and 2" (TAC NOS. M94165, MA94166, MA1972, and MA1973). (Relief Request A-1.)

2.0 INSERVICE PUMP TESTING PLAN

2.1 Scope

The scope of the Inservice Pump Testing Plan is derived from the requirements of ASME OM Code 2004 Edition through 2006 Addenda, as modified by 10CFR50.55a(f)(4). As modified by Risk Informed IST Program Plan and previously NRC approved by Relief Request A-1. The pumps selected for inclusion in this testing plan are that ASME Class 1, 2 and 3 pumps which are provided with an emergency power source and are:

a) Required in shutting down a reactor to the safe shutdown condition, or

b) Required in maintaining the safe shutdown condition, or

c) Required in mitigating the consequences of an accident.

Excluded from this testing plan are:

a) Drivers, except where the pump and driver form an integral unit and the pump bearings are in the driver, and

b) Pumps that are supplied with emergency power solely for operating convenience.

c) Skid mounted pumps that are tested as part of the major components and are justified to be adequately tested.

The pumps in the scope of this testing plan are described in the CPNPP Final Safety Analysis Report (FSAR), Section 3.9N.3.2 and 3.9B.3.2, "Pump and Valve Operability Assurance" and are tabulated in FSAR Tables 3.9N-9 and 3.9B-8, "Active Pumps". This similar listing of pumps can be found in Table 0 of this IST Plan.

2.2 Pump Testing Table Format

Detailed information and testing requirements for the pumps included in this IST Plan are summarized in Table 0. The guidance presented in References 1.5.2, 1.5.8 and 1.5.9 was used to the greatest extent possible in formatting this table. Following is a discussion of the types of information presented in Table 0.

1. Pump Identification - The pump identification field includes the pump name (system name) and pump number. The pump name is the common noun name for the pump and conveys some sense of the pump function. The pump number is a unique identifier applied to each pump. Pumps are listed in Table 0 in alphabetical order by system name. See Flow Diagram M1-0200, "Mechanical Symbols and Notes", for a discussion of pump numbering conventions and abbreviations. The pump names and

pump numbers shown in Table 0 are the same names and numbers used on the respective flow diagrams to identify the pumps.

2. Flow Diagram Number - The flow diagram number field indicates on which drawing the pump may be found. The flow diagram numbers are prefixed by "M1" to indicate a Unit 1 drawing and by "M2" to indicate a Unit 2 drawing. The suffix (if any) indicates the drawing sheet number.

3. Code Class - The code class field indicates the ASME Boiler and Pressure Vessel Code, Section III classification for the pump.

4. Pump Type - The pump type field indicates the classification of the pump. The pumps are classified for the purpose of determining the Code required test parameters to be measured as well as for determining the Code limits for those test parameters. The pump classifications are taken from the Code itself.

   Two basic pump classifications are used: centrifugal and positive displacement. Centrifugal pumps are further classified by the pump/driver arrangement and positive displacement pumps are further classified by the mechanical construction of the machine. The pump type acronyms are listed below along with their meanings.

   C/DC (Centrifugal pump direct coupled to its driver): This is the most common centrifugal pump arrangement in which the pump and driver are mounted independent of each other (usually horizontally) and are connected by a flexible coupling. In this pump type, the pump and driver bearings are separate.

   C/VLS (Centrifugal vertical line shaft pump): This arrangement is a special case of the direct coupled centrifugal pump. As the name suggests, the pump and driver are arranged vertically. However, unlike the typical direct coupled centrifugal pump, the vertical line shaft pump has a pumping element suspended at the end of a very long line shaft and has bearings which are inaccessible. Also, the vertical line shaft pump shares bearings with the driver in that the motor thrust bearing also acts as a thrust bearing for the pump.

   C/DC/VLS (Centrifugal vertical line shaft direct coupled): This arrangement is also a special case of a vertically arranged pump. This pump has a short pump shaft, and has an accessible inboard bearing housing near the coupling end of the pump; the pump shaft and suction areas are inaccessible due to being submerged.

   C/CC (Centrifugal pump close coupled to its driver): In this arrangement, no coupling is provided and the pump and driver form an integral unit. The pumping element is attached directly to the motor shaft and the pump bearings are actually the motor bearings. Orientation may be either horizontal or vertical.

PD/RECIP (Reciprocating positive displacement pump): This is a positive displacement pump in which fluid is moved by a back and forth motion of the pressure-producing member(s). The output from a reciprocating pump will be pulsating and flow through the pump is controlled by integral check valves. (There are no reciprocating pumps in the CPNPP IST Plan.)

PD/ROT (Rotary positive displacement pump): This is a positive displacement pump in which fluid is moved by a rotating motion of the pressure-producing member(s). The output from a rotary pump is non-pulsating and flow through the pump is controlled by the geometry of the pump casing and rotor(s).

5. Test Parameters - The test parameters field indicates those quantities which the Code requires to be established or determined at each inservice test. The test parameters include speed, discharge pressure, differential pressure, flow rate and bearing vibration. Vibration is further classified as pump bearing vibration and driver bearing vibration. Not all test parameters are applicable to all pumps. Rather, the parameters to be established or determined for any pump are dependent on the pump type and are specified per the requirements of ASME OM Code 2004 Edition, through 2006 Addenda, Subsection ISTB. In Table 0, Code required test parameters are indicated with an "X". Test parameters which are not applicable to a particular pump are indicated "N/A". Required test parameters for which relief is requested are indicated by a footnote with the specific Relief Request number. (All pump and valve relief requests are contained in Appendix A of this IST Plan.)

6. Test Schedule - The test schedule field indicates the frequency of inservice tests for each pump in the RI-IST Plan. High Safety Significant pumps for which fluid inventory is normally provided are tested nominally every three months per the requirements of ASME OM Code 2004 Edition, through 2006 Addenda, Subsection ISTB-3400, and are indicated in Table 0 by "3 MO". High Safety Significant pumps lacking required fluid inventory (e.g., pumps in dry sumps) are tested at least once every two years per the requirements of ASME OM Code 2004 Edition, through 2006 Addenda, Subsection ISTB-3400, and are indicated in Table 0 by "2 YR". Low Safety Significant pumps are tested nominally every six years (on a staggered test basis) unless indicated otherwise per the requirements of Relief Request A-1, and are indicated in Table 0 by "6 YR".

   A (Group A pump test): Testing for pumps that are operated continuously or routinely during normal operation, cold shutdown, or refueling operations as defined by ISTB-5121, 5221 and Table ISTB-3000-1.

   B (Group B pump test): Testing for pumps in standby systems that are not operated routinely except for testing as defined by ISTB-5122, 5322 and Table ISTB-3000-1.

CPT (Comprehensive pump test): Testing for pumps as defined by ISTB-5123, 5223, 5323 and Table ISTB-3000-1.

When a Group A test is required, a comprehensive test may be substituted. When a Group B test is required, a Group A or comprehensive test may be substituted. A preservice test may be substituted for any inservice test. As allowed by ASME OM Code edition 2004 through 2006 addenda, Subsection ISTB-5000.

Pump Curves may be used for testing where it is impractical to adjust a centrifugal or vertical line shaft pump to a specific reference value as allowed by OMN-16 Rev. 1 of the 2012 Edition of the ASME OM Code supplemented by Figure 1 of OMN-16 that is in the 2006 Addendum of the OM Code.

7. Footnotes - Footnotes containing additional pump testing information are located at the back of Table 0 and are referenced in Table 0 by the footnote number in parentheses.

TABLE 0 - INSERVICE PUMP TESTING PLAN

Pump Identification	Flow Diagram	Code Class	Risk Ranking	Pump Type	Test Parameters						
					Speed	Discharge Pressure	Differential Pressure	Flow Rate	Pump Bearing Vib.	Driver Bearing Vib.	Test Schedule
Auxiliary Feedwater (Motor Driven)											
CP1-AFAPMD-01	M1-0206-01	3	HIGH	C/DC	N/A	N/A	X	X	X	N/A	3 MO/A 2 YR/CPT
CP1-AFAPMD-02	M1-0206-01	3	HIGH	C/DC	N/A	N/A	X	X	X	N/A	3 MO/A 2 YR/CPT
CP2-AFAPMD-01	M2-0206-01	3	HIGH	C/DC	N/A	N/A	X	X	X	N/A	3 MO/A 2 YR CPT
CP2-AFAPMD-02	M2-0206-01	3	HIGH	C/DC	N/A	N/A	X	X	X	N/A	3 MO/A 2 YR CPT
Auxiliary Feedwater (Turbine Driven)											
CP1-AFAPTD-01	M1-0206-01	3	HIGH	C/DC	X	N/A	X	X	X	N/A	3 MO/B 2 YR/CPT
CP2-AFAPTD-01	M2-0206-01	3	HIGH	C/DC	X	N/A	X	X	X	N/A	3 MO/B 2 YR/CPT
Component Cooling Water											
CP1-CCAPCC-01	M1-0229-A	3	HIGH	C/DC	N/A	N/A	X	X	X	N/A	3 MO/A 2 YR/CPT
CP1-CCAPCC-02	M1-0229-B	3	HIGH	C/DC	N/A	N/A	X	X	X	N/A	3 MO/A 2 YR/CPT
CP2-CCAPCC-01	M2-0229	3	HIGH	C/DC	N/A	N/A	X	X	X	N/A	3 MO/A 2 YR/CPT
CP2-CCAPCC-02	M2-0229	3	HIGH	C/DC	N/A	N/A	X	X	X	N/A	3 MO/A 2 YR/CPT
Chilled Water (Safety)											
CP1-CHAPCP-05	M1-0311	3	HIGH	C/DC	N/A	N/A	X	X	X	N/A	3 MO/A 2 YR/CPT

TABLE 0 - INSERVICE PUMP TESTING PLAN

Pump Identification	Flow Diagram	Code Class	Risk Ranking	Pump Type	Test Parameters						
					Speed	Discharge Pressure	Differential Pressure	Flow Rate	Pump Bearing Vib.	Driver Bearing Vib.	Test Schedule
CP1-CHAPCP-06	M1-0311	3	HIGH	C/DC	N/A	N/A	X	X	X	N/A	3 MO/A 2 YR/CPT
CP2-CHAPCP-05	M2-0311	3	HIGH	C/DC	N/A	N/A	X	X	X	N/A	3 MO/A 2 YR/CPT
CP2-CHAPCP-06	M2-0311	3	HIGH	C/DC	N/A	N/A	X	X	X	N/A	3 MO/A 2 YR/CPT
Centrifugal Charging											
TBX-CSAPCH-01	M1-0255-01	2	HIGH	C/DC	N/A	N/A	X	X	X	N/A	3 MO/A 2 YR/CPT
TBX-CSAPCH-02	M1-0255-01	2	HIGH	C/DC	N/A	N/A	X	X	X	N/A	3 MO/A 2 YR/CPT
TCX-CSAPCH-01	M2-0254	2	HIGH	C/DC	N/A	N/A	X	X	X	N/A	3 MO/A 2 YR/CPT
TCX-CSAPCH-02	M2-0254	2	HIGH	C/DC	N/A	N/A	X	X	X	N/A	3 MO/A 2 YR/CPT
Boric Acid Transfer											
TBX-CSAPBA-01	M1-0257	3	LOW (1)	C/CC	N/A	N/A	X	X	N/A	X	6 YR/A 6 YR/CPT
TBX-CSAPBA-02	M1-0257	3	LOW (1)	C/CC	N/A	N/A	X	X	N/A	X	6 YR/A 6 YR/CPT
TCX-CSAPBA-01	M1-0257	3	LOW (1)	C/CC	N/A	N/A	X	X	N/A	X	6 YR/A 6 YR/CPT
TCX-CSAPBA-02	M1-0257	3	LOW (1)	C/CC	N/A	N/A	X	X	N/A	X	6 YR/A 6 YR/CPT
Containment Spray											
CP1-CTAPCS-01	M1-0232	2	LOW (1)	C/DC	N/A	N/A	X	X	X	N/A	6 YR/B 6 YR/CPT

TABLE 0 - INSERVICE PUMP TESTING PLAN

Pump Identification	Flow Diagram	Code Class	Risk Ranking	Pump Type	Test Parameters						
					Speed	Discharge Pressure	Differential Pressure	Flow Rate	Pump Bearing Vib.	Driver Bearing Vib.	Test Schedule
CP1-CTAPCS-02	M1-0232	2	LOW (1)	C/DC	N/A	N/A	X	X	X	N/A	6 YR/B 6 YR/CPT
CP1-CTAPCS-03	M1-0232	2	LOW (1)	C/DC	N/A	N/A	X	X	X	N/A	6 YR/B 6 YR/CPT
CP1-CTAPCS-04	M1-0232	2	LOW (1)	C/DC	N/A	N/A	X	X	X	N/A	6 YR/B 6 YR/CPT
CP2-CTAPCS-01	M2-0232	2	LOW (1)	C/DC	N/A	N/A	X	X	X	N/A	6 YR/B 6 YR/CPT
CP2-CTAPCS-02	M2-0232	2	LOW (1)	C/DC	N/A	N/A	X	X	X	N/A	6 YR/B 6 YR/CPT
CP2-CTAPCS-03	M2-0232	2	LOW (1)	C/DC	N/A	N/A	X	X	X	N/A	6 YR/B 6 YR/CPT
CP2-CTAPCS-04	M2-0232	2	LOW (1)	C/DC	N/A	N/A	X	X	X	N/A	6 YR/B 6 YR/CPT
Reactor Makeup Water											
CP1-DDAPRM-01	M1-0241-01	3	LOW(1)	C/DC	N/A	N/A	X	X	X	N/A	4 1/2 YR/A 4 1/2 YR/CPT
CPX-DDAPRM-01	M1-0241-01	3	LOW(1)	C/DC	N/A	N/A	X	X	X	N/A	4 1/2 YR/A 4 1/2 YR/CPT
CP2-DDAPRM-01	M2-0241	3	LOW(1)	C/DC	N/A	N/A	X	X	X	N/A	4 1/2 YR/A 4 1/2 YR/CPT
Fuel Oil Transfer											
CP1-DOAPFT-01	M1-0215-F	(3)	LOW (1)	PD/ROT	N/A	X	N/A	X	X	N/A	6 YR/B 6 YR/CPT
CP1-DOAPFT-02	M1-0215-F	(3)	LOW (1)	PD/ROT	N/A	X	N/A	X	X	N/A	6 YR/B 6 YR/CPT
CP1-DOAPFT-03	M1-0215-G	(3)	LOW (1)	PD/ROT	N/A	X	N/A	X	X	N/A	6 YR/B 6 YR/CPT

TABLE 0 - INSERVICE PUMP TESTING PLAN

Pump Identification	Flow Diagram	Code Class	Risk Ranking	Pump Type	Test Parameters						
					Speed	Discharge Pressure	Differential Pressure	Flow Rate	Pump Bearing Vib.	Driver Bearing Vib.	Test Schedule
CP1-DOAPFT-04	M1-0215-G	(3)	LOW (1)	PD/ROT	N/A	X	N/A	X	X	N/A	6 YR/B 6 YR/CPT
CP2-DOAPFT-01	M2-0215-F	(3)	LOW (1)	PD/ROT	N/A	X	N/A	X	X	N/A	6 YR/B 6 YR/CPT
CP2-DOAPFT-02	M2-0215-F	(3)	LOW (1)	PD/ROT	N/A	X	N/A	X	X	N/A	6 YR/B 6 YR/CPT
CP2-DOAPFT-03	M2-0215-G	(3)	LOW (1)	PD/ROT	N/A	X	N/A	X	X	N/A	6 YR/B 6 YR/CPT
CP2-DOAPFT-04	M2-0215-G	(3)	LOW (1)	PD/ROT	N/A	X	N/A	X	X	N/A	6 YR/B 6 YR/CPT
Residual Heat Removal											
TBX-RHAPRH-01	M1-0260	2	HIGH	C/DC	N/A	N/A	X	X	X(4)	X(4)	3 MO/A 2 YR/CPT
TBX-RHAPRH-02	M1-0260	2	HIGH	C/DC	N/A	N/A	X	X	X(4)	X(4)	3 MO/A 2 YR/CPT
TCX-RHAPRH-01	M2-0260	2	HIGH	C/DC	N/A	N/A	X	X	X(4)	X(4)	3 MO/A 2 YR/CPT
TCX-RHAPRH-02	M2-0260	2	HIGH	C/DC	N/A	N/A	X	X	X(4)	X(4)	3 MO/A 2 YR/CPT
Spent Fuel Pool Cooling											
CPX-SFAPSF-01	M1-0235	3	LOW(1)	C/DC	N/A	N/A	X	X	X	N/A	3 YR/A 3 YR/CPT
CPX-SFAPSF-02	M1-0235	3	LOW(1)	C/DC	N/A	N/A	X	X	X	N/A	3 YR/A 3 YR/CPT
Safety Injection											
TBX-SIAPSI-01	M1-0263-A	2	HIGH	C/DC	N/A	N/A	X	X	X	N/A	3 MO/B 2 YR/CPT

TABLE 0 - INSERVICE PUMP TESTING PLAN

Pump Identification	Flow Diagram	Code Class	Risk Ranking	Pump Type	Test Parameters: Speed	Discharge Pressure	Differential Pressure	Flow Rate	Pump Bearing Vib.	Driver Bearing Vib.	Test Schedule
TBX-SIAPSI-02	M1-0263-A	2	HIGH	C/DC	N/A	N/A	X	X	X	N/A	3 MO/B 2 YR CPT
TCX-SIAPSI-01	M2-0262	2	HIGH	C/DC	N/A	N/A	X	X	X	N/A	3 MO/B 2 YR/CPT
TCX-SIAPSI-02	M2-0262	2	HIGH	C/DC	N/A	N/A	X	X	X	N/A	3 MO/B 2 YR/CPT
Service Water											
CP1-SWAPSW-01	M1-0233	3	HIGH	C/VLS	N/A	N/A	X	X	N/A	X	3 MO/A 2 YR/CPT
CP1-SWAPSW-02	M1-0233	3	HIGH	C/VLS	N/A	N/A	X	X	N/A	X	3 MO/A 2 YR/CPT
CP2-SWAPSW-01	M2-0233	3	HIGH	C/VLS	N/A	N/A	X	X	N/A	X	3 MO/A 2 YR/CPT
CP2-SWAPSW-02	M2-0233	3	HIGH	C/VLS	N/A	N/A	X	X	N/A	X	3 MO/A 2 YR/CPT
Safeguards Building Floor Drain Pump (5)											
CP1-WPAPSS-01	M1-0236	3	LOW(1)	C/DC/VLS	N/A	N/A	X	X	X	N/A	6 YR/A 6 YR/CPT
CP1-WPAPSS-02	M1-0236	3	LOW(1)	C/DC/VLS	N/A	N/A	X	X	X	N/A	6 YR/A 6 YR/CPT
CP1-WPAPSS-03	M1-0236	3	LOW(1)	C/DC/VLS	N/A	N/A	X	X	X	N/A	6 YR/A 6 YR/CPT
CP1-WPAPSS-04	M1-0236	3	LOW(1)	C/DC/VLS	N/A	N/A	X	X	X	N/A	6 YR/A 6 YR/CPT
CP2-WPAPSS-01	M2-0236	3	LOW(1)	C/DC/VLS	N/A	N/A	X	X	X	N/A	6 YR/A 6 YR/CPT
CP2-WPAPSS-02	M2-0236	3	LOW(1)	C/DC/VLS	N/A	N/A	X	X	X	N/A	6 YR/A 6 YR/CPT

TABLE 0 - INSERVICE PUMP TESTING PLAN

Pump Identification	Flow Diagram	Code Class	Risk Ranking	Pump Type	Test Parameters: Speed	Discharge Pressure	Differential Pressure	Flow Rate	Pump Bearing Vib.	Driver Bearing Vib.	Test Schedule
CP2-WPAPSS-03	M2-0236	3	LOW(1)	C/DC/VLS	N/A	N/A	X	X	X	N/A	6 YR/A 6 YR/CPT
CP2-WPAPSS-04	M2-0236	3	LOW(1)	C/DC/VLS	N/A	N/A	X	X	X	N/A	6 YR/A 6 YR/CPT

TABLE 0 - INSERVICE PUMP TESTING PLAN

NOTES

1. A risk informed - staggered test basis (RI-STB) shall be established for the pumps within the specified group.

2. Not Used.

3. The Fuel Oil Transfer Pumps were not commercially available as ASME BPV Code, Section III, Class 3; however, the normal commercial design was upgraded to "equivalent" ASME Section III, Class 3 quality requirements through seismic testing, qualification, and documentation.

4. The Residual Heat Removal Pumps were close coupled and all bearings were in the driver (motor); therefore, the driver was monitored for vibration. The pumps were modified to a direct coupled design and one set of radial bearings were installed in the pumps. The thrust bearing is still in the driver; therefore, it is prudent to take vibration at two points on the pump and five points on the driver.

5. Refer to Relief Request P-1 in Appendix "A".

3.0 INSERVICE VALVE TESTING PLAN

3.1 Scope

The scope of the Inservice Valve Testing Plan is derived from the requirements of ASME OM Code 2004 Edition through 2006 Addenda, Subsection ISTC, Appendix I and Appendix II as modified by 10CFR50.55a(f)(4) and the Risk Informed IST Program Plan as allowed by previously NRC approved, Relief Request A-1. The valves selected for inclusion in this testing plan are those active or passive ASME Class 1, 2 and 3 valves and pressure relief devices (and their actuating and position indicating systems) which are required to perform a specific function:

a) In shutting down a reactor to the safe shutdown condition, or

b) In maintaining the safe shutdown condition, or

c) In mitigating the consequences of an accident.

Excluded from this testing plan are:

a) Valves used only for operating convenience such as vent, drain, instrument and test valves, or

b) Valves used only for system control, such as pressure regulating valves, or

c) Valves used only for system or component maintenance.

d) Skid mounted valves which are tested as part of the major component.

e) Category A and Category B Safety and Relief Valves are excluded from the requirements of ISTC-3700 and ISTC-3500, valve testing requirements.

Further, the valve actuating system test scope does not include external control and protection systems responsible for sensing plant conditions and providing signals for valve operation.

The active valves and pressure relief devices in the scope of this testing plan are described in the CPNPP Final Safety Analysis Report (FSAR), Sections 3.9N.3.2 and 3.9B.3.2, "Pump and Valve Operability Assurance", and are tabulated in FSAR Tables 3.9N-10 and 3.9B-10, "Active Valves". ASME Code Class 2 and 3 pressure relief devices that only protect systems/components that perform a safety function as described above are not tabulated in FSAR Tables 3.9N-10 and 3.9B-10. These valves will continue to be tested within the required test interval of 10 years during the third interval. Consistent with the philosophy discussed in Reference 1, these specific thermal relief valves do not require the two additional valve tests following as-found set-pressure determination failures. However, if

performance data indicates that more frequent testing is needed to assure valve function, then the testing frequency should be modified. In lieu of tests, valve replacement may be performed as an alternative to testing. This philosophy only applies to thermal relief valves whose only function is to protect systems/ components that have a safety function. These valves are identified in the IST Plan by having a safety function position listing of "N/A".

The passive valves and pressure relief devices in the scope of this testing plan were identified by review and are those valves and pressure relief devices which perform a nuclear safety function but are not active and for which leakage testing or position indicator testing is required.

A listing of the above described active and passive valves and pressure relief devices can be found in Tables 1 through 19 of this IST Plan.

3.2 Valve Testing Table Format

Detailed information and testing requirements for the valves included in this IST Plan are summarized in Tables 1 through 19. A separate table has been prepared for each plant system which contains valves in the scope of the plan. The tables are arranged in alphabetical order by system name:

Auxiliary Feedwater	Table 1
Component Cooling Water	Table 2
Chilled Water (Safety & Non-Safety)	Table 3
Chemical and Volume Control	Table 4
Containment Spray	Table 5
Demineralized and Reactor Makeup Water	Table 6
Diesel Generator Auxiliaries	Table 7
Feedwater	Table 8
Main Steam	Table 9
Reactor Coolant	Table 10
Residual Heat Removal	Table 11
Spent Fuel Pool Cooling	Table 12
Safety Injection	Table 13
Service Water	Table 14
Ventilation (Control Room Air Conditioning)	Table 15

Vents and Drains	Table 16
Miscellaneous Containment Isolation Valves	Table 17
Safety & Relief Valves	Table 18
Motor Operated Valves	Table 19

The guidance in References 1.5.2, 1.5.8 and 1.5.9 was used to the greatest extent possible in formatting the tables. Following is a discussion of the types of information presented in the tables.

1. Valve Groups - Valves are grouped by system, safety significance, valve type, actuator type, manufacturer, model number. Each group has a unique Group Number to facilitate the implementation of the risk informed Inservice Test Program.

2. Valve Identification - Valve identification includes the valve number field and a brief description of the valve safety function (in the Remarks field). In each table, the valves are arranged in numerical order by the four digit location number which forms the root of each valve number. See Flow Diagram M1-0200, "Mechanical Symbols and Notes", for a discussion of valve numbering conventions and abbreviations. The valve numbers shown in Tables 1 through 19 are the same numbers used on the respective flow diagrams to identify the valves.

   For valves which exist in both Unit 1 and Unit 2 and for which the test requirements are the same, the unit designator prefixes have been dropped from the valve numbers in the tables. The valve numbers in this case should be understood to be prefixed by "1" (or CP1) and "2" (or CP2), as appropriate. If a valve is in a common system, exists in one unit only, is numbered differently between units or has different test requirements between units, then the unit designator is shown.

3. Flow Diagram Number - The flow diagram number field indicates on which drawing the valve may be found. The flow diagram numbers are prefixed by "M1" to indicate a Unit 1 drawing and by "M2" to indicate a Unit 2 drawing. The suffix (if any) indicates the drawing sheet number. Drawing coordinates are indicated in parentheses below the flow diagram number for ease in locating a valve.

4. Risk Ranking - A valve will either be ranked as High or Low Safety Significant. This was determined through the CPNPP Individual Plant Examination utilizing Probability Risk Assessment techniques and through the RI-IST Expert Panel.

5. Size - The size field indicates the nominal valve size in inches.

6. Code Class - The code class field indicates the ASME Boiler and Pressure Vessel Code, Section III classification for the valve.

7. Category - The category field indicates the classification of the valve according to characteristics described in 2004 Edition through 2006 Addenda, Subsection ISTC-1300. See the Valve Table Index at the end of this section for a listing of valve categories and their meanings.

8. Function - The function field indicates the manner in which a valve accomplishes its required safety function(s). "A" denotes an active valve and "P" denotes a passive valve with the terms defined as follows:

   Active valves - valves which are required to change obturator position to accomplish their required safety function(s).

   Passive valves - valves which maintain obturator position and are not required to change obturator position to accomplish their required safety function(s).

   Obturator - valve closure member (disk, gate, plug, ball, etc.)

9. Safety Function Position - The safety function position field indicates the position (open or closed) to which a valve must move or remain in to accomplish its required safety function(s). The open and closed positions are indicated by "O" and "C" respectively.

10. Test Parameters/Schedule - The test parameters/schedule field denotes the Code test requirements and test frequencies for valves in the IST Plan. The test parameters include leak test, exercise test, fail-safe test and position indicator test. Not all test parameters are applicable to all valves. Rather, the parameters to be tested for any valve are dependent on the valve/actuator type, category, and function. Valves which have both an open and closed safety function position and for which the test requirements or frequencies are different in the two positions, have their open and closed test requirements identified separately. Test parameters which are not applicable to a particular valve are indicated "N/A".

    Check valves are exercise tested in both the open and closed direction regardless of safety function position or valve safety significance. Non-safety function exercise tests for high safety significant check valves shall be performed at least once every two years. Non-safety function exercise tests for low safety significant check valves shall be performed at the frequency specified in Relief Request A-1.

    Required test parameters or test frequencies for which relief is requested are indicated by the specific Relief Request number. (All pump and valve relief requests are contained in Appendix A of this IST Plan.) In cases where the performance of a valve full-stroke exercise test is limited to cold shutdowns or refueling outages, a table footnote is provided which justifies

this determination. See the Valve Table Index at the end of this section for a listing of test parameter and schedule acronyms and their meanings.

11. Footnotes - Footnotes containing additional valve testing information are located at the back of each system valve table and are referenced in the tables by the footnote number in parentheses.

3.3 References

1. NUREG/CP-0152, "Proceedings of the Fourth NRC/ASME Symposium on Valve and Pump Testing", July 15-18, 1996, pages 3B-19 through 3B-21.

2. NUREG-1482, Rev. 1, "Guidelines for Inservice Testing at Nuclear Power Plants".

3. USNRC Letter dated August 14, 1998, "Approval of Risk Informed Inservice Testing (RI-IST) Program for Comanche Peak Steam Electric Station, Unit 1 and 2" (TAC NOS. M94165, MA94166, MA1972, and MA1973). (Relief Request A-1.)

VALVE TABLE INDEX (Page 1 of 4)

VALVE TYPES

AN - Angle
BA - Ball
BF - Butterfly
CK - Check
DA - Diaphragm
GA - Gate
GL - Globe
PL - Plug
RE - Relief
SCK - Stop Check
SF - Safety
VB - Vacuum Breaker

ACTUATOR TYPES

AO - Air Operator
HO - Hydraulic Operator
MA - Manual Operator
MO - Motor Operator
SA - Self Actuated
SO - Solenoid Operator

VALVE FUNCTIONS

A - Active
P - Passive

SAFETY FUNCTION POSITIONS

O - Open
C - Closed

VALVE CATEGORIES

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

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

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

Category D - Valves which are actuated by an energy source capable of only one operation, such as rupture disks or explosively actuated valves, for fulfillment of their required safety function(s). (There are no Category D valves or pressure relief devices in the CPNPP RI-IST Plan.)

Note: Seat tightness determination is performed as part of the performance test for Category C pressure relief devices (SRV) and may be performed as a method of close exercise test for check valves (CV). However, pressure relief devices and check valves are further classified as Category A only if there is a safety analysis criteria existing for valve seat leakage such as for pressure relief devices or check valves performing containment isolation functions or reactor coolant system pressure isolation functions.

TEST PARAMETERS

Leak Test

LT - Leak test Category A valve (other than containment isolation valves) per the requirements of ASME OM Code 2004 Edition through 2006 Addenda, Subsection ISTC-3630.

LTJ - Leak test Category A containment isolation valve per the requirements of ASME OM Code 2004 Edition through 2006 Addenda, Subsection ISTC-3620.

Exercise Test

MT - Exercise power operated Category A or B valve full-stroke to its safety function position(s) and measure stroke time per the requirements of ASME OM Code 2004 Edition through 2006 Addenda, Subsection ISTC-3510.

ET - Exercise Category A or B valve full-stroke to its safety function position(s) per the requirements of ASME OM Code 2004 Edition through 2006 Addenda, Subsection ISTC-3510.

DT - Diagnostic testing determines the cause or mechanism associated with failure, degradation, or performance anomaly of a motor operated valve per the requirements of OMN-1 Rev. 1 (Relief Request V-1).

CV - Exercise Category C check valve full-stroke to its safety function position(s) per the requirements of ASME OM Code 2004 Edition through 2006 Addenda, Subsection ISTC-3510.

CVD - Disassemble Category C check valve to verify operability per the requirements of ASME OM Code 2004 Edition through 2006 Addenda, Subsection ISTC-5220.

PS - Exercise Category A or B valve or Category C check valve part-stroke towards its safety function position(s) per the requirements of ASME OM Code 2004 Edition through 2006 Addenda. Part-stroke close exercising is not applicable to check valves except upon disassembly and inspection as practicable.

SRV - Performance test Category C safety, relief or vacuum breaker valve per the requirements of ASME OM Code 2004 Edition through 2006 Addenda, Subsection ISTC-5230 and Appendix I.

TEST PARAMETERS (Continued)

DD - Dual direction test/verification shall be performed in accordance with ASME OM Code 2004 Edition through 2006 Addenda, Subsection ISTC-5220. Frequency is determined by relief request A-1 or Appendix II, Check Valve Condition Monitoring as applicable.

Fail Safe Test

FO - Fail safe test Category A or B valve in the open direction per the requirements of ASME OM Code 2004 Edition, through 2006 Addenda, Subsection ISTC-3560.

FC - Fail safe test Category A or B valve in the closed direction per the requirements of ASME OM Code 2004 Edition, through 2006 Addenda, Subsection ISTC-3560.

Position Indicator Test

PIT - Test Category A, B, C or D valve position indication per ASME OM Code 2004 Edition, through 2006 Addenda, Subsection ISTC-3700.

TEST SCHEDULES

3MO - Perform exercise test (and fail safe test, if applicable) nominally every three months.

CS - Perform exercise test (and fail safe test, if applicable) during each cold shutdown outage (A plant shutdown during which the plant reaches the Cold Shutdown condition as defined by Technical Specifications). Such exercise is not required if the time period since the previous fullstroke exercise is less than three months. Valve exercising during cold shutdown shall commence within 48 hours of achieving cold shutdown, and continue until all testing is complete or the plant is ready to return to power. For extended outages, testing need not be commenced in 48 hours provided all valves required to be tested during cold shutdown will be tested prior to plant startup. Periodic testing requirements during an extended cold shutdown are addressed for each valve separately in the respective cold shutdown justification.

RF - Perform exercise test (and fail safe test, if applicable) during each refueling outage.

VALVE TABLE INDEX (Page 4 of 4)

TEST SCHEDULES (Continued)

TS - Perform test at the applicable Technical Specification frequency.

NYR - Perform test at least once every N years. For leak tests (LT) and position indicator tests (PIT), N equals two years for High Safety Significance or six years for Low Safety Significance valves. For pressure relief device performance tests (SRV), N nominally equals five years or ten years for Class 1 or Class 2 & 3 devices respectively. However, other test frequencies may apply for pressure relief devices. See ASME OM Code 2004 Edition through 2006 Addenda, Appendix I.

TABLE 1 - AUXILIARY FEEDWATER

Valve Number	Flow Diagram (Coord.)	Risk Ranking	Size	Code Class	Category	Function	Safety Func. Pos.	Test Parameters/Schedule: Leak Test	Exercise Test	Fail Safe Test	Position Indicator Test	Remarks
Group 4 Swing Check Valve/Self Actuating Borg-Warner 75000 Series												
AF-0014	M1-0206-1 (B-2) M2-0206-1 (B-2)	LOW (1)	6	3	C	A	O	N/A	CV/6YR DD/6YR	N/A	N/A	AFW Flowpath
AF-0024	M1-0206-1 (B-3) M2-0206-1 (B-3)	LOW (1)	6	3	C	A	O	N/A	CV/6YR DD/6YR	N/A	N/A	AFW Flowpath
AF-0032	M1-0206-1 (B-5) M2-0206-1 (B-5)	LOW (1)	8	3	C	A	O	N/A	CV/6YR DD/6YR	N/A	N/A	AFW Flowpath
AF-0038	M1-0206-1 (E-4) M2-0206-1 (E-4)	LOW (1)	8	3	C	A	O	N/A	CV/6YR DD/6YR	N/A	N/A	AFW Flowpath
AF-0051	M1-0206-1 (E-3) M2-0206-1 (E-3)	LOW (1)	6	3	C	A	O	N/A	CV/6YR DD/6YR	N/A	N/A	AFW Flowpath
AF-0065	M1-0206-1 (E-2) M2-0206-1 (E-2)	LOW (1)	6	3	C	A	O	N/A	CV/6YR DD/6YR	N/A	N/A	AFW Flowpath
AF-0167	M1-0206-2 (A-5) M2-0206-2 (A-5)	LOW (1)	8	3	C	A	O	N/A	CV/6YR DD/6YR	N/A	N/A	Pump Miniflow Path

TABLE 1 - AUXILIARY FEEDWATER

Valve Number	Flow Diagram (Coord.)	Risk Ranking	Size	Code Class	Cate-gory	Func-tion	Safety Func. Pos.	Test Parameters/Schedule: Leak Test	Exercise Test	Fail Safe Test	Position Indicator Test	Remarks
CVCM Group X-6 Swing Check Valve / Self Actuating Borg Warner 75000 Series												
AF-0009	M1-0206-2 (D-1) M2-0206-2 (D-1)	LOW (4)	3	3	C	A	C	N/A	DD/12YR	N/A	N/A	Non-Safety Makeup Line Isolation
CVCM Group 1-19 Nozzle Check Valve / Self Actuating Mokveld Model TKZ-Y-0												
1AF-0075	M1-0206 (C-4)	LOW (4)	4	3	C	A	O/C	N/A	DD/12YR	N/A	N/A	AFW Flowpath/AFW Flowpath Boundary & AFW Line Break Mitigation & FW Backflow Prevention During Startup
1AF-0083	M1-0206 (C-2)	LOW (4)	4	3	C	A	O/C	N/A	DD/12YR	N/A	N/A	AFW Flowpath/AFW Flowpath Boundary & AFW Line Break Mitigation & FW Backflow Prevention During Startup
1AF-0086	M1-0206 (C-3)	LOW (4)	4	3	C	A	O/C	N/A	DD/12YR	N/A	N/A	AFW Flowpath/AFW Flowpath Boundary & AFW Line Break Mitigation & FW Backflow Prevention During Startup
CVCM Group X-15 Nozzle Check Valve / Self Actuating Enertech Model DRV-Z												
1AF-0078	M1-0206 (C-4)	LOW (4)	4	3	C	A	O/C	N/A	DD/12YR	N/A	N/A	AFW Flowpath/AFW Flowpath Boundary & AFW Line Break Mitigation & FW Backflow Prevention During Startup
2AF-0101	M2-0206 (C-5)	LOW (4)	4	3	C	A	O/C	N/A	DD/12YR	N/A	N/A	AFW Flowpath/AFW Flowpath Boundary & AFW Line Break Mitigation & FW Backflow Prevention During Startup

TABLE 1 - AUXILIARY FEEDWATER

Valve Number	Flow Diagram (Coord.)	Risk Ranking	Size	Code Class	Cate-gory	Func-tion	Safety Func. Pos.	Test Parameters/Schedule: Leak Test	Exercise Test	Fail Safe Test	Position Indicator Test	Remarks
CVCM Group 2-19 Nozzle Check Valve / Self Actuating Mokveld Model TKZ-Y-0												
2AF-0075	M2-0206 (C-4)	LOW (4)	4	3	C	A	O/C	N/A	DD/16YR	N/A	N/A	AFW Flowpath/AFW Flowpath Boundary & AFW Line Break Mitigation & FW Backflow Prevention During Startup
2AF-0078	M2-0206 (C-4)	LOW (4)	4	3	C	A	O/C	N/A	DD/16YR	N/A	N/A	AFW Flowpath/AFW Flowpath Boundary & AFW Line Break Mitigation & FW Backflow Prevention During Startup
2AF-0083	M2-0206 (C-2)	LOW (4)	4	3	C	A	O/C	N/A	DD/16YR	N/A	N/A	AFW Flowpath/AFW Flowpath Boundary & AFW Line Break Mitigation & FW Backflow Prevention During Startup
2AF-0086	M2-0206 (C-3)	LOW (4)	4	3	C	A	O/C	N/A	DD/16YR	N/A	N/A	AFW Flowpath/AFW Flowpath Boundary & AFW Line Break Mitigation & FW Backflow Prevention During Startup
CVCM Group 1-5 Nozzle Check Valve / Self Actuating Mokveld Model TKZ-Y-0												
1AF-0093	M1-0206 (C-1)	LOW (4)	4	3	C	A	O/C	N/A	DD/16YR	N/A	N/A	AFW Flowpath/AFW Flowpath Boundary & AFW Line Break Mitigation & FW Backflow Prevention During Startup
1AF-0098	M1-0206 (C-2)	LOW (4)	4	3	C	A	O/C	N/A	DD/16YR	N/A	N/A	AFW Flowpath/AFW Flowpath Boundary & AFW Line Break Mitigation & FW Backflow Prevention During Startup
1AF-0101	M1-0206 (C-5)	LOW (4)	4	3	C	A	O/C	N/A	DD/16YR	N/A	N/A	AFW Flowpath/AFW Flowpath Boundary & AFW Line Break Mitigation & FW Backflow Prevention During Startup

TABLE 1 - AUXILIARY FEEDWATER

Valve Number	Flow Diagram (Coord.)	Risk Ranking	Size	Code Class	Cate-gory	Func-tion	Safety Func. Pos.	Test Parameters/Schedule: Leak Test	Exercise Test	Fail Safe Test	Position Indicator Test	Remarks
1AF-0106	M1-0206 (C-5)	LOW (4)	4	3	C	A	O/C	N/A	DD/16YR	N/A	N/A	AFW Flowpath/AFW Flowpath Boundary & AFW Line Break Mitigation & FW Backflow Prevention During Startup
CVCM Group 2-5 Nozzle Check Valve / Self Actuating Mokveld Model TKZ-Y-0												
2AF-0093	M2-0206 (C-1)	LOW (4)	4	3	C	A	O/C	N/A	DD/12YR	N/A	N/A	AFW Flowpath/AFW Flowpath Boundary & AFW Line Break Mitigation & FW Backflow Prevention During Startup
2AF-0098	M2-0206 (C-2)	LOW (4)	4	3	C	A	O/C	N/A	DD/12YR	N/A	N/A	AFW Flowpath/AFW Flowpath Boundary & AFW Line Break Mitigation & FW Backflow Prevention During Startup
2AF-0106	M2-0206 (C-5)	LOW (4)	4	3	C	A	O/C	N/A	DD/12YR	N/A	N/A	AFW Flowpath/AFW Flowpath Boundary & AFW Line Break Mitigation & FW Backflow Prevention During Startup
CVCM Group X-8 Piston Check Valve / Self Actuating Edwards Model D36274F316JT1												
AF-0350	M1-0206-2 (D-1) M2-0206-2 (D-1)	LOW (4)	2	3	C	A	C	N/A	DD/12YR	N/A	N/A	Non-Safety Makeup Line Isolation
CVCM Group X-9 Swing Check Valve / Self Actuating Westinghouse Model #3000CS8200000												
AF-0351	M1-0206-2 (D-1) M2-0206-2 (D-1)	LOW (4)	3	3	C	A	C	N/A	DD/12YR	N/A	N/A	Non-Safety Makeup Line Isolation

TABLE 1 - AUXILIARY FEEDWATER

Valve Number	Flow Diagram (Coord.)	Risk Ranking	Size	Code Class	Cate-gory	Func-tion	Safety Func. Pos.	Test Parameters/Schedule: Leak Test	Exercise Test	Fail Safe Test	Position Indicator Test	Remarks
GROUP 114 - Not Used												
GROUP 3 Nozzle Check Valve / Self Actuating Circle Seal Model N162-180												
1AF-0215	M1-0218-1A (E-4)	LOW (1)	½	3	A/C	A	C	LT/6YR	CV/6YR (3)	N/A	N/A	Safety-Related Air Accumulator to Non-Safety Air Supply Isolation
1AF-0216	M1-0218-1A (E-4)	LOW (1)	½	3	A/C	A	C	LT/6YR	CV/6YR (3)	N/A	N/A	Safety-Related Air Accumulator to Non-Safety Air Supply Isolation
1AF-0217	M1-0218-1A (D-4)	LOW (1)	½	3	A/C	A	C	LT/6YR	CV/6YR (3)	N/A	N/A	Safety-Related Air Accumulator to Non-Safety Air Supply Isolation
1AF-0218	M1-0218-1A (D-4)	LOW (1)	½	3	A/C	A	C	LT/6YR	CV/6YR (3)	N/A	N/A	Safety-Related Air Accumulator to Non-Safety Air Supply Isolation
1AF-0219	M1-0218-1A (C-4)	LOW (1)	½	3	A/C	A	C	LT/6YR	CV/6YR (3)	N/A	N/A	Safety-Related Air Accumulator to Non-Safety Air Supply Isolation
1AF-0220	M1-0218-1A (C-4)	LOW (1)	½	3	A/C	A	C	LT/6YR	CV/6YR (3)	N/A	N/A	Safety-Related Air Accumulator to Non-Safety Air Supply Isolation
AF-0221	M1-0218-1A (C-4) M2-0218-2 (C-5)	LOW (1)	½	3	A/C	A	C	LT/6YR	CV/6YR (3)	N/A	N/A	Safety-Related Air Accumulator to Non-Safety Air Supply Isolation
AF-0222	M1-0218-1A (C-4) M2-0218-2 (C-5)	LOW (1)	½	3	A/C	A	C	LT/6YR	CV/6YR (3)	N/A	N/A	Safety-Related Air Accumulator to Non-Safety Air Supply Isolation
AF-0223	M1-0218-1A (A-4) M2-0218-2 (C-4)	LOW (1)	½	3	A/C	A	C	LT/6YR	CV/6YR (3)	N/A	N/A	Safety-Related Air Accumulator to Non-Safety Air Supply Isolation

TABLE 1 - AUXILIARY FEEDWATER

Valve Number	Flow Diagram (Coord.)	Risk Ranking	Size	Code Class	Cate-gory	Func-tion	Safety Func. Pos.	Test Parameters/Schedule				Remarks
								Leak Test	Exercise Test	Fail Safe Test	Position Indicator Test	
AF-0224	M1-0218-1A (A-4) M2-0218-2 (C-4)	LOW (1)	½	3	A/C	A	C	LT/6YR	CV/6YR (3)	N/A	N/A	Safety-Related Air Accumulator to Non-Safety Air Supply Isolation
AF-0226	M1-0218-1A (B-4) M2-0218-2 (B-4)	LOW (1)	½	3	A/C	A	C	LT/6YR	CV/6YR (3)	N/A	N/A	Safety-Related Air Accumulator to Non-Safety Air Supply Isolation
AF-0227	M1-0218-1A (B-4) M2-0218-2 (B-4)	LOW (1)	½	3	A/C	A	C	LT/6YR	CV/6YR (3)	N/A	N/A	Safety-Related Air Accumulator to Non-Safety Air Supply Isolation
AF-0228	M1-0218-1A (A-4) M2-0218-2 (D/E-4)	LOW (1)	½	3	A/C	A	C	LT/6YR	CV/6YR (3)	N/A	N/A	Safety-Related Air Accumulator to Non-Safety Air Supply Isolation
AF-0229	M1-0218-1A (A-4) M2-0218-2 (D/E-4)	LOW (1)	½	3	A/C	A	C	LT/6YR	CV/6YR (3)	N/A	N/A	Safety-Related Air Accumulator to Non-Safety Air Supply Isolation
AF-0230	M1-0218-1A (B-4) M2-0218-2 (F-4)	LOW (1)	½	3	A/C	A	C	LT/6YR	CV/6YR (3)	N/A	N/A	Safety-Related Air Accumulator to Non-Safety Air Supply Isolation
AF-0231	M1-0218-1A (B-4) M2-0218-2 (F-4)	LOW (1)	½	3	A/C	A	C	LT/6YR	CV/6YR (3)	N/A	N/A	Safety-Related Air Accumulator to Non-Safety Air Supply Isolation
AF-0232	M1-0218-1 (F-2) M2-0218-1 (F-2)	LOW (1)	½	3	A/C	A	C	LT/6YR	CV/6YR (3)	N/A	N/A	Safety-Related Air Accumulator to Non-Safety Air Supply Isolation

TABLE 1 - AUXILIARY FEEDWATER

Valve Number	Flow Diagram (Coord.)	Risk Ranking	Size	Code Class	Cate-gory	Func-tion	Safety Func. Pos.	Test Parameters/Schedule				Remarks
								Leak Test	Exercise Test	Fail Safe Test	Position Indicator Test	
AF-0233	M1-0218-1 (F-2) M2-0218-1 (F-2)	LOW (1)	½	3	A/C	A	C	LT/6YR	CV/6YR (3)	N/A	N/A	Safety-Related Air Accumulator to Non-Safety Air Supply Isolation
AF-0234	M1-0218-1 (F-1) M2-0218-1 (D-1)	LOW (1)	½	3	A/C	A	C	LT/6YR	CV/6YR (3)	N/A	N/A	Safety-Related Air Accumulator to Non-Safety Air Supply Isolation
AF-0235	M1-0218-1 (F-1) M2-0218-1 (D-1)	LOW (1)	½	3	A/C	A	C	LT/6YR	CV/6YR (3)	N/A	N/A	Safety-Related Air Accumulator to Non-Safety Air Supply Isolation
2AF-0236	M2-0218-2 (F-5)	LOW (1)	½	3	A/C	A	C	LT/6YR	CV/6YR (3)	N/A	N/A	Safety-Related Air Accumulator to Non-Safety Air Supply Isolation
2AF-0237	M2-0218-2 (E-5)	LOW (1)	½	3	A/C	A	C	LT/6YR	CV/6YR (3)	N/A	N/A	Safety-Related Air Accumulator to Non-Safety Air Supply Isolation
2AF-0238	M2-0218-2 (E-5)	LOW (1)	½	3	A/C	A	C	LT/6YR	CV/6YR (3)	N/A	N/A	Safety-Related Air Accumulator to Non-Safety Air Supply Isolation
2AF-0239	M2-0218-2 (D-5)	LOW (1)	½	3	A/C	A	C	LT/6YR	CV/6YR (3)	N/A	N/A	Safety-Related Air Accumulator to Non-Safety Air Supply Isolation
2AF-0240	M2-0218-2 (D-5)	LOW (1)	½	3	A/C	A	C	LT/6YR	CV/6YR (3)	N/A	N/A	Safety-Related Air Accumulator to Non-Safety Air Supply Isolation
2AF-0291	M2-0218-2 (F-5)	LOW (1)	½	3	A/C	A	C	LT/6YR	CV/6YR (3)	N/A	N/A	Safety-Related Air Accumulator to Non-Safety Air Supply Isolation

TABLE 1 - AUXILIARY FEEDWATER

Valve Number	Flow Diagram (Coord.)	Risk Ranking	Size	Code Class	Cate-gory	Func-tion	Safety Func. Pos.	Test Parameters/Schedule: Leak Test	Exercise Test	Fail Safe Test	Position Indicator Test	Remarks
GROUP 5 Globe Valve / Air Operated Fisher Model DBQ												
FV-2456	M1-0206-1 (D-1) M2-0206-1 (D-1)	LOW (1)	2	3	B	A	O/C	N/A	ET/18MO MT/6YR	FO/6YR	PIT/ 6YR	Pump Miniflow Path/AFW Flowpath Boundary
FV-2457	M1-0206-1 (D-3) M2-0206-1 (D-3)	LOW (1)	2	3	B	A	O/C	N/A	ET/18MO MT/6YR	FO/6YR	PIT/ 6YR	Pump Miniflow Path/AFW Flowpath Boundary
GROUP 6 - Not Used.												
GROUP 7 Gate Valve / Manually Operated Borg-Warner & Edwards Models												
AF-0042	M1-0206-1 (F-4) M2-0206-1 (F-4)	LOW (1)	6	3	B	P	C	N/A	N/A	N/A	PIT/ 6YR	AFW Flowpath Boundary
AF-0041	M1-0206-1 (E-4) M2-0206-1 (E-4)	LOW (1)	8	3	B	P	O	N/A	N/A	N/A	PIT/ 6YR	AFW Flowpath
AF-0054	M1-0206-1 (E-3) M2-0206-1 (E-3)	LOW (1)	6	3	B	P	O	N/A	N/A	N/A	PIT/ 6YR	AFW Flowpath
AF-0055	M1-0206-1 (F-3) M2-0206-1 (F-3)	LOW (1)	6	3	B	P	C	N/A	N/A	N/A	PIT/ 6YR	AFW Flowpath Boundary

TABLE 1 - AUXILIARY FEEDWATER

Valve Number	Flow Diagram (Coord.)	Risk Ranking	Size	Code Class	Cate-gory	Func-tion	Safety Func. Pos.	Test Parameters/Schedule: Leak Test	Exercise Test	Fail Safe Test	Position Indicator Test	Remarks
AF-0066	M1-0206-1 (E-2) M2-0206-1 (E-2)	LOW (1)	6	3	B	P	O	N/A	N/A	N/A	PIT/ 6YR	AFW Flowpath
AF-0067	M1-0206-1 (F-2) M2-0206-1 (F-2)	LOW (1)	6	3	B	P	C	N/A	N/A	N/A	PIT/ 6YR	AFW Flowpath Boundary
GROUP 111 Globe Valve / Air Operated Fisher Model ES & ET												
PV-2453A	M1-0206 (B-4) M2-0206 (B-4)	LOW (1)	3	3	B	A	O/C	N/A	MT/6YR ET/18MO	FO/6YR	PIT/ 6YR	AFW to SG Flowpath/AFW to Faulted SG Flow Isolation
PV-2453B	M1-0206 (B-2) M2-0206 (B-2)	LOW (1)	3	3	B	A	O/C	N/A	MT/6YR ET/18MO	FO/6YR	PIT/ 6YR	AFW to SG Flowpath/AFW to Faulted SG Flow Isolation
PV-2454A	M1-0206 (B-1) M2-0206 (B-1)	LOW (1)	3	3	B	A	O/C	N/A	MT/6YR ET/18MO	FO/6YR	PIT/ 6YR	AFW to SG Flowpath/AFW to Faulted SG Flow Isolation
PV-2454B	M1-0206 (B-5) M2-0206 (B-5)	LOW (1)	3	3	B	A	O/C	N/A	MT/6YR ET/18MO	FO/6YR	PIT/ 6YR	AFW to SG Flowpath/AFW to Faulted SG Flow Isolation
HV-2459	M1-0206 (B-4) M2-0206 (B-4)	LOW (1)	3	3	B	A	O/C	N/A	MT/6YR ET/18MO	FO/6YR	PIT/ 6YR	AFW to SG Flowpath/AFW to Faulted SG Flow Isolation
HV-2460	M1-0206 (B-3) M2-0206 (B-3)	LOW (1)	3	3	B	A	O/C	N/A	MT/6YR ET/18MO	FO/6YR	PIT/ 6YR	AFW to SG Flowpath/AFW to Faulted SG Flow Isolation

TABLE 1 - AUXILIARY FEEDWATER

Valve Number	Flow Diagram (Coord.)	Risk Ranking	Size	Code Class	Cate-gory	Func-tion	Safety Func. Pos.	Test Parameters/Schedule				Remarks
								Leak Test	Exercise Test	Fail Safe Test	Position Indicator Test	
HV-2461	M1-0206 (B-2) M2-0206 (B-2)	LOW (1)	3	3	B	A	O/C	N/A	MT/6YR ET/18MO	FO/6YR	PIT/ 6YR	AFW to SG Flowpath/AFW to Faulted SG Flow Isolation
HV-2462	M1-0206 (B-5) M2-0206 (B-5)	LOW (1)	3	3	B	A	O/C	N/A	MT/6YR ET/18MO	FO/6YR	PIT/ 6YR	AFW to SG Flowpath/AFW to Faulted SG Flow Isolation

TABLE 1 - AUXILIARY FEEDWATER

NOTES

1. A risk informed - staggered test basis (RI-STB) shall be established for the valves within the specified group.

2. DELETED

3. ISTC-3550 Valve in Regular Use - This valve operates in the course of plant operation at a frequency that satisfies the requirements of this IST Plan.

4. A Check Valve Condition Monitoring Plan has been established per ASME OM Code Appendix II for valves in this group.

TABLE 2 - COMPONENT COOLING WATER

Valve Number	Flow Diagram (Coord.)	Risk Ranking	Size	Code Class	Cate-gory	Func-tion	Safety Func. Pos.	Test Parameters/Schedule: Leak Test	Exercise Test	Fail Safe Test	Position Indicator Test	Remarks
HIGH SAFETY SIGNIFICANCE Ball Valve/Air Operated Fisher Model U												
PV-4552	M1-0229-A (D-5) M2-0229-A (E-5)	HIGH	3	3	B	A	N/A (2)	N/A	N/A	FO/18MO	PIT/ 18MO	Safety Chilled Water Condenser Cooling Flow Control
PV-4553	M1-0229-B (D-5) M2-0229-B (D-1)	HIGH	3	3	B	A	N/A (2)	N/A	N/A	FO/18MO	PIT/ 18MO	Safety Chilled Water Condenser Cooling Flow Control
CVCM GROUP 1-12 / 2-12 Swing Check Valve / Self Actuating Borg-Warner Model 75500												
CC-0003	M1-0229-A (C-1) M2-0229 (C-1)	LOW (4)	3	3	C	A	O	N/A	DD/12YR	N/A	N/A	Surge Tank Emergency Makeup Flowpath
CC-0004	M1-0229-A (D-1) M2-0229 (E-1)	LOW (4)	3	3	C	A	C	N/A	DD/12YR	N/A	N/A	Surge Tank Emergency Makeup Flowpath Boundary
CVCM Group X-5 Swing Check Valve / Self Actuating Borg-Warner Model 75690												
CC-0713	M1-0231-A (C-6) M2-0231 (C-6)	LOW (4)	8	2	A/C	A	C	LTJ/TS	DD/12YR (3)	N/A	N/A	Containment Isolation
GROUP 105 Nozzle Check Valve / Self Actuating Circle Seal Model N162-180												
1CC-1079	M1-0216-1 (F-4)	LOW (1)	½	3	A/C	A	C	LT/6YR	CV/6YR (3)	N/A	N/A	Safety-Related Air Accumulator to Non-Safety Air Supply Isolation

TABLE 2 - COMPONENT COOLING WATER

Valve Number	Flow Diagram (Coord.)	Risk Ranking	Size	Code Class	Cate-gory	Func-tion	Safety Func. Pos.	Test Parameters/Schedule				Remarks
								Leak Test	Exercise Test	Fail Safe Test	Position Indicator Test	
1CC-1080	M1-0216-1 (F-4)	LOW (1)	½	3	A/C	A	C	LT/6YR	CV/6YR (3)	N/A	N/A	Safety-Related Air Accumulator to Non-Safety Air Supply Isolation
1CC-1081	M1-0216-1 (F-4)	LOW (1)	½	3	A/C	A	C	LT/6YR	CV/6YR (3)	N/A	N/A	Safety-Related Air Accumulator to Non-Safety Air Supply Isolation
1CC-1082	M1-0216-1 (F-4)	LOW (1)	½	3	A/C	A	C	LT/6YR	CV/6YR (3)	N/A	N/A	Safety-Related Air Accumulator to Non-Safety Air Supply Isolation
2CC-1091	M2-0216-B (D-1)	LOW (1)	½	3	A/C	A	C	LT/6YR	CV/6YR (3)	N/A	N/A	Safety-Related Air Accumulator to Non-Safety Air Supply Isolation
2CC-1092	M2-0216-B (D-1)	LOW (1)	½	3	A/C	A	C	LT/6YR	CV/6YR (3)	N/A	N/A	Safety-Related Air Accumulator to Non-Safety Air Supply Isolation
2CC-1093	M2-0216-B (D-1)	LOW (1)	½	3	A/C	A	C	LT/6YR	CV/6YR (3)	N/A	N/A	Safety-Related Air Accumulator to Non-Safety Air Supply Isolation
2CC-1094	M2-0216-B (D-1)	LOW (1)	½	3	A/C	A	C	LT/6YR	CV/6YR (3)	N/A	N/A	Safety-Related Air Accumulator to Non-Safety Air Supply Isolation
GROUP 11 Piston Check Valve / Self Actuating Edwards Model 838YT1 and D36274T2												
CC-0629	M1-0231 (C-4) M2-0231 (A-6)	LOW (1)	2	2	A/C	A	O/C	LTJ/TS	CV/6YR	N/A	N/A	Containment Penetration Thermal Relief/Containment Isolation
CC-0831	M1-0231 (C-4) M2-0231 (A-4)	LOW (1)	1	2	A/C	A	O/C	LTJ/TS	CV/6YR	N/A	N/A	Containment Penetration Thermal Relief/Containment Isolation

TABLE 2 - COMPONENT COOLING WATER

Valve Number	Flow Diagram (Coord.)	Risk Ranking	Size	Code Class	Cate-gory	Func-tion	Safety Func. Pos.	Test Parameters/Schedule: Leak Test	Exercise Test	Fail Safe Test	Position Indicator Test	Remarks
GROUP 12 Swing Check Valve / Self Actuating Edwards Model 24-670BTY												
CC-0031	M1-0229-A (E-3) M2-0229 (B-4)	LOW (1)	24	3	C	A	O/C	N/A	CV/6YR	N/A	N/A	CCW Flowpath/CCW Flowpath Boundary
CC-0061	M1-0229-B (C-3) M2-0229 (F-4)	LOW (1)	24	3	C	A	O/C	N/A	CV/6YR	N/A	N/A	CCW Flowpath/CCW Flowpath Boundary
GROUP 13 Stop Check Valve / Self Actuating Edwards Model 3664T1												
CC-0646	M1-0231-A (D-4) M2-0231 (D-4)	LOW (1)	2	3	C	A	C	N/A	CV/6YR (3)	N/A	N/A	RCP Thermal Barrier Rupture Isolation
CC-0657	M1-0231-A (D-3) M2-0231 (D-3)	LOW (1)	2	3	C	A	C	N/A	CV/6YR (3)	N/A	N/A	RCP Thermal Barrier Rupture Isolation
CC-0687	M1-0231-A (G-3) M2-0231 (G-3)	LOW (1)	2	3	C	A	C	N/A	CV/6YR (3)	N/A	N/A	RCP Thermal Barrier Rupture Isolation
CC-0694	M1-0231-A (G-4) M2-0231 (G-4)	LOW (1)	2	3	C	A	C	N/A	CV/6YR (3)	N/A	N/A	RCP Thermal Barrier Rupture Isolation

TABLE 2 - COMPONENT COOLING WATER

Valve Number	Flow Diagram (Coord.)	Risk Ranking	Size	Code Class	Cate-gory	Func-tion	Safety Func. Pos.	Test Parameters/Schedule				Remarks
								Leak Test	Exercise Test	Fail Safe Test	Position Indicator Test	
GROUP 14 Stop Check Valve / Self Actuating Edwards Model B36164B3												
1CC-1075	M1-0231-A (G-4)	LOW (1)	2	3	C	A	C	N/A	CV/6YR (3)	N/A	N/A	RCP Thermal Barrier Rupture Isolation
1CC-1076	M1-0231-A (G-3)	LOW (1)	2	3	C	A	C	N/A	CV/6YR (3)	N/A	N/A	RCP Thermal Barrier Rupture Isolation
1CC-1077	M1-0231-A (D-3)	LOW (1)	2	3	C	A	C	N/A	CV/6YR (3)	N/A	N/A	RCP Thermal Barrier Rupture Isolation
1CC-1078	M1-0231-A (D-4)	LOW (1)	2	3	C	A	C	N/A	CV/6YR (3)	N/A	N/A	RCP Thermal Barrier Rupture Isolation
2CC-0371	M2-0231 (G-4)	LOW (1)	2	3	C	A	C	N/A	CV/6YR (3)	N/A	N/A	RCP Thermal Barrier Rupture Isolation
2CC-0372	M2-0231 (F-3)	LOW (1)	2	3	C	A	C	N/A	CV/6YR (3)	N/A	N/A	RCP Thermal Barrier Rupture Isolation
2CC-0373	M2-0231 (D-3)	LOW (1)	2	3	C	A	C	N/A	CV/6YR (3)	N/A	N/A	RCP Thermal Barrier Rupture Isolation
2CC-0374	M2-0231 (D-4)	LOW (1)	2	3	C	A	C	N/A	CV/6YR (3)	N/A	N/A	RCP Thermal Barrier Rupture Isolation
GROUP 15 Globe Valve / Air Operated Fisher Model DBQ												
HV-4631A	M1-0230-A (D-3) M2-0230-A (C-5)	LOW (1)	2	3	B	A	C	N/A	ET/18MO MT/6YR	FC/6YR	PIT/ 6YR	Non-Safety Flowpath (Process Sample Cooling) Isolation
HV-4631B	M1-0230-A (D-6) M2-0230-A (C-6)	LOW (1)	2	3	B	A	C	N/A	ET/18MO MT/6YR	FC/6YR	PIT/ 6YR	Non-Safety Flowpath (Process Sample Cooling) Isolation

TABLE 2 - COMPONENT COOLING WATER

Valve Number	Flow Diagram (Coord.)	Risk Ranking	Size	Code Class	Category	Function	Safety Func. Pos.	Test Parameters/Schedule: Leak Test	Exercise Test	Fail Safe Test	Position Indicator Test	Remarks
GROUP 109 Globe Valve / Air Operated Fisher Model DBQ												
HV-4725	M1-0231 (C-5) M2-0231-A (F-3)	LOW (1)	2	2	A	A	C	LTJ/TS	MT/6YR ET/18MO	FC/6YR	PIT/ 6YR	Containment Isolation
HV-4726	M1-0231 (B-5) M2-0231-A (G-3)	LOW (1)	2	2	A	A	C	LTJ/TS	MT/6YR ET/18MO	FC/6YR	PIT/ 6YR	Containment Isolation
GROUP 16 Globe Valve / Air Operated Fisher Model ES												
LV-4500	M1-0229-A (C-2) M2-0229 (C-1)	LOW (1)	3	3	B	A	O/C	N/A	ET/18MO MT/6YR	FC/6YR	PIT/ 6YR	Surge Tank Emergency Makeup Flowpath/Isolation
LV-4500-1	M1-0229-A (C-1) M2-0229 (C-1)	LOW (1)	3	3	B	A	O	N/A	ET/18MO MT/6YR	FO/6YR	PIT/ 6YR	Surge Tank Emergency Makeup Flowpath
LV-4501	M1-0229-A (D-2) M2-0229 (D-1)	LOW (1)	3	3	B	A	O/C	N/A	ET/18MO MT/6YR	FC/6YR	PIT/ 6YR	Surge Tank Emergency Makeup Flowpath/Isolation
HV-4710	M1-0231 (B-1) M2-0230-A (F-3)	LOW (1)	4	2	B	A	C	N/A	ET/18MO MT/6YR	FC/6YR	PIT/ 6YR	Containment Isolation
HV-4711	M1-0231 (B-2) M2-0230-A (F-5)	LOW (1)	4	2	B	A	C	N/A	ET/18MO MT/6YR	FC/6YR	PIT/ 6YR	Containment Isolation

TABLE 2 - COMPONENT COOLING WATER

Valve Number	Flow Diagram (Coord.)	Risk Ranking	Size	Code Class	Cate-gory	Func-tion	Safety Func. Pos.	Test Parameters/Schedule: Leak Test	Exercise Test	Fail Safe Test	Position Indicator Test	Remarks
GROUP 17 Plug Valve / Air Operated Tufline Model 166SW												
X-PCV-H116A	M1-0229-A (A-4)	LOW (1)	1	3	B	A	N/A (2)	N/A	N/A	FO/6YR	N/A	UPS A/C Condenser Cooling Flow Control
X-PCV-H116B	M1-0229-B (F-4)	LOW (1)	1	3	B	A	N/A (2)	N/A	N/A	FO/6YR	N/A	UPS A/C Condenser Cooling Flow Control
GROUP 18 Butterfly Valve / Air Operated Fisher Model 9510												
FV-4650A	M1-0230-A (F-2) M2-0230 (F-2)	LOW (1)	10	3	B	A	C	N/A	ET/18MO MT/6YR	FC/6YR	PIT/ 6YR	Non-Safety Flowpath (Ventilation Chillers, Letdown Chiller) Isolation
FV-4650B	M1-0230-B (A-5) M2-0230 (F-5)	LOW (1)	10	3	B	A	C	N/A	ET/18MO MT/6YR	FC/6YR	PIT/ 6YR	Non-Safety Flowpath (Ventilation Chillers, Letdown Chiller) Isolation
FV-4536	M1-0229-A (F-2) M2-0229 (A-1)	LOW (1)	10	3	B	A	C	N/A	MT/6YR ET/18MO	FC/6YR	PIT/ 6YR	CCW Flowpath Boundary
FV-4537	M1-0229-B (B-2) M2-0229 (G-1)	LOW (1)	10	3	B	A	C	N/A	MT/6YR ET/18MO	FC/6YR	PIT/ 6YR	CCW Flowpath Boundary
GROUP 98 Butterfly Valve / Manual Gear Posi-Seal Model 2144												
CC-0109	M1-0229 (D-2) M2-0229-A	LOW (1)	18	3	B	A	O/C	N/A	ET/6YR (3)	N/A	N/A	RHR heat exchanger CCW inlet valve (modified to function as a restrictive orifice)

TABLE 2 - COMPONENT COOLING WATER

Valve Number	Flow Diagram (Coord.)	Risk Ranking	Size	Code Class	Cate-gory	Func-tion	Safety Func. Pos.	Test Parameters/Schedule				Remarks
								Leak Test	Exercise Test	Fail Safe Test	Position Indicator Test	
CC-0157	M1-0229 (E-5) M2-0229-B (C-4)	LOW (1)	18	3	B	A	O/C	N/A	ET/6YR (3)	N/A	N/A	RHR heat exchanger CCW inlet valve (modified to function as a restrictive orifice)

TABLE 2 - COMPONENT COOLING WATER

NOTES

1. A risk informed - staggered test basis (RI-STB) shall be established for the valves within the specified group.

2. X-PCV-H116A, -H116B, UPS A/C Condenser Cooling Flow Control Valves;
These valves are exempt from Inservice Testing per ASME OM Code 2004 Edition, through 2006 Addenda, Subsection ISTC-1200. However, the valves are fail open by accumulators. Therefore the fail open function is required to be tested per NUREG-1482 Rev. 1 paragraph 4.2.9.

   PV-4552, -4553, Safety Chilled Water Condenser Cooling Flow Control Valves:
These valves are included in the IST program based on PRA HSSC ranking (ER-EA-010 Rev. 2). These are exempt from the ASME OM code per ISTC 1200. The valve's safety function is to modulate to control temperature. The valves are fail open by design, however they are not fail safe. Air accumulators are required to perform safety function of low temperature control upon loss of instrument air. Thus the testing should be commensurate with the safety significance. Therefore, a full stroke PIT and Fail-Open test should be done every 18 months. Since this is a self-revealing, in-process failure mode for normally operating equipment, this is considered an adequate test and is a conservative approach.

3. ISTC-3550 Valve in Regular Use - This valve operates in the course of plant operation at a frequency that satisfies the requirements of this IST Plan.

4. A Check Valve Condition Monitoring Plan has been established per ASME OM Code Appendix II for valves in this group.

TABLE 3 - CHILLED WATER (SAFETY & NON-SAFETY)

Valve Number	Flow Diagram (Coord.)	Risk Ranking	Size	Code Class	Cate-gory	Func-tion	Safety Func. Pos.	Test Parameters/Schedule: Leak Test	Exercise Test	Fail Safe Test	Position Indicator Test	Remarks
CVCM Group X-3 Swing Check Valve / Self Actuating Borg-Warner Model 75630												
CH-0024	M1-0307-A (C-2) M2-0307 (B-3)	LOW (3)	6	2	A/C	A	C	LTJ/TS	DD/12YR (2)	N/A	N/A	Containment Isolation
CVCM GROUP 1-3 / 2-3 Piston Check Valve / Self Actuating Edwards Model 838YT1												
CH-0300	M1-0311-M2-0311 (D-3)	LOW (3)	1	3	C	A	O	N/A	DD/12YR	N/A	N/A	Surge Tank Emergency Makeup Flowpath
CH-0301	M1-0311-M2-0311 (F-3)	LOW (3)	1	3	C	A	C	N/A	DD/12YR	N/A	N/A	Surge Tank Emergency Makeup Flowpath Boundary
GROUP 20 Globe Valve / Manually Operated Edwards Model 848YT1												
CH-0302	M1-0311-M2-0311 (D-3)	LOW (1)	1	3	B	A	O/C	N/A	ET/6YR	N/A	N/A	Surge Tank Emergency Makeup Flowpath/Isolation
CH-0305	M1-0311-M2-0311 (E-3)	LOW (1)	1	3	B	A	O/C	N/A	ET/6YR	N/A	N/A	Surge Tank Emergency Makeup Flowpath/Isolation

TABLE 3 - CHILLED WATER (SAFETY & NON-SAFETY)

NOTES

1. A risk informed - staggered test basis (RI-STB) shall be established for the valves within the specified group.

2. ISTC-3550 Valve in Regular Use - This valve operates in the course of plant operation at a frequency that satisfies the requirements of this IST Plan.

3. A Check Valve Condition Monitoring Plan has been established per ASME OM Code Appendix II for valves in this group.

TABLE 4 - CHEMICAL AND VOLUME CONTROL

Valve Number	Flow Diagram (Coord.)	Risk Ranking	Size	Code Class	Cate-gory	Func-tion	Safety Func. Pos.	Test Parameters/Schedule: Leak Test	Exercise Test	Fail Safe Test	Position Indicator Test	Remarks
CVCM GROUP X-11 Swing Check Valve / Self Actuating Westinghouse 08000CS8800000												
8546	M1-0255 (C-6) M2-0254 (C-5)	HIGH (3)	8	2	C	A	O C	N/A N/A	DD/12YR DD/12YR	N/A N/A	N/A N/A	ECCS Injection Flowpath & Boration Flowpath ECCS Recirculation Flowpath Boundary
CVCM GROUP X-20 Piston Check Valve / Self Actuating Edwards Model 3674F316T / 3/4-inch												
XCS-0037	M1-0257 (C-3)	LOW (3)	¾	3	C	A	O	N/A	DD/16YR	N/A	N/A	Pump Miniflow Path
XCS-0039	M1-0257 (C-5)	LOW (3)	¾	3	C	A	O	N/A	DD/16YR	N/A	N/A	Pump Miniflow Path
XCS-0041	M1-0257 (C-4)	LOW (3)	¾	3	C	A	O	N/A	DD/16YR	N/A	N/A	Pump Miniflow Path
XCS-0044	M1-0257 (C-6)	LOW (3)	¾	3	C	A	O	N/A	DD/16YR	N/A	N/A	Pump Miniflow Path
GROUP 22 Piston Check Valve / Self Actuating Edwards Model 3674F316T												
CS-8180	M1-0253 (B-4) M2-0255-1 (B-4)	LOW (1)	¾	2	A/C	A	O/C	LTJ/TS	CV/6YR	N/A	N/A	Containment Penetration Thermal Relief/Containment Isolation
CS-8350A	M1-0253 (C-6) M2-0255-1 (C-6)	LOW (1)	2	1	C	A	C	N/A	CV/6YR (6)	N/A	N/A	Reactor Coolant Pressure Boundary
CS-8350B	M1-0253 (G-6) M2-0255-1 (G-6)	LOW (1)	2	1	C	A	C	N/A	CV/6YR (6)	N/A	N/A	Reactor Coolant Pressure Boundary

TABLE 4 - CHEMICAL AND VOLUME CONTROL

Valve Number	Flow Diagram (Coord.)	Risk Ranking	Size	Code Class	Cate-gory	Func-tion	Safety Func. Pos.	Test Parameters/Schedule				Remarks
								Leak Test	Exercise Test	Fail Safe Test	Position Indicator Test	
CS-8350C	M1-0253 (G-3) M2-0255-1 (G-3)	LOW (1)	2	1	C	A	C	N/A	CV/6YR (6)	N/A	N/A	Reactor Coolant Pressure Boundary
CS-8350D	M1-0253 (C-3) M2-0255-1 (C-3)	LOW (1)	2	1	C	A	C	N/A	CV/6YR (6)	N/A	N/A	Reactor Coolant Pressure Boundary
CS-8367A	M1-0253 (C-6) M2-0255-1 (C-6)	LOW (1)	2	1	C	A	C	N/A	CV/6YR DD/6YR (6)	N/A	N/A	Reactor Coolant Pressure Boundary
CS-8367B	M1-0253 (G-6) M2-0255-1 (G-6)	LOW (1)	2	1	C	A	C	N/A	CV/6YR DD/6YR (6)	N/A	N/A	Reactor Coolant Pressure Boundary
CS-8367C	M1-0253 (G-3) M2-0255-1 (G-3)	LOW (1)	2	1	C	A	C	N/A	CV/6YR DD/6YR (6)	N/A	N/A	Reactor Coolant Pressure Boundary
CS-8367D	M1-0253 (C-3) M2-0255-1 (C-3)	LOW (1)	2	1	C	A	C	N/A	CV/6YR DD/6YR (6)	N/A	N/A	Reactor Coolant Pressure Boundary
CS-8368A	M1-0253 (B-6) M2-0255-1 (B-6)	LOW (1)	2	2	C	A	C	N/A	CV/6YR DD/6YR (6)	N/A	N/A	Containment Isolation
CS-8368B	M1-0253 (E-6) M2-0255-1 (E-6)	LOW (1)	2	2	C	A	C	N/A	CV/6YR DD/6YR (6)	N/A	N/A	Containment Isolation

TABLE 4 - CHEMICAL AND VOLUME CONTROL

Valve Number	Flow Diagram (Coord.)	Risk Ranking	Size	Code Class	Cate-gory	Func-tion	Safety Func. Pos.	Test Parameters/Schedule				Remarks
								Leak Test	Exercise Test	Fail Safe Test	Position Indicator Test	
CS-8368C	M1-0253 (F-3) M2-0255-1 (F-3)	LOW (1)	2	2	C	A	C	N/A	CV/6YR DD/6YR (6)	N/A	N/A	Containment Isolation
CS-8368D	M1-0253 (B-3) M2-0255-1 (B-3)	LOW (1)	2	2	C	A	C	N/A	CV/6YR DD/6YR (6)	N/A	N/A	Containment Isolation
CS-8377	M1-0253-A (B-6) M2-0255 (G-4)	LOW (1)	2	1	C	A	C	N/A	CV/6YR DD/6YR	N/A	N/A	Reactor Coolant Pressure Boundary
CS-8442	M1-0255-2 (F-5) M2-0255-2 (B-3)	LOW (1)	2	2	C	A	O	N/A	CV/6YR CVD/8YR	N/A	N/A	Boration Flowpath
CS-8473	M1-0257 (C-4) M1-0257 (C-5)	LOW (1)	2	3	C	A	O/C	N/A	CV/6YR	N/A	N/A	Boration Flowpath/Boration Flowpath Boundary
CS-8480A	M1-0255-1 (E-4) M2-0254 (E-5)	LOW (1)	2	2	C	A	C	N/A	CV/6YR (6)	N/A	N/A	ECCS Flowpath Boundary
CS-8480B	M1-0255-1 (E-5) M2-0254 (E-6)	LOW (1)	2	2	C	A	C	N/A	CV/6YR (6)	N/A	N/A	ECCS Flowpath Boundary
CS-8487	M1-0257 (C-4) M1-0257 (C-6)	LOW (1)	2	3	C	A	O/C	N/A	CV/6YR	N/A	N/A	Boration Flowpath/Boration Flowpath Boundary

TABLE 4 - CHEMICAL AND VOLUME CONTROL

Valve Number	Flow Diagram (Coord.)	Risk Ranking	Size	Code Class	Cate-gory	Func-tion	Safety Func. Pos.	Test Parameters/Schedule: Leak Test	Exercise Test	Fail Safe Test	Position Indicator Test	Remarks
GROUP 23 Swing Check Valve / Self Actuating Westinghouse CS8800000 Series												
8378A	M1-0253-A (B-5)	LOW (1)	3	1	C	A	O	N/A	CV/6YR (4)	N/A	N/A	Boration Flowpath
	M2-0255 (G-3)						C	N/A	CV/6YR	N/A	N/A	Reactor Coolant Pressure Boundary
8378B	M1-0253-A (B-5)	LOW (1)	3	1	C	A	O	N/A	CV/6YR (4)	N/A	N/A	Boration Flowpath
	M2-0255 (G-3)						C	N/A	CV/6YR	N/A	N/A	Reactor Coolant Pressure Boundary
8379A	M1-0253-A (B-5)	LOW (1)	3	1	C	A	O	N/A	CV/6YR (4)	N/A	N/A	Boration Flowpath
	M2-0255 (G-3)						C	N/A	CV/6YR	N/A	N/A	Reactor Coolant Pressure Boundary
8379B	M1-0253-A (B-5)	LOW (1)	3	1	C	A	O	N/A	CV/6YR (4)	N/A	N/A	Boration Flowpath
	M2-0255 (G-3)						C	N/A	CV/6YR	N/A	N/A	Reactor Coolant Pressure Boundary
8381	M1-0253-A (E-3)	LOW (1)	3	2	A/C	A	O	N/A	CV/6YR	N/A	N/A	Boration Flowpath
	M2-0255 (E-2)						C	LTJ/TS	CV/6YR	N/A	N/A	Containment Isolation
8481A	M1-0255-1 (E-4)	LOW (1)	4	2	C	A	O	N/A	CV/6YR	N/A	N/A	ECCS Flowpath & Boration Flowpath
	M2-0254 (F-5)						C	N/A	CV/6YR	N/A	N/A	ECCS Flowpath Boundary
8481B	M1-0255-1 (D-5)	LOW (1)	4	2	C	A	O	N/A	CV/6YR	N/A	N/A	ECCS Flowpath & Boration Flowpath
	M2-0254 (F-6)						C	N/A	CV/6YR	N/A	N/A	ECCS Flowpath Boundary
8497	M1-0255-1 (D-2) M2-0254 (F-4)	LOW (1)	3	2	C	A	C	N/A	CV/6YR (6)	N/A	N/A	ECCS Flowpath Boundary

TABLE 4 - CHEMICAL AND VOLUME CONTROL

Valve Number	Flow Diagram (Coord.)	Risk Ranking	Size	Code Class	Cate-gory	Func-tion	Safety Func. Pos.	Test Parameters/Schedule				Remarks
								Leak Test	Exercise Test	Fail Safe Test	Position Indicator Test	
GROUP 24 Globe Valve / Air Operated Copes-Vulcan Model D-100												
FCV-0111A	M1-0255-2 (C-2) M2-0255-2 (C-2)	LOW (1)	2	3	B	P	C	N/A	N/A	N/A	PIT/ 6YR	Boration Flowpath Boundary
LCV-0459	M1-0253-A (B-4) M2-0253 (B-3)	LOW (1)	3	1	B	A	C	N/A	MT/6YR ET/18MO (6)	FC/6YR	PIT/ 6YR	Reactor Coolant Pressure Boundary
LCV-0460	M1-0253-A (B-4) M2-0253 (A-3)	LOW (1)	3	1	B	A	C	N/A	MT/6YR ET/18MO (6)	FC/6YR	PIT/ 6YR	Reactor Coolant Pressure Boundary
8145	M1-0253-A (C-6) M2-0255 (F-4)	LOW (1)	2	1	B	A	C	N/A	ET/18MO (6) MT/6YR	FC/6YR	PIT/ 6YR	Reactor Coolant Pressure Boundary
8146	M1-0253-A (C-5) M2-0255 (F-3)	LOW (1)	3	2	B	P	O	N/A	N/A	N/A	PIT/ 6YR	Boration Flowpath
8147	M1-0253-A (C-5) M2-0255 (F-3)	LOW (1)	3	2	B	P	O	N/A	N/A	N/A	PIT/ 6YR	Boration Flowpath
8153	M1-0253-A (E-1) M2-0253 (B-5)	LOW (1)	1	1	B	A	C	N/A	ET/18MO MT/6YR	FC/6YR	PIT/ 6YR	Reactor Coolant Pressure Boundary
8154	M1-0253-A (F-1) M2-0253 (A-5)	LOW (1)	1	1	B	A	C	N/A	ET/18MO MT/6YR	FC/6YR	PIT/ 6YR	Reactor Coolant Pressure Boundary

TABLE 4 - CHEMICAL AND VOLUME CONTROL

Valve Number	Flow Diagram (Coord.)	Risk Ranking	Size	Code Class	Cate-gory	Func-tion	Safety Func. Pos.	Test Parameters/Schedule: Leak Test	Exercise Test	Fail Safe Test	Position Indicator Test	Remarks
8152	M1-0253-A (F-2) M2-0253 (F-3)	LOW (1)	3	2	A	A	C	LTJ/TS	MT/6YR ET/18MO	FC/6YR	PIT/ 6YR	Containment Isolation
8160	M1-0253-A (E-2) M2-0253 (E-3)	LOW (1)	3	2	A	A	C	LTJ/TS	MT/6YR ET/18MO	FC/6YR	PIT/ 6YR	Containment Isolation
GROUP 25 Diaphragm Globe Valve / Air Operated ITT Model SD-C-102880												
FCV-0110B	M1-0255 (F-5) M2-0255-2 (F-3)	LOW (1)	2	2	B	P	C	N/A	N/A	N/A	PIT/ 6YR	Boration Flowpath Boundary
FCV-0111B	M1-0255 (G-3) M2-0255-2 (E-2)	LOW (1)	2	2	B	P	C	N/A	N/A	N/A	PIT/ 6YR	Boration Flowpath Boundary & Boron Dilution Flowpath Isolation (during Mode 6)
GROUP 26 Globe Valve / Solenoid Operated Valcor Model V526-5295-53												
8202A	M1-0255-1 (E-1) M2-0254 (D-1)	LOW (1)	1	2	B	A	C	N/A	ET/18MO MT/6YR	FC/6YR	PIT/ 6YR	ECCS Flowpath Boundary & Isolation of VCT Cover Gas from Charging Pumps' Suction Header
8202B	M1-0255-1 (E-1) M2-0254 (D-1)	LOW (1)	1	2	B	A	C	N/A	ET/18MO MT/6YR	FC/6YR	PIT/ 6YR	ECCS Flowpath Boundary & Isolation of VCT Cover Gas from Charging Pumps' Suction Header
8210A	M1-0255-1 (D-1) M2-0254 (E-3)	LOW (1)	1	2	B	A	C	N/A	ET/18MO MT/6YR	FC/6YR	PIT/ 6YR	ECCS Flowpath Boundary & Isolation of PD Pump Suction Stabilizer Gas Supply from Charging Pumps' Suction Header

TABLE 4 - CHEMICAL AND VOLUME CONTROL

Valve Number	Flow Diagram (Coord.)	Risk Ranking	Size	Code Class	Cate-gory	Func-tion	Safety Func. Pos.	Test Parameters/Schedule				Remarks
								Leak Test	Exercise Test	Fail Safe Test	Position Indicator Test	
8210B	M1-0255-1 (D-1) M2-0254 (E-3)	LOW (1)	1	2	B	A	C	N/A	ET/18MO MT/6YR	FC/6YR	PIT/ 6YR	ECCS Flowpath Boundary & Isolation of PD Pump Suction Stabilizer Gas Supply from Charging Pumps' Suction Header
GROUP 27 Ball Valve / Air Operated Flowserve Model #043005382670801												
HV-8220	M1-0255 (E-2) M2-0254 (D-2)	LOW (1)	1	2	B	A	C	N/A	ET/18MO MT/6YR	FC/6YR	PIT/ 6YR	ECCS Flowpath Boundary & Isolation of VCT Cover Gas from Charging Pumps' Suction Header (upon low VCT level)
HV-8221	M1-0255 (E-2) M2-0254 (D-2)	LOW (1)	1	2	B	A	C	N/A	ET/18MO MT/6YR	FC/6YR	PIT/ 6YR	ECCS Flowpath Boundary & Isolation of VCT Cover Gas from Charging Pumps' Suction Header (upon low VCT level)

TABLE 4 - CHEMICAL AND VOLUME CONTROL

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NOTES

1. A risk informed - staggered test basis (RI-STB) shall be established for the valves within the specified group.

2. 8152, 8160, Letdown Line Containment Isolation Valves; are full-stroke closed exercised during a cold shutdown outage. These valves cannot be full-stroke close exercised during plant operation because closing the valves isolates letdown flow from the RCS. In that letdown flow is used to preheat charging flow, isolation of letdown will cause thermal transients on the RCS charging nozzles, the regenerative heat exchanger and the letdown heat exchanger for which they are not designed. The subject power operated valves cannot be part-stroke close exercised during plant operation. In the case of 8152, 8160, their stroke times are so short that any part-stroke exercise attempt would effectively be a full-stroke and thus is not performed for the reasons given above. These valves perform an ISTA-1100(a) function in MODES 1,2, 3, and 4. During an extended cold shutdown outage, exercise testing is required to be repeated every 3 months if the plant is in hot shutdown (MODE 4).

3. A Check Valve Condition Monitoring Plan has been established per ASME OM Code Appendix II for valves in this group.

4. Charging service is alternated approximately every refueling outage between the normal charging line (containing check valves 8378A and 8378B) and the alternate charging line (containing check valves 8379A and 8379B) such that neither flowpath will be exposed to more than 60% of the thermal transients associated with stoppage and restart of charging flow. In accordance with ASME OM Code 2004 Edition, through 2006 Addenda, Subsection ISTC-3510, the pair of check valves in the charging line which is out of service need not be open exercise tested as they are only relied on to perform their open boration path function when they are designated to be in service. However, they must have a valid, current open exercise tested prior to placing the charging line back in service.

   The check valves in both the normal and alternate charging lines are relied on to perform their closed reactor coolant pressure boundary function at all times when this function is required. Therefore, the close exercise test schedule must be maintained for all four check valves, regardless of which charging line is designated to be in service.

5. Not Used.

6. ISTC-3550 Valve in Regular Use - This valve operates in the course of plant operation at a frequency that satisfies the requirements of this IST Plan.

TABLE 5 - CONTAINMENT SPRAY

Valve Number	Flow Diagram (Coord.)	Risk Ranking	Size	Code Class	Cate-gory	Func-tion	Safety Func. Pos.	Test Parameters/Schedule: Leak Test	Exercise Test	Fail Safe Test	Position Indicator Test	Remarks
GROUP 28 Swing Check Valve / Self Actuating Borg-Warner Model 75810												
CT-0025	M1-0232-A (E-3) M2-0232-A (E-3)	LOW (1)	16	2	C	A	O/C	N/A	CV/6YR	N/A	N/A	Containment Spray Injection Flowpath/Sump Recirculation Flowpath Boundary
CT-0077	M1-0232-A (D-2) M2-0232-A (D-2)	LOW (1)	16	2	C	A	O/C	N/A	CV/6YR	N/A	N/A	Containment Spray Injection Flowpath/Sump Recirculation Flowpath Boundary
CT-0142	M1-0232 (B-5) M2-0232 (B-5)	LOW (1)	16	2	A/C	A	O/C	N/A (3)	CVD/8YR (2)	N/A	N/A	Containment Spray Flowpath/Containment Isolation
CT-0145	M1-0232 (B-2) M2-0232 (B-2)	LOW (1)	16	2	A/C	A	O/C	N/A (3)	CVD/8YR (2)	N/A	N/A	Containment Spray Flowpath/Containment Isolation
CT-0148	M1-0232-A (E-4) M2-0232-A (E-4)	LOW (1)	16	2	C	A	O	N/A	CVD/8YR (2)	N/A	N/A	Sump Recirculation Flowpath
CT-0149	M1-0232-A (D-3) M2-0232-A (D-3)	LOW (1)	16	2	C	A	O	N/A	CVD/8YR (2)	N/A	N/A	Sump Recirculation Flowpath
CVCM GROUP 1-13 / 2-13 Swing Check Valve / Self Actuating Borg-Warner Model 75750												
CT-0013	M1-0232 (E-2) M2-0232 (E-2)	LOW (4)	10	2	C	A	O	N/A	CV/16YR DD/16YR	N/A	N/A	Containment Spray Flowpath

TABLE 5 - CONTAINMENT SPRAY

Valve Number	Flow Diagram (Coord.)	Risk Ranking	Size	Code Class	Cate-gory	Func-tion	Safety Func. Pos.	Test Parameters/Schedule: Leak Test	Exercise Test	Fail Safe Test	Position Indicator Test	Remarks
CT-0042	M1-0232 (E-3) M2-0232 (E-3)	LOW (4)	10	2	C	A	O	N/A	CV/16YR DD/16YR	N/A	N/A	Containment Spray Flowpath
CT-0065	M1-0232 (E-5) M2-0232 (E-5)	LOW (4)	10	2	C	A	O	N/A	CV/16YR DD/16YR	N/A	N/A	Containment Spray Flowpath
CT-0094	M1-0232 (E-6) M2-0232 (E-6)	LOW (4)	10	2	C	A	O	N/A	CV/16YR DD/16YR	N/A	N/A	Containment Spray Flowpath
CVCM GROUP 1-14 / 2-14 Swing Check Valve / Self Actuating Byron Jackson Model 422JDB1-002												
CT-0047	M1-0232 (F-3) M2-0232 (F-3)	LOW (4)	4	2	C	A	O	N/A	CV/16YR DD/16YR	N/A	N/A	Pump Miniflow Path
CT-0048	M1-0232 (F-3) M2-0232 (F-3)	LOW (4)	4	2	C	A	O	N/A	CV/16YR DD/16YR	N/A	N/A	Pump Miniflow Path
CT-0063	M1-0232 (E-5) M2-0232 (E-5)	LOW (4)	4	2	C	A	O	N/A	CV/16YR DD/16YR	N/A	N/A	Pump Miniflow Path
CT-0064	M1-0232 (E-6) M2-0232 (E-6)	LOW (4)	4	2	C	A	O	N/A	CV/16YR DD/16YR	N/A	N/A	Pump Miniflow Path

TABLE 5 - CONTAINMENT SPRAY

Valve Number	Flow Diagram (Coord.)	Risk Ranking	Size	Code Class	Cate-gory	Func-tion	Safety Func. Pos.	Test Parameters/Schedule: Leak Test	Exercise Test	Fail Safe Test	Position Indicator Test	Remarks
CVCM GROUP 1-25 / 2-25 Swing Check Valve / Self Actuating Edwards Model 3674F316T1												
CT-0020	M1-0232 (F-2) M2-0232 (F-2)	LOW (4)	2	2	C	A	O	N/A	CV/16YR DD/16YR	N/A	N/A	Chemical Additive Flowpath
CT-0031	M1-0232 (F-3) M2-0232 (F-3)	LOW (4)	2	2	C	A	O	N/A	CV/16YR DD/16YR	N/A	N/A	Chemical Additive Flowpath
CT-0072	M1-0232 (F-4) M2-0232 (F-4)	LOW (4)	2	2	C	A	O	N/A	CV/16YR DD/16YR	N/A	N/A	Chemical Additive Flowpath
CT-0082	M1-0232 (F-5) M2-0232 (F-5)	LOW (4)	2	2	C	A	O	N/A	CV/16YR DD/16YR	N/A	N/A	Chemical Additive Flowpath

TABLE 5 - CONTAINMENT SPRAY

NOTES

1. A risk informed - staggered test basis (RI-STB) shall be established for the valves within the specified group.

2. CT-0142, CT-0145, Containment Spray Header Check Valves; CT-0148, CT-0149, Containment Spray Pump Suction Check Valves from the Recirculation Sumps, are disassembled at refueling outages to verify operability. Full or part-stroke exercising these valves with flow is not practicable. In the case of CT-0142 and CT-0145, the flowpath downstream of the valves is open to the Containment Building via the spray headers. No meaningful flow can be achieved through these valves without deluging the Containment and causing a significant cleanup problem and potential equipment damage. In the case of CT-0148 and CT-0149, the flowpath upstream of the valves is open to the normally dry Containment Recirculation Sumps. Sump inventory only exists post-accident when the RWST has been depleted. Flooding the sumps for test purposes would introduce contaminants into the Containment Spray System and the RWST which otherwise contain reactor quality water. Additionally, sump makeup would be required at a high rate to protect the Containment Spray Pumps from a loss of suction.

3. This valve has a water filled loop seal and is not required to be leakrate tested (see DBD-ME-013, Rev. 22, Attachment 1, Note 3).

4. A Check Valve Condition Monitoring Plan has been established per ASME OM Code Appendix II for valves in this group.

TABLE 6 - DEMINERALIZED & REACTOR MAKEUP WATER

Valve Number	Flow Diagram (Coord.)	Risk Ranking	Size	Code Class	Cate-gory	Func-tion	Safety Func. Pos.	Test Parameters/Schedule: Leak Test	Exercise Test	Fail Safe Test	Position Indicator Test	Remarks
CVCM GROUP X-7 Swing Check Valve / Self Actuating Borg Warner Model 75520												
2DD-0002	M2-0241 (C-2)	LOW (3)	3	3	C	A	C	N/A	DD/12YR (2)	N/A	N/A	Non-Safety Makeup Line Isolation
DD-0006	M1-0241-1 (C-6) M2-0241 (C-2)	LOW (3)	3	3	C	A	C	N/A	DD/12YR (2)	N/A	N/A	Non-Safety Makeup Line Isolation
1DD-065	M1-0241-1 (C-5)	LOW (3)	3	3	C	A	C	N/A	DD/12YR (2)	N/A	N/A	Non-Safety Makeup Line Isolation
CVCM GROUP X-4 Swing Check Valve / Self Actuating Edwards Model 3674F316T1												
2DD-0008	M2-0241 (F-1)	LOW (3)	2	3	C	A	C	N/A	DD/12YR (2)	N/A	N/A	Non-Safety Makeup Line Isolation
2DD-0009	M2-0241 (D-1)	LOW (3)	2	3	C	A	C	N/A	DD/12YR (2)	N/A	N/A	Non-Safety Makeup Line Isolation
1DD-0064	M1-0241-1 (D-4)	LOW (3)	2	3	C	A	C	N/A	DD/12YR (2)	N/A	N/A	Non-Safety Makeup Line Isolation
1DD-0066	M1-0241-1 (C-4)	LOW (3)	2	3	C	A	C	N/A	DD/12YR (2)	N/A	N/A	Non-Safety Makeup Line Isolation
CVCM GROUP X-10 Swing Check Valve / Self Actuating Borg Warner Model 75520												
DD-0018	M1-0241-1 (E-2) M2-0241 (E-4)	LOW (3)	3	3	C	A	O	N/A	DD/12YR	N/A	N/A	Pump Discharge Flowpath
XDD-0048	M1-0241-1 (E-2)	LOW (3)	3	3	C	A	O	N/A	DD/12YR	N/A	N/A	Pump Discharge Flowpath

TABLE 6 - DEMINERALIZED & REACTOR MAKEUP WATER

Valve Number	Flow Diagram (Coord.)	Risk Ranking	Size	Code Class	Cate-gory	Func-tion	Safety Func. Pos.	Test Parameters/Schedule: Leak Test	Exercise Test	Fail Safe Test	Position Indicator Test	Remarks
GROUP 33 Swing Check Valve / Self Actuating Westinghouse & Worcester Controls Models												
DD-0016	M1-0241-1 (D-3) M2-0241 (F-5)	LOW (1)	2	3	C	A	O	N/A	CV/6YR DD/6YR	N/A	N/A	Pump Miniflow Path
XDD-0044	M1-0241-1 (D-2)	LOW (1)	2	3	C	A	O	N/A	CV/3YR DD/6YR	N/A	N/A	Pump Miniflow Path
8046	M1-0251 (E-2) M2-0251 (E-2)	LOW (1)	3	2	A/C	A	C	LTJ/TS	CV/6YR (2)	N/A	N/A	Containment Isolation
GROUP 34 Globe Valve / Air Operated Fisher Model ES												
HV-5365	M1-0242-B (E-2) M2-0242 (C-3)	LOW (1)	3	2	A	A	C	LTJ/TS	ET/18MO MT/6YR	FC/6YR	PIT/ 6YR	Containment Isolation
HV-5366	M1-0242-B (E-2) M2-0242 (B-3)	LOW (1)	3	2	A	A	C	LTJ/TS	ET/18MO MT/6YR	FC/6YR	PIT/ 6YR	Containment Isolation
HV-6720	0311 (D-3)	LOW (1)	1	3	B	A	O	N/A	ET/18MO MT/6YR	FO/6YR	PIT/ 6YR	Surge Tank Emergency Makeup Flowpath
LV-2478	M1-0206-2 (E-1) M2-0206-2 (E-1)	LOW (1)	3	3	B	P	C	N/A	N/A	N/A	PIT/ 6YR	Non-Safety Makeup Line Isolation
GROUP 35 Ball Valve / Manually Operated BNL Model HBV-B2-30-0006												
1DD-0020	M1-0241-1 (F-2)	LOW (1)	3	3	B	A	C	N/A	ET/3YR	N/A	N/A	Non-Safety Flowpath Isolation

TABLE 6 - DEMINERALIZED & REACTOR MAKEUP WATER

Valve Number	Flow Diagram (Coord.)	Risk Ranking	Size	Code Class	Cate-gory	Func-tion	Safety Func. Pos.	Test Parameters/Schedule				Remarks
								Leak Test	Exercise Test	Fail Safe Test	Position Indicator Test	
XDD-0103	M1-0241-1 (F-2)	LOW (1)	3	3	B	A	C	N/A	ET/3YR	N/A	N/A	Non-Safety Flowpath Isolation

TABLE 6 - DEMINERALIZED & REACTOR MAKEUP WATER

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NOTES

1. A risk informed - staggered test basis (RI-STB) shall be established for the valves within the specified group.
2. ISTC-3550 Valve in Regular Use - This valve operates in the course of plant operation at a frequency that satisfies the requirements of this IST Plan.
3. A Check Valve Condition Monitoring Plan has been established per ASME OM Code Appendix II for valves in this group.

TABLE 7 - DIESEL GENERATOR AUXILIARIES

Valve Number	Flow Diagram (Coord.)	Risk Ranking	Size	Code Class	Cate-gory	Func-tion	Safety Func. Pos.	Test Parameters/Schedule: Leak Test	Exercise Test	Fail Safe Test	Position Indicator Test	Remarks
GROUP 113 Swing Check Valve / Self Actuating Edwards Model 838YT1												
DO-0049	M1-0215-F (C-4) M2-0215-F (C-4)	LOW (1)	2	3	C	A	O	N/A	CV/6YR CVD/8YR	N/A	N/A	Fuel Oil Flowpath
1DO-0050	M1-0215-G (C-4)	LOW (1)	2	3	C	A	O	N/A	CV/6YR CVD/8YR	N/A	N/A	Fuel Oil Flowpath
2DO-0052	M2-0215-G (C-4)	LOW (1)	2	3	C	A	O	N/A	CV/6YR CVD/8YR	N/A	N/A	Fuel Oil Flowpath
GROUP 37 Swing Check Valve / Self Actuating Clear Flow & Durabla Series												
DO-0157	M1-0215-B (C-6) M2-0215-B (C-6)	LOW (1)	6	3	C	A	O	N/A	CV/6YR (2)	N/A	N/A	Lube Oil Flowpath
DO-0158	M1-0215-B (C-6) M2-0215-B (C-6)	LOW (1)	6	3	C	A	C	N/A	CV/6YR (2)	N/A	N/A	Lube Oil Flowpath Boundary
DO-0257	M1-0215-C (C-6) M2-0215-C (C-6)	LOW (1)	6	3	C	A	O	N/A	CV/6YR (2)	N/A	N/A	Lube Oil Flowpath
DO-0258	M1-0215-C (C-6) M2-0215-C (C-6)	LOW (1)	6	3	C	A	C	N/A	CV/6YR (2)	N/A	N/A	Lube Oil Flowpath Boundary

TABLE 7 - DIESEL GENERATOR AUXILIARIES

Valve Number	Flow Diagram (Coord.)	Risk Ranking	Size	Code Class	Cate-gory	Func-tion	Safety Func. Pos.	Test Parameters/Schedule: Leak Test	Exercise Test	Fail Safe Test	Position Indicator Test	Remarks
GROUP 38 Swing Check Valve / Self Actuating Edwards Model 838YT1												
DO-0004	M1-0215-F (F-5) M2-0215-F (F-5)	LOW (1)	2	3	C	A	O/C	N/A	CV/6YR	N/A	N/A	Fuel Oil Flowpath/Fuel Oil Flowpath Boundary
DO-0005	M1-0215-F (F-6) M2-0215-F (F-6)	LOW (1)	2	3	C	A	O/C	N/A	CV/6YR	N/A	N/A	Fuel Oil Flowpath/Fuel Oil Flowpath Boundary
DO-0016	M1-0215-G (F-5) M2-0215-G (F-5)	LOW (1)	2	3	C	A	O/C	N/A	CV/6YR	N/A	N/A	Fuel Oil Flowpath/Fuel Oil Flowpath Boundary
DO-0017	M1-0215-G (F-6) M2-0215-G (F-6)	LOW (1)	2	3	C	A	O/C	N/A	CV/6YR	N/A	N/A	Fuel Oil Flowpath/Fuel Oil Flowpath Boundary
1DO-0062	M1-0215-D (F-6)	LOW (1)	1½	3	C	A	C	N/A	CV/3YR (2)	N/A	N/A	Safety-Related Air Receiver to Non-Safety Air Supply Isolation
1DO-0063	M1-0215-D (E-1)	LOW (1)	1½	3	C	A	C	N/A	CV/3YR (2)	N/A	N/A	Safety-Related Air Receiver to Non-Safety Air Supply Isolation
1DO-0064	M1-0215-E (F-6)	LOW (1)	1½	3	C	A	C	N/A	CV/3YR (2)	N/A	N/A	Safety-Related Air Receiver to Non-Safety Air Supply Isolation
1DO-0065	M1-0215-E (E-1)	LOW (1)	1½	3	C	A	C	N/A	CV/3YR (2)	N/A	N/A	Safety-Related Air Receiver to Non-Safety Air Supply Isolation
2DO-0074	M2-0215-D (E-1)	LOW (1)	1½	3	C	A	C	N/A	CV/3YR (2)	N/A	N/A	Safety-Related Air Receiver to Non-Safety Air Supply Isolation

TABLE 7 - DIESEL GENERATOR AUXILIARIES

Valve Number	Flow Diagram (Coord.)	Risk Ranking	Size	Code Class	Cate-gory	Func-tion	Safety Func. Pos.	Test Parameters/Schedule				Remarks
								Leak Test	Exercise Test	Fail Safe Test	Position Indicator Test	
2DO-0075	M2-0215-D (F-5)	LOW (1)	1½	3	C	A	C	N/A	CV/3YR (2)	N/A	N/A	Safety-Related Air Receiver to Non-Safety Air Supply Isolation
2DO-0076	M2-0215-E (E-1)	LOW (1)	1½	3	C	A	C	N/A	CV/3YR (2)	N/A	N/A	Safety-Related Air Receiver to Non-Safety Air Supply Isolation
2DO-0077	M2-0215-E (F-5)	LOW (1)	1½	3	C	A	C	N/A	CV/3YR (2)	N/A	N/A	Safety-Related Air Receiver to Non-Safety Air Supply Isolation

TABLE 7 - DIESEL GENERATOR AUXILIARIES

NOTES

1. A risk informed - staggered test basis (RI-STB) shall be established for the valves within the specified group.

2. ISTC-3550 Valve in Regular Use - This valve operates in the course of plant operation at a frequency that satisfies the requirements of this IST Plan.

TABLE 8 - FEEDWATER

Valve Number	Flow Diagram (Coord.)	Risk Ranking	Size	Code Class	Cate-gory	Func-tion	Safety Func. Pos.	Test Parameters/Schedule: Leak Test	Exercise Test	Fail Safe Test	Position Indicator Test	Remarks
HIGH SAFETY SIGNIFICANCE Globe Valve / Air Operated Copes Vulcan Model D-1000												
FCV-0510	M1-0203-1 (B-1) M2-0203-1 (B-1)	HIGH	18	5	B	A	C	N/A	MT/CS (3)	FC/CS	PIT/ 2YR	Feedwater Isolation
FCV-0520	M1-0203-1 (B-3) M2-0203-1 (B-3)	HIGH	18	5	B	A	C	N/A	MT/CS (3)	FC/CS	PIT/ 2YR	Feedwater Isolation
FCV-0530	M1-0203-1 (B-4) M2-0203-1 (B-4)	HIGH	18	5	B	A	C	N/A	MT/CS (3)	FC/CS	PIT/ 2YR	Feedwater Isolation
FCV-0540	M1-0203-1 (B-6) M2-0203-1 (B-6)	HIGH	18	5	B	A	C	N/A	MT/CS (3)	FC/CS	PIT/ 2YR	Feedwater Isolation
GROUP 41 Swing Check Valve / Self Actuating Borg-Warner Model 454KAB1												
FW-0198	M1-0203-1A (B-4) M2-0203-1A (B-1)	LOW (1)	6	2	C	A	O/C	N/A	CV/6YR	N/A	N/A	See Note 7 below
FW-0199	M1-0203-1A (C-5) M2-0203-1A (C-5)	LOW (1)	6	2	C	A	O/C	N/A	CV/6YR	N/A	N/A	See Note 7 below
FW-0200	M1-0203-1A (C-1) M2-0203-1A (C-4)	LOW (1)	6	2	C	A	O/C	N/A	CV/6YR	N/A	N/A	See Note 7 below

TABLE 8 - FEEDWATER

Valve Number	Flow Diagram (Coord.)	Risk Ranking	Size	Code Class	Cate-gory	Func-tion	Safety Func. Pos.	Test Parameters/Schedule: Leak Test	Exercise Test	Fail Safe Test	Position Indicator Test	Remarks
FW-0201	M1-0203-1A (C-3) M2-0203-1A (C-3)	LOW (1)	6	2	C	A	O/C	N/A	CV/6YR	N/A	N/A	See Note 7 below
FW-0202	M1-0203-1A (C-4) M2-0203-1A (C-1)	LOW (1)	6	2	C	A	O/C	N/A	CV/6YR	N/A	N/A	See Note 7 below
FW-0195	M1-0203-1A (B-5) M2-0203-1A (B-5)	LOW (1)	6	2	C	A	O/C	N/A	CV/6YR	N/A	N/A	See Note 7 below
FW-0196	M1-0203-1A (B-1) M2-0203-1A (B-4)	LOW (1)	6	2	C	A	O/C	N/A	CV/6YR	N/A	N/A	See Note 7 below
FW-0197	M1-0203-1A (B-2) M2-0203-1A (B-3)	LOW (1)	6	2	C	A	O/C	N/A	CV/6YR	N/A	N/A	See Note 7 below
GROUP 42 Swing Check Valve / Self Actuating Edwards Model 18-970BQTY												
FW-0070	M1-0203-1 (C-4) M2-0203-1 (C-1)	LOW (1)	18	2	C	A	C	N/A	CVD/8YR (2)	N/A	N/A	Main Feedline Break Isolation
FW-0076	M1-0203-1 (C-3) M2-0203-1 (C-3)	LOW (1)	18	2	C	A	C	N/A	CVD/8YR (2)	N/A	N/A	Main Feedline Break Isolation
FW-0082	M1-0203-1 (C-1) M2-0203-1 (C-4)	LOW (1)	18	2	C	A	C	N/A	CVD/8YR (2)	N/A	N/A	Main Feedline Break Isolation

TABLE 8 - FEEDWATER

Valve Number	Flow Diagram (Coord.)	Risk Ranking	Size	Code Class	Cate-gory	Func-tion	Safety Func. Pos.	Test Parameters/Schedule				Remarks
								Leak Test	Exercise Test	Fail Safe Test	Position Indicator Test	
FW-0088	M1-0203-1 (C-6) M2-0203-1 (C-6)	LOW (1)	18	2	C	A	C	N/A	CVD/8YR (2)	N/A	N/A	Main Feedline Break Isolation
GROUP 43 Gate Valve / Hydraulic-Pneumatic Operated Borg-Warner Model 75830												
HV-2134	M1-0203-1 (D-1) M2-0203-1 (D-4)	LOW (1)	18	2	B	A	C	N/A	ET/18MO MT/6YR	FC/6YR	PIT/ 6YR	Feedwater Isolation & Containment Isolation
HV-2135	M1-0203-1 (D-3) M2-0203-1 (D-3)	LOW (1)	18	2	B	A	C	N/A	ET/18MO MT/6YR	FC/6YR	PIT/ 6YR	Feedwater Isolation & Containment Isolation
HV-2136	M1-0203-1 (D-4) M2-0203-1 (D-1)	LOW (1)	18	2	B	A	C	N/A	ET/18MO MT/6YR)	FC/6YR	PIT/ 6YR	Feedwater Isolation & Containment Isolation
HV-2137	M1-0203-1 (D-6) M2-0203-1 (D-6)	LOW (1)	18	2	B	A	C	N/A	ET/18MO MT/6YR	FC/6YR	PIT/ 6YR	Feedwater Isolation & Containment Isolation
GROUP 45 Globe Valve / Air Operated Fisher Model SS120												
HV-2185	M1-0203-1 (D-2) M2-0203-1 (D-5)	LOW (1)	3	2	B	A	C	N/A	ET/18MO MT/6YR	FC/6YR	PIT/ 6YR	Feedwater Isolation & Containment Isolation

TABLE 8 - FEEDWATER

Valve Number	Flow Diagram (Coord.)	Risk Ranking	Size	Code Class	Cate-gory	Func-tion	Safety Func. Pos.	Test Parameters/Schedule: Leak Test	Exercise Test	Fail Safe Test	Position Indicator Test	Remarks
HV-2186	M1-0203-1 (D-3) M2-0203-1 (D-3)	LOW (1)	3	2	C	A	C	N/A	ET/18MO MT/6YR	FC/6YR	PIT/ 6YR	Feedwater Isolation & Containment Isolation
HV-2187	M1-0203-1 (D-5) M2-0203-1 (D-2)	LOW (1)	3	2	C	A	C	N/A	ET/18MO MT/6YR	FC/6YR	PIT/ 6YR	Feedwater Isolation & Containment Isolation
HV-2188	M1-0203-1 (D-6) M2-0203-1 (D-6)	LOW (1)	3	2	C	A	C	N/A	ET/18MO MT/6YR	FC/6YR	PIT/ 6YR	Feedwater Isolation & Containment Isolation
2-FV-2193	M2-0203-1 (D-4)	LOW (1)	3	2	C	A	C	N/A	ET/18MO MT/6YR	FC/6YR	PIT/ 6YR	Feedwater Isolation & Containment Isolation
2-FV-2194	M2-0203-1 (D-3)	LOW (1)	3	2	C	A	C	N/A	ET/18MO MT/6YR	FC/6YR	PIT/ 6YR	Feedwater Isolation & Containment Isolation
2-FV-2195	M2-0203-1 (D-1)	LOW (1)	3	2	C	A	C	N/A	ET/18MO MT/6YR	FC/6YR	PIT/ 6YR	Feedwater Isolation & Containment Isolation
2-FV-2196	M2-0203-1 (D-5)	LOW (1)	3	2	C	A	C	N/A	ET/18MO MT/6YR	FC/6YR	PIT/ 6YR	Feedwater Isolation & Containment Isolation
GROUP 46 Butterfly Valve / Air Operated ITT Conoflow Model 30006ZSFN												
2-FV-2181	M2-0203-1A (B-4)	LOW (1)	6	2	B	A	C	N/A	ET/18MO MT/6YR	FC/6YR	PIT/ 6YR	AFW Flowpath Boundary
2-FV-2182	M2-0203-1A (B-2)	LOW (1)	6	2	B	A	C	N/A	ET/18MO MT/6YR	FC/6YR	PIT/ 6YR	AFW Flowpath Boundary
2-FV-2183	M2-0203-1A (B-1)	LOW (1)	6	2	B	A	C	N/A	ET/18MO MT/6YR	FC/6YR	PIT/ 6YR	AFW Flowpath Boundary
2-FV-2184	M2-0203-1A (B-5)	LOW (1)	6	2	B	A	C	N/A	ET/18MO MT/6YR	FC/6YR	PIT/ 6YR	AFW Flowpath Boundary

TABLE 8 - FEEDWATER

Valve Number	Flow Diagram (Coord.)	Risk Ranking	Size	Code Class	Cate-gory	Func-tion	Safety Func. Pos.	Test Parameters/Schedule: Leak Test	Exercise Test	Fail Safe Test	Position Indicator Test	Remarks
GROUP 103 Globe Valve / Air Operated Fisher Model ED												
LV-2162	M1-0203-1 (B-2) M2-0203-1 (B-5)	LOW (1)	8	5	B	A	C	N/A	ET/18MO (4) MT/6YR	FC/6YR	PIT/ 2YR	Feedwater Isolation
LV-2163	M1-0203 (B-3) M2-0203 (B-3)	LOW (1)	8	5	B	A	C	N/A	ET/18MO (4) MT/6YR	FC/6YR	PIT/ 2YR	Feedwater Isolation
LV-2164	M1-0203 (B-5) M2-0203 (B-2)	LOW (1)	8	5	B	A	C	N/A	ET/18MO (4) MT/6YR	FC/6YR	PIT/ 2YR	Feedwater Isolation
LV-2165	M1-0203 (B-6) M2-0203 (B-6)	LOW (1)	8	5	B	A	C	N/A	ET/18MO (4) MT/6YR	FC/6YR	PIT/ 2YR	Feedwater Isolation
GROUP 104 Globe Valve / Manually Operated Edwards Model 848YT1												
FW-0113	M1-0203-1 (F-3) M2-0203-1 (F-3)	LOW (1)	3/4	2	B	P	C (5)	N/A	N/A	N/A	N/A	Containment Isolation
FW-0116	M1-0203-1 (B-3) M2-0203-1 (B-3)	LOW (1)	3/4	2	B	P	C (5)	N/A	N/A	N/A	N/A	Containment Isolation
CVCM GROUP 2-17 Swing Check Valve / Self Actuating Borg-Warner Model 454KAB1												
2FW-0191	M2-0203-1 (D-5)	LOW (6)	6	2	C	A	C	N/A	DD/16YR	N/A	N/A	AFW Flowpath Boundary

TABLE 8 - FEEDWATER

Valve Number	Flow Diagram (Coord.)	Risk Ranking	Size	Code Class	Cate-gory	Func-tion	Safety Func. Pos.	Test Parameters/Schedule				Remarks
								Leak Test	Exercise Test	Fail Safe Test	Position Indicator Test	
2FW-0192	M2-0203-1 (D-4)	LOW (6)	6	2	C	A	C	N/A	DD/16YR	N/A	N/A	AFW Flowpath Boundary
2FW-0193	M2-0203-1 (D-2)	LOW (6)	6	2	C	A	C	N/A	DD/16YR	N/A	N/A	AFW Flowpath Boundary
2FW-0194	M2-0203-1 (D-1)	LOW (6)	6	2	C	A	C	N/A	DD/16YR	N/A	N/A	AFW Flowpath Boundary

TABLE 8 - FEEDWATER

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NOTES

1. A risk informed - staggered test basis (RI-STB) shall be established for the valves within the specified group.

2. FW-0070, FW-0076, FW-0082, and FW-0088, Main Feedwater Header Check Valves, are disassembled at refueling outages to verify operability as allowed by ASME OM Code, 2004 Edition, through 2006 Addenda, Subsection ISTC-5220. Full or part stroking these valves is not practical. Leak testing of the valves has proven to be impractical due to the insufficient amount of test makeup available versus the valve's size. Pursuant to Generic Letter 89-04 and NUREG-1482, verification of the operability of the subject check valves will be performed through disassembly and inspection of one of the four valves at each refueling outage for each unit. The disassembled valve will be verified to be capable of full-stroking and it will be verified that the internals of the valve are structurally sound (no loose or corroded parts). Also, the disk will be manually exercised. Each valve will be disassembled, inspected and manually full-stroke exercised on a rotating basis at each refueling outage until the entire group has been tested. If the disassembled valve is not capable of being full-stroke exercised or there is binding or failure of valve internals, the remaining valves in the group in that unit will also be tested during the same outage. Once this is completed, the sequence of disassembly will be repeated unless extension of the interval can be justified.

3. FCV-0510, FCV-0520, FCV-0530, FCV-0540, Feedwater Regulating Valves are full-stroke exercised during cold shutdown outages. These valves cannot be full-stroke exercised during plant operation because closing the valves interrupts feedwater flow resulting in severe steam generator level transients and, most likely, a turbine and reactor trip. These valves perform an ISTA-1100(a) function in MODES 1, 2, and 3. During an extended cold shutdown outage, exercise testing is required to be repeated every 3 months if the plant is in hot standby (MODE 3).

4. The ISTC-3550 Valve in Regular Use - This valve operates in the course of plant operation at a frequency that satisfies the requirements of this IST Plan.

5. FW-0013, FW-0016, FW Line Section Sample Isolation Valves, are manual containment isolation valves. These valves are locked closed to establish containment isolation and AFW operability. There is no operational need to cycle these valves (passive).

6. Check Valve Condition Monitoring Plan 2-17 has been established per ASME OM Code Appendix II for valves in this group.

7. The feedwater check valves in the auxiliary feedwater lines to the steam generator open to provide the AFW flowpath during design basis events. These valves must close in the event of a line break upstream of the outboard check valve in order to terminate a Condition III loss of feedwater event. In addition, these valve se also must close post-LOCA to protect the cold containment penetration during intermittent operation of AFW.

TABLE 9 - MAIN STEAM

Valve Number	Flow Diagram (Coord.)	Risk Ranking	Size	Code Class	Cate-gory	Func-tion	Safety Func. Pos.	Test Parameters/Schedule: Leak Test	Exercise Test	Fail Safe Test	Position Indicator Test	Remarks
HIGH SAFETY SIGNIFICANCE Globe Valve / Air Operated Control Components Model DRAG-M1G9-X7-X8BW-X8BW-XXCEE2												
PV-2325	M1-0202 (B-3) M2-0202 (B-3)	HIGH	8	2	B	A	O/C	N/A	MT/18MO (3)	FC/18MO (4)	PIT/ 2YR	Steam Vent Flowpath (for residual heat removal)/ Containment Isolation
PV-2326	M1-0202 (B-2) M2-0202 (B-2)	HIGH	8	2	B	A	O/C	N/A	MT/18MO (3)	FC/18MO (4)	PIT/ 2YR	Steam Vent Flowpath (for residual heat removal)/ Containment Isolation
PV-2327	M1-0202 (B-1) M2-0202 (B-1)	HIGH	8	2	B	A	O/C	N/A	MT/18MO (3)	FC/18MO (4)	PIT/ 2YR	Steam Vent Flowpath (for residual heat removal)/ Containment Isolation
PV-2328	M1-0202 (B-4) M2-0202 (B-4)	HIGH	8	2	B	A	O/C	N/A	MT/18MO (3)	FC/18MO (4)	PIT/ 2YR	Steam Vent Flowpath (for residual heat removal)/ Containment Isolation
GROUP 112 Globe Valve / Hydraulic Pneumatic Operated Edwards Model 32-612(WCC)GJMMPTY												
HV-2333A	M1-0202 (F-4) M2-0202 (F-4)	LOW (1)	32 X 34	2	B	A	C	N/A	ET/18MO MT/6YR	FC/6YR	PIT/ 6YR	Steam Line Isolation & Containment Isolation
HV-2334A	M1-0202 (F-2) M2-0202 (F-2)	LOW (1)	32 X 34	2	B	A	C	N/A	ET/18MO MT/6YR	FC/6YR	PIT/ 6YR	Steam Line Isolation & Containment Isolation
HV-2335A	M1-0202 (F-1) M2-0202 (F-1)	LOW (1)	32 X 34	2	B	A	C	N/A	ET/18MO MT/6YR	FC/6YR	PIT/ 6YR	Steam Line Isolation & Containment Isolation

TABLE 9 - MAIN STEAM

Valve Number	Flow Diagram (Coord.)	Risk Ranking	Size	Code Class	Cate-gory	Func-tion	Safety Func. Pos.	Test Parameters/Schedule: Leak Test	Exercise Test	Fail Safe Test	Position Indicator Test	Remarks
HV-2336A	M1-0202 (F-5) M2-0202 (F-5)	LOW (1)	32 X 34	2	B	A	C	N/A	ET/18MO MT/6YR	FC/6YR	PIT/ 6YR	Steam Line Isolation & Containment Isolation
GROUP 47 Swing Check Valve / Self Actuating Borg-Warner Model 75560-1												
MS-0142	M1-0202 (B-5) M2-0202 (B-5)	LOW (1)	4	3	C	A	O/C	N/A	CV/6YR	N/A	N/A	TDAFW Pump Steam Supply Flowpath/TDAFW Pump Steam Supply Flowpath Boundary
MS-0143	M1-0202 (B-6) M2-0202 (B-6)	LOW (1)	4	3	C	A	O/C	N/A	CV/6YR	N/A	N/A	TDAFW Pump Steam Supply Flowpath/TDAFW Pump Steam Supply Flowpath Boundary
GROUP 48 Swing Check Valve / Self Actuating Circle Seal Model N162-180												
2MS-0663	M2-0218-1 (F-2)	LOW (1)	½	3	A/C	A	C	LT/6YR	CV/6YR (2)	N/A	N/A	Safety-Related Air Accumu-lator to Non-Safety Air Supply Isolation
2MS-0664	M2-0218-1 (F-2)	LOW (1)	½	3	A/C	A	C	LT/6YR	CV/6YR (2)	N/A	N/A	Safety-Related Air Accumu-lator to Non-Safety Air Supply Isolation
2MS-0665	M2-0218-1 (F-1)	LOW (1)	½	3	A/C	A	C	LT/6YR	CV/6YR (2)	N/A	N/A	Safety-Related Air Accumu-lator to Non-Safety Air Supply Isolation
2MS-0666	M2-0218-1 (F-1)	LOW (1)	½	3	A/C	A	C	LT/6YR	CV/6YR (2)	N/A	N/A	Safety-Related Air Accumu-lator to Non-Safety Air Supply Isolation
2MS-0667	M2-0218-1 (F-1)	LOW (1)	½	3	A/C	A	C	LT/6YR	CV/6YR (2)	N/A	N/A	Safety-Related Air Accumu-lator to Non-Safety Air Supply Isolation

TABLE 9 - MAIN STEAM

Valve Number	Flow Diagram (Coord.)	Risk Ranking	Size	Code Class	Cate-gory	Func-tion	Safety Func. Pos.	Test Parameters/Schedule				Remarks
								Leak Test	Exercise Test	Fail Safe Test	Position Indicator Test	
2MS-0668	M2-0218-1 (F-1)	LOW (1)	½	3	A/C	A	C	LT/6YR	CV/6YR (2)	N/A	N/A	Safety-Related Air Accumu-lator to Non-Safety Air Supply Isolation
2MS-0669	M2-0218-1 (F-2)	LOW (1)	½	3	A/C	A	C	LT/6YR	CV/6YR (2)	N/A	N/A	Safety-Related Air Accumu-lator to Non-Safety Air Supply Isolation
2MS-0670	M2-0218-1 (F-2)	LOW (1)	½	3	A/C	A	C	LT/6YR	CV/6YR (2)	N/A	N/A	Safety-Related Air Accumu-lator to Non-Safety Air Supply Isolation
1MS-0680	M2-0218-1 (F-3)	LOW (1)	½	3	A/C	A	C	LT/6YR	CV/6YR (2)	N/A	N/A	Safety-Related Air Accumu-lator to Non-Safety Air Supply Isolation
1MS-0681	M2-0218-1 (F-3)	LOW (1)	½	3	A/C	A	C	LT/6YR	CV/6YR (2)	N/A	N/A	Safety-Related Air Accumu-lator to Non-Safety Air Supply Isolation
1MS-0682	M2-0218-1 (F-3)	LOW (1)	½	3	A/C	A	C	LT/6YR	CV/6YR (2)	N/A	N/A	Safety-Related Air Accumu-lator to Non-Safety Air Supply Isolation
1MS-0683	M2-0218-1 (F-3)	LOW (1)	½	3	A/C	A	C	LT/6YR	CV/6YR (2)	N/A	N/A	Safety-Related Air Accumu-lator to Non-Safety Air Supply Isolation
1MS-0684	M2-0218-1 (F-4)	LOW (1)	½	3	A/C	A	C	LT/6YR	CV/6YR (2)	N/A	N/A	Safety-Related Air Accumu-lator to Non-Safety Air Supply Isolation
1MS-0685	M2-0218-1 (F-4)	LOW (1)	½	3	A/C	A	C	LT/6YR	CV/6YR (2)	N/A	N/A	Safety-Related Air Accumu-lator to Non-Safety Air Supply Isolation
1MS-0686	M2-0218-1 (F-4)	LOW (1)	½	3	A/C	A	C	LT/6YR	CV/6YR (2)	N/A	N/A	Safety-Related Air Accumu-lator to Non-Safety Air Supply Isolation
1MS-0687	M2-0218-1 (F-4)	LOW (1)	½	3	A/C	A	C	LT/6YR	CV/6YR (2)	N/A	N/A	Safety-Related Air Accumu-lator to Non-Safety Air Supply Isolation

TABLE 9 - MAIN STEAM

Valve Number	Flow Diagram (Coord.)	Risk Ranking	Size	Code Class	Cate-gory	Func-tion	Safety Func. Pos.	Test Parameters/Schedule: Leak Test	Exercise Test	Fail Safe Test	Position Indicator Test	Remarks
GROUP 49 Globe Valve / Air Operated Fisher Model BXA												
HV-2401A	M1-0202-2 (C-2) M2-0202-2 (C-2)	LOW (1)	¾	2	B	A	C	N/A	ET/18MO MT/6YR	FC/6YR	PIT/ 6YR	AFW Flowpath Boundary
HV-2401B	M1-0202-2 (C-3) M2-0202-2 (C-3)	LOW (1)	¾	2	B	A	C	N/A	ET/18MO MT/6YR	FC/6YR	PIT/ 6YR	AFW Flowpath Boundary
HV-2402A	M1-0202-2 (C-2) M2-0202-2 (C-2)	LOW (1)	¾	2	B	A	C	N/A	ET/18MO MT/6YR	FC/6YR	PIT/ 6YR	AFW Flowpath Boundary
HV-2402B	M1-0202-2 (C-3) M2-0202-2 (C-3)	LOW (1)	¾	2	B	A	C	N/A	ET/18MO MT/6YR	FC/6YR	PIT/ 6YR	AFW Flowpath Boundary
HV-2403A	M1-0202-2 (B-5) M2-0202-2 (B-5)	LOW (1)	¾	2	B	A	C	N/A	ET/18MO MT/6YR	FC/6YR	PIT/ 6YR	AFW Flowpath Boundary
HV-2403B	M1-0202-2 (B-6) M2-0202-2 (B-6)	LOW (1)	¾	2	B	A	C	N/A	ET/18MO MT/6YR	FC/6YR	PIT/ 6YR	AFW Flowpath Boundary
HV-2404A	M1-0202-2 (C-5) M2-0202-2 (C-5)	LOW (1)	¾	2	B	A	C	N/A	ET/18MO MT/6YR	FC/6YR	PIT/ 6YR	AFW Flowpath Boundary
HV-2404B	M1-0202-2 (C-6) M2-0202-2 (C-6)	LOW (1)	¾	2	B	A	C	N/A	ET/18MO MT/6YR	FC/6YR	PIT/ 6YR	AFW Flowpath Boundary

TABLE 9 - MAIN STEAM

Valve Number	Flow Diagram (Coord.)	Risk Ranking	Size	Code Class	Cate-gory	Func-tion	Safety Func. Pos.	Test Parameters/Schedule				Remarks
								Leak Test	Exercise Test	Fail Safe Test	Position Indicator Test	
HV-2405	M1-0202-2 (F-2) M2-0202-2 (F-2)	LOW (1)	¾	2	B	A	C	N/A	ET/18MO MT/6YR	FC/6YR	PIT/ 6YR	Containment Isolation & AFW Flowpath Boundary
HV-2406	M1-0202-2 (F-3) M2-0202-2 (F-3)	LOW (1)	¾	2	B	A	C	N/A	ET/18MO MT/6YR	FC/6YR	PIT/ 6YR	Containment Isolation & AFW Flowpath Boundary
HV-2407	M1-0202-2 (F-4) M2-0202-2 (F-4)	LOW (1)	¾	2	B	A	C	N/A	ET/18MO MT/6YR	FC/6YR	PIT/ 6YR	Containment Isolation & AFW Flowpath Boundary
HV-2408	M1-0202-2 (F-5) M2-0202-2 (F-5)	LOW (1)	¾	2	B	A	C	N/A	ET/18MO MT/6YR	FC/6YR	PIT/ 6YR	Containment Isolation & AFW Flowpath Boundary
GROUP 50 Globe Valve / Air Operated Fisher Model DBQ												
HV-2409	M1-0202 (E-4) M2-0202 (E-4)	LOW (1)	2	2	B	A	C	N/A	MT/18MO	FC/18MO	PIT/ 6YR	Steam Line Isolation & Containment Isolation
HV-2410	M1-0202 (E-3) M2-0202 (E-3)	LOW (1)	2	2	B	A	C	N/A	MT/18MO	FC/18MO	PIT/ 6YR	Steam Line Isolation & Containment Isolation
HV-2411	M1-0202 (E-2) M2-0202 (E-2)	LOW (1)	2	2	B	A	C	N/A	MT/18MO	FC/18MO	PIT/ 6YR	Steam Line Isolation & Containment Isolation
HV-2412	M1-0202 (E-5) M2-0202 (E-5)	LOW (1)	2	2	B	A	C	N/A	MT/18MO	FC/18MO	PIT/ 6YR	Steam Line Isolation & Containment Isolation

TABLE 9 - MAIN STEAM

Valve Number	Flow Diagram (Coord.)	Risk Ranking	Size	Code Class	Cate-gory	Func-tion	Safety Func. Pos.	Test Parameters/Schedule: Leak Test	Exercise Test	Fail Safe Test	Position Indicator Test	Remarks
GROUP 51 Globe Valve / Air Operated Fisher Model ES												
HV-2397	M1-0202-2 (F-2) M2-0202-2 (F-2)	LOW (1)	3	2	B	A	C	N/A	ET/18MO MT/6YR	FC/6YR	PIT/ 6YR	Containment Isolation & HELB Isolation & AFW Flowpath Boundary
HV-2397A	M1-0202-2 (F-2) M2-0202-2 (F-2)	LOW (1)	3	2	B	A	C	N/A	ET/18MO MT/6YR	FC/6YR	PIT/ 6YR	HELB Isolation & AFW Flowpath Boundary
HV-2398	M1-0202-2 (F-3) M2-0202-2 (F-3)	LOW (1)	3	2	B	A	C	N/A	ET/18MO MT/6YR	FC/6YR	PIT/ 6YR	Containment Isolation & HELB Isolation & AFW Flowpath Boundary
HV-2398A	M1-0202-2 (F-3) M2-0202-2 (F-3)	LOW (1)	3	2	B	A	C	N/A	ET/18MO MT/6YR	FC/6YR	PIT/ 6YR	HELB Isolation & AFW Flowpath Boundary
HV-2399	M1-0202-2 (F-4) M2-0202-2 (F-4)	LOW (1)	3	2	B	A	C	N/A	ET/18MO MT/6YR	FC/6YR	PIT/ 6YR	Containment Isolation & HELB Isolation & AFW Flowpath Boundary
HV-2399A	M1-0202-2 (F-4) M2-0202-2 (F-4)	LOW (1)	3	2	B	A	C	N/A	ET/18MO MT/6YR	FC/6YR	PIT/ 6YR	HELB Isolation & AFW Flowpath Boundary
HV-2400	M1-0202-2 (F-5) M2-0202-2 (F-5)	LOW (1)	3	2	B	A	C	N/A	ET/18MO MT/6YR	FC/6YR	PIT/ 6YR	Containment Isolation & HELB Isolation & AFW Flowpath Boundary
HV-2400A	M1-0202-2 (F-5) M2-0202-2 (F-5)	LOW (1)	3	2	B	A	C	N/A	ET/18MO MT/6YR	FC/6YR	PIT/ 6YR	HELB Isolation & AFW Flowpath Boundary

TABLE 9 - MAIN STEAM

Valve Number	Flow Diagram (Coord.)	Risk Ranking	Size	Code Class	Cate-gory	Func-tion	Safety Func. Pos.	Test Parameters/Schedule: Leak Test	Exercise Test	Fail Safe Test	Position Indicator Test	Remarks
GROUP 52 Globe Valve / Air Operated Fisher Model ES												
HV-2452-1	M1-0202 (A-6) M2-0202 (A-6)	LOW (1)	4	2	B	A	O/C	N/A	ET/18MO MT/6YR	FO/6YR	PIT/ 6YR	TDAFW Pump Steam Supply Flowpath/Containment Isolation
HV-2452-2	M1-0202 (A-5) M2-0202 (A-5)	LOW (1)	4	2	B	A	O/C	N/A	ET/18MO MT/6YR	FO/6YR	PIT/ 6YR	TDAFW Pump Steam Supply Flowpath/Containment Isolation
GROUP 53 - Not Used.												
GROUP 54 Gate Valve / Manually Operated Borg-Warner Model 75730-1												
MS-0026	M1-0202 (B-3) M2-0202 (B-3)	LOW (1)	8	2	B	A	C	N/A	ET/6YR	N/A	N/A	Steam Generator Tube Rupture Isolation (Isolates PORV)
MS-0063	M1-0202 (B-2) M2-0202 (B-2)	LOW (1)	8	2	B	A	C	N/A	ET/6YR	N/A	N/A	Steam Generator Tube Rupture Isolation (Isolates PORV)
MS-0098	M1-0202 (B-1) M2-0202 (B-1)	LOW (1)	8	2	B	A	C	N/A	ET/6YR	N/A	N/A	Steam Generator Tube Rupture Isolation (Isolates PORV)
MS-0134	M1-0202 (B-5) M2-0202 (B-5)	LOW (1)	8	2	B	A	C	N/A	ET/6YR	N/A	N/A	Steam Generator Tube Rupture Isolation (Isolates PORV)

TABLE 9 - MAIN STEAM

Valve Number	Flow Diagram (Coord.)	Risk Ranking	Size	Code Class	Cate-gory	Func-tion	Safety Func. Pos.	Test Parameters/Schedule: Leak Test	Exercise Test	Fail Safe Test	Position Indicator Test	Remarks
GROUP 55 Globe Valve / Manually Operated Edwards Model 4016 JPQYT												
HV-2333B	M1-0202 (F-4) M2-0202 (F-4)	LOW (1)	4	2	B	P	C	N/A	N/A	N/A	PIT/ 6YR	Steam Line Isolation & Containment Isolation
HV-2334B	M1-0202 (F-2) M2-0202 (F-2)	LOW (1)	4	2	B	P	C	N/A	N/A	N/A	PIT/ 6YR	Steam Line Isolation & Containment Isolation
HV-2335B	M1-0202 (F-1) M2-0202 (F-1)	LOW (1)	4	2	B	P	C	N/A	N/A	N/A	PIT/ 6YR	Steam Line Isolation & Containment Isolation
HV-2336B	M1-0202 (F-5) M2-0202 (F-5)	LOW (1)	4	2	B	P	C	N/A	N/A	N/A	PIT/ 6YR	Steam Line Isolation & Containment Isolation
GROUP 107 Gate Valve / Manually Operated Borg-Warner Model 75600-2												
MS-0101	M1-0202 (A-6) M2-0202 (A-6)	LOW (1)	4	2	B	A	C	N/A	ET/6YR	N/A	N/A	TDAFWP Steam Supply Flowpath/Containment Isolation
MS-0128	M1-0202 (A-5) M2-0202 (A-5)	LOW (1)	4	2	B	A	C	N/A	ET/6YR	N/A	N/A	TDAFWP Steam Supply Flowpath/Containment Isolation

TABLE 9 - MAIN STEAM

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NOTES

1. A risk informed - staggered test basis (RI-STB) shall be established for the valves within the specified group.
2. ISTC-3550 Valve in Regular Use - This valve operates in the course of plant operation at a frequency that satisfies the requirements of this IST Plan.
3. ISTC-3510 Exercising Test Frequency - Power-operated relief valves shall be tested once per fuel cycle.
4. ISTC-3560 Fail-Safe Valves - Valves with fail-safe actuators shall be tested in accordance with the exercising frequency in ISTC-3510.

TABLE 10 - REACTOR COOLANT

Valve Number	Flow Diagram (Coord.)	Risk Ranking	Size	Code Class	Cate-gory	Func-tion	Safety Func. Pos.	Test Parameters/Schedule: Leak Test	Exercise Test	Fail Safe Test	Position Indicator Test	Remarks
HIGH SAFETY SIGNIFICANCE Globe Valve / Air Operated Westinghouse												
PCV-0455A	M1-0251 (A-4) M2-0251 (A-4)	HIGH	3	1	B	A	O/C	N/A	MT/18MO (4)	FC/18MO (5)	PIT/ 2YR	Post Accident Vent Path/Vent Path Isolation & Reactor Coolant Pressure Boundary
PCV-0456	M1-0251 (A-4) M2-0251 (A-4)	HIGH	3	1	B	A	O/C	N/A	MT/18MO (4)	FC/18MO (5)	PIT/ 2YR	Post Accident Vent Path/Vent Path Isolation & Reactor Coolant Pressure Boundary
GROUP 56 Diaphram Valve / Air Operated ITT Model SD-C-102872 & SD-C-100598												
8026	M1-0251 (E-1) M2-0251 (E-1)	LOW (1)	1	2	A	A	C	LTJ/TS	ET/18MO MT/6YR	FC/6YR	PIT/ 6YR	Containment Isolation
8027	M1-0251 (F-1) M2-0251 (F-1)	LOW (1)	1	2	A	A	C	LTJ/TS	ET/18MO MT/6YR	FC/6YR	PIT/ 6YR	Containment Isolation
8047	M1-0251 (F-2) M2-0251 (F-2)	LOW (1)	3	2	A	A	C	LTJ/TS	ET/18MO MT/6YR	FC/6YR	PIT/ 6YR	Containment Isolation
GROUP 57 Globe Valve / Solenoid Operated Target Rock Model 79AB-001/79AB-008-1/79AB-001BB												
HV-3607	M1-0250 (F-4) M2-0250 (F-4)	LOW (1)	1	2	B	A	O/C	N/A	ET/18MO MT/6YR	FC/6YR	PIT/ 6YR	Post Accident Vent Path/Vent Path Isolation

TABLE 10 - REACTOR COOLANT

Valve Number	Flow Diagram (Coord.)	Risk Ranking	Size	Code Class	Cate-gory	Func-tion	Safety Func. Pos.	Test Parameters/Schedule: Leak Test	Exercise Test	Fail Safe Test	Position Indicator Test	Remarks
HV-3608	M1-0250 (F-4) M2-0250 (F-4)	LOW (1)	1	2	B	A	O/C	N/A	ET/18MO MT/6YR	FC/6YR	PIT/ 6YR	Post Accident Vent Path/Vent Path Isolation
HV-3609	M1-0251 (B-4) M2-0251 (B-4)	LOW (1)	1	2	B	A	O/C	N/A	ET/18MO MT/6YR	FC/6YR	PIT/ 6YR	Post Accident Vent Path/Vent Path Isolation
HV-3610	M1-0251 (B-4) M2-0251 (B-4)	LOW (1)	1	2	B	A	O/C	N/A	ET/18MO MT/6YR	FC/6YR	PIT/ 6YR	Post Accident Vent Path/Vent Path Isolation
GROUP 109 Globe Valve / Solenoid Operated Targe Rock Model 79AB-001BB												
2-HV-3607	M2-0250 (F-4)	LOW (1)	1	2	B	A	O/C	N/A	MT/CS (3)	FC/CS (3)	PIT/2YR	Post Accident Vent Path/Vent Path Isolation
2-HV-3608	M2-0250 (F-4)	LOW (1)	1	2	B	A	O/C	N/A	MT/CS (3)	FC/CS (3)	PIT/2YR	Post Accident Vent Path/Vent Path Isolation
GROUP 108 Check Valve / Self Actuating Edwards Valve Model 838 YT1												
SI-0166 (2)	M1-0262 (F-5) M2-0263-B (B-5)	LOW (1)	¾	3	A/C	A	C	LT/6YR	CV/6YR (6)	N/A	N/A	Safety Related Nitrogen Accumulator to Non-Safety Nitrogen Supply Isolation
SI-0167 (2)	M1-0262 (F-5) M1-0263-B (B-5)	LOW (1)	¾	3	A/C	A	C	LT/6YR	CV/6YR (6)	N/A	N/A	Safety Related Nitrogen Accumulator to Non-Safety Nitrogen Supply Isolation
SI-0168 (2)	M1-0262 (G-5) M2-0263-B (A-5)	LOW (1)	¾	3	A/C	A	C	LT/6YR	CV/6YR (6)	N/A	N/A	Safety Related Nitrogen Accumulator to Non-Safety Nitrogen Supply Isolation

TABLE 10 - REACTOR COOLANT

Valve Number	Flow Diagram (Coord.)	Risk Ranking	Size	Code Class	Cate-gory	Func-tion	Safety Func. Pos.	Test Parameters/Schedule				Remarks
								Leak Test	Exercise Test	Fail Safe Test	Position Indicator Test	
SI-0169 (2)	M1-0262 (G-5) M2-0263-B (A-5)	LOW (1)	¾	3	A/C	A	C	LT/6YR	CV/6YR (6)	N/A	N/A	Safety Related Nitrogen Accumulator to Non-Safety Nitrogen Supply Isolation

TABLE 10 - REACTOR COOLANT

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NOTES

1. A risk informed - staggered test basis (RI-STB) shall be established for the valves within the specified group.

2. SI-0166, SI-0167, SI-0168, SI-0169 are part of Safety Injection System but are included in this table because they are more closely associated with Reactor Coolant System.

3. DELETED

4. ISTC-3510 Exercising Test Frequency - Power-operated relief valves shall be tested once per fuel cycle. PCV-0455A & PCV-0456, Pressurizer Power Operated Relief Valves, are full-stroke exercised during cold shutdown outages. These valves cannot be fullstroke exercised during plant operation because cycling the valves introduces the unnecessary risk of inadvertently opening an RCS vent path which would result in a design basis event. The stroke length (and stroke time) of these valves is so short that any part-stroke exercise attempt would effectively be a full-stroke and thus is not performed for the same reasons. These valves perform an ISTA-1100(a) function in MODES 1, 2, 3, 4, 5, and 6 with the reactor vessel head on. During an extended cold shutdown outage, exercise testing is required to be repeated every 3 months if the plant is in cold shutdown or refueling (MODE 5 or 6 with the reactor vessel head on).

5. ISTC-3560 Fail-Safe Valves - Valves with fail-safe actuators shall be tested in accordance with the exercising frequency in ISTC-3510.

6. ISTC-3550 Valve in Regular Use - This valve operates in the course of plant operation at a frequency that satisfies the requirements of this IST Plan.

TABLE 11 - RESIDUAL HEAT REMOVAL

Valve Number	Flow Diagram (Coord.)	Risk Ranking	Size	Code Class	Cate-gory	Func-tion	Safety Func. Pos.	Test Parameters/Schedule: Leak Test	Exercise Test	Fail Safe Test	Position Indicator Test	Remarks
HIGH SAFETY SIGNIFICANCE Butterfly Valve / Air Operated Fisher Model 7613												
HCV-0606	M1-0260 (B-3) M2-0260 (B-3)	HIGH	10	2	B	P	O	N/A	N/A	N/A	PIT/ 2YR	ECCS Flowpath
HCV-0607	M1-0260 (B-5) M2-0260 (B-5)	HIGH	10	2	B	P	O	N/A	N/A	N/A	PIT/ 2YR	ECCS Flowpath
GROUP 115 Gate Valve / Manually Operated Westinghouse Model 08000GH84000050												
8717	M1-0260 (A-4) M2-0260 (A-4)	LOW (1)	8	2	B	P	C	N/A	N/A	N/A	PIT/ 2YR	ECCS Flowpath Boundary
GROUP 58 Swing Check Valve / Self Actuating Westinghouse Model 10000CS8400000												
8730A	M1-0260 (B-3) M2-0260 (B-3)	LOW (1)	10	2	C	A	O/C	N/A	CV/3YR	N/A	N/A	ECCS & RHR Flowpath/ ECCS Injection Flowpath Boundary
8730B	M1-0260 (B-5) M2-0260 (B-5)	LOW (1)	10	2	C	A	O/C	N/A	CV/3YR	N/A	N/A	ECCS & RHR Flowpath/ ECCS Injection Flowpath Boundary

TABLE 11 - RESIDUAL HEAT REMOVAL

Valve Number	Flow Diagram (Coord.)	Risk Ranking	Size	Code Class	Category	Function	Safety Func. Pos.	Test Parameters/Schedule: Leak Test	Exercise Test	Fail Safe Test	Position Indicator Test	Remarks
GROUP 59 Butterfly Valve / Air Operated Fisher Model 7613												
FCV-0618	M1-0260 (C-3) M2-0260 (C-3)	LOW (1)	8	2	B	P	C	N/A	N/A	N/A	PIT/ 6YR	ECCS Flowpath Boundary
FCV-0619	M1-0260 (C-6) M2-0260 (C-6)	LOW (1)	8	2	B	P	C	N/A	N/A	N/A	PIT/ 6YR	ECCS Flowpath Boundary
GROUP 60 Angle Valve / Air Operated Fisher Model BXA												
HV-4178 (2)	M1-0228 (A-3) M1-0228 (A-3)	LOW (1)	¾	2	B	A	C	N/A	ET/18MO MT/6YR	FC/6YR	PIT/ 6YR	RHR System to Non-Safety Process Sampling System Isolation
HV-4179 (2)	M1-0228 (A-4) M2-0228 (A-4)	LOW (1)	¾	2	B	A	C	N/A	ET/18MO MT/6YR	FC/6YR	PIT/ 6YR	RHR System to Non-Safety Process Sampling System Isolation
HV-4182 (2)	M1-0228-1 (B-4) M2-0228-1 (B-4)	LOW (1)	¾	2	B	A	C	N/A	ET/18MO MT/6YR	FC/6YR	PIT/ 6YR	RHR System to Non-Safety Post Accident Sampling System Isolation

TABLE 11 - RESIDUAL HEAT REMOVAL

NOTES

1. A risk informed - staggered test basis (RI-STB) shall be established for the valves within the specified group.

2. HV-4178 and HV-4179 are part of Process Sampling System and HV-4182 is part of Post Accident Sampling System but are included in this table because their safety functions are more closely associated with Residual Heat Removal System.

TABLE 12 - SPENT FUEL POOL COOLING

Valve Number	Flow Diagram (Coord.)	Risk Ranking	Size	Code Class	Cate-gory	Func-tion	Safety Func. Pos.	Test Parameters/Schedule: Leak Test	Exercise Test	Fail Safe Test	Position Indicator Test	Remarks
GROUP 61 Swing Check Valve / Self Actuating Borg-Warner 75000 Series												
XSF-0003	M1-0235 (D-2)	LOW (1)	10	3	C	A	O	N/A	CV/3YR DD/6YR	N/A	N/A	Spent Fuel Pool Cooling Flowpath
XSF-0004	M1-0235 (D-5)	LOW (1)	10	3	C	A	O	N/A	CV/3YR DD/6YR	N/A	N/A	Spent Fuel Pool Cooling Flowpath
XSF-0160	M1-0235 (B-2)	LOW (1)	3	3	C	A	O	N/A	CV/6YR DD/6YR	N/A	N/A	Spent Fuel Pool Emergency Makeup Flowpath
XSF-0180	M1-0235 (B-4)	LOW (1)	3	3	C	A	O	N/A	CV/6YR DD/6YR	N/A	N/A	Spent Fuel Pool Emergency Makeup Flowpath
GROUP 62 Diaphram Valve / Manual Operated ITT Models												
SF-0011	M1-0235-2 (A-1) M2-0235 (B-3)	LOW (1)	4	2	A	P	C	LTJ/TS	N/A	N/A	N/A	Containment Isolation
SF-0012	M1-0235-2 (B-1) M2-0235 (B-3)	LOW (1)	4	2	A	P	C	LTJ/TS	N/A	N/A	N/A	Containment Isolation
SF-0021	M1-0235-2 (A-3) M2-0235 (B-5)	LOW (1)	4	2	A	P	C	LTJ/TS	N/A	N/A	N/A	Containment Isolation
SF-0022	M1-0235-2 (A-2) M2-0235 (B-5)	LOW (1)	4	2	A	P	C	LTJ/TS	N/A	N/A	N/A	Containment Isolation
1SF-0053	M1-0235-2 (F-2)	LOW (1)	3	2	A	P	C	LTJ/TS	N/A	N/A	N/A	Containment Isolation
1SF-0054	M1-0235-2 (F-2)	LOW (1)	3	2	A	P	C	LTJ/TS	N/A	N/A	N/A	Containment Isolation

TABLE 12 - SPENT FUEL POOL COOLING

Valve Number	Flow Diagram (Coord.)	Risk Ranking	Size	Code Class	Cate-gory	Func-tion	Safety Func. Pos.	Test Parameters/Schedule				Remarks
								Leak Test	Exercise Test	Fail Safe Test	Position Indicator Test	
2SF-0055	M2-0235 (B-2)	LOW (1)	3	2	A	P	C	LTJ/TS	N/A	N/A	N/A	Containment Isolation
2SF-0056	M2-0235 (B-2)	LOW (1)	3	2	A	P	C	LTJ/TS	N/A	N/A	N/A	Containment Isolation
XSF-0161	M1-0235 (B-2)	LOW (1)	3	3	B	A	O/C	N/A	ET/6YR	N/A	N/A	Spent Fuel Pool Emergency Makeup Flowpath/Isolation
XSF-0179	M1-0235 (B-4)	LOW (1)	3	3	B	A	O/C	N/A	ET/6YR	N/A	N/A	Spent Fuel Pool Emergency Makeup Flowpath/Isolation

TABLE 12 - SPENT FUEL POOL COOLING

NOTES

1. A risk informed - staggered test basis (RI-STB) shall be established for the valves within the specified group.

TABLE 13 - SAFETY INJECTION

Valve Number	Flow Diagram (Coord.)	Risk Ranking	Size	Code Class	Category	Function	Safety Func. Pos.	Test Parameters/Schedule: Leak Test	Exercise Test	Fail Safe Test	Position Indicator Test	Remarks
HIGH SAFETY SIGNIFICANCE Piston or Nozzle Check Valve / Self Actuating Edwards Model D36274F316JT1 or Enertech Model ERV-Z												
SI-8819A	M1-0263 (D-4) M2-0263 (D-4)	HIGH	2	1	A/C	A	O/C	LT/TS (2)	CV/RF (3)	N/A	N/A	ECCS to CL / RCS Press Boundary & CNTMT Isolation
SI-8819B	M1-0263 (C-4) M2-0263 (D-4)	HIGH	2	1	A/C	A	O/C	LT/TS (2)	CV/RF (3)	N/A	N/A	ECCS to CL / RCS Press Boundary & CNTMT Isolation
SI-8819C	M1-0263 (B-4) M2-0263 (E-4)	HIGH	2	1	A/C	A	O/C	LT/TS (2)	CV/RF (3)	N/A	N/A	ECCS to CL / RCS Press Boundary & CNTMT Isolation
SI-8819D	M1-0263 (F-4) M2-0263 (F-4)	HIGH	2	1	A/C	A	O/C	LT/TS (2)	CV/RF (3)	N/A	N/A	ECCS to CL / RCS Press Boundary & CNTMT Isolation
HIGH SAFETY SIGNIFICANCE Swing Check Valve / Self Actuating Westinghouse Model 03000CS8800000												
8815	M1-0261 (B-2) M2-0261 (E-4)	HIGH	3	1	A/C	A	O/C	LT/TS (2)	CV/RF (3)	N/A	N/A	ECCS to Cold Legs Flowpath & Boration Flowpath/Reactor Coolant Pressure Boundary & Containment Isolation
HIGH SAFETY SIGNIFICANCE Swing Check Valve / Self Actuating Westinghouse Model 06000CS8800000												
8818A	M1-0263 (E-4) M2-0263 (C-4)	HIGH	6	1	A/C	A	O C	LT/TS (2)	CV/RF (5) CV/CS (5)	N/A	N/A	ECCS to Cold Legs Flowpath/Reactor Coolant Pressure Boundary & Containment Isolation

TABLE 13 - SAFETY INJECTION

Valve Number	Flow Diagram (Coord.)	Risk Ranking	Size	Code Class	Cate-gory	Func-tion	Safety Func. Pos.	Test Parameters/Schedule: Leak Test	Exercise Test	Fail Safe Test	Position Indicator Test	Remarks
8818B	M1-0263 (D-5) M2-0263 (C-5)	HIGH	6	1	A/C	A	O C	LT/TS (2)	CV/RF (5) CV/CS (5)	N/A	N/A	ECCS to Cold Legs Flowpath/Reactor Coolant Pressure Boundary & Containment Isolation
8818C	M1-0263 (C-6) M2-0263 (E-6)	HIGH	6	1	A/C	A	O C	LT/TS (2)	CV/RF (5) CV/CS (5)	N/A	N/A	ECCS to Cold Legs Flowpath/Reactor Coolant Pressure Boundary & Containment Isolation
8818D	M1-0263 (C-6) M2-0263 (E-6)	HIGH	6	1	A/C	A	O C	LT/TS (2)	CV/RF (5) CV/CS (5)	N/A	N/A	ECCS to Cold Legs Flowpath/Reactor Coolant Pressure Boundary & Containment Isolation
HIGH SAFETY SIGNIFICANCE Swing Check Valve / Self Actuating Westinghouse Model 08000CS8200000												
8926	M1-0263-A (G-2) M2-0262 (A-2)	HIGH	8	2	C	A	O/C	N/A	CV/RF (3)	N/A	N/A	ECCS Injection Flowpath/ ECCS Recirculation Flowpath Boundary
CVCM GROUP 1-2 / 2-2 Swing Check Valve / Self Actuating Westinghouse Model 10000CS8800000												
8948A	M1-0262 (A-2) M2-0263-B (G-2)	HIGH	10	1	A/C	A	O/C	LT/TS (2)	DD/16YR (4)	N/A	N/A	ECCS to Cold Legs Flowpath/ Reactor Coolant Pressure Boundary
8948B	M1-0262 (A-3) M2-0263-B (G-3)	HIGH	10	1	A/C	A	O/C	LT/TS (2)	DD/16YR (4)	N/A	N/A	ECCS to Cold Legs Flowpath/ Reactor Coolant Pressure Boundary
8948C	M1-0262 (A-5) M2-0263-B (G-5)	HIGH	10	1	A/C	A	O/C	LT/TS (2)	DD/16YR (4)	N/A	N/A	ECCS to Cold Legs Flowpath/ Reactor Coolant Pressure Boundary

TABLE 13 - SAFETY INJECTION

Valve Number	Flow Diagram (Coord.)	Risk Ranking	Size	Code Class	Cate-gory	Func-tion	Safety Func. Pos.	Test Parameters/Schedule: Leak Test	Exercise Test	Fail Safe Test	Position Indicator Test	Remarks
8948D	M1-0262 (A-6) M2-0263-B (G-6)	HIGH	10	1	A/C	A	O/C	LT/TS (2)	DD/16YR (4)	N/A	N/A	ECCS to Cold Legs Flowpath/ Reactor Coolant Pressure Boundary
HIGH SAFETY SIGNIFICANCE Swing Check Valve / Self Actuating Westinghouse Model CS Series												
8922A	M1-0263-A (D-2) M2-0262 (D-2)	HIGH	4	2	C	A	O/C	N/A	CV/RF (3)	N/A	N/A	ECCS Flowpath/ECCS Flowpath Boundary
8922B	M1-0263-A (D-3) M2-0262 (D-5)	HIGH	4	2	C	A	O/C	N/A	CV/RF (3)	N/A	N/A	ECCS Flowpath/ECCS Flowpath Boundary
8969B	M1-0263-A (F-3) M2-0262 (B-4)	HIGH	8	2	C	A	O/C	N/A	CV/RF (3)	N/A	N/A	ECCS Recirculation Flowpath/ECCS Flowpath Boundary (during Re-circulation with Loss of RHR A)
HIGH SAFETY SIGNIFICANCE Swing Check Valve / Self Actuating Westinghouse Model CS Series												
8841A	M1-0263 (C-1) M2-0263 (E-1)	HIGH	6	1	A/C	A	O/C	LT/TS (2)	CV/RF (5)	N/A	N/A	ECCS to Hot Legs Flowpath/ Reactor Coolant Pressure Boundary & Containment Isolation
8841B	M1-0263 (C-2) M2-0263 (E-2)	HIGH	6	1	A/C	A	O/C	LT/TS (2)	CV/RF (5)	N/A	N/A	ECCS to Hot Legs Flowpath/ Reactor Coolant Pressure Boundary & Containment Isolation
8949A	M1-0263 (A-2) M2-0263 (F-2)	HIGH	6	1	A/C	A	O/C	LT/TS (2)	CV/RF (5)	N/A	N/A	ECCS to Hot Legs Flowpath/ Reactor Coolant Pressure Boundary

TABLE 13 - SAFETY INJECTION

Valve Number	Flow Diagram (Coord.)	Risk Ranking	Size	Code Class	Cate-gory	Func-tion	Safety Func. Pos.	Test Parameters/Schedule: Leak Test	Exercise Test	Fail Safe Test	Position Indicator Test	Remarks
8949B	M1-0263 (A-1) M2-0263 (G-1)	HIGH	6	1	A/C	A	O/C	LT/TS (2)	CV/RF (5)	N/A	N/A	ECCS to Hot Legs Flowpath/ Reactor Coolant Pressure Boundary
8949C	M1-0263 (A-1) M2-0263 (G-2)	HIGH	6	1	A/C	A	O/C	LT/TS (2)	CV/RF (5)	N/A	N/A	ECCS to Hot Legs Flowpath/ Reactor Coolant Pressure Boundary
8949D	M1-0263 (A-3) M2-0263 (F-3)	HIGH	6	1	A/C	A	O/C	LT/TS (2)	CV/RF (5)	N/A	N/A	ECCS to Hot Legs Flowpath/ Reactor Coolant Pressure Boundary
HIGH SAFETY SIGNIFICANCE Gate Valve / Manually Operated Borg-Warner Model 82790												
SI-0047	M1-0261 (F-1) M2-0261 (D-1)	HIGH	24	2	B	P	O	N/A	N/A	N/A	PIT/ 2YR	ECCS Injection Flowpath
HIGH SAFETY SIGNIFICANCE Swing Check Valve / Self Actuating Edwards Models												
SI-8905A	M1-0263 (C-2) M2-0263 (D-2)	HIGH	2	1	A/C	A	O/C	LT/TS (2)	CV/RF (3)	N/A	N/A	ECCS to Hot Legs Flowpath/ Reactor Coolant Pressure Boundary & Containment Isolation
SI-8905B	M1-0263 (D-1) M2-0263 (D-1)	HIGH	2	1	A/C	A	O/C	LT/TS (2)	CV/RF (3)	N/A	N/A	ECCS to Hot Legs Flowpath/ Reactor Coolant Pressure Boundary & Containment Isolation
SI-8905C	M1-0263 (D-1) M2-0263 (D-2)	HIGH	2	1	A/C	A	O/C	LT/TS (2)	CV/RF (3)	N/A	N/A	ECCS to Hot Legs Flowpath/ Reactor Coolant Pressure Boundary & Containment Isolation

TABLE 13 - SAFETY INJECTION

Valve Number	Flow Diagram (Coord.)	Risk Ranking	Size	Code Class	Cate-gory	Func-tion	Safety Func. Pos.	Test Parameters/Schedule: Leak Test	Exercise Test	Fail Safe Test	Position Indicator Test	Remarks
SI-8905D	M1-0263 (C-3) M2-0263 (D-3)	HIGH	2	1	A/C	A	O/C	LT/TS (2)	CV/RF (3)	N/A	N/A	ECCS to Hot Legs Flowpath/ Reactor Coolant Pressure Boundary & Containment Isolation
GROUP 63 Swing Check Valve / Self Actuating Edwards Models												
SI-8900A	M1-0261 (A-2) M2-0261 (G-4)	LOW (1)	1½	1	A/C	A	O/C	LT/TS (2)	CV/6YR	N/A	N/A	ECCS to Cold Legs Flowpath & Boration Flowpath/Reactor Coolant Pressure Boundary
SI-8900B	M1-0261 (A-1) M2-0261 (G-4)	LOW (1)	1½	1	A/C	A	O/C	LT/TS (2)	CV/6YR	N/A	N/A	ECCS to Cold Legs Flowpath & Boration Flowpath/Reactor Coolant Pressure Boundary
SI-8900C	M1-0261 (A-3) M2-0261 (G-5)	LOW (1)	1½	1	A/C	A	O/C	LT/TS (2)	CV/6YR	N/A	N/A	ECCS to Cold Legs Flowpath & Boration Flowpath/Reactor Coolant Pressure Boundary
SI-8900D	M1-0261 (A-2) M2-0261 (G-5)	LOW (1)	1½	1	A/C	A	O/C	LT/TS (2)	CV/6YR	N/A	N/A	ECCS to Cold Legs Flowpath & Boration Flowpath/Reactor Coolant Pressure Boundary
SI-8919A	M1-0263-A (D-3) M2-0262 (D-3)	LOW (1)	1½	2	C	A	O/C	N/A	CV/6YR	N/A	N/A	SI Pump Miniflow Path/ECCS Recirculation Flowpath Boundary
SI-8919B	M1-0263-A (D-4) M2-0262 (D-4)	LOW (1)	1½	2	C	A	O/C	N/A	CV/6YR	N/A	N/A	SI Pump Miniflow Path/ECCS Recirculation Flowpath Boundary
SI-8968	M1-0262 (F-1) M2-0263-B (A-1)	LOW (1)	1	2	A/C	A	C	LTJ/TS	CV/6YR (6)	N/A	N/A	Containment Isolation

TABLE 13 - SAFETY INJECTION

Valve Number	Flow Diagram (Coord.)	Risk Ranking	Size	Code Class	Cate-gory	Func-tion	Safety Func. Pos.	Test Parameters/Schedule: Leak Test	Exercise Test	Fail Safe Test	Position Indicator Test	Remarks
GROUP 64 Swing Check Valve / Self Actuating Westinghouse Model CS Series												
8958A	M1-0263-B (F-2) M2-0263-A (B-2)	LOW (1)	14	2	C	A	O/C	N/A	CV/3YR	N/A	N/A	ECCS Injection Flowpath/ ECCS Recirculation Flowpath Boundary
8958B	M1-0263-B (F-4) M2-0263-A (B-3)	LOW (1)	14	2	C	A	O/C	N/A	CV/3YR	N/A	N/A	ECCS Injection Flowpath/ ECCS Recirculation Flowpath Boundary
8969A	M1-0261 (E-4) M2-0261 (B-5)	LOW (1)	8	2	C	A	O/C	N/A	CV/6YR	N/A	N/A	ECCS Recirculation Flowpath/ECCS Flowpath Boundary (during Re-circulation with Loss of RHR B)
CVCM GROUP 1-1 / 2-1 Swing Check Valve / Self Actuating Westinghouse Model 10000CS8800000												
8956A	M1-0262 (B-2) M2-0263-B (E-2)	LOW	10	1	A/C	A	O/C	LT/TS (2)	DD/16YR (4)	N/A	N/A	ECCS to Cold Legs Flowpath/ Reactor Coolant Pressure Boundary
8956B	M1-0262 (B-3) M2-0263-B (E-3)	LOW	10	1	A/C	A	O/C	LT/TS (2)	DD/16YR (4)	N/A	N/A	ECCS to Cold Legs Flowpath/ Reactor Coolant Pressure Boundary
8956C	M1-0262 (B-5) M2-0263-B (E-5)	LOW	10	1	A/C	A	O/C	LT/TS (2)	DD/16YR (4)	N/A	N/A	ECCS to Cold Legs Flowpath/ Reactor Coolant Pressure Boundary
8956D	M1-0262 (B-6) M2-0263-B (E-6)	LOW	10	1	A/C	A	O/C	LT/TS (2)	DD/16YR (4)	N/A	N/A	ECCS to Cold Legs Flowpath/ Reactor Coolant Pressure Boundary

TABLE 13 - SAFETY INJECTION

Valve Number	Flow Diagram (Coord.)	Risk Ranking	Size	Code Class	Cate-gory	Func-tion	Safety Func. Pos.	Test Parameters/Schedule: Leak Test	Exercise Test	Fail Safe Test	Position Indicator Test	Remarks
GROUP 65 Globe Valve / Air Operated Copes Vulcan Model D-100 (3/4-inch)(Active)												
8823	M1-0263 (E-3) M2-0263 (B-3)	LOW (1)	¾	2	B	A	C	N/A	ET/18MO MT/6YR	FC/6YR	PIT/ 6YR	Containment Isolation & ECCS Flowpath Boundary
8824	M1-0263 (E-2) M2-0263 (B-2)	LOW (1)	¾	2	B	A	C	N/A	ET/18MO MT/6YR	FC/6YR	PIT/ 6YR	Containment Isolation & ECCS Flowpath Boundary
8825	M1-0263 (E-1) M2-0263 (B-2)	LOW (1)	¾	2	B	A	C	N/A	ET/18MO MT/6YR	FC/6YR	PIT/ 6YR	Containment Isolation & ECCS Flowpath Boundary
8843	M1-0261 (B-2) M2-0261 (E-4)	LOW (1)	¾	2	B	A	C	N/A	ET/18MO MT/6YR	FC/6YR	PIT/ 6YR	Containment Isolation & ECCS Flowpath Boundary
8871	M1-0262 (B-1) M2-0263-C (D-2)	LOW (1)	¾	2	A	A	C	LTJ/TS	ET/18MO MT/6YR	FC/6YR	PIT/ 6YR	Containment Isolation
8881	M1-0263 (E-1) M2-0263 (B-1)	LOW (1)	¾	2	B	A	C	N/A	ET/18MO MT/6YR	FC/6YR	PIT/ 6YR	Containment Isolation & ECCS Flowpath Boundary
8888	M1-0263-A (B-2) M2-0262 (E-2)	LOW (1)	¾	2	A	A	C	LTJ/TS	ET/18MO MT/6YR	FC/6YR	PIT/ 6YR	Containment Isolation & ECCS Flowpath Boundary
8890A	M1-0263 (E-4) M2-0263 (B-4)	LOW (1)	¾	2	B	A	C	N/A	ET/18MO MT/6YR	FC/6YR	PIT/ 6YR	Containment Isolation & ECCS Flowpath Boundary

TABLE 13 - SAFETY INJECTION

Valve Number	Flow Diagram (Coord.)	Risk Ranking	Size	Code Class	Cate-gory	Func-tion	Safety Func. Pos.	Test Parameters/Schedule: Leak Test	Exercise Test	Fail Safe Test	Position Indicator Test	Remarks
8890B	M1-0263 (E-5) M2-0263 (C-5)	LOW (1)	¾	2	B	A	C	N/A	ET/18MO MT/6YR	FC/6YR	PIT/ 6YR	Containment Isolation & ECCS Flowpath Boundary
8964	M1-0262 (A-1) M2-0263-C (E-2)	LOW (1)	¾	2	A	A	C	LTJ/TS	ET/18MO MT/6YR	FC/6YR	PIT/ 6YR	Containment Isolation
GROUP 66 Globe Valve / Air Operated Copes Vulcan Model D-100 (1-inch & greater)(Active)												
8800A	M1-0261 (F-4) M2-0261 (D-4)	LOW (1)	3	2	B	A	C	N/A	ET/18MO MT/6YR	FC/6YR	PIT/ 6YR	RWST to Non-Safety Purification System Isolation
8800B	M1-0261 (F-4) M2-0261 (D-3)	LOW (1)	3	2	B	A	C	N/A	ET/18MO MT/6YR	FC/6YR	PIT/ 6YR	RWST to Non-Safety Purification System Isolation
8880	M1-0262 (G-1) M2-0263-B (A-1)	LOW (1)	1	2	A	A	C	LTJ/TS	ET/18MO MT/6YR	FC/6YR	PIT/ 6YR	Containment Isolation
GROUP 67 Globe Valve / Air Operated Copes Vulcan Model D-100 (3/4-inch)(Passive)												
8877A	M1-0262 (C-2) M2-0263-B (E-2)	LOW (1)	¾	2	B	P	C	N/A	N/A	N/A	PIT/ 6YR	ECCS Flowpath Boundary
8877B	M1-0262 (C-3) M2-0263-B (E-3)	LOW (1)	¾	2	B	P	C	N/A	N/A	N/A	PIT/ 6YR	ECCS Flowpath Boundary

TABLE 13 - SAFETY INJECTION

Valve Number	Flow Diagram (Coord.)	Risk Ranking	Size	Code Class	Cate-gory	Func-tion	Safety Func. Pos.	Test Parameters/Schedule				Remarks
								Leak Test	Exercise Test	Fail Safe Test	Position Indicator Test	
8877C	M1-0262 (C-5) M2-0263-B (E-5)	LOW (1)	¾	2	B	P	C	N/A	N/A	N/A	PIT/ 6YR	ECCS Flowpath Boundary
8877D	M1-0262 (C-6) M2-0263-B (E-6)	LOW (1)	¾	2	B	P	C	N/A	N/A	N/A	PIT/ 6YR	ECCS Flowpath Boundary
8879A	M1-0263 (D-4) M2-0263 (C-4)	LOW (1)	¾	2	B	P	C	N/A	N/A	N/A	PIT/ 6YR	ECCS Flowpath Boundary
8879B	M1-0263 (C-5) M2-0263 (E-5)	LOW (1)	¾	2	B	P	C	N/A	N/A	N/A	PIT/ 6YR	ECCS Flowpath Boundary
8879C	M1-0263 (B-5) M2-0263 (F-5)	LOW (1)	¾	2	B	P	C	N/A	N/A	N/A	PIT/ 6YR	ECCS Flowpath Boundary
8879D	M1-0263 (B-6) M2-0263 (E-6)	LOW (1)	¾	2	B	P	C	N/A	N/A	N/A	PIT/ 6YR	ECCS Flowpath Boundary
8882	M1-0261 (B-3) M2-0261 (F-3)	LOW (1)	¾	2	B	P	C	N/A	N/A	N/A	PIT/ 6YR	ECCS Flowpath Boundary
8889A	M1-0263 (B-2) M2-0263 (F-2)	LOW (1)	¾	2	B	P	C	N/A	N/A	N/A	PIT/ 6YR	ECCS Flowpath Boundary

TABLE 13 - SAFETY INJECTION

Valve Number	Flow Diagram (Coord.)	Risk Ranking	Size	Code Class	Cate-gory	Func-tion	Safety Func. Pos.	Test Parameters/Schedule: Leak Test	Exercise Test	Fail Safe Test	Position Indicator Test	Remarks
8889B	M1-0263 (B-1) M2-0263 (E-1)	LOW (1)	¾	2	B	P	C	N/A	N/A	N/A	PIT/ 6YR	ECCS Flowpath Boundary
8889C	M1-0263 (B-1) M2-0263 (F-1)	LOW (1)	¾	2	B	P	C	N/A	N/A	N/A	PIT/ 6YR	ECCS Flowpath Boundary
8889D	M1-0263 (B-3) M2-0263 (F-3)	LOW (1)	¾	2	B	P	C	N/A	N/A	N/A	PIT/ 6YR	ECCS Flowpath Boundary
GROUP 68 Globe Valve / Air Operated Copes Vulcan Model D-100 (1-inch)(Passive)												
8875A	M1-0262 (E-1) M2-0263-B (C-1)	LOW (1)	1	2	B	P	C	N/A	N/A	N/A	PIT/ 6YR	ECCS Flowpath Boundary
8875B	M1-0262 (E-2) M2-0263-B (C-2)	LOW (1)	1	2	B	P	C	N/A	N/A	N/A	PIT/ 6YR	ECCS Flowpath Boundary
8875C	M1-0262 (E-4) M2-0263-B (C-4)	LOW (1)	1	2	B	P	C	N/A	N/A	N/A	PIT/ 6YR	ECCS Flowpath Boundary
8875D	M1-0262 (E-5) M2-0263-B (C-5)	LOW	1	2	B	P	C	N/A	N/A	N/A	PIT/ 6YR	ECCS Flowpath Boundary
8878A	M1-0262 (E-2) M2-0263-B (C-2)	LOW (1)	1	2	B	P	C	N/A	N/A	N/A	PIT/ 6YR	ECCS Flowpath Boundary

TABLE 13 - SAFETY INJECTION

Valve Number	Flow Diagram (Coord.)	Risk Ranking	Size	Code Class	Cate-gory	Func-tion	Safety Func. Pos.	Test Parameters/Schedule				Remarks
								Leak Test	Exercise Test	Fail Safe Test	Position Indicator Test	
8878B	M1-0262 (E-3) M2-0263-B (C-3)	LOW (1)	1	2	B	P	C	N/A	N/A	N/A	PIT/ 6YR	ECCS Flowpath Boundary
8878C	M1-0262 (E-5) M2-0263-B (C-5)	LOW (1)	1	2	B	P	C	N/A	N/A	N/A	PIT/ 6YR	ECCS Flowpath Boundary
8878D	M1-0262 (E-6) M2-0263-B (C-6)	LOW (1)	1	2	B	P	C	N/A	N/A	N/A	PIT/ 6YR	ECCS Flowpath Boundary

TABLE 13 - SAFETY INJECTION

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NOTES

1. A risk informed - staggered test basis (RI-STB) shall be established for the valves within the specified group.

2. The test frequency requirements of Technical Specification SR 3.4.14.1 apply for leak testing of 8815; 8818A, B, C, D; SI-8819A, B, C, D; 8841A, B; SI-8900A, B, C, D; SI-8905A, B, C, D, 8948A, B, C, D; 8949A, B, C, D; 8956A, B, C, D. The Technical Specification SR 3.4.14.1 test frequency requirements are more restrictive than the test frequency requirements of ASME OM Code 2004 Edition, through 2006 Addenda, Subsection ISTC-3630.

3. 8815 High Head Safety Injection Flowpath Check Valve: SI-8819A, B, C, D, 8926, 8969B, 8922A, B, and SI-8905A, B, C,D, 8949A and D Intermediate Head Safety Injection Flowpath Check Valves are full-stroke exercised at refueling outages. These valves cannot be full stroke open exercised during plant operation or during cold shutdowns because the flowpaths discharge into the RCS.

   In the case of the High Head subsystem, the valves cannot be full-stroke exercised during plant operation because the high RCS pressure will not allow the maximum required injection flowrate to be achieved.

   In the case of the Intermediate Head subsystems, the valves cannot be full stroke exercised during plant operation because the relatively higher pressure of the Reactor Coolant System will not allow forward flow through these paths. (An exception to this is valve 8926 which lies in the SI Pumps' miniflow path and thus is part-stroke open exercised quarterly during pump tests.) The check valves in the intermediate head injection paths cannot be full-stroke exercised at cold shutdowns using the Safety Injection Pumps because the resulting high flowrates and pressures could challenge the RCS Cold Overpressure Mitigation System. This leak testing is not practicable to perform at cold shutdowns due to its complexity and critical path nature. Such testing would prevent the immediate return of a shutdown unit to power operation which is contrary to the intent of ASME OM Code 2004 Edition, through 2006 Addenda, Subsection ISTC-3522.

   The subject check valves are full-stroke close exercised at refueling outages at the same frequency as the full-stroke open exercise for the reasons described above.

4. Valves 8956A, B, C, D, 8948A, B, C, and D test interval and method per ASME OM Code Appendix II, Check Valve Condition Monitoring.

5. 8818A, B, C, D, 8841A, B, 8949B, and C Low Head Safety Injection Flowpath Check Valves, are full-stroke exercised at refueling outages to verify operability. These valves cannot be full or part-stroke open exercised during plant operation because the relatively higher pressure of the Reactor Coolant System will not allow forward flow through these paths. Part-stroke exercising of these check valves during plant operation via the SI test header is not practicable because this path yields flowrates too small (approximately 5 gpm) to be meaningful for assessing the operational readiness of these valves. It is not practicable to full stroke exercise these valves at cold shutdowns because the acoustic emission testing needed to verify the valves go full-open requires both Residual Heat Removal Pumps running and all Reactor Coolant Pumps secured to perform a satisfactory test. Both Residual Heat Removal Pumps are required to flow through a single SI header to achieve the hydraulic transient necessary to create the acoustic signature. During the test Residual Heat Removal flow must be secured. The Reactor Coolant Pumps must be secured to lower background noise sufficiently to record the acoustic signature.

   Non-intrusive testing techniques, such as the acoustic emission method applied here is considered "other positive means" as defined in ASME OM Code 2004 Edition, through 2006 Addenda, Subsection ISTC-3520. During the initial acoustic emission testing for these valves, the system flow conditions were established to cause the valves to fully stroke. During subsequent testing, all valves shall be fully stroked at repeatable system conditions. The acoustic emission monitoring of the valves, however, will only be performed on one valve per group per outage on a rotating schedule each time testing is performed (a sampling program). This method is applied to the following group of four valves: 8818A, B, C, D. If problems are found with the sample valve, all valves in the group must be tested using acoustic emission monitoring during the same outage. An alternative would be to perform acoustic emission testing on all valves listed above instead of measuring flow conditions. Either method is acceptable.

In addition to full-stroke open exercising as described above, the subject check valves are part-stroke exercised open and full-stroke exercised closed during cold shutdown outages because acoustic emission monitoring is not required for these tests. These valves perform an ISTA-1100(a) function in MODES 1,2,3,4,5, and 6. During an extended cold shutdown outage, 8818A, B, C, D, part-stroke open exercise testing is required to be repeated every 3 months while the plant is in cold shutdown or refueling (MODES 5 or 6).

6. ISTC-3550 Valve in Regular Use - This valve operates in the course of plant operation at a frequency that satisfies the requirements of this IST Plan.

TABLE 14 - SERVICE WATER

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Valve Number	Flow Diagram (Coord.)	Risk Ranking	Size	Code Class	Cate-gory	Func-tion	Safety Func. Pos.	Test Parameters/Schedule: Leak Test	Exercise Test	Fail Safe Test	Position Indicator Test	Remarks
Group 116 Swing Check Valve / Self Actuating CRANE DUO-CHEK MODEL G15 BAF-PL												
SW-0373	M1-0233 (D-3) M2-0233 (B-3)	LOW (1)	24	3	C	A	O/C	N/A	CV/6YR	N/A	N/A	Service Water Flowpath/ Backflow Prevention (to facilitate pump restart) & Service Water Flowpath Boundary (following pump failure)
SW-0374	M1-0233 (E-3) M2-0233 (D-3)	LOW (1)	24	3	C	A	O/C	N/A	CV/6YR	N/A	N/A	Service Water Flowpath/ Backflow Prevention (to facilitate pump restart) & Service Water Flowpath Boundary (following pump failure)
HIGH SAFETY SIGNIFICANCE Nozzle Check / Self Actuating Enertech Model DRV-Z												
SWVAVB-01	M1-0234 (A-6) M2-0234 (A-6)	HIGH	2	3	C	A	O/C	N/A	CV/3MO	N/A	N/A	Vent Path (for water hammer prevention)/Flowpath Boundary
SWVAVB-02	M1-0234 (A-1) M2-0234 (A-1)	HIGH	2	3	C	A	O/C	N/A	CV/3MO	N/A	N/A	Vent Path (for water hammer prevention)/Flowpath Boundary

TABLE 15 - VENTILATION (CONTROL ROOM AIR CONDITIONING)

Valve Number	Flow Diagram (Coord.)	Risk Ranking	Size	Code Class	Cate-gory	Func-tion	Safety Func. Pos.	Test Parameters/Schedule: Leak Test	Exercise Test	Fail Safe Test	Position Indicator Test	Remarks
GROUP 106 Check Valve / Self Actuating Circle Seal Model N162-180												
1CI-0644 (1)	M1-0216-1 (B-2)	LOW (3)	½	3	A/C	A	C	LT/6YR	CV/6YR (2)	N/A	N/A	Safety-Related Air Accumulator to Non-Safety Air Supply Isolation
1CI-0645 (1)	M1-0216-1 (B-2)	LOW (3)	½	3	A/C	A	C	LT/6YR	CV/6YR (2)	N/A	N/A	Safety-Related Air Accumulator to Non-Safety Air Supply Isolation
1CI-0646 (1)	M1-0216-1 (B-5)	LOW (3)	½	3	A/C	A	C	LT/6YR	CV/6YR (2)	N/A	N/A	Safety-Related Air Accumulator to Non-Safety Air Supply Isolation
1CI-0647 (1)	M1-0216-1 (B-5)	LOW (3)	½	3	A/C	A	C	LT/6YR	CV/6YR (2)	N/A	N/A	Safety-Related Air Accumulator to Non-Safety Air Supply Isolation

TABLE 15 - VENTILATION (CONTROL ROOM AIR CONDITIONING)

NOTES

1. 1CI-0644, 1CI-0645, 1CI-0646, 1CI-0647 are part of Instrument Air System but are included in this table because their safety function is more closely associated with Control Room Air Conditioning System.

2. ISTC-3550 Valve in Regular Use - This valve operates in the course of plant operation at a frequency that satisfies the requirements of this IST Plan.

3. A risk informed-staggered test basis (RI-STB) shall be established for the valves within the specified group.

TABLE 16 - VENTS & DRAINS

Valve Number	Flow Diagram (Coord.)	Risk Ranking	Size	Code Class	Cate-gory	Func-tion	Safety Func. Pos.	Test Parameters/Schedule: Leak Test	Exercise Test	Fail Safe Test	Position Indicator Test	Remarks
GROUP 69 Swing Check Valve / Self Actuated Edwards Model 838YT1												
VD-0003	M1-0236-B (F-2) M2-0236-B (F-2)	LOW (1)	2	3	C	A	O/C	N/A	CV/6YR	N/A	N/A	Sump Discharge Flowpath / Sump Discharge Flowpath Boundary
VD-0004	M1-0236-B (F-2) M2-0236-B (F-2)	LOW (1)	2	3	C	A	O/C	N/A	CV/6YR	N/A	N/A	Sump Discharge Flowpath / Sump Discharge Flowpath Boundary
VD-0011	M1-0236-B (C-5) M2-0236-B (C-5)	LOW (1)	2	3	C	A	O/C	N/A	CV/6YR	N/A	N/A	Sump Discharge Flowpath / Sump Discharge Flowpath Boundary
VD-0012	M1-0236-B (C-5) M2-0236-B (C-5)	LOW (1)	2	3	C	A	O/C	N/A	CV/6YR	N/A	N/A	Sump Discharge Flowpath / Sump Discharge Flowpath Boundary
GROUP 110 Diaphram Valve / Air Operated ITT Model SD-C-105925												
HV-5157	M1-0238 (B-6) M2-0238 (B-6)	LOW (1)	4	2	A	A	C	LTJ/TS	MT/6YR ET/18MO	FC/6YR	PIT/ 6YR	Containment Isolation
HV-5158	M1-0238 (B-6) M2-0238 (B-6)	LOW (1)	4	2	A	A	C	LTJ/TS	MT/6YR ET/18MO	FC/6YR	PIT/ 6YR	Containment Isolation

TABLE 16 - VENTS & DRAINS

NOTES

1. A risk informed - staggered test basis (RI-STB) shall be established for the valves within the specified group.

TABLE 17 - MISCELLANEOUS CONTAINMENT ISOLATION VALVES

Valve Number	Flow Diagram (Coord.)	Risk Ranking	Size	Code Class	Cate-gory	Func-tion	Safety Func. Pos.	Test Parameters/Schedule: Leak Test	Exercise Test	Fail Safe Test	Position Indicator Test	Remarks
GROUP 70 Swing Check Valve / Self Actuated Borg-Warner 75000 Series												
CA-0016	M1-0216-A (F-2) M2-0216-A (F-2)	LOW (1)	3	2	A/C	A	C	LTJ/TS	CV/6YR (4)	N/A	N/A	Containment Isolation
CI-0030	M1-0216-A (F-5) M2-0216-B (F-2)	LOW (1)	3	2	A/C	A	C	LTJ/TS	CV/6YR (4)	N/A	N/A	Containment Isolation
GROUP 71 Globe Valve / Air Operated Fisher Model BXA												
HV-4165	M1-0228 (B-2) M2-0228 (B-2)	LOW (1)	¾	2	A	A	C	LTJ/TS	ET/18MO MT/6YR	FC/6YR	PIT/ 6YR	Containment Isolation
HV-4166	M1-0228 (B-1) M2-0228 (B-1)	LOW (1)	¾	2	A	A	C	LTJ/TS	ET/18MO MT/6YR	FC/6YR	PIT/ 6YR	Containment Isolation
HV-4167	M1-0228 (C-1) M2-0228 (C-1)	LOW (1)	¾	2	A	A	C	LTJ/TS	ET/18MO MT/6YR	FC/6YR	PIT/ 6YR	Containment Isolation
HV-4168	M1-0228 (B-2) M2-0228 (B-2)	LOW (1)	¾	2	A	A	C	LTJ/TS	ET/18MO MT/6YR	FC/6YR	PIT/ 6YR	Containment Isolation
HV-4169	M1-0228 (B-2) M2-0228 (B-2)	LOW (1)	¾	2	A	A	C	LTJ/TS	ET/18MO MT/6YR	FC/6YR	PIT/ 6YR	Containment Isolation

TABLE 17 - MISCELLANEOUS CONTAINMENT ISOLATION VALVES

Valve Number	Flow Diagram (Coord.)	Risk Ranking	Size	Code Class	Cate-gory	Func-tion	Safety Func. Pos.	Test Parameters/Schedule				Remarks
								Leak Test	Exercise Test	Fail Safe Test	Position Indicator Test	
HV-4170	M1-0228 (B-2) M2-0228 (B-2)	LOW (1)	¾	2	A	A	C	LTJ/TS	ET/18MO MT/6YR	FC/6YR	PIT/ 6YR	Containment Isolation
HV-4171	M1-0228 (B-3) M2-0228 (B-3)	LOW (1)	¾	2	A	A	C	LTJ/TS	ET/18MO MT/6YR	FC/6YR	PIT/ 6YR	Containment Isolation
HV-4172	M1-0228 (B-3) M2-0228 (B-3)	LOW (1)	¾	2	A	A	C	LTJ/TS	ET/18MO MT/6YR	FC/6YR	PIT/ 6YR	Containment Isolation
HV-4173	M1-0228 (B-3) M2-0228 (B-3)	LOW (1)	¾	2	A	A	C	LTJ/TS	ET/18MO MT/6YR	FC/6YR	PIT/ 6YR	Containment Isolation
HV-4174	M1-0228 (B-3) M2-0228 (B-3)	LOW (1)	¾	2	A	A	C	LTJ/TS	ET/18MO MT/6YR	FC/6YR	PIT/ 6YR	Containment Isolation
HV-4175	M1-0228 (C-2) M2-0228 (C-2)	LOW (1)	¾	2	A	A	C	LTJ/TS	ET/18MO MT/6YR	FC/6YR	PIT/ 6YR	Containment Isolation
HV-4176	M1-0228 (C-1) M2-0228 (C-1)	LOW (1)	¾	2	A	A	C	LTJ/TS	ET/18MO MT/6YR	FC/6YR	PIT/ 6YR	Containment Isolation
HV-7311	M1-0264 (D-4) M2-0264 (D-4)	LOW (1)	¾	2	A	A	C	LTJ/TS	ET/18MO MT/6YR	FC/6YR	PIT/ 6YR	Containment Isolation

TABLE 17 - MISCELLANEOUS CONTAINMENT ISOLATION VALVES

Valve Number	Flow Diagram (Coord.)	Risk Ranking	Size	Code Class	Cate-gory	Func-tion	Safety Func. Pos.	Test Parameters/Schedule				Remarks
								Leak Test	Exercise Test	Fail Safe Test	Position Indicator Test	
HV-7312	M1-0264 (D-3) M2-0264 (D-3)	LOW (1)	¾	2	A	A	C	LTJ/TS	ET/18MO MT/6YR	FC/6YR	PIT/ 6YR	Containment Isolation
GROUP 72 Globe Valve / Air Operated Copes Vulcan & Fisher 3-inch Models												
HV-3486	M1-0216-A (E-2) M2-0216-A (E-2)	LOW (1)	3	2	A	A	C	LTJ/TS	ET/18MO MT/6YR	FC/6YR	PIT/ 6YR	Containment Isolation
HV-3487	M1-0216-A (E-5) M2-0216-B (F-2)	LOW (1)	3	2	A	A	C	LTJ/TS	ET/18MO MT/6YR	FC/6YR	PIT/ 6YR	Containment Isolation
LCV-1003	M1-0264 (G-2) M2-0264 (G-2)	LOW (1)	3	2	A	A	C	LTJ/TS	MT/6YR ET/18MO	FC/6YR	PIT/ 6YR	Containment Isolation
GROUP 73 Butterfly Valve / Air Operated Posi-Seal Model 9134-05-07-03, 48-inch												
HV-5536	M1-0301 (F-2) M2-0301 (E-2)	LOW (1)	48	2	A	P	C	LTJ/TS	N/A	N/A	PIT/ 6YR	Containment Isolation
HV-5537	M1-0301 (E-2) M2-0301 (D-2)	LOW (1)	48	2	A	P	C	LTJ/TS	N/A	N/A	PIT/ 6YR	Containment Isolation
HV-5538	M1-0301 (F-3) M2-0301 (E-3)	LOW (1)	48	2	A	P	C	LTJ/TS	N/A	N/A	PIT/ 6YR	Containment Isolation

TABLE 17 - MISCELLANEOUS CONTAINMENT ISOLATION VALVES

Valve Number	Flow Diagram (Coord.)	Risk Ranking	Size	Code Class	Cate-gory	Func-tion	Safety Func. Pos.	Test Parameters/Schedule: Leak Test	Exercise Test	Fail Safe Test	Position Indicator Test	Remarks
HV-5539	M1-0301 (E-3) M2-0301 (D-3)	LOW (1)	48	2	A	P	C	LTJ/TS	N/A	N/A	PIT/ 6YR	Containment Isolation
GROUP 74 Butterfly Valve / Air Operated Posi-Seal Model 9134-05-07-03, 18-inch												
HV-5548	M1-0301 (F-3) M2-0301 (E-4)	LOW (1)	18	2	A	A	C	LTJ/TS	ET/18MO MT/6YR	FC/6YR	PIT/ 6YR	Containment Isolation
HV-5549	M1-0301 (E-3) M2-0301 (D-4)	LOW (1)	18	2	A	A	C	LTJ/TS	ET/18MO MT/6YR	FC/6YR	PIT/ 6YR	Containment Isolation
GROUP 75 Diaphram Valve / Air Operated ITT Model SD-C-102863/100598												
7126	M1-0264 (B-2) M2-0264 (B-2)	LOW (1)	¾	2	A	A	C	LTJ/TS	ET/18MO MT/6YR	FC/6YR	PIT/ 6YR	Containment Isolation
7150	M1-0264 (C-1) M2-0264 (C-1)	LOW (1)	¾	2	A	A	C	LTJ/TS	ET/18MO MT/6YR	FC/6YR	PIT/ 6YR	Containment Isolation
7136	M1-0264 (G-3) M2-0264 (G-3)	LOW (1)	3	2	A	A	C	LTJ/TS	MT/6YR ET/18MO	FC/6YR	PIT/ 6YR	Containment Isolation

TABLE 17 - MISCELLANEOUS CONTAINMENT ISOLATION VALVES

Valve Number	Flow Diagram (Coord.)	Risk Ranking	Size	Code Class	Cate-gory	Func-tion	Safety Func. Pos.	Test Parameters/Schedule: Leak Test	Exercise Test	Fail Safe Test	Position Indicator Test	Remarks
GROUP 76 Ball Valve / Hydraulic Operated Neles-Jamesbury Model 3-A150F-36TT												
BS-0025	M1-0245 (D-1) M2-0245 (D-2)	LOW (1)	3	2	A	P	C	LTJ/TS	N/A	N/A	N/A	Containment Isolation
BS-0030	M1-0245 (C-1) M2-0245 (C-2)	LOW (1)	3	2	A	P	C	LTJ/TS	N/A	N/A	N/A	Containment Isolation
GROUP 77 Globe Valve / Solenoid Operated Valcor Model V52600-5292-7												
HV-5556	M1-0301-A (C-4) M2-0301-A (C-4)	LOW (1)	1	2	A	A	C	LTJ/TS	ET/18MO MT/6YR	FC/6YR	PIT/ 6YR	Containment Isolation
HV-5557	M1-0301-A (D-4) M2-0301-A (D-4)	LOW (1)	1	2	A	A	C	LTJ/TS	ET/18MO MT/6YR	FC/6YR	PIT/ 6YR	Containment Isolation
HV-5558	M1-0301-A (C-4) M2-0301-A (C-4)	LOW (1)	1	2	A	A	C	LTJ/TS	ET/18MO MT/6YR	FC/6YR	PIT/ 6YR	Containment Isolation
HV-5559	M1-0301-A (D-4) M2-0301-A (D-4)	LOW (1)	1	2	A	A	C	LTJ/TS	ET/18MO MT/6YR	FC/6YR	PIT/ 6YR	Containment Isolation
HV-5560	M1-0301-A (C-4) M2-0301-A (C-4)	LOW (1)	1	2	A	A	C	LTJ/TS	ET/18MO MT/6YR	FC/6YR	PIT/ 6YR	Containment Isolation

TABLE 17 - MISCELLANEOUS CONTAINMENT ISOLATION VALVES

Valve Number	Flow Diagram (Coord.)	Risk Ranking	Size	Code Class	Cate-gory	Func-tion	Safety Func. Pos.	Test Parameters/Schedule: Leak Test	Exercise Test	Fail Safe Test	Position Indicator Test	Remarks
HV-5561	M1-0301-A (D-4) M2-0301-A (D-4)	LOW (1)	1	2	A	A	C	LTJ/TS	ET/18MO MT/6YR	FC/6YR	PIT/ 6YR	Containment Isolation
GROUP 78 Globe Valve / Solenoid Operated Valcor Model V52600-5950-11												
HV-5544	M1-0301-A (C-1) M2-0301-A (C-1)	LOW (1)	1	2	A	A	C	LTJ/TS	ET/18MO MT/6YR	FC/6YR	PIT/ 6YR	Containment Isolation
HV-5545	M1-0301-A (D-1) M2-0301-A (D-1)	LOW (1)	1	2	A	A	C	LTJ/TS	ET/18MO MT/6YR	FC/6YR	PIT/ 6YR	Containment Isolation
HV-5546	M1-0301-A (C-2) M2-0301-A (C-2)	LOW (1)	1	2	A	A	C	LTJ/TS	ET/18MO MT/6YR	FC/6YR	PIT/ 6YR	Containment Isolation
HV-5547	M1-0301-A (D-2) M2-0301-A (D-2)	LOW (1)	1	2	A	A	C	LTJ/TS	ET/18MO MT/6YR	FC/6YR	PIT/ 6YR	Containment Isolation
GROUP 79 Ball Valve / Manually Operated Worcester Controls / Neles-Jamesbury												
1BS-0015	M1-0245 (D-3)	LOW (1)	¾	N/A (2)	A	P	C	LTJ/TS	N/A	N/A	N/A	Containment Isolation
1BS-0029	M1-0245 (E-2)	LOW (1)	¾	N/A (2)	A	P	C	LTJ/TS	N/A	N/A	N/A	Containment Isolation
1BS-0044	M1-0245 (B-2)	LOW (1)	¾	N/A (2)	A	P	C	LTJ/TS	N/A	N/A	N/A	Containment Isolation
1BS-0056	M1-0245 (B-3)	LOW (1)	¾	N/A (2)	A	P	C	LTJ/TS	N/A	N/A	N/A	Containment Isolation

TABLE 17 - MISCELLANEOUS CONTAINMENT ISOLATION VALVES

Valve Number	Flow Diagram (Coord.)	Risk Ranking	Size	Code Class	Cate-gory	Func-tion	Safety Func. Pos.	Test Parameters/Schedule: Leak Test	Exercise Test	Fail Safe Test	Position Indicator Test	Remarks
BS-0202	M1-0245 (A-5) M2-0245-A (B-3)	LOW (1)	2	2	A	P	C	LTJ/TS	N/A	N/A	N/A	Containment Isolation
BS-0203	M1-0245 (C-5) M2-0245-A (E-3)	LOW (1)	2	2	A	P	C	LTJ/TS	N/A	N/A	N/A	Containment Isolation
GROUP 80 Diaphram Valve / Manually Operated ITT Model SD-C-100552												
7135	M1-0264 (G-2) M2-0264 (G-2)	LOW (1)	3	2	A	P	C	LTJ/TS	N/A	N/A	N/A	Containment Isolation
GROUP 81 Globe Valve / Manually Operated Anderson-Greenwood Model NO3-6020-504												
2BS-0016	M2-0245 (C-4)	LOW (1)	3/8	2	A	P	C	LTJ/TS	N/A	N/A	N/A	Containment Isolation
2BS-0017	M2-0245 (C-4)	LOW (1)	3/8	2	A	P	C	LTJ/TS	N/A	N/A	N/A	Containment Isolation
2BS-0039	M2-0245 (D-4)	LOW (1)	3/8	2	A	P	C	LTJ/TS	N/A	N/A	N/A	Containment Isolation
2BS-0040	M2-0245 (D-4)	LOW (1)	3/8	2	A	P	C	LTJ/TS	N/A	N/A	N/A	Containment Isolation
GROUP 82 Relief Valve / Manually Operated Anderson-Greenwood Model 83NS80608LG-N2												
2BS-0015	M2-0245 (E-4)	LOW (1)	¾ X 1	2	A (3)	P	C	LTJ/TS	N/A	N/A	N/A	Containment Isolation
2BS-0029	M2-0245 (D-3)	LOW (1)	¾ X 1	2	A (3)	P	C	LTJ/TS	N/A	N/A	N/A	Containment Isolation

TABLE 17 - MISCELLANEOUS CONTAINMENT ISOLATION VALVES

Valve Number	Flow Diagram (Coord.)	Risk Ranking	Size	Code Class	Cate-gory	Func-tion	Safety Func. Pos.	Test Parameters/Schedule				Remarks
								Leak Test	Exercise Test	Fail Safe Test	Position Indicator Test	
2BS-0044	M2-0245 (C-3)	LOW (1)	¾ X 1	2	A (3)	P	C	LTJ/TS	N/A	N/A	N/A	Containment Isolation
2BS-0056	M2-0245 (B-4)	LOW (1)	¾ X 1	2	A (3)	P	C	LTJ/TS	N/A	N/A	N/A	Containment Isolation

TABLE 17 - MISCELLANEOUS CONTAINMENT ISOLATION VALVES

NOTES

1. A risk informed - staggered test basis (RI-STB) shall be established for the valves within the specified group.

2. 1BS-0015, 1BS-0029, 1BS-0044, 1BS-0056 are non-ASME valves. However, they are included in the Inservice Valve Testing Plan in accordance with Generic Letter 89-04, Attachment 1, Position 10 because they are containment isolation valves which are included in the 10CFR50 Appendix J Program.

3. 2BS-0015, 2BS-0029, 2BS-0044, 2BS-0056 are relief valves and therefore would normally be classified as Category A/C. In this application, however, they are being used as lever operated manual valves which spring return to closed and not for self-actuated overpressure relief. For this reason they are classified as Category A.

4. ISTC-3550 Valve in Regular Use - This valve operates in the course of plant operation at a frequency that satisfies the requirements of this IST Plan.

TABLE 18 - SAFETY & RELIEF VALVES

Valve Number	Flow Diagram (Coord.)	Risk Ranking	Size	Code Class	Cate-gory	Func-tion	Safety Func. Pos.	Test Parameters/Schedule: Leak Test	Exercise Test	Fail Safe Test	Position Indicator Test	Remarks
GROUP 83 HIGH SAFETY SIGNIFICANCE Safety Valve / Self Actuating Crosby Model HB-BP-86, Size 6M6												
8010A	M1-0251 (A-1) M2-0251 (A-1)	HIGH	6	1	C	A	O/C	N/A	SRV/5YR	N/A	PIT/2YR	Overpressure Protection/ Reactor Coolant Pressure Boundary
8010B	M1-0251 (B-1) M2-0251 (B-1)	HIGH	6	1	C	A	O/C	N/A	SRV/5YR	N/A	PIT/2YR	Overpressure Protection/ Reactor Coolant Pressure Boundary
8010C	M1-0251 (C-1) M2-0251 (C-1)	HIGH	6	1	C	A	O/C	N/A	SRV/5YR	N/A	PIT/2YR	Overpressure Protection/ Reactor Coolant Pressure Boundary
GROUP 84 Safety Valve / Self Actuating Crosby Model HA-75-FN, Size 6R8X8												
MS-0021	M1-0202 (C-4) M2-0202 (C-4)	LOW	6 X 8	2	C	A	O/C	N/A	SRV/5YR	N/A	PIT/2YR	Overpressure Protection & Steam Vent Flowpath (for residual heat removal)/ Steam Line Isolation & Containment Isolation
MS-0022	M1-0202 (C-4) M2-0202 (C-4)	LOW	6 X 8	2	C	A	O/C	N/A	SRV/5YR	N/A	PIT/2YR	Overpressure Protection & Steam Vent Flowpath (for residual heat removal)/ Steam Line Isolation & Containment Isolation
MS-0023	M1-0202 (D-4) M2-0202 (D-4)	LOW	6 X 8	2	C	A	O/C	N/A	SRV/5YR	N/A	PIT/2YR	Overpressure Protection & Steam Vent Flowpath (for residual heat removal)/ Steam Line Isolation & Containment Isolation

TABLE 18 - SAFETY & RELIEF VALVES

Valve Number	Flow Diagram (Coord.)	Risk Ranking	Size	Code Class	Cate-gory	Func-tion	Safety Func. Pos.	Test Parameters/Schedule				Remarks
								Leak Test	Exercise Test	Fail Safe Test	Position Indicator Test	
MS-0024	M1-0202 (D-4) M2-0202 (D-4)	LOW	6 X 8	2	C	A	O/C	N/A	SRV/5YR	N/A	PIT/2YR	Overpressure Protection & Steam Vent Flowpath (for residual heat removal)/ Steam Line Isolation & Containment Isolation
MS-0025	M1-0202 (E-4) M2-0202 (E-4)	LOW	6 X 8	2	C	A	O/C	N/A	SRV/5YR	N/A	PIT/2YR	Overpressure Protection & Steam Vent Flowpath (for residual heat removal)/ Steam Line Isolation & Containment Isolation
MS-0058	M1-0202 (C-2) M2-0202 (C-2)	LOW	6 X 8	2	C	A	O/C	N/A	SRV/5YR	N/A	PIT/2YR	Overpressure Protection & Steam Vent Flowpath (for residual heat removal)/ Steam Line Isolation & Containment Isolation
MS-0059	M1-0202 (C-2) M2-0202 (C-2)	LOW	6 X 8	2	C	A	O/C	N/A	SRV/5YR	N/A	PIT/2YR	Overpressure Protection & Steam Vent Flowpath (for residual heat removal)/ Steam Line Isolation & Containment Isolation
MS-0060	M1-0202 (D-2) M2-0202 (D-2)	LOW	6 X 8	2	C	A	O/C	N/A	SRV/5YR	N/A	PIT/2YR	Overpressure Protection & Steam Vent Flowpath (for residual heat removal)/ Steam Line Isolation & Containment Isolation
MS-0061	M1-0202 (D-2) M2-0202 (D-2)	LOW	6 X 8	2	C	A	O/C	N/A	SRV/5YR	N/A	PIT/2YR	Overpressure Protection & Steam Vent Flowpath (for residual heat removal)/ Steam Line Isolation & Containment Isolation
MS-0062	M1-0202 (E-2) M2-0202 (E-2)	LOW	6 X 8	2	C	A	O/C	N/A	SRV/5YR	N/A	PIT/2YR	Overpressure Protection & Steam Vent Flowpath (for residual heat removal)/ Steam Line Isolation & Containment Isolation

TABLE 18 - SAFETY & RELIEF VALVES

Valve Number	Flow Diagram (Coord.)	Risk Ranking	Size	Code Class	Cate-gory	Func-tion	Safety Func. Pos.	Test Parameters/Schedule				Remarks
								Leak Test	Exercise Test	Fail Safe Test	Position Indicator Test	
MS-0093	M1-0202 (C-1) M2-0202 (C-1)	LOW	6 X 8	2	C	A	O/C	N/A	SRV/5YR	N/A	PIT/2YR	Overpressure Protection & Steam Vent Flowpath (for residual heat removal)/ Steam Line Isolation & Containment Isolation
MS-0094	M1-0202 (C-1) M2-0202 (C-1)	LOW	6 X 8	2	C	A	O/C	N/A	SRV/5YR	N/A	PIT/2YR	Overpressure Protection & Steam Vent Flowpath (for residual heat removal)/ Steam Line Isolation & Containment Isolation
MS-0095	M1-0202 (D-1) M2-0202 (D-1)	LOW	6 X 8	2	C	A	O/C	N/A	SRV/5YR	N/A	PIT/2YR	Overpressure Protection & Steam Vent Flowpath (for residual heat removal)/ Steam Line Isolation & Containment Isolation
MS-0096	M1-0202 (D-1) M2-0202 (D-1)	LOW	6 X 8	2	C	A	O/C	N/A	SRV/5YR	N/A	PIT/2YR	Overpressure Protection & Steam Vent Flowpath (for residual heat removal)/ Steam Line Isolation & Containment Isolation
MS-0097	M1-0202 (E-1) M2-0202 (E-1)	LOW	6 X 8	2	C	A	O/C	N/A	SRV/5YR	N/A	PIT/2YR	Overpressure Protection & Steam Vent Flowpath (for residual heat removal)/ Steam Line Isolation & Containment Isolation
MS-0129	M1-0202 (C-5) M2-0202 (C-5)	LOW	6 X 8	2	C	A	O/C	N/A	SRV/5YR	N/A	PIT/2YR	Overpressure Protection & Steam Vent Flowpath (for residual heat removal)/ Steam Line Isolation & Containment Isolation
MS-0130	M1-0202 (C-5) M2-0202 (C-5)	LOW	6 X 8	2	C	A	O/C	N/A	SRV/5YR	N/A	PIT/2YR	Overpressure Protection & Steam Vent Flowpath (for residual heat removal)/ Steam Line Isolation & Containment Isolation

TABLE 18 - SAFETY & RELIEF VALVES

Valve Number	Flow Diagram (Coord.)	Risk Ranking	Size	Code Class	Cate-gory	Func-tion	Safety Func. Pos.	Test Parameters/Schedule: Leak Test	Exercise Test	Fail Safe Test	Position Indicator Test	Remarks
MS-0131	M1-0202 (D-5) M2-0202 (D-5)	LOW	6 X 8	2	C	A	O/C	N/A	SRV/5YR	N/A	PIT/2YR	Overpressure Protection & Steam Vent Flowpath (for residual heat removal)/ Steam Line Isolation & Containment Isolation
MS-0132	M1-0202 (D-5) M2-0202 (D-5)	LOW	6 X 8	2	C	A	O/C	N/A	SRV/5YR	N/A	PIT/2YR	Overpressure Protection & Steam Vent Flowpath (for residual heat removal)/ Steam Line Isolation & Containment Isolation
MS-0133	M1-0202 (E-5) M2-0202 (E-5)	LOW	6 X 8	2	C	A	O/C	N/A	SRV/5YR	N/A	PIT/2YR	Overpressure Protection & Steam Vent Flowpath (for residual heat removal)/ Steam Line Isolation & Containment Isolation
GROUP 85 HIGH SAFETY SIGNIFICANCE Relief Valve / Self Actuating / Safety Function Crosby Model JB												
8708A	M1-0260 (E-2) M2-0260 (E-2)	HIGH	3 X 4	2	A/C	P	O/C	N/A	SRV/10YR (2)	N/A	N/A	RCS Overpressure Protection/RHR Flowpath Boundary and Containment Isolation
8708B	M1-0260 (E-5) M2-0260 (E-5)	HIGH	3 X 4	2	A/C	P	O/C	N/A	SRV/10YR (2)	N/A	N/A	RCS Overpressure Protection/RHR Flowpath Boundary and Containment Isolation
GROUP 86 Relief Valve / Self Actuating / Safety Function Crosby Model JBAK												
8510A	M1-0255-1 (D-4) M2-0254 (F-5)	LOW	1½ X 2	2	C	A	O/C	N/A	SRV/8YR	N/A	N/A	High Head Safety Injection Pump Miniflow Path/ECCS Recirculation Flowpath Boundary

TABLE 18 - SAFETY & RELIEF VALVES

Valve Number	Flow Diagram (Coord.)	Risk Ranking	Size	Code Class	Cate-gory	Func-tion	Safety Func. Pos.	Test Parameters/Schedule: Leak Test	Exercise Test	Fail Safe Test	Position Indicator Test	Remarks
8510B	M1-0255-1 (D-4) M2-0254 (F-6)	LOW	1½ X 2	2	C	A	O/C	N/A	SRV/8YR	N/A	N/A	High Head Safety Injection Pump Miniflow Path/ECCS Recirculation Flowpath Boundary
GROUP 87 Relief Valve / Self Actuating / Safety Function Crosby Model JMAK												
CC-0611	M1-0231 (F-2) M2-0231-A (C-2)	LOW	¾ X 1	2	C	A	O/C (1)	N/A	SRV/10YR	N/A	N/A	Containment Penetration Thermal Relief
CC-0618	M1-0231 (F-3) M2-0231-A (C-3)	LOW	¾ X 1	2	C	A	O/C (1)	N/A	SRV/10YR	N/A	N/A	Containment Penetration Thermal Relief
1CC-1067	M1-0231 (B-5)	LOW	¾ X 1	2	A/C	A	O/C (1)	LTJ/TS	SRV/10YR	N/A	N/A	Containment Penetration Thermal Relief/Containment Isolation
2CC-1090	M2-0231-A (F-2)	LOW	¾ X 1	2	A/C	A	O/C (1)	LTJ/TS	SRV/10YR	N/A	N/A	Containment Penetration Thermal Relief/Containment Isolation
1CH-0271	M1-0307-A (B-1)	LOW	¾ X 1	2	A/C	A	O/C (1)	LTJ/TS	SRV/10YR	N/A	N/A	Containment Penetration Thermal Relief/Containment Isolation
1CH-0272	M1-0307-A (B-1)	LOW	¾ X 1	2	A/C	A	O/C (1)	LTJ/TS	SRV/10YR	N/A	N/A	Containment Penetration Thermal Relief/Containment Isolation
2CH-0281	M2-0307 (B-3)	LOW	¾ X 1	2	A/C	A	O/C (1)	LTJ/TS	SRV/10YR	N/A	N/A	Containment Penetration Thermal Relief/Containment Isolation
2CH-0282	M2-0307 (B-2)	LOW	¾ X 1	2	A/C	A	O/C (1)	LTJ/TS	SRV/10YR	N/A	N/A	Containment Penetration Thermal Relief/Containment Isolation

TABLE 18 - SAFETY & RELIEF VALVES

Valve Number	Flow Diagram (Coord.)	Risk Ranking	Size	Code Class	Cate-gory	Func-tion	Safety Func. Pos.	Test Parameters/Schedule: Leak Test	Exercise Test	Fail Safe Test	Position Indicator Test	Remarks
DD-0430	M1-0242-B (E-2) M2-0242 (C-3)	LOW	¾ X 1	2	A/C	A	O/C (1)	LTJ/TS	SRV/10YR	N/A	N/A	Containment Penetration Thermal Relief/Containment Isolation
GROUP 88 Relief Valve / Self Actuating / Safety Function Crosby Model JRAK												
PS-0500	M1-0228 (B-3) M2-0228 (B-3)	LOW	¾ X 1	2	A/C	A	C (1)	LTJ/TS	SRV/10YR	N/A	N/A	Containment Penetration Thermal Relief/Containment Isolation
PS-0501	M1-0228 (B-1) M2-0228 (B-1)	LOW	¾ X 1	2	A/C	A	O/C (1)	LTJ/TS	SRV/10YR	N/A	N/A	Containment Penetration Thermal Relief/Containment Isolation
PS-0502	M1-0228 (B-1) M2-0228 (B-1)	LOW	¾ X 1	2	A/C	A	O/C (1)	LTJ/TS	SRV/10YR	N/A	N/A	Containment Penetration Thermal Relief/Containment Isolation
PS-0503	M1-0228 (B-2) M2-0228 (B-2)	LOW	¾ X 1	2	A/C	A	O/C (1)	LTJ/TS	SRV/10YR	N/A	N/A	Containment Penetration Thermal Relief/Containment Isolation
1SI-8972	M1-0262 (B-1)	LOW	¾ X 1	2	A/C	A	O/C (1)	LTJ/TS	SRV/10YR	N/A	N/A	Containment Penetration Thermal Relief/Containment Isolation
2SI-8983	M2-0263-C (D-2)	LOW	¾ X 1	2	A/C	A	O/C (1)	LTJ/TS	SRV/10YR	N/A	N/A	Containment Penetration Thermal Relief/Containment Isolation
WP-7177	M1-0264 (C-4) M2-0264 (C-4)	LOW	¾ X 1	2	A/C	A	O/C (1)	LTJ/TS	SRV/10YR	N/A	N/A	Containment Penetration Thermal Relief/Containment Isolation

TABLE 18 - SAFETY & RELIEF VALVES

Valve Number	Flow Diagram (Coord.)	Risk Ranking	Size	Code Class	Cate-gory	Func-tion	Safety Func. Pos.	Test Parameters/Schedule: Leak Test	Exercise Test	Fail Safe Test	Position Indicator Test	Remarks
GROUP 89 Relief Valve / Self Actuating / Safety Function Crosby Model 900 with Omni Trim												
SI-0182	M1-0263-B (B-6) M2-0263-A (B-5)	HIGH	¾ X 1	2	C	A	O/C	N/A	SRV/10YR	N/A	N/A	8811A Bonnet Overpressure Relief/Containment Isolation
SI-0183	M1-0263-B (B-5) M2-0263-A (B-6)	HIGH	¾ X 1	2	C	A	O/C	N/A	SRV/10YR	N/A	N/A	8811B Bonnet Overpressure Relief/Containment Isolation
CT-0309	M1-0232-A (C-5) M2-0232-A (C-5)	LOW	¾ X 1	2	C	A	O/C	N/A	SRV/10YR	N/A	N/A	HV-4782 Bonnet Overpressure Relief/Containment Isolation
CT-0310	M1-0232-A (C-6) M2-0232-A (C-6)	LOW	¾ X 1	2	C	A	O/C	N/A	SRV/10YR	N/A	N/A	HV-4783 Bonnet Overpressure Relief/Containment Isolation
RH-0033	M1-0260 (A-3) M2-0260 (A-3)	LOW	¾ X 1	2	C	A	O/C	N/A	SRV/10YR	N/A	N/A	8716A Bonnet Overpressure Relief/ECCS Recirculation Flowpath Boundary
RH-0034	M1-0260 (A-4) M2-0260 (A-5)	LOW	¾ X 1	2	C	A	O/C	N/A	SRV/10YR	N/A	N/A	8716B Bonnet Overpressure Relief/ECCS Recirculation Flowpath Boundary
GROUP 90 Relief Valve / Self Actuating / No Active Safety Function Anderson-Greenwood Model N06-1047-009												
DO-0123	M1-0215-D (F-2) M2-0215-D (F-2)	LOW	1 X 1	3	C	P	C (1)	N/A	SRV/10YR	N/A	N/A	Diesel Generator Starting Air Receiver Relief Valve

TABLE 18 - SAFETY & RELIEF VALVES

Valve Number	Flow Diagram (Coord.)	Risk Ranking	Size	Code Class	Cate-gory	Func-tion	Safety Func. Pos.	Test Parameters/Schedule: Leak Test	Exercise Test	Fail Safe Test	Position Indicator Test	Remarks
DO-0129	M1-0215-D (F-4) M2-0215-D (F-4)	LOW	1 X 1	3	C	P	C (1)	N/A	SRV/10YR	N/A	N/A	Diesel Generator Starting Air Receiver Relief Valve
DO-0223	M1-0215-E (F-2) M2-0215-E (F-2)	LOW	1 X 1	3	C	P	C (1)	N/A	SRV/10YR	N/A	N/A	Diesel Generator Starting Air Receiver Relief Valve
DO-0229	M1-0215-E (F-4) M2-0215-E (F-4)	LOW	1 X 1	3	C	P	C (1)	N/A	SRV/10YR	N/A	N/A	Diesel Generator Starting Air Receiver Relief Valve
GROUP 91 Relief Valve / Self Actuating / No Active Safety Function Crosby Model JO												
DO-0111	M1-0215-F (E-5) M2-0215-F (E-5)	LOW	1½ X 2	3	C	A	C (1)	N/A	SRV/10YR	N/A	N/A	Diesel Generator Fuel Oil Transfer Pump Discharge Relief Valve
SI-0176	M1-0262 (F-6) M2-0263-B (B-6)	LOW	¾ X 1	3	C	P	C (1)	N/A	SRV/10YR	N/A	N/A	Nitrogen Supply Header Relief
SI-0177	M1-0262 (G-6) M2-0263-B (A-6)	LOW	¾ X 1	3	C	P	C (1)	N/A	SRV/10YR	N/A	N/A	Nitrogen Supply Header Relief
DO-0187	M1-0215-F (E-5) M2-0215-F (E-5)	LOW	1½ X 2	3	C	A	C (1)	N/A	SRV/10YR	N/A	N/A	Diesel Generator Fuel Oil Transfer Pump Discharge Relief Valve
DO-0211	M1-0215-G (E-5) M2-0215-G (E-5)	LOW	1½ X 2	3	C	A	C (1)	N/A	SRV/10YR	N/A	N/A	Diesel Generator Fuel Oil Transfer Pump Discharge Relief Valve

TABLE 18 - SAFETY & RELIEF VALVES

Valve Number	Flow Diagram (Coord.)	Risk Ranking	Size	Code Class	Cate-gory	Func-tion	Safety Func. Pos.	Test Parameters/Schedule: Leak Test	Exercise Test	Fail Safe Test	Position Indicator Test	Remarks
CT-0218	M1-0232-A (F-4) M2-0232-A (F-4)	LOW	1½ X 2½	2	C	P	C (1)	N/A	SRV/10YR	N/A	N/A	Chemical Additive Tank Relief Valve
DO-0287	M1-0215-G (E-5) M2-0215-G (E-5)	LOW	1½ X 2	2	C	A	C (1)	N/A	SRV/10YR	N/A	N/A	Diesel Generator Fuel Oil Transfer Pump Discharge Relief Valve
2CS-8000	M2-0251 (D-3)	LOW	1 X 1½	2	C	P	C (1)	N/A	SRV/10YR	N/A	N/A	RCP Seal Water Return Line Relief Valve
1-8121	M1-0251 (D-3)	LOW	2 X 3	2	C	P	C (1)	N/A	SRV/10YR	N/A	N/A	RCP Seal Water Return Line Relief Valve
GROUP 92 Relief Valve / Self Actuating / No Active Safety Function Crosby Model JMAK												
CC-0042	M1-0229-B (A-5) M2-0229 (D-6)	LOW	¾ X 1	3	C	P	C (1)	N/A	SRV/10YR	N/A	N/A	Non-Safeguards Loop Supply Relief Valve
CC-0183	M1-0229-A (E-4) M2-0229 (A-4)	LOW	¾ x 1	3	C	P	C (1)	N/A	SRV/10YR	N/A	N/A	Component Cooling Water Hx Relief Valve
CC-0184	M1-0229-B (B-4) M2-0229 (F-4)	LOW	¾ x 1	3	C	P	C (1)	N/A	SRV/10YR	N/A	N/A	Component Cooling Water Hx Relief Valve
AF-0248	M1-0206-1 (B-1) M2-0206-1 (B-1)	LOW	¾ x 1	3	C	P	C (1)	N/A	SRV/10YR	N/A	N/A	Motor Driven AFW Pump Suction Relief Valve

TABLE 18 - SAFETY & RELIEF VALVES

Valve Number	Flow Diagram (Coord.)	Risk Ranking	Size	Code Class	Cate-gory	Func-tion	Safety Func. Pos.	Test Parameters/Schedule: Leak Test	Exercise Test	Fail Safe Test	Position Indicator Test	Remarks
AF-0249	M1-0206-1 (B-2) M2-0206-1 (B-2)	LOW	¾ x 1	3	C	P	C (1)	N/A	SRV/10YR	N/A	N/A	Motor Driven AFW Pump Suction Relief Valve
AF-0250	M1-206-1 (B-5) M2-206-1 (B-5)	LOW	¾ x 1	3	C	P	C (1)	N/A	SRV/10YR	N/A	N/A	Turbine Driven AFW Pump Suction Relief Valve
1SW-0448	M1-0234 (F-2)	LOW	¾ x 1	3	C	P	C (1)	N/A	SRV/10YR	N/A	N/A	Diesel Jacket Water Cooler Relief Valve
1SW-0449	M1-0234 (F-5)	LOW	¾ x 1	3	C	P	C (1)	N/A	SRV/10YR	N/A	N/A	Diesel Jacket Water Cooler Relief Valve
2SW-0432	M2-0234 (F-2)	LOW	¾ x 1	3	C	P	C (1)	N/A	SRV/10YR	N/A	N/A	Diesel Jacket Water Cooler Relief Valve
2SW-0433	M2-0234 (F-5)	LOW	¾ x 1	3	C	P	C (1)	N/A	SRV/10YR	N/A	N/A	Diesel Jacket Water Cooler Relief Valve
CC-0722	M1-0231-A (D-1) M2-0231 (D-1)	LOW	¾ x 1	3	C	P	C (1)	N/A	SRV/10YR	N/A	N/A	Component Cooling Water Supply Line
CH-0600	M1-0311 (F-2) M2-0311 (F-2)	LOW	¾ x 1	3	C	P	C (1)	N/A	SRV/10YR	N/A	N/A	Safety Chilled Water Recirculation Pump Discharge Relief Valves
CH-0601	M1-0311 (F-5) M2-0311 (F-5)	LOW	¾ x 1	3	C	P	C (1)	N/A	SRV/10YR	N/A	N/A	Safety Chilled Water Recirculation Pump Discharge Relief Valve

TABLE 18 - SAFETY & RELIEF VALVES

Valve Number	Flow Diagram (Coord.)	Risk Ranking	Size	Code Class	Cate-gory	Func-tion	Safety Func. Pos.	Test Parameters/Schedule: Leak Test	Exercise Test	Fail Safe Test	Position Indicator Test	Remarks
GROUP 93 Relief Valve / Self Actuating / No Active Safety Function Crosby Model JRAK												
8124	M1-0255 (B-5) M2-0254 (C-5)	LOW	¾ x 1	2	C	P	C (1)	N/A	SRV/10YR	N/A	N/A	Charging Pump Suction Line Relief Valve
2-8468A	M2-0254 (D-4) M1-0259-A (C-3)	LOW	¾ x 1	2	C	P	C (1)	N/A	SRV/10YR	N/A	N/A	Positive Displacement Pump Suction Line Relief Valve
2-8468B	M2-0254 (D-5)	LOW	¾ x 1	2	C	P	C (1)	N/A	SRV/10YR	N/A	N/A	Centrifugal Charging Pump Suction Line Relief Valve
2-8468C	M2-0254 (D-6)	LOW	¾ x 1	2	C	P	C (1)	N/A	SRV/10YR	N/A	N/A	Centrifugal Charging Pump Suction Line Relief Valve
8858A	M1-0263-A (F-2) M2-0262 (B-2)	LOW	¾ x 1	2	C	P	C (1)	N/A	SRV/10YR	N/A	N/A	SI PMP Section Relief
8858B	M1-0263-A (F-3) M2-0262 (B-4)	LOW	¾ x 1	2	C	P	C (1)	N/A	SRV/10YR	N/A	N/A	SI PMP section Relief
GROUP 94 Relief Valve / Self Actuating / No Active Safety Function Target Rock Model 76K-003												
CT-0005	M1-0232 (D-2) M2-0232 (D-2)	LOW	¾ x 1	2	C	P	C (1)	N/A	SRV/10YR	N/A	N/A	Containment Spray HX Relief Valve

TABLE 18 - SAFETY & RELIEF VALVES

Valve Number	Flow Diagram (Coord.)	Risk Ranking	Size	Code Class	Cate-gory	Func-tion	Safety Func. Pos.	Test Parameters/Schedule: Leak Test	Exercise Test	Fail Safe Test	Position Indicator Test	Remarks
CT-0056	M1-0232 (D-4) M2-0232 (D-4)	LOW	¾ x 1	2	C	P	C (1)	N/A	SRV/10YR	N/A	N/A	Containment Spray HX Relief Valve
GROUP 96 Vacuum Breaker / Self Actuating Crosby Model VR												
CTVBCA-01	M1-0232-A (F-4) M2-0232-A (F-4)	HIGH	2	3	C	A	O/C	N/A	SRV/2YR	N/A	N/A	Chemical Additive Tank Ventpath/System Boundary
CTVBCA-02	M1-0232-A (F-4) M2-0232-A (F-4)	HIGH	2	3	C	A	O/C	N/A	SRV/2YR	N/A	N/A	Chemical Additive Tank Ventpath/System Boundary
GROUP 99 Relief Valve / Self Actuating / No Active Safety Function Crosby Model JRAK - Medium/High Pressure Spring Set												
8851	M1-0263-A (B-4) M2-0262 (F-3)	LOW	¾ X 1	2	C	P	C	N/A	SRV/10YR	N/A	N/A	SI PMP Discharge to Cold leg, Reactor Coolant Pressure Boundary Valve Leakage
8853A	M1-0263-A (B-2) M2-0262 (F-2)	LOW	¾ X 1	2	C	P	C	N/A	SRV/10YR	N/A	N/A	SI PMP Discharge to Cold leg, Reactor Coolant Pressure Boundary Valve Leakage
8853B	M1-0263-A (F-3) M2-0262 (F-4)	LOW	¾ X 1	2	C	P	C	N/A	SRV/10YR	N/A	N/A	SI PMP Discharge to Cold leg, Reactor Coolant Pressure Boundary Valve Leakage

TABLE 18 - SAFETY & RELIEF VALVES

Valve Number	Flow Diagram (Coord.)	Risk Ranking	Size	Code Class	Cate-gory	Func-tion	Safety Func. Pos.	Test Parameters/Schedule: Leak Test	Exercise Test	Fail Safe Test	Position Indicator Test	Remarks
GROUP 100 Relief Valve / Self Actuating / Safety Function Crosby Model JRAK – Medium Pressure Spring Set												
8842	M1-0263-B (B-2) M2-0263-A (F-2)	LOW	¾ X 1	2	C	P	C	N/A	SRV/10YR	N/A	N/A	RHR To Hot Leg Injection Relief Valve, Reactor Coolant Pressure Boundary Valve Leakage
8856A	M1-0263-B (B-1) M2-0263-A (F-1)	LOW	¾ X 1	2	C	P	C	N/A	SRV/10YR	N/A	N/A	RHR to Cold Leg Injection Relief Valve, Reactor Coolant Pressure Boundary Valve Leakage
8856B	M1-0263-B (B-3) M2-0263-A (F-3)	LOW	¾ X 1	2	C	P	C	N/A	SRV/10YR	N/A	N/A	RHR to Cold Leg Injection Relief Valve, Reactor Coolant Pressure Boundary Valve Leakage
GROUP 101 Relief Valve / Self Actuating / Safety Function Crosby Model JRAK - Low Pressure Spring Set												
2VD-0896	M2-0238 (B-6)	LOW	¾ X 1	2	A/C	A	O/C (1)	LTJ/TS	SRV/10YR	N/A	N/A	Containment Penetration Thermal Relief/Containment Isolation
1VD-0907	M1-0238 (B-6)	LOW	¾ X 1	2	A/C	A	O/C (1)	LTJ/TS	SRV/10YR	N/A	N/A	Containment Penetration Thermal Relief/Containment Isolation
WP-7176	M1-0264 (E-3) M2-0264 (E-3)	LOW	¾ X 1	2	A/C	A	O/C (1)	LTJ/TS	SRV/10YR	N/A	N/A	Containment Penetration Thermal Relief/Containment Isolation

TABLE 18 - SAFETY & RELIEF VALVES

Valve Number	Flow Diagram (Coord.)	Risk Ranking	Size	Code Class	Cate-gory	Func-tion	Safety Func. Pos.	Test Parameters/Schedule: Leak Test	Exercise Test	Fail Safe Test	Position Indicator Test	Remarks
RC-0036	M1-0251 (F-2) M2-0251 (F-2)	LOW	¾ X 1	2	A/C	A	O/C (1)	LTJ/TS	SRV/10YR	N/A	N/A	Containment Penetration Thermal Relief/Containment Isolation
GROUP 102 Relief Valve / Self Actuating / No Active Safety Function Crosby Model JO												
8855A	M1-0262 (D-1) M2-0263-B (C-1)	LOW	1 X 2	2	C	p	C	N/A	SRV/10YR	N/A	N/A	SI Accumulator Relief
8855B	M1-0262 (D-2) M2-0263-B (C-2)	LOW	1 X 2	2	C	p	C	N/A	SRV/10YR	N/A	N/A	SI Accumulator Relief
8855C	M1-0262 (D-4) M2-0263-B (C-4)	LOW	1 X 2	2	C	p	C	N/A	SRV/10YR	N/A	N/A	SI Accumulator Relief
8855D	M1-0262 (D-5) M2-0263-B (C-5)	LOW	1 X 2	2	C	P	C	N/A	SRV/10YR	N/A	N/A	SI Accumulator Relief

TABLE 18 - SAFETY & RELIEF VALVES

NOTES

1. These valves meet the scoping requirement of ISTA-1100(b) for relief devices that protect systems or portion of systems that perform one or more of the three safety functions (shutdown the reactor to the safe shutdown condition, maintain the safe shutdown condition, or mitigate the consequences of an accident). Additionally, these relief valves meet the criteria of ASME OM CODE 2004 Edition through 2006 Addenda, I-1390 "Test Frequency, Class 2 and 3 Pressure Relief Devices That Are Used for Thermal Relief Application." These thermal relief valves shall be tested every 10 years, unless performance data indicate more frequent testing is necessary. In lieu of tests, relief valves may be replaced at frequency of every 10 years, unless performance data indicate more frequent replacement is necessary. No additional valves are required to be tested if a thermal relief valve exceeds its as-found set pressure tolerance.

2. 8708A and 8708B, RHR Suction Relief Valves, are Passive and are therefore exempt from performance 2004 through 2006 Addenda, Subsection ISTC, Table ISTC-3500-1.) Technical Specification LCO 3.4.12, however, allows crediting these valves for LTOP protection in MODES 4, 5, 6. Therefore, these valves are performance tested to the requirements of ASME OM Code 2004 Edition, through 2006 Addenda, Appendix I.

TABLE 19 - MOTOR OPERATED VALVES

Valve Number	Flow Diagram (Coord.)	Risk Ranking	Size	Code Class	Cate-gory	Func-tion	Safety Func. Pos.	Test Parameters/Schedule: LeakTest/ PIT	Exercise Test	Fail Safe Test	Diagnostic Testing	Remarks
AUXILIARY FEEDWATER Gate Valve / Motor Operated Borg-Warner 75000 Series with Limitorque Actuator												
HV-2480	M1-0206-1 (B-2) M2-0206-1 (B-2)	LOW	6	3	B	A	O	N/A	ET/18MO	N/A	(1)	AFW Pump Emergency Supply Flowpath
HV-2481	M1-0206-1 (B-4) M2-0206-1 (B-4)	LOW	6	3	B	A	O	N/A	ET/18MO	N/A	(1)	AFW Pump Emergency Supply Flowpath
HV-2482	M1-0206-1 (B-4) M2-0206-1 (B-4)	LOW	8	3	B	A	O	N/A	ET/18MO	N/A	(1)	AFW Pump Emergency Supply Flowpath
AUXILIARY FEEDWATER Gate Valve / Motor Operated Borg-Warner Model 75610-1 with Limitorque Actuator												
HV-2491A	M1-0206 (D-4) M2-0206 (D-4)	LOW	4	2	B	A	C	N/A	ET/18MO	N/A	(1)	Containment Isolation & AFW to Faulted SG Flow Isolation
HV-2491B	M1-0206 (D-4) M2-0206 (D-4)	LOW	4	2	B	A	C	N/A	ET/18MO	N/A	(1)	Containment Isolation & AFW to Faulted SG Flow Isolation
HV-2492A	M1-0206 (D-3) M2-0206 (D-3)	LOW	4	2	B	A	C	N/A	ET/18MO	N/A	(1)	Containment Isolation & AFW to Faulted SG Flow Isolation
HV-2492B	M1-0206 (D-2) M2-0206 (D-2)	LOW	4	2	B	A	C	N/A	ET/18MO	N/A	(1)	Containment Isolation & AFW to Faulted SG Flow Isolation

TABLE 19 - MOTOR OPERATED VALVES

Valve Number	Flow Diagram (Coord.)	Risk Ranking	Size	Code Class	Cate-gory	Func-tion	Safety Func. Pos.	Test Parameters/Schedule: LeakTest/ PIT	Exercise Test	Fail Safe Test	Diagnostic Testing	Remarks
HV-2493A	M1-0206 (D-1) M2-0206 (D-1)	LOW	4	2	B	A	C	N/A	ET/18MO	N/A	(1)	Containment Isolation & AFW to Faulted SG Flow Isolation
HV-2493B	M1-0206 (D-2) M2-0206 (D-2)	LOW	4	2	B	A	C	N/A	ET/18MO	N/A	(1)	Containment Isolation & AFW to Faulted SG Flow Isolation
HV-2494A	M1-0206 (D- 5) M2-0206 (D-5)	LOW	4	2	B	A	C	N/A	ET/18MO	N/A	(1)	Containment Isolation & AFW to Faulted SG Flow Isolation
HV-2494B	M1-0206 (D-5) M2-0206 (D-5)	LOW	4	2	B	A	C	N/A	ET/18MO	N/A	(1)	Containment Isolation & AFW to Faulted SG Flow Isolation
AUXILIARY FEEDWATER Butterfly Valve / Motor Operated Fisher Controls Series with Limitorque Actuator												
HV-2484	M1-0206-2 (D-4) M2-0206-2 (D-4)	LOW	12	3	B	A	C	N/A	ET/18MO	N/A	(1)	Condensate System to Condensate Storage Tank Isolation to Preclude Tank Overpressurization
HV-2485	M1-0206-2 (D-4) M2-0206-2 (D-4)	LOW	12	3	B	A	C	N/A	ET/18MO	N/A	(1)	Condensate System to Condensate Storage Tank Isolation to Preclude Tank Overpressurization
COMPONENT COOLING WATER Butterfly Valve / Motor Operated Fisher with Limitorque Actuator (24-inch)												
HV-4512	M1-0229-A (F-1) M2-0229 (C-3)	LOW	24	3	B	A	C	N/A	ET/18MO	N/A	(1)	Train A to Train B Crosstie Isolation

TABLE 19 - MOTOR OPERATED VALVES

Valve Number	Flow Diagram (Coord.)	Risk Ranking	Size	Code Class	Cate-gory	Func-tion	Safety Func. Pos.	Test Parameters/Schedule: LeakTest/ PIT	Exercise Test	Fail Safe Test	Diagnostic Testing	Remarks
HV-4513	M1-0229-A (G-1) M2-0229 (E-3)	LOW	24	3	B	A	C	N/A	ET/18MO	N/A	(1)	Train A to Train B Crosstie Isolation
HV-4514	M1-0229-B (A-4) M2-0229 (C-6)	LOW	24	3	B	A	C	N/A	ET/18MO	N/A	(1)	Train A to Train B Crosstie Isolation
HV-4515	M1-0229-B (A-4) M2-0229 (D-6)	LOW	24	3	B	A	C	N/A	ET/18MO	N/A	(1)	Train A to Train B Crosstie Isolation
HV-4524	M1-0229-A (F-1) M2-0229 (D-4)	LOW	24	3	B	A	C	N/A	ET/18MO	N/A	(1)	Non-Safety Loop Flowpath Isolation
HV-4525	M1-0229-A (F-1) M2-0229 (D-4)	LOW	24	3	B	A	C	N/A	ET/18MO	N/A	(1)	Non-Safety Loop Flowpath Isolation
HV-4526	M1-0229-B (A-5) M2-0229 (D-6)	LOW	24	3	B	A	C	N/A	ET/18MO	N/A	(1)	Non-Safety Loop Flowpath Isolation
HV-4527	M1-0229-B (A-5) M2-0229 (D-6)	LOW	24	3	B	A	C	N/A	ET/18MO	N/A	(1)	Non-Safety Loop Flowpath Isolation
COMPONENT COOLING WATER - HIGH SAFETY SIGNIFICANCE Butterfly Valve / Motor Operated Velan with Limitorque Actuator (18-inch)												
HV-4572	M1-0229 (B-2) M2-0229-A (C-4)	HIGH	18	3	B	A	O	N/A	ET/18MO	N/A	(1)	RHR Heat Exchanger Cooling Flowpath

TABLE 19 - MOTOR OPERATED VALVES

Valve Number	Flow Diagram (Coord.)	Risk Ranking	Size	Code Class	Cate-gory	Func-tion	Safety Func. Pos.	Test Parameters/Schedule: LeakTest/ PIT	Exercise Test	Fail Safe Test	Diagnostic Testing	Remarks
HV-4573	M1-0229-B (F-6) M2-0229-B (F-4)	HIGH	18	3	B	A	O	N/A	ET/18MO	N/A	(1)	RHR Heat Exchanger Cooling Flowpath
COMPONENT COOLING WATER Gate Valve / Motor Operated Borg-Warner with Limitorque Actuator												
HV-4696	M1-0231 (C-4) M2-0231 (A-4)	LOW	4	2	A	A	C	LTJ/TS	ET/18MO	N/A	(1)	Containment Isolation & RCP Thermal Barrier Rupture Isolation
HV-4699	M1-0231-A (B-6) M2-0230-A (E-2)	LOW	8	2	B	A	C	N/A	ET/18MO	N/A	(1)	Passive Pipe Break Isolation (inside Containment)
HV-4700	M1-0231-A (B-6) M2-0230-A (E-3)	LOW	8	2	A	A	C	LTJ/TS	ET/18MO	N/A	(1)	Containment Isolation & RCP Thermal Barrier Rupture Isolation
HV-4701	M1-0231 (C-4) M2-0231 (A-6)	LOW	8	2	A	A	C	LTJ/TS	ET/18MO	N/A	(1)	Containment Isolation
HV-4708	M1-0231 (B-4) M2-0230-A (E-4)	LOW	8	2	A	A	C	LTJ/TS	ET/18MO	N/A	(1)	Containment Isolation
HV-4709	M1-0231 (B-4) M2-0230-A (F-4)	LOW	4	2	A	A	C	LTJ/TS	ET/18MO	N/A	(1)	Containment Isolation & RCP Thermal Barrier Rupture Isolation

TABLE 19 - MOTOR OPERATED VALVES

Valve Number	Flow Diagram (Coord.)	Risk Ranking	Size	Code Class	Cate-gory	Func-tion	Safety Func. Pos.	Test Parameters/Schedule: LeakTest/ PIT	Exercise Test	Fail Safe Test	Diagnostic Testing	Remarks
COMPONENT COOLING WATER Butterfly Valve / Motor Operated Velan with Limitorque Actuator												
HV-4574	M1-0229 (B-4) M2-0229-A (C-2)	LOW	18	3	B	A	O	N/A	ET/18MO	N/A	(1)	Containment Spray Heat Exchanger Cooling Flowpath
HV-4575	M1-0229-B (F-6) M2-0229-B (F-5)	LOW	18	3	B	A	O	N/A	ET/18MO	N/A	(1)	Containment Spray Heat Exchanger Cooling Flowpath
SAFETY & NON-SAFETY CHILLED WATER Gate Valve / Motor Operated Borg-Warner with Limitorque Actuator												
HV-6082	M1-0307-A (B-1) M2-0307 (B-2)	LOW	6	2	A	A	C	LTJ/TS	ET/18MO	N/A	(1)	Containment Isolation
HV-6083	M1-0307-A (C-1) M2-0307 (B-2)	LOW	6	2	A	A	C	LTJ/TS	ET/18MO	N/A	(1)	Containment Isolation
HV-6084	M1-0307-A (B-2) M2-0307 (B-3)	LOW	6	2	A	A	C	LTJ/TS	ET/18MO	N/A	(1)	Containment Isolation
CHEMICAL and VOLUME CONTROL - HIGH SAFETY SIGNIFICANCE Globe Valve / Motor Operated Velan with Limitorque Actuator												
8110	M1-0255 (B-2) M2-0254 (A-2)	HIGH	2	2	B	A	C	N/A	ET/18MO	N/A	(1)	ECCS Flowpath Boundary

TABLE 19 - MOTOR OPERATED VALVES

Valve Number	Flow Diagram (Coord.)	Risk Ranking	Size	Code Class	Cate-gory	Func-tion	Safety Func. Pos.	Test Parameters/Schedule: LeakTest/ PIT	Exercise Test	Fail Safe Test	Diagnostic Testing	Remarks
8111	M1-0255 (B-2) M2-0254 (A-2)	HIGH	2	2	B	A	C	N/A	ET/18MO	N/A	(1)	ECCS Flowpath Boundary
CHEMICAL and VOLUME CONTROL - HIGH SAFETY SIGNIFICANCE Gate Valve / Motor Operated Westinghouse with Limitorque Actuator												
LCV-0112B	M1-0255 (E-6) M2-0254 (C-4)	HIGH	4	2	B	A	C	N/A	ET/18MO	N/A	(1)	ECCS Flowpath Boundary & Isolation of VCT Cover Gas from Charging Pumps' Suction Header (upon low VCT level) & Boron Dilution Flowpath Isolation
LCV-0112C	M1-0255 (D-6) M2-0254 (C-4)	HIGH	4	2	B	A	C	N/A	ET/18MO	N/A	(1)	ECCS Flowpath Boundary & Isolation of VCT Cover Gas from Charging Pumps' Suction Header (upon low VCT level) & Boron Dilution Flowpath Isolation
LCV-0112D	M1-0255 (C-5) M2-0254 (B-5)	HIGH	8	2	B	A	O/C	N/A	ET/18MO	N/A	(1)	ECCS Injection Flowpath & Boration Flowpath/ECCS Recirculation Flowpath Boundary
LCV-0112E	M1-0255 (C-4) M2-0254 (B-5)	HIGH	8	2	B	A	O/C	N/A	ET/18MO	N/A	(1)	ECCS Injection Flowpath & Boration Flowpath/ECCS Recirculation Flowpath Boundary
CHEMICAL and VOLUME CONTROL - HIGH SAFETY SIGNIFICANCE Gate Valve / Motor Operated Westinghouse with Limitorque Actuator												
8105	M1-0255-1 (A-2) M2-0255 (D-1)	HIGH	3	2	A	A	O/C	LTJ/TS	ET/18MO	N/A	(1)	Boration Flowpath/ECCS Flowpath Boundary & Containment Isolation

TABLE 19 - MOTOR OPERATED VALVES

Valve Number	Flow Diagram (Coord.)	Risk Ranking	Size	Code Class	Cate-gory	Func-tion	Safety Func. Pos.	Test Parameters/Schedule: LeakTest/ PIT	Exercise Test	Fail Safe Test	Diagnostic Testing	Remarks
8106	M1-0255-1 (B-2) M2-0255 (C-1)	HIGH	3	2	B	A	O/C	N/A	ET/18MO	N/A	(1)	Boration Flowpath/ECCS Flowpath Boundary
CHEMICAL and VOLUME CONTROL Gate Valve / Motor Operated Flowserve with Limitorque Actuator												
HV-8402A	M1-0255-1 (B-2) M2-0255 (B-1)	LOW	3	2	B	P	O/C (5)	N/A	ET/18MO (5)	N/A	(1)	Boration Flowpath
CHEMICAL and VOLUME CONTROL Globe Valve / Motor Operated Velan with Limitorque Actuator												
8100	M1-0253 (A-4) M2-0253 (D-6)	LOW	2	2	A	A	C	LTJ/TS	ET/18MO	N/A	(1)	Containment Isolation
8104	M1-0255-2 (F-5) M2-0255-2 (B-3)	LOW	2	2	B	A	O	N/A	ET/18MO	N/A	(1)	Boration Flowpath
8109	M1-0255-1 (E-1) M2-0254 (D-3)	LOW	2	2	B	P	C	PIT/ 2YR (4)	N/A	N/A	N/A	ECCS Flowpath Boundary
8112	M1-0253 (A-4) M2-0255-1 (B-4)	LOW	2	2	A	A	C	LTJ/TS	ET/18MO	N/A	(1)	Containment Isolation
8351A	M1-0253 (A-6) M2-0255 (D-5)	LOW	2	2	B	A	C	N/A	ET/18MO	N/A	(1)	Containment Isolation

TABLE 19 - MOTOR OPERATED VALVES

Valve Number	Flow Diagram (Coord.)	Risk Ranking	Size	Code Class	Cate-gory	Func-tion	Safety Func. Pos.	Test Parameters/Schedule: LeakTest/ PIT	Exercise Test	Fail Safe Test	Diagnostic Testing	Remarks
8351B	M1-0253 (E-6) M2-0255 (D-4)	LOW	2	2	B	A	C	N/A	ET/18MO	N/A	(1)	Containment Isolation
8351C	M1-0253 (E-3) M2-0255 (D-6)	LOW	2	2	B	A	C	N/A	ET/18MO	N/A	(1)	Containment Isolation
8351D	M1-0253 (A-3) M2-0255 (D-5)	LOW	2	2	B	A	C	N/A	ET/18MO	N/A	(1)	Containment Isolation
8511A	M1-0255-1 (D-4) M2-0254 (E-5)	LOW	2	2	B	A	O/C	N/A	ET/18MO	N/A	(1)	High Head Safety Injection Pump Miniflow Path/ECCS Recirculation Flowpath Boundary
8511B	M1-0255-1 (D-4) M2-0254 (E-6)	LOW	2	2	B	A	O/C	N/A	ET/18MO	N/A	(1)	High Head Safety Injection Pump Miniflow Path/ECCS Recirculation Flowpath Boundary
8512A	M1-0255-1 (D-4) M2-0254 (F-6)	LOW	2	2	B	A	C	N/A	ET/18MO	N/A	(1)	ECCS Recirculation Flowpath Boundary
8512B	M1-0255-1 (D-4) M2-0254 (F-5)	LOW	2	2	B	A	C	N/A	ET/18MO	N/A	(1)	ECCS Recirculation Flowpath Boundary
CONTAINMENT SPRAY Gate Valve / Motor Operated Borg-Warner with Limitorque Actuator												
HV-4776	M1-0232 (C-5) M2-0232 (C-5)	LOW	16	2	B	A	O/C	N/A (2)	ET/18MO	N/A	(1)	Containment Spray Flowpath/ Containment Isolation

TABLE 19 - MOTOR OPERATED VALVES

Valve Number	Flow Diagram (Coord.)	Risk Ranking	Size	Code Class	Cate-gory	Func-tion	Safety Func. Pos.	Test Parameters/Schedule: LeakTest/ PIT	Exercise Test	Fail Safe Test	Diagnostic Testing	Remarks
HV-4777	M1-0232 (C-2) M2-0232 (C-2)	LOW	16	2	B	A	O/C	N/A (2)	ET/18MO	N/A	(1)	Containment Spray Flowpath/ Containment Isolation
HV-4782	M1-0232-A (C-5) M2-0232-A (C-5)	LOW	16	2	B	A	O/C	N/A	ET/18MO	N/A	(1)	Sump Recirculation Flowpath/Containment Isolation
HV-4783	M1-0232-A (C-6) M2-0232-A (C-6)	LOW	16	2	B	A	O/C	N/A	ET/18MO	N/A	(1)	Sump Recirculation Flowpath/Containment Isolation
CONTAINMENT SPRAY Butterfly Valve / Motor Operated Copes Vulcan with Limitorque Actuator												
HV-4758	M1-0232-A (D-2) M2-0232-A (D-2)	LOW	16	2	B	A	C	N/A	ET/18MO	N/A	(1)	Sump Recirculation Flowpath Boundary
HV-4759	M1-0232-A (D-2) M2-0232-A (E-3)	LOW	16	2	B	A	C	N/A	ET/18MO	N/A	(1)	Sump Recirculation Flowpath Boundary
CONTAINMENT SPRAY Globe Valve / Motor Operated Fisher with Limitorque Actuator												
FV-4772-1	M1-0232 (E-6) M2-0232 (E-6)	LOW	4	2	B	A	O/C	N/A	ET/18MO	N/A	(1)	Pump Miniflow Flowpath/ Containment Spray Flowpath Boundary
FV-4772-2	M1-0232 (E-5) M2-0232 (E-5)	LOW	4	2	B	A	O/C	N/A	ET/18MO	N/A	(1)	Pump Miniflow Flowpath/ Containment Spray Flowpath Boundary

TABLE 19 - MOTOR OPERATED VALVES

Valve Number	Flow Diagram (Coord.)	Risk Ranking	Size	Code Class	Cate-gory	Func-tion	Safety Func. Pos.	Test Parameters/Schedule: LeakTest/ PIT	Exercise Test	Fail Safe Test	Diagnostic Testing	Remarks
FV-4773-1	M1-0232 (F-3) M2-0232 (F-3)	LOW	4	2	B	A	O/C	N/A	ET/18MO	N/A	(1)	Pump Miniflow Flowpath/ Containment Spray Flowpath Boundary
FV-4773-2	M1-0232 (F-2) M2-0232 (F-2)	LOW	4	2	B	A	O/C	N/A	ET/18MO	N/A	(1)	Pump Miniflow Flowpath/ Containment Spray Flowpath Boundary
CONTAINMENT SPRAY Diaphram Valve / Motor Operated ITT with Limitorque Actuator												
LV-4754	M1-0232-A (F-5) M2-0232-A (F-5)	LOW	3	3	B	A	O/C	N/A	ET/18MO	N/A	(1)	Chemical Additive Flowpath/ Chemical Additive Tank Isolation
LV-4755	M1-0232-A (F-5) M2-0232-A (F-5)	LOW	3	3	B	A	O/C	N/A	ET/18MO	N/A	(1)	Chemical Additive Flowpath/ Chemical Additive Tank Isolation
REACTOR COOLANT Gate Valve / Motor Operated Westinghouse Model 03000GM88FNH000												
8000A	M1-0251 (A-4) M2-0251 (A-4)	LOW	3	1	B	A	O/C	N/A	ET/18MO	N/A	(1)	Post Accident Vent Path/Vent Path Isolation & Reactor Coolant Pressure Boundary
8000B	M1-0251 (A-4) M2-0251 (A-4)	LOW	3	1	B	A	O/C	N/A	ET/18MO	N/A	(1)	Post Accident Vent Path/Vent Path Isolation & Reactor Coolant Pressure Boundary

TABLE 19 - MOTOR OPERATED VALVES

Valve Number	Flow Diagram (Coord.)	Risk Ranking	Size	Code Class	Cate-gory	Func-tion	Safety Func. Pos.	Test Parameters/Schedule: LeakTest/ PIT	Test Parameters/Schedule: Exercise Test	Test Parameters/Schedule: Fail Safe Test	Test Parameters/Schedule: Diagnostic Testing	Remarks
RESIDUAL HEAT REMOVAL Globe Valve / Motor Operated Copes Vulcan with Limitorque Actuator												
FCV-0610	M1-0260 (D-1) M2-0260 (D-1)	LOW	3	2	B	A	O/C	N/A	ET/18MO	N/A	(1)	Pump Miniflow Path/ECCS & RHR Flowpath Boundary
FCV-0611	M1-0260 (D-6) M2-0260 (D-6)	LOW	3	2	B	A	O/C	N/A	ET/18MO	N/A	(1)	Pump Miniflow Path/ECCS & RHR Flowpath Boundary
RESIDUAL HEAT REMOVAL - HIGH SAFETY SIGNIFICANCE Gate Valve / Motor Operated Westinghouse with Limitorque Actuator (12-inch)												
8701A	M1-0260 (F-3) M2-0260 (F-3)	HIGH	12	1	A	A	O/C	LT/TS (3)	ET/18MO	N/A	(1)	RHR Flowpath/Containment Isolation & Reactor Coolant Pressure Boundary
8701B	M1-0260 (F-5) M2-0260 (F-5)	HIGH	12	1	A	A	O/C	LT/TS (3)	ET/18MO	N/A	(1)	RHR Flowpath/Containment Isolation & Reactor Coolant Pressure Boundary
8702A	M1-0260 (F-3) M2-0260 (F-3)	HIGH	12	1	A	A	O/C	LT/TS (3)	ET/18MO	N/A	(1)	RHR Flowpath/Reactor Coolant Pressure Boundary
8702B	M1-0260 (F-5) M2-0260 (F-5)	HIGH	12	1	A	A	O/C	LT/TS (3)	ET/18MO	N/A	(1)	RHR Flowpath/Reactor Coolant Pressure Boundary

TABLE 19 - MOTOR OPERATED VALVES

Valve Number	Flow Diagram (Coord.)	Risk Ranking	Size	Code Class	Cate-gory	Func-tion	Safety Func. Pos.	Test Parameters/Schedule: LeakTest/ PIT	Exercise Test	Fail Safe Test	Diagnostic Testing	Remarks
RESIDUAL HEAT REMOVAL Gate Valve / Motor Operated Westinghouse with Limitorque Actuator (10-inch)												
8716A	M1-0260 (B-3) M2-0260 (B-3)	LOW	10	2	B	A	O/C	N/A	ET/18MO	N/A	(1)	ECCS Injection Flowpath/ECCS Recirculation Flowpath Boundary
8716B	M1-0260 (B-4) M2-0260 (B-4)	LOW	10	2	B	A	O/C	N/A	ET/18MO	N/A	(1)	ECCS Injection Flowpath/ECCS Recirculation Flowpath Boundary
SAFETY INJECTION Globe Valve / Motor Operated Westinghouse with Limitorque Actuator												
8814A	M1-0263-A (D-3) M2-0262 (D-3)	LOW	1½	2	B	A	C	N/A	ET/18MO	N/A	(1)	ECCS Recirculation Flowpath Boundary
8814B	M1-0263-A (D-4) M2-0262 (D-4)	LOW	1½	2	B	A	C	N/A	ET/18MO	N/A	(1)	ECCS Recirculation Flowpath Boundary
SAFETY INJECTION - HIGH SAFETY SIGNIFICANCE Globe Valve / Motor Operated Westinghouse with Limitorque Actuator												
8813	M1-0263-A (E-5) M2-0262 (C-3)	HIGH	2	2	B	A	C	N/A	ET/18MO	N/A	(1)	ECCS Recirculation Flowpath Boundary
SAFETY INJECTION - HIGH SAFETY SIGNIFICANCE Gate Valve / Motor Operated Westinghouse with Limitorque Actuator (less than 8-inch)												

TABLE 19 - MOTOR OPERATED VALVES

Valve Number	Flow Diagram (Coord.)	Risk Ranking	Size	Code Class	Cate-gory	Func-tion	Safety Func. Pos.	Test Parameters/Schedule: LeakTest/ PIT	Test Parameters/Schedule: Exercise Test	Test Parameters/Schedule: Fail Safe Test	Test Parameters/Schedule: Diagnostic Testing	Remarks
8835	M1-0263-A (A-5) M2-0262 (F-3)	HIGH	4	2	B	A	O/C	N/A	ET/18MO	N/A	(1)	ECCS to Cold Legs Flowpath/ ECCS to Hot Legs Flowpath Boundary & Containment Isolation & Passive Pipe Break Isolation
8923A	M1-0263-A (F-2) M2-0262 (A-2)	HIGH	6	2	B	A	C	N/A	ET/18MO	N/A	(1)	Passive Pipe Break Isolation
8923B	M1-0263-A (F-3) M2-0262 (A-5)	HIGH	6	2	B	A	C	N/A	ET/18MO	N/A	(1)	Passive Pipe Break Isolation
SAFETY INJECTION - HIGH SAFETY SIGNIFICANCE Gate Valve / Motor Operated Westinghouse with Limitorque Actuator (8-inch)												
8804B	M1-0263-A (F-3) M2-0262 (B-4)	HIGH	8	2	B	A	O/C	N/A	ET/18MO	N/A	(1)	ECCS Recirculation Flowpath/Passive Pipe Break Isolation
8806	M1-0263-A (G-2) M2-0262 (A-2)	HIGH	8	2	B	A	C	N/A	ET/18MO	N/A	(1)	ECCS Flowpath Boundary (during Recirculation)
SAFETY INJECTION - HIGH SAFETY SIGNIFICANCE Gate Valve / Motor Operated Westinghouse with Limitorque Actuator (10-inch)												
8809A	M1-0263-B (A-2) M2-0263-A (F-1)	HIGH	10	2	B	A	O/C	N/A (2)	ET/18MO	N/A	(1)	ECCS to Cold Legs Flowpath/ ECCS to Hot Legs Flowpath Boundary & Passive Pipe Break Isolation & Contain-ment Isolation

TABLE 19 - MOTOR OPERATED VALVES

Valve Number	Flow Diagram (Coord.)	Risk Ranking	Size	Code Class	Cate-gory	Func-tion	Safety Func. Pos.	Test Parameters/Schedule: LeakTest/ PIT	Exercise Test	Fail Safe Test	Diagnostic Testing	Remarks
8809B	M1-0263-B (A-4) M2-0263-A (F-3)	HIGH	10	2	B	A	O/C	N/A (2)	ET/18MO	N/A	(1)	ECCS to Cold Legs Flowpath/ ECCS to Hot Legs Flowpath Boundary & Passive Pipe Break Isolation & Contain-ment Isolation
SAFETY INJECTION - HIGH SAFETY SIGNIFICANCE Gate Valve / Motor Operated Westinghouse with Limitorque Actuator (14-inch)												
8811A	M1-0263-B (B-6) M2-0263-A (B-5)	HIGH	14	2	B	A	O/C	N/A	ET/18MO	N/A	(1)	ECCS Recirculation Flowpath/Containment Isolation & Passive Pipe Break Isolation
8811B	M1-0263-B (B-5) M2-0263-A (B-6)	HIGH	14	2	B	A	O/C	N/A	ET/18MO	N/A	(1)	ECCS Recirculation Flowpath/Containment Isolation & Passive Pipe Break Isolation
8812A	M1-0263-B (F-2) M2-0263-A (B-2)	HIGH	14	2	B	A	C	N/A	ET/18MO	N/A	(1)	ECCS Recirculation Flowpath Boundary & Shutdown Cooling Flowpath Boundary (during Safety Grade Cold Shutdown)
8812B	M1-0263-B (F-3) M2-0263-A (B-3)	HIGH	14	2	B	A	C	N/A	ET/18MO	N/A	(1)	ECCS Recirculation Flowpath Boundary & Shutdown Cooling Flowpath Boundary (during Safety Grade Cold Shutdown)
SAFETY INJECTION - HIGH SAFETY SIGNIFICANCE Gate Valve / Motor Operated Westinghouse with Limitorque Actuator (4-inch)												
8801A	M1-0261 (C-2) M2-0261 (E-4)	HIGH	4	2	B	A	O/C	N/A	ET/18MO	N/A	(1)	ECCS to Cold Legs Flowpath & Boration Flowpath/ Containment Isolation & Passive Pipe Break Isolation

TABLE 19 - MOTOR OPERATED VALVES

Valve Number	Flow Diagram (Coord.)	Risk Ranking	Size	Code Class	Cate-gory	Func-tion	Safety Func. Pos.	Test Parameters/Schedule: LeakTest/ PIT	Exercise Test	Fail Safe Test	Diagnostic Testing	Remarks
8801B	M1-0261 (C-2) M2-0261 (E-5)	HIGH	4	2	B	A	O/C	N/A	ET/18MO	N/A	(1)	ECCS to Cold Legs Flowpath & Boration Flowpath/ Containment Isolation & Passive Pipe Break Isolation
SAFETY INJECTION - HIGH SAFETY SIGNIFICANCE Gate Valve / Motor Operated Westinghouse with Limitorque Actuator (10-inch)												
8840	M1-0263-B (A-3) M2-0263-A (F-2)	HIGH	10	2	B	A	O/C	N/A (2)	ET/18MO	N/A	(1)	ECCS to Hot Legs Flowpath/ ECCS to Cold Legs Flowpath Boundary & Containment Isolation & Passive Pipe Break Isolation
SAFETY INJECTION - HIGH SAFETY SIGNIFICANCE Gate Valve / Motor Operated Westinghouse with Limitorque Actuator (4-inch)												
8802A	M1-0263-A (A-2) M2-0262 (F-2)	HIGH	4	2	B	A	O/C	N/A	ET/18MO	N/A	(1)	ECCS to Hot Legs Flowpath/ ECCS to Cold Legs Flowpath Boundary & Containment Isolation & Passive Pipe Break Isolation
8802B	M1-0263-A (A-3) M2-0262 (F-5)	HIGH	4	2	B	A	O/C	N/A	ET/18MO	N/A	(1)	ECCS to Hot Legs Flowpath/ ECCS to Cold Legs Flowpath Boundary & Containment Isolation & Passive Pipe Break Isolation
8821A	M1-0263-A (C-3) M2-0262 (E-3)	HIGH	4	2	B	A	O/C	N/A	ET/18MO	N/A	(1)	ECCS to ColdLegsFlowpath/ ECCS to Hot Legs Flowpath Boundary & Passive Pipe Break Isolation
8821B	M1-0263-A (C-4) M2-0262 (E-4)	HIGH	4	2	B	A	O/C	N/A	ET/18MO	N/A	(1)	ECCS to ColdLegsFlowpath/ ECCS to Hot Legs Flowpath Boundary & Passive Pipe Break Isolation

TABLE 19 - MOTOR OPERATED VALVES

Valve Number	Flow Diagram (Coord.)	Risk Ranking	Size	Code Class	Cate-gory	Func-tion	Safety Func. Pos.	Test Parameters/Schedule: LeakTest/ PIT	Exercise Test	Fail Safe Test	Diagnostic Testing	Remarks
SAFETY INJECTION Gate Valve / Motor Operated Westinghouse with Limitorque Actuator (larger than 4-inch)												
8807A	M1-0261 (E-5) M2-0261 (B-6)	LOW	6	2	B	A	O/C	N/A	ET/18MO	N/A	(1)	ECCS Recirculation Flowpath/Passive Pipe Break Isolation
8807B	M1-0261 (E-5) M2-0261 (B-6)	LOW	6	2	B	A	O/C	N/A	ET/18MO	N/A	(1)	ECCS Recirculation Flowpath/Passive Pipe Break Isolation
8808A	M1-0262 (C-2) M2-0263-B (E-2)	LOW	10	2	B	P	O	PIT/ 2YR (4)	N/A	N/A	N/A	ECCS from Accumulators to Cold Legs Flowpath
8808B	M1-0262 (C-3) M2-0263-B (E-3)	LOW	10	2	B	P	O	PIT/ 2YR (4)	N/A	N/A	N/A	ECCS from Accumulators to Cold Legs Flowpath
8808C	M1-0262 (C-5) M2-0263-B (E-5)	LOW	10	2	B	P	O	PIT/ 2YR (4)	N/A	N/A	N/A	ECCS from Accumulators to Cold Legs Flowpath
8808D	M1-0262 (C-6) M2-0263-B (E-6)	LOW	10	2	B	P	O	PIT/ 2YR (4)	N/A	N/A	N/A	ECCS from Accumulators to Cold Legs Flowpath
8924	M1-0261 (E-4) M2-0261 (B-5)	LOW	6	2	B	A	C	N/A	ET/18MO	N/A	(1)	Passive Pipe Break Isolation
8804A	M1-0261 (F-5) M2-0261 (A-6)	LOW	8	2	B	A	O/C	N/A	ET/18MO	N/A	(1)	ECCS Recirculation Flowpath/Passive Pipe Break Isolation

TABLE 19 - MOTOR OPERATED VALVES

Valve Number	Flow Diagram (Coord.)	Risk Ranking	Size	Code Class	Cate-gory	Func-tion	Safety Func. Pos.	Test Parameters/Schedule: LeakTest/ PIT	Exercise Test	Fail Safe Test	Diagnostic Testing	Remarks
STATION SERVICE WATER - HIGH SAFETY SIGNIFICANCE Butterfly Valve / Motor Operated Fisher with Limitorque Actuator												
HV-4286	M1-0233 (E-2) M2-0233 (D-3)	HIGH	24	3	B	A	O/C	N/A	ET/18MO	N/A	(1)	Service Water Flowpath/ Throttling during Pump Start
HV-4287	M1-0233 (D-2) M2-0233 (B-3)	HIGH	24	3	B	A	O/C	N/A	ET/18MO	N/A	(1)	Service Water Flowpath/ Throttling during Pump Start
STATION SERVICE WATER Butterfly Valve / Motor Operated Fisher with Limitorque Actuator												
HV-4393	M1-0234 (F-6) M2-0234 (F-6)	LOW	10	3	B	A	O	N/A	ET/18MO	N/A	(1)	Service Water Flowpath
HV-4394	M1-0234 (F-1) M2-0234 (F-1)	LOW	10	3	B	A	O	N/A	ET/18MO	N/A	(1)	Service Water Flowpath
HV-4395	M1-0234 (G-6) M2-0234 (G-6)	LOW	10	3	B	A	O	N/A	ET/18MO	N/A	(1)	AFW Pump Emergency Supply Flowpath
HV-4396	M1-0234 (G-1) M2-0234 (G-1)	LOW	10	3	B	A	O	N/A	ET/18MO	N/A	(1)	AFW Pump Emergency Supply Flowpath

TABLE 19 - MOTOR OPERATED VALVES

Valve Number	Flow Diagram (Coord.)	Risk Ranking	Size	Code Class	Cate-gory	Func-tion	Safety Func. Pos.	Test Parameters/Schedule: LeakTest/ PIT	Test Parameters/Schedule: Exercise Test	Test Parameters/Schedule: Fail Safe Test	Test Parameters/Schedule: Diagnostic Testing	Remarks
CONTAINMENT ISOLATION Gate Valve / Motor Operated Borg-Warner with Limitorque Actuator												
HV-4075B	M1-0225-5 (B-3) M2-0225-5 (B-3)	LOW	4	2	A	A	C	LTJ/TS	ET/18MO	N/A	(1)	Containment Isolation
HV-4075C	M1-0225-5 (D-3) M2-0225-5 (D-3)	LOW	4	2	A	A	C	LTJ/TS	ET/18MO	N/A	(1)	Containment Isolation
CONTAINMENT ISOLATION Butterfly Valve / Motor Operated Posi-Seal with Limitorque Actuator												
HV-5540	M1-0301 (C-2) M2-0301 (B-2)	LOW	12	2	A	P	C	LTJ/TS	N/A	N/A	N/A	Containment Isolation
HV-5541	M1-0301 (D-2) M2-0301 (C-2)	LOW	12	2	A	P	C	LTJ/TS	N/A	N/A	N/A	Containment Isolation
HV-5542	M1-0301 (C-4) M2-0301 (B-4)	LOW	12	2	A	P	C	LTJ/TS	N/A	N/A	N/A	Containment Isolation
HV-5543	M1-0301 (D-4) M2-0301 (C-4)	LOW	12	2	A	P	C	LTJ/TS	N/A	N/A	N/A	Containment Isolation

TABLE 19 - MOTOR OPERATED VALVES

Valve Number	Flow Diagram (Coord.)	Risk Ranking	Size	Code Class	Cate-gory	Func-tion	Safety Func. Pos.	Test Parameters/Schedule				Remarks
								LeakTest/ PIT	Exercise Test	Fail Safe Test	Diagnostic Testing	
HV-5562	M1-0301 (D-2) M2-0301 (C-2)	LOW	12	2	A	P	C	LTJ/TS	N/A	N/A	N/A	Containment Isolation
HV-5563	M1-0301 (D-4) M2-0301 (C-4)	LOW	12	2	A	P	C	LTJ/TS	N/A	N/A	N/A	Containment Isolation

TABLE 19 - MOTOR OPERATED VALVES

NOTES

1. The test frequency for each MOV shall be determined from the chart (see Relief Request V-1 for more details):

Initial Inservice Test Frequency
MARGIN

RISK	Low	Medium	High
High	1 cycle	2 cycles	3 cycles
Low	2 cycles	4 cycles	6 cycles*

* Not to exceed 10 years

A. Criteria for MOV Margin Categories
   Low Margin: < 10%
   Medium Margin: ≥ 10% and < 15%
   High Margin: ≥ 15%

B. Criteria for Risk Categories
   High Risk: Risk-Informed IST Program
   Low Risk: Risk-Informed IST Program

2. This valve has a water filled loop seal and is not required to be leakrate tested (see DBD-ME-013, Rev. 22, Attachment 1, Note 3).

3. The test frequency requirements of Technical Specification SR 3.4.14.1 apply for leak testing of 8701A, 8701B, 8702A, 8702B, which are more restrictive than the test frequency requirements of ASME OM Code 2004 Edition, through 2006 Addenda, Subsection ISTC-3630.

4. For valves 8109, 8808A, 8808B, 8808C and 8808D, position indication testing (PIT) will be performed every two years. These valves have a low safety significance and a six year test frequency requirement; however, a two year test frequency is established to avoid scheduling staggered tests.

5. MOV HV-8402A is a passive valve with open safety function for boration flowpath. The design function of HV-8402A is to isolate and bypass HCV-0182 during maintenance and in case of a fire to ensure that the normal charging path is isolated. Since the function to close during a fire is important to safety, HV-8402A will be exercise tested open and closed.

APPENDIX A RELIEF REQUESTS FOR PUMPS AND VALVES

The following pages contain requests for relief from certain Code test requirements which are identified in the Pump and Valve Testing Plans' tables. The Relief Requests address instances where an alternative to the Code requirements is proposed or where it has been determined that compliance with certain Code requirements is impractical or presents a hardship or unusual difficulty without a compensating increase in the level of plant quality and safety. Relief Requests associated with the Inservice Pump Testing Plan have numbers prefixed with "P". Relief Requests associated with the Inservice Valve Testing Plan have numbers prefixed with "V". Administrative Relief Requests have numbers prefixed with "A". The guidance presented in References 1.5.2, 1.5.8 and 1.5.9 was used to the greatest extent possible in formatting the Relief Requests in this appendix.

NRC staff approval pursuant to 10CFR50.55a(a)(3) or (f)(5) is required prior to implementation of a Relief Request. The approval status of each Relief Request in this appendix is indicated individually as part of the Relief Request.

RELIEF REQUEST NO.	A-1
SYSTEM	See Tables 0 through 19.
CODE CLASS	See Tables 0 through 19.
CATEGORY	See Tables 0 through 19.
COMPONENT NO. & COMPONENT DESCRIPTION	See Tables 0 through 19. This change affects all current components in the CPNPP Inservice Testing (IST) Plan, and also adds some new components to the RI-IST Plan.
DESCRIPTION	Risked Informed - Inservice Testing, Alternative from 10CFR50.55a(f)(4)(i) and (ii) for Inservice Testing Frequency: This alternative utilizes a risk-based approach to change the test frequencies of certain low safety significant components (LSSCs) in the ASME OM Code pump and valve inservice testing (IST) Program. The extended frequencies are greater than those currently allowed by the ASME OM Code. The process used to identify candidates for frequency extension is discussed under "Proposed Alternative" and "Basis for Alternative."
CURRENT TEST REQUIREMENTS	Test frequencies of 2 years or less, the specified frequency for each inservice test is met if the test is performed within 1.25 times the interval specified in frequency. For test frequencies greater than 2 years, the specified frequency for each inservice test is met if the test is performed with the interval specified in frequency (1.25 times interval does not apply). Regulation 10 CFR 50, Section 50.55a(f)(4)(i) states; Inservice tests to verify operation readiness of pumps and valves, whose function is required for safety, conducted during the initial 120-month interval must comply with the requirements in the latest edition and addenda of the Code incorporated by reference in paragraph (b) of this section on the date 12 months prior to the date of issuance of the operating license subject to the limitations and modifications listed in paragraph (b) of this section. Regulation 10 CFR 50, Section 50.55a(f)(4)(ii) states; Inservice tests to verify operation readiness of pumps and valves, whose function is required for safety, conducted during successive 120-month interval must comply with the requirements in the latest edition and addenda of the Code incorporated by reference in paragraph (b) of this section 12 months prior to the start of the 120-

month interval, subject to the limitations and modifications listed in paragraph (b) of this section.

The ASME Code of record for CPNPP is the ASME OM Code 2004 Edition through 2006 Addenda. The Code specifies the following test frequencies:

Test Type	Test Frequency (nominal)	Code Reference
Pump Test	3 months	OM ISTB
Valve Position Indication Verification	2 years	OM ISTC
Valve Exercising Test	3 months	OM ISTC
Valve Fail-Safe Test	3 months	OM ISTC
Valve Leak Rate Test	2 years (Non-Containment Isolation Valves) Frequency per Appendix J (Containment Isolation Valves)	OM ISTC 10CFR50 App. J
Check Valve Exercise Test	3 months	OM ISTC
Safety/Relief Valve Setpoint Test	5 years (class 1, class 2 MSSV) 10 years (class 2, 3)	OM Appendix I OM Appendix I

PROPOSED ALTERNATIVE

In lieu of performing inservice tests on pumps and valves whose function is required for safety at frequencies specified in the ASME Code, as required by 10 CFR 50.55a(f)(4)(i) during the 120-month operating interval, this alternative would allow the inservice test frequencies of those pumps and valves to be determined in accordance with an NRC approved Risk-Informed IST Program Description at CPNPP as follows:

(1) The safety significance of pumps and valves whose function is required for safety will be assessed in accordance with the NRC approved Risk-Informed IST Program Description. These components will be classified as either High Safety Significant

Components (HSSCs) or Low Safety Significant Components (LSSCs). The inservice testing of those components classified as LSSC will be performed at extended test frequencies determined in accordance with the Risk-Informed IST Program Description. The inservice test methods for all pumps and valves whose function is important to safety will continue to be performed in accordance with the ASME Code.

(2) The safety significance assessment of pumps and valves will be updated, as specified in the Risk-Informed IST Program Description.

This alternative will also apply to 10CFR50.55a(f)(4)(ii) for successive 120-month IST intervals.

See Attachment 1 for the Risk-Informed Inservice Testing Program Description.

BASIS FOR ALTERNATIVE

Section 50.55a(a)(3) of 10 CFR states in part:

Proposed alternatives to the requirements of paragraphs (c), (d), (e), (f), (g), and (h) of this section or portions thereof may be used when authorized by the Director of the Office of Nuclear Reactor Regulation. The applicant shall demonstrate that: (i) The proposed alternatives would provide an acceptable level of quality and safety.

TU Electric requests NRC approval to implement the Risk-Informed Inservice Testing Program Description as an alternative to the requirements of 10 CFR 50.55a(f)(4)(i) and (ii). These regulations require that inservice tests on pumps and valves, whose function is required for safety, must comply with a specified ASME Code. Specifically, TU Electric requests approval to utilize a risk-informed inservice testing program to determine inservice test frequencies for valves and pumps that are identified as low safety significant, in lieu of testing those components at the frequencies specified in the ASME Code. The use of the Risk-Informed Inservice Testing Program Description will provide an acceptable level of quality and safety.

The current Code is based on a deterministic approach which considers a set of challenges to safety and determines how those challenges should be mitigated. The deterministic approach contains elements of probability, such as the selection of accidents to be analyzed as design basis accidents (e.g., the reactor vessel rupture is considered too improbable to be included) and the requirements for emergency core cooling (e.g., safety train redundancy).

The Risk-Informed IST Program that would be implemented with this alternative incorporates a probabilistic approach to regulation which enhances and extends this traditional, deterministic approach, by:

(1) allowing consideration of a broader set of potential challenges to safety,

(2) providing a logical means for prioritizing these challenges based on risk significance, and

(3) allowing consideration of a broader set of resources to defend against these challenges.

First, the PRA model has identified a broader set of challenges to safety. The Risk-Informed Inservice Testing Program identified High Safety Significant Components (HSSCs) which were not in the previous ASME IST Program. Even though the components are outside the ASME Code class boundary, they will be tested commensurate with their safety significance. Where the ASME OM Code testing is practical, HSSCs not in the current ASME IST Program Plan will be tested in accordance with Appendix I for safety relief valves, Subsection ISTC for active valves and Subsection ISTB for pumps. Where ASME OM Code testing is not practical, alternative methods will be developed to ensure operational readiness.

Components in the current ASME IST Program which are determined to be HSSCs will continue to be tested in accordance with the current Program, which meets the requirements of the ASME OM Code, except where specific written relief has been granted. Components in the current ASME IST Program which are determined to be LSSC will also be tested in accordance with the ASME IST Program, except that the test frequency will initially be extended to once every 6 years. The extended test frequency will be staggered over 6 years as described in Attachment 1. No LSSC will be deleted from the ASME IST Program.

Second, the Risk-Informed Inservice Testing Program prioritizes these challenges based on the results of the CPNPP PRA. The risk rankings are then complemented with rankings based on consideration of other accident initiators (e.g. fires, tornadoes, and earthquakes) and plant operating modes. These rankings considered importance with respect to core damage prevention, and prevention of large early releases of radiation to the public. Attachment 1 (pages 5 through 20 of Enclosure 1 to TXX-98086) describes the program methodology. Enclosure 3 to TXX-96371 (TU Electric letter dated June 3, 1996, from C. L. Terry to the NRC) provides the current list of LSSCs from the initial implementation of that methodology.

Third, an Integrated Decision Process (IDP) allows a broader set of resources to be considered to defend against challenges to safety. The IDP is composed of experienced individuals with expertise in the areas of ASME Code, plant operations, maintenance engineering, system engineering, design engineering, and probabilistic risk assessment. The IDP is responsible to ensure the risk ranking input information is consistent with plant design, operating procedures, and with plant-specific operating experience. At the end of the IDP review process every component in the CPNPP ASME IST Program is reviewed.

The risk-informed process will assure that a defense-in-depth philosophy is maintained.

As a living process, components will be reassessed periodically to reflect changes in plant configuration, component performance, test results, industry experience, and other factors. When the list of components is affected, changes will be provided to the NRC in regular Program updates.

There could be safety enhancements obtained by focusing resources on HSSCs and reducing the testing frequency on LSSCs. Extensive testing on LSSCs could have an adverse effect on safety. Reduction of testing should reduce component wear-out, operator burden, system unavailability, cost of testing, and radiation exposure. Reduced testing could also achieve a more optimum balance between the positive impacts of testing and the negative effects of disturbing equipment from service and entering less than optimum plant configuration, such as valve misalignments.

RADIOLOGICAL CONCERNS (ALARA)	Potential radiation exposure will be diminished due to less frequent testing.

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RISK-INFORMED INSERVICE TESTING PROGRAM DESCRIPTION (RI-IST)

The proposed alternative is a risk informed process to determine the safety significance and testing strategy of components in the ASME Inservice Testing (IST) Program, and identify non-ASME IST components (pumps & valves) modeled in the Probabilistic Risk Analysis (PRA) that are determined to be High Safety Significant Components (HSSCs). The process consists of the following elements.

1) Utilization of the Probabilistic Risk Analysis (PRA) techniques to identify component importance measure values. (PRA Techniques)

2) Categorize components based on importance measures determined by the PRA techniques. (Component Risk Category)

3) Blended deterministic and probabilistic data to perform a final importance ranking of components and categorization as either Low Safety Significant Component (LSSC) or High Safety Significant Component (HSSC). (Integrated Decision Process) (IDP)

4) Develop/Determine Test Frequencies and Test Methodologies for the IST components. (Testing Philosophy)

5) Evaluate the cumulative impact of the test frequency changes on total plant risk (i.e., CDF and LERF) to ensure that the change in plant safety is within the acceptable range. (Cumulative impact)

6) Develop an implementation plan. (Implementation)

7) Develop a Corrective Action plan. (Corrective Action)

8) Perform periodic reassessments. (Periodic Reassessments)

9) Methodology for making changes to the RI-IST. (Changes to RI-IST Program after Initial NRC Approval)

1) PRA Techniques

PRA methods will be used to determine the risk significance of components based on end states of interest, such as core damage frequency (CDF) and release of radioactivity (e.g. large early release frequency (LERF)).

The PRA techniques are used in conjunction with the Integrated Decision Process (IDP) to ensure that all the available information is accounted for in developing the importance measures. As such, a review of plant equipment and operating procedures will be performed to identify potential plant specific initiating events as well as those initiating events that have been identified in the Nuclear industry. Evaluation of initiating events

will also include loss of support systems and other special initiators.

Any changes to the PRA models used for the development of importance measures for the RI-IST will be independently reviewed. The independent reviews will be by either the in-house personnel or outside consultants.

The PRA will be periodically evaluated (See Section 8) to reflect the current plant design, procedures, and programs. Also the PRA will be evaluated prior to moving components to the LSSC category.

A full scope PRA is not required. However, any limitations (e.g. missing initiating events) will be addressed by the IDP using the methodology described in Section 2 below.

The potential degradation of components will be considered in the overall assessment of risk associated with the implementation of the RI-IST. As a result, any effect on common cause failure estimations will also be evaluated. To the extent possible, plant-specific data will be utilized to assess component degradation.

Compensatory measures which are used as part of the IDP process to qualitatively justify the extension of test interval will be re-verified during the IDP process update (See Section 8).

2) Component Risk Category

Two figures of merit will be used to initially determine the risk categories of IST components. These two methods are Fussell-Vesely (FV) and Risk Achievement Worth (RAW). For the RI-IST Program, the following criteria will be used to initially rank components for review by the Integrated Decision Process (IDP).

Category	Criterion
High	FV > 0.001
Potentially High	FV < 0.001 and RAW > 2
Low	FV < 0.001 and RAW < 2

The ΔCDF and ΔLERF for the change are within the acceptance guidelines of Regulatory Guide 1.174.

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Methodology/Decision Criteria for Limited Scope PRA

The following describes the methodology used to categorize components in the RI-IST when the program is reassessed. However, only those elements that are significantly affected by the model changes (e.g., design modifications or procedural changes) need to be reviewed in detail using this process. The scope of the review and the justification for it will be documented as part of the IDP.

Apply Importance Criteria to PRA and Review

Review FV and RAW importance measures for pumps and valves considered in the PRA against the criteria and determine if the grouping of components is logical.

Review component importance measures to make sure that their bases are well understood.

Robustness/Validation of Results

- Address the sensitivity of the results to common cause failures (CCF), assuming all/none of the CCF importance is assigned to the associated component.
- Evaluate the sensitivity due to human action modeling. Identify/evaluate operator actions omitted by the PRA that can change the ranking of a component. The omitted recovery actions are those not credited because they are not important to the CDF.
- Consider industry history for particular IST components. Review such sources as NRC Generic Letters, SOERs, IOERs and Technical Bulletins and rank accordingly.
- For components with low FV/high RAW ensure that other compensatory measures are available to maintain the reliability of the component.
- Identify and evaluate components whose performance shows a history of causing entry into LCO conditions. To ensure that safety margins are maintained, consider retaining the ASME test frequency for these components.
- Ensure that truncated components have been eliminated due to redundancy of function rather than solely due to reliability. If they are truncated due to their high reliability, then those components should be qualitatively re-evaluated and re-categorized appropriately.

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Validate or change the PRA-based component ranking. If the validated PRA ranking is high, rank the component high; if the PRA ranking is low and the other factors such as the operating performance of the component validate the ranking, rank as low.

Fire, Tornado and Seismic Considerations

Consider the following for risk ranking components for external events.

- Calculate risk importance measures for components in the fire and tornado cutsets. Compare these calculated values and the PRA values to identify those components that are low risk significant for the PRA but high risk significant for fire and tornado.

- Review component importance measures and the PRA limitations for fire and tornado in a manner similar to that described for internal events discussed above and adjust the rankings of the components accordingly.

- For those components on the Safe Shutdown Equipment List (SSEL) and the containment systems list, review their risk categories to ensure that those components important to seismic and containment integrity are appropriately categorized.

Outage Risk Importance

A qualitative assessment of PRA systems modeled for shutdown modes will be performed to determine the impact of shutdown modes on IST rankings. To perform this analysis a three step process will be used. First, using existing PRA system models as the basis, components and system configurations that are unique to the shutdown modes from the at power PRA will be identified. Second, using a qualitative set of rules, components in key trains will be ranked into three categories:

1. Category 1: High safety significant components (high FV)

2. Category 2: Potentially high safety significant components (low FV, moderate to high RAW).

3. Category 3: Low safety significant components (low FV, low RAW)

Third, support systems that are unique to shutdown configurations will also be identified and ranked accordingly.

There are several safety functions important to shutdown. These are Over-Pressure Protection, Shutdown Cooling, Spent Fuel Pool Cooling, Inventory

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Control, Reactivity Control, AC Power, and Containment Integrity. Rather than analyzing each function separately, the systems required for the shutdown accident sequences will be analyzed and ranked with respect to their shutdown configurations. This will provide a comprehensive review of the shutdown systems and their unique configurations.

The risk profile for an outage changes as maintenance activities start and stop and plant states change. Therefore, the importance of components can also change during the outage, depending on the plant configuration as governed by the outage schedule. There can be times when almost any component can become more risk significant depending upon the outage scenario. If the plant is in a configuration of increased risk, and an IST component must operate to respond to an accident, that component will be more risk significant for that time period. If that period of time is extended, then the component on average will be more risk significant.

A major difference between at power and shutdown is that safety systems are in a standby mode at power and active components must start or reposition automatically for success. Since actuation failure is much more likely than failure to continue to operate, a reliability-oriented risk importance measure like Fussell-Vesely is lower for outage than at power. However, since functional importance is similar, the RAW value is likely to be the same and its FV is correspondingly lower. Also, during shutdown, automatic actuations are usually blocked and pumps and valves are actuated by manual operation only. Since the failure probability for human action may at times be more likely than automatic actuation, the contribution of equipment failure is relatively less likely. Therefore, in most cases the ranking of components at power is higher than during shutdown, although the system configuration must still be compared to determine if there are unique differences for the shutdown mode. Based upon the insights discussed above, the approach to risk ranking is as follows:

- If a component performs the same function and is in the same initial state as at power, the at power ranking is assumed to bound the outage ranking.

- If a component performs a different function or is in a different initial state than at power, then the outage ranking must be evaluated.

The latter evaluation involves cases where a different system is used, i.e., spent fuel pool cooling, or where a different function is performed by a component in a system "used" at power or during an outage. Additionally the following guidelines are used for risk ranking for shutdown.

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Category 1 - High Safety Significant Components (High FV):

- Pumps that must start to perform function (assume all pumps in systems that cycle operating trains)(High FV)
- Motor Operated Valve (MOV) or Air Operated Valve (AOV) that must change state to perform function (but not portions with redundant paths, e.g. two supply sources to one pump)(High FV)
- MOV or AOV that must change state to prevent flow diversion that can fail redundant trains (high FV, extremely high RAW)
- Pressure relief valves (safety or power operated) needed to control pressure so that redundant trains of systems can perform function (high FV or low FV, high RAW)

Category 2 - Potentially High Safety Significant Components (low FV & moderate to high RAW):

- Pumps that must continue running (low FV, moderate RAW)
- Valves in single path portions of redundant systems that are not required to change state (RHR outlet valves)(usually low FV, moderate or high RAW)
- Check valve plus MOV or AOV that must remain as is if they are in the trains only flow path (low FV, moderate RAW)
- Check valves for which reverse flow can fail redundant trains simultaneously (low FV, extremely high RAW)
- MOV or AOV which if they change state can cause flow diversion that can fail redundant trains (low FV, extremely high RAW)
- Control components that need to function to prevent system degradation (e.g. AFW flow control valves to the Steam Generators that can fail the Turbine Driven AFW pump)(low FV, moderate RAW)

Category 3 - Low Safety Significant Components (low FV & low RAW):

- All other Components that do not fall into category 1 or 2 were ranked low.

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These rules will be applied to the systems that support the safety functions described herein.

Back-end Risk Importance

It is equally important to identify those pumps and valves that prevent containment failure or bypass that could result in an unacceptable release. Examples might include the valves that provide the boundary between the reactor coolant system and low-pressure systems located outside containment. Various analyses have shown that large releases, though infrequent and of low probability, tend to dominate offsite consequences. Therefore, those IST components identified by back-end analyses will be ranked according to their importance to large early release frequency only.

Containment isolation failures or containment bypass events can, in some accident scenarios, cause a large, early release. The associated valves represent a substantial fraction of components treated by the IST program. However, their importance varies significantly depending on their initial position, their size, the leak path they are in, etc. These factors will be evaluated with a simple model consistent with the PRA back-end analysis. Risk importance of containment functions will be measured by developing quantitative importance measures for accidents contributing to large, early releases.

The large, early releases are more likely to result from accidents with the following attributes:

- A failure in containment exists at the time of the accident, either because the containment fails to isolate or it is bypassed, or

- A high-pressure core meltdown occurs with containment heat removal (sprays) unavailable at the time of core melting.

One cause of a large, early release is a steam generator tube rupture, with immediate failure of core cooling, and failure of the main steam system to isolate. A large but not early release can also occur if the same scenario occurs except that core cooling fails late in the accident rather than immediately. This latter scenario is the most likely source of a large release. However, because adequate time would be available to implement emergency response measures, this source of a large release will not be considered in the importance measure calculation. Instead, the most important sources of main steam isolation failure are considered potentially important and will be reviewed by the IDP to determine if the associated valves should be categorized as high.

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IST Components Not in PRA

Review components not explicitly modeled in the PRA to ensure an IST component is, in fact, low risk.

High-Risk PRA Components Not in the IST Program

Identify other high risk pumps and valves that are not in the IST program but should be tested commensurate with their risk importance.

- Evaluate the PRA modeling assumptions, component failure modes, operator actions, recoveries and any other effects that could substantiate the components risk category as "high risk" even if they are not in the IST Program.

- Determine whether current plant testing is commensurate with the importance of these valves. If not, determine what test, e.g., the IST test, would be the most appropriate.

Other Considerations

Perform sensitivity studies, as needed, to evaluate the cumulative impact of changes in the IST Program test strategies on the total Core Damage Frequency (CDF).

3) Integrated Decision Process

The purpose of utilizing the Integrated Decision Process (IDP) is to confirm or adjust the initial risk ranking developed from the PRA results, and to provide qualitative assessment based on engineering judgement and experience. This qualitative assessment compensates for limitations of the PRA, including cases where adequate quantitative data is not available.

The IDP utilizes deterministic insights, engineering judgement, experience and regulatory requirements as described above in Section 2. The IDP will review the initial PRA risk ranking, evaluate applicable deterministic information, and determine the final safety significance categories. The IDP considerations will be documented for each individual component to allow for future repeatability and scrutiny of the categorization process.

The scope of the IDP includes both categorization and application. The IDP is to provide deterministic insights that might influence categorization. The IDP will identify components whose performance justifies a higher categorization.

The IDP will determine appropriate changes to testing strategies. The IDP will identify compensatory measures for potentially high components or justify the final

categorization. The IDP will also concur on the test interval for components categorized as low.

The end product of the IDP will be components categorized as Low Safety Significant Component (LSSC) or High Safety Significant Component (HSSC).

In making these determinations, the IDP will ensure that key safety principles, namely defense-in-depth and safety margins, are maintained and that the changes in risk for both CDF and LERF are acceptable per the guidelines discussed in Section 2 above. The key safety principles are described below.

Defense in Depth

To ensure that defense-in-depth is maintained by the CPNPP RI-IST program, adherence to four basic principles will be reviewed and documented as part of the IDP for any future changes to the program. The following describes these four basic principles:

1. No changes to the plant design or operation's procedures will be made as part of the RI-IST program which either significantly reduce defense-in-depth or place strong reliance on any particular plant feature, human action, or programmatic activity.

2. The results and dominant contributors to core damage risk will be reviewed to ensure that the categorization of components using PRA is done on an evenhanded basis covering the full scope of safety functions. A review will be done to ensure that components which mitigate the spectrum of accidents are not ranked low solely because of initiating event frequency. Further, sensitivity studies will be performed for human actions to ensure that components which mitigate the spectrum of accidents are not ranked low solely because of the reliability of a human action.

3. The methodology for component categorization, namely the selection of importance measures and how they are applied and understanding the basic reasons why components are categorized HSSC or LSSC, will be reviewed to ensure that redundancy and diversity are preserved as the more important principles. If a component is categorized as LSSC solely due to its high reliability, then it must be confirmed that: 1) plant performance has been good and 2) a compensatory measure or feedback mechanism is available to ensure adverse trends in equipment performance can be detected in a timely manner. A review will be done to ensure that relaxation in the RI-IST program occurs only when the level of redundancy or diversity in the plant design or operation supports it. In this regard, all components that have significant contributions to common cause failure will be reviewed to avoid relaxation of requirements on those components with the lowest level of diversity within the system.

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4. The use of multiple risk metrics, including core damage frequency (CDF) and large early release frequency (LERF), with additional checks for large but late releases and consequence mitigation, will be done to ensure a reasonable balance between risk reduction methods.

Other Considerations Related To Defense-In-Depth

When the PRA does not explicitly model a component, function or mode of operation, a qualitative method may be used to classify the component HSSC or LSSC and to determine whether a compensatory measure is required.

Sufficient Safety Margin is Maintained

The IDP will perform reviews to ensure that sufficient safety margin is maintained when compared to the existing IST program. In performing this review, the IDP will consider such things as proposed changes to test intervals and, where appropriate, test methods. The IDP will ensure that the proposed compensatory measures are effective fault finding tasks, where this is required in the program, to assure safety margin is maintained. To enhance the safety margin, the IDP will also review PRA-important components not in the current IST program for potential inclusion in the RI-IST program.

Categorization Guidelines

Modeled Components/Functions

For modeled components/functions with a FV >0.001 the IDP either confirms the component categorization is HSSC or justification of conservatism in the PRA model will be developed.

For modeled components/functions with a FV <0.001, but a RAW >2.0, the component will be categorized LSSC provided a compensatory measure exists that ensures operational readiness and the components' performance has been acceptable. If a compensatory measure is not available or the component has a history of performance problems, the component will be ranked HSSC.

For modeled components/functions with a FV <0.001 and a RAW <2.0, the component will be categorized as LSSC provided the components' performance has been acceptable. For those components with performance problems, a compensatory measure will be identified to ensure operational readiness or the component will be categorized as HSSC.

Non-Modeled Components/Functions

For components not modeled or the safety function not modeled in the PRA, the categorization is as follows:

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If the sister train is modeled then the component takes that final categorization.

If the component is implicitly modeled, the FV and RAW are estimated and the deliberation is as discussed for modeled components/functions.

If the component is not implicitly modeled, the system ranking associated with the Maintenance Rule will be confirmed. For confirmed system ranking, the component performance history will be reviewed. For acceptable performance history the component will be categorized as LSSC. For poor performance history, a compensatory measure will be identified to ensure operational readiness and the component categorized as LSSC, or if no compensatory measures are available, categorize the component as HSSC.

Documentation

Documentation of the IDP will be available for review at the plant site.

4) Testing Philosophy

Motor Operated Valves (MOVs)

HSSC Testing will be performed in accordance with Code Case OMN-1 (except the maximum diagnostic test interval will be 6 years), and NRC Generic Letter 89-10 and 96-05 commitments.

LSSC Testing will be performed in accordance with Code Case OMN-1 (except the maximum diagnostic test interval will be 10 years), and NRC Generic Letter 89-10 and 96-05 commitments.

Performance Monitoring (applicable to HSSC and LSSC):

- termination inspection
- stem threads re-lubed
- actuator gear box grease inspection
- T-drain inspection
- limit switch gear box grease inspection
- visual inspection of housings
- stem nut staked and secure

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Relief Valves

HSSC & LSSC — Testing will be performed in accordance with Code of Record as defined in 10CFR50.55a.

Performance Monitoring (applicable to HSSC and LSSC):

- test results trended
- new valves tested prior to installation
- valves set as close to nominal as practical

Check Valve Testing Strategy

HSSC — Testing will be performed in accordance with the ASME Code of Record as defined by 10CFR50.55a.

Certain HSSC check valves will also be tested in accordance with the Check Valve Reliability Program (CVRP). This program was developed in response to INPO SOER 86-03. Testing for the CVRP includes nonintrusive testing (e.g. acoustic monitoring) and where conditions direct, valve disassembly. The enhanced nonintrusive testing provides for condition monitoring by comparing data from current testing to a known baseline where the valve was operating in a satisfactory manner

LSSC — Testing will be performed in accordance with the ASME Code of Record as defined by 10CFR50.55a except at a test frequency not to exceed 6 years.

Test frequencies of 2 years or less, the specified frequency for each inservice test is met if the test is performed within 1.25 times the interval specified in frequency. For staggered test frequencies greater than 2 years (typically 3 to 6 years), the specified frequency for each inservice test is met if the test is performed within 1.25 times the 18 month interval, but not to be deferred past the next refueling outage.

Certain LSSC check valves will be tested in accordance with the CVRP as necessary.

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Check valves included in the CVRP are those which have been evaluated to be susceptible to wear, fatigue, or corrosion.

Performance Monitoring (applicable to HSSC and LSSC):

- acoustic monitoring data when taken is trended
- check valve disassembly inspections where necessary

Air Operated Valves (AOVs)

HSSC Testing will be performed in accordance with the Code of Record as defined by 10CFR50.55a.

LSSC Testing will be performed in accordance with the Code of Record as defined by 10CFR50.55a except with a test frequency not to exceed 6 years. Additionally LSSC AOVs will be stroked at least once during the operating cycle.

Test frequencies of 2 years or less, the specified frequency for each inservice test is met if the test is performed within 1.25 times the interval specified in frequency. For staggered test frequencies greater than 2 years (typically 3 to 6 years), the specified frequency for each inservice test is met if the test is performed within 1.25 times the 18 month interval, but not to be deferred past the next refueling outage.

Performance Monitoring (applicable to HSSC and LSSC):

- diagnostic testing
- elastomer replacement
- response time testing

Note: Luminant Power is participating in a tailored collaboration project with EPRI to develop an AOV program similar to the MOV Program mandated by GL 89-10 and 96-05. This program will evaluate the valve/operator characteristics/capabilities and the design conditions under which the valve is expected to operate. Once this information is developed the valves will be tested and modified as necessary to meet their safety function. AOV's which are being evaluated by the EPRI Tailored Collaboration are:

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1) an HSSC AOV from each grouping (i.e. same manufacturer, size)

2) an LSSC AOV from other groups not included from (1) above.

Pumps

HSSC Testing will be performed in accordance with the Code of Record as defined by 10CFR50.55a.

LSSC Testing will be performed in accordance with the Code of Record as defined by 10CFR50.55a except with a test frequency not to exceed 6 years.

Test frequencies of 2 years or less, the specified frequency for each inservice test is met if the test is performed within 1.25 times the interval specified in frequency. For staggered test frequencies greater than 2 years (typically 3 to 6 years), the specified frequency for each inservice test is met if the test is performed within 1.25 times the 18 month interval, but not to be deferred past the next refueling outage.

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Performance Monitoring (applicable to HSSC and LSSC):

- thermography of the drivers
- lube oil analysis
- alignment checks
- motor current testing
- vibration monitoring
- flange loading checks of connected piping

5) Cumulative Impact

Evaluate the cumulative impact of the test frequency changes on total plant risk (i.e., CDF and LERF) to ensure that the change in plant safety is within the acceptable range.

This will be done by performing various sensitivity studies to determine the potential risk impact of increasing in-service testing intervals simultaneously on all low risk significant components.

The unavailabilities of the IST components in the low-risk category will be increased by a factor equivalent to the proposed increase in the component test interval. For each sensitivity case, the PRA cutset results will be requantified using the adjusted component unavailabilities due to the proposed test intervals. The new total CDF and LERF for each case will be obtained. These new values will, then, be compared with the CDF and LERF of the base case to assess the net change in total plant risk due to proposed IST test frequencies.

In addition, component risk importances will be re-evaluated for the following groups of IST components to identify any components that may move up from low safety significant components to high safety significant components:

Group 1:	Low FV, high RAW with credit taken for compensatory measures identified by the IDP (i.e., other surveillance tests on the same piece of equipment).
Group 2:	Low FV, low RAW with no credit taken for compensatory measures because this category implies that increases in component unavailabilities are not expected to impact risk significantly.

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Due to uncertainty in how test interval changes will actually affect the component unavailabilities, a number of conservative assumptions are made as summarized below:

- It is assumed that any increase in test intervals would simultaneously impact the reliability of all IST components in the low safety-significant component (LSSC) category.

- Consistent with the PRA techniques, the component unavailability required to change state, is assumed to be:

$$Q = \lambda_{OD} + \lambda(T/2)$$

Q = total component unavailability

Where λ_{OD} = Component unavailability on demand

λ = Component failure rate per hour

T = Interval between tests that verify operability of the component

- The component unavailability is assumed to increase by the same factor as the increase in the test interval. For example, a change in the test interval from quarterly to semi-annually is assumed to increase the total component unavailability by a factor of two. This is a very conservative assumption because it assumes that not only the $\lambda(T/2)$ term would be increased by a factor of two, but also the failure on demand term (λ_{OD}) term is assumed to be directly impacted by the change in the test interval.

- Decrease in wear out due to less frequent testing is assumed to be negligible although frequent testing has been seen to cause components to be less available due to wearout.

- It is conservatively assumed that all IST tests are fully effective in finding the causes of component unavailabilities.

The PRA models will be updated to reflect the changes to the test frequency of modeled components, and the PRA study will be re-evaluated to quantify the aggregate impact of the changes. The cumulative impact of the test frequency changes will be reviewed through the IDP.

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6) Implementation

Implementation of the RI-IST to LSSC will consist of grouping components and then staggering the testing of the group over the test frequency.

Grouping:

Components will be grouped based on:

- manufacturer
- model
- service condition
- size

The population of the group will be dependent on:

- total population available
- maintaining current testing schedule

Grouping components in this manner and testing on a staggered basis over the test frequency will reduce the importance of common cause failure modes as components in the same staggering failure mode group are continually being tested. This ensures that the component capability will be maintained over the test interval (i.e., 6 years).

Testing of components within the defined group will be staggered over the test interval, typically 6 years. Testing will be scheduled on regular intervals over the 6 year period to ensure all components in the group are tested at least once during the 6 year test interval and not all components are tested at one time. The staggering allows the trending of components in the group to ensure the test frequency selected is appropriate.

Testing will be scheduled/planned such that there is no more than one cycle between tests of components in a group.

7) Corrective Action

When a component on the extended test interval fails to meet established test criteria, corrective actions will be taken in accordance with the CPNPP corrective action program as described below for the RI-IST.

For components not meeting the acceptance criteria, a Smart Form will be generated. This document initiates the corrective action process. Also, the initiating event for a

ATTACHMENT TO R/R A-1

Smart Form may be from causes other than an unacceptable IST test. Programs exist that provide timely information to the IST Engineer that the performance of a reliable component has degraded. For example, a common compensatory action for pump discharge check valves would be the IST pump test. Since this test can not be considered satisfactory if the check valve fails to perform its risk significant function, a test failure would be recorded and a Smart Form initiated. The recorded information could then be used to assess whether a significant change in component reliability has occurred such that the component would merit a change in test interval.

The initiating event could be any other indication that the component is in a non-conforming condition. The unsatisfactory condition will be evaluated to:

a) Determine the impact on system operability and take appropriate action.

b) Review the previous test data for the component and all components in the group.

c) Perform a root cause analysis.

d) Determine if this is a generic failure. If it is a generic failure whose implications affect a group of components, initiate corrective action for all components in the affected group.

e) Initiate corrective action for failed IST components.

f) Evaluate the adequacy of the test strategy. If a change is required, review the IST test schedule and change as appropriate.

The results of component testing will be provided to the PRA group for input to PRA model evaluation. (See Section 8)

For an emergent plant modification, any new IST component added will initially be included at the current Code of Record test frequency. Only after evaluation of the component through the RI-IST Program (i.e., PRA model evaluation if applicable and IDP review) will this be considered LSSC.

8) Periodic Reassessment

As a living process, components will be reassessed at a frequency not to exceed every other refueling outage (based on Unit 1 refueling outages) to reflect changes in plant configuration, component performance test results, industry experience, and other inputs to the process. The RI-IST reassessment will be completed within 9 months of completion of the outage.

Part of this periodic reassessment will be a feedback loop of information to the PRA. This will include information such as components tested since last reassessment, number and

type of tests, number of failures, corrective actions taken including generic implication and changed test frequencies. Once the PRA has been reassessed, the information will be brought back to the IDP for deliberation and confirmation of the existing lists of HSSCs and LCCSs or modification of these lists based on the new data. As part of the IDP, confirmatory measures previously utilized to categorize components as LSSC will be validated. Additionally, the maximum test interval will be verified or modified as dictated by the IDP.

9) Changes to RI-IST after Initial NRC Approval

Changes to the process described above and to the evaluation of risk impact will require prior NRC approval. Changes to the categorization of components and associated testing strategies using the above process will not require prior NRC approval. As changes to component categorization are made, TU Electric will periodically submit them to the NRC for their information.

NRC APPROVAL STATUS	Approved. Reference safety evaluation dated August 14, 1998 for Units 1 & 2.

RELIEF REQUEST NO. P-1

SYSTEM	Vents & Drains	
PUMP NUMBER	CP1-WPAPSS-01	CP2-WPAPSS-01
	CP1-WPAPSS-02	CP2-WPAPSS-02
	CP1-WPAPSS-03	CP2-WPAPSS-03
	CP1-WPAPSS-04	CP2-WPAPSS-04
CLASS	3	
DESCRIPTION	Safeguards Building Floor Drain Sump	
TEST REQUIREMENT	ASME OM Code:	
	ISTB-3540 (b), "Vibration"	
	ISTB-5200 (a) (1), "Duration of Tests"	
	ISTB-5221, "Group A Test Procedure"	
	ISTB-5223, "Comprehensive Test Procedure"	
REFERENCES	1. Generic Letter 89-04, "Guidance for Developing AcceptableInservice Testing Programs"	
	2. NUREG-1482, Revision 1, "Guidelines for Inservice Testing atNuclear Power Plants"	

BASIS FOR RELIEF

The Safeguards Building Sump Pumps are required to detect and mitigate passive failures in the Emergency Core Cooling System (ECCS) and Containment Spray (CT) System post-LOCA and to prevent flooding of the safety-related systems.

There is no recirculation line from the discharge header of the pumps back to the sumps. There are no installed pressure instruments on the pump suction or discharge. Without a recirculation line on each pump discharge, the only method to meet the Group A Test procedure requirement is to set a reference flow of 0 gpm, dead-head the pump, calculate the differential pressure and record vibration. Differential pressure is determined by making elevation corrections to the discharge pressure reading taken from an installed test gage at a vent connection. This vent connection is remotely located in a different

room on a different floor elevation than the sump pumps. An elevation difference is also measured on the suction side between the sump cover and the sump water surface. This procedure takes a minimum of four test personnel to conduct the test in this manner. This test has proven to be very difficult and operating experience and equipment history show that testing the pump in a dead-head condition can cause equipment reliability concerns.

CPNPP Inservice Testing Program is an approved Risk-Informed Inservice Testing (RI-IST) Program as described in the Safety Evaluation Report (TAC NOS. M94165, M94166, MA1972, and MA1973). The basis of the RI-IST Program is that there could be safety enhancements obtained by focusing resources on High Safety Significant Components (HSSCs). Extensive testing on Low Safety Significant Components (LSSCs) could have an adverse effect on safety. Reduction of testing should reduce component wear, operator burden, system unavailability, cost of testing, and radiation exposure. Reduced testing could also achieve a more optimum balance between the positive impacts of testing and the negative effects of disturbing equipment from service and entering a less than optimum plant configuration, such as valve misalignments. The CPNPP Safeguards Building Sump Pumps (SBSPs) have a low risk ranking and are tested every six years on a staggered test basis, such that at least two pumps are tested every 18 months.

To meet the operational readiness requirements for these pumps, a test should require that the pump starts on the proper level switch actuation, determine that the pump is capable of delivering a minimum of 50 gpm to the Waste Holdup Tank (WHT), and that velocity-based vibration readings are satisfactory. Differential pressure measurement is not needed to show adequate pump performance. Differential pressure measurement may result in additional radiation exposure to personnel (ALARA) and potential equipment damage due to dead-heading the pump. Pumping 50 gpm or more to the WHT demonstrates that an adequate head was developed to overcome system resistance and greater confidence exists that the ASME OM Code requirements for operational readiness have been met.

These pumps alert the operator of potential leakage in the safeguards building and mitigate the consequences of the leakage. To meet the testing requirements of ASME OM Code, Subsection ISTB, the pumps must be dead-headed for extended periods.

SUBSTITUTE TEST

The pumps shall be tested in accordance with ISTB-5221 (Group A pump test) and ISTB-5223 (Comprehensive pump test) for measuring flow and vibration. The sump will be filled to a predetermined level and the pump will operate until the rapidly (approximately 50 seconds) by

	automatic low-level cutoff switch actuates. The sump will be pumped down rapidly (approximately 50 seconds). Suction pressure will vary as sump level changes; therefore, the 2 minute stabilization time and differential pressure measurement are not achievable. The test will require pumping the same quantity of fluid along a repeatable system path while measuring flow and vibration. A baseline reference value shall be established for flow and vibration. Alert and Required Action Limits for vibration will be established and maintained as per Table ISTB-5221-1 for vertical line shaft centrifugal pumps. Vibration will be measured in a single direction due to the short pump run and the ability to acquire a single vibration reading during this time period. The acceptance criteria for flow will be greater than the design flow of 50 gpm. The flowrate delivered will be trended for detecting pump degradation to ensure the SBSPs have adequate design margin.
NRC APPROVAL STATUS	Approved for the third ten year IST program interval; reference safety evaluation dated June 26, 2013 for Units 1 & 2, TAC NOS. ME9259 and ME9260 [ML13050A183].

RELIEF REQUEST NO. T-1

SYSTEM	See Tables 0 through 19
CODE CLASS	See Tables 0 through 19
CATEGORY	See Tables 0 through 19
COMPONENT NO. & COMPONENT DESCRIPTION	See Tables 0 through 19, this change affects all current components in the CPNPP Inservice Testing (IST) Plan.
BASIS FOR RELIEF	ASME OM Code Section 1ST 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, Guidelines for Inservice Testing at Nuclear Power Plants, Revision 2 [dated October 2013 (ADAMS Accession No. ML13295A020)]) and owners routinely applied the surveillance extension time period (i.e., grace period) contained in the plant Technical Specifications (TSs) Surveillance Requirements (SRs). The TSs 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 (TS SR 3.0.2). However, Regulatory Issue Summary 2012-10, NRC Staff Position on Applying Surveillance Requirements (SRs) 3.0.2 and 3.0.3 to Administrative Controls Program Tests, [dated August 23, 2012 (ADAMS Accession No. ML12079A393),] states that SR 3.0.2 and 3.0.3 cannot be applied to TS 5.5, Programs and Manuals, for tests that are not associated with a TS SR. TS SR 3.0.2 is equivalent to SR 3.0.2 contained in NUREG-1431, Standard Technical Specifications, Westinghouse Plants, [Revision 4 (ADAMS Accession No. ML12100A222)] The lack of a tolerance band 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 Limiting Condition for Operation (LCO) is within its applicability. The NRC recognized this potential issue in the TSs by allowing a frequency tolerance as described in TS SR 3.0.2. The lack of a similar tolerance applied to the [ASME] 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 [ASME] 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.

TEST REQUIREMENT

ISTA-3120, "Inservice Test Interval," (a) states, "The frequency for inservice testing shall be in accordance with the requirements of Section IST."

ISTB-3400, "Frequency of Inservice Tests," states, "An inservice test shall be run on each pump as specified in Table ISTB-3400-1."

ISTC-3510, "Exercising Test Frequency," states, "Active Category A, Category B, and Category C check valves shall be exercised nominally every 3 months, except as provided by ISTC-3520, ISTC-3540, ISTC-3550, ISTC-3570, ISTC-5221, and ISTC-5222. Power-operated valves shall be exercise tested once per fuel cycle."

ISTC-3540, "Manual Valves," states, "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. Any increased testing frequency shall be specified by the Owner. The valve shall exhibit the required change of obturator position."

ISTC-3630, "Leakage Rate for Other Than Containment Isolation Valves," (a) "Frequency," states, "Tests shall be conducted at least once every 2 years."

ISTC-3700, "Position Verification Testing," states, in part, "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, "Valve Obturator Movement," (c)(3), states, "At least one valve from each group shall be disassembled and examined at each refueling outage; all valves in each group shall be disassembled and examined at least once every 8 years."

Mandatory Appendix I, "Inservice Testing of Pressure Relief Devices in Light-Water Reactor Nuclear Power Plants," 1-1320, "Test Frequencies, Class 1 Pressure Relief Valves," (a), "5-Year Test Interval," states, in part, "Class 1 pressure relief valves shall be tested at least once every 5 years, starting with initial electric power generation."

Mandatory Appendix I, 1-1330, 'Test Frequency, Class 1 Nonreclosing Pressure Relief Devices," states, "Class 1 nonreclosing pressure relief devices shall be replaced every 5 years unless historical data indicates a requirement for more frequent replacement."

Mandatory Appendix I, 1-1340, 'Test Frequency, Class 1 Pressure Relief Valves That Are Used for Thermal Relief Application," states, 'Tests shall be performed in accordance with 1-1320, Test Frequencies, Class 1 Pressure Relief Valves."

Mandatory Appendix I, 1-1350, 'Test Frequency, Classes 2 and 3 Pressure Relief Valves," (a), "10-Year Test Interval," states, in part, "Class 2 and 3 pressure relief valves, with the exception of PWR [pressurized-water reactor] main steam safety valves, shall be tested every 10 years, starting with initial electric power generation."

Mandatory Appendix I, 1-1360, "Test Frequency, Classes 2 and 3 Nonreclosing Pressure Relief Devices," states, "Classes 2 and 3 nonreclosing pressure relief devices shall be replaced every 5 years, unless historical data indicates a requirement for more frequent replacement."

Mandatory Appendix I, 1-1370, "Test Frequency, Classes 2 and 3 Primary Containment Vacuum Relief Valves," (a) states, "Tests shall be performed on all Classes 2 and 3 containment vacuum relief valves at each refueling outage or every 2 years, whichever is sooner, unless historical data requires more frequent testing." 1-1370 (b) states "Leak tests shall be performed on all Classes 2 and 3 containment vacuum relief valves at a frequency designated by the Owner in accordance with Table ISTC-3500-1."

Mandatory Appendix I, 1-1380, "Test Frequency, Classes 2 and 3 Vacuum Relief Valves, Except for Primary Containment Vacuum Relief Valves," states, "All Classes 2 and 3 vacuum relief valves shall be tested every 2 years, unless performance data suggest the need for a more appropriate test interval."

Mandatory Appendix I, 1-1390, 'Test Frequency, Classes 2 and 3 Pressure Relief Devices That Are Used for Thermal Relief Application," states, 'Tests shall be performed on all Classes 2 and 3 relief devices used in thermal relief application every 10 years, unless performance data indicate more frequent testing is necessary. In lieu of tests the Owner may replace the relief devices at a frequency of every 10 years, unless performance data indicate more frequent replacements are necessary."

PROPOSED ALTERNATIVE

The ASME OM Code specifies component test frequencies 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.). ASME OM Code, Code

Case OMN-20, describes test frequency grace periods associated with the IST program for pumps and valves as follows:

(a) Components whose test frequencies are based on elapsed time periods shall be tested at the frequencies specified in Section IST with a specified time period between tests as shown in the table below.

Frequency	Specified Time Period Between Tests
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

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

1) For periods specified as less than 2 yr, the period may be extended by up to 25 percent for any given test.

2) For periods specified as greater than or equal to 2 yr, 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).

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.

Period extensions may also be applied to accelerated test frequencies (e.g., pumps in alert range) and other less than 2 yr test frequencies not specified in the table above.

Period extensions may not be applied to the test frequency requirements specified in ASME OM Code Subsection ISTD, Preservice and Inservice Examination and Testing of Dynamic Restraints (Snubbers) in Light-Water Reactor Nuclear Power Plants, as Subsection ISTD contains its own rules for period extensions.

(b) Components whose test frequencies are based on the occurrence of plant conditions or events may not have their period between tests extended except as allowed by the ASME OM Code.

NRC APPROVAL STATUS	Approved for the remainder of the third ten year IST program interval; reference safety evaluation dated January 19, 2016 for Units 1 & 2, [ML16011A073].

RELIEF REQUEST NO.	V-1, Revision 0
SYSTEM	See attached table
VALVE NUMBER	See attached table
CATEGORY	See attached table
CLASS	See attached table
DESCRIPTION	See attached table
BASIS FOR RELIEF	Pursuant to the guidelines provided in NUREG-1482, Rev. 1, Section 4.2.5, and the conditions stated in RG 1.192, CPNPP proposes to implement Code Case OMN-1 Revision 1, in lieu of the stroke-time provisions specified in ISTC-5120 for MOVs as well as the position verification testing in ISTC-3700.
TEST REQUIREMENT	ISTC-5120, Motor-Operated Valves, ISTC-5121(a) states: "Active valves shall have their stroke times measured when exercised in accordance with ISTC-3500." ISTC-3700, Position Verification Testing, states in part: "Valves with remote position indicators shall be observed locally at least once every 2 years to verify that valve operation is accurately indicated." ISTC-3510, Exercising Test Frequency, states: "Active Category A, Category B, and Category C check valves shall be exercised nominally every 3 months, except as provided by ISTC-3520, ISTC-3540, ISTC-3550, ISTC-3560, ISTC-5221, and ISTC-5222. Power-operated relief valves shall be exercise tested once per fuel cycle."
SUBSTITUTE TEST	The use of Code Case OMN-1 Revision 1 by CPNPP permits it to replace stroke time and position verification testing of MOVs with a program of exercising MOVs every refueling cycle and diagnostically testing on longer intervals. This alternative is considered to be acceptable because Code Case OMN-1 Revision 1 provides a superior method than the stroke-timing method required by the OM code for assessing the operational readiness of MOVs. Using the alternative to the MOV stroke time testing requirements of ISTC-5120 and position indication verification of ISTC-3700 provide an acceptable level of quality for determination of valve operational readiness. Code Case OMN-1 Revision 1 should be considered

acceptable for use with ASME OM Code 2004 Edition through 2006 Addenda as the Code of Record.

1) The potential benefits (such as identification of decreased thrustoutput and increase thrust requirements) and potential adverseeffects (such as accelerated aging or valve damage) will beconsidered when determining the appropriate testing for each MOV.

2) Where the selected inservice test frequency extends beyond6 years or 4 refueling outages (whichever is longer),performance and test experience obtained from valve testingconducted during the first 6 year or 4 refueling outage timeperiod shall be evaluated to justify the longer periodicverification frequency.

3) The risk insights determined during TU Electric's participationin the Electric Power Research Institute (EPRI) Risk-InformedInservice Testing Pilot Project (ref. EPRI TR-105869) and on- going development of an updated risk-informed categorizationprocess based upon ASME Research guidance and Codes asapplicable will be used in accordance with the requirements ofthe ASME OM Code Case OMN-1.

Inservice testing shall be conducted in the "as-found" condition only. "As-found" referring to: no maintenance activities that may affect the performance of an MOV shall be conducted prior to performing inservice testing. MOV Preventative Maintenance (PM) activities (including stem lubrication) will be performed on time based intervals to ensure the MOV is maintained in optimum working condition. PM activities will be scheduled separately and frequencies determined independently from MOV inservice test requirements. Performance of a MOV PM will not alter an MOVs "as-found" status with regards to performing inservice testing. The effects of PM activities on MOV operational readiness will be assessed to ensure the PM activities do not affect the validity of the MOV inservice test results.

Inservice testing shall be sufficient to assess changes in MOV functional margin. Therefore, MOVs requiring maintenance prior to their scheduled inservice test frequency shall be evaluated to determine whether or not performance of an inservice test prior to the maintenance activity will provide sufficient and/or valuable information in assessing changes in the MOVs functional margin. This evaluation, as a minimum, shall consider: inservice test frequency, time from last inservice or preservice test, functional margin, maintenance activity to be performed, grouping, MOV history, risk significance, and a review of the last inservice or preservice test performed. In addition, this

evaluation shall be documented for future reference.

Any OMN-1 Code Case requirements that are not currently included in the CPNPP MOV program will be implemented using a controlled process in accordance with OMN-1 and evaluated under 10 CFR 50.59.

CPNPP intends to Maintain the following exceptions to the requirements in ASME Code Case OMN-1 as described below:

1) Paragraph 3.3.1, items (a) & (b) The initial inservice testfrequency for each MOV shall be determined based upon theMOV's risk significance category (i.e. High or Low) andmagnitude of margin. See Figure 1 for initial inservice testfrequency details. The inservice test frequency may changewhen sufficient test data has been collected and analyzed todetermine a more appropriate test frequency. No testfrequency shall exceed 10 years.

2) Paragraph 6.4.3 - In order to maintain consistency andcompatibility with the Joint Owners Group (JOG) MOV PeriodicVerification Program, "Functional Margin" will be redefined toagree with the definition of "Margin" as detailed in TopicalReport MPR-1807 (Reference 1). The terms "FunctionalMargin" and "Margin" shall be synonymous within the CPNPPMOV Periodic verification program.

   Margin", as defined in Reference 1, is dependent upon"Required Thrust." At CPNPP "Required Thrust" for rising stemMOVs has been determined from stem thrust measurementstaken during extensive baseline testing performed in responseto GL 89-10 under both static and dynamic test conditions.Valve factors have been determined by statistical means foreach group of rising stem MOVs; these factors will bereviewed/verified as new data is obtained from CPNPP testingand results are received from the JOG Periodic VerificationProgram."

REFERENCES

1) Joint BWR, Westinghouse and Combustion Engineering Owners' Group Program onPeriodic Verification on Motor-Operated Valves (MOV) Periodic Verification, TopicalReport MPR-1807, Revision 2, July 1997"

System	Valve Number	Category	Class	Description
Auxiliary Feedwater	HV-2480	B	3	Aux Feedwater Pump Emergency Supply Flowpath
	HV-2481	B	3	Aux Feedwater Pump Emergency Supply Flowpath
	HV-2482	B	3	Aux Feedwater Pump Emergency Supply Flowpath
	HV-2484	B	3	Condensate System to Condensate Storage Tank Isolation to Preclude Tank Overpressurization
	HV-2485	B	3	Condensate System to Condensate Storage Tank Isolation to Preclude Tank Overpressurization
	HV-2491A	B	2	Containment Isolation & AFW to Faulted SG Flow Isolation
	HV-2491B	B	2	Containment Isolation & AFW to Faulted SG Flow Isolation
	HV-2492A	B	2	Containment Isolation & AFW to Faulted SG Flow Isolation
	HV-2492B	B	2	Containment Isolation & AFW to Faulted SG Flow Isolation
	HV-2493A	B	2	Containment Isolation & AFW to Faulted SG Flow Isolation
	HV-2493B	B	2	Containment Isolation & AFW to Faulted SG Flow Isolation
	HV-2494A	B	2	Containment Isolation & AFW to Faulted SG Flow Isolation
	HV-2494B	B	2	Containment Isolation & AFW to Faulted SG Flow Isolation
Component Cooling Water	HV-4512	B	3	Train A to Train B Crosstie Isolation
	HV-4513	B	3	Train A to Train B Crosstie Isolation

System	Valve Number	Category	Class	Description
	HV-4514	B	3	Train A to Train B Crosstie Isolation
	HV-4515	B	3	Train A to Train B Crosstie Isolation
	HV-4524	B	3	Non-Safety Loop Flowpath Isolation
	HV-4525	B	3	Non-Safety Loop Flowpath Isolation
	HV-4526	B	3	Non-Safety Loop Flowpath Isolation
	HV-4527	B	3	Non-Safety Loop Flowpath Isolation
	HV-4572	B	3	RHR Heat Exchanger Cooling Flowpath
	HV-4573	B	3	RHR Heat Exchanger Cooling Flowpath
	HV-4574	B	3	Containment Spray Heat Exchanger Cooling Flowpath
	HV-4575	B	3	Containment Spray Heat Exchanger Cooling Flowpath
	HV-4696	A	2	Containment Isolation & RCP Thermal Barrier Rupture Isolation
	HV-4699	B	2	Passive Pipe Break Isolation (Inside Containment)
	HV-4700	A	2	Containment Isolation & Passive Pipe Break Isolation (Inside Containment)
	HV-4701	A	2	Containment Isolation
	HV-4708	A	2	Containment Isolation
	HV-4709	A	2	Containment Isolation & RCP Thermal Barrier Rupture Isolation
Chemical & Volume Control	LCV-0112B	B	2	ECCS Flowpath Boundary & Isolation of VCT Cover Gas from Charging Pumps' Suction Header (upon low VCT level) & Boron Dilution Flowpath Isolation
	LCV-0112C	B	2	ECCS Flowpath Boundary & Isolation of VCT Cover Gas from Charging Pumps' Suction Header (upon low VCT level) & Boron Dilution Flowpath Isolation

System	Valve Number	Category	Class	Description
	LCV-0112D	B	2	ECCS Injection Flowpath & Boration Flowpath/ECCS Recirc Flowpath Boundary
	LCV-0112E	B	2	ECCS Injection Flowpath & Boration Flowpath/ECCS Recirc Flowpath Boundary
	8100	A	2	Containment Isolation
	8104	B	2	Boration Flowpath
	8105	A	2	Boration Flowpath/ECCS Flowpath Boundary & Containment Isolation
	8106	B	2	Boration Flowpath/ECCS Flowpath Boundary
	8109	B	2	ECCS Flowpath Boundary
	8110	B	2	ECCS Flowpath Boundary
	8111	B	2	ECCS Flowpath Boundary
	8112	A	2	Containment Isolation
	8351A	B	2	Containment Isolation
	8351B	B	2	Containment Isolation
	8351C	B	2	Containment Isolation
	8351D	B	2	Containment Isolation
	8511A	B	2	High Head Safety Injection Pump Miniflow Path/ECCS Recirculation Flowpath Boundary
	8511B	B	2	High Head Safety Injection Pump Miniflow Path/ECCS Recirculation Flowpath Boundary
	8512A	B	2	ECCS Recirculation Flowpath Boundary
	8512B	B	2	ECCS Recirculation Flowpath Boundary
Containment Spray	LV-4754	B	3	Chemical Additive Flowpath/Chemical Additive Tank Isolation
	LV-4755	B	3	Chemical Additive Flowpath/Chemical Additive Tank Isolation
	HV-4758	B	2	Sump Recirculation Flowpath Boundary

System	Valve Number	Category	Class	Description
	HV-4759	B	2	Sump Recirculation Flowpath Boundary
	FV-4772-1	B	2	Pump Miniflow Flowpath/Containment Spray Flowpath Boundary
	FV-4772-2	B	2	Pump Miniflow Flowpath/Containment Spray Flowpath Boundary
	FV-4773-1	B	2	Pump Miniflow Flowpath/Containment Spray Flowpath Boundary
	FV-4773-2	B	2	Pump Miniflow Flowpath/Containment Spray Flowpath Boundary
	HV-4776	A	2	Containment Spray Flowpath/Containment Isolation
	HV-4777	A	2	Containment Spray Flowpath/Containment Isolation
	HV-4782	B	2	Sump Recirculation Flowpath/Containment Isolation
	HV-4783	B	2	Sump Recirculation Flowpath/Containment Isolation
Reactor Coolant	8000A	B	1	Post Accident Vent Path/Vent Path Isolation & Reactor Coolant Pressure Boundary
	8000B	B	1	Post Accident Vent Path/Vent Path Isolation & Reactor Coolant Pressure Boundary
Residual Heat Removal	FCV-0610	B	2	Pump Miniflow Path/ECCS & RHR Flowpath Boundary
	FCV-0611	B	2	Pump Miniflow Path/ECCS & RHR Flowpath Boundary
	8701A	A	1	RHR Flowpath/Containment Isolation & Reactor Coolant Pressure Boundary
	8701B	A	1	RHR Flowpath/Containment Isolation & Reactor Coolant Pressure Boundary
	8702A	A	1	RHR Flowpath/Reactor Coolant Pressure Boundary

System	Valve Number	Category	Class	Description
	8702B	A	1	RHR Flowpath/Reactor Coolant Pressure Boundary
	8716A	B	2	ECCS Injection Flowpath/ECCS Recirculation Flowpath Boundary
	8716B	B	2	ECCS Injection Flowpath/ECCS Recirculation Flowpath Boundary
Safety Injection	8801A	B	2	ECCS to Cold Legs Flowpath & Boration Flowpath/ Containment Isolation & Passive Pipe Break Isolation
	8801B	B	2	ECCS to Cold Legs Flowpath & Boration Flowpath/ Containment Isolation & Passive Pipe Break Isolation
	8802A	B	2	ECCS to Hot Legs Flowpath/ECCS to Cold Legs Flowpath Boundary & Containment Isolation & Passive Pipe Break Isolation
	8802B	B	2	ECCS to Hot Legs Flowpath/ECCS to Cold Legs Flowpath Boundary & Containment Isolation & Passive Pipe Break Isolation
	8804A	B	2	ECCS Recirculation Flowpath/Passive Pipe Break Isolation
	8804B	B	2	ECCS Recirculation Flowpath/Passive Pipe Break Isolation
	8806	B	2	ECCS Flowpath Boundary (during Recirculation)
	8807A	B	2	ECCS Recirculation Flowpath/Passive Pipe Break Isolation
	8807B	B	2	ECCS Recirculation Flowpath/Passive Pipe Break Isolation
	8808A	B	2	ECCS from Accumulators to RC Cold Legs
	8808B	B	2	ECCS from Accumulators to RC Cold Legs
	8808C	B	2	ECCS from Accumulators to RC Cold Legs
	8808D	B	2	ECCS from Accumulators to RC Cold Legs

System	Valve Number	Category	Class	Description
	8809A	A	2	ECCS to Cold Legs Flowpath/ECCS to Hot Legs Flowpath Boundary & Passive Pipe Break Isolation & Containment Isolation
	8809B	A	2	ECCS to Cold Legs Flowpath/ECCS to Hot Legs Flowpath Boundary & Passive Pipe Break Isolation & Containment Isolation
	8811A	B	2	ECCS Recirculation Flowpath/Containment Isolation & Passive Pipe Break Isolation
	8811B	B	2	ECCS Recirculation Flowpath/Containment Isolation & Passive Pipe Break Isolation
	8812A	B	2	ECCS Recirculation Flowpath Boundary & Shutdown Cooling Flowpath Boundary (during Safety Grade Cold Shutdown)
	8812B	B	2	ECCS Recirculation Flowpath Boundary & Shutdown Cooling Flowpath Boundary (during Safety Grade Cold Shutdown)
	8813	B	2	ECCS Recirculation Flowpath Boundary
	8814A	B	2	ECCS Recirculation Flowpath Boundary
	8814B	B	2	ECCS Recirculation Flowpath Boundary
	8821A	B	2	ECCS to Cold Legs Flowpath/ECCS to Hot Legs Flowpath Boundary & Passive Pipe Break Isolation
	8821B	B	2	ECCS to Cold Legs Flowpath/ECCS to Hot Legs Flowpath Boundary & Passive Pipe Break Isolation
	8835	B	2	ECCS to Cold Legs Flowpath/ECCS to Hot Legs Flowpath Boundary & Containment Isolation & Passive Pipe Break Isolation
	8840	A	2	ECCS to Hot Legs Flowpath/ECCS to Cold Legs Flowpath Boundary & Containment Isolation & Passive Pipe Break Isolation
	8923A	B	2	Passive Pipe Break Isolation

System	Valve Number	Category	Class	Description
	8923B	B	2	Passive Pipe Break Isolation
	8924	B	2	Passive Pipe Break Isolation
Service Water	HV-4286	B	3	Service Water Flowpath/Throttling during Pump Start
	HV-4287	B	3	Service Water Flowpath/Throttling during Pump Start
	HV-4393	B	3	Service Water Flowpath
	HV-4394	B	3	Service Water Flowpath
	HV-4395	B	3	AFW Pump Emergency Supply Flowpath
	HV-4396	B	3	AFW Pump Emergency Supply Flowpath
Containment Isolation	HV-6082	A	2	Containment Isolation
	HV-6083	A	2	Containment Isolation
	HV-6084	A	2	Containment Isolation
	HV-4075B	A	2	Containment Isolation
	HV-4075C	A	2	Containment Isolation
	HV-5540	A	2	Containment Isolation
	HV-5541	A	2	Containment Isolation
	HV-5542	A	2	Containment Isolation
	HV-5543	A	2	Containment Isolation
	HV-5562	A	2	Containment Isolation
	HV-5563	A	2	Containment Isolation

LEGEND:	Category A =	Valves for which seat leakage is limited to a specific maximum amount in the closed position for fulfillment of their required safety function(s).
	Category B =	Valves for which seat leakage in the closed position is inconsequential for fulfillment of their required safety function(s).
	Class =	Code class

Figure 1

Initial Inservice Test Frequency

MARGIN

RISK		Low	Medium	High
	High	1 cycle	2 cycles	3 cycles
	Low	2 cycles	4 cycles	6 cycles*

* Not to exceed 10 years

Notes:

1. Criteria for MOV Margin Categories

   Low Margin: < 10%

   Medium Margin: ≥ 10% and < 15%

   High Margin: ≥ 15%

2. Criteria for Risk Categories

   High Risk: Risk-Informed IST Program

   Low Risk: Risk-Informed IST Program

THIRD INTERVAL REVISION 0:

LDCR-IT-2013-004 (EV-CR-2011-009418-12) (JCH):

General Editorial Changes:

Page Nos: 1-1, 1-3, 2-1, 2-3, 3-1, 3-4 Valve Table Index all pages; Table 2 Page 8 of 8;Table 4 Page 8 of 8; Table 8 Page 7 of 7; Table 13 Page 12 of 13; Table 18 Page 15 of 15; Table 19 Page 20 of 20

Description: Changed Code Edition and Addenda year from 1998 Edition through 2000Addenda to 2004 Edition through 2006 Addenda.

Justification: To comply with 10 CFR 50.55a (f)(4)(i) for the third inservice testing interval, which will be adoption of 2004 Edition through 2006 Addenda.

Affected Pages: Cover Page and General

Description: Added "Third" Interval, Removed "Second" throughout the IST Plan, and added the address of CPNPP.

Justification: Editorial change for the third interval annotation. Added the address of the facility as required by ASME OM Code Subsection ISTA-9220.

Description: Added the approval date for the RI-IST and implementation start date. Section 1.3 Added a sentence to indicate the start and end date of the third interval. Section 1.3 Added sentence 'the first interval' for consistency. Page 1-3 added Ref. 10 RI-IST approval letter.

Justification: Editorial addition and consistency.

Description: Removed Para 2.1 and renumbered the paragraphs. Added Para c) to add the skid mounted pumps

Justification: Para 2.1 was redundant, the IST Plan is in accordance with the ASME OM Code and its Subsections for pumps and valves; Section 1 explains this adequately.

Description: Added definition of centrifugal vertical line shaft direct coupled pumps

Justification: To depict the actual configuration of the safeguards pumps. Refer to AI-CR-2011-009418-2 and AI-CR-2011-009418-3.

Description: Changed the pump type from C/DC to C/DC/VLS

Justification: To depict the actual configuration of the safeguards pumps. Refer to AI-CR-2011-009418-2 and AI-CR-2011-009418-3.

Description: Removed Para 3.1 and renumbered the paragraphs. Added Para e) to reflect that Category A & B safety and relief are excluded from certain testing requirements.

LDCR-IT-2013-004 (EV-CR-2011-009418-12) (JCH) (continued):

Justification: Previous Para 3.1 was redundant, the IST Plan is in accordance with the ASME OM Code and its Subsections for pumps and valves; Section 1 explains this adequately. Category A & B safety and relief are excluded from the testing requirements of stroke and position verification testing. Refer to ISTC-1200, "Exemptions", which excludes Category A & B safety and relief valves.

Description: Added additional sentence to first paragraph.

Justification: Clarification for N/A.

Description: Added Rev. 1 to NUREG-1482 and included NRC RI-IST approval letter as reference 3.

Justification: Editorial and enhancement.

Affected Pages: 4, 5, & 15

Description: For Group 86, valves 8510A and 8510B removed footnote 2 and extended the frequency of these valves to 4 years.

Removed Note 2 and Note 3, and renumbered the notes in the table accordingly.

Justification: Note 2 was a commitment to in response to NRC IN-92-61, this commitment (CDF # 26357) was closed using STA-509, "Commitment Management Program", and a CMCE # 4636255 was issued and was approved to remove the commitment identified in Note 2. Also refer to EV-CR-2013-004411-3. Note 3 did not correspond to any items in the Table.

Description: Removed measured stroke time testing (MT) and position indication verification (PIT) was removed from certain valves as marked.

Justification: Comanche Peak Relief request has been reviewed and approved by the NRC to adopt the OMN-1 Rev 1. This relief request eliminates MT and PIT; refer to NRC SER TAC Nos. ME9503 and ME9504 for both units.

Description: Removed old relief request V-8 and inserted V-1 in its place.

Justification: Comanche Peak Relief request has been reviewed and approved by the NRC to adopt the OMN-1 Rev 1. This relief request eliminates MT and PIT; refer to NRC SER TAC Nos. ME9503 and ME9504 for both units. Therefore, V-8 is not applicable anymore.

Description: Removed old Relief Request P-2 and inserted P-1 in its place.

Justification: Comanche Peak Relief Request has been reviewed and approved by the NRC on June 26, 2013. It is approved for the third ten year IST program interval; reference safety evaluattion dated June 26, 2013 for Units 1 & 2, TAC NOS. ME9259 and ME9260 [ML13050A183]. This relief request supersedes old relief request P-1.

LDCR-IT-2013-003 (EV-CR-2012-002342-1) (JCH):

Description: Table 5, "Containment Spray",

Add "(3)" under Leak Test for CT-0142/0145 in Group 28 on Page 1 of 4.

Add Note 3 to Page 4: "3. This valve has a water filled loop seal and is not required to be leakrate tested (see DBD-ME-013, rev. 22, Attachment 1, Note 3)."

Justification: Valves CT-0142/0145 have water seals and are exempt from Appendix J leak testing.

Per DBD-ME-013,Attachment 1, Note 3, "These valves are part of closed systems outside containment tested per NUREG-0737 Section III.D.1 which are in service post-accident and have a water filled loop seal on the containment side of the valves. These valves are either open or closed providing a third barrier to containment leakage. A water seal is maintained both inside and outside containment. These valves are therefore not required to be leakrate tested.

Description: Table 19, "Motor Operated Valves",

Add "(2)" under Leak Test for HV-4776 on Page 8, HV-4777 on Page 9, 8809A on Page 13, 8809B on Page 14, 8840 on page 15

Add Note 2 to Page 20: 2. "This valve has a water filled loop seal and is not required to be leakrate tested (see DBD-ME-013, rev. 22, Attachment 1, Note 3)."

Justification: Valves HV-4776/4777/8809A/8809B/8840 have water seals and are exempt from Appendix J leak testing.

Per DBD-ME-013,Attachment 1, Note 3, "These valves are part of closed systems outside containment tested per NUREG-0737 Section III.D.1 which are in service post-accident and have a water filled loop seal on the containment side of the valves. These valves are either open or closed providing a third barrier to containment leakage. A water seal is maintained both inside and outside containment. These valves are therefore not required to be leakrate tested.

LDCR-IT-2012-001 (EV-CR-2010-004331-60) (JCH):

Table 19 - Motor Operated Valves

Description: add the following valve to Table 19: 1-HV-8402A under "Chemical and Volume Control-High Safety Significance"

Under "Gate Valve/Motor Operated Westinghouse with Limitorque Actuator":

-Change 2-HV-8402A to HV-8402A

- Add Flow Diagram- M1-0255(B-1)

LDCR-IT-2012-001 (EV-CR-2010-004331-60) (JCH) (continued):

Justification:

The new 3-inch motor operated valve is classified as Nuclear Safety Class 2. The control switch will be used to isolate and bypass

1-HCV-0182 during maintenance and in case of a fire to ensure that the normal charging path is isolated. Replacement of this manual operated valve with a motor operated gate valve will maintain all design and operational functions of the existing valve. This includes

the requirement that the valve is a "PASSIVE" open valve. Since the function to close during a fire is important to safety, 1-HV-8402A will be exercise open and closed and position indicated tested.

LDCR-IT-2013-002 (EV-CR-2012-003165-4) (JCH):

Description: Change the function from "P" to "A" for the following valves in Table 18, Group 91:

DO-011, DO-0187, DO-0211, DO-0287

Justification: These valves are required to protect diesel fuel oil transfer pumps when backpressure from the "Y" strainers requires it. Since this could happen during the Emergency Diesel Generator mission time (30 Days) and no credit had been taken for online maintenance or operator action to protect the pumps, these valves must be classifed as ACTIVE to perform their function as described in the FSAR.

THIRD INTERVAL REVISION 1:

LDCR-IT-2013-005 (EV-CR-2011-009418-17) (JCH):

Table 19 - Motor Operated Valves

VALVE TABLE INDEX (VTI)

Description: Diagnostic Testing column under Test Parameters/Schedule.

The Valve Table Index defines diagnostic testing as follows:

DT-Diagnostic testing determines the cause or mechanism associated with failure, degradation, or performance anomaly of a motor operated valve per the requirements of OMN-1 Rev. 1 (Relief Request V-1)

Justification: Code Case OMN-1 allows users to replace MOV stroke-time testing with a combination of MOV exercising at least every refueling outage and MON diagnostic testing on a longer interval. Table 19 is being enhanced to include an additional column which will identify those MOVs which are required to be "diagnostic" tested.

LDCR-IT-2013-005 (EV-CR-2011-009418-17) (JCH) (continued):

VALVE TABLE INDEX (VTI)

Description: add the following under Exercise Test:

DT-Diagnostic testing determines the cause or mechanism associated with failure, degradation, or performance anomaly of a motor operated valve per the requirements of OMN-1 Rev. 1 (Relief Request V-1)

Justification: Code Case OMN-1 allows users to replace MOV stroke-tiem testing with a combination of MOV exercising at least every refueling outage and MON diagnostic testing on a longer interval

THIRD INTERVAL REVISION 2:

LDCR-IT-2014-001 (EV-CR-2012-011620-15) (JCH):

Referenced Section: Table 13, Safety Injection

Description of Change: This activity replaces the Unit 2 Safety Injection (SI) to Cold Leg (CL) 2-01 piston check valve (2SI-8819A) with a 2" Enertech nozzle check valve.

Technical Justification: The nozzle check valve is a ASME Section III Class 1513 valve with a pressure rating of 3632 psig at 100F and a design rating of 2485 psig at 650F per drawing MD22754 Revision E (VDRT-3902424). This meets the requirements of 2323-MS-43B Category 2501 component. For flow characteristics, Westinghouse reviewed the new valve and the old valve and concluded the flow changes are insiginificant and acceptable; the Westinghouse conclusions regarding 2SI-8819A are documented in WPT-17762. The replacement valve is designed and manufactured in accordance with the requirements of ASME B&PV Code Section III, Class 1, 1974 Edition through winter 1975 Summer Addenda

LDCR-IT-2014-003 (EV-CR-2014-005580-7) (JCH):

Table 1-Auxiliary Feedwater

Description:

Change frequency for the following valves for dual direction testing (DD) from "3MO" to "RF"- AF-0014, AF-0024, AF-0032, AF-0038, AF-0051, AF-0065

Justification:

Reverse flow testing (dual direction) is not practical at power operations. Such testing would unacceptably increase plant risk due to system unavailability. The Code of Record allows performance of this testing during plant refueling.

LDCR-IT-2014-003 (EV-CR-2014-005580-7) (JCH) (continued):

Description:

Add Note 4 to end of Table 1:

"AF-0014, AF-0024, AF-0032, AFW Pump suction valves and AF-0065, AF-0051, AF-0038, AFW Pump discharge check valves are reverse flow (closed) tested at refueling. These valves are not reverse flow tested during plant operation because such testing would unacceptably increase plant risk due to system unavailability."

Justification: Note 4 provides clarification for reverse flow testing during plant refueling outages.

Table 18-SAFETY & RELIEF VALVES

Description:

Page 5-Change Flow Diagram number for 2CH-0281 and 2CH-0282 from "M1-0307" to "M2-0307"

Justification:

The following corrections are needed to correct typos for the drawing numbers These are Unit 2 valves and the drawing numbers should start as M2 and not M1.

Description:

Table 13- Page 8: Change 8825 Category from "A" to "B"

Table 13-Page 8: Change 8890A and 8890B from "A" to "B"

Table 19-Page 8: Change HV-4776 from "A" to "B"

Table 19-Page 9: Change HV-4777 from "A" to "B"

Table 19-Page 13: Change 8809A from "A" to "B"

Table 19-Page 14: Change 8809B from "A" to "B"

Table 19-Page 15: Change 8840 from "A" to "B"

Justification:

The affected valves were listed as Category A valves; they should be listed as Category B, because they do not require leak testing criteria.

THIRD INTERVAL REVISION 3:

LDCR-IT-2019-001 (EV-TR-2018-000922-18) (GWS):

Document use of Code Case OMN-16 Rev. 1. Update Risk Rank in accordance with EREA-010 R5. Revise Test Parameters/Schedule per Relief Request A-1 R0 and V-1 R0.

Add Relief Request T-1. Revision changed Pump Test Table and System Tables 1 (AFW), 2 (CCW), 4 (CVCS), 8 (FW), 13 (SI), 14 (SW), 16 (VD), 17 (Misc. CIVs), 18 (Safeties & Reliefs), and 19 (MOVs).

THIRD INTERVAL REVISION 4:

LDCR-IT-2019-002 (EV-CR-2015-011094-8) (GWS):

IST Plan Table 13 Safety Injection Update.

LDCR-IT-2020-001 (EV-TR-2019-008291-12) (GWS):

As allowed by ISTC-5220, implementation of a Check Valve Condition Monitoring Program in accordance with ASME OM Code Mandatory Appendix II.

LDCR-IT-2020-002 (EV-TR-2020-002118-23) (GWS):

Change maximum diagnostic test interval for LSSC Motor Operated Valves from 6 years to 10 years.

LDCR-IT-2021-001 (EV-TR-2019-001528-8) (GWS):

Remove Group 39 and all associated valve and test information due to replacing DG Starting Air Compressors per FDA-2017-000092-01.