DUKE POWER COMPANY
McGUIRE NUCLEAR STATION - UNIT 1
PUMP INSERVICE TESTING PROGRAM
ASME OM CODE-1987, OM Part 6 (OMa-1988 Addenda)

INTRODUCTION

The inservice testing of ASME Code Class 1, 2 and 3 pumps provided with an emergency power source will be tested as required by ASME Operations and Maintenance Standards Part 6 (OM-6), OMa-1988, of the ASME Code for Operation and Maintenance of Nuclear Power Plants, as referenced in 10CFR50.55a (January 1, 1993 Edition), except where specific written relief has been granted by the Nuclear Regulatory Commission. The effective date of the submittal is March 1, 1994.

Technical Specification 4.0.5 requires inservice testing of ASME Code Class 1, 2 and 3 pumps in accordance with Section XI of the ASME Boiler and Pressure Boiler Code and applicable Addenda as required by 10 CFR 50, Section 50.55a(g), except where specific written relief has been granted by the Commission pursuant to 10 CFR 50, Section 50.55a(g)(6)(i). Pumps were selected for inclusion in the IST Program (Section I.2) which fall within this category, as required by this Technical Specification. Pumps within the above ASME categories which are required to mitigate the consequences of an accident, shutdown the reactor or maintain shutdown are included in the program. Testing requirements are identified for each pump which ensure that the pump will perform as designed in response to an accident, in shutting down the reactor, or in maintaining shutdown. Acceptance criteria are specified in accordance with ASME Boiler and Pressure Vessel Code Subsection IWP. The safety functions of the pumps listed in Section I.2 are included in the Design Basis Documents, and fall within the basic categories of accident mitigation, reactor shutdown, and maintaining shutdown. Post modification testing requirements are included in the applicable Nuclear System Directive; a modification test plan is required to be developed to verify proper operation. The Code requires the determination of new reference values after pump repair or replacement, or maintenance which could impact operation. These Code requirements and programmatic controls ensure that the pump inservice test program remains current following modifications performed under 10 CFR 50.59. The documents used in development of this program include the following:

- McGuire Technical Specifications.
- Safety Analysis Report.
- ASME Section XI, IWP (1986).
- ASME Operations and Maintenance Standards Part 6 (OM-6), OMa-1988.
- Generic Letter 89-04.
- Supplement 1 to Generic Letter 89-04.
- NUREG 1482, Guidelines for Inservice Testing at Nuclear Power Plants.
- Safety Evaluation Report for the McGuire IST Program dated October 21, 1994.

A description of the Inservice Testing Program, Justification for Testing Deferral, as well as Specific Relief Requests from code requirements determined to be impractical, is described in the submittal.

NOTES:

1) OMa-1988 Part 6, Section 7.3 requires the signature of the person or persons responsible for conducting and analyzing the test. The dated initials of the person or persons responsible for conducting and analyzing the test will be used in place of a signature in the record of tests. Initials shall be construed as signatures to meet the intent of OM-6.

2) A Supplemental Test Program has been established, which inlcudes components which have been determined important to safety and prudent to test, but which are not explicitly under the scope of ASME Codes and Standards.

UNIT 1 - McGUIRE NUCLEAR STATION

Pump Inservice Testing General Data

Pump ID. Number	Description	Code Class	Flow Diagram	Applicable Relief Requests	Test Frequency	Remarks
1KCPU0004	Component Cooling Water Pump 1B2	3	MC-1573-1.0	RR-I.3.1, RR-I.4.3	Quarterly	NONE
1NDPU0001	Residual Heat Removal Pump 1A	2	MC-1561-1.0	RR-I.3.1, RR-I.4.4	Quarterly	The ND Testing Plan meets other code requirements unless otherwise specified.
1NDPU0002	Residual Heat Removal Pump 1B	2	MC-1561-1.0	RR-I.3.1, RR-I.4.4	Quarterly	The ND Testing Plan meets other code requirements unless otherwise specified.
1NIPU0009	Safety Injection Pump 1A	2	MC-1562-3.0	RR-I.3.1, RR-I.4.5	Quarterly	The NI Testing Plan meets other code requirements unless otherwise specified.
1NIPU0010	Safety Injection Pump 1B	2	MC-1562-3.0	RR-I.3.1, RR-I.4.5	Quarterly	The NI Testing Plan meets other code requirements unless otherwise specified.
1NSPU0001	Containment Spray Pump 1A	2	MC-1563-1.0	RR-I.3.1	Quarterly	NONE

UNIT 1 - McGUIRE NUCLEAR STATION

Pump Inservice Testing Specific Data

Pump ID. Number	Speed	Inlet Pressure	Discharge Pressure	Differential Pressure	Reference Vibration	Flow Rate	Pump Type	Revision
1KCPU0004	Not Required	RR-I.4.3	Meets Code Requirements	Meets Code Requirements	RR-I.3.1	Meets Code Requirements	Centrifugal	
1NDPU0001	Not Required	RR-I.4.4	Meets Code Requirements	Meets Code Requirements	RR-I.3.1	RR-I.4.4	Vertical Line Shaft Centrifugal	22
1NDPU0002	Not Required	RR-I.4.4	Meets Code Requirements	Meets Code Requirements	RR-I.3.1	RR-I.4.4	Vertical Line Shaft Centrifugal	22
1NIPU0009	Not Required	RR-I.4.5	Meets Code Requirements	Meets Code Requirements	RR-I.3.1	RR-I.4.5	Centrifugal	22
1NIPU0010	Not Required	RR-I.4.5	Meets Code Requirements	Meets Code Requirements	RR-I.3.1	RR-I.4.5	Centrifugal	22
1NSPU0001	Not Required	Meets Code Requirements	Meets Code Requirements	Meets Code Requirements	RR-I.3.1	Meets Code Requirements	Vertical Line Shaft Centrifugal	

UNIT 1 - McGUIRE NUCLEAR STATION

Pump Inservice Testing General Data

Pump ID. Number	Description	Code Class	Flow Diagram	Applicable Relief Requests	Test Frequency	Remarks
1NSPU0002	Containment Spray Pump 1B	2	MC-1563-1.0	RR-I.3.1	Quarterly	NONE
1NVPU0015	Centrifugal Charging Pump 1A	2	MC-1554-1.0	RR-I.3.1, RR-I.4.6	Quarterly-Miniflow; Refueling-Full Flow (RR-I.4.6)	The NV Testing Plan meets other code requirements unless otherwise specified.
1NVPU0016	Centrifugal Charging Pump 1B	2	MC-1554-1.0	RR-I.3.1, RR-I.4.6	Quarterly-Miniflow; Refueling-Full Flow (RR-I.4.6)	The NV Testing Plan meets other code requirements unless otherwise specified.
1NVPU0027	Boric Acid Transfer Pump 1A	3	MC-1554-5.0	RR-I.3.1	Quarterly	NONE
1NVPU0028	Boric Acid Transfer Pump 1B	3	MC-1554-5.0	RR-I.3.1	Quarterly	NONE
1RNPU0003	Nuclear Service Water Pump 1A	3	MC-1574-1.1	RR-I.3.1	Quarterly	NONE

UNIT 1 - McGUIRE NUCLEAR STATION

Pump Inservice Testing Specific Data

Pump ID. Number	Speed	Inlet Pressure	Discharge Pressure	Differential Pressure	Reference Vibration	Flow Rate	Pump Type	Revision
1NSPU0002	Not Required	Meets Code Requirements	Meets Code Requirements	Meets Code Requirements	RR-I.3.1	Meets Code Requirements	Vertical Line Shaft Centrifugal	
1NVPU0015	Not Required	RR-I.4.6	Meets Code Requirements	Meets Code Requirements	RR-I.3.1	RR-I.4.6	Centrifugal	
1NVPU0016	Not Required	RR-I.4.6	Meets Code Requirements	Meets Code Requirements	RR-I.3.1	RR-I.4.6	Centrifugal	
1NVPU0027	Not Required	Meets Code Requirements	Meets Code Requirements	Meets Code Requirements	RR-I.3.1	Meets Code Requirements	Centrifugal	
1NVPU0028	Not Required	Meets Code Requirements	Meets Code Requirements	Meets Code Requirements	RR-I.3.1	Meets Code Requirements	Centrifugal	
1RNPU0003	Not Required	Meets Code Requirements	Meets Code Requirements	Meets Code Requirements	RR-I.3.1	Meets Code Requirements	Centrifugal	22

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Pump Inservice Testing General Data

Pump ID. Number	Description	Code Class	Flow Diagram	Applicable Relief Requests	Test Frequency	Remarks
1RNPU0004	Nuclear Service Water Pump 1B	3	MC-1574-1.1	RR-I.3.1	Quarterly	NONE
1WNPU0094	Diesel Generator Sump Pump 1A2	3	MC-1609-7.0	RR-I.3.1	Two Year	Two year frequency for dry sump pumps per OMa-1988, Part 6 section 5.5.
1WNPU0096	Diesel Generator Sump Pump 1A3	3	MC-1609-7.0	RR-I.3.1	Two Year	Two year frequency for dry sump pumps per OMa-1988, Part 6 section 5.5.
1WNPU0095	Diesel Generator Sump Pump 1B2	3	MC-1609-7.0	RR-I.3.1	Two Year	Two year frequency for dry sump pumps per OMa-1988, Part 6 section 5.5.
1WNPU0097	Diesel Generator Sump Pump 1B3	3	MC-1609-7.0	RR-I.3.1	Two Year	Two year frequency for dry sump pumps per OMa-1988, Part 6 section 5.5.
1WZPU0001	Groundwater Drainage Sump A Pump A	3	MC-1581-1.0	RR-I.3.1	Quarterly	NONE

UNIT 1 - McGUIRE NUCLEAR STATION

Pump Inservice Testing Specific Data

Pump ID. Number	Speed	Inlet Pressure	Discharge Pressure	Differential Pressure	Reference Vibration	Flow Rate	Pump Type	Revision
1RNPU0004	Not Required	Meets Code Requirements	Meets Code Requirements	Meets Code Requirements	RR-I.3.1	Meets Code Requirements	Centrifugal	22
1WNPU0094	Not Required	Meets Code Requirements	Meets Code Requirements	Meets Code Requirements	RR-I.3.1	Meets Code Requirements	Vertical Line Shaft Centrifugal	
1WNPU0096	Not Required	Meets Code Requirements	Meets Code Requirements	Meets Code Requirements	RR-I.3.1	Meets Code Requirements	Vertical Line Shaft Centrifugal	
1WNPU0095	Not Required	Meets Code Requirements	Meets Code Requirements	Meets Code Requirements	RR-I.3.1	Meets Code Requirements	Vertical Line Shaft Centrifugal	
1WNPU0097	Not Required	Meets Code Requirements	Meets Code Requirements	Meets Code Requirements	RR-I.3.1	Meets Code Requirements	Vertical Line Shaft Centrifugal	
1WZPU0001	Not Required	Meets Code Requirements	Meets Code Requirements	Meets Code Requirements	RR-I.3.1	Meets Code Requirements	Vertical Line Shaft Centrifugal	21

General Relief Request

RELIEF REQUEST: I.3.1

PUMPS: All pumps in the Inservice Test Program

TEST REQUIREMENTS: OMa-1988 Part 6 Section 6.1 (Table 3a) specifies the allowable range for acceptable operation of vibration measurements.

BASIS FOR RELIEF: Experience has shown that smooth operating pumps (Vr ≤ 0.075 in/sec) often fall in the alert range of vibration measurement when compared to the acceptance criteria given in OMa-1988 Part 6, Table 3a. The Code does not include provisions for a fixed band acceptance criteria for these pumps. The Alternative Testing provided below applies to all pumps in the Testing Program by establishing a threshold of vibration of ≤ 0.075 in/sec. In addition to this, OMa-1988 Part 6 does not specifically address different types of positive displacement pumps. Since McGuire has internal gear positive displacement pumps, the Alternate Testing below will be used for these pumps.

ALTERNATE TESTING: In addition to the vibration specifed in OMa-1988 Part 6, Table 3a, the following ranges shall be used.

	Acceptable Range	Alert Range	Required Action Range
For all pumps when Vr ≤ 0.075 in/sec	0 to 0.19 in/sec	> 0.19 ≤ 0.45 in/sec	> 0.45 in/sec
For centrifugal, vertical line shaft and positive displacement pumps except reciprocating when Vr > 0.075 in/sec	≤ 2.5 * Vr	> 2.5 * Vr to 6 * Vr or > 0.325 to 0.70 in/sec	> 6 * Vr or > 0.70 in/sec
For reciprocating pumps, when Vr > 0.075 in/sec	≤ 2.5 * Vr	> 2.5 * Vr to 6 * Vr	> 6 * Vr

Revised by revision 22

Specific Relief Request

RELIEF REQUEST: I.4.4

PUMPS: 1NDPU0001, 1A Residual Heat Removal Pump
1NDPU0002, 1B Residual Heat Removal Pump

TEST REQUIREMENT: OMa-1988 Part 6, Section 4.6.1.2.a specifies the range of each instrument shall be three times the reference value or less.

BASIS FOR RELIEF: Range requirements will be waived for the tests. The purpose of the quarterly test is to verify Tech Spec requirements are met and to obtain vibration data for trending. The instrumentation used for the quarterly Residual Heat Removal Pump test will meet accuracy requirements for assuring Residual Heat Removal Pump operability per Technical Specifications.

ALTERNATE TESTING: The Residual Heat Removal Pumps will be tested according to the following program, which is consistent with Generic Letter 89-04.

These pumps have process instrumentation installed such that there are two suction pressure gauges (0-60 psig and 0-600 psig), and one discharge pressure gauge, (0-1000 psig). Each has a 0.5% accuracy. This is done to provide accurate pressure indication in either the recirculation or the heat removal condition of operation. As such, there are times when the 3 times the reference range requirements cannot be met.

Quarterly

The Residual Heat Removal Pumps will be tested quarterly to verify Technical Specifications are met. The test measures differential pressure and velocity vibration data. The differential pressure and velocity vibration data will be trended. The instrument used to measure vibrations will meet the requirements specified in relief request I.3.1. The test loop used in the test has a flow measuring orifice installed, however, the system resistance cannot be adjusted with the associated throttling valve without invalidating the Residual Heat Removal system flow balance (a Tech Spec balance of flow to all 4 cold legs.) Therefore, flow through this loop will be recorded for information only.

The instrumentation range requirements of OMa-1988 Part 6, Section 4.6.1.2.a will be waived. Since the instrumentation used to measure suction and discharge pressure is more accurate than code requirements (0.5% vs. 2%) using the process instrument for this test will yield results within the overall accuracy requirements of the code and will meet applicable accuracy requirements for the determination of operability per Technical Specifications. Typical values for ND suction pressure in mini-

Specific Relief Request

RELIEF REQUEST: I.4.4 (Continued)

flow are 48-81 psig, and discharge pressures are in the 230-260 psig range. Therefore, the process range for discharge pressure (0-1000 psig) will not meet the three times criteria; the appropriate suction pressure loop can be used, which is within the three times requirement. The accuracy of these process instruments (0.5%) is well below the requirements specified in Table 1 of OM-6 for instrument accuracy (2%). The actual reading error at test pressure due to the process instrument is 2.2 % (0.5 * 1000/230) for discharge pressure at the low end of this range (ND pump procedures specify that instrumentation must meet the three times criteria). If a 0-690 psig gauge was used with 2% accuracy, the reading error would be 6% (2 * 690/230). When the requirements of Oma-1988 Part 6, Section 4.6.1.2.a and Table 1 are combined, the actual instrument error introduced into the test is less than the code allowable (2.2 % vs. 6 % at the low (conservative) end). Using the process instruments for suction and discharge pressure data does not degrade the quality of the test and meets the intent of the instrumentation requirements of the code.

Refueling Outage

Full flow vibration measurements will be taken during refueling outages as part of the IST Supplemental Program.

Revised by revision 22

Specific Relief Request

RELIEF REQUEST: I.4.5

PUMPS: 1NIPU0009, 1A Safety Injection Pump
1NIPU0010, 1B Safety Injection Pump

TEST REQUIREMENT: OMa-1988 Part 6, Section 4.6.1.2.a specifies the range of each instrument shall be three times the reference value or less.

BASIS FOR RELIEF: Range requirements will be waived for the tests. The purpose of the quarterly test is to verify Tech Spec requirements are met and to obtain vibration data for trending. The instrumentation used for the quarterly Safety Injection Pump test will meet accuracy requirements for assuring Safety Injection Pump operability per Technical Specifications.

ALTERNATE TESTING: The Safety Injection Pumps will be tested according to the following program, which is consistent with Generic Letter 89-04.

Quarterly

The Safety Injection Pumps will be tested quarterly to verify Technical Specifications are met. The test measures differential pressure and velocity vibration data. The differential pressure and velocity vibration data will be trended. The instrument used to measure vibrations will meet the requirements specified in relief request I.3.1. The test loop has a flow measuring orifice installed, however, there is no means provided to vary the system resistance to set either the flow or differential pressure. Therefore, flow through this loop will be recorded for information only.

The instrumentation range requirements of OMa-1988 Part 6, Section 4.6.1.2.a will be waived. The instrumentation used to measure suction and discharge pressure will meet applicable accuracy requirements for the determination of operability per Technical Specifications. The process instruments meet the three times criteria, however in the event a test instrument is to be used, based on available equipment, it may not meet the three times criteria. In these instances, the accuracy of the test instruments is 0.25%, and this accuracy applied over the range of the instrument will meet the uncertainty allowed by the code assuming an accuracy of 2%.

Typical values for NI suction pressure are in the 25-51 psig range, and discharge pressures are in the 1500-1575 psig range. Test equipment used for suction and discharge pressures may not meet the three times

Specific Relief Request

RELIEF REQUEST: I.4.5 (Continued)

criteria, however these instruments will have 0.25% accuracy. The NI pump procedures specify that if a test instrument is needed for suction pressure, a 0-60 psig instrument is preferred, and that the range of the instrument must not exceed 0-100 psig. They also specify that it a discharge pressure test instrument is to be used, 0-2000 psig range is preferred, not to exceed 0-4500 psig. Using the low end suction pressure of 25 psig with the high end allowable gauge, accuracy is 1% (0.25 * 100/25); if a 0-75 psig gauge was used with a 2% accuracy, the code allowable would be 6% (2 * 75/25), so that use of this gauge would be within the code requirements. Using the low end discharge pressure with the high end allowable gauge, accuracy is 0.75% (0.25 * 4500/1500); this is at the three times range, and use of a 2% accuracy gauge would produce a total 6% allowable error. Therefore, using these test instruments for suction and discharge pressure data does not degrade the quality of the test and meets the intent of the instrumentation requirements of the code.

Refueling Outage

Full-flow vibration will be recorded under the IST Supplemental Program.

Revised by revision 22

Specific Relief Request

RELIEF REQUEST: I.4.6

PUMPS: 1NVPU0015, 1A Centrifugal Charging Pump
1NVPU0016, 1B Centrifugal Charging Pump

TEST REQUIREMENT: OMa-1988 Part 6, Section 4.6.1.2.a specifies the range of each instrument shall be three times the reference value or less.

BASIS FOR RELIEF: Range requirements will be waived for the tests. The purpose of the quarterly test is to verify Tech Spec requirements are met and to obtain vibration data for trending. The suction and discharge pressure gauges (0-60 psig and 0-3000 psig) installed for the pump have an accuracy of 0.5%. These pumps are aligned from the VCT for the quarterly test. Since these pumps are tested with different levels of VCT pressure, the suction pressure may vary over a range of approximately 15 to 50 psig. Since the uncertainty associated with using the process gauge is better than that allowed by code requirements, (2% vs. 6% determined by 0.5 * 60/15 vs. 2 * 45/15) the instrumentation used for the quarterly Centrifugal Charging Pump test will meet accuracy requirements for assuring Centrifugal Charging Pump operability per Technical Specifications.

Regarding instrument accuracy during the refueling outage testing (in Relief Request 1.4.6), the range of the highest suction pressure test gauge allowed for the full flow point will be 0-450 psig, and the range of the highest discharge pressure test gauge allowed (for the full flow point) will be 0-4500 psig. Suction pressure is typically 140 to 160 psig, and discharge pressure ranges from approximately 1000 to 2700 psig, so that overall suction and discharge pressure reading accuracy are 0.8 % (0.25 * 450/140) and 1.1 % (0.25 * 4500/1000), respectively. If a 0-420 psig suction pressure gauge was used with 2% accuracy, allowable accuracy would be 6 % (2 * 420/140), and if a 0-3000 psig discharge pressure gauge was used with 2% accuracy, allowable accuracy would be 6 % (2 * 3000/1000). Therefore, using these test instruments for suction and discharge pressure data (for the full flow point) does not degrade the quality of the test and meets the intent of the instrumentation requirements of the code. A 1% uncertainty is conservatively added for the flow orifice.

Specific Relief Request

RELIEF REQUEST: I.4.6 (Continued)

ALTERNATE TESTING: The Centrifugal Charging Pumps will be tested according to the following program, which is consistent with Generic Letter 89-04.

Quarterly

The Centrifugal Charging Pumps will be tested quarterly to verify Technical Specifications are met. The test measures differential pressure and velocity vibration data. The differential pressure and velocity vibration data will be trended. The instrumentation range requirements of OMa-1988 Part 6, Section 4.6.1.2.a will be waived. The instrumentation used to measure suction and discharge pressure will meet applicable accuracy requirements for the determination of operability per Technical Specifications. The instrument used to measure vibrations will meet the requirements specified in relief request I.3.1. The flow through the miniflow line to the Volume Control Tank will be assumed to be constant at the orifice design conditions (60 gpm).

Refueling Outage

During each refueling outage, a code pump test - including velocity vibration measurements - will be performed at a full flow test point.

The instrumentation used for the refueling outage tests is test instruments, with accuracy of 0.25%. When applied over the span on the instrument and the various range of outputs, in all cases the uncertainty of the overall loop will meet or exceed the code requirements of 2% over the instrument's range.

Revised by revision 22

Specific Relief Request

RELIEF REQUEST: I.4.7

PUMPS: 1RNPU0003, 1A Nuclear Service Water Pump
1RNPU0004, 1B Nuclear Service Water Pump

Relief Request deleted by Revision 22

DUKE POWER COMPANY
McGUIRE NUCLEAR STATION - UNIT 1
VALVE INSERVICE TESTING PROGRAM

INTRODUCTION

The inservice testing of ASME Code Categories A, B, C and D will be performed as required by ASME OM-Code-1987, Part 10 OMa-1988 addenda included, (Inservice Testing of Valves in Light-Water Reactor Power Plants), as incorporated in 10CFR50.55a. These rules for IST were instituted by 1989 edition of ASME Section XI and will be adhered to, except where specific written relief has been granted by the Commission. The effective date for this ten year submittal is March 1, 1994.

Technical Specification 4.0.5 requires inservice testing of ASME Code Class 1, 2 and 3 valves in accordance with Section XI of the ASME Boiler and Pressure Boiler Code and applicable Addenda as required by 10 CFR 50, Section 50.55a(g), except where specific written relief has been granted by the Commission pursuant to 10 CFR 50, Section 50.55a(g)(6)(i). Valves were selected for inclusion in the IST Program (Section II.2) which fall within this category, as required by this Technical Specification. Valves within the above ASME categories which are required to mitigate the consequences of an accident, shutdown the reactor or maintain shutdown, or are pressure relief devices which protect systems or portions of systems which provide these functions, are included in the program. Testing requirements are identified for each valve which ensure that the valve will perform as designed in response to an accident, shutting down the reactor, or in providing relief protection. Valves are categorized in accordance with OM-10 Section 1.4, as Category A, B or C (there are no Category D valves in the program). Valves with remote position indicators are observed locally at least once every 2 years in accordance with the Code. Acceptance criteria are specified in accordance with ASME Boiler and Pressure Vessel Code Subsection IWV. The safety functions of the valves listed in Section II.2 are included in the Design Basis Documents, and fall within the basic categories of accident mitigation, reactor shutdown or maintaining shutdown, or pressure relief for systems providing such. Post modification testing requirements are included in the applicable Nuclear System Directive; a modification test plan is required to be developed to verify proper operation. OM-10 requires the determination of a new reference value after valve replacement, repair or maintenance that could affect its operation. These Code requirements and programmatic controls ensure that the valve inservice test program is maintained current with modifications performed under 10 CFR 50.59. The documents used in development of this program include the following:

- McGuire Technical Specifications.
- Safety Analysis Report.
- ASME Section XI, IWV (1986).
- ASME OM-Code-1987, Part 10 Oma-1988 addenda included.
- Generic Letter 89-04.
- Supplement 1 to Generic Letter 89-04.
- NUREG 1482, Guidelines for Inservice Testing at Nuclear Power Plants.
- Safety Evaluation Report for the McGuire IST Program dated October 21, 1994.

NOTES:

1) The dated initials of the person responsible for the action may be used in place of a signature in the record of tests. Initials shall be construed as signatures to meet the intent of OMa-1988, Section 6.3.

2) Category A and A/C valves include containment isolation valves (CIV) and pressure isolation valves (PIV). CIVs are leak tested in accordance with 10CFR50, Appendix J, and Section 4.2.2.3, unless specific relief is requested.

3) Generic Letter 89-04, provides guidance for sample disassembly of check valves as an alternative to verify operability of check valves. The check valves where sample disassembly will be utilized will be specified in the contents of the program submittal and performed according to the guidelines of Generic Letter 89-04.

4) A Supplemental Test Program has been established, which includes components which have been determined important to safety and prudent to test, but which are not explicitly under the scope of ASME Codes and Standards.

VALVE NUMBER	FLOW DIAGRAM	FLOW COOR	ASME CLASS	VALVE CATEGORY	ACT PAS	VALVE TYPE	ACTUATOR TYPE	TEST REQ'MT #1	TEST REQ'MT #2	RELIEF REQST	JUSTIF OF DEFERRAL	REMARKS	TEST ALTERNATIVES	REV
CHEMICAL AND VOLUME CONTROL (NV)														
1NV-0006	1554-1.2	K-09	2	C	ACT	Relief	-	SP	-	-	-	-	600 PSIG	22
1NV-0007B	1554-1.2	J-10	2	B	ACT	Globe	EMO	ST-Q	-	-	1-MC-NV2	-	-	-
1NV-0020	1554-1.2	E-02	2	C	ACT	Check	-	SP	-	-	-	Spring Loaded Ck Valve	50 PSIG	-
1NV-0021A	1554-1.2	E-03	1	B	ACT	Control	AOV	ST-Q	-	-	1-MC-NV3	-	-	-
1NV-0029	1554-1.0	C-01	2	C	ACT	Check	-	MTO-Q	-	-	-	-	-	-
1NV-0031	1554-1.0	D-02	1	C	ACT	Check	-	MTO-Q	-	-	-	-	-	-
1NV-0035A	1554-1.2	K-07	2	B	ACT	Gate	AOV	ST-Q	-	-	1-MC-NV18	-	-	22
1NV-0045	1554-1.0	C-08	2	C	ACT	Check	-	MTO-Q	-	-	-	-	-	-
1NV-0047	1554-1.0	D-08	1	C	ACT	Check	-	MTO-Q	-	-	-	-	-	-
1NV-0061	1554-1.1	C-01	2	C	ACT	Check	-	MTO-Q	-	-	-	-	-	-
1NV-0063	1554-1.1	D-02	1	C	ACT	Check	-	MTO-Q	-	-	-	-	-	-
1NV-0077	1554-1.1	C-08	2	C	ACT	Check	-	MTO-Q	-	-	-	-	-	-
1NV-0079	1554-1.1	D-08	1	C	ACT	Check	-	MTO-Q	-	-	-	-	-	-
1NV-0093	1554-1.1	K-12	2	C	ACT	Relief	-	SP	-	-	-	-	150 PSIG	-
1NV-0094AC	1554-1.1	J-13	2	B	ACT	Gate	EMO	ST-Q	-	-	1-MC-NV1	-	-	-
1NV-0095B	1554-1.1	H-13	2	B	ACT	Gate	EMO	ST-Q	-	-	1-MC-NV1	-	-	-

VALVE NUMBER	FLOW DIAGRAM	FLOW COOR	ASME CLASS	VALVE CATEGORY	ACT PAS	VALVE TYPE	ACTUATOR TYPE	TEST REQ'MT #1	TEST REQ'MT #2	RELIEF REQST	JUSTIF OF DEFERRAL	REMARKS	TEST ALTERNATIVES	REV
1NV-0141A	1554-2.0	B-08	2	B	ACT	Gate	EMO	ST-Q	-	-	1-MC-NV4	-	-	-
1NV-0142B	1554-2.0	B-07	2	B	ACT	Gate	EMO	ST-Q	-	-	1-MC-NV4	-	-	-
1NV-0143	1554-2.0	B-07	2	C	ACT	Check	-	MTC-Q	-	-	1-MC-NV15	-	-	-
1NV-0150B	1554-2.0	F-02	2	B	ACT	Kerotest	EMO	ST-Q	-	-	1-MC-NV8	-	-	-
1NV-0151A	1554-2.0	G-02	2	B	ACT	Kerotest	EMO	ST-Q	-	-	1-MC-NV8	-	-	-
1NV-0155	1554-2.0	I-06	2	C	ACT	Relief	-	SP	-	-	-	-	150 PSIG	-
1NV-0156	1554-2.0	J-09	2	C	ACT	Relief	-	SP	-	-	-	-	255 PSIG	-
1NV-0164	-	-	-	-	-	-	-	DELETED	-	-	-	-	-	22
1NV-0170	1554-2.0	C-08	2	C	ACT	Relief	-	SP	-	-	-	-	75 PSIG	-
1NV-0218	1554-3.0	J-05	2	C	ACT	Check	-	MTC-Q	-	-	-	-	-	-
1NV-0221A	1554-3.1	H-01	2	B	ACT	Gate	EMO	ST-Q	-	-	1-MC-NV6	-	-	-
1NV-0222B	1554-3.1	I-01	2	B	ACT	Gate	EMO	ST-Q	-	-	1-MC-NV6	-	-	-
1NV-0223	1554-3.1	I-02	2	C	ACT	Check	-	MTO,C-Q	-	-	1-MC-NV11	-	-	-
1NV-0225	1554-3.1	F-05	2	C	ACT	Check	-	MTO,C-Q	-	-	1-MC-NV10	-	-	-
1NV-0227	1554-3.1	E-06	2	C	ACT	Check	-	MTO,C-Q	-	-	-	-	-	-
1NV-0229	1554-3.1	I-12	2	C	ACT	Relief	-	SP	-	-	-	-	220 PSIG	-

Unit 1 - McGuire Nuclear Station
Inservice Testing Program

VALVE NUMBER	FLOW DIAGRAM	FLOW COOR	ASME CLASS	VALVE CATEGORY	ACT PAS	VALVE TYPE	ACTUATOR TYPE	TEST REQ'MT #1	TEST REQ'MT #2	RELIEF REQST	JUSTIF OF DEFERRAL	REMARKS	TEST ALTERNATIVES	REV
1NV-0231	1554-3.1	F-10	2	C	ACT	Check	-	MTO,C-Q	-	-	1-MC-NV10	-	-	-
1NV-0233	1554-3.1	E-10	2	C	ACT	Check	-	MTO,C-Q	-	-	-	-	-	-
1NV-0238								DELETED						21
1NV-0244A	1554-3.0	K-08	2	B	ACT	Gate	EMO	ST-Q	-	-	1-MC-NV5	-	-	-
1NV-0245B	1554-3.0	K-09	2	B	ACT	Gate	EMO	ST-Q	-	-	1-MC-NV5	-	-	-
1NV-0261	1554-3.1	J-03	2	C	ACT	Check	-	MTC-Q	-	-	1-MC-NV13	-	-	-
1NV-0263	1554-3.1	J-11	2	C	ACT	Check	-	MTC-Q	-	-	1-MC-NV13	-	-	-
1NV-0264	1554-3.1	J-10	2	C	ACT	Check	-	MTO,C-Q	-	-	1-MC-NV7	-	-	-
1NV-0265B	1554-3.1	J-09	2	B	ACT	Globe	EMO	ST-Q	-	-	1-MC-NV9	-	-	-
1NV-0383	1554-5.0	E-06	3	C	ACT	Check	-	MTO,C-Q	-	-	-	-	-	-
1NV-0386	1554-5.0	C-06	3	C	ACT	Check	-	MTO,C-Q	-	-	-	-	-	-
1NV-0457A	1554-1.2	I-07	2	B	ACT	Control	AOV	ST-Q	-	-	1-MC-NV18	-	-	22
1NV-0458A	1554-1.2	J-07	2	B	ACT	Control	AOV	ST-Q	-	-	1-MC-NV18	-	-	22
1NV-0482	1554-2.0	D-07	2	C	ACT	Relief	-	SP	-	-	-	-	150 PSIG	-
1NV-0483	1554-2.0	D-11	3	C	ACT	Relief	-	SP	-	-	-	-	150 PSIG	-
1NV-0486	1554-3.1	J-09	2	C	ACT	Relief	-	SP	-	-	-	-	150 PSIG	-

Unit 1 - McGuire Nuclear Station
Inservice Testing Program

VALVE NUMBER	FLOW DIAGRAM	FLOW COOR	ASME CLASS	VALVE CATEGORY	ACT PAS	VALVE TYPE	ACTUATOR TYPE	TEST REQ'MT #1	TEST REQ'MT #2	RELIEF REQST	JUSTIF OF DEFERRAL	REMARKS	TEST ALTERNATIVES	REV
1RN-0299A	1574-1.0	K-02	3	B	ACT	Butterfly	EMO	ST-Q	-	-	-	-	-	-
1RN-0442	1574-2.0	J-11	3	B	ACT	Butterfly	AOV	ST-Q	-	-	-	-	-	-
1RN-0445	1574-2.0	J-11	3	B	ACT	Butterfly	AOV	ST-Q	-	-	-	-	-	-
1RN-0457	1574-3.0	J-11	3	B	ACT	Butterfly	AOV	ST-Q	-	-	-	-	-	-
1RN-0460	1574-3.0	J-11	3	B	ACT	Butterfly	AOV	ST-Q	-	-	-	-	-	-
1RN-0891	-	-	-	-	-	-	-	DELETED	-	-	-	-	-	22
1RN-0892	-	-	-	-	-	-	-	DELETED	-	-	-	-	-	22
1RN-0994	1574-3.1	C-07	3	C	ACT	Check	-	MTC-Q	-	-	-	-	-	21
1RN-1006	1574-2.1	E-06	3	C	ACT	Check	-	MTC-Q	-	-	-	-	-	21

Specific Relief Request

Item Number:	1-MC-RR-NS1
Valve:	1NS-13, 1NS-16, 1NS-30, 1NS-33, 1NS-41, 1NS-46
Flow Diagram:	MC-1563-1.0
Code Category:	C
ASME Class:	2
Function:	Open on flow from containment spray pumps.
Test Requirement:	Verify proper valve movement once per three months as required by OMa-1988 Part 10, 4.3.2.1.
Basis for Relief:	Containment Spray valves 1NS-13, 16, 30, 33, 41, and 46 are Aloyco/Walworth model D-49300 cover hung, swing check valves. They are normally closed providing Category C interior containment isolation for Containment Spray and Auxiliary Containment Spray (valves 1NS-41 and 46). OMa-1988, Part 10, paragraph 4.3.2.1 requires quarterly exercising, deferrable to cold shutdowns or refueling outages. McGuire FSAR Table 6-112 identifies these valves as Leak Class 1A valves not requiring leak rate testing due their inability to release containment atmosphere during a LOCA. Full stroke operation of the check valves shall be verified by disassembly/inspection of the valves as no operational method exists without actuating containment spray (reference 1MC-NS2, NUREG-1482 Staff Position 2). As a supplement to the full stroke testing, part stroke and closed verification will be conducted upon reassembly and periodically by air test as described for the spray nozzle test in McGuire FSAR 6.5.4 (reference , NUREG-1482 Staff Position 2). For valve disassembly/inspection, all six valves will be grouped into one group and inspected within a four cycle window (six year interval). All six valves are identical in manufacturer and installation. Operationally, the valves are identical with respect to operational readiness. During system actuation, supply originates from the Containment Spray system for valves 1NS-13, 16, 30, and 33 and Residual Heat Removal system for

Specific Relief Request

Item Number: 1-MC-RR-NS1 (cont.)

1NS-41 and 46. In spray modes both systems have similar hydraulic characteristics. At McGuire's discretion the valves may be disassembled/inspected sequentially, in sub-groups, or as one complete group every fourth outage (six years). Diversion from the sequential disassembly/inspection represents an extension from the Code required frequency.

The relief request does not represent a decrease in quality nor safety. The valve disassembly/inspection will demonstrate ability of the valve to full stroke and fully close. As the valves do not function except during testing and severe plant emergencies, no operating degradation mechanisms exist. Potential degradation mechanisms from the valves being in a static position will be identified by the part stroke test conducted each refueling outage on all valves.

Compliance with the Code requirements is impractical and would impose unnecessary hardship. The valves are located within the containment dome volume and are accessible by a temporary cantilevered scaffold attached to the Polar Crane Scissors Jack. This action, in accordance with the requirements of 29CFR 1910.28, 29CFR 1926.452, ANSI A10.8-1977, and McGuire's Scaffold program places personnel in unsafe positions during the erection/removal of the scaffold and valve testing. No additional assurance of valve function is gained. In fact, although unlikely, frequent intrusion into the valves' internals and the inability to verify exact seat alignment during reassemble may degrade the valves' condition.

Pursuant to NUREG-1482 Staff Position 2, extension of the valve disassembly/inspection interval will be considered in cases of extreme hardship. Response to Question 19 of same implies "extreme hardship" is proportional to the impact on plant safety. The hardship impact is one of undue personnel safety risk and refueling outage extension. Yet the benefit from testing under the current scheme (reference 1MC-NS2) as compared to the proposed scheme is negligible at best. All valves will be disassembled/inspected once per four refueling outages (six years).

Revised by Rev. 22.

Specific Relief Request

Item Number: 1-MC-RR-NS1 (cont.)

A review of McGuire's valves, similar industry valves, and the "EPRI Applications Guidelines for Check Valves in Nuclear Power Plants" was conducted.

A review of the past 6 Unit 1 refueling outages, 7 Unit 2, identified part stroke testing of all valves every outage through 1/2EOC 9. Since 1/2EOC 6 each Containment Spray check valve has been disassembled/inspected once and Auxiliary Containment Spray valves twice (due to the current grouping scheme). A comprehensive review of all valves identified no indication of wear, corrosion, or degradation.

A NPRDS search for Aloyco-Walworth and Walworth check valves provided a list of 34 Containment Spray check valve failures. A detailed review of the 34 failures identified 14 potentially related failures. Subsequent conversation with the respective plants' System Engineers resolved 11 of these potentially related failures as unrelated. Reasons for determining a valve failure was unrelated included the following; valves normally see flow during testing or other plant operation, and recent ISI disassembly/inspection of valves identified no degradation. The 3 remaining potentially related failures included 2 which could not be determined and 1 which was a result of valve disk misalignment. As stated earlier the potential for valve disk misalignment increases, although marginally, with repetitive disassembles.

A review of the "EPRI Applications Guidelines for Check Valves in Nuclear Power Plants" primarily addressed degradation of check valves regularly in operation service. Design criteria for check valve application was also discussed. Comparison with the subject check valves did not reveal any design misapplication issues. The issue of valve sticking open/closed was discussed in section 6.5.4, identifying improperly assembly as a potential cause. This issue would be addressed by the proposed part flow testing.

This Relief Request evaluation concludes adequate justification without compromise to safety or quality exist to warrant the proposed test methodology.

Revised by Rev. 22.

Specific Relief Request

Item Number: 1-MC-RR-NS1 (cont.)

Test Alternative & Frequency: Containment Spray valves 1NS-13, 16, 30, 33, 41, and 46 will be grouped into a single test group. The valves may be disassembled/inspected sequentially, in sub-groups, or as one complete group every fourth outage (6 years). Each valve will be disassembled/inspected once per four refueling outages (6 years). Each Containment Spray valve will be part stroke tested during each refueling outage.

Revised by Rev. 22.

Justification of Deferral

Item Number:	1-MC-CA1
Valve:	1CA-37, 1CA-41, 1CA-45, 1CA-49, 1CA-53, 1CA-57, 1CA-61, 1CA-65
Flow Diagram:	MC-1592-1.0
Code Category:	C
ASME Class:	2
Function:	Check flow from the steam generators to Auxiliary Feedwater. Open to allow Auxiliary Feedwater supply to the Steam Generators.
Test Requirement:	Verify proper valve movement once per three months as required by OMa-1988 Part 10, 4.3.2.1.
Basis for Deferral:	Full stroke testing these valves would unnecessarily thermal shock the steam generators and feedwater piping.
Test Alternative & Frequency:	Valves will be full stroke exercised at cold shutdown. Closure will be verified quarterly.

Justification of Deferral

Item Number:	1-MC-CA2
Valve:	1CA-165, 1CA-166
Flow Diagram:	MC-1592-1.1
Code Category:	C
ASME Class:	3
Function:	Prevents backflow from Auxiliary Feedwater System to Nuclear service Water System until the associated EMOs are closed. EMOs are powered from the same train they serve. Must open to allow assured makeup flow to CA from RN system.
Test Requirement:	Verify proper valve movement once per three months as required by OMa-1988 Part 10, 4.3.2.1.
Basis for Deferral:	Neither full nor partial flow can be put through these valves without contaminating the Auxiliary Feedwater System with raw water. No means exist for alternate testing techniques using air or any other medium. No means exist to test for proper closure without contaminating the Auxiliary Feedwater System with raw water. These valves will not be tested during cold shutdown because sample disassembly is required.
Test Alternative & Frequency:	At least one of these two valves will be disassembled and full stroked during each refueling outage, and both valves will have been disassembled and full stroked after two consecutive refueling outages. Failure of one valve to properly full stroke during a refueling outage will result in the remaining valves being disassembled and full stroked during that outage. Sample disassemble will also be used to verify proper closure of valves.

Justification of Deferral

Item Number:	1-MC-CA3
Valve:	1CA-8, 1CA-10, 1CA-12
Flow Diagram:	MC-1592-1.1
Code Category:	C
ASME Class:	3
Function:	Auxiliary Feedwater Pump Suction Check valves to prevent diversion of assured auxiliary feedwater source.
Test Requirement:	Verify proper valve movement once per three months as required by OMa-1988 Part 10, 4.3.2.1.
Basis for Deferral:	These valves cannot be tested to close without contaminating the Auxiliary Feedwater System with raw water. These valves will not be tested during cold shutdown because sample disassembly is required.
Test Alternative & Frequency:	Valves will be sample disassembled during refueling outages to verify valve closure capability. 1CA-8 is disassembled every refueling outage, 1CA-10 and 1CA-12 every other refueling outage on a staggered basis.

Justification of Deferral

Item Number:	1-MC-CF1
Valve:	1CF-26AB, 1CF-28AB, 1CF-30AB, 1CF-35AB
Flow Diagram:	MC-1591-1.1
Code Category:	B
ASME Class:	2
Function:	Provide feedwater and containment isolation.
Test Requirement:	Stroke time test in accordance with OMa-1988 Part 10, 4.2.1.1.
Basis for Deferral:	Closure of these valves would isolate the Steam Generator feedwater which could result in a severe transient in the Steam Generator, resulting in a Unit trip.
Test Alternative & Frequency:	Valve will be cycled and timed during cold shutdown.

Justification of Deferral

Item Number:	1-MC-CF2
Valve:	1CF-17AB, 1CF-20AB, 1CF-23AB, 1CF-32AB
Flow Diagram:	MC-1591-1.1
Code Category:	B
ASME Class:	ANSI B31.1.0 (1967)
Function:	Feedwater control.
Test Requirement:	Stroke time test in accordance with OMa-1988 Part 10, 4.2.1.1.
Basis for Deferral:	Closure of these valves would isolate the Steam Generator feedwater which could result in a severe transient in the Steam Generator, resulting in a Unit trip.
Test Alternative & Frequency:	Valve will be cycled and timed during cold shutdown.

Justification of Deferral

Item Number:	1-MC-CF3
Valve:	1CF-126B, 1CF-127B, 1CF-128B, 1CF-129B
Flow Diagram:	MC-1591-1.1
Code Category:	B
ASME Class:	2
Function:	Opens to provide startup feedwater supply to the steam generators.
Test Requirement:	Stroke time test in accordance with OMa-1988 Part 10, 4.2.1.1.
Basis for Deferral:	Cycling valves during power operation could induce unwanted transients in the steam generators. This would result in an increase in flow to the main feedwater nozzles causing vibrations in the preheater section of the steam generators.
Test Alternative & Frequency:	Valve will be cycled and timed during cold shutdown.

Justification of Deferral

Item Number:	1-MC-CF4
Valve:	1CF-104AB, 1CF-105AB, 1CF-106AB, 1CF-107AB
Flow Diagram:	MC-1591-1.1
Code Category:	B
ASME Class:	ANSI B31.1.0 (1967)
Function:	Provides tempering flow to the steam generators.
Test Requirement:	Stroke time test in accordance with OMa-1988 Part 10, 4.2.1.1.
Basis for Deferral:	Closing these valves during operation would result in a feedwater transient and could result in loss of Steam Generator level control, causing a Unit trip. These valves are normally open at power.
Test Alternative & Frequency:	Valve will be cycled and timed during cold shutdown.

Revised by Rev. 22.

Justification of Deferral

Item Number:	1-MC-CF5
Valve:	1CF-152, 1CF-154, 1CF-156, 1CF-158
Flow Diagram:	MC-1591-1.1
Code Category:	C
ASME Class:	2
Function:	Opens to allow tempering flow to the Steam Generator auxiliary feedwater nozzles. Closes to form pressure boundary for auxiliary feedwater.
Test Requirement:	Verify proper valve movement once per three months as required by OMa-1988 Part 10, 4.3.2.1.
Basis for Deferral:	During normal operation, there is constant flow through these valves to keep the auxiliary feedwater nozzles tempered. Testing these valves would require supplying the Steam Generators with cold water and thus thermally shocking these nozzles.
Test Alternative & Frequency:	Valve will be full stroke exercised at cold shutdown.

Justification of Deferral

Item Number:	1-MC-CF6
Valve:	1CF-118, 1CF-119, 1CF-120, 1CF-121
Flow Diagram:	MC-1591-1.1
Code Category:	C
ASME Class:	2
Function:	Opens to allow feedwater flow to the Steam Generators. Closes to form pressure boundary for maintaining Steam Generator inventory. The open function is not within the Scope of OM-10.
Test Requirement:	Verify proper valve movement once per three months as required by OMa-1988 Part 10, 4.3.2.1.
Basis for Deferral:	During normal operation, there is constant flow through these valves. The required test is performed while the Steam Generators are in wet-layup, with the main condensate system in service. The piping upstream of the check valve is depressurized, while the downstream side is pressurized. The check valves are verified to prevent gross diversion of flow. These conditions cannot be obtained with the unit operating.
Test Alternative & Frequency:	Valves will be full stroke exercised at cold shutdown.

Revised by revision 21

Justification of Deferral

Item Number:	1-MC-FW1
Valve:	1FW-27A
Flow Diagram:	MC-1571-1.0
Code Category:	B
ASME Class:	2
Function:	Isolates low pressure injection from the Refueling Water Storage Tank.
Test Requirement:	Stroke time test in accordance with OMa-1988 Part 10, 4.2.1.1.
Basis for Deferral:	Closure of this valve during normal power operation would render all low pressure injection inoperable. This valve is opened and power removed above Mode 4 per Tech Spec 4.5.2.
Test Alternative & Frequency:	Valve will be cycled and timed during cold shutdown.

Justification of Deferral

Item Number:	1-MC-FW2
Valve:	1FW-28
Flow Diagram:	MC-1571-1.0
Code Category:	C
ASME Class:	2
Function:	Opens to allow low pressure injection flow. Closes to prevents reverse flow to the Refueling Water Storage Tank, thereby preventing pressurization of the tank.
Test Requirement:	Verify proper valve movement once per three months as required by OMa-1988 Part 10, 4.3.2.1.
Basis for Deferral:	Valve cannot be full stroked during power operation since the only full flow path is into the RCS by the Residual Heat Removal pumps. These pumps cannot overcome RCS system pressure.
Test Alternative & Frequency:	Valve will be full stroke exercised at cold shutdown.

Justification of Deferral

Item Number:	1-MC-FW3
Valve:	1FW-74
Flow Diagram:	MC-1571-1.0
Code Category:	C
ASME Class:	3
Function:	Must close to provide a pressure boundary for the assured makeup (Nuclear service Water) to the Spent Fuel Pool.
Test Requirement:	Verify proper valve movement once per three months as required by OMa-1988 Part 10, 4.3.2.1.
Basis for Deferral:	The system does not provide a means to verify valve closure.
Test Alternative & Frequency:	Valve will be disassembled and inspected to verify closure at refueling outage frequency.

Revised by revision 21

Justification of Deferral

Item Number:	1-MC-IA1
Valve:	1IA-5260, 1IA-5270, 1IA-5280, 1IA-5290, 1IA-5300, 1IA-5310, 1IA-5320, 1IA-5330, 1IA-5340, 1IA-5350, 1IA-5360, 1IA-5370, 1IA-5380, 1IA-5390
Flow Diagram:	MC-1499-IA1
Code Category:	A,C
ASME Class:	2 & 3
Function:	1IA-5260, 5270, 5280, 5290, 5300, 5310, 5320 and 5330 prevent loss of air from receiver tank on each personnel airlock door in the event of loss of instrument air supply to door seals. These check valves form a pressure boundary for the inflatable seals. 1IA-5340 and 5350 provide the inside containment isolation barrier in the event of a break on the flexible hose connection on the air supply to the door seals. The outside isolation valves are 1IA-5080 and 5160. These check valves are on the auxiliary building side of the airlocks. 1IA-5360, 5370, 5380 and 5390 provide double isolation on the reactor building side of the airlocks for the pressure relief line.
Test Requirement:	1) Verify proper valve movement once per three months as required by OMa-1988 Part 10, 4.3.2.1. 2) Leak test once per 2 years in accordance with OMa-1988 Part 10, 4.2.2.2. 3) Leak test in accordance with Technical Specification 4.6.1.3.d.
Basis for Deferral:	These valves cannot be practically tested during operation due to the design of the system.
Test Alternative & Frequency:	Valves will be verified closed by leak test performed in accordance with 10CFR50 Appendix J at a six month frequency per Tech Spec 4.6.1.3.d.

Justification of Deferral

Item Number:	1-MC-KC1
Valve:	1KC-424B, 1KC-425A
Flow Diagram:	MC-1573-3.1
Code Category:	A
ASME Class:	2
Function:	Provide containment isolation for penetration M-320.
Test Requirement:	Stroke time test in accordance with OMa-1988 Part 10, 4.2.1.1.
Basis for Deferral:	Failure of either of these valves in the closed position during testing would inhibit the normal flow path from the reactor coolant pump motor coolers. This action could result in damage to the NC pumps. Within 15 to 30 minutes, the NC Pumps would be tripped on high bearing temperature, and an abnormal shutdown (natural circulation) would be required.
Test Alternative & Frequency:	Valve will be cycled and timed during cold shutdown.

Revised by Rev. 22.

Justification of Deferral

Item Number:	1-MC-KC2
Valve:	1KC-338B
Flow Diagram:	MC-1573-3.1
Code Category:	A
ASME Class:	2
Function:	Provide containment isolation for penetration M-327.
Test Requirement:	Stroke time test in accordance with OMa-1988 Part 10, 4.2.1.1.
Basis for Deferral:	Failure of this valve in the closed position during testing could result in damage to the NC pumps. Within 15 to 30 minutes, the NC Pumps would be tripped on high bearing temperature, and an abnormal shutdown (natural circulation) would be required.
Test Alternative & Frequency:	Valve will be cycled and timed during cold shutdown.

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Justification of Deferral

Item Number:	1-MC-KC3
Valve:	1KC-332B, 1KC-333A
Flow Diagram:	MC-1573-3.1
Code Category:	A
ASME Class:	2
Function:	Provide containment isolation for penetration M-355.
Test Requirement:	Stroke time test in accordance with OMa-1988 Part 10, 4.2.1.1.
Basis for Deferral:	Failure of one of these valves in the closed position during testing would inhibit flow through the reactor coolant drain tank heat exchanger. No alternate flowpath for cooling water to the heat exchanger exists. Without flow to the heat exchanger, the drain tank would become over pressurized and steam would be released. Such a test would not be conservative, since Reactor Coolant would be released. This test would challenge the overpressure protection of a Reactor Coolant System component. It is concluded therefore that per NUREG-1482 Section 3.1.1 that these valves should be excluded from quarterly testing.
Test Alternative & Frequency:	Valve will be cycled and timed during cold shutdown.

Revised by Rev. 22.

Justification of Deferral

Item Number:	1-MC-KC4
Valve:	1KC-320A
Flow Diagram:	MC-1573-3.1
Code Category:	A
ASME Class:	2
Function:	Provide containment isolation for penetration M-376.
Test Requirement:	Stroke time test in accordance with OMa-1988 Part 10, 4.2.1.1.
Basis for Deferral:	Failure of this valve in the closed position during testing would inhibit flow through the reactor coolant drain tank heat exchanger. No alternate flowpath for cooling water to the heat exchanger exists. Without flow to the heat exchanger, the drain tank would become over pressurized and steam would be released. Such a release of Reactor Coolant makes this test nonconservative and would challenge the overpressure protection of a Reactor Coolant System component. It is concluded therefore that per NUREG-1482 Section 3.1.1 that this valve should be excluded from quarterly testing.
Test Alternative & Frequency:	Valve will be cycled and timed during cold shutdown.

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Justification of Deferral

Item Number:	1-MC-KC5
Valve:	1KC-280
Flow Diagram:	MC-1573-3.1
Code Category:	A,C
ASME Class:	2
Function:	Provides containment isolation and thermal over pressurization protection of line between 1KC-332B and 1KC-333A on penetration M-355.
Test Requirement:	1) Verify proper valve movement once per three months as required by OMa-1988 Part 10, 4.3.2.1. 2) Leak test once per 2 years in accordance with OMa-1988 Part 10, 4.2.2.2.
Basis for Deferral:	This valve cannot be practically tested during operation due to the design of the system. Testing during power operation is impractical for this valve since it is located inside containment, as well as the test connection needed to test it. During cold shutdowns, this testing would involve work inside containment, possibly with high radiation levels.
Test Alternative & Frequency:	Valve will be verified closed by leak test performed in accordance with 10CFR50 Appendix J at refueling outage frequency.

Revised by Rev. 22.

Justification of Deferral

Item Number:	1-MC-KC6
Valve:	1KC-322
Flow Diagram:	MC-1573-3.1
Code Category:	A,C
ASME Class:	2
Function:	Provides containment isolation on penetration M-376.
Test Requirement:	1) Verify proper valve movement once per three months as required by OMa-1988 Part 10, 4.3.2.1. 2) Leak test once per 2 years in accordance with OMa-1988 Part 10, 4.2.2.2.
Basis for Deferral:	This valve cannot be practically tested during operation due to the design of the system. Testing during power operation is impractical for this valve since it is located inside containment, as well as the test connection needed to test it. During cold shutdowns, this testing would involve work inside containment, possibly with high radiation levels.
Test Alternative & Frequency:	Valve will be verified closed by leak test performed in accordance with 10CFR50 Appendix J at refueling outage frequency.

Revised by Rev. 22.

Justification of Deferral

Item Number:	1-MC-KC7
Valve:	1KC-279
Flow Diagram:	MC-1573-3.1
Code Category:	A,C
ASME Class:	2
Function:	Provides containment isolation and thermal over pressurization protection of line between 1KC-424B and 1KC-425A on penetration M-320.
Test Requirement:	1) Verify proper valve movement once per three months as required by OMa-1988 Part 10, 4.3.2.1. 2) Leak test once per 2 years in accordance with OMa-1988 Part 10, 4.2.2.2.
Basis for Deferral:	The system design does not provide a means of verifying valve closure upon flow reversal. Testing during power operation is impractical for this valve since it is located inside containment, as well as the test connection needed to test it. During cold shutdowns, this testing would involve work inside containment, possibly with high radiation levels.
Test Alternative & Frequency:	Valve will be verified closed by leak test performed in accordance with 10CFR50 Appendix J at refueling outage frequency.

Revised by Rev. 22.

Justification of Deferral

Item Number:	1-MC-KC8
Valve:	1KC-340
Flow Diagram:	MC-1573-3.1
Code Category:	A,C
ASME Class:	2
Function:	Provides containment isolation on penetration M-327.
Test Requirement:	1) Verify proper valve movement once per three months as required by OMa-1988 Part 10, 4 3.2.1. 2) Leak test once per 2 years in accordance with OMa-1988 Part 10, 4.2.2.2.
Basis for Deferral:	The system design does not provide a means of verifying valve closure upon flow reversal. Testing during power operation is impractical for this valve since it is located inside containment, as well as the test connection needed to test it. During cold shutdowns, this testing would involve work inside containment, possibly with high radiation levels.
Test Alternative & Frequency:	Valve will be verified closed by leak test performed in accordance with 10CFR50 Appendix J at refueling outage frequency.

Revised by Rev. 22.

Justification of Deferral

Item Number:	1-MC-KC9
Valve:	1KC-47
Flow Diagram:	MC-1573-4.0
Code Category:	A,C
ASME Class:	2
Function:	Provides containment isolation on penetration M-322.
Test Requirement:	1) Verify proper valve movement once per three months as required by OMa-1988 Part 10, 4.3.2.1. 2) Leak test once per 2 years in accordance with OMa-1988 Part 10, 4.2.2.2.
Basis for Deferral:	The system design does not provide a means of verifying valve closure upon flow reversal.
Test Alternative & Frequency:	Valve will be verified closed by leak test performed in accordance with 10CFR50 Appendix J at refueling outage frequency.

Justification of Deferral

Item Number:	1-MC-NB1
Valve:	1NB-262
Flow Diagram:	MC-1556-3.0
Code Category:	A,C
ASME Class:	2
Function:	Provides containment isolation on penetration M-259.
Test Requirement:	1) Verify proper valve movement once per three months as required by OMa-1988 Part 10, 4.3.2.1. 2) Leak test once per 2 years in accordance with OMa-1988 Part 10, 4.2.2.2.
Basis for Deferral:	The system design does not provide a means of verifying valve closure upon flow reversal. Testing during power operation is impractical for this valve since it is located inside containment, as well as the test connection needed to test it. During cold shutdowns, this testing would involve work inside containment, possibly with high radiation levels.
Test Alternative & Frequency:	Valve will be verified closed by leak test performed in accordance with 10CFR50 Appendix J at refueling outage frequency.

Revised by Rev. 22.

Justification of Deferral

Item Number:	1-MC-NC1
Valve:	1NC-32B, 1NC-34A, 1NC-36B
Flow Diagram:	MC-1553-2.0
Code Category:	B
ASME Class:	1
Function:	Reactor Coolant System PORV. Opens to relieve pressure for the primary system.
Test Requirement:	Stroke time test in accordance with OMa-1988 Part 10, 4.2.1.1.
Basis for Deferral:	PORVs do not serve a safety function when unit is at operating temperature and pressure. PORVs protect the Reactor Coolant System from over pressurization during LTOP conditions.
Test Alternative & Frequency:	Stroke time testing will be performed at cold shutdown and in all cases prior to entering LTOP conditions in accordance with Generic Letter 90-06. Testing will not be required more often than once per quarter as defined in OMa-1988 Part 10, 4.2.1.1.

Justification of Deferral

Item Number:	1-MC-NC2
Valve:	1NC-272AC, 1NC-273AC, 1NC-274B, 1NC-275B
Flow Diagram:	MC-1553-2.1
Code Category:	B
ASME Class:	1
Function:	Reactor vessel head vent.
Test Requirement:	Stroke time test in accordance with OMa-1988 Part 10, 4.2.1.1.
Basis for Deferral:	Opening these valves at full pressure could cause damage to the valve seating surfaces. A reactor coolant leak could be caused.
Test Alternative & Frequency:	Valve will be cycled and timed during cold shutdown.

Justification of Deferral

Item Number:	1-MC-NC3
Valve:	1NC-259, 1NC-261
Flow Diagram:	MC-1553-4.0
Code Category:	A,C
ASME Class:	2
Function:	Provides containment isolation and thermal over pressurization protection of line between 1NC-195B and 1NC-196A on penetration M-361, and line between 1NC-141 and 1NC-142 on penetration M-326 respectively.
Test Requirement:	1) Verify proper valve movement once per three months as required by OMa-1988 Part 10, 4.3.2.1. 2) Leak test once per 2 years in accordance with OMa-1988 Part 10, 4.2.2.2.
Basis for Deferral:	The system design does not provide a means of verifying valve closure upon flow reversal. Testing during power operation is impractical for this valve since it is located inside containment, as well as the test connection needed to test it. During cold shutdowns, this testing would involve work inside containment, possibly with high radiation levels.
Test Alternative & Frequency:	Valve will be verified closed by leak test performed in accordance with 10CFR50 Appendix J at refueling outage frequency.

Revised by Rev. 22.

Justification of Deferral

Item Number:	1-MC-NC4
Valve:	1NC-59
Flow Diagram:	MC-1553-2.1
Code Category:	C
ASME Class:	2
Function:	Must open to allow various relief valves on ECCS systems to relive to the Pressurizer Relief Tank.
Test Requirement:	Verify proper valve movement once per three months as required by OMa-1988 Part 10, 4.3.2.1.
Basis for Deferral:	The system design does not provide a sufficient means of verifying full opening of the check valve.
Test Alternative & Frequency:	Valve will be disassembled and inspected to verify full stroke opening at refueling outage frequency.

Justification of Deferral

Item Number:	1-MC-NC5
Valve:	1NC-284
Flow Diagram:	MC-1553-2.1
Code Category:	C
ASME Class:	Duke Class E
Function:	Must open to allow various relief valves on ECCS systems to relive to the Pressurizer Relief Tank.
Test Requirement:	Verify proper valve movement once per three months as required by OMa-1988 Part 10, 4.3.2.1.
Basis for Deferral:	The system design does not provide a sufficient means of verifying full opening of the check valve.
Test Alternative & Frequency:	Valve will be disassembled and inspected to verify full stroke opening at refueling outage frequency.

Justification of Deferral

Item Number:	1-MC-ND1
Valve:	1ND-1B, 1ND-2AC
Flow Diagram:	MC-1561-1.0
Code Category:	A
ASME Class:	1
Function:	Provides suction for Residual Heat Removal pumps during normal cooldown.
Test Requirement:	1) Stroke time test in accordance with OMa-1988 Part 10, 4.2.1.1. 2) Leak test once per 2 years in accordance with OMa-1988 Part 10, 4.2.2.3.
Basis for Deferral:	These valves have an interlock which prevents their opening when the Reactor Coolant System pressure is greater than 385psig.
Test Alternative & Frequency:	Valve will be cycled and timed during cold shutdown. Valve will be leak tested in accordance with Tech Spec 4.4.6.2.2.

Justification of Deferral

Item Number:	1-MC-ND2
Valve:	1ND-58A
Flow Diagram:	MC-1561-1.0
Code Category:	B
ASME Class:	2
Function:	Provides suction to the Centrifugal Charging Pumps and Safety Injection Pumps from the Residual Heat Removal system.
Test Requirement:	Stroke time test in accordance with OMa-1988 Part 10, 4.2.1.1.
Basis for Deferral:	Opening 1ND-58A would seat check valve 1NV-223 (FWST to Charging Pump suction) closed, so that if 1ND-58A failed in the open position, both trains of NV would be inoperable.
Test Alternative & Frequency:	Valve will be cycled and timed during cold shutdown.

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Justification of Deferral

Item Number:	MC-ND3
Valve:	1ND-15B, 1ND-30A
Flow Diagram:	MC-1561-1.0
Code Category:	B
ASME Class:	2
Function:	ND Heat Exchanger Outlet Crossover Block Valves.
Test Requirement:	Stroke time test in accordance with OMa-1988 Part 10, 4.2.1.1.
Basis for Deferral:	One of the ECCS safety analysis assumptions is that each train of ND can supply flow to all four cold legs. If either of these valves failed closed during testing then only two cold legs could be supplied by each train of ND. This would make both trains of ND inoperable. Power cannot be removed from these valves, since at least one of them must be closed for cold leg recirc. If power was removed from one valve, a single failure on the opposite train would disable isolation of ND to the cold legs when needed (this isolation is needed for adequate cold leg recirc flow).
Test Alternative & Frequency:	Valve will be cycled and timed during cold shutdown.

Revised by Rev. 22.

Justification of Deferral

Item Number:	1-MC-ND4
Valve:	1ND-70
Flow Diagram:	MC-1561-1.0
Code Category:	C
ASME Class:	2
Function:	Opens to provides suction to the Centrifugal Charging Pumps and Safety Injection Pumps from the Residual Heat Removal system. Closes to provide suction pressure boundary for the Centrifugal Charging Pumps and Safety Injection Pumps
Test Requirement:	Verify proper valve movement once per three months as required by OMa-1988 Part 10, 4.3.2.1.
Basis for Deferral:	Valve cannot be full stroked during power operation since 1ND-58A would have to be opened, rendering both trains of ND inoperable. Additionally, the flow requirements to full stroke this valve cannot be achieved with the Reactor Coolant System pressurized. Opening 1ND-58A would seat check valve 1NV-223 (FWST to Charging Pump suction) closed, so that if 1ND-58A failed in the open position, both trains of NV would be inoperable. Manually closing 1ND-29, a fail-open valve, would be impractical.
Test Alternative & Frequency:	Valve will be full stroke exercised at cold shutdown. Valve will be partial stroked quarterly.

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Justification of Deferral

Item Number:	1-MC-ND5
Valve:	1ND-71
Flow Diagram:	MC-1561-1.0
Code Category:	C
ASME Class:	2
Function:	Opens to provides suction to the Centrifugal Charging Pumps and Safety Injection Pumps from the Residual Heat Removal system. Closes to provide suction pressure boundary for the Centrifugal Charging Pumps and Safety Injection Pumps
Test Requirement:	Verify proper valve movement once per three months as required by OMa-1988 Part 10, 4.3.2.1.
Basis for Deferral:	Valve cannot be full stroked during power operation since 1NI-136B would have to be opened, rendering both trains of ND inoperable. Additionally, the flow requirements to full stroke this valve cannot be achieved with the Reactor Coolant System pressurized. Opening 1ND-136B would seat check valve 1NV-223 (FWST to Charging Pump suction) closed, so that if 1ND-136B failed in the open position, both trains of NV would be inoperable. Manually closing 1ND-14, a fail-open valve, would be impractical.
Test Alternative & Frequency:	Valve will be full stroke exercised at cold shutdown.

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Justification of Deferral

Item Number:	1-MC-ND6
Valve:	1ND-8, 1ND-23
Flow Diagram:	MC-1561-1.0
Code Category:	C
ASME Class:	2
Function:	Residual Heat Removal pump discharge check valve.
Test Requirement:	Verify proper valve movement once per three months as required by OMa-1988 Part 10, 4.3.2.1.
Basis for Deferral:	Valves cannot be full stroke exercised during power operation since the only full flow path is into the Reactor Coolant System and the ND pumps cannot overcome RCS pressure.
Test Alternative & Frequency:	Valve will be full stroke exercised at cold shutdown. Valves will be partially stroked quarterly. The opposite train valves will be tested closed quarterly except when the opposite train of ND is in service.

Justification of Deferral

Item Number:	1-MC-NF1
Valve:	1NF-229
Flow Diagram:	MC-1558-4.0
Code Category:	A,C
ASME Class:	2
Function:	Provides containment isolation on penetration M-373.
Test Requirement:	1) Verify proper valve movement once per three months as required by OMa-1988 Part 10, 4.3.2.1. 2) Leak test once per 2 years in accordance with OMa-1988 Part 10, 4.2.2.2. 10CFR50 Appendix J requires measurement of local leak rate using air or nitrogen.
Basis for Deferral:	The system design does not provide a means of verifying valve closure upon flow reversal. Testing during power operation is impractical for this valve since it is located inside containment, as well as the test connection needed to test it. During cold shutdowns, this testing would involve work inside containment, possibly with high radiation levels.
Test Alternative & Frequency:	1) Valve will be verified closed by leak test performed in accordance with 10CFR50 Appendix J at refueling outage frequency. 2) Leak Rate testing of the valve will be performed per Tech Spec 4.6.1.2.d.4.

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Justification of Deferral

Item Number:	1-MC-NI1
Valve:	1NI-9A, 1NI-10B
Flow Diagram:	MC-1562-1.0
Code Category:	B
ASME Class:	2
Function:	Flowpath for Centrifugal Charging Pumps to Reactor Coolant System Cold Legs.
Test Requirement:	Stroke time test in accordance with OMa-1988 Part 10, 4.2.1.1.
Basis for Deferral:	Opening either of these valves during operation would increase the charging flow into the Reactor Coolant System resulting in an increase of pressure and a rapid change in the primary system boron concentration. This could create a transient and possible unit shutdown.
Test Alternative & Frequency:	Valve will be cycled and timed during cold shutdown.

Justification of Deferral

Item Number:	1-MC-NI2
Valve:	1NI-100B
Flow Diagram:	MC-1562-3.0
Code Category:	B
ASME Class:	2
Function:	Flowpath from the Refueling Water Storage Tank the Safety Injection Pump suction.
Test Requirement:	Stroke time test in accordance with OMa-1988 Part 10, 4.2.1.1.
Basis for Deferral:	Closing this valve during operation would render both trains of Safety Injection inoperable. This valve is opened and power removed above Mode 4 per Tech Spec 4.5.2.
Test Alternative & Frequency:	Valve will be cycled and timed during cold shutdown.

Justification of Deferral

Item Number:	1-MC-NI3
Valve:	1NI-147A, 1NI115B
Flow Diagram:	MC-1562-3.0
Code Category:	B
ASME Class:	2
Function:	1NI-147A provides flowpath for both trains of Safety Injection recirculation line to the Refueling Water Storage Tank. 1NI-115B provides flowpath for A train of Safety Injection re-circulation line to the Refueling Water Storage Tank.
Test Requirement:	Stroke time test in accordance with OMa-1988 Part 10, 4.2.1.1.
Basis for Deferral:	Closing either of these valve during power operation renders both trains of Safety Injection inoperable. 1NI-147A is open with power removed above Mode 4 per Tech Spec 4.5.2. In the event of a loss of offsite power with the loss of 1B diesel generator as the single failure, 1NI-115B would not open, rendering A Train NI inoperable (due to loss of miniflow path). B Train NI would already be inoperable due to the single failure.
Test Alternative & Frequency:	Valve will be cycled and timed during cold shutdown.

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Justification of Deferral

Item Number:	1-MC-NI4
Valve:	1NI-121A, 1NI-152B
Flow Diagram:	MC-1562-3.0
Code Category:	B
ASME Class:	2
Function:	Isolates Safety Injection flow to the hot legs.
Test Requirement:	Stroke time test in accordance with OMa-1988 Part 10, 4.2.1.1.
Basis for Deferral:	These valves are closed with power removed above Mode 4 per Tech Spec 4.5.2.
Test Alternative & Frequency:	Valve will be cycled and timed during cold shutdown.

Justification of Deferral

Item Number:	1-MC-NI5
Valve:	1NI-162A
Flow Diagram:	MC-1562-3.1
Code Category:	B
ASME Class:	2
Function:	Isolates Safety Injection flow to the cold legs.
Test Requirement:	Stroke time test in accordance with OMa-1988 Part 10, 4.2.1.1.
Basis for Deferral:	This valve is opened and power removed above Mode 4 per Tech Spec 4.5.2.
Test Alternative & Frequency:	Valve will be cycled and timed during cold shutdown.

Justification of Deferral

Item Number:	1-MC-NI6
Valve:	1NI-103A
Flow Diagram:	MC-1562-3.0
Code Category:	B
ASME Class:	2
Function:	Provides A Train Safety Injection Pump suction flow from the Refueling Water Storage Tank. Also provides a flowpath for B Train Residual Heat Removal pump discharge to B Train Chemical and Volume Control pump suction.
Test Requirement:	Stroke time test in accordance with OMa-1988 Part 10, 4.2.1.1.
Basis for Deferral:	Closing this valve during power operations degrades both trains of Chemical and Volume Control. In the event of a loss of offsite power with the loss of 1A diesel generator as the single failure when the valve was closed, B Train NV would be lost for sump recirc mode. Since that could happen as fast as 30 minutes and would then be inaccessible due to dose rates, credit could not be taken for manually opening 1NI-103A in this event. A Train NV would already be inoperable due to the single failure.
Test Alternative & Frequency:	Valve will be cycled and timed during cold shutdown.

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Justification of Deferral

Item Number:	1-MC-NI7
Valve:	1NI-173A, 1NI-178B
Flow Diagram:	MC-1562-3.1
Code Category:	B
ASME Class:	2
Function:	Provides flowpath for Residual Heat Removal to the cold legs.
Test Requirement:	Stroke time test in accordance with OMa-1988 Part 10, 4.2.1.1.
Basis for Deferral:	These valves are opened and power removed above Mode 4 per Tech Spec 4.5.2.
Test Alternative & Frequency:	Valve will be cycled and timed during cold shutdown.

Justification of Deferral

Item Number:	1-MC-NI8
Valve:	1NI-334B
Flow Diagram:	MC-1562-3.0
Code Category:	B
ASME Class:	2
Function:	Provides flowpath from B Train of Residual Heat Removal to B Train of Chemical and Volume Control, and from A Train of Residual Heat Removal to A Train of Safety Injection.
Test Requirement:	Stroke time test in accordance with OMa-1988 Part 10, 4.2.1.1.
Basis for Deferral:	Closing this valve during power operation degrades both trains of Safety Injection. With the single failure of 1B diesel generator, Train A of Safety Injection, which is provided suction from Residual Heat Removal via 1NI-334B or 1NI-136B, would be inoperable (since 1NI-136B is normally closed). Train B of Safety Injection would already be inoperable due to the single failure.
Test Alternative & Frequency:	Valve will be cycled and timed during cold shutdown.

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Justification of Deferral

Item Number:	1-MC-NI9
Valve:	1NI-183B
Flow Diagram:	MC-1562-3.0
Code Category:	B
ASME Class:	2
Function:	Isolates Residual Heat Removal flow to the hot legs.
Test Requirement:	Stroke time test in accordance with OMa-1988 Part 10, 4.2.1.1.
Basis for Deferral:	This valve is closed and power removed above Mode 4 per Tech Spec 4.5.2.
Test Alternative & Frequency:	Valve will be cycled and timed during cold shutdown.

Justification of Deferral

Item Number:	1-MC-NI10
Valve:	1NI-184B, 1NI-185A
Flow Diagram:	MC-1562-3.1
Code Category:	B
ASME Class:	2
Function:	Provides flowpath from the Containment Sump to the Residual Heat Removal Pump and the Containment Spray Pump suction.
Test Requirement:	Stroke time test in accordance with OMa-1988 Part 10, 4.2.1.1.
Basis for Deferral:	Opening these valves during power operation would allow water to enter lower containment. To prevent this, 1FW-27A would have to be closed, rendering both trains of Residual Heat Removal inoperable. Voids in suction piping would be created requiring fill and vent operations to prevent ECCS pump damage.
Test Alternative & Frequency:	Valve will be cycled and timed during cold shutdown.

Justification of Deferral

Item Number:	1-MC-NI11
Valve:	1NI-332A, 1NI-333B
Flow Diagram:	MC-1562-3.0
Code Category:	B
ASME Class:	2
Function:	Provides flowpath to Centrifugal Charging Pumps and Safety Injection Pumps from Residual Heat Removal Pumps during recirculation phase.
Test Requirement:	Stroke time test in accordance with OMa-1988 Part 10, 4.2.1.1.
Basis for Deferral:	Opening these valves during power operations requires 1NI-334B to be closed to prevent aligning FWST to the suction of the Centrifugal Charging Pumps. Injecting FWST boron concentrated water into the Reactor Coolant System would induce a transient. Closing 1NI-334B degrades both trains of Safety Injection (With the single failure of 1B diesel generator, Train A of Safety Injection, which is provided suction from Residual Heat Removal via 1NI-334B or 1NI-136B, would be inoperable (since 1NI-136B is normally closed). Train B of Safety Injection would already be inoperable due to the single failure).
Test Alternative & Frequency:	Valve will be cycled and timed during cold shutdown.

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Justification of Deferral

Item Number:	1-MC-NI12
Valve:	1NI-15, 1NI-17, 1NI-19, 1NI-21, 1NI-347, 1NI-348, 1NI-349, 1NI-354
Flow Diagram:	MC-1562-1.0
Code Category:	C
ASME Class:	1
Function:	Opens to allow flow to the cold legs from the Centrifugal Charging Pumps.
Test Requirement:	Verify proper valve movement once per three months as required by OMa-1988 Part 10, 4.3.2.1.
Basis for Deferral:	Injecting flow through these valves from the Centrifugal Charging Pumps during power operations could result in unnecessary thermal shock to the injection nozzles.
Test Alternative & Frequency:	Valve will be full stroke exercised at cold shutdown.

Justification of Deferral

Item Number:	1-MC-NI13
Valve:	1NI-12
Flow Diagram:	MC-1562-1.0
Code Category:	C
ASME Class:	2
Function:	Flowpath for Centrifugal Charging Pumps to Reactor Coolant System cold legs.
Test Requirement:	Verify proper valve movement once per three months as required by OMa-1988 Part 10, 4.3.2.1.
Basis for Deferral:	Injecting flow through this valve from the Centrifugal Charging Pumps during power operations could result in unnecessary thermal shock to the injection nozzles.
Test Alternative & Frequency:	Valve will be full stroke exercised at cold shutdown.

Justification of Deferral

Item Number:	1-MC-NI14
Valve:	1NI-101
Flow Diagram:	MC-1562-3.0
Code Category:	C
ASME Class:	2
Function:	Opens to allow flow from the Refueling Water Storage Tank to the Safety Injection Pumps. Closes to provide suction pressure boundary for these pumps from the Residual Heat Removal Pump discharge.
Test Requirement:	Verify proper valve movement once per three months as required by OMa-1988 Part 10, 4.3.2.1.
Basis for Deferral:	Valve cannot be full stroke tested during power operation since the Safety Injection Pumps cannot overcome Reactor Coolant System pressure. Closure cannot be verified quarterly since both trains of Residual Heat Removal would be rendered inoperable.
Test Alternative & Frequency:	Valve will be full stroke exercised at cold shutdown. Valve will be partial stroked quarterly.

Justification of Deferral

Item Number:	1-MC-NI15
Valve:	1NI-116, 1NI-148
Flow Diagram:	MC-1562-3.0
Code Category:	C
ASME Class:	2
Function:	Pump discharge check valve, opens to allow Safety Injection Flow. Closes to prevent opposite train flow losses.
Test Requirement:	Verify proper valve movement once per three months as required by OMa-1988 Part 10, 4.3.2.1.
Basis for Deferral:	Valve cannot be full or partial stroke tested during power operation since the Safety Injection Pumps cannot overcome Reactor Coolant System pressure.
Test Alternative & Frequency:	Valve will be full stroke exercised at cold shutdown. Valve will be verified closed quarterly.

Justification of Deferral

Item Number:	1-MC-NI16
Valve:	1NI-124, 1NI-128, 1NI-156, 1NI-157, 1NI-159, 1NI-160
Flow Diagram:	MC-1562-3.0
Code Category:	AC
ASME Class:	1
Function:	1) Opens on flow from the Safety Injection Pumps to the hot legs. 2) Reactor Coolant System pressure boundary.
Test Requirement:	1) Verify proper valve movement once per three months as required by OMa-1988 Part 10, 4.3.2.1. 2) Leak test once per two years in accordance with OMa-1988 Part 10, 4.2.2.3.
Basis for Deferral:	Valves cannot be full or partial stroke tested during power operation since the Safety Injection Pumps cannot overcome Reactor Coolant System pressure.
Test Alternative & Frequency:	Valve will be full stroke exercised at cold shutdown. Leak test in accordance with Tech Spec 4.4.6.2.2.

Justification of Deferral

Item Number:	1-MC-NI17
Valve:	1NI-165, 1NI-167, 1NI-169, 1NI-171
Flow Diagram:	MC-1562-3.1
Code Category:	AC
ASME Class:	1
Function:	1) Opens on flow from the Safety Injection Pumps to the cold legs. 2) Reactor Coolant System pressure boundary.
Test Requirement:	1) Verify proper valve movement once per three months as required by OMa-1988 Part 10, 4.3.2.1. 2) Leak test once per 2 years in accordance with OMa-1988 Part 10, 4.2.2.3.
Basis for Deferral:	Valves cannot be full or partial stroke tested during power operations since the Safety Injection Pumps cannot overcome Reactor Coolant System pressure.
Test Alternative & Frequency:	Valve will be full stroke exercised at cold shutdown. Leak test in accordance with Tech Spec 4.4.6.2.2.

Justification of Deferral

Item Number:	1-MC-NI18
Valve:	1NI-175, 1NI-176, 1NI-180, 1NI-181
Flow Diagram:	MC-1562-3.1
Code Category:	AC
ASME Class:	1
Function:	1) Opens on flow from the Residual Heat Removal Pumps to the cold legs. 2) Reactor Coolant System pressure boundary.
Test Requirement:	1) Verify proper valve movement once per three months as required by OMa-1988 Part 10, 4.3.2.1. 2) Leak test once per two years in accordance with OMa-1988 Part 10, 4.2.2.3.
Basis for Deferral:	Valves cannot be full or partial stroke tested during power operation since the Residual Heat Removal pumps cannot overcome Reactor Coolant System pressure.
Test Alternative & Frequency:	Valve will be full stroke exercised at cold shutdown. Leak test in accordance with Tech Spec 4.4.6.2.2.

Justification of Deferral

Item Number:	1-MC-NI19
Valve:	1NI-125, 1NI-126, 1NI-129, 1NI-134
Flow Diagram:	MC-1562-3.0
Code Category:	AC
ASME Class:	1
Function:	1) Opens on flow from the Residual Heat Removal Pumps to the hot legs. 2) Reactor Coolant System pressure boundary.
Test Requirement:	1) Verify proper valve movement once per three months as required by OMa-1988 Part 10, 4.3.2.1. 2) Leak test once per two years in accordance with OMa-1988 Part 10, 4.2.2.3.
Basis for Deferral:	Valves cannot be full or partial stroke tested during power operation since the Residual Heat Removal pumps cannot overcome Reactor Coolant System pressure.
Test Alternative & Frequency:	Valve will be full stroke exercised at cold shutdown. Leak test in accordance with Tech Spec 4.4.6.2.2.

Justification of Deferral

Item Number:	1-MC-NI20
Valve:	1NI-136B
Flow Diagram:	MC-1562-3.0
Code Category:	B
ASME Class:	2
Function:	Provides suction to the Centrifugal Charging Pumps and Safety Injection Pumps from the Residual Heat Removal System.
Test Requirement:	Stroke time test in accordance with OMa-1988 Part 10, 4.2.1.1.
Basis for Deferral:	Opening 1NI-136B would seat check valve 1NV-223 (FWST to Charging Pump suction) closed, so that if 1NI-136B failed in the open position, both trains of NV would be inoperable.
Test Alternative & Frequency:	Valve will be cycled and timed during cold shutdown.

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Justification of Deferral

Item Number:	1-MC-NI21
Valve:	1NI-48
Flow Diagram:	MC-1562-2.0
Code Category:	A,C
ASME Class:	2
Function:	Provides containment isolation on penetration M-330.
Test Requirement:	1) Verify proper valve movement once per three months as required by OMa-1988 Part 10, 4.3.2.1. 2) Leak test once per 2 years in accordance with OMa-1988 Part 10, 4.2.2.2.
Basis for Deferral:	The system design does not provide a means of verifying valve closure upon flow reversal.
Test Alternative & Frequency:	Valve will be verified closed by leak test performed in accordance with 10CFR50 Appendix J at refueling outage frequency.

Justification of Deferral

Item Number:	1-MC-NI22
Valve:	1NI-59, 1NI-70, 1NI-81, 1NI-93
Flow Diagram:	MC-1562-2.0, MC-1562-2.1
Code Category:	A,C
ASME Class:	1
Function:	Opens on flow from the NI cold leg accumulator to the Reactor Coolant System. Reactor Coolant Boundary valve.
Test Requirement:	1) Verify proper valve movement once per three months as required by OMa-1988 Part 10, 4.3.2.1. 2) Leak test once per 2 years in accordance with OMa-1988 Part 10, 4.2.2.3. 3) Leak test in accordance with Tech Spec 4.4.6.2.2.
Basis for Deferral:	Valves cannot be full or partial stroked during power operation since the accumulator pressure is ~600 psig and cannot overcome RCS pressure. Valves will not be tested during cold shutdown since disassembly is required. Disassembly would render one train of RHR inoperable for an extended period of time.
Test Alternative & Frequency:	Valves will be full stroked at refueling by disassembly on a sample basis. All valves will be partial stroked at refueling. Partial stroke will not be performed at cold shutdown since Tech Spec 4.4.6.2.2 requires leak testing after initiating flow through these valves and does not require leak testing more often than once per nine months. Valves will be verified closed by leak test performed in accordance with Tech Spec 4.4.6.2.2.

Justification of Deferral

Item Number:	1-MC-NI23
Valve:	1NI-436
Flow Diagram:	MC-1562-2.1
Code Category:	A,C
ASME Class:	2
Function:	Provides containment isolation and thermal over pressurization protection for penetration M-321.
Test Requirement:	1) Verify proper valve movement once per three months as required by OMa-1988 Part 10, 4.3.2.1. 2) Leak test once per 2 years in accordance with OMa-1988 Part 10, 4.2.2.2.
Basis for Deferral:	The system design does not provide a means of verifying valve closure upon flow reversal. Testing during power operation is impractical for this valve since it is located inside containment, as well as the test connection needed to test it. During cold shutdowns, this testing would involve work inside containment, possibly with high radiation levels.
Test Alternative & Frequency:	Valve will be verified closed by leak test performed in accordance with 10CFR50 Appendix J at refueling outage frequency.

Revised by Rev. 22.

Justification of Deferral

Item Number:	1-MC-NI24
Valve:	1NI-60, 1NI-71, 1NI-82, 1NI-94
Flow Diagram:	MC-1562-2.0, MC-1562-2.1
Code Category:	A,C
ASME Class:	1
Function:	Opens on flow from the NI cold leg accumulator to the Reactor Coolant System. Reactor Coolant Boundary valve.
Test Requirement:	1) Verify proper valve movement once per three months as required by OMa-1988 Part 10, 4.3.2.1. 2) Leak test once per 2 years in accordance with OMa-1988 Part 10, 4.2.2.3. 3) Leak test in accordance with Tech Spec 4.4.6.2.2.
Basis for Deferral:	Valves cannot be full or partial stroked during power operation since a driving head which can overcome RCS pressure does not exist. Instrumentation is not present to measure the flow through the individual valves. Valves will not be tested during cold shutdown since disassembly is required. Disassembly would render one train of RHR inoperable for an extended period of time.
Test Alternative & Frequency:	Valves will be full stroked at refueling by disassembly on a sample basis. All valves will be partial stroked at refueling. Partial stroke will not be performed at cold shutdown since Tech Spec 4.4.6.2.2 requires leak testing after initiating flow through these valves and does not require leak testing more often than once per nine months. Valves will be verified closed by leak test performed in accordance with Tech Spec 4.4.6.2.2.

Justification of Deferral

Item Number:	1-MC-NM1
Valve:	1NM-420, 1NM-421
Flow Diagram:	MC-1572-1.0
Code Category:	A,C
ASME Class:	2
Function:	Provides containment isolation and thermal over pressurization protection for penetrations M-235 and M-309 respectively.
Test Requirement:	1) Verify proper valve movement once per three months as required by OMa-1988 Part 10, 4.3.2.1. 2) Leak test once per 2 years in accordance with OMa-1988 Part 10, 4.2.2.2.
Basis for Deferral:	The system design does not provide a means of verifying valve closure upon flow reversal. Testing during power operation is impractical for this valve since it is located inside containment, as well as the test connection needed to test it. During cold shutdowns, this testing would involve work inside containment, possibly with high radiation levels.
Test Alternative & Frequency:	Valve will be verified closed by leak test performed in accordance with 10CFR50 Appendix J at refueling outage frequency.

Revised by Rev. 22.

Justification of Deferral

Item Number:	1-MC-NS1
Valve:	1NS-38B, 1NS-43A
Flow Diagram:	MC-1563-1.0
Code Category:	B
ASME Class:	2
Function:	Auxiliary Spray Nozzle header isolation.
Test Requirement:	Stroke time test in accordance with OMa-1988 Part 10, 4.2.1.1.
Basis for Deferral:	Opening either of these valves during power operation renders both trains on Residual Heat Removal inoperable. With cross-connected trains of ND, flow would be diverted from both trains through a failed-open NS-38B or 43A. To isolate one train of ND, it would be necessary to manually secure closed either ND-14 or 29, since these valves fail open on loss of air. This would be an impractical measure to perform the quarterly test.
Test Alternative & Frequency:	Valve will be cycled and timed during cold shutdown.

Revised by Rev. 22.

Justification of Deferral

Item Number:	1-MC-NS2
Valve:	1NS-13, 1NS-16, 1NS-30, 1NS-33, 1NS-41, 1NS-46
Flow Diagram:	MC-1563-1.0
Code Category:	C
ASME Class:	2
Function:	Open on flow from containment spray pumps.
Test Requirement:	Verify proper valve movement once per three months as required by OMa-1988 Part 10, 4.3.2.1.
Basis for Deferral:	Full stroke exercising of these check valves is not practical since there is no external indication of disk movement. Full stroke exercising would require for the pumps and spray nozzles to be activated which would require a large scale cleanup effort. Valves will not be tested during cold shutdown since sample disassembly is required.
Test Alternative & Frequency:	These valves will be verified to fully cycle by sample disassembly at refueling outage frequencies.
Note:	Relief is being requested on these valves. Refer to relief request 1-MC-RR-NS1. When relief is granted, this Justification Of Deferral will be deleted.

Justification of Deferral

Item Number:	1-MC-NS3
Valve:	1NS-4, 1NS-21
Flow Diagram:	MC-1563-1.0
Code Category:	C
ASME Class:	2
Function:	Opens to allow flow from the Refueling Water Storage Tank to the Containment Spray Pump suction. Closes to prevent flow from the Containment Recirculation Sump to the Refueling Water Storage Tank.
Test Requirement:	Verify proper valve movement once per three months as required by OMa-1988 Part 10, 4.3.2.1.
Basis for Deferral:	Full stroke exercising with flow would require for the pumps and spray nozzles to be activated which would require a large scale cleanup effort. The system design does not provide any indication for verifying closure upon flow reversal.
Test Alternative & Frequency:	Full stroke testing will be achieved by sample disassembly. At least one of these valves will be disassembled during each refueling outage, and both valves will have been disassembled and full stroked after two consecutive outages. Sample disassembly will also verify closure. Failure of one of valve to properly full stroke during a refueling outage will result in the remaining valve being disassembled and full stroked during that outage. Valves will be partial stroked quarterly.

Justification of Deferral

Item Number:	1-MC-NS4
Valve:	1NS-140, 1NS-141
Flow Diagram:	MC-1563-1.0
Code Category:	A,C
ASME Class:	2
Function:	Must open to allow Containment Spray to the spray ring headers. Must close to prevent column separation of water in the header after initial building spraydown and pump shutdown. During this time, the column of water in the vertical piping up to the spray rings could separate, creating a void in the system at sub-atmospheric pressure. Upon pump restart, the collapse of this void would damage the piping system.
Test Requirement:	1) Verify proper valve movement once per three months as required by OMa-1988 Part 10, 4.3.2.1. 2) Leak test once per 2 years in accordance with OMa-1988 Part 10, 4.2.2.3.
Basis for Deferral:	Full stroke exercising of these check valves is not practical since there is no external indication of disk movement. Full stroke exercising would require for the pumps and spray nozzles to be activated which would require a large scale cleanup effort. Valves will not be tested during cold shutdown since sample disassembly is required.
Test Alternative & Frequency:	Valves will be verified to full stroke open using sample disassembly every other refueling outage on a staggered basis. Valves will be partial stroked quarterly. Valves will be leak tested at refueling outages. Leak testing will also verify closure of these valves.

Justification of Deferral

Item Number:	1-MC-NV1
Valve:	1NV-94AC, 1NV-95B
Flow Diagram:	MC-1554-1.1
Code Category:	B
ASME Class:	2
Function:	1) Provides flowpath for Reactor Coolant Pump seal water discharge line. 2) Provides containment isolation for penetration M-256
Test Requirement:	Stroke time test in accordance with OMa-1988 Part 10, 4.2.1.1.
Basis for Deferral:	Closure of one of these valves during power operation would inhibit normal seal water flow across the reactor coolant pump number 1 seal. This action could result in damage to the reactor coolant pump seals or the pump itself. Failure of this seal with NC flow out the seal would be a loss of NV system function, and is justification for deferral in accordance with NUREG-1482 Section 3.1.1.
Test Alternative & Frequency:	Valve will be cycled and timed during cold shutdown.

Revised by Rev. 22.

Justification of Deferral

Item Number:	1-MC-NV2
Valve:	1NV-7B
Flow Diagram:	MC-1554-1.2
Code Category:	B
ASME Class:	2
Function:	1) Provides flowpath for normal letdown. 2) Provides containment isolation for penetration M-347.
Test Requirement:	Stroke time test in accordance with OMa-1988 Part 10, 4.2.1.1.
Basis for Deferral:	Failure of this valve in a closed position would result in a significant event (letdown isolation), possibly resulting in loss of pressurizer level control, and possible Unit trip (not a normal shutdown).
Test Alternative & Frequency:	Valve will be cycled and timed during cold shutdown.

Revised by Rev. 22.

Justification of Deferral

Item Number:	1-MC-NV3
Valve:	1NV-21A
Flow Diagram:	MC-1554-1.2
Code Category:	B
ASME Class:	1
Function:	Provides isolation for Pressurizer Auxiliary spray.
Test Requirement:	Stroke time test in accordance with OMa-1988 Part 10, 4.2.1.1.
Basis for Deferral:	Opening this valve during power operations could result in a reactor low pressure trip.
Test Alternative & Frequency:	Valve will be cycled and timed during cold shutdown.

Justification of Deferral

Item Number:	1-MC-NV4
Valve:	1NV-141A, 1NV-142B
Flow Diagram:	MC-1554-2.0
Code Category:	B
ASME Class:	2
Function:	Provides isolation for Volume Control Tank upon Safety Injection Signal.
Test Requirement:	Stroke time test in accordance with OMa-1988 Part 10, 4.2.1.1.
Basis for Deferral:	Closure of one of these valves during power operation would isolate the suction for the Centrifugal Charging Pumps. This action could result in damage to the pumps. Seal water to the Reactor Coolant pumps would be interrupted causing damage to the seals.
Test Alternative & Frequency:	Valve will be cycled and timed during cold shutdown.

Justification of Deferral

Item Number:	1-MC-NV5
Valve:	1NV-244A, 1NV-245B
Flow Diagram:	MC-1554-3.0
Code Category:	B
ASME Class:	2
Function:	Isolates charging to the Reactor Coolant System upon Safety Injection.
Test Requirement:	Stroke time test in accordance with OMa-1988 Part 10, 4.2.1.1.
Basis for Deferral:	If one of these valves were to fail in the closed position while testing during power operation, normal and alternate charging would be lost. Total loss of charging flow would be a significant event, resulting in a possible loss of Pressurizer control, and a likely Unit trip (not a normal shutdown), as well as loss of NC pump seal flow.
Test Alternative & Frequency:	Valve will be cycled and timed during cold shutdown.

Revised by Rev. 22.

Justification of Deferral

Item Number:	1-MC-NV6
Valve:	1NV-221A, 1NV-222B
Flow Diagram:	MC-1554-3.1
Code Category:	B
ASME Class:	2
Function:	Flowpath for Refueling Water Storage Tank to the suction of the Centrifugal Charging Pumps.
Test Requirement:	Stroke time test in accordance with OMa-1988 Part 10, 4.2.1.1.
Basis for Deferral:	Opening these valves during power operation allows the Charging Pumps to inject highly borated water into the Reactor coolant System which could result in a unit shutdown.
Test Alternative & Frequency:	Valve will be cycled and timed during cold shutdown.

Justification of Deferral

Item Number:	1-MC-NV7
Valve:	1NV-264
Flow Diagram:	MC-1554-3.1
Code Category:	C
ASME Class:	2
Function:	Provides flowpath from the Boric Acid Tank to the Centrifugal Charging Pump suction. Closes to provide pump suction pressure boundary.
Test Requirement:	Verify proper valve movement once per three months as required by OMa-1988 Part 10, 4.3.2.1.
Basis for Deferral:	To full stroke exercise this valve during power operations would inject more than 30 gpm of boric acid into the Reactor Coolant System creating a transient. To verify closure, residual boric acid would be injected causing a transient.
Test Alternative & Frequency:	Valve will be full stroke exercised at cold shutdown.

Justification of Deferral

Item Number:	1-MC-NV8
Valve:	1NV-150B, 1NV-151A
Flow Diagram:	MC-1554-2.0
Code Category:	B
ASME Class:	2
Function:	Provides isolation for Centrifugal Charging Pump miniflow line to Volume Control Tank.
Test Requirement:	Stroke time test in accordance with OMa-1988 Part 10, 4.2.1.1.
Basis for Deferral:	If either valve were to fail closed while testing, the Charging Pump miniflow protection line is isolated possibly causing damage to the pump. Closure of either of these valves would render both trains of NV inoperable, since on a spurious safety injection event (in which reactor coolant system pressure is increased above normal), this is a relief path back to the Volume Control Tank.
Test Alternative & Frequency:	Valve will be cycled and timed during cold shutdown.

Revised by Rev. 22.

Justification of Deferral

Item Number:	1-MC-NV9
Valve:	1NV-265B
Flow Diagram:	MC-1554-3.1
Code Category:	B
ASME Class:	2
Function:	Isolates the Boric Acid Tank from the suction of the Charging Pumps.
Test Requirement:	Stroke time test in accordance with OMa-1988 Part 10, 4.2.1.1.
Basis for Deferral:	If valve is opened during power operations, boric acid could be injected into the Reactor Coolant System causing a transient.
Test Alternative & Frequency:	Valve will be cycled and timed during cold shutdown.

Justification of Deferral

Item Number:	1-MC-NV10
Valve:	1NV-225, 1NV-231
Flow Diagram:	MC-1554-3.1
Code Category:	C
ASME Class:	2
Function:	Pump discharge check valve. Opens to provide flowpath for Centrifugal Charging Pump. Closes to prevent opposite train flow losses.
Test Requirement:	Verify proper valve movement once per three months as required by OMa-1988 Part 10, 4.3.2.1.
Basis for Deferral:	Valve cannot be full stroke exercised during power operation since this would require an increase in Reactor Coolant System boron concentration which could result in unit shutdown. Normal letdown is not sufficient to verify full stroke, this must be done when aligned to the FWST for suction.
Test Alternative & Frequency:	Valve will be full stroke exercised during cold shutdown, partial stroked with normal use.

Justification of Deferral

Item Number:	1-MC-NV11
Valve:	1NV-223
Flow Diagram:	MC-1554-3.1
Code Category:	C
ASME Class:	2
Function:	Provides open flowpath from the FWST. Provides closed pump suction pressure boundary when suction is from the Residual Heat Removal pumps.
Test Requirement:	Verify proper valve movement once per three months as required by OMa-1988 Part 10, 4.3.2.1.
Basis for Deferral:	Testing this valve during power operations would require opening of either 1NV-221A or 1NV-222B. Opening these valves during power operation could result in a unit trip. See Justification # MC-NV6.
Test Alternative & Frequency:	Valve will be full stroke exercised at cold shutdown.

Justification of Deferral

Item Number:	1-MC-NV12
Valve:	1NV-1046
Flow Diagram:	MC-1554-3.0
Code Category:	C
ASME Class:	2
Function:	Closes to provide pump suction pressure boundary for Centrifugal Charging Pumps. Open function is to protect the Positive Displacement Pump from over pressurization. This is not a safety related function.
Test Requirement:	Verify proper valve movement once per three months as required by OMa-1988 Part 10, 4.3.2.1.
Basis for Deferral:	Testing this valve during power operation would result in the addition of highly borated water into the Reactor Coolant System causing a transient. To place adequate test pressure on this valve, it would be necessary to use ND Pump discharge pressure, which would require opening 1ND-58A. This would inject FWST water into the NC System via the Charging Pumps, which are also on the discharge of the ND Pumps (for cold leg recirc) via 1ND-58A.
Test Alternative & Frequency:	Valve will be full stroke exercised at cold shutdown.

Revised by Rev. 22.

Justification of Deferral

Item Number:	1-MC-NV13
Valve:	1NV-261, 1NV-263
Flow Diagram:	MC-1554-3.1
Code Category:	C
ASME Class:	2
Function:	These valves shall close to provide pump suction pressure isolation for the Centrifugal Charging Pumps by preventing backflow to the Chemical Mixing Tank or the RMWST respectively.
Test Requirement:	Verify proper valve movement once per three months as required by OMa-1988 Part 10, 4.3.2.1.
Basis for Deferral:	Testing these valves requires 1NI-121A to be opened. This valve is closed with power removed above mode 4 per Tech Spec 4.5.2. This testing would require opening valve 1ND-58A, which would render both trains of NV inoperable (by seating check valve 1NV-223 (charging pump suction from the FWST in-line check) closed).
Test Alternative & Frequency:	Valve will be full stroke exercised at cold shutdown.

Revised by Rev. 22.

Justification of Deferral

Item Number:	1-MC-NV14
Valve:	1NV-1002
Flow Diagram:	MC-1554-1.3
Code Category:	A,C
ASME Class:	2
Function:	Provides containment isolation on penetration M-342.
Test Requirement:	1) Verify proper valve movement once per three months as required by OMa-1988 Part 10, 4.3.2.1. 2) Leak test once per 2 years in accordance with OMa-1988 Part 10, 4.2.2.2.
Basis for Deferral:	The system design does not provide a means of verifying valve closure upon flow reversal. Testing during power operation is impractical for this valve since it is located inside containment, as well as the test connection needed to test it. During cold shutdowns, this testing would involve work inside containment, possibly with high radiation levels.
Test Alternative & Frequency:	Valve will be verified closed by leak test performed in accordance with 10CFR50 Appendix J at refueling outage frequency.

Revised by Rev. 22.

Justification of Deferral

Item Number:	1-MC-NV15
Valve:	1NV-143
Flow Diagram:	MC-1554-2.0
Code Category:	C
ASME Class:	2
Function:	This valve shall close to provide Centrifugal Charging Pump suction pressure boundary during Recirculation alignment from RHR Pump discharge.
Test Requirement:	Verify proper valve movement once per three months as required by OMa-1988 Part 10, 4.3.2.1.
Basis for Deferral:	This valve is in the flowpath from the Volume Control Tank to the Charging pumps. During normal system operation, this valve is open. To verify this valve closes properly requires the alignment from the RHR pumps, and would interrupt normal charging activities.
Test Alternative & Frequency:	Valve will be full stroke exercised at cold shutdown.

Justification of Deferral

Item Number: 1-MC-NV16

Valve: 1NV-164

Justification deleted by Revision 22.

Justification of Deferral

Item Number:	1-MC-NV17
Valve:	1NV-1007, 1NV-1008, 1NV-1009, 1NV-1010
Flow Diagram:	MC-1554-1.3
Code Category:	C
ASME Class:	2
Function:	These valves must close to maintain a pressure boundary for normal Reactor Coolant Pump Seal Injection.
Test Requirement:	Verify proper valve movement once per three months as required by OMa-1988 Part 10, 4.3.2.1.
Basis for Deferral:	In the event of failure of one of these valves during testing, the seal injection water for that Reactor Coolant Pump would be diverted, thereby creating a loss of seal injection to that pump. This condition would result in destroying a seal for the pump, and possibly creating a small break loss of coolant accident.
Test Alternative & Frequency:	These valves will be tested for closure during cold shutdowns.

Resived by revision 21

Justification of Deferral

Item Number:	1-MC-NV18
Valve:	1NV-0035A, 1NV-0457A, 1NV-0458A
Flow Diagram:	MCFD-1554-01.02
Code Category:	B
ASME Class:	2
Function:	These valves must automatically close to isolate containment on a Phase A signal, and to isolate letdown on a Pressurizer Low Level signal. They can be operated from the Auxiliary Shutdown Panel, and cannot be opened unless valves 1NV-1A and 1NV-2A are both open.
Test Requirement:	Stroke time test quarterly in accordance with Oma-1988 Part 10, 4.2.1.1.
Basis for Deferral:	Letdown header relief valve 1NV-6 has experienced lifting and subsequent seat leakage as a result of pressure transients during orifice swaps for stroke time testing of the above valves. Although the NV operating procedure specifically addresses the potential pressure increase that could occur when swapping from the 45 gpm to the 75 gpm orifice, the increase can occur so quickly that the operator and system controls cannot respond fast enough to prevent the pressure transient. The NV operating procedure currently provides for simultaneous opening/closure of the above orifice isolation valves, and for backpressure reduction using the downstream control valve, to prevent such a pressure transient; however, procedure effectiveness is problematic with respect to repeatablility due to the inability to achieve perfect coordination each time. It is concluded that testing of these valves is impractical and nonconservative during power operation, since it results in pressure transients which have caused relief valve leakage. This leakage is Reactor Coolant (NC) leakage, which is reflected in higher NC leakage values. Finally, these valves have demonstrated a favorable test history.
Test Alternative & Frequency:	Valves will be stroke time tested during cold shutdown.

Added by Rev. 22

Justification of Deferral

Item Number:	1-MC-RF1
Valve:	1RF-823
Flow Diagram:	MC-1599-2.2
Code Category:	A,C
ASME Class:	2
Function:	Provides containment isolation on penetration M-353.
Test Requirement:	1) Verify proper valve movement once per three months as required by OMa-1988 Part 10, 4.3.2.1. 2) Leak test once per 2 years in accordance with OMa-1988 Part 10, 4.2.2.2.
Basis for Deferral:	The system design does not provide a means of verifying valve closure upon flow reversal. Testing during power operation is impractical for this valve since it is located inside containment, as well as the test connection needed to test it. During cold shutdowns, this testing would involve work inside containment, possibly with high radiation levels.
Test Alternative & Frequency:	Valve will be verified closed by leak test performed in accordance with 10CFR50 Appendix J at refueling outage frequency.

Revised by Rev. 22.

Justification of Deferral

Item Number:	1-MC-RN1
Valve:	1RN-252B, 1RN-253A
Flow Diagram:	MC-1574-4.0
Code Category:	A
ASME Class:	2
Function:	1) Provides containment isolation for penetration M-307. 2) Provides flowpath for cooling water to the Reactor Coolant Pump Motor Air Cooler
Test Requirement:	Stroke time test in accordance with OMa-1988 Part 10, 4.2.1.1.
Basis for Deferral:	If one of these valves were to fail closed during testing, isolation of cooling water to the motor coolers could result in damage to the pumps. Closure of these valves would result in a Unit trip from NC Pump motors being manually shut down due to high stator temperatures (within minutes). An abnormal (natural circulation) shutdown would be required.
Test Alternative & Frequency:	Valve will be cycled and timed during cold shutdown.

Revised by Rev. 22.

Justification of Deferral

Item Number:	1-MC-RN2
Valve:	1RN-276A, 1RN-277B
Flow Diagram:	MC-1574-4.0
Code Category:	A
ASME Class:	2
Function:	1) Provides containment isolation for penetration M-315. 2) Provides flowpath for cooling water to the Rcactor Coolant Pump Motor Air Cooler.
Test Requirement:	Stroke time test in accordance with OMa-1988 Part 10, 4.2.1.1.
Basis for Deferral:	If one of these valves were to fail closed during testing, isolation of cooling water to the motor coolers could result in damage to the pumps. Closure of these valves would result in a Unit trip from NC Pump motors being manually shut down due to high stator temperatures (within minutes). An abnormal (natural circulation) shutdown would be required.
Test Alternative & Frequency:	Valve will be cycled and timed during cold shutdown.

Revised by Rev. 22.

Justification of Deferral

Item Number: 1-MC-RN3

Valve: 1RN-42A

Justification deleted by Revision 21

Justification of Deferral

Item Number: 1-MC-RN4

Valve: 1RN-63B, 1RN-64A

Justification deleted by Revision 21

Justification of Deferral

Item Number: 1-MC-RN5

Valve: 1RN-214

Justification deleted by Revision 21

Justification of Deferral

Item Number:	1-MC-RN6
Valve:	1RN-891, 1RN-892

Justification deleted by Revision 22

Justification of Deferral

Item Number:	1-MC-RV1
Valve:	1RV-32A, 1RV-33B, 1RV-76A, 1RV-77B
Flow Diagram:	MC-1604-3.0
Code Category:	A
ASME Class:	2
Function:	Provide containment isolation for penetration M-240 and M-279 respectively.
Test Requirement:	Stroke time test in accordance with OMa-1988 Part 10, 4.2.1.1.
Basis for Deferral:	Failure of one of these valves in the closed position during testing would isolate cooling flow to the Lower Containment Ventilation Units causing an increase in lower containment temperature which could exceed Tech Spec limits. Although the exact time depends on outside temperature, the Tech Spec limit would be exceeded within minutes if cooling flow was isolated to these ventilation units.
Test Alternative & Frequency:	Valve will be cycled and timed during cold shutdown.

Revised by Rev. 22.

Justification of Deferral

Item Number:	1-MC-SA1
Valve:	1SA-5, 1SA-6
Flow Diagram:	MC-1593-1.2
Code Category:	C
ASME Class:	2
Function:	Opens to allow steam supply to the turbine driven Auxiliary Feedwater Pump. Closes to prevent cross connecting steam generators 1B and 1C.
Test Requirement:	Verify proper valve movement once per three months as required by OMa-1988 Part 10, 4.3.2.1.
Basis for Deferral:	System configuration and design do not provide a suitable means to prove the valve prevents reversal of flow. To test the close function of this valve on line would risk personnel safety since high energy steam would be involved.
Test Alternative & Frequency:	At least one of these two valves will be disassembled and full stroked during each refueling outage, and both valves will have been disassembled and full stroked after two consecutive outages. Sample disassembly will verify closure. Failure of one of valve to properly full stroke during a refueling outage will result in the remaining valve being disassembled and full stroked during that outage. Valves will be full stroked open quarterly.

Justification of Deferral

Item Number:	1-MC-SM1
Valve:	1SM-1AB, 1SM-3AB, 1SM-5AB, 1SM-7AB
Flow Diagram:	MC-1593-1.0, MC-1593-1.3
Code Category:	B
ASME Class:	2
Function:	Main Steam Isolation Valves
Test Requirement:	Stroke time test in accordance with OMa-1988 Part 10, 4.2.1.1.
Basis for Deferral:	These valves cannot be fully cycled closed during power operation since a unit shutdown would result.
Test Alternative & Frequency:	These valves will be partially cycled closed while in Modes 1, 2 and 3. These valves will be cycled and timed during cold shutdown.

Justification of Deferral

Item Number:	1-MC-VB1
Valve:	1VB-50
Flow Diagram:	MC-1605-3.1
Code Category:	A,C
ASME Class:	2
Function:	Provides containment isolation on penetration M-215.
Test Requirement:	1) Verify proper valve movement once per three months as required by OMa-1988 Part 10, 4.3.2.1. 2) Leak test once per 2 years in accordance with OMa-1988 Part 10, 4.2.2.2.
Basis for Deferral:	The system design does not provide a means of verifying valve closure upon flow reversal. Testing during power operation is impractical for this valve since it is located inside containment, as well as the test connection needed to test it. During cold shutdowns, this testing would involve work inside containment, possibly with high radiation levels.
Test Alternative & Frequency:	Valve will be verified closed by leak test performed in accordance with 10CFR50 Appendix J at refueling outage frequency.

Revised by Rev. 22.

Justification of Deferral

Item Number:	1-MC-VG1
Valve:	1VG-17, 1VG-18, 1VG-19, 1VG-20
Flow Diagram:	MC-1609-4.0
Code Category:	C
ASME Class:	3
Function:	Provides flowpath for Diesel Generator control air from individual starting air banks.
Test Requirement:	Verify proper valve movement once per three months as required by OMa-1988 Part 10, 4.3.2.1.
Basis for Deferral:	Testing these valves requires the Diesel Generator to be started on a single bank of control air which is considered a degraded condition. This is not justified for quarterly starts. This test is required to be done on an 18 month frequency as committed to in our response to SOER 80-1.
Test Alternative & Frequency:	Valve will be full stroke exercised with the diesel generator start on a single bank of control air and performed at refueling outage frequency.

Justification of Deferral

Item Number:	1-MC-VI1
Valve:	1VI-368, 1VI-372, 1VI-373, 1VI-374
Flow Diagram:	MC-1605-1.3
Code Category:	C
ASME Class:	ANSI B31.1.0 (1967)
Function:	1VI-368 and 1VI-373 must open to allow nitrogen to the PORV actuator. 1VI-372, 1VI-374 must close to prevent loss of Nitrogen pressure if instrument air is lost.
Test Requirement:	Verify proper valve movement once per three months as required by OMa-1988 Part 10, 4.3.2.1.
Basis for Deferral:	All four valves are tested with PORV stroke timing. PORVs are tested on a cold shutdown frequency. Refer to Justification # 1-MC-NC1
Test Alternative & Frequency:	Valve will be full stroke exercised at cold shutdown.

Justification of Deferral

Item Number:	1-MC-VI2
Valve:	1VI-124, 1VI-149
Flow Diagram:	MC-1605-1.2
Code Category:	A,C
ASME Class:	2
Function:	Provides containment isolation on penetrations M-317 and M-386 respectively.
Test Requirement:	1) Verify proper valve movement once per three months as required by OMa-1988 Part 10, 4.3.2.1. 2) Leak test once per 2 years in accordance with OMa-1988 Part 10, 4.2.2.2.
Basis for Deferral:	The system design does not provide a means of verifying valve closure upon flow reversal. Testing during power operation is impractical for this valve since it is located inside containment, as well as the test connection needed to test it. During cold shutdowns, this testing would involve work inside containment, possibly with high radiation levels.
Test Alternative & Frequency:	Valve will be verified closed by leak test performed in accordance with 10CFR50 Appendix J at refueling outage frequency.

Revised by Rev. 22.

Justification of Deferral

Item Number:	1-MC-VI3
Valve:	1VI-40, 1VI-161
Flow Diagram:	MC-1605-1.3
Code Category:	A,C
ASME Class:	2
Function:	Provides containment isolation on penetrations M-220 and M-359 respectively.
Test Requirement:	1) Verify proper valve movement once per three months as required by OMa-1988 Part 10, 4.3.2.1. 2) Leak test once per 2 years in accordance with OMa-1988 Part 10, 4.2.2.2.
Basis for Deferral:	The system design does not provide a means of verifying valve closure upon flow reversal. Testing during power operation is impractical for this valve since it is located inside containment, as well as the test connection needed to test it. During cold shutdowns, this testing would involve work inside containment, possibly with high radiation levels.
Test Alternative & Frequency:	Valve will be verified closed by leak test performed in accordance with 10CFR50 Appendix J at refueling outage frequency.

Revised by Rev. 22.

Justification of Deferral

Item Number:	1-MC-VI4
Valve:	1VI-129B, 1VI-150B, 1VI-160B
Flow Diagram:	MC-1605-1.14; MC-1605-1.17
Code Category:	A
ASME Class:	2
Function:	Provides containment isolation on penetrations M-220, M-317 and M-359 respectively.
Test Requirement:	Stroke time test in accordance with OMa-1988 Part 10, 4.2.1.1.
Basis for Deferral:	These valves isolate instrument air headers to the reactor building. In the past, to perform stroke timing of these valves, the containment air compressor was started to maintain an un-interrupted air supply to components inside containment. During the past refueling outage, the containment compressor was deleted. Should these valves be closed during power operation, components inside containment would experience a loss of instrument air, resulting in unwanted transients. During cold shutdowns, personnel entry into containment may be made to manually align instrument air headers together, allowing these valves to be tested. Since this is a manual alignment, it is not possible to enter containment to make this alignment for quarterly testing.
Test Alternative & Frequency:	Valves will be cycled and timed during cold shutdown. Leak testing will be performed as per the requirements of 10CFR50, Appendix J.

Revised by revision 21

Justification of Deferral

Item Number:	1-MC-VS1
Valve:	1VS-13
Flow Diagram:	MC-1605-2.2
Code Category:	A,C
ASME Class:	2
Function:	Provides containment isolation on penetration M-219.
Test Requirement:	1) Verify proper valve movement once per three months as required by OMa-1988 Part 10, 4.3.2.1. 2) Leak test once per 2 years in accordance with OMa-1988 Part 10, 4.2.2.2.
Basis for Deferral:	The system design does not provide a means of verifying valve closure upon flow reversal. Testing during power operation is impractical for this valve since it is located inside containment, as well as the test connection needed to test it. During cold shutdowns, this testing would involve work inside containment, possibly with high radiation levels.
Test Alternative & Frequency:	Valve will be verified closed by leak test performed in accordance with 10CFR50 Appendix J at refueling outage frequency.

Justification of Deferral

Item Number:	1-MC-VX1
Valve:	1VX-30
Flow Diagram:	MC-1557-1
Code Category:	A,C
ASME Class:	2
Function:	Provides containment isolation on penetration M-325.
Test Requirement:	1) Verify proper valve movement once per three months as required by OMa-1988 Part 10, 4.3.2.1. 2) Leak test once per 2 years in accordance with OMa-1988 Part 10, 4.2.2.2.
Basis for Deferral:	The system design does not provide a means of verifying valve closure upon flow reversal. Testing during power operation is impractical for this valve since it is located inside containment, as well as the test connection needed to test it. During cold shutdowns, this testing would involve work inside containment, possibly with high radiation levels.
Test Alternative & Frequency:	Valve will be verified closed by leak test performed in accordance with 10CFR50 Appendix J at refueling outage frequency.

Revised by Rev. 22.

Justification of Deferral

Item Number:	1-MC-WL1
Valve:	1WL-24
Flow Diagram:	MC-1565-1.1
Code Category:	A,C
ASME Class:	2
Function:	Provides containment isolation and thermal over pressurization protection of line between 1WL-1B and 1WL-2A on penetration M-375.
Test Requirement:	1) Verify proper valve movement once per three months as required by OMa-1988 Part 10, 4.3.2.1. 2) Leak test once per 2 years in accordance with OMa-1988 Part 10, 4.2.2.2.
Basis for Deferral:	The system design does not provide a means of verifying valve closure upon flow reversal. Testing during power operation is impractical for this valve since it is located inside containment, as well as the test connection needed to test it. During cold shutdowns, this testing would involve work inside containment, possibly with high radiation levels.
Test Alternative & Frequency:	Valve will be verified closed by leak test performed in accordance with 10CFR50 Appendix J at refueling outage frequency.

Revised by Rev. 22.

Justification of Deferral

Item Number:	1-MC-WL2
Valve:	1WL-385
Flow Diagram:	MC-1565-7.0
Code Category:	A,C
ASME Class:	2
Function:	Provides containment isolation and thermal over pressurization protection of line between 1WL-322B and 1WL-321A on penetration M-221.
Test Requirement:	1) Verify proper valve movement once per three months as required by OMa-1988 Part 10, 4.3.2.1. 2) Leak test once per 2 years in accordance with OMa-1988 Part 10, 4.2.2.2.
Basis for Deferral:	The system design does not provide a means of verifying valve closure upon flow reversal. Testing during power operation is impractical for this valve since it is located inside containment, as well as the test connection needed to test it. During cold shutdowns, this testing would involve work inside containment, possibly with high radiation levels.
Test Alternative & Frequency:	Valve will be verified closed by leak test performed in accordance with 10CFR50 Appendix J at refueling outage frequency.

Justification of Deferral

Item Number:	1-MC-YM1
Valve:	1YM-116
Flow Diagram:	MC-1601-2.4
Code Category:	A,C
ASME Class:	2
Function:	Provides containment isolation on penetration M-337.
Test Requirement:	1) Verify proper valve movement once per three months as required by OMa-1988 Part 10, 4.3.2.1. 2) Leak test once per 2 years in accordance with OMa-1988 Part 10, 4.2.2.2.
Basis for Deferral:	The system design does not provide a means of verifying valve closure upon flow reversal. Testing during power operation is impractical for this valve since it is located inside containment, as well as the test connection needed to test it. During cold shutdowns, this testing would invoive work inside containment, possibly with high radiation levels.
Test Alternative & Frequency:	Valve will be verified closed by leak test performed in accordance with 10CFR50 Appendix J at refueling outage frequency.

Revised by Rev. 22.

DUKE POWER COMPANY
McGUIRE NUCLEAR STATION - UNIT 2
PUMP INSERVICE TESTING PROGRAM
ASME OM CODE-1987, OM Part 6 (OMa-1988 Addenda)

INTRODUCTION

The inservice testing of ASME Code Class 1, 2 and 3 pumps provided with an emergency power source will be tested as required by ASME Operations and Maintenance Standards Part 6 (OM-6), OMa-1988, of the ASME Code for Operation and Maintenance of Nuclear Power Plants, as referenced in 10CFR50.55a (January 1, 1993 Edition), except where specific written relief has been granted by the Nuclear Regulatory Commission. The effective date of the submittal is March 1, 1994.

Technical Specification 4.0.5 requires inservice testing of ASME Code Class 1, 2 and 3 pumps in accordance with Section XI of the ASME Boiler and Pressure Boiler Code and applicable Addenda as required by 10 CFR 50, Section 50.55a(g), except where specific written relief has been granted by the Commission pursuant to 10 CFR 50, Section 50.55a(g)(6)(i). Pumps were selected for inclusion in the IST Program (Section I.2) which fall within this category, as required by this Technical Specification. Pumps within the above ASME categories which are required to mitigate the consequences of an accident, shutdown the reactor or maintain shutdown are included in the program. Testing requirements are identified for each pump which ensure that the pump will perform as designed in response to an accident, in shutting down the reactor, or in maintaining shutdown. Acceptance criteria are specified in accordance with ASME Boiler and Pressure Vessel Code Subsection IWP. The safety functions of the pumps listed in Section I.2 are included in the Design Basis Documents, and fall within the basic categories of accident mitigation, reactor shutdown, and maintaining shutdown. Post modification testing requirements are included in the applicable Nuclear System Directive; a modification test plan is required to be developed to verify proper operation. The Code requires the determination of new reference values after pump repair or replacement, or maintenance which could impact operation. These Code requirements and programmatic controls ensure that the pump inservice test program remains current following modifications performed under 10 CFR 50.59. The documents used in development of this program include the following:

- McGuire Technical Specifications.
- Safety Analysis Report.
- ASME Section XI, IWP (1986).
- ASME Operations and Maintenance Standards Part 6 (OM-6), OMa-1988.
- Generic Letter 89-04.
- Supplement 1 to Generic Letter 89-04.
- NUREG 1482, Guidelines for Inservice Testing at Nuclear Power Plants.
- Safety Evaluation Report for the McGuire IST Program dated October 21,1994

A description of the Inservice Testing Program, Justification for Testing Deferral, as well as Specific Relief Requests from code requirements determined to be impractical, is described in the submittal.

NOTES:

1) OMa-1988 Part 6, Section 7.3 requires the signature of the person or persons responsible for conducting and analyzing the test. The dated initials of the person or persons responsible for conducting and analyzing the test will be used in place of a signature in the record of tests. Initials shall be construed as signatures to meet the intent of OM-6.

2) A Supplemental Test Program has been established, which includes components which have been determined important to safety and prudent to test, but which are not explicitly under the scope of ASME Codes and Standards.

UNIT 2 - McGUIRE NUCLEAR STATION

Pump Inservice Testing General Data

Pump ID. Number	Description	Code Class	Flow Diagram	Applicable Relief Requests	Test Frequency	Remarks
2KCPU0004	Component Cooling Water Pump 2B2	3	MC-2573-1.0	RR-I.3.1, RR-I.4.3	Quarterly	NONE
2NDPU0001	Residual Heat Removal Pump 2A	2	MC-2561-1.0	RR-I.3.1, RR-I.4.4	Quarterly	The ND Testing Plan meets other code requirements unless otherwise specified.
2NDPU0002	Residual Heat Removal Pump 2B	2	MC-2561-1.0	RR-I.3.1, RR-I.4.4	Quarterly	The ND Testing Plan meets other code requirements unless otherwise specified.
2NIPU0009	Safety Injection Pump 2A	2	MC-2562-3.0	RR-I.3.1, RR-I.4.5	Quarterly	The NI Testing Plan meets other code requirements unless otherwise specified.
2NIPU0010	Safety Injection Pump 2B	2	MC-2562-3.0	RR-I.3.1, RR-I.4.5	Quarterly	The NI Testing Plan meets other code requirements unless otherwise specified.
2NSPU0001	Containment Spray Pump 2A	2	MC-2563-1.0	RR-I.3.1	Quarterly	NONE

UNIT 2 - McGUIRE NUCLEAR STATION

Pump Inservice Testing Specific Data

Pump ID. Number	Speed	Inlet Pressure	Discharge Pressure	Differential Pressure	Reference Vibration	Flow Rate	Pump Type	Revision
2KCPU0004	Not Required	RR-I.4.3	Meets Code Requirements	Meets Code Requirements	RR-I.3.1	Meets Code Requirements	Centrifugal	
2NDPU0001	Not Required	RR-I.4.4	Meets Code Requirements	Meets Code Requirements	RR-I.3.1	RR-I.4.4	Vertical Line Shaft Centrifugal	22
2NDPU0002	Not Required	RR-I.4.4	Meets Code Requirements	Meets Code Requirements	RR-I.3.1	RR-I.4.4	Vertical Line Shaft Centrifugal	22
2NIPU0009	Not Required	RR-I.4.5	Meets Code Requirements	Meets Code Requirements	RR-I.3.1	RR-I.4.5	Centrifugal	22
2NIPU0010	Not Required	RR-I.4.5	Meets Code Requirements	Meets Code Requirements	RR-I.3.1	RR-I.4.5	Centrifugal	22
2NSPU0001	Not Required	Meets Code Requirements	Meets Code Requirements	Meets Code Requirements	RR-I.3.1	Meets Code Requirements	Vertical Line Shaft Centrifugal	

UNIT 2 - McGUIRE NUCLEAR STATION

Pump Inservice Testing General Data

Pump ID. Number	Description	Code Class	Flow Diagram	Applicable Relief Requests	Test Frequency	Remarks
2NSPU0002	Containment Spray Pump 2B	2	MC-2563-1.0	RR-I.3.1	Quarterly	NONE
2NVPU0015	Centrifugal Charging Pump 2A	2	MC-2554-1.0	RR-I.3.1, RR-I.4.6	Quarterly-Miniflow; Refueling-Full Flow (RR-I.4.6)	The NV Testing Plan meets other code requirements unless otherwise specified.
2NVPU0016	Centrifugal Charging Pump 2B	2	MC-2554-1.0	RR-I.3.1, RR-I.4.6	Quarterly-Miniflow; Refueling-Full Flow (RR-I.4.6)	The NV Testing Plan meets other code requirements unless otherwise specified.
2NVPU0027	Boric Acid Transfer Pump 2A	3	MC-2554-5.0	RR-I.3.1	Quarterly	NONE
2NVPU0028	Boric Acid Transfer Pump 2B	3	MC-2554-5.0	RR-I.3.1	Quarterly	NONE
2RNPU0003	Nuclear Service Water Pump 2A	3	MC-2574-1.1	RR-I.3.1	Quarterly	NONE

UNIT 2 - McGUIRE NUCLEAR STATION

Pump Inservice Testing Specific Data

Pump ID. Number	Speed	Inlet Pressure	Discharge Pressure	Differential Pressure	Reference Vibration	Flow Rate	Pump Type	Revision
2NSPU0002	Not Required	Meets Code Requirements	Meets Code Requirements	Meets Code Requirements	RR-I.3.1	Meets Code Requirements	Vertical Line Shaft Centrifugal	
2NVPU0015	Not Required	RR-I.4.6	Meets Code Requirements	Meets Code Requirements	RR-I.3.1	RR-I.4.6	Centrifugal	
2NVPU0016	Not Required	RR-I.4.6	Meets Code Requirements	Meets Code Requirements	RR-I.3.1	RR-I.4.6	Centrifugal	
2NVPU0027	Not Required	Meets Code Requirements	Meets Code Requirements	Meets Code Requirements	RR-I.3.1	Meets Code Requirements	Centrifugal	
2NVPU0028	Not Required	Meets Code Requirements	Meets Code Requirements	Meets Code Requirements	RR-I.3.1	Meets Code Requirements	Centrifugal	
2RNPU0003	Not Required	Meets Code Requirements	Meets Code Requirements	Meets Code Requirements	RR-I.3.1	Meets Code Requirements	Centrifugal	22

UNIT 2 - McGUIRE NUCLEAR STATION

Pump Inservice Testing General Data

Pump ID. Number	Description	Code Class	Flow Diagram	Applicable Relief Requests	Test Frequency	Remarks
2RNPU0004	Nuclear Service Water Pump 2B	3	MC-2574-1.1	RR-I.3.1	Quarterly	NONE
2WNPU0094	Diesel Generator Sump Pump 2A2	3	MC-2609-7.0	RR-I.3.1	Two Year	Two year frequency for dry sump pumps per OMa-1988, Part 6 section 5.5.
2WNPU0096	Diesel Generator Sump Pump 2A3	3	MC-2609-7.0	RR-I.3.1	Two Year	Two year frequency for dry sump pumps per OMa-1988, Part 6 section 5.5.
2WNPU0095	Diesel Generator Sump Pump 2B2	3	MC-2609-7.0	RR-I.3.1	Two Year	Two year frequency for dry sump pumps per OMa-1988, Part 6 section 5.5.
2WNPU0097	Diesel Generator Sump Pump 2B3	3	MC-2609-7.0	RR-I.3.1	Two Year	Two year frequency for dry sump pumps per OMa-1988, Part 6 section 5.5.

UNIT 2 - McGUIRE NUCLEAR STATION

Pump Inservice Testing Specific Data

Pump ID. Number	Speed	Inlet Pressure	Discharge Pressure	Differential Pressure	Reference Vibration	Flow Rate	Pump Type	Revision
2RNPU0004	Not Required	Meets Code Requirements	Meets Code Requirements	Meets Code Requirements	RR-I.3.1	Meets Code Requirements	Centrifugal	22
2WNPU0094	Not Required	Meets Code Requirements	Meets Code Requirements	Meets Code Requirements	RR-I.3.1	Meets Code Requirements	Vertical Line Shaft Centrifugal	
2WNPU0096	Not Required	Meets Code Requirements	Meets Code Requirements	Meets Code Requirements	RR-I.3.1	Meets Code Requirements	Vertical Line Shaft Centrifugal	
2WNPU0095	Not Required	Meets Code Requirements	Meets Code Requirements	Meets Code Requirements	RR-I.3.1	Meets Code Requirements	Vertical Line Shaft Centrifugal	
2WNPU0097	Not Required	Meets Code Requirements	Meets Code Requirements	Meets Code Requirements	RR-I.3.1	Meets Code Requirements	Vertical Line Shaft Centrifugal	

General Relief Request

RELIEF REQUEST: I.3.1

PUMPS: All pumps in the Inservice Test Program

TEST REQUIREMENTS: OMa-1988 Part 6 Section 6.1 (Table 3a) specifies the allowable range for acceptable operation of vibration measurements.

BASIS FOR RELIEF: Experience has shown that smooth operating pumps (Vr ≤ 0.075 in/sec) often fall in the alert range of vibration measurement when compared to the acceptance criteria given in OMa-1988 Part 6, Table 3a. The Code does not include provisions for a fixed band acceptance criteria for these pumps. The Alternative Testing provided below applies to all pumps in the Testing Program by establishing a threshold of vibration of ≤ 0.075 in/sec. In addition to this, OMa-1988 Part 6 does not specifically address different types of positive displacement pumps. Since McGuire has internal gear positive displacement pumps, the Alternate Testing below will be used for these pumps.

ALTERNATE TESTING: In addition to the vibration specifed in OMa-1988 Part 6, Table 3a, the following ranges shall be used.

	Acceptable Range	Alert Range	Required Action Range
For all pumps when Vr ≤ 0.075 in/sec	0 to 0.19 in/sec	> 0.19 ≤ 0.45 in/sec	> 0.45 in/sec
For centrifugal, vertical line shaft and positive displacement pumps except reciprocating when Vr > 0.075 in/sec	≤ 2.5 * Vr	> 2.5 * Vr to 6 * Vr or > 0.325 to 0.70 in/sec	> 6 * Vr or > 0.70 in/sec
For reciprocating pumps, when Vr > 0.075 in/sec	≤ 2.5 * Vr	> 2.5 * Vr to 6 * Vr	> 6 * Vr

Revised by revision 17

Specific Relief Request

RELIEF REQUEST: I.4.4

PUMPS: 2NDPU0001, 2A Residual Heat Removal Pump
2NDPU0002, 2B Residual Heat Removal Pump

TEST REQUIREMENT: OMa-1988 Part 6, Section 4.6.1.2.a specifies the range of each instrument shall be three times the reference value or less.

BASIS FOR RELIEF: Range requirements will be waived for the tests. The purpose of the quarterly test is to verify Tech Spec requirements are met and to obtain vibration data for trending. The instrumentation used for the quarterly Residual Heat Removal Pump test will meet accuracy requirements for assuring Residual Heat Removal Pump operability per Technical Specifications.

ALTERNATE TESTING: The Residual Heat Removal Pumps will be tested according to the following program, which is consistent with Generic Letter 89-04.

These pumps have process instrumentation installed such that there are two suction pressure gauges (0-60 psig and 0-600 psig), and one discharge pressure gauge, (0-1000 psig). Each has a 0.5% accuracy. This is done to provide accurate pressure indication in either the recirculation or the heat removal condition of operation. As such, there are times when the 3 times the reference range requirements cannot be met.

Quarterly

The Residual Heat Removal Pumps will be tested quarterly to verify Technical Specifications are met. The test measures differential pressure and velocity vibration data. The differential pressure and velocity vibration data will be trended. The instrument used to measure vibrations will meet the requirements specified in relief request I.3.1. The test loop used in the test has a flow measuring orifice installed, however, the system resistance cannot be adjusted with the associated throttling valve without invalidating the Residual Heat Removal system flow balance (a Tech Spec balance of flow to all 4 cold legs.) Therefore, flow through this loop will be recorded for information only.

The instrumentation range requirements of OMa-1988 Part 6, Section 4.6.1.2.a will be waived. Since the instrumentation used to measure suction and discharge pressure is more accurate than code requirements (0.5% vs. 2%) using the process instrument for this test will yield results within the overall accuracy requirements of the code and will meet applicable accuracy requirements for the determination of operability per Technical Specifications. Typical values for ND suction pressure in mini-

Specific Relief Request

RELIEF REQUEST: I.4.4 (Continued)

flow are 48-81 psig, and discharge pressures are in the 230-260 psig range. Therefore, the process range for discharge pressure (0-1000 psig) will not meet the three times criteria; the appropriate suction pressure loop can be used, which is within the three times requirement. The accuracy of these process instruments (0.5%) is well below the requirements specified in Table 1 of OM-6 for instrument accuracy (2%). The actual reading error at test pressure due to the process instrument is 2.2 % (0.5 * 1000/230) for discharge pressure at the low end of this range (ND pump procedures specify that instrumentation must meet the three times criteria). If a 0-690 psig gauge was used with 2% accuracy, the reading error would be 6% (2 * 690/230). When the requirements of Oma-1988 Part 6, Section 4.6.1.2.a and Table 1 are combined, the actual instrument error introduced into the test is less than the code allowable (2.2 % vs. 6 % at the low (conservative) end). Using the process instruments for suction and discharge pressure data does not degrade the quality of the test and meets the intent of the instrumentation requirements of the code.

Refueling Outage

Full flow vibration measurements will be taken during refueling outages as part of the IST Supplemental Program.

Revised by revision 17

Specific Relief Request

RELIEF REQUEST: I.4.5

PUMPS: 2NIPU0009, 2A Safety Injection Pump
2NIPU0010, 2B Safety Injection Pump

TEST REQUIREMENT: OMa-1988 Part 6, Section 4.6.1.2.a specifies the range of each instrument shall be three times the reference value or less.

BASIS FOR RELIEF: Range requirements will be waived for the tests. The purpose of the quarterly test is to verify Tech Spec requirements are met and to obtain vibration data for trending. The instrumentation used for the quarterly Safety Injection Pump test will meet accuracy requirements for assuring Safety Injection Pump operability per Technical Specifications.

ALTERNATE TESTING: The Safety Injection Pumps will be tested according to the following program, which is consistent with Generic Letter 89-04.

Quarterly

The Safety Injection Pumps will be tested quarterly to verify Technical Specifications are met. The test measures differential pressure and velocity vibration data. The differential pressure and velocity vibration data will be trended. The instrument used to measure vibrations will meet the requirements specified in relief request I.3.1. The test loop has a flow measuring orifice installed, however, there is no means provided to vary the system resistance to set either the flow or differential pressure. Therefore, flow through this loop will be recorded for information only.

The instrumentation range requirements of OMa-1988 Part 6, Section 4.6.1.2.a will be waived. The instrumentation used to measure suction and discharge pressure will meet applicable accuracy requirements for the determination of operability per Technical Specifications. The process instruments meet the three times criteria, however in the event a test instrument is to be used, based on available equipment, it may not meet the three times criteria. In these instances, the accuracy of the test instruments is 0.25%, and this accuracy applied over the range of the instrument will meet the uncertainty allowed by the code assuming an accuracy of 2%.

Specific Relief Request

RELIEF REQUEST: I.4.5 (Continued)

Typical values for NI suction pressure are in the 25-51 psig range, and discharge pressures are in the 1500-1575 psig range. Test equipment used for suction and discharge pressures may not meet the three times criteria, however these instruments will have 0.25% accuracy. The NI pump procedures specify that if a test instrument is needed for suction pressure, a 0-60 psig instrument is preferred, and that the range of the instrument must not exceed 0-100 psig. They also specify that if a discharge pressure test instrument is to be used, 0-2000 psig range is preferred, not to exceed 0-4500 psig. Using the low end suction pressure of 25 psig with the high end allowable gauge, accuracy is 1% (0.25 * 100/25); if a 0-75 psig gauge was used with a 2% accuracy, the code allowable would be 6% (2 * 75/25), so that use of this gauge would be within the code requirements. Using the low end discharge pressure with the high end allowable gauge, accuracy is 0.75% (0.25 * 4500/1500); this is at the three times range, and use of a 2% accuracy gauge would produce a total 6% allowable error. Therefore, using these test instruments for suction and discharge pressure data does not degrade the quality of the test and meets the intent of the instrumentation requirements of the code.

Refueling Outage

Full-flow vibration will be recorded under the IST Supplemental Program.

Revised by revision 17

Specific Relief Request

RELIEF REQUEST: I.4.6

PUMPS: 2NVPU0015, 2A Centrifugal Charging Pump
2NVPU0016, 2B Centrifugal Charging Pump

TEST REQUIREMENT: OMa-1988 Part 6, Section 4.6.1.2.a specifies the range of each instrument shall be three times the reference value or less.

BASIS FOR RELIEF: Range requirements will be waived for the tests. The purpose of the quarterly test is to verify Tech Spec requirements are met and to obtain vibration data for trending. The suction and discharge pressure gauges (0-60 psig and 0-3000 psig) installed for the pump have an accuracy of 0.5%. These pumps are aligned from the VCT for the quarterly test. Since these pumps are tested with different levels of VCT pressure, the suction pressure may vary over a range of approximately 15 to 50 psig. Since the uncertainty associated with using the process gauge is better than that allowed by code requirements, (2% vs. 6% determined by 0.5 * 60/15 vs. 2 * 45/15) the instrumentation used for the quarterly Centrifugal Charging Pump test will meet accuracy requirements for assuring Centrifugal Charging Pump operability per Technical Specifications.

Regarding instrument accuracy during the refueling outage testing (in Relief Request 1.4.6), the range of the highest suction pressure test gauge allowed for the full flow point will be 0-450 psig, and the range of the highest discharge pressure test gauge allowed (for the full flow point) will be 0-4500 psig. Suction pressure is typically 140 to 160 psig, and discharge pressure ranges from approximately 1000 to 2700 psig, so that overall suction and discharge pressure reading accuracy are 0.8 % (0.25 * 450/140) and 1.1 % (0.25 * 4500/1000), respectively. If a 0-420 psig suction pressure gauge was used with 2% accuracy, allowable accuracy would be 6 % (2 * 420/140), and if a 0-3000 psig discharge pressure gauge was used with 2% accuracy, allowable accuracy would be 6 % (2 * 3000/1000). Therefore, using these test instruments for suction and discharge pressure data (for the full flow point) does not degrade the quality of the test and meets the intent of the instrumentation requirements of the code. A 1% uncertainty is conservatively added for the flow orifice.

Specific Relief Request

RELIEF REQUEST: I.4.6 (Continued)

ALTERNATE TESTING: The Centrifugal Charging Pumps will be tested according to the following program, which is consistent with Generic Letter 89-04.

Quarterly

The Centrifugal Charging Pumps will be tested quarterly to verify Technical Specifications are met. The test measures differential pressure and velocity vibration data. The differential pressure and velocity vibration data will be trended. The instrumentation range requirements of OMa-1988 Part 6, Section 4.6.1.2.a will be waived. The instrumentation used to measure suction and discharge pressure will meet applicable accuracy requirements for the determination of operability per Technical Specifications. The instrument used to measure vibrations will meet the requirements specified in relief request I.3.1. The flow through the miniflow line to the Volume Control Tank will be assumed to be constant at the orifice design conditions (60 gpm).

Refueling Outage

During each refueling outage, a code pump test - including velocity vibration measurements - will be performed at a full flow test point.

The instrumentation used for the refueling outage tests is test instruments, with accuracy of 0.25%. When applied over the span on the instrument and the various range of outputs, in all cases the uncertainty of the overall loop will meet or exceed the code requirements of 2% over the instrument's range.

Revised by revision 17

Specific Relief Request

RELIEF REQUEST: I.4.7

PUMPS: 2RNPU0003, 2A Nuclear Service Water Pump
2RNPU0004, 2B Nuclear Service Water Pump

Relief Request deleted by Revision 17

DUKE POWER COMPANY
McGUIRE NUCLEAR STATION - UNIT 2
VALVE INSERVICE TESTING PROGRAM

INTRODUCTION

The inservice testing of ASME Code Categories A, B, C and D will be performed as required by ASME OM-Code-1987, Part 10 OMa-1988 addenda included, (Inservice Testing of Valves in Light-Water Reactor Power Plants), as incorporated in 10CFR50.55a. These rules for IST were instituted by 1989 edition of ASME Section XI and will be adhered to, except where specific written relief has been granted by the Commission. The effective date for this ten year submittal is March 1, 1994.

Technical Specification 4.0.5 requires inservice testing of ASME Code Class 1, 2 and 3 valves in accordance with Section XI of the ASME Boiler and Pressure Boiler Code and applicable Addenda as required by 10 CFR 50, Section 50.55a(g), except where specific written relief has been granted by the Commission pursuant to 10 CFR 50, Section 50.55a(g)(6)(i). Valves were selected for inclusion in the IST Program (Section II.2) which fall within this category, as required by this Technical Specification. Valves within the above ASME categories which are required to mitigate the consequences of an accident, shutdown the reactor or maintain shutdown, or are pressure relief devices which protect systems or portions of systems which provide these functions, are included in the program. Testing requirements are identified for each valve which ensure that the valve will perform as designed in response to an accident, shutting down the reactor, or in providing relief protection. Valves are categorized in accordance with OM-10 Section 1.4, as Category A, B or C (there are no Category D valves in the program). Valves with remote position indicators are observed locally at least once every 2 years in accordance with the Code. Acceptance criteria are specified in accordance with ASME Boiler and Pressure Vessel Code Subsection IWV. The safety functions of the valves listed in Section II.2 are included in the Design Basis Documents, and fall within the basic categories of accident mitigation, reactor shutdown or maintaining shutdown, or pressure relief for systems providing such. Post modification testing requirements are included in the applicable Nuclear System Directive; a modification test plan is required to be developed to verify proper operation. OM-10 requires the determination of a new reference value after valve replacement, repair or maintenance that could affect its operation. These Code requirements and programmatic controls ensure that the valve inservice test program is maintained current with modifications performed under 10 CFR 50.59. The documents used in development of this program include the following:

- McGuire Technical Specifications.
- Safety Analysis Report.
- ASME Section XI, IWV (1986).
- ASME OM-Code-1987, Part 10 Oma-1988 addenda included.
- Generic Letter 89-04.
- Supplement 1 to Generic Letter 89-04.
- NUREG 1482, Guidelines for Inservice Testing at Nuclear Power Plants.
- Safety Evaluation Report for the McGuire IST Program dated October 21, 1994.

NOTES:

1) The dated initials of the person responsible for the action may be used in place of a signature in the record of tests. Initials shall be construed as signatures to meet the intent of OMa-1988, Section 6.3.

2) Category A and A/C valves include containment isolation valves (CIV) and pressure isolation valves (PIV). CIVs are leak tested in accordance with 10CFR50, Appendix J, and Section 4.2.2.3, unless specific relief is requested.

3) Generic Letter 89-04, provides guidance for sample disassembly of check valves as an alternative to verify operability of check valves. The check valves where sample disassembly will be utilized will be specifically referenced in the contents of the submittal and performed according to the guidelines of Generic Letter 89-04.

4) A Supplemental Test Program has been established, which includes components which have been determined important to safety and prudent to test, but which are not explicitly under the scope of ASME Codes and Standards.

VALVE NUMBER	FLOW DIAGRAM	FLOW COOR	ASME CLASS	VALVE CATEGORY	ACT PAS	VALVE TYPE	ACTUATOR TYPE	TEST REQ'MT #1	TEST REQ'MT #2	RELIEF REQST	JUSTIF OF DEFERRAL	REMARKS	TEST ALTERNATIVES	REV
STEAM GENERATOR BLOWDOWN RECYCLE (BB)														
2BB-0001B	2580-1.0	H-02	2	B	ACT	Gate	AOV	ST-Q	-	-	-	-	-	-
2BB-0002B	2580-1.0	H-04	2	B	ACT	Gate	AOV	ST-Q						22
2BB-0003B	2580-1.0	H-12	2	B	ACT	Gate	AOV	ST-Q	-	-	-	-	-	22
2BB-0004B	2580-1.0	H-10	2	B	ACT	Gate	AOV	ST-Q	-	-	-	-	-	-
2BB-0005A	2580-1.0	F-02	2	B	ACT	Gate	AOV	ST-Q	-	-	-	-	-	-
2BB-0006A	2580-1.0	F-04	2	B	ACT	Gate	AOV	ST-Q	-	-	-	-	-	-
2BB-0007A	2580-1.0	F-12	2	B	ACT	Gate	AOV	ST-Q	-	-	-	-	-	-
2BB-0008A	2580-1.0	F-10	2	B	ACT	Gate	AOV	ST-Q	-	-	-	-	-	-

CHEMICAL AND VOLUME CONTROL (NV)

VALVE NUMBER	FLOW DIAGRAM	FLOW COOR	ASME CLASS	VALVE CATEGORY	ACT PAS	VALVE TYPE	ACTUATOR TYPE	TEST REQ'MT #1	TEST REQ'MT #2	RELIEF REQST	JUSTIF OF DEFERRAL	REMARKS	TEST ALTERNATIVES	REV
2NV-0006	2554-1.2	K-08	2	C	ACT	Relief	-	SP	-	-	-	-	600 PSIG	-
2NV-0007B	2554-1.2	J-11	2	B	ACT	Globe	EMO	ST-Q	-	-	2-MC-NV2	-	-	-
2NV-0020	2554-1.2	E-02	2	C	ACT	Check	-	SP	-	-	-	Spring Loaded Ck Valve	200 PSIG	-
2NV-0021A	2554-1.2	E-03	1	B	ACT	Control	AOV	ST-Q	-	-	2-MC-NV3	-	-	-
2NV-0029	2554-1.0	C-02	2	C	ACT	Check	-	MTO-Q	-	-	-	-	-	-
2NV-0031	2554-1.0	D-02	1	C	ACT	Check	-	MTO-Q	-	-	-	-	-	-
2NV-0035A	2554-1.2	K-07	2	B	ACT	Gate	AOV	ST-Q	-	-	2-MC-NV19	-	-	17
2NV-0045	2554-1.0	C-08	2	C	ACT	Check	-	MTO-Q	-	-	-	-	-	-
2NV-0047	2554-1.0	D-08	1	C	ACT	Check	-	MTO-Q	-	-	-	-	-	-
2NV-0061	2554-1.1	C-02	2	C	ACT	Check	-	MTO-Q	-	-	-	-	-	-
2NV-0063	2554-1.1	D-02	1	C	ACT	Check	-	MTO-Q	-	-	-	-	-	-
2NV-0077	2554-1.1	C-08	2	C	ACT	Check	-	MTO-Q	-	-	-	-	-	-
2NV-0079	2554-1.1	D-08	1	C	ACT	Check	-	MTO-Q	-	-	-	-	-	-
2NV-0093	2554-1.1	K-12	2	C	ACT	Relief	-	SP	-	-	-	-	150 PSIG	-
2NV-0094AC	2554-1.1	J-13	2	B	ACT	Gate	EMO	ST-Q	-	-	2-MC-NV1	-	-	-
2NV-0095B	2554-1.1	H-13	2	B	ACT	Gate	EMO	ST-Q	-	-	2-MC-NV1	-	-	-

Unit 2 - McGuire Nuclear Station
Inservice Testing Program

VALVE NUMBER	FLOW DIAGRAM	FLOW COOR	ASME CLASS	VALVE CATEGORY	ACT PAS	VALVE TYPE	ACTUATOR TYPE	TEST REQ'MT #1	TEST REQ'MT #2	RELIEF REQST	JUSTIF OF DEFERRAL	REMARKS	TEST ALTERNATIVES	REV
2NV-0141A	2554-2.0	B-08	2	B	ACT	Gate	EMO	ST-Q	-	-	2-MC-NV4	-	-	-
2NV-0142B	2554-2.0	B-07	2	B	ACT	Gate	EMO	ST-Q	-	-	2-MC-NV4	-	-	-
2NV-0143	2554-2.0	B-06	2	C	ACT	Check	-	MTC-Q	-	-	2-MC-NV15	-	-	-
2NV-0150B	2554-2.0	F-02	2	B	ACT	Kerotest	EMO	ST-Q	-	-	2-MC-NV8	-	-	-
2NV-0151A	2554-2.0	G-02	2	B	ACT	Kerotest	EMO	ST-Q	-	-	2-MC-NV8	-	-	-
2NV-0155	2554-2.0	I-06	2	C	ACT	Relief	-	SP	-	-	-	-	150 PSIG	-
2NV-0156	2554-2.0	J-09	2	C	ACT	Relief	-	SP	-	-	-	-	255 PSIG	-
2NV-0164	-	-	-	-	-	-	-	DELETED	-	-	-	-	-	17
2NV-0170	2554-2.0	C-08	2	C	ACT	Relief	-	SP	-	-	-	-	75 PSIG	-
2NV-0218	2554-3.0	J-05	2	C	ACT	Check	-	MTC-Q	-	-	-	-	-	-
2NV-0221A	2554-3.1	H-01	2	B	ACT	Gate	EMO	ST-Q	-	-	2-MC-NV6	-	-	-
2NV-0222B	2554-3.1	I-01	2	B	ACT	Gate	EMO	ST-Q	-	-	2-MC-NV6	-	-	-
2NV-0223	2554-3.1	I-02	2	C	ACT	Check	-	MTO,C-Q	-	-	2-MC-NV11	-	-	-
2NV-0225	2554-3.1	F-05	2	C	ACT	Check	-	MTO,C-Q	-	-	2-MC-NV10	-	-	-
2NV-0227	2554-3.1	E-06	2	C	ACT	Check	-	MTO,C-Q	-	-	-	-	-	-
2NV-0229	2554-3.1	I-12	2	C	ACT	Relief	-	SP	-	-	-	-	220 PSIG	-

VALVE NUMBER	FLOW DIAGRAM	FLOW COOR	ASME CLASS	VALVE CATEGORY	ACT PAS	VALVE TYPE	ACTUATOR TYPE	TEST REQ'MT #1	TEST REQ'MT #2	RELIEF REQST	JUSTIF OF DEFERRAL	REMARKS	TEST ALTERNATIVES	REV
2NV-0231	2554-3.1	F-10	2	C	ACT	Check	-	MTO,C-Q	-	-	2-MC-NV10	-	-	-
2NV-0233	2554-3.1	E-10	2	C	ACT	Check	-	MTO,C-Q	-	-	-	-	-	-
2NV-0238								DELETED						16
2NV-0244A	2554-3.0	K-08	2	B	ACT	Gate	EMO	ST-Q	-	-	2-MC-NV5	-	-	-
2NV-0245B	2554-3.0	K-09	2	B	ACT	Gate	EMO	ST-Q	-	-	2-MC-NV5	-	-	-
2NV-0261	2554-3.1	J-03	2	C	ACT	Check	-	MTC-Q	-	-	2-MC-NV13	-	-	-
2NV-0263	2554-3.1	J-11	2	C	ACT	Check	-	MTC-Q	-	-	2-MC-NV13	-	-	-
2NV-0264	2554-3.1	J-10	2	C	ACT	Check	-	MTO,C-Q	-	-	2-MC-NV7	-	-	-
2NV-0265B	2554-3.1	J-09	2	B	ACT	Globe	EMO	ST-Q	-	-	2-MC-NV9	-	-	-
2NV-0383	2554-5.0	F-06	3	C	ACT	Check	-	MTO,C-C	-	-	-	-	-	-
2NV-0386	2554-5.0	D-06	3	C	ACT	Check	-	MTO,C-Q	-	-	-	-	-	-
2NV-0457A	2554-1.2	I-07	2	B	ACT	Control	AOV	ST-Q	-	-	2-MC-NV19	-	-	17
2NV-0458A	2554-1.2	J-07	2	B	ACT	Control	AOV	ST-Q	-	-	2-MC-NV19	-	-	17
2NV-0482	2554-2.0	D-07	2	C	ACT	Relief	-	SP	-	-	-	-	150 PSIG	-
2NV-0483	2554-2.0	D-11	2	C	ACT	Relief	-	SP	-	-	-	-	150 PSIG	-
2NV-0486	2554-3.1	J-09	2	C	ACT	Relief	-	SP	-	-	-	-	150 PSIG	-

Unit 2 - McGuire Nuclear Station
Inservice Testing Program

VALVE NUMBER	FLOW DIAGRAM	FLOW COOR	ASME CLASS	VALVE CATEGORY	ACT PAS	VALVE TYPE	ACTUATOR TYPE	TEST REQ'MT #1	TEST REQ'MT #2	RELIEF REQST	JUSTIF OF DEFERRAL	REMARKS	TEST ALTERNATIVES	REV
2RN-0238B	2574-3.1	I-07	3	B	ACT	Butterfly	EMO	ST-Q	-	-	-	-	-	-
2RN-0240B	2574-3.0	F-13	3	B	ACT	Globe	AOV	ST-Q	-	-	-	-	-	-
2RN-0252B	2574-4.0	E-02	2	A	ACT	Diaphram	AOV	ST-Q	LT-RF	-	2-MC-RN1	-	-	-
2RN-0253A	2574-4.0	C-02	2	A	ACT	Diaphram	EMO	ST-Q	LT-RF	-	2-MC-RN1	-	-	-
2RN-0276A	2574-4.0	J-02	2	A	ACT	Diaphram	EMO	ST-Q	LT-RF	-	2-MC-RN2	-	-	-
2RN-0277B	2592-4.0	H-02	2	A	ACT	Diaphram	AOV	ST-Q	LT-RF	-	2-MC-RN2	-	-	-
2RN-0279B	1574-1.0	C-02	3	B	ACT	Butterfly	EMO	ST-Q	-	-	-	-	-	-
2RN-0293	2574-3.1	I-05	3	C	ACT	Relief	-	SP	-	-	-	-	135 PSIG	-
2RN-0294	2574-3.0	F-12	3	C	ACT	Relief	-	SP	-	-	-	-	135 PSIG	-
2RN-0295	2574-2.0	H-11	3	C	ACT	Relief	-	SP	-	-	-	-	135 PSIG	-
2RN-0296A	2574-1.1	L-13	3	B	ACT	Butterfly	EMO	ST-Q	-	-	-	-	-	-
2RN-0297B	2574-3.0	L-05	3	B	ACT	Butterfly	EMO	ST-Q	-	-	-	-	-	-
2RN-0299A	1574-1.0	C-02	3	B	ACT	Butterfly	EMO	ST-Q	-	-	-	-	-	-
2RN-0891	-	-	-	-	-	-	-	DELETED	-	-	-	-	-	17
2RN-0892	-	-	-	-	-	-	-	DELETED	-	-	-	-	-	17
2RN-0994	2574-3.1	C-07	3	C	ACT	Check	-	MTC-Q	-	-	-	-	-	16

Specific Relief Request

Item Number:	2-MC-RR-NS1
Valve:	2NS-13, 2NS-16, 2NS-30, 2NS-33, 2NS-41, 2NS-46
Flow Diagram:	MC-2563-1.0
Code Category:	C
ASME Class:	2
Function:	Open on flow from containment spray pumps.
Test Requirement:	Verify proper valve movement once per three months as required by OMa-1988 Part 10, 4.3.2.1.

Basis for Relief:

Containment Spray valves 2NS-13, 16, 30, 33, 41, and 46 are Aloyco/Walworth model D-49300 cover hung, swing check valves. They are normally closed providing Category C interior containment isolation for Containment Spray and Auxiliary Containment Spray (valves 2NS-41 and 46). OMa-1988, Part 10, paragraph 4.3.2.1 requires quarterly exercising, deferrable to cold shutdowns or refueling outages. McGuire FSAR Table 6-112 identifies these valves as Leak Class 1A valves not requiring leak rate testing due their inability to release containment atmosphere during a LOCA.

Full stroke operation of the check valves shall be verified by disassembly/inspection of the valves as no operational method exists without actuating containment spray (reference 2MC-NS2, NUREG-1482 Staff Position 2). As a supplement to the full stroke testing, part stroke and closed verification will be conducted upon reassembly and periodically by air test as described for the spray nozzle test in McGuire FSAR 6.5.4 (reference , NUREG-1482 Staff Position 2).

For valve disassembly/inspection, all six valves will be grouped into one group and inspected within a four cycle window (six year interval). All six valves are identical in manufacturer and installation. Operationally, the valves are identical with respect to operational readiness. During system actuation, supply originates from the Containment Spray system for valves 2NS-13, 16, 30, and 33 and Residual Heat Removal system for

Revised by Rev. 17.

Specific Relief Request

Item Number: 2-MC-RR-NS1 (cont.)

2NS-41 and 46. In spray modes both systems have similar hydraulic characteristics. At McGuire's discretion the valves may be disassembled/inspected sequentially, in sub-groups, or as one complete group every fourth outage (six years). Diversion from the sequential disassembly/inspection represents an extension from the Code required frequency.

The relief request does not represent a decrease in quality nor safety. The valve disassembly/inspection will demonstrate ability of the valve to full stroke and fully close. As the valves do not function except during testing and severe plant emergencies, no operating degradation mechanisms exist. Potential degradation mechanisms from the valves being in a static position will be identified by the part stroke test conducted each refueling outage on all valves.

Compliance with the Code requirements is impractical and would impose unnecessary hardship. The valves are located within the containment dome volume and are accessible by a temporary cantilevered scaffold attached to the Polar Crane Scissors Jack. This action, in accordance with the requirements of 29CFR 1910.28, 29CFR 1926.452, ANSI A10.8-1977, and McGuire's Scaffold program places personnel in unsafe positions during the erection/removal of the scaffold and valve testing. No additional assurance of valve function is gained. In fact, although unlikely, frequent intrusion into the valves' internals and the inability to verify exact seat alignment during reassemble may degrade the valves' condition.

Pursuant to NUREG-1482 Staff Position 2, extension of the valve disassembly/inspection interval will be considered in cases of extreme hardship. Response to Question 19 of same implies "extreme hardship" is proportional to the impact on plant safety. The hardship impact is one of undue personnel safety risk and refueling outage extension. Yet the benefit from testing under the current scheme (reference 2MC-NS2) as compared to the proposed scheme is negligible at best. All valves will be disassembled/inspected once per four refueling outages (six years).

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Specific Relief Request

Item Number: 2-MC-RR-NS1 (cont.)

A review of McGuire's valves, similar industry valves, and the "EPRI Applications Guidelines for Check Valves in Nuclear Power Plants" was conducted.

A review of the past 6 Unit 1 refueling outages, 7 Unit 2, identified part stroke testing of all valves every outage through 1/2EOC 9. Since 1/2EOC 6 each Containment Spray check valve has been disassembled/inspected once and Auxiliary Containment Spray valves twice (due to the current grouping scheme). A comprehensive review of all valves identified no indication of wear, corrosion, or degradation.

A NPRDS search for Aloyco-Walworth and Walworth check valves provided a list of 34 Containment Spray check valve failures. A detailed review of the 34 failures identified 14 potentially related failures. Subsequent conversation with the respective plants' System Engineers resolved 11 of these potentially related failures as unrelated. Reasons for determining a valve failure was unrelated included the following; valves normally see flow during testing or other plant operation, and recent ISI disassembly/inspection of valves identified no degradation. The 3 remaining potentially related failures included 2 which could not be determined and 1 which was a result of valve disk misalignment. As stated earlier the potential for valve disk misalignment increases, although marginally, with repetitive disassembles.

A review of the "EPRI Applications Guidelines for Check Valves in Nuclear Power Plants" primarily addressed degradation of check valves regularly in operation service. Design criteria for check valve application was also discussed. Comparison with the subject check valves did not reveal any design misapplication issues. The issue of valve sticking open/closed was discussed in section 6.5.4, identifying improperly assembly as a potential cause. This issue would be addressed by the proposed part flow testing.

This Relief Request evaluation concludes adequate justification without compromise to safety or quality exist to warrant the proposed test methodology.

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Specific Relief Request

Item Number: 2-MC-RR-NS1 (cont.)

Test Alternative & Frequency: Containment Spray valves 2NS-13, 16, 30, 33, 41, and 46 will be grouped into a single test group. The valves may be disassembled/inspected sequentially, in sub-groups, or as one complete group every fourth outage (6 years). Each valve will be disassembled/inspected once per four refueling outages (6 years). Each Containment Spray valve will be part stroke tested during each refueling outage.

Justification of Deferral

Item Number:	2-MC-CA1
Valve:	2CA-37, 2CA-41, 2CA-45, 2CA-49, 2CA-53, 2CA-57, 2CA-61, 2CA-65
Flow Diagram:	MC-2592-1.0
Code Category:	C
ASME Class:	2
Function:	Check flow from the steam generators to Auxiliary Feedwater. Open to allow Auxiliary Feedwater supply to the Steam Generators.
Test Requirement:	Verify proper valve movement once per three months as required by OMa-1988 Part 10, 4.3.2.1.
Basis for Deferral:	Full stroke testing these valves during power operations would unnecessarily thermal shock the steam generators and feedwater piping.
Test Alternative & Frequency:	Valves will be full stroke exercised at cold shutdown. Closure will be verified quarterly.

Justification of Deferral

Item Number:	2-MC-CA2
Valve:	2CA-165, 2CA-166
Flow Diagram:	MC-2592-1.1
Code Category:	C
ASME Class:	3
Function:	Prevents backflow from Auxiliary Feedwater System to Nuclear service Water System until the associated EMOs are closed. EMOs are powered from the same train they serve. Must open to allow assured makeup flow to CA from RN system.
Test Requirement:	Verify proper valve movement once per three months as required by OMa-1988 Part 10, 4.3.2.1.
Basis for Deferral:	Neither full nor partial flow can be put through these valves without contaminating the Auxiliary Feedwater System with raw water. No means exist for alternate testing techniques using air or any other medium. No means exist to test for proper closure without contaminating the Auxiliary Feedwater System with raw water. These valves will not be tested during cold shutdown because sample disassembly is required.
Test Alternative & Frequency:	At least one of these two valves will be disassembled and full stroked during each refueling outage, and both valves will have been disassembled and full stroked after two consecutive refueling outages. Failure of one valve to properly full stroke during a refueling outage will result in the remaining valves being disassembled and full stroked during that outage. Sample disassemble will also be used to verify proper closure of valves.

Justification of Deferral

Item Number:	2-MC-CA3
Valve:	2CA-8, 2CA-10, 2CA-12
Flow Diagram:	MC-2592-1.1
Code Category:	C
ASME Class:	3
Function:	Auxiliary Feedwater Pump Suction Check valves to prevent diversion of assured auxiliary feedwater source.
Test Requirement:	Verify proper valve movement once per three months as required by OMa-1988 Part 10, 4.3.2.1.
Basis for Deferral:	These valves cannot be tested to close without contaminating the Auxiliary Feedwater System with raw water. These valves will not be tested during cold shutdown because sample disassembly is required.
Test Alternative & Frequency:	Valves will be sample disassembled during refueling outages to verify valve closure capability. 2CA-8 is disassembled every refueling outage, 2CA-10 and 2CA-12 every other refueling outage on a staggered basis.

Justification of Deferral

Item Number:	2-MC-CF1
Valve:	2CF-26AB, 2CF-28AB, 2CF-30AB, 2CF-35AB
Flow Diagram:	MC-2591-1.1
Code Category:	B
ASME Class:	2
Function:	Provide feedwater and containment isolation.
Test Requirement:	Stroke time test in accordance with OMa-1988 Part 10, 4.2.1.1.
Basis for Deferral:	Closure of these valves would isolate the Steam Generator feedwater which could result in a severe transient in the Steam Generator, resulting in a Unit trip.
Test Alternative & Frequency:	Valve will be cycled and timed during cold shutdown.

Justification of Deferral

Item Number:	2-MC-CF2
Valve:	2CF-17AB, 2CF-20AB, 2CF-23AB, 2CF-32AB
Flow Diagram:	MC-2591-1.1
Code Category:	B
ASME Class:	ANSI B31.1.0 (1967)
Function:	Feedwater control.
Test Requirement:	Stroke time test in accordance with OMa-1988 Part 10, 4.2.1.1.
Basis for Deferral:	Closure of these valves would isolate the Steam Generator feedwater which could result in a severe transient in the Steam Generator, resulting in a Unit trip.
Test Alternative & Frequency:	Valve will be cycled and timed during cold shutdown.

Justification of Deferral

Item Number:	2-MC-CF3
Valve:	2CF-126B, 2CF-127B, 2CF-128B, 2CF-129B
Flow Diagram:	MC-2591-1.1
Code Category:	B
ASME Class:	2
Function:	Opens to provide startup feedwater supply to the steam generators.
Test Requirement:	Stroke time test in accordance with OMa-1988 Part 10, 4.2.1.1.
Basis for Deferral:	Cycling valves during power operation could induce unwanted transients in the steam generators. This would result in an increase in flow to the main feedwater nozzles causing vibrations in the preheater section of the steam generators.
Test Alternative & Frequency:	Valve will be cycled and timed during cold shutdown.

Justification of Deferral

Item Number:	2-MC-CF4
Valve:	2CF-104AB, 2CF-105AB, 2CF-106AB, 2CF-107AB
Flow Diagram:	MC-2591-1.1
Code Category:	B
ASME Class:	ANSI B31.1.0 (1967)
Function:	Provides tempering flow to the steam generators.
Test Requirement:	Stroke time test in accordance with OMa-1988 Part 10, 4.2.1.1.
Basis for Deferral:	Closing these valves during operation would result in a feedwater transient and could result in loss of Steam Generator level control, causing a Unit trip. These valves are normally open at power.
Test Alternative & Frequency:	Valve will be cycled and timed during cold shutdown.

Revised by Rev. 17.

Justification of Deferral

Item Number:	2-MC-CF5
Valve:	2CF-152, 2CF-154, 2CF-156, 2CF-158
Flow Diagram:	MC-2591-1.1
Code Category:	C
ASME Class:	2
Function:	Opens to allow tempering flow to the Steam Generator auxiliary feedwater nozzles. Closes to form pressure boundary for auxiliary feedwater.
Test Requirement:	Verify proper valve movement once per three months as required by OMa-1988 Part 10, 4.3.2.1.
Basis for Deferral:	During normal operation, there is constant flow through these valves to keep the auxiliary feedwater nozzles tempered. Testing these valves would require supplying the Steam Generators with cold water and thus thermally shocking these nozzles.
Test Alternative & Frequency:	Valve will be full stroke exercised at cold shutdown.

Justification of Deferral

Item Number:	2-MC-CF6
Valve:	2CF-118, 2CF-119, 2CF-120, 2CF-121
Flow Diagram:	MC-2591-1.1
Code Category:	C
ASME Class:	2
Function:	Opens to allow feedwater flow to the Steam Generators. Closes to form pressure boundary for maintaining Steam Generator inventory. The open function is not within the Scope of OM-10.
Test Requirement:	Verify proper valve movement once per three months as required by OMa-1988 Part 10, 4.3.2.1.
Basis for Deferral:	During normal operation, there is constant flow through these valves. The required test is performed while the Steam Generators are in wet-layup, with the main condensate system in service. The piping upstream of the check valve is depressurized, while the downstream side is pressurized. The check valves are verified to prevent gross diversion of flow. These conditions cannot be obtained with the unit operating.
Test Alternative & Frequency:	Valves will be full stroke exercised at cold shutdown.

Revised by revision 16

Justification of Deferral

Item Number:	2-MC-FW1
Valve:	2FW-27A
Flow Diagram:	MC-2571-1.0
Code Category:	B
ASME Class:	2
Function:	Isolates low pressure injection from the Refueling Water Storage Tank.
Test Requirement:	Stroke time test in accordance with OMa-1988 Part 10, 4.2.1.1.
Basis for Deferral:	Closure of this valve during normal power operation would render all low pressure injection inoperable. This valve is opened and power removed above Mode 4 per Tech Spec 4.5.2.
Test Alternative & Frequency:	Valve will be cycled and timed during cold shutdown.

Justification of Deferral

Item Number:	2-MC-FW2
Valve:	2FW-28
Flow Diagram:	MC-2571-1.0
Code Category:	C
ASME Class:	2
Function:	Opens to allow low pressure injection flow. Closes to prevents reverse flow to the Refueling Water Storage Tank, thereby preventing pressurization of the tank.
Test Requirement:	Verify proper valve movement once per three months as required by OMa-1988 Part 10, 4.3.2.1.
Basis for Deferral:	Valve cannot be full stroked during power operation since the only full flow path is into the RCS by the Residual Heat Removal pumps. These pumps cannot overcome RCS system pressure.
Test Alternative & Frequency:	Valve will be full stroke exercised at cold shutdown.

Justification of Deferral

Item Number:	2-MC-FW3
Valve:	2FW-74
Flow Diagram:	MC-2571-1.0
Code Category:	C
ASME Class:	3
Function:	Must close to provide a pressure boundary for the assured makeup (Nuclear service Water) to the Spent Fuel Pool.
Test Requirement:	Verify proper valve movement once per three months as required by OMa 1988 Part 10, 4.3.2.1.
Basis for Deferral:	The system does not provide a means to verify valve closure.
Test Alternative & Frequency:	Valve will be disassembled and inspected to verify closure at refueling outage frequency.

Revised by revision 16

Justification of Deferral

Item Number:	2-MC-IA1
Valve:	2IA-5260, 2IA-5270, 2IA-5280, 2IA-5290, 2IA-5300, 2IA-5310, 2IA-5320, 2IA-5330, 2IA-5340, 2IA-5350, 2IA-5360, 2IA-5370, 2IA-5380, 2IA-5390
Flow Diagram:	MC-2499-IA1
Code Category:	A,C
ASME Class:	2 & 3
Function:	2IA-5260, 5270, 5280, 5290, 5300, 5310, 5320 and 5330 prevent loss of air from receiver tank on each personnel airlock door in the event of loss of instrument air supply to door seals. These check valves form a pressure boundary for the inflatable seals. 2IA-5340 and 5350 provide the inside containment isolation barrier in the event of a break on the flexible hose connection on the air supply to the door seals. The outside isolation valves are 2IA-5080 and 5160. These check valves are on the auxiliary building side of the airlocks. 2IA-5360, 5370, 5380 and 5390 provide double isolation on the reactor building side of the airlocks for the pressure relief line.
Test Requirement:	1) Verify proper valve movement once per three months as required by OMa-1988 Part 10, 4.3.2.1. 2) Leak test once per 2 years in accordance with OMa-1988 Part 10, 4.2.2.2. 3) Leak test in accordance with Technical Specification 4.6.1.3.d.
Basis for Deferral:	These valves cannot be practically tested during operation due to the design of the system.
Test Alternative & Frequency:	Valves will be verified closed by leak test performed in accordance with 10CFR50 Appendix J at a six month frequency per Tech Spec 4.6.1.3.d.

Justification of Deferral

Item Number:	2-MC-KC1
Valve:	2KC-424B, 2KC-425A
Flow Diagram:	MC-2573-3.1
Code Category:	A
ASME Class:	2
Function:	Provide containment isolation for penetration M-320.
Test Requirement:	Stroke time test in accordance with OMa-1988 Part 10, 4.2.1.1.
Basis for Deferral:	Failure of either of these valves in the closed position during testing would inhibit the normal flow path from the reactor coolant pump motor coolers. This action could result in damage to the NC pumps. Within 15 to 30 minutes, the NC Pumps would be tripped on high bearing temperature, and an abnormal shutdown (natural circulation) would be required.
Test Alternative & Frequency:	Valve will be cycled and timed during cold shutdown.

Revised by Rev. 17.

Justification of Deferral

Item Number:	2-MC-KC2
Valve:	2KC-338B
Flow Diagram:	MC-2573-3.1
Code Category:	A
ASME Class:	2
Function:	Provide containment isolation for penetration M-327.
Test Requirement:	Stroke time test in accordance with OMa-1988 Part 10, 4.2.1.1.
Basis for Deferral:	Failure of this valve in the closed position could result in damage to the NC pumps. Within 15 to 30 minutes, the NC Pumps would be tripped on high bearing temperature, and an abnormal shutdown (natural circulation) would be required.
Test Alternative & Frequency:	Valve will be cycled and timed during cold shutdown.

Revised by Rev. 17.

Justification of Deferral

Item Number:	2-MC-KC3
Valve:	2KC-332B, 2KC-333A
Flow Diagram:	MC-2573-3.1
Code Category:	A
ASME Class:	2
Function:	Provide containment isolation for penetration M-355.
Test Requirement:	Stroke time test in accordance with OMa-1988 Part 10, 4.2.1.1.
Basis for Deferral:	Failure of one of these valves in the closed position during testing would inhibit flow through the reactor coolant drain tank heat exchanger. No alternate flowpath for cooling water to the heat exchanger exists. Without flow to the heat exchanger, the drain tank would become over pressurized and steam would be released. Such a test would not be conservative, since Reactor Coolant would be released. This test would challenge the overpressure protection of a Reactor Coolant System component. It is concluded therefore that per NUREG-1482 Section 3.1.1 that these valves should be excluded from quarterly testing.
Test Alternative & Frequency:	Valve will be cycled and timed during cold shutdown.

Revised by Rev. 17.

Justification of Deferral

Item Number:	2-MC-KC4
Valve:	2KC-320A
Flow Diagram:	MC-2573-3.1
Code Category:	A
ASME Class:	2
Function:	Provide containment isolation for penetration M-376.
Test Requirement:	Stroke time test in accordance with OMa-1988 Part 10, 4.2.1.1.
Basis for Deferral:	Failure of this valve in the closed position during testing would inhibit flow through the reactor coolant drain tank heat exchanger. No alternate flowpath for cooling water to the heat exchanger exists. Without flow to the heat exchanger, the drain tank would become over pressurized and steam would be released. Such a release of Reactor Coolant makes this test nonconservative and would challenge the overpressure protection of a Reactor Coolant System component. It is concluded therefore that per NUREG-1482 Section 3.1.1 that this valve should be excluded from quarterly testing.
Test Alternative & Frequency:	Valve will be cycled and timed during cold shutdown.

Revised by Rev. 17.

Justification of Deferral

Item Number:	2-MC-KC5
Valve:	2KC-280
Flow Diagram:	MC-2573-3.1
Code Category:	A,C
ASME Class:	2
Function:	Provides containment isolation and thermal over pressurization protection of line between 2KC-332B and 2KC-333A on penetration M-355.
Test Requirement:	1) Verify proper valve movement once per three months as required by OMa-1988 Part 10, 4.3.2.1. 2) Leak test once per 2 years in accordance with OMa-1988 Part 10, 4.2.2.2.
Basis for Deferral:	This valve cannot be practically tested during operation due to the design of the system. Testing during power operation is impractical for this valve since it is located inside containment, as well as the test connection needed to test it. During cold shutdowns, this testing would involve work inside containment, possibly with high radiation levels.
Test Alternative & Frequency:	Valve will be verified closed by leak test performed in accordance with 10CFR50 Appendix J at refueling outage frequency.

Revised by Rev. 17.

Justification of Deferral

Item Number:	2-MC-KC6
Valve:	2KC-322
Flow Diagram:	MC-2573-3.1
Code Category:	A,C
ASME Class:	2
Function:	Provides containment isolation on penetration M-376.
Test Requirement:	1) Verify proper valve movement once per three months as required by OMa-1988 Part 10, 4.3.2.1. 2) Leak test once per 2 years in accordance with OMa-1988 Part 10, 4.2.2.2.
Basis for Deferral:	This valve cannot be practically tested during operation due to the design of the system. Testing during power operation is impractical for this valve since it is located inside containment, as well as the test connection needed to test it. During cold shutdowns, this testing would involve work inside containment, possibly with high radiation levels.
Test Alternative & Frequency:	Valve will be verified closed by leak test performed in accordance with 10CFR50 Appendix J at refueling outage frequency.

Revised by Rev. 17.

Justification of Deferral

Item Number:	2-MC-KC7
Valve:	2KC-279
Flow Diagram:	MC-2573-3.1
Code Category:	A,C
ASME Class:	2
Function:	Provides containment isolation and thermal over pressurization protection of line between 2KC-424B and 2KC-425A on penetration M-320.
Test Requirement:	1) Verify proper valve movement once per three months as required by OMa-1988 Part 10, 4.3.2.1. 2) Leak test once per 2 years in accordance with OMa-1988 Part 10, 4.2.2.2.
Basis for Deferral:	The system design does not provide a means of verifying valve closure upon flow reversal. Testing during power operation is impractical for this valve since it is located inside containment, as well as the test connection needed to test it. During cold shutdowns, this testing would involve work inside containment, possibly with high radiation levels.
Test Alternative & Frequency:	Valve will be verified closed by leak test performed in accordance with 10CFR50 Appendix J at refueling outage frequency.

Revised by Rev. 17.

Justification of Deferral

Item Number:	2-MC-KC8
Valve:	2KC-340
Flow Diagram:	MC-2573-3.1
Code Category:	A,C
ASME Class:	2
Function:	Provides containment isolation on penetration M-327.
Test Requirement:	1) Verify proper valve movement once per three months as required by OMa-1988 Part 10, 4.3.2.1. 2) Leak test once per 2 years in accordance with OMa-1988 Part 10, 4.2.2.2.
Basis for Deferral:	The system design does not provide a means of verifying valve closure upon flow reversal. Testing during power operation is impractical for this valve since it is located inside containment, as well as the test connection needed to test it. During cold shutdowns, this testing would involve work inside containment, possibly with high radiation levels.
Test Alternative & Frequency:	Valve will be verified closed by leak test performed in accordance with 10CFR50 Appendix J at refueling outage frequency.

Revised by Rev. 17.

Justification of Deferral

Item Number:	2-MC-KC9
Valve:	2KC-47
Flow Diagram:	MC-2573-4.0
Code Category:	A,C
ASME Class:	2
Function:	Provides containment isolation on penetration M-322.
Test Requirement:	1) Verify proper valve movement once per three months as required by OMa-1988 Part 10, 4.3.2.1. 2) Leak test once per 2 years in accordance with OMa-1988 Part 10, 4.2.2.2.
Basis for Deferral:	The system design does not provide a means of verifying valve closure upon flow reversal.
Test Alternative & Frequency:	Valve will be verified closed by leak test performed in accordance with 10CFR50 Appendix J at refueling outage frequency.

Justification of Deferral

Item Number:	2-MC-NB1
Valve:	2NB-262
Flow Diagram:	MC-2556-3.0
Code Category:	A,C
ASME Class:	2
Function:	Provides containment isolation on penetration M-259.
Test Requirement:	1) Verify proper valve movement once per three months as required by OMa-1988 Part 10, 4.3.2.1. 2) Leak test once per 2 years in accordance with OMa-1988 Part 10, 4.2.2.2.
Basis for Deferral:	The system design does not provide a means of verifying valve closure upon flow reversal. Testing during power operation is impractical for this valve since it is located inside containment, as well as the test connection needed to test it. During cold shutdowns, this testing would involve work inside containment, possibly with high radiation levels.
Test Alternative & Frequency:	Valve will be verified closed by leak test performed in accordance with 10CFR50 Appendix J at refueling outage frequency.

Revised by Rev. 17.

Justification of Deferral

Item Number:	2-MC-NB2
Valve:	2NB-438
Flow Diagram:	MC-2556-3.0
Code Category:	C
ASME Class:	3
Function:	Must close to provide a pressure boundary to prevent possible radiological releases caused by backflow from the pressurized sources downstream to the Unit 2 Reactor Makeup Water Storage Tank upstream.
Test Requirement:	Verify proper valve movement once per three months as required by OMa-1988 Part 10, 4.3.2.1.
Basis for Deferral:	The system design does not provide a means of verifying valve closure upon flow reversal.
Test Alternative & Frequency:	Valve will be disassembled and inspected to verify closure at refueling outage frequency.

Revised by revision 16

Justification of Deferral

Item Number:	2-MC-NC1
Valve:	2NC-32B, 2NC-34A, 2NC-36B
Flow Diagram:	MC-2553-2.0
Code Category:	B
ASME Class:	1
Function:	Reactor Coolant System PORV. Opens to relieve pressure for the primary system.
Test Requirement:	Stroke time test in accordance with OMa-1988 Part 10, 4.2.1.1.
Basis for Deferral:	PORVs do not serve a safety function when unit is at operating temperature and pressure. PORVs protect the Reactor Coolant System from over pressurization during LTOP conditions.
Test Alternative & Frequency:	Stroke time testing will be performed at cold shutdown and in all cases prior to entering LTOP conditions in accordance with Generic Letter 90-06. Testing will not be required more often than once per quarter as defined in OMa-1988 Part 10, 4.2.1.1.

Justification of Deferral

Item Number:	2-MC-NC2
Valve:	2NC-272AC, 2NC-273AC, 2NC-274B, 2NC-275B
Flow Diagram:	MC-2553-2.1
Code Category:	B
ASME Class:	1
Function:	Reactor vessel head vent.
Test Requirement:	Stroke time test in accordance with OMa-1988 Part 10, 4.2.1.1.
Basis for Deferral:	Opening these valves at full pressure could cause damage to the valve seating surfaces. A reactor coolant leak could be caused.
Test Alternative & Frequency:	Valve will be cycled and timed during cold shutdown.

Justification of Deferral

Item Number:	2-MC-NC3
Valve:	2NC-259, 2NC-261
Flow Diagram:	MC-2553-4.0
Code Category:	A,C
ASME Class:	2
Function:	Provides containment isolation and thermal over pressurization protection of line between 2NC-195B and 2NC-196A on penetration M-361, and line between 2NC-141 and 2NC-142 on penetration M-326 respectively.
Test Requirement:	1) Verify proper valve movement once per three months as required by OMa-1988 Part 10, 4.3.2.1. 2) Leak test once per 2 years in accordance with OMa-1988 Part 10, 4.2.2.2.
Basis for Deferral:	The system design does not provide a means of verifying valve closure upon flow reversal. Testing during power operation is impractical for this valve since it is located inside containment, as well as the test connection needed to test it. During cold shutdowns, this testing would involve work inside containment, possibly with high radiation levels.
Test Alternative & Frequency:	Valve will be verified closed by leak test performed in accordance with 10CFR50 Appendix J at refueling outage frequency.

Revised by Rev. 17.

Justification of Deferral

Item Number:	2-MC-NC4
Valve:	2NC-59
Flow Diagram:	MC-2553-2.1
Code Category:	C
ASME Class:	2
Function:	Must open to allow various relief valves on ECCS systems to relive to the Pressurizer Relief Tank.
Test Requirement:	Verify proper valve movement once per three months as required by OMa-1988 Part 10, 4.3.2.1.
Basis for Deferral:	The system design does not provide a sufficient means of verifying full opening of the check valve.
Test Alternative & Frequency:	Valve will be disassembled and inspected to verify full stroke opening at refueling outage frequency.

Revised by revision 16

Justification of Deferral

Item Number:	2-MC-ND1
Valve:	2ND-1B, 2ND-2AC
Flow Diagram:	MC-2561-1.0
Code Category:	A
ASME Class:	1
Function:	Provides suction for Residual Heat Removal pumps during normal cool down.
Test Requirement:	1) Stroke time test in accordance with OMa-1988 Part 10, 4.2.1.1. 2) Leak test once per 2 years in accordance with OMa-1988 Part 10, 4.2.2.3.
Basis for Deferral:	These valves have an interlock which prevents their opening when the Reactor Coolant System pressure is greater than 385psig.
Test Alternative & Frequency:	Valve will be cycled and timed during cold shutdown. Valve will be leak tested in accordance with Tech Spec 4.4.6.2.2.

Justification of Deferral

Item Number:	2-MC-ND2
Valve:	2ND-58A
Flow Diagram:	MC-2561-1.0
Code Category:	B
ASME Class:	2
Function:	Provides suction to the Centrifugal Charging Pumps and Safety Injection Pumps from the Residual Heat Removal system.
Test Requirement:	Stroke time test in accordance with OMa-1988 Part 10, 4.2.1.1.
Basis for Deferral:	Opening 2ND-58A would seat check valve 2NV-223 (FWST to Charging Pump suction) closed, so that if 2ND-58A failed in the open position, both trains of NV would be inoperable.
Test Alternative & Frequency:	Valve will be cycled and timed during cold shutdown.

Revised by Rev. 17.

Justification of Deferral

Item Number:	2-MC-ND3
Valve:	2ND-15B, 2ND-30A
Flow Diagram:	MC-2561-1.0
Code Category:	B
ASME Class:	2
Function:	ND Heat Exchanger Outlet Crossover Block Valves.
Test Requirement:	Stroke time test in accordance with OMa-1988 Part 10, 4.2.1.1.
Basis for Deferral:	One of the ECCS safety analysis assumptions is that each train of ND can supply flow to all four cold legs. If either of these valves failed closed during testing then only two cold legs could be supplied by each train of ND. This would make both trains of ND inoperable. Power cannot be removed from these valves, since at least one of them must be closed for cold leg recirc. If power was removed from one valve, a single failure on the opposite train would disable isolation of ND to the cold legs when needed (this isolation is needed for adequate cold leg recirc flow).
Test Alternative & Frequency:	Valve will be cycled and timed during cold shutdown.

Revised by Rev. 17.

Justification of Deferral

Item Number:	2-MC-ND4
Valve:	2ND-70
Flow Diagram:	MC-2561-1.0
Code Category:	C
ASME Class:	2
Function:	Opens to provides suction to the Centrifugal Charging Pumps and Safety Injection Pumps from the Residual Heat Removal system. Closes to provide suction pressure boundary for the Centrifugal Charging Pumps and Safety Injection Pumps
Test Requirement:	Verify proper valve movement once per three months as required by OMa-1988 Part 10, 4.3.2.1.
Basis for Deferral:	Valve cannot be full stroked during power operation since 2ND-58A would have to be opened, rendering both trains of ND inoperable. Additionally, the flow requirements to full stroke this valve cannot be achieved with the Reactor Coolant System pressurized. Opening 2ND-58A would seat check valve 2NV-223 (FWST to Charging Pump suction) closed, so that if 2ND-58A failed in the open position, both trains of NV would be inoperable. Manually closing 2ND-29, a fail-open valve, would be impractical.
Test Alternative & Frequency:	Valve will be full stroke exercised at cold shutdown.

Revised by Rev. 17.

Justification of Deferral

Item Number:	2-MC-ND5
Valve:	2ND-71
Flow Diagram:	MC-2561-1.0
Code Category:	C
ASME Class:	2
Function:	Opens to provides suction to the Centrifugal Charging Pumps and Safety Injection Pumps from the Residual Heat Removal system. Closes to provide suction pressure boundary for the Centrifugal Charging Pumps and Safety Injection Pumps
Test Requirement:	Verify proper valve movement once per three months as required by OMa-1988 Part 10, 4.3.2.1.
Basis for Deferral:	Valve cannot be full stroked during power operation since 2NI-136B would have to be opened, rendering both trains of ND inoperable. Additionally, the flow requirements to full stroke this valve cannot be achieved with the Reactor Coolant System pressurized. Opening 2ND-136B would seat check valve 2NV-223 (FWST to Charging Pump suction) closed, so that if 2ND-136B failed in the open position, both trains of NV would be inoperable. Manually closing 2ND-14, a fail-open valve, would be impractical.
Test Alternative & Frequency:	Valve will be full stroke exercised at cold shutdown.

Revised by Rev. 17.

Justification of Deferral

Item Number:	2-MC-ND6
Valve:	2ND-8, 2ND-23
Flow Diagram:	MC-2561-1.0
Code Category:	C
ASME Class:	2
Function:	Residual Heat Removal pump discharge check valve.
Test Requirement:	Verify proper valve movement once per three months as required by OMa-1988 Part 10, 4.3.2.1.
Basis for Deferral:	Valves cannot be full stroke exercised during power operation since the only full flow path is into the Reactor Coolant System and the ND pumps cannot overcome RCS pressure.
Test Alternative & Frequency:	Valve will be full stroke exercised at cold shutdown. Valves will be partially stroked quarterly. The opposite train valves will be tested closed quarterly except when the opposite train of ND is in service.

Justification of Deferral

Item Number:	2-MC-NF1
Valve:	2NF-229
Flow Diagram:	MC-2558-4.0
Code Category:	A,C
ASME Class:	2
Function:	Provides containment isolation on penetration M-373.
Test Requirement:	1) Verify proper valve movement once per three months as required by OMa-1988 Part 10, 4.3.2.1. 2) Leak test once per 2 years in accordance with OMa-1988 Part 10, 4.2.2.2. 10CFR50 Appendix J requires measurement of local leak rate using air or nitrogen.
Basis for Deferral:	The system design does not provide a means of verifying valve closure upon flow reversal. Testing during power operation is impractical for this valve since it is located inside containment, as well as the test connection needed to test it. During cold shutdowns, this testing would involve work inside containment, possibly with high radiation levels.
Test Alternative & Frequency:	1) Valve will be verified closed by leak test performed in accordance with 10CFR50 Appendix J at refueling outage frequency. 2) Leak Rate testing of the valve will be performed per Tech Spec 4.6.1.2.d.4).

Revised by Rev. 17.

Justification of Deferral

Item Number:	2-MC-NI1
Valve:	2NI-9A, 2NI-10B
Flow Diagram:	MC-2562-1.0
Code Category:	B
ASME Class:	2
Function:	Flowpath for Centrifugal Charging Pumps to Reactor Coolant System Cold Legs.
Test Requirement:	Stroke time test in accordance with OMa-1988 Part 10, 4.2.1.1.
Basis for Deferral:	Opening either of these valves during operation would increase the charging flow into the Reactor Coolant System resulting in an increase of pressure and a rapid change in the primary system boron concentration. This could create a transient and possible unit shutdown.
Test Alternative & Frequency:	Valve will be cycled and timed during cold shutdown.

Justification of Deferral

Item Number:	2-MC-NI2
Valve:	2NI-100B
Flow Diagram:	MC-2562-3.0
Code Category:	B
ASME Class:	2
Function:	Flowpath from the Refueling Water Storage Tank the Safety Injection Pump suction.
Test Requirement:	Stroke time test in accordance with OMa-1988 Part 10, 4.2.1.1.
Basis for Deferral:	Closing this valve during operation would render both trains of Safety Injection inoperable. This valve is opened and power removed above Mode 4 per Tech Spec 4.5.2.
Test Alternative & Frequency:	Valve will be cycled and timed during cold shutdown.

Justification of Deferral

Item Number:	2-MC-NI3
Valve:	2NI-147A, 2NI115B
Flow Diagram:	MC-2562-3.0
Code Category:	B
ASME Class:	2
Function:	2NI-147A provides flowpath for both trains of Safety Injection recirculation line to the Refueling Water Storage Tank. 2NI-115B provides flowpath for A train of Safety Injection re-circulation line to the Refueling Water Storage Tank.
Test Requirement:	Stroke time test in accordance with OMa-1988 Part 10, 4.2.1.1.
Basis for Deferral:	Closing either of these valve during power operation renders both trains of Safety Injection inoperable. 2NI-147A is open with power removed above Mode 4 per Tech Spec 4.5.2. In the event of a loss of offsite power with the loss of 2B diesel generator as the single failure, 2NI-115B would not open, rendering A Train NI inoperable (due to loss of miniflow path). B Train NI would already be inoperable due to the single failure.
Test Alternative & Frequency:	Valve will be cycled and timed during cold shutdown.

Revised by Rev. 17.

Justification of Deferral

Item Number:	2-MC-NI4
Valve:	2NI-121A, 2NI-152B
Flow Diagram:	MC-2562-3.0
Code Category:	B
ASME Class:	2
Function:	Isolates Safety Injection flow to the hot legs.
Test Requirement:	Stroke time test in accordance with OMa-1988 Part 10, 4.2.1.1.
Basis for Deferral:	These valves are closed with power removed above Mode 4 per Tech Spec 4.5.2.
Test Alternative & Frequency:	Valve will be cycled and timed during cold shutdown.

Justification of Deferral

Item Number:	2-MC-NI5
Valve:	2NI-162A
Flow Diagram:	MC-2562-3.1
Code Category:	B
ASME Class:	2
Function:	Isolates Safety Injection flow to the cold legs.
Test Requirement:	Stroke time test in accordance with OMa-1988 Part 10, 4.2.1.1.
Basis for Deferral:	This valve is opened and power removed above Mode 4 per Tech Spec 4.5.2.
Test Alternative & Frequency:	Valve will be cycled and timed during cold shutdown.

Justification of Deferral

Item Number:	2-MC-NI6
Valve:	2NI-103A
Flow Diagram:	MC-2562-3.0
Code Category:	B
ASME Class:	2
Function:	Provides A Train Safety Injection Pump suction flow from the Refueling Water Storage Tank. Also provides a flowpath for B Train Residual Heat Removal pump discharge to B Train Chemical and Volume Control pump suction.
Test Requirement:	Stroke time test in accordance with OMa-1988 Part 10, 4.2.1.1.
Basis for Deferral:	Closing this valve during power operations degrades both trains of Chemical and Volume Control. In the event of a loss of offsite power with the loss of 2A diesel generator as the single failure when the valve was closed, B Train NV would be lost for sumprecirc mode. Since that could happen as fast as 30 minutes and would then be inaccessible due to dose rates, credit could not be taken for manually opening 2NI-103A in this event. A Train NV would already be inoperable due to the single failure.
Test Alternative & Frequency:	Valve will be cycled and timed during cold shutdown.

Justification of Deferral

Item Number:	2-MC-NI7
Valve:	2NI-173A, 2NI-178B
Flow Diagram:	MC-2562-3.1
Code Category:	B
ASME Class:	2
Function:	Provides flowpath for Residual Heat Removal to the cold legs.
Test Requirement:	Stroke time test in accordance with OMa-1988 Part 10, 4.2.1.1.
Basis for Deferral:	These valves are opened and power removed above Mode 4 per Tech Spec 4.5.2.
Test Alternative & Frequency:	Valve will be cycled and timed during cold shutdown.

Justification of Deferral

Item Number:	2-MC-NI8
Valve:	2NI-334B
Flow Diagram:	MC-2562-3.0
Code Category:	B
ASME Class:	2
Function:	Provides flowpath from B Train of Residual Heat Removal to B Train of Chemical and Volume Control, and from A Train of Residual Heat Removal to A Train of Safety Injection.
Test Requirement:	Stroke time test in accordance with OMa-1988 Part 10, 4.2.1.1.
Basis for Deferral:	Closing this valve during power operation degrades both trains of Safety Injection. With the single failure of 2B diesel generator, Train A of Safety Injection, which is provided suction from Residual Heat Removal via 2NI-334B or 2NI-136B, would be inoperable (since 2NI-136B is normally closed). Train B of Safety Injection would already be inoperable due to the single failure.
Test Alternative & Frequency:	Valve will be cycled and timed during cold shutdown.

Revised by Rev. 17.

Justification of Deferral

Item Number:	2-MC-NI9
Valve:	2NI-183B
Flow Diagram:	MC-2562-3.1
Code Category:	B
ASME Class:	2
Function:	Isolates Residual Heat Removal flow to the hot legs.
Test Requirement:	Stroke time test in accordance with OMa-1988 Part 10, 4.2.1.1.
Basis for Deferral:	This valve is closed and power removed above Mode 4 per Tech Spec 4.5.2.
Test Alternative & Frequency:	Valve will be cycled and timed during cold shutdown.

Justification of Deferral

Item Number:	2-MC-NI10
Valve:	2NI-184B, 2NI-185A
Flow Diagram:	MC-2562-3.0
Code Category:	B
ASME Class:	2
Function:	Provides flowpath from the Containment Sump to the Residual Heat Removal Pump and the Containment Spray Pump suction.
Test Requirement:	Stroke time test in accordance with OMa-1988 Part 10, 4.2.1.1.
Basis for Deferral:	Opening these valves during power operation would allow water to enter lower containment. To prevent this, 1FW-27A would have to be closed, rendering both trains of Residual Heat Removal inoperable. Voids in suction piping would be created requiring fill and vent operations to prevent ECCS pump damage.
Test Alternative & Frequency:	Valve will be cycled and timed during cold shutdown.

Justification of Deferral

Item Number:	2-MC-NI11
Valve:	2NI-332A, 2NI-333B
Flow Diagram:	MC-2562-3.0
Code Category:	B
ASME Class:	2
Function:	Provides flowpath to Centrifugal Charging Pumps and Safety Injection Pumps from Residual Heat Removal Pumps during recirculation phase.
Test Requirement:	Stroke time test in accordance with OMa-1988 Part 10, 4.2.1.1.
Basis for Deferral:	Opening these valves during power operations requires 2NI-334B to be closed to prevent aligning FWST to the suction of the Centrifugal Charging Pumps. Injecting FWST boron concentrated water into the Reactor Coolant System would induce a transient. Closing 2NI-334B degrades both trains of Safety Injection (With the single failure of 2B diesel generator, Train A of Safety Injection, which is provided suction from Residual Heat Removal via 2NI-334B or 2NI-136B, would be inoperable (since 2NI-136B is normally closed). Train B of Safety Injection would already be inoperable due to the single failure).
Test Alternative & Frequency:	Valve will be cycled and timed during cold shutdown.

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Justification of Deferral

Item Number:	2-MC-NI12
Valve:	2NI-15, 2NI-17, 2NI-19, 2NI-21, 2NI-347, 2NI-348, 2NI-349, 2NI-354
Flow Diagram:	MC-2562-1.0
Code Category:	C
ASME Class:	1
Function:	Opens to allow flow to the cold legs from the Centrifugal Charging Pumps.
Test Requirement:	Verify proper valve movement once per three months as required by OMa-1988 Part 10, 4.3.2.1.
Basis for Deferral:	Injecting flow through these valves from the Centrifugal Charging Pumps during power operations could result in unnecessary thermal shock to the injection nozzles.
Test Alternative & Frequency:	Valve will be full stroke exercised at cold shutdown.

Justification of Deferral

Item Number:	2-MC-NI13
Valve:	2NI-12
Flow Diagram:	MC-2562-1.0
Code Category:	C
ASME Class:	2
Function:	Flowpath for Centrifugal Charging Pumps to Reactor Coolant System cold legs.
Test Requirement:	Verify proper valve movement once per three months as required by OMa-1988 Part 10, 4.3.2.1.
Basis for Deferral:	Injecting flow through this valve from the Centrifugal Charging Pumps during power operations could result in unnecessary thermal shock to the injection nozzles.
Test Alternative & Frequency:	Valve will be full stroke exercised at cold shutdown.

Justification of Deferral

Item Number:	2-MC-NI14
Valve:	2NI-101
Flow Diagram:	MC-2562-3.0
Code Category:	C
ASME Class:	2
Function:	Opens to allow flow from the Refueling Water Storage Tank to the Safety Injection Pumps. Closes to provide suction pressure boundary for these pumps from the Residual Heat Removal Pump discharge.
Test Requirement:	Verify proper valve movement once per three months as required by OMa-1988 Part 10, 4.3.2.1.
Basis for Deferral:	Valve cannot be full stroke tested during power operation since the Safety Injection Pumps cannot overcome Reactor Coolant System pressure. Closure cannot be verified quarterly since both trains of Residual Heat Removal would be rendered inoperable.
Test Alternative & Frequency:	Valve will be full stroke exercised at cold shutdown. Valve will be partial stroked quarterly.

Justification of Deferral

Item Number:	2-MC-NI15
Valve:	2NI-116, 2NI-148
Flow Diagram:	MC-2562-3.0
Code Category:	C
ASME Class:	1
Function:	Pump discharge check valve, opens to allow Safety Injection Flow. Closes to prevent opposite train flow losses.
Test Requirement:	Verify proper valve movement once per three months as required by OMa-1988 Part 10, 4.3.2.1.
Basis for Deferral:	Valve cannot be full or partial stroke tested during power operation since the Safety Injection Pumps cannot overcome Reactor Coolant System pressure.
Test Alternative & Frequency:	Valve will be full stroke exercised at cold shutdown. Valve will be verified closed quarterly.

Justification of Deferral

Item Number:	2-MC-NI16
Valve:	2NI-124, 2NI-128, 2NI-156, 2NI-157, 2NI-159, 2NI-160
Flow Diagram:	MC-2562-3.0
Code Category:	AC
ASME Class:	2
Function:	1) Opens on flow from the Safety Injection Pumps to the hot legs. 2) Reactor Coolant System pressure boundary.
Test Requirement:	1) Verify proper valve movement once per three months as required by OMa-1988 Part 10, 4.3.2.1. 2) Leak test once per two years in accordance with OMa-1988 Part 10, 4.2.2.3.
Basis for Deferral:	Valves cannot be full or partial stroke tested during power operation since the Safety Injection Pumps cannot overcome Reactor Coolant System pressure.
Test Alternative & Frequency:	Valve will be full stroke exercised at cold shutdown. Leak test in accordance with Tech Spec 4.4.6.2.2.

Justification of Deferral

Item Number:	2-MC-NI17
Valve:	2NI-165, 2NI-167, 2NI-169, 2NI-171
Flow Diagram:	MC-2562-3.1
Code Category:	AC
ASME Class:	1
Function:	1) Opens on flow from the Safety Injection Pumps to the cold legs. 2) Reactor Coolant System pressure boundary.
Test Requirement:	1) Verify proper valve movement once per three months as required by OMa-1988 Part 10, 4.3.2.1. 2) Leak test once per 2 years in accordance with OMa-1988 Part 10, 4.2.2.3.
Basis for Deferral:	Valves cannot be full or partial stroke tested during power operations since the Safety Injection Pumps cannot overcome Reactor Coolant System pressure.
Test Alternative & Frequency:	Valve will be full stroke exercised at cold shutdown. Leak test in accordance with Tech Spec 4.4.6.2.2.

Justification of Deferral

Item Number:	2-MC-NI18
Valve:	2NI-175, 2NI-176, 2NI-180, 2NI-181
Flow Diagram:	MC-2562-3.1
Code Category:	AC
ASME Class:	1
Function:	1) Opens on flow from the Residual Heat Removal Pumps to the cold legs. 2) Reactor Coolant System pressure boundary.
Test Requirement:	1) Verify proper valve movement once per three months as required by OMa-1988 Part 10, 4.3.2.1. 2) Leak test once per two years in accordance with OMa-1988 Part 10, 4.2.2.3.
Basis for Deferral:	Valves cannot be full or partial stroke tested during power operation since the Residual Heat Removal pumps cannot overcome Reactor Coolant System pressure.
Test Alternative & Frequency:	Valve will be full stroke exercised at cold shutdown. Leak test in accordance with Tech Spec 4.4.6.2.2.

Justification of Deferral

Item Number:	2-MC-NI19
Valve:	2NI-125, 2NI-126, 2NI-129, 2NI-134
Flow Diagram:	MC-2562-3.0
Code Category:	AC
ASME Class:	1
Function:	1) Opens on flow from the Residual Heat Removal Pumps to the hot legs. 2) Reactor Coolant System pressure boundary.
Test Requirement:	1) Verify proper valve movement once per three months as required by OMa-1988 Part 10, 4.3.2.1. 2) Leak test once per two years in accordance with OMa-1988 Part 10, 4.2.2.3.
Basis for Deferral:	Valves cannot be full or partial stroke tested during power operation since the Residual Heat Removal pumps cannot overcome Reactor Coolant System pressure.
Test Alternative & Frequency:	Valve will be full stroke exercised at cold shutdown. Leak test in accordance with Tech Spec 4.4.6.2.2.

Justification of Deferral

Item Number:	2-MC-NI20
Valve:	2NI-136B
Flow Diagram:	MC-2562-3.0
Code Category:	B
ASME Class:	2
Function:	Provides suction to the Centrifugal Charging Pumps and Safety Injection Pumps from the Residual Heat Removal System.
Test Requirement:	Stroke time test in accordance with OMa-1988 Part 10, 4.2.1.1.
Basis for Deferral:	Opening 2NI-136B would seat check valve 2NV-223 (FWST to Charging Pump suction) closed, so that if 2NI-136B failed in the open position, both trains of NV would be inoperable.
Test Alternative & Frequency:	Valve will be cycled and timed during cold shutdown.

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Justification of Deferral

Item Number:	2-MC-NI21
Valve:	2NI-48
Flow Diagram:	MC-2562-2.0
Code Category:	A,C
ASME Class:	2
Function:	Provides containment isolation on penetration M-330.
Test Requirement:	1) Verify proper valve movement once per three months as required by OMa-1988 Part 10, 4.3.2.1. 2) Leak test once per 2 years in accordance with OMa-1988 Part 10, 4.2.2.2.
Basis for Deferral:	The system design does not provide a means of verifying valve closure upon flow reversal.
Test Alternative & Frequency:	Valve will be verified closed by leak test performed in accordance with 10CFR50 Appendix J at refueling outage frequency.

Justification of Deferral

Item Number:	2-MC-NI22
Valve:	2NI-59, 2NI-70, 2NI-81, 2NI-93
Flow Diagram:	MC-2562-2.0, MC-2562-2.1
Code Category:	A,C
ASME Class:	1
Function:	Opens on flow from the NI cold leg accumulator to the Reactor Coolant System. Reactor Coolant Boundary valve.
Test Requirement:	1) Verify proper valve movement once per three months as required by OMa-1988 Part 10, 4.3.2.1. 2) Leak test once per 2 years in accordance with OMa-1988 Part 10, 4.2.2.3. 3) Leak test in accordance with Tech Spec 4.4.6.2.2.
Basis for Deferral:	Valves cannot be full or partial stroked during power operation since the accumulator pressure is ~600 psig and cannot overcome RCS pressure. Valves will not be tested during cold shutdown since disassembly is required. Disassembly would render one train of RHR inoperable for an extended period of time.
Test Alternative & Frequency:	Valves will be full stroked at refueling by disassembly on a sample basis. All valves will be partial stroked at refueling. Partial stroke will not be performed at cold shutdown since Tech Spec 4.4.6.2.2 requires leak testing after initiating flow through these valves and does not require leak testing more often than once per nine months. Valves will be verified closed by leak test performed in accordance with Tech Spec 4.4.6.2.2.

Justification of Deferral

Item Number:	2-MC-NI23
Valve:	2NI-436
Flow Diagram:	MC-2562-2.1
Code Category:	A,C
ASME Class:	2
Function:	Provides containment isolation and thermal over pressurization protection for penetration M-321.
Test Requirement:	1) Verify proper valve movement once per three months as required by OMa-1988 Part 10, 4.3.2.1. 2) Leak test once per 2 years in accordance with OMa-1988 Part 10, 4.2.2.2.
Basis for Deferral:	The system design does not provide a means of verifying valve closure upon flow reversal. Testing during power operation is impractical for this valve since it is located inside containment, as well as the test connection needed to test it. During cold shutdowns, this testing would involve work inside containment, possibly with high radiation levels.
Test Alternative & Frequency:	Valve will be verified closed by leak test performed in accordance with 10CFR50 Appendix J at refueling outage frequency.

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Justification of Deferral

Item Number:	2-MC-NI24
Valve:	2NI-60, 2NI-71, 2NI-82, 2NI-94
Flow Diagram:	MC-2562-2.0, MC-2562-2.1
Code Category:	A,C
ASME Class:	1
Function:	Opens on flow from the NI cold leg accumulator to the Reactor Coolant System. Reactor Coolant Boundary valve.
Test Requirement:	1) Verify proper valve movement once per three months as required by OMa-1988 Part 10, 4.3.2.1. 2) Leak test once per 2 years in accordance with OMa-1988 Part 10, 4.2.2.3. 3) Leak test in accordance with Tech Spec 4.4.6.2.2.
Basis for Deferral:	Valves cannot be full or partial stroked during power operation since a driving head which can overcome RCS pressure does not exist. Instrumentation is not present to measure the flow through the individual valves. Valves will not be tested during cold shutdown since disassembly is required. Disassembly would render one train of RHR inoperable for an extended period of time.
Test Alternative & Frequency:	Valves will be full stroked at refueling by disassembly on a sample basis. All valves will be partial stroked at refueling. Partial stroke will not be performed at cold shutdown since Tech Spec 4.4.6.2.2 requires leak testing after initiating flow through these valves and does not require leak testing more often than once per nine months. Valves will be verified closed by leak test performed in accordance with Tech Spec 4.4.6.2.2.

Justification of Deferral

Item Number:	2-MC-NM1
Valve:	2NM-420, 2NM-421
Flow Diagram:	MC-2572-1.0
Code Category:	A,C
ASME Class:	2
Function:	Provides containment isolation and thermal over pressurization protection for penetrations M-235 and M-309 respectively.
Test Requirement:	1) Verify proper valve movement once per three months as required by OMa-1988 Part 10, 4.3.2.1. 2) Leak test once per 2 years in accordance with OMa-1988 Part 10, 4.2.2.2.
Basis for Deferral:	The system design does not provide a means of verifying valve closure upon flow reversal. Testing during power operation is impractical for this valve since it is located inside containment, as well as the test connection needed to test it. During cold shutdowns, this testing would involve work inside containment, possibly with high radiation levels.
Test Alternative & Frequency:	Valve will be verified closed by leak test performed in accordance with 10CFR50 Appendix J at refueling outage frequency.

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Justification of Deferral

Item Number:	2-MC-NS1
Valve:	2NS-38B, 2NS-43A
Flow Diagram:	MC-2563-1.0
Code Category:	B
ASME Class:	2
Function:	Auxiliary Spray Nozzle header isolation.
Test Requirement:	Stroke time test in accordance with OMa-1988 Part 10, 4.2.1.1.
Basis for Deferral:	Opening either of these valves during power operation renders both trains on Residual Heat Removal inoperable. With cross-connected trains of ND, flow would be diverted from both trains through a failed-open NS-38B or 43A. To isolated one train of ND, it would be necessary to manually secure closed either ND-14 or 29, since these valves fail open on loss of air. This would be an impractical measure to perform the quarterly test.
Test Alternative & Frequency:	Valve will be cycled and timed during cold shutdown.

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Justification of Deferral

Item Number:	2-MC-NS2
Valve:	2NS-13, 2NS-16, 2NS-30, 2NS-33, 2NS-41, 2NS-46
Flow Diagram:	MC-2563-1.0
Code Category:	C
ASME Class:	2
Function:	Open on flow from containment spray pumps.
Test Requirement:	Verify proper valve movement once per three months as required by OMa-1988 Part 10, 4.3.2.1.
Basis for Deferral:	Full stroke exercising of these check valves is not practical since there is no external indication of disk movement. Full stroke exercising would require for the pumps and spray nozzles to be activated which would require a large scale cleanup effort. Valves will not be tested during cold shutdown since sample disassembly is required.
Test Alternative & Frequency:	These valves will be verified to fully cycle by sample disassembly at refueling outage frequencies.
Note:	Relief is being requested on these valves. Refer to relief request 2-MC-RR-NS1. When relief is granted, this Justification Of Deferral will be deleted.

Justification of Deferral

Item Number:	2-MC-NS3
Valve:	2NS-4, 2NS-21
Flow Diagram:	MC-2563-1.0
Code Category:	C
ASME Class:	2
Function:	Opens to allow flow from the Refueling Water Storage Tank to the Containment Spray Pump suction. Closes to prevent flow from the Containment Recirculation Sump to the Refueling Water Storage Tank.
Test Requirement:	Verify proper valve movement once per three months as required by OMa-1988 Part 10, 4.3.2.1.
Basis for Deferral:	Full stroke exercising with flow would require for the pumps and spray nozzles to be activated which would require a large scale cleanup effort. The system design does not provide any indication for verifying closure upon flow reversal.
Test Alternative & Frequency:	Full stroke testing will be achieved by sample disassembly. At least one of these valves will be disassembled during each refueling outage, and both valves will have been disassembled and full stroked after two consecutive outages. Sample disassembly will also verify closure. Failure of one of valve to properly full stroke during a refueling outage will result in the remaining valve being disassembled and full stroked during that outage. Valves will be partial stroked quarterly.

Justification of Deferral

Item Number:	2-MC-NS4
Valve:	2NS-140, 2NS-141
Flow Diagram:	MC-2563-1.0
Code Category:	A,C
ASME Class:	2
Function:	Must open to allow Containment Spray to the spray ring headers. Must close to prevent column separation of water in the header after initial building spraydown and pump shutdown. During this time, the column of water in the vertical piping up to the spray rings could separate, creating a void in the system at sub-atmospheric pressure. Upon pump restart, the collapse of this void would damage the piping system.
Test Requirement:	1) Verify proper valve movement once per three months as required by CMa-1988 Part 10, 4.3.2.1. 2) Leak test once per 2 years in accordance with OMa-1988 Part 10, 4.2.2.3.
Basis for Deferral:	Full stroke exercising of these check valves is not practical since there is no external indication of disk movement. Full stroke exercising would require for the pumps and spray nozzles to be activated which would require a large scale cleanup effort. Valves will not be tested during cold shutdown since sample disassembly is required.
Test Alternative & Frequency:	Valves will be verified to full stroke open using sample disassembly every other refueling outage on a staggered basis. Valves will be partial stroked quarterly. Valves will be leak tested at refueling outages. Leak testing will also verify closure of these valves.

Justification of Deferral

Item Number:	2-MC-NV1
Valve:	2NV-94AC, 2NV-95B
Flow Diagram:	MC-2554-1.1
Code Category:	B
ASME Class:	2
Function:	1) Provides flowpath for Reactor Coolant Pump seal water discharge line. 2) Provides containment isolation for penetration M-256
Test Requirement:	Stroke time test in accordance with OMa-1988 Part 10, 4.2.1.1.
Basis for Deferral:	Closure of one of these valves during power operation would inhibit normal seal water flow across the reactor coolant pump number 1 seal. This action could result in damage to the reactor coolant pump seals or the pump itself. Failure of this seal with NC flow out the seal would be a loss of NV system function, and is justification for deferral in accordance with NUREG-1482 Section 3.1.1.
Test Alternative & Frequency:	Valve will be cycled and timed during cold shutdown.

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Justification of Deferral

Item Number:	2-MC-NV2
Valve:	2NV-7B
Flow Diagram:	MC-2554-1.2
Code Category:	B
ASME Class:	2
Function:	1) Provides flowpath for normal letdown. 2) Provides containment isolation for penetration M-347.
Test Requirement:	Stroke time test in accordance with OMa-1988 Part 10, 4.2.1.1.
Basis for Deferral:	Failure of this valve in a closed position would result in a significant event (letdown isolation), possibly resulting in loss of pressurizer level control, and possible Unit trip (not a normal shutdown).
Test Alternative & Frequency:	Valve will be cycled and timed during cold shutdown.

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Justification of Deferral

Item Number:	2-MC-NV3
Valve:	2NV-21A
Flow Diagram:	MC-2554-1.2
Code Category:	B
ASME Class:	1
Function:	Provides isolation for Pressurizer Auxiliary spray.
Test Requirement:	Stroke time test in accordance with OMa-1988 Part 10, 4.2.1.1.
Basis for Deferral:	Opening this valve during power operations could result in a reactor low pressure trip.
Test Alternative & Frequency:	Valve will be cycled and timed during cold shutdown.

Justification of Deferral

Item Number:	2-MC-NV4
Valve:	2NV-141A, 2NV-142B
Flow Diagram:	MC-2554-2.0
Code Category:	B
ASME Class:	2
Function:	Provides isolation for Volume Control Tank upon Safety Injection Signal.
Test Requirement:	Stroke time test in accordance with OMa-1988 Part 10, 4.2.1.1.
Basis for Deferral:	Closure of one of these valves during power operation would isolate the suction for the Centrifugal Charging Pumps. This action could result in damage to the pumps. Seal water to the Reactor Coolant pumps would be interrupted causing damage to the seals.
Test Alternative & Frequency:	Valve will be cycled and timed during cold shutdown.

Justification of Deferral

Item Number:	2-MC-NV5
Valve:	2NV-244A, 2NV-245B
Flow Diagram:	MC-2554-3.0
Code Category:	B
ASME Class:	2
Function:	Isolates charging to the Reactor Coolant System upon Safety Injection.
Test Requirement:	Stroke time test in accordance with OMa-1988 Part 10, 4.2.1.1.
Basis for Deferral:	If one of these valves were to fail in the closed position while testing during power operation, normal and alternate charging would be lost. Total loss of charging flow would be a significant event, resulting in a possible loss of Pressurizer control, and a likely Unit trip (not a normal shutdown), as well as loss of NC pump seal flow.
Test Alternative & Frequency:	Valve will be cycled and timed during cold shutdown.

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Justification of Deferral

Item Number:	2-MC-NV6
Valve:	2NV-221A, 2NV-222B
Flow Diagram:	MC-2554-3.1
Code Category:	B
ASME Class:	2
Function:	Flowpath for Refueling Water Storage Tank to the suction of the Centrifugal Charging Pumps.
Test Requirement:	Stroke time test in accordance with OMa-1988 Part 10, 4.2.1.1.
Basis for Deferral:	Opening these valves during power operation allows the Charging Pumps to inject highly borated water into the Reactor coolant System which could result in a unit shutdown.
Test Alternative & Frequency:	Valve will be cycled and timed during cold shutdown.

Justification of Deferral

Item Number:	2-MC-NV7
Valve:	2NV-264
Flow Diagram:	MC-2554-3.1
Code Category:	C
ASME Class:	2
Function:	Provides flowpath from the Boric Acid Tank to the Centrifugal Charging Pump suction. Closes to provide pump suction pressure boundary.
Test Requirement:	Verify proper valve movement once per three months as required by OMa-1988 Part 10, 4.3.2.1.
Basis for Deferral:	To full stroke exercise this valve during power operations would inject more than 30 gpm of boric acid into the Reactor Coolant System creating a transient. To verify closure, residual boric acid would be injected causing a transient.
Test Alternative & Frequency:	Valve will be full stroke exercised at cold shutdown.

Justification of Deferral

Item Number:	2-MC-NV8
Valve:	2NV-150B, 2NV-151A
Flow Diagram:	MC-2554-2.0
Code Category:	B
ASME Class:	2
Function:	Provides isolation for Centrifugal Charging Pump miniflow line to Volume Control Tank.
Test Requirement:	Stroke time test in accordance with OMa-1988 Part 10, 4.2.1.1.
Basis for Deferral:	If either valve were to fail closed while testing, the Charging Pump miniflow protection line is isolated possibly causing damage to the pump. Closure of either of these valves would render both trains of NV inoperable, since on a spurious safety injection event (in which reactor coolant system pressure is increased above normal), this is a relief path back to the Volume Control Tank.
Test Alternative & Frequency:	Valve will be cycled and timed during cold shutdown.

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Justification of Deferral

Item Number:	2-MC-NV9
Valve:	2NV-265B
Flow Diagram:	MC-2554-3.1
Code Category:	B
ASME Class:	2
Function:	Isolates the Boric Acid Tank from the suction of the Charging Pumps.
Test Requirement:	Stroke time test in accordance with OMa-1988 Part 10, 4.2.1.1.
Basis for Deferral:	If valve is opened during power operations, boric acid could be injected into the Reactor Coolant System causing a transient.
Test Alternative & Frequency:	Valve will be cycled and timed during cold shutdown.

Justification of Deferral

Item Number:	2-MC-NV10
Valve:	2NV-225, 2NV-231
Flow Diagram:	MC-2554-3.1
Code Category:	C
ASME Class:	3
Function:	Pump discharge check valve. Opens to provide flowpath for Centrifugal Charging Pump. Closes to prevent opposite train flow losses.
Test Requirement:	Verify proper valve movement once per three months as required by OMa-1988 Part 10, 4.3.2.1.
Basis for Deferral:	Valve cannot be full stroke exercised during power operation since this would require an increase in Reactor Coolant System boron concentration which could result in unit shutdown. Normal letdown is not sufficient to verify full stroke, this must be done when aligned to the FWST for suction.
Test Alternative & Frequency:	Valve will be full stroke exercised during cold shutdown, partial stroked with normal use.

Justification of Deferral

Item Number:	2-MC-NV11
Valve:	2NV-223
Flow Diagram:	MC-2554-3.1
Code Category:	C
ASME Class:	2
Function:	Provides open flowpath from the FWST. Provides closed pump suction pressure boundary when suction is from the Residual Heat Removal pumps.
Test Requirement:	Verify proper valve movement once per three months as required by OMa-1988 Part 10, 4.3.2.1.
Basis for Deferral:	Testing this valve during power operations would require opening of either 2NV-221A or 2NV-222B. Opening these valves during power operation could result in a unit trip. See Justification # MC-NV6.
Test Alternative & Frequency:	Valve will be full stroke exercised at cold shutdown.

Justification of Deferral

Item Number:	2-MC-NV12
Valve:	2NV-1046
Flow Diagram:	MC-2554-3.0
Code Category:	C
ASME Class:	2
Function:	Closes to provide pump suction pressure boundary for Centrifugal Charging Pumps. Open function is to protect the Positive Displacement Pump from over pressurization. This is not a safety related function.
Test Requirement:	Verify proper valve movement once per three months as required by OMa-1988 Part 10, 4.3.2.1.
Basis for Deferral:	Testing this valve during power operation would result in the addition of highly borated water into the Reactor Coolant System causing a transient. To place adequate test pressure on this valve, it would be necessary to use ND Pump discharge pressure, which would require opening 1ND-58A. This would inject FWST water into the NC System via the Charging Pumps, which are also on the discharge of the ND Pumps (for cold leg recirc) via 1ND-58A.
Test Alternative & Frequency:	Valve will be full stroke exercised at cold shutdown.

Revised by Rev. 17.

Justification of Deferral

Item Number:	2-MC-NV13
Valve:	2NV-261, 2NV-263
Flow Diagram:	MC-2554-3.1
Code Category:	C
ASME Class:	2
Function:	These valves shall close to provide pump suction pressure isolation for the Centrifugal Charging Pumps by preventing backflow to the Chemical Mixing Tank or the RMWST respectively.
Test Requirement:	Verify proper valve movement once per three months as required by OMa-1988 Part 10, 4.3.2.1.
Basis for Deferral:	Testing these valves requires 2NI-121A to be opened. This valve is closed with power removed above mode 4 per Tech Spec 4.5.2. This testing would require opening valve 1ND-58A, which would render both trains of NV inoperable (by seating check valve 1NV-223 (charging pump suction from the FWST in-line check) closed).
Test Alternative & Frequency:	Valve will be full stroke exercised at cold shutdown.

Revised by Rev. 17.

Justification of Deferral

Item Number:	2-MC-NV14
Valve:	2NV-1002
Flow Diagram:	MC-2554-1.3
Code Category:	A,C
ASME Class:	2
Function:	Provides containment isolation on penetration M-342.
Test Requirement:	1) Verify proper valve movement once per three months as required by OMa-1988 Part 10, 4.3.2.1. 2) Leak test once per 2 years in accordance with OMa-1988 Part 10, 4.2.2.2.
Basis for Deferral:	The system design does not provide a means of verifying valve closure upon flow reversal. Testing during power operation is impractical for this valve since it is located inside containment, as well as the test connection needed to test it. During cold shutdowns, this testing would involve work inside containment, possibly with high radiation levels.
Test Alternative & Frequency:	Valve will be verified closed by leak test performed in accordance with 10CFR50 Appendix J at refueling outage frequency.

Revised by Rev. 17.

Justification of Deferral

Item Number:	2-MC-NV15
Valve:	2NV-143
Flow Diagram:	MC-2554-2.0
Code Category:	C
ASME Class:	2
Function:	This valve shall close to provide Centrifugal Charging Pump suction pressure boundary during Recirculation alignment from RHR Pump discharge.
Test Requirement:	Verify proper valve movement once per three months as required by OMa- 988 Part 10, 4.3.2.1.
Basis for Deferral:	This valve is in the flowpath from the Volume Control Tank to the Charging pumps. During normal system operation, this valve is open. To verify this valve closes properly requires the alignment from the RHR pumps, and would interrupt normal charging activities.
Test Alternative & Frequency:	Valve will be full stroke exercised at cold shutdown.

Justification of Deferral

Item Number: 2-MC-NV16

Valve: 2NV-164

Justification deleted by Revision 17.

Justification of Deferral

Item Number:	2-MC-NV17
Valve:	2NV-1007, 2NV-1008, 2NV-1009, 2NV-1010
Flow Diagram:	MC-2554-1.3
Code Category:	C
ASME Class:	2
Function:	These valves must close to maintain a pressure boundary for normal Reactor Coolant Pump Seal Injection.
Test Requirement:	Verify proper valve movement once per three months as required by OMa-1988 Part 10, 4.3.2.1.
Basis for Deferral:	In the event of failure of one of these valves during testing, the seal injection water for that Reactor Coolant Pump would be diverted, thereby creating a loss of seal injection to that pump. This condition would result in destroying a seal for the pump, and possibly creating a small break loss of coolant accident.
Test Alternative & Frequency:	These valves will be tested for closure during cold shutdowns.

Resived by revision 16

Justification of Deferral

Item Number:	2-MC-NV18
Valve:	2NV-1034
Flow Diagram:	MC-2554-2.0
Code Category:	C
ASME Class:	3
Function:	Must close to provide a pressure boundary to prevent possible radiological releases caused by backflow from the pressurized sources downstream to the Unit 1 Reactor Makeup Water Storage Tank upstream.
Test Requirement:	Verify proper valve movement once per three months as required by OMa-1988 Part 10, 4.3.2.1.
Basis for Deferral:	The system design does not provide a means of verifying valve closure upon flow reversal.
Test Alternative & Frequency:	Valve will be disassembled and inspected to verify closure at refueling outage frequency.

Revised by revision 16

Justification of Deferral

Item Number:	2-MC-NV19
Valve:	2NV-0035A, 2NV-0457A, 2NV-0458A
Flow Diagram:	MCFD-2554-01.02
Code Category:	B
ASME Class:	2
Function:	These valves must automatically close to isolate containment on a Phase A signal, and to isolate letdown on a Pressurizer Low Level signal. They can be operated from the Auxiliary Shutdown Panel, and cannot be opened unless valves 2NV-1A and 2NV-2A are both open.
Test Requirement:	Stroke time test quarterly in accordance with Oma-1988 Part 10, 4.2.1.1.
Basis for Deferral:	Letdown header relief valve 2NV-6 has experienced lifting and subsequent seat leakage as a result of pressure transients during orifice swaps for stroke time testing of the above valves. Although the NV operating procedure specifically addresses the potential pressure increase that could occur when swapping from the 45 gpm to the 75 gpm orifice, the increase can occur so quickly that the operator and system controls cannot respond fast enough to prevent the pressure transient. The NV operating procedure currently provides for simultaneous opening/closure of the above orifice isolation valves, and for backpressure reduction using the downstream control valve, to prevent such a pressure transient; however, procedure effectiveness is problematic with respect to repeatablility due to the inability to achieve perfect coordination each time. It is concluded that testing of these valves is impractical and nonconservative during power operation, since it results in pressure transients which have caused relief valve leakage. This leakage is Reactor Coolant (NC) leakage, which is reflected in higher NC leakage values. Finally, these valves have demonstrated a favorable test history.
Test Alternative & Frequency:	Valves will be stroke time tested during cold shutdown.

Added by Rev. 17.

Justification of Deferral

Item Number:	2-MC-RF1
Valve:	1RF-834
Flow Diagram:	MC-1599-2.2
Code Category:	A,C
ASME Class:	2
Function:	Provides containment isolation on penetration M-353.
Test Requirement:	1) Verify proper valve movement once per three months as required by OMa-1988 Part 10, 4.3.2.1. 2) Leak test once per 2 years in accordance with OMa-1988 Part 10, 4.2.2.2.
Basis for Deferral:	The system design does not provide a means of verifying valve closure upon flow reversal. Testing during power operation is impractical for this valve since it is located inside containment, as well as the test connection needed to test it. During cold shutdowns, this testing would involve work inside containment, possibly with high radiation levels.
Test Alternative & Frequency:	Valve will be verified closed by leak test performed in accordance with 10CFR50 Appendix J at refueling outage frequency.

Revised by Rev. 17.

Justification of Deferral

Item Number:	2-MC-RN1
Valve:	2RN-252B, 2RN-253A
Flow Diagram:	MC-2574-4.0
Code Category:	A
ASME Class:	2
Function:	1) Provides containment isolation for penetration M-307. 2) Provides flowpath for cooling water to the Reactor Coolant Pump Motor Air Cooler
Test Requirement:	Stroke time test in accordance with OMa-1988 Part 10, 4.2.1.1.
Basis for Deferral:	If one of these valves were to fail closed during testing, isolation of cooling water to the motor coolers could result in damage to the pumps. Closure of these valves would result in a Unit trip from NC Pump motors being manually shut down due to high stator temperatures (within minutes). An abnormal (natural circulation) shutdown would be required.
Test Alternative & Frequency:	Valve will be cycled and timed during cold shutdown.

Revised by Rev. 17.

Justification of Deferral

Item Number:	2-MC-RN2
Valve:	2RN-276A, 2RN-277B
Flow Diagram:	MC-2574-4.0
Code Category:	A
ASME Class:	2
Function:	1) Provides containment isolation for penetration M-315. 2) Provides flowpath for cooling water to the Reactor Coolant Pump Motor Air Cooler.
Test Requirement:	Stroke time test in accordance with OMa-1988 Part 10, 4.2.1.1.
Basis for Deferral:	If one of these valves were to fail closed during testing, isolation of cooling water to the motor coolers could result in damage to the pumps. Closure of these valves would result in a Unit trip from NC Pump motors being manually shut down due to high stator temperatures (within minutes). An abnormal (natural circulation) shutdown would be required.
Test Alternative & Frequency:	Valve will be cycled and timed during cold shutdown.

Revised by Rev. 17.

Justification of Deferral

Item Number:	2-MC-RN3
Valve:	2RN-42A

Justification deleted by revision 16

Justification of Deferral

Item Number:	2-MC-RN4
Valve:	2RN-63B, 2RN-64A

Justification deleted by revision 16

Justification of Deferral

Item Number: 2-MC-RN5

Valve: 2RN-113

Justification deleted by revision 16

Justification of Deferral

Item Number:	2-MC-RN6
Valve:	2RN-891, 2RN-892

Justification deleted by Revision 17

Justification of Deferral

Item Number:	2-MC-RV1
Valve:	2RV-32A, 2RV-33B, 2RV-76A, 2RV-77B
Flow Diagram:	MC-2604-3.0
Code Category:	A
ASME Class:	2
Function:	Provide containment isolation for penetration M-240 and M-279 respectively.
Test Requirement:	Stroke time test in accordance with OMa-1988 Part 10, 4.2.1.1.
Basis for Deferral:	Failure of one of these valves in the closed position during testing would isolate cooling flow to the Lower Containment Ventilation Units causing an increase in lower containment temperature which could exceed Tech Spec limits. Although the exact time depends on outside temperature, the Tech Spec limit would be exceeded within minutes if cooling flow was isolated to these ventilation units.
Test Alternative & Frequency:	Valve will be cycled and timed during cold shutdown.

Revised by Rev. 17.

Justification of Deferral

Item Number:	2-MC-SA1
Valve:	2SA-5, 2SA-6
Flow Diagram:	MC-2593-1.2
Code Category:	C
ASME Class:	2
Function:	Opens to allow steam supply to the turbine driven Auxiliary Feedwater Pump. Closes to prevent cross connecting steam generators 1B and 1C.
Test Requirement:	Verify proper valve movement once per three months as required by OMa-1988 Part 10, 4.3.2.1.
Basis for Deferral:	System configuration and design do not provide a suitable means to prove the valve prevents reversal of flow. To test the close function of this valve on line would risk personnel safety since high energy steam would be involved.
Test Alternative & Frequency:	At least one of these two valves will be disassembled and full stroked during each refueling outage, and both valves will have been disassembled and full stroked after two consecutive outages. Sample disassembly will verify closure. Failure of one of valve to properly full stroke during a refueling outage will result in the remaining valve being disassembled and full stroked during that outage. Valves will be full stroked open quarterly.

Justification of Deferral

Item Number:	2-MC-SM1
Valve:	2SM-1AB, 2SM-3AB, 2SM-5AB, 2SM-7AB
Flow Diagram:	MC-2593-1.0, MC-2593-1.3
Code Category:	B
ASME Class:	2
Function:	Main Steam Isolation Valves
Test Requirement:	Stroke time test in accordance with OMa-1988 Part 10, 4.2.1.1.
Basis for Deferral:	These valves cannot be fully cycled closed during power operation since a unit shutdown would result.
Test Alternative & Frequency:	These valves will be partially cycled closed while in Modes 1, 2 and 3. These valves will be cycled and timed during cold shutdown.

Justification of Deferral

Item Number:	2-MC-VB1
Valve:	2VB-50
Flow Diagram:	MC-2605-3.1
Code Category:	A,C
ASME Class:	2
Function:	Provides containment isolation on penetration M-215.
Test Requirement:	1) Verify proper valve movement once per three months as required by OMa-1988 Part 10, 4.3.2.1. 2) Leak test once per 2 years in accordance with OMa-1988 Part 10, 4.2.2.2.
Basis for Deferral:	The system design does not provide a means of verifying valve closure upon flow reversal. Testing during power operation is impractical for this valve since it is located inside containment, as well as the test connection needed to test it. During cold shutdowns, this testing would involve work inside containment, possibly with high radiation levels.
Test Alternative & Frequency:	Valve will be verified closed by leak test performed in accordance with 10CFR50 Appendix J at refueling outage frequency.

Revised by Rev. 17.

Justification of Deferral

Item Number:	2-MC-VG1
Valve:	2VG-17, 2VG-18, 2VG-19, 2VG-20
Flow Diagram:	MC-2609-4.0
Code Category:	C
ASME Class:	3
Function:	Provides flowpath for Diesel Generator control air from individual starting air banks.
Test Requirement:	Verify proper valve movement once per three months as required by OMa-1988 Part 10, 4.3.2.1.
Basis for Deferral:	Testing these valves requires the Diesel Generator to be started on a single bank of control air which is considered a degraded condition. This is not justified for quarterly starts. This test is required to be done on an 18 month frequency as committed to in our response to SOER 80-1.
Test Alternative & Frequency:	Valve will be full stroke exercised with the diesel generator start on a single bank of control air and performed at refueling outage frequency.
Note:	A separate relief request has been submitted for these valves. This relief request was submitted on August 24, 1993 as Docket No. 50-370, Relief Request 92-01.

Justification of Deferral

Item Number:	2-MC-VI1
Valve:	2VI-368, 2VI-372, 2VI-373, 2VI-374
Flow Diagram:	MC-2605-1.3
Code Category:	C
ASME Class:	ANSI B31.1.0 (1967)
Function:	2VI-368 and 2VI-373 must open to allow nitrogen to the PORV actuator. 2VI-372, 2VI-374 must close to prevent loss of Nitrogen pressure if instrument air is lost.
Test Requirement:	Verify proper valve movement once per three months as required by OMa-1988 Part 10, 4.3.2.1.
Basis for Deferral:	All four valves are tested with PORV stroke timing. PORVs are tested on a cold shutdown frequency. Refer to Justification # 2-MC-NC1
Test Alternative & Frequency:	Valve will be full stroke exercised at cold shutdown.

Justification of Deferral

Item Number:	2-MC-VI2
Valve:	2VI-124, 2VI-149
Flow Diagram:	MC-2605-1.2
Code Category:	A,C
ASME Class:	2
Function:	Provides containment isolation on penetrations M-317 and M-386 respectively.
Test Requirement:	1) Verify proper valve movement once per three months as required by OMa-1988 Part 10, 4.3.2.1. 2) Leak test once per 2 years in accordance with OMa-1988 Part 10, 4.2.2.2.
Basis for Deferral:	The system design does not provide a means of verifying valve closure upon flow reversal. Testing during power operation is impractical for this valve since it is located inside containment, as well as the test connection needed to test it. During cold shutdowns, this testing would involve work inside containment, possibly with high radiation levels.
Test Alternative & Frequency:	Valve will be verified closed by leak test performed in accordance with 10CFR50 Appendix J at refueling outage frequency.

Revised by Rev. 17.

Justification of Deferral

Item Number:	2-MC-VI3
Valve:	2VI-40, 2VI-161
Flow Diagram:	MC-2605-1.3
Code Category:	A,C
ASME Class:	2
Function:	Provides containment isolation on penetrations M-220 and M-359 respectively.
Test Requirement:	1) Verify proper valve movement once per three months as required by OMa-1988 Part 10, 4.3.2.1. 2) Leak test once per 2 years in accordance with OMa-1988 Part 10, 4.2.2.2.
Basis for Deferral:	The system design does not provide a means of verifying valve closure upon flow reversal. Testing during power operation is impractical for this valve since it is located inside containment, as well as the test connection needed to test it. During cold shutdowns, this testing would involve work inside containment, possibly with high radiation levels.
Test Alternative & Frequency:	Valve will be verified closed by leak test performed in accordance with 10CFR50 Appendix J at refueling outage frequency.

Revised by Rev. 17.

Justification of Deferral

Item Number:	2-MC-VI4
Valve:	2VI-129B, 2VI-150B, 2VI-160B
Flow Diagram:	MC-2605-1.2; MC-2605-1.3
Code Category:	A
ASME Class:	2
Function:	Provides containment isolation on penetrations M-220, M-317 and M-359 respectively.
Test Requirement:	Stroke time test in accordance with OMa-1988 Part 10, 4.2.1.1.
Basis for Deferral:	These valves isolate instrument air headers to the reactor building. In the past, to perform stroke timing of these valves, the containment air compressor was started to maintain an uninterrupted air supply to components inside containment. During the past refueling outage, the containment compressor was deleted. Should these valves be closed during power operation, components inside containment would experience a loss of instrument air, resulting in unwanted transients. During cold shutdowns, personnel entry into containment may be made to manually align instrument air headers together, allowing these valves to be tested. Since this is a manual alignment, it is not possible to enter containment to make this alignment for quarterly testing.
Test Alternative & Frequency:	Valves will be cycled and timed during cold shutdown. Leak testing will be performed as per the requirements of 10CFR50, Appendix J.

Revised by revision 16

Justification of Deferral

Item Number:	2-MC-VS1
Valve:	2VS-13
Flow Diagram:	MC-2605-2.2
Code Category:	A,C
ASME Class:	2
Function:	Provides containment isolation on penetration M-219.
Test Requirement:	1) Verify proper valve movement once per three months as required by OMa-1988 Part 10, 4.3.2.1. 2) Leak test once per 2 years in accordance with OMa-1988 Part 10, 4.2.2.2.
Basis for Deferral:	The system design does not provide a means of verifying valve closure upon flow reversal. Testing during power operation is impractical for this valve since it is located inside containment, as well as the test connection needed to test it. During cold shutdowns, this testing would involve work inside containment, possibly with high radiation levels.
Test Alternative & Frequency:	Valve will be verified closed by leak test performed in accordance with 10CFR50 Appendix J at refueling outage frequency.

Revised by Rev. 17.

Justification of Deferral

Item Number:	2-MC-VX1
Valve:	2VX-30
Flow Diagram:	MC-2557-1
Code Category:	A,C
ASME Class:	2
Function:	Provides containment isolation on penetration M-325.
Test Requirement:	1) Verify proper valve movement once per three months as required by OMa-1988 Part 10, 4.3.2.1. 2) Leak test once per 2 years in accordance with OMa-1988 Part 10, 4.2.2.2.
Basis for Deferral:	The system design does not provide a means of verifying valve closure upon flow reversal. Testing during power operation is impractical for this valve since it is located inside containment, as well as the test connection needed to test it. During cold shutdowns, this testing would involve work inside containment, possibly with high radiation levels.
Test Alternative & Frequency:	Valve will be verified closed by leak test performed in accordance with 10CFR50 Appendix J at refueling outage frequency.

Revised by Rev. 17.

Justification of Deferral

Item Number:	2-MC-WL1
Valve:	2WL-24
Flow Diagram:	MC-2565-1.1
Code Category:	A,C
ASME Class:	2
Function:	Provides containment isolation and thermal over pressurization protection of line between 2WL-1B and 2WL-2A on penetration M-375.
Test Requirement:	1) Verify proper valve movement once per three months as required by OMa-1988 Part 10, 4.3.2.1. 2) Leak test once per 2 years in accordance with OMa-1988 Part 10, 4.2.2.2.
Basis for Deferral:	The system design does not provide a means of verifying valve closure upon flow reversal. Testing during power operation is impractical for this valve since it is located inside containment, as well as the test connection needed to test it. During cold shutdowns, this testing would involve work inside containment, possibly with high radiation levels.
Test Alternative & Frequency:	Valve will be verified closed by leak test performed in accordance with 10CFR50 Appendix J at refueling outage frequency.

Revised by Rev. 17.

Justification of Deferral

Item Number:	2-MC-WL2
Valve:	2WL-385
Flow Diagram:	MC-2565-7.0
Code Category:	A,C
ASME Class:	2
Function:	Provides containment isolation and thermal over pressurization protection of line between 2WL-322B and 2WL-321A on penetration M-221.
Test Requirement:	1) Verify proper valve movement once per three months as required by OMa-1988 Part 10, 4.3.2.1. 2) Leak test once per 2 years in accordance with OMa-1988 Part 10, 4.2.2.2.
Basis for Deferral:	The system design does not provide a means of verifying valve closure upon flow reversal. Testing during power operation is impractical for this valve since it is located inside containment, as well as the test connection needed to test it. During cold shutdowns, this testing would involve work inside containment, possibly with high radiation levels.
Test Alternative & Frequency:	Valve will be verified closed by leak test performed in accordance with 10CFR50 Appendix J at refueling outage frequency.

Revised by Rev. 17.

Justification of Deferral

Item Number:	2-MC-YM1
Valve:	2YM-116
Flow Diagram:	MC-2601-2.4
Code Category:	A,C
ASME Class:	2
Function:	Provides containment isolation on penetration M-337.
Test Requirement:	1) Verify proper valve movement once per three months as required by OMa-1988 Part 10, 4.3.2.1. 2) Leak test once per 2 years in accordance with OMa-1988 Part 10, 4.2.2.2.
Basis for Deferral:	The system design does not provide a means of verifying valve closure upon flow reversal. Testing during power operation is impractical for this valve since it is located inside containment, as well as the test connection needed to test it. During cold shutdowns, this testing would involve work inside containment, possibly with high radiation levels.
Test Alternative & Frequency:	Valve will be verified closed by leak test performed in accordance with 10CFR50 Appendix J at refueling outage frequency.

Revised by Rev. 17.

Supplemental Test Program

The 10CFR50, Appendix B Program (Supplemental Test Program) includes components which have been determined to be important to safety and judged to be prudent to test, but which are not explicitly under the scope of ASME Codes and Standards. Changes to test methods, frequency and acceptance criteria, as well as additions to or deletions from the program do not require Justification of Deferrals, Relief Requests, or or other forms of NRC notification. However, such changes should be approved by the IST program administrator, and documented in the IST Correspondence File.

The following items are currently being planned for addition to this program:

1) Full-flow vibrations will be recorded during each refueling outage for the ND and NI Pumps (Reference Pump Relief Requests 1.4.4 and 1.4.5, Memorandum to IST Correspondence File dated September 18, 1995).

2) Leak-rate testing of the Hydrogen Analyzer/Post Accident Gas Sample loops will be performed during each refueling outage (Reference PIP 1-M95-1622).

3) During refueling outages 1(2)EOC10, gross leakage will be monitored past the ND to Auxiliary Spray boundary valves (Reference PIP 0-M95-643).

4) A gross diversion leak test of 1(2)NV-164 (hydrogen inlet to the VCT) will be performed (frequency to be determined).

Added by Rev. 22 (Unit 1), Rev. 17 (Unit 2).