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July 28, 2016

L-MT-16-031
10 CFR 50.90
10 CFR 50.55a

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

Monticello Nuclear Generating Plant
Docket No. 50-263
Renewed Facility Operating License No. DPR-22

Application to Revise Technical Specifications to Adopt TSTF-545, Revision 3, "TS Inservice Testing Program Removal & Clarify SR Usage Rule Application to Section 5.5 Testing," and to Request an Alternative to the ASME Code

Pursuant to 10 CFR 50.90, Northern States Power Company, a Minnesota corporation, doing business as Xcel Energy (hereafter "NSPM"), hereby requests an amendment to the Technical Specifications (TS) for the Monticello Nuclear Generating Plant (MNGP). The proposed change revises the TS to eliminate the Section 5.5.5, "Inservice Testing Program." A new defined term "Inservice Testing Program" is added to the TS Definitions section. This request is consistent with TSTF-545, Revision 3, "TS Inservice Testing Program Removal & Clarify SR Usage Rule Application to Section 5.5 Testing."

Pursuant to 10 CFR 50.55a(z), the application also proposes an alternative to the testing frequencies in the American Society of Mechanical Engineers (ASME) Operation and Maintenance (OM) Code, by adoption of approved Code Case OMN-20, "Inservice Test Frequency," for the current 10 year Inservice Testing (IST) interval.

Enclosure 1 provides a description and assessment of the proposed TS changes. Attachment 1 to Enclosure 1 provides the existing TS pages marked up to show the proposed changes. Attachment 2 to Enclosure 1 provides revised (clean) TS pages. Attachment 3 to Enclosure 1 provides TS Bases pages marked up to show the associated TS Bases changes and is provided for information only. Enclosure 2 provides the request for an alternative to the ASME Code.

Approval of the proposed amendment and relief request are requested by July 28, 2017. The amendment shall be implemented within 90 days of approval, or within 90 days of startup from the 2017 refueling outage, whichever is later.

In accordance with 10 CFR 50.91, a copy of this application, with attachments, is being provided to the designated Minnesota official.

If there are any questions or if additional information is needed, please contact Mr. Shane Jurek at (612) 330-5788.

Summary of Commitments

This letter makes no new commitments and no revisions to existing commitments.

I declare, under penalty of perjury, that the foregoing is true and correct.
Executed on July 18, 2016.

Peter A. Gardner
Site Vice President, Monticello Nuclear Generating Plant
Northern States Power Company – Minnesota

Enclosures (2)

cc: Administrator, Region III, USNRC
Project Manager, Monticello, USNRC
Resident Inspector, Monticello, USNRC
State of Minnesota

ENCLOSURE 1

MONTICELLO NUCLEAR GENERATING PLANT

Evaluation of the Proposed Change

Application to Revise Technical Specifications to Adopt TSTF-545, Revision 3, "TS Inservice Testing Program Removal & Clarify SR Usage Rule Application to Section 5.5 Testing"

ATTACHMENTS:

1. Technical Specification Pages (Markup)
2. Technical Specification Pages (Retyped)
3. Technical Specification Bases Pages (Markup – for information only)

Application to Revise Technical Specifications to Adopt TSTF-545, Revision 3, "TS Inservice Testing Program Removal & Clarify SR Usage Rule Application to Section 5.5 Testing"

1.0 DESCRIPTION

The proposed change eliminates the Technical Specifications (TS), Section 5.5.5, "Inservice Testing Program," to remove requirements duplicated in American Society of Mechanical Engineers (ASME) Code for Operation and Maintenance of Nuclear Power Plants (OM Code), Case OMN-20, "Inservice Test Frequency." A new defined term, "Inservice Testing Program," is added to TS Section 1.1, "Definitions." The proposed change to the TS is consistent with TSTF-545, Revision 3, "TS Inservice Testing Program Removal & Clarify SR Usage Rule Application to Section 5.5 Testing."

2.0 ASSESSMENT

2.1 Applicability of Published Safety Evaluation

Northern States Power Company, a Minnesota corporation, doing business as Xcel Energy (hereafter "NSPM"), has reviewed the model safety evaluation provided in the Federal Register Notice dated March 28, 2016. This review included a review of the NRC staff's evaluation, as well as the information provided in TSTF-545. NSPM concluded that the justifications presented in TSTF-545, and the model safety evaluation prepared by the NRC staff are applicable to the Monticello Nuclear Generating Plant (MNGP) and justify this amendment for incorporation of changes to the MNGP TS.

MNGP was issued a construction permit on June 19, 1967, and the provisions of 10 CFR 50.55a(f)(1) are applicable.

2.2 Variations

NSPM is proposing the following administrative variations from the TS changes described in TSTF-545, Revision 3, or the applicable parts of the NRC staff's model safety evaluation dated December 11, 2015. These variations do not affect the applicability of TSTF-545 or the NRC staff's model safety evaluation to the proposed license amendment.

Table 1 provides a description of the proposed changes and variations from TSTF-545. These differences are administrative in nature, and do not affect the applicability of TSTF-545, Revision 3, to the MNGP TS.

Table 1 – Differences between NUREG-1433 and MNGP Specifications

NUREG-1433 TS – TSTF 545- Markup		**MNGP Equivalent TS**		
NUREG-1433 Specification Title (BWR/4)	SRs Affected	MNGP Spec. #	Equivalent MNGP SRs	Differences between TSTF-545 and MNGP TS
3.4.3, Safety/Relief Valves (S/RVs)	3.4.3.2	3.4.3	3.4.3.2	MNGP TS SR 3.4.3.2 has an IST-specified frequency
3.4.5, RCS Pressure Isolation Valve (PIV) Leakage	3.4.5.1	N/A	N/A	MNGP TS do not include a specification for PIV Leakage
3.5.1, ECCS [Emergency Core Cooling Systems] - Operating	3.5.1.6 3.5.1.8 3.5.1.12	3.5.1	3.5.1.6 3.5.1.8 3.5.1.12	MNGP TS SRs 3.5.1.6, 3.5.1.8, and 3.5.1.12 have IST-specified frequencies.
3.5.3, RCIC [Reactor Core Isolation Cooling] System	3.5.3.3	3.5.3	3.5.3.2 (1)	MNGP TS SR 3.5.3.2 has an IST-specified frequency.
3.6.1.3, Primary Containment Isolation Valves (PCIVs)	3.6.1.3.6 3.6.1.3.8	3.6.1.3	3.6.1.3.5(1) 3.6.1.3.6(1)	MNGP TS SRs 3.6.1.3.5 and 3.6.1.3.6 have frequencies specified as 24 months.
3.6.1.6, Low-Low Set Valves	3.6.1.6.1	3.6.1.5	3.6.1.5.1(1)	MNGP TS SR 3.6.1.5.1 has an IST-specified frequency.
3.6.2.4, Residual Heat Removal (RHR) Suppression Pool Spray	3.6.2.4.2	N/A	N/A	MNGP TS do not include a specification for RHR Suppression Pool Spray
3.6.4.2, Secondary Containment Isolation Valves (SCIVs)	3.6.4.2.2	3.6.4.2	3.6.4.2.2	MNGP TS SR 3.6.4.2.2 has a frequency specified as 92 days.

Note (1): The corresponding MNGP specification number or specific SR numbers are different from those specified in the BWR/4 Standard Technical Specifications (STS) NUREG-1433 that is marked-up in TSTF-545 for the same or similar specification.

The MNGP TS utilizes different numbering than the STS on which TSTF-545 was based. Also, the MNGP TS do not have some of the existing SRs revised by TSTF-545. These differences do not affect the applicability of TSTF-545 to the MNGP TS.

In lieu of renumbering TSs 5.5.6 through 5.5.14 to coordinate with the deletion of TS 5.5.5, "Inservice Testing Program," NSPM proposes to instead replace the text of current TS 5.5.5 with the phrase "(Deleted)". This avoids a large administrative impact requiring the renumbering of the subsequent TS, and the revising of plant documents that refer to those subsequent sections. This deviation also results in eliminating the revision to LCO 3.0.6, as shown in TSTF-545.

The SRs listed in Table 1 as having IST-specified frequencies have listed frequencies in the MNGP TS as "In accordance with the Inservice Testing Program". They differ from the frequencies for the associated SRs in the STS in that the STS specify frequencies (i.e., a specific number of days or months) for the SRs. The changes to the MNGP TS SRs neither change the SR frequency, nor the intent of the SR. The changes are editorial in nature, and reflect the standard convention of having terms defined in section 1 of the TS being listed in all-caps whenever used in the TS. Per Section 2.2.1 of TSTF-545, the use of the phrase "Inservice Testing Program" may appear in different locations in plant-specific TS, and revising the phrase to be capitalized wherever it may appear is within the scope of the changes approved in the TSTF.

The SRs listed in Table 1 with a specified frequency (i.e., a specific number of days or months) have those frequencies in the MNGP TS. They differ from the frequencies for their associated SRs in the STS in that the STS identify the frequency as "In accordance with the Inservice Testing Program". The changes to the MNGP TS SRs neither change the SR frequency, nor the intent of the SR. The changes are editorial in nature, and reflect the standard convention of having terms defined in Section 1 of the TS being listed in all-caps whenever used in the TS. Per Section 2.2.1 of TSTF-545, the use of the phrase "Inservice Testing Program" may appear in different locations in plant-specific TS, and revising the phrase to be capitalized wherever it may appear is within the scope of the changes approved in the TSTF.

The MNGP TS do not include Specification 3.4.5, "RCS [Reactor Coolant System] Primary Isolation Valve Leakage" that is contained in NUREG-1433. Additionally, the MNGP TS do not include Specification 3.6.2.4, "Residual Heat Removal (RHR) Suppression Pool Spray" that is contained in NUREG-1433. The MNGP TS do include another RHR specification for a similar application, Specification 3.6.1.8, "RHR Drywell Spray". However, MNGP TS 3.6.1.8 does not include a commensurate SR to 3.6.2.4.2, and therefore a commensurate change is not required.

All of these changes are in accordance with the guidance and the intent of clarifying the usage of SR 3.0.2 in administrative testing governed by TS Section 5.5 as outlined in TSTF-545, Revision 3, and are acceptable.

2.3 Facility Description

MNGP is a single unit plant located on the south bank of the Mississippi River in the city of Monticello, Minnesota. The facility is owned and operated by NSPM. The MNGP is a single

cycle, forced circulation, low power density boiling water reactor, designed and supplied by the General Electric Corporation. The MNGP application for a Construction Permit and Operating License was submitted to the Atomic Energy Commission (AEC) on August 1, 1966. Amendment No. 1 to Provisional Operating License No. DPR-22 was issued on January 19, 1971, granting full power operation. MNGP began commercial operation on June 30, 1971.

The MNGP was designed and constructed to comply with NSPM's understanding of the intent of the AEC General Design Criteria (GDC) for Nuclear Power Plant Construction Permits, as proposed on July 11, 1967. MNGP was not licensed to NUREG-0800, Standard Review Plan (SRP).

3.0 REGULATORY ANALYSIS

3.1 No Significant Hazards Consideration Analysis

Northern States Power Company, a Minnesota corporation, doing business as Xcel Energy (hereafter "NSPM"), requests adoption of the Technical Specification (TS) changes described in TSTF-545, "TS Inservice Testing Program Removal & Clarify SR Usage Rule Application to Section 5.5. Testing," which is an approved change to the Improved Standard Technical Specifications (ISTS), into the Monticello Nuclear Generating Plant (MNGP) TS. The proposed change revises the TS Chapter 5, "Administrative Controls," Section 5.5, "Programs and Manuals," to delete the "Inservice Testing Program" specification. Requirements in the Inservice Testing (IST) Program are removed, as they are duplicative of requirements in the American Society of Mechanical Engineers (ASME) Operations and Maintenance (OM) Code, as clarified by Code Case OMN-20, "Inservice Test Frequency." Other requirements in Section 5.5 are eliminated because the Nuclear Regulatory Commission (NRC) has determined that their appearance in the TS is contrary to the regulations. A new defined term, "Inservice Testing Program," is added, which references the requirements of Title 10 of the Code of Federal Regulations (10 CFR), Part 50, paragraph 50.55a(f). NSPM has evaluated whether or not a significant hazards consideration is involved with the proposed amendment by focusing on the three standards set forth in 10 CFR 50.92, "Issuance of amendment," as discussed below:

1. Does the proposed change involve a significant increase in the probability or consequences of an accident previously evaluated?

   Response: No

   The proposed change revises TS Chapter 5, "Administrative Controls," Section 5.5, "Programs and Manuals," by eliminating the "Inservice Testing Program" specification. Most requirements in the IST Program are removed as they are duplicative of requirements in the ASME OM Code, as clarified by Code Case OMN-20, "Inservice Test Frequency." The remaining requirements in the Section 5.5 IST Program are eliminated because the NRC has determined their inclusion in the TS is contrary to the regulations. A new defined term, "Inservice Testing Program," is added to the TS, which references the requirements of 10 CFR 50.55a(f).

Performance of inservice testing is not an initiator to any accident previously evaluated. As a result, the probability of occurrence of an accident is not significantly affected by the proposed change. Inservice test frequencies under Code Case OMN-20 are equivalent to the current testing period allowed by the TS with the exception that testing frequencies greater than 2 years may be extended by up to 6 months to facilitate test scheduling and consideration of plant operating conditions that may not be suitable for performance of the required testing. The testing frequency extension will not affect the ability of the components to mitigate any accident previously evaluated as the components are required to be operable during the testing period extension. Performance of inservice tests utilizing the allowances in OMN-20 will not significantly affect the reliability of the tested components. As a result, the availability of the affected components, as well as their ability to mitigate the consequences of accidents previously evaluated, is not affected.

Therefore, the proposed change does not involve a significant increase in the probability or consequences of an accident previously evaluated.

2. Does the proposed change create the possibility of a new or different kind of accident from any accident previously evaluated?

   Response: No

   The proposed change does not alter the design or configuration of the plant. The proposed change does not involve a physical alteration of the plant; no new or different kind of equipment will be installed. The proposed change does not alter the types of inservice testing performed. In most cases, the frequency of inservice testing is unchanged. However, the frequency of testing would not result in a new or different kind of accident from any previously evaluated since the testing methods are not altered.

   Therefore, the proposed change does not create the possibility of a new or different kind of accident from any accident previously evaluated.

3. Does the proposed change involve a significant reduction a margin of safety?

   Response: No

   The proposed change eliminates some requirements from the TS in lieu of requirements in the ASME Code, as modified by use of Code Case OMN-20. Compliance with the ASME Code is required by 10 CFR 50.55a. The proposed change also allows inservice tests with frequencies greater than 2 years to be extended by 6 months to facilitate test scheduling and consideration of plant operating conditions that may not be suitable for performance of the required testing. The testing frequency extension will not affect the ability of the components to respond to an accident as the components are required to be operable during the testing period extension. The proposed change will eliminate the existing TS SR 3.0.3 allowance to defer performance of missed inservice tests up to the duration of the specified frequency, and will instead require an assessment of the missed test on equipment operability. This assessment will consider the effect on a margin of safety (equipment operability). Should the component be inoperable, the TS

provide actions to ensure that the margin of safety is protected. The proposed change also eliminates a statement that nothing in the ASME Code should be construed to supersede the requirements of any TS. The NRC has determined that statement to be incorrect. However, elimination of the statement will have no effect on plant operation or safety.

Therefore, the proposed change does not involve a significant reduction in a margin of safety.

Based on the above evaluation, NSPM concludes that the proposed presents no significant hazards consideration under the standards set forth in 10 CFR 50.92(c), and accordingly, a finding of “no significant hazards consideration” is justified.

4.0 ENVIRONMENTAL EVALUATION

The proposed change would change a requirement with respect to installation or use of a facility component located within the restricted area, as defined in 10 CFR 20, or would change an inspection or surveillance requirement. However, the proposed change does not involve (i) a significant hazards consideration, (ii) a significant change in the types or significant increase in the amounts of any effluents that may be released offsite, or (iii) a significant increase in individual or cumulative occupational radiation exposure. Accordingly, the proposed change meets the eligibility criterion for categorical exclusion set forth in 10 CFR 51.22(c)(9). Therefore, pursuant to 10 CFR 51.22(b), no environmental impact statement or environmental assessment need be prepared in connection with the proposed change.

ENCLOSURE 1, ATTACHMENT 1

MONTICELLO NUCLEAR GENERATING PLANT

Application to Revise Technical Specifications to Adopt TSTF-545, Revision 3, "TS Inservice Testing Program Removal & Clarify SR Usage Rule Application to Section 5.5 Testing"

TECHNICAL SPECIFICATION PAGES (Markup)

(12 pages follow)

1.1 Definitions

CORE ALTERATION	CORE ALTERATION shall be the movement of any fuel, sources, or reactivity control components, within the reactor vessel with the vessel head removed and fuel in the vessel. The following exceptions are not considered to be CORE ALTERATIONS: a. Movement of source range monitors, local power range monitors, intermediate range monitors, traversing incore probes, or special movable detectors (including undervessel replacement); and b. Control rod movement, provided there are no fuel assemblies in the associated core cell. Suspension of CORE ALTERATIONS shall not preclude completion of movement of a component to a safe position.
CORE OPERATING LIMITS REPORT (COLR)	The COLR is the unit specific document that provides cycle specific parameter limits for the current reload cycle. These cycle specific limits shall be determined for each reload cycle in accordance with Specification 5.6.3. Plant operation within these limits is addressed in individual Specifications.
DOSE EQUIVALENT I-131	DOSE EQUIVALENT I-131 shall be that concentration of I-131 (microcuries/gram) that alone would produce the same dose as the quantity and isotopic mixture of I-131, I-132, I-133, I-134, and I-135 actually present. The dose conversion factors used for this calculation shall be those listed in Federal Guidance Report (FGR)-11, "Limiting Values of Radionuclide Intake and Air Concentration Factors for Inhalation, Submersion and Ingestion," September 1988, and FGR-12, "External Exposure to Radionuclides in Air, Water and Soil," September 1993.
INSERVICE TESTING PROGRAM	The INSERVICE TESTING PROGRAM is the licensee program that fulfills the requirements of 10 CFR 50.55a(f).
LEAKAGE	LEAKAGE shall be: a. Identified LEAKAGE 1. LEAKAGE into the drywell, such as that from pump seals or valve packing that is captured and conducted to a sump or collecting tank; or

1.1 Definitions

LEAKAGE (continued)	2. LEAKAGE into the drywell atmosphere from sources that are both specifically located and known either not to interfere with the operation of leakage detection systems or not to be pressure boundary LEAKAGE; b. Unidentified LEAKAGE All LEAKAGE into the drywell that is not identified LEAKAGE; c. Total LEAKAGE Sum of the identified and unidentified LEAKAGE; and d. Pressure Boundary LEAKAGE LEAKAGE through a nonisolable fault in a Reactor Coolant System (RCS) component body, pipe wall, or vessel wall.
LINEAR HEAT GENERATION RATE (LHGR)	The LHGR shall be the heat generation rate per unit length of fuel rod. It is the integral of the heat flux over the heat transfer area associated with the unit length.
LOGIC SYSTEM FUNCTIONAL TEST	A LOGIC SYSTEM FUNCTIONAL TEST shall be a test of all logic components required for OPERABILITY of a logic circuit, from as close to the sensor as practicable up to, but not including, the actuated device, to verify OPERABILITY. The LOGIC SYSTEM FUNCTIONAL TEST may be performed by means of any series of sequential, overlapping, or total system steps so that the entire logic system is tested.
MINIMUM CRITICAL POWER RATIO (MCPR)	The MCPR shall be the smallest critical power ratio (CPR) that exists in the core for each class of fuel. The CPR is that power in the assembly that is calculated by application of the appropriate correlation(s) to cause some point in the assembly to experience boiling transition, divided by the actual assembly operating power.
MODE	A MODE shall correspond to any one inclusive combination of mode switch position, average reactor coolant temperature, and reactor vessel head closure bolt tensioning specified in Table 1.1-1 with fuel in the reactor vessel.

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.1.7.7	Verify each pump develops a flow rate ≥ 24 gpm at a discharge pressure ≥ 1275 psig.	In accordance with the ~~Inservice Testing Program~~ INSERVICE TESTING PROGRAM
SR 3.1.7.8	Verify flow through one SLC subsystem from pump into reactor pressure vessel.	24 months on a STAGGERED TEST BASIS
SR 3.1.7.9	Verify all heat traced piping between storage tank and pump suction is unblocked.	24 months AND --------NOTE-------- Only required if SLC pump suction lines heat tracing is inoperable. ---------- Once within 24 hours after room temperature in the vicinity of the SLC pumps is restored within the solution temperature limits of Figure 3.1.7-2
SR 3.1.7.10	Verify sodium pentaborate enrichment is ≥ 55.0 atom percent B-10.	Prior to addition to SLC tank

SURVEILLANCE REQUIREMENTS

	SURVEILLANCE	FREQUENCY
SR 3.4.3.1	Verify the safety function lift setpoints of the required S/RVs are 1109 ± 33.2 psig. Following testing, lift settings shall be 1109 ± 11.0 psig.	In accordance with the ~~Inservice Testing Program~~ INSERVICE TESTING PROGRAM
SR 3.4.3.2	----------NOTE---------- Not required to be performed until 12 hours after reactor steam flow is adequate to perform the test. ---------- Verify each required S/RV is capable of being opened.	In accordance with the ~~Inservice Testing Program~~ INSERVICE TESTING PROGRAM

SURVEILLANCE REQUIREMENTS

	SURVEILLANCE	FREQUENCY
SR 3.5.1.1	Verify, for each ECCS injection/spray subsystem, locations susceptible to gas accumulation are sufficiently filled with water.	31 days
SR 3.5.1.2	----------NOTE---------- Not required to be met for system vent flow paths opened under administrative control. ---------- Verify each ECCS injection/spray subsystem manual, power operated, and automatic valve in the flow path, that is not locked, sealed, or otherwise secured in position, is in the correct position.	31 days
SR 3.5.1.3	Verify ADS pneumatic pressure is as follows for each required ADS pneumatic supply: a. S/RV Accumulator Bank header pressure ≥ 88.3 psig; and b. Alternate Nitrogen System pressure is ≥ 410 psig.	31 days
SR 3.5.1.4	----------NOTE---------- Only required to be met in MODE 1. ---------- Verify the RHR System intertie return line isolation valves are closed.	31 days
SR 3.5.1.5	Verify correct breaker alignment to the LPCI swing bus.	31 days
SR 3.5.1.6	Verify each recirculation pump discharge valve cycles through one complete cycle of full travel or is de-energized in the closed position.	In accordance with the ~~Inservice Testing Program~~ INSERVICE TESTING PROGRAM

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.5.1.7	Verify the following ECCS pumps develop the specified flow rate against a system head corresponding to the specified reactor to containment pressure. System / Flow Rate / No. of Pumps / System Head Corresponding to a Reactor to Containment Pressure of Core Spray / ≥ 2835 gpm / 1 / ≥ 130 psi LPCI / ≥ 3870 gpm / 1 / ≥ 20 psi	In accordance with the ~~Inservice Testing Program~~ INSERVICE TESTING PROGRAM
SR 3.5.1.8	----------NOTE---------- Not required to be performed until 12 hours after reactor steam pressure and flow are adequate to perform the test. ---------- Verify, with reactor steam dome pressure ≤ 1025.3 psig and ≥ 950 psig, the HPCI pump can develop a flow rate ≥ 2700 gpm against a system head corresponding to reactor pressure.	In accordance with the ~~Inservice Testing Program~~ INSERVICE TESTING PROGRAM
SR 3.5.1.9	----------NOTE---------- Not required to be performed until 12 hours after reactor steam pressure and flow are adequate to perform the test. ---------- Verify, with reactor pressure ≤ 165 psig, the HPCI pump can develop a flow rate ≥ 2700 gpm against a system head corresponding to reactor pressure.	24 months

SURVEILLANCE REQUIREMENTS (continued)

	SURVEILLANCE	FREQUENCY
SR 3.5.1.10	----------NOTE---------- Vessel injection/spray may be excluded. ---------- Verify each ECCS injection/spray subsystem actuates on an actual or simulated automatic initiation signal.	24 months
SR 3.5.1.11	----------NOTE---------- Valve actuation may be excluded. ---------- Verify the ADS actuates on an actual or simulated automatic initiation signal.	24 months
SR 3.5.1.12	----------NOTE---------- Not required to be performed until 12 hours after reactor steam flow is adequate to perform the test. ---------- Verify each ADS valve is capable of being opened.	In accordance with the ~~Inservice Testing Program~~ INSERVICE TESTING PROGRAM
SR 3.5.1.13	Verify automatic transfer capability of the LPCI swing bus power supply from the normal source to the backup source.	24 months

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.5.2.2	Verify, for each required ECCS injection/spray subsystem, locations susceptible to gas accumulation are sufficiently filled with water.	31 days
SR 3.5.2.3	----------NOTE---------- Not required to be met for system vent flow paths opened under administrative control. ---------- Verify each required ECCS injection/spray subsystem manual, power operated, and automatic valve in the flow path, that is not locked, sealed, or otherwise secured in position, is in the correct position.	31 days
SR 3.5.2.4	Verify each required ECCS pump develops the specified flow rate against a system head corresponding to the specified reactor to containment pressure. System / Flow Rate / No. of Pumps / System Head Corresponding to a Reactor to Containment Pressure of Core Spray: ≥ 2835 gpm / 1 / ≥ 130 psi LPCI: ≥ 3870 gpm / 1 / ≥ 20 psi	In accordance with the ~~Inservice Testing Program~~ INSERVICE TESTING PROGRAM
SR 3.5.2.5	----------NOTE---------- Vessel injection/spray may be excluded. ---------- Verify each required ECCS injection/spray subsystem actuates on an actual or simulated automatic initiation signal.	24 months

SURVEILLANCE REQUIREMENTS

	SURVEILLANCE	FREQUENCY
SR 3.5.3.1	----------NOTE---------- Not required to be met for system vent flow paths opened under administrative control. ----------	
	Verify each RCIC System manual, power operated, and automatic valve in the flow path, that is not locked, sealed, or otherwise secured in position, is in the correct position.	31 days
SR 3.5.3.2	----------NOTE---------- Not required to be performed until 12 hours after reactor steam pressure and flow are adequate to perform the test. ----------	
	Verify, with reactor pressure ≤ 1025.3 psig and ≥ 950 psig, the RCIC pump can develop a flow rate ≥ 400 gpm against a system head corresponding to reactor pressure.	In accordance with the ~~Inservice Testing Program~~ INSERVICE TESTING PROGRAM
SR 3.5.3.3	----------NOTE---------- Not required to be performed until 12 hours after reactor steam pressure and flow are adequate to perform the test. ----------	
	Verify, with reactor pressure ≤ 165 psig, the RCIC pump can develop a flow rate ≥ 400 gpm against a system head corresponding to reactor pressure.	24 months
SR 3.5.3.4	----------NOTE---------- Vessel injection may be excluded. ----------	
	Verify the RCIC System actuates on an actual or simulated automatic initiation signal.	24 months
SR 3.5.3.5	Verify the RCIC System locations susceptible to gas accumulation are sufficiently filled with water.	31 days

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.6.1.5.1	----------NOTE---------- Not required to be performed until 12 hours after reactor steam flow is adequate to perform the test. ---------- Verify each LLS valve is capable of being opened.	In accordance with the ~~Inservice Testing Program~~ INSERVICE TESTING PROGRAM
SR 3.6.1.5.2	----------NOTE---------- Valve actuation may be excluded. ---------- Verify the LLS System actuates on an actual or simulated automatic initiation signal.	24 months

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.6.2.3.2	Verify each required RHR pump develops a flow rate ≥ 3870 gpm through the associated heat exchanger while operating in the suppression pool cooling mode.	In accordance with the ~~Inservice Testing Program~~ INSERVICE TESTING PROGRAM
SR 3.6.2.3.3	Verify RHR suppression pool cooling subsystem locations susceptible to gas accumulation are sufficiently filled with water.	31 days

5.5 Programs and Manuals

5.5.5 ~~Inservice Testing Program~~(Deleted)

~~This program provides controls for inservice testing of ASME Code Class 1, 2, and 3 pumps and valves.~~

~~a. Testing Frequencies specified in the ASME Operation and Maintenance (OM) Code and applicable Addenda as follows:~~

~~ASME OM Code and applicable Addenda terminology for inservice testing activities~~	~~Required Frequencies for performing inservice testing activities~~
~~Weekly~~	~~At least once per 7 days~~
~~Monthly~~	~~At least once per 31 days~~
~~Biquarterly~~	~~At least once per 46 days~~
~~Quarterly or every 3 months~~	~~At least once per 92 days~~
~~Semiannually or every 6 months~~	~~At least once per 184 days~~
~~Every 9 months~~	~~At least once per 276 days~~
~~Yearly, every 12 months, or annually~~	~~At least once per 366 days~~
~~Biennially, every 24 months, or every 2 years~~	~~At least once per 731 days~~
~~Every 48 months~~	~~At least once per 1461 days~~
~~Every 5 years~~	~~At least once per 1827 days~~
~~Every 8 years~~	~~At least once per 2922 days~~
~~Every 10 years~~	~~At least once per 3653 days~~

~~b. The provisions of SR 3.0.2 are applicable to the above required Frequencies for performing inservice testing activities.~~

~~c. The provisions of SR 3.0.3 are applicable to inservice testing activities.~~

~~d. Nothing in the ASME OM Code shall be construed to supersede the requirements of any TS.~~

5.5.6 Ventilation Filter Testing Program (VFTP)

A program shall establish the required testing of Engineered Safety Feature (ESF) filter ventilation systems. Tests described in Specifications 5.5.6.a and 5.5.6.b shall be performed once per 24 months and following painting, fire, or chemical release in any ventilation zone communicating with the subsystem while it is in operation that could adversely affect the high efficiency particulate air (HEPA) filters or charcoal adsorber capability.

ENCLOSURE 1, ATTACHMENT 2

MONTICELLO NUCLEAR GENERATING PLANT

Application to Revise Technical Specifications to Adopt TSTF-545, Revision 3, "TS Inservice Testing Program Removal & Clarify SR Usage Rule Application to Section 5.5 Testing"

TECHNICAL SPECIFICATION PAGES (Retyped)

(12 pages follow)

1.1 Definitions

CORE ALTERATION	CORE ALTERATION shall be the movement of any fuel, sources, or reactivity control components, within the reactor vessel with the vessel head removed and fuel in the vessel. The following exceptions are not considered to be CORE ALTERATIONS: a. Movement of source range monitors, local power range monitors, intermediate range monitors, traversing incore probes, or special movable detectors (including undervessel replacement); and b. Control rod movement, provided there are no fuel assemblies in the associated core cell. Suspension of CORE ALTERATIONS shall not preclude completion of movement of a component to a safe position.
CORE OPERATING LIMITS REPORT (COLR)	The COLR is the unit specific document that provides cycle specific parameter limits for the current reload cycle. These cycle specific limits shall be determined for each reload cycle in accordance with Specification 5.6.3. Plant operation within these limits is addressed in individual Specifications.
DOSE EQUIVALENT I-131	DOSE EQUIVALENT I-131 shall be that concentration of I-131 (microcuries/gram) that alone would produce the same dose as the quantity and isotopic mixture of I-131, I-132, I-133, I-134, and I-135 actually present. The dose conversion factors used for this calculation shall be those listed in Federal Guidance Report (FGR)-11, "Limiting Values of Radionuclide Intake and Air Concentration Factors for Inhalation, Submersion and Ingestion," September 1988, and FGR-12, "External Exposure to Radionuclides in Air, Water and Soil," September 1993.
INSERVICE TESTING PROGRAM	The INSERVICE TESTING PROGRAM is the licensee program that fulfills the requirements of 10 CFR 50.55a(f).
LEAKAGE	LEAKAGE shall be: a. <u>Identified LEAKAGE</u> 1. LEAKAGE into the drywell, such as that from pump seals or valve packing that is captured and conducted to a sump or collecting tank; or

1.1 Definitions

LEAKAGE (continued)	2. LEAKAGE into the drywell atmosphere from sources that are both specifically located and known either not to interfere with the operation of leakage detection systems or not to be pressure boundary LEAKAGE; b. Unidentified LEAKAGE All LEAKAGE into the drywell that is not identified LEAKAGE; c. Total LEAKAGE Sum of the identified and unidentified LEAKAGE; and d. Pressure Boundary LEAKAGE LEAKAGE through a nonisolable fault in a Reactor Coolant System (RCS) component body, pipe wall, or vessel wall.
LINEAR HEAT GENERATION RATE (LHGR)	The LHGR shall be the heat generation rate per unit length of fuel rod. It is the integral of the heat flux over the heat transfer area associated with the unit length.
LOGIC SYSTEM FUNCTIONAL TEST	A LOGIC SYSTEM FUNCTIONAL TEST shall be a test of all logic components required for OPERABILITY of a logic circuit, from as close to the sensor as practicable up to, but not including, the actuated device, to verify OPERABILITY. The LOGIC SYSTEM FUNCTIONAL TEST may be performed by means of any series of sequential, overlapping, or total system steps so that the entire logic system is tested.
MINIMUM CRITICAL POWER RATIO (MCPR)	The MCPR shall be the smallest critical power ratio (CPR) that exists in the core for each class of fuel. The CPR is that power in the assembly that is calculated by application of the appropriate correlation(s) to cause some point in the assembly to experience boiling transition, divided by the actual assembly operating power.
MODE	A MODE shall correspond to any one inclusive combination of mode switch position, average reactor coolant temperature, and reactor vessel head closure bolt tensioning specified in Table 1.1-1 with fuel in the reactor vessel.

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.1.7.7	Verify each pump develops a flow rate ≥ 24 gpm at a discharge pressure ≥ 1275 psig.	In accordance with the INSERVICE TESTING PROGRAM
SR 3.1.7.8	Verify flow through one SLC subsystem from pump into reactor pressure vessel.	24 months on a STAGGERED TEST BASIS
SR 3.1.7.9	Verify all heat traced piping between storage tank and pump suction is unblocked.	24 months AND --------NOTE-------- Only required if SLC pump suction lines heat tracing is inoperable. ---------- Once within 24 hours after room temperature in the vicinity of the SLC pumps is restored within the solution temperature limits of Figure 3.1.7-2
SR 3.1.7.10	Verify sodium pentaborate enrichment is ≥ 55.0 atom percent B-10.	Prior to addition to SLC tank

SURVEILLANCE REQUIREMENTS

	SURVEILLANCE	FREQUENCY
SR 3.4.3.1	Verify the safety function lift setpoints of the required S/RVs are 1109 ± 33.2 psig. Following testing, lift settings shall be 1109 ± 11.0 psig.	In accordance with the INSERVICE TESTING PROGRAM
SR 3.4.3.2	----------NOTE---------- Not required to be performed until 12 hours after reactor steam flow is adequate to perform the test. ----------	
	Verify each required S/RV is capable of being opened.	In accordance with the INSERVICE TESTING PROGRAM

SURVEILLANCE REQUIREMENTS

	SURVEILLANCE	FREQUENCY
SR 3.5.1.1	Verify, for each ECCS injection/spray subsystem, locations susceptible to gas accumulation are sufficiently filled with water.	31 days
SR 3.5.1.2	----------NOTE---------- Not required to be met for system vent flow paths opened under administrative control. ---------- Verify each ECCS injection/spray subsystem manual, power operated, and automatic valve in the flow path, that is not locked, sealed, or otherwise secured in position, is in the correct position.	31 days
SR 3.5.1.3	Verify ADS pneumatic pressure is as follows for each required ADS pneumatic supply: a. S/RV Accumulator Bank header pressure $\geq$ 88.3 psig; and b. Alternate Nitrogen System pressure is $\geq$ 410 psig.	31 days
SR 3.5.1.4	----------NOTE---------- Only required to be met in MODE 1. ---------- Verify the RHR System intertie return line isolation valves are closed.	31 days
SR 3.5.1.5	Verify correct breaker alignment to the LPCI swing bus.	31 days
SR 3.5.1.6	Verify each recirculation pump discharge valve cycles through one complete cycle of full travel or is de-energized in the closed position.	In accordance with the INSERVICE TESTING PROGRAM

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE					FREQUENCY
SR 3.5.1.7	Verify the following ECCS pumps develop the specified flow rate against a system head corresponding to the specified reactor to containment pressure.				In accordance with the INSERVICE TESTING PROGRAM
	System	Flow Rate	No. of Pumps	System Head Corresponding to a Reactor to Containment Pressure of	
	Core Spray	≥ 2835 gpm	1	≥ 130 psi	
	LPCI	≥ 3870 gpm	1	≥ 20 psi	
SR 3.5.1.8	----------NOTE---------- Not required to be performed until 12 hours after reactor steam pressure and flow are adequate to perform the test. ----------				
	Verify, with reactor steam dome pressure ≤ 1025.3 psig and ≥ 950 psig, the HPCI pump can develop a flow rate ≥ 2700 gpm against a system head corresponding to reactor pressure.				In accordance with the INSERVICE TESTING PROGRAM
SR 3.5.1.9	----------NOTE---------- Not required to be performed until 12 hours after reactor steam pressure and flow are adequate to perform the test. ----------				
	Verify, with reactor pressure ≤ 165 psig, the HPCI pump can develop a flow rate ≥ 2700 gpm against a system head corresponding to reactor pressure.				24 months

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.5.1.10	----------NOTE---------- Vessel injection/spray may be excluded. ---------- Verify each ECCS injection/spray subsystem actuates on an actual or simulated automatic initiation signal.	24 months
SR 3.5.1.11	----------NOTE---------- Valve actuation may be excluded. ---------- Verify the ADS actuates on an actual or simulated automatic initiation signal.	24 months
SR 3.5.1.12	----------NOTE---------- Not required to be performed until 12 hours after reactor steam flow is adequate to perform the test. ---------- Verify each ADS valve is capable of being opened.	In accordance with the INSERVICE TESTING PROGRAM
SR 3.5.1.13	Verify automatic transfer capability of the LPCI swing bus power supply from the normal source to the backup source.	24 months

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE					FREQUENCY
SR 3.5.2.2	Verify, for each required ECCS injection/spray subsystem, locations susceptible to gas accumulation are sufficiently filled with water.				31 days
SR 3.5.2.3	----------NOTE---------- Not required to be met for system vent flow paths opened under administrative control. ----------				
	Verify each required ECCS injection/spray subsystem manual, power operated, and automatic valve in the flow path, that is not locked, sealed, or otherwise secured in position, is in the correct position.				31 days
SR 3.5.2.4	Verify each required ECCS pump develops the specified flow rate against a system head corresponding to the specified reactor to containment pressure.				In accordance with the INSERVICE TESTING PROGRAM
	System	Flow Rate	No. of Pumps	System Head Corresponding to a Reactor to Containment Pressure of	
	Core Spray	≥ 2835 gpm	1	≥ 130 psi	
	LPCI	≥ 3870 gpm	1	≥ 20 psi	
SR 3.5.2.5	----------NOTE---------- Vessel injection/spray may be excluded. ----------				
	Verify each required ECCS injection/spray subsystem actuates on an actual or simulated automatic initiation signal.				24 months

SURVEILLANCE REQUIREMENTS

	SURVEILLANCE	FREQUENCY
SR 3.5.3.1	----------NOTE---------- Not required to be met for system vent flow paths opened under administrative control. --- Verify each RCIC System manual, power operated, and automatic valve in the flow path, that is not locked, sealed, or otherwise secured in position, is in the correct position.	31 days
SR 3.5.3.2	----------NOTE---------- Not required to be performed until 12 hours after reactor steam pressure and flow are adequate to perform the test. --- Verify, with reactor pressure $\leq$ 1025.3 psig and $\geq$ 950 psig, the RCIC pump can develop a flow rate $\geq$ 400 gpm against a system head corresponding to reactor pressure.	In accordance with the INSERVICE TESTING PROGRAM
SR 3.5.3.3	----------NOTE---------- Not required to be performed until 12 hours after reactor steam pressure and flow are adequate to perform the test. --- Verify, with reactor pressure $\leq$ 165 psig, the RCIC pump can develop a flow rate $\geq$ 400 gpm against a system head corresponding to reactor pressure.	24 months
SR 3.5.3.4	----------NOTE---------- Vessel injection may be excluded. --- Verify the RCIC System actuates on an actual or simulated automatic initiation signal.	24 months
SR 3.5.3.5	Verify the RCIC System locations susceptible to gas accumulation are sufficiently filled with water.	31 days

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.6.1.5.1	----------NOTE---------- Not required to be performed until 12 hours after reactor steam flow is adequate to perform the test. ----------	
	Verify each LLS valve is capable of being opened.	In accordance with the INSERVICE TESTING PROGRAM
SR 3.6.1.5.2	----------NOTE---------- Valve actuation may be excluded. ----------	
	Verify the LLS System actuates on an actual or simulated automatic initiation signal.	24 months

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.6.2.3.2	Verify each required RHR pump develops a flow rate $\geq$ 3870 gpm through the associated heat exchanger while operating in the suppression pool cooling mode.	In accordance with the INSERVICE TESTING PROGRAM
SR 3.6.2.3.3	Verify RHR suppression pool cooling subsystem locations susceptible to gas accumulation are sufficiently filled with water.	31 days

5.5 Programs and Manuals

5.5.5 (Deleted)

5.5.6 Ventilation Filter Testing Program (VFTP)

A program shall establish the required testing of Engineered Safety Feature (ESF) filter ventilation systems. Tests described in Specifications 5.5.6.a and 5.5.6.b shall be performed once per 24 months and following painting, fire, or chemical release in any ventilation zone communicating with the subsystem while it is in operation that could adversely affect the high efficiency particulate air (HEPA) filters or charcoal adsorber capability.

ENCLOSURE 1, ATTACHMENT 3

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TECHNICAL SPECIFICATION BASES PAGES (Markup)
(Provided for Information Only)

(17 pages follow)

B 3.0 SURVEILLANCE REQUIREMENT (SR) Applicability

BASES

SRs	SR 3.0.1 through SR 3.0.4 establish the general requirements applicable to all Specifications ~~in Section 3.1 through 3.10~~ and apply at all times, unless otherwise stated. SR 3.0.2 and SR 3.0.3 apply in Chapter 5 only when invoked by a Chapter 5 Specification.
SR 3.0.1	SR 3.0.1 establishes the requirement that SRs must be met during the MODES or other specified conditions in the Applicability for which the requirements of the LCO apply, unless otherwise specified in the individual SRs. This Specification is to ensure that Surveillances are performed to verify the OPERABILITY of systems and components, and that variables are within specified limits. Failure to meet a Surveillance within the specified Frequency, in accordance with SR 3.0.2, constitutes a failure to meet an LCO. Surveillances may be performed by means of any series of sequential, overlapping, or total steps provided the entire Surveillance is performed within the specified Frequency. Additionally, the definitions related to instrument testing (e.g., CHANNEL CALIBRATION) specify that these tests are performed by means of any series of sequential, overlapping, or total steps. Systems and components are assumed to be OPERABLE when the associated SRs have been met. Nothing in this Specification, however, is to be construed as implying that systems or components are OPERABLE when: a. The systems or components are known to be inoperable, although still meeting the SRs; or b. The requirements of the Surveillance(s) are known to be not met between required Surveillance performances. Surveillances do not have to be performed when the unit is in a MODE or other specified condition for which the requirements of the associated LCO are not applicable, unless otherwise specified. The SRs associated with a Special Operations LCO are only applicable when the Special Operations LCO is used as an allowable exception to the requirements of a Specification. Unplanned events may satisfy the requirements (including applicable acceptance criteria) for a given SR. In this case, the unplanned event may be credited as fulfilling the performance of the SR. Surveillances, including Surveillances invoked by Required Actions, do not have to be performed on inoperable equipment because the ACTIONS define the remedial measures that apply. Surveillances have to be met and performed in accordance with SR 3.0.2, prior to returning equipment to OPERABLE status.

SURVEILLANCE REQUIREMENTS (continued)

met. SR 3.1.7.5 must be performed any time sodium pentaborate or water is added to the storage tank solution to determine that the sodium pentaborate solution concentration is within the specified limits. SR 3.1.7.5 must also be performed anytime the temperature is restored to within the limits of Figure 3.1.7-2, to ensure that no significant boron

precipitation occurred. The 31 day Frequency of this Surveillance is appropriate because of the relatively slow variation of sodium pentaborate concentration between Surveillances.

SR 3.1.7.7

Demonstrating that each SLC System pump develops a flow rate ≥ 24 gpm at a discharge pressure ≥ 1275 psig ensures that pump performance has not degraded during the fuel cycle. This minimum pump flow rate requirement ensures that, when combined with the sodium pentaborate solution concentration requirements, the rate of negative reactivity insertion from the SLC System will adequately compensate for the positive reactivity effects encountered during power reduction, cooldown of the moderator, and xenon decay. This test confirms one point on the pump design curve and is indicative of overall performance. Such inservice tests confirm component OPERABILITY, trend performance, and detect incipient failures by indicating abnormal performance. The Frequency of this Surveillance is in accordance with the ~~Inservice Testing Program~~ INSERVICE TESTING PROGRAM.

SR 3.1.7.8 and SR 3.1.7.9

These Surveillances ensure that there is a functioning flow path from the boron solution storage tank to the RPV, including the firing of an explosive valve. The replacement charge for the explosive valve shall be from the same manufactured batch as the one fired or from another batch that has been certified by having one of that batch successfully fired. The pump and explosive valve tested should be alternated such that both complete flow paths are tested every 48 months at alternating 24 month intervals. The Surveillance may be performed in separate steps to prevent injecting boron into the RPV. An acceptable method for verifying flow from the pump to the RPV is to pump demineralized water from a test tank through one manually initiated SLC subsystem and into the RPV. The 24 month Frequency is based on the need to perform this Surveillance under the conditions that apply during a plant outage and the potential for an unplanned transient if the Surveillance were performed with the reactor at power. Operating experience has shown these components usually pass the Surveillance when performed at the 24 month Frequency; therefore, the Frequency was concluded to be acceptable from a reliability standpoint.

BASES

ACTIONS (continued)

The 14 day Completion Time to restore the inoperable required S/RVs to OPERABLE status is based on the relief capability of the remaining S/RVs, the low probability of an event requiring S/RV actuation, and a reasonable time to complete the Required Action.

B.1 and B.2

With less than the minimum number of required S/RVs OPERABLE, a transient may result in the violation of the ASME Code limit on reactor pressure. If the safety function of the inoperable required S/RVs cannot be restored to OPERABLE status within the associated Completion Time of Required Action A.1, or if the safety function of three or more required S/RVs is inoperable, the plant must be brought to a MODE in which the LCO does not apply. To achieve this status, the plant must be brought to MODE 3 within 12 hours and to MODE 4 within 36 hours. The allowed Completion Times are reasonable, based on operating experience, to reach required plant conditions from full power conditions in an orderly manner and without challenging plant systems.

SURVEILLANCE REQUIREMENTS

SR 3.4.3.1

This Surveillance requires that the required S/RVs will open at the pressures assumed in the safety analysis of Reference 1. The demonstration of the S/RV safety lift settings must be performed during shutdown, since this is a bench test, to be done in accordance with the ~~Inservice Testing Program~~ INSERVICE TESTING PROGRAM. The lift setting pressure shall correspond to ambient conditions of the valves at nominal operating temperatures and pressures. The S/RV setpoint is ± 3% for OPERABILITY; however, the valves are reset to ± 1% during the Surveillance to allow for drift.

SR 3.4.3.2

This Surveillance verifies that each S/RV is capable of being opened, which can be determined by either of two means, i.e., Method 1 or Method 2. Applying Method 1, approved in Reference 5, valve OPERABILITY and setpoints for overpressure protection are verified in accordance with the ASME OM Code. Applying Method 2, a manual actuation of the S/RV is performed to verify that the valve is functioning properly.

BASES

SURVEILLANCE REQUIREMENTS (continued)

Method 1

Valve OPERABILITY and setpoints for overpressure protection are verified in accordance with the requirements of the ASME OM Code (Ref. 4). Proper S/RV function is verified through performance of inspections and overlapping tests on component assemblies, demonstrating the valve is capable of being opened. Testing is performed to demonstrate that each:

- S/RV main stage opens and passes steam when the associated pilot stage actuates; and
- S/RV second stage actuates to open the associated main stage when the pneumatic actuator is pressurized;
- S/RV solenoid valve ports pneumatic pressure to the associated S/RV actuator when energized;
- S/RV actuator stem moves when dry lift tested in-situ. (With exception of main and pilot stages this test demonstrates mechanical operation without steam.)

The solenoid valves and S/RV actuators are functionally tested once per cycle as part of the ~~Inservice Testing Program~~ INSERVICE TESTING PROGRAM. The S/RV assembly is bench tested as part of the certification process, at intervals determined in accordance with the ~~Inservice Testing Program~~ INSERVICE TESTING PROGRAM. Maintenance procedures ensure that the S/RV is correctly installed in the plant, and that the S/RV and associated piping remain clear of foreign material that might obstruct valve operation or full steam flow.

This methodology provides adequate assurance that the S/RV will operate when actuated, while minimizing the challenges to the valves and the likelihood of leakage or spurious operation.

Method 2

A manual actuation of each required S/RV is performed to verify that, mechanically, the valve is functioning properly and no blockage exists in the valve discharge line. This can be demonstrated by the response of the turbine bypass valves, by a change in the measured steam flow, or by any other method suitable to verify steam flow. Adequate steam flow must be passing through the turbine bypass valves to continue to control reactor pressure when the S/RVs divert steam flow upon opening.

BASES

SURVEILLANCE REQUIREMENTS (continued)

Sufficient time is therefore allowed after the required flow is achieved to perform this test. Adequate steam flow is represented by at least one turbine bypass valve 80% open. This SR is modified by a Note that states the Surveillance is not required to be performed until 12 hours after reactor steam flow is adequate to perform the test. Plant startup is allowed prior to performing this test because valve OPERABILITY and the setpoints for overpressure protection are verified, per ASME Code requirements, prior to valve installation. The 12 hours allowed for manual actuation after the required flow is reached is sufficient to achieve stable conditions for testing and provides a reasonable time to complete the SR. If a valve fails to actuate due only to the failure of the solenoid but is capable of opening on overpressure, the safety function of the S/RV is considered OPERABLE.

The Frequency of "In accordance with the ~~Inservice Testing Program~~ INSERVICE TESTING PROGRAM" is based on ASME OM Code requirements. Industry operating experience has shown that these components usually pass the SR when performed at the Code required Frequency. Therefore, the Frequency was concluded to be acceptable from a reliability standpoint.

REFERENCES

1. USAR, Section 14.5.1.
2. USAR, Section 14.4.
3. USAR, Section 14A.6.
4. ASME Operation and Maintenance (OM) Code.
5. Amendment No. 168, "Issuance of Amendment Re: Testing of Main Steam Safety/Relief Valves," dated July 27, 2012. (ADAMS Accession No. ML12185A216)

BASES

SURVEILLANCE REQUIREMENTS

SR 3.5.1.1

The flow path piping has the potential to develop voids and pockets of entrained air. Maintaining the pump discharge lines of the CS System and LPCI subsystems full of water ensures that the ECCS will perform properly, injecting its full capacity into the RCS upon demand. This will also prevent a water hammer following an ECCS initiation signal. One acceptable method of ensuring that the lines are full is to vent at the high points. While the potential for developing voids in the HPCI System exists, the effects of a void have been analyzed and shown to be acceptable. The 31 day Frequency is based on the gradual nature of void buildup in the ECCS piping, the procedural controls governing system operation, and operating experience.

SR 3.5.1.2

Verifying the correct alignment for manual, power operated, and automatic valves in the ECCS flow paths provides assurance that the proper flow paths will exist for ECCS operation. This SR does not apply to valves that are locked, sealed, or otherwise secured in position since these were verified to be in the correct position prior to locking, sealing, or securing. A valve that receives an initiation signal is allowed to be in a nonaccident position provided the valve will automatically reposition in the proper stroke time. This SR does not require any testing or valve manipulation; rather, it involves verification that those valves capable of potentially being mispositioned are in the correct position. This SR does not apply to valves that cannot be inadvertently misaligned, such as check valves. For the HPCI System, this SR also includes the steam flow path for the turbine and the flow controller position.

The 31 day Frequency of this SR was derived from the ~~Inservice Testing Program~~ INSERVICE TESTING PROGRAM requirements for performing valve testing at least once every 92 days. The Frequency of 31 days is further justified because the valves are operated under procedural control and because improper valve position would only affect a single subsystem. This Frequency has been shown to be acceptable through operating experience.

SR 3.5.1.3

Verification every 31 days that each ADS pneumatic pressure is within the analysis limits (S/RV Accumulator Bank header pressure $\geq$ 88.3 psig and Alternate Nitrogen System supply (ALT N2 TRAIN A (or B) SUPPLY) pressure $\geq$ 410 psig (Ref. 13)) ensures adequate pressure for reliable ADS operation. The supply associated with each ADS valve provides

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SURVEILLANCE REQUIREMENTS (continued)

31 day Frequency has been found acceptable based on engineering judgment and operating experience.

SR 3.5.1.6

Cycling the recirculation pump discharge valves through one complete cycle of full travel demonstrates that the valves are mechanically OPERABLE and will close when required. Upon initiation of an automatic LPCI subsystem injection signal, these valves are required to be closed to ensure full LPCI subsystem flow injection in the reactor via the recirculation jet pumps. De-energizing the valve in the closed position will also ensure the proper flow path for the LPCI subsystem. Acceptable methods of de-energizing the valve include de-energizing breaker control power, racking out the breaker or removing the breaker.

The Frequency of this SR is in accordance with the ~~Inservice Testing Program~~ INSERVICE TESTING PROGRAM. If any recirculation pump discharge valve is inoperable and in the open position, both LPCI subsystems must be declared inoperable.

SR 3.5.1.7, SR 3.5.1.8, and SR 3.5.1.9

The performance requirements of the low pressure ECCS pumps are determined through application of the 10 CFR 50, Appendix K criteria (Ref. 7). This periodic Surveillance is performed (in accordance with the ASME Operation and Maintenance (OM) Code requirements for the ECCS pumps) to verify that the ECCS pumps will develop the flow rates required by the respective analyses. The low pressure ECCS pump flow rates ensure that adequate core cooling is provided to satisfy the acceptance criteria of Reference 9. The pump flow rates are verified against a system head equivalent to the reactor to containment pressure expected during a LOCA. In addition, for LPCI the system head for the tested pump must include a head correction that corresponds to two LPCI pumps delivering 7,740 gpm. The total system pump outlet pressure is adequate to overcome the elevation head pressure between the pump suction and the vessel discharge, the piping friction losses, and RPV pressure present during a LOCA. These values are established analytically.

The flow tests for the HPCI System are performed at two different pressure ranges such that system capability to provide rated flow against a system head corresponding to reactor pressure is tested at both the higher and lower operating ranges of the system. The required system head should overcome the RPV pressure and associated discharge line losses. Adequate reactor steam pressure must be available to perform

BASES

SURVEILLANCE REQUIREMENTS (continued)

the tests. Additionally, adequate steam flow must be passing through the main turbine or turbine bypass valves to continue to control reactor pressure when the HPCI System diverts steam flow. Therefore, sufficient time is allowed after adequate pressure and flow are achieved to perform these tests. Reactor steam pressure must be ≥ 950 psig to perform SR 3.5.1.8 and ≥ 150 psig to perform SR 3.5.1.9. Adequate steam flow is represented by at least one turbine bypass valve 80% open. Reactor startup is allowed prior to performing the low pressure Surveillance test because the reactor pressure is low and the time allowed to satisfactorily perform the Surveillance test is short. The reactor pressure is allowed to be increased to normal operating pressure since it is assumed that the low pressure test has been satisfactorily completed and there is no indication or reason to believe that HPCI is inoperable.

Therefore, SR 3.5.1.8 and SR 3.5.1.9 are modified by Notes that state the Surveillances are not required to be performed until 12 hours after the reactor steam pressure and flow are adequate to perform the test. The 12 hours allowed for performing the flow test after the required pressure and flow are reached is sufficient to achieve stable conditions for testing and provides reasonable time to complete the SRs. The Frequency for SR 3.5.1.7 and SR 3.5.1.8 is in accordance with the ~~Inservice Testing Program~~ INSERVICE TESTING PROGRAM requirements. The 24 month Frequency for SR 3.5.1.9 is based on the need to perform the Surveillance under the conditions that apply during a startup from a plant outage. Operating experience has shown that these components usually pass the SR when performed at the 24 month Frequency, which is based on the refueling cycle. Therefore, the Frequency was concluded to be acceptable from a reliability standpoint.

SR 3.5.1.10

The ECCS subsystems are required to actuate automatically to perform their design functions. This Surveillance verifies that, with a required system initiation signal (actual or simulated), the automatic initiation logic of HPCI, CS, and LPCI will cause the systems or subsystems to operate as designed, including actuation of the system throughout its emergency operating sequence, automatic pump startup and actuation of all automatic valves to their required positions. This SR also ensures that the HPCI System will automatically restart on a Reactor Vessel Water Level - Low Low signal received subsequent to a Reactor Vessel Water Level - High trip and that the suction is automatically transferred from the CSTs to the suppression pool on a Suppression Pool Water Level - High or Condensate Storage Tank Level - Low signal. The LOGIC SYSTEM FUNCTIONAL TEST performed in LCO 3.3.5.1 overlaps this Surveillance to provide complete testing of the assumed safety function.

BASES

SURVEILLANCE REQUIREMENTS (continued)

accordance with the ASME OM Code. Applying Method 2, a manual actuation of the ADS valve is performed to verify the valve is functioning properly.

Method 1

Valve OPERABILITY and setpoints for overpressure protection are verified in accordance with the requirements of the ASME OM Code (Ref. 16). Proper ADS valve function is verified through performance of inspections and overlapping tests on component assemblies, demonstrating the valve is capable of being opened. Testing is performed to demonstrate that each:

- ADS S/RV main stage opens and passes steam when the associated pilot stage actuates; and
- ADS S/RV second stage actuates to open the associated main stage when the pneumatic actuator is pressurized;
- ADS S/RV solenoid valve ports pneumatic pressure to the associated S/RV actuator when energized;
- ADS S/RV actuator stem moves when dry lift tested in-situ. (With exception of main and pilot stages this test demonstrates mechanical operation without steam.)

The solenoid valves and S/RV actuators are functionally tested once per cycle as part of the ~~Inservice Testing Program~~ INSERVICE TESTING PROGRAM. The S/RV assembly is bench tested as part of the certification process, at intervals determined in accordance with the ~~Inservice Testing Program~~ INSERVICE TESTING PROGRAM. Maintenance procedures ensure that the S/RV is correctly installed in the plant, and that the S/RV and associated piping remain clear of foreign material that might obstruct valve operation or full steam flow.

This methodology provides adequate assurance that the ADS valves will operate when actuated, while minimizing the challenges to the valves and the likelihood of leakage or spurious operation.

Method 2

A manual actuation of each ADS valve is performed to verify that the valve and solenoid are functioning properly and that no blockage exists in the S/RV discharge lines. This is demonstrated by the response of the turbine bypass valves, by a change in the measured flow, or by any other method suitable to verify steam flow. Adequate steam flow must be

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SURVEILLANCE REQUIREMENTS (continued)

passing through the turbine bypass valves to continue to control reactor pressure when the ADS valves divert steam flow upon opening.

Sufficient time is therefore allowed after the required flow is achieved to perform this SR. Adequate steam flow is represented by at least one turbine bypass valve 80% open. This SR is modified by a Note that states the Surveillance is not required to be performed until 12 hours after reactor steam flow is adequate to perform the test. Reactor startup is allowed prior to performing this SR because valve OPERABILITY and the setpoints for overpressure protection are verified, per ASME requirements, prior to valve installation. The 12 hours allowed for manual actuation after the required flow is reached is sufficient to achieve stable conditions and provides adequate time to complete the Surveillance.

SR 3.5.1.11 and the LOGIC SYSTEM FUNCTIONAL TEST performed in LCO 3.3.5.1, "ECCS Instrumentation," overlap this Surveillance to provide complete testing of the assumed safety function.

The Frequency of "In accordance with the ~~Inservice Testing Program~~ INSERVICE TESTING PROGRAM" is based on ASME OM Code requirements. Industry operating experience has shown that these components usually pass the SR when performed at the Code required Frequency. Therefore, the Frequency was concluded to be acceptable from a reliability standpoint.

SR 3.5.1.13

The LPCI System injection valves, recirculation pump discharge valves, recirculation pump suction valves, and the RHR discharge intertie line isolation valves are powered from the LPCI swing bus, which must be energized after a single failure, including loss of power from the normal source to the swing bus. Therefore, the automatic transfer capability from the normal power source to the backup power source must be verified to ensure the automatic capability to detect loss of normal power and initiate an automatic transfer to the swing bus backup power source. Verification of this capability every 24 months ensures that AC electrical power is available for proper operation of the associated LPCI injection valves, recirculation pump discharge valves, recirculation pump suction valves, and the RHR discharge intertie line isolation valves. The swing bus automatic transfer scheme must be OPERABLE for both LPCI subsystems to be OPERABLE. The Frequency of 24 months is based on the need to perform the Surveillance under the conditions that apply during a startup from a plant outage. Operating experience has shown that the components usually pass the SR when performed at the 24

BASES

SURVEILLANCE REQUIREMENTS (continued)

sealing, or securing. A valve that receives an initiation signal is allowed to be in a nonaccident position provided the valve will automatically reposition in the proper stroke time. This SR does not require any testing or valve manipulation; rather, it involves verification that those valves capable of potentially being mispositioned are in the correct position. This SR does not apply to valves that cannot be inadvertently misaligned, such as check valves. For the RCIC System, this SR also includes the steam flow path for the turbine and the flow controller position.

The 31 day Frequency of this SR was derived from the ~~Inservice Testing Program~~ INSERVICE TESTING PROGRAM requirements for performing valve testing at least once every 92 days. The Frequency of 31 days is further justified because the valves are operated under procedural control and because improper valve position would affect only the RCIC System. This Frequency has been shown to be acceptable through operating experience.

SR 3.5.3.2 and SR 3.5.3.3

The RCIC pump flow rates ensure that the system can maintain reactor coolant inventory during pressurized conditions with the RPV isolated. The flow tests for the RCIC System are performed at two different pressure ranges such that system capability to provide rated flow against a system head corresponding to reactor pressure is tested both at the higher and lower operating ranges of the system. The required system head should overcome the RPV pressure and associated discharge line losses. Adequate reactor steam pressure must be available to perform these tests. Additionally, adequate steam flow must be passing through the turbine bypass valves to continue to control reactor pressure when the RCIC System diverts steam flow. Therefore, sufficient time is allowed after adequate pressure and flow are achieved to perform these SRs. Reactor steam pressure must be ≥ 950 psig to perform SR 3.5.3.2 and ≥ 150 psig to perform SR 3.5.3.3. Adequate steam flow is represented by at least one turbine bypass valve 80% open. Reactor startup is allowed prior to performing the low pressure Surveillance because the reactor pressure is low and the time allowed to satisfactorily perform the Surveillance is short. The reactor pressure is allowed to be increased to normal operating pressure since it is assumed that the low pressure Surveillance has been satisfactorily completed and there is no indication or reason to believe that RCIC is inoperable. Therefore, these SRs are modified by Notes that state the Surveillances are not required to be performed until 12 hours after the reactor steam pressure and flow are

BASES

SURVEILLANCE REQUIREMENTS (continued)

adequate to perform the test. The 12 hours allowed for performing the flow test after the required pressure and flow are reached is sufficient to achieve stable conditions for testing and provides reasonable time to complete the SRs.

The Frequency of SR 3.5.3.2 is consistent with the ~~Inservice Testing Program~~ INSERVICE TESTING PROGRAM requirements. The 24 month Frequency for SR 3.5.3.3 is based on the need to perform the Surveillance under conditions that apply during a startup from a plant outage. Operating experience has shown that these components usually pass the SR when performed at the 24 month Frequency, which is based on the refueling cycle. Therefore, the Frequency was concluded to be acceptable from a reliability standpoint.

SR 3.5.3.4

The RCIC System is required to actuate automatically in order to verify its design function satisfactorily. This Surveillance verifies that, with a required system initiation signal (actual or simulated), the automatic initiation logic of the RCIC System will cause the system to operate as designed, i.e., actuation of the system throughout its emergency operating sequence; which includes automatic pump startup and actuation of all automatic valves to their required positions. This Surveillance also ensures the RCIC System will automatically restart on a Reactor Vessel Water Level - Low Low signal received subsequent to a Reactor Vessel Water Level - High trip and that the suction is automatically transferred from the CSTs to the suppression pool on a Condensate Storage Tank Level - Low signal. The LOGIC SYSTEM FUNCTIONAL TEST performed in LCO 3.3.5.2 overlaps this Surveillance to provide complete testing of the assumed safety function.

The 24 month Frequency is based on the need to perform the Surveillance under the conditions that apply during a plant outage and the potential for an unplanned transient if the Surveillance were performed with the reactor at power. Operating experience has shown that these components usually pass the SR when performed at the 24 month Frequency, which is based on the refueling cycle. Therefore, the Frequency was concluded to be acceptable from a reliability standpoint.

This SR is modified by a Note that excludes vessel injection during the Surveillance. Since all active components are testable and full flow can be demonstrated by recirculation through the test line, coolant injection into the RPV is not required during the Surveillance.

BASES

SURVEILLANCE REQUIREMENTS (continued)

(Ref. 2). Proper LLS valve function is verified through performance of inspections and overlapping tests on component assemblies, demonstrating the valve is capable of being opened. Testing is performed to demonstrate that each:

- LLS S/RV main stage opens and passes steam when the associated pilot stage actuates; and
- LLS S/RV second stage actuates to open the associated main stage when the pneumatic actuator is pressurized;
- LLS S/RV solenoid valve ports pneumatic pressure to the associated S/RV actuator when energized;
- LLS S/RV actuator stem moves when dry lift tested in-situ. (With exception of main and pilot stages this test demonstrates mechanical operation without steam.)

The solenoid valves and S/RV actuators are functionally tested once per cycle as part of the ~~Inservice Testing Program~~ INSERVICE TESTING PROGRAM. The S/RV assembly is bench tested as part of the certification process, at intervals determined in accordance with the ~~Inservice Testing Program~~ INSERVICE TESTING PROGRAM. Maintenance procedures ensure that the S/RV is correctly installed in the plant, and that the S/RV and associated piping remain clear of foreign material that might obstruct valve operation or full steam flow.

This methodology provides adequate assurance that the LLS valves will operate when actuated, while minimizing the challenges to the valves and the likelihood of leakage or spurious operation.

Method 2

A manual actuation of each LLS valve is performed to verify that the valve and solenoids are functioning properly and no blockage exists in the valve discharge line. This can be demonstrated by the response of the turbine bypass valves, by a change in the measured steam flow, or by any other method that is suitable to verify steam flow. Adequate steam flow must be passing through the turbine bypass valves to continue to control reactor pressure when the LLS valves divert steam flow upon opening. Sufficient time is therefore allowed after the required flow is achieved to perform this test. Adequate steam flow is represented by at least one turbine bypass valve 80% open. This SR is modified by a Note that states the Surveillance is not required to be performed until 12 hours after reactor steam flow is adequate to perform the test. Unit startup is allowed prior to performing the test because valve OPERABILITY is verified by

BASES

SURVEILLANCE REQUIREMENTS (continued)

Reference 2 prior to valve installation. The 12 hours allowed for manual actuation after the required flow is reached is sufficient to achieve stable conditions for testing and provides a reasonable time to complete the Surveillance.

SR 3.6.1.5.2 and the LOGIC SYSTEM FUNCTIONAL TEST performed in LCO 3.3.6.3, "LLS Instrumentation," overlap this Surveillance to provide complete testing of the assumed safety function.

The Frequency of "In accordance with the ~~Inservice Testing Program~~ INSERVICE TESTING PROGRAM" is based on ASME OM Code requirements. Industry operating experience has shown that these components usually pass the SR when performed at the Code required Frequency. Therefore, the Frequency was concluded to be acceptable from a reliability standpoint.

SR 3.6.1.5.2

The LLS designated S/RVs are required to actuate automatically upon receipt of specific initiation signals. A system functional test is performed to verify that the mechanical portions (i.e., solenoids) of the LLS function operate as designed when initiated either by an actual or simulated automatic initiation signal. The LOGIC SYSTEM FUNCTIONAL TEST in LCO 3.3.6.3, "Low-Low Set (LLS) Instrumentation," overlaps this SR to provide complete testing of the safety function.

The 24 month Frequency is based on the need to perform this Surveillance under the conditions that apply during a plant outage and the potential for an unplanned transient if the Surveillance were performed with the reactor at power. Operating experience has shown these components usually pass the Surveillance when performed at the 24 month Frequency. Therefore, the Frequency was concluded to be acceptable from a reliability standpoint.

This SR is modified by a Note that excludes valve actuation. This prevents a reactor pressure vessel pressure blowdown.

REFERENCES

1. USAR, Section 4.4.3.

2. ASME Operation and Maintenance (OM) Code.

3. Amendment No. 168, "Issuance of Amendment Re: Testing of Main Steam Safety/Relief Valves," dated July 27, 2012. (ADAMS Accession No. ML12185A216)

BASES

SURVEILLANCE REQUIREMENTS

SR 3.6.1.6.1

Each vacuum breaker is verified to be closed to ensure that a potential breach in the primary containment boundary is not present. This Surveillance is performed by observing local or control room indications of vacuum breaker position. The 14 day Frequency is based on engineering judgment, is considered adequate in view of other indications of vacuum breaker status available to operations personnel, and has been shown to be acceptable through operating experience.

Two Notes are added to this SR. The first Note allows reactor building-to-suppression chamber vacuum breakers opened in conjunction with the performance of a Surveillance to not be considered as failing this SR. These periods of opening vacuum breakers are controlled by plant procedures and do not represent inoperable vacuum breakers. The second Note is included to clarify that vacuum breakers open due to an actual differential pressure are not considered as failing this SR.

SR 3.6.1.6.2

Each vacuum breaker must be cycled to ensure that it opens properly to perform its design function and returns to its fully closed position. This ensures that the safety analysis assumptions are valid. The 92 day Frequency of this SR was developed based upon ~~Inservice Testing Program~~ INSERVICE TESTING PROGRAM requirements to perform valve testing at least once every 92 days.

SR 3.6.1.6.3

Demonstration of vacuum breaker opening setpoint is necessary to ensure that the safety analysis assumption regarding vacuum breaker full open differential pressure of ≤ 0.5 psid is valid. The 92 day Frequency has been shown to be acceptable, based on operating experience.

REFERENCES

1. USAR, Section 5.2.1.2.3.

BASES

SURVEILLANCE REQUIREMENTS (continued)

SR 3.6.1.7.2

Each required vacuum breaker must be cycled to ensure that it opens adequately to perform its design function and returns to the fully closed position. This ensures that the safety analysis assumptions are valid. The 31 day Frequency of this SR was developed, based on ~~Inservice Testing Program~~ INSERVICE TESTING PROGRAM requirements to perform valve testing at least once every 92 days. A 31 day Frequency was chosen to provide additional assurance that the vacuum breakers are OPERABLE, since they are located in a harsh environment (the suppression chamber airspace).

SR 3.6.1.7.3

Verification of the vacuum breaker opening setpoint is necessary to ensure that the safety analysis assumption regarding vacuum breaker full open differential pressure of 0.5 psid (acting on the suppression chamber face of the valve disc) is valid. The 24 month Frequency is based on the need to perform this Surveillance under the conditions that apply during a plant outage and the potential for an unplanned transient if the Surveillance were performed with the reactor at power. For this facility, the 24 month Frequency has been shown to be acceptable, based on operating experience, and is further justified because of other surveillances performed at shorter Frequencies that convey the proper functioning status of each vacuum breaker.

REFERENCES 1. USAR, Section 5.2.1.2.3.

BASES

ACTIONS (continued)

C.1 and C.2

If the Required Action and associated Completion Time cannot be met, the plant must be brought to a MODE in which the LCO does not apply. To achieve this status, the plant must be brought to at least MODE 3 within 12 hours and to MODE 4 within 36 hours. The allowed Completion Times are reasonable, based on operating experience, to reach the required plant conditions from full power conditions in an orderly manner and without challenging plant systems.

SURVEILLANCE REQUIREMENTS

SR 3.6.2.3.1

Verifying the correct alignment for manual and power operated valves in the RHR suppression pool cooling mode flow path provides assurance that the proper flow path exists for system operation. This SR does not apply to valves that are locked, sealed, or otherwise secured in position since these valves were verified to be in the correct position prior to locking, sealing, or securing. A valve is also allowed to be in the nonaccident position provided it can be aligned to the accident position within the time assumed in the accident analysis. This is acceptable since the RHR suppression pool cooling mode is manually initiated. This SR does not require any testing or valve manipulation; rather, it involves verification that those valves capable of being mispositioned are in the correct position. This SR does not apply to valves that cannot be inadvertently misaligned, such as check valves.

The Frequency of 31 days is justified because the valves are operated under procedural control, improper valve position would affect only a single subsystem, the probability of an event requiring initiation of the system is low, and the subsystem is a manually initiated system. This Frequency has been shown to be acceptable based on operating experience.

SR 3.6.2.3.2

Verifying that each RHR pump develops a flow rate ≥ 3870 gpm while operating in the suppression pool cooling mode with flow through the associated heat exchanger ensures that pump performance has not degraded during the cycle. Flow is a normal test of centrifugal pump performance required by ASME OM Code (Ref. 2). This test confirms one point on the pump design curve, and the results are indicative of overall performance. Such inservice tests confirm component OPERABILITY, trend performance, and detect incipient failures by indicating abnormal performance. The Frequency of this SR is in accordance with the ~~Inservice Testing Program~~ INSERVICE TESTING PROGRAM

ENCLOSURE 2

DESCRIPTION AND ASSESSMENT OF THE PROPOSED ALTERNATIVE TO THE ASME CODE

Request in Accordance with 10 CFR 50.55a(z)(2)

Alternative Due to Hardship without a Compensating Increase in Quality and Safety

1.0 DESCRIPTION

The request is to adopt a proposed alternative to the American Society of Mechanical Engineers (ASME) Operation and Maintenance (OM) Code by adoption of approved Code Case OMN-20, “Inservice Test Frequency.”

2.0 ASSESSMENT

Technical Evaluation of the Proposed Alternative to the OM Code

Section IST of Division 1 of the OM Code, which is incorporated by reference in 10 CFR 50.55a(a), specifies component test frequencies based either on elapsed time periods (e.g., quarterly, 2 years) or on the occurrence of a plant condition or event (e.g., cold shutdown, refueling outage).

ASME Code Case OMN-20, “Inservice Test Frequency,” has been approved for use by the ASME OM committee as an alternative to the test frequencies for pumps and valves specified in ASME OM Division: 1 Section IST 2009 Edition through OMa-2011 Addenda, and all earlier editions and addenda of ASME OM Code.

Code Case OMN-20 is not referenced in the latest revision of Regulatory Guide 1.192 (August 2014) as an acceptable OM Code Case to comply with 10 CFR 50.55a(f) requirements as allowed by 10 CFR 50.55a(b)(6). The proposed alternative is to use Code Case OMN-20 to extend or reduce the IST frequency requirements for the fifth 10 year IST interval or until OMN-20 is incorporated into the next revision of Regulatory Guide 1.192.

ASME Code Components Affected

The Code Case applies to pumps and valves specified in ASME OM Division: 1 Section IST 2009 Edition through OMa-2011 Addenda and all earlier editions and addenda of ASME OM Code. Frequency extensions may also be applied to accelerated test frequencies (e.g., pumps in Alert Range) as specified in OMN-20.

For pumps and valves with test periods of 2 years or less, the test frequency allowed by OMN-20 and the current TS Inservice Testing Program (as modified by SR 3.0.2 and EGM 12-001) are the same. For pumps and valves with test frequencies greater than 2 years, OMN-20 allows the test frequency to be extended by 6 months.

Applicable Code Edition and Addenda

ASME Code Case OMN-20 applies to ASME OM Division: 1 Section IST 2009 Edition through OMa-2011 Addenda and all earlier editions and addenda of ASME OM Code.

The Monticello Nuclear Generating Plant (MNGP) Code Edition and Addenda that are applicable to the program interval are the 2004 Edition through 2006 Addenda. The MNGP current interval ends May 31, 2022.

Applicable Code Requirements

This request is made in accordance with 10 CFR 50.55a(z)(2), and proposes an alternative to the requirements of 10 CFR 50.55a(f), which requires pumps and valves to meet the test requirements set forth in specific documents incorporated by reference in 10 CFR 50.55a(a). ASME Code Case OMN-20 applies to Division 1, Section IST of the ASME OM Code and associated addenda incorporated by reference in 10 CFR 50.55a(a).

Reason for Request

The IST Program controls specified in Section 5.5 of TS provide: a) a table specifying certain IST frequencies; b) an allowance to apply SR 3.0.2 to inservice tests required by the OM Code; c) an allowance to apply SR 3.0.3 to inservice tests required by the OM Code; and d) a statement that, “Nothing in the ASME OM Code shall be construed to supersede the requirements of any TS.” In Regulatory Issue Summary (RIS) 2012-10, “NRC Staff Position on Applying Surveillance Requirements 3.0.2 and 3.0.3 to Administrative Controls Program Tests,” and Enforcement Guidance Memorandum (EGM) 2012-001, “Dispositioning Noncompliance with Administrative Controls Technical Specifications Programmatic Requirements that Extend Test Frequencies and Allow Performance of Missed Tests,” the NRC stated that items b, c, and d of the TS IST Program were inappropriately added to the TS and may not be applied (although the EGM allows licensees to continue to apply those paragraphs pending a generic resolution of the issue).

In RIS 2012-10 and EGM 12-001, the NRC stated that the current TS allowance to apply SR 3.0.2 and SR 3.0.3 to the Inservice Testing Program would no longer be permitted. In response, OMN-20, which provides allowances similar to SR 3.0.2, was approved and is proposed to be used as an alternative to the test periods specified in the OM code. The proposed alternative substitutes an approved Code Case for the existing TS requirements that the NRC has determined are not legally acceptable as a TS allowance. This proposed alternative provides an equivalent level of safety as the existing TS allowance, while maintaining consistency with the 10 CFR 50.55a and the ASME OM Code.

Proposed Alternative and Basis for Use

The proposed alternative is OMN-20, “Inservice Test Frequency,” which addresses testing periods for pumps and valves specified in ASME OM Division 1, Section IST, 2009 Edition through OMa-2011 Addenda, and all earlier editions and addenda of ASME OM Code.

This request is being made in accordance with 10 CFR 50.55a(z)(2), in that the existing requirements are considered a hardship without a compensating increase in quality and safety for the following reasons:

1) For IST testing periods up to and including 2 years, Code Case OMN-20 provides an allowance to extend the IST testing periods by up to 25%. The period extension is to facilitate test scheduling and considers plant operating conditions that may not be suitable for performance of the required testing (e.g., performance of the test would cause an unacceptable increase in the plant risk profile due to transient conditions or other ongoing surveillance, test or maintenance activities). Period extensions are not intended to be used repeatedly merely as an operational convenience to extend test intervals beyond those specified. The test period extension and the statements regarding the appropriate use of the period extension are equivalent to the existing TS SR 3.0.2 allowance and the statements regarding its use in the SR 3.0.2 Bases. Use of the SR 3.0.2 period extension has been a practice in the nuclear industry for many decades and elimination of this allowance would place a hardship on Northern States Power Company, a Minnesota corporation, doing business as Xcel Energy (hereafter “NSPM”), when there is no evidence that the period extensions affect component reliability.

2) For IST testing periods of greater than 2 years, OMN-20 allows an extension of up to 6 months. The ASME OM Committee determined that such an extension is appropriate. The 6-month extension will have a minimal impact on component reliability considering that the most probable result of performing any inservice test is satisfactory verification of the test acceptance criteria. As such, pumps and valves will continue to be adequately assessed for operational readiness when tested in accordance with the requirements specified in 10 CFR 50.55a(f) with the frequency extension allowed by Code Case OMN-20.

3) As stated in EGM 12-001, if an Inservice Test is not performed within its frequency, SR 3.0.3 will not be applied. The effect of a missed Inservice Test on the Operability of TS equipment will be assessed under NSPM’s Operability Determination Program.

Duration of Proposed Alternative

The proposed alternative is requested for the current 10 year IST interval or until Code Case OMN-20 is incorporated into a future revision of Regulatory Guide 1.192, referenced by a future revision of 10 CFR 50.55a, whichever is shorter.

Precedent

The NRC approved the use of OMN-20 for North Anna on March 27, 2014 (NRC ADAMS Accession No. ML14084A407).