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

January 28, 2019

Mr. Christopher Church
Site Vice President
Monticello Nuclear Generating Plant
Northern States Power Company - Minnesota
2807 West County Road 75
Monticello, MN 55362-9637

SUBJECT: MONTICELLO NUCLEAR GENERATING PLANT - ISSUANCE OF AMENDMENT RE: ADOPTION OF TSTF-425, RELOCATE SURVEILLANCE FREQUENCIES TO LICENSEE CONTROL - RITSTF INITIATIVE 5B (EPID: L-2017-LLA-0434)

Dear Mr. Church:

The U.S. Nuclear Regulatory Commission has issued the enclosed Amendment No. 200 to Renewed Facility Operating License No. DPR-22 for the Monticello Nuclear Generating Plant (MNGP). The amendment consists of changes to the technical specifications (TSs) in response to your application dated December 19, 2017, as supplemented by letters dated April 24, 2018, October 23, 2018, and November 20, 2018.

The amendment revises the MNGP TS to adopt Technical Specification Task Force (TSTF)-425, "Relocate Surveillance Frequencies to Licensee Control - RITSTF Initiative 5B."

A copy of our related safety evaluation is also enclosed. The Notice of Issuance will be included in the Commission's biweekly *Federal Register* notice.

Sincerely,

Robert F. Kuntz, Senior Project Manager
Plant Licensing Branch III
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket No. 50-263

Enclosures:
1. Amendment No. 200 to DPR-22
2. Safety Evaluation

cc: ListServ

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

NORTHERN STATES POWER COMPANY

DOCKET NO. 50-263

MONTICELLO NUCLEAR GENERATING PLANT

AMENDMENT TO RENEWED FACILITY OPERATING LICENSE

Amendment No. 200
License No. DPR-22

1. The U.S. Nuclear Regulatory Commission (the Commission) has found that:

   A. The application for amendment by Northern States Power Company (NSPM, the licensee), dated December 19, 2017, as supplemented by letters dated April 24, 2018, October 23, 2018 and November 20, 2018, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations set forth in 10 CFR Chapter I;

   B. The facility will operate in conformity with the application, the provisions of the Act, and the rules and regulations of the Commission;

   C. There is reasonable assurance (i) that the activities authorized by this amendment can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with the Commission's regulations;

   D. The issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public; and

   E. The issuance of this amendment is in accordance with 10 CFR Part 51 of the Commission's regulations and all applicable requirements have been satisfied.

2. Accordingly, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment, and paragraph 2.C.2 of Renewed Facility Operating License No. DPR-22 is hereby amended to read as follows:

Technical Specifications

The Technical Specifications contained in Appendix A, as revised through Amendment No. 200, are hereby incorporated in the license. NSPM shall operate the facility in accordance with the Technical Specifications.

3. This license amendment is effective as of its date of issuance and shall be implemented prior to the next refueling outage.

FOR THE NUCLEAR REGULATORY COMMISSION

David J. Wrona, Chief
Plant Licensing Branch III
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Attachment:
Changes to the Renewed Operating
License No. DPR-22 and
Technical Specifications

Date of Issuance: January 28, 2019

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.1.2.1	Verify core reactivity difference between the monitored control rod inventory and the predicted control rod inventory is within ± 1% Δk/k.	Once within 24 hours after reaching equilibrium conditions following startup after fuel movement within the reactor pressure vessel or control rod replacement AND In accordance with the Surveillance Frequency Control Program

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
D. ----------NOTE---------- Not applicable when THERMAL POWER > 10% RTP. ---------- Two or more inoperable control rods not in compliance with banked position withdrawal sequence (BPWS) and not separated by two or more OPERABLE control rods.	D.1 Restore compliance with BPWS. OR D.2 Restore control rod to OPERABLE status.	4 hours 4 hours
E. Required Action and associated Completion Time of Condition A, C, or D not met. OR Nine or more control rods inoperable.	E.1 Be in MODE 3.	12 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.1.3.1	Determine the position of each control rod.	In accordance with the Surveillance Frequency Control Program

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.1.3.2	----------NOTE---------- Not required to be performed until 31 days after the control rod is withdrawn and THERMAL POWER is greater than the LPSP of RWM. ---------- Insert each withdrawn control rod at least one notch.	In accordance with the Surveillance Frequency Control Program
SR 3.1.3.3	Verify each control rod scram time from fully withdrawn to notch position 06 is ≤ 7 seconds.	In accordance with SR 3.1.4.1, SR 3.1.4.2, SR 3.1.4.3, and SR 3.1.4.4
SR 3.1.3.4	Verify each control rod does not go to the withdrawn overtravel position.	Each time the control rod is withdrawn to “full out” position AND Prior to declaring control rod OPERABLE after work on control rod or CRD System that could affect coupling.

3.1 REACTIVITY CONTROL SYSTEMS

3.1.4 Control Rod Scram Times

LCO 3.1.4

a. No more than 8 OPERABLE control rods shall be "slow," in accordance with Table 3.1.4-1, and

b. No more than 2 OPERABLE control rods that are "slow" shall occupy adjacent locations.

APPLICABILITY: MODES 1 and 2.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Requirements of the LCO not met.	A.1 Be in MODE 3.	12 hours

SURVEILLANCE REQUIREMENTS

----------NOTE----------
During single control rod scram time Surveillances, the control rod drive (CRD) pumps shall be isolated from the associated scram accumulator.

SURVEILLANCE		FREQUENCY
SR 3.1.4.1	Verify each control rod scram time is within the limits of Table 3.1.4-1 with reactor steam dome pressure ≥ 800 psig.	Prior to exceeding 40% RTP after each reactor shutdown ≥ 120 days
SR 3.1.4.2	Verify, for a representative sample, each tested control rod scram time is within the limits of Table 3.1.4-1 with reactor steam dome pressure ≥ 800 psig.	In accordance with the Surveillance Frequency Control Program

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.1.5.1	Verify each control rod scram accumulator pressure is ≥ 940 psig.	In accordance with the Surveillance Frequency Control Program

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.1.6.1	Verify all OPERABLE control rods comply with BPWS.	In accordance with the Surveillance Frequency Control Program

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.1.7.1	Verify available volume of sodium pentaborate solution is within the limits of Figure 3.1.7-1 or Equation 1 of Table 3.1.7-1.	In accordance with the Surveillance Frequency Control Program
SR 3.1.7.2	Verify temperature of sodium pentaborate solution is within the limits of Figure 3.1.7-2.	In accordance with the Surveillance Frequency Control Program
SR 3.1.7.3	Verify temperature of room in the vicinity of the SLC pumps is within the solution temperature limits of Figure 3.1.7-2 or verify SLC pump suction lines heat tracing is OPERABLE.	In accordance with the Surveillance Frequency Control Program
SR 3.1.7.4	Verify continuity of explosive charge.	In accordance with the Surveillance Frequency Control Program
SR 3.1.7.5	Verify the concentration of sodium pentaborate in solution is within the limits of Figure 3.1.7-1 or within the limits of Equation 2 of Table 3.1.7-1.	In accordance with the Surveillance Frequency Control Program AND Once within 24 hours after water or sodium pentaborate is added to solution AND Once within 24 hours after solution temperature is restored within the limits of Figure 3.1.7-2

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.1.7.6	Verify each SLC subsystem manual valve in the flow path that is not locked, sealed, or otherwise secured in position is in the correct position, or can be aligned to the correct position.	In accordance with the Surveillance Frequency Control Program
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.	In accordance with the Surveillance Frequency Control Program
SR 3.1.7.9	Verify all heat traced piping between storage tank and pump suction is unblocked.	In accordance with the Surveillance Frequency Control Program 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 3.1.8.1	----------NOTE---------- Not required to be met on vent and drain valves closed during performance of SR 3.1.8.2. ---------- Verify each SDV vent and drain valve is open.	In accordance with the Surveillance Frequency Control Program
SR 3.1.8.2	Cycle each SDV vent and drain valve to the fully closed and fully open position.	In accordance with the Surveillance Frequency Control Program
SR 3.1.8.3	Verify each SDV vent and drain valve: a. Closes in ≤ 30 seconds after receipt of an actual or simulated scram signal; and b. Opens when the actual or simulated scram signal is reset.	In accordance with the Surveillance Frequency Control Program

3.2 POWER DISTRIBUTION LIMITS

3.2.1 AVERAGE PLANAR LINEAR HEAT GENERATION RATE (APLHGR)

LCO 3.2.1 All APLHGRs shall be less than or equal to the limits specified in the COLR.

APPLICABILITY: THERMAL POWER ≥ 25% RTP.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Any APLHGR not within limits.	A.1 Restore APLHGR(s) to within limits.	2 hours
B. Required Action and associated Completion Time not met.	B.1 Reduce THERMAL POWER to < 25% RTP.	4 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.2.1.1	Verify all APLHGRs are less than or equal to the limits specified in the COLR.	Once within 12 hours after ≥ 25% RTP AND In accordance with the Surveillance Frequency Control Program

3.2 POWER DISTRIBUTION LIMITS

3.2.2 MINIMUM CRITICAL POWER RATIO (MCPR)

LCO 3.2.2 All MCPRs shall be greater than or equal to the MCPR operating limits specified in the COLR.

APPLICABILITY: THERMAL POWER ≥ 25% RTP.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Any MCPR not within limits.	A.1 Restore MCPR(s) to within limits.	2 hours
B. Required Action and associated Completion Time not met.	B.1 Reduce THERMAL POWER to < 25% RTP.	4 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.2.2.1	Verify all MCPRs are greater than or equal to the limits specified in the COLR.	Once within 12 hours after ≥ 25% RTP AND In accordance with the Surveillance Frequency Control Program

3.2 POWER DISTRIBUTION LIMITS

3.2.3 LINEAR HEAT GENERATION RATE (LHGR)

LCO 3.2.3 All LHGRs shall be less than or equal to the limits specified in the COLR.

APPLICABILITY: THERMAL POWER ≥ 25% RTP.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Any LHGR not within limits.	A.1 Restore LHGR(s) to within limits.	2 hours
B. Required Action and associated Completion Time not met.	B.1 Reduce THERMAL POWER to < 25% RTP.	4 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.2.3.1	Verify all LHGRs are less than or equal to the limits specified in the COLR.	Once within 12 hours after ≥ 25% RTP AND In accordance with the Surveillance Frequency Control Program

SURVEILLANCE REQUIREMENTS

----------NOTES----------

1. Refer to Table 3.3.1.1-1 to determine which SRs apply for each RPS Function.

2. When a channel is placed in an inoperable status solely for performance of required Surveillances, entry into associated Conditions and Required Actions may be delayed for up to 6 hours provided the associated Function maintains RPS trip capability.

	SURVEILLANCE	FREQUENCY
SR 3.3.1.1.1	Perform CHANNEL CHECK.	In accordance with the Surveillance Frequency Control Program
SR 3.3.1.1.2	----------NOTE---------- Not required to be performed until 12 hours after THERMAL POWER ≥ 25% RTP. ---------- Verify the absolute difference between the average power range monitor (APRM) channels and the calculated power is ≤ 2% RTP while operating at ≥ 25% RTP.	In accordance with the Surveillance Frequency Control Program
SR 3.3.1.1.3	----------NOTE---------- Not required to be performed when entering MODE 2 from MODE 1 until 12 hours after entering MODE 2. ---------- Perform CHANNEL FUNCTIONAL TEST.	In accordance with the Surveillance Frequency Control Program

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.3.1.1.4	Perform a functional test of each RPS automatic scram contactor.	In accordance with the Surveillance Frequency Control Program
SR 3.3.1.1.5	Perform CHANNEL FUNCTIONAL TEST.	In accordance with the Surveillance Frequency Control Program
SR 3.3.1.1.6	Calibrate the local power range monitors.	In accordance with the Surveillance Frequency Control Program
SR 3.3.1.1.7	Perform CHANNEL FUNCTIONAL TEST.	In accordance with the Surveillance Frequency Control Program
SR 3.3.1.1.8	Calibrate the trip units.	In accordance with the Surveillance Frequency Control Program
SR 3.3.1.1.9	Perform CHANNEL CALIBRATION.	In accordance with the Surveillance Frequency Control Program
SR 3.3.1.1.10	Perform CHANNEL FUNCTIONAL TEST.	In accordance with the Surveillance Frequency Control Program

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.3.1.1.11	----------NOTES---------- 1. Neutron detectors are excluded. 2. For Function 1, not required to be performed when entering MODE 2 from MODE 1 until 12 hours after entering MODE 2. 3. For Functions 2.b and 2.f, the recirculation flow transmitters that feed the APRMs are included. ---------- Perform CHANNEL CALIBRATION.	In accordance with the Surveillance Frequency Control Program
SR 3.3.1.1.12	Perform LOGIC SYSTEM FUNCTIONAL TEST.	In accordance with the Surveillance Frequency Control Program
SR 3.3.1.1.13	Verify Turbine Stop Valve - Closure and Turbine Control Valve Fast Closure, Acceleration Relay Oil Pressure - Low Functions are not bypassed when THERMAL POWER is > 40% RTP.	In accordance with the Surveillance Frequency Control Program
SR 3.3.1.1.14	Verify the RPS RESPONSE TIME is within limits.	In accordance with the Surveillance Frequency Control Program

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.3.1.1.15	----------NOTES---------- 1. For Function 2.a, not required to be performed when entering MODE 2 from MODE 1 until 12 hours after entering MODE 2. 2. For Functions 2.b and 2.f, the CHANNEL FUNCTIONAL TEST includes the recirculation flow input processing, excluding the flow transmitters. ---------- Perform CHANNEL FUNCTIONAL TEST.	In accordance with the Surveillance Frequency Control Program
SR 3.3.1.1.16	Verify the oscillation power range monitor (OPRM) function is not bypassed when APRM Simulated Thermal Power is ≥ 25% RTP and drive flow is ≤ 60% of rated drive flow.	In accordance with the Surveillance Frequency Control Program

Table 3.3.1.1-1 (page 1 of 4)
Reactor Protection System Instrumentation

FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	REQUIRED CHANNELS PER TRIP SYSTEM	CONDITIONS REFERENCED FROM REQUIRED ACTION D.1	SURVEILLANCE REQUIREMENTS	ALLOWABLE VALUE
1. Intermediate Range Monitors					
a. Neutron Flux – High High	2	3	G	SR 3.3.1.1.1 SR 3.3.1.1.3 SR 3.3.1.1.4 SR 3.3.1.1.11 SR 3.3.1.1.12 SR 3.3.1.1.14	≤ 122/125 divisions of full scale
	5[(a)]	3	H	SR 3.3.1.1.1 SR 3.3.1.1.3 SR 3.3.1.1.4 SR 3.3.1.1.11 SR 3.3.1.1.12 SR 3.3.1.1.14	≤ 122/125 divisions of full scale
b. Inop.	2	3	G	SR 3.3.1.1.3 SR 3.3.1.1.4 SR 3.3.1.1.12	NA
	5[(a)]	3	H	SR 3.3.1.1.3 SR 3.3.1.1.4 SR 3.3.1.1.12	NA
2. Average Power Range Monitors					
a. Neutron Flux – High, (Setdown)	2	3[(c)]	G	SR 3.3.1.1.1 SR 3.3.1.1.4 SR 3.3.1.1.6 SR 3.3.1.1.11 SR 3.3.1.1.15	≤ 20% RTP
b. Simulated Thermal Power – High	1	3[(c)]	F	SR 3.3.1.1.1 SR 3.3.1.1.2 SR 3.3.1.1.4 SR 3.3.1.1.6 SR 3.3.1.1.11 SR 3.3.1.1.15	≤ 0.61W + 67.2% RTP[(b)] and ≤ 116% RTP

(a) With any control rod withdrawn from a core cell containing one or more fuel assemblies.

(b) ≤ 0.55 (W – Delta W) + 61.5% RTP when reset for single loop operation per LCO 3.4.1, "Recirculation Loops Operating." The cycle-specific value for Delta W is specified in the COLR.

(c) Each APRM / OPRM channel provides inputs to both trip systems.

Table 3.3.1.1-1 (page 2 of 4)
Reactor Protection System Instrumentation

	FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	REQUIRED CHANNELS PER TRIP SYSTEM	CONDITIONS REFERENCED FROM REQUIRED ACTION D.1	SURVEILLANCE REQUIREMENTS	ALLOWABLE VALUE
c.	Neutron Flux – High	1	3[(c)]	F	SR 3.3.1.1.1 SR 3.3.1.1.2 SR 3.3.1.1.4 SR 3.3.1.1.6 SR 3.3.1.1.11[(f)(g)] SR 3.3.1.1.15	≤ 122% RTP
d.	Inop.	1, 2	3[(c)]	G	SR 3.3.1.1.4 SR 3.3.1.1.15	NA
e.	2-Out-Of-4 Voter	1, 2	2	G	SR 3.3.1.1.1 SR 3.3.1.1.4 SR 3.3.1.1.12 SR 3.3.1.1.14 SR 3.3.1.1.15	NA
f.	OPRM Upscale	≥ 20% RTP	3[(c)]	I	SR 3.3.1.1.1 SR 3.3.1.1.4 SR 3.3.1.1.6 SR 3.3.1.1.11 SR 3.3.1.1.15 SR 3.3.1.1.16	As specified in COLR
g.	Extended Flow Window Stability – High	Within EFW boundary defined in COLR	3[(c)]	J	SR 3.3.1.1.1 SR 3.3.1.1.2 SR 3.3.1.1.4 SR 3.3.1.1.6 SR 3.3.1.1.11 SR 3.3.1.1.15	As specified in COLR
3.	Reactor Vessel Steam Dome Pressure – High	1, 2	2	G	SR 3.3.1.1.4 SR 3.3.1.1.7 SR 3.3.1.1.9 SR 3.3.1.1.12 SR 3.3.1.1.14	≤ 1075 psig

(c) Each APRM / OPRM channel provides inputs to both trip systems.

(f) If the as-found channel setpoint is not the Nominal Trip Setpoint but is conservative with respect to the Allowable Value, then the channel shall be evaluated to verify that it is functioning as required before returning the channel to service.

(g) The instrument channel setpoint shall be reset to the Nominal Trip Setpoint (NTSP) at the completion of the surveillance; otherwise, the channel shall be declared inoperable. The NTSP and the methodology used to determine the NTSP are specified in the Technical Requirements Manual.

Table 3.3.1.1-1 (page 3 of 4)
Reactor Protection System Instrumentation

FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	REQUIRED CHANNELS PER TRIP SYSTEM	CONDITIONS REFERENCED FROM REQUIRED ACTION D.1	SURVEILLANCE REQUIREMENTS	ALLOWABLE VALUE
4. Reactor Vessel Water Level – Low	1, 2	2	G	SR 3.3.1.1.1 SR 3.3.1.1.4 SR 3.3.1.1.7 SR 3.3.1.1.8 SR 3.3.1.1.11 SR 3.3.1.1.12 SR 3.3.1.1.14	≥ 7 inches
5. Main Steam Isolation Valve – Closure	1, 2[(d)]	8	F	SR 3.3.1.1.4 SR 3.3.1.1.7 SR 3.3.1.1.11 SR 3.3.1.1.12 SR 3.3.1.1.14	≤ 10% closed
6. Drywell Pressure – High	1, 2	2	G	SR 3.3.1.1.4 SR 3.3.1.1.7 SR 3.3.1.1.9 SR 3.3.1.1.12	≤ 2.0 psig
7. Scram Discharge Volume Water Level – High					
a. Resistance Temperature Detector	1, 2	2	G	SR 3.3.1.1.4 SR 3.3.1.1.7 SR 3.3.1.1.9 SR 3.3.1.1.12	≤ 56.0 gallons
	5[(a)]	2	H	SR 3.3.1.1.4 SR 3.3.1.1.7 SR 3.3.1.1.9 SR 3.3.1.1.12	≤ 56.0 gallons
b. Float Switch	1, 2	2	G	SR 3.3.1.1.4 SR 3.3.1.1.7 SR 3.3.1.1.9 SR 3.3.1.1.12	≤ 56.0 gallons
	5[(a)]	2	H	SR 3.3.1.1.4 SR 3.3.1.1.7 SR 3.3.1.1.9 SR 3.3.1.1.12	≤ 56.0 gallons

(a) With any control rod withdrawn from a core cell containing one or more fuel assemblies.

(d) With reactor pressure ≥ 600 psig.

Table 3.3.1.1-1 (page 4 of 4)
Reactor Protection System Instrumentation

	FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	REQUIRED CHANNELS PER TRIP SYSTEM	CONDITIONS REFERENCED FROM REQUIRED ACTION D.1	SURVEILLANCE REQUIREMENTS	ALLOWABLE VALUE
8.	Turbine Stop Valve – Closure	> 40% RTP	4	E	SR 3.3.1.1.4 SR 3.3.1.1.7 SR 3.3.1.1.11 SR 3.3.1.1.12 SR 3.3.1.1.13 SR 3.3.1.1.14	≤ 10% closed
9.	Turbine Control Valve Fast Closure, Acceleration Relay Oil Pressure – Low	> 40% RTP	2	E	SR 3.3.1.1.4 SR 3.3.1.1.7 SR 3.3.1.1.9 SR 3.3.1.1.12 SR 3.3.1.1.13 SR 3.3.1.1.14	≥ 167.8 psig
10.	Reactor Mode Switch – Shutdown Position	1, 2	1	G	SR 3.3.1.1.10 SR 3.3.1.1.12	NA
		5[(a)]	1	H	SR 3.3.1.1.10 SR 3.3.1.1.12	NA
11.	Manual Scram	1, 2	1	G	SR 3.3.1.1.5 SR 3.3.1.1.12	NA
		5[(a)]	1	H	SR 3.3.1.1.5 SR 3.3.1.1.12	NA

(a) With any control rod withdrawn from a core cell containing one or more fuel assemblies.

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
E. One or more required SRMs inoperable in MODE 5.	E.1 Suspend CORE ALTERATIONS except for control rod insertion. AND	Immediately
	E.2 Initiate action to fully insert all insertable control rods in core cells containing one or more fuel assemblies.	Immediately

SURVEILLANCE REQUIREMENTS

----------NOTE----------
Refer to Table 3.3.1.2-1 to determine which SRs apply for each applicable MODE or other specified conditions.

SURVEILLANCE		FREQUENCY
SR 3.3.1.2.1	Perform CHANNEL CHECK.	In accordance with the Surveillance Frequency Control Program

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.3.1.2.2	----------NOTES---------- 1. Only required to be met during CORE ALTERATIONS. 2. One SRM may be used to satisfy more than one of the following. ---------- Verify an OPERABLE SRM detector is located in: a. The fueled region; b. The core quadrant where CORE ALTERATIONS are being performed, when the associated SRM is included in the fueled region; and c. A core quadrant adjacent to where CORE ALTERATIONS are being performed, when the associated SRM is included in the fueled region.	In accordance with the Surveillance Frequency Control Program
SR 3.3.1.2.3	Perform CHANNEL CHECK.	In accordance with the Surveillance Frequency Control Program
SR 3.3.1.2.4	----------NOTE---------- Not required to be met with less than or equal to two fuel assemblies adjacent to the SRM and no other fuel assemblies in the associated core quadrant. ---------- Verify count rate is ≥ 3.0 cps with a signal to noise ratio ≥ 3:1.	In accordance with the Surveillance Frequency Control Program

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.3.1.2.5	----------NOTE---------- The determination of signal to noise ratio is not required to be met with less than or equal to two fuel assemblies adjacent to the SRM and no other fuel assemblies in the associated core quadrant. --- Perform CHANNEL FUNCTIONAL TEST and determination of signal to noise ratio.	In accordance with the Surveillance Frequency Control Program
SR 3.3.1.2.6	----------NOTE---------- Not required to be performed until 12 hours after IRMs on Range 2 or below. --- Perform CHANNEL FUNCTIONAL TEST and determination of signal to noise ratio.	In accordance with the Surveillance Frequency Control Program
SR 3.3.1.2.7	----------NOTES---------- 1. Neutron detectors are excluded. 2. Not required to be performed until 12 hours after IRMS on Range 2 or below. --- Perform CHANNEL CALIBRATION.	In accordance with the Surveillance Frequency Control Program

SURVEILLANCE REQUIREMENTS

----------NOTES----------

1. Refer to Table 3.3.2.1-1 to determine which SRs apply for each Control Rod Block Function.

2. When an RBM channel is placed in an inoperable status solely for performance of required Surveillances, entry into associated Conditions and Required Actions may be delayed for up to 6 hours provided the associated Function maintains control rod block capability.

	SURVEILLANCE	FREQUENCY
SR 3.3.2.1.1	Perform CHANNEL FUNCTIONAL TEST.	In accordance with the Surveillance Frequency Control Program
SR 3.3.2.1.2	----------NOTE---------- Not required to be performed until 1 hour after any control rod is withdrawn at ≤ 10% RTP in MODE 2. --- Perform CHANNEL FUNCTIONAL TEST.	In accordance with the Surveillance Frequency Control Program
SR 3.3.2.1.3	----------NOTE---------- Not required to be performed until 1 hour after THERMAL POWER is ≤ 10% RTP in MODE 1. --- Perform CHANNEL FUNCTIONAL TEST.	In accordance with the Surveillance Frequency Control Program

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.3.2.1.4	----------NOTE---------- Neutron detectors are excluded. ---------- Perform CHANNEL CALIBRATION.	In accordance with the Surveillance Frequency Control Program
SR 3.3.2.1.5	----------NOTE---------- Neutron detectors are excluded. ---------- Verify the RBM: a. Low Power Range - Upscale Function is not bypassed when THERMAL POWER is ≥ 30% and < 65% RTP; b. Intermediate Power Range - Upscale Function is not bypassed when THERMAL POWER is ≥ 65% and < 85% RTP; and c. High Power Range – Upscale Function is not bypassed when THERMAL POWER is ≥ 85% RTP.	In accordance with the Surveillance Frequency Control Program
SR 3.3.2.1.6	Verify the RWM is not bypassed when THERMAL POWER is ≤ 10% RTP.	In accordance with the Surveillance Frequency Control Program

SURVEILLANCE REQUIREMENTS (continued)

	SURVEILLANCE	FREQUENCY
SR 3.3.2.1.7	----------NOTE---------- Not required to be performed until 1 hour after reactor mode switch is in the shutdown position. ---------- Perform CHANNEL FUNCTIONAL TEST.	In accordance with the Surveillance Frequency Control Program
SR 3.3.2.1.8	Verify control rod sequences input to the RWM are in conformance with BPWS.	Prior to declaring RWM OPERABLE following loading of sequence into RWM

Table 3.3.2.1-1 (page 1 of 1)
Control Rod Block Instrumentation

FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	REQUIRED CHANNELS	SURVEILLANCE REQUIREMENTS	ALLOWABLE VALUE
1. Rod Block Monitor				
a. Low Power Range - Upscale	(a)	2	SR 3.3.2.1.1 SR 3.3.2.1.4[(h)(i)] SR 3.3.2.1.5	As specified in COLR
b. Intermediate Power Range - Upscale	(b)	2	SR 3.3.2.1.1 SR 3.3.2.1.4[(h)(i)] SR 3.3.2.1.5	As specified in COLR
c. High Power Range - Upscale	(c), (d)	2	SR 3.3.2.1.1 SR 3.3.2.1.4[(h)(i)] SR 3.3.2.1.5	As specified in COLR
d. Inop	(d), (e)	2	SR 3.3.2.1.1	NA
2. Rod Worth Minimizer	1[(f)], 2[(f)]	1	SR 3.3.2.1.2 SR 3.3.2.1.3 SR 3.3.2.1.6 SR 3.3.2.1.8	NA
3. Reactor Mode Switch - Shutdown Position	(g)	2	SR 3.3.2.1.7	NA

(a) THERMAL POWER ≥ 30% and < 65% RTP and MCPR is below the limit specified in COLR.

(b) THERMAL POWER ≥ 65% and < 85% RTP and MCPR is below the limit specified in COLR.

(c) THERMAL POWER ≥ 85% and < 90% RTP and MCPR is below the limit specified in COLR.

(d) THERMAL POWER ≥ 90% RTP and MCPR is below the limit specified in COLR.

(e) THERMAL POWER ≥ 30% and < 90% RTP and MCPR is below the limit specified in COLR.

(f) With THERMAL POWER ≤ 10% RTP, except during the reactor shutdown process if the coupling of each withdrawn control rod has been confirmed.

(g) Reactor mode switch in the shutdown position.

(h) If the as-found channel setpoint is not the Nominal Trip Setpoint (NTSP) but is conservative with respect to the Allowable Value, then the channel shall be evaluated to verify that it is functioning as required before returning the channel to service.

(i) The instrument channel setpoint shall be reset to the Nominal Trip Setpoint at the completion of the surveillance; otherwise, the channel shall be declared inoperable. The NTSP shall be specified in the COLR. The methodology used to determine the NTSP is specified in the Technical Requirements Manual.

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
	C.2 Reduce THERMAL POWER to < 25% RTP.	4 hours

SURVEILLANCE REQUIREMENTS

----------NOTE----------
When a channel is placed in an inoperable status solely for performance of required Surveillances, entry into associated Conditions and Required Actions may be delayed for up to 6 hours provided feedwater pump and main turbine high water level trip capability is maintained.

SURVEILLANCE		FREQUENCY
SR 3.3.2.2.1	Perform CHANNEL CHECK.	In accordance with the Surveillance Frequency Control Program
SR 3.3.2.2.2	Perform CHANNEL FUNCTIONAL TEST.	In accordance with the Surveillance Frequency Control Program
SR 3.3.2.2.3	Calibrate the trip units.	In accordance with the Surveillance Frequency Control Program
SR 3.3.2.2.4	Perform CHANNEL CALIBRATION. The Allowable Value shall be ≤ 49 inches.	In accordance with the Surveillance Frequency Control Program

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.3.2.2.5	Perform LOGIC SYSTEM FUNCTIONAL TEST including valve and breaker actuation.	In accordance with the Surveillance Frequency Control Program

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
E. As required by Required Action D.1 and referenced in Table 3.3.3.1-1.	E.1 Be in MODE 3.	12 hours
F. As required by Required Action D.1 and referenced in Table 3.3.3.1-1.	F.1 Initiate action in accordance with Specification 5.6.4.	Immediately

SURVEILLANCE REQUIREMENTS

----------NOTES----------

1. These SRs apply to each Function in Table 3.3.3.1-1.

2. When a channel is placed in an inoperable status solely for performance of required Surveillances, entry into associated Conditions and Required Actions may be delayed for up to 6 hours provided the other required channel in the associated Function is OPERABLE.

SURVEILLANCE		FREQUENCY
SR 3.3.3.1.1	Perform CHANNEL CHECK.	In accordance with the Surveillance Frequency Control Program
SR 3.3.3.1.2	Perform CHANNEL CALIBRATION.	In accordance with the Surveillance Frequency Control Program

3.3 INSTRUMENTATION

3.3.3.2 Alternate Shutdown System

LCO 3.3.3.2 The Alternate Shutdown System Functions shall be OPERABLE.

APPLICABILITY: MODES 1 and 2.

ACTIONS

----------NOTE----------
Separate Condition entry is allowed for each Function.

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more required Functions inoperable.	A.1 Restore required Function to OPERABLE status.	30 days
B. Required Action and associated Completion Time not met.	B.1 Be in MODE 3.	12 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.3.3.2.1	Perform CHANNEL CHECK for each required instrumentation channel that is normally energized.	In accordance with the Surveillance Frequency Control Program
SR 3.3.3.2.2	Verify each required control circuit and transfer switch is capable of performing the intended function.	In accordance with the Surveillance Frequency Control Program

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.3.3.2.3	Perform CHANNEL CALIBRATION for each required instrumentation channel.	In accordance with the Surveillance Frequency Control Program

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
C. Both Functions with ATWS-RPT trip capability not maintained.	C.1 Restore ATWS-RPT trip capability for one Function.	1 hour
D. Required Action and associated Completion Time not met.	D.1 ----------NOTE---------- Only applicable if inoperable channel is the result of an inoperable breaker. ---------- Remove the affected recirculation pump from service.	6 hours
	OR	
	D.2 Be in MODE 2.	6 hours

SURVEILLANCE REQUIREMENTS

----------NOTE----------
When a channel is placed in an inoperable status solely for performance of required Surveillances, entry into associated Conditions and Required Actions may be delayed for up to 6 hours provided the associated Function maintains ATWS-RPT trip capability.

SURVEILLANCE		FREQUENCY
SR 3.3.4.1.1	----------NOTE---------- Not required for the time delay portion of the Reactor Vessel Water Level - Low Low Function. ---------- Perform CHANNEL CHECK.	In accordance with the Surveillance Frequency Control Program

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.3.4.1.2	Perform CHANNEL FUNCTIONAL TEST.	In accordance with the Surveillance Frequency Control Program
SR 3.3.4.1.3	Calibrate the trip units.	In accordance with the Surveillance Frequency Control Program
SR 3.3.4.1.4	Perform CHANNEL CALIBRATION of Reactor Vessel Water Level - Low Low time delay relays. The Allowable Value shall be ≥ 6 seconds and ≤ 8.6 seconds.	In accordance with the Surveillance Frequency Control Program
SR 3.3.4.1.5	Perform CHANNEL CALIBRATION. The Allowable Values shall be: a. Reactor Vessel Water Level – Low Low ≥ -48 inches; and b. Reactor Vessel Steam Dome Pressure - High ≤ 1155 psig.	In accordance with the Surveillance Frequency Control Program
SR 3.3.4.1.6	Perform LOGIC SYSTEM FUNCTIONAL TEST including breaker actuation.	In accordance with the Surveillance Frequency Control Program

SURVEILLANCE REQUIREMENTS

----------NOTES----------

1. Refer to Table 3.3.5.1-1 to determine which SRs apply for each ECCS Function.

2. When a channel is placed in an inoperable status solely for performance of required Surveillances, entry into associated Conditions and Required Actions may be delayed as follows: (a) for up to 6 hours for Functions 3.c and 3.f; and (b) for up to 6 hours for Functions other than 3.c and 3.f provided the associated Function or the redundant Function maintains ECCS initiation capability.

SURVEILLANCE		FREQUENCY
SR 3.3.5.1.1	Perform CHANNEL CHECK.	In accordance with the Surveillance Frequency Control Program
SR 3.3.5.1.2	Perform CHANNEL FUNCTIONAL TEST.	In accordance with the Surveillance Frequency Control Program
SR 3.3.5.1.3	Calibrate the trip unit.	In accordance with the Surveillance Frequency Control Program
SR 3.3.5.1.4	Perform CHANNEL CALIBRATION.	In accordance with the Surveillance Frequency Control Program
SR 3.3.5.1.5	Perform CHANNEL FUNCTIONAL TEST.	In accordance with the Surveillance Frequency Control Program
SR 3.3.5.1.6	Perform CHANNEL CALIBRATION.	In accordance with the Surveillance Frequency Control Program

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.3.5.1.7	Perform CHANNEL CALIBRATION.	In accordance with the Surveillance Frequency Control Program
SR 3.3.5.1.8	Perform LOGIC SYSTEM FUNCTIONAL TEST.	In accordance with the Surveillance Frequency Control Program
SR 3.3.5.1.9	Perform CHANNEL FUNCTIONAL TEST.	In accordance with the Surveillance Frequency Control Program

Table 3.3.5.1-1 (page 1 of 6)
Emergency Core Cooling System Instrumentation

FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	REQUIRED CHANNELS PER FUNCTION	CONDITIONS REFERENCED FROM REQUIRED ACTION A.1	SURVEILLANCE REQUIREMENTS	ALLOWABLE VALUE
1. Core Spray System					
a. Reactor Vessel Water Level - Low Low	1, 2, 3	4[(a)]	B	SR 3.3.5.1.1 SR 3.3.5.1.2 SR 3.3.5.1.3 SR 3.3.5.1.7 SR 3.3.5.1.8	≥ -48 inches
b. Drywell Pressure - High	1, 2, 3	4[(a)]	B	SR 3.3.5.1.2 SR 3.3.5.1.4 SR 3.3.5.1.8	≤ 2 psig
c. Reactor Steam Dome Pressure - Low (Injection Permissive)	1, 2, 3	2	C	SR 3.3.5.1.2 SR 3.3.5.1.4[(b)(c)] SR 3.3.5.1.8	≥ 397 psig and ≤ 440 psig
d. Reactor Steam Dome Pressure Permissive - Low (Pump Permissive)	1, 2, 3	2	C	SR 3.3.5.1.2 SR 3.3.5.1.4[(b)(c)] SR 3.3.5.1.8	≥ 397 psig
e. Reactor Steam Dome Pressure Permissive - Bypass Timer (Pump Permissive)	1, 2, 3	2	C	SR 3.3.5.1.7 SR 3.3.5.1.8	≤ 18 minutes

(a) Also required to initiate the associated emergency diesel generator (EDG).

(b) If the as-found channel setpoint is conservative with respect to the Allowable Value but outside its predefined as-found tolerance, then the channel shall be evaluated to verify that it is functioning as required before returning the channel to service.

(c) The instrument channel setpoint shall be reset to a value that is within the as-left tolerance of the nominal trip setpoint; otherwise, the channel shall be declared inoperable. The nominal trip setpoint and the methodology used to determine the as-found tolerance and the as-left tolerance are specified in the Technical Requirements Manual (TRM).

Table 3.3.5.1-1 (page 2 of 6)
Emergency Core Cooling System Instrumentation

FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	REQUIRED CHANNELS PER FUNCTION	CONDITIONS REFERENCED FROM REQUIRED ACTION A.1	SURVEILLANCE REQUIREMENTS	ALLOWABLE VALUE
1. Core Spray System					
f. Core Spray Pump Start - Time Delay Relay	1, 2, 3	1 per pump	C	SR 3.3.5.1.7 SR 3.3.5.1.8	≤ 15.86 seconds
2. Low Pressure Coolant Injection (LPCI) System					
a. Reactor Vessel Water Level - Low Low	1, 2, 3	4	B	SR 3.3.5.1.1 SR 3.3.5.1.2 SR 3.3.5.1.3 SR 3.3.5.1.7 SR 3.3.5.1.8	≥ -48 inches
b. Drywell Pressure - High	1, 2, 3	4	B	SR 3.3.5.1.2 SR 3.3.5.1.4 SR 3.3.5.1.8	≤ 2 psig
c. Reactor Steam Dome Pressure - Low (Injection Permissive)	1, 2, 3	2	C	SR 3.3.5.1.2 SR 3.3.5.1.4(b)(c) SR 3.3.5.1.8	≥ 397 psig and ≤ 440 psig
d. Reactor Steam Dome Pressure Permissive - Low (Pump Permissive)	1, 2, 3	2	C	SR 3.3.5.1.2 SR 3.3.5.1.4(b)(c) SR 3.3.5.1.8	≥ 397 psig

(b) If the as-found channel setpoint is conservative with respect to the Allowable Value but outside its predefined as-found tolerance, then the channel shall be evaluated to verify that it is functioning as required before returning the channel to service.

(c) The instrument channel setpoint shall be reset to a value that is within the as-left tolerance of the nominal trip setpoint; otherwise, the channel shall be declared inoperable. The nominal trip setpoint and the methodology used to determine the as-found tolerance and the as-left tolerance are specified in the TRM.

Table 3.3.5.1-1 (page 3 of 6)
Emergency Core Cooling System Instrumentation

	FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	REQUIRED CHANNELS PER FUNCTION	CONDITIONS REFERENCED FROM REQUIRED ACTION A.1	SURVEILLANCE REQUIREMENTS	ALLOWABLE VALUE
2.	LPCI System					
e.	Reactor Steam Dome Pressure Permissive - Bypass Timer (Pump Permissive)	1, 2, 3	2	C	SR 3.3.5.1.7 SR 3.3.5.1.8	≤ 18 minutes
f.	Low Pressure Coolant Injection Pump Start - Time Delay Relay	1, 2, 3	4 per pump	B	SR 3.3.5.1.7 SR 3.3.5.1.8	
	Pumps A, B					≤ 5.33 seconds
	Pumps C, D					≤ 10.59 seconds
g.	Low Pressure Coolant Injection Pump Discharge Flow - Low (Bypass)	1, 2, 3	1 per pump	E	SR 3.3.5.1.2 SR 3.3.5.1.7 SR 3.3.5.1.8	≥ 360 gpm and ≤ 745 gpm
h.	Reactor Steam Dome Pressure - Low (Break Detection)	1, 2, 3	4	B	SR 3.3.5.1.2 SR 3.3.5.1.7 SR 3.3.5.1.8	≥ 873.6 psig and ≤ 923.4 psig
i.	Recirculation Pump Differential Pressure - High (Break Detection)	1, 2, 3	4 per pump	C	SR 3.3.5.1.2 SR 3.3.5.1.7 SR 3.3.5.1.8	≥ 63.5 inches wc
j.	Recirculation Riser Differential Pressure - High (Break Detection)	1, 2, 3	4	C	SR 3.3.5.1.2 SR 3.3.5.1.7[(b)(c)] SR 3.3.5.1.8	≤ 100.0 inches wc

(b) If the as-found channel setpoint is conservative with respect to the Allowable Value but outside its predefined as-found tolerance, then the channel shall be evaluated to verify that it is functioning as required before returning the channel to service.

(c) The instrument channel setpoint shall be reset to a value that is within the as-left tolerance of the nominal trip setpoint; otherwise, the channel shall be declared inoperable. The nominal trip setpoint and the methodology used to determine the as-found tolerance and the as-left tolerance are specified in the TRM.

Table 3.3.5.1-1 (page 4 of 6)
Emergency Core Cooling System Instrumentation

FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	REQUIRED CHANNELS PER FUNCTION	CONDITIONS REFERENCED FROM REQUIRED ACTION A.1	SURVEILLANCE REQUIREMENTS	ALLOWABLE VALUE
2. LPCI System					
k. Recirculation Steam Dome Pressure - Time Delay Relay (Break Detection)	1, 2, 3	2	B	SR 3.3.5.1.7 SR 3.3.5.1.8 SR 3.3.5.1.9	≤ 2.97 seconds
l. Recirculation Pump Differential Pressure - Time Delay Relay (Break Detection)	1, 2, 3	2	C	SR 3.3.5.1.7 SR 3.3.5.1.8 SR 3.3.5.1.9	≤ 0.75 seconds
m. Recirculation Riser Differential Pressure - Time Delay Relay (Break Detection)	1, 2, 3	2	C	SR 3.3.5.1.7 SR 3.3.5.1.8 SR 3.3.5.1.9	≤ 0.75 seconds
3. High Pressure Coolant Injection (HPCI) System					
a. Reactor Vessel Water Level - Low Low	1, 2[(d)], 3[(d)]	4	B	SR 3.3.5.1.1 SR 3.3.5.1.2 SR 3.3.5.1.3 SR 3.3.5.1.7 SR 3.3.5.1.8	≥ -48 inches
b. Drywell Pressure - High	1, 2[(d)], 3[(d)]	4	B	SR 3.3.5.1.2 SR 3.3.5.1.4 SR 3.3.5.1.8	≤ 2 psig
c. Reactor Vessel Water Level - High	1, 2[(d)], 3[(d)]	2	C	SR 3.3.5.1.1 SR 3.3.5.1.2 SR 3.3.5.1.3 SR 3.3.5.1.7 SR 3.3.5.1.8	≤ 48 inches
d. Condensate Storage Tank Level - Low	1, 2[(d)], 3[(d)]	2	D	SR 3.3.5.1.7 SR 3.3.5.1.8	≥ 29.3 inches
e. Suppression Pool Water Level - High	1, 2[(d)], 3[(d)]	2	D	SR 3.3.5.1.5 SR 3.3.5.1.6 SR 3.3.5.1.8	≤ 3.0 inches
f. High Pressure Coolant Injection Pump Discharge Flow - Low (Bypass)	1, 2[(d)], 3[(d)]	1	E	SR 3.3.5.1.5 SR 3.3.5.1.6 SR 3.3.5.1.8	≥ 362 gpm and ≤ 849 gpm

(d) With reactor steam dome pressure > 150 psig.

Table 3.3.5.1-1 (page 5 of 6)
Emergency Core Cooling System Instrumentation

FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	REQUIRED CHANNELS PER FUNCTION	CONDITIONS REFERENCED FROM REQUIRED ACTION A.1	SURVEILLANCE REQUIREMENTS	ALLOWABLE VALUE
4. Automatic Depressurization System (ADS) Trip System A					
a. Reactor Vessel Water Level - Low Low	1, 2[(d)], 3[(d)]	2	F	SR 3.3.5.1.1 SR 3.3.5.1.2 SR 3.3.5.1.3 SR 3.3.5.1.7 SR 3.3.5.1.8	≥ -48 inches
b. Automatic Depressurization System Initiation Timer	1, 2[(d)], 3[(d)]	1	G	SR 3.3.5.1.7 SR 3.3.5.1.8	≤ 120 seconds
c. Core Spray Pump Discharge Pressure - High	1, 2[(d)], 3[(d)]	2	G	SR 3.3.5.1.2 SR 3.3.5.1.4[(b)(c)] SR 3.3.5.1.8	≥ 75 psig and ≤ 125 psig
d. Low Pressure Coolant Injection Pump Discharge Pressure - High	1, 2[(d)], 3[(d)]	4	G	SR 3.3.5.1.2 SR 3.3.5.1.4[(b)(c)] SR 3.3.5.1.8	≥ 75 psig and ≤ 125 psig
5. ADS Trip System B					
a. Reactor Vessel Water Level - Low Low	1, 2[(d)], 3[(d)]	2	F	SR 3.3.5.1.1 SR 3.3.5.1.2 SR 3.3.5.1.3 SR 3.3.5.1.7 SR 3.3.5.1.8	≥ -48 inches
b. Automatic Depressurization System Initiation Timer	1, 2[(d)], 3[(d)]	1	G	SR 3.3.5.1.7 SR 3.3.5.1.8	≤ 120 seconds

(b) If the as-found channel setpoint is conservative with respect to the Allowable Value but outside its predefined as-found tolerance, then the channel shall be evaluated to verify that it is functioning as required before returning the channel to service.

(c) The instrument channel setpoint shall be reset to a value that is within the as-left tolerance of the nominal trip setpoint; otherwise, the channel shall be declared inoperable. The nominal trip setpoint and the methodology used to determine the as-found tolerance and the as-left tolerance are specified in the TRM.

(d) With reactor steam dome pressure > 150 psig.

Table 3.3.5.1-1 (page 6 of 6)
Emergency Core Cooling System Instrumentation

FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	REQUIRED CHANNELS PER FUNCTION	CONDITIONS REFERENCED FROM REQUIRED ACTION A.1	SURVEILLANCE REQUIREMENTS	ALLOWABLE VALUE
5. ADS Trip System B					
c. Core Spray Pump Discharge Pressure - High	1, 2[(d)], 3[(d)]	2	G	SR 3.3.5.1.2 SR 3.3.5.1.4[(b)(c)] SR 3.3.5.1.8	≥ 75 psig and ≤ 125 psig
d. Low Pressure Coolant Injection Pump Discharge Pressure - High	1, 2[(d)], 3[(d)]	4	G	SR 3.3.5.1.2 SR 3.3.5.1.4[(b)(c)] SR 3.3.5.1.8	≥ 75 psig and ≤ 125 psig

(b) If the as-found channel setpoint is conservative with respect to the Allowable Value but outside its predefined as-found tolerance, then the channel shall be evaluated to verify that it is functioning as required before returning the channel to service.

(c) The instrument channel setpoint shall be reset to a value that is within the as-left tolerance of the nominal trip setpoint; otherwise, the channel shall be declared inoperable. The nominal trip setpoint and the methodology used to determine the as-found tolerance and the as-left tolerance are specified in the TRM.

(d) With reactor steam dome pressure > 150 psig.

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
D. As required by Required Action A.1 and referenced in Table 3.3.5.2-1.	D.1 ----------NOTE---------- Only applicable if RCIC pump suction is not aligned to the suppression pool. ---------- Declare RCIC System inoperable.	1 hour from discovery of loss of RCIC initiation capability
	AND	
	D.2.1 Place channel in trip.	24 hours
	OR	
	D.2.2 Align RCIC pump suction to the suppression pool.	24 hours
E. Required Action and associated Completion Time of Condition B, C, or D not met.	E.1 Declare RCIC System inoperable.	Immediately

SURVEILLANCE REQUIREMENTS

----------NOTES----------

1. Refer to Table 3.3.5.2-1 to determine which SRs apply for each RCIC Function.

2. When a channel is placed in an inoperable status solely for performance of required Surveillances, entry into associated Conditions and Required Actions may be delayed as follows: (a) for up to 6 hours for Function 2; and (b) for up to 6 hours for Functions 1 and 3 provided the associated Function maintains RCIC initiation capability.

SURVEILLANCE		FREQUENCY
SR 3.3.5.2.1	Perform CHANNEL CHECK.	In accordance with the Surveillance Frequency Control Program
SR 3.3.5.2.2	Perform CHANNEL FUNCTIONAL TEST.	In accordance with the Surveillance Frequency Control Program
SR 3.3.5.2.3	Calibrate the trip units.	In accordance with the Surveillance Frequency Control Program
SR 3.3.5.2.4	Perform CHANNEL CALIBRATION.	In accordance with the Surveillance Frequency Control Program
SR 3.3.5.2.5	Perform LOGIC SYSTEM FUNCTIONAL TEST.	In accordance with the Surveillance Frequency Control Program

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
E. Required Action and associated Completion Time of Condition C or D not met.	E.1 Declare associated low pressure ECCS injection/spray subsystem inoperable.	Immediately

SURVEILLANCE REQUIREMENTS

----------NOTE----------
Refer to Table 3.3.5.3-1 to determine which SRs apply for each ECCS Function.

SURVEILLANCE		FREQUENCY
SR 3.3.5.3.1	Perform CHANNEL CHECK.	In accordance with the Surveillance Frequency Control Program
SR 3.3.5.3.2	Perform CHANNEL FUNCTIONAL TEST.	In accordance with the Surveillance Frequency Control Program

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
I. As required by Required Action C.1 and referenced in Table 3.3.6.1-1.	I.1 Initiate action to restore channel to OPERABLE status.	Immediately

SURVEILLANCE REQUIREMENTS

----------NOTES----------

1. Refer to Table 3.3.6.1-1 to determine which SRs apply for each Primary Containment Isolation Function.

2. When a channel is placed in an inoperable status solely for performance of required Surveillances, entry into associated Conditions and Required Actions may be delayed for up to 6 hours provided the associated Function maintains primary containment isolation capability.

SURVEILLANCE		FREQUENCY
SR 3.3.6.1.1	Perform CHANNEL CHECK.	In accordance with the Surveillance Frequency Control Program
SR 3.3.6.1.2	Perform CHANNEL FUNCTIONAL TEST.	In accordance with the Surveillance Frequency Control Program
SR 3.3.6.1.3	Calibrate the trip unit.	In accordance with the Surveillance Frequency Control Program

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.3.6.1.4	Perform CHANNEL CALIBRATION.	In accordance with the Surveillance Frequency Control Program
SR 3.3.6.1.5	Perform CHANNEL CALIBRATION.	In accordance with the Surveillance Frequency Control Program
SR 3.3.6.1.6	Perform LOGIC SYSTEM FUNCTIONAL TEST.	In accordance with the Surveillance Frequency Control Program

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
	C.2.1 Place the associated standby gas treatment (SGT) subsystem in operation. OR C.2.2 Declare associated SGT subsystem inoperable.	1 hour 1 hour

SURVEILLANCE REQUIREMENTS

----------NOTES----------

1. Refer to Table 3.3.6.2-1 to determine which SRs apply for each Secondary Containment Isolation Function.

2. When a channel is placed in an inoperable status solely for performance of required Surveillances, entry into associated Conditions and Required Actions may be delayed for up to 6 hours provided the associated Function maintains secondary containment isolation capability.

SURVEILLANCE		FREQUENCY
SR 3.3.6.2.1	Perform CHANNEL CHECK.	In accordance with the Surveillance Frequency Control Program
SR 3.3.6.2.2	Perform CHANNEL FUNCTIONAL TEST.	In accordance with the Surveillance Frequency Control Program
SR 3.3.6.2.3	Calibrate the trip unit.	In accordance with the Surveillance Frequency Control Program

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.3.6.2.4	Perform CHANNEL CALIBRATION.	In accordance with the Surveillance Frequency Control Program
SR 3.3.6.2.5	Perform CHANNEL CALIBRATION.	In accordance with the Surveillance Frequency Control Program
SR 3.3.6.2.6	Perform LOGIC SYSTEM FUNCTIONAL TEST.	In accordance with the Surveillance Frequency Control Program

Table 3.3.6.2-1 (page 1 of 1)
Secondary Containment Isolation Instrumentation

	FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	REQUIRED CHANNELS PER TRIP SYSTEM	SURVEILLANCE REQUIREMENTS	ALLOWABLE VALUE
1.	Reactor Vessel Water Level - Low Low	1, 2, 3	2	SR 3.3.6.2.1 SR 3.3.6.2.2 SR 3.3.6.2.3 SR 3.3.6.2.5 SR 3.3.6.2.6	≥ -48 inches
2.	Drywell Pressure - High	1, 2, 3	2	SR 3.3.6.2.2 SR 3.3.6.2.4 SR 3.3.6.2.6	≤ 2 psig
3.	Reactor Building Ventilation Exhaust Radiation - High	1, 2, 3, (a)	2	SR 3.3.6.2.1 SR 3.3.6.2.2 SR 3.3.6.2.4 SR 3.3.6.2.6	≤ 100 mR/hr
4.	Refueling Floor Radiation - High	1, 2, 3, (a)	2	SR 3.3.6.2.1 SR 3.3.6.2.2 SR 3.3.6.2.4 SR 3.3.6.2.6	≤ 100 mR/hr

(a) During movement of recently irradiated fuel assemblies in secondary containment.

SURVEILLANCE REQUIREMENTS

----------NOTES----------

1. Refer to Table 3.3.6.3-1 to determine which SRs apply for each Function.

2. When a channel is placed in an inoperable status solely for performance of required Surveillances, entry into associated Conditions and Required Actions may be delayed for up to 6 hours provided the associated Function maintains LLS initiation capability.

SURVEILLANCE		FREQUENCY
SR 3.3.6.3.1	Perform CHANNEL CHECK.	In accordance with the Surveillance Frequency Control Program
SR 3.3.6.3.2	----------NOTE---------- For Function 1, only required to be performed prior to entering MODE 2 or 3 from MODE 4. ----------	
	Perform CHANNEL FUNCTIONAL TEST.	In accordance with the Surveillance Frequency Control Program
SR 3.3.6.3.3	Calibrate the trip unit.	In accordance with the Surveillance Frequency Control Program
SR 3.3.6.3.4	Perform CHANNEL CALIBRATION.	In accordance with the Surveillance Frequency Control Program
SR 3.3.6.3.5	Perform CHANNEL CALIBRATION.	In accordance with the Surveillance Frequency Control Program

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.3.6.3.6	Perform LOGIC SYSTEM FUNCTIONAL TEST.	In accordance with the Surveillance Frequency Control Program

Table 3.3.6.3-1 (page 1 of 1)
Low-Low Set Instrumentation

FUNCTION	REQUIRED CHANNELS PER FUNCTION	SURVEILLANCE REQUIREMENTS	ALLOWABLE VALUE
1. Reactor Scram Detection	4 per LLS valve	SR 3.3.6.3.2 SR 3.3.6.3.6	NA
2. Low-Low Set Pressure Setpoints	4 per LLS valve	SR 3.3.6.3.1 SR 3.3.6.3.2 SR 3.3.6.3.3 SR 3.3.6.3.5 SR 3.3.6.3.6	Low: Open ≤ 1066 psig Close ≤ 986 psig Medium: Open ≤ 1076 psig Close ≤ 996 psig High: Open ≤ 1086 psig Close ≤ 1006 psig
3. Tailpipe Pressure Switch	4 per LLS valve	SR 3.3.6.3.1 SR 3.3.6.3.2 SR 3.3.6.3.5 SR 3.3.6.3.6	≥ 27 psid and ≤ 33 psid
4. Inhibit Timers	4 per LLS valve	SR 3.3.6.3.2 SR 3.3.6.3.4 SR 3.3.6.3.6	≥ 8 seconds and ≤ 12 seconds

SURVEILLANCE REQUIREMENTS

----------NOTES----------

1. Refer to Table 3.3.7.1-1 to determine which SRs apply for each CREF System Function.
2. When a channel is placed in an inoperable status solely for performance of required Surveillances, entry into associated Conditions and Required Actions may be delayed for up to 6 hours provided the associated Function maintains CREF System initiation capability.

SURVEILLANCE		FREQUENCY
SR 3.3.7.1.1	Perform CHANNEL CHECK.	In accordance with the Surveillance Frequency Control Program
SR 3.3.7.1.2	Perform CHANNEL FUNCTIONAL TEST.	In accordance with the Surveillance Frequency Control Program
SR 3.3.7.1.3	Calibrate the trip unit.	In accordance with the Surveillance Frequency Control Program
SR 3.3.7.1.4	Perform CHANNEL CALIBRATION.	In accordance with the Surveillance Frequency Control Program
SR 3.3.7.1.5	Perform CHANNEL CALIBRATION.	In accordance with the Surveillance Frequency Control Program
SR 3.3.7.1.6	Perform LOGIC SYSTEM FUNCTIONAL TEST.	In accordance with the Surveillance Frequency Control Program

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
C. Required Action and associated Completion Time not met.	C.1 Isolate the mechanical vacuum pump. OR	12 hours
	C.2 Isolate the main steam lines. OR	12 hours
	C.3 Be in MODE 3.	12 hours

SURVEILLANCE REQUIREMENTS

----------NOTE----------

When a channel is placed in an inoperable status solely for performance of required Surveillances, entry into associated Conditions and Required Actions may be delayed for up to 6 hours provided the associated Function maintains mechanical vacuum pump isolation capability.

SURVEILLANCE		FREQUENCY
SR 3.3.7.2.1	Perform CHANNEL CHECK.	In accordance with the Surveillance Frequency Control Program
SR 3.3.7.2.2	Perform CHANNEL FUNCTIONAL TEST.	In accordance with the Surveillance Frequency Control Program
SR 3.3.7.2.3	Perform CHANNEL CALIBRATION. The Allowable Value Shall be ≤ 6.9 R/hour.	In accordance with the Surveillance Frequency Control Program

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.3.7.2.4	Perform LOGIC SYSTEM FUNCTIONAL TEST, including mechanical vacuum pump breaker and isolation valves actuation.	In accordance with the Surveillance Frequency Control Program

SURVEILLANCE REQUIREMENTS

----------NOTES----------

1. Refer to Table 3.3.8.1-1 to determine which SRs apply for each LOP Instrumentation Function.

2. When a channel is placed in an inoperable status solely for performance of required Surveillances, entry into associated Conditions and Required Actions may be delayed for up to 2 hours provided the associated Function maintains EDG initiation capability.

SURVEILLANCE		FREQUENCY
SR 3.3.8.1.1	Perform CHANNEL FUNCTIONAL TEST.	In accordance with the Surveillance Frequency Control Program
SR 3.3.8.1.2	Perform CHANNEL CALIBRATION.	In accordance with the Surveillance Frequency Control Program
SR 3.3.8.1.3	Perform CHANNEL CALIBRATION.	In accordance with the Surveillance Frequency Control Program
SR 3.3.8.1.4	Perform LOGIC SYSTEM FUNCTIONAL TEST.	In accordance with the Surveillance Frequency Control Program

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
	F.2.2 Declare associated SGT subsystem(s) inoperable. AND F.3.1 Place the associated control room emergency filtration (CREF) subsystem(s) in operation. OR F.3.2 Declare associated CREF subsystem(s) inoperable.	Immediately Immediately Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.3.8.2.1	Perform CHANNEL FUNCTIONAL TEST.	In accordance with the Surveillance Frequency Control Program
SR 3.3.8.2.2	Perform CHANNEL CALIBRATION. The Allowable Values shall be: a. Overvoltage ≤ 128 V; b. Undervoltage ≥ 104 V; and c. Underfrequency ≥ 57 Hz.	In accordance with the Surveillance Frequency Control Program

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.3.8.2.3	Perform CHANNEL CALIBRATION of each Overvoltage, Undervoltage, and Underfrequency time delay relay. The Allowable Value shall be ≤ 4 seconds.	In accordance with the Surveillance Frequency Control Program
SR 3.3.8.2.4	Perform a system functional test.	In accordance with the Surveillance Frequency Control Program

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.4.1.1	----------NOTE---------- Not required to be performed until 24 hours after both recirculation loops are in operation. ---------- Verify jet pump loop flow mismatch with both recirculation loops in operation is: a. ≤ 10% of rated core flow when operating at < 70% of rated core flow; and b. ≤ 5% of rated core flow when operating at ≥ 70% of rated core flow.	In accordance with the Surveillance Frequency Control Program

3.4 REACTOR COOLANT SYSTEM (RCS)

3.4.2 Jet Pumps

LCO 3.4.2 All jet pumps shall be OPERABLE.

APPLICABILITY: MODES 1 and 2.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more jet pumps inoperable.	A.1 Be in MODE 3.	12 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.4.2.1	----------NOTES---------- 1. Not required to be performed until 4 hours after associated recirculation loop is in operation. 2. Not required to be performed until 24 hours after > 25% RTP. ---------- Verify at least one of the following criteria (a or b) is satisfied for each operating recirculation loop: a. Recirculation pump flow to speed ratio differs by ≤ 5% from established patterns, and jet pump loop flow to recirculation pump speed ratio differs by ≤ 5% from established patterns; or b. Each jet pump diffuser to lower plenum differential pressure differs by ≤ 20% from established patterns.	In accordance with the Surveillance Frequency Control Program

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
C. Required Action and associated Completion Time of Condition A or B not met. OR Pressure boundary LEAKAGE exists.	C.1 Be in MODE 3. AND C.2 Be in MODE 4.	12 hours 36 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.4.4.1	Verify RCS unidentified and total LEAKAGE and unidentified LEAKAGE increases are within limits.	In accordance with the Surveillance Frequency Control Program

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
D. Required Action and associated Completion Time not met.	D.1 Be in MODE 3. AND D.2 Be in MODE 4.	12 hours 36 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.4.5.1	Perform a CHANNEL CHECK of required leakage detection instrumentation.	In accordance with the Surveillance Frequency Control Program
SR 3.4.5.2	Perform a CHANNEL FUNCTIONAL TEST of the drywell particulate radioactivity monitoring system and the flow instrumentation of the required drywell drain sump monitoring system.	In accordance with the Surveillance Frequency Control Program
SR 3.4.5.3	Perform a CHANNEL CALIBRATION of required leakage detection instrumentation.	In accordance with the Surveillance Frequency Control Program

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.4.6.1	----------NOTE---------- Only required to be performed in MODE 1. ----------	
	Verify reactor coolant DOSE EQUIVALENT I-131 specific activity is ≤ 0.2 µCi/gm.	In accordance with the Surveillance Frequency Control Program

ACTIONS (continued)

CONDITION	REQUIRED ACTION		COMPLETION TIME
B. No RHR shutdown cooling subsystem in operation. AND No recirculation pump in operation.	B.1	Initiate action to restore one RHR shutdown cooling subsystem or one recirculation pump to operation.	Immediately
	AND		
	B.2	Verify reactor coolant circulation by an alternate method.	1 hour from discovery of no reactor coolant circulation AND Once per 12 hours thereafter
	AND		
	B.3	Monitor reactor coolant temperature and pressure.	Once per hour

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.4.7.1	----------NOTE---------- Not required to be met until 2 hours after reactor steam dome pressure is less than the RHR shutdown cooling supply isolation interlock. ----------	
	Verify one RHR shutdown cooling subsystem or recirculation pump is operating.	In accordance with the Surveillance Frequency Control Program

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.4.7.2	----------NOTE---------- Not required to be performed until 12 hours after reactor steam dome pressure is less than the RHR shutdown cooling supply isolation interlock. ----------	
	Verify RHR shutdown cooling subsystem locations susceptible to gas accumulation are sufficiently filled with water.	In accordance with the Surveillance Frequency Control Program

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
	B.2 Monitor reactor coolant temperature and pressure.	Once per hour

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.4.8.1	Verify one RHR shutdown cooling subsystem or recirculation pump is operating.	In accordance with the Surveillance Frequency Control Program
SR 3.4.8.2	Verify RHR shutdown cooling subsystem locations susceptible to gas accumulation are sufficiently filled with water.	In accordance with the Surveillance Frequency Control Program

SURVEILLANCE REQUIREMENTS

	SURVEILLANCE	FREQUENCY
SR 3.4.9.1	----------NOTE---------- Only required to be performed during RCS heatup and cooldown operations and RCS inservice leak and hydrostatic testing. ---------- Verify: a. RCS pressure and RCS temperature are within the applicable limits specified in the PTLR; and b. RCS heatup and cooldown rates are within the the limits specified in the PTLR.	In accordance with the Surveillance Frequency Control Program
SR 3.4.9.2	Verify RCS pressure and RCS temperature are within the criticality limits specified in the PTLR.	Once within 15 minutes prior to control rod withdrawal for the purpose of achieving criticality
SR 3.4.9.3	----------NOTE---------- Only required to be met in MODES 1, 2, 3, and 4 during recirculation pump startup. ---------- Verify the difference between the reactor coolant temperature in the recirculation loop to be started and the RPV coolant temperature is within the limits specified in the PTLR.	Once within 15 minutes prior to each startup of a recirculation pump
SR 3.4.9.4	----------NOTE---------- Only required to be performed when tensioning the reactor vessel head bolting studs. ---------- Verify reactor vessel flange and head flange temperature are within the limits specified in the PTLR.	In accordance with the Surveillance Frequency Control Program

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.4.9.5	----------NOTE---------- Not required to be performed until 30 minutes after RCS temperature ≤ 80°F in MODE 4. ----------	
	Verify reactor vessel flange and head flange temperatures are within the limits specified in the PTLR.	In accordance with the Surveillance Frequency Control Program
SR 3.4.9.6	----------NOTE---------- Not required to be performed until 12 hours after RCS temperature ≤ 100°F in MODE 4. ----------	
	Verify reactor vessel flange and head flange temperatures are within the limits specified in the PTLR.	In accordance with the Surveillance Frequency Control Program

3.4 REACTOR COOLANT SYSTEM (RCS)

3.4.10 Reactor Steam Dome Pressure

LCO 3.4.10 The reactor steam dome pressure shall be ≤ 1025.3 psig.

APPLICABILITY: MODES 1 and 2.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Reactor steam dome pressure not within limit.	A.1 Restore reactor steam dome pressure to within limit.	15 minutes
B. Required Action and associated Completion Time not met.	B.1 Be in MODE 3.	12 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.4.10.1	Verify reactor steam dome pressure is ≤ 1025.3 psig.	In accordance with the Surveillance Frequency Control 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.	In accordance with the Surveillance Frequency Control Program
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 valves in the flow path, that is not locked, sealed, or otherwise secured in position, is in the correct position.	In accordance with the Surveillance Frequency Control Program
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 ≥ 1060 psig.	In accordance with the Surveillance Frequency Control Program
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.	In accordance with the Surveillance Frequency Control Program
SR 3.5.1.5	Verify correct breaker alignment to the LPCI swing bus.	In accordance with the Surveillance Frequency Control Program

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
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
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
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

SURVEILLANCE REQUIREMENTS (continued)

	SURVEILLANCE	FREQUENCY
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.	In accordance with the Surveillance Frequency Control Program
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.	In accordance with the Surveillance Frequency Control Program
SR 3.5.1.11	----------NOTE---------- Valve actuation may be excluded. ---------- Verify the ADS actuates on an actual or simulated automatic initiation signal.	In accordance with the Surveillance Frequency Control Program
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

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.5.1.13	Verify automatic transfer capability of the LPCI swing bus power supply from the normal source to the backup source.	In accordance with the Surveillance Frequency Control Program

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
	D.3 Initiate action to isolate each secondary containment penetration flow path or verify it can be manually isolated from the control room. AND	Immediately
	D.4 Initiate action to verify one standby gas treatment subsystem is capable of being placed in operation.	Immediately
E. Required Action and associated Completion Time of Condition C or D not met. OR DRAIN TIME < 1 hour.	E.1 Initiate action to restore DRAIN TIME to ≥ 36 hours.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.5.2.1	Verify, for the required ECCS injection/spray subsystem, the: a. Suppression pool water level is ≥ -3 ft; or b. Condensate storage tank(s) water level is ≥ 7 ft for one tank operation and ≥ 4 ft for two tank operation.	In accordance with the Surveillance Frequency Control Program

SURVEILLANCE REQUIREMENTS (continued)

	SURVEILLANCE	FREQUENCY
SR 3.5.2.2	Verify, for the required ECCS injection/spray subsystem, locations susceptible to gas accumulation are sufficiently filled with water.	In accordance with the Surveillance Frequency Control Program
SR 3.5.2.3	----------NOTE---------- Not required to be met for system vent flow paths opened under administrative control. ----------	
	Verify, for the required ECCS injection/spray subsystem, each 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.	In accordance with the Surveillance Frequency Control Program
SR 3.5.2.4	Operate the required ECCS injection/spray subsystem for ≥ 10 minutes.	In accordance with the Surveillance Frequency Control Program
SR 3.5.2.5	----------NOTE---------- Vessel injection/spray may be excluded. ----------	
	Verify the required ECCS injection/spray subsystem can be manually operated.	In accordance with the Surveillance Frequency Control Program
SR 3.5.2.6	Verify each valve credited for automatically isolating a penetration flow path actuates to the isolation position on an actual or simulated isolation signal.	In accordance with the Surveillance Frequency Control Program

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.5.2.7	Verify DRAIN TIME ≥ 36 hours.	In accordance with the Surveillance Frequency Control Program

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.	In accordance with the Surveillance Frequency Control Program
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
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.	In accordance with the Surveillance Frequency Control Program
SR 3.5.3.4	----------NOTE---------- Vessel injection may be excluded. ----------	
	Verify the RCIC System actuates on an actual or simulated automatic initiation signal.	In accordance with the Surveillance Frequency Control Program

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.5.3.5	Verify the RCIC System locations susceptible to gas accumulation are sufficiently filled with water.	In accordance with the Surveillance Frequency Control Program

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.6.1.1.2	Verify drywell to suppression chamber bypass leakage is less than that equivalent to a one inch diameter orifice.	In accordance with the Surveillance Frequency Control Program AND ---------NOTE-------- Only required after two consecutive tests fail and continues until two consecutive tests pass ---------- 12 months

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.6.1.2.1	----------NOTES---------- 1. An inoperable air lock door does not invalidate the previous successful performance of the overall air lock leakage test. 2. Results shall be evaluated against acceptance criteria applicable to SR 3.6.1.1.1. ---------- Perform required primary containment air lock leakage rate testing in accordance with the Primary Containment Leakage Rate Testing Program.	In accordance with the Primary Containment Leakage Rate Testing Program
SR 3.6.1.2.2	Verify only one door in the primary containment air lock can be opened at a time.	In accordance with the Surveillance Frequency Control Program

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.6.1.3.1	----------NOTE---------- Not required to be met when the 18 inch primary containment purge and vent valves are open for inerting, de-inerting, pressure control, ALARA or air quality considerations for personnel entry, or Surveillances that require the valves to be open. ---------- Verify each 18 inch primary containment purge and vent valve is closed.	In accordance with the Surveillance Frequency Control Program
SR 3.6.1.3.2	----------NOTES---------- 1. Valves and blind flanges in high radiation areas may be verified by use of administrative means. 2. Not required to be met for PCIVs that are open under administrative controls. ---------- Verify each primary containment isolation manual valve and blind flange that is located outside primary containment and not locked, sealed, or otherwise secured and is required to be closed during accident conditions is closed.	In accordance with the Surveillance Frequency Control Program

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.6.1.3.3	----------NOTES---------- 1. Valves and blind flanges in high radiation areas may be verified by use of administrative means. 2. Not required to be met for PCIVs that are open under administrative controls. ---------- Verify each primary containment manual isolation valve and blind flange that is located inside primary containment and not locked, sealed, or otherwise secured and is required to be closed during accident conditions is closed.	Prior to entering MODE 2 or 3 from MODE 4 if primary containment was de-inerted while in MODE 4, if not performed within the previous 92 days
SR 3.6.1.3.4	Verify continuity of the traversing incore probe (TIP) shear isolation valve explosive charge.	In accordance with the Surveillance Frequency Control Program
SR 3.6.1.3.5	Verify the isolation time of each power operated automatic PCIV, except for MSIVs, is within limits.	In accordance with the Surveillance Frequency Control Program
SR 3.6.1.3.6	Verify the isolation time of each MSIV is ≥ 3 seconds and ≤ 9.9 seconds.	In accordance with the Surveillance Frequency Control Program
SR 3.6.1.3.7	Verify each automatic PCIV actuates to the isolation position on an actual or simulated isolation signal.	In accordance with the Surveillance Frequency Control Program

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.6.1.3.8	Verify each reactor instrumentation line EFCV actuates on a simulated instrument line break to restrict flow to ≤ 2 gpm.	In accordance with the Surveillance Frequency Control Program
SR 3.6.1.3.9	Verify each 18 inch primary containment purge and vent valve is blocked to restrict the valve from opening > 40°.	In accordance with the Surveillance Frequency Control Program
SR 3.6.1.3.10	Remove and test the explosive squib from each shear isolation valve of the TIP System.	In accordance with the Surveillance Frequency Control Program
SR 3.6.1.3.11	Perform leakage rate testing for each 18 inch primary containment purge and vent valve with resilient seals.	In accordance with the Primary Containment Leakage Rate Testing Program
SR 3.6.1.3.12	Verify leakage rate through each MSIV is: (a) ≤ 100 scfh when tested at ≥ 44.1 psig (P_a); or (b) ≤ 75.3 scfh when tested at ≥ 25 psig.	In accordance with the Primary Containment Leakage Rate Testing Program
SR 3.6.1.3.13	Verify leakage rate through the main steam pathway is: (a) ≤ 200 scfh when tested at ≥ 44.1 psig (P_a); or (b) ≤ 150.6 scfh when tested at ≥ 25 psig.	In accordance with the Primary Containment Leakage Rate Testing Program

3.6 CONTAINMENT SYSTEMS

3.6.1.4 Drywell Air Temperature

LCO 3.6.1.4 Drywell average air temperature shall be ≤ 135°F.

APPLICABILITY: MODES 1, 2, and 3.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Drywell average air temperature not within limit.	A.1 Restore drywell average air temperature to within limit.	8 hours
B. Required Action and associated Completion Time not met.	B.1 Be in MODE 3. AND B.2 Be in MODE 4.	12 hours 36 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.6.1.4.1	Verify drywell average air temperature is within limit.	In accordance with the Surveillance Frequency Control Program

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.	In accordance with the Surveillance Frequency Control Program

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
E. Required Action and Associated Completion Time not met.	E.1 Be in MODE 3. AND E.2 Be in MODE 4.	12 hours 36 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.6.1.6.1	----------NOTES---------- 1. Not required to be met for vacuum breakers that are open during Surveillances. 2. Not required to be met for vacuum breakers open when performing their intended function. ---------- Verify each vacuum breaker is closed.	In accordance with the Surveillance Frequency Control Program
SR 3.6.1.6.2	Perform a functional test of each vacuum breaker.	In accordance with the Surveillance Frequency Control Program
SR 3.6.1.6.3	Verify the opening setpoint of each vacuum breaker is ≤ 0.5 psid.	In accordance with the Surveillance Frequency Control Program

SURVEILLANCE REQUIREMENTS

	SURVEILLANCE	FREQUENCY
SR 3.6.1.7.1	----------NOTES---------- 1. Not required to be met for vacuum breakers that are open during Surveillances. 2. Not required to be met for vacuum breakers performing their intended function. 3. Not required to be met for vacuum breakers being cycled, one at a time, during primary containment inerting and de-inerting operations. ----------	
	Verify each vacuum breaker is closed.	In accordance with the Surveillance Frequency Control Program AND Within 12 hours after any operation that causes the drywell-to-suppression chamber differential pressure to be reduced by ≥ 0.5 psid if any vacuum breaker position indicator does not indicate closed
SR 3.6.1.7.2	Perform a functional test of each required vacuum breaker.	In accordance with the Surveillance Frequency Control Program

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.6.1.7.3	Verify the opening setpoint of each required vacuum breaker is ≤ 0.5 psid.	In accordance with the Surveillance Frequency Control Program

3.6 CONTAINMENT SYSTEMS

3.6.1.8 Residual Heat Removal (RHR) Drywell Spray

LCO 3.6.1.8 Two RHR drywell spray subsystems shall be OPERABLE.

APPLICABILITY: MODES 1, 2, and 3.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One RHR drywell spray subsystem inoperable.	A.1 Restore RHR drywell spray subsystem to OPERABLE status.	7 days
B. Two RHR drywell spray subsystems inoperable.	B.1 Restore one RHR drywell spray subsystem to OPERABLE status.	8 hours
C. Required Action and associated Completion Time not met.	C.1 Be in MODE 3. AND C.2 Be in MODE 4.	12 hours 36 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.6.1.8.1	Verify each RHR drywell spray subsystem manual and power operated valve in the flow path that is not locked, sealed, or otherwise secured in position is in the correct position or can be aligned to the correct position.	In accordance with the Surveillance Frequency Control Program

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.6.1.8.2	Verify each drywell spray header and nozzle is unobstructed.	10 years
SR 3.6.1.8.3	Verify RHR drywell spray subsystem locations susceptible to gas accumulation are sufficiently filled with water.	In accordance with the Surveillance Frequency Control Program

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.6.2.1.1	Verify suppression pool average temperature is within the acceptable limits.	In accordance with the Surveillance Frequency Control Program AND 5 minutes when performing testing that adds heat to the suppression pool

3.6 CONTAINMENT SYSTEMS

3.6.2.2 Suppression Pool Water Level

LCO 3.6.2.2 Suppression pool water level shall be $\geq$ - 4.0 inches and $\leq$ + 3.0 inches.

APPLICABILITY: MODES 1, 2, and 3.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Suppression pool water level not within limits.	A.1 Restore suppression pool water level to within limits.	2 hours
B. Required Action and associated Completion Time not met.	B.1 Be in MODE 3. AND B.2 Be in MODE 4.	12 hours 36 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.6.2.2.1	Verify suppression pool water level is within limits.	In accordance with the Surveillance Frequency Control Program

3.6 CONTAINMENT SYSTEMS

3.6.2.3 Residual Heat Removal (RHR) Suppression Pool Cooling

LCO 3.6.2.3 Two RHR suppression pooling cooling subsystems shall be OPERABLE.

APPLICABILITY: MODES 1, 2, and 3.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One RHR suppression pool cooling subsystem inoperable.	A.1 Restore RHR suppression pool cooling subsystem to OPERABLE status.	7 days
B. Two RHR suppression pool cooling subsystems inoperable.	B.1 Restore one RHR suppression pool cooling subsystem to OPERABLE status.	8 hours
C. Required Action and associated Completion Time not met.	C.1 Be in MODE 3. AND C.2 Be in MODE 4.	12 hours 36 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.6.2.3.1	Verify each RHR suppression pool cooling subsystem manual and power operated valve in the flow path that is not locked, sealed, or otherwise secured in position is in the correct position or can be aligned to the correct position.	In accordance with the Surveillance Frequency Control Program

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
SR 3.6.2.3.3	Verify RHR suppression pool cooling subsystem locations susceptible to gas accumulation are sufficiently filled with water.	In accordance with the Surveillance Frequency Control Program

3.6 CONTAINMENT SYSTEMS

3.6.3.1 Primary Containment Oxygen Concentration

LCO 3.6.3.1 The primary containment oxygen concentration shall be < 4.0 volume percent.

APPLICABILITY: MODE 1 during the time period:

a. From 24 hours after THERMAL POWER is > 15% RTP following startup, to

b. 24 hours prior to reducing THERMAL POWER to < 15% RTP prior to the next scheduled reactor shutdown.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Primary containment oxygen concentration not within limit.	A.1 Restore oxygen concentration to within limit.	24 hours
B. Required Action and associated Completion Time not met.	B.1 Reduce THERMAL POWER to ≤ 15% RTP.	8 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.6.3.1.1	Verify primary containment oxygen concentration is within limits.	In accordance with the Surveillance Frequency Control Program

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.6.4.1.1	----------NOTE---------- Not required to be met for 4 hours if analysis demonstrates one standby gas treatment (SGT) subsystem is capable of establishing the required secondary containment vacuum. ---------- Verify secondary containment vacuum is ≥ 0.25 inch of vacuum water gauge.	In accordance with the Surveillance Frequency Control Program
SR 3.6.4.1.2	Verify all secondary containment equipment hatches are closed and sealed.	In accordance with the Surveillance Frequency Control Program
SR 3.6.4.1.3	Verify one secondary containment access door in each access opening is closed, except when the access opening is being used for entry and exit.	In accordance with the Surveillance Frequency Control Program
SR 3.6.4.1.4	Verify the secondary containment can be maintained ≥ 0.25 inch of vacuum water gauge for 1 hour using one SGT subsystem at a flow rate ≤ 4000 cfm.	In accordance with the Surveillance Frequency Control Program

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
D. Required Action and associated Completion Time of Condition A or B not met during movement of recently irradiated fuel assemblies in the secondary containment.	D.1 ----------NOTE---------- LCO 3.0.3 is not applicable. ---------- Suspend movement of recently irradiated fuel assemblies in the secondary containment.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.6.4.2.1	----------NOTES---------- 1. Valves and blind flanges in high radiation areas may be verified by use of administrative means. 2. Not required to be met for SCIVs that are open under administrative controls. ---------- Verify each secondary containment isolation manual valve and blind flange that is not locked, sealed, or otherwise secured and is required to be closed during accident conditions is closed.	In accordance with the Surveillance Frequency Control Program
SR 3.6.4.2.2	Verify the isolation time of each power operated, automatic SCIV is within limits.	In accordance with the Surveillance Frequency Control Program

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.6.4.2.3	Verify each automatic SCIV actuates to the isolation position on an actual or simulated actuation signal.	In accordance with the Surveillance Frequency Control Program

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
D. Two SGT subsystems inoperable in MODE 1, 2, or 3.	D.1 Enter LCO 3.0.3.	Immediately
E. Two SGT subsystems inoperable during movement of recently irradiated fuel assemblies in the secondary containment.	E.1 ----------NOTE---------- LCO 3.0.3 is not applicable. ---------- Suspend movement of recently irradiated fuel assemblies in secondary containment.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.6.4.3.1	Operate each SGT subsystem for ≥ 15 continuous minutes.	In accordance with the Surveillance Frequency Control Program
SR 3.6.4.3.2	Perform required SGT filter testing in accordance with the Ventilation Filter Testing Program (VFTP).	In accordance with the VFTP
SR 3.6.4.3.3	Verify each SGT subsystem actuates on an actual or simulated initiation signal.	In accordance with the Surveillance Frequency Control Program

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
C. Required Action and associated Completion Time not met.	C.1 Be in MODE 3. AND C.2 Be in MODE 4.	12 hours 36 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.7.1.1	Verify each RHRSW 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 or can be aligned to the correct position.	In accordance with the Surveillance Frequency Control Program

SURVEILLANCE REQUIREMENTS

	SURVEILLANCE	FREQUENCY
SR 3.7.2.1	Verify the water level in the intake structure is ≥ 899 ft mean sea level.	In accordance with the Surveillance Frequency Control Program
SR 3.7.2.2	Verify the average water temperature of UHS is ≤ 90°F.	In accordance with the Surveillance Frequency Control Program
SR 3.7.2.3	----------NOTE---------- Isolation of flow to individual components does not render ESW System inoperable. ---------- Verify each ESW subsystem manual and automatic valve in the flow paths servicing safety related systems or components, that is not locked, sealed, or otherwise secured in position, is in the correct position.	In accordance with the Surveillance Frequency Control Program
SR 3.7.2.4	Verify each ESW subsystem actuates on an actual or simulated initiation signal.	In accordance with the Surveillance Frequency Control Program

3.7 PLANT SYSTEMS

3.7.3 Emergency Diesel Generator-Emergency Service Water (EDG-ESW) System

LCO 3.7.3 Two EDG-ESW subsystems shall be OPERABLE.

APPLICABILITY: MODES 1, 2, and 3.

ACTIONS

----------NOTE----------
Separate Condition entry is allowed for each EDG-ESW subsystem.

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more EDG-ESW subsystems inoperable.	A.1 Declare associated EDG inoperable.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.7.3.1	Verify each EDG-ESW subsystem manual valve in the flow path, that is not locked, sealed, or otherwise secured in position, is in the correct position.	In accordance with the Surveillance Frequency Control Program
SR 3.7.3.2	Verify each EDG-ESW subsystem pump starts automatically when the associated EDG starts and energizes the respective bus.	In accordance with the Surveillance Frequency Control Program

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
F. Two CREF subsystems inoperable during movement of recently irradiated fuel assemblies in the secondary containment. OR One or more CREF subsystems inoperable due to an inoperable CRE boundary during movement of recently irradiated fuel assemblies in the secondary containment.	----------NOTE---------- LCO 3.0.3 is not applicable. ---------- F.1 Suspend movement of recently irradiated fuel assemblies in the secondary containment.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.7.4.1	Operate each CREF subsystem for $\geq$ 15 continuous minutes.	In accordance with the Surveillance Frequency Control Program
SR 3.7.4.2	Perform required CREF filter testing in accordance with the Ventilation Filter Testing Program (VFTP).	In accordance with the VFTP
SR 3.7.4.3	Verify each CREF subsystem actuates on an actual or simulated initiation signal.	In accordance with the Surveillance Frequency Control Program

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.7.4.4	Perform required CRE unfiltered air in-leakage testing in accordance with the Control Room Envelope Habitability Program.	In accordance with the Control Room Envelope Habitability Program

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
	D.2 Suspend movement of recently irradiated fuel assemblies in the secondary containment.	Immediately
E. Required Action and associated Completion Time of Condition B not met during movement of recently irradiated fuel assemblies in the secondary containment.	----------NOTE---------- LCO 3.0.3 is not applicable. ---------- E.1 Suspend movement of recently irradiated fuel assemblies in the secondary containment.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.7.5.1	Verify each control room ventilation subsystem has the capability to remove the assumed heat load.	In accordance with the Surveillance Frequency Control Program

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.7.6.1	----------NOTE---------- Not required to be performed until 31 days after any main steam line not isolated and SJAE in operation. ----------	
	Verify the gross gamma activity rate of the noble gases is ≤ 260 mCi/second after decay of 30 minutes.	In accordance with the Surveillance Frequency Control Program AND Once within 4 hours after a ≥ 50% increase in the nominal steady state fission gas release after factoring out increases due to changes in THERMAL POWER level

3.7 PLANT SYSTEMS

3.7.7 Main Turbine Bypass System

LCO 3.7.7 The Main Turbine Bypass System shall be OPERABLE.

APPLICABILITY: THERMAL POWER ≥ 25% RTP.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Main Turbine Bypass System inoperable.	A.1 Restore Main Turbine Bypass System to OPERABLE status.	2 hours
B. Required Action and associated Completion Time not met.	B.1 Reduce THERMAL POWER to < 25% RTP.	4 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.7.7.1	Verify one complete cycle of each main turbine bypass valve.	In accordance with the Surveillance Frequency Control Program
SR 3.7.7.2	Perform a system functional test.	In accordance with the Surveillance Frequency Control Program

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.7.7.3	Verify the TURBINE BYPASS SYSTEM RESPONSE TIME is within limits.	In accordance with the Surveillance Frequency Control Program

3.7 PLANT SYSTEMS

3.7.8 Spent Fuel Storage Pool Water Level

LCO 3.7.8 The spent fuel storage pool water level shall be ≥ 37 ft above the bottom of the spent fuel storage pool.

APPLICABILITY: During movement of irradiated fuel assemblies in the spent fuel storage pool.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Spent fuel storage pool water level not within limit.	A.1 ----------NOTE---------- LCO 3.0.3 is not applicable. ---------- Suspend movement of irradiated fuel assemblies in the spent fuel storage pool.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.7.8.1	Verify the spent fuel storage pool water level is ≥ 37 ft above the bottom of the spent fuel storage pool.	In accordance with the Surveillance Frequency Control Program

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
F. Required Action and associated Completion Time of Condition A, B, C, D, or E not met.	F.1 Be in MODE 3. AND F.2 Be in MODE 4.	12 hours 36 hours
G. Three or more required AC sources inoperable.	G.1 Enter LCO 3.0.3.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.8.1.1	Verify correct breaker alignment and indicated power availability for each required offsite circuit.	In accordance with the Surveillance Frequency Control Program
SR 3.8.1.2	----------NOTES---------- 1. All EDG starts may be preceded by an engine prelube period and followed by a warmup period prior to loading. 2. A modified EDG start involving idling and gradual acceleration to synchronous speed may be used for this SR as recommended by the manufacturer. ---------- Verify each EDG starts from standby conditions and achieves steady state voltage ≥ 3975 V and ≤ 4400 V and frequency ≥ 58.8 Hz and ≤ 61.2 Hz.	In accordance with the Surveillance Frequency Control Program

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.8.1.3	----------NOTES---------- 1. EDG loadings may include gradual loading as recommended by the manufacturer. 2. Momentary transients outside the load range do not invalidate this test. 3. This Surveillance shall be conducted on only one EDG at a time. 4. This SR shall be preceded by and immediately follow, without shutdown, a successful performance of SR 3.8.1.2. ---------- Verify each EDG is synchronized and loaded and operates for ≥ 60 minutes at a load ≥ 2250 kW and ≤ 2500 kW.	In accordance with the Surveillance Frequency Control Program
SR 3.8.1.4	Check for and remove accumulated water from each day tank and base tank.	In accordance with the Surveillance Frequency Control Program
SR 3.8.1.5	Verify the fuel oil transfer system operates to transfer fuel oil from the storage tank to the day tanks and from each day tank to the associated base tank.	In accordance with the Surveillance Frequency Control Program

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.8.1.6	----------NOTE---------- This Surveillance shall not normally be performed in MODE 1 or 2. However, this Surveillance may be performed to reestablish OPERABILITY provided an assessment determines the safety of the plant is maintained or enhanced. Credit may be taken for unplanned events that satisfy this SR. ---------- Verify automatic and manual transfer of unit power supply from the normal offsite circuit to the alternate offsite circuit.	In accordance with the Surveillance Frequency Control Program
SR 3.8.1.7	----------NOTES---------- 1. This Surveillance shall not normally be performed in MODE 1 or 2. However, this Surveillance may be performed to reestablish OPERABILITY provided an assessment determines the safety of the plant is maintained or enhanced. Credit may be taken for unplanned events that satisfy this SR. 2. If performed with EDG synchronized with offsite power, it shall be performed within the power factor limit. However, if grid conditions do not permit, the power factor limit is not required to be met. Under this condition the power factor shall be maintained as close to the limit as practicable. ---------- Verify each EDG rejects a load greater than or equal to its associated single largest post-accident load, and following load rejection, the frequency is ≤ 67.5 Hz.	In accordance with the Surveillance Frequency Control Program

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.8.1.8	----------NOTE---------- This Surveillance shall not normally be performed in MODE 1 or 2. However, portions of the Surveillance may be performed to reestablish OPERABILITY provided an assessment determines the safety of the plant is maintained or enhanced. Credit may be taken for unplanned events that satisfy this SR. ---------- Verify on an actual or simulated Emergency Core Cooling System (ECCS) initiation signal, permanently connected loads remain energized from the offsite power system and emergency loads are auto-connected through the time delay relays from the offsite power system.	In accordance with the Surveillance Frequency Control Program
SR 3.8.1.9	----------NOTES---------- 1. Momentary transients outside the load and power factor ranges do not invalidate this test. 2. This Surveillance shall not normally be performed in MODE 1 or 2. However, this Surveillance may be performed to reestablish OPERABILITY provided an assessment determines the safety of the plant is maintained or enhanced. Credit may be taken for unplanned events that satisfy this SR. 3. If part b is performed with EDG synchronized with offsite power, it shall be performed within the power factor limit. However, if grid conditions do not permit, the power factor limit is not required to be met. Under this condition the power factor shall be maintained as close to the limit as practicable. ---------- Verify each EDG operates for ≥ 8 hours: a. For ≥ 2 hours loaded ≥ 2625 kW and ≤ 2750 kW; and b. For the remaining hours of the test loaded ≥ 2250 kW and ≤ 2500 kW.	In accordance with the Surveillance Frequency Control Program

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.8.1.10	----------NOTES---------- 1. This Surveillance shall be performed within 5 minutes of shutting down the EDG after the EDG has operated ≥ 2 hours loaded ≥ 2250 kW and ≤ 2500 kW. Momentary transients outside of load range do not invalidate this test. 2. All EDG starts may be preceded by an engine prelube period. ---------- Verify each EDG starts and achieves: a. In ≤ 10 seconds, voltage ≥ 3975 V and frequency ≥ 58.8 Hz; and b. Steady state voltage ≥ 3975 V and ≤ 4400 V and frequency ≥ 58.8 Hz and ≤ 61.2 Hz.	In accordance with the Surveillance Frequency Control Program
SR 3.8.1.11	----------NOTE---------- This Surveillance shall not normally be performed in MODE 1, 2, or 3. However, this Surveillance may be performed to reestablish OPERABILITY provided an assessment determines the safety of the plant is maintained or enhanced. Credit may be taken for unplanned events that satisfy this SR. ---------- Verify each EDG: a. Synchronizes with offsite power source while loaded with emergency loads upon a simulated restoration of offsite power; b. Transfers loads to offsite power source; and c. Returns to ready-to-load operation.	In accordance with the Surveillance Frequency Control Program

SURVEILLANCE REQUIREMENTS (continued)

	SURVEILLANCE	FREQUENCY
SR 3.8.1.12	----------NOTES---------- 1. All EDG starts may be preceded by an engine prelube period. 2. This Surveillance shall not normally be performed in MODE 1, 2, or 3. However, portions of the Surveillance may be performed to reestablish OPERABILITY provided an assessment determines the safety of the plant is maintained or enhanced. Credit may be taken for unplanned events that satisfy this SR. ---------- Verify, on an actual or simulated loss of offsite power signal in conjunction with an actual or simulated ECCS initiation signal: a. De-energization of emergency buses; b. Load shedding from emergency buses; and c. EDG auto-starts from standby condition and: 1. Energizes permanently connected loads in ≤ 10 seconds; 2. Energizes auto-connected emergency loads through time delay relays; 3. Achieves steady state voltage ≥ 3975 V and ≤ 4400 V; 4. Achieves steady state frequency ≥ 58.8 Hz and ≤ 61.2 Hz; and 5. Supplies permanently connected and auto-connected emergency loads for ≥ 5 minutes.	In accordance with the Surveillance Frequency Control Program

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.8.1.13	----------NOTE---------- This Surveillance shall not normally be performed in MODE 1, 2, or 3. However, this Surveillance may be performed to reestablish OPERABILITY provided an assessment determines the safety of the plant is maintained or enhanced. Credit may be taken for unplanned events that satisfy this SR. ---------- Verify interval between each sequenced load block is greater than or equal to the minimum design load interval.	In accordance with the Surveillance Frequency Control Program

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
E. One or more EDGs with starting air receiver pressure in one starting air subsystem < 165 psig.	E.1 Restore starting air receiver pressure to ≥ 165 psig.	7 days
F. One or more EDGs with starting air receiver pressure in both starting air subsystems < 165 psig and ≥ 125 psig.	F.1 Restore starting air receiver pressure in one starting air subsystem to ≥ 165 psig.	48 hours
G. Required Action and associated Completion Time of Condition A, B, C, D, E, or F not met. OR One or more EDGs with diesel fuel oil, lube oil, or starting air subsystem(s) not within limits for reasons other than Condition A, B, C, D, E, or F.	G.1 Declare associated EDG inoperable.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.8.3.1	Verify the fuel oil storage tank contains ≥ a 7-day supply of fuel.	In accordance with the Surveillance Frequency Control Program

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.8.3.2	Verify, for each EDG, lube oil inventory is ≥ a 7-day supply.	In accordance with the Surveillance Frequency Control Program
SR 3.8.3.3	Verify fuel oil properties of new and stored fuel oil are tested in accordance with, and maintained within the limits of, the Diesel Fuel Oil Testing Program.	In accordance with the Diesel Fuel Oil Testing Program
SR 3.8.3.4	Verify each EDG air start receiver pressure is ≥ 165 psig.	In accordance with the Surveillance Frequency Control Program
SR 3.8.3.5	Check for and remove accumulated water from the fuel oil storage tank.	In accordance with the Surveillance Frequency Control Program

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
C. Required Action and associated Completion Time not met.	C.1 Be in MODE 3. AND C.2 Be in MODE 4.	12 hours 36 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.8.4.1	Verify battery terminal voltage is greater than or equal to the minimum established float voltage.	In accordance with the Surveillance Frequency Control Program
SR 3.8.4.2	Verify each required battery charger supplies the following: • ≥ 150 amps for 250 VDC Div 1 • ≥ 110 amps for 250 VDC Div 2 • ≥ 75 amps for 125 VDC subsystems, at greater than or equal to the minimum established float voltage for ≥ 4 hours.	In accordance with the Surveillance Frequency Control Program

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.8.4.3	----------NOTES---------- 1. The modified performance discharge test in SR 3.8.6.6 may be performed in lieu of SR 3.8.4.3. 2. This Surveillance shall not normally be performed in MODE 1, 2, or 3. However, portions of the Surveillance may be performed to reestablish OPERABILITY provided an assessment determines the safety of the plant is maintained or enhanced. Credit may be taken for unplanned events that satisfy this SR. ----------	
	Verify battery capacity is adequate to supply, and maintain in OPERABLE status, the required emergency loads for the design duty cycle when subjected to a battery service test.	In accordance with the Surveillance Frequency Control Program

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
F. Required Action and associated Completion Time of Condition A, B, C, D, or E not met. OR One or more batteries with one or more battery cells float voltage < 2.07 V and float current > 2 amps for 250 VDC batteries or > 1 amp for 125 VDC batteries. OR SR 3.8.6.6 not met.	F.1 Declare associated battery inoperable.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.8.6.1	----------NOTE---------- Not required to be met when battery terminal voltage is less than the minimum established float voltage of SR 3.8.4.1. ---------- Verify each battery float current is ≤ 2 amps for 250 VDC batteries and ≤ 1 amp for 125 VDC batteries.	In accordance with the Surveillance Frequency Control Program

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.8.6.2	Verify each battery pilot cell voltage is ≥ 2.07 V.	In accordance with the Surveillance Frequency Control Program
SR 3.8.6.3	Verify each battery connected cell electrolyte level is greater than or equal to minimum established design limits.	In accordance with the Surveillance Frequency Control Program
SR 3.8.6.4	Verify each battery pilot cell temperature is greater than or equal to minimum established design limits.	In accordance with the Surveillance Frequency Control Program
SR 3.8.6.5	Verify each battery connected cell voltage is ≥ 2.07 V.	In accordance with the Surveillance Frequency Control Program

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.8.6.6	----------NOTE---------- This Surveillance shall not normally be performed in MODE 1, 2, or 3. However, portions of the Surveillance may be performed to reestablish OPERABILITY provided an assessment determines the safety of the plant is maintained or enhanced. Credit may be taken for unplanned events that satisfy this SR. ----------	
	Verify battery capacity is ≥ 90% of the manufacturer's rating when subjected to a performance discharge test or a modified performance discharge test.	In accordance with the Surveillance Frequency Control Program AND 12 months when battery shows degradation, or has reached 85% of the expected life with capacity < 100% of manufacturer's rating AND 24 months when battery has reached 85% of the expected life with capacity ≥ 100% of manufacturer's rating

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
D. Two or more electrical power distribution subsystems inoperable that result in a loss of function.	D.1 Enter LCO 3.0.3.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.8.7.1	Verify correct breaker alignments and voltage to required AC and DC electrical power distribution subsystems.	In accordance with the Surveillance Frequency Control Program

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
	A.2.3 Initiate actions to restore required AC and DC electrical power distribution subsystems to OPERABLE status. AND A.2.4 Declare associated required shutdown cooling subsystem(s) inoperable and not in operation.	Immediately Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.8.8.1	Verify correct breaker alignments and voltage to required AC and DC electrical power distribution subsystems.	In accordance with the Surveillance Frequency Control Program

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.9.1.1	Perform CHANNEL FUNCTIONAL TEST on each of the following required refueling equipment interlock inputs: a. All-rods-in; b. Refuel platform position; c. Refuel platform fuel grapple, fuel loaded; d. Refuel platform fuel grapple fully retracted position; e. Refuel platform frame mounted hoist, fuel loaded; f. Refuel platform monorail mounted hoist, fuel loaded; and g. Service platform hoist, fuel loaded.	In accordance with the Surveillance Frequency Control Program

3.9 REFUELING OPERATIONS

3.9.2 Refuel Position One-Rod-Out Interlock

LCO 3.9.2 The refuel position one-rod-out interlock shall be OPERABLE.

APPLICABILITY: MODE 5 with the reactor mode switch in the refuel position and any control rod withdrawn.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Refuel position one-rod-out interlock inoperable.	A.1 Suspend control rod withdrawal. AND A.2 Initiate action to fully insert all insertable control rods in core cells containing one or more fuel assemblies.	Immediately Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.9.2.1	Verify reactor mode switch locked in refuel position.	In accordance with the Surveillance Frequency Control Program

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.9.2.2	----------NOTE---------- Not required to be performed until 1 hour after any control rod is withdrawn. ----------	
	Perform CHANNEL FUNCTIONAL TEST.	In accordance with the Surveillance Frequency Control Program

3.9 REFUELING OPERATIONS

3.9.3 Control Rod Position

LCO 3.9.3 All control rods shall be fully inserted.

APPLICABILITY: When loading fuel assemblies into the core.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more control rods not fully inserted.	A.1 Suspend loading fuel assemblies into the core.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.9.3.1	Verify all control rods are fully inserted.	In accordance with the Surveillance Frequency control Program

3.9 REFUELING OPERATIONS

3.9.5 Control Rod OPERABILITY - Refueling

LCO 3.9.5 Each withdrawn control rod shall be OPERABLE.

APPLICABILITY: MODE 5.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more withdrawn control rods inoperable.	A.1 Initiate action to fully insert inoperable withdrawn control rods.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.9.5.1	----------NOTE---------- Not required to be performed until 7 days after the control rod is withdrawn. ---------- Insert each withdrawn control rod at least one notch.	In accordance with the Surveillance Frequency Control Program
SR 3.9.5.2	Verify each withdrawn control rod scram accumulator pressure is ≥ 940 psig.	In accordance with the Surveillance Frequency Control Program

3.9 REFUELING OPERATIONS

3.9.6 Reactor Pressure Vessel (RPV) Water Level

LCO 3.9.6 RPV water level shall be ≥ 21 ft 11 inches above the top of the RPV flange.

APPLICABILITY: During movement of irradiated fuel assemblies within the RPV,
During movement of new fuel assemblies or handling of control rods within the RPV, when irradiated fuel assemblies are seated within the RPV.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. RPV water level not within limit.	A.1 Suspend movement of fuel assemblies and handling of control rods within the RPV.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.9.6.1	Verify RPV water level is ≥ 21 ft 11 inches above the top of the RPV flange.	In accordance with the Surveillance Frequency Control Program

ACTIONS (continued)

CONDITION	REQUIRED ACTION		COMPLETION TIME
	B.3	Initiate action to restore one standby gas treatment subsystem to OPERABLE status.	Immediately
	AND		
	B.4	Initiate action to restore isolation capability in each required secondary containment penetration flow path not isolated.	Immediately
C. No RHR shutdown cooling subsystem in operation.	C.1	Verify reactor coolant circulation by an alternate method.	1 hour from discovery of no reactor coolant circulation AND Once per 12 hours thereafter
	AND		
	C.2	Monitor reactor coolant temperature.	Once per hour

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.9.7.1	Verify one RHR shutdown cooling subsystem is operating.	In accordance with the Surveillance Frequency Control Program

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.9.7.2	Verify required RHR shutdown cooling subsystem locations susceptible to gas accumulation are sufficiently filled with water.	In accordance with the Surveillance Frequency Control Program

ACTIONS (continued)

CONDITION	REQUIRED ACTION		COMPLETION TIME
	B.3	Initiate action to restore isolation capability in each required secondary containment penetration flow path not isolated.	Immediately
C. No RHR shutdown cooling subsystem in operation.	C.1	Verify reactor coolant circulation by an alternate method.	1 hour from discovery of no reactor coolant circulation AND Once per 12 hours thereafter
	AND		
	C.2	Monitor reactor coolant temperature.	Once per hour

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.9.8.1	Verify one RHR shutdown cooling subsystem is operating.	In accordance with the Surveillance Frequency Control Program
SR 3.9.8.2	Verify RHR shutdown cooling subsystem locations susceptible to gas accumulation are sufficiently filled with water.	In accordance with the Surveillance Frequency Control Program

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
	A.3.2 ----------NOTE---------- Only applicable in MODE 5. ---------- Place the reactor mode switch in the refuel position.	 1 hour

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.10.2.1	Verify all control rods are fully inserted in core cells containing one or more fuel assemblies.	In accordance with the Surveillance Frequency Control Program
SR 3.10.2.2	Verify no CORE ALTERATIONS are in progress.	In accordance with the Surveillance Frequency Control Program

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.10.3.2	----------NOTE---------- Not required to be met if SR 3.10.3.1 is satisfied for LCO 3.10.3.d.1 requirements. ---------- Verify all control rods, other than the control rod being withdrawn, in a five by five array centered on the control rod being withdrawn, are disarmed.	In accordance with the Surveillance Frequency Control Program
SR 3.10.3.3	Verify all control rods, other than the control rod being withdrawn, are fully inserted.	In accordance with the Surveillance Frequency Control Program

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
	B.2.2 Initiate action to satisfy the requirements of this LCO.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.10.4.1	Perform the applicable SRs for the required LCOs.	According to the applicable SRs
SR 3.10.4.2	----------NOTE---------- Not required to be met if SR 3.10.4.1 is satisfied for LCO 3.10.4.c.1 requirements. ---------- Verify all control rods, other than the control rod being withdrawn, in a five by five array centered on the control rod being withdrawn, are disarmed.	In accordance with the Surveillance Frequency Control Program
SR 3.10.4.3	Verify all control rods, other than the control rod being withdrawn, are fully inserted.	In accordance with the Surveillance Frequency Control Program
SR 3.10.4.4	----------NOTE---------- Not required to be met if SR 3.10.4.1 is satisfied for LCO 3.10.4.b.1 requirements. ---------- Verify a control rod withdrawal block is inserted.	In accordance with the Surveillance Frequency Control Program

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Requirements of the LCO not met.	A.1 Suspend removal of the CRD mechanism. AND A.2.1 Initiate action to fully insert all control rods. OR A.2.2 Initiate action to satisfy the requirements of this LCO.	Immediately Immediately Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.10.5.1	Verify all control rods, other than the control rod withdrawn for the removal of the associated CRD, are fully inserted.	In accordance with the Surveillance Frequency Control Program
SR 3.10.5.2	Verify all control rods, other than the control rod withdrawn for the removal of the associated CRD, in a five by five array centered on the control rod withdrawn for the removal of the associated CRD, are disarmed.	In accordance with the Surveillance Frequency Control Program
SR 3.10.5.3	Verify a control rod withdrawal block is inserted.	In accordance with the Surveillance Frequency Control Program
SR 3.10.5.4	Perform SR 3.1.1.1.	According to SR 3.1.1.1

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.10.5.5	Verify no other CORE ALTERATIONS are in progress.	In accordance with the Surveillance Frequency Control Program

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
	A.3.1 Initiate action to fully insert all control rods in core cells containing one or more fuel assemblies. OR A.3.2 Initiate action to satisfy the requirements of this LCO.	Immediately Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.10.6.1	Verify the four fuel assemblies are removed from core cells associated with each control rod or CRD removed.	In accordance with the Surveillance Frequency Control Program
SR 3.10.6.2	Verify all other control rods in core cells containing one or more fuel assemblies are fully inserted.	In accordance with the Surveillance Frequency Control Program
SR 3.10.6.3	----------NOTE---------- Only required to be met during fuel loading. ---------- Verify fuel assemblies being loaded are in compliance with an approved reload sequence.	 In accordance with the Surveillance Frequency Control Program

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. ----------NOTE---------- Separate Condition entry is allowed for each control rod. ---------- One or more control rods not coupled to its associated CRD.	----------NOTE---------- Rod worth minimizer may be bypassed as allowed by LCO 3.3.2.1, "Control Rod Block Instrumentation," if required, to allow insertion of inoperable control rod and continued operation. ---------- A.1 Fully insert inoperable control rod. AND A.2 Disarm the associated CRD.	 3 hours 4 hours
B. Requirements of the LCO not met for reasons other than Condition A.	B.1 Place the reactor mode switch in the shutdown or refuel position.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.10.8.1	Verify all RPS shorting links are removed.	In accordance with the Surveillance Frequency Control Program
SR 3.10.8.2	----------NOTE---------- Not required to be met if SR 3.10.8.3 satisfied. ---------- Perform the MODE 2 applicable SRs for LCO 3.3.2.1, Function 2 of Table 3.3.2.1-1	 According to the applicable SRs

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.10.8.3	----------NOTE---------- Not required to be met if SR 3.10.8.2 satisfied. ----------	
	Verify movement of control rods is in compliance with the approved control rod sequence for the SDM test by a second licensed operator or other qualified member of the technical staff.	During control rod movement
SR 3.10.8.4	Verify no other CORE ALTERATIONS are in progress.	In accordance with the Surveillance Frequency Control Program
SR 3.10.8.5	Verify each withdrawn control rod does not go to the withdrawn overtravel position.	Each time the control rod is withdrawn to “full out” position AND Prior to satisfying LCO 3.10.8.c requirement after work on control rod or CRD System that could affect coupling
SR 3.10.8.6	Verify CRD charging water header pressure ≥ 940 psig.	In accordance with the Surveillance Frequency Control Program

5.5 Programs and Manuals

5.5.14 Spent Fuel Pool Boral Monitoring Program

The program provides routine monitoring and actions to ensure that the condition of Boral in the spent fuel pool racks is appropriately monitored to ensure that the Boral neutron attenuation capability described in the criticality safety analysis of USAR Section 10.2.1 is maintained. The program shall include the following:

a. Periodic physical examination of representative Boral coupons or in situ storage racks at a frequency defined by observed trends or calculated projections of Boral degradation. The measurement will be performed to ensure that average thickness of the coupon (or average thickness of a representative area of the in situ storage rack) does not exceed the nominal design thickness of the coupon (or storage rack) plus the 0.055-inch dimension assumed for the analyzed blister.

b. Neutron attenuation testing of a representative Boral coupon or in situ storage rack shall be performed prior to December 31, 2015, and thereafter at a frequency of not more than 10 years, or more frequently based on observed trends or calculated projections of Boral degradation. The acceptance criterion for minimum boron areal density will be that value assumed in the criticality safety analysis (0.013 gm/cm^2).

c. Description of appropriate corrective actions for discovery of nonconforming Boral.

5.5.15 Surveillance Frequency Control Program

This program provides controls for Surveillance Frequencies. The program shall ensure that Surveillance Requirements specified in the Technical Specifications are performed at intervals sufficient to assure the associated Limiting Conditions for Operation are met.

a. The Surveillance Frequency Control Program shall contain a list of Frequencies of those Surveillance Requirements for which the Frequency is controlled by the program.

b. Changes to the Frequencies listed in the Surveillance Frequency Control Program shall be made in accordance with NEI 04-10, “Risk-Informed Method for Control of Surveillance Frequencies,” Revision 1.

c. The provisions of Surveillance Requirements 3.0.2 and 3.0.3 are applicable to the Frequencies established in the Surveillance Frequency Control Program.

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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NO. 200 TO

RENEWED FACILITY OPERATING LICENSE NO. DPR-22

NORTHERN STATES POWER COMPANY

MONTICELLO NUCLEAR GENERATING PLANT

DOCKET NO. 50-263

1.0 INTRODUCTION

By application dated December 19, 2017 (Reference 1), as supplemented by letters dated April 24, 2018 (Reference 2), October 23, 2018 (Reference 3), and November 20, 2018 (Reference 4), Northern States Power Company - Minnesota (NSPM, the licensee) requested changes to the technical specifications (TSs) for Monticello Nuclear Generating Plant (MNGP), which are contained in the Renewed Facility Operating License DPR-22. The licensee requested to revise the MNGP TSs by relocating specific surveillance requirement (SR) frequencies to a licensee-controlled program. The licensee requested to revise the TSs to require that changes to such surveillance frequencies be made in accordance with the Nuclear Energy Institute (NEI) guidance in NEI 04-10, Revision 1, "Risk Informed Technical Specifications Initiative 5b, Risk Informed Method for Control of Surveillance Frequencies" (Reference 5). The requested change is for the adoption of U.S. Nuclear Regulatory Commission (NRC or Commission) approved Technical Specification Task Force (TSTF) Standard Technical Specifications (STSs) Change Traveler TSTF-425, Revision 3, "Relocate Surveillance Frequencies to Licensee Control—RITSTF [Risk -Informed TSTF] Initiative 5b" (Reference 6). The *Federal Register* (FR) notice published on July 6, 2009 (74 FR 31996), announced the availability of TSTF-425, Revision 3.

The supplements dated April 24, 2018, October 23, 2018, and November 20, 2018, provided additional information that clarified the application, but did not expand the scope of the application or change the NRC staff's original proposed no significant hazards consideration determination as published in the FR on February 27, 2018 (83 FR 8518).

2.0 REGULATORY EVALUATION

2.1 Description of the Proposed Changes

The licensee proposed to modify the MNGP TSs by relocating specific surveillance frequencies to a licensee-controlled program (i.e., the surveillance frequency control program (SFCP)) in accordance with NEI 04-10, Revision 1. The licensee stated that the proposed change is consistent with the adoption of NRC-approved TSTF-425, Revision 3. When implemented,

TSTF-425, Revision 3, relocates most periodic frequencies of TS surveillances to the SFCP, and provides requirements for the new program in the Administrative Controls sections of the TSs. All surveillance frequencies can be relocated except the following:

- Frequencies that reference other approved programs for the specific interval, such as the In-Service Testing Program or the Primary Containment Leakage Rate Testing Program;

- Frequencies that are event-driven (e.g., "each time the control rod is withdrawn to the 'full out' position");

- Frequencies that are event-driven, but have a time component for performing the surveillance on a one-time basis once the event occurs (e.g., "within 24 hours after thermal power reaching ≥ 95 percent RTP [rated thermal power]"); and

- Frequencies that are related to specific conditions (e.g., battery degradation, age and capacity) or conditions for the performance of a SR (e.g., "drywell to suppression chamber differential pressure decrease").

The licensee proposed to add the SFCP to TSs, Section 5.0, "Administrative Controls." The SFCP describes the requirements for the program to control changes to the relocated surveillance frequencies. The TS Bases for each affected surveillance would be revised to state that the frequency is controlled under the SFCP. The existing TS Bases information will be relocated to the licensee-controlled SFCP. The proposed changes to the Administrative Controls section of the TSs to incorporate the SFCP include a specific reference to NEI 04-10, Revision 1, as the basis for making any changes to the surveillance frequencies once they are relocated out of the TSs.

In letter dated September 19, 2007 (Reference 7), the NRC staff approved NEI 04-10, Revision 1, as acceptable for referencing in licensing actions to the extent specified and under the limitations delineated in NEI 04-10, Revision 1, and the safety evaluation (SE) providing the basis for NRC acceptance of NEI 04-10, Revision 1. The licensee proposed other changes and deviations from TSTF-425, which are discussed in Section 3.4 of this SE.

2.2 Applicable Commission Policy Statements

In the "Final Policy Statement: Technical Specifications for Nuclear Power Plants," dated July 22, 1993 (58 FR 39132), the NRC addressed the use of probabilistic safety analysis (PSA, currently referred to as probabilistic risk assessment or PRA) in STS. In this 1993 publication, the NRC states:

> The Commission believes that it would be inappropriate at this time to allow requirements which meet one or more of the first three criteria [of Title 10 of the *Code of Federal Regulations* (10 CFR), Section 50.36] to be deleted from TSs based solely on PSA (Criterion 4). However, if the results of PSA indicate that TSs can be relaxed or removed, a deterministic review will be performed.
>
> The Commission Policy in this regard is consistent with its Policy Statement on "Safety Goals for the Operation of Nuclear Power Plants," 51 FR 30028, published on August 21, 1986. The Policy Statement on Safety Goals states in

part, ". . . probabilistic results should also be reasonably balanced and supported through use of deterministic arguments. In this way, judgments can be made . . . about the degree of confidence to be given these [probabilistic] estimates and assumptions. This is a key part of the process for determining the degree of regulatory conservatism that may be warranted for particular decisions. This defense-in-depth approach is expected to continue to ensure the protection of public health and safety."

The Commission will continue to use PSA, consistent with its policy on Safety Goals, as a tool in evaluating specific line-item improvements to TSs, new requirements, and industry proposals for risk-based TS changes.

Approximately 2 years later, the NRC provided additional detail concerning the use of PRA in the "Final Policy Statement: Use of Probabilistic Risk Assessment in Nuclear Regulatory Activities," dated August 16, 1995 (60 FR 42622). In this publication, the NRC states:

The Commission believes that an overall policy on the use of PRA methods in nuclear regulatory activities should be established so that the many potential applications of PRA can be implemented in a consistent and predictable manner that would promote regulatory stability and efficiency. In addition, the Commission believes that the use of PRA technology in NRC regulatory activities should be increased to the extent supported by the state-of-the-art in PRA methods and data and in a manner that complements the NRC's deterministic approach....

PRA addresses a broad spectrum of initiating events by assessing the event frequency. Mitigating system reliability is then assessed, including the potential for multiple and common cause failures (CCFs). The treatment therefore goes beyond the single failure requirements in the deterministic approach. The probabilistic approach to regulation is, therefore, considered an extension and enhancement of traditional regulation by considering risk in a more coherent and complete manner....

Therefore, the Commission believes that an overall policy on the use of PRA in nuclear regulatory activities should be established so that the many potential applications of PRA can be implemented in a consistent and predictable manner that promotes regulatory stability and efficiency. This policy statement sets forth the Commission's intention to encourage the use of PRA and to expand the scope of PRA applications in all nuclear regulatory matters to the extent supported by the state-of-the-art in terms of methods and data....

Therefore, the Commission adopts the following policy statement regarding the expanded NRC use of PRA:

1. The use of PRA technology should be increased in all regulatory matters to the extent supported by the state-of-the-art in PRA methods and data and in a manner that complements the NRC's deterministic approach and supports the NRC's traditional defense-in-depth philosophy.

2. PRA and associated analyses (e.g., sensitivity studies, uncertainty analyses, and importance measures) should be used in regulatory matters, where

practical within the bounds of the state-of-the-art, to reduce unnecessary conservatism associated with current regulatory requirements, regulatory guides, license commitments, and staff practices. Where appropriate, PRA should be used to support the proposal for additional regulatory requirements in accordance with 10 CFR 50.109 (Backfit Rule). Appropriate procedures for including PRA in the process for changing regulatory requirements should be developed and followed. It is, of course, understood that the intent of this policy is that existing rules and regulations shall be complied with unless these rules and regulations are revised.

3. PRA evaluations in support of regulatory decisions should be as realistic as practicable and appropriate supporting data should be publicly available for review.

4. The Commission's safety goals for nuclear power plants and subsidiary numerical objectives are to be used with appropriate consideration of uncertainties in making regulatory judgments on the need for proposing and back fitting new generic requirements on nuclear power plant licensees.

2.3 Applicable Regulations

Existing regulatory requirements, such as 10 CFR 50.65, "Requirements for monitoring the effectiveness of maintenance at nuclear power plants" (i.e., the Maintenance Rule), and 10 CFR Part 50, Appendix B, Criterion XVI, "Corrective Action," require licensee monitoring of surveillance test failures and implementing corrective actions to address such failures. Such failures can result in the licensee increasing the frequency of a surveillance test. In addition, by having the TSs require that changes to the frequencies listed in the SFCP be made in accordance with NEI 04-10, Revision 1, the licensee will be required to monitor the performance of structures, systems, and components (SSCs) for which surveillance frequencies are decreased to assure reduced testing does not adversely impact the SSCs.

2.4 Regulatory Guides and Review Plans

Regulatory Guide (RG) 1.174, Revision 3, "An Approach for Using Probabilistic Risk Assessment in Risk-Informed Decisions on Plant-Specific Changes to the Licensing Basis" (Reference 8), describes an acceptable risk-informed approach for assessing the nature and impact of proposed permanent licensing-basis changes by considering engineering issues and applying risk insights. This regulatory guide also provides risk acceptance guidelines for evaluating the results of such evaluations.

Guidance in RG 1.177, Revision 1, "An Approach for Plant-Specific, Risk-Informed Decision-Making: Technical Specifications" (Reference 9), describes an acceptable risk-informed approach specifically for assessing proposed TS changes.

Guidance in RG 1.200, Revision 2, "An Approach for Determining the Technical Adequacy of Probabilistic Risk Assessment Results for Risk-Informed Activities" (Reference 10), describes an acceptable approach for determining whether the acceptability of the base PRA, in total or the parts that are used to support an application, is sufficient to provide confidence in the results, such that the PRA can be used in regulatory decisionmaking for light-water reactors (LWRs).

The NUREG-0800, "Standard Review Plan [SRP] for the Review of Safety Analysis Reports for Nuclear Power Plants: LWR Edition," Chapter 19, Section 19.2, "Review of Risk Information Used to Support Permanent Plant-Specific Changes to the Licensing Basis: General Guidance" (Reference 11), provides general guidance for evaluating the technical basis for proposed risk-informed changes. Guidance on evaluating PRA technical adequacy is provided in SRP, Chapter 19, Section 19.1, Revision 3, "Determining the Technical Adequacy of Probabilistic Risk Assessment for Risk-Informed License Amendment Requests After Initial Fuel Load" (Reference 12). More specific guidance related to risk-informed TS changes is provided in SRP, Chapter 16, Section 16.1, Revision 1, "Risk-Informed Decision Making: Technical Specifications" (Reference 13), which includes changes to surveillance test intervals (STIs) (i.e., surveillance frequencies) as part of risk-informed decision making. Section 19.2 of the SRP references the same criteria as RG 1.174, Revision 3, and RG 1.177, Revision 1, and states that a risk-informed application should be evaluated to ensure the proposed changes meet the following 5 key principles:

- The proposed change meets the current regulations, unless it explicitly relates to a requested exemption or rule change.
- The proposed change is consistent with the defense-in-depth philosophy.
- The proposed change maintains sufficient safety margins.
- When proposed changes result in an increase in core damage frequency (CDF) or risk, the increase(s) should be small and consistent with the intent of the Commission's Safety Goal Policy Statement.
- The impact of the proposed change should be monitored using performance measurement strategies.

3.0 TECHNICAL EVALUATION

3.1 Traditional Engineering Evaluation

The traditional engineering evaluation presented below addresses the first three key principles of the staff's standards for risk-informed decision making, which concern compliance with current regulations, evaluation of defense-in-depth, and evaluation of safety margins.

3.1.1 Key Principle 1: Licensing Basis Change Meets the Current Regulations

Paragraph (c)(3) of 10 CFR 50.36 requires that TSs include surveillances which are "requirements relating to test, calibration, or inspection to assure that necessary quality of systems and components is maintained, that facility operation will be within safety limits, and that the limiting conditions for operation will be met." The licensee is required by its TSs to perform surveillance tests, calibration, or inspection on specific safety-related equipment (e.g., reactivity control, power distribution, electrical, and instrumentation) to verify system operability. Surveillance frequencies are based primarily upon deterministic methods such as engineering judgment, operating experience, and manufacturer's recommendations. The licensee's use of NRC-approved methodologies identified in NEI 04-10, Revision 1, provides a way to establish risk-informed surveillance frequencies that complements the deterministic approach and supports the NRC's traditional defense-in-depth philosophy.

The SRs themselves remain in the TSs, as required by 10 CFR 50.36(c)(3). This change is analogous to other NRC-approved TS changes in which the SRs are retained in TSs, but the related surveillance frequencies are relocated to licensee-controlled documents, such as surveillances performed in accordance with the In-Service Testing Program and the Primary Containment Leakage Rate Testing Program. Thus, this proposed change complies with 10 CFR 50.36(c)(3) by retaining the requirements relating to test, calibration, or inspection to assure that the necessary quality of systems and components is maintained, that facility operation will be within safety limits, and that the limiting conditions for operation will be met.

The regulatory requirements in 10 CFR 50.65 and 10 CFR Part 50, Appendix B, and the monitoring required by referencing NEI 04-10, Revision 1, ensure that surveillance frequencies are sufficient to assure that the requirements of 10 CFR 50.36 are satisfied and that any performance deficiencies will be identified and appropriate corrective actions taken. The licensee's SFCP ensures that SRs specified in the TSs are performed at intervals sufficient to assure the above regulatory requirements are met. In light of the above, the staff concludes that the proposed change meets the first key safety principle of RG 1.174, Revision 3, by complying with current regulations.

3.1.2 Key Principle 2: Licensing Basis Change is Consistent with the Defense-In-Depth Philosophy

The defense-in-depth philosophy (i.e., the second key safety principle of RG 1.174, Revision 3), is maintained by adherence to the following:

- Preserve a reasonable balance among the layers of defense.
- Preserve adequate capability of design features without an overreliance on programmatic activities as compensatory measures.
- Preserve system redundancy, independence, and diversity commensurate with the expected frequency and consequences of challenges to the system, including consideration of uncertainty.
- Preserve adequate defense against potential common-cause failures.
- Maintain multiple fission product barriers.
- Preserve sufficient defense against human errors.
- Continue to meet the intent of the plant's design criteria.

The changes to the Administrative Controls section of the TSs will require the application of NEI 04-10, Revision 1, for any changes to surveillance frequencies within the SFCP. NEI 04-10, Revision 1, uses both the CDF and the large early release frequency (LERF) metrics to evaluate the impact of proposed changes to surveillance frequencies. The guidance of RG 1.174, Revision 3, and RG 1.177, Revision 1, for changes to CDF and LERF is achieved by evaluation using a comprehensive risk analysis, which assesses the impact of proposed changes including contributions from human errors and CCFs. Defense in depth is also included in the methodology explicitly as a qualitative consideration outside of the risk analysis, as is the potential impact on detection of component degradation that could lead to an increased likelihood of CCFs. The NRC staff concludes that both the quantitative risk analysis and the

qualitative considerations assure the defense-in-depth philosophy is maintained to ensure protection of public health and safety, satisfying the second key safety principle of RG 1.177, Revision 1.

3.1.3 Key Principle 3: Licensing Basis Change Maintains Sufficient Safety Margins

The engineering evaluation conducted by the licensee under the SFCP when surveillance frequencies are revised will assess the impact of the proposed frequency change to assure that sufficient safety margins are maintained. The guidelines used for making that assessment will include ensuring the proposed surveillance test frequency change is not in conflict with approved industry codes and standards or adversely affects any assumptions or inputs to the safety analysis; or, if such inputs are affected, justification is provided to ensure sufficient safety margin will continue to exist.

The design, operation, testing methods, and acceptance criteria for SSCs specified in applicable codes and standards (or alternatives approved for use by the NRC) will continue to be met as described in the plants licensing bases, including the Updated Safety Analysis Report and TS Bases, because these are not affected by changes to the surveillance frequencies. Similarly, there is no impact to safety analysis acceptance criteria as described in the plant licensing basis. On this basis, the NRC staff concludes that safety margins are maintained by the proposed methodology, and the third key safety principle of RG 1.174, Revision 3, is satisfied.

3.2 Risk-Informed Considerations

The risk-informed considerations presented below addresses the fourth and fifth key principles of the staff's standards for risk-informed decision making, which concern the change in risk and monitoring the impact of the licensing basis change.

The licensee's application for the changes described in TSTF-425, Revision 3, included documentation regarding the PRA (i.e., PRA acceptability) consistent with RG 1.200, Revision 2. NEI 04-10, Revision 1, states that PRA methods are used with plant performance data and other considerations to identify and justify modifications to the surveillance frequencies of equipment at nuclear power plants. This is consistent with guidance provided in RG 1.174, Revision 3, and RG 1.177, Revision 1, in support of changes to STIs.

3.2.1 Key Principle 4: Change in Risk is Consistent with the Commission's Policy Statement on Safety Goals

Key Principle 4 focuses on risk considerations and is evaluated using the risk-informed decision making framework for TSs described in SRP Chapter 16.1, Revision 1, RG 1.200, Revision 2, RG 1.174, Revision 3, RG 1.177, Revision 1, as well as SFCP guidance contained NEI 04-10, Revision 1.

NEI 04-10, Revision 1, states that PRA methods are used with plant performance data and other considerations to identify and justify modifications to the surveillance frequencies of equipment at nuclear power plants. This is consistent with guidance provided in RG 1.174, Revision 3, and RG 1.177, Revision 1, in support of changes to STIs.

Consistent with the information provided in "NRC Regulatory Issue Summary 2007-06 Regulatory Guide 1.200 Implementation" (Reference 14), the NRC staff uses Revision 2 of RG 1.200 to assess the acceptability of the PRA used to support the risk-informed applications.

The licensee has performed an assessment of the PRA models used to support the SFCP using the guidance of RG 1.200, Revision 2, to assure that the PRA models are capable of determining the change in risk due to changes to surveillance frequencies of SSCs, using plant-specific data and models. Any identified deficiencies to those requirements are assessed further to determine any impacts to proposed decreases of surveillance frequencies, including the use of sensitivity studies where appropriate, in accordance with NEI 04-10, Revision 1.

The licensee addressed the above provisions provided in the applicable guidance. A summary of how the licensee's SFCP is consistent with the guidance and methodology prescribed in NEI 04-10, Revision 1, and regulatory guidance is provided in the sections below.

3.2.1.1 PRA Acceptability

3.2.1.1.1 PRA Scope

The changes to the Administrative Controls section of the TSs will require the licensee to evaluate each proposed change to a relocated surveillance frequency using NEI 04-10, Revision 1, to determine the change's potential impact on risk (CDF and LERF) from internal events, fires, seismic, other external events, and shutdown conditions. In cases where a PRA of sufficient scope or quantitative risk models are unavailable, the licensee uses bounding analyses, or other conservative quantitative evaluations. A qualitative screening analysis may be used when the surveillance frequency impact on plant risk is shown to be insignificant. In Section 3.0 of the license amendment request (LAR) and Section 4.0 of Attachment 2 of the LAR, the licensee proposes the use of the seismic margin analysis (SMA) and the NUMARC report 96-01, "Guidelines for Industry Actions to Assess Shutdown Management" (Reference 15), to assess the risk of seismic and shutdown, respectively. The NRC staff review of the non-PRA methods proposed to be used in the SFCP is provided in Sections 3.2.1.2 through 3.2.1.2.3 of this SE.

The licensee has an internal events (includes internal flood) PRA model (IEPRA) and an internal fire PRA (FPRA) model, both of which model full power operation. In accordance with Section 4.0 of NEI 04-10, Revision 1, the licensee will use the IEPRA and FPRA models to perform quantitative evaluations to support the development of changes to surveillance frequencies in the SFCP. The staff finds the scope of the MNGP IEPRA and FPRA consistent with the NRC-approved methodology in NEI 04-10, Revision 1, because the guidance allows for more refined analysis (i.e., modelled PRA hazards) to be performed supporting changes to surveillance frequencies in the SFCP. The NRC staff review of the IEPRA and FPRA for acceptability is provided in Sections 3.2.1.1.2 and 3.2.1.1.3, respectively, of this SE as follows.

3.2.1.1.2 Internal Events and Internal Flooding

In Section 2.3.1 of Attachment 2 of the LAR, the licensee states that a full-scope peer review of the MNGP full power, internal events and internal flood PRA was performed in April 2013 using NEI 05-04, "Process for Performing Follow-On PRA Peer Reviews Using the ASME PRA Standard" (Reference 16), RG 1.200, Revision 2, and the American Society of Mechanical Engineers/American Nuclear Society (ASME/ANS) PRA standard ASME/ANS RA-Sa-2009, "Addenda to ASME RA-S-2008 Standard for Level 1/Large Early Release Frequency Probabilistic Risk Assessment for Nuclear Power Plant Applications" (Reference 17). The peer review performed in April 2013 on the IEPRA identified 22 finding-level Facts and Observations

(F&Os) that were determined to be not met at Capability Category (CC) II for the specific supporting requirements in ASME/ANS RA-Sa-2009.

In Section 2.3.1 of Attachment 2 of the LAR, the licensee states, in part, a Findings Closure Review was completed for the MNGP IEPRA in October 2017 by the Boiling Water Reactor Owner's Group in accordance with the process documented in Appendix X to NEI 05-04, "Close Out of Facts and Observations (F&Os)" (Reference 18). In addition, the licensee states the Findings Closure Review Report determined all 22 finding-level F&Os from the April 2013 peer review were closed as a result of the independent assessments performed. The NRC staff performed a review of these independent assessments, as documented in Section 3.2.1.1.4 of this SE.

3.2.1.1.3 Internal Fire

In Section 2.3.2 of Attachment 2 of the LAR, the licensee states that a full-scope peer review of the MNGP full power FPRA was performed in March 2015 using NEI 07-12, "Fire Probabilistic Risk Assessment (FPRA) Peer Review Process Guidelines" (Reference 19), RG 1.200, Revision 2, and ASME/ANS RA-Sa-2009. A focused-scope peer review of the MNGP FPRA was performed in December 2016 to assess the licensee's incorporation of upgrades in the FPRA. A total of 75 finding-level F&Os were identified from the March 2015 full-scope peer review and the December 2016 focused-scope peer review.

A findings closure review was completed for the MNGP FPRA in October 2017 by ENERCON Services, Inc. in accordance with the process documented in Appendix X to NEI 05-04. This findings closure review documents 61 of the 75 finding-level F&Os as being closed and 14 of the finding-level F&Os as being open. The 14 open finding-level F&Os were provided in Table 2-1 of Attachment 2 of the LAR. For each finding-level F&O, Table 2-1 identifies the related supporting requirements from ASME/ANS RA-Sa-2009, the F&O identifier, the description of the F&O, a summary of actions taken to resolve the F&O, and an evaluation of the impact on the assessment of STIs using the process documented in NEI 04-10, Revision 1. In Section 2.5 of Attachment 2 of the LAR, the licensee states that the impact of each open FPRA finding-level F&O will be reviewed as part of STI change evaluations and that the results of such reviews will be presented to the Integrated Decisionmaking Panel. Step 14 of NEI 04-10, Revision 1, explicitly states, in part, "[a]dditional sensitivity cases should also be explored for particular areas of uncertainty associated with any of the significant contributors to the CDF and LERF results or if there are open Gap Analysis[1] items when compared to the ASME Standard Capability Category II that would impact the results of the assessment." The NRC staff finds the licensee's response to address each F&O and its impact on the STI consistent with the NEI guidance for addressing open F&Os in accordance with the SFCP.

The NRC staff reviewed the summary of open FPRA finding-level F&Os provided in Table 2-1 of Attachment 2 of the LAR. F&O 2-5 associated with supporting requirement IGN-A7 from ASME/ANS RA-Sa-2009 identifies an underestimation of the ignition influencing factors used for certain physical analysis units in the FPRA model. Table 2-1 of Attachment 2 of the LAR states that licensee's actions to resolve the F&O included performing a review of the influencing factors used in the FPRA model and making adjustments to maintenance influencing factors. Table 2-1 of Attachment 2 of the LAR also indicates that the findings closure review team

[1] The term *open gap* is used synonymous with the term *open finding-level F&O* for this purpose. An open gap and finding-level F&O are both representative of deficiencies related to supporting requirements in ASME/ANS RA-Sa-2009 at CC II.

determined the revised factors were acceptable, but that a better justification of the application of a "very low" influencing factor in fire compartments 8 and 33 are necessary. As part of the NRC staff's request for additional information (RAI) dated September 26, 2018 (Reference 20), the NRC staff requested that the licensee provide justification for the appropriateness of the treatment of fire compartments 8 and 33 for this application.

In its response to RAI 01.b, provided by letter dated October 23, 2018, the licensee stated that the guidance in FAQ 12-0064, "Close-Out of National Fire Protection Association 805 Frequently Asked Question 12-0064 on Hot Work/Transient Fire Frequency Influence Factors" (Reference 21), was considered during a detailed review of F&O 2-5 in May 2018. The licensee performed a subsequent review of the independent assessment team's recommended action in response to RAI 01.b and concluded that the influencing factor related to transient storage of combustibles should be changed from very low (i.e., influencing factor of 0.3) to low (i.e., influencing factor of 1.0) for fire compartments 8 and 33. The NRC staff finds this issue has been resolved because the licensee applied acceptable guidance to reevaluate the influence factors and modified the PRA accordingly.

The licensee also stated that the changes to the influencing factor for fire compartments 8 and 33 to 1.0 will be completed during an update of the FPRA prior to the implementation of the SFCP at MNGP.

The NRC staff finds the licensee's planned update of the ignition frequency factors for fire compartments 8 and 33 to low in the FPRA prior to implementation of the SFCP is consistent with the NEI 04-10, Revision 1, guidance for addressing remaining open F&Os.

In addition, NEI 04-10, Revision 1, guidance provides risk metrics for delta CDF, delta LERF, total CDF and total LERF to be met for the risk evaluation(s) performed to assess the extension of a SR. In Section 2.2 of the LAR, the licensee states that the SFCP for MNGP will be performed in accordance with NEI 04-10, Revision 1, therefore, any future changes associated with MNGP updates to the FPRA model used in future STI evaluations to support the extension of SRs will have to meet the risk metrics delineated in Section 4.0 of NEI 04-10, Revision 1.

3.2.1.1.4 Independent Assessment for Closure of Finding-level F&Os

Appendix X to NEI 05-04, NEI 07-12, and NEI 12-13 provides processes for close out of F&Os. In a letter dated May 3, 2017 (Reference 22), the NRC staff accepted, with conditions, Appendix X to NEI 05-04, NEI 07-12, and NEI 12-13 governing the process for close-outs of F&Os. In the letter the NRC staff states, in part, "[t]he NRC also intends to periodically conduct audits of a licensee's implementation of the Appendix X F&O closure process, as well as review a sampling of the final independent assessment team reports." The NRC staff performed an audit of the findings closure reports that documented the independent assessments performed for closure of the F&Os identified in the peer reviews performed in 2013 and 2015 on the IEPRA and FPRA, as documented in the staff audit report (Reference 23).

The NRC staff determined that the F&O closure review teams assessed each finding-level F&O identified from the 2013 and 2015 peer reviews against the supporting requirements at CC II in ASME/ANS RA-Sa-2009. The NRC staff finds that the independent assessments performed were consistent with the guidance provided in Appendix X of NEI 05-04, NEI 07-12, and NEI 12-13 and the staff conditions of acceptance for the independent assessment process provided in letter to NEI dated May 3, 2017.

3.2.1.1.5 Key Assumptions and Sources of Uncertainty

Table A-1 of RG 1.200, Revision 2, entitled, "Staff Position on ASME/ANS RA-Sa-2009 Part 1, General Requirements for an At-Power Level 1 and LERF PRA," includes the NRC staff clarification of Section 1-6.1 of ASME/ANS RA-Sa-2009. The resolution for this clarification states, in part, "[t]herefore, the peer review shall also assess the appropriateness of the assumptions." In addition, NUREG-1855, Revision 1 (Reference 27), explicitly states, in part, "RG 1.200 [NRC 2009] and the PRA consensus standard published by ASME and the American Nuclear Society (ANS) (ASME/ANS, 2009) each recognize the importance of identifying and understanding uncertainties as part of the process of achieving acceptability in a PRA, and these references provide guidance on this subject." ASME/ANS RA-Sa-2009 has supporting requirements (e.g., QU-ES, QU-E2, QU-E3, QU-E4) that assess the identification of the assumptions and sources of uncertainty, provided basis, and impact to the PRA model. The NRC staff performed a review of the F&Os and did not identify any remaining open F&Os associated with these supporting requirements.

Section 3.3.2 of RG 1.200, Revision 2, provides guidance that states, in part, "[f]or each application that calls upon this regulatory guide, the applicant identifies the key assumptions and approximations relevant to that application. This will be used to identify sensitivity studies as input to the decision-making associated with the application." The failure probabilities of SSCs modeled in PRAs may include a standby time-related contribution and a cyclic demand-related contribution, which is a key uncertainty. In letter dated April 21, 2016 (Reference 24), the industry TSTF provided clarification of information needed to be provided in a submittal to the NRC by licensees adopting TSTF-425, Revision 3. This letter states that licensees should describe in their submittal how the separation of failure rates into cyclic demand-related and standby time-related failure contributions will be performed consistent with the guidance in NEI 04-10, Revision 1, Section 4.0, Step 8.

Section 1.0 of the LAR states that, in accordance with NEI 04-10, Revision 1, all failures will be assumed to be time-related in calculating the risk impact of a proposed STI adjustment, to obtain the maximum test-limited risk contribution. Additionally, the licensee states that if a further breakdown of failure probability is required to remove conservatism from the risk impact calculation of a proposed surveillance frequency change, it shall be justified through data and/or engineering analyses. This is consistent with the guidance in NEI 04-10, Revision 1, Section 4.0, Step 8.

Section 2.5 of Attachment 2 of the LAR states that determination of standby failure rates is a key source of uncertainty and, therefore, sensitivity studies will be performed on standby failure rates for STI evaluations. The SSC failure rate (per unit time) is assumed to be unaffected by the change in test frequency, such that the failure probability is assumed to increase linearly with time. This assumption will be confirmed by the required monitoring and feedback implemented after the change in surveillance frequency is implemented. The NEI 04-10, Revision 1, process requires consideration of qualitative sources of information with regards to potential impacts of test frequency on SSC performance, including industry and plant-specific operating experience, vendor recommendations, industry standards, and code-specified test intervals. Thus, the process is not reliant upon risk analyses as the sole basis for the proposed changes.

The potential benefits of a reduced surveillance frequency, including reduced downtime and reduced potential for restoration errors, test-caused transients, and test-caused wear of equipment, are identified qualitatively, but are not quantitatively assessed. Thus, the NRC staff

finds that, consistent with NEI 04-10, Revision 1, the licensee has employed reasonable assumptions with regard to extensions of STIs, and is consistent with Regulatory Position 2.3.4 of RG 1.177, Revision 1.

The NRC staff finds the key assumptions and sources of uncertainty provided by the licensee in Section 1.0 of the LAR and Section 2.5 of Attachment 2 of the LAR for the IEPRA (including internal floods) and FPRA, are consistent with RG 1.200, Revision 2, and appropriate when applied consistent with NUREG-1855, Revision 1, for performing future STI evaluations.

3.2.1.1.6 Sensitivity and Uncertainty Analyses

By having the TSs require that changes to the frequencies listed in the SFCP be made in accordance with NEI 04-10, Revision 1, the licensee will be required to have sensitivity studies that assess the impact of uncertainties from key assumptions of the PRA, uncertainty in the failure probabilities of the affected SSCs, impact on the frequency of initiating events, and any identified deviations from CC II supporting requirements in ASME/ANS RA-Sa-2009. Where the sensitivity analyses identify a potential impact on the proposed change, revised surveillance frequencies are considered, along with any qualitative considerations that may bear on the results of such sensitivity studies. The licensee will also be required to perform monitoring and feedback of SSC performance, once the revised surveillance frequency is implemented. Thus, the NRC staff concludes that through the application of NRC-approved NEI 04-10, Revision 1, the licensee has appropriately considered the possible impact of PRA model uncertainty and sensitivity to key assumptions and model limitations and is consistent with Regulatory Position 2.3.5 of RG 1.177, Revision 1.

3.2.1.1.7 Summary of IEPRA and FPRA Acceptability

In Section 2.3 of Attachment 2 of the LAR, as supplemented in the letter dated October 23, 2018, the licensee provided: (1) the history of peer reviews performed for the IEPRA (including internal flood) and FPRA; (2) results of the October 2017 F&O closure review; and (3) the remaining open F&Os along with the proposed resolutions and impact on the application. The NRC staff finds the results of the peer review and October 2017 F&O closure review submitted in the LAR, along with the information provided in the supplement dated October 23, 2018, appropriately identified the technical elements of the ASME/ANS RA-Sa-2009 that were not met, provided closure of finding-level F&Os, and identified remaining open findings.

3.2.1.2 External Hazards Consideration and Non-PRA Methods

The methodology in NEI 04-10, Revision 1, allows for STI change evaluations to be performed in the absence of quantifiable PRA models for all external hazards. For those cases where the STI cannot be modeled in the plant PRA (or where a particular PRA model does not exist for a given hazard group), a qualitative or bounding analysis is performed to provide justification for the acceptability of the proposed test interval change.

The licensee's process for performing STI evaluation use the following non-PRA methods:

- Seismic Margins Assessment and bounding or qualitative analysis consistent with Step 10 of NEI 04-10, Revision 1.

- Qualitative or bounding consistent with Step 10 of NEI 04-10, Revision 1 for high winds or tornados, external floods, and other external hazards.

- Safe Shutdown Risk Management program consistent with NUMARC 91-06, as provided for in Step 10 of NEI 04-10, Revision 1.

3.2.1.2.1 Seismic Risk

In Section 3.0 of Attachment 2 of the LAR, the licensee states, "[a] Seismic Margins Assessment (SMA) was performed for MNGP with screening of Structures, Systems and Components (SSC) capacity at 0.3g. SSCs impacted by frequency changes under the SFCP, therefore, will be assessed against the Seismic Margins Analysis and evaluated in accordance with NEI 04-10 bounding or qualitative analysis guidance, as appropriate." Step 10b of NEI 04-10, Revision 1, further states "[a]lternative evaluations for the impact from external events and shutdown events are also deemed acceptable at this point." The alternative evaluation considers the risk metrics discussed in Section 3.1.2 of this SE along with the associated sensitivity cases described in Step 14 of NEI 04-10, Revision 1, to bound the potential impact from external events and shutdown PRA model contributors. In addition Step 10a of NEI 04-10, Revision 1, guidance states, in part, "[i]f the seismic risk was evaluated using the SMA, then, in the SMA, a determination shall be made if the SSC impacted by the STI change is part of the success path or not, and the information conveyed to the IDP in Step 15." The NRC staff finds the use of the licensee's SMA in addition to performing a qualitative or a bounding approach as described in NEI 04-10, Revision 1, acceptable for assessing the seismic risk for an STI change.

3.2.1.2.2 Other External Risks

External hazards were initially evaluated by the licensee during the individual plant examination of external events (IPEEE). This hazard category includes all non-seismic external hazards such as high winds, external floods, transportation and nearby facility accidents, and other hazards.

NUREG-1407, "Procedural and Submittal Guidance for the Individual Plant Examination of External Events (IPEEE) for Severe Accident Vulnerabilities" (Reference 25), and the screening criteria in ASME/ANS RA-Sa-2009 use a bounding mean CDF value of less than 1E-6 per reactor-year. In Section 3.0 of Attachment 2 of the LAR, the licensee states, in part, "[t]he IPEEE assessment of other external events at Monticello shows that there is no external event (other than internal fires and seismic events) that may be a safety concern to the Monticello plant. No vulnerabilities were identified. These hazards were determined in the MNGP IPEEE to be negligible contributors to overall plant risk." The MNGP IPEEE (Reference 26) external hazard analysis used a progressive screening approach and concluded that all these other hazards are negligible contributors to overall plant risk. The licensee further states in Section 3.0 of Attachment 2 of the LAR "[a] qualitative or a bounding approach will be utilized."

For SSCs determined to be only implicitly modeled, NEI 04-10, Revision 1, provides guidance for performing either a bounding analysis as described in Step 10b or a detailed analysis as described Step 11. Step 10b of NEI 04-10, Revision 1, further states "[a]lternative evaluations for the impact from external events and shutdown events are also deemed acceptable at this point." The alternative evaluation considers the risk metrics discussed in Section 3.1.2 of this SE along with the associated sensitivity cases described in Step 14 of NEI 04-10, Revision 1, to bound the potential impact from external events and shutdown PRA model contributors. The NRC staff finds the use of a qualitative or a bounding approach for other external hazards (e.g.,

high winds, external floods, transportation, and nearby facility accidents) as described in NEI 04-10, Revision 1, acceptable for assessing an STI change.

3.2.1.2.3 Shutdown Risk

Consistent with the guidance in NEI 04-10, Revision 1, the licensee proposes to use the shutdown safety assessment process based on NUMARC 91-06. NUMARC 91-06 provides considerations for maintaining defense in depth (DID) for the five key safety functions during shutdown, namely, decay heat removal capability, inventory control, power availability, reactivity control, and containment - primary/secondary. NUMARC 91-06 specifies that a DID approach should be used with respect to each defined shutdown key safety function, which is accomplished by designating a running and an alternative system/train to accomplish the given key safety function.

Step 10a of NEI 04-10, Revision 1, guidance explicitly states, in part, "if the plant had performed other external hazards analysis or a NUMARC 91-06 safety program for shutdown risk, a qualitative evaluation shall be made by personnel knowledgeable in the scope, level of detail, and assumptions of the analysis to conclude if the SSC impacted by the STI change has an important contribution in the evaluation, and the information conveyed to the IDP in Step 15." The NRC staff finds the use of NUMARC 91-06 in addition to performing a qualitative or a bounding approach as described in NEI 04-10, Revision 1, acceptable for assessing the shutdown risk for an STI change.

3.2.1.3 Acceptance Guidelines

The licensee will be required to quantitatively evaluate the change in total risk (including internal and external events contributions) in terms of CDF and LERF for both the individual risk impact of a proposed change in surveillance frequency and the cumulative impact from all individual changes to surveillance frequencies using NEI 04-10, Revision 1, in accordance with the TS SFCP. Each individual change to surveillance frequency must show a risk impact below 1E-6 per year for change to CDF, and below 1E-7 per year for change to LERF. These changes to CDF and LERF are consistent with the acceptance criteria of RG 1.174, Revision 3, for very small changes in risk. Where the RG 1.174, Revision 3, acceptance criteria are not met, the process in NEI 04-10, Revision 1, either considers revised surveillance frequencies which are consistent with RG 1.174, Revision 3, or the process terminates without permitting the proposed changes. Where quantitative results are unavailable for comparison with the acceptance guidelines, appropriate qualitative analyses are required to demonstrate that the associated risk impact of a proposed change to surveillance frequency is negligible or insignificant. Otherwise, bounding quantitative analyses are required which demonstrate the risk impact is at least one order of magnitude lower than the RG 1.174, Revision 3, acceptance guidelines for very small changes in risk. In addition to assessing each individual SSC surveillance frequency change, the cumulative impact of all changes must result in a risk impact less than 1E-5 per year for change to CDF, and less than 1E-6 per year for change to LERF, and the total CDF and total LERF must be reasonably shown to be less than 1E-4 per year and 1E-5 per year, respectively. These values are consistent with the acceptance criteria of RG 1.174, Revision 3, as referenced by RG 1.177, Revision 1, for changes to surveillance frequencies.

Consistent with the NRC's SE dated September 19, 2007, for NEI 04-10, Revision 1, the TS SFCP will require the licensee to calculate the total change in risk (i.e., the cumulative risk) by comparing a baseline model that uses failure probabilities based on surveillance frequencies

prior to being changed per the SFCP to a revised model that uses failure probabilities based on the changed surveillance frequencies. The NRC staff further notes that the licensee includes a provision to exclude the contribution to cumulative risk from individual changes to surveillance frequencies associated with insignificant risk increases (i.e., less than 5.0E-8 CDF and 5.0E-9 LERF) once the baseline PRA models are updated to include the effects of the revised surveillance frequencies.

The quantitative acceptance guidance of RG 1.174, Revision 3, is supplemented by qualitative information to evaluate the proposed changes to surveillance frequencies, including industry and plant-specific operating experience, vendor recommendations, industry standards, the results of sensitivity studies, and SSC performance data and test history. The final acceptability of the proposed change is based on all of these considerations and not solely on the PRA results. Post implementation performance monitoring and feedback are also required to assure continued reliability of the components. The licensee's application of NRC-approved NEI 04-10, Revision 1, provides acceptable methods for evaluating the risk increase associated with proposed changes to surveillance frequencies, consistent with Regulatory Position 2.4 of RG 1.177, Revision 1. Therefore, the NRC staff concludes that the proposed methodology satisfies the fourth key safety principle of RG 1.177, Revision 1, by assuring any increase in risk is small, and is consistent with the intent of the Commission's Safety Goal Policy Statement.

3.2.2 Key Principle 5: Monitor the Impact of the Proposed Change

The licensee's adoption of TSTF-425, Revision 3, requires application of NEI 04-10, Revision 1, in the SFCP. NEI 04-10, Revision 1, provides guidance for performance monitoring programs that include the following attributes:

- Enough tests are included to provide meaningful data.
- The test is devised such that incipient degradation can reasonably be expected to be detected.
- The licensee trends appropriate parameters as necessary, to provide reasonable assurance that the component will remain operable over the test interval.

Furthermore, Step 19 of NEI 04-10, Revision 1, for periodic re-assessment specifies, in part, "[p]rovisions whereby component performance data is fed back periodically into the component test strategy determination (i.e., test interval and methods) process. This would include results of component or train level monitoring of Maintenance Rule (or §50.69 monitoring)."

The above provisions are considered to be acceptable performance monitoring strategies for assuring that the risk of the proposed change will remain small. Accordingly, Key Principle 5 is met.

3.3 Addition of Surveillance Frequency Control Program to Administrative Controls

The licensee proposed including the SFCP and specific requirements into the MNGP TSs, Section 5.5.14, as follows:

Surveillance Frequency Control Program

This program provides controls for Surveillance Frequencies. The program shall ensure that Surveillance Requirements specified in the Technical Specifications are performed at intervals sufficient to assure that the associated Limiting Conditions for Operation are met.

a) The Surveillance Frequency Control Program shall contain a list of frequencies of those Surveillance Requirements for which the Frequency is controlled by the program.

b) Changes to the Frequencies listed in the Surveillance Frequency Control Program shall be made in accordance with NEI 04-10, "Risk-Informed Method for Control of Surveillance Frequencies," Revision 1.

c) The provisions of Surveillance Requirements 3.0.2 and 3.0.3 are applicable to the Frequencies established in the Surveillance Frequency Control Program.

The proposed program is consistent with the model application of TSTF-425, Revision 3, and therefore, the staff concludes that it is acceptable.

3.4 Deviations from TSTF-425 and Other Changes

The licensee states that, revised (clean) TS pages are not included in this LAR given the number of TS pages affected, the straightforward nature of the proposed changes, and outstanding LARs that may affect some of the same TS pages. Only mark-ups of the proposed TS changes are provided to satisfy requirements of 10 CFR 50.90, "[a]pplication for amendment of license, construction permit, of early site permit." The NRC staff determined that this change is administrative in nature and continues to meet the requirements of 10 CFR 50.90 and is an acceptable variation from the approved TSTF.

The definition of STAGGERED TEST BASIS is being retained in the MNGP TS due to its continued use in Administrative TS Section 5.5.13, "Control Room Envelope Habitability Program." Since this defined term is still used elsewhere in the TS, it should remain in the TS according to the NUREG-1433 guidance. This is an administrative deviation and the NRC staff recognizes that the definition should be retained for the reason stated; therefore, this deviation is acceptable.

The insert provided in TSTF-425 for the TS Bases (Insert 2) states, "The Surveillance Frequency is based on operating experience, equipment reliability, and plant risk and is controlled under the Surveillance Frequency Control Program." In a letter dated April 14, 2010 (Reference 28), the NRC staff agreed that the insert applies to surveillance frequencies that are relocated and subsequently evaluated and changed in accordance with the SFCP, but does not apply to frequencies relocated to the SFCP, but not changed. Therefore, the insert for the Bases is revised to, "The Surveillance Frequency is controlled under the Surveillance Frequency Control Program" or "The Surveillance Frequencies are controlled under the Surveillance Frequency Control Program," as appropriate. The NRC staff reviewed the proposed wording and determined that these are administrative deviations only with no impact on the conclusions reached in the NRC's model SE dated July 6, 2009, and are, therefore, acceptable.

A cross-reference between the NUREG 1433 SR included in TSTF-425 versus MNGP TS SRs included in the LAR was provided. The cross-reference includes the following:

- TS SRs included in TSTF-425 and corresponding MNGP TS SRs with differing TS SR numbers
- TS SRs included in TSTF-425 that are not contained in the MNGP TS
- MNGP plant-specific TS SRs that are not contained in the TSTF-425 TS SRs and, therefore, are not included in the TSTF-425 mark-ups

The cross reference served only as an aid in the NRC staff review and provided information as stated in bullet 4 of section 2.2 of the LAR.

The licensee's TS contain plant-specific SRs not included in the approved TSTF-425, Revision 3. Approved TSTF-425, Revision 3, states, "[t]he proposed change relocates all periodic Surveillance Frequencies from the Technical Specifications and places the Frequencies under licensee control in accordance with a new program" and "[a]ll surveillances are relocated except [four exclusion criteria for the surveillance frequencies are listed]." It does not add, delete, or modify the content of the surveillance requirements themselves. These statements denote that TSTF-425 applies to all surveillances, including the MNGP plant specific surveillances, that are periodic and do not meet one of the exclusion criteria. The NRC staff reviewed the marked-up SRs in the LAR and supplements to ensure that no surveillances were included that matched the exclusion criteria. The staff determined that all marked-up surveillances included in the original LAR, as supplemented, were included within the scope of approved TSTF-425, Revision 3. Therefore, the SRs will continue to meet 10 CFR 50.36(c)(3).

The licensee included SR 3.1.2.1 which was not included in the approved traveler TSTF-425 Revision 3. The licensee stated that the frequency of SR 3.1.2.1 is encompassed by the intent of TSTF- 425, Revision 3, and, therefore, was within the scope of the NRC model SE. The licensee further stated that the NUREG-1433 markups within TSTF-425 include a similar core exposure based frequency in SR 3.3.1.1.6. During the NRC review of TSTF-425, Revision 1, an information response from the TSTF (Reference 29) specifically identified frequencies based on core exposure to be within the scope of TSTF-425 and NEI 04-10. Therefore, the NRC staff recognizes MNGP SR 3.1.2.1 to be within scope of approved traveler TSTF-425, Revision 3, for the reasons stated and, therefore, accepts the markup of SR 3.1.2.1 proposed in the original LAR.

3.5 Summary and Conclusions

The NRC staff has reviewed the licensee's proposed relocation of some surveillance frequencies to a licensee-controlled document, and controlling changes to surveillance frequencies in accordance with a new program, the SFCP, identified in the Administrative Controls of TSs. The NRC staff confirmed that this amendment does not relocate surveillance frequencies that reference other approved programs for the specific interval, are purely event-driven, are event-driven but have a time component for performing the surveillance on a one-time basis once the event occurs, or are related to specific conditions. The SFCP and TSs Section 5.0, Subsection 5.5.14, references NEI 04-10, Revision 1, which provides a risk-informed methodology using plant-specific risk insights and performance data to revise surveillance frequencies within the SFCP. This methodology supports relocating surveillance frequencies from TSs to a licensee-controlled document, provided those frequencies are changed in accordance with the NRC-approved NEI 04-10, Revision 1, which is specified in the administrative controls of the TSs.

The proposed licensee adoption of TSTF-425, Revision 3, and risk-informed methodology of NRC-approved NEI 04-10, Revision 1, as referenced in the Administrative Controls of TSs, satisfies the key principles of risk-informed decisionmaking applied to changes to TSs as delineated in RG 1.174, Revision 3, and RG 1.177, Revision 1, in that:

- The proposed change meets current regulations;
- The proposed change is consistent with defense-in-depth philosophy;
- The proposed change maintains sufficient safety margins;
- Increases in risk resulting from the proposed change are small and consistent with the Commission's Safety Goal Policy Statement; and
- The impact of the proposed change is monitored with performance measurement strategies.

Paragraph 50.36(c) of 10 CFR discusses the categories that will be included in TSs. Paragraph 50.36(c)(3) of 10 CFR discusses the specific category of SRs and states, "Surveillance requirements are requirements relating to test, calibration, or inspection to assure that the necessary quality of systems and components is maintained, that facility operation will be within safety limits, and that the limiting conditions for operation will be met." The NRC staff finds that with the proposed relocation of surveillance frequencies to a licensee-controlled document and administratively controlled in accordance with the TS SFCP, the licensee continues to meet the requirements in 10 CFR 50.36.

4.0 STATE CONSULTATION

In accordance with the Commission's regulations, the Minnesota State official was notified of the proposed issuance of the amendment on January 3, 2019. The State official had no comments.

5.0 ENVIRONMENTAL CONSIDERATION

The amendment changes a requirement with respect to the installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20 or change the surveillance requirements. The staff has determined that the amendment involves no significant increase in the amounts, and no significant change in the types, of any effluents that may be released offsite, and that there is no significant increase in individual or cumulative occupational radiation exposure. The Commission has previously issued a proposed finding that the amendment involves no significant hazards consideration and there has been no public comment on such finding (83 FR 8518). Accordingly, the amendment meets the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9). Pursuant to 10 CFR 51.22(b), no environmental impact statement or environmental assessment need be prepared in connection with the issuance of the amendment.

6.0 CONCLUSION

The Commission has concluded, based on the considerations discussed above, that: (1) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, (2) there is reasonable assurance that such activities will be conducted in compliance with the Commission's regulations, and (3) the issuance of the amendment will not be inimical to the common defense and security or to the health and safety of the public.

7.0 REFERENCES

1. Letter from Christopher R. Church, Xcel Energy, to U.S. Nuclear Regulatory Commission, Subject: "License Amendment Request: Application for Technical Specification Change Regarding Risk-Informed Justification for the Relocation of Specific Surveillance Frequency Requirements to a Licensee Controlled Program," dated December 19, 2017 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML17353A189).

2. Letter from Christopher R. Church, Xcel Energy, to U.S. Nuclear Regulatory Commission, "Supplement to License Amendment Request; Application for Technical Specification Change Regarding Risk-Informed Justification for the Relocation of Specific Surveillance Frequency Requirements to a Licensee Controlled Program (EPID L-2017-LLA-0434)," dated April 24, 2018 (ADAMS Accession No. ML18114A401).

3. Letter from Christopher R. Church, Xcel Energy, to U.S. Nuclear Regulatory Commission, "Response to Request for Additional Information: Application for Technical Specification Change Regarding Risk-Informed Justification for the Relocation of Specific Surveillance Frequency Requirements to a Licensee Controlled Program (EPID L-2017-LLA-0434)," dated October 23, 2018 (ADAMS Accession No. ML18296A653).

4. Letter from Christopher R. Church, Xcel Energy, to U.S. Nuclear Regulatory Commission, "Supplement to License Amendment Request: Application for Technical Specification Change Regarding Risk-Informed Justification for the Relocation of Specific Surveillance Frequency Requirements to a Licensee Controlled Program (EPID L-2017-LLA-0434)," dated November 20, 2018 (ADAMS Accession No. ML18324A753).

5. Nuclear Energy Institute, "Risk-Informed Technical Specifications Initiative 5B, Risk-Informed Method for Control of Surveillance Frequencies," NEI 04-10, Revision 1, April 2007 (ADAMS Accession No. ML071360456).

6. Technical Specifications Task Force, "Relocate Surveillance Frequencies to Licensee Control—RITSTF Initiative 5b," TSTF-425, Revision 3, March 18, 2009 (ADAMS Accession No. ML090850642).

7. U.S. Nuclear Regulatory Commission, Final Safety Evaluation for NEI TR NEI 04-10, Revision 1, "Risk-Informed Technical Specifications Initiative 5B, Risk-Informed Method for Control of Surveillance Frequencies," September 19, 2007 (ADAMS Accession No. ML072570267).

8. U.S. Nuclear Regulatory Commission, "An Approach for Using Probabilistic Risk Assessment in Risk-Informed Decisions on Plant-Specific Changes to the Licensing

Basis," Regulatory Guide 1.174, Revision 3, January 2018 (ADAMS Accession No. ML17317A256).

9. U.S. Nuclear Regulatory Commission, "An Approach for Plant-Specific, Risk-Informed Decision-making: Technical Specifications," Regulatory Guide 1.177, Revision 1, May 2011 (ADAMS Accession No. ML100910008).

10. U.S. Nuclear Regulatory Commission, "An Approach for Determining the Technical Adequacy of Probabilistic Risk Assessment Results for Risk-Informed Activities," Regulatory Guide 1.200, Revision 2, March 2009 (ADAMS Accession No. ML090410014).

11. U.S. Nuclear Regulatory Commission, Standard Review Plan Section 19.2, "Review of Risk Information Used to Support Permanent Plant-Specific Changes to the Licensing Basis: General Guidance," NUREG-0800, June 2007 (ADAMS Accession No. ML071700658).

12. U.S. Nuclear Regulatory Commission, Standard Review Plan Section 19.1, Revision 3, "Determining the Technical Adequacy of Probabilistic Risk Assessment for Risk-Informed License Amendment Requests After Initial Fuel Load," NUREG-0800, September 2012 (ADAMS Accession No. ML12193A107).

13. U.S. Nuclear Regulatory Commission, Standard Review Plan Section 16.1, Revision 1, "Risk-Informed Decision Making: Technical Specifications," NUREG-0800, March 2007 (ADAMS Accession No. ML070380228).

14. U.S. Nuclear Regulatory Commission, "NRC Regulatory Issue Summary 2007-06 Regulatory Guide 1.200 Implementation," RIS-07-06, March 22, 2007 (ADAMS Accession No. ML070650428).

15. Nuclear Management and Resources Council, Inc., "Guidelines for Industry Actions to Assess Shutdown Management," NUMARC 91-06, December 1991 (ADAMS Accession No. ML14365A203).

16. Nuclear Energy Institute, "Process for Performing Internal Events PRA Peer Reviews Using the ASME/ANS PRA Standard," NEI 05-04, Revision 2, November 2008 (ADAMS Accession No. ML083430462).

17. American Society of Mechanical Engineers (ASME) and American Nuclear Society (ANS) "Addenda to ASME/ANS RA-S-2008, Standard for Level 1/Large Early Release Frequency Probabilistic Risk Assessment for Nuclear Power Plant Applications," ASME/ANS RA-Sa-2009, Februrary 2009, New York, NY.

18. Anderson, V. K., Nuclear Energy Institute, letter to Stacey Rosenberg, U.S. Nuclear Regulatory Commission, "Final Revision of Appendix X to NEI 05-04/07-12/12-16, 'Close-Out of Facts and Observations,'" dated February 21, 2017 (ADAMS Package Accession No. ML17086A431).

19. Nuclear Energy Institute, "Fire Probabilistic Risk Assessment (FPRA) Peer Review Process Guidelines," NEI 07-12, Revision 1, June 2010 (ADAMS Accession No. ML102230070).

20. E-mail from Robert Kuntz, U.S. Nuclear Regulatory Commission, to Sarah Scott, Xcel Energy, "Request for Additional Information RE: Monticello license amendment request to adopt TSTF-425," dated September 26, 2018 (ADAMS Accession No. ML18269A357).

21. U.S. Nuclear Regulatory Commission, "Hot work/transient fire frequency: influence factors," FAQ 12-0064, Revision 0, June 28, 2012 (ADAMS Accession No. ML121780013).

22. Giitter, J., and Ross-Lee, M. J., U.S. Nuclear Regulatory Commission, letter to Mr. Greg Krueger, Nuclear Energy Institute, "U.S. Nuclear Regulatory Commission Acceptance on Nuclear Energy Institute Appendix X to Guidance 05-04, 07-12, and 12-13, Close-Out of Facts and Observations (F&Os)," dated May 3, 2017 (ADAMS Accession No. ML 17079A427).

23. Gilbertson, A. F., U.S. Nuclear Regulatory Commission, memorandum to Franovich, M. X., U.S. Nuclear Regulatory Commission, "Summary of Staff Electronic Audit to Support Adoption of TSTF-425, Revision 3, for Monticello Nuclear Generating Plant (EPID NO. L-2018-LLA-0434)," November 16, 2018 (ADAMS Accession No. ML18319A246).

24. Morris, J. R., Pressurized-Water Reactor Owner's Group, letter to Members of the PWROG and BWROG Licensing Committees, "Clarification of Information Needed from Licensees Adopting TSTF-425, Revision 3, 'Relocate Surveillance Frequencies to Licensee Control – RITSTF Initiative 5b,'" dated April 21, 2016 (ADAMS Accession No. ML18051A833).

25. U.S. Nuclear Regulatory Commission, "Procedural and Submittal Guidance for the Individual Plant Examination of External Events (IPEEE) for Severe Accident Vulnerabilities," NUREG-1407, Revision 0, June 31, 1991 (ADAMS Accession No. ML063550238).

26. Letter from W. J. Hill, Northern States Power Company, to U.S. Nuclear Regulatory Commission, "Submittal of Monticello Individual Plant Examination of External Events (IPEEE) Report, Revision 1; Seismic Analysis, Revision 0 and Internal Fires Analysis, Revision 1 (TAC M83644)," dated November 20, 1995 (ADAMS Accession No. ML080720565).

27. U.S. Nuclear Regulatory Commission, "Guidance on the Treatment of Uncertainties Associated with PRAs in Risk-Informed Decisionmaking," NUREG-1855, Revision 1, March 2017 (ADAMS Accession No. ML17062A466).

28. Letter from Eric E. Bowman, U.S. Nuclear Regulatory Commission, Notification of Issue with NRC-Approved Technical Specifications Task Force (TSTF) Traveler TSTF-425, Revision 3, "Relocate Surveillance Frequencies to Licensee Control - RITSSTF Initiative 5b" (ADAMS Accession No. ML100990099).

29. Letter from Technical Specifications Task Force, "Response to NRC Request for Additional Information Regarding TSTF-425, Revision 1, "Relocate Surveillance Frequencies to Licensee Control - RITSTF Initiative 5b," dated October 2, 2007" January 17, 20008 (ADAMS Accession No. ML080280272).

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Date of issuance: January 28, 2019

SUBJECT: MONTICELLO NUCLEAR GENERATING PLANT - ISSUANCE OF AMENDMENT RE: ADOPTION OF TSTF-425, RELOCATE SURVEILLANCE FREQUENCIES TO LICENSEE CONTROL - RITSTF INITIATIVE 5B (EPID: L-2017-LLA-0434) DATED JANUARY 28, 2019

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