THREE MILE ISLAND NUCLEAR STATION, UNIT-1

PUMP AND VALVE

INSERVICE TESTING PROGRAM

PUMP AND VALVE INSERVICE TEST PROGRAM FOR THE
THREE MILE ISLAND NUCLEAR STATION, UNIT-1 (TMI-1)

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PUMP AND VALVE TEST PROGRAM FOR THE
THREE MILE ISLAND NUCLEAR STATION (TMI-1)

1.0 INTRODUCTION

The Pump and Valve Inservice Test (IST) Program along with the augmented IST for Three Mile Island Nuclear Station, Unit 1, (TMI-1) are described in Appendices A and B. TMI-1 ISI Boundary Drawings and the associated Piping & Instrumentation Diagrams (P&IDs) are listed in Table 1. Four sets of drawings are being provided to the NRC Senior Project Manager to facilitate the NRC review of this submittal. The color coded ISI drawings are being provided in black and white for IST review purposes because the ASME Code Class and Category for each component within the scope of the IST program is indicated on the pump/valve table as appropriate.

The TMI-1 IST program is implemented by plant procedures which are controlled in accordance with the GPU Nuclear Operational Quality Assurance Plan.

2.0 SCOPE OF THE IST PROGRAM

TMI-1 was designed and licensed to operate with the Hot Shutdown condition defined as the "safe" shutdown condition[1]. Therefore, components and systems necessary to achieve Cold Shutdown may not be safety-related or subject to quality assurance requirements. Such components are not credited to achieve "safe" shutdown in the plant's safety analyses.

The IST pump and valve programs were both developed with consideration given to boundary classification guidelines contained in 10 CFR 50.2(v) for Quality Group A and Regulatory Guide 1.26 for Quality Groups B and C. (Quality Group A is the same as ASME Class 1, Group B is Class 2 and Group C is Class 3). These programs have been reviewed with respect to NRC Generic Letter (GL) 89-04, "Guidance on Developing Acceptable Inservice Testing Programs" using many of the recommendations provided in NUREG-1482, "Guidance on Developing Acceptable Inservice Testing Programs."

NUREG-1482 states that licensees may elect to consolidate the testing of safety-related pumps and valves that are required to be tested (both Code and non-Code), designating the non-Code components as such in the IST program. Components

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[1] TMI-1 Updated FSAR, Chapter 6B, Section 2.3.2.1.

that are either 1) non-Code or 2) Code Class 1, 2, or 3 components with no required safety function are included in Tables A-2 and B-2 as augmented IST pumps and valves.

NUREG-1482, Section 2.2 states that relief requests for non-Code components may be implemented without NRC evaluation and approval. However, as requested by the NUREG, deviations from Code requirements are identified in Tables A-3 and B-3 for the non-Code pumps and valves. If relief from Code requirements is not needed, changes to the IST program will be made in accordance with 10 CFR 50.59 as appropriate, without prior NRC approval.

3.0 APPLICABILITY

The Construction Permit (CP) for TMI-1 was issued on April 19, 1967; the Operating License (OL) was issued on April 19, 1974. Commercial operation began on September 2, 1974.

This IST Program applies to the TMI-1 third ten year interval (120-month period of operation from start of facility commercial operation) as defined by 10 CFR 50.55a(f) and the ASME Code Section XI. 10 CFR 50.55a(f)(4)(ii) requires that IST in each 120-month interval following the initial interval, which began on September 2, 1974, be conducted in compliance with the requirements of the latest edition and addenda of the Code incorporated by reference in 10 CFR 50.55a(b), in effect 12 months before the start of the interval. Therefore, GPU Nuclear is required to update IST to the Section XI 1989 Code Edition for the third IST interval.

ASME Code Section XI allows an extension of the 12 month interval up to twelve months, all of which can be taken during the current interval. In a letter dated June 29, 1994 GPU Nuclear requested an extension of an additional 12 months for a total extension of 24 months. The NRC's letter dated September 22, 1995 allowed for continuation of current testing for up to one year and further permitted continuation of current refueling interval tests through the Cycle 11 Refueling (11R) Outage. Therefore, transition to the IST program for the third 10-yr interval has begun and will be completed as allowed by the NRC's letter dated September 22, 1994.

4.0 PUMP TEST PROGRAM

The pump test program shall be conducted in accordance with Part OM-6 of the ASME/ANSI OMa-1988 Addenda to ASME/ANSI OM-1987 Edition (OM-6) as required by Subsection IWP of Section XI of the 1989 Edition of the ASME Boiler and Pressure Vessel Code, except for relief requested under the provisions of 10 CFR 50.55a(f)(5)(iii).

Appendix A, Table A-1 includes the list of pumps which require operational testing under the guidelines of OM-6. Specific requests for relief are noted in Appendix A. Test parameters which will be measured for each pump are indicated.

Appendix A, Table A-2 includes the list of pumps in the Augmented IST Program which are operationally tested under the guidelines of OM-6.

5.0 VALVE TEST PROGRAM

The valve test program shall be conducted in accordance with Part OM-10 of the ASME/ANSI OMa-1988 Addenda to ASME/ANSI OM-1987 Edition (OM-10) as required by Subsection IWV of Section XI of the 1989 Edition of the ASME Boiler and Pressure Vessel Code, except for relief requested under the provisions of 10 CFR 50.55a(f)(5)(iii). In addition, as required by 10 CFR 50.55a(b)(2)(vii), "Inservice Testing of Containment Isolation Valves," OM-10 paragraphs 4.2.2.3(e), "Analysis of Leakage Rates," and 4.2.2.3(f), "Corrective Action," apply to Containment Isolation Valves (CIVs) that do not provide a reactor coolant pressure isolation function.

Appendix B, Table B-1 includes the list of valves which require operational testing under the guidelines of OM-10. Specific requests for relief are noted in Appendix B.

Appendix B, Table B-2 includes the list of valves in the Augmented IST Program which are operationally tested under the guidelines of OM-10.

6.0 CODE RELIEF WHERE NRC APPROVAL IS NOT REQUIRED

OM-6 and OM-10 now provide relief from certain excessively restrictive requirements where NRC approval previously was needed. In addition, GL 89-04 and its Supplement 1, which includes NUREG-1482, grant generic relief from certain code requirements that have been demonstrated to be excessive. Tables A-1 and B-1 provide the justification to support such a reduction of test requirements as allowed by the code and appropriate application of relief granted by GL.

TABLE 1

TMI-1 INSERVICE PUMP AND VALVE TESTING PROGRAM

ISI DRAWINGS REFERENCED BY P&ID

P&ID No.	ISI DRAWING No.	P&ID No.	ISI DRAWING No.	P&ID No.	ISI DRAWING No.
302-011	ID-ISI-FD-001	302-620	ID-ISI-FD-022	302-690	ID-ISI-FD-023
302-012	ID-ISI-FD-001	302-630	ID-ISI-FD-018	302-692	ID-ISI-FD-021
302-081	ID-ISI-FD-009	302-640	ID-ISI-FD-005	302-694	ID-ISI-FD-023
302-082	ID-ISI-FD-009	302-645	ID-ISI-FD-003	302-706	ID-ISI-FD-023
302-101	ID-ISI-FD-008	302-650	ID-ISI-FD-019	302-711	ID-ISI-FD-004
302-121	ID-ISI-FD-001	302-651	ID-ISI-FD-019	302-712	ID-ISI-FD-012
302-196	ID-ISI-FD-023	302-660	ID-ISI-FD-016	302-719	ID-ISI-FD-001
302-202	ID-ISI-FD-002	302-661	ID-ISI-FD-017	302-720	ID-ISI-FD-023
302-203	ID-ISI-FD-002	302-669	ID-ISI-FD-005	302-721	ID-ISI-FD-023
302-231	ID-ISI-FD-023	302-670	ID-ISI-FD-021	302-722	ID-ISI-FD-015
302-271	ID-ISI-FD-023	302-671	ID-ISI-FD-020	302-725	ID-ISI-FD-015
302-354	-------	302-671	ID-ISI-FD-016	302-831	ID-ISI-FD-023
302-610	ID-ISI-FD-010	302-674	ID-ISI-FD-023	302-847	ID-ISI-FD-011

APPENDIX A

PUMP TEST PROGRAM

APPENDIX A

TMI-1 PUMP TEST PROGRAM

SUMMARY OF APPENDIX A TABLE INFORMATION

The TMI-1 Inservice Test Program Pump Tabulations (Tables A-1 and A-3) provide information under the following column headings:

- PUMP NUMBER:
  Individual pump identifier (e.g., MU-P1A identifies Makeup & Purification System Pump "A")

- TYPE:
  Type of pump (Centrifugal or Positive Displacement).

- CLASS:
  The ASME Code Class as Class 1, 2, or 3 for IST pumps. For pumps included under the Augmented IST Pump Program, "A" is shown in column under class.

- FLOWRATE:
  Identifies whether flowrate testing applies for the component and gives the frequency of test (e.g., *QUARTER* = Quarterly Test Frequency, *3RDREFL* = Every third Refueling Outage, and *REFUEL* = Refueling[1] Interval Test Frequency).

- DIFFERENTIAL PRESSURE:
  Identifies whether differential pressure testing applies for the component and gives the frequency of test (e.g., *QUARTER* = Quarterly Test Frequency).

- DISCHARGE PRESSURE:
  Identifies whether discharge pressure testing applies for the component and gives the frequency of test (e.g., *QUARTER* = Quarterly Test Frequency).

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[1] TMI-1 utilizes the 24 month fuel cycle.

SUMMARY OF APPENDIX A TABLE INFORMATION (CONTINUED):

- VIBRATION:
  Identifies whether vibration testing applies for the component and gives the frequency of test (e.g., *QUARTER* = Quarterly Test Frequency).

- SPEED:
  Identifies whether rotative speed testing for variable speed pumps applies to the component and gives the frequency of test (e.g., *QUARTER* = Quarterly Test Frequency).

- RELIEF NUMBER:
  The pump relief request number from Appendix A, Table A-2, where applicable (e.g., P 1, P 2, etc. for relief that applies to specific components or PG 1, PG 2, etc. for relief that applies generically).

- DRAWING:
  This column identifies the TMI-1 ISI Boundary Drawing Number on which the component is shown. For non-Code components the table shows the Piping and Instrumentation Drawing (P&ID) number, a "302" series drawing number. TMI-1 ISI Boundary Drawings and the associated Piping & Instrumentation Diagrams (P&IDs) are listed in Table 1.

TABLE A-1

TMI1 INSERVICE TEST PROGRAM PUMP TABULATION

PUMP NUMBER	TYPE	CLASS	FLOWRATE	DIFFERENTIAL PRESSURE	DISCHARGE PRESSURE	VIBRATION	SPEED	RELIEF NUMBER	DRAWING
AH-P3A	CENTRIFUGAL	3	QUARTER	QUARTER	QUARTER	QUARTER	---		1D-ISI-FD-011
Description:	CONTROL BUILDING CHILLED WATER SUPPLY PUMP "A"								
AH-P3B	CENTRIFUGAL	3	QUARTER	QUARTER	QUARTER	QUARTER	---		1D-ISI-FD-011
Description:	CONTROL BUILDING CHILLED WATER SUPPLY PUMP "B"								
BS-P1A	CENTRIFUGAL	2	QUARTER	QUARTER	QUARTER	QUARTER	---		1D-ISI-FD-012
Description:	REACTOR BUILDING SPRAY PUMP "A"								
BS-P1B	CENTRIFUGAL	2	QUARTER	QUARTER	QUARTER	QUARTER	---		1D-ISI-FD-012
Description:	REACTOR BUILDING SPRAY PUMP "B"								
CA-P1A	POSITIVE DISPLACEMENT	3	QUARTER	---	QUARTER	QUARTER	---		1D-ISI-FD-021
Description:	BORIC ACID INJECTION PUMP "A"								
CA-P1B	POSITIVE DISPLACEMENT	3	QUARTER	---	QUARTER	QUARTER	---		1D-ISI-FD-021
Description:	BORIC ACID INJECTION PUMP "B"								
DC-P1A	CENTRIFUGAL	3	QUARTER	QUARTER	QUARTER	QUARTER	---		1D-ISI-FD-003
Description:	DH CLOSED COOLING WATER PUMP "A"								
DC-P1B	CENTRIFUGAL	3	QUARTER	QUARTER	QUARTER	QUARTER	---		1D-ISI-FD-003
Description:	DH CLOSED COOLING WATER PUMP "B"								
DH-P1A	CENTRIFUGAL	2	QUARTER	QUARTER	---	QUARTER	---		1D-ISI-FD-005
Description:	DECAY HEAT REMOVAL PUMP "A"								
DH-P1B	CENTRIFUGAL	2	QUARTER	QUARTER	---	QUARTER	---		1D-ISI-FD-005
Description:	DECAY HEAT REMOVAL PUMP "B"								
DR-P1A	CENTRIFUGAL	3	QUARTER	QUARTER	QUARTER	QUARTER	---		1D-ISI-FD-002
Description:	DECAY HEAT RIVER WATER PUMP "A"								
DR-P1B	CENTRIFUGAL	3	QUARTER	QUARTER	QUARTER	QUARTER	---		1D-ISI-FD-002
Description:	DECAY HEAT RIVER WATER PUMP "B"								
EF-P1	CENTRIFUGAL	2	3RDREFL	QUARTER	QUARTER	QUARTER	QUARTER	P 2	1D-ISI-FD-009
Description:	TURBINE DRIVEN EMERGENCY FEEDWATER PUMP								
Justification:	The Emergency Feedwater Pumps are tested on recirculation to the Condensate Storage Tanks. Installed restriction orifices limit the flow rate to a fixed value (approximately 190 gpm for EF-P1 and approximately 90 gpm for EF-P2A and B). Flowrate is not measured quarterly.								

TABLE A-1

TMI1 INSERVICE TEST PROGRAM PUMP TABULATION

PUMP NUMBER	TYPE	CLASS	FLOWRATE	DIFFERENTIAL PRESSURE	DISCHARGE PRESSURE	VIBRATION	SPEED	RELIEF NUMBER	DRAWING
EF-P2A	CENTRIFUGAL	2	3RDREFL	QUARTER	QUARTER	QUARTER	---	P 2	1D-ISI-FD-009
Description:	MOTOR DRIVEN EMERGENCY FEEDWATER PUMP "A"								
Justification:	The Emergency Feedwater Pumps are tested on recirculation to the Condensate Storage Tanks. Installed restriction orifices limit the flow rate to a fixed value (approximately 190 gpm for EF-P1 and approximately 90 gpm for EF-P2A and B). Flowrate is not measured quarterly.								
EF-P2B	CENTRIFUGAL	2	3RDREFL	QUARTER	QUARTER	QUARTER	---	P 2	1D-ISI-FD-009
Description:	MOTOR DRIVEN EMERGENCY FEEDWATER PUMP "B"								
Justification:	The Emergency Feedwater Pumps are tested on recirculation to the Condensate Storage Tanks. Installed restriction orifices limit the flow rate to a fixed value (approximately 190 gpm for EF-P1 and approximately 90 gpm for EF-P2A and B). Flowrate is not measured quarterly.								
MU-P1A	CENTRIFUGAL	2	REFUEL	QUARTER	QUARTER	QUARTER	---	P 1	1D-ISI-FD-017
Description:	MAKEUP & PURIFICATION PUMP "A"								
Justification:	The quarterly test uses the minimum flow recirculation (miniflow) line, where there is no flow instrumentation. As permitted by NUREG-1482 and NRC GL 89-04, Staff Position 9, flow rate will be measured during the refueling outage test at full flow conditions.								
MU-P1B	CENTRIFUGAL	2	REFUEL	QUARTER	QUARTER	QUARTER	---	P 1	1D-ISI-FD-017
Description:	MAKEUP & PURIFICATION PUMP "B"								
Justification:	The quarterly test uses the minimum flow recirculation (miniflow) line, where there is no flow instrumentation. As permitted by NUREG-1482 and NRC GL 89-04, Staff Position 9, flow rate will be measured during the refueling outage test at full flow conditions.								
MU-P1C	CENTRIFUGAL	2	REFUEL	QUARTER	QUARTER	QUARTER	---	P 1	1D-ISI-FD-017
Description:	MAKEUP & PURIFICATION PUMP "C"								
Justification:	The quarterly test uses the minimum flow recirculation (miniflow) line, where there is no flow instrumentation. As permitted by NUREG-1482 and NRC GL 89-04, Staff Position 9, flow rate will be measured during the refueling outage test at full flow conditions.								
NR-P1A	CENTRIFUGAL	3	REFUEL	QUARTER	QUARTER	QUARTER	---	P 3	1D-ISI-FD-002
Description:	NUCLEAR SERVICE RIVER WATER PUMP "A"								
NR-P1B	CENTRIFUGAL	3	REFUEL	QUARTER	QUARTER	QUARTER	---	P 3	1D-ISI-FD-002
Description:	NUCLEAR SERVICE RIVER WATER PUMP "B"								
NR-P1C	CENTRIFUGAL	3	REFUEL	QUARTER	QUARTER	QUARTER	---	P 3	1D-ISI-FD-002
Description:	NUCLEAR SERVICE RIVER WATER PUMP "C"								
NS-P1A	CENTRIFUGAL	3	QUARTER	QUARTER	QUARTER	QUARTER	---		1D-ISI-FD-010
Description:	NUCLEAR SERVICE CLOSED COOLING WATER PUMP "A"								

TABLE A-1

TMI1 INSERVICE TEST PROGRAM PUMP TABULATION

PUMP NUMBER	TYPE	CLASS	FLOWRATE	DIFFERENTIAL PRESSURE	DISCHARGE PRESSURE	VIBRATION	SPEED	RELIEF NUMBER	DRAWING
NS-P1B	CENTRIFUGAL	3	QUARTER	QUARTER	QUARTER	QUARTER	---		1D-ISI-FD-010
Description:	NUCLEAR SERVICE CLOSED COOLING WATER PUMP "B"								
NS-P1C	CENTRIFUGAL	3	QUARTER	QUARTER	QUARTER	QUARTER	---		1D-ISI-FD-010
Description:	NUCLEAR SERVICE CLOSED COOLING WATER PUMP "C"								
RR-P1A	CENTRIFUGAL	3	REFUEL	QUARTER	QUARTER	QUARTER	---		1D-ISI-FD-002
Description:	RB EMERGENCY COOLING RIVER WATER PUMP "A"								
Justification:	The Reactor Building Emergency Cooling Water Pumps supply river water to the Reactor Building Emergency Cooling Coils. Due to the chemistry of the river water, the coils are normally filled with water that contains a corrosion inhibiter. The discharge of this water to the river must be minimized. For this reason, the quarterly test is by way of the minimum flow recirculation line. There is no flow instrumentation in this line. As permitted by NUREG 1482, NRC GL 89-04, Staff Position 9, flow rate will be measured during the refueling outage test at full flow conditions.								
RR-P1B	CENTRIFUGAL	3	REFUEL	QUARTER	QUARTER	QUARTER	---		1D-ISI-FD-002
Description:	RB EMERGENCY COOLING RIVER WATER PUMP "B"								
Justification:	The Reactor Building Emergency Cooling Water Pumps supply river water to the Reactor Building Emergency Cooling Coils. Due to the chemistry of the river water, the coils are normally filled with water that contains a corrosion inhibiter. The discharge of this water to the river must be minimized. For this reason, the quarterly test is by way of the minimum flow recirculation line. There is no flow instrumentation in this line. As permitted by NUREG 1482, NRC GL 89-04, Staff Position 9, flow rate will be measured during the refueling outage test at full flow conditions.								
SF-P1A	CENTRIFUGAL	3	QUARTER	QUARTER	QUARTER	QUARTER	---		1D-ISI-FD-018
Description:	SPENT FUEL COOLING PUMP "A"								
Justification:	No pipe taps are present on the suction of the pump. Differential pressure will be determined by calculation using indicated discharge pressure and suction pressure determined using fuel pool level as recommended in NUREG-1482 Section 5.5.3.								
SF-P1B	CENTRIFUGAL	3	QUARTER	QUARTER	QUARTER	QUARTER	---		1D-ISI-FD-018
Description:	SPENT FUEL COOLING PUMP "B"								
Justification:	No pipe taps are present on the suction of the pump. Differential pressure will be determined by calculation using indicated discharge pressure and suction pressure determined using fuel pool level as recommended in NUREG-1482 Section 5.5.3.								
WDL-P13A	CENTRIFUGAL	3	QUARTER	QUARTER	QUARTER	QUARTER	---		1D-ISI-FD-021
Description:	BORIC ACID RECYCLE PUMP "A"								
Justification:	No pipe taps are present on the suction of the pump. Differential pressure will be determined by calculation using indicated discharge pressure and suction pressure determined using suction tank boric acid level as recommended in NUREG-1482 Section 5.5.3.								
WDL-P13B	CENTRIFUGAL	3	QUARTER	QUARTER	QUARTER	QUARTER	---		1D-ISI-FD-021
Description:	BORIC ACID RECYCLE PUMP "B"								
Justification:	No pipe taps are present on the suction of the pump. Differential pressure will be determined by calculation using								

TABLE A-1

TMI1 INSERVICE TEST PROGRAM PUMP TABULATION

PUMP NUMBER	TYPE	CLASS	FLOWRATE	DIFFERENTIAL PRESSURE	DISCHARGE PRESSURE	VIBRATION	SPEED	RELIEF NUMBER	DRAWING

indicated discharge pressure and suction pressure determined using suction tank boric acid level as recommended in NUREG-1482 Section 5.5.3.

TABLE A-2
TMI-1 IST PUMP RELIEF REQUESTS

RELIEF REQUEST NO. P 1

Component Tag No.	Component Description	Type
MU-P1A	Makeup & Purification Pump "A"	Centrifugal
MU-P1B	Makeup & Purification Pump "B"	Centrifugal
MU-P1C	Makeup & Purification Pump "C"	Centrifugal

Code Section from Which Relief is Requested
Relief is requested from the OM-6, §5.6, "Duration of Tests," requirement for a run time of at least two minutes after reaching stable pump conditions before obtaining data and the §5.2, "Test Procedure," requirement for testing at a single reference point.

Also, relief is requested from the vibration measurement requirements of OM-6, §4.6.4.

Alternate Test Description
As permitted by NRC GL 89-04, Position No. 9, the pumps will be full flow tested at a refueling outage frequency (see justification). The refueling outage test will include measurement of stable flow rate and DP. Pump testing will be performed with the system lined up to pump to the RCS through different flow path combinations to provide pump data at various flowrates. Run time through each flow configuration may be less than the two minutes required by OM-6. Due to the short duration of testing, a best effort will be used to take vibration data and all points may not be obtained.

Basis for Relief Request
The amount of time that the Makeup Pump injects at full flow to the Reactor Coolant System (RCS) must be limited. Pumping to the RCS will raise the level in the pressurizer and a plant transient can occur. Run time, therefore, must be limited.

Pumping time is limited to a total of approximately five minutes for all flow configurations. Because of the short time available for a test run, throttling to a specific reference point can not be accomplished. The pump is run with several different valve lineups to verify that flowrate and head are equal to or higher than accident design requirements. Flow rate and pressure measurements for each lineup is compared to previous test data. Acceptance is based on meeting or exceeding accident flow and head requirements. This meets the intent of the code. The test is similar to that described in NUREG 1482, §5.2 except for the following:

1) A manufacturers curve is not used. Comparison is with the FSAR Safety Analysis curve and previous full flow tests,
2) A five point curve is not used. The pump will operate at several different points, and

RELIEF REQUEST NO. P 1 (Continued):

3) Vibration is taken during the quarterly test and to the extent time allows during the full flow test.

These tests demonstrate pump operability and meet the intent of the code.

TABLE A-2
TMI-1 IST PUMP RELIEF REQUESTS

RELIEF REQUEST NO. P 2

Component Tag No.	Component Description	Type
EF-P1	Turbine Driven Emergency Feedwater Pump	Centrifugal
EF-P2A	Motor Driven Emergency Feedwater Pump "A"	Centrifugal
EF-P2B	Motor Driven Emergency Feedwater Pump "B"	Centrifugal

Code Section from Which Relief is Requested

Regarding refueling interval tests, relief is requested from:

1. OM-6, §5.6, "Duration of Tests," requirement for a run time of at least two minutes after reaching stable pump conditions before obtaining data,
2. OM-6, §5.2.c, requirement to compare flow rate and pressure to their respective reference values, and
3. OM-6, §4.6.4.a, requirement to take vibration measurements on each accessible pump bearing.

Alternate Test Description

TMI-1 Tech Specs requires a test each refueling to demonstrate that the motor driven EFW pumps can pump water from the condensate storage tanks (CSTs) to the steam generators. Except for tests every third refueling outage, the pump will be stopped as soon as accident design flowrate is achieved.

Every third refueling starting with the 11R Outage in September 1995, the test will demonstrate full flow for each pump based on a reference value. During the full flow test, the pump will be stopped based on steam generator level when approximately 1000 gallons has been transferred. Run time while pumping to the steam generator in either case may be less than the two minutes required by OM-6. A best effort will be used to take vibration data for each pump bearing, however because of the short duration of the refueling interval test, it may not be possible to obtain all of the data.

Basis for Relief Request

The EFW pumps are only for emergency use. They are not needed for startup, shutdown, or normal plant operation. Since the pumps operate only for test, no significant degradation is expected if testing is performed as proposed.

Every refueling outage, accident design flow for each pump will be verified by starting the pump and running only long enough to take flow rate data. EFW flow to the steam generators is limited by the cavitating venturis.

RELIEF REQUEST NO. P 2 (Continued):

A full flow test of all three pumps will be performed every third refueling outage. The test pressure and flow will be measured and compared to the system design basis values as well as results of previous tests. This test verifies the acceptable flow rate of the pumps. In between full flow tests, the refueling interval test will demonstrate accident design flowrate.

Since the refueling interval tests transfer lower quality water into the steam generators, the number and duration of tests must be limited to minimize the routine exposure of the steam generators to lower quality water. This will reduce chemistry challenges to the materials of the steam generator. Minimizing the duration of the test is necessary to limit the amount of CST water injected into the steam generators where corrosion damage promoted by oxygen contamination can occur. Because of the short duration of the refueling interval tests, it may not be possible to obtain all of the vibration data.

The EFW pump quarterly tests verify that the pumps are operational, start on demand, and can generate the required discharge pressure. During the quarterly test, vibration data will be taken on each bearing while pumping through the recirculation line.

TABLE A-2
TMI-1 IST PUMP RELIEF REQUESTS

RELIEF REQUEST NO. P 3

Component Tag No.	Component Description	Type
NR-P1A	Nuclear Service River Water Pump "A"	Centrifugal
NR-P1B	Nuclear Service River Water Pump "B"	Centrifugal
NR-P1C	Nuclear Service River Water Pump "C"	Centrifugal

Code Section from Which Relief is Requested
Relief is requested from OM-6, §5.2, "Test Procedure," item (d) regarding the determination of flow rate.

Alternate Test Description
Flowrate for individual pumps will be measured at refueling outages.

Basis for Relief Request
The test flow instrumentation for this system is located in the common discharge from all three pumps. The piping configuration does not facilitate installation of individual pump flow measuring devices. GPU Nuclear has not been successful in attaining acceptable accuracy or repeatability using individual annubar flow instruments.

During normal plant operation, at least two of the three pumps are in operation. Operation of only one Nuclear Service River Water Pump is not allowed because of reliability concerns and could jeopardize plant equipment due to heat loads for a large part of the year. Individual flow rate measurement is impractical during plant operation or during Cold Shutdowns of short duration.

TABLE A-2
TMI-1 IST PUMP RELIEF REQUESTS

RELIEF REQUEST NO. PG 1

Code Section from which Relief is Requested
Relief is requested from OM-6, §6.1, "Acceptance Criteria". This section requires doubling the test frequency until the cause is determined and corrected for vibration readings in the alert range (0.325 ips).

Alternate Test
If vibration readings are in the alert range, vibration trends and spectrum data will be evaluated. If the evaluation concludes that the vibration amplitude is above the established average by a statistically significant amount or that a significant change in the spectrum has occurred, then test frequency will be doubled until the cause is determined and corrected. Otherwise normal monitoring will continue.

Basis for Relief
OM-6 requires doubling test frequency whenever the overall vibration amplitude reaches 0.325 ips during quarterly testing. The code assumes that the equipment has degraded to the point where more frequent monitoring and possibly a repair are warranted. There is no consideration for test conditions, vibration history, or equipment maintenance history.

Consideration of vibration amplitudes was not part of the original acceptance criteria for pumps procured for many of the earlier nuclear plants. As a result, some of the pumps purchased in the late 60's and early 70's had inherently high vibrations. During low flow conditions, typical of IST testing, vibration amplitudes are at their highest. TMI plant data, shop testing by GPU Nuclear, and conversations with several pump vendors indicate that it is not unusual to experience vibrations in excess of 0.325 ips with these older pumps, especially at low flow conditions. Provided there is a successful long term operating history and provided there is no significant change in vibration amplitude or spectra, there is no reason to suspect equipment degradation at these vibration levels. TMI's Decay Heat Removal (DHR) pumps are one specific example and show the type of evaluations that we perform for pumps that exceed the alert limit.

EXAMPLE:
TMI's DHR pumps are early edition American Petroleum Institute (API) 610 process pumps. They have operated with occasionally high but untrending vibration since 1974. This includes extensive operating time between 1979 and 1985 (TMI's extended shutdown). The pumps have not failed, there is no unusual degradation in hydraulic performance, and seal and bearing life are normal. Vibration amplitudes average 0.293 ips (standard deviation of 0.1) with the highest vibration occurring at the lower flow IST conditions. Because of normal variation in vibration response and measurement, measured vibration exceeds

RELIEF REQUEST NO. PG 1 (Continued):

0.325 ips about once per year during low flow IST operation. However, there is no upward trend in the data and vibration has always been at vane pass frequency.

GPU has discussed these relatively high vibration readings with several vendors who manufactured API pumps. The vendors stated that high vibrations are expected with early edition API 610 pumps, particularly at the low flow rates encountered during inservice testing.

Additionally, GPU has shop tested TMI's spare DHR pump and found that its vibration readings were almost identical to TMI's two inservice pumps. During the shop test, vibration data were recorded at many different flow rates. At flow rates equal to and below the IST flow rate, vibrations occasionally exceeded 0.325 ips. This pump was inspected prior to and after the shop test to assure no degradation had occurred. The spare pump is identical to the inservice pumps and had never been used.

Based on many years of successful operating history, no step changes or trends in vibration data, extensive vibration analysis, shop testing, and vendor input, GPU Nuclear does not consider the vibration amplitudes of TMI's operating decay heat pumps unacceptable. Replacing or modifying the pumps to reduce vibrations only to assure they do not occasionally exceed 0.325 ips is unnecessary. Further, doubling the test frequency would result in running the pumps more often at low flow/high vibration conditions and would provide no useful information.

TABLE A-2
TMI-1 IST PUMP RELIEF REQUESTS

RELIEF REQUEST NO. PG 2

Code Section from Which Relief is Requested
Additional clarification to OM-6, §6.1, "Acceptance Criteria," regarding rerunning of a test is requested.

Alternate Test Description
If the test parameter values fall outside the acceptable range in OM-6 due to an identified systematic error, such as an improper valve line up or inaccurate instrumentation, the test will be rerun after the correction of the error.

Basis for Relief Request
There can be instances where the data gathered during a test appears to be in question. The clarification to OM-6, §6.1 will permit the evaluation of the condition and the rerunning of the test without declaring a pump to be either in the Alert Range or inoperable. The evaluation will be included in the test records. This is permitted by OM Code ISTB-1995, §6.2.3.

TABLE A-2
TMI-1 IST PUMP RELIEF REQUESTS

RELIEF REQUEST NO. PG 3

Code Section from Which Relief is Requested
Relief is requested from OM-6, §6.1, "Acceptance Criteria," regarding doubling of test frequency in the alert range, and declaring a pump inoperable if flow or differential pressure is in the alert or required action range.

Alternate Test Description
If measured pump parameters fall within the alert range the test frequency will be doubled until the cause of the deviation is found and corrected or an analysis of the pump is performed and new reference values established. The frequency of test will not be changed if the evaluation concludes that the condition does not impair the ability of the pump to fulfill its safety function.

If measured test parameters fall within the required action range the pump shall be declared inoperable until either the cause of the deviation is determined and the condition corrected, or an analysis of the pump is performed and new reference values established.

Basis for Relief Request
An analysis of the pump condition can demonstrate that the pump can furnish its design function especially for those pumps with large margins above their design requirement. Doubling test frequency for pumps is intended to get more data. For pumps that are normally standby, the degrading mechanism will not be active when the pump is off. Doubling test frequency may not establish any additional information.

The analysis will include an evaluation of previous data to establish a trend, an investigation into the reson for the parameter change, and if necessary the collection of additional data. The analysis will include a comparison of the test results and the required design parameters. To be successful, the evaluation must conclude that the condition does not impair the ability of the pump to perform its safety function. The evaluation will be maintained in the test records.

This option was permitted by earlier editions of ASME Section XI, Subsection IWP, and is also permitted by the ASME OM Code ISTB-1995, §6.2.2.

TABLE A-3

TMI1 AUGMENTED IST PROGRAM PUMP TABULATION

PUMP NUMBER	TYPE	CLASS	FLOWRATE	PRESSURE DIFFERENTIAL	DISCHARGE PRESSURE	VIBRATION	SPEED	RELIEF NUMBER	DRAWING
DF-P1A	POSITIVE DISPLACEMENT	A	QUARTER	---	---	---	---		C-302-351
Description:	DIESEL "A" FUEL TRANSFER PUMP (AC)								
Justification:	These pumps will be tested as part of the test of the Emergency Diesel Generator Tech Spec Surveillance. The only code parameter evaluated is flow rate and the test flow rate will be calculated for this pump.								
DF-P1B	POSITIVE DISPLACEMENT	A	QUARTER	---	---	---	---		C-302-351
Description:	DIESEL "A" FUEL TRANSFER PUMP (DC)								
Justification:	These pumps will be tested as part of the test of the Emergency Diesel Generator Tech Spec Surveillance. The only code parameter evaluated is flow rate and the test flow rate will be calculated for this pump.								
DF-P1C	POSITIVE DISPLACEMENT	A	QUARTER	---	---	---	---		C-302-351
Description:	DIESEL "B" FUEL TRANSFER PUMP (AC)								
Justification:	These pumps will be tested as part of the test of the Emergency Diesel Generator Tech Spec Surveillance. The only code parameter evaluated is flow rate and the test flow rate will be calculated for this pump.								
DF-P1D	POSITIVE DISPLACEMENT	A	QUARTER	---	---	---	---		C-302-351
Description:	DIESEL "B" FUEL TRANSFER PUMP (DC)								
Justification:	These pumps will be tested as part of the test of the Emergency Diesel Generator Tech Spec Surveillance. The only code parameter evaluated is flow rate and the test flow rate will be calculated for this pump.								

APPENDIX B

VALVE TEST PROGRAM

APPENDIX B

TMI-1 VALVE TEST PROGRAM

SUMMARY OF APPENDIX B TABLE INFORMATION

The TMI-1 Inservice Test Program Valve Tabulations (Table B-1 and B-3) provide information under the following column headings:

- VALVE NO:
  Individual valve identifier (e.g., MS-V9A identifies Main Steam System Valve 9A).

- TYPE:
  This column lists the type of valve as follows:

BALL	Ball Valve
BUTTERFLY	Butterfly Valve
CONTROL	Control Valve
DIAPHRAGM	Diaphragm Valve
GATE	Gate Valve
GLOBE	Globe Valve
LIFT CHECK	Lift Check Valve
PLUG	Plug Valve
RELIEF	Relief Valve
SOLENOID	Solenoid Valve
STOP CHECK	Stop Check Valve
SWINGCHECK	Swing Check Valve
THREEWAY	Three Way Valve
TILTDISCCK	Tilting Disc Check Valve

- SIZE:
  Valve Size in inches.

SUMMARY OF APPENDIX B TABLE INFORMATION (CONTINUED):

- CLS:
  The ASME Code Class as Class 1, 2, or 3 for IST valves. For valves included under the Augmented IST Valve Program, "A" is shown in column under class.

- CAT:
  The valve category (A, B, C, or D as defined in OM-10) or combination of categories (e.g., AC) when more than one distinguishing category characteristic is applicable and hence all requirements of each of the individual categories applies. Categories of valves are defined in OM-10, §1.4.

- ACTIVE/PASSIVE:
  Identifies whether the valve is active (required to change position to accomplish the required function) or passive (not required to change position to accomplish the required function). For active valves, information is given to indicate the direction the valve would travel in order to fulfill the required function (e.g. [from] "CLOSED TO OPEN" [position] if the valve must actuate to the open position, [from] "OPEN TO CLOSE" if the valve must close to perform its required function, or "BOTH" if the valve has a required function which demands that the valve go open under some circumstances and also has a required function which demands that the valve go closed under other circumstances).

- ACTUATOR:
  The type of actuator or "operator" (e.g., Piston, Motor, Diaphragm, Hand, Solenoid, Air or Not Applicable "NA" for check valves).

- NORM POS:
  The position of the valve during normal full power plant operation.

- FAIL POS:
  The fail safe position for valves which have fail safe actuators.

SUMMARY OF APPENDIX B TABLE INFORMATION (CONTINUED):

- TEST TYPE:
  This column lists the applicable tests as follows:

CLOSE	Close test
OPEN	Open test
DISASEMBLE	Disassemble and exercise the valve disc
FAIL SAFE	Verify the valve will move to the fail safe position
FULL FLOW	Check valve test to the full open condition
LEAK	Seat leakage test
NONINTRUSV	Full open test using non-intrusive techniques
PART FLOW	Verify partial opening of a check valve
PARTIAL	Partial valve stroke
POS VERIFY	Verification of the required remote position indication
SET POINT	Test to verify the setpoint of a relief or safety valve
TIME	Full stroke exercise and timing of the valve
TIME BOTH	Full stroke exercise and timing of the valve both open and close

- FREQUENCY:
  For each test listed in the Test Type column, the test frequency is provided in the column to the right. The test frequencies are defined as follows:

QUARTER	Quarterly or once per 92 days
COLD SD	Cold Shutdown
APP. J	Frequency required by 10 CFR 50, Appendix J
REFUEL	Refueling Interval (Once per 24 months)
ALTREFU	Every other (alternating) refueling outage
4REFUEL	Every fourth refueling interval
2 YEAR	Once per 2 years
5 YEAR	Once per 5 years
10 YEAR	Once per 10 years

SUMMARY OF APPENDIX B TABLE INFORMATION (CONTINUED):

- DRAWING:
  This column identifies the TMI-1 ISI Boundary Drawing Number on which the component is shown. For non-Code components the table shows the Piping and Instrumentation Drawing (P&ID) number, a "302" series drawing number. TMI-1 ISI Boundary Drawings and the associated Piping & Instrumentation Diagrams (P&IDs) are listed in Table 1.

- RELIEF NO:
  The Valve relief request number from Appendix A, Table A-2, where applicable (e.g., V 1, V 2, etc. for specific valves or VG 1, VG 2, etc. for relief that applies generically)

TABLE B-1

TMI1 INSERVICE TEST PROGRAM VALVE TABULATION

VALVE NO	TYPE	SIZE	CLS	CAT	ACTIVE/PASSIVE	ACTUATOR	NORM POS	FAIL POS	TEST TYPE	FREQUENCY	DRAWING	RELIEF NO
AH-V 1A	BUTTERFLY	48.0	2	A	ACTIVE OPEN TO CLOSE	PISTON	CLOSE	CLOSE	LEAK	APP. J	1D-ISI-FD-023	
Description: CONTAINMENT ISOLATION - RB PURGE OUTLET ISOL VALVE									TIME	QUARTER		
									FAIL SAFE	QUARTER		
									POS VERIFY	2 YEAR		
AH-V 1B	BUTTERFLY	48.0	2	A	ACTIVE OPEN TO CLOSE	MOTOR	CLOSE	AS IS	LEAK	APP. J	1D-ISI-FD-023	
Description: CONTAINMENT ISOLATION - RB PURGE OUTLET ISOL VALVE									TIME	QUARTER		
									POS VERIFY	2 YEAR		
AH-V 1C	BUTTERFLY	48.0	2	A	ACTIVE OPEN TO CLOSE	MOTOR	CLOSE	AS IS	LEAK	APP. J	1D-ISI-FD-023	
Description: CONTAINMENT ISOLATION - RB PURGE INLET ISOL VALVE									TIME	QUARTER		
									POS VERIFY	2 YEAR		
AH-V 1D	BUTTERFLY	48.0	2	A	ACTIVE OPEN TO CLOSE	PISTON	CLOSE	CLOSE	LEAK	APP. J	1D-ISI-FD-023	
Description: CONTAINMENT ISOLATION - RB PURGE INLET ISOL VALVE									TIME	QUARTER		
									FAIL SAFE	QUARTER		
									POS VERIFY	2 YEAR		
AH-V11A	THREE WAY	5.0	3	B	ACTIVE CLOSE TO OPEN	DIAPHRAGM	THROT	OPEN	TIME	QUARTER	1D-ISI-FD-011	
Description: CONTROL BLDG VENT UNIT "A" COOLING COIL DISCH VLV									FAIL SAFE	QUARTER		
AH-V11B	THREE WAY	5.0	3	B	ACTIVE CLOSE TO OPEN	DIAPHRAGM	THROT	OPEN	TIME	QUARTER	1D-ISI-FD-011	
Description: CONTROL BLDG VENT UNIT "B" COOLING COIL DISCH VLV									FAIL SAFE	QUARTER		
AS-V4	STOP CHECK	4.0	3	C	PASSIVE	MOTOR	CLOSE	AS IS	CLOSE	QUARTER	1D-ISI-FD-001	
Description: AUX STEAM STOP CHECK VALVE SUPPLY TO EF-U1									POS VERIFY	2 YEAR		
Justification: If the auxiliary boiler is operating, this valve cannot be tested. It cannot be tested because the piping downstream of the valve will contain live steam. The downstream pipe must be empty to verify check valve closure. Auxiliary boiler operation is not expected to coincide with the quarterly test. However, if the schedule conflicts, the valve test will be postponed until the auxiliary boiler is no longer needed. This meets the intent of OM-10, §4.3.2.2 (c).												
BS-V 1A	GLOBE	8.0	2	B	ACTIVE CLOSE TO OPEN	MOTOR	CLOSE	AS IS	TIME	QUARTER	1D-ISI-FD-012	
Description: BS-P1A DISCHARGE ISOLATION VALVE									POS VERIFY	2 YEAR		
BS-V 1B	GLOBE	8.0	2	B	ACTIVE CLOSE TO OPEN	MOTOR	CLOSE	AS IS	TIME	QUARTER	1D-ISI-FD-012	
Description: BS-P1B DISCHARGE ISOLATION VALVE									POS VERIFY	2 YEAR		
BS-V 2A	GATE	4.0	2	B	ACTIVE CLOSE TO OPEN	MOTOR	CLOSE	AS IS	TIME	QUARTER	1D-ISI-FD-012	
Description: NAOH TANK - SUCTION ISOLATION VALVE									POS VERIFY	2 YEAR		

TABLE B-1

TMI1 INSERVICE TEST PROGRAM VALVE TABULATION

VALVE NO	TYPE	SIZE	CLS	CAT	ACTIVE/PASSIVE	ACTUATOR	NORM POS	FAIL POS	TEST TYPE	FREQUENCY	DRAWING	RELIEF NO
BS-V 2B	GATE	4.0	2	B	ACTIVE CLOSE TO OPEN	MOTOR	CLOSE	AS IS	TIME	QUARTER	1D-ISI-FD-012	
Description: NAOH TANK SUCTION ISOLATION VALVE									POS VERIFY	2 YEAR		
BS-V 3A	GATE	10.0	2	B	ACTIVE CLOSE TO OPEN	MOTOR	CLOSE	AS IS	TIME	QUARTER	1D-ISI-FD-012	
Description: BS-P1A SUCTION VALVE									POS VERIFY	2 YEAR		
BS-V 3B	GATE	10.0	2	B	ACTIVE CLOSE TO OPEN	MOTOR	CLOSE	AS IS	TIME	QUARTER	1D-ISI-FD-012	
Description: BS-P1B SUCTION VALVE									POS VERIFY	2 YEAR		
BS-V23A	SWINGCHECK	10.0	2	C	ACTIVE CLOSE TO OPEN	NA	CLOSE	NONE	FULL FLOW	QUARTER	1D-ISI-FD-012	
Description: BS-P1A SUCTION CHECK VALVE												
BS-V23B	SWINGCHECK	10.0	2	C	ACTIVE CLOSE TO OPEN	NA	CLOSE	NONE	FULL FLOW	QUARTER	1D-ISI-FD-012	
Description: BS-P1B SUCTION CHECK VALVE												
BS-V30A	SWINGCHECK	8.0	2	C	ACTIVE CLOSE TO OPEN	NA	CLOSE	NONE	DISASEMBLE	4REFUEL	1D-ISI-FD-012	V 4
Description: CONTAINMENT ISOLATION - BS NOZZLE INLET CHECK VLV									PART FLOW	QUARTER		
Justification: This valve cannot be full stroke exercised with flow because initiation of flow will spray down the containment.												
BS-V30B	SWINGCHECK	8.0	2	C	ACTIVE CLOSE TO OPEN	NA	CLOSE	NONE	DISASEMBLE	4REFUEL	1D-ISI-FD-012	V 4
Description: CONTAINMENT ISOLATION - BS NOZZLE INLET CHECK VLV									PART FLOW	QUARTER		
Justification: This valve cannot be full stroke exercised with flow because initiation of flow will spray down the containment.												
BS-V52A	SWINGCHECK	4.0	2	C	ACTIVE CLOSE TO OPEN	NA	CLOSE	NONE	DISASEMBLE	4REFUEL	1D-ISI-FD-012	V 3
Description: NAOH TANK TO LPI/BS SUCTION HEADER CHECK VALVE												
Justification: This valve cannot be exercised with flow because it will inject Sodium Hydroxide into the Decay Heat Removal system.												
BS-V52B	SWINGCHECK	4.0	2	C	ACTIVE CLOSE TO OPEN	NA	CLOSE	NONE	DISASEMBLE	4REFUEL	1D-ISI-FD-012	V 3
Description: NAOH TANK TO LPI/BS SUCTION HEADER CHECK VALVE												
Justification: This valve cannot be exercised with flow because it will inject Sodium Hydroxide into the Decay Heat Removal system.												
BS-V59	GATE	6.0	2	A	PASSIVE	HAND	CLOSE	AS IS	LEAK	REFUEL	1D-ISI-FD-012	
Description: TEST LINE ISOLATION VALVE TO BWST												
CA-V 2	GATE	1.0	1	A	ACTIVE BOTH	PISTON	CLOSE	CLOSE	LEAK	APP. J	1D-ISI-FD-020	
Description: CONTAINMENT ISOLATION - RC SAMPLE ISOLATION VALVE									TIME BOTH	QUARTER		
									FAIL SAFE	QUARTER		
									POS VERIFY	2 YEAR		

TABLE B-1

TMI1 INSERVICE TEST PROGRAM VALVE TABULATION

VALVE NO	TYPE	SIZE	CLS	CAT	ACTIVE/PASSIVE	ACTUATOR	NORM POS	FAIL POS	TEST TYPE	FREQUENCY	DRAWING	RELIEF NO
CA-V 3	GLOBE	1.0	1	A	ACTIVE CLOSE TO OPEN	MOTOR	CLOSE	AS IS	TIME	QUARTER	1D-ISI-FD-020	
Description: CONTAINMENT ISOLATION - PRZ WATER SAMPLE ISOL VLV									POS VERIFY	2 YEAR		
CA-V 4A	GLOBE	1.0	2	A	ACTIVE OPEN TO CLOSE	MOTOR	CLOSE	AS IS	LEAK	APP. J	1D-ISI-FD-020	
Description: CONTAINMENT ISOLATION - OTSG "A" FW SAMPLE VALVE									TIME	QUARTER		
									POS VERIFY	2 YEAR		
CA-V 4B	GLOBE	1.0	2	A	ACTIVE OPEN TO CLOSE	MOTOR	CLOSE	AS IS	LEAK	APP. J	1D-ISI-FD-020	
Description: CONTAINMENT ISOLATION - OTSG "B" FW SAMPLE VALVE									TIME	QUARTER		
									POS VERIFY	2 YEAR		
CA-V 5A	GATE	1.0	2	A	ACTIVE OPEN TO CLOSE	PISTON	CLOSE	CLOSE	LEAK	APP. J	1D-ISI-FD-020	
Description: CONTAINMENT ISOLATION - OTSG "A" FW SAMPLE VALVE									TIME	QUARTER		
									FAIL SAFE	QUARTER		
									POS VERIFY	2 YEAR		
CA-V 5B	GATE	1.0	2	A	ACTIVE OPEN TO CLOSE	PISTON	CLOSE	CLOSE	LEAK	APP. J	1D-ISI-FD-020	
Description: CONTAINMENT ISOLATION - OTSG "B" FW SAMPLE VALVE									TIME	QUARTER		
									FAIL SAFE	QUARTER		
									POS VERIFY	2 YEAR		
CA-V13	GLOBE	0.5	1	A	ACTIVE BOTH	MOTOR	CLOSE	AS IS	LEAK	APP. J	1D-ISI-FD-020	
Description: CONTAINMENT ISOLATION - RCS LETDOWN SAMPLE VALVE									TIME BOTH	QUARTER		
									POS VERIFY	2 YEAR		
CA-V177	LIFT CHECK	1.0	3	C	ACTIVE CLOSE TO OPEN	NA	CLOSE	---	PART FLOW	COLD SD	1D-ISI-FD-021	
Description: CA-T1 TO MAKEUP SYSTEM CHECK VALVE									FULL FLOW	REFUEL		
Justification: Initiation of flow through this valve will inject concentrated boric acid into the Reactor Coolant System. This will adversely affect plant operation due to a reactivity change and potential control transient. Returning the concentration to the operating band will create additional radwaste to be processed. For these reasons, exercising during operation is considered to be impractical. This is one of two alternative Tech Spec paths that may be used to bring the plant to cold shutdown. This path will not be used for a shutdown when the flow path from the Boric Acid Mix Tank is out of service. Partial stroke testing will occur during shutdowns when this flow path is used. Per OM-10, §4.3.2.2 (e), the valve will be exercised at refueling outages.													
CA-V189	GATE	2.0	2	A	ACTIVE OPEN TO CLOSE	DIAPHRAGM	OPEN	CLOSE	LEAK	APP. J	1D-ISI-FD-021	
Description: CONTAINMENT INTEGRITY - RECLAIMED WATER TO RB VLV									POS VERIFY	2 YEAR		
									TIME	QUARTER		
									FAIL SAFE	QUARTER		

TABLE B-1

TMI1 INSERVICE TEST PROGRAM VALVE TABULATION

VALVE NO	TYPE	SIZE	CLS	CAT	ACTIVE/PASSIVE	ACTUATOR	NORM POS	FAIL POS	TEST TYPE	FREQUENCY	DRAWING	RELIEF NO
CA-V192	LIFT CHECK	2.0	2	A/C	ACTIVE OPEN TO CLOSE	NA	CLOSE	---	LEAK	APP. J	1D-ISI-FD-021	
Description: CONTAINMENT ISOLATION - RECLAIMED FEED TO RB CHK												
Justification: Following the completion of Reactor Coolant Pump Seal Modifications during the 11R Refueling Outage, there will be no flow through this valve during normal operation. The only practical method of verifying the closed position of the valve is Appendix J testing. In accordance with the NRC's recommendation in NUREG-1482, §4.1.4, these closed passive valves will be tested in accordance with Appendix J and extension of the test frequency is acceptable in accordance with 10 CFR 50.55a(f)(4)(iv).												
CF-V 1A	GATE	14.0	2	B	PASSIVE	MOTOR	OPEN	AS IS	POS VERIFY	2 YEAR	1D-ISI-FD-004	
Description: CORE FLOOD TANK "A" - DISCHARGE ISOLATION VALVE												
Justification: This valve is passive for its open safety function and must be open during operation as required by Tech Spec 3.3.1.2 c. GPUN also performs a stroke time test of this valve each refueling outage which is not required by the code.												
CF-V 1B	GATE	14.0	2	B	PASSIVE	MOTOR	OPEN	AS IS	POS VERIFY	2 YEAR	1D-ISI-FD-004	
Description: CORE FLOOD TANK "B" - DISCHARGE ISOLATION VALVE												
Justification: This valve is passive for its open safety function and must be open during operation as required by Tech Spec 3.3.1.2 c. GPUN also performs a stroke time test of this valve each refueling outage which is not required by the code.												
CF-V 2A	GLOBE	1.0	2	A	ACTIVE OPEN TO CLOSE	MOTOR	CLOSE	AS IS	LEAK TIME POS VERIFY	APP. J QUARTER 2 YEAR	1D-ISI-FD-004	
Description: CONTAINMENT ISOLATION - CF-T1A SAMPLE ISO VLV												
CF-V 2B	GLOBE	1.0	2	A	ACTIVE OPEN TO CLOSE	MOTOR	CLOSE	AS IS	LEAK TIME POS VERIFY	APP. J QUARTER 2 YEAR	1D-ISI-FD-004	
Description: CONTAINMENT ISOLATION - CF-T1B SAMPLE ISO VLV												
CF-V 4A	TILTDISCCK	14.0	1	A/C	ACTIVE CLOSE TO OPEN	NA	CLOSE	---	LEAK PART FLOW NONINTRUSV	REFUEL COLD SD ALTREFU	1D-ISI-FD-004	
Description: CORE FLOOD TANK "A" OUTLET CHECK VALVE												
Justification: This valve cannot be exercised during power operations. The pressure of this system (600 psi) during power operation is significantly lower than the RCS pressure (2155 psi) and the valve cannot be opened. As permitted by OM-10, §4.3.2.2(d) the valve will be partial stroke exercised during cold shutdowns. This valve (CF-V4A) along with CF-V4B forms a group as defined by GL 89-04, Position 2 and NUREG 1482, Section 4.1.2. One of the valves in the group will be full stroke exercised every refueling outage (alternating between A & B) using nonintrusive techniques or, as an alternative, one of the valves will be disassembled and inspected.												
CF-V 4B	TILTDISCCK	14.0	1	A/C	ACTIVE CLOSE TO OPEN	NA	CLOSE	---	LEAK PART FLOW NONINTRUSV	REFUEL COLD SD ALTREFU	1D-ISI-FD-004	
Description: CORE FLOOD TANK "B" OUTLET CHECK VALVE												
Justification: This valve cannot be exercised during power operations. The pressure of this system (600 psi) during power operation is significantly lower than the RCS pressure (2155 psi) and the valve cannot be opened. As permitted by OM-10, §4.3.2.2(d) the valve will be partial stroke exercised during cold shutdowns. This valve (CF-V4B) along with CF-V4A forms a group as defined by GL 89-04, Position 2 and NUREG 1482, §4.1.2. One valve of the group will be full stroke exercised every refueling outage (alternating between A & B) using nonintrusive techniques or, as an alternative, one valve in the group will be disassembled and inspected.												

TABLE B-1

TMI1 INSERVICE TEST PROGRAM VALVE TABULATION

VALVE NO	TYPE	SIZE	CLS	CAT	ACTIVE/PASSIVE	ACTUATOR	NORM POS	FAIL POS	TEST TYPE	FREQUENCY	DRAWING	RELIEF NO
CF-V 5A	SWINGCHECK	14.0	1	A/C	ACTIVE	NA	CLOSE	---	LEAK	REFUEL	1D-ISI-FD-004	
Description: CF-T1A & DH PUMP DISCH CHECK VALVE									PART FLOW	COLD SD		
									FULL FLOW	REFUEL		
									NONINTRUSV	ALTREFU		
Justification: Leak Testing Required to fulfill T.S. 4.2.7.1. This valve cannot be exercised during power operations. The pressure of this system during power operation is significantly lower than the RCS pressure and the valve cannot be opened. This valve (CF-V5A) along with CF-V5B form a group as defined by GL 89-04, Position 2 and NUREG-1482, §4.1.2. One valve in the group will be full stroke exercised every refueling outage (alternating between A & B) using nonintrusive techniques or, as an alternative, one of these valves will be disassembled and inspected. Both valves (CF-V5A and CF-V5B) will be open tested with flow every refueling outage.												
CF-V 5B	SWINGCHECK	14.0	1	A/C	ACTIVE	NA	CLOSE	---	LEAK	REFUEL	1D-ISI-FD-004	
Description: CF-T1B & DH PUMP DISCH CHECK VALVE									PART FLOW	COLD SD		
									FULL FLOW	REFUEL		
									NONINTRUSV	ALTREFU		
Justification: Leak Testing Required to fulfill T.S. 4.2.7.1. This valve cannot be exercised during power operations. The pressure of this system during power operation is significantly lower than the RCS pressure and the valve cannot be opened. This valve (CF-V5B) along with CF-V5A form a group as defined by GL 89-04, Position 2 and NUREG-1482, §4.1.2. One valve in the group will be full stroke exercised every refueling outage (alternating between A & B) using nonintrusive techniques or, as an alternative, one of these valves will be disassembled and inspected. Both valves (CF-V5A and CF-V5B) will be open tested with flow every refueling outage.												
CF-V12A	LIFT CHECK	1.0	2	A/C	ACTIVE OPEN TO CLOSE	NA	CLOSE	---	LEAK	APP. J	1D-ISI-FD-004	
Description: CONTAINMENT ISOLATION - CF-T1A MAKEUP CHECK VLV									CLOSE	QUARTER		
CF-V12B	LIFT CHECK	1.0	2	A/C	ACTIVE OPEN TO CLOSE	NA	CLOSE	---	LEAK	APP. J	1D-ISI-FD-004	
Description: CONTAINMENT ISOLATION - CF-T1B MAKEUP CHECK VLV									CLOSE	QUARTER		
CF-V19A	GATE	1.0	2	A	ACTIVE OPEN TO CLOSE	DIAPHRAGM	CLOSE	CLOSE	LEAK	APP. J	1D-ISI-FD-004	
Description: CONTAINMENT ISOLATION - MU TO CF-T1A									TIME	QUARTER		
									FAIL SAFE	QUARTER		
									POS VERIFY	2 YEAR		
CF-V19B	GATE	1.0	2	A	ACTIVE OPEN TO CLOSE	DIAPHRAGM	CLOSE	CLOSE	LEAK	APP. J	1D-ISI-FD-004	
Description: CONTAINMENT ISOLATION - MU TO CF-T1B									TIME	QUARTER		
									FAIL SAFE	QUARTER		
									POS VERIFY	2 YEAR		
CF-V20A	GATE	1.0	2	A	ACTIVE OPEN TO CLOSE	DIAPHRAGM	CLOSE	CLOSE	LEAK	APP. J	1D-ISI-FD-004	
Description: CONTAINMENT ISOLATION - CF-T1A SAMPLE ISOL VLV									TIME	QUARTER		
									FAIL SAFE	QUARTER		
									POS VERIFY	2 YEAR		

TABLE B-1

TMI1 INSERVICE TEST PROGRAM VALVE TABULATION

VALVE NO	TYPE	SIZE	CLS	CAT	ACTIVE/PASSIVE	ACTUATOR	NORM POS	FAIL POS	TEST TYPE	FREQUENCY	DRAWING	RELIEF NO
CF-V20B	GATE	1.0	2	A	ACTIVE OPEN TO CLOSE	DIAPHRAGM	CLOSE	CLOSE	LEAK	APP. J	1D-ISI-FD-004	
									TIME	QUARTER		
									FAIL SAFE	QUARTER		
									POS VERIFY	2 YEAR		
Description: CONTAINMENT ISOLATION - CF-T1B SAMPLE ISOL VLV												
CH-V22A	SWINGCHECK	4.0	3	C	ACTIVE BOTH	NA	---	---	FULL FLOW	QUARTER	1D-ISI-FD-011	
									CLOSE	QUARTER		
Description: AH-C3B CHILLED WATER DISCHARGE CHECK VALVE												
CH-V22B	SWINGCHECK	4.0	3	C	ACTIVE BOTH	NA	---	---	FULL FLOW	QUARTER	1D-ISI-FD-011	
									CLOSE	QUARTER		
Description: AH-C3B CHILLED WATER DISCHARGE CHECK VALVE												
CM-V1	BALL	1.0	2	A	ACTIVE OPEN TO CLOSE	PISTON	OPEN	CLOSE	LEAK	APP. J	1D-ISI-FD-023	
									TIME	QUARTER		
									FAIL SAFE	QUARTER		
									POS VERIFY	2 YEAR		
Description: CONTAINMENT ISOLATION - RB ATMOSPHERE SAMPLE VALVE												
CM-V2	BALL	1.0	2	A	ACTIVE OPEN TO CLOSE	PISTON	OPEN	CLOSE	LEAK	APP. J	1D-ISI-FD-023	
									TIME	QUARTER		
									FAIL SAFE	QUARTER		
									POS VERIFY	2 YEAR		
Description: CONTAINMENT ISOLATION - RB ATMOS SAMPLE RETURN VLV												
CM-V3	BALL	1.0	2	A	ACTIVE OPEN TO CLOSE	PISTON	OPEN	CLOSE	LEAK	APP. J	1D-ISI-FD-023	
									TIME	QUARTER		
									FAIL SAFE	QUARTER		
									POS VERIFY	2 YEAR		
Description: CONTAINMENT ISOLATION - RB ATMOSPHERE SAMPLE VALVE												
CM-V4	BALL	1.0	2	A	ACTIVE OPEN TO CLOSE	PISTON	OPEN	CLOSE	LEAK	APP. J	1D-ISI-FD-023	
									TIME	QUARTER		
									FAIL SAFE	QUARTER		
									POS VERIFY	2 YEAR		
Description: CONTAINMENT ISOLATION - RB ATMOS SAMPLE ISOL VALVE												
CO-V 14A	GATE	12.0	3	B	ACTIVE OPEN TO CLOSE	MOTOR	OPEN	AS IS	TIME	QUARTER	1D-ISI-FD-008	
									POS VERIFY	2 YEAR		
Description: CONDENSATE STORAGE TANK "A" ISOLATION VALVE												
Justification:												
CO-V 14B	GATE	12.0	3	B	ACTIVE OPEN TO CLOSE	MOTOR	OPEN	AS IS	TIME	QUARTER	1D-ISI-FD-008	
									POS VERIFY	2 YEAR		
Description: CONDENSATE STORAGE TANK "B" ISOLATION VALVE												
CO-V 16A	SWINGCHECK	10.0	3	C	ACTIVE	NA	---	---	PART FLOW	QUARTER	1D-ISI-FD-009	
									FULL FLOW	REFUEL		
Description: CONDENSATE CHECK VALVE - SUPPLY TO EFW PUMPS												

Justification: Initiating flow through this valve requires that the Emergency Feedwater Pump be operating. These pumps are operated quarterly on minimum flow recirculation. This flowrate is insufficient to open the valve fully. Full flow requires injection into the OTSG. This is impractical because injecting unheated water from the Condensate Storage Tank into the hot Steam Generator during operation would thermally cycle the auxiliary feedwater nozzles and OTSG tubes. Further, injection from the Condensate Storage Tank will introduce oxygenated water into the Steam Generators.

TABLE B-1

TMI1 INSERVICE TEST PROGRAM VALVE TABULATION

VALVE NO	TYPE	SIZE	CLS	CAT	ACTIVE/PASSIVE	ACTUATOR	NORM POS	FAIL POS	TEST TYPE	FREQUENCY	DRAWING	RELIEF NO
	The exposure of the Steam Generator tubes to oxygenated water must be minimized. While performance of the test at cold shutdown is not strictly impracticable, it is not prudent to change water chemistry solely for this test. As permitted by OM-10 §4.3.2.2 (e) the valve will be full stroked at refueling outages.											
CO-V 168	SWINGCHECK	10.0	3	C	ACTIVE	NA	---	---	PART FLOW	QUARTER	1D-ISI-FD-009	
Description:	CONDENSATE CHECK VALVE - SUPPLY TO EFW PUMPS								FULL FLOW	REFUEL		
Justification:	Initiating flow through this valve requires that the Emergency Feedwater Pump be operating. These pumps are operated quarterly on minimum flow recirculation. This flowrate is insufficient to open the valve fully. Full flow requires injection into the OTSG. This is impractical because injecting unheated water from the Condensate Storage Tank into the hot Steam Generator during operation would thermally cycle the auxiliary feedwater nozzles and OTSG tubes. Further, injection from the Condensate Storage Tank will introduce oxygenated water into the Steam Generators. The exposure of the Steam Generator tubes to oxygenated water must be minimized. While performance of the test at cold shutdown is not strictly impracticable, it is not prudent to change water chemistry solely for this test. As permitted by OM-10 §4.3.2.2 (e) the valve will be full stroked at refueling outages.											
CO-V111A	GATE	4.0	3	B	ACTIVE OPEN TO CLOSE	MOTOR	OPEN	AS IS	TIME	QUARTER	1D-ISI-FD-008	
Description:	CONDENSATE STORAGE TANK "A" ISOLATION TIE VALVE								POS VERIFY	2 YEAR		
CO-V111B	GATE	4.0	3	B	ACTIVE OPEN TO CLOSE	MOTOR	OPEN	AS IS	TIME	QUARTER	1D-ISI-FD-008	
Description:	CONDENSATE STORAGE TANK "B" ISOLATION TIE VALVE								POS VERIFY	2 YEAR		
CO-V175A	LIFT CHECK	2.0	3	C	ACTIVE	NA	---	---	OPEN	QUARTER	1D-ISI-FD-008	V 5
Description:	EFW PUMP BEARING COOLING RETURN CHECK VALVE								DISASEMBLE	ALTREFU		
Justification:	This valve is tested to the open position quarterly during the test of the EFW pumps. Due to system arrangement, it is not possible to ascertain if both A and B valves operate during the quarterly test.											
CO-V175B	LIFT CHECK	2.0	3	C	ACTIVE	NA	---	---	OPEN	QUARTER	1D-ISI-FD-008	V 5
Description:	EFW PUMP BEARING COOLING RETURN CHECK VALVE								DISASEMBLE	ALTREFU		
Justification:	This valve is tested to the open position quarterly during the test of the EFW pumps. Due to system arrangement, it is not possible to ascertain if both A and B valves operate during the quarterly test.											
DH-V 1	GATE	12.0	1	B	ACTIVE CLOSE TO OPEN	MOTOR	CLOSE	AS IS	TIME	COLD SD	1D-ISI-FD-005	
Description:	DECAY HEAT SUCTION ISOLATION FROM "B" HOT LEG								POS VERIFY	2 YEAR		
Justification:	DH-V1 is a high pressure valve in the Decay Heat drop line (suction to LPI pumps). During normal plant operation, DH-V1 cannot be cycled because it would reduce redundancy by providing only one high pressure valve between the RCS and the low pressure Decay Heat Removal System. In addition, the valves are interlocked with RCS pressure such that they cannot be opened unless RCS pressure is less than 400 psig. Per OM-10, §4.2.1.2 c, these valves will be tested at cold shutdowns.											
DH-V 2	GATE	12.0	1	B	ACTIVE CLOSE TO OPEN	MOTOR	CLOSE	AS IS	TIME	COLD SD	1D-ISI-FD-005	
Description:	CONTAINMENT ISOLATION - DH DROP LINE/PUMP SUCTION								POS VERIFY	2 YEAR		
Justification:	During normal plant operation, DH-V2 cannot be cycled because it would reduce redundancy by providing only one high pressure valve between the RCS and the low pressure Decay Heat Removal System. In addition, the valves are interlocked with RCS pressure such that they cannot be opened unless RCS pressure is less than 400 psig. Per OM-10, §4.2.1.2 c, these valves will be tested at cold shutdowns.											

TABLE B-1

TMI1 INSERVICE TEST PROGRAM VALVE TABULATION

VALVE NO	TYPE	SIZE	CLS	CAT	ACTIVE/PASSIVE	ACTUATOR	NORM POS	FAIL POS	TEST TYPE	FREQUENCY	DRAWING	RELIEF NO
DH-V 3	GATE	12.0	2	B	ACTIVE CLOSE TO OPEN	MOTOR	CLOSE	AS IS	TIME	QUARTER	1D-ISI-FD-005	
Description: CONTAINMENT ISOLATION - DH DROP LINE VLV									POS VERIFY	2 YEAR		
DH-V 4A	GATE	10.0	2	B	ACTIVE CLOSE TO OPEN	MOTOR	CLOSE	AS IS	TIME	COLD SD	1D-ISI-FD-005	
Description: CONTAINMENT ISOLATION - DH-P1A DISCHARGE ISOL VLV									POS VERIFY	2 YEAR		
Justification: This valve is in series with valves DH-V22A and CF-V5A. If there is leakage past DH-V22A and CF-V5A, opening DH-V4A during operation could subject the DH sytem to a pressure in excess of its design pressure. For this reason, the stroke test will be performed at cold shutdowns. This is as described in NUREG 1482, §3.1.1, (3).												
DH-V 4B	GATE	10.0	2	B	ACTIVE CLOSE TO OPEN	MOTOR	CLOSE	AS IS	TIME	COLD SD	1D-ISI-FD-005	
Description: CONTAINMENT ISOLATION - DH-P1B DISCH ISOL VALVE									POS VERIFY	2 YEAR		
Justification: This valve is in series with valves DH-V22B and CF-V5B. If there is leakage past DH-V22B and CF-V5B, opening of DH-V4B during operation could subject the DH sytem to a pressure in excess of its design pressure. For this reason, the stroke test will be performed at cold shutdowns. This is as described in NUREG 1482, §3.1.1, (3).												
DH-V 5A	GATE	14.0	2	B	ACTIVE OPEN TO CLOSE	MOTOR	OPEN	AS IS	TIME	QUARTER	1D-ISI-FD-005	
Description: DECAY HEAT SUCTION VALVE FROM BWST									POS VERIFY	2 YEAR		
DH-V 5B	GATE	14.0	2	B	ACTIVE OPEN TO CLOSE	MOTOR	OPEN	AS IS	TIME	QUARTER	1D-ISI-FD-005	
Description: DH PUMP SUCTION FROM BWST									POS VERIFY	2 YEAR		
DH-V 6A	GATE	14.0	2	B	ACTIVE CLOSE TO OPEN	MOTOR	CLOSE	AS IS	TIME	REFUEL	1D-ISI-FD-005	
Description: CONTAINMENT ISOLATION - RB SUMP RECIRC SUCTION VLV									POS VERIFY	2 YEAR		
Justification: Performance of the exercise test requires draining and blanking off the line to the Reactor Building Sump to prevent flooding the sump from the Decay Heat System. Blanking the sump involves radiation exposure. The work involved to prepare for the test will cause a significant burden. Per OM-10, §4.2.1.2 (e) the valve will be full stroke exercised during refueling.												
DH-V 6B	GATE	14.0	2	B	ACTIVE CLOSE TO OPEN	MOTOR	CLOSE	AS IS	TIME	REFUEL	1D-ISI-FD-005	
Description: CONTAINMENT ISOLATION - RB SUMP RECIRC SUCTION									POS VERIFY	2 YEAR		
Justification: Performance of the exercise test requires draining and blanking off the line to the Reactor Building Sump to prevent flooding the sump from the Decay Heat System. Blanking the sump involves radiation exposure. The work involved to prepare for the test will cause a significant burden. Per OM-10, §4.2.1.2 (e) the valve will be full stroke exercised during refueling.												
DH-V 7A	GATE	4.0	2	B	ACTIVE CLOSE TO OPEN	MOTOR	CLOSE	AS IS	TIME	QUARTER	1D-ISI-FD-005	
Description: DH-C1A DISCHARGE VALVE TO MAKEUP SYSTEM									POS VERIFY	2 YEAR		
									CLOSE	QUARTER		
DH-V 7B	GATE	4.0	2	B	ACTIVE CLOSE TO OPEN	MOTOR	CLOSE	AS IS	TIME	QUARTER	1D-ISI-FD-005	
Description: DH-C1B DISCHARGE VALVE TO MAKEUP SYSTEM									POS VERIFY	2 YEAR		
									CLOSE	QUARTER		

TABLE B-1

TMI1 INSERVICE TEST PROGRAM VALVE TABULATION

VALVE NO	TYPE	SIZE	CLS	CAT	ACTIVE/PASSIVE	ACTUATOR	NORM POS	FAIL POS	TEST TYPE	FREQUENCY	DRAWING	RELIEF NO
DH-V14A	SWINGCHECK	14.0	2	C	ACTIVE CLOSE TO OPEN	NA	---	---	PART FLOW	QUARTER	1D-ISI-FD-005	
Description: DH PUMP SUCTION FROM BWST CHECK VALVE									FULL STROK	REFUEL		
									NONINTRUSV	ALTREFU		

Justification: Full flow testing of this valve requires that the DH system inject into the Reactor Coolant System (RCS). This cannot be accomplished during power operation because RCS pressure is higher than the design pressure of the DH system and because the flowrate possible through the pump test line is less than the full design flowrate. These valves can be exercised quarterly with partial flow. Full flow testing requires that the Decay Heat Pump operate at design flowrate in parallel with the Building Spray Pump. This could significantly affect short, unplanned cold shutdowns and could result in pumping the RCS to the Borated Water Storage Tank in the unlikely event of a valve mispositioning error. Therefore, testing at full flow is impractical at cold shutdown. As permitted by OM-10, §4.3.2.2 (d), this valve will be partial flow tested quarterly and full stroke tested at refueling. This valve (DH-V14A) along with DH-V14B form a group as defined by GL 89-04, Position 2 and NUREG 1482, §4.1.2 in that they are identical, mounted the same manner, and see the same service. One valve of the group will be full stroke exercised every refueling outage (alternating between A & B) using nonintrusive techniques or, as an alternative, one valve in the group will be disassembled and inspected. Both valves (DH-V14A and DH-V14B) will be open tested with flow every refueling outage.

DH-V14B	SWINGCHECK	14.0	2	C	ACTIVE CLOSE TO OPEN	NA	---	---	PART FLOW	QUARTER	1D-ISI-FD-005	
Description: DH PUMP SUCTION FROM BWST CHECK VALVE									FULL STROK	REFUEL		
									NONINTRUSV	ALTREFU		

Justification: Full flow testing of this valve requires that the DH system inject into the Reactor Coolant System (RCS). This cannot be accomplished during power operation because RCS pressure is higher than the design pressure of the DH system and because the flowrate possible through the pump test line is less than the full design flowrate. These valves can be exercised quarterly with partial flow. Full flow testing requires that the Decay Heat Pump operate at design flowrate in parallel with the Building Spray Pump. This could significantly affect short, unplanned cold shutdowns and could result in pumping the RCS to the Borated Water Storage Tank in the unlikely event of a valve mispositioning error. Therefore, testing at full flow is impractical at cold shutdown. As permitted by OM-10, §4.3.2.2 (d), this valve will be partial flow tested quarterly and full stroke tested at refueling. This valve (DH-V14B) along with DH-V14A form a group as defined by GL 89-04, Position 2 and NUREG 1482, Section 4.1.2 in that they are identical, mounted the same manner, and see the same service. One valve of the group will be full stroke exercised every refueling outage (alternating between A & B) using nonintrusive techniques or as an alternative, one valve in the group will be disassembled and inspected. Both valves (DH-V14A and DH-V14B) will be open tested with flow every refueling outage.

DH-V16A	SWINGCHECK	10.0	2	C	ACTIVE CLOSE TO OPEN	NA	---	---	PART FLOW	QUARTER	1D-ISI-FD-005	
Description: DH-P1A DISCHARGE CHECK VALVE									FULL FLOW	REFUEL		

Justification: Full flow testing of this valve requires that the DH system inject into the Reactor Coolant System. This cannot be done during power operation because the RCS pressure is higher than the design pressure of the DH system and exceeds the capability of the DH pumps. The valves can be exercised quarterly with partial flow through a test line. Both valves will be tested during each refueling. Full flow testing of both valves is considered to be impractical for short duration cold shutdowns since only one DH train is normally utilized.

DH-V16B	SWINGCHECK	10.0	2	C	ACTIVE CLOSE TO OPEN	NA	---	---	PART FLOW	QUARTER	1D-ISI-FD-005	
Description: DECAY HEAT PUMP "B" DISCHARGE CHECK VALVE									FULL FLOW	REFUEL		

Justification: Full flow testing of this valve requires that the DH system inject into the Reactor Coolant System. This cannot be done during power operation because the RCS pressure is higher than the design pressure of the DH system and exceeds the capability of the DH pumps. The valves can be exercised quarterly with partial flow through a test line. Both valves will be tested during each refueling. Full flow testing of both valves is considered to be impractical for short duration cold shutdowns since only one DH train is normally utilized.

TABLE B-1

TMI1 INSERVICE TEST PROGRAM VALVE TABULATION

VALVE NO	TYPE	SIZE	CLS	CAT	ACTIVE/PASSIVE	ACTUATOR	NORM POS	FAIL POS	TEST TYPE	FREQUENCY	DRAWING	RELIEF NO
DH-V21	GLOBE	3.0	3	A	PASSIVE	HAND	CLOSE	---	LEAK	REFUEL	1D-ISI-FD-005	
Description: DH PUMPS DISCHARGE TEST ISOLATION VALVE												
DH-V22A	TILTDISCCK	10.0	1	A/C	ACTIVE	NA	CLOSE	---	LEAK	REFUEL	1D-ISI-FD-005	
Description: CONTAINMENT ISOLATION - DH-P1A DISCHARGE CHK TO CF									PART FLOW	COLD SD		
									FULL FLOW	REFUEL		
Justification: Leak testing is required to fulfill T.S. 4.2.7.1. This valve cannot be exercised during power operations. The pressure of this system during power operation is significantly lower than the RCS pressure and the valve cannot be opened. At a minimum, one of the DH-V22 valves will will be exercised during cold shutdowns. Both valves will be tested each refueling. Full flow testing of both valves is considered to be impractical for short duration cold shutdowns since only one DH train is normally utilized.												
DH-V22B	TILTDISCCK	10.0	1	A/C	ACTIVE	NA	CLOSE	---	LEAK	REFUEL	1D-ISI-FD-005	
Description: CONTAINMENT ISOLATION - DH-P1B DISCH CHK TO CF									PART FLOW	COLD SD		
									FULL FLOW	REFUEL		
Justification: Leak testing is required to fulfill T.S. 4.2.7.1. This valve cannot be exercised during power operations. The pressure of this system during power operation is significantly lower than the RCS pressure and the valve cannot be opened. At a minimum one of the DH-V22 valves will be exercised during cold shutdowns. Both valves will be tested each refueling. Full flow testing of both valves is considered to be impractical for short duration cold shutdowns since only one DH train is normally utilized.												
DH-V38A	GATE	6.0	2	B	ACTIVE CLOSE TO OPEN	HAND	CLOSE	---	OPEN	QUARTER	1D-ISI-FD-005	
Description: DECAY HEAT CROSSOVER VALVE									CLOSE	QUARTER		
DH-V38B	GATE	6.0	2	B	ACTIVE CLOSE TO OPEN	HAND	CLOSE	---	OPEN	QUARTER	1D-ISI-FD-005	
Description: DECAY HEAT CROSSOVER VALVE									CLOSE	QUARTER		
DH-V50	SWINGCHECK	4.0	2	C	PASSIVE	NA	CLOSE	---			1D-ISI-FD-005	V 2
Description: SPENT FUEL RETURN CLEANUP CHECK VALVE												
DH-V64	GLOBE	2.0	2	A	ACTIVE BOTH	HAND	CLOSE	---	LEAK	APP. J	1D-ISI-FD-005	
Description: CONTAINMENT ISOLATION - DH TO PZR SPRAY ISOL VLV									OPEN	QUARTER		
DH-V69	SWINGCHECK	1.5	2	A/C	ACTIVE BOTH	NA	OPEN	---	LEAK	APP. J	1D-ISI-FD-005	
Description: CONTAINMENT ISOLATION - DH TO PZR AUX SPRAY LINE									FULL FLOW	COLD SD		
Justification: This valve is in the discharge of the Decay Heat Removal pumps. The valve open safety function is to provide long term core circulation to prevent boron concentration. The open function of the check valve cannot be tested quarterly. Decay Heat (LPI) pumps have a discharge pressure in the order of 200 psig. During normal plant operation, these valves cannot be opened because the RCS pressure is approximately 2155 psig. The valve will be flow tested during cold shutdown as permitted by OM 10, §4.3.2.2 (c).												
DR-V1A	BUTTERFLY	20.0	3	B	ACTIVE CLOSE TO OPEN	MOTOR	CLOSE	AS IS	TIME	QUARTER	1D-ISI-FD-002	
Description: DR-P1A DISCHARGE VALVE									POS VERIFY	2 YEAR		

TABLE B-1

TMI1 INSERVICE TEST PROGRAM VALVE TABULATION

VALVE NO	TYPE	SIZE	CLS	CAT	ACTIVE/PASSIVE	ACTUATOR	NORM POS	FAIL POS	TEST TYPE	FREQUENCY	DRAWING	RELIEF NO
DR-V1B	BUTTERFLY	20.0	3	B	ACTIVE CLOSE TO OPEN	MOTOR	CLOSE	AS IS	TIME	QUARTER	1D-ISI-FD-002	
Description: DR-P1B DISCHARGE VALVE									POS VERIFY	2 YEAR		
DR-V7A	SWINGCHECK	2.0	3	C	ACTIVE OPEN TO CLOSE	NA	---	---	FULL FLOW	QUARTER	1D-ISI-FD-002	
Description: DR-P1A COLUMN VACUUM BREAKER									CLOSE	QUARTER		
DR-V7B	SWINGCHECK	2.0	3	C	ACTIVE OPEN TO CLOSE	NA	---	---	FULL FLOW	QUARTER	1D-ISI-FD-002	
Description: DR-P1B COLUMN VACUUM BREAKER									CLOSE	QUARTER		
EF-V 2A	GATE	6.0	3	B	ACTIVE OPEN TO CLOSE	MOTOR	OPEN	AS IS	TIME	QUARTER	1D-ISI-FD-009	
Description: EFW PUMP DISCHARGE HEADER CROSS CONNECT VALVE									POS VERIFY	REFUEL		
EF-V 2B	GATE	6.0	3	B	ACTIVE OPEN TO CLOSE	MOTOR	OPEN	AS IS	TIME	QUARTER	1D-ISI-FD-009	
Description: EFW PUMP DISCHARGE HEADER CROSS CONNECT VALVE									POS VERIFY	REFUEL		
EF-V 4	GATE	6.0	3	B	ACTIVE CLOSE TO OPEN	MOTOR	CLOSE	AS IS	TIME	QUARTER	1D-ISI-FD-010	
Description: EMERGENCY RIVER WATER SUPPLY TO EFW PUMPS									TIME	REFUEL		
									POS VERIFY	2 YEAR		
EF-V 5	GATE	6.0	3	B	ACTIVE CLOSE TO OPEN	MOTOR	CLOSE	AS IS	TIME	QUARTER	1D-ISI-FD-010	
Description: EMERGENCY RIVER WATER SUPPLY TO EFW PUMPS									TIME	REFUEL		
									POS VERIFY	2 YEAR		
EF-V11A	TILTDISCCK	4.0	3	C	ACTIVE	NA	---	---	FULL FLOW	REFUEL	1D-ISI-FD-009	
Description: EF-P2A DISCHARGE CHECK VALVE									CLOSE	REFUEL		

Justification: These check valves are on the discharge of pumps EF-P2A/B. The EF pumps are tested quarterly on recirculation with the steam generators isolated. Since the recirculation line is upstream of these valves there is no flow to open them. Initiation of flow through the valves during power operation would inject cold water into a hot steam generator. This is impractical because injecting cold water from the Condensate Storage Tank into the hot Steam Generator during operation would thermally cycle the tubes and Emergency Feedwater nozzles. Further, injection from the Condensate Storage Tank will introduce oxygenated water into the Steam Generators. The exposure of the Steam Generator tubes to oxygenated water, especially during short shutdowns, must be minimized. The closed test requires the closing of one injection line to the OTSG and the cross connecting of two of the three Emergency Feedwater Pumps. This effectively removes two pumps from service. This is not desirable nor permitted by the Tech Specs when the plant is operating. During short duration or unplanned Cold Shutdowns, the test could extend the outage. As permitted by OM-10, §4.3.2.2 (e), flow testing and closed testing of the valves will be performed at a refueling outage frequency.

EF-V11B	TILTDISCCK	4.0	3	C	ACTIVE	NA	---	---	FULL FLOW	REFUEL	1D-ISI-FD-009	
Description: EF-P2B DISCHARGE CHECK VALVE									CLOSE	REFUEL		

Justification: These check valves are on the discharge of pumps EF-P2A/B. The EF pumps are tested quarterly on recirculation with the steam generators isolated. Since the recirculation line is upstream of these valves there is no flow to open them. Initiation of flow through the valves during power operation would inject cold water into a hot steam generator. This is impractical because injecting cold water from the Condensate Storage Tank into the hot Steam Generator during operation would thermally cycle the tubes and the Emergency Feedwater nozzles. Further, injection from the Condensate Storage Tank will introduce oxygenated water into the Steam Generators. The exposure of the Steam Generator tubes to oxygenated water, especially during short shutdowns, must be minimized. The closed test requires the closing of one injection line to the OTSG and the cross connecting of two of the three Emergency Feedwater Pumps. This effectively removes two pumps from service. This is not desirable nor

VALVE NO	TYPE	SIZE	CLS	CAT	ACTIVE/PASSIVE	ACTUATOR	NORM POS	FAIL POS	TEST TYPE	FREQUENCY	DRAWING	RELIEF NO

permitted by the Tech Specs when the plant is operating. During short duration or unplanned Cold Shutdowns, the test could extend the outage. As permitted by OM-10, §4.3.2.2 (e), flow testing and closed testing of the valves will be at a refueling outage frequency.

EF-V12A	TILTDISCCK	6.0	2	C	ACTIVE	NA	CLOSE	---	FULL FLOW	REFUEL	1D-ISI-FD-009	
Description:	CONTAINMENT ISOLATION - EFW TO OTSG "A" CHECK VLV								CLOSE	REFUEL		

Justification: This is the last valve in the flowpath before feedwater reaches the steam generator. Initiation of flow through these valves during power operation would inject cold water into a hot steam generator. This is considered to be impractical because injecting cold water from the Condensate Storage Tank into the hot Steam Generator during operation would thermally cycle the Emergency Feedwater nozzles and tubes. Further, injection from the Condensate Storage Tank will introduce oxygenated water into the Steam Generators. The exposure of the Steam Generator tubes to oxygenated water, especially during short cold shutdowns, must be minimized. The closed test cannot be performed at power because it would drain the injection pipe. The pipe would need to be refilled. The refill operation may cause injection into the OTSG. This is not desirable for the reasons stated above. The closed test requires that the OTSG be isolated and pressurized with Nitrogen. This is not practical for short unplanned Cold Shutdowns. The valve will be tested at refueling outages as permitted by OM-10, §4.3.2.2 (e).

EF-V12B	TILTDISCCK	6.0	2	C	ACTIVE	NA	CLOSE	---	FULL FLOW	REFUEL	1D-ISI-FD-009	
Description:	CONTAINMENT ISOLATION - EFW TO OTSG "B" CHECK VLV								CLOSE	REFUEL		

Justification: This is the last valve in the flowpath before feedwater reaches the steam generator. Initiation of flow through these valves during power operation would inject cold water into a hot steam generator. This is considered to be impractical because injecting cold water from the Condensate Storage Tank into the hot Steam Generator during operation would thermally cycle the Emergency Feedwater nozzles and tubes. Further, injection from the Condensate Storage Tank will introduce oxygenated water into the Steam Generators. The exposure of the Steam Generator tubes to oxygenated water, especially during short cold shutdowns, must be minimized. The closed test cannot be performed at power because it would drain the injection pipe. The pipe would need to be refilled. The refill operation may cause injection into the OTSG. This is not desirable for the reasons stated above. The closed test requires that the OTSG be isolated and pressurized with nitrogen. This is not practical for short unplanned Cold Shutdowns. The valve will be tested at a refueling outage frequency as permitted by OM-10, §4.3.2.2 (e).

EF-V13	TILTDISCCK	6.0	3	C	ACTIVE	NA	---	---	PART FLOW	QUARTER	1D-ISI-FD-009	
Description:	EF-P1 DISCHARGE CHECK VALVE								FULL FLOW	REFUEL		
									CLOSE	REFUEL		

Justification: This check valve is on the discharge of the turbine driven Emergency Feedwater Pump (EF-P1). The EF pumps are tested quarterly on recirculation with the steam generators isolated. Since the recirculation line is upstream of these valves, there is no flow to open them. Initiation of flow through the valves during power operation would inject unheated water into a hot steam generator. This is considered to be impractical because injecting unheated water from the Condensate Storage Tank into the hot Steam Generator during operation would thermally cycle the Emergency Feedwater nozzles and the Steam Generator tubes. Further, injection from the Condensate Storage Tank will introduce oxygenated water into the Steam Generators. The exposure of the Steam Generator tubes to oxygenated water, especially during short shutdowns, must be minimized. A partial stroke is performed quarterly by flowing water through a drain valve. The closed test will not be performed at power because it would render part of the system inoperable and remove redundancy for providing Emergency Feedwater to each Steam Generator. The closed test requires that the OTSG be isolated and pressurized with nitrogen. This is not practical for short unplanned Cold Shutdowns. As permitted by OM-10, §4.3.2.2 (e), flow testing of the valves will be performed at a refueling outage frequency.

TABLE B-1

TMI1 INSERVICE TEST PROGRAM VALVE TABULATION

VALVE NO	TYPE	SIZE	CLS	CAT	ACTIVE/PASSIVE	ACTUATOR	NORM POS	FAIL POS	TEST TYPE	FREQUENCY	DRAWING	RELIEF NO
EF-V19A	LIFT CHECK	1.5	3	C	ACTIVE	NA	---	---	FULL FLOW	QUARTER	1D-ISI-FD-009	
Description: EF-P2A RECIRC LINE CHECK VALVE									CLOSE	QUARTER		
EF-V19B	LIFT CHECK	1.5	3	C	ACTIVE	NA	---	---	FULL FLOW	QUARTER	1D-ISI-FD-009	
Description: EF-P2B RECIRC LINE CHECK VALVE									CLOSE	QUARTER		
EF-V21	LIFT CHECK	2.0	3	C	ACTIVE	NA	---	---	FULL FLOW	QUARTER	1D-ISI-FD-009	
Description: EF-P1 RECIRCULATION CHECK VALVE									CLOSE	QUARTER		
EF-V30A	CONTROL	3.0	2	B	ACTIVE BOTH	DIAPHRAGM	CLOSE	CLOSE	TIME BOTH	QUARTER	1D-ISI-FD-009	
Description: EFW TO OTSG "A" FLOW CONTROL VALVE									FAIL SAFE	QUARTER		
									POS VERIFY	2 YEAR		
									OPEN	REFUEL		
									CLOSE	REFUEL		
Justification: The open and close tests are not required by Code, this testing is part of the augmented testing of 2-Hr Backup Air switching valves (IA-V1625 and IA-V1626).												
EF-V30B	CONTROL	3.0	2	B	ACTIVE BOTH	DIAPHRAGM	CLOSE	CLOSE	TIME BOTH	QUARTER	1D-ISI-FD-009	
Description: EFW TO OTSG "B" FLOW CONTROL VALVE									FULL	QUARTER		
									POS VERIFY	2 YEAR		
									OPEN	REFUEL		
									CLOSE	REFUEL		
Justification: The open and close tests are not required by Code, this testing is part of the augmented testing of 2-Hr Backup Air switching valves (IA-V1625 and IA-V1626).												
EF-V30C	CONTROL	3.0	2	B	ACTIVE BOTH	DIAPHRAGM	CLOSE	CLOSE	TIME BOTH	QUARTER	1D-ISI-FD-009	
Description: EFW TO OTSG "A" FLOW CONTROL VALVE									FAIL SAFE	QUARTER		
									POS VERIFY	2 YEAR		
									OPEN	REFUEL		
									CLOSE	REFUEL		
Justification: The open and close tests are not required by Code, this testing is part of the augmented testing of 2-Hr Backup Air switching valves (IA-V1625 and IA-V1626).												
EF-V30D	CONTROL	3.0	2	B	ACTIVE BOTH	DIAPHRAGM	CLOSE	CLOSE	TIME BOTH	QUARTER	1D-ISI-FD-009	
Description: EFW TO OTSG "B" FLOW CONTROL VALVE									FAIL SAFE	QUARTER		
									POS VERIFY	2 YEAR		
									OPEN	REFUEL		
									CLOSE	REFUEL		
Justification: The open and close tests are not required by Code, this testing is part of the augmented testing of 2-Hr Backup Air switching valves (IA-V1625 and IA-V1626).												

TABLE B-1

TMI1 INSERVICE TEST PROGRAM VALVE TABULATION

VALVE NO	TYPE	SIZE	CLS	CAT	ACTIVE/PASSIVE	ACTUATOR	NORM POS	FAIL POS	TEST TYPE	FREQUENCY	DRAWING	RELIEF NO
FW-V12A	TILTDISCCK	20.0	2	C	ACTIVE OPEN TO CLOSE	NA	OPEN	---	CLOSE	REFUEL	1D-ISI-FD-009	
Description:	CONTAINMENT ISOLATION - OTSG "A" INLET CHECK VALVE											
Justification:	This valve supplies feedwater to the Steam Generator during plant operation. Any stroke testing during operation is impossible. To perform the closed portion of the cycle test, condenser vacuum must be broken and the Steam Generator pressurized with nitrogen. This evolution requires significant resources and is considered to be impractical for cold shutdowns. Per OM-10, §4.3.2.2(e) this valve will be tested on a refueling outage frequency.											
FW-V12B	TILTDISCCK	20.0	2	C	ACTIVE OPEN TO CLOSE	NA	OPEN	---	CLOSE	REFUEL	1D-ISI-FD-009	
Description:	CONTAINMENT ISOLATION - OTSG "B" INLET CHECK VALVE											
Justification:	This valve supplies feedwater to the Steam Generator during plant operation. Any stroke testing during operation is impossible. To perform the closed portion of the cycle test, condenser vacuum must be broken and the Steam Generator pressurized with nitrogen. This evolution requires significant resources and is considered to be impractical for cold shutdowns. Per OM-10, §4.3.2.2(e) this valve will be tested on a refueling outage frequency.											
HM-V1A	GLOBE	1.0	2	A	ACTIVE CLOSE TO OPEN	SOLENOID	CLOSE	CLOSE	LEAK TIME FAIL SAFE POS VERIFY	APP. J QUARTER QUARTER 2 YEAR	1D-ISI-FD-023	
Description:	CONTAINMENT ISOLATION - H2 MONITOR "A" OUTLET ISOL											
HM-V1B	GLOBE	1.0	2	A	ACTIVE CLOSE TO OPEN	SOLENOID	CLOSE	CLOSE	LEAK TIME FAIL SAFE POS VERIFY	APP. J QUARTER QUARTER 2 YEAR	1D-ISI-FD-023	
Description:	CONTAINMENT ISOLATION - H² MONITOR "B" OUTLET ISOL											
HM-V2A	GLOBE	1.0	2	A	ACTIVE CLOSE TO OPEN	SOLENOID	CLOSE	CLOSE	LEAK TIME FAIL SAFE POS VERIFY	APP. J QUARTER QUARTER 2 YEAR	1D-ISI-FD-023	
Description:	CONTAINMENT ISOLATION - "A" H² MONITOR INLET ISOL											
HM-V2B	GLOBE	1.0	2	A	ACTIVE CLOSE TO OPEN	SOLENOID	CLOSE	CLOSE	LEAK TIME FAIL SAFE POS VERIFY	APP. J QUARTER QUARTER 2 YEAR	1D-ISI-FD-023	
Description:	CONTAINMENT ISOLATION - "B" H² MONITOR INLET ISOL											
HM-V3A	SOLENOID	1.0	2	A	ACTIVE CLOSE TO OPEN	SOLENOID	CLOSE	CLOSE	LEAK TIME FAIL SAFE POS VERIFY	APP. J QUARTER QUARTER 2 YEAR	1D-ISI-FD-023	
Description:	CONTAINMENT ISOLATION - "A" H² MONITOR OUTLET ISOL											

TABLE B-1

TMI1 INSERVICE TEST PROGRAM VALVE TABULATION

VALVE NO	TYPE	SIZE	CLS	CAT	ACTIVE/PASSIVE	ACTUATOR	NORM POS	FAIL POS	TEST TYPE	FREQUENCY	DRAWING	RELIEF NO
HM-V3B	SOLENOID	1.0	2	A	ACTIVE CLOSE TO OPEN	SOLENOID	CLOSE	CLOSE	LEAK	APP. J	1D-ISI-FD-023	
Description: CONTAINMENT ISOLATION - "B" H^2 MONITOR OUTLET ISOL									TIME	QUARTER		
									FAIL SAFE	QUARTER		
									POS VERIFY	2 YEAR		
HM-V4A	SOLENOID	1.0	2	A	ACTIVE CLOSE TO OPEN	SOLENOID	CLOSE	CLOSE	LEAK	APP. J	1D-ISI-FD-023	
Description: CONTAINMENT ISOLATION - "A" H^2 MONITOR OUTLET ISOL									TIME	QUARTER		
									FAIL SAFE	QUARTER		
									POS VERIFY	2 YEAR		
HM-V4B	SOLENOID	1.0	2	A	ACTIVE CLOSE TO OPEN	SOLENOID	CLOSE	CLOSE	LEAK	APP. J	1D-ISI-FD-023	
Description: CONTAINMENT ISOLATION - "B" H^2 MONITOR OUTLET ISOL									TIME	QUARTER		
									FAIL SAFE	QUARTER		
									POS VERIFY	2 YEAR		
HP-V1	GATE	6.0	2	A	PASSIVE	HAND	CLOSE	---	LEAK	APP. J	1D-ISI-FD-023	
Description: CONTAINMENT ISOLATION - H^2 PURGE ISOLATION VALVE												
HP-V6	GATE	6.0	2	A	PASSIVE	HAND	CLOSE	---	LEAK	APP. J	1D-ISI-FD-023	
Description: CONTAINMENT ISOLATION - H^2 PURGE RB ISOL VALVE												
HR-V 2A	GLOBE	2.0	2	A	ACTIVE CLOSE TO OPEN	HAND	CLOSE	---	LEAK	APP. J	1D-ISI-FD-015	
Description: CONTAINMENT ISOLATION - HR-R1A/B RB SUPPLY VALVE									OPEN	QUARTER		
									CLOSE	QUARTER		
HR-V 2B	GLOBE	2.0	2	A	ACTIVE CLOSE TO OPEN	HAND	CLOSE	---	LEAK	APP. J	1D-ISI-FD-015	
Description: CONTAINMENT ISOLATION - HR-R1A/B RB SUPPLY									OPEN	QUARTER		
									CLOSE	QUARTER		
HR-V 4A	GLOBE	2.0	2	A	ACTIVE CLOSE TO OPEN	HAND	CLOSE	---	LEAK	APP. J	1D-ISI-FD-015	
Description: CONTAINMENT ISOLATION - HR-R1A/B RB RETURN VALVE									OPEN	QUARTER		
									CLOSE	QUARTER		
HR-V 4B	GLOBE	2.0	2	A	ACTIVE CLOSE TO OPEN	HAND	CLOSE	---	LEAK	APP. J	1D-ISI-FD-015	
Description: CONTAINMENT ISOLATION - HR-R1A/B RB RETURN VALVE									OPEN	QUARTER		
									CLOSE	QUARTER		
HR-V22A	GLOBE	2.0	2	A	ACTIVE BOTH	SOLENOID	CLOSE	CLOSE	LEAK	APP. J	1D-ISI-FD-015	
Description: CONTAINMENT ISOLATION - RB EXHAUST TO H2 RECOMB									TIME BOTH	QUARTER		
									FAIL SAFE	QUARTER		
									POS VERIFY	2 YEAR		

TABLE B-1

TMI1 INSERVICE TEST PROGRAM VALVE TABULATION

VALVE NO	TYPE	SIZE	CLS	CAT	ACTIVE/PASSIVE	ACTUATOR	NORM POS	FAIL POS	TEST TYPE	FREQUENCY	DRAWING	RELIEF NO
HR-V22B	GLOBE	2.0	2	A	ACTIVE BOTH	SOLENOID	CLOSE	CLOSE	LEAK	APP. J	1D-ISI-FD-015	
									TIME BOTH	QUARTER		
									FAIL SAFE	QUARTER		
									POS VERIFY	2 YEAR		
Description: CONTAINMENT ISOLATION - RB EXHAUST TO H^2 RECOMB												
HR-V23A	GLOBE	2.0	2	A	ACTIVE BOTH	SOLENOID	CLOSE	CLOSE	LEAK	APP. J	1D-ISI-FD-015	
									TIME BOTH	QUARTER		
									FAIL SAFE	QUARTER		
									POS VERIFY	2 YEAR		
Description: CONTAINMENT ISOLATION - H^2 RECOMB RETURN ISOL VLV												
HR-V23B	GLOBE	2.0	2	A	ACTIVE BOTH	SOLENOID	CLOSE	CLOSE	LEAK	APP. J	1D-ISI-FD-015	
									TIME BOTH	QUARTER		
									FAIL SAFE	QUARTER		
									POS VERIFY	2 YEAR		
Description: CONTAINMENT ISOLATION - H^2 RECOMB RETURN ISOL VLV												
IA-V 6	GLOBE	2.0	2	A	PASSIVE	HAND	CLOSE	---	LEAK	APP. J	1D-ISI-FD-023	
Description: CONTAINMENT ISOLATION - RB INST AIR CONN VALVE												
Justification: The valve is a passive component. Per OM-10, Table 1, no valve exercise will be performed.												
IA-V 20	GLOBE	2.0	2	A	PASSIVE	HAND	CLOSE	---	LEAK	APP. J	1D-ISI-FD-023	
Description: CONTAINMENT ISOLATION - IA INNER RB ISOL VALVE												
Justification: The valve is a passive component. Per OM-10, Table 1, no valve exercise will be performed.												
IC-V 2	GATE	6.0	3	A	ACTIVE OPEN TO CLOSE	MOTOR	OPEN	AS IS	LEAK	APP. J	1D-ISI-FD-022	
									PARTIAL	QUARTER		
									TIME	COLD SD		
									POS VERIFY	2 YEAR		
Description: CONTAINMENT ISOLATION - ICCW COOLANT RETURN VALVE												
Justification: Full Stroke Exercise of this valve during power operation will isolate cooling water returning from the Primary Letdown Coolers, Control Rod Drive Cooling Coils, and the Reactor Coolant Pump Heat Exchangers. Operation of this valve during power operation will jepordize Control Rod Drive Stators and cause thermal cycling of the Letdown Coolers. As per OM-10, §4.2.1.2(d), this valve will be full stroke exercised at the Cold Shutdown frequency.												
IC-V 3	PLUG	6.0	2	A	ACTIVE OPEN TO CLOSE	PISTON	OPEN	CLOSE	LEAK	APP. J	1D-ISI-FD-022	
									PARTIAL	QUARTER		
									TIME	COLD SD		
									FAIL SAFE	COLD SD		
									POS VERIFY	2 YEAR		
Description: CONTAINMENT ISOLATION - ICCW COOLANT RETURN VALVE												
Justification: Full Stroke Exercise of this valve during power operation will isolate cooling water returning from the primary Letdown Coolers, Control Rod Drive Cooling Coils, and the Reactor Coolant Pump Heat Exchangers. Operation of this valve during power operation will cause thermal cycling of the Letdown Cooler. This is not tolerable. As per OM-10, §4.2.1.2(d), this valve will be full stroke exercised at the Cold Shutdown frequency.												

TABLE B-1

TMI1 INSERVICE TEST PROGRAM VALVE TABULATION

VALVE NO	TYPE	SIZE	CLS	CAT	ACTIVE/PASSIVE	ACTUATOR	NORM POS	FAIL POS	TEST TYPE	FREQUENCY	DRAWING	RELIEF NO
IC-V 4	PLUG	6.0	2	A	ACTIVE OPEN TO CLOSE	PISTON	OPEN	CLOSE	LEAK	APP. J	1D-ISI-FD-022	
Description: CONTAINMENT ISOLATION - IC ISOL COOLANT SUPPLY									PARTIAL	QUARTER		
									TIME	COLD SD		
									FAIL SAFE	COLD SD		
									POS VERIFY	2 YEAR		
Justification: Full Stroke exercise of this valve during power operation will isolate cooling water going to the primary Letdown Coolers, and the Reactor Coolant Pump Heat Exchangers. Operation of this valve during power operation will cause thermal cycling of the Letdown Coolers and the RC Pump Coolers. As per OM-10, §4.2.1.2(d), this valve will be full stroke exercised at the Cold Shutdown frequency.												
IC-V 6	GATE	3.0	2	A	ACTIVE OPEN TO CLOSE	PISTON	OPEN	CLOSE	LEAK	APP. J	1D-ISI-FD-022	
Description: CONTAINMENT ISOLATION - IC COOLANT SUPPLY TO CRDM									PARTIAL	QUARTER		
									TIME	COLD SD		
									FAIL SAFE	COLD SD		
									POS VERIFY	2 YEAR		
Justification: Full Stroke exercise of this valve during power operation will isolate cooling water going to the Control Rod Drive Cooling Coils. Operation of this valve during power operation will isolate cooling to the CRD Motor Stators. This would cause equipment damage or require that the Reactor be tripped. As per OM-10, §4.2.1.2(d), this valve will be full stroke exercised at the Cold Shutdown frequency.												
IC-V16	SWINGCHECK	3.0	2	A/C	ACTIVE OPEN TO CLOSE	NA	OPEN	---	LEAK	APP. J	1D-ISI-FD-022	
Description: CONTAINMENT ISOLATION - CRD COOLING CHECK VALVE												
Justification: Stopping flow through this valve will stop all cooling to the Control Rod Drive Stator Coolers. This will cause equipment damage to the Control Rod Motor Stators and/or require tripping the reactor. Since the only practical means available to test this valve is setting up test equipment and performing leak rate testing as required by Appendix J, the test frequency has been extended to refueling as permitted by NUREG 1482, §4.1.4 (NRC Recommendation).												
IC-V18	SWINGCHECK	6.0	2	A/C	ACTIVE OPEN TO CLOSE	NA	OPEN	---	LEAK	APP. J	1D-ISI-FD-022	
Description: CONTAINMENT ISOLATION - LETDOWN SUPPLY CHECK VLV												
Justification: Stopping flow through this valve to cycle it closed will stop all cooling to the RC Pump Coolers, Letdown Coolers, and the Reactor Coolant Drain Tank Heat Exchanger. This would cause a thermal cycle on the above equipment. Since the only practical means available to test this valve is setting up test equipment and performing leak rate testing as required by Appendix J, the test frequency has been extended to refueling as permitted by NUREG 1482, §4.1.4 (NRC Recommendation).												
MS-V 1A	STOP CHECK	24.0	2	B/C	ACTIVE OPEN TO CLOSE	MOTOR	OPEN	AS IS	PARTIAL	QUARTER	1D-ISI-FD-001	
Description: CONTAINMENT ISOLATION - OTSG "A" MS ISOL VALVE									TIME	COLD SD		
									POS VERIFY	2 YEAR		
									CLOSE	REFUEL		
Justification: Full stroke testing of this valve during power operation would cause turbine pressure instabilities and may cause possible chalenges to safety valves upstream. This valve will be partial stroke tested quarterly and full stroke exercised at Cold Shutdown as permitted by OM-10, §4.2.1.2(b). The close test of the check function requires that one OTSG be depressurized while pressure on the other is monitored. Effectively, the closed function is verified by leak test. This test can only be done during normal shutdowns (not turbine trip). The test is performed when the generator is taken off line but before the turbine is tripped. The test lengthens the shutdown process and does intail some risk. As permitted by OM-10 §4.3.2.2(e) the close test is performed during refueling.												

TABLE B-1

TMI1 INSERVICE TEST PROGRAM VALVE TABULATION

VALVE NO	TYPE	SIZE	CLS	CAT	ACTIVE/PASSIVE	ACTUATOR	NORM POS	FAIL POS	TEST TYPE	FREQUENCY	DRAWING	RELIEF NO
MS-V 1B	STOP CHECK	24.0	2	B/C	ACTIVE OPEN TO CLOSE	MOTOR	OPEN	AS IS	PARTIAL	QUARTER	1D-ISI-FD-001	
Description: CONTAINMENT ISOLATION - OTSG "A" MS ISOL STOP CHK									TIME	COLD SD		
									POS VERIFY	2 YEAR		
									CLOSE	REFUEL		

Justification: Full stroke testing of this valve during power operation would cause turbine pressure instabilities and may cause possible chalenges to safety valves upstream. This valve will be partial stroke tested quarterly and full stroke exercised at cold shutdown as permitted by OM-10, §4.2.1.2(b). The close test of the check function requires that one OTSG be depressurized while pressure on the other is monitored. Effectively, the closed function is verified by leak test. This test can only be done during normal shutdowns (not turbine trip). The test is performed when the generator is taken off line but before the turbine is tripped. The test lengthens the shutdown process and does intail some risk. As permitted by OM-10 §4.3.2.2(e) the close test is performed during refueling.

VALVE NO	TYPE	SIZE	CLS	CAT	ACTIVE/PASSIVE	ACTUATOR	NORM POS	FAIL POS	TEST TYPE	FREQUENCY	DRAWING	RELIEF NO
MS-V 1C	STOP CHECK	24.0	2	B/C	ACTIVE OPEN TO CLOSE	MOTOR	OPEN	AS IS	PARTIAL	QUARTER	1D-ISI-FD-001	
Description: CONTAINMENT ISOLATION - OTSG "B" MS ISOL STOP CHK									TIME	COLD SD		
									POS VERIFY	2 YEAR		
									CLOSE	REFUEL		

Justification: Full stroke testing of this valve during power operation would cause turbine pressure instabilities and may cause possible chalenges to safety valves upstream. This valve will be partial stroke tested quarterly and full stroke exercised at cold shutdown as permitted by OM-10, §4.2.1.2(b). The close test of the check function requires that one OTSG be depressurized while pressure on the other is monitored. Effectively, the closed function is verified by leak test. This test can only be done during normal shutdowns (not turbine trip). The test is performed when the generator is taken off line but before the turbine is tripped. The test lengthens the shutdown process and does intail some risk. As permitted by OM-10, §4.3.2.2(e) the close test is performed during refueling.

VALVE NO	TYPE	SIZE	CLS	CAT	ACTIVE/PASSIVE	ACTUATOR	NORM POS	FAIL POS	TEST TYPE	FREQUENCY	DRAWING	RELIEF NO
MS-V 1D	STOP CHECK	24.0	2	B/C	ACTIVE OPEN TO CLOSE	MOTOR	OPEN	AS IS	PARTIAL	QUARTER	1D-ISI-FD-001	
Description: CONTAINMENT ISOLATION - OTSG "B" MS ISOL STOP CHK									TIME	COLD SD		
									POS VERIFY	2 YEAR		
									CLOSE	REFUEL		

Justification: Full stroke testing of this valve during power operation would cause turbine pressure instabilities and may cause possible chalenges to safety valves upstream. This valve will be partial stroke tested quarterly and full stroke exercised at cold shutdown as permitted by OM-10, §4.2.1.2(b). The close test of the check function requires that one OTSG be depressurized while pressure on the other is monitored. Effectively, the closed function is verified by leak test. This test can only be done during normal shutdowns (not turbine trip). The test is performed when the generator is taken off line but before the turbine is tripped. The test lengthens the shutdown process and does intail some risk. As permitted by OM-10, §4.3.2.2(e) the close test is performed during refueling.

VALVE NO	TYPE	SIZE	CLS	CAT	ACTIVE/PASSIVE	ACTUATOR	NORM POS	FAIL POS	TEST TYPE	FREQUENCY	DRAWING	RELIEF NO
MS-V 2A	GATE	12.0	2	B	ACTIVE OPEN TO CLOSE	MOTOR	OPEN	AS IS	TIME	QUARTER	1D-ISI-FD-001	
Description: OTSG "A" MS TO EF-P1 & TURBINE BYPASS VALVES									POS VERIFY	2 YEAR		

VALVE NO	TYPE	SIZE	CLS	CAT	ACTIVE/PASSIVE	ACTUATOR	NORM POS	FAIL POS	TEST TYPE	FREQUENCY	DRAWING	RELIEF NO
MS-V 2B	GATE	12.0	2	B	ACTIVE OPEN TO CLOSE	MOTOR	OPEN	AS IS	TIME	QUARTER	1D-ISI-FD-001	
Description: OTSG "B" TO EF-P1 & TURBINE BYPASS VALVES									POS VERIFY	2 YEAR		

TABLE B-1

TMI1 INSERVICE TEST PROGRAM VALVE TABULATION

VALVE NO	TYPE	SIZE	CLS	CAT	ACTIVE/PASSIVE	ACTUATOR	NORM POS	FAIL POS	TEST TYPE	FREQUENCY	DRAWING	RELIEF NO
MS-V 4A	CONTROL	6.0	3	B	ACTIVE CLOSE TO OPEN	PISTON	CLOSE	CLOSE	TIME	QUARTER	1D-ISI-FD-001	
Description: ATMOSPHERIC DUMP VALVE FOR OTSG "A"									FAIL SAFE	QUARTER		
									POS VERIFY	QUARTER		
Justification: Position Verification required quarterly per NRC Committment.												
MS-V 4B	CONTROL	6.0	3	B	ACTIVE CLOSE TO OPEN	PISTON	CLOSE	CLOSE	TIME	QUARTER	1D-ISI-FD-001	
Description: ATMOSPHERIC DUMP VALVE FOR OTSG "B"									FAIL SAFE	QUARTER		
									POS VERIFY	QUARTER		
Justification: Position verify required each quarter per NRC committment.												
MS-V 6	GLOBE	4.0	3	B	ACTIVE	DIAPHRAGM	OPEN	OPEN	TIME	QUARTER	1D-ISI-FD-001	
Description: EF-P1 MS PRESSURE REGULATOR CONTROL VALVE									FAIL SAFE	QUARTER		
Justification: This valve will be tested with the Emergency Feed Pump Turbine. The valve is considered to be a "Skid Mounted Component" as defined in NUREG 1482, §3.4. The only method available to open this valve is to change the setpoint of its pressure controller. This is a precise setpoint that is relied upon to prevent opening of the turbine driver safety valves. The setpoint should not be routinely changed. The controller must then be returned to the pretest setpoint. Since, the valve stroke cannot be directly measured, obturator movement will be monitoring by the startup time of the Emergency Feedwater Pump Turbine to verify the proper functioning of MS-V6. This is as permitted by OM-10, §4.2.1.3. The valve stroke will be that required to accelerate the turbine.												
MS-V 8A	GATE	12.0	3	B	PASSIVE	MOTOR	OPEN	AS IS	POS VERIFY	2 YEAR	1D-ISI-FD-001	
Description: OTSG "A" TO MS-V3D, 3E & 3F ISOLATION VALVE												
Justification: Normal Decay Heat Removal is by the steam generator to the condenser via this valve and the turbine bypass valves. This valve is passive in that it is open as required per T.S. 3.4.1.1.b. during operation. Per OM-10, Table 1 the only test required is position verification.												
MS-V 8B	GATE	12.0	3	B	PASSIVE	MOTOR	OPEN	AS IS	POS VERIFY	2 YEAR	1D-ISI-FD-001	
Description: OTSG "B" TO MS-V3A, 3B & 3C ISOL VALVE												
Justification: Normal decay heat removal is by the steam generator to the condenser via this valve and the turbine bypass valves. This valve is passive in that it is open as required per T.S. 3.4.1.1.b. during operation. Per OM-10, Table 1 the only test required is position verification.												
MS-V 9A	SWINGCHECK	6.0	3	C	ACTIVE	NA	---	---	PART FLOW	QUARTER	1D-ISI-FD-001	
Description: MAIN STEAM SUPPLY CHECK VALVE TO EF-U1									DISASEMBLE	ALTREFU		
Justification: This valve supplies steam from the OTSG to the Turbine Driven Emergency Feedwater Pump. This valve cannot be full stroke exercised during operation because such an evolution would require injecting low temperature condensate into the operating OTSG. Injecting cold water into the OTSG will thermally cycle the tubes and Emergency Feedwater nozzles, which should be avoided. A partial stroke is possible through the testing of the pump on recirculation. As permitted by OM-10, §4.3.2.2(b) a partial stroke test will be conducted quarterly. This valve (MS-V9A) along with MS-V9B forms a group as described in Generic Letter 89-04, Positon No. 2 and NUREG-1482 in that they are identical, mounted the same manner, and see the same service. One valve in the group will be disassembled and inspected and the disc manually exercised every refueling outage alternating between A and B (the interval for each valve is every other refueling outage). If the inspected valve is found to be unacceptable, the other valve in the group will be inspected during the same outage.												

TABLE B-1

TMI1 INSERVICE TEST PROGRAM VALVE TABULATION

VALVE NO	TYPE	SIZE	CLS	CAT	ACTIVE/PASSIVE	ACTUATOR	NORM POS	FAIL POS	TEST TYPE	FREQUENCY	DRAWING	RELIEF NO
MS-V 9B	SWINGCHECK	6.0	3	C	ACTIVE	NA	---	---	PART FLOW	QUARTER	1D-ISI-FD-001	
Description: MAIN STEAM SUPPLY CHECK VALVE TO EF-U1									DISASEMBLE	ALTREFU		
Justification: This valve supplies steam from the OTSG to the Turbine Driven Emergency Feedwater Pump. This valve cannot be full stroke exercised during operation because such an evolution would require injecting low temperature condensate into the operating OTSG. Injecting cold water into the OTSG will thermally cycle the tubes and Emergency Feedwater nozzles, which should be avoided. A partial stroke is possible through the testing of the pump on recirculation. As permitted by OM-10, §4.3.2.2(b) a partial stroke test will be conducted quarterly. This valve (MS-V9B) along with MS-V9A forms a group as described in Generic Letter 89-04, Positon No. 2 and NUREG-1482 in that they are identical, mounted the same manner, and see the same service. One valve in the group will be disassembled and inspected and the disc manually exercised every refueling outage alternating between A and B (the interval for each valve is every other refueling outage). If the inspected valve is found to be unacceptable, the other valve in the group will be inspected during the same outage.												
MS-V13A	GLOBE	2.0	3	B	ACTIVE CLOSE TO OPEN	DIAPHRAGM	CLOSE	OPEN	TIME	QUARTER	1D-ISI-FD-001	
Description: MAIN STEAM SUPPLY TO EF-P1 FROM OTSG "A"									FAIL SAFE	QUARTER		
									POS VERIFY	2 YEAR		
MS-V13B	GLOBE	2.0	3	B	ACTIVE CLOSE TO OPEN	DIAPHRAGM	CLOSE	OPEN	TIME	QUARTER	1D-ISI-FD-001	
Description: MAIN STEAM SUPPLY TO EF-P1 FROM OTSG "B"									FAIL SAFE	QUARTER		
									POS VERIFY	2 YEAR		
MS-V17A	RELIEF	6.0X10.0	2	C	ACTIVE	NA	CLOSE	---	SET POINT	5 YEAR	1D-ISI-FD-001	
Description: OTSG "A" MS RELIEF VALVE												
MS-V17B	RELIEF	6.0X10.0	2	C	ACTIVE	NA	CLOSE	---	SET POINT	5 YEAR	1D-ISI-FD-001	
Description: OTSG "A" MS RELIEF VALVE												
MS-V17C	RELIEF	6.0X10.0	2	C	ACTIVE	NA	CLOSE	---	SET POINT	5 YEAR	1D-ISI-FD-001	
Description: OTSG "B" MS RELIEF VALVE												
MS-V17D	RELIEF	6.0X10.0	2	C	ACTIVE	NA	CLOSE	---	SET POINT	5 YEAR	1D-ISI-FD-001	
Description: OTSG MS RELIEF VALVE												
MS-V18A	RELIEF	6.0X10.0	2	C	ACTIVE	NA	CLOSE	---	SET POINT	5 YEAR	1D-ISI-FD-001	
Description: OTSG "A" MS RELIEF VALVE												
MS-V18B	RELIEF	6.0X10.0	2	C	ACTIVE	NA	CLOSE	---	SET POINT	5 YEAR	1D-ISI-FD-001	
Description: OTSG "A" MS RELIEF VALVE												
MS-V18C	RELIEF	6.0X10.0	2	C	ACTIVE	NA	CLOSE	---	SET POINT	5 YEAR	1D-ISI-FD-001	
Description: OTSG "B" MS RELIEF VALVE												

TABLE B-1

TMI1 INSERVICE TEST PROGRAM VALVE TABULATION

VALVE NO	TYPE	SIZE	CLS	CAT	ACTIVE/PASSIVE	ACTUATOR	NORM POS	FAIL POS	TEST TYPE	FREQUENCY	DRAWING	RELIEF NO
MS-V18D	RELIEF	6.0X10.0	2	C	ACTIVE	NA	CLOSE	---	SET POINT	5 YEAR	1D-ISI-FD-001	
Description: OTSG "B" MS RELIEF VALVE												
MS-V19A	RELIEF	6.0X10.0	2	C	ACTIVE	NA	CLOSE	---	SET POINT	5 YEAR	1D-ISI-FD-001	
Description: OTSG "A" MS RELIEF VALVE												
MS-V19B	RELIEF	6.0X10.0	2	C	ACTIVE	NA	CLOSE	---	SET POINT	5 YEAR	1D-ISI-FD-001	
Description: OTSG "A" MS RELIEF VALVE												
MS-V19C	RELIEF	6.0X10.0	2	C	ACTIVE	NA	CLOSE	---	SET POINT	5 YEAR	1D-ISI-FD-001	
Description: OTSG "B" MS RELIEF VALVE												
MS-V19D	RELIEF	6.0X10.0	2	C	ACTIVE	NA	CLOSE	---	SET POINT	5 YEAR	1D-ISI-FD-001	
Description: OTSG "B" MS RELIEF VALVE												
MS-V20A	RELIEF	6.0X10.0	2	C	ACTIVE	NA	CLOSE	---	SET POINT	5 YEAR	1D-ISI-FD-001	
Description: OTSG "A" MS RELIEF VALVE												
MS-V20B	RELIEF	6.0X10.0	2	C	ACTIVE	NA	CLOSE	---	SETPOINT	5 YEAR	1D-ISI-FD-001	
Description: OTSG "A" MS RELIEF VALVE												
MS-V20C	RELIEF	6.0X10.0	2	C	ACTIVE	NA	CLOSE	---	SETPOINT	5 YEAR	1D-ISI-FD-001	
Description: OTSG "B" MS RELIEF VALVE												
MS-V20D	RELIEF	6.0X10.0	2	C	ACTIVE	NA	CLOSE	---	SETPOINT	5 YEAR	1D-ISI-FD-001	
Description: OTSG "B" MS RELIEF VALVE												
MS-V21A	RELIEF	3.0X6.0	2	C	ACTIVE	NA	CLOSE	---	SETPOINT	5 YEAR	1D-ISI-FD-001	
Description: OTSG "A" MS SAFETY VALVE												
MS-V21B	RELIEF	3.0X6.0	2	C	ACTIVE	NA	CLOSE	---	SETPOINT	5 YEAR	1D-ISI-FD-001	
Description: OTSG "B" MS SAFETY VALVE												
MU-V 2A	GLOBE	2.5	1	A	ACTIVE OPEN TO CLOSE	MOTOR	OPEN	AS IS	LEAK PARTIAL TIME POS VERIFY	APP. J QUARTER COLD SD 2 YEAR	1D-ISI-FD-016	
Description: CONTAINMENT ISOLATION - LETDOWN CLR "A" OUTLET VLV												
Justification: Fully closing this valve will isolate letdown flow through one cooler. This will cause a thermal cycle on that Letdown Cooler. A thermal cycle must be avoided if possible. Per OM-10, §4.2.1.2(b), a partial stroke test will be performed quarterly with a full stroke test at the Cold Shutdown frequency.												

TABLE B-1

TMI1 INSERVICE TEST PROGRAM VALVE TABULATION

VALVE NO	TYPE	SIZE	CLS	CAT	ACTIVE/PASSIVE	ACTUATOR	NORM POS	FAIL POS	TEST TYPE	FREQUENCY	DRAWING	RELIEF NO
MU-V 2B	GLOBE	2.5	1	A	ACTIVE OPEN TO CLOSE	MOTOR	OPEN	AS IS	LEAK	APP. J	1D-ISI-FD-016	
Description: CONTAINMENT ISOLATION - LETDOWN CLR "B" OUTLET VLV									PARTIAL	QUARTER		
									TIME	COLD SD		
									POS VERIFY	2 YEAR		
Justification: Fully closing this valve will isolate letdown flow through one cooler. This will cause a thermal cycle on that Letdown Cooler. A thermal cycle must be avoided if possible. Per OM-10, §4.2.1.2(b), a partial stroke test will be performed quarterly with a full stroke test at the Cold Shutdown frequency.												
MU-V 3	GATE	2.5	2	A	ACTIVE OPEN TO CLOSE	PISTON	OPEN	CLOSE	LEAK	APP. J	1D-ISI-FD-016	
Description: CONTAINMENT ISOLATION - LETDOWN COOLER ISOL VALVE									PARTIAL	QUARTER		
									TIME	COLD SD		
									FAIL SAFE	COLD SD		
									POS VERIFY	2 YEAR		
Justification: Fully closing this valve will isolate letdown flow. Isolation of letdown flow during power operation will cause loss of the Reactor coolant normal purification and will cause thermal cycling of the Letdown Cooler. Per OM-10, §4.2.1.2(b), a partial stroke test will be performed quarterly with a full stroke test at the Cold Shutdown frequency.												
MU-V 10	GATE	2.5	3	B	ACTIVE CLOSE TO OPEN	PISTON	CLOSE	CLOSE	TIME	QUARTER	1D-ISI-FD-016	
Description: WDL ADDITION TO LETDOWN ISOLATION VALVE									POS VERIFY	2 YEAR		
MU-V 12	GATE	4.0	2	B	PASSIVE	MOTOR	OPEN	AS IS	POS VERIFY	2 YEAR	1D-ISI-FD-017	
Description: MAKEUP TANK OUTLET ISOLATION VALVE												
MU-V 14A	STOP CHECK	6.0	2	AC	ACTIVE	MOTOR	CLOSE	AS IS	TIME	QUARTER	1D-ISI-FD-017	
Description: MU PUMP SUCTION FROM BWST STOP CHECK VALVE									LEAK	REFUEL		
									FULL FLOW	REFUEL		
									POS VERIFY	2 YEAR		
Justification: To test the open check function of this valve, flow must be initiated from the Borated Water Storage Tank (BWST) into the RCS. This is not practical during operation because of the effect it will have on reactivity and RCS inventory control. It is not practical during shutdowns because it may lengthen the time to reach criticality. The delay would occur because the boron concentration would need to be diluted by water from a Reactor Coolant Bleed Tank. The check valve close function test requires and unusual lineup to isolate the Makeup Tank and observe of level decrease over time. This procedure can significantly lengthen an unplanned Cold Shutdown. As permited by OM-10, §4.3.2.2(e) the check valve portion of the test will be performed on a refueling interval frequency.												
MU-V 14B	STOP CHECK	6.0	2	AC	ACTIVE	MOTOR	CLOSE	AS IS	TIME	QUARTER	1D-ISI-FD-017	
Description: MU PUMP SUCTION FROM BWST STOP CHECK VALVE									LEAK	REFUEL		
									FULL FLOW	REFUEL		
									POS VERIFY	2 YEAR		
Justification: To test the open check function of this valve, flow must be initiated from the Borated Water Storage Tank (BWST) into the RCS. This is not practical during operation because of the effect it will have on reactivity and RCS inventory control. It is not practical during shutdowns because it may lengthen the time to reach criticality. The delay would occur because the boron concentration would need to be diluted by water from a Reactor Coolant Bleed Tank. The check valve close function test requires an unusual lineup to isolate the Makeup Tank and observe of level decrease over time. This procedure can significantly lengthen an unplanned Cold Shutdown. As permited by OM-10, §4.3.2.2(e) the check valve portion of the test will be performed on a refueling interval frequency.												

TABLE B-1

TMI1 INSERVICE TEST PROGRAM VALVE TABULATION

VALVE NO	TYPE	SIZE	CLS	CAT	ACTIVE/PASSIVE	ACTUATOR	NORM POS	FAIL POS	TEST TYPE	FREQUENCY	DRAWING	RELIEF NO
MU-V 16A	GLOBE	2.5	2	B	ACTIVE CLOSE TO OPEN	MOTOR	CLOSE	AS IS	TIME	QUARTER	1D-ISI-FD-017	
Description: CONTAINMENT ISOLATION - HPI "A" CONTROL VALVE									POS VERIFY	2 YEAR		
MU-V 16B	GLOBE	2.5	2	B	ACTIVE CLOSE TO OPEN	MOTOR	CLOSE	AS IS	TIME	QUARTER	1D-ISI-FD-017	
Description: CONTAINMENT ISOLATION - HPI "B" CONTROL VALVE									POS VERIFY	2 YEAR		
MU-V 16C	GLOBE	2.5	2	B	ACTIVE CLOSE TO OPEN	MOTOR	CLOSE	AS IS	TIME	QUARTER	1D-ISI-FD-017	
Description: CONTAINMENT ISOLATION - HPI "C" CONTROL VALVE									POS VERIFY	2 YEAR		
MU-V 16D	GLOBE	2.5	2	B	ACTIVE CLOSE TO OPEN	MOTOR	CLOSE	AS IS	TIME	QUARTER	1D-ISI-FD-017	
Description: CONTAINMENT ISOLATION - HPI "D" CONTROL VALVE									POS VERIFY	2 YEAR		
MU-V 18	GATE	2.5	2	A	ACTIVE OPEN TO CLOSE	PISTON	OPEN	CLOSE	LEAK	APP. J	1D-ISI-FD-017	
Description: CONTAINMENT ISOLATION - CHARGE LINE ISOL VALVE									TIME	COLD SD		
									FAIL SAFE	COLD SD		
									POS VERIFY	2 YEAR		
									PARTIAL	QUARTER		
Justification: MU-V18 is required for throttling and maintaining RCS inventory control during power operation. Per OM-10, §4.2.1.2(b), this valve will be partially stroked quarterly and full stroke exercised at the Cold Shutdown frequency.												
MU-V 20	GATE	4.0	2	A	ACTIVE OPEN TO CLOSE	PISTON	OPEN	CLOSE	LEAK	APP. J	1D-ISI-FD-017	
Description: CONTAINMENT ISOLATION - RCP SEAL WATER ISOL VLV									TIME	COLD SD		
									FAIL SAFE	COLD SD		
									POS VERIFY	2 YEAR		
Justification: Closure of this valve at power operation risks permanent damage to the Reactor Coolant Pump seals and subsequent Reactor Coolant leakage. The valve will be full stroked at the Cold Shutdown frequency.												
MU-V 25	GLOBE	4.0	2	A	ACTIVE OPEN TO CLOSE	MOTOR	OPEN	AS IS	LEAK	APP. J	1D-ISI-FD-016	
Description: CONTAINMENT ISOLATION RCP SEAL RETURN ISOL VALVE									PARTIAL	QUARTER		
									TIME	COLD SD		
									POS VERIFY	2 YEAR		
Justification: Closure of this valve at power operation risks permanent damage to the Reactor Coolant Pump seals and subsequent Reactor Coolant leakage. Per OM-10, §4.2.1.2(b), this valve will be part stroke exercised quarterly and full stroke tested at the Cold Shutdown frequency.												
MU-V 26	GATE	4.0	2	A	ACTIVE OPEN TO CLOSE	PISTON	OPEN	CLOSE	LEAK	APP. J	1D-ISI-FD-016	
Description: CONTAINMENT ISOLATION RCP SEAL RETURN LETDOWN ISOL									PARTIAL	QUARTER		
									TIME	COLD SD		
									FAIL SAFE	COLD SD		
									POS VERIFY	2 YEAR		
Justification: Closure of this valve at power operation risks permanent damage to the Reactor Coolant Pump seals and subsequent Reactor Coolant leakage. Per OM-10, §4.2.1.2(b), this valve will be part stroke exercised quarterly and full strok tested at the Cold Shutdown frequenc.												

TABLE B-1

TMI1 INSERVICE TEST PROGRAM VALVE TABULATION

VALVE NO	TYPE	SIZE	CLS	CAT	ACTIVE/PASSIVE	ACTUATOR	NORM POS	FAIL POS	TEST TYPE	FREQUENCY	DRAWING	RELIEF NO
MU-V 36	GATE	2.0	2	B	ACTIVE BOTH	MOTOR	OPEN	AS IS	TIME BOTH	QUARTER	1D-ISI-FD-017	
Description: MU PUMPS RECIRC ISOLATION VALVE									POS VERIFY	2 YEAR		
MU-V 37	GATE	2.0	3	B	ACTIVE BOTH	MOTOR	OPEN	AS IS	TIME BOTH	QUARTER	1D-ISI-FD-017	
Description: MU PUMPS RECIRC ISOL VALVE									POS VERIFY	2 YEAR		
MU-V 47	STOP CHECK	4.0	2	C	ACTIVE CLOSE TO OPEN	HAND	OPEN	---	FULL FLOW	QUARTER	1D-ISI-FD-016	
Description: MAKEUP TANK INLET ISOL STOP CHECK VALVE												
MU-V 51	DIAPHRAGM	1.0	3	B	ACTIVE CLOSE TO OPEN	AIR	CLOSE	CLOSE	TIME	QUARTER	1D-ISI-FD-016	
Description: EMERGENCY BORIC ACID ADD VALVE TO MAKEUP TANK									FAIL SAFE	QUARTER		
									POS VERIFY	2 YEAR		
MU-V 73A	TILTDISCCK	3.0	2	C	ACTIVE	NA	---	---	PART FLOW	QUARTER	1D-ISI-FD-017	
Description: MU-P1A DISCHARGE CHECK VALVE									CLOSE	QUARTER		
									FULL FLOW	REFUEL		

Justification: Full flow testing of this valve requires injection into the Reactor Coolant System (RCS). The flow rate must be limited to to avoid pressure transients in the RCS. The makeup flowrate is significantly less than the design accident flow. Per OM-10, §4.3.2.2(d) this will be a partial stroke. The testing of this valve also requires that the "A" Makeup Pump be started. Normal makeup is by the "B" Makeup Pump. Attaining full flow requires that additional injection valves be opened. Tech Spec 3.1.12.3 will not permit opening of the injection valves (MU-V16 A,B,C,D) when RCS temperature is below 275 degrees F with the Reactor Head in place. This means testing at Cold Shutdown is not possible and that the test must be performed as the plant shuts down or restarts. The required test procedure is extensive and will delay restart from a short or unplanned Cold Shutdown. Per OM-10, §4.3.2.2(e), this valve will be tested during refueling.

MU-V 73B	TILTDISCCK	3.0	2	C	ACTIVE	NA	---	---	PART FLOW	QUARTER	1D-ISI-FD-017	
Description: MU-P1B DISCHARGE CHECK VALVE									CLOSE	QUARTER		
									FULL FLOW	REFUEL		

Justification: Full flow testing of this valve requires injection into the Reactor Coolant System (RCS) through the normally alligned makeup point. The flow rate must be limited to avoid transients in the RCS. The makeup flowrate is significantly less than the design accident flow. Per OM-10, §4.3.2.2(d) this will be a partial stroke test. Attaining full flow requires that additional injection valves be opened. Tech Spec 3.1.12.3 will not permit opening of the injection valves (MU-V16 A,B,C,D) when RCS temperature is below 275 degrees F with the Reactor Head in place. This means testing at Cold Shutdown is not possible and that the test must be performed as the plant shuts down or during restart. The required test procedure is extensive and will delay restart from a short or unplanned Cold Shutdown. Per OM-10, §4.3.2.2(e), this valve will be tested during refueling.

MU-V 73C	TILTDISCCK	3.0	2	C	ACTIVE	NA	---	---	PART FLOW	QUARTER	1D-ISI-FD-017	
Description: MU-P1C DISCHARGE CHECK VALVE									CLOSE	QUARTER		
									FULL FLOW	REFUEL		

Justification: Full flow testing of this valve requires injection into the Reactor Coolant System (RCS). The flow rate must be limited to avoid transients in the RCS. The makeup flowrate is significantly less than accident design flow. Per OM-10, §4.3.2.2(d) this will be a partial stroke test. Testing this valve also requires that the "C" Makeup Pump be started. Normal makeup is by the "B" Makeup Pump. Attaining full flow requires that additional injection valves be opened. Tech Spec 3.1.12.3 will not permit opening of the injection valves (MU-V16 A,B,C,D) when RCS temperature is below 275 degrees F with the Reactor Head in place. This means testing at Cold Shutdown is not possible and that the test must be performed as the plant is shuting down or during restart. Also, the suction for the "C" Makeup Pump must be switched from the Borated Water

TABLE B-1

TMI1 INSERVICE TEST PROGRAM VALVE TABULATION

VALVE NO	TYPE	SIZE	CLS	CAT	ACTIVE/PASSIVE	ACTUATOR	NORM POS	FAIL POS	TEST TYPE	FREQUENCY	DRAWING	RELIEF NO

Storage Tank to the Makeup Tank. The required test procedure is extensive and will delay restart from a short or unplanned Cold Shutdown. Per OM-10, §4.3.2.2(e), this valve will be tested at during refueling.

MU-V 78	GLOBE	2.5"	2	B	PASSIVE	HAND	CLOSE	---	---	---	ID-ISI-FD-017	V 1

Description: MU TANK AND PUMPS BYPASS FOR RCS FILL ISOLATION

MU-V 79	SWINGCHECK	2.5"	2	C	PASSIVE	NA	CLOSE	---	---	---	ID-ISI-FD-017	V 1

Description: MU TANK AND PUMPS BYPASS FOR RCS FILL CHECK VALVE

MU-V 86A	TILTDISCCK	2.5	1	C	ACTIVE CLOSE TO OPEN	NA	CLOSE	---	NONINTRUSV PART FLOW	ALTREFU REFUEL	1D-ISI-FD-017	

Description: LOOP "D" RCS HPI INLET CHECK VALVE

Justification: Full flow testing of this valve is not possible during power operation. Initiating flow through this valve requires opening an additional flow path to the Reactor Coolant System (RCS) or switching from the normal makeup path. Injection of flowrates higher than normal makeup will cause a significant transient to the RCS and could cause a plant trip. Aditionally, injection at higher flowrates can cause a thermal cycle to the pressurizer surge line. Partial flow testing requires switching from the normal makeup nozzle. Switching the normal makeup path to close and then reopening the normal makeup valve will cause an additional thermal cycle on the injection nozzle as well as that of the tested valve (MU-V86A). This not considered to be prudent and, therefore, part flow testing is not possible quarterly. Tech Spec 3.1.12.3 will not permit opening of the injection valves (MU-V16 A,B,C,D) when RCS temperature is below 275 degrees F with the Reactor head in place. The reactor head is normally not removed for Cold Shutdown other than refueling. This makes testing at the Cold Shutdown frequency impractical. These valves (MU-V86A/B, MU-V94, MU-V95, and MU-V220) are in parallel flow paths that are cross connected. While flow instrumentation is available, it is upstream of the cross connection. Because the cross connection has no means for isolating flow, there is no way to quantify flowrate through each of the parallel valves. This valve (MU-V86A) along with MU-V86B and MU-V95 form a group as per Generic Letter 89-04, Position 2. One valve in the group will be tested each refueling outage using nonintrusive equipment as permitted by NUREG-1482, §4.1.2 or, as an alternative, one of the valves in the group will be disassembled and inspected. A different valve in the group will be tested using nonintrusive techniques or disassembled each subsequent refueling outage.

MU-V 86B	TILTDISCCK	2.5	1	C	ACTIVE CLOSE TO OPEN	NA	CLOSE	---	NONINTRUSV PART FLOW	ALTREFU REFUEL	1D-ISI-FD-017	

Description: LOOP "C" RCS HPI INLET CHECK VALVE

Justification: Full flow testing of this valve is not possible during power operation. Initiating flow through this valve requires opening an additional flow path to the Reactor Coolant System (RCS) or switching from the normal makeup path. Injection of flowrates higher than normal makeup will cause a significant transient to the RCS and could cause a plant trip. Partial flow testing requires switching from the normal make up nozzle. Switching the normal makeup path to close and then reopening the normal makeup valve will cause an additional thermal cycle on the normal injection nozzle as well as that of the tested valves (MU-V86B & MU-V95). This not considered to be prudent and, therefore, part flow testing is not possible quarterly. Tech Spec 3.1.12.3 will not permit opening of the injection valves (MU-V16 A,B,C,D) when RCS temperature is below 275 degrees F with the Reactor head in place. The reactor head is normally not removed for Cold Shutdown other than refueling. This makes testing at a Cold Shutdown frequency impractical. These valves (MU-V86A/B, MU-V94, MU-V95, and MU-V220) are in parallel flow paths that are cross connected. While flow instrumentation is available, it is upstream of the cross connection. Because the cross connection has no means for isolating flow, there is no way to quantify flowrate through each of the parallel valves. This valve (MU-V86B) along with MU-V 86A and MU-V95 form a group as per Generic Letter 89-04, Position 2. One valve of the group will be tested each refueling outage using nonintrusive equipment as permitted by NUREG-1482, §4.1.2 or, as an alternative, one valve in the group will be disassembled and inspected. A different valve in the group will be tested using nonintrusive techniques or disassembled each subsequent refueling outage.

TABLE B-1

TMI1 INSERVICE TEST PROGRAM VALVE TABULATION

VALVE NO	TYPE	SIZE	CLS	CAT	ACTIVE/PASSIVE	ACTUATOR	NORM POS	FAIL POS	TEST TYPE	FREQUENCY	DRAWING	RELIEF NO
MU-V 94	TILTDISCCK	2.5	1	C	ACTIVE CLOSE TO OPEN	NA	OPEN	---	PART FLOW	QUARTER	1D-ISI-FD-017	
Description:	LOOP "B" RCS HPI INLET CHECK VALVE								NONINTRUSV	REFUEL		

Justification: Normal makeup flow through this valve is significantly lower than the accident design flowrate. Full flow testing of this valve is not possible during power operation. Injection at higher than normal makeup will cause a significant perturbation and could cause a plant trip. Additionally, injection at higher flowrates can cause a thermal cycle to the pressurizer surge line. Tech Spec 3.1.12.3 will not permit opening of the injection valves (MU-V16A,B,C,D) when RCS temperature is below 275 degrees F with the Reactor head in place. The reactor head is normally not removed for Cold Shutdown other than refueling. This makes testing at Cold Shutdown frequency impractical. The vaives (MU-V86A/B, MU-V94, MU-V95, and MU-V220) are in parallel flow paths that are cross connected. While flow instrumentation is available, it is upstream of the cross connection. Because the cross connection has no means for isolating flow, there is no way to quantify flowrate through each of the parallel valves. This valve (MU-V94) will be partial flow tested quarterly then tested using nonintrusive equipment as permitted by NUREG-1482, §4.1. or, as an alternative, disassembled and inspected.

MU-V 95	TILTDISCCK	2.5	1	C	ACTIVE	NA	CLOSE	---	NONINTRUSV	ALTREFU	1D-ISI-FD-017	
Description:	LOOP "A" RCS HPI INLET CHECK VALVE								PART FLOW	REFUEL		

Justification: Full flow testing of this valve is not possible during power operation. Initiating flow through this valve requires opening an additional flow path to the Reactor Coolant System (RCS) or switching from the normal makeup path. Injection of flowrates higher than normal makeup will cause a significant transient to the RCS and could cause a plant trip. Partial flow testing requires switching from the normal makeup nozzle. Switching the normal makeup path to close and then reopening the normal makeup valve will cause an additional thermal cycle on the normal injection nozzle as well as that of the tested valves (MU-V86B & MU-V95). This not considered to be prudent and, therefore, part flow testing is not possible quarterly. Tech Spec 3.1.12.3 will not permit opening of the injection valves (MU-V16A,B,C,D) when RCS temperature is below 275 degrees F with the Reactor head in place. The Reactor head is normally not removed for Cold Shutdown other than refueling. This makes testing at Cold Shutdown impractical. These valves (MU-V86A/B, MU-V94, MU-V95, and MU-V220) are in parallel flow paths that are cross connected. While flow instrumentation is available, it is upstream of the cross connection. Because the cross connection has no means for isolating flow, there is no way to quantify flowrate through each of the parallel valves. This valve (MU-V95) along with MU-V86A and MU-V86B form a group as per Generic Letter 89-04, Position 2. One valve of the group will be tested each refueling outage using nonintrusive equipment as permitted by NUREG-1482, §4.1.2 or, as an alternative, one valve in the group will be disassembled and inspected. A differnet valve in the group will be tested using nonintrusive techniques or disassembled each subsequent refueling outage.

MU-V107A	TILTDISCCK	2.5	1	C	ACTIVE CLOSE TO OPEN	NA	CLOSE	---	FULL FLOW	REFUEL	1D-ISI-FD-017	
Description:	CONTAINMENT ISOLATION - HPI TO RC "A" SUPPLY CHECK											

Justification: Full flow testing of this valve is not possible during power operation because the design accident flow rate exceeds, by far, the normal RCS makeup flow. Full design flow rate would cause a significant perturbation and could cause a plant trip. Aditionally, the use of injection nozzles that are not part of the normal makeup path would add a thermal cycle to the nozzle and, at design flow, cause a thermal cycle to the pressurizer surge line. For all those valves that are not part of the normal makeup path, a thermal cycle will be experienced by the nozzle. Taking the additional thermal cycle for a check valve test is not considered to be prudent. Tech Spec 3.1.12.3 will not permit opening of the injection valves (MU-V16 A,B,C,D) when RCS temperature is below 275 degrees F with the Reactor head in place. The Reactor head is not normally removed for Cold Shutdown other than refueling. This mekes testing at Cold Shutdown impractical. Per OM-10, §4.3.2.2(e), this valve will be tested during refueling outages.

TABLE B-1

TMI1 INSERVICE TEST PROGRAM VALVE TABULATION

VALVE NO	TYPE	SIZE	CLS	CAT	ACTIVE/PASSIVE	ACTUATOR	NORM POS	FAIL POS	TEST TYPE	FREQUENCY	DRAWING	RELIEF NO
MU-V107B	TILTDISCCK	2.5	1	C	ACTIVE	NA	OPEN	---	FULL FLOW	REFUEL	1D-ISI-FD-017	

Description: CONTAINMENT ISOLATION - HPI TO RC "B" SUPPLY CHK

Justification: Normal makeup flow through this valve is significantly lower than the accident design flowrate. Full flow testing of this valve is not possible during power operation because the design flow exceeds, by far, the normal makeup flow. Injection would cause a significant perturbation and could cause a plant trip. Aditionally, injection at design flow can cause a thermal cycle to the pressurizer surge line. Switching the normal makeup path to close and then reopening the valve would cause an additional thermal cycle on the injection nozzle. This not considered to be prudent and, therefore, part flow testing is not possible quarterly. Tech Spec 3.1.12.3 will not permit opening of the injection valves (MU-V16 A,B,C,D) when RCS temperature is below 275 degrees F with the Reactor head in place. The Reactor head is normally not removed for Cold Shutdown other than refueling. This makes testing at Cold Shutdown impractical. Per OM-10, §4.3.2.2(d), this valve will be part stroke tested during restart from a Cold Shutdown and full stroke tested during refueling outages.

VALVE NO	TYPE	SIZE	CLS	CAT	ACTIVE/PASSIVE	ACTUATOR	NORM POS	FAIL POS	TEST TYPE	FREQUENCY	DRAWING	RELIEF NO
MU-V107C	TILTDISCCK	2.5	1	C	ACTIVE	NA	CLOSE	---	FULL FLOW	REFUEL	1D-ISI-FD-017	

Description: CONTAINMENT ISOLATION - HPI TO RC "C" SUPPLY CHK

Justification: Full flow testing of this valve is not possible during power operation because the accident design flow rate exceeds, by far, the normal RCS makeup flow. Full design flow rate will cause a significant perturbation and could cause a plant trip. Aditionally, the use of injection nozzles that are not part of the normal makeup path would add a thermal cycle to the nozzle and, at design flow, cause a thermal cycle to the pressurizer surge line. For all those valves that are not part of the normal makeup path, a thermal cycle would be experienced by the nozzle. Taking the additional thermal cycle for a check valve test is not considered to be prudent. Tech Spec 3.1.12.3 will not permit opening of the injection valves (MU-V16A,B,C,D) when RCS temperature is below 275 degrees F with the Reactor head in place. The Reactor head is not normally removed for Cold Shutdown other than refueling. This makes testing at Cold Shutdown impractical. Per OM-10, §4.3.2.2(e), this valve will be tested during refueling outages.

VALVE NO	TYPE	SIZE	CLS	CAT	ACTIVE/PASSIVE	ACTUATOR	NORM POS	FAIL POS	TEST TYPE	FREQUENCY	DRAWING	RELIEF NO
MU-V107D	TILTDISCCK	2.5	1	C	ACTIVE	NA	CLOSE	---	FULL FLOW	REFUEL	1D-ISI-FD-017	

Description: CONTAINMENT ISOLATION - HPI TO RC "D" SUPPLY CHK

Justification: Full flow testing of this valve is not possible during power operation because the accident design flow rate exceeds, by far, the normal RCS makeup flow. Full design flow rate will cause a significant perturbation and could cause a plant trip. Aditionally, the use of injection nozzles that are not part of the normal makeup path will add a thermal cycle to the nozzle and, at design flow, cause a thermal cycle to the pressurizer surge line. For all those valves that are not part of the normal makeup path, a thermal cycle will be experienced by the nozzle. Taking the additional thermal cycle for a check valve test is not considered to be prudent. Tech Spec 3.1.12.3 will not permit opening of the injection valves (MU-V16A,B,C,D) when RCS temperature is below 275 degrees F with the Reactor head in place. The Reactor head is not normally removed for Cold Shutdown other than refueling. This makes testing at Cold Shutdown impractical. Per OM-10, §4.3.2.2(e), this valve will be tested during refueling outages.

VALVE NO	TYPE	SIZE	CLS	CAT	ACTIVE/PASSIVE	ACTUATOR	NORM POS	FAIL POS	TEST TYPE	FREQUENCY	DRAWING	RELIEF NO
MU-V112	SWINGCHECK	4.0	2	AC	ACTIVE	NA	OPEN	---	FULL FLOW	QUARTER	1D-ISI-FD-017	
									CLOSE	REFUEL		

Description: MAKEUP TANK OUTLET CHECK VALVE

Justification: To test the closed function, the HPI Pumps must be secured and the MU Tank depressurized. This cannot be done quarterly and could significantly add to the scope of a unplanned or short duration Cold Shutdown. As permited by OM-10, §.3.2.2(e), the check valve portion of the test will be done at a refueling interval frequency.

TABLE B-1

TMI1 INSERVICE TEST PROGRAM VALVE TABULATION

VALVE NO	TYPE	SIZE	CLS	CAT	ACTIVE/PASSIVE	ACTUATOR	NORM POS	FAIL POS	TEST TYPE	FREQUENCY	DRAWING	RELIEF NO
MU-V116	LIFT CHECK	1.5	1	A/C	ACTIVE OPEN TO CLOSE	NA	OPEN	---	LEAK	APP. J	1D-ISI-FD-017	
Description:	CONTAINMENT ISOLATION - SEAL INJ SPRY/RC CHK											
Justification:	The normal operating position of this valve is open to provide a seal water flow to the Reactor Coolant Pump seals. Flow cannot be interupted to exercise this valve to the closed position during periods when any of the RC pumps are operating. The open position is not the Nuclear Safety Related position. The only practical way to close test this valve is to setup equipment and perform a leakage test per Appendix J. The frequency will be extended to the Appendix J required test frequency as permited by NUREG-1482, §4.1.4 (NRC Recommendation).											
MU-V193A	STOP CHECK	2.0	2	C	ACTIVE	HAND	---	---	FULL FLOW CLOSE	QUARTER QUARTER	1D-ISI-FD-017	
Description:	MU-P1A RECIRC STOP CHECK VALVE											
MU-V193B	STOP CHECK	2.0	2	C	ACTIVE	HAND	---	---	FULL FLOW CLOSE	QUARTER QUARTER	1D-ISI-FD-017	
Description:	MU-P1B RECIRC STOP CHECK VALVE											
MU-V193C	STOP CHECK	2.0	2	C	ACTIVE	HAND	---	---	FULL FLOW CLOSE	QUARTER QUARTER	1D-ISI-FD-017	
Description:	MU-P1C RECIRC STOP CHECK VALVE											
MU-V220	SWINGCHECK	2.5	1	C	ACTIVE	NA	CLOSE	---	PART FLOW NONINTRUSV	REFUEL REFUEL	1D-ISI-FD-017	
Description:	HPI LOOP "B" BACK FLOW FROM MAKEUP - CHECK VALVE											
Justification:	Full flow testing of this valve is not possible during power operation. Injection of flowrates higher than normal makeup will cause a significant perturbation and could cause a plant trip. Aditionally, injection at higher flowrates can cause a thermal cycle to the pressurizer surge line. Switching the normal makeup path to close and then reopen the valve will cause an additional thermal cycle on two injection nozzles. This not considered to be prudent and, therefore, part flow testing is not possible quarterly. Tech Spec 3.1.12.3 will not permit opening of the injection valves (MU-V16A,B,C,D) when RCS temperature is below 275 degrees F with the Reactor head is in place. The Reactor head is not normally removed for Cold Shutdown other than refueling. This makes testing at Cold Shutdown impractical. These valves (MU-V86A/B, MU-V94, MU-V95, and MU-V220) are in parallel flow paths that are cross connected. While flow instrumentation is available, it is upstream of the cross connection. Because the cross connection has no means for isolating flow, there is no way to quantify flowrate through each of the parallel valves. This valve will be tested using nonintrusive equipment as permitted by NUREG-1482, §4.1.2 or, as an alternative, disassembled and inspected.											
NI-V26	GLOBE	1.0	2	A	PASSIVE	HAND	CLOSE	---	LEAK	APP. J	1D-ISI-FD-023	
Description:	CONTAINMENT ISOLATION - 650# N^2 SUPPLY TO RB											
Justification:	This valve is a passive component. Per OM-10, Table 1, no exercise test will be performed.											
NI-V27	GLOBE	1.0	2	A	PASSIVE	HAND	CLOSE	---	LEAK	APP. J	1D-ISI-FD-023	
Description:	CONTAINMENT ISOLATION - 650# N^2 SUPPLY TO RB											
Justification:	This valve is a passive component. Per OM-10, Table 1, no exercise test will be performed.											
NR-V 1A	BUTTERFLY	16.0	3	B	ACTIVE CLOSE TO OPEN	MOTOR	---	AS IS	TIME POS VERIFY TIME	QUARTER 2 YEAR REFUEL	1D-ISI-FD-002	
Description:	NUC RIVER PUMP "A" DISCH VALVE											

TABLE B-1

TMI1 INSERVICE TEST PROGRAM VALVE TABULATION

VALVE NO	TYPE	SIZE	CLS	CAT	ACTIVE/PASSIVE	ACTUATOR	NORM POS	FAIL POS	TEST TYPE	FREQUENCY	DRAWING	RELIEF NO
NR-V 1B	BUTTERFLY	16.0	3	B	ACTIVE CLOSE TO OPEN	MOTOR	---	AS IS	TIME POS VERIFY TIME	QUARTER 2 YEAR REFUEL	1D-ISI-FD-002	
Description: NUC RIVER PUMP "B" DISCH VALVE												
NR-V 1C	BUTTERFLY	16.0	3	B	ACTIVE CLOSE TO OPEN	MOTOR	---	AS IS	TIME POS VERIFY TIME	QUARTER 2 YEAR REFUEL	1D-ISI-FD-002	
Description: NR-P1C DISCH VALVE												
NR-V 2	BUTTERFLY	30"	3	A	PASSIVE	MOTOR	CLOSE	AS IS	LEAK POS VERIFY	REFUEL 2 YEAR	1D-ISI-FD-002	
Description: NR TO SR HEADER ISOLATION VALVE												
NR-V 4A	BUTTERFLY	30.0	3	A	ACTIVE OPEN TO CLOSE	MOTOR	THROT	AS IS	TIME POS VERIFY LEAK	QUARTER 2 YEAR REFUEL	1D-ISI-FD-002	
Description: DEICING MAKEUP VALVE "A"												
NR-V 4B	BUTTERFLY	30.0	3	A	ACTIVE OPEN TO CLOSE	MOTOR	OPEN	AS IS	TIME POS VERIFY LEAK	QUARTER 2 YEAR REFUEL	1D-ISI-FD-002	
Description: DEICING MAKEUP VALVE "B"												
NR-V 6	BUTTERFLY	30"	3	A	PASSIVE	MOTOR	CLOSE	AS IS	LEAK POS VERIFY	REFUEL 2 YEAR	1D-ISI-FD-002	
Description: HX VAULT CROSS CONNECT BETWEEN NR & SR												
NR-V20A	SWINGCHECK	16.0	3	C	ACTIVE	NA	---	---	PART FLOW CLOSE FULL FLOW	QUARTER QUARTER REFUEL	1D-ISI-FD-002	
Description: NR-P1A DISCHARGE CHECK VALVE												
Justification: To verify full flow through this valve, only one of three Nuclear River Pumps can be operating. Usually, plant heat loads will not permit the operation of only one Nuclear River Pump. This applies to Power Operation, Hot Shutdown and most Cold Shutdown Conditions. As permitted by OM-10, §4.3.2.2(d), this valve will be full stroke tested during refueling outages.												
NR-V20B	SWINGCHECK	16.0	3	C	ACTIVE	NA	---	---	PART FLOW CLOSE FULL FLOW	QUARTER QUARTER REFUEL	1D-ISI-FD-002	
Description: NR-P1B DISCH CHECK VALVE												
Justification: To verify full flow through this valve, only one of three Nuclear River Pumps can be operating. Usually, plant heat loads will not permit the operation of only one Nuclear River Pump. This applies to Power Operation, Hot Shutdown and most Cold Shutdown conditions. As permitted by OM-10, §4.3.2.2(d), the valve will be full stroke tested during refueling outages.												
NR-V20C	SWINGCHECK	16.0	3	C	ACTIVE	NA	---	---	PART FLOW CLOSE FULL FLOW	QUARTER QUARTER REFUEL	1D-ISI-FD-002	
Description: NR-P1C DISCHARGE CHECK VALVE												
Justification: To verify full flow through this valve, only one of three Nuclear River Pumps can be operating. Usually, plant heat loads will not permit the operation of only one Nuclear River Pump. This applies to Power Operation, Hot Shutdown and most Cold Shutdown conditions. As permitted by OM-10, §4.3.2.2(d), this valve will be full stroke tested during refueling outages.												

TABLE B-1

TMI1 INSERVICE TEST PROGRAM VALVE TABULATION

VALVE NO	TYPE	SIZE	CLS	CAT	ACTIVE/PASSIVE	ACTUATOR	NORM POS	FAIL POS	TEST TYPE	FREQUENCY	DRAWING	RELIEF NO
NR-V22A	SWINGCHECK	2.0	3	C	ACTIVE	NA	---	---	FULL FLOW	QUARTER	1D-ISI-FD-002	
Description: NR-P1A VACUUM BREAKER									CLOSE	QUARTER		
NR-V22B	SWINGCHECK	2.0	3	C	ACTIVE	NA	---	---	FULL FLOW	QUARTER	1D-ISI-FD-002	
Description: NR-P1B VACUUM BREAKER									CLOSE	QUARTER		
NR-V22C	SWINGCHECK	2.0	3	C	ACTIVE	NA	---	---	FULL FLOW	QUARTER	1D-ISI-FD-002	
Description: NR-P1C VACUUM BREAKER									CLOSE	QUARTER		
NS-V 4	GATE	8.0	2	A	ACTIVE OPEN TO CLOSE	MOTOR	OPEN	AS IS	LEAK	APP. J	1D-ISI-FD-010	
Description: RCP MOTOR COOLER RETURN VALVE									PARTIAL	QUARTER		
									TIME	COLD SD		
									POS VERIFY	2 YEAR		
Justification: This valve cannot be closed during power operations because it would isolate cooling water for the Reactor Coolant Pump Motors. Per OM-10, §4.2.1.2(b), this valve will be part stroke tested quarterly and full stroke tested at the Cold Shutdown frequency.												
NS-V 10A	SWINGCHECK	12.0	3	C	ACTIVE	NA	---	---	FULL FLOW	QUARTER	1D-ISI-FD-010	
Description: NUC SVCS PUMP "A" DISCHARGE CHECK VALVE									CLOSE	QUARTER		
NS-V 10B	SWINGCHECK	12.0	3	C	ACTIVE	NA	---	---	FULL FLOW	QUARTER	1D-ISI-FD-010	
Description: NS-P1B DISCHARGE CHECK VALVE									CLOSE	QUARTER		
NS-V 10C	SWINGCHECK	12.0	3	C	ACTIVE	NA	---	---	FULL FLOW	QUARTER	1D-ISI-FD-010	
Description: NS-P1C DISCHARGE CHECK VALVE									CLOSE	QUARTER		
NS-V 11	SWINGCHECK	8.0	2	A/C	ACTIVE OPEN TO CLOSE	NA	OPEN	---	LEAK	APP. J	1D-ISI-FD-010	
Description: RCP MOTOR COOLER SUPPLY VALVE												
Justification: The normal operating position of this valve is open to provide cooling water to the Reactor Coolant Pump motor coolers. Flow cannot be interupted to exercise this valve to the closed position during periods when any of the RC pumps are operating. The open position is not the Nuclear Safety Related position. The only practical way to test the closed position is by seting up equipment and performing the Appendix J leakage test. The frequency will be extended to refueling outages as permited by NUREG-1482, §4.1.4 (NRC Recomendation).												
NS-V 15	GATE	8.0	2	A	ACTIVE OPEN TO CLOSE	MOTOR	OPEN	AS IS	LEAK	APP. J	1D-ISI-FD-010	
Description: RCP MOTOR COOLER RETURN VALVE									PARTIAL	QUARTER		
									TIME	COLD SD		
									POS VERIFY	2 YEAR		
Justification: This valve cannot be closed during power operations because it would isolate cooling water for the Reactor Coolant Pump Motors. Per OM-10, §4.2.1.2(b), this valve will be part stroke tested quarterly and full stroke tested at the Cold Shutdowns frequency.												

TABLE B-1

TMI1 INSERVICE TEST PROGRAM VALVE TABULATION

VALVE NO	TYPE	SIZE	CLS	CAT	ACTIVE/PASSIVE	ACTUATOR	NORM POS	FAIL POS	TEST TYPE	FREQUENCY	DRAWING	RELIEF NO
NS-V 35	GATE	8.0	3	A	ACTIVE OPEN TO CLOSE	MOTOR	OPEN	AS IS	LEAK	APP. J	1D-ISI-FD-010	
									PARTIAL	QUARTER		
									TIME	COLD SD		
									POS VERIFY	2 YEAR		
Description: RCP MOTOR COOLER RETURN VALVE												
Justification: This valve cannot be closed during power operations because it would isolate cooling water for the Reactor Coolant Pump Motors. Per OM-10, §4.2.1.2(b), this valve will be part stroke tested quarterly and full stroke tested at the Cold Shutdown frequency.												
NS-V 52A	GATE	1.0	2	B	PASSIVE	PISTON	OPEN	OPEN	POS VERIFY	2 YEAR	1D-ISI-FD-010	
Description: CONTAINMENT ISOLATION - AH-E1A MOTOR COOLER SUPPLY												
Justification: This valve is also positiun verified Open in Auxiliary Operator Logs which require the reading of cooling water flow to the fan motor coolers each shift.												
NS-V 52B	GATE	1.0	2	B	PASSIVE	PISTON	OPEN	OPEN	POS VERIFY	2 YEAR	1D-ISI-FD-010	
Description: CONTAINMENT ISOLATION - AH-E1B MTR COOLER SUPPLY												
Justification: This valve is also position verified Open in Auxiliary Operator Logs which require the reading of cooling water flow to the fan motor coolers each shift.												
NS-V 52C	GATE	1.0	2	B	PASSIVE	PISTON	OPEN	OPEN	POS VERIFY	2 YEAR	1D-ISI-FD-010	
Description: CONTAINMENT ISOLATION - AH-E1C MTR COOLER SUPPLY												
Justification: This valve is also position verified Open in Auxiliary Operator Logs which require the reading of cooling water flow to the fan motor coolers each shift.												
NS-V 53A	GATE	1.0	2	B	PASSIVE	PISTON	OPEN	OPEN	POS VERIFY	2 YEAR	1D-ISI-FD-010	
Description: CONTAINMENT ISOLATION - AH-E1A MTR COOLER RETURN												
Justification: This valve is also position verified Open in Auxiliary Operator Logs which require the reading of cooling water flow to the fan motor coolers each shift.												
NS-V 53B	GATE	1.0	2	B	PASSIVE	PISTON	OPEN	OPEN	POS VERIFY	2 YEAR	1D-ISI-FD-010	
Description: CONTAINMENT ISOLATION - AH-E1B MTR COOLER RETURN												
Justification: This valve is also position verified Open in Auxiliary Operator Logs which require the reading of cooling water flow to the fan motor coolers each shift.												
NS-V 53C	GATE	1.0	2	B	PASSIVE	PISTON	OPEN	OPEN	POS VERIFY	2 YEAR	1D-ISI-FD-010	
Description: CONTAINMENT ISOLATION - AH-E1C MTR COOLER RETURN												
Justification: This valve is also position verified Open in Auxiliary Operator Logs which require the reading of cooling water flow to the fan motor coolers each shift.												
NS-V 54A	CONTROL	1.5	3	B		DIAPHRAGM	THROT	CLOSE	TIME	QUARTER	1D-ISI-FD-010	
Description: SPENT FUEL PUMP ROOM COOLING COIL FLOW CONTROL									FAIL SAFE	QUARTER		

TABLE B-1

TMI1 INSERVICE TEST PROGRAM VALVE TABULATION

VALVE NO	TYPE	SIZE	CLS	CAT	ACTIVE/PASSIVE	ACTUATOR	NORM POS	FAIL POS	TEST TYPE	FREQUENCY	DRAWING	RELIEF NO
NS-V 54B	CONTROL	1.5	3	B		DIAPHRAGM	THROT	CLOSE	TIME	QUARTER	1D-ISI-FD-010	
Description: SPENT FUEL PUMP ROOM COOLING COIL FLOW CONTROL VLV									FAIL SAFE	QUARTER		
NS-V 55A	CONTROL	3.0	3	B		DIAPHRAGM	THROT	CLOSE	TIME	QUARTER	1D-ISI-FD-010	
Description: EFW PUMP ROOMS & IA COMPRESSOR FLOW CONTROL VLV									FAIL SAFE	QUARTER		
NS-V 55B	CONTROL	3.0	3	B		DIAPHRAGM	THROT	CLOSE	TIME	QUARTER	1D-ISI-FD-010	
Description: EFW PUMP ROOMS & IA COMPRESSOR FLOW CONTROL VLV									FAIL SAFE	QUARTER		
NS-V 56A	CONTROL	2.0	3	B	ACTIVE CLOSE TO OPEN	DIAPHRAGM	THROT	CLOSE	TIME	QUARTER	1D-ISI-FD-010	
Description: NS-P1 & DC-P1 PUMP AREA VENT EQ FLOW CONTROL VLV									FAIL SAFE	QUARTER		
NS-V 56B	CONTROL	2.0	3	B	ACTIVE CLOSE TO OPEN	DIAPHRAGM	THROT	CLOSE	TIME	QUARTER	1D-ISI-FD-010	
Description: NS-P1 & DC-P1 PUMP AREA VENT EQ FLOW CONTROL VLV									FAIL SAFE	QUARTER		
NS-V108A	GLOBE	5.0	3	B	ACTIVE CLOSE TO OPEN	DIAPHRAGM	THROT	OPEN	TIME	QUARTER	1D-ISI-FD-010	
Description: CONTROL ROOM HVAC COOLER OUTLET CONTROL VALVE									FAIL SAFE	QUARTER		
NS-V108B	GLOBE	5.0	3	B	ACTIVE CLOSE TO OPEN	DIAPHRAGM	THROT	OPEN	TIME	QUARTER	1D-ISI-FD-010	
Description: CONTROL ROOM HVAC COOLER OUTLET CONTROL VALV									FAIL SAFE	QUARTER		
NS-V205	LIFT CHECK	2.0	3		ACTIVE	NA	CLOSE	---	CLOSE	QUARTER	1D-ISI-FD-010	
Description: NSCCW SURGE TANK DEMIN WATER SUPPLY CHECK VALVE												
PP-V210	GLOBE	1.0	2		PASSIVE	HAND	CLOSE	AS IS	LEAK	APP. J	1D-ISI-FD-015	
Description: CONTAINMENT INTEGRITY BACKUP SUPPLY AH-V1A/B												
PP-V211	GLOBE	1.0	2		PASSIVE	HAND	CLOSE	AS IS	LEAK	APP. J	1D-ISI-FD-015	
Description: CONTAINMENT INTEGRITY - BACKUP SUPPLY TO AH-V1C/D												
PP-V212	GLOBE	2.0	2		PASSIVE	HAND	CLOSE	AS IS	LEAK	APP. J	1D-ISI-FD-015	
Description: CONTAINMENT INTEGRITY - PP-T1B SUPPLY TO AH-V1A/B												
PP-V213	GLOBE	2.0	2		PASSIVE	HAND	CLOSE	---	LEAK	APP. J	1D-ISI-FD-015	
Description: CONTAINMENT INTEGRITY - PP-T1A SUPPLY TO AH-V1C/D												
RB-V2A	GATE	8.0	2	A	ACTIVE OPEN TO CLOSE	MOTOR	OPEN	AS IS	LEAK	APP. J	1D-ISI-FD-010	
Description: CONTAINMENT ISOLATION - RB NORMAL AIR COOL SUP VLV									PARTIAL	QUARTER		
									TIME	COLD SD		
									POS VERIFY	2 YEAR		

Justification: Closure of this valve will isolate cooling to the Reactor Building (RB) normal cooling coils. Isolation of the RB cooling coils could challenge the compliance with RB Temperature Limits in Tech Spec 3.17. Per OM-10, §4.2.1.2(b), this valve will be part stroke tested quarterly and full stroke tested at the Cold Shutdown frequency.

TABLE B-1

TMI1 INSERVICE TEST PROGRAM VALVE TABULATION

VALVE NO	TYPE	SIZE	CLS	CAT	ACTIVE/PASSIVE	ACTUATOR	NORM POS	FAIL POS	TEST TYPE	FREQUENCY	DRAWING	RELIEF NO
RB-V7	GATE	8.0	2	A	ACTIVE OPEN TO CLOSE	MOTOR	OPEN	AS IS	LEAK	APP. J	1D-ISI-FD-010	
Description: CONTAINMENT ISOLATION - RB NORMAL COOL RETURN ISOL									PARTIAL	QUARTER		
									TIME	COLD SD		
									POS VERIFY	2 YEAR		
Justification: Closure of this valve will isolate cooling to the Reactor Building (RB) normal cooling coils. Isolation of the RB cooling coils could challange the compliance with RB Temperature limits - Tech Spec 3.17. Per OM-10, §4.2.1.2(b), this valve will be part stroke tested quarterly and full stroke tested at the Cold Shutdown frequency.												
RC-RV1A	RELIEF	2.5	1	C	ACTIVE	NA	CLOSE	---	SET POINT	5 year	1D-ISI-FD-019	
Description: PRESSURIZER CODE SAFETY VALVE												
RC-RV1B	RELIEF	2.5	1	C	ACTIVE	NA	CLOSE	---	SET POINT	5 year	1D-ISI-FD-019	
Description: PRESSURIZER CODE SAFETY VALVE												
RC-RV2	RELIEF	2.5X4.0	1	C	ACTIVE	SOLENOID	CLOSE	---	SET POINT	5 year	1D-ISI-FD-019	
Description: PZR PILOT OPERATED RELIEF VALVE (PORV)									TIME	REFUEL		
									POS VERIFY	2 YEAR		
Justification: During each refueling outage one of the following tests will be performed: 1) Actuate during shutdown conditions, or 2) Remove and bench test, or 3) Remove and replace with a spare valve that had been bench tested within the last three years. In addition, an as-found and as-left visual examination will be performed. For in-place testing the stroke time will be determined by acoustic monitors. For bench testing, the stroke time will be determined by observation. Fail Safe testing will be accomplished by observing valve closure upon the removal of the open actuation signal.												
RC-V 2	GATE	2.50	1	B	ACTIVE	MOTOR	OPEN	AS IS	TIME	QUARTER	1D-ISI-FD-019	
Description: PORV (RC-RV2) ISOLATION VALVE									POS VERIFY	2 YEAR		
RC-V 4	GLOBE	1.5	1	B	ACTIVE	MOTOR	CLOSE	AS IS	TIME	COLD SD	1D-ISI-FD-019	
Description: DECAY HEAT PRESSURIZER SPRAY LINE ISOLATION VALVE									POS VERIFY	2 YEAR		
Justification: This valve is one of two isolation valves in series that isolate the RCS from a lower design pressure system, the Decay Heat System. Exercising this valve at power would reduce the margin of safety for the RCS pressure barrier. Per OM-10, §4.2.1.2(c), this valve will be exercised at the Cold Shutdown frequency.												
RC-V23	LIFT CHECK	1.5	1	C	ACTIVE	NA	CLOSE	---	FULL FLOW	COLD SD	1D-ISI-FD-019	
Description: DH PRESSURIZER SPRAY LINE CHECK VALVE												
Justification: This valve is in the discharge of the Decay Heat Pumps and the Auxiliary Pressurizer Spray line. The pumps have a discharge pressure in the order of 200 psig. During normal plant operation, these valves cannot be opened because the RCS pressure is approximately 2155 psig. Per OM-10, §4.2.1.2(c), this valve will be exercised at the Cold Shutdown frequency.												

TABLE B-1

TMI1 INSERVICE TEST PROGRAM VALVE TABULATION

VALVE NO	TYPE	SIZE	CLS	CAT	ACTIVE/PASSIVE	ACTUATOR	NORM POS	FAIL POS	TEST TYPE	FREQUENCY	DRAWING	RELIEF NO
RC-V28	GLOBE	1.0	1	B	ACTIVE CLOSE TO OPEN	MOTOR	CLOSE	AS IS	TIME	COLD SD	1D-ISI-FD-019	
Description: PZR VENT TO RCDT ISOLATION VALVE									POS VERIFY	2 YEAR		
Justification: This valve is one of two isolation valves in series. The valves isolate the Reactor Coolant System from the lower design pressure Reactor Coolant Drain Tank. Exercising this valve at power will reduce the margin of safety for the RCS barrier. Per OM-10, §4.2.1.2(c), this valve will be exercised at the Cold Shutdown frequency.												
RC-V40A	GLOBE	0.5	1	B	ACTIVE CLOSE TO OPEN	SOLENOID	CLOSE	CLOSE	TIME	COLD SD	1D-ISI-FD-019	
Description: "A" HOT LEG HIGH POINT VENT TO RCDT AND ATMOSPHERE									POS VERIFY	2 YEAR		
Justification: This valve is one of two high pressure isolation valves in series. Exercising this valve at power will reduce the margin of safety for the RCS barrier. Since this is a solenoid operated valve, it is not possible to part stroke it. Per OM-10, §4.2.1.2(c), this valve will be exercised at the Cold Shutdown frequency.												
RC-V40B	GLOBE	0.5	1	B	ACTIVE CLOSE TO OPEN	SOLENOID	CLOSE	CLOSE	TIME	COLD SD	1D-ISI-FD-019	
Description: "B" HOT LEG VENT TO RCDT AND ATMOSPHERE									POS VERIFY	2 YEAR		
Justification: This valve is one of two high pressure isolation valves in series. Exercising this valve at power will reduce the margin of safety for the RCS barrier. Since this is a solenoid operated valve, it is not possible to part stroke it. Per OM-10, §4.2.1.2(c), this valve will be exercised at the Cold Shutdown frequency.												
RC-V41A	GLOBE	0.5	1	B	ACTIVE CLOSE TO OPEN	SOLENOID	CLOSE	CLOSE	TIME	COLD SD	1D-ISI-FD-019	
Description: "A" HOT LEG VENT TO RCDT AND ATMOSPHERE									POS VERIFY	2 YEAR		
Justification: This valve is one of two high pressure isolation valves in series. Exercising this valve at power will reduce the margin of safety for the RCS barrier. Since this is a solenoid operated valve it is not possible to part stroke it. Per OM-10, §4.2.1.2(c), this valve will be exercised at the Cold Shutdown frequency.												
RC-V41B	GLOBE	0.5	1	B	ACTIVE CLOSE TO OPEN	SOLENOID	CLOSE	CLOSE	TIME	COLD SD	1D-ISI-FD-019	
Description: "B" HOT LEG VENT TO RCDT AND ATMOSPHERE									POS VERIFY	2 YEAR		
Justification: This valve is one of two high pressure isolation valves in series. Exercising this valve at power will reduce the margin of safety for the RCS barrier. Since this is a solenoid operated valve, it is not possible to part stroke it. Per OM-10, §4.2.1.2(c), this valve will be exercised at Cold Shutdown frequency.												
RC-V42	GLOBE	0.5	1	B	ACTIVE CLOSE TO OPEN	SOLENOID	CLOSE	CLOSE	TIME	COLD SD	1D-ISI-FD-019	
Description: REACTOR VESSEL VENT TO REACTOR BLDG ATMOSPHERE									POS VERIFY	2 YEAR		
Justification: This valve is one of two high pressure isolation valves in series. Exercising this valve at power will reduce the margin of safety for the RCS barrier. Since this is a solenoid operated valve, it is not possible to part stroke it. Per OM-10, §4.2.1.2(c), this valve will be exercised at Cold Shutdown frequency.												
RC-V43	GLOBE	0.5	1	B	ACTIVE CLOSE TO OPEN	SOLENOID	CLOSE	CLOSE	TIME	COLD SD	1D-ISI-FD-019	
Description: REACTOR VESSEL VENT TO REACTOR BLDG ATMOSPHERE									POS VERIFY	2 YEAR		
Justification: This valve is one of two high pressure isolation valves in series. Exercising this valve at power will reduce the margin of safety for the RCS barrier. Since this is a solenoid operated valve, it is not possible to part stroke it. Per OM-10, §4.2.1.2(c), this valve will be exercised at the Cold Shutdown frequency.												

TABLE B-1

TMI1 INSERVICE TEST PROGRAM VALVE TABULATION

VALVE NO	TYPE	SIZE	CLS	CAT	ACTIVE/PASSIVE	ACTUATOR	NORM POS	FAIL POS	TEST TYPE	FREQUENCY	DRAWING	RELIEF NO
RC-V44	GLOBE	1.0	1	B	ACTIVE CLOSE TO OPEN	SOLENOID	CLOSE	CLOSE	TIME	COLD SD	1D-ISI-FD-019	
Description: PRESSURIZER HI POINT VENT ISOLATION VALVE									POS VERIFY	2 YEAR		
Justification: This valve is one of two high pressure isolation valves in series. Exercising this valve at power will reduce the margin of safety for the RCS barrier. Since this is a solenoid operated valve, it is not possible to part stroke it. Per OM-10, §4.2.1.2(c), this valve will be exercised at the Cold Shutdown frequency.												
RR-V 1A	BUTTERFLY	16.0	3	B	ACTIVE CLOSE TO OPEN	MOTOR	CLOSE	AS IS	TIME	QUARTER	1D-ISI-FD-002	
Description: RR-P1A DISCHARGE VALVE									POS VERIFY	2 YEAR		
RR-V 1B	BUTTERFLY	16.0	3	B	ACTIVE CLOSE TO OPEN	MOTOR	CLOSE	AS IS	TIME	QUARTER	1D-ISI-FD-002	
Description: RR-P1B DISCHARGE VALVE									POS VERIFY	2 YEAR		
RR-V 3A	GATE	12.0	2	B	ACTIVE CLOSE TO OPEN	MOTOR	OPEN	AS IS	TIME	QUARTER	1D-ISI-FD-010	
Description: CONTAINMENT ISOLATION - RBEC COIL "A" INLET VALVE									POS VERIFY	2 YEAR		
RR-V 3B	GATE	12.0	2	B	ACTIVE CLOSE TO OPEN	MOTOR	OPEN	AS IS	TIME	QUARTER	1D-ISI-FD-010	
Description: CONTAINMENT ISOLATION - RBEC COIL "B" INLET VALVE									POS VERIFY	2 YEAR		
RR-V 3C	GATE	12.0	2	B	ACTIVE CLOSE TO OPEN	MOTOR	OPEN	AS IS	TIME	QUARTER	1D-ISI-FD-010	
Description: CONTAINMENT ISOLATION - RBEC COIL "C" INLET VALVE									POS VERIFY	2 YEAR		
RR-V 4A	GATE	12.0	2	B	ACTIVE CLOSE TO OPEN	MOTOR	CLOSE	AS IS	TIME	QUARTER	1D-ISI-FD-010	
Description: CONTAINMENT ISOLATION - RBEC COIL "1A" OUTLET VLV									POS VERIFY	2 YEAR		
RR-V 4B	GATE	12.0	2	B	ACTIVE CLOSE TO OPEN	MOTOR	CLOSE	AS IS	TIME	QUARTER	1D-ISI-FD-010	
Description: CONTAINMENT ISOLATION RBEC COIL "1B" OUTLET VALVE									POS VERIFY	2 YEAR		
RR-V 4C	GATE	12.0	2	B	ACTIVE CLOSE TO OPEN	MOTOR	CLOSE	AS IS	TIME	QUARTER	1D-ISI-FD-010	
Description: CONTAINMENT ISOLATION - RBEC COIL "1C" OUTLET VLV									POS VERIFY	2 YEAR		
RR-V 4D	GATE	12.0	2	B	ACTIVE CLOSE TO OPEN	MOTOR	CLOSE	AS IS	TIME	QUARTER	1D-ISI-FD-010	
Description: CONTAINMENT ISOLATION - RBEC COIL "1D" OUTLET VLV									POS VERIFY	2 YEAR		
RR-V 5	BUTTERFLY	10.0	3	B	ACTIVE CLOSE TO OPEN	MOTOR	CLOSE	AS IS	TIME	QUARTER	1D-ISI-FD-010	
Description: RR-V6 RB COOLING COIL DISCHARGE BYPASS VALVE									POS VERIFY	2 YEAR		
RR-V 6	BUTTERFLY	10.0	3	B	ACTIVE CLOSE TO OPEN	DIAPHRAGM	THROT	OPEN	TIME	QUARTER	1D-ISI-FD-010	
Description: RB EMERG COOLING COIL BACK PRESSURE REGULATOR									FAIL SAFE	QUARTER		

TABLE B-1

TMI1 INSERVICE TEST PROGRAM VALVE TABULATION

VALVE NO	TYPE	SIZE	CLS	CAT	ACTIVE/PASSIVE	ACTUATOR	NORM POS	FAIL POS	TEST TYPE	FREQUENCY	DRAWING	RELIEF NO
RR-V 7A	SWINGCHECK	16.0	3	C	ACTIVE CLOSE TO OPEN	NA	---	---	PART FLOW	QUARTER	1D-ISI-FD-002	
Description:	RB EMERG COOL PUMP "A" DISCHARGE CHECK VALVE								FULL FLOW	REFUEL		

Justification: Quarterly testing will be performed by flowing through the pump minimum flow line. This flow is less than the design flow rate. Initiating full flow through these valves would introduce river water into the Reactor Building Emergency Cooling Coils. Since river water contains silt and microorganisms, the system must be drained to the Reactor Building sump and refilled with Nuclear Services Closed Cooling Water. Approximately 5,000 gallons of water must be processed through the Liquid Waste Disposal System. This is not pratical for a quarterly or cold shutdown frequency. Additionally, test operation will discharge a quantity of corrosion inhibiter to the river, an environmental release that should be held to a minimum. As permitted by OM-10, §4.3.2.2(e), this valve will be full stroke tested at a refueling outage frequency.

VALVE NO	TYPE	SIZE	CLS	CAT	ACTIVE/PASSIVE	ACTUATOR	NORM POS	FAIL POS	TEST TYPE	FREQUENCY	DRAWING	RELIEF NO
RR-V 7B	SWINGCHECK	16.0	3	C	ACTIVE CLOSE TO OPEN	NA	---	---	PART FLOW	QUARTER	1D-ISI-FD-002	
Description:	RB EMERG COOL PUMP "B" DISCARGE CHECK VALVE								FULL FLOW	REFUEL		

Justification: Quarterly testing will be performed by flowing through the pump minimum flow line. This flow is less than the design flow rate. Initiating full flow through these valves will introduce river water into the Reactor Building Emergency Cooling Coils. Since the river water contains silt and microorganisms, the system must be drained to the Reactor Building sump and refilled with Nuclear Services Closed Cooling Water. Approximately 5,000 gallons of water must be processed through the Liquid Waste Disposal System. This is not pratical for a quarterly or cold shutdown frequency. Additionally, test operation will discharge a quantity of corrosion inhibiter to the river, an environmental release that should be held to a minimum. As permitted by OM-10, §4.3.2.2(e), this valve will be full stroke tested at a refueling outage frequency.

VALVE NO	TYPE	SIZE	CLS	CAT	ACTIVE/PASSIVE	ACTUATOR	NORM POS	FAIL POS	TEST TYPE	FREQUENCY	DRAWING	RELIEF NO
RR-V 8A	SWINGCHECK	20.0	3	C	ACTIVE	NA	CLOSE	---	FULL FLOW	REFUEL	1D-ISI-FD-010	
Description:	RIVER WATER TO RB COOL UNITS CHECK VALVE								CLOSE	QUARTER		

Justification: Initiating flow through these valves will introduce river water into the Reactor Building Emergency Cooling Coils. Since the river water may be silt laden and is untreated, the system must be drained to the Reactor Building sump and refilled with Nuclear Services Closed Cooling Water. This produces quantities of water that must be processed through the Liquid Waste Disposal System. This is not pratical for quarterly or cold shutdown testing. Additionally, test operation will discharge a quantity of corrosion inhibiter to the river, a condition that should be held to a minimum. As permitted by OM-10, §4.3.2.2(e), this valve will be tested at a refueling outage frequency.

VALVE NO	TYPE	SIZE	CLS	CAT	ACTIVE/PASSIVE	ACTUATOR	NORM POS	FAIL POS	TEST TYPE	FREQUENCY	DRAWING	RELIEF NO
RR-V 8B	SWINGCHECK	20.0	3	C	ACTIVE	NA	CLOSE	---	FULL FLOW	REFUEL	1D-ISI-FD-010	
Description:	RIVER WATER TO RB COOL UNITS CHECK VALVE								CLOSE	QUARTER		

Justification: Initiating flow through these valves will introduce river water into the Reactor Building Emergency Cooling Coils. Since the river water may be silt laden and is untreated, the system must be drained to the Reactor Building sump and refilled with Nuclear Services Closed Cooling Water. This produces quantities of water that must be processed through the Liquid Waste Disposal System. This is not pratical for quarterly or cold shutdown testing. Additionally, test operation will discharge a quantity of corrosion inhibiter to the river, a condition that should be held to a minimum. As permitted by OM-10, §4.3.2.2(e), this valve will be tested at a refueling outage frequency.

VALVE NO	TYPE	SIZE	CLS	CAT	ACTIVE/PASSIVE	ACTUATOR	NORM POS	FAIL POS	TEST TYPE	FREQUENCY	DRAWING	RELIEF NO
RR-V 9A	SWINGCHECK	12.0	3	C	ACTIVE	NA	---	---	FULL FLOW	REFUEL	1D-ISI-FD-010	
Description:	CONTAINMENT ISOLATION - AH-E1A EMERG COOL OUTLET											

Justification: Initiating flow through these valves will introduce river water into the Reactor Building Emergency Cooling Coils. Since the river water may be silt laden and is untreated, the system must be drained to the Reactor Building sump and refilled with Nuclear Services Closed Cooling Water. This produces quantities of water that must be processed through the Liquid Waste Disposal System. This is not pratical for quarterly or cold shutdowns. Additionally, test operation will discharge a quantity of corrosion inhibiter to the river, a condition that should be held to a minimum. As permitted by OM-10, §4.3.2.2(e), this valve will be tested at a refueling outage frequency.

TABLE B-1

TMI1 INSERVICE TEST PROGRAM VALVE TABULATION

VALVE NO	TYPE	SIZE	CLS	CAT	ACTIVE/PASSIVE	ACTUATOR	NORM POS	FAIL POS	TEST TYPE	FREQUENCY	DRAWING	RELIEF NO
RR-V 9B	SWINGCHECK	12.0	3	C	ACTIVE	NA	---	---	FULL FLOW	REFUEL	1D-ISI-FD-010	
Description:	CONTAINMENT ISOLATION - AH-E1B EMERG COOL OUTLET											
Justification:	Initiating flow through these valves will introduce river water into the Reactor Building Emergency Cooling Coils. Since the river water may be silt laden and is untreated, the system must be drained to the Reactor Building sump and refilled with Nuclear Services Closed Cooling Water. This produces quantities of water that must be processed through the Liquid Waste Disposal System. This is not pratical for quarterly or cold shutdown testing. Additionally, test operation will discharge a quantity of corrosion inhibiter to the river, a condition that should be held to a minimum. As permitted by OM-10, §4.3.2.2, this valve will be tested at a refueling outage frequency.											
RR-V 9C	SWINGCHECK	12.0	3	C	ACTIVE	NA	---	---	FULL FLOW	REFUEL	1D-ISI-FD-010	
Description:	CONTAINMENT ISOLATION - AH-E1C EMERG COOL OUTLET											
Justification:	Initiating flow through these valves will introduce river water into the Reactor Building Emergency Cooling Coils. Since the river water may be silt laden and is untreated, the system must be drained to the Reactor Building sump and refilled with Nuclear Services Closed Cooling Water. This produces quantities of water that must be processed through the Liquid Waste Disposal System. This is not pratical for quarterly or cold shutdown testing. Additionally, test operation will discharge a quantity of corrosion inhibiter to the river, a condition that should be held to a minimum. As permitted by OM-10, §4.3.2.2(e), this valve will be tested at a refueling outage frequency.											
RR-V10A	GLOBE	2.0	3	B	ACTIVE BOTH	DIAPHRAGM			TIME BOTH	QUARTER	1D-ISI-FD-002	
Description:	RR-P1A RECIRCULATION MINIMUM FLOW BYPASS VALVE								FAIL SAFE	QUARTER		
									POS VERIFY	2 YEAR		
RR-V10B	GLOBE	2.0	3	B	ACTIVE BOTH	DIAPHRAGM			TIME BOTH	QUARTER	1D-ISI-FD-002	
Description:	RR-P1B RECIRCULATION MINIMUM FLOW BYPASS VALVE								FAIL SAFE	QUARTER		
									POS VERIFY	2 YEAR		
RR-V12A	SWINGCHECK	2.0	3	C	ACTIVE BOTH	NA	---	---	FULL FLOW	QUARTER	1D-ISI-FD-002	
Description:	RIVER WATER PUMP "A" VACUUM BREAKER								CLOSE	QUARTER		
RR-V12B	SWINGCHECK	2.0	3	C	ACTIVE BOTH	NA	---	---	FULL FLOW	QUARTER	1D-ISI-FD-002	
Description:	RIVER WATER PUMP "B" VACUUM BREAKER								CLOSE	QUARTER		
SA-V 2	GLOBE	2.0	2	A	PASSIVE	HAND	CLOSE	---	LEAK	APP. J	1D-ISI-FD-023	
Description:	CONTAINMENT ISOLATION - SERVICE AIR TURB BLDG											
Justification:	The valve is a passive component. Per OM-10, Table 1, no valve exercise will be performed.											
SA-V 3	GLOBE	2.0	2	A	PASSIVE	HAND	CLOSE	---	LEAK	APP. J	1D-ISI-FD-023	
Description:	CONTAINMENT ISOLATION - RB 1ST FL SVC AIR ISOL											
Justification:	The valve is a passive component. Per OM-10, Table 1, no valve exercise will be performed.											
SF-V 7	SWINGCHECK	8.0	3		ACTIVE	NA	---	---	FULL FLOW	QUARTER	1D-SIS-FD-018	
Description:	SF-P1A DISCHARGE CHECK VALVE											

TABLE B-1

TMI1 INSERVICE TEST PROGRAM VALVE TABULATION

VALVE NO	TYPE	SIZE	CLS	CAT	ACTIVE/PASSIVE	ACTUATOR	NORM POS	FAIL POS	TEST TYPE	FREQUENCY	DRAWING	RELIEF NO
SF-V 8	SWINGCHECK	8.0	3		ACTIVE	NA	---	---	FULL FLOW	QUARTER	1D-SIS-FD-018	
Description: SF-P1B DISCHARGE CHECK VALVE												
SF-V23	GATE	8.0	2	A	PASSIVE	HAND	CLOSE	CLOSE	LEAK	REFUEL	1D-SIS-FD-018	
Description: FUEL TRANSFER CANAL FILL & DRAIN LINE VALVE												
Justification: This valve is a passive component as defined by OM-10. Per OM-10, Table 1, no exercise test will be performed.												
SF-V50	SWINGCHECK	8.0	3		ACTIVE	NA	OPEN	---	FULL FLOW	QUARTER	1D-ISI-FD-018	
Description: SF POOL "A" COOLING RETURN CHECK VALVE												
SF-V51	SWINGCHECK	8.0	3		ACTIVE	NA	OPEN	---	FULL FLOW	QUARTER	1D-SIS-FD-018	
Description: SF POOL "B" COOLING RETURN CHECK VALVE												
WDG-V3	GLOBE	2.0	2	A	ACTIVE OPEN TO CLOSE	MOTOR	OPEN	AS IS	LEAK	APP. J	1D-ISI-FD-023	
Description: CONTAINMENT ISOLATION - RB VENT HEADER VALVE									TIME	QUARTER		
									POS VERIFY	2 YEAR		
WDG-V4	GATE	2.0	2	A	ACTIVE OPEN TO CLOSE	SOLENOID	OPEN	CLOSE	LEAK	APP. J	1D-ISI-FD-023	
Description: CONTAINMENT ISOLATION - RB VENT HEADER VALVE									TIME	QUARTER		
									FAIL SAFE	QUARTER		
									POS VERIFY	2 YEAR		
WDL-V 49	DIAPHRAGM	1.5	3	B	ACTIVE CLOSE TO OPEN	DIAPHRAGM	CLOSE	CLOSE	TIME	QUARTER	1D-ISI-FD-021	
Description: WDL-P13A OUTLET SUPPLY TO RCBT									POS VERIFY	2 YEAR		
WDL-V 50	DIAPHRAGM	1.5	3	B	ACTIVE CLOSE TO OPEN	DIAPHRAGM	CLOSE	CLOSE	TIME	QUARTER	1D-ISI-FD-021	
Description: WDL-P13B OUTLET SUPPLY TO RCBT									POS VERIFY	2 YEAR		
WDL-V 61	DIAPHRAGM	1.0	3	B	ACTIVE CLOSE TO OPEN	DIAPHRAGM	CLOSE	CLOSE	TIME	QUARTER	1D-ISI-FD-021	
Description: BORIC ACID MIX TANK OUTLET TO PRIMARY SYSTEM									POS VERIFY	2 YEAR		
WDL-V 62	DIAPHRAGM	1.0	3	B	ACTIVE OPEN TO CLOSE	DIAPHRAGM	CLOSE	CLOSE	TIME	QUARTER	1D-ISI-FD-021	
Description: OUTLET BORIC ACID MIX TANK TO RCBT									POS VERIFY	2 YEAR		
WDL-V 89	DIAPHRAGM	2.0	3	B	ACTIVE CLOSE TO OPEN	DIAPHRAGM	CLOSE	CLOSE	TIME	QUARTER	1D-ISI-FD-021	
Description: OUTLET RBAT (WDL-T7A) TO WDL-P13A												
WDL-V 90	DIAPHRAGM	2.0	3	B	ACTIVE CLOSE TO OPEN	DIAPHRAGM	CLOSE	CLOSE	TIME	QUARTER	1D-ISI-FD-021	
Description: OUTLET RBAT (WDL-T7A) TO WDL-P13B												

TABLE B-1

TMI1 INSERVICE TEST PROGRAM VALVE TABULATION

VALVE NO	TYPE	SIZE	CLS	CAT	ACTIVE/PASSIVE	ACTUATOR	NORM POS	FAIL POS	TEST TYPE	FREQUENCY	DRAWING	RELIEF NO
WDL-V 91	DIAPHRAGM	2.0	3	B	ACTIVE CLOSE TO OPEN	DIAPHRAGM	CLOSE	CLOSE	TIME	QUARTER	1D-ISI-FD-021	
Description: OUTLET RBAT (WDL-T7B) TO WDL-P13A												
WDL-V 92	DIAPHRAGM	2.0	3	B	ACTIVE CLOSE TO OPEN	DIAPHRAGM	CLOSE	CLOSE	TIME	QUARTER	1D-ISI-FD-021	
Description: OUTLET WDL-T7B TO WDL-P13B												
WDL-V303	GATE	3.0	2	A	ACTIVE OPEN TO CLOSE	MOTOR	CLOSE	AS IS	LEAK TIME POS VERIFY	APP. J QUARTER 2 YEAR	1D-ISI-FD-023	
Description: CONTAINMENT ISOLATION - RC DRAIN PUMP DISCH VALVE												
WDL-V304	GATE	3.0	2	A	ACTIVE OPEN TO CLOSE	PISTON	CLOSE	CLOSE	LEAK TIME FAIL SAFE POS VERIFY	APP. J QUARTER QUARTER 2 YEAR	1D-ISI-FD-023	
Description: CONTAINMENT ISOLATION - RC DRAIN PUMP DISCH ISOL												
WDL-V353	LIFT CHECK	1.5	3	C	ACTIVE	NA	---	---	FULL FLOW	QUARTER	1D-ISI-FD-021	
Description: BA RECYCLE PUMP "A" DISCHARGE CHECK VALVE												
WDL-V354	LIFT CHECK	1.5	3	C	ACTIVE	NA	---	---	FULL FLOW	QUARTER	1D-ISI-FD-021	
Description: BA RECYCLE PUMP "B" DISCHARGE CHECK VALVE												
WDL-V361	LIFT CHECK	1.0	3	C	ACTIVE	NA	---	---	PART FLOW FULL FLOW	COLD SD REFUEL	1D-ISI-FD-021	
Description: FEED INJ CHECK BAMT TO MU&P SYSTEM												
Justification: Initiation of flow through this valve will inject concentrated boric acid into the Reactor Coolant Makeup and Purification System. This would adversely affect plant operation due to reactivity changes. Returning the concentration to the operating band would create additional radwaste to be processed. For these reasons, exercising during operation is considered to be impractical. Partial stroke testing will occur at the Cold Shutdown frequency. Per OM-10, §4.3.2.2 (c), the valve will be exercised at a refueling outage frequency.												
WDL-V362	SWINGCHECK	2.5	3	C	ACTIVE	NA	---	---	CLOSE	REFUEL	1D-ISI-FD-021	
Description: FEED INJ DEBORATING DEMIN TO MU&P SYS CHECK VALVE												
Justification: Initiation of flow through this line will inject concentrated boric acid into the Reactor Coolant Makeup and Purification System. This would adversely affect plant operation due to reactivity changes. Returning the concentration to the operating band would create additional radwaste to be processed. For these reasons close testing during operation is considered to be impractical. Per OM-10, §4.3.2.2(c), this valve will be exercised at the refueling outage frequency.												
WDL-V534	GATE	6.0	2	A	ACTIVE OPEN TO CLOSE	PISTON	CLOSE	CLOSE	LEAK TIME FAIL SAFE POS VERIFY	APP. J QUARTER QUARTER 2 YEAR	1D-ISI-FD-021	
Description: CONTAINMENT ISOLATION - RB SUMP DRAIN TO AUX BLDG												

TABLE B-1

TMI1 INSERVICE TEST PROGRAM VALVE TABULATION

VALVE NO	TYPE	SIZE	CLS	CAT	ACTIVE/PASSIVE	ACTUATOR	NORM POS	FAIL POS	TEST TYPE	FREQUENCY	DRAWING	RELIEF NO
WDL-V535	GATE	6.0	2	A	ACTIVE OPEN TO CLOSE	PISTON	CLOSE	CLOSE	LEAK	APP. J	1D-ISI-FD-021	
									TIME	QUARTER		
Description: CONTAINMENT ISOLATION - RB SUMP DRAIN TO AUX BLDG									FAIL SAFE	QUARTER		
									POS VERIFY	2 YEAR		

TABLE B-2
TMI-1 IST VALVE RELIEF REQUESTS

RELIEF REQUEST NO. V 1

Component Tag No.	Component Description	Category	Type	Actuator
MU-V78	Makeup Tank and Pumps Bypass for RCS Fill Isolation Valve	C	Globe	Hand
MU-V79	Makeup Tank and Pumps Bypass for RCS Fill Check Valve	C	Swing Check	NA

Code Section from Which Relief is Requested
Relief is requested from the exercising requirements of OM-10, §4.3.2.2.

Alternate Test Description
The valve pair (MU-V78 in series with MU-V79) is verified closed by normal operating procedures. No specific test procedures will be implemented. MU-V78 is a locked closed hand operated globe valve. Leakage will be noted by observing Makeup Tank level and pressure as part of normal operating procedures.

Basis for Relief Request
Relief is requested from the requirement to perform a quarterly exercise test for MU-V79. MU-V79, a 2½" swing check valve, has no nuclear safety function in the open position. During normal plant operation, MU-V79 is isolated by a hand operated locked closed valve, MU-V78. Either of these valves fulfills the nuclear safety function. MU-V78 is maintained locked closed during operation in accordance with the normal system valve lineup. Both of these valves are Seismic Category I and capable of seating against the shutoff head of the Makeup Pumps.

A small amount of leakage past MU-V78 and MU-V79 into the 2½" fill line is of no consequence since any leakage water would return to the Makeup Tank and remain available for makeup to the primary system. The Makeup Tank is alarmed for both pressure and level.

Significant leakage such as would be seen if both valves were open would be identified by significant changes in Makeup Tank pressure and level. Significant leakage would also be identified by a refueling surveillance 1303-11.8, "HPI Test," since this procedure verifies HPI accident design flow rate.

NUREG-1482, §4.1.1 discusses the situation of two check valves in series and the acceptability of testing them together. Although MU-V78 is not a check valve, a similar argument can be made. There is no pressure tap between these two redundant

RELIEF REQUEST NO. V 1 (Continued):

valves and testing would only be capable of verifying the seat tightness of one valve. Both of these valves are capable seating against accident design pressure. The valve pair (MU-V78 and MU-V79) are under constant test for significant leakage since Makeup Tank high level and high pressure are both alarmed conditions. Therefore, specific tests to exercise these valves or disassemble and inspect them are not needed.

TABLE B-2
TMI-1 IST VALVE RELIEF REQUESTS

RELIEF REQUEST NO. V 2

Component

Tag No.	Component Description	Category	Type	Actuator
DH-V50	Spent Fuel Return Cleanup Check Valve	C	Swing Check	NA

Code Section from Which Relief is Requested
Relief is requested from the exercising requirements of OM-10, §4.3.2.2.

Alternate Test Description
The valve pair (DH-V50 in series with SF-V44) is verified closed by means of Borated Water Storage Tank (BWST) level as part of normal operating and alarm response procedures. No specific test procedure will be implemented.

Basis for Relief Request
DH-V50 has no nuclear safety function in the open position. The nuclear safety function is to prevent fluid from the BWST and Reactor Building Sump from entering the non seismic portion of the Spent Fuel Pool Cooling System (SF) after a LOCA when the Decay Heat Removal System is in Low Pressure Injection (LPI) mode and suction is from the BWST and later from the Reactor Building sump. The valve is in series with a hand-operated normally closed valve (SF-V44).

The leak tightness of these valves (DH-V50 and SF-V44) is under constant test by surveillance of BWST level. Maintaining BWST level, which is also alarmed, verifies that (either DH-V50 or SF-V44) is in the closed position. Any appreciable leakage would be detected through use of the current procedures (e.g., Surveillance Procedure 1301-1, "Shift and Daily Checks"). In addition, refueling surveillance 1303-11.54, "LPI Test," verifies that these valves do not have significant seat leakage since this procedure verifies LPI accident design flow rate.

DH-V50 is only used when the DH system is to be filled from the spent fuel pool which is rarely done. SF-V44 is included in the Augmented IST program because it is a non-Code valve. Both of these valves are Seismic Category I and capable of seating against accident design pressure. Either of these valves fulfills the nuclear safety function.

NUREG-1482, §4.1.1 discusses the situation of two check valves in series and the acceptability of testing them together. Although SF-V44 is not a check valve, a similar argument can be made. There is no pressure tap between these two redundant valves and testing would only be capable of verifying the seat tightness of the first valve, DH-V50. The valve pair (DH-V50 and SF-V44) are

RELIEF REQUEST NO. V 2 (Continued):

under constant test for significant leakage since BWST level is alarmed and is surveilled. Therefore, opening SF-V44 to test the leak tightness of DH-V50, or other specific tests to exercise these valves or disassemble and inspect them are not needed.

TABLE B-2
TMI-1 IST VALVE RELIEF REQUESTS

RELIEF REQUEST NO. V 3

Component Tag No.	Component Description	Category	Type	Actuator
BS-V52A	NAOH Tank LPI/BS Suction Header Check Valve	C	Swing Check	NA
BS-V52B	NAOH Tank LPI/BS Suction Header Check Valve	C	Swing Check	NA

Code Section from Which Relief is Requested

Relief is requested from OM-10, §4.3.2.4(c) regarding the frequency of disassembly for inspection purposes. This valve cannot be exercised with flow.

Alternate Test Description

These valves form a group as described in Generic Letter 89-04, Position 2 and NUREG-1482 in that they are identical, mounted the same manner, and see the same service. As approved for the last 10-year interval, one valve in the group will be disassembled and inspected and the disc manually exercised every other refueling outage alternating between A and B, such that each valve is disassembled every fourth outage. This results in a disassembly frequency of approximately every 8 years for a specific valve. If the inspected valve is found to be unacceptable, the other valve in the group will be inspected during the same outage.

Basis for Relief Request

Flow testing of these valves requires the injection of sodium hydroxide into the Decay Heat Removal and Building Spray Systems. Such operation is impractical in that the sodium hydroxide must be removed from the Decay Heat System. Therefore, flow testing is not considered to be practical. Except for accident conditions, these valves would never see flow. The valves are stainless steel and are subject to conditions (clean, low temperature fluid) that would minimize the possibility of their sticking closed.

Both valves were disassembled and inspected in 1984. BS-V52A was again disassembled during the 6R (1986) and 9R (1991) Outages. BS-V52B was disassembled during the 7R (1988) Outage and in July, 1995. All inspections have shown the valves to be in excellent condition.

Given the valves' materials of construction, lack of service, and the results of previous disassembly inspections, this relief is justified. Similar relief was approved by the NRC for the previous IST interval in a letter dated December 27, 1989. The NRC granted relief based on GPU Nuclear letters dated June 7, 1988 and April 17, 1989. Inspection results from disassembly subsequent to our previous correspondence provide even greater justification for reducing the frequency of inspection.

TABLE B-2
TMI-1 IST VALVE RELIEF REQUESTS

RELIEF REQUEST NO. V 4

Component Tag No.	Component Description	Category	Type	Actuator
BS-V30A	Containment Isolation - BS Nozzle Inlet Check Valve	C	Swing Check	NA
BS-V30B	Containment Isolation - BS Nozzle Inlet Check Valve	C	Swing Check	NA

Code Section from Which Relief is Requested

Relief is requested from OM-10, §4.3.2.4(c), regarding disassembly frequency. This valve cannot be full stroke exercised with flow.

Alternate Test Description

These valves form a group as described in Generic Letter 89-04, Position 2 and NUREG-1482 in that they are identical, mounted the same manner, and see the same service. As approved for the last submittal, each valve in the group will be disassembled and inspected and the disc manually exercised every other refueling outage alternating between A and B, such that each valve is disassembled every fourth outage. This equates to disassembly frequency of approximately 8 years for a specific valve. If the inspected valve is found to be unacceptable, the other valve in the group will be inspected during the same outage. Both valves are partial flow tested every quarter using nitrogen.

Basis for Relief Request

Operation of this system would require spraying the containment. Therefore flow testing is not considered to be practical. These valves effectively never see service and are subject to conditions (clean, low temperature water) that would minimize their sticking closed. Both valves are stainless steel.

BS-V30A was opened and inspected for the first time in 1984. It was opened again during the 7R (1988) Outage. It is scheduled to be opened during the 11R Outage (9/95). BS-V30B was disassembled during the 6R (1986) and 9R (1991) Outages. All inspections have shown the valves to be in excellent condition.

Given the valves' materials of construction, lack of service, and the results of previous disassembly inspections, this relief is justified. Similar relief was approved by the NRC for the previous IST interval in a letter dated December 27, 1989. The NRC granted relief based on GPU Nuclear letters dated June 7, 1988 and April 17, 1989. Inspection results from disassembly subsequent to our previous correspondence provide even greater justification for reducing the frequency of inspection.

TABLE B-2
TMI-1 IST VALVE RELIEF REQUESTS

RELIEF REQUEST NO. V 5

Component Tag No.	Component Description	Category	Type	Actuator
CO-V175A	EFW Pump Bearing Cooling Return Check Valve	C	Lift Check	NA
CO-V175B	EFW Pump Bearing Cooling Return Check Valve	C	Lift Check	NA

Code Section from Which Relief is Requested

Specific relief is requested from the full flow test requirement of NRC Generic Letter 89-04, Position 1. While the system is tested quarterly, it is not possible to determine that both valves open.

Alternate Test Description

These valves form a group as described in Generic Letter 89-04, Position 2 and NUREG-1482 in that they are identical, mounted the same manner, and see the same service. One valve in the group will be disassembled and inspected and the disc manually exercised every other refueling outage alternating between A and B, such that each valve is disassembled every fourth outage. This results in a disassembly frequency of approximately every 8 years for a specific valve. If the inspected valve is found to be unacceptable, the other valve in the group will be inspected during the same outage.

Basis for Relief Request

These stop check valves direct flow from the EFW Pump seal supply back to the EFW Pump Suction header. The return flow from all three EFW Pumps is combined and then flow is directed through these parallel valves. The closed function is required to prevent draining one Condensate Storage Tank (CST) through the other CST if a failure of one tank is postulated. Full flow testing would require that two of three EFW Pumps (one motor driven and the turbine driven) operate simultaneously with one Condensate Storage Tank/EFW Suction Header isolated (to the opposite motor driven EFW Pump). This test is not practical because isolation of a header and Condensate storage tank with two pumps operating is undesirable.

Both valves were disassembled and inspected during Refueling Outages 8R (January 1990) and 9R (October 1991); both were found to be in good condition. CO-V175A was again disassembled and inspected during 10R (September 1993) and found in good condition. CO-V175B is scheduled to be disassembled and inspected in 11R (September 1995). These valves operate in clean water and are of a simple design. Disassembly and inspection every other outage is sufficient to demonstrate the operational readiness of these valves.

TABLE B-2
TMI-1 IST VALVE RELIEF REQUESTS

RELIEF REQUEST NO. VG 1

Code Section from Which Relief is Requested
Generic relief is requested from OM-10, §§4.2.2.3(a) and 4.1 regarding test frequency.

Alternate Test Description
These tests will be performed each refueling outage instead of the Code specified frequency "at least once every two years."

Basis for Relief Request
The refuel cycle for TMI-1 is nominally two years. Several of the valves requiring leak testing cannot be tested with the plant operating. If, due to an intermediate outage, the refueling cycle exceeds two years, the code requirement could require a shutdown simply to test the certain valves. This is impractical. Testing each refueling is a reasonable alternative.

Typically, valve position verification is done more frequently than once every two years. Some valves must be stroked to verify position. Of these, several cannot be stroked with the plant operating. As delineated above, the refuel cycle may extend beyond two years. Position verification using the code specified frequency, could cause the plant to be shut down. Position verification at least every refueling is a reasonable alternative to at least every two years.

TABLE B-3

TMI1 AUGMENTED IST PROGRAM VALVE TABULATION

VALVE NO	TYPE	SIZE	CLS	CAT	ACTIVE/PASSIVE	ACTUATOR	NORM POS	FAIL POS	TEST TYPE	FREQUENCY	DRAWING	RELIEF NO
DF-V 7A/A	LIFT CHECK	1.0	A		ACTIVE BOTH	NA	CLOSE	---	FULL FLOW	QUARTER	C-302-351	
Description: DF-P1A DISCHARGE CHECK VALVE									CLOSE	QUARTER		
DF-V 7A/B	LIFT CHECK	1.0	A		ACTIVE BOTH	NA	CLOSE	---	FULL FLOW	QUARTER	C-302-351	
Description: DF-P1C DISCHARGE CHECK VALVE									CLOSE	QUARTER		
DF-V 7B/A	LIFT CHECK	1.0	A		ACTIVE BOTH	NA	CLOSE	---	FULL FLOW	QUARTER	C-302-351	
Description: DF-P1B DISCHARGE CHECK VALVE									CLOSE	QUARTER		
DF-V 7B/B	LIFT CHECK	1.0	A		ACTIVE BOTH	NA	CLOSE	---	FULL FLOW	QUARTER	C-302-351	
Description: DF-P1D DISCHARGE CHECK VALVE									CLOSE	QUARTER		
DF-V23A	STOP CHECK	2.0	A		ACTIVE BOTH	NA	CLOSE	---	FULL FLOW	QUARTER	C-302-283	
Description: DF-T1 FOOT VALVE									CLOSE	QUARTER		
DF-V23B	STOP CHECK	2.0	A		ACTIVE BOTH	NA	CLOSE	---	FULL FLOW	QUARTER	C-302-283	
Description: DF-T1 FOOT VALVE									CLOSE	QUARTER		
EG-V10AA	LIFT CHECK	0.75	A		ACTIVE	NA	CLOSE	---	CLOSE	QUARTER	C-302-351	
Description: EDG-1A AIR START RECEIVER INLET CHECK VALVE												
EG-V10AB	LIFT CHECK	0.75	A		ACTIVE	NA	CLOSE	---	CLOSE	QUARTER	C-302-351	
Description: EG-T1B-1 AIR START SYS. RECEIVER INLET CHECK												
EG-V10BA	LIFT CHECK	0.75	A		ACTIVE	NA	CLOSE	---	CLOSE	QUARTER	C-302-351	
Description: EG-T1A-2 AIR START SYS. RECEIVER INLET CHECK												
EG-V10BB	LIFT CHECK	0.75	A		ACTIVE	NA	CLOSE	---	CLOSE	QUARTER	C-302-351	
Description: EG-T1B-2 AIR START RECEIVER INLET CHECK												
EG-V16AA	DIAPHRAGM	1.5	A	B	ACTIVE CLOSE TO OPEN	SOLENOID	CLOSE	OPEN	TIME	QUARTER	C-302-351	
Description: AIR START FOR DIESEL GENERATOR 1A												
EG-V16AB	DIAPHRAGM	1.5	A	B	ACTIVE CLOSE TO OPEN	SOLENOID	CLOSE	OPEN	TIME	QUARTER	C-302-351	
Description: AIR START FOR DIESEL GENERATOR 1B												
EG-V16BA	DIAPHRAGM	1.5	A	B	ACTIVE CLOSE TO OPEN	SOLENOID	CLOSE	OPEN	TIME	QUARTER	C-302-351	
Description: AIR START FOR EG-Y1A												

TABLE B-3

TMI1 AUGMENTED IST PROGRAM VALVE TABULATION

VALVE NO	TYPE	SIZE	CLS	CAT	ACTIVE/PASSIVE	ACTUATOR	NORM POS	FAIL POS	TEST TYPE	FREQUENCY	DRAWING	RELIEF NO
EG-V16BB	DIAPHRAGM	1.5	A	B	ACTIVE CLOSE TO OPEN	SOLENOID	CLOSE	OPEN	TIME	QUARTER	C-302-351	
Description: AIR START FOR DIESEL EG-Y1B												
EG-V31A	THREE WAY	5.0	A	C	ACTIVE CLOSE TO OPEN	EXPANSION	---	---	FULL FLOW	QUARTER	C-302-354	
Description: EDG "A" JACKET COOLANT TEMP CONTROL VALVE									DISASEMBLE	10 YEAR		
Justification: These are self contained thermostatic valves that use an expanding wax type of temperature sensing element. There are no external actuators. The valves have four internal elements that start to open at 100 degrees F and are fully open at 115 degrees F. These valves are self actuating in response to some system characteristic (temperature) therefore, they are clasified as category C per the definition of OM-10, §1.4.c. There are no rules in OM-10 for the testing of these valves (rules exist for check and relief valves only). Further, these valves are an integral part of the Diesel Generator skid. The proper functioning of these valves will be indicated during the performance of the Diesel Genrator test.												
EG-V31B	THREE WAY	5.0	A	C	ACTIVE CLOSE TO OPEN	EXPANSION	---	---	FULL FLOW	QUARTER	C-302-354	
Description: EDG "B" JACKET COOLANT TEMPERATURE CONTROL VALVE									DISASEMBLE	10 YEAR		
Justification: These are self contained thermostatic valves that use an expanding wax type of temperature sensing element. There are no external actuators. The valves have four internal elements that start to open at 100 degrees F and are fully open at 115 degrees F. These valves are self actuating in response to some system characteristic (temperature) therefore, they are clasified as category C per the definition of OM-10, §1.4.c. There are no rules in OM-10 for the testing of these valves (rules exist for check and relief valves only). Further, these valves are an integral part of the Diesel Generator skid. The proper functioning of these valves will be indicated during the performance of the Diesel Genrator test.												
EG-V32AA	SWINGCHECK	4.0	A	C	ACTIVE CLOSE TO OPEN	NA	---	---	FULL FLOW	QUARTER	C-302-354	
Description: EG-C3A/A COOL RADIATOR OUTLET CHECK VALVE									DISASEMBLE	10 YEAR		
Justification: These valves are located downstream of the Diesel Generator and must open to allow to be pumped out of the two 50% capacity each radiators and are an integral part of the Diesel Generator skid. Their function is verified open during the performance of testing of the Diesel Gemerator by observation of acceptable engine coolant temperatures. If one of the valves did not open, acceptable coolant temperatures could not be attained. This is considered to be an indirect indicator of valve function as permitted by OM-10, §4.3.2.4(a).												
EG-V32AB	SWINGCHECK	4.0	A	C	ACTIVE CLOSE TO OPEN	NA	---	---	FULL FLOW	QUARTER	C-302-354	
Description: EG-C3A/B COOL RADIATOR OUTLET CHECK VALVE									DISASEMBLE	10 YEAR		
Justification: These valves are located downstream of the Diesel Generator and must open to allow to be pumped out of the two 50% capacity each radiators and are an integral part of the Diesel Generator skid. Their function is verified open during the performance of testing of the Diesel Gemerator by observation of acceptable engine coolant temperatures. If one of the valves did not open, acceptable coolant temperatures could not be attained. This is considered to be an indirect indicator of valve function as permitted by OM-10, §4.3.2.4(a).												
EG-V32BA	SWINGCHECK	4.0	A	C	ACTIVE CLOSE TO OPEN	NA	---	---	FULL FLOW	QUARTER	C-302-354	
Description: EG-C3B/A COOL RADIATOR OUTLET CHECK VALVE									DISASEMBLE	10 YEAR		
Justification: These valves are located downstream of the Diesel Generator and must open to allow to be pumped out of the two 50% capacity each radiators and are an integral part of the Diesel Generator skid. Their function is verified open during the performance of testing of the Diesel Gemerator by observation of acceptable engine coolant temperatures. If one of the valves did not open, acceptable coolant temperatures could not be attained. This is considered to be an interect indicator of valve function as permitted by OM-10, §4.3.2.4(a).												

TABLE B-3

TMI1 AUGMENTED IST PROGRAM VALVE TABULATION

VALVE NO	TYPE	SIZE	CLS	CAT	ACTIVE/PASSIVE	ACTUATOR	NORM POS	FAIL POS	TEST TYPE	FREQUENCY	DRAWING	RELIEF NO
EG-V32BB	SWINGCHECK	4.0	A	C	ACTIVE CLOSE TO OPEN	NA	---	---	FULL FLOW	QUARTER	C-302-354	
									DISASEMBLE	10 YEAR		
Description: EG-C-3B/B COOL RADIATOR OUTLET CHECK VALVE												
Justification: These valves are located downstream of the Diesel Generator and must open to allow to be pumped out of the two 50% capacity each radiators and are an integral part of the Diesel Generator skid. Their function is verified open during the performance of testing of the Diesel Gemerator by observation of acceptable engine coolant temperatures. If one of the valves did not open, acceptable coolant temperatures could not be attained. This is considered to be an interect indicator of valve function as permitted by OM-10, §4.3.2.4(a).												
EG-V34A	SWINGCHECK	5.0	A	C	ACTIVE OPEN TO CLOSE	NA	---	---	CLOSE	QUARTER	C-302-354	
									DISASEMBLE	10 YEAR		
Description: JACKET COOLANT RADIATOR BYPASS CHECK VALVE												
Justification: This valve will be tested as part of the test of the Diesel Generator. The valve is an integral part of the Diesel skid. Maintaining the Diesel jacket water temperature within its operating range will be considered as an acceptable test of the valve and is considered an indirect observation of valve function as permitted by OM-10, §4.3.2.4(a).												
EG-V34B	SWINGCHECK	5.0	A	C	ACTIVE OPEN TO CLOSE	NA	---	---	CLOSE	QUARTER	C-302-354	
									DISASEMBLE	10 YEAR		
Description: JACKET COOLANT RADIATOR BYPASS CHECK VALVE												
Justification: This valve will be tested as part of the test of the Diesel Generator. The valve is an integral part of the Diesel skid. Maintaining the Diesel jacket water temperature within its operating range will be considered as an acceptable test of the valve and is considered an indirect observation of valve function as permitted by OM-10, §4.3.2.4(a).												
EG-V47A	THREE WAY	4.0	A	C	ACTIVE CLOSE TO OPEN	NA	---	---	FULL FLOW	QUARTER	C-302-354	
									DISASEMBLE	10 YEAR		
Description: TEMPERATURE CONTROL VALVE FROM PUMP EG-P2A												
Justification: These are self contained thermostatic valves that use an expanding wax type of temperature sensing element. There are no external actuators. The valves have six internal elements that start to open at 155 degrees F and are fully open at 170 degrees F. These valves are self actuating in response to some system characteristic (temperature) therefore, they are clasified as category C per the definition of OM-10, §1.4.c. There are no rules in OM-10 for the testing of these valves (rules exist for check and relief valves only). Further, these valves are an integral part of the Diesel Generator skid. The proper functioning of these valves will be indicated during the performance of the Diesel Genrator test.												
EG-V47B	THREE WAY	4.0	A	C	ACTIVE CLOSE TO OPEN	NA	---	---	FULL FLOW	QUARTER	C-302-354	
									DISASEMBLE	10 YEAR		
Description: TEMPERATURE CONTROL VALVE FROM PUMP EG-P2B												
Justification: These are self contained thermostatic valves that use an expanding wax type of temperature sensing element. There are no external actuators. The valves have six internal elements that start to open at 155 degrees F and are fully open at 170 degrees F. These valves are self actuating in response to some system characteristic (temperature) therefore, they are clasified as category C per the definition of OM-10, §1.4.c. There are no rules in OM-10 for the testing of these valves (rules exist for check and relief valves only). Further, these valves are an integral part of the Diesel Generator skid. The proper functioning of these valves will be indicated during the performance of the Diesel Genrator test.												
EG-V48A	SWINGCHECK	4.0	A	C	ACTIVE	NA	---	---	FULL FLOW	QUARTER	C-302-354	
									DISASEMBLE	10 YEAR		
Description: AIR COOLING PUMP "A" DISCHARGE CHECK VALVE												
									CLOSE	QUARTER		
Justification: This valve will be tested as part of the test of the Diesel Generator. The valve is an integral part of the Diesel skid. Maintaining the Air Reciever temperature within its operating range will be considered as an acceptable test of the valve and is considered an indirect observation of valve function as permitted by OM-10, §4.3.2.4(a).												

TABLE B-3

TMI1 AUGMENTED IST PROGRAM VALVE TABULATION

VALVE NO	TYPE	SIZE	CLS	CAT	ACTIVE/PASSIVE	ACTUATOR	NORM POS	FAIL POS	TEST TYPE	FREQUENCY	DRAWING	RELIEF NO
EG-V48B	SWINGCHECK	4.0	A	C	ACTIVE	NA	---	---	FULL FLOW	QUARTER	C-302-354	
Description: AIR COOLING PUMP "B" DISCHARGE CHECK VALVE									DISASEMBLE	10 YEAR		
									CLOSE	QUARTER		
Justification: Maintaining the Air Reciever temperature within its operating range will be considered as an acceptable test of the valve and is considered an indirect observation of valve function as permitted by OM-10, §4.3.2.4(a).												
FW-V 5A	GATE	20.0	A	B	ACTIVE OPEN TO CLOSE	MOTOR	OPEN	AS IS	TIME	COLD SD	C-302-081	
Description: MAIN FEEDWATER "A" BLOCK VALVE									POS VERIFY	2 YEAR		
Justification: This valves do not have jog control a cannot be part stroked. This valve is in the main feedwater line and cannot be closed during operation. Per OM-10, §4.2.12(c), it will be exercised at a Cold Shutdown frequency.												
FW-V 5B	GATE	20.0	A	B	ACTIVE OPEN TO CLOSE	MOTOR	OPEN	AS IS	TIME	COLD SD	C-302-081	
Description: MAIN FEEDWATER "B" BLOCK VALVE									POS VERIFY	2 YEAR		
Justification: This valves do not have jog control a cannot be part stroked. This valve is in the main feedwater line and cannot be closed during operation. Per OM-10, §4.2.12.(c), it will be exercised at a Cold Shutdown frequency.												
FW-V16A	CONTROL	6.0	A	B	ACTIVE OPEN TO CLOSE	AIR	OPEN	AS IS	TIME	COLD SD	C-302-081	
Description: MAIN FEEDWATER STARTUP FLOW CONTROL VALVE									FAIL SAFE	COLD SD		
									POS VERIFY	2 YEAR		
FW-V16B	CONTROL	6.0	A	B	ACTIVE OPEN TO CLOSE	AIR	OPEN	AS IS	TIME	COLD SD	C-302-081	
Description: MAIN FEEDWATER STARTUP FLOW CONTROL VALVE									FAIL SAFE	COLD SD		
									POS VERIFY	2 YEAR		
FW-V17A	CONTROL	20.0	A	B	ACTIVE OPEN TO CLOSE	AIR	THROT	AS IS	TIME	COLD SD	C-302-081	
Description: MAIN FEEDWATER CONTROL VALVES									FAIL SAFE	COLD SD		
									POS VERIFY	2 YEAR		
FW-V17B	CONTROL	20.0	A	B	ACTIVE OPEN TO CLOSE	AIR	THROT	AS IS	TIME	COLD SD	C-302-081	
Description: MAIN FEEDWATER CONTROL VALVE									FAIL SAFE	COLD SD		
									POS VERIFY	2 YEAR		
FW-V92A	GATE	6.0	A	B	ACTIVE OPEN TO CLOSE	MOTOR	OPEN	AS IS	TIME	COLD SD	C-302-081	
Description: OTSG "A" STARTUP FEEDWATER BLOCK VALVE									POS VERIFY	2 YEAR		
Justification: This valves do not have jog control a cannot be part stroked. This valve is in the main feedwater line and cannot be closed during operation. Per OM-10, §4.2.12(c), it will be exercised at the Cold Shutdown frequency.												
FW-V92B	GATE	6.0	A	B	ACTIVE OPEN TO CLOSE	MOTOR	OPEN	AS IS	TIME	COLD SD	C-302-081	
Description: OTSG "B" STARTUP FEEDWATER BLOCK VALVE									POS VERIFY	2 YEAR		
Justification: This valves do not have jog control a cannot be part stroked. This valve is in the main feedwater line and cannot be closed during operation. Per OM-10, §4.2.12(c), it will be exercised at the Cold Shutdown frequency.												

TABLE B-3

TMI1 AUGMENTED IST PROGRAM VALVE TABULATION

VALVE NO	TYPE	SIZE	CLS	CAT	ACTIVE/PASSIVE	ACTUATOR	NORM POS	FAIL POS	TEST TYPE	FREQUENCY	DRAWING	RELIEF NO
IA-V1625A	THREE WAY	1.0	A		ACTIVE	AIR	OPEN	OPEN	FUNCTION	REFUEL	302-273	
Description: 2-HR BACKUP AIR SYSTEM "A" HEADER VENT VALVE												
IA-V1625B	THREE WAY	1.0	A		ACTIVE	AIR	OPEN	OPEN	FUNCTION	REFUEL	302-273	
Description: 2-HR BACKUP AIR SYSTEM "B" HEADER VENT VALVE												
IA-V1626A	THREE WAY	1.0	A		ACTIVE	AIR	OPEN	OPEN	FUNCTION	REFUEL	302-273	
Description: 2-HR BACKUP AIR SYSTEM HEADER SUPPLY VALVE												
Justification: There is no practical way to stroke time these valves. The test includes stroking the Emergency Feedwater and Mainsteam valves supplied by the 2-hr Backup Air Bottles to demonstrate this component will perform its intended function.												
IA-V1626B	THREE WAY	1.0	A		ACTIVE	AIR	OPEN	OPEN	FUNCTION	REFUEL	302-273	
Description: 2-HR BACKUP AIR SYSTEM HEADER SUPPLY VALVE												
Justification: There is no practical way to stroke time these valves. The test includes stroking the Emergency Feedwater and Mainsteam valves supplied by the 2-Hr Backup Air Bottles to demonstrate this component will perform its intended function.												
IC-V 1A	GATE	4.0	A	B	ACTIVE	MOTOR	---	AS IS	TIME	COLD SD	1D-ISI-FD-022	
Description: LETDOWN COOLER "A" SUPPLY ISOLATION VALVE												
Justification: This valve has no Nuclear Safety Function.												
IC-V 1B	GATE	4.0	A	B	ACTIVE	MOTOR	---	AS IS	TIME	COLD SD	1D-ISI-FD-022	
Description: LETDOWN COOLER "B" SUPPLY ISOLATION VALVE												
Justification: The valve has no Nuclear Safety Function.												
MS-V10A	GATE	6.0	A	B	ACTIVE CLOSE TO OPEN	MOTOR	CLOSE	AS IS	TIME POS VERIFY	REFUEL 2 YEAR	1D-ISI-FD-001	
Description: OTSG "A" TO EF-P1 JOG/THROTTLE VALVE												
Justification: Valve is not required to perform a safety function or midigate the consequences of an accident. GPUN has chosen to test this valve at a refueling interval frequency.												
MS-V10B	GATE	6.0	A	B	ACTIVE CLOSE TO OPEN	MOTOR	CLOSE	AS IS	TIME POS VERIFY	REFUEL 2 YEAR	1D-ISI-FD-001	
Description: OTSG "B" TO EF-P1 JOG/THROTTLE VALVE												
Justification: Valve is not required to perform a safety function or mitigate the consequences of an accident. GPUN has chosen to test the valve at a refueling interval frequency.												
MU-V217	GLOBE	2.5	A	B	ACTIVE CLOSE TO OPEN	MOTOR	CLOSE	AS IS	PARTIAL TIME POS VERIFY	QUARTER COLD SD 2 YEAR	1D-ISI-FD-017	
Description: HIGH CAPACITY NORMAL MAKEUP VALVE												
Justification: This valve has no Nuclear Safety Related function. It is used to avoid chalanges to the High Pressure Injection system in that it is manually opened to increase makeup flow during some abnormal conditions and during reactor trip.												

TABLE B-3

TMI1 AUGMENTED IST PROGRAM VALVE TABULATION

VALVE NO	TYPE	SIZE	CLS	CAT	ACTIVE/PASSIVE	ACTUATOR	NORM POS	FAIL POS	TEST TYPE	FREQUENCY	DRAWING	RELIEF NO
NS-V 32	GATE	8.0	A		ACTIVE OPEN TO CLOSE	MOTOR	OPEN	AS IS	TIME	COLD SD	1D-ISI-FD-010	
Description: INLET HEADER TO EVAP CONDENSER & WG COMP VALVE												
RC-V 1	GLOBE	2.5	A	B	ACTIVE CLOSE TO OPEN	MOTOR	CLOSE	AS IS	PARTIAL	QUARTER	1D-ISI-FD-019	
Description: PRESSURIZER SPRAY CONTROL VALVE									POS VERIFY	2 YEAR		
Justification: This valve has no nuclear safety function, but it is important to plant operation. It is one of two valves in series used as a method of reducing RCS pressure during a transient.												
RC-V 3	GLOBE	2.5	A	B	ACTIVE OPEN TO CLOSE	MOTOR	OPEN	AS IS	TIME	COLD SD	1D-ISI-FD-019	
Description: PRESSURIZER SPRAY LINE ISOLATION VALVE									POS VERIFY	2 YEAR		
Justification: This valve has no nuclear safety function, but it is important to plant operation. RC-V3 is one of two valves in series used as a method of reducing RCS pressure during a transient. One of the two valves must reclose to avoid lowering pressure below the normal operating point.												
SF-V44	DIAPHRAGM	4.0	A	B	PASSIVE	HAND	CLOSE	---	---	---	C302-630	
Description: ISOLATION VALVE FROM SPENT FUEL TO DH-P1A												
Justification: See relief request V 2 for discussion of relief regarding DH-V50.												