



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

May 20, 2016

Mr. Jon A. Franke  
Site Vice President  
Susquehanna Nuclear, LLC  
769 Salem Boulevard  
NUCSB3  
Berwick, PA 18603-0467

SUBJECT: SUSQUEHANNA STEAM ELECTRIC STATION, UNITS 1 AND 2 - ISSUANCE  
OF AMENDMENTS RE: ADOPTION OF TSTF-425 (CAC NOS. MF5151 AND  
MF5152)

Dear Mr. Franke:

The U.S. Nuclear Regulatory Commission (NRC) has issued the enclosed Amendment Nos. 266 and 247 to Renewed Facility Operating License (RFOL) Nos. NPF-14 and NPF-22, for the Susquehanna Steam Electric Station, Units 1 and 2, respectively. These amendments consist of changes to the RFOLs in response to your application dated October 27, 2014, as supplemented by letters dated July 2, 2015; September 21, 2015; November 11, 2015; and January 29, 2016.

These amendments adopt the NRC-approved Technical Specification Task Force Traveler (TSTF)-425, Revision 3, "Relocate Surveillance Frequencies to Licensee Control - RITSTF Initiative 5b."

A copy of the NRC staff's safety evaluation is also enclosed. Notice of Issuance will be included in the Commission's Biweekly *Federal Register* Notice.

J. Franke

-2-

If you have any questions, please contact me by phone at 301-415-4090, or by e-mail at [jeffrey.whited@nrc.gov](mailto:jeffrey.whited@nrc.gov).

Sincerely,

A handwritten signature in black ink, appearing to read "Jeffrey A. Whited". The signature is fluid and cursive, with the first name "Jeffrey" and last name "Whited" clearly distinguishable.

Jeffrey A. Whited, Project Manager  
Plant Licensing Branch I-2  
Division of Operating Reactor Licensing  
Office of Nuclear Reactor Regulation

Docket Nos. 50-387 and 50-388

Enclosures:

1. Amendment No. 266 to RFOL  
No. NPF-14
2. Amendment No. 247 to RFOL  
No. NPF-22
3. Safety Evaluation

cc w/enclosures: Distribution via Listserv



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

SUSQUEHANNA NUCLEAR, LLC

ALLEGHENY ELECTRIC COOPERATIVE, INC.

DOCKET NO. 50-387

SUSQUEHANNA STEAM ELECTRIC STATION, UNIT 1

AMENDMENT TO RENEWED FACILITY OPERATING LICENSE

Amendment No. 266  
Renewed License No. NPF-14

1. The U.S. Nuclear Regulatory Commission (the Commission) has found that:
  - A. The application for the amendment filed by Susquehanna Nuclear, LLC, dated October 27, 2014, as supplemented by letters dated July 2, 2015; September 21, 2015; November 11, 2015; and January 29, 2016, 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 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 Renewed Facility Operating License as indicated in the attachment to this license amendment, and paragraph 2.C.(2) of Renewed Facility Operating License No. NPF-14 is hereby amended to read as follows:

(2) Technical Specifications and Environmental Protection Plan

The Technical Specifications contained in Appendix A, as revised through Amendment No. 266, and the Environmental Protection Plan contained in Appendix B, are hereby incorporated in the license. Susquehanna Nuclear, LLC shall operate the facility in accordance with the Technical Specifications and the Environmental Protection Plan.

3. The license amendment is effective as of its date of issuance and shall be implemented within 180 days of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION



Douglas A. Broaddus, Chief  
Plant Licensing Branch I-2  
Division of Operating Reactor Licensing  
Office of Nuclear Reactor Regulation

Attachment:  
Changes to the Renewed Facility Operating  
License and Technical Specifications

Date of Issuance: May 20, 2016

ATTACHMENT TO LICENSE AMENDMENT NO. 266  
RENEWED FACILITY OPERATING LICENSE NO. NPF-14  
DOCKET NO. 50-387

Replace the following page of the Renewed Facility Operating License with the attached revised page. The revised page is identified by amendment number and contains marginal lines indicating the areas of change.

REMOVE  
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INSERT  
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Replace the following pages of the Appendix A Technical Specifications with the attached revised pages. The revised pages are identified by amendment number and contain marginal lines indicating the areas of change.

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- (3) Susquehanna Nuclear, LLC, pursuant to the Act and 10 CFR Parts 30, 40, and 70, to receive, possess, and use at any time any byproduct, source and special nuclear material as sealed neutron sources for reactor startup, sealed neutron sources for reactor instrumentation and radiation monitoring equipment calibration, and as fission detectors in amounts as required;
  - (4) Susquehanna Nuclear, LLC, pursuant to the Act and 10 CFR Parts 30, 40, and 70 to receive, possess, and use in amounts as required any byproduct, source or special nuclear material without restriction to chemical or physical form, for sample analysis or instrument calibration or associated with radioactive apparatus or components; and
  - (5) Susquehanna Nuclear, LLC, pursuant to the Act and 10 CFR Parts 30, 40, and 70 to possess, but not separate, such byproduct and special nuclear materials as may be produced by the operation of the facility.
- C. This license shall be deemed to contain and is subject to the conditions specified in the Commission's regulations set forth in 10 CFR Chapter I and is subject to all applicable provisions of the Act and to the rules, regulations and orders of the Commission now or hereafter in effect; and is subject to the additional conditions specified or incorporated below:
- (1) Maximum Power Level

Susquehanna Nuclear, LLC is authorized to operate the facility at reactor core power levels not in excess of 3952 megawatts thermal in accordance with the conditions specified herein. The preoperational tests, startup tests and other items identified in License Conditions 2.C.(36), 2.C.(37), 2.C.(38), and 2.C.(39) to this license shall be completed as specified.
  - (2) Technical Specifications and Environmental Protection Plan

The Technical Specifications contained in Appendix A, as revised through Amendment No. 266 and the Environmental Protection Plan contained in Appendix B are hereby incorporated in the license. Susquehanna Nuclear, LLC shall operate the facility in accordance with the Technical Specifications and the Environmental Protection Plan.

For Surveillance Requirements (SRs) that are new in Amendment 178 to Facility Operating License No. NPF-14, the first performance is due at the end of the first surveillance interval that begins at implementation of Amendment 178. For SRs that existed prior to Amendment 178, including SRs with modified acceptance criteria and SRs whose frequency of performance is being extended, the first performance is due at the end of the first surveillance interval that begins on the date the Surveillance was last performed prior to implementation of Amendment 178.

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.1.3.1 Determine the position of each control rod.	In accordance with the Surveillance Frequency Control Program
SR 3.1.3.2 NOT USED	
SR 3.1.3.3 -----NOTE----- Not required to be performed until 31 days after the control rod is withdrawn and THERMAL POWER is greater than the LPSP of the RWM. ----- Insert each withdrawn control rod at least one notch.	In accordance with the Surveillance Frequency Control Program
SR 3.1.3.4 Verify each control rod scram time from fully withdrawn to notch position 05 is $\leq 7$ 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

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE	FREQUENCY
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 $\geq 800$ psig.	In accordance with the Surveillance Frequency Control Program
SR 3.1.4.3    Verify each affected control rod scram time is within the limits of Table 3.1.4-1 with any reactor steam dome pressure.	Prior to declaring control rod OPERABLE after work on control rod or CRD System that could affect scram time
SR 3.1.4.4    Verify each affected control rod scram time is within the limits of Table 3.1.4-1 with reactor steam dome pressure $\geq 800$ psig.	Prior to exceeding 40% RTP after fuel movement within the affected core cell  <u>AND</u>  Prior to exceeding 40% RTP after work on control rod or CRD System that could affect scram time

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
C. One or more control rod scram accumulators inoperable with reactor steam dome pressure < 900 psig.	C.1 Verify all control rods associated with inoperable accumulators are fully inserted.	Immediately upon discovery of charging water header pressure < 940 psig
	<u>AND</u> C.2 Declare the associated control rod inoperable.	1 hour
D. Required Action and associated Completion Time of Required Action B.1 or C.1 not met.	D.1 -----NOTE----- Not applicable if all inoperable control rod scram accumulators are associated with fully inserted control rods. -----  Place the reactor mode switch in the shutdown position.	Immediately

SURVEILLANCE REQUIREMENTS

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

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
B. Nine or more OPERABLE control rods not in compliance with BPWS.	B.1 <div>-----NOTE----- Rod worth minimizer (RWM) may be bypassed as allowed by LCO 3.3.2.1. -----</div> Suspend withdrawal of control rods.	Immediately
	<u>AND</u>  B.2 Place the reactor mode switch in the shutdown position.	1 hour

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.	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 pump suction piping is within the limits of Figure 3.1.7-2.	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.	In accordance with the Surveillance Frequency Control Program
	<u>AND</u>  Once within 24 hours after water or sodium pentaborate is added to solution
	<u>AND</u>  Once within 24 hours after solution temperature is restored within the limits of Figure 3.1.7-2

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE	FREQUENCY
SR 3.1.7.6 Verify each SLC 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
SR 3.1.7.7 Verify each pump develops a flow rate $\geq 40.0$ gpm at a discharge pressure $\geq 1250$ psig.	In accordance with the Inservice Testing Program
SR 3.1.7.8 Verify flow through one SLC subsystem 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  <u>AND</u>  Once within 24 hours after solution temperature is restored within the limits of Figure 3.1.7-2
SR 3.1.7.10 Verify sodium pentaborate enrichment is $\geq 88$ atom percent B-10.	Prior to addition to SLC tank.



SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
<p>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.</p>	In accordance with the Surveillance Frequency Control Program
<p>SR 3.1.8.2 Cycle each SDV vent and drain valve to the fully closed and fully open position.</p>	In accordance with the Surveillance Frequency Control Program
<p>SR 3.1.8.3 Verify each SDV vent and drain valve:</p> <ul style="list-style-type: none"> <li>a. Closes in <math>\leq 30</math> seconds after receipt of an actual or simulated scram signal; and</li> <li>b. Opens when the actual or simulated scram signal is reset.</li> </ul>	In accordance with the Surveillance Frequency Control Program

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 24 hours after $\geq 23\%$ RTP  <u>AND</u>  In accordance with the Surveillance Frequency Control Program  <u>AND</u>  Prior to exceeding 44% RTP

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 24 hours after $\geq 23\%$ RTP  <u>AND</u>  In accordance with the Surveillance Frequency Control Program  <u>AND</u>  Prior to exceeding 44% RTP
SR 3.2.2.2    Determine the MCPR limits.	Once within 72 hours after each completion of SRs in 3.1.4

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 24 hours after $\geq 23\%$ RTP  <u>AND</u>  In accordance with the Surveillance Frequency Control Program  <u>AND</u>  Prior to exceeding 44% RTP

## 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	Perform CHANNEL CHECK.	In accordance with the Surveillance Frequency Control Program
SR 3.3.1.1.3	<p>-----NOTE----- Not required to be performed until 12 hours after THERMAL POWER <math>\geq</math> 23% RTP.</p> <p>Verify the absolute difference between the average power range monitor (APRM) channels and the calculated power is <math>\leq</math> 2% RTP while operating at <math>\geq</math> 23% RTP.</p>	In accordance with the Surveillance Frequency Control Program
SR 3.3.1.1.4	<p>-----NOTE----- Not required to be performed when entering MODE 2 from MODE 1 until 12 hours after entering MODE 2.</p> <p>Perform CHANNEL FUNCTIONAL TEST.</p>	In accordance with the Surveillance Frequency Control Program

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.3.1.1.5	Perform CHANNEL FUNCTIONAL TEST.	In accordance with the Surveillance Frequency Control Program
SR 3.3.1.1.6	Verify the source range monitor (SRM) and intermediate range monitor (IRM) channels overlap.	Prior to fully withdrawing SRMs from the core.
SR 3.3.1.1.7	<p>-----NOTE----- Only required to be met during entry into MODE 2 from MODE 1. -----</p> <p>Verify the IRM and APRM channels overlap.</p>	In accordance with the Surveillance Frequency Control Program
SR 3.3.1.1.8	Calibrate the local power range monitors.	In accordance with the Surveillance Frequency Control Program
SR 3.3.1.1.9	<p>-----NOTE----- A test of all required contacts does not have to be performed. -----</p> <p>Perform CHANNEL FUNCTIONAL TEST.</p>	In accordance with the Surveillance Frequency Control Program

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.3.1.1.10	Perform CHANNEL CALIBRATION.	In accordance with the Surveillance Frequency Control Program
SR 3.3.1.1.11	<p>-----NOTES-----</p> <ol style="list-style-type: none"> <li>1. Neutron detectors are excluded.</li> <li>2. For Function 1.a, not required to be performed when entering MODE 2 from MODE 1 until 12 hours after entering MODE 2.</li> </ol> <p>-----</p> <p>Perform CHANNEL CALIBRATION.</p>	In accordance with the Surveillance Frequency Control Program
SR 3.3.1.1.12	<p>-----NOTES-----</p> <ol style="list-style-type: none"> <li>1. For Function 2.a, not required to be performed when entering MODE 2 from MODE 1 until 12 hours after entering MODE 2.</li> <li>2. For Functions 2.b and 2.f, the CHANNEL FUNCTIONAL TEST includes the recirculation flow input processing, excluding the flow transmitters.</li> </ol> <p>-----</p> <p>Perform CHANNEL FUNCTIONAL TEST</p>	In accordance with the Surveillance Frequency Control Program

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.3.1.1.13	Perform CHANNEL CALIBRATION.	In accordance with the Surveillance Frequency Control Program
SR 3.3.1.1.14	Perform CHANNEL FUNCTIONAL TEST.	In accordance with the Surveillance Frequency Control Program
SR 3.3.1.1.15	Perform LOGIC SYSTEM FUNCTIONAL TEST.	In accordance with the Surveillance Frequency Control Program
SR 3.3.1.1.16	Verify Turbine Stop Valve-Closure and Turbine Control Valve Fast Closure, Trip Oil Pressure-Low Functions are not bypassed when THERMAL POWER is $\geq 26\%$ RTP.	In accordance with the Surveillance Frequency Control Program
SR 3.3.1.1.17	-----NOTES----- 1. Neutron detectors are excluded.	In accordance with the Surveillance Frequency Control Program
	----- Verify the RPS RESPONSE TIME is within limits.	

(continued)



SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.3.1.1.18	<p>-----NOTES-----</p> <ol style="list-style-type: none"> <li>1. Neutron detectors are excluded.</li> <li>2. For Functions 2.b and 2.f, the recirculation flow transmitters that feed the APRMs are included.</li> </ol> <p>-----</p> <p>Perform CHANNEL CALIBRATION</p>	In accordance with the Surveillance Frequency Control Program
SR 3.3.1.1.19	Verify OPRM is not bypassed when APRM Simulated Thermal Power is $\geq 25\%$ and recirculation drive flow is $\leq$ value equivalent to the core flow value defined in the COLR.	In accordance with the Surveillance Frequency Control Program
SR 3.3.1.1.20	Adjust recirculation drive flow to conform to reactor core flow.	In accordance with the Surveillance Frequency Control Program

## SURVEILLANCE REQUIREMENTS

-----NOTE-----  
Refer to Table 3.3.1.2-1 to determine which SRs apply for each applicable MODE or other specified conditions.  
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SURVEILLANCE		FREQUENCY
SR 3.3.1.2.1	Perform CHANNEL CHECK.	In accordance with the Surveillance Frequency Control Program
SR 3.3.1.2.2	<p>-----NOTES-----</p> <ol style="list-style-type: none"> <li>1. Only required to be met during CORE ALTERATIONS.</li> <li>2. One SRM may be used to satisfy more than one of the following</li> </ol> <p>Verify an OPERABLE SRM detector is located in:</p> <ol style="list-style-type: none"> <li>a. The fueled region;</li> <li>b. The core quadrant where CORE ALTERATIONS are being performed, when the associated SRM is included in the fueled region; and</li> <li>c. A core quadrant adjacent to where CORE ALTERATIONS are being performed, when the associated SRM is included in the fueled region.</li> </ol>	In accordance with the Surveillance Frequency Control Program

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.3.1.2.3	Perform CHANNEL CHECK.	In accordance with the Surveillance Frequency Control Program
SR 3.3.1.2.4	<p>-----NOTE-----            Not required to be met with less than or equal to four fuel assemblies adjacent to the SRM and no other fuel assemblies in the associated core quadrant.            -----</p> <p>Verify count rate is:</p> <p>a. <math>\geq 3.0</math> cps if a signal to noise ratio <math>\geq 2:1</math>            or            b. Within the limits of Figure 3.3.1.2-1</p>	<p>12 hours during CORE ALTERATIONS</p> <p><u>AND</u></p> <p>In accordance with the Surveillance Frequency Control Program</p>
SR 3.3.1.2.5	Perform CHANNEL FUNCTIONAL TEST and determination of signal to noise ratio.	In accordance with the Surveillance Frequency Control Program

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.3.1.2.6	<p>-----NOTE----- Not required to be performed until 12 hours after IRMs on Range 2 or below. -----</p> <p>Perform CHANNEL FUNCTIONAL TEST and determination of signal to noise ratio.</p>	In accordance with the Surveillance Frequency Control Program
SR 3.3.1.2.7	<p>-----NOTES-----</p> <ol style="list-style-type: none"> <li>1. Neutron detectors are excluded.</li> <li>2. Not required to be performed until 12 hours after IRMs on Range 2 or below.</li> </ol> <p>-----</p> <p>Perform CHANNEL CALIBRATION.</p>	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 $\leq 10\%$ 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 $\leq 10\%$ RTP in MODE 1. ----- Perform CHANNEL FUNCTIONAL TEST.	In accordance with the Surveillance Frequency Control Program
SR 3.3.2.1.4 Verify the RBM:  a. Low Power Range - Upscale Function is not bypassed when APRM Simulated Thermal Power is $\geq 28\%$ RTP and $\leq$ Intermediate Power Range Setpoint specified in the COLR.	In accordance with the Surveillance Frequency Control Program  (continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE	FREQUENCY
<p>b. Intermediate Power Range - Upscale Function is not bypassed when APRM Simulated Thermal Power is <math>&gt;</math> Intermediate Power Range Setpoint specified in the COLR and <math>\leq</math> High Power Range Setpoint specified in the COLR.</p> <p>c. High Power Range - Upscale Function is not bypassed when APRM Simulated Thermal Power is <math>&gt;</math> High Power Range Setpoint specified in the COLR.</p>	
SR 3.3.2.1.5 Verify the RWM is not bypassed when THERMAL POWER is $\leq$ 10% RTP.	In accordance with the Surveillance Frequency Control Program
<p>SR 3.3.2.1.6 -----NOTE----- Not required to be performed until 1 hour after reactor mode switch is in the shutdown position. -----</p> <p>Perform CHANNEL FUNCTIONAL TEST.</p>	In accordance with the Surveillance Frequency Control Program
<p>SR 3.3.2.1.7 -----NOTE----- Neutron detectors are excluded. -----</p> <p>Perform CHANNEL CALIBRATION</p>	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

## 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 - 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 <div style="margin-left: 40px;">             1. A test of all required contacts does not have to be performed.               2. For the Feedwater - Main Turbine High Water Level Function, a test of all required relays does not have to be performed.           </div> Perform CHANNEL FUNCTIONAL TEST.	In accordance with the Surveillance Frequency Control Program
SR 3.3.2.2.3 Perform CHANNEL CALIBRATION. The Allowable Value shall be $\leq 55.5$ inches.	In accordance with the Surveillance Frequency Control Program
SR 3.3.2.2.4 Perform LOGIC SYSTEM FUNCTIONAL TEST including valve actuation.	In accordance with the Surveillance Frequency Control Program

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
D. Required Action and associated Completion Time of Condition C not met.	D.1 Enter the Condition referenced in Table 3.3.3.1-1 for the channel.	Immediately
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 5.6.7.	Immediately

SURVEILLANCE REQUIREMENTS

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

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 Not Used.	
SR 3.3.3.1.3 Perform CHANNEL CALIBRATION for all Functions except PCIV Position.	In accordance with the Surveillance Frequency Control Program



## SURVEILLANCE REQUIREMENTS

### NOTE

Refer to Table 3.3.3.2-1 to determine which SRs apply for each Remote Shutdown System Function.

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

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 EOC-RPT trip capability.

SURVEILLANCE	FREQUENCY
<p>SR 3.3.4.1.1</p> <p>A test of all required contacts does not have to be performed.</p> <p>Perform CHANNEL FUNCTIONAL TEST.</p>	<p>In accordance with the Surveillance Frequency Control Program</p>
<p>SR 3.3.4.1.2</p> <p>Perform CHANNEL CALIBRATION. The Allowable Values shall be:</p> <p>TSV—Closure: <math>\leq 7\%</math> closed;</p> <p>and</p> <p>TCV Fast Closure, Trip Oil Pressure—Low: <math>\geq 460</math> psig.</p>	<p>In accordance with the Surveillance Frequency Control Program</p>
<p>SR 3.3.4.1.3</p> <p>Perform LOGIC SYSTEM FUNCTIONAL TEST including breaker actuation.</p>	<p>In accordance with the Surveillance Frequency Control Program</p>
<p>SR 3.3.4.1.4</p> <p>Verify TSV—Closure and TCV Fast Closure, Trip Oil Pressure—Low Functions are not bypassed when THERMAL POWER is <math>\geq 26\%</math> RTP.</p>	<p>In accordance with the Surveillance Frequency Control Program</p>

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE	FREQUENCY
<p>SR 3.3.4.1.5 -----NOTE----- Breaker arc suppression time may be assumed from the most recent performance of SR 3.3.4.1.6.</p> <p>Verify the EOC-RPT SYSTEM RESPONSE TIME is within limits.</p>	<p>In accordance with the Surveillance Frequency Control Program</p>
<p>SR 3.3.4.1.6 Determine RPT breaker arc suppression time.</p>	<p>In accordance with the Surveillance Frequency Control Program</p>

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
B. One Function with ATWS-RPT trip capability not maintained.	B.1 Restore ATWS-RPT trip capability.	72 hours
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 Remove the associated recirculation pump from service.	6 hours
	<u>OR</u> 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 3.3.4.2.1 Perform CHANNEL CHECK of Reactor Vessel Water Level, Low Low, Level 2.	In accordance with the Surveillance Frequency Control Program

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.3.4.2.2	<p>-----</p> <p>A test of all required contacts does not have to be performed.</p> <p>-----</p> <p>Perform CHANNEL FUNCTIONAL TEST.</p>	In accordance with the Surveillance Frequency Control Program
SR 3.3.4.2.3	Perform CHANNEL CALIBRATION of the Reactor Steam Dome Pressure-High. The Allowable Values shall be $\leq 1150$ psig.	In accordance with the Surveillance Frequency Control Program
SR 3.3.4.2.4	Perform CHANNEL CALIBRATION of the Reactor Vessel Water Level Low Low, Level 2. The Allowable Values shall be $\geq -45$ inches.	In accordance with the Surveillance Frequency Control Program
SR 3.3.4.2.5	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.e; and (b) for up to 6 hours for Functions other than 3.c and 3.e 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	<p>A test of all required contacts does not have to be performed.</p> <p>Perform CHANNEL FUNCTIONAL TEST.</p>	In accordance with the Surveillance Frequency Control Program
SR 3.3.5.1.3	Perform CHANNEL CALIBRATION.	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 LOGIC SYSTEM FUNCTIONAL TEST.	In accordance with the Surveillance Frequency Control Program

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 Functions 2 and 4 and (b) for up to 6 hours for Functions other than Functions 2 and 4 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	<p>-----</p> <p>A test of all required contacts does not have to be performed.</p> <p>-----</p> <p>Perform CHANNEL FUNCTIONAL TEST.</p>	In accordance with the Surveillance Frequency Control Program
SR 3.3.5.2.3	Perform CHANNEL CALIBRATION.	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

## 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 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	<ol style="list-style-type: none"> <li>1. A test of all required contacts does not have to be performed</li> <li>2. For Functions 2.e, 3.a, and 4.a, a test of all required relays does not have to be performed</li> </ol> Perform CHANNEL FUNCTIONAL TEST.	In accordance with the Surveillance Frequency Control Program
SR 3.3.6.1.3	Perform CHANNEL CALIBRATION.	In accordance with the Surveillance Frequency Control Program
SR 3.3.6.1.4	Perform CHANNEL CALIBRATION.	In accordance with the Surveillance Frequency Control Program
SR 3.3.6.1.5	Perform LOGIC SYSTEM FUNCTIONAL TEST.	In accordance with the Surveillance Frequency Control Program



SURVEILLANCE REQUIREMENTS (continued)		
SURVEILLANCE		FREQUENCY
SR 3.3.6.1.6	<p>-----NOTE-----</p> <ol style="list-style-type: none"> <li>1. For Function 1.b. channel sensors are excluded.</li> <li>2. Response time testing of isolating relays is not required for Function 5.a.</li> </ol> <p>-----</p> <p>Verify the ISOLATION SYSTEM RESPONSE TIME is within limits.</p>	<p>In accordance with the Surveillance Frequency Control Program</p>

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	A test of all required contacts does not have to be performed.	In accordance with the Surveillance Frequency Control Program
	Perform CHANNEL FUNCTIONAL TEST.	
SR 3.3.6.2.3	Perform CHANNEL CALIBRATION.	In accordance with the Surveillance Frequency Control Program
SR 3.3.6.2.4	Perform CHANNEL CALIBRATION.	In accordance with the Surveillance Frequency Control Program
SR 3.3.6.2.5	Perform LOGIC SYSTEM FUNCTIONAL TEST.	In accordance with the Surveillance Frequency Control Program

SURVEILLANCE REQUIREMENTS

NOTES

1. Refer to Table 3.3.7.1-1 to determine which SRs apply for each CREOAS 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 CREOAS 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	<ol style="list-style-type: none"> <li>1. A test of all required contacts does not have to be performed.</li> <li>2. For Function 8, a test of all required relays does not have to be performed.</li> </ol> Perform CHANNEL FUNCTIONAL TEST.	In accordance with the Surveillance Frequency Control Program
SR 3.3.7.1.3	Perform CHANNEL CALIBRATION.	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 LOGIC SYSTEM FUNCTIONAL TEST.	In accordance with the Surveillance Frequency Control Program

CONDITION	REQUIRED ACTION	COMPLETION TIME
D. Required Action and associated Completion Time of Condition B or C not met.	D.1 Declare associated diesel generator (DG) inoperable.	Immediately

#### SURVEILLANCE REQUIREMENTS

##### NOTES

1. Refer to Table 3.3.8.1-1 to determine which SRs apply for each LOP 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 DG initiation capability.

SURVEILLANCE		FREQUENCY
SR 3.3.8.1.1	Perform CHANNEL CHECK.	In accordance with the Surveillance Frequency Control Program
SR 3.3.8.1.2	Perform CHANNEL FUNCTIONAL TEST.	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
D. Required Action and associated Completion Time of Condition A or B not met in MODE 4 or 5.	D.1 Initiate action to fully insert all insertable control rods in core cells containing one or more fuel assemblies.	Immediately
	<u>AND</u>	
	D.2.1 Initiate action to restore one electric power monitoring assembly to OPERABLE status for inservice power supply(s) supplying required instrumentation.	Immediately
	<u>OR</u>	
	D.2.2 Initiate action to isolate the Residual Heat Removal Shutdown Cooling System.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.3.8.2.1      -----NOTE----- Only required to be performed prior to entering MODE 2 or 3 from MODE 4, when in MODE 4 for ≥ 24 hours. ----- Perform CHANNEL FUNCTIONAL TEST.	In accordance with the Surveillance Frequency Control Program

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.3.8.2.2	<p>Perform CHANNEL CALIBRATION. The Allowable Values shall be:</p> <ul style="list-style-type: none"> <li>a. Overvoltage <math>\leq 128.3</math> V for Division A and <math>\leq 129.5</math> V for Division B.</li> <li>b. Undervoltage <math>\geq 110.7</math> V for Division A and <math>\geq 111.9</math> V for Division B.</li> <li>c. Underfrequency <math>\geq 57</math> Hz.</li> </ul>	In accordance with the Surveillance Frequency Control Program
SR 3.3.8.2.3	Perform a system functional test.	In accordance with the Surveillance Frequency Control Program

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR	<p>3.4.1.1 -----NOTE-----</p> <p>Not required to be performed until 24 hours after both recirculation loops are in operation.</p> <p>-----</p> <p>Verify recirculation loop jet pump flow mismatch with both recirculation loops in operation is:</p> <p>a.     <math>\leq 10</math> million lbm/hr when operating at <math>&lt; 75</math> million lbm/hr total core flow; and</p> <p>b.     <math>\leq 5</math> million lbm/hr when operating at <math>\geq 75</math> million lbm/hr total core flow.</p>	<p>In accordance with the Surveillance Frequency Control Program</p>
SR	<p>3.4.1.2 -----NOTE-----</p> <p>Only required to be met during single loop operations.</p> <p>-----</p> <p>Verify recirculation pump speed is within the limit specified in the LCO.</p>	<p>In accordance with the Surveillance Frequency Control Program</p>

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR	<p>3.4.2.1 -----NOTES-----</p> <ol style="list-style-type: none"> <li>1. Not required to be completed until 4 hours after associated recirculation loop is in operation.</li> <li>2. Not required to be completed until 24 hours after &gt; 23% RTP.</li> </ol> <p>-----</p> <p>Verify at least two of the following criteria (a, b, or c) are satisfied for each operating recirculation loop:</p> <ol style="list-style-type: none"> <li>a. Recirculation loop drive flow versus Recirculation Pump speed differs by <math>\leq 10\%</math> from established patterns.</li> <li>b. Recirculation loop drive flow versus total core flow differs by <math>\leq 10\%</math> from established patterns.</li> <li>c. Each jet pump diffuser to lower plenum differential pressure differs by <math>\leq 20\%</math> from established patterns, or each jet pump flow differs by <math>\leq 10\%</math> from established patterns.</li> </ol>	In accordance with the Surveillance Frequency Control Program



ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
B. (continued)	B.2 Verify source of unidentified LEAKAGE increase is not service sensitive type 304 or type 316 austenitic stainless steel.	4 hours
C. Required Action and associated Completion Time of Condition A or B not met.  <u>OR</u>  Pressure boundary LEAKAGE exists.	C.1 Be in MODE 3.  <u>AND</u>  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

**SURVEILLANCE REQUIREMENTS**

SURVEILLANCE		FREQUENCY
SR 3.4.6.1	Perform a CHANNEL CHECK of required primary containment atmospheric monitoring system.	In accordance with the Surveillance Frequency Control Program
SR 3.4.6.2	Perform a CHANNEL FUNCTIONAL TEST of required leakage detection instrumentation.	In accordance with the Surveillance Frequency Control Program
SR 3.4.6.3	Perform a CHANNEL CALIBRATION of required leakage detection instrumentation.	In accordance with the Surveillance Frequency Control Program

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
B. (continued)	B.2.2.1 Be in MODE 3.	12 hours
	<u>AND</u> B.2.2.2 Be in MODE 4.	36 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.4.7.1 <div>-----NOTE-----</div> Only required to be performed in MODE 1. <div>-----</div> Verify reactor coolant DOSE EQUIVALENT I-131 specific activity is $\leq 0.2 \mu\text{Ci/gm}$ .	In accordance with the Surveillance Frequency Control Program

RHR Shutdown Cooling System - Hot Shutdown  
3.4.8

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
<p>SR 3.4.8.1</p> <p>-----NOTE----- Not required to be met until 2 hours after reactor steam dome pressure is less than the RHR cut in permissive pressure. -----</p> <p>Verify one RHR shutdown cooling subsystem or recirculation pump is operating.</p>	<p>In accordance with the Surveillance Frequency Control Program</p>

RHR Shutdown Cooling System - Cold Shutdown  
3.4.9

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
B. No RHR shutdown cooling subsystem in operation.  <u>AND</u>  No recirculation pump in operation.	B.1 Verify reactor coolant circulating by an alternate method.	1 hour from discovery of no reactor coolant circulation
	<u>AND</u>	<u>AND</u>
	B.2 Monitor reactor coolant temperature.	Once per 12 hours thereafter  Once per hour

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.4.9.1	Verify one RHR shutdown cooling subsystem or recirculation pump is operating.	In accordance with the Surveillance Frequency Control Program

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
<p>SR 3.4.10.1</p> <p>-----NOTE----- Only required to be performed during RCS heatup and cooldown operations and RCS inservice leak and hydrostatic testing.</p> <p>-----</p> <p>Verify:</p> <p>a. RCS pressure and RCS temperature are to the right of the most limiting curve specified in Figures 3.4.10-1 through 3.4.10-3; and</p> <p>b. -----NOTE----- Only applicable when governed by Figure 3.4.10-2, Curve B, and Figure 3.4.10-3, Curve C.</p> <p>-----</p> <p>RCS heatup and cooldown rates are <math>\leq 100^{\circ}\text{F}</math> in any one hour period; and</p> <p>c. -----NOTE----- Only applicable when governed by Figure 3.4.10-1, Curve A.</p> <p>-----</p> <p>RCS heatup and cooldown rates are <math>\leq 20^{\circ}\text{F}</math> in any one hour period.</p>	<p>In accordance with the Surveillance Frequency Control Program</p>
<p>SR 3.4.10.2</p> <p>Verify RCS pressure and RCS temperature are to the right of the criticality limit (Curve C) specified in Figure 3.4.10-3.</p>	<p>Once within 15 minutes prior to control rod withdrawal for the purpose of achieving criticality</p>

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE	FREQUENCY
<p>SR 3.4.10.6</p> <p>-----NOTE----- Only required to be met in single loop operation when the idle recirculation loop is not isolated from the RPV, and:</p> <p>a. THERMAL POWER <math>\leq</math> 27% RTP; or</p> <p>b. The operating recirculation loop flow <math>\leq</math> 21,320 gpm.</p> <p>-----</p> <p>Verify the difference between the reactor coolant temperature in the recirculation loop not in operation and the RPV coolant temperature is <math>\leq</math> 50°F.</p>	<p>Once within 15 minutes prior to an increase in THERMAL POWER or an increase in loop flow.</p>
<p>SR 3.4.10.7</p> <p>-----NOTE----- Only required to be performed when tensioning the reactor vessel head bolting studs.</p> <p>-----</p> <p>Verify reactor vessel flange and head flange temperatures are <math>\geq</math> 70°F.</p>	<p>In accordance with the Surveillance Frequency Control Program</p>
<p>SR 3.4.10.8</p> <p>-----NOTE----- Not required to be performed until 30 minutes after RCS temperature <math>\leq</math> 80°F in MODE 4.</p> <p>-----</p> <p>Verify reactor vessel flange and head flange temperatures are <math>\geq</math> 70°F.</p>	<p>In accordance with the Surveillance Frequency Control Program</p>

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.4.10.9	<div>-----NOTE-----</div> <div>Not required to be performed until 12 hours after RCS temperature <math>\leq 100^{\circ}\text{F}</math> in MODE 4.</div> <div>-----</div> <div>Verify reactor vessel flange and head flange temperatures are <math>\geq 70^{\circ}\text{F}</math>.</div>	In accordance with the Surveillance Frequency Control Program



### 3.4 REACTOR COOLANT SYSTEM (RCS)

#### 3.4.11 Reactor Steam Dome Pressure

LCO 3.4.11 The reactor steam dome pressure shall be  $\leq 1050$  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 3.4.11.1 Verify reactor steam dome pressure is $\leq 1050$ 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, the piping is filled with water from the pump discharge valve to the injection valve.	In accordance with the Surveillance Frequency Control Program
SR 3.5.1.2    -----NOTE----- Low pressure coolant injection (LPCI) subsystems may be considered OPERABLE during alignment and operation for decay heat removal with reactor steam dome pressure less than the Residual Heat Removal (RHR) cut in permissive pressure in MODE 3, if capable of being manually realigned and not otherwise inoperable. ----- Verify each ECCS injection/spray subsystem manual, power operated, and automatic valve in the flow path, that is not locked, sealed, or otherwise secured in position, and the HPCI flow controller are in the correct position.	In accordance with the Surveillance Frequency Control Program
SR 3.5.1.3    Verify ADS gas supply header pressure is $\geq 135$ psig.	In accordance with the Surveillance Frequency Control Program
SR 3.5.1.4    Verify at least one RHR System cross tie valve is closed and power is removed from the valve operator.	In accordance with the Surveillance Frequency Control Program
SR 3.5.1.5    Verify each 480 volt AC swing bus transfers automatically from the normal source to the alternate source on loss of power.	In accordance with the Surveillance Frequency Control Program

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE	FREQUENCY
<p>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. -----</p> <p>Verify, with reactor pressure <math>\leq 165</math> psig, the HPCI pump can develop a flow rate <math>\geq 5000</math> gpm against a system head corresponding to reactor pressure.</p>	<p>In accordance with the Surveillance Frequency Control Program</p>
<p>SR 3.5.1.10 -----NOTE----- Vessel injection/spray may be excluded. -----</p> <p>Verify each ECCS injection/spray subsystem actuates on an actual or simulated automatic initiation signal.</p>	<p>In accordance with the Surveillance Frequency Control Program</p>
<p>SR 3.5.1.11 -----NOTE----- Valve actuation may be excluded. -----</p> <p>Verify the ADS actuates on an actual or simulated automatic initiation signal.</p>	<p>In accordance with the Surveillance Frequency Control Program</p>
<p>SR 3.5.1.12    Verify each ADS valve actuator strokes when manually actuated.</p>	<p>In accordance with the Surveillance Frequency Control Program</p>

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE	FREQUENCY
<div>SR 3.5.1.13</div> <div>-----NOTE----- Instrumentation response time is based on historical response time data. -----</div> <div>Verify the ECCS RESPONSE TIME for each ECCS injection/spray subsystem is within limit.</div>	<div></div> <div>In accordance with the Surveillance Frequency Control Program</div>

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
D. Required Action C.2 and associated Completion Time not met.	D.1 Initiate action to restore secondary containment to OPERABLE status.	Immediately
	<u>AND</u>	
	D.2 Initiate action to restore one standby gas treatment subsystem to OPERABLE status.	Immediately
	<u>AND</u>	
	D.3 Initiate action to restore isolation capability in each required secondary containment penetration flow path not isolated.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.5.2.1 Verify, for each required low pressure coolant injection (LPCI) subsystem, the suppression pool water level is $\geq 20$ ft 0 inches.	In accordance with the Surveillance Frequency Control Program

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE	FREQUENCY
<p>SR 3.5.2.2 Verify, for each required core spray (CS) subsystem, the:</p> <p>a. Suppression pool water level is <math>\geq 20</math> ft 0 inches; or</p> <p>b. -----NOTE----- Only one required CS subsystem may take credit for this option during OPDRVs. -----</p> <p>Condensate storage tank water level is <math>\geq 49\%</math> of capacity.</p>	<p>In accordance with the Surveillance Frequency Control Program</p>
<p>SR 3.5.2.3 Verify, for each required ECCS injection/spray subsystem, the piping is filled with water from the pump discharge valve to the injection valve.</p>	<p>In accordance with the Surveillance Frequency Control Program</p>
<p>SR 3.5.2.4 -----NOTE----- LPCI subsystems may be considered OPERABLE during alignment and operation for decay heat removal if capable of being manually realigned and not otherwise inoperable. -----</p> <p>Verify each required ECCS injection/spray subsystem manual, power operated, and automatic valve in the flow path, that is not locked, sealed, or otherwise secured in position, is in the correct position.</p>	<p>In accordance with the Surveillance Frequency Control Program</p>

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE				FREQUENCY
SR 3.5.2.5	Verify each required ECCS pump develops the specified flow rate against a system head corresponding to the specified reactor pressure.			In accordance with the Inservice Testing Program
			SYSTEM HEAD CORRESPONDING TO A REACTOR PRESSURE OF	
<u>SYSTEM</u>	<u>FLOW RATE</u>	<u>NO. OF PUMPS</u>		
CS	≥ 6350 gpm	2	≥ 105 psig	
LPCI	≥ 12,200 gpm	1	≥ 20 psig	
SR 3.5.2.6	<p>-----NOTE----- Vessel injection/spray may be excluded.</p> <p>-----</p> <p>Verify each required ECCS injection/spray subsystem actuates on an actual or simulated automatic initiation signal.</p>			In accordance with the Surveillance Frequency Control Program
SR 3.5.2.7	<p>-----NOTE----- Instrumentation response time may be assumed to be the historical instrumentation response time.</p> <p>-----</p> <p>Verify the ECCS RESPONSE TIME for each ECCS injection/spray subsystem is within limit.</p>			In accordance with the Surveillance Frequency Control Program

**SURVEILLANCE REQUIREMENTS**

SURVEILLANCE	FREQUENCY
SR 3.5.3.1    Verify the RCIC System piping is filled with water from the pump discharge valve to the injection valve.	In accordance with the Surveillance Frequency Control Program
SR 3.5.3.2    Verify each RCIC System manual, power operated, and automatic valve in the flow path, that is not locked, sealed, or otherwise secured in position, and the RCIC flow controller are in the correct position.	In accordance with the Surveillance Frequency Control Program
SR 3.5.3.3    -----NOTE----- Not required to be performed until 12 hours after reactor steam pressure and flow are adequate to perform the test. ----- Verify, with reactor pressure $\leq 1060$ psig and $\geq 920$ psig, the RCIC pump can develop a flow rate $\geq 600$ gpm against a system head corresponding to reactor pressure.	In accordance with the Inservice Testing Program
SR 3.5.3.4    -----NOTE----- Not required to be performed until 12 hours after reactor steam pressure and flow are adequate to perform the test. ----- Verify, with reactor pressure $\leq 165$ psig, the RCIC pump can develop a flow rate $\geq 600$ gpm against a system head corresponding to reactor pressure.	In accordance with the Surveillance Frequency Control Program

(continued)



SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE	FREQUENCY
<p>SR 3.5.3.5 -----NOTE----- Vessel injection may be excluded. -----</p> <p>Verify the RCIC System actuates on an actual or simulated automatic initiation signal.</p>	<p>In accordance with the Surveillance Frequency Control Program</p>

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE	FREQUENCY
<p>SR 3.6.1.1.3 -----Note----- Satisfied by the performance of SR 3.6.1.1.2. -----</p> <p>Verify that the total drywell-to-suppression chamber vacuum breaker leakage is less than or equal to .001605 ft<sup>2</sup> and the leakage area for each set of vacuum breakers is less than or equal to .000642 ft<sup>2</sup> at an initial differential pressure of <math>\geq 4.3</math> psi.</p>	<p>In accordance with the Surveillance Frequency Control Program</p>

ACTIONS (continued)

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

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.6.1.2.1	<p>-----NOTES-----</p> <ol style="list-style-type: none"> <li>1. An inoperable air lock door does not invalidate the previous successful performance of the overall air lock leakage test.</li> <li>2. Results shall be evaluated against acceptance criteria acceptable to SR 3.6.1.1.1.</li> </ol> <p>-----</p> <p>Perform required primary containment air lock leakage rate testing in accordance with the Primary Containment Leakage Rate Testing Program.</p>	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	<p>-----NOTES-----</p> <ol style="list-style-type: none"><li>1. Only required to be met in MODES 1, 2, and 3.</li><li>2. Not required to be met when the 18 and 24 inch primary containment purge 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.</li></ol> <p>-----</p> <p>Verify each 18 and 24 inch primary containment purge valve is closed.</p>	In accordance with the Surveillance Frequency Control Program
SR 3.6.1.3.2	<p>-----NOTES-----</p> <ol style="list-style-type: none"><li>1. Valves and blind flanges in high radiation areas may be verified by use of administrative means.</li><li>2. Not required to be met for PCIVs that are open under administrative controls.</li></ol> <p>-----</p> <p>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.</p>	In accordance with the Surveillance Frequency Control Program

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.6.1.3.3	<p>-----NOTES-----</p> <ol style="list-style-type: none"> <li>1. Valves and blind flanges in high radiation areas may be verified by use of administrative means.</li> <li>2. Not required to be met for PCIVs that are open under administrative controls.</li> </ol> <p>-----</p> <p>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.</p>	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 for each 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 and each automatic PCIV, except for MSIVs, is within limits.	In accordance with the Inservice Testing Program

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.6.1.3.6	<p>-----NOTE----- Only required to be met in MODES 1, 2 and 3. -----</p> <p>Perform leakage rate testing for each primary containment purge valve with resilient seals.</p>	In accordance with the Surveillance Frequency Control Program
SR 3.6.1.3.7	Verify the isolation time of each MSIV is $\geq 3$ seconds and $\leq 5$ seconds.	In accordance with the Inservice Testing Program
SR 3.6.1.3.8	Verify each automatic PCIV actuates to the isolation position on an actual or simulated isolation signal.	In accordance with the Surveillance Frequency Control Program
SR 3.6.1.3.9	Verify a representative sample of reactor instrumentation line EFCVs actuate to check flow on a simulated instrument line break.	In accordance with the Surveillance Frequency Control Program

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
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	<p>-----NOTES----- Only required to be met in MODES 1, 2, and 3. -----</p> <p>Verify the combined leakage rate for all secondary containment bypass leakage paths is <math>\leq 15</math> scfh when pressurized to <math>\geq P_a</math>.</p>	In accordance with the Primary Containment Leakage Rate Testing Program.
SR 3.6.1.3.12	<p>-----NOTES----- Only required to be met in MODES 1, 2, and 3. -----</p> <p>Verify leakage rate through each MSIV is <math>\leq 100</math> scfh and <math>\leq 300</math> scfh for the combined leakage including the leakage from the MS Line Drains, when the MSIVs are tested at <math>\geq 24.3</math> psig or <math>P_a</math> and the MS Line Drains are tested at <math>P_a</math>.</p>	In accordance with the Primary Containment Leakage Rate Testing Program.

(continued)

### 3.6 CONTAINMENT SYSTEMS

#### 3.6.1.4 Containment Pressure

LCO 3.6.1.4 Containment pressure shall be -1.0 to 2.0 psig.

APPLICABILITY: MODES 1, 2, and 3.

#### ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Containment pressure not within limit	A.1 Restore containment pressure to within limit.	1 hour
B. Required Action and associated Completion Time not met.	B.1 Be in MODE 3.	12 hours
	<u>AND</u> B.2 Be in MODE 4.	36 hours

#### SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.6.1.4.1 Verify containment pressure is within limit.	In accordance with the Surveillance Frequency Control Program



### 3.6 CONTAINMENT SYSTEMS

#### 3.6.1.5 Drywell Air Temperature

LCO 3.6.1.5 Drywell average air temperature shall be  $\leq 135^{\circ}\text{F}$ .

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.	12 hours
	<u>AND</u> B.2 Be in MODE 4.	36 hours

#### SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.6.1.5.1 Verify drywell average air temperature is within limit.	In accordance with the Surveillance Frequency Control Program

Suppression Chamber-to-Drywell Vacuum Breakers  
3.6.1.6

ACTIONS (continued)

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

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.6.1.6.1	<p>-----NOTE-----</p> <p>Not required to be met for vacuum breakers that are open during Surveillances.</p> <p>-----</p> <p>Verify each vacuum breaker is closed.</p>	<p>In accordance with the Surveillance Frequency Control Program</p> <p><u>AND</u></p> <p>Within 2 hours after discharge of steam to the suppression chamber from safety/relief valve (S/RV) operation.</p>

(continued)

Suppression Chamber-to-Drywell Vacuum Breakers  
3.6.1.6

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.6.1.6.2	Perform a functional test of each required vacuum breaker.	<p>In accordance with the Surveillance Frequency Control Program</p> <p><u>AND</u></p> <p>Within 12 hours after discharge of steam to the suppression chamber from S/RV operation</p> <p><u>AND</u></p> <p>Within 12 hours following an operation that causes any of the vacuum breakers to open</p>
SR 3.6.1.6.3	Verify the opening setpoint of each required vacuum breaker is $\geq 0.25$ and $\leq .75$ psid.	In accordance with the Surveillance Frequency Control Program

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
E. Suppression pool average temperature > 120°F.	E.1 Depressurize the reactor vessel to < 200 psig.	12 hours

SURVEILLANCE REQUIREMENTS

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

### 3.6 CONTAINMENT SYSTEMS

#### 3.6.2.2 Suppression Pool Water Level

LCO 3.6.2.2 Suppression pool water level shall be  $\geq 22$  ft 0 inches and  $\leq 24$  ft 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.	12 hours
	<u>AND</u> B.2 Be in MODE 4.	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

**SURVEILLANCE REQUIREMENTS**

SURVEILLANCE	FREQUENCY
SR 3.6.2.3.1 Verify each RHR suppression pool cooling subsystem manual, power operated, and automatic valve in the flow path that is not locked, sealed, or otherwise secured in position is in the correct position or can be aligned to the correct position.	In accordance with the Surveillance Frequency Control Program
SR 3.6.2.3.2 Verify each RHR pump develops a flow rate > 9750 gpm through the associated heat exchanger while operating in the suppression pool cooling mode.	In accordance with the Inservice Testing Program

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.6.2.4.1 Verify each RHR suppression pool spray subsystem manual, power operated, and automatic valve in the flow path that is not locked, sealed, or otherwise secured in position is in the correct position or can be aligned to the correct position.	In accordance with the Surveillance Frequency Control Program
SR 3.6.2.4.2 Verify each suppression pool spray is unobstructed.	In accordance with the Surveillance Frequency Control Program

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.6.3.2.1 Operate each required drywell cooling fan at low speed for $\geq 15$ minutes.	In accordance with the Surveillance Frequency Control Program



### 3.6 CONTAINMENT SYSTEMS

#### 3.6.3.3 Primary Containment Oxygen Concentration

LCO 3.6.3.3 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  $\leq$  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 $\leq$ 15% RTP.	8 hours

#### SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.6.3.3.1 Verify primary containment oxygen concentration is within limits.	In accordance with the Surveillance Frequency Control Program

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
C. Secondary containment inoperable during movement of irradiated fuel assemblies in the secondary containment, during CORE ALTERATIONS, or during OPDRVs.	C.1 <del>-----NOTE-----</del> LCO 3.0.3 is not applicable. <del>-----</del>  Suspend movement of irradiated fuel assemblies in the secondary containment.	Immediately
	<u>AND</u>  C.2 Suspend CORE ALTERATIONS.	Immediately
	<u>AND</u>  C.3 Initiate action to suspend OPDRVs.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.6.4.1.1 Verify secondary containment vacuum is $\geq 0.25$ inch of vacuum water gauge.	In accordance with the Surveillance Frequency Control Program
SR 3.6.4.1.2 Verify all required secondary containment removable walls and equipment hatches required to be closed are closed and sealed.	In accordance with the Surveillance Frequency Control Program

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE	FREQUENCY
<p>-----NOTE----- Single door access openings between required zones within the secondary containment boundary may be opened for entry and exit. -----</p>	
SR 3.6.4.1.3 Verify one secondary containment access door in each access opening is closed.	In accordance with the Surveillance Frequency Control Program
<p>SR 3.6.4.1.4 -----NOTE----- The maximum time allowed for secondary containment draw down is dependent on the secondary containment configuration. -----</p>	<p>-----NOTE----- Test each configuration at least one time every 60 months. -----</p>
<p>Verify each standby gas treatment (SGT) subsystem will draw down the secondary containment to <math>\geq 0.25</math> inch of vacuum water gauge in less than or equal to the maximum time allowed for the secondary containment configuration that is OPERABLE.</p>	In accordance with the Surveillance Frequency Control Program
<p>SR 3.6.4.1.5 -----NOTE----- The maximum flow allowed for maintaining secondary containment vacuum is dependent on the secondary containment configuration. -----</p>	<p>-----NOTE----- Test each configuration at least one time every 60 months. -----</p>
<p>Verify each SGT subsystem can maintain <math>\geq 0.25</math> inch of vacuum water gauge in the secondary containment for at least 1 hour at a flow rate less than or equal to the maximum flow rate permitted for the secondary containment configuration that is OPERABLE.</p>	In accordance with the Surveillance Frequency Control Program

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
<p>SR 3.6.4.2.1 -----NOTES-----</p> <ol style="list-style-type: none"> <li>1. Valves and blind flanges in high radiation areas may be verified by use of administrative means.</li> <li>2. Not required to be met for SCIVs that are open under administrative controls.</li> </ol> <p>-----</p> <p>Verify each required secondary containment isolation manual valve and blind flange that is required to be closed during accident conditions is closed.</p>	<p>In accordance with the Surveillance Frequency Control Program</p>
<p>SR 3.6.4.2.2 Verify the isolation time of each required automatic SCIV is within limits.</p>	<p>In accordance with the Surveillance Frequency Control Program</p>
<p>SR 3.6.4.2.3 Verify each required automatic SCIV actuates to the isolation position on an actual or simulated actuation signal.</p>	<p>In accordance with the Surveillance Frequency Control Program</p>

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
F. Two SGT subsystems inoperable during movement of irradiated fuel assemblies in the secondary containment, during CORE ALTERATIONS, or during OPDRVs.	F.1 -----NOTE----- LCO 3.0.3 is not applicable. -----	
	Suspend movement of irradiated fuel assemblies in secondary containment.	Immediately
	<u>AND</u>	
	F.2 Suspend CORE ALTERATIONS.	Immediately
	<u>AND</u>	
	F.3 Initiate action to suspend OPDRVs.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.6.4.3.1 Operate each SGT filter train for $\geq 10$ continuous hours with heaters operating.	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
SR 3.6.4.3.4 Verify each SGT filter cooling bypass and outside air damper opens and the fan starts on high charcoal temperature.	In accordance with the Surveillance Frequency Control Program

## SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.7.1.1	Verify the water level is greater than or equal to 678 feet 1 inch above Mean Sea Level.	In accordance with the Surveillance Frequency Control Program
SR 3.7.1.2	<p>Verify the average water temperature of the UHS is:</p> <p>a. -----NOTE----- Only applicable with both units in MODE 1 or 2, or with either unit in MODE 3 for less than twelve (12) hours. -----</p> <p style="text-align: center;"><math>\leq 85^{\circ}\text{F}</math>; or</p> <p>b. -----NOTE----- Only applicable when either unit has been in MODE 3 for at least twelve (12) hours but not more than twenty-four (24) hours. -----</p> <p style="text-align: center;"><math>\leq 87^{\circ}\text{F}</math>; or</p> <p>c. -----NOTE----- Only applicable when either unit has been in MODE 3 for at least twenty-four (24) hours. -----</p> <p style="text-align: center;"><math>\leq 88^{\circ}\text{F}</math></p>	In accordance with the Surveillance Frequency Control Program
SR 3.7.1.3	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
SR 3.7.1.4	Verify that valves HV-01222A and B (the spray array bypass valves) close upon receipt of a closing signal and open upon receipt of an opening signal.	In accordance with the Surveillance Frequency Control Program

(continued)

# SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.7.1.5	Verify that valves HV-01224A1 and B1 (the large spray array valves) close upon receipt of a closing signal and open upon receipt of an opening signal.	In accordance with the Surveillance Frequency Control Program
SR 3.7.1.6	Verify that valves HV-01224A2 and B2 (the small spray array valves) close upon receipt of a closing signal and open upon receipt of an opening signal.	In accordance with the Surveillance Frequency Control Program
SR 3.7.1.7	Verify that valves 012287A and 012287B (the spray array bypass manual valves) are capable of being opened and closed.	In accordance with the Surveillance Frequency Control Program

**SURVEILLANCE REQUIREMENTS**

SURVEILLANCE	FREQUENCY
<p>SR 3.7.2.1 -----NOTE----- Isolation of flow to individual components does not render ESW System inoperable.</p> <hr/> <p>Verify each ESW subsystem manual, power operated, 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.</p>	<p>In accordance with the Surveillance Frequency Control Program</p>
<p>SR 3.7.2.2    Verify each ESW subsystem actuates on an actual or simulated initiation signal.</p>	<p>In accordance with the Surveillance Frequency Control Program</p>



ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
<p>F. Two CREOAS subsystems inoperable during movement of irradiated fuel assemblies in the secondary containment, during CORE ALTERATIONS, or during OPDRVs.</p> <p><u>OR</u></p> <p>One or more CREOAS subsystems inoperable due to an inoperable CRE boundary during movement of irradiated fuel assemblies in the secondary containment, during CORE ALTERATIONS, or during OPDRVs.</p>	<p>-----NOTE----- LCO 3.0.3 is not applicable.</p>	
	<p>F.1 Suspend movement of irradiated fuel assemblies in the secondary containment.</p>	Immediately
	<p><u>AND</u></p> <p>F.2 Suspend CORE ALTERATIONS.</p>	Immediately
	<p><u>AND</u></p> <p>F.3 Initiate action to suspend OPDRVs.</p>	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.7.3.1 Operate each CREOAS filter train for $\geq 10$ continuous hours with the heaters operable.	In accordance with the Surveillance Frequency Control Program
SR 3.7.3.2 Perform required CREOAS filter testing in accordance with the Ventilation Filter Testing Program (VFTP).	In accordance with the VFTP
SR 3.7.3.3 Verify each CREOAS subsystem actuates on an actual or simulated initiation signal.	In accordance with the Surveillance Frequency Control Program

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
E. Two control room floor cooling subsystems inoperable during movement of irradiated fuel assemblies in the secondary containment, during CORE ALTERATIONS, or during OPDRVs.	-----NOTE----- LCO 3.0.3 is not applicable. -----	
	E.1 Suspend movement of irradiated fuel assemblies in the secondary containment.	Immediately
	<u>AND</u>	
	E.2 Suspend CORE ALTERATIONS.	Immediately
	<u>AND</u>	
	E.3 Initiate actions to suspend OPDRVs.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.7.4.1 Verify each control room floor cooling subsystem has the capability to remove the assumed heat load.	In accordance with the Surveillance Frequency Control Program

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
<p>SR 3.7.5.1 -----NOTE-----            Not required to be performed until 31 days after            any main steam line is not isolated            -----            Verify the radioactivity rate of the specified noble            gases is <math>\leq 330</math> mCi/second.</p>	<p>In accordance with the            Surveillance Frequency Control            Program</p> <p><u>AND</u></p> <p>Once within 4 hours after a  <math>\geq 50\%</math> increase in the            nominal steady state fission            gas release after factoring            out increases due to changes            in THERMAL POWER level</p>

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.7.6.1	Verify one complete cycle of each required main turbine bypass valve.	In accordance with the Surveillance Frequency Control Program
SR 3.7.6.2	Perform a system functional test.	In accordance with the Surveillance Frequency Control Program
SR 3.7.6.3	Verify the TURBINE BYPASS SYSTEM RESPONSE TIME is within limits.	In accordance with the Surveillance Frequency Control Program

Spent Fuel Storage Pool Water Level  
3.7.7

3.7 PLANT SYSTEMS

3.7.7 Spent Fuel Storage Pool Water Level

LCO 3.7.7 The spent fuel storage pool water level shall be  $\geq 22$  ft over the top of irradiated fuel assemblies seated in the spent fuel storage pool racks.

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.	<p>A.1 <span style="border: 1px dashed black; padding: 2px;">-----NOTE----- LCO 3.0.3 is not applicable.</span></p> <p>Suspend movement of irradiated fuel assemblies in the spent fuel storage pool.</p>	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.7.7.1 Verify the spent fuel storage pool water level is $\geq 22$ ft over the top of irradiated fuel assemblies seated in the spent fuel storage pool racks.	In accordance with the Surveillance Frequency Control Program

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.7.8.1	Verify that both Main Turbine Pressure Regulators are each capable of controlling main steam pressure.	In accordance with the Surveillance Frequency Control Program
SR 3.7.8.2	Perform a system functional test.	In accordance with the Surveillance Frequency Control Program

## 3.8 Electrical Power Systems

## ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
E. Two or more required DGs inoperable.	E.1 Restore at least three required DGs to OPERABLE status.	2 hours
F. Required Action and Associated Completion Time of Condition A, B, C, D, or E not met.	F.1 Be in MODE 3. <u>AND</u>	12 hours
	F.2 Be in MODE 4.	36 hours
G. One or more offsite circuits and two or more required DGs inoperable.  <u>OR</u>  One required DG and two offsite circuits inoperable.	G.1 Enter LCO 3.0.3.	Immediately

## SURVEILLANCE REQUIREMENTS

## -----NOTE-----

Four DGs are required and a DG is only considered OPERABLE when the DG is aligned to the Class 1E distribution system. DG Surveillance Requirements have been modified to integrate the necessary testing to demonstrate the availability of DG E and ensure its OPERABILITY when substituted for any other DG. If the DG Surveillance Requirements, as modified by the associated Notes, are met and performed, DG E can be considered available and OPERABLE when substituted for any other DG after performance of SR 3.8.1.3 and SR 3.8.1.7.

SURVEILLANCE	FREQUENCY
SR 3.8.1.1 Verify correct breaker alignment and indicated power availability for each offsite circuit.	In accordance with the Surveillance Frequency Control Program (continued)

3.8 Electrical Power Systems

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE	FREQUENCY
SR 3.8.1.2 Not Used.	
<p>SR 3.8.1.3 -----NOTES-----</p> <ol style="list-style-type: none"> <li>1. DG loading may include gradual loading as recommended by the manufacturer.</li> <li>2. Momentary transients outside the load range do not invalidate this test.</li> <li>3. This Surveillance shall be conducted on only one DG at a time.</li> <li>4. This SR shall be preceded by and immediately follow, without shutdown, a successful performance of SR 3.8.1.7.</li> <li>5. DG E, when not aligned to the Class 1E distribution system, may satisfy this SR using the test facility.</li> <li>6. A single test will satisfy this Surveillance for both units if synchronization is to the 4.16 kV ESS bus for Unit 1 for one periodic test and synchronization is to the 4.16 kV ESS bus for Unit 2 for the next periodic test. However, if it is not possible to perform the test on Unit 2 or test performance is not required per SR 3.8.2.1, then the test shall be performed synchronized to the 4.16 kV ESS bus for Unit 1.</li> </ol> <p>-----</p> <p>Verify each DG is synchronized and loaded and operates for <math>\geq 60</math> minutes at a load <math>\geq 3600</math> kW and <math>\leq 4000</math> kW.</p>	<p>In accordance with the Surveillance Frequency Control Program</p>

(continued)



3.8 Electrical Power Systems

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE	FREQUENCY
SR 3.8.1.4 Verify each engine mounted day tank fuel oil level is $\geq 420$ gallons for DG A-D and $\geq 425$ gallons for DG E.	In accordance with the Surveillance Frequency Control Program
SR 3.8.1.5 Check for and remove accumulated water from each engine mounted day tank.	In accordance with the Surveillance Frequency Control Program
SR 3.8.1.6 Verify the fuel oil transfer system operates to automatically transfer fuel oil from the storage tanks to each engine mounted tank.	In accordance with the Surveillance Frequency Control Program
<p>SR 3.8.1.7 -----NOTES-----</p> <ol style="list-style-type: none"> <li>1. All DG starts may be preceded by an engine prelube period.</li> <li>2. A single test at the specified Frequency will satisfy this Surveillance for both units.</li> </ol> <p>-----</p> <p>Verify each DG starts from standby condition and achieves, in <math>\leq 10</math> seconds, voltage <math>\geq 3793</math> V and frequency <math>\geq 58.8</math>, and after steady state conditions are reached, maintains voltage <math>\geq 3793</math> V and <math>\leq 4400</math> V and frequency <math>\geq 58.8</math> Hz and <math>\leq 61.2</math> Hz.</p>	In accordance with the Surveillance Frequency Control Program
<p>SR 3.8.1.8 -----NOTE-----</p> <p>The automatic transfer of the unit power supply shall not be performed in MODE 1 or 2.</p> <p>-----</p> <p>Verify automatic and manual transfer of unit power supply from the normal offsite circuit to the alternate offsite circuit.</p>	<p>In accordance with the Surveillance Frequency Control Program</p> <p>(continued)</p>

3.8 Electrical Power Systems

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE	FREQUENCY
<p>SR 3.8.1.9 -----NOTE----- A single test at the specified Frequency will satisfy this Surveillance for both units.</p> <p>-----</p> <p>Verify each DG rejects a load greater than or equal to its associated single largest post-accident load, and:</p> <p>a. Following load rejection, the frequency is <math>\leq 64.5</math> Hz;</p> <p>b. Within 4.5 seconds following load rejection, the voltage is <math>\geq 3760</math> V and <math>\leq 4560</math> V, and after steady state conditions are reached, maintains voltage <math>\geq 3793</math> V and <math>\leq 4400</math> V; and</p> <p>c. Within 6 seconds following load rejection, the frequency is <math>\geq 58.8</math> Hz and <math>\leq 61.2</math> Hz.</p>	<p>In accordance with the Surveillance Frequency Control Program</p>
<p>SR 3.8.1.10 -----NOTES----- A single test at the specified Frequency will satisfy this Surveillance for both units.</p> <p>-----</p> <p>Verify each DG does not trip and voltage is maintained <math>\leq 4560</math> V during and following a load rejection of <math>\geq 4000</math> kW.</p>	<p>In accordance with the Surveillance Frequency Control Program</p>

(continued)

3.8 Electrical Power Systems

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE	FREQUENCY
<p>SR 3.8.1.11 -----NOTES-----</p> <ol style="list-style-type: none"> <li>1. All DG starts may be preceded by an engine prelube period.</li> <li>2. This SR shall be performed for each DG on a rotational test basis and for each 4.16 kV ESS bus at the specified FREQUENCY.</li> <li>3. This Surveillance shall not be performed in MODE 1, 2 or 3.</li> </ol> <p>-----</p> <p>Verify on an actual or simulated loss of offsite power signal:</p> <ol style="list-style-type: none"> <li>a. De-energization of 4.16 kV ESS buses;</li> <li>b. Load shedding from 4.16 kV ESS buses; and</li> <li>c. DG auto-starts from standby condition and:               <ol style="list-style-type: none"> <li>1. energizes permanently connected loads in <math>\leq 10</math> seconds,</li> <li>2. energizes auto-connected shutdown loads through individual load timers,</li> <li>3. maintains steady state voltage <math>\geq 3793</math> V and <math>\leq 4400</math> V,</li> <li>4. maintains steady state frequency <math>\geq 58.8</math> Hz and <math>\leq 61.2</math> Hz, and</li> <li>5. supplies permanently connected loads for <math>\geq 5</math> minutes.</li> </ol> </li> </ol>	<p>In accordance with the Surveillance Frequency Control Program</p>

(continued)

3.8 Electrical Power Systems

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE	FREQUENCY
<p>SR 3.8.1.12 -----NOTES-----</p> <ol style="list-style-type: none"> <li>1. All DG starts may be preceded by an engine prelube period.</li> <li>2. DG E, when not aligned to the Class 1E distribution system, may satisfy this SR for both units by performance of SR 3.8.1.12.a, b and c using the test facility to simulate a 4.16 kV ESS bus. SR 3.8.1.12.d and e may be satisfied with either the normally aligned DG or DG E aligned to the Class 1E distribution system.</li> </ol> <p>-----</p> <p>Verify, on an actual or simulated Emergency Core Cooling System (ECCS) initiation signal, each DG auto-starts from standby condition and:</p> <ol style="list-style-type: none"> <li>a. In <math>\leq 10</math> seconds after auto-start achieves voltage <math>\geq 3793</math> V, and after steady state conditions are reached, maintains voltage <math>\geq 3793</math> V and <math>\leq 4400</math> V;</li> <li>b. In <math>\leq 10</math> seconds after auto-start achieves frequency <math>\geq 58.8</math> Hz, and after steady state conditions are reached, maintains frequency <math>\geq 58.8</math> Hz and <math>\leq 61.2</math> Hz;</li> <li>c. Operates for <math>\geq 5</math> minutes;</li> <li>d. Permanently connected loads remain energized from the offsite power system; and</li> <li>e. Emergency loads are energized or auto-connected through the individual load timers from the offsite power system.</li> </ol>	<p>In accordance with the Surveillance Frequency Control Program</p>

(continued)

3.8 Electrical Power Systems

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE	FREQUENCY
<p>SR 3.8.1.13 -----NOTES-----</p> <ol style="list-style-type: none"> <li>1. A single test at the specified Frequency will satisfy this Surveillance for both units.</li> <li>2. DG E, when not aligned to the Class 1E distribution system, may satisfy this SR for both units by using a simulated ECCS initiation signal.</li> </ol> <p>-----</p> <p>Verify each DG's automatic trips are bypassed on actual or simulated loss of voltage signal on the 4.16 kV ESS bus concurrent with an actual or simulated ECCS initiation signal except:</p> <ol style="list-style-type: none"> <li>a. Engine overspeed; and</li> <li>b. Generator differential current; and</li> <li>c. Low lube oil pressure.</li> </ol>	<p>In accordance with the Surveillance Frequency Control Program</p>

(continued)

3.8 Electrical Power Systems

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE	FREQUENCY
<p>SR 3.8.1.14 -----NOTES-----</p> <ol style="list-style-type: none"> <li>1. Momentary transients outside the load ranges do not invalidate this test.</li> <li>2. A single test at the specified Frequency will satisfy this Surveillance for both units.</li> <li>3. DG E, when not aligned to the Class 1E distribution system may satisfy this SR by using the test facility.</li> </ol> <p>-----</p> <p>Verify each DG operates for <math>\geq 24</math> hours:</p> <ol style="list-style-type: none"> <li>a. For <math>\geq 2</math> hours loaded <math>\geq 4400</math> kW and <math>\leq 4700</math> kW for DGs A through D and <math>\geq 5000</math> kW and <math>\leq 5500</math> kW for DG E; and</li> <li>b. For the remaining hours of the test loaded <math>\geq 3600</math> kW and <math>\leq 4000</math> kW for DGs A through D and <math>\geq 4500</math> kW and <math>\leq 5000</math> kW for DG E.</li> </ol>	<p>In accordance with the Surveillance Frequency Control Program</p>

(continued)

3.8 Electrical Power Systems

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE	FREQUENCY
<p>SR 3.8.1.15 -----NOTES-----</p> <ol style="list-style-type: none"> <li>1. This Surveillance shall be performed within 5 minutes of shutting down the DG after the DG has operated <math>\geq 2</math> hours loaded <math>\geq 3800</math> kW.</li> </ol> <p>                    Momentary transients outside of load range do not invalidate this test.</p> <ol style="list-style-type: none"> <li>2. All DG starts may be preceded by an engine prelube period.</li> <li>3. A single test at the specified Frequency will satisfy this Surveillance for both units.</li> </ol> <p>-----</p> <p>Verify each DG starts and achieves, in <math>\leq 10</math> seconds, voltage <math>\geq 3793</math> V and frequency <math>\geq 58.8</math> and after steady state conditions are reached, maintains voltage <math>\geq 3793</math> V and <math>\leq 4400</math> V and frequency <math>\geq 58.8</math> Hz and <math>\leq 61.2</math> Hz.</p>	<p>In accordance with the Surveillance Frequency Control Program</p>

(continued)

3.8 Electrical Power Systems

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE	FREQUENCY
<p>SR 3.8.1.16 -----NOTES-----  This SR shall be performed for each DG on a rotational test basis and for each 4.16 kV ESS bus at the specified FREQUENCY.  -----  Verify each DG:</p> <ul style="list-style-type: none"> <li>a. Synchronizes with offsite power source while loaded with emergency loads upon a simulated restoration of offsite power;</li> <li>b. Transfers loads to offsite power source; and</li> <li>c. Returns to ready-to-load operation.</li> </ul>	<p>In accordance with the Surveillance Frequency Control Program</p>

(continued)



3.8 Electrical Power Systems

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE	FREQUENCY
<p>SR 3.8.1.17 -----NOTES-----</p> <p>This SR shall be performed for each DG on a rotational test basis and for each 4.16 kV ESS bus at the specified FREQUENCY.</p> <p>-----</p> <p>Verify with a DG operating in test mode and connected to its bus, an actual or simulated ECCS initiation signal overrides the test mode by:</p> <ul style="list-style-type: none"> <li>a. Returning DG to ready-to-load operation; and</li> <li>b. Automatically energizing the emergency load from offsite power.</li> </ul>	<p>In accordance with the Surveillance Frequency Control Program</p>
<p>SR 3.8.1.18 -----NOTE-----</p> <p>Load timers associated with equipment that has automatic initiation capability disabled are not required to be OPERABLE.</p> <p>-----</p> <p>Verify each sequenced load is within required limits of the design interval.</p>	<p>In accordance with the Surveillance Frequency Control Program</p>

(continued)

3.8 Electrical Power Systems

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE	FREQUENCY
<p>SR 3.8.1.19 -----NOTES-----</p> <ol style="list-style-type: none"> <li>1. All DG starts may be preceded by an engine prelube period.</li> <li>2. This SR shall be performed for each DG on a rotational test basis and for each 4.16 kV ESS bus at the specified FREQUENCY.</li> <li>3. This Surveillance shall not be performed in MODE 1, 2 or 3.</li> </ol> <p>-----</p> <p>Verify on an actual or simulated loss of offsite power signal in conjunction with an actual or simulated ECCS initiation signal:</p> <ol style="list-style-type: none"> <li>a. De-energization of 4.16 kV ESS buses;</li> <li>b. Load shedding from emergency buses; and</li> <li>c. DG auto-starts from standby condition and:               <ol style="list-style-type: none"> <li>1. energizes permanently connected loads in <math>\leq 10</math> seconds,</li> <li>2. energizes auto-connected emergency loads through individual load timers,</li> <li>3. achieves steady state voltage <math>\geq 3793</math> V and <math>\leq 4400</math> V,</li> <li>4. achieves steady state frequency <math>\geq 58.8</math> Hz and <math>\leq 61.2</math> Hz, and</li> <li>5. supplies permanently connected and auto-connected emergency loads for <math>\geq 5</math> minutes.</li> </ol> </li> </ol>	<p>In accordance with the Surveillance Frequency Control Program</p>

(continued)

3.8 Electrical Power Systems

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE	FREQUENCY
<p>SR 3.8.1.20 -----NOTES-----</p> <ol style="list-style-type: none"> <li>1. All DG starts may be preceded by an engine prelube period.</li> <li>2. This SR does not have to be performed with DG E substituted for any DG.</li> </ol> <p>-----</p> <p>Verify, when started simultaneously from standby condition, each DG achieves, in <math>\leq 10</math> seconds, voltage <math>\geq 3793</math> V and frequency <math>\geq 58.8</math> and after steady state conditions are reached, maintains voltage <math>\geq 3793</math> V and <math>\leq 4400</math> V and frequency <math>\geq 58.8</math> Hz and <math>\leq 61.2</math> Hz.</p>	<p>In accordance with the Surveillance Frequency Control Program</p>

ACTIONS (continued)  
SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.8.3.1 Verify each fuel oil storage tank contains ≥ 47,570 gallons for DG A-D; ≥ 60,480 gallons for DG E.	In accordance with the Surveillance Frequency Control Program
SR 3.8.3.2 Verify lube oil sump level is visible in the sight glass.	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 -----NOTE----- Not required to be met when DG is operating. -----  Verify each DG air start receiver pressure is ≥ 240 psig.	In accordance with the Surveillance Frequency Control Program
SR 3.8.3.5 Check for and remove accumulated water from each fuel oil storage tank.	In accordance with the Surveillance Frequency Control Program

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
E. Diesel Generator E DC electrical power subsystem inoperable, when not aligned to the Class 1E distribution system.	E.1 Verify that all ESW valves associated with Diesel Generator E are closed.	2 hours
F. Diesel Generator E DC electrical power subsystem inoperable, when aligned to the Class 1E distribution system.	F.1 Declare Diesel Generator E inoperable.	2 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 its associated battery at the following rates for $\geq 4$ hours at greater than or equal to the minimum established float voltages.  a. $\geq 100$ amps for the 125V Battery  b. $\geq 300$ amps for the 250V Battery  c. $\geq 200$ amps for the 125V Diesel Generator E Battery	In accordance with the Surveillance Frequency Control Program

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE	FREQUENCY
<p>SR 3.8.4.3 -----NOTES-----</p> <ol style="list-style-type: none"> <li>1. The modified performance discharge test in SR 3.8.6.6 may be performed in lieu of SR 3.8.4.3.</li> <li>2. This Surveillance shall not be Performed in Mode 1, 2, or 3 except for the Diesel Generator E DC electrical power subsystem. This Surveillance can be performed on the Diesel Generator E DC electrical power subsystem when the Diesel Generator E is not aligned to the Class 1E distribution system. However, credit may be taken for unplanned events that satisfy this SR.</li> </ol> <p>-----</p> <p>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.</p>	<p>In accordance with the Surveillance Frequency Control Program</p>

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
<p>SR 3.8.6.1</p> <p>-----NOTE----- Not required to be met when battery terminal voltage is less than the minimum established float voltage of SR 3.8.4.1. -----</p> <p>Verify each battery float current is <math>\leq 2</math> amps.</p>	<p>In accordance with the Surveillance Frequency Control Program</p>
<p>SR 3.8.6.2    Verify each battery pilot cell voltage is <math>\geq 2.07</math> V.</p>	<p>In accordance with the Surveillance Frequency Control Program</p>
<p>SR 3.8.6.3    Verify each battery connected cell electrolyte level is greater than or equal to minimum established design limits.</p>	<p>In accordance with the Surveillance Frequency Control Program</p>
<p>SR 3.8.6.4    Verify each battery pilot cell temperature is greater than or equal to minimum established design limits.</p>	<p>In accordance with the Surveillance Frequency Control Program</p>
<p>SR 3.8.6.5    Verify each battery connected cell voltage is <math>\geq 2.07</math> V.</p>	<p>In accordance with the Surveillance Frequency Control Program</p> <p>(continued)</p>

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE	FREQUENCY
<p>SR 3.8.6.6 -----NOTE----- This Surveillance shall not be Performed in Mode 1, 2, or 3. However, credit may be taken for unplanned events that satisfy this SR. -----</p> <p>Verify battery capacity is <math>\geq 80\%</math> of the manufacturer's rating when subjected to a performance discharge test or a modified performance discharge test.</p>	<p>In accordance with the Surveillance Frequency Control Program</p> <p><u>AND</u></p> <p>12 months when battery shows degradation or has reached 85% of expected service life with capacity <math>&lt; 100\%</math> of manufacturer's rating</p> <p><u>AND</u></p> <p>24 months when battery has reached 85% of the expected service life with capacity <math>\geq 100\%</math> of manufacturer's rating</p>



SURVEILLANCE REQUIREMENTS

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

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
B. Diesel Generator E DC electrical power distribution subsystem inoperable, while not aligned to the Class 1E distribution system.	B.1 Verify that all ESW valves associated with Diesel Generator E are closed.	2 hours
C. Diesel Generator E DC electrical power distribution subsystem inoperable, while aligned to the Class 1E distribution system.	C.1 Declare Diesel Generator E inoperable.	2 hours

SURVEILLANCE REQUIREMENTS

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

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
<p>SR 3.9.1.1 Perform CHANNEL FUNCTIONAL TEST on each of the following required refueling equipment interlock inputs:</p> <ul style="list-style-type: none"> <li>a. All-rods-in,</li> <li>b. Refuel platform position,</li> <li>c. Refuel platform fuel grapple, fuel loaded,</li> <li>d. Refuel platform frame mounted hoist, fuel loaded,</li> <li>e. Refuel platform monorail mounted hoist, fuel loaded.</li> </ul>	<p>In accordance with the Surveillance Frequency Control Program</p>

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.	Immediately
	<p><u>AND</u></p> <p>A.2 Initiate action to fully insert all insertable control rods in core cells containing one or more fuel assemblies.</p>	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

(continued)

SURVEILLANCE REQUIREMENTS (continued)

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

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 $\geq 940$ 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  $\geq 22$  ft above the top of the RPV flange.

APPLICABILITY: During movement of irradiated fuel assemblies within the RPV,

During movement of new or irradiated 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 $\geq 22$ ft above the top of the RPV flange.	In accordance with the Surveillance Frequency Control Program



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

SURVEILLANCE	FREQUENCY
SR 3.9.8.1    Verify one RHR shutdown cooling subsystem is operating.	In accordance with the Surveillance Frequency Control Program

# ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. (continued)	A.3.1 Place the reactor mode switch in the shutdown position.	1 hour
	<p><u>OR</u></p> <p>A.3.2 -----NOTE----- Only applicable in MODE 5 -----</p> <p>Place the reactor mode switch in the refuel position.</p>	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

SURVEILLANCE	FREQUENCY
SR 3.10.3.1 Perform the applicable SRs for the required LCOs.	According to the applicable SRs
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. One or more of the above requirements not met with the affected control rod not insertable.	B.1 Suspend withdrawal of the control rod and removal of associated CRD.	Immediately
	<u>AND</u>	
	B.2.1 Initiate action to fully insert all control rods.	Immediately
	<u>OR</u>	
	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

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE	FREQUENCY
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. (continued)	A.2.1 Initiate action to fully insert all control rods.	Immediately
	<u>OR</u> A.2.2 Initiate action to satisfy the requirements of this LCO.	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

(continued)

SURVEILLANCE REQUIREMENTS (continued)

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



ACTIONS

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

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE	FREQUENCY
<p>SR 3.10.8.2 -----NOTE----- Not required to be met if SR 3.10.8.3 satisfied.</p> <p>Perform the MODE 2 applicable SRs for LCO 3.3.2.1. Function 2 of Table 3.3.2.1-1.</p>	<p>According to the applicable SRs</p>
<p>SR 3.10.8.3 -----NOTE----- Not required to be met if SR 3.10.8.2 satisfied.</p> <p>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.</p>	<p>During control rod movement</p>
<p>SR 3.10.8.4 Verify no other CORE ALTERATIONS are in progress.</p>	<p>In accordance with the Surveillance Frequency Control Program</p>

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE	FREQUENCY
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  <u>AND</u>  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 $\geq 940$ psig	In accordance with the Surveillance Frequency Control Program

5.5 Programs and Manuals

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5.5.14 Control Room Envelope Habitability Program (continued)

- e. The quantitative limits on unfiltered air leakage into the CRE. These limits shall be stated in a manner to allow direct comparison to the unfiltered air leakage measured by the testing described in paragraph c. The unfiltered air leakage limit for radiological challenges is the leakage flow rate assumed in the licensing basis analyses of DBA consequences. Unfiltered air leakage limits for hazardous chemicals must ensure that exposure of CRE occupants to these hazards will be within the assumptions in the licensing basis.
- f. The provisions of SR 3.0.2 are applicable to the Frequencies for assessing CRE habitability, determining CRE unfiltered leakage, and measuring CRE pressure and assessing the CRE boundary as required by paragraphs c and d, respectively.

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

SUSQUEHANNA NUCLEAR, LLC

ALLEGHENY ELECTRIC COOPERATIVE, INC.

DOCKET NO. 50-388

SUSQUEHANNA STEAM ELECTRIC STATION, UNIT 2

AMENDMENT TO RENEWED FACILITY OPERATING LICENSE

Amendment No. 247  
Renewed License No. NPF-22

1. The U.S. Nuclear Regulatory Commission (the Commission) has found that:
  - A. The application for the amendment filed by Susquehanna Nuclear, LLC, dated October 27, 2014, as supplemented by letters dated July 2, 2015; September 21, 2015; November 11, 2015; and January 29, 2016, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's 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 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.

Enclosure 2

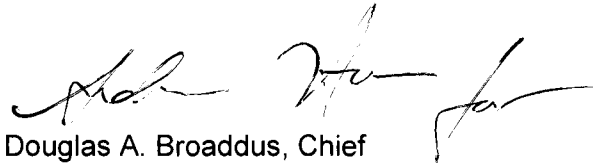
2. Accordingly, the license is amended by changes to the Renewed Facility Operating License as indicated in the attachment to this license amendment, and paragraph 2.C.(2) of the Renewed Facility Operating License No. NPF-22 is hereby amended to read as follows:

(2) Technical Specifications and Environmental Protection Plan

The Technical Specifications contained in Appendix A, as revised through Amendment No. 247, and the Environmental Protection Plan contained in Appendix B, are hereby incorporated in the license. PPL Susquehanna, LLC shall operate the facility in accordance with the Technical Specifications and the Environmental Protection Plan.

3. The license amendment is effective as of its date of issuance and shall be implemented within 180 days of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION



Douglas A. Broaddus, Chief  
Plant Licensing Branch I-2  
Division of Operating Reactor Licensing  
Office of Nuclear Reactor Regulation

Attachment:  
Changes to the Renewed Facility Operating  
License and Technical Specifications

Date of Issuance: May 20, 2016

ATTACHMENT TO LICENSE AMENDMENT NO. 247

RENEWED FACILITY OPERATING LICENSE NO. NPF-22

DOCKET NO. 50-388

Replace the following page of the Renewed Facility Operating License with the attached revised page. The revised page is identified by amendment number and contains marginal lines indicating the areas of change.

REMOVE

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Replace the following pages of the Appendix A Technical Specifications with the attached revised pages. The revised pages are identified by amendment number and contain marginal lines indicating the areas of change.

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TS / 3.1-10

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- (3) Susquehanna Nuclear, LLC, pursuant to the Act and 10 CFR Parts 30, 40, and 70, to receive, possess, and use at any time any byproduct, source and special nuclear material as sealed neutron sources for reactor startup, sealed neutron sources for reactor instrumentation and radiation monitoring equipment calibration, and as fission detectors in amounts as required;
  - (4) Susquehanna Nuclear, LLC, pursuant to the Act and 10 CFR Parts 30, 40, and 70, to receive, possess, and use in amounts as required any byproduct, source or special nuclear material without restriction to chemical or physical form, for sample analysis or instrument calibration or associated with radioactive apparatus or components; and
  - (5) Susquehanna Nuclear, LLC, pursuant to the Act and 10 CFR Parts 30, 40, and 70, to possess, but not separate, such byproduct and special nuclear materials as may be produced by the operation of the facility.
- C. This license shall be deemed to contain and is subject to the conditions specified in the Commission's regulations set forth in 10 CFR Chapter I and is subject to all applicable provisions of the Act and to the rules, regulations and orders of the Commission now or hereafter in effect; and is subject to the additional conditions specified or incorporated below:
- (1) Maximum Power Level

Susquehanna Nuclear, LLC is authorized to operate the facility at reactor core power levels not in excess of 3952 megawatts thermal in accordance with the conditions specified herein. The preoperational test, startup tests and other items identified in License Conditions 2.C.(20), 2.C.(21), 2.C.(22), and 2.C.(23) to this license shall be completed as specified.
  - (2) Technical Specifications and Environmental Protection Plan

The Technical Specifications contained in Appendix A, as revised through Amendment No. 247, and the Environmental Protection Plan contained in Appendix B, are hereby incorporated in the license. Susquehanna Nuclear, LLC shall operate the facility in accordance with the Technical Specifications and the Environmental Protection Plan.

For Surveillance Requirements (SRs) that are new in Amendment 151 to Facility Operating License No. NPF-22, the first performance is due at the end of the first surveillance interval that begins at implementation of Amendment 151. For SRs that existed prior to Amendment 151, including SRs with modified acceptance criteria and SRs whose frequency of performance is being extended, the first performance is due at the end of the first surveillance interval that begins on the date the Surveillance was last performed prior to implementation of Amendment 151.

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.1.3.1	Determine the position of each control rod.	In accordance with the Surveillance Frequency Control Program
SR 3.1.3.2	NOT USED	
SR 3.1.3.3	<p>-----NOTE-----            Not required to be performed until 31 days after the control rod is withdrawn and THERMAL POWER is greater than the LPSP of the RWM.            -----</p> <p>Insert each withdrawn control rod at least one notch.</p>	In accordance with the Surveillance Frequency Control Program
SR 3.1.3.4	Verify each control rod scram time from fully withdrawn to notch position 05 is $\leq 7$ 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

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE	FREQUENCY
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 $\geq$ 800 psig.	In accordance with the Surveillance Frequency Control Program
SR 3.1.4.3    Verify each affected control rod scram time is within the limits of Table 3.1.4-1 with any reactor steam dome pressure.	Prior to declaring control rod OPERABLE after work on control rod or CRD System that could affect scram time
SR 3.1.4.4    Verify each affected control rod scram time is within the limits of Table 3.1.4-1 with reactor steam dome pressure $\geq$ 800 psig.	Prior to exceeding 40% RTP after fuel movement within the affected core cell  <u>AND</u>  Prior to exceeding 40% RTP after work on control rod or CRD System that could affect scram time

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
C. One or more control rod scram accumulators inoperable with reactor steam dome pressure < 900 psig.	<p>C.1 Verify all control rods associated with inoperable accumulators are fully inserted.</p> <p><u>AND</u></p> <p>C.2 Declare the associated control rod inoperable.</p>	<p>Immediately upon discovery of charging water header pressure &lt; 940 psig</p> <p>1 hour</p>
D. Required Action and associated Completion Time of Required Action B.1 or C.1 not met.	<p>D.1 -----NOTE----- Not applicable if all inoperable control rod scram accumulators are associated with fully inserted control rods. ----- Place the reactor mode switch in the shutdown position.</p>	<p>Immediately</p>

SURVEILLANCE REQUIREMENTS

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

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
B. Nine or more OPERABLE control rods not in compliance with BPWS.	B.1 -----NOTE----- Rod worth minimizer (RWM) may be bypassed as allowed by LCO 3.3.2.1. -----  Suspend withdrawal of control rods.	Immediately
	<u>AND</u>  B.2 Place the reactor mode switch in the shutdown position.	1 hour

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.	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 pump suction piping is within the limits of Figure 3.1.7-2.	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 .	<p>In accordance with the Surveillance Frequency Control Program</p> <p><u>AND</u></p> <p>Once within 24 hours after water or sodium pentaborate is added to solution</p> <p><u>AND</u></p> <p>Once within 24 hours after solution temperature is restored within the limits of Figure 3.1.7-2</p>

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE	FREQUENCY
SR 3.1.7.6 Verify each SLC 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
SR 3.1.7.7 Verify each pump develops a flow rate $\geq 40.0$ gpm at a discharge pressure $\geq 1250$ psig.	In accordance with the Inservice Testing Program
SR 3.1.7.8 Verify flow through one SLC subsystem 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  <u>AND</u>  Once within 24 hours after solution temperature is restored within the limits of Figure 3.1.7-2
SR 3.1.7.10 Verify sodium pentaborate enrichment is $\geq 88$ atom percent B-10.	Prior to addition to SLC tank.

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.1.8.1	<p>-----NOTE----- Not required to be met on vent and drain valves closed during performance of SR 3.1.8.2. -----</p> <p>Verify each SDV vent and drain valve is open.</p>	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	<p>Verify each SDV vent and drain valve:</p> <ul style="list-style-type: none"> <li>a. Closes in <math>\leq 30</math> seconds after receipt of an actual or simulated scram signal; and</li> <li>b. Opens when the actual or simulated scram signal is reset.</li> </ul>	In accordance with the Surveillance Frequency Control Program

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 24 hours after $\geq 23\%$ RTP  <u>AND</u>  In accordance with the Surveillance Frequency Control Program  <u>AND</u>  Prior to exceeding 44% RTP

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 24 hours after $\geq 23\%$ RTP  <u>AND</u>  In accordance with the Surveillance Frequency Control Program  <u>AND</u>  Prior to exceeding 44% RTP
SR 3.2.2.2    Determine the MCPR limits.	Once within 72 hours after each completion of SRs in 3.1.4

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 24 hours after $\geq 23\%$ RTP  <u>AND</u>  In accordance with the Surveillance Frequency Control Program  <u>AND</u>  Prior to exceeding 44% RTP

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	Perform CHANNEL CHECK.	In accordance with the Surveillance Frequency Control Program
SR 3.3.1.1.3	<p>-----NOTE----- Not required to be performed until 12 hours after THERMAL POWER <math>\geq</math> 23% RTP.</p> <p>Verify the absolute difference between the average power range monitor (APRM) channels and the calculated power is <math>\leq</math> 2% RTP while operating at <math>\geq</math> 23% RTP.</p>	In accordance with the Surveillance Frequency Control Program

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.3.1.1.4	<p>-----NOTE----- Not required to be performed when entering MODE 2 from MODE 1 until 12 hours after entering MODE 2. -----</p> <p>Perform CHANNEL FUNCTIONAL TEST.</p>	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	Verify the source range monitor (SRM) and intermediate range monitor (IRM) channels overlap.	Prior to fully withdrawing SRMs from the core.
SR 3.3.1.1.7	<p>-----NOTE----- Only required to be met during entry into MODE 2 from MODE 1. -----</p> <p>Verify the IRM and APRM channels overlap.</p>	In accordance with the Surveillance Frequency Control Program
SR 3.3.1.1.8	Calibrate the local power range monitors.	In accordance with the Surveillance Frequency Control Program

(continued)



SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.3.1.1.9	<p>-----NOTE-----</p> <p>A test of all required contacts does not have to be performed.</p> <p>-----</p> <p>Perform CHANNEL FUNCTIONAL TEST.</p>	In accordance with the Surveillance Frequency Control Program
SR 3.3.1.1.10	Perform CHANNEL CALIBRATION.	In accordance with the Surveillance Frequency Control Program
SR 3.3.1.1.11	<p>-----NOTES-----</p> <p>1. Neutron detectors are excluded.</p> <p>2. For Function 1.a, not required to be performed when entering MODE 2 from MODE 1 until 12 hours after entering MODE 2.</p> <p>-----</p> <p>Perform CHANNEL CALIBRATION.</p>	In accordance with the Surveillance Frequency Control Program

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.3.1.1.12	<p>-----NOTES-----</p> <ol style="list-style-type: none"> <li>1. For Function 2.a, not required to be performed when entering MODE 2 from MODE 1 until 12 hours after entering MODE 2.</li> <li>2. For Functions 2.b and 2.f, the CHANNEL FUNCTIONAL TEST includes the recirculation flow input processing, excluding the flow transmitters.</li> </ol> <p>-----</p> <p>Perform CHANNEL FUNCTIONAL TEST</p>	In accordance with the Surveillance Frequency Control Program
SR 3.3.1.1.13	Perform CHANNEL CALIBRATION.	In accordance with the Surveillance Frequency Control Program
SR 3.3.1.1.14	Perform CHANNEL FUNCTIONAL TEST.	In accordance with the Surveillance Frequency Control Program
SR 3.3.1.1.15	Perform LOGIC SYSTEM FUNCTIONAL TEST.	In accordance with the Surveillance Frequency Control Program

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.3.1.1.16	Verify Turbine Stop Valve—Closure and Turbine Control Valve Fast Closure, Trip Oil Pressure—Low Functions are not bypassed when THERMAL POWER is $\geq 26\%$ RTP.	In accordance with the Surveillance Frequency Control Program
SR 3.3.1.1.17	<p>-----NOTES-----</p> <p>1. Neutron detectors are excluded.</p> <p>-----</p> <p>Verify the RPS RESPONSE TIME is within limits.</p>	In accordance with the Surveillance Frequency Control Program
SR 3.3.1.1.18	<p>-----NOTES-----</p> <p>1. Neutron detectors are excluded.</p> <p>2. For Functions 2b and 2.f, the recirculation flow transmitters that feed the APRMs are included.</p> <p>-----</p> <p>Perform CHANNEL CALIBRATION</p>	In accordance with the Surveillance Frequency Control Program
SR 3.3.1.1.19	Verify OPRM is not bypassed when APRM Simulated Thermal Power is $\geq 25\%$ and recirculation drive flow is $\leq$ value equivalent to the core flow value defined in the COLR.	In accordance with the Surveillance Frequency Control Program

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.3.1.1.20	Adjust recirculation drive flow to conform to reactor core flow.	In accordance with the Surveillance Frequency Control Program

## 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
SR 3.3.1.2.2	<p>NOTES</p> <ol style="list-style-type: none"> <li>Only required to be met during CORE ALTERATIONS.</li> <li>One SRM may be used to satisfy more than one of the following.</li> </ol> <p>Verify an OPERABLE SRM detector is located in:</p> <ol style="list-style-type: none"> <li>The fueled region;</li> <li>The core quadrant where CORE ALTERATIONS are being performed, when the associated SRM is included in the fueled region; and</li> <li>A core quadrant adjacent to where CORE ALTERATIONS are being performed, when the associated SRM is included in the fueled region.</li> </ol>	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

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.3.1.2.4	<p>-----NOTE----- Not required to be met with less than or equal to four fuel assemblies adjacent to the SRM and no other fuel assemblies in the associated core quadrant.</p> <p>-----</p> <p>Verify count rate is:</p> <p>a. <math>\geq 3.0</math> cps if a signal to noise ratio <math>\geq 2:1</math></p> <p>or</p> <p>b. Within the limits of Figure 3.3.1.2-1</p>	<p>12 hours during CORE ALTERATIONS</p> <p>AND</p> <p>In accordance with the Surveillance Frequency Control Program</p>
SR 3.3.1.2.5	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	<p>-----NOTE----- Not required to be performed until 12 hours after IRMs on Range 2 or below.</p> <p>-----</p> <p>Perform CHANNEL FUNCTIONAL TEST and determination of signal to noise ratio.</p>	In accordance with the Surveillance Frequency Control Program
SR 3.3.1.2.7	<p>-----NOTES-----</p> <p>1. Neutron detectors are excluded.</p> <p>2. Not required to be performed until 12 hours after IRMs on Range 2 or below.</p> <p>-----</p> <p>Perform CHANNEL CALIBRATION.</p>	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 $\leq 10\%$ 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 $\leq 10\%$ RTP in MODE 1. ----- Perform CHANNEL FUNCTIONAL TEST.	In accordance with the Surveillance Frequency Control Program
SR 3.3.2.1.4 Verify the RBM: <ol style="list-style-type: none"> <li>a. Low Power Range – Upscale Function is not bypassed when APRM Simulated Thermal Power is <math>\geq 28\%</math> RTP and <math>\leq</math> Intermediate Power Range Setpoint specified in the COLR.</li> </ol>	In accordance with the Surveillance Frequency Control Program (continued)

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
<p>b. Intermediate Power Range – Upscale Function is not bypassed when APRM Simulated Thermal Power is &gt; Intermediate Power Range Setpoint specified in the COLR and <math>\leq</math> High Power Range Setpoint specified in the COLR.</p> <p>c. High Power Range – Upscale Function is not bypassed when APRM Simulated Thermal Power &gt; High Power Range Setpoint specified in the COLR.</p>	
<p>SR 3.3.2.1.5 Verify the RWM is not bypassed when THERMAL POWER is <math>\leq</math> 10% RTP.</p> <p>SR 3.3.2.1.6 -----NOTE----- Not required to be performed until 1 hour after reactor mode switch is in the shutdown position. -----</p> <p>Perform CHANNEL FUNCTIONAL TEST.</p>	<p>In accordance with the Surveillance Frequency Control Program</p> <p>In accordance with the Surveillance Frequency Control Program</p>
<p>SR 3.3.2.1.7 -----NOTE----- Neutron detectors are excluded. -----</p> <p>Perform CHANNEL CALIBRATION.</p>	<p>In accordance with the Surveillance Frequency Control Program</p>
<p>SR 3.3.2.1.8 Verify control rod sequences input to the RWM are in conformance with BPWS.</p>	<p>Prior to declaring RWM OPERABLE following loading of sequence into RWM</p>



## 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 - 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 <div>             1. A test of all required contacts does not have to be performed.                           2. For the Feedwater - Main Turbine High Water Level Function, a test of all required relays does not have to be performed.           </div> Perform CHANNEL FUNCTIONAL TEST.	In accordance with the Surveillance Frequency Control Program
SR 3.3.2.2.3 Perform CHANNEL CALIBRATION. The Allowable Value shall be $\leq 55.5$ inches.	In accordance with the Surveillance Frequency Control Program
SR 3.3.2.2.4 Perform LOGIC SYSTEM FUNCTIONAL TEST including valve actuation.	In accordance with the Surveillance Frequency Control Program

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
D. Required Action and associated Completion Time of Condition C not met.	D.1 Enter the Condition referenced in Table 3.3.3.1-1 for the channel.	Immediately
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 5.6.7.	Immediately

SURVEILLANCE REQUIREMENTS

NOTES

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

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

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE	FREQUENCY
SR 3.3.3.1.2 Not Used.	
SR 3.3.3.1.3 Perform CHANNEL CALIBRATION for all Functions except PCIV Position.	In accordance with the Surveillance Frequency Control Program

SURVEILLANCE REQUIREMENTS

NOTES

Refer to Table 3.3.3.2-1 to determine which SRs apply for each Remote Shutdown System Function.

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

## 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 EOC-RPT trip capability.

SURVEILLANCE		FREQUENCY
SR 3.3.4.1.1	<p>A test of all required contacts does not have to be performed.</p> <p>Perform CHANNEL FUNCTIONAL TEST.</p>	In accordance with the Surveillance Frequency Control Program
SR 3.3.4.1.2	<p>Perform CHANNEL CALIBRATION. The Allowable Values shall be:</p> <p>TSV—Closure: <math>\leq 7\%</math> closed;</p> <p>and</p> <p>TCV Fast Closure, Trip Oil Pressure—Low: <math>\geq 460</math> psig.</p>	In accordance with the Surveillance Frequency Control Program
SR 3.3.4.1.3	Perform LOGIC SYSTEM FUNCTIONAL TEST including breaker actuation.	In accordance with the Surveillance Frequency Control Program
SR 3.3.4.1.4	Verify TSV—Closure and TCV Fast Closure, Trip Oil Pressure—Low Functions are not bypassed when THERMAL POWER is $\geq 26\%$ RTP.	In accordance with the Surveillance Frequency Control Program

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE	FREQUENCY
<p>SR 3.3.4.1.5 -----NOTE----- Breaker arc suppression time may be assumed from the most recent performance of SR 3.3.4.1.6.</p> <hr/> <p>Verify the EOC-RPT SYSTEM RESPONSE TIME is within limits.</p>	<p>In accordance with the Surveillance Frequency Control Program</p>
<p>SR 3.3.4.1.6 Determine RPT breaker arc suppression time.</p>	<p>In accordance with the Surveillance Frequency Control Program</p>

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
B. One Function with ATWS-RPT trip capability not maintained.	B.1 Restore ATWS-RPT trip capability.	72 hours
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 Remove the associated recirculation pump from service.	6 hours
	<u>OR</u> 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 3.3.4.2.1 Perform CHANNEL CHECK of Reactor Vessel Water Level, Low Low, Level 2.	In accordance with the Surveillance Frequency Control Program

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE	FREQUENCY
<p>SR 3.3.4.2.2 -----  A test of all required contacts does not have to be performed.  -----</p> <p>Perform CHANNEL FUNCTIONAL TEST.</p>	<p>In accordance with the Surveillance Frequency Control Program</p>
<p>SR 3.3.4.2.3 Perform CHANNEL CALIBRATION of the Reactor Steam Dome Pressure—High. The Allowable Values shall be <math>\leq 1150</math> psig.</p>	<p>In accordance with the Surveillance Frequency Control Program</p>
<p>SR 3.3.4.2.4 Perform CHANNEL CALIBRATION of the Reactor Vessel Water Level Low Low, Level 2. The Allowable Values shall be <math>\geq -45</math> inches.</p>	<p>In accordance with the Surveillance Frequency Control Program</p>
<p>SR 3.3.4.2.5 Perform LOGIC SYSTEM FUNCTIONAL TEST including breaker actuation.</p>	<p>In accordance with the Surveillance Frequency Control Program</p>



## 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.e; and (b) for up to 6 hours for Functions other than 3.c and 3.e 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 ----- A test of all required contacts does not have to be performed. -----  Perform CHANNEL FUNCTIONAL TEST.	In accordance with the Surveillance Frequency Control Program
SR 3.3.5.1.3 Perform CHANNEL CALIBRATION.	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 LOGIC SYSTEM FUNCTIONAL TEST.	In accordance with the Surveillance Frequency Control Program

## 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 Functions 2 and 4 and (b) for up to 6 hours for Functions other than Functions 2 and 4 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	<p>A test of all required contacts does not have to be performed.</p> <p>Perform CHANNEL FUNCTIONAL TEST.</p>	In accordance with the Surveillance Frequency Control Program
SR 3.3.5.2.3	Perform CHANNEL CALIBRATION.	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

## 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 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	<ol style="list-style-type: none"> <li>1. A test of all required contacts does not have to be performed</li> <li>2. For Functions 2.e, 3.a, and 4.a, a test of all required relays does not have to be performed</li> </ol> Perform CHANNEL FUNCTIONAL TEST.	In accordance with the Surveillance Frequency Control Program
SR 3.3.6.1.3	Perform CHANNEL CALIBRATION.	In accordance with the Surveillance Frequency Control Program
SR 3.3.6.1.4	Perform CHANNEL CALIBRATION.	In accordance with the Surveillance Frequency Control Program
SR 3.3.6.1.5	Perform LOGIC SYSTEM FUNCTIONAL TEST.	In accordance with the Surveillance Frequency Control Program

SURVEILLANCE REQUIREMENTS (continued)		
SURVEILLANCE		FREQUENCY
SR 3.3.6.1.6	<p>-----NOTE-----</p> <ol style="list-style-type: none"> <li>For Function 1.b. channel sensors are excluded.</li> <li>Response time testing of isolating relays is not required for Function 5.a.</li> </ol> <p>-----</p> <p>Verify the ISOLATION SYSTEM RESPONSE TIME is within limits.</p>	<p>In accordance with the Surveillance Frequency Control Program</p>

## 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	<p>A test of all required contacts does not have to be performed.</p> <p>Perform CHANNEL FUNCTIONAL TEST.</p>	In accordance with the Surveillance Frequency Control Program
SR 3.3.6.2.3	Perform CHANNEL CALIBRATION.	In accordance with the Surveillance Frequency Control Program
SR 3.3.6.2.4	Perform CHANNEL CALIBRATION.	In accordance with the Surveillance Frequency Control Program
SR 3.3.6.2.5	Perform LOGIC SYSTEM FUNCTIONAL TEST.	In accordance with the Surveillance Frequency Control Program

ACTIONS

SURVEILLANCE REQUIREMENTS

NOTES

1. Refer to Table 3.3.7.1-1 to determine which SRs apply for each CREOAS 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 CREOAS 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 <div>             1. A test of all required contacts does not have to be performed.                           2. For Function 8, a test of all required relays does not have to be performed.           </div> Perform CHANNEL FUNCTIONAL TEST.	In accordance with the Surveillance Frequency Control Program
SR 3.3.7.1.3 Perform CHANNEL CALIBRATION.	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 LOGIC SYSTEM FUNCTIONAL TEST.	In accordance with the Surveillance Frequency Control Program

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
D. As required by Required Action A.1 and referenced in Table 3.3.8.1-1.	D.1 Restore the inoperable Channel.	1 hour
E. Required Action and associated Completion Time of Condition B, C, or D not met.	E.1 Declare associated diesel generator (DG) inoperable.	Immediately

SURVEILLANCE REQUIREMENTS

NOTES

1. Refer to Table 3.3.8.1-1 to determine which SRs apply for each LOP 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 DG initiation capability.

SURVEILLANCE	FREQUENCY
SR 3.3.8.1.1 Perform CHANNEL CHECK.	In accordance with the Surveillance Frequency Control Program
SR 3.3.8.1.2 Perform CHANNEL FUNCTIONAL TEST.	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
D. Required Action and associated Completion Time of Condition A or B not met in MODE 4 or 5.	D.1 Initiate action to fully insert all insertable control rods in core cells containing one or more fuel assemblies.	Immediately
	<u>AND</u>	
	D.2.1 Initiate action to restore one electric power monitoring assembly to OPERABLE status for inservice power supply(s) supplying required instrumentation.	Immediately
	<u>OR</u>	
	D.2.2 Initiate action to isolate the Residual Heat Removal Shutdown Cooling System.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.3.8.2.1 -----NOTE----- Only required to be performed prior to entering MODE 2 or 3 from MODE 4, when in MODE 4 for $\geq 24$ hours. ----- Perform CHANNEL FUNCTIONAL TEST.	In accordance with the Surveillance Frequency Control Program

(continued)



SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE	FREQUENCY
<p>SR 3.3.8.2.2 Perform CHANNEL CALIBRATION. The Allowable Values shall be:</p> <ul style="list-style-type: none"> <li>a. Overvoltage <math>\leq 129.1</math> V for Division A and <math>\leq 130.3</math> V for Division B.</li> <li>b. Undervoltage <math>\geq 112.0</math> V for Division A and <math>\geq 112.5</math> V for Division B.</li> <li>c. Underfrequency <math>\geq 57</math> Hz.</li> </ul>	<p>In accordance with the Surveillance Frequency Control Program</p>
<p>SR 3.3.8.2.3 Perform a system functional test.</p>	<p>In accordance with the Surveillance Frequency Control Program</p>

**SURVEILLANCE REQUIREMENTS**

SURVEILLANCE		FREQUENCY
SR	<p>3.4.1.1 -----NOTE-----</p> <p>Not required to be performed until 24 hours after both recirculation loops are in operation.</p> <hr/> <p>Verify recirculation loop jet pump flow mismatch with both recirculation loops in operation is:</p> <p>a. <math>\leq 10</math> million lbm/hr when operating at <math>&lt; 75</math> million lbm/hr total core flow; and</p> <p>b. <math>\leq 5</math> million lbm/hr when operating at <math>\geq 75</math> million lbm/hr total core flow.</p>	In accordance with the Surveillance Frequency Control Program
SR	<p>3.4.1.2 -----NOTE-----</p> <p>Only required to be met during single loop operations.</p> <hr/> <p>Verify recirculation pump speed is within the limit specified in the LCO.</p>	In accordance with the Surveillance Frequency Control Program

## SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR	<p>3.4.2.1 -----NOTES-----</p> <ol style="list-style-type: none"> <li>1. Not required to be completed until 4 hours after associated recirculation loop is in operation.</li> <li>2. Not required to be completed until 24 hours after &gt; 23% RTP.</li> </ol> <p>Verify at least two of the following criteria (a, b, or c) are satisfied for each operating recirculation loop:</p> <ol style="list-style-type: none"> <li>a. Recirculation loop drive flow versus Recirculation Pump speed differs by <math>\leq 10\%</math> from established patterns.</li> <li>b. Recirculation loop drive flow versus total core flow differs by <math>\leq 10\%</math> from established patterns.</li> <li>c. Each jet pump diffuser to lower plenum differential pressure differs by <math>\leq 20\%</math> from established patterns, or each jet pump flow differs by <math>\leq 10\%</math> from established patterns.</li> </ol>	In accordance with the Surveillance Frequency Control Program

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
B. (continued)	B.2 Verify source of unidentified LEAKAGE increase is not service sensitive type 304 or type 316 austenitic stainless steel.	4 hours
C. Required Action and associated Completion Time of Condition A or B not met.  <u>OR</u>  Pressure boundary LEAKAGE exists.	C.1 Be in MODE 3.  <u>AND</u>  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

**SURVEILLANCE REQUIREMENTS**

SURVEILLANCE		FREQUENCY
SR 3.4.6.1	Perform a CHANNEL CHECK of required primary containment atmospheric monitoring system.	In accordance with the Surveillance Frequency Control Program
SR 3.4.6.2	Perform a CHANNEL FUNCTIONAL TEST of required leakage detection instrumentation.	In accordance with the Surveillance Frequency Control Program
SR 3.4.6.3	Perform a CHANNEL CALIBRATION of required leakage detection instrumentation.	In accordance with the Surveillance Frequency Control Program

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
B. (continued)	B.2.2.1 Be in MODE 3.	12 hours
	<u>AND</u> B.2.2.2 Be in MODE 4.	36 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.4.7.1 -----NOTE----- Only required to be performed in MODE 1. ----- Verify reactor coolant DOSE EQUIVALENT I-131 specific activity is $\leq 0.2 \mu\text{Ci/gm.}$	In accordance with the Surveillance Frequency Control Program

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
<p>SR 3.4.8.1</p> <p>-----NOTE----- Not required to be met until 2 hours after reactor steam dome pressure is less than the RHR cut in permissive pressure. -----</p> <p>Verify one RHR shutdown cooling subsystem or recirculation pump is operating.</p>	<p>In accordance with the Surveillance Frequency Control Program</p>

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
<p>B. No RHR shutdown cooling subsystem in operation.</p> <p><u>AND</u></p> <p>No recirculation pump in operation.</p>	<p>B.1 Verify reactor coolant circulating by an alternate method.</p> <p><u>AND</u></p> <p>B.2 Monitor reactor coolant temperature.</p>	<p>1 hour from discovery of no reactor coolant circulation</p> <p><u>AND</u></p> <p>Once per 12 hours thereafter</p> <p>Once per hour</p>

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
<p>SR 3.4.9.1 Verify one RHR shutdown cooling subsystem or recirculation pump is operating.</p>	<p>In accordance with the Surveillance Frequency Control Program</p>



SURVEILLANCE REQUIREMENTS		
SURVEILLANCE		FREQUENCY
SR 3.4.10.1	<p>-----NOTE----- Only required to be performed during RCS heatup and cooldown operations and RCS inservice leak and hydrostatic testing.</p> <p>Verify:</p> <p>a. RCS pressure and RCS temperature are to the right of the most limiting curve specified in Figures 3.4.10-1 through 3.4.10-3; and</p> <p>b. -----NOTE----- Only applicable when governed by Figure 3.4.10-2, Curve B, and Figure 3.4.10-3, Curve C.</p> <p>RCS heatup and cooldown rates are <math>\leq 100^{\circ}\text{F}</math> in any one hour period; and</p> <p>c. -----NOTE----- Only applicable when governed by Figure 3.4.10-1, Curve A.</p> <p>RCS heatup and cooldown rates are <math>\leq 20^{\circ}\text{F}</math> in any one hour period.</p>	In accordance with the Surveillance Frequency Control Program
SR 3.4.10.2	Verify RCS pressure and RCS temperature are to the right of the criticality limit (Curve C) specified in Figure 3.4.10-3.	Once within 15 minutes prior to control rod withdrawal for the purpose of achieving criticality

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE	FREQUENCY
<p>SR 3.4.10.6</p> <p>-----NOTE----- Only required to be met in single loop operation when the idle recirculation loop is not isolated from the RPV, and:</p> <p>a. THERMAL POWER <math>\leq</math> 27% RTP; or</p> <p>b. The operating recirculation loop flow <math>\leq</math> 21,320 gpm.</p> <p>-----</p> <p>Verify the difference between the reactor coolant temperature in the recirculation loop not in operation and the RPV coolant temperature is <math>\leq</math> 50°F.</p>	<p>Once within 15 minutes prior to an increase in THERMAL POWER or an increase in loop flow.</p>
<p>SR 3.4.10.7</p> <p>-----NOTE----- Only required to be performed when tensioning the reactor vessel head bolting studs.</p> <p>-----</p> <p>Verify reactor vessel flange and head flange temperatures are <math>\geq</math> 70°F.</p>	<p>In accordance with the Surveillance Frequency Control Program</p>
<p>SR 3.4.10.8</p> <p>-----NOTE----- Not required to be performed until 30 minutes after RCS temperature <math>\leq</math> 80°F in MODE 4.</p> <p>-----</p> <p>Verify reactor vessel flange and head flange temperatures are <math>\geq</math> 70°F.</p>	<p>In accordance with the Surveillance Frequency Control Program</p>

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE	FREQUENCY
<p>SR 3.4.10.9</p> <p>-----NOTE----- Not required to be performed until 12 hours after RCS temperature <math>\leq 100^{\circ}\text{F}</math> in MODE 4.</p> <p>----- Verify reactor vessel flange and head flange temperatures are <math>\geq 70^{\circ}\text{F}</math>.</p>	<p>In accordance with the Surveillance Frequency Control Program</p>

### 3.4 REACTOR COOLANT SYSTEM (RCS)

#### 3.4.11 Reactor Steam Dome Pressure

LCO 3.4.11 The reactor steam dome pressure shall be  $\leq 1050$  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 3.4.11.1 Verify reactor steam dome pressure is $\leq 1050$ 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, the piping is filled with water from the pump discharge valve to the injection valve.	In accordance with the Surveillance Frequency Control Program
SR 3.5.1.2	<p>-----NOTE-----</p> <p>Low pressure coolant injection (LPCI) subsystems may be considered OPERABLE during alignment and operation for decay heat removal with reactor steam dome pressure less than the Residual Heat Removal (RHR) cut in permissive pressure in MODE 3, if capable of being manually realigned and not otherwise inoperable.</p> <p>Verify each ECCS injection/spray subsystem manual, power operated, and automatic valve in the flow path, that is not locked, sealed, or otherwise secured in position, and the HPCI flow controller are in the correct position.</p>	In accordance with the Surveillance Frequency Control Program
SR 3.5.1.3	Verify ADS gas supply header pressure is $\geq 135$ psig.	In accordance with the Surveillance Frequency Control Program
SR 3.5.1.4	Verify at least one RHR System cross tie valve is closed and power is removed from the valve operator.	In accordance with the Surveillance Frequency Control Program
SR 3.5.1.5	Verify each 480 volt AC swing bus transfers automatically from the normal source to the alternate source on loss of power.	In accordance with the Surveillance Frequency Control Program

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.5.1.9	<p>-----NOTE----- Not required to be performed until 12 hours after reactor steam pressure and flow are adequate to perform the test. -----</p> <p>Verify, with reactor pressure <math>\leq 165</math> psig, the HPCI pump can develop a flow rate <math>\geq 5000</math> gpm against a system head corresponding to reactor pressure.</p>	In accordance with the Surveillance Frequency Control Program
SR 3.5.1.10	<p>-----NOTE----- Vessel injection/spray may be excluded. -----</p> <p>Verify each ECCS injection/spray subsystem actuates on an actual or simulated automatic initiation signal.</p>	In accordance with the Surveillance Frequency Control Program
SR 3.5.1.11	<p>-----NOTE----- Valve actuation may be excluded. -----</p> <p>Verify the ADS actuates on an actual or simulated automatic initiation signal.</p>	In accordance with the Surveillance Frequency Control Program
SR 3.5.1.12	Verify each ADS valve actuator strokes when manually actuated.	In accordance with the Surveillance Frequency Control Program

(continued)

### SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.5.1.13	<p>-----NOTE-----</p> <p>Instrumentation response time is based on historical response time data.</p> <p>-----</p> <p>Verify the ECCS RESPONSE TIME for each ECCS injection/spray subsystem is within limit.</p>	In accordance with the Surveillance Frequency Control Program

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
D. Required Action C.2 and associated Completion Time not met.	D.1 Initiate action to restore secondary containment to OPERABLE status.	Immediately
	<u>AND</u>	
	D.2 Initiate action to restore one standby gas treatment subsystem to OPERABLE status.	Immediately
	<u>AND</u>	
	D.3 Initiate action to restore isolation capability in each required secondary containment penetration flow path not isolated.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.5.2.1 Verify, for each required low pressure coolant injection (LPCI) subsystem, the suppression pool water level is $\geq 20$ ft 0 inches.	In accordance with the Surveillance Frequency Control Program

(continued)



SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE	FREQUENCY
<p>SR 3.5.2.2    Verify, for each required core spray (CS) subsystem, the:</p> <p style="margin-left: 40px;">a.    Suppression pool water level is <math>\geq 20</math> ft 0 inches; or</p> <p style="margin-left: 40px;">b.    -----NOTE----- Only one required CS subsystem may take credit for this option during OPDRVs.</p> <p style="margin-left: 40px;">----- Condensate storage tank water level is <math>\geq 49\%</math> of capacity.</p>	<p>In accordance with the Surveillance Frequency Control Program</p>
<p>SR 3.5.2.3    Verify, for each required ECCS injection/spray subsystem, the piping is filled with water from the pump discharge valve to the injection valve.</p>	<p>In accordance with the Surveillance Frequency Control Program</p>
<p>SR 3.5.2.4    -----NOTE----- LPCI subsystems may be considered OPERABLE during alignment and operation for decay heat removal if capable of being manually realigned and not otherwise inoperable.</p> <p style="margin-left: 40px;">----- Verify each required ECCS injection/spray subsystem manual, power operated, and automatic valve in the flow path, that is not locked, sealed, or otherwise secured in position, is in the correct position.</p>	<p>In accordance with the Surveillance Frequency Control Program</p>

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE				FREQUENCY
SR 3.5.2.5 Verify each required ECCS pump develops the specified flow rate against a system head corresponding to the specified reactor pressure.				In accordance with the Inservice Testing Program
			SYSTEM HEAD CORRESPONDING TO A REACTOR PRESSURE OF	
<u>SYSTEM</u>	<u>FLOW RATE</u>	<u>NO. OF PUMPS</u>		
CS	≥ 6350 gpm	2	≥ 105 psig	
LPCI	≥ 12,200 gpm	1	≥ 20 psig	
SR 3.5.2.6 -----NOTE----- Vessel injection/spray may be excluded. ----- Verify each required ECCS injection/spray subsystem actuates on an actual or simulated automatic initiation signal.				In accordance with the Surveillance Frequency Control Program
SR 3.5.2.7 -----NOTE----- Instrumentation response time may be assumed to be the historical instrumentation response time. ----- Verify the ECCS RESPONSE TIME for each ECCS injection/spray subsystem is within limit.				In accordance with the Surveillance Frequency Control Program

**SURVEILLANCE REQUIREMENTS**

SURVEILLANCE	FREQUENCY
SR 3.5.3.1    Verify the RCIC System piping is filled with water from the pump discharge valve to the injection valve.	In accordance with the Surveillance Frequency Control Program
SR 3.5.3.2    Verify each RCIC System manual, power operated, and automatic valve in the flow path, that is not locked, sealed, or otherwise secured in position, and the RCIC flow controller are in the correct position.	In accordance with the Surveillance Frequency Control Program
SR 3.5.3.3    -----NOTE----- Not required to be performed until 12 hours after reactor steam pressure and flow are adequate to perform the test. ----- Verify, with reactor pressure $\leq 1060$ psig and $\geq 920$ psig, the RCIC pump can develop a flow rate $\geq 600$ gpm against a system head corresponding to reactor pressure.	In accordance with the Inservice Testing Program
SR 3.5.3.4    -----NOTE----- Not required to be performed until 12 hours after reactor steam pressure and flow are adequate to perform the test. ----- Verify, with reactor pressure $\leq 165$ psig, the RCIC pump can develop a flow rate $\geq 600$ gpm against a system head corresponding to reactor pressure.	In accordance with the Surveillance Frequency Control Program

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE	FREQUENCY
<p>SR 3.5.3.5 -----NOTE----- Vessel injection may be excluded. -----</p> <p>Verify the RCIC System actuates on an actual or simulated automatic initiation signal.</p>	<p>In accordance with the Surveillance Frequency Control Program</p>

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE	FREQUENCY
<p>SR 3.6.1.1.3 -----Note----- Satisfied by the performance of SR 3.6.1.1.2. -----</p> <p>Verify that the total drywell-to-suppression chamber vacuum breaker leakage is less than or equal to .001605 ft<sup>2</sup> and the leakage area for each set of vacuum breakers is less than or equal to .000642 ft<sup>2</sup> at an initial differential pressure of <math>\geq 4.3</math> psi.</p>	<p>In accordance with the Surveillance Frequency Control Program</p>

ACTIONS (continued)

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

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
<p>SR 3.6.1.2.1 -----NOTE-----</p> <ol style="list-style-type: none"> <li>1. An inoperable air lock door does not invalidate the previous successful performance of the overall air lock leakage test.</li> <li>2. Results shall be evaluated against acceptance criteria acceptable to SR 3.6.1.1.1.</li> </ol> <p>Perform required primary containment air lock leakage rate testing in accordance with the Primary Containment Leakage Rate Testing Program.</p>	In accordance with the Primary Containment Leakage Rate Testing Program
<p>SR 3.6.1.2.2 Verify only one door in the primary containment air lock can be opened at a time.</p>	In accordance with the Surveillance Frequency Control Program

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.6.1.3.1	<p>-----NOTES-----</p> <ol style="list-style-type: none"> <li>Only required to be met in MODES 1, 2, and 3.</li> <li>Not required to be met when the 18 and 24 inch primary containment purge 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.</li> </ol> <p>-----</p> <p>Verify each 18 and 24 inch primary containment purge valve is closed.</p>	In accordance with the Surveillance Frequency Control Program
SR 3.6.1.3.2	<p>-----NOTES-----</p> <ol style="list-style-type: none"> <li>Valves and blind flanges in high radiation areas may be verified by use of administrative means.</li> <li>Not required to be met for PCIVs that are open under administrative controls.</li> </ol> <p>-----</p> <p>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.</p>	In accordance with the Surveillance Frequency Control Program

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.6.1.3.3	<p>-----NOTES-----</p> <ol style="list-style-type: none"> <li>Valves and blind flanges in high radiation areas may be verified by use of administrative means.</li> <li>Not required to be met for PCIVs that are open under administrative controls.</li> </ol> <p>-----</p> <p>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.</p>	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 for each 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 and each automatic PCIV, except for MSIVs, is within limits.	In accordance with the Inservice Testing Program

(continued)



SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.6.1.3.6	<p>-----NOTE----- Only required to be met in MODES 1, 2 and 3. -----</p> <p>Perform leakage rate testing for each primary containment purge valve with resilient seals.</p>	In accordance with the Surveillance Frequency Control Program
SR 3.6.1.3.7	Verify the isolation time of each MSIV is $\geq 3$ seconds and $\leq 5$ seconds.	In accordance with the Inservice Testing Program
SR 3.6.1.3.8	Verify each automatic PCIV actuates to the isolation position on an actual or simulated isolation signal.	In accordance with the Surveillance Frequency Control Program
SR 3.6.1.3.9	Verify a representative sample of reactor instrumentation line EFCVs actuate to check flow on a simulated instrument line break.	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

(continued)

### 3.6 CONTAINMENT SYSTEMS

#### 3.6.1.4 Containment Pressure

LCO 3.6.1.4 Containment pressure shall be -1.0 to 2.0 psig.

APPLICABILITY: MODES 1, 2, and 3.

#### ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Containment pressure not within limit	A.1 Restore containment pressure to within limit.	1 hour
B. Required Action and associated Completion Time not met.	B.1 Be in MODE 3.	12 hours
	<u>AND</u> B.2 Be in MODE 4.	36 hours

#### SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.6.1.4.1 Verify containment pressure is within limit.	In accordance with the Surveillance Frequency Control Program

### 3.6 CONTAINMENT SYSTEMS

#### 3.6.1.5 Drywell Air Temperature

LCO 3.6.1.5 Drywell average air temperature shall be  $\leq 135^{\circ}\text{F}$ .

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.	12 hours
	<u>AND</u> B.2 Be in MODE 4.	36 hours

#### SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.6.1.5.1 Verify drywell average air temperature is within limit.	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.	12 hours
	<u>AND</u>	
	D.2 Be in MODE 4.	36 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.6.1.6.1	<p>-----NOTE-----</p> <p>Not required to be met for vacuum breakers that are open during Surveillances.</p> <p>-----</p> <p>Verify each vacuum breaker is closed.</p>	<p>In accordance with the Surveillance Frequency Control Program</p> <p><u>AND</u></p> <p>Within 2 hours after discharge of steam to the suppression chamber from safety/relief valve (S/RV) operation.</p>

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.6.1.6.2	Perform a functional test of each required vacuum breaker.	<p>In accordance with the Surveillance Frequency Control Program</p> <p><u>AND</u></p> <p>Within 12 hours after discharge of steam to the suppression chamber from S/RV operation</p> <p><u>AND</u></p> <p>Within 12 hours following an operation that causes any of the vacuum breakers to open</p>
SR 3.6.1.6.3	Verify the opening setpoint of each required vacuum breaker is $\geq 0.25$ and $\leq .75$ psid.	In accordance with the Surveillance Frequency Control Program

Suppression Pool Average Temperature  
3.6.2.1

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
E. Suppression pool average temperature > 120°F.	E.1 Depressurize the reactor vessel to < 200 psig.	12 hours

SURVEILLANCE REQUIREMENTS

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

### 3.6 CONTAINMENT SYSTEMS

#### 3.6.2.2 Suppression Pool Water Level

LCO 3.6.2.2 Suppression pool water level shall be  $\geq 22$  ft 0 inches and  $\leq 24$  ft 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.	12 hours
	<u>AND</u> B.2 Be in MODE 4.	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

**SURVEILLANCE REQUIREMENTS**

SURVEILLANCE	FREQUENCY
SR 3.6.2.3.1 Verify each RHR suppression pool cooling subsystem manual, power operated, and automatic valve in the flow path that is not locked, sealed, or otherwise secured in position is in the correct position or can be aligned to the correct position.	In accordance with the Surveillance Frequency Control Program
SR 3.6.2.3.2 Verify each RHR pump develops a flow rate > 9750 gpm through the associated heat exchanger while operating in the suppression pool cooling mode.	In accordance with the Inservice Testing Program



SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.6.2.4.1 Verify each RHR suppression pool spray subsystem manual, power operated, and automatic valve in the flow path that is not locked, sealed, or otherwise secured in position is in the correct position or can be aligned to the correct position.	In accordance with the Surveillance Frequency Control Program
SR 3.6.2.4.2 Verify each suppression pool spray is unobstructed.	In accordance with the Surveillance Frequency Control Program

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.6.3.2.1 Operate each required drywell cooling fan at low speed for $\geq 15$ minutes.	In accordance with the Surveillance Frequency Control Program

### 3.6 CONTAINMENT SYSTEMS

#### 3.6.3.3 Primary Containment Oxygen Concentration

LCO 3.6.3.3 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  $\leq$  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 $\leq$ 15% RTP.	8 hours

#### SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.6.3.3.1 Verify primary containment oxygen concentration is within limits.	In accordance with the Surveillance Frequency Control Program

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
C. Secondary containment inoperable during movement of irradiated fuel assemblies in the secondary containment, during CORE ALTERATIONS, or during OPDRVs.	C.1 -----NOTE----- LCO 3.0.3 is not applicable. -----  Suspend movement of irradiated fuel assemblies in the secondary containment.  <u>AND</u>	Immediately
	C.2 Suspend CORE ALTERATIONS.  <u>AND</u>	Immediately
	C.3 Initiate action to suspend OPDRVs.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.6.4.1.1 Verify secondary containment vacuum is $\geq 0.25$ inch of vacuum water gauge.	In accordance with the Surveillance Frequency Control Program
SR 3.6.4.1.2 Verify all required secondary containment removable walls and equipment hatches required to be closed are closed and sealed.	In accordance with the Surveillance Frequency Control Program

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE	FREQUENCY
<p>-----NOTE----- Single door access openings between required zones within the secondary containment boundary may be opened for entry and exit. -----</p> <p>SR 3.6.4.1.3 Verify one secondary containment access door in each access opening is closed.</p>	<p>In accordance with the Surveillance Frequency Control Program</p>
<p>SR 3.6.4.1.4 -----NOTE----- The maximum time allowed for secondary containment draw down is dependent on the secondary containment configuration. -----</p> <p>Verify each standby gas treatment (SGT) subsystem will draw down the secondary containment to <math>\geq 0.25</math> inch of vacuum water gauge in less than or equal to the maximum time allowed for the secondary containment configuration that is OPERABLE.</p>	<p>-----NOTE----- Test each configuration at least one time every 60 months. -----</p> <p>In accordance with the Surveillance Frequency Control Program</p>
<p>SR 3.6.4.1.5 -----NOTE----- The maximum flow allowed for maintaining secondary containment vacuum is dependent on the secondary containment configuration. -----</p> <p>Verify each SGT subsystem can maintain <math>\geq 0.25</math> inch of vacuum water gauge in the secondary containment for at least 1 hour at a flow rate less than or equal to the maximum flow rate permitted for the secondary containment configuration that is OPERABLE.</p>	<p>-----NOTE----- Test each configuration at least one time every 60 months. -----</p> <p>In accordance with the Surveillance Frequency Control Program</p>

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
<p>SR 3.6.4.2.1 -----NOTES-----</p> <ol style="list-style-type: none"> <li>1. Valves and blind flanges in high radiation areas may be verified by use of administrative means.</li> <li>2. Not required to be met for SCIVs that are open under administrative controls.</li> </ol> <p>-----</p> <p>Verify each required secondary containment isolation manual valve and blind flange that is required to be closed during accident conditions is closed.</p>	<p>In accordance with the Surveillance Frequency Control Program</p>
<p>SR 3.6.4.2.2 Verify the isolation time of each required automatic SCIV is within limits.</p>	<p>In accordance with the Surveillance Frequency Control Program</p>
<p>SR 3.6.4.2.3 Verify each required automatic SCIV actuates to the isolation position on an actual or simulated actuation signal.</p>	<p>In accordance with the Surveillance Frequency Control Program</p>

## ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
F. Two SGT subsystems inoperable during movement of irradiated fuel assemblies in the secondary containment, during CORE ALTERATIONS, or during OPDRVs.	F.1 -----NOTE----- LCO 3.0.3 is not applicable. -----	
	Suspend movement of irradiated fuel assemblies in secondary containment.	Immediately
	<u>AND</u>	
	F.2 Suspend CORE ALTERATIONS.	Immediately
	<u>AND</u>	
	F.3 Initiate action to suspend OPDRVs.	Immediately

## SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.6.4.3.1 Operate each SGT filter train for $\geq 10$ continuous hours with heaters operating.	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
SR 3.6.4.3.4 Verify each SGT filter cooling bypass and outside air damper opens and the fan starts on high charcoal temperature.	In accordance with the Surveillance Frequency Control Program

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
<p>SR 3.7.1.1    Verify the water level is greater than or equal to 678 feet 1 inch above Mean Sea Level.</p>	<p>In accordance with the Surveillance Frequency Control Program</p>
<p>SR 3.7.1.2    Verify the average water temperature of the UHS is:</p> <p>a. -----NOTE----- Only applicable with both units in MODE 1 or 2, or with either unit in MODE 3 for less than twelve (12) hours. -----</p> <p style="text-align: center;"><math>\leq 85^{\circ}\text{F}</math>; or</p> <p>b. -----NOTE----- Only applicable when either unit has been in MODE 3 for at least twelve (12) hours but not more than twenty-four (24) hours. -----</p> <p style="text-align: center;"><math>\leq 87^{\circ}\text{F}</math>; or</p> <p>c. -----NOTE----- Only applicable when either unit has been in MODE 3 for at least twenty-four (24) hours. -----</p> <p style="text-align: center;"><math>\leq 88^{\circ}\text{F}</math>.</p>	<p>In accordance with the Surveillance Frequency Control Program</p>
<p>SR 3.7.1.3    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.</p>	<p>In accordance with the Surveillance Frequency Control Program</p>
<p>SR 3.7.1.4    Verify that valves HV-01222A and B (the spray array bypass valves) close upon receipt of a closing signal and open upon receipt of an opening signal.</p>	<p>In accordance with the Surveillance Frequency Control Program</p>

(continued)



SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE	FREQUENCY
SR 3.7.1.5    Verify that valves HV-01224A1 and B1 (the large spray array valves) close upon receipt of a closing signal and open upon receipt of an opening signal.	In accordance with the Surveillance Frequency Control Program
SR 3.7.1.6    Verify that valves HV-01224A2 and B2 (the small spray array valves) close upon receipt of a closing signal and open upon receipt of an opening signal.	In accordance with the Surveillance Frequency Control Program
SR 3.7.1.7    Verify that valves 012287A and 012287B (the spray array bypass manual valves) are capable of being opened and closed.	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, B or C not met.  <u>OR</u>  Both ESW subsystems inoperable for reasons other than Condition A and B.	D.1 Be in MODE 3.	12 hours
	<u>AND</u>  D.2 Be in MODE 4.	36 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.7.2.1 -----NOTE----- Isolation of flow to individual components does not render ESW System inoperable. -----  Verify each ESW subsystem manual, power operated, 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 3.7.2.2 Verify each ESW subsystem actuates on an actual or simulated initiation signal.	In accordance with the Surveillance Frequency Control Program

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
<p>F. Two CREOAS subsystems inoperable during movement of irradiated fuel assemblies in the secondary containment, during CORE ALTERATIONS, or during OPDRVs.</p> <p><u>OR</u></p> <p>One or more CREOAS subsystems inoperable due to an inoperable CRE boundary during movement of irradiated fuel assemblies in the secondary containment, during CORE ALTERATIONS, or during OPDRVs.</p>	<p>-----NOTE----- LCO 3.0.3 is not applicable. -----</p>	
	<p>F.1 Suspend movement of irradiated fuel assemblies in the secondary containment.</p>	Immediately
	<p><u>AND</u></p> <p>F.2 Suspend CORE ALTERATIONS.</p>	Immediately
	<p><u>AND</u></p> <p>F.3 Initiate action to suspend OPDRVs.</p>	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.7.3.1 Operate each CREOAS filter train for $\geq 10$ continuous hours with the heaters operable.	In accordance with the Surveillance Frequency Control Program
SR 3.7.3.2 Perform required CREOAS filter testing in accordance with the Ventilation Filter Testing Program (VFTP).	In accordance with the VFTP
SR 3.7.3.3 Verify each CREOAS subsystem actuates on an actual or simulated initiation signal.	In accordance with the Surveillance Frequency Control Program

(continued)

## ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
E. Two control room floor cooling subsystems inoperable during movement of irradiated fuel assemblies in the secondary containment, during CORE ALTERATIONS, or during OPDRVs.	-----NOTE----- LCO 3.0.3 is not applicable. -----	
	E.1 Suspend movement of irradiated fuel assemblies in the secondary containment.	Immediately
	<u>AND</u>	
	E.2 Suspend CORE ALTERATIONS.	Immediately
	<u>AND</u>	
	E.3 Initiate actions to suspend OPDRVs.	Immediately

## SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.7.4.1 Verify each control room floor cooling subsystem has the capability to remove the assumed heat load.	In accordance with the Surveillance Frequency Control Program

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
<p>SR 3.7.5.1 -----NOTE-----            Not required to be performed until 31 days after            any main steam line is not isolated.</p> <hr/> <p>Verify the radioactivity rate of the specified noble            gases is <math>\leq 330</math> mCi/second.</p>	<p>In accordance with the            Surveillance Frequency Control            Program</p> <p><u>AND</u></p> <p>Once within 4 hours after a  <math>\geq 50\%</math> increase in the            nominal steady state fission            gas release after factoring            out increases due to            changes in THERMAL            POWER level</p>

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.7.6.1	Verify one complete cycle of each required main turbine bypass valve.	In accordance with the Surveillance Frequency Control Program
SR 3.7.6.2	Perform a system functional test.	In accordance with the Surveillance Frequency Control Program
SR 3.7.6.3	Verify the TURBINE BYPASS SYSTEM RESPONSE TIME is within limits.	In accordance with the Surveillance Frequency Control Program

3.7 PLANT SYSTEMS

3.7.7 Spent Fuel Storage Pool Water Level

LCO 3.7.7 The spent fuel storage pool water level shall be  $\geq 22$  ft over the top of irradiated fuel assemblies seated in the spent fuel storage pool racks.

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.	<p>A.1 -----NOTE----- LCO 3.0.3 is not applicable.</p> <p>Suspend movement of irradiated fuel assemblies in the spent fuel storage pool.</p>	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.7.7.1 Verify the spent fuel storage pool water level is $\geq 22$ ft over the top of irradiated fuel assemblies seated in the spent fuel storage pool racks.	In accordance with the Surveillance Frequency Control Program

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.7.8.1    Verify that both Main Turbine Pressure Regulators are each capable of controlling main steam pressure.	In accordance with the Surveillance Frequency Control Program
SR 3.7.8.2    Perform a system functional test.	In accordance with the Surveillance Frequency Control Program



SURVEILLANCE REQUIREMENTS

-----NOTES-----

1. Four DGs are required and a DG is only considered OPERABLE when the DG is aligned to the Class 1E distribution system. DG Surveillance Requirements have been modified to integrate the necessary testing to demonstrate the availability of DG E and ensure its OPERABILITY when substituted for any other DG. If the DG Surveillance Requirements, as modified by the associated Notes, are met and performed, DG E can be considered available and OPERABLE when substituted for any other DG after performance of SR 3.8.1.3 and SR 3.8.1.7.
2. SR 3.8.1.21 establishes Surveillance Requirements for the Unit 1 AC sources required to support Unit 2.
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SURVEILLANCE		FREQUENCY
SR 3.8.1.1	Verify correct breaker alignment and indicated power availability for each offsite circuit.	In accordance with the Surveillance Frequency Control Program
SR 3.8.1.2	Not Used.	

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE	FREQUENCY
<p>SR 3.8.1.3 -----NOTES-----</p> <ol style="list-style-type: none"> <li>1. DG loading may include gradual loading as recommended by the manufacturer.</li> <li>2. Momentary transients outside the load range do not invalidate this test.</li> <li>3. This Surveillance shall be conducted on only one DG at a time.</li> <li>4. This SR shall be preceded by and immediately follow, without shutdown, a successful performance of SR 3.8.1.7.</li> <li>5. DG E, when not aligned to the Class 1E distribution system, may satisfy this SR using the test facility.</li> <li>6. A single test will satisfy this Surveillance for both units if synchronization is to the 4.16 kV ESS bus for Unit 2 for one periodic test and synchronization is to the 4.16 kV ESS bus for Unit 1 for the next periodic test. However, if it is not possible to perform the test on Unit 1 or test performance is not required per SR 3.8.2.1, then the test shall be performed synchronized to the 4.16 kV ESS bus for Unit 2.</li> </ol> <p>-----</p> <p>Verify each DG is synchronized and loaded and operates for <math>\geq 60</math> minutes at a load <math>\geq 3600</math> kW and <math>\leq 4000</math> kW.</p>	<p>In accordance with the Surveillance Frequency Control Program</p>

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.8.1.4	Verify each engine mounted day tank fuel oil level is $\geq 420$ gallons for DG A-D and $\geq 425$ gallons for DG E.	In accordance with the Surveillance Frequency Control Program
SR 3.8.1.5	Check for and remove accumulated water from each engine mounted day tank.	In accordance with the Surveillance Frequency Control Program
SR 3.8.1.6	Verify the fuel oil transfer system operates to automatically transfer fuel oil from the storage tanks to each engine mounted tank.	In accordance with the Surveillance Frequency Control Program
SR 3.8.1.7	<p>-----NOTES-----</p> <ol style="list-style-type: none"> <li>1. All DG starts may be preceded by an engine prelube period.</li> <li>2. A single test at the specified Frequency will satisfy this Surveillance for both units.</li> </ol> <p>-----</p> <p>Verify each DG starts from standby condition and achieves, in <math>\leq 10</math> seconds, voltage <math>\geq 3793</math> V and frequency <math>\geq 58.8</math>, and after steady state conditions are reached, maintains voltage <math>\geq 3793</math> V and <math>\leq 4400</math> V and frequency <math>\geq 58.8</math> Hz and <math>\leq 61.2</math> Hz.</p>	In accordance with the Surveillance Frequency Control Program
SR 3.8.1.8	<p>-----NOTE-----</p> <p>The automatic transfer of unit power supply shall not be performed in MODE 1 or 2.</p> <p>-----</p> <p>Verify automatic and manual transfer of unit power supply from the normal offsite circuit to the alternate offsite circuit.</p>	In accordance with the Surveillance Frequency Control Program

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE	FREQUENCY
<p>SR 3.8.1.9 -----NOTE----- A single test at the specified Frequency will satisfy this Surveillance for both units.</p> <p>-----</p> <p>Verify each DG rejects a load greater than or equal to its associated single largest post-accident load, and:</p> <ul style="list-style-type: none"> <li>a. Following load rejection, the frequency is <math>\leq 64.5</math> Hz;</li> <li>b. Within 4.5 seconds following load rejection, the voltage is <math>\geq 3760</math> V and <math>\leq 4560</math> V, and after steady state conditions are reached, maintains voltage <math>\geq 3793</math> V and <math>\leq 4400</math> V; and</li> <li>c. Within 6 seconds following load rejection, the frequency is <math>\geq 58.8</math> Hz and <math>\leq 61.2</math> Hz.</li> </ul>	<p>In accordance with the Surveillance Frequency Control Program</p>
<p>SR 3.8.1.10 -----NOTE----- A single test at the specified Frequency will satisfy this Surveillance for both units.</p> <p>-----</p> <p>Verify each DG does not trip and voltage is maintained <math>\leq 4560</math> V during and following a load rejection of <math>\geq 4000</math> kW.</p>	<p>In accordance with the Surveillance Frequency Control Program</p>

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE	FREQUENCY
<p>SR 3.8.1.11 -----NOTES-----</p> <ol style="list-style-type: none"> <li>1. All DG starts may be preceded by an engine prelube period.</li> <li>2. This Surveillance shall not be performed in MODE 1, 2 or 3.</li> <li>3. This SR shall be performed for each DG on a rotational test basis and for each 4.16 kV ESS bus at the specified FREQUENCY.</li> </ol> <p>-----</p> <p>Verify on an actual or simulated loss of offsite power signal:</p> <ol style="list-style-type: none"> <li>a. De-energization of 4.16 kV ESS buses;</li> <li>b. Load shedding from 4.16 kV ESS buses; and</li> <li>c. DG auto-starts from standby condition and:               <ol style="list-style-type: none"> <li>1. energizes permanently connected loads in <math>\leq 10</math> seconds,</li> <li>2. energizes auto-connected shutdown loads through individual load timers,</li> <li>3. maintains steady state voltage <math>\geq 3793</math> V and <math>\leq 4400</math> V,</li> <li>4. maintains steady state frequency <math>\geq 58.8</math> Hz and <math>\leq 61.2</math> Hz, and</li> <li>5. supplies permanently connected loads for <math>\geq 5</math> minutes.</li> </ol> </li> </ol>	<p>In accordance with the Surveillance Frequency Control Program</p>

(continued)

## SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE	FREQUENCY
<p>SR 3.8.1.12 -----NOTES-----</p> <ol style="list-style-type: none"> <li>1. All DG starts may be preceded by an engine prelube period.</li> <li>2. DG E, when not aligned to the Class 1E distribution system, may satisfy this SR for both units by performance of SR 3.8.1.12.a, b and c using the test facility to simulate a 4.16 kV ESS bus. SR 3.8.1.12.d and e may be satisfied with either the normally aligned DG or DG E aligned to the Class 1E distribution system.</li> </ol> <p>-----</p> <p>Verify, on an actual or simulated Emergency Core Cooling System (ECCS) initiation signal, each DG auto-starts from standby condition and:</p> <ol style="list-style-type: none"> <li>a. In <math>\leq 10</math> seconds after auto-start achieves voltage <math>\geq 3793</math> V, and after steady state conditions are reached, maintains voltage <math>\geq 3793</math> V and <math>\leq 4400</math> V;</li> <li>b. In <math>\leq 10</math> seconds after auto-start achieves frequency <math>\geq 58.8</math> Hz, and after steady state conditions are reached, maintains frequency <math>\geq 58.8</math> Hz and <math>\leq 61.2</math> Hz;</li> <li>c. Operates for <math>\geq 5</math> minutes;</li> <li>d. Permanently connected loads remain energized from the offsite power system; and</li> <li>e. Emergency loads are energized or auto-connected through the individual load timers from the offsite power system.</li> </ol>	<p>In accordance with the Surveillance Frequency Control Program</p>

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE	FREQUENCY
<p>SR 3.8.1.13 -----NOTES-----</p> <ol style="list-style-type: none"> <li>1. A single test at the specified Frequency will satisfy this Surveillance for both units.</li> <li>2. DG E when not aligned to the Class 1E distribution system may satisfy this SR by using a simulated ECCS initiation signal.</li> </ol> <p>-----</p> <p>Verify each DG's automatic trips are bypassed on actual or simulated loss of voltage signal on the 4.16 kV ESS bus concurrent with an actual or simulated ECCS initiation signal except:</p> <ol style="list-style-type: none"> <li>a. Engine overspeed; and</li> <li>b. Generator differential current; and</li> <li>c. Low lube oil pressure.</li> </ol>	<p>In accordance with the Surveillance Frequency Control Program</p>

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE	FREQUENCY
<p>SR 3.8.1.14 -----NOTES-----</p> <ol style="list-style-type: none"> <li>1. Momentary transients outside the load ranges do not invalidate this test.</li> <li>2. A single test at the specified Frequency will satisfy this Surveillance for both units.</li> <li>3. DG E when not aligned to the Class 1E distribution system may satisfy this SR using the test facility.</li> </ol> <p>-----</p> <p>Verify each DG operates for <math>\geq 24</math> hours:</p> <ol style="list-style-type: none"> <li>a. For <math>\geq 2</math> hours loaded <math>\geq 4400</math> kW and <math>\leq 4700</math> kW for DGs A through D and <math>\geq 5000</math> kW and <math>\leq 5500</math> kW for DG E; and</li> <li>b. For the remaining hours of the test loaded <math>\geq 3600</math> kW and <math>\leq 4000</math> kW for DGs A through D and <math>\geq 4500</math> kW and <math>\leq 5000</math> kW for DG E.</li> </ol>	<p>In accordance with the Surveillance Frequency Control Program</p>

(continued)



SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE	FREQUENCY
<p>SR 3.8.1.15 -----NOTES-----</p> <ol style="list-style-type: none"> <li>1. This Surveillance shall be performed within 5 minutes of shutting down the DG after the DG has operated <math>\geq 2</math> hours loaded <math>\geq 3800</math> kW.</li> <li>2. All DG starts may be preceded by an engine prelube period.</li> <li>3. A single test at the specified Frequency will satisfy this Surveillance for both units.</li> </ol> <p>-----</p> <p>Verify each DG starts and achieves, in <math>\leq 10</math> seconds, voltage <math>\geq 3793</math> V and frequency <math>\geq 58.8</math> and after steady state conditions are reached, maintains voltage <math>\geq 3793</math> V and <math>\leq 4400</math> V and frequency <math>\geq 58.8</math> Hz and <math>\leq 61.2</math> Hz.</p>	<p>In accordance with the Surveillance Frequency Control Program</p>

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE	FREQUENCY
<p>SR 3.8.1.16 -----NOTE-----  This SR shall be performed for each DG on a rotational basis and for each 4.16 kV ESS bus at the specified FREQUENCY.  -----</p> <p>Verify each DG:</p> <ul style="list-style-type: none"> <li>a. Synchronizes with offsite power source while loaded with emergency loads upon a simulated restoration of offsite power;</li> <li>b. Transfers loads to offsite power source; and</li> <li>c. Returns to ready-to-load operation.</li> </ul>	<p>In accordance with the Surveillance Frequency Control Program</p>

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE	FREQUENCY
<p>SR 3.8.1.17 -----NOTES-----  This SR shall be performed for each DG on a rotational basis and for each 4.16 kV ESS bus at the specified FREQUENCY.</p> <p>-----  Verify with a DG operating in test mode and connected to its bus, an actual or simulated ECCS initiation signal overrides the test mode by:</p> <p>a. Returning DG to ready-to-load operation; and</p> <p>b. Automatically energizing the emergency load from offsite power.</p>	<p>In accordance with the Surveillance Frequency Control Program</p>
<p>SR 3.8.1.18 -----NOTE-----  Load timers associated with equipment that has automatic initiation capability disabled are not required to be OPERABLE.</p> <p>-----  Verify each sequenced load is within required limits of the design interval.</p>	<p>In accordance with the Surveillance Frequency Control Program</p>

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE	FREQUENCY
<p>SR 3.8.1.19 -----NOTES-----</p> <ol style="list-style-type: none"> <li>1. All DG starts may be preceded by an engine prelube period.</li> <li>2. This SR shall be performed for each DG on a rotational test basis and for each 4.16 kV ESS bus at the specified FREQUENCY.</li> <li>3. This Surveillance shall not be performed in MODE 1, 2 or 3.</li> </ol> <p>-----</p> <p>Verify on an actual or simulated loss of offsite power signal in conjunction with an actual or simulated ECCS initiation signal:</p> <ol style="list-style-type: none"> <li>a. De-energization of 4.16 kV ESS buses;</li> <li>b. Load shedding from emergency buses; and</li> <li>c. DG auto-starts from standby condition and:               <ol style="list-style-type: none"> <li>1. energizes permanently connected loads in <math>\leq 10</math> seconds,</li> <li>2. energizes auto-connected emergency loads through individual load timers,</li> <li>3. achieves steady state voltage <math>\geq 3793</math> V and <math>\leq 4400</math> V,</li> <li>4. achieves steady state frequency <math>\geq 58.8</math> Hz and <math>\leq 61.2</math> Hz, and</li> <li>5. supplies permanently connected and auto-connected emergency loads for <math>\geq 5</math> minutes.</li> </ol> </li> </ol>	<p>In accordance with the Surveillance Frequency Control Program</p>

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE	FREQUENCY
<p>SR 3.8.1.20 -----NOTES-----</p> <ol style="list-style-type: none"> <li>1. All DG starts may be preceded by an engine prelube period.</li> <li>2. This SR must be met, but does not have to be performed with DG E substituted for any DG.</li> </ol> <p>-----</p> <p>Verify, when started simultaneously from standby condition, each DG achieves, in <math>\leq 10</math> seconds, voltage <math>\geq 3793</math> V and frequency <math>\geq 58.8</math> and after steady state conditions are reached, maintains voltage <math>\geq 3793</math> V and <math>\leq 4400</math> V and frequency <math>\geq 58.8</math> Hz and <math>\leq 61.2</math> Hz.</p>	<p>In accordance with the Surveillance Frequency Control Program</p>
<p>SR 3.8.1.21 -----NOTE-----</p> <p>When Unit 1 is in MODE 4 or 5, or moving irradiated fuel assemblies in the secondary containment, the Note to Unit 1 SR 3.8.2.1 is applicable.</p> <p>-----</p> <p>For required Unit 1 AC sources, the following SRs of Unit 1 Specification 3.8.1 are applicable:</p> <p>SR 3.8.1.1;                      SR 3.8.1.10;  SR 3.8.1.3;                      SR 3.8.1.11;  SR 3.8.1.4;                      SR 3.8.1.14;  SR 3.8.1.5;                      SR 3.8.1.15;  SR 3.8.1.6;                      SR 3.8.1.16;  SR 3.8.1.7;                      SR 3.8.1.18;  SR 3.8.1.9;                      SR 3.8.1.19;  and</p> <p>SR 3.8.1.8 (when more than one Unit 1 offsite circuit is required)</p>	<p>In accordance with applicable SRs</p>

**SURVEILLANCE REQUIREMENTS**

SURVEILLANCE	FREQUENCY
SR 3.8.3.1 Verify each fuel oil storage tank contains ≥ 47,570 gallons for DG A-D; ≥ 60,480 gallons for DG E.	In accordance with the Surveillance Frequency Control Program
SR 3.8.3.2 Verify lube oil sump level is visible in the sight glass.	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 -----NOTE----- Not required to be met when DG is operating. -----  Verify each DG air start receiver pressure is ≥ 240 psig.	In accordance with the Surveillance Frequency Control Program
SR 3.8.3.5 Check for and remove accumulated water from each fuel oil storage tank.	In accordance with the Surveillance Frequency Control Program

**SURVEILLANCE REQUIREMENTS**

SURVEILLANCE	FREQUENCY
<p>SR 3.8.4.1    Verify battery terminal voltage is greater than or equal to the minimum established float voltage.</p>	<p>In accordance with the Surveillance Frequency Control Program</p>
<p>SR 3.8.4.2    Verify each required battery charger supplies its associated battery at the following rates for <math>\geq 4</math> hours at greater than or equal to the minimum established float voltages:</p> <ul style="list-style-type: none"> <li>a) <math>\geq 100</math> amps for the 125V Battery</li> <li>b) <math>\geq 300</math> amps for the 250V Battery</li> <li>c) <math>\geq 200</math> amps for the 125V Diesel Generator E Battery</li> </ul>	<p>In accordance with the Surveillance Frequency Control Program</p> <p style="text-align: right;">(continued)</p>

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE	FREQUENCY
<p>SR 3.8.4.3 -----NOTES-----</p> <ol style="list-style-type: none"> <li>1. The modified performance discharge test in SR 3.8.6.6 may be performed in lieu of SR 3.8.4.3.</li> <li>2. This Surveillance shall not be Performed in Mode 1, 2 or 3 except for the Diesel Generator E DC electrical power subsystem. This Surveillance can be performed on the Diesel Generator E DC electrical power subsystem when the Diesel Generator E is not aligned to the Class 1E distribution system. However, credit may be taken for unplanned events that satisfy this SR.</li> </ol> <p>-----</p> <p>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.</p>	<p>In accordance with the Surveillance Frequency Control Program</p>
<p>SR 3.8.4.4 -----NOTE-----</p> <p>When Unit 1 is in MODE 4 or 5, or moving irradiated fuel assemblies in the secondary containment, the Note to Unit 1 SR 3.8.5.1 is applicable.</p> <p>-----</p> <p>For required Unit 1 DC electrical power subsystems, the SRs for Unit 1 Specification 3.8.4 are applicable.</p>	<p>In accordance with applicable SRs</p>



SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
<p>SR 3.8.6.1</p> <p style="text-align: center;">-----NOTE-----</p> <p>Not required to be met when battery terminal voltage is less than the minimum established float voltage of SR 3.8.4.1.</p> <p>Verify each battery float current is <math>\leq 2</math> amps.</p>	<p>In accordance with the Surveillance Frequency Control Program</p>
<p>SR 3.8.6.2    Verify each battery pilot cell voltage is <math>\geq 2.07</math> V.</p>	<p>In accordance with the Surveillance Frequency Control Program</p>
<p>SR 3.8.6.3    Verify each battery connected cell electrolyte level is greater than or equal to minimum established design limits.</p>	<p>In accordance with the Surveillance Frequency Control Program</p>
<p>SR 3.8.6.4    Verify each battery pilot cell temperature is greater than or equal to minimum established design limits.</p>	<p>In accordance with the Surveillance Frequency Control Program</p> <p style="text-align: right;">(continued)</p>

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE	FREQUENCY
SR 3.8.6.5    Verify each battery connected cell voltage is $\geq 2.07$ V.	In accordance with the Surveillance Frequency Control Program
<div data-bbox="290 590 1070 741">           SR 3.8.6.6    -----NOTE-----            This Surveillance shall not be Performed in Mode 1, 2, or 3. However, credit may be taken for unplanned events that satisfy this SR.            -----         </div> <div data-bbox="475 785 992 915">           Verify battery capacity is <math>\geq 80\%</math> of the manufacturer's rating when subjected to a performance discharge test or a modified performance discharge test.         </div>	<div data-bbox="1108 785 1453 873">           In accordance with the Surveillance Frequency Control Program         </div> <div data-bbox="1108 909 1169 940"> <u>AND</u> </div> <div data-bbox="1108 974 1430 1167">           12 months when battery shows degradation or has reached 85% of expected service life with capacity <math>&lt; 100\%</math> of manufacturer's rating         </div> <div data-bbox="1108 1203 1169 1234"> <u>AND</u> </div> <div data-bbox="1108 1268 1460 1425">           24 months when battery has reached 85% of the expected service life with capacity <math>\geq 100\%</math> of manufacturer's rating         </div>

SURVEILLANCE REQUIREMENTS

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

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
B. Diesel Generator E DC electrical power distribution subsystem inoperable, while not aligned to the Class 1E distribution system.	B.1 Verify that all ESW valves associated with Diesel Generator E are closed.	2 hours
C. Diesel Generator E DC electrical power distribution subsystem inoperable, while aligned to the Class 1E distribution system.	C.1 Declare Diesel Generator E inoperable.	2 hours

SURVEILLANCE REQUIREMENTS

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

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
<p>SR 3.9.1.1 Perform CHANNEL FUNCTIONAL TEST on each of the following required refueling equipment interlock inputs:</p> <ul style="list-style-type: none"> <li>a. All-rods-in,</li> <li>b. Refuel platform position,</li> <li>c. Refuel platform fuel grapple, fuel loaded,</li> <li>d. Refuel platform frame mounted hoist, fuel loaded,</li> <li>e. Refuel platform monorail mounted hoist, fuel loaded.</li> </ul>	<p>In accordance with the Surveillance Frequency Control Program</p>

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.	Immediately
	<p><u>AND</u></p> <p>A.2 Initiate action to fully insert all insertable control rods in core cells containing one or more fuel assemblies.</p>	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

(continued)

SURVEILLANCE REQUIREMENTS (continued)

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

### 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
<p>SR 3.9.5.1 -----NOTE----- Not required to be performed until 7 days after the control rod is withdrawn. -----</p> <p>Insert each withdrawn control rod at least one notch.</p>	In accordance with the Surveillance Frequency Control Program
SR 3.9.5.2 Verify each withdrawn control rod scram accumulator pressure is $\geq 940$ 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  $\geq 22$  ft above the top of the RPV flange.

APPLICABILITY: During movement of irradiated fuel assemblies within the RPV,

During movement of new or irradiated 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 $\geq 22$ ft above the top of the RPV flange.	In accordance with the Surveillance Frequency Control Program

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

SURVEILLANCE	FREQUENCY
SR 3.9.8.1    Verify one RHR shutdown cooling subsystem is operating.	In accordance with the Surveillance Frequency Control Program

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. (continued)	A.3.1 Place the reactor mode switch in the shutdown position.  <u>OR</u> A.3.2 -----NOTE----- Only applicable in MODE 5 -----  Place the reactor mode switch in the refuel position.	1 hour
		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

SURVEILLANCE	FREQUENCY
SR 3.10.3.1 Perform the applicable SRs for the required LCOs.	According to the applicable SRs
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. One or more of the above requirements not met with the affected control rod not insertable.	B.1 Suspend withdrawal of the control rod and removal of associated CRD.	Immediately
	<u>AND</u>	
	B.2.1 Initiate action to fully insert all control rods.	Immediately
	<u>OR</u>	
	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 <del>-----NOTE-----</del> Not required to be met if SR 3.10.4.1 is satisfied for LCO 3.10.4.c.1 requirements. <del>-----</del> 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

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE	FREQUENCY
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. (continued)	A.2.1 Initiate action to fully insert all control rods.	Immediately
	<u>OR</u> A.2.2 Initiate action to satisfy the requirements of this LCO.	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

(continued)

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

ACTIONS

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

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE	FREQUENCY
<p>SR 3.10.8.2 -----NOTE----- Not required to be met if SR 3.10.8.3 satisfied.</p> <hr/> <p>Perform the MODE 2 applicable SRs for LCO 3.3.2.1, Function 2 of Table 3.3.2.1-1.</p>	<p>According to the applicable SRs</p>
<p>SR 3.10.8.3 -----NOTE----- Not required to be met if SR 3.10.8.2 satisfied.</p> <hr/> <p>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.</p>	<p>During control rod movement</p>
<p>SR 3.10.8.4 Verify no other CORE ALTERATIONS are in progress.</p>	<p>In accordance with the Surveillance Frequency Control Program</p>

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE	FREQUENCY
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  <u>AND</u>  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 $\geq 940$ psig.	In accordance with the Surveillance Frequency Control Program

## 5.5 Programs and Manuals

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### 5.5.14 Control Room Envelope Habitability Program (continued)

- e. The quantitative limits on unfiltered air leakage into the CRE. These limits shall be stated in a manner to allow direct comparison to the unfiltered air leakage measured by the testing described in paragraph c. The unfiltered air leakage limit for radiological challenges is the leakage flow rate assumed in the licensing basis analyses of DBA consequences. Unfiltered air leakage limits for hazardous chemicals must ensure that exposure of CRE occupants to these hazards will be within the assumptions in the licensing basis.
- f. The provisions of SR 3.0.2 are applicable to the Frequencies for assessing CRE habitability, determining CRE unfiltered leakage, and measuring CRE pressure and assessing the CRE boundary as required by paragraphs c and d, respectively.

### 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 NOS. 266 AND 247

TO RENEWED FACILITY OPERATING LICENSE NOS. NPF-14 AND NPF-22

SUSQUEHANNA NUCLEAR, LLC

ALLEGHENY ELECTRIC COOPERATIVE, INC.

SUSQUEHANNA STEAM ELECTRIC STATION, UNITS 1 AND 2

DOCKET NOS. 50-387 AND 50-388

1.0 INTRODUCTION

By application dated October 27, 2014 (Reference 1), as supplemented by letters dated July 2, 2015 (Reference 2); September 21, 2015 (Reference 3); November 11, 2015 (Reference 4); and January 29, 2016 (Reference 18), Susquehanna Nuclear, LLC (Susquehanna or the licensee) submitted a license amendment request (LAR) proposing changes to the technical specifications (TSs) for the Susquehanna Steam Electric Station (SSES), Units 1 and 2.

The requested change is the adoption of U.S. Nuclear Regulatory Commission (NRC)-approved Technical Specification Task Force Traveler (TSTF)-425, Revision 3, "Relocate Surveillance Frequencies to Licensee Control – RITSTF Initiative 5b" (Reference 5). When implemented, TSTF-425 relocates most periodic frequencies of TS surveillances to a licensee controlled program, the Surveillance Frequency Control Program (SFCP), and provides requirements for the new program in the Administrative Controls section of the TSs. All surveillance frequencies can be relocated except:

- Frequencies that reference other approved programs for the specific interval (such as the Inservice Testing Program or the Primary Containment Leakage Rate Testing Program);
- Frequencies that are purely 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  $\geq 95\%$  RTP"); and
- Frequencies that are related to specific conditions (e.g., battery degradation, age, and capacity) or conditions for the performance of a surveillance requirement (SR) (e.g., "drywell to suppression chamber differential pressure decrease").

A new program is added to the Administrative Controls of TS Section 5 as Specification 5.5.15. The new program is called the Surveillance Frequency Control Program and describes the requirements for the program to control changes to the relocated surveillance frequencies. The TS Bases for each of the affected SRs are revised to state that the frequency is set in

Enclosure 3

accordance with the SFCP. Some SR Bases do not contain a discussion of the frequency. In these cases, the Bases describing the current frequency were added to maintain consistency with the Bases for similar surveillances. These instances are noted in the markup along with the source of the text. The licensee's proposed changes to the Administrative Controls of the TSs to incorporate the SFCP include a specific reference to Nuclear Energy Institute (NEI) 04-10, Revision 1, "Risk-Informed Technical Specifications Initiative 5b, Risk-Informed Method for Control of Surveillance Frequencies" (Reference 6), as the basis for making any changes to the surveillance frequencies once they are relocated out of the TSs.

In a 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 and the safety evaluation, providing the basis for NRC acceptance of NEI 04-10.

The supplemental letters dated July 2, 2015; September 21, 2015; November 11, 2015; and January 29, 2016, provided additional information that clarified the application, did not expand the scope of the application as originally noticed, and did not change the NRC staff's original proposed no significant hazards consideration determination as published in the *Federal Register* (FR) on March 3, 2015 (80 FR 11479). The letter dated January 29, 2016, provided two revised marked-up pages to the SSES TSs to correct a typographical error that was provided with the marked-up TS pages included with the letter dated October 27, 2014.

This LAR was submitted by PPL Susquehanna, LLC; however, on June 1, 2015 (Reference 8), the NRC staff issued an amendment changing the name on the SSES license from PPL Susquehanna, LLC to Susquehanna Nuclear, LLC. This amendment was issued subsequent to an order issued to SSES on April 10, 2015 (Reference 9), approving an indirect license transfer of the SSES license to Talen Energy Corporation.

## 2.0 REGULATORY EVALUATION

### 2.1 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]<sup>1</sup> to be deleted from Technical Specifications based solely on PSA (Criterion 4). However, if the results of PSA indicate that Technical Specifications can be relaxed or removed, a deterministic review will be performed....

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<sup>1</sup> This clarification is not part of the original policy statement.



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]<sup>2</sup> estimates and assumptions. This is a key part of the process of 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 Technical Specifications, new requirements, and industry proposals for risk-based Technical Specification 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. 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....

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<sup>2</sup> The *Federal Register* Notice 58 FR 39135 (Alteration in Original) explains the brackets.

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 backfitting new generic requirements on nuclear power plant licensees.

## 2.2 Applicable Regulations

In 10 CFR 50.36, "Technical specifications," the NRC established its regulatory requirements related to the content of TS. Pursuant to 10 CFR 50.36, TSs are required to include items in the following five specific categories related to station operation: (1) safety limits, limiting safety system settings, and limiting control settings; (2) limiting conditions for operation (LCOs); (3) SRs; (4) design features; and (5) administrative controls. These categories will remain in the SSES TSs.

Section 50.36(c)(3) of 10 CFR states that, "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 FR notice published on July 6, 2009 (74 FR 31996), which announced the availability of TSTF-425, Revision 3, states that the addition of the SFCP to the TSs provides the necessary administrative controls to require that surveillances frequencies relocated to the SFCP are conducted at a frequency to assure that the necessary quality of systems and components is maintained, that facility operation will be within safety limits, and that the LCOs will be met. The FR notice also states that changes to surveillance

frequencies in the SFCP are made using the methodology contained in NEI 04-10, Revision 1, including qualitative considerations, results of risk analyses, sensitivity studies and any bounding analyses, and recommended monitoring of structures, systems, and components (SSCs), and are required to be documented.

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 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 at which a surveillance test is performed. In addition, the SFCP implementation guidance in NEI 04-10, Revision 1, provides for monitoring the performance of SSCs for which surveillance frequencies are decreased to assure reduced testing does not adversely impact the SSCs.

### 2.3 Applicable NRC Regulatory Guides and Review Plans

Regulatory Guide (RG) 1.174, Revision 2, "An Approach for Using Probabilistic Risk Assessment in Risk-Informed Decisions on Plant-Specific Changes to the Licensing Basis" (Reference 10), 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.

RG 1.177, Revision 1, "An Approach for Plant-Specific, Risk-Informed Decisionmaking: Technical Specifications" (Reference 11), describes an acceptable risk-informed approach specifically for assessing proposed TS changes.

RG 1.200, Revision 2, "An Approach for Determining the Technical Adequacy of Probabilistic Risk Assessment Results for Risk-Informed Activities" (Reference 12), describes an acceptable approach for determining whether the quality of the 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.

### 3.0 TECHNICAL EVALUATION

The licensee's adoption of TSTF-425 for SSES provides for administrative relocation of applicable surveillance frequencies and provides for the addition of the SFCP to the Administrative Controls of TSs. TSTF-425 also requires the application of NEI 04-10 for any changes to surveillance frequencies within the SFCP. The licensee's application for the changes proposed in TSTF-425 included documentation regarding the PRA technical adequacy consistent with the guidance in RG 1.200. In accordance with NEI 04-10, PRA methods are used, in combination with plant performance data and other considerations, to identify and justify modifications to the surveillance frequencies of equipment at nuclear power plants. This is in accordance with guidance provided in RG 1.174 and RG 1.177 in support of changes to surveillance test intervals.

In Reference 1, the licensee provided revised TS Bases pages to be implemented with the associated TS changes. These pages were provided for information only and will be revised in accordance with the SSES TS Bases Control Program.

### 3.1 RG 1.177 Five Key Safety Principles

RG 1.177 identifies five key safety principles required for risk-informed changes to TSs. Each of these principles is addressed by NEI 04-10.

#### 3.1.1 The Proposed Change Meets Current Regulations

Section 50.36(c)(3) of 10 CFR provides that TSs will include surveillances that 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." NEI 04-10 provides guidance for relocating the surveillance frequencies from the TSs to a licensee-controlled program by providing an NRC-approved methodology for control of the surveillance frequencies. The surveillances themselves would remain in the TSs, as required by 10 CFR 50.36(c)(3).

This change is consistent with other NRC-approved TS changes in which the surveillance frequencies are relocated to licensee-controlled documents, such as surveillances performed in accordance with the Inservice Testing Program or the Primary Containment Leakage Rate Testing Program. Thus, this proposed change meets the first key safety principle of RG 1.177 by complying with current regulations.

#### 3.1.2 The Proposed Change is Consistent with the Defense-in-Depth Philosophy

The defense-in-depth philosophy, the second key safety principle of RG 1.177, is maintained if:

- A reasonable balance is preserved among prevention of core damage, prevention of containment failure, and consequence mitigation.
- Over-reliance on programmatic activities to compensate for weaknesses in plant design is avoided.
- System redundancy, independence, and diversity are preserved commensurate with the expected frequency, consequences of challenges to the system, and uncertainties (e.g., no risk outliers). Because the scope of the proposed methodology is limited to revision of surveillance frequencies, the redundancy, independence, and diversity of plant systems are not impacted.
- Defenses against potential common cause failures are preserved, and the potential for the introduction of new common cause failure mechanisms is assessed.
- Independence of barriers is not degraded.
- Defenses against human errors are preserved.
- The intent of the General Design Criteria in 10 CFR Part 50, Appendix A, is maintained.

TSTF-425 requires the application of NEI 04-10 for any changes to surveillance frequencies within the SFCP. NEI 04-10 uses both the core damage frequency (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 and RG 1.177 for changes to CDF and LERF is achieved by evaluation using a comprehensive risk analysis that assesses the impact of proposed changes, including contributions from human errors and common cause failures. 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 common cause failures. Both the quantitative risk analysis and the qualitative considerations assure a reasonable balance of defense-in-depth is maintained to ensure protection of public health and safety, satisfying the second key safety principle of RG 1.177.

### 3.1.3 The Proposed Change Maintains Sufficient Safety Margins

The engineering evaluation that will be conducted by the licensee under the SFCP when 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 plant licensing basis (including the Updated Final Safety Analysis Report and Bases to TSs), since 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.

Thus, safety margins are maintained by the proposed methodology, and the third key safety principle of RG 1.177 is satisfied.

### 3.1.4 When Proposed Changes Result in an Increase in Core Damage Frequency or Risk, the Increases Should be Small and Consistent with the Intent of the Commission's Safety Goal Policy Statement

RG 1.177 provides a framework for evaluating the risk impact of proposed changes to surveillance frequencies. This provides for the identification of the risk contribution from impacted surveillances, determination of the risk impact from the change to the proposed surveillance frequency, and performance of sensitivity and uncertainty evaluations. TSTF-425 provides for the application of NEI 04-10 in the SFCP. NEI 04-10 satisfies the intent of RG 1.177 guidance for evaluating the change in risk, and for assuring that such changes are small.

#### 3.1.4.1 Quality of the PRA

The quality of the SSES PRA must be commensurate with the safety significance of the proposed TS change and the role the PRA plays in justifying the change. That is, the higher

change in risk or the greater the uncertainty in that risk from the requested TS change, or both, the more rigor that must go into ensuring the quality of the PRA.

RG 1.200 provides regulatory guidance for assessing the technical adequacy of a PRA. Revision 2 of this RG endorses (with comments and qualifications) the use of the American Society of Mechanical Engineers (ASME)/American Nuclear Society (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 13), NEI 00-02, "PRA Peer Review Process Guidelines" (Reference 14) and NEI 05-04, "Process for Performing Follow-On PRA Peer Reviews Using the ASME PRA Standard" (Reference 15). Revision 1 of this RG had endorsed the internal events PRA standard ASME RA-Sb-2005, "Addenda to ASME RA-S-2002 Standard for Probabilistic Risk Assessment for Nuclear Power Plant Applications" (Reference 16). For the internal events PRA, there are no significant technical differences in the standard requirements; however, the licensee should conform to the latest version of the ASME/ANS Standard as qualified and clarified to the latest version of RG 1.200.

The licensee has performed an assessment of the PRA models used to support the SFCP using the guidance of RG 1.200 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. Capability Category II of the standard is provided for in NEI 04-10 for the internal events PRA, and any identified deficiencies to those requirements are assessed further to determine any impacts of proposed decreases to surveillance frequencies, including the use of sensitivity studies where appropriate.

A full-scope PRA peer review of the SSES internal events and internal flood PRA was performed in October 2012 using the ASME/ANS RA-Sa-2009 PRA Standard as clarified and qualified by RG 1.200, Revision 2. There were 35 findings and observations (F&Os) from this peer review that were considered "not met (lower than CC II)."

The internal events PRA model addressed F&Os from the 2012 peer review assessment and provided a description of the resolutions and model revisions in Table 1 of the LAR. The NRC staff reviewed the F&Os provided in Attachment 1 of Reference 1. The NRC staff's evaluation of the F&Os for Supporting Requirements (SRs) that are unmet and Capability Category I are provided below.

F&O 4-4 for SR IE-A5: The F&O found that the Maintenance Rule plant systems were not all identified in the systematic evaluation to assess the possibility of an initiating event occurring due to a failure of the system. The licensee stated that the evaluation was completed but not properly documented. The licensee further stated that it placed the evaluation in Section 2.8 of the IE notebook. The NRC staff concludes that the licensee has properly dispositioned this F&O for the application because the licensee has updated its documentation to reflect the identification of the plant systems, and it does not impact the PRA model.

F&O 6-29 for SR IE-A5: The F&O observes that the licensee does not provide discussion on the effect of a loss of a single 13.8/4.16 kilovolt (kv) transformer in the initiating events workbook. The peer review team states that this is a suggestion because the discussions with the licensee indicated that the loss of a transformer would not result in a plant trip or a need for

shutdown. The licensee stated that it provided additional discussion on the loss of 13.8 and 4.16 kv transformers to Section 2.4.5 of the IE notebook to address this F&O. The NRC staff concludes that the licensee has dispositioned this F&O for the application because the licensee has updated its documentation to reflect the F&O, and it does not impact the PRA model.

F&O 1-12 for SR SC-A5: The F&O was created because the licensee did not perform an evaluation to determine if certain accident sequences should be extended beyond 24 hours. The licensee addressed this F&O by adding Section 2.1.17 to the success criteria notebook to outline the dominant considerations contributing to the 24-hour PRA mission time and the systems/equipment with less than a 24-hour mission time. The NRC staff requested that the licensee explain whether a safe and stable plant condition was achieved for the model accident sequences contributing to the 24-hour PRA mission time in request for additional information (RAI) 1, which was sent to the licensee via letter dated May 22, 2015 (Reference 17). In response to RAI 1 (Reference 2), the licensee stated, in part, that:

The Susquehanna PRA model is developed such that a safe and stable plant condition is achieved for modeled accident sequences with the assumed 24 hour PRA mission time.

The licensee also clarified that:

[M]odeling of certain accident sequences is extended beyond 24 hours when required to reach safe and stable plant conditions.

The NRC staff concludes that the licensee has adequately addressed mission times for application to the TSTF-425 program because it has accounted for safe and stable plant conditions for the 24-hour mission time and beyond.

F&O 1-24 for SR SC-A5: The F&O was created because the licensee allowed for a 25-hour mission time for the failure to run events for the Emergency Diesel Generators. The peer review team noted that the treatment was conservative and added a small increase in the failure probability. The licensee stated in Reference 2 that it reviewed the parameters and concluded that 1 hour for failure to start and 24 hours for failure to run is conservative. The NRC staff concludes that the licensee's use of conservative values to represent failure to start and run is an adequate disposition of this F&O for the application.

F&O 1-18 for SR SY-C3: The F&O was created because the licensee identified four candidates as sources of uncertainty in the Summary Notebook Appendix D. The peer review team noted that the large number of modeling assumptions in the system notebooks should warrant a more thorough evaluation of plant-specific sources of uncertainty. The licensee reviewed all of the system notebook assumptions for applicability as potential sources of model uncertainty and added additional assumptions to Table D-2 in Appendix D of its Summary Notebook. The NRC staff concludes that the licensee's identification and documentation of the sources of uncertainty

is an adequate disposition for the F&O for the application because the licensee systematically addressed the sources of uncertainty.

F&O 7-4 for SR HR-B2: The F&O was created because the peer review noted human reliability analysis (HRA) documentation indicating that due to staggered testing/maintenance practices, like components in different divisions are generally not susceptible to restoration error, and common mode errors are screened. The licensee explained in response to RAI 3 (Reference 2), based on its interpretation of SR HR-A3, which is referenced by HR-B2, that the pre-initiator identification process would preclude the development of common mode misalignment events for like components in separate divisions. Therefore, it was not necessary to rely on staggered testing/maintenance principles for screening purposes. In response to RAI 8 (Reference 3), the licensee explained its interpretation of HR-A3 indicated that only single activities such as system misalignments, and not multiple activities that could result in common mode failures, were necessary to consider. The NRC staff did not agree that SR HR-A3 is limited to single activities since miscalibration potential exists if the same incorrect procedure is used, such as during testing and maintenance. In response to RAI 10 (Reference 4), the licensee stated that work practices, including procedures that simultaneously affect multiple equipment in either different trains of a redundant system or a diverse system are not screened. Specifically, staggered testing is not used to screen common mode failures. Based on the detailed HRA pre-initiator process and the inclusion of staggered testing activities, the NRC staff finds that the F&O has been adequately addressed for the PRA model used for this application.

F&O 7-1 for SR HR-C3: The F&O was created because the licensee did not include an analysis of miscalibration for the component failure rate data. The licensee stated in the resolution for this F&O that adding this level of detail for single component miscalibration events is not warranted. In response to RAI 2 (Reference 2), the licensee explained further the PRA modeling of miscalibration for SR HR-C3. The licensee's pre-initiator methodology includes evaluating miscalibration as a failure mode of initiation of standby systems. Miscalibration is included for components/functions common mode events rather than at the level of a single component miscalibration event. The licensee determined that these single miscalibration events are very low contributors, and therefore, are not included in the PRA model. The NRC staff finds that the inclusion of miscalibration for common cause events is sufficient based on the licensee's evaluation that miscalibrations are not significant contributors for a single component failure mode.

F&Os 1-2 for SR HR-F1: The F&O was created because the licensee grouped the characteristics of several valves into a single human failure event (HFE) (i.e., MANOP\_SPC\_INJ\_L-O). The peer review team cited the similarity in the degree of difficulty for opening valves and the performance shaping factors as examples of places where the licensee lacked justification for the groupings. The licensee dispositioned this F&O by redefining the HFE into three new human error probabilities (HEP) and performing detailed evaluations for each. According to the ASME/ANS Standard, grouping HEP into a single HFE is acceptable for this program as long as the licensee provides justification for the similarities in failure modes or it can be conservatively bounded. The NRC staff concludes that the disposition is acceptable for the application because the licensee reevaluated and split the HFE.



F&O 1-3 for SR HR-F1: The F&O was created because the licensee did not include the evaluation of the time it takes for manual valve manipulation for HRA MAN-OP\_SPC\_INJ\_L-O. The licensee dispositioned this F&O by evaluating detailed timing manipulations and adding applicable references to the HRA documentation for the three new HEPs as mentioned in the discussion on F&O 1-2. The NRC staff concludes that the disposition is acceptable for the application because the licensee performed a detailed evaluation of the manual operation timing for three valves in the large diameter piping segments.

F&O 7-9 for SR HR-G6: The F&O was created because the licensee's comparison of events with similar HEP was incomplete. The licensee dispositioned this F&O by reviewing the documentation of the HEP and identifying and correcting any inconsistencies with the comparison of events with similar HEP. The NRC staff concludes that the disposition is acceptable for the application because the licensee performed the consistency check with a HEP ranking system relative to one another for correctness.

F&O 4-9 for SR DA-C6: The F&O was created because the licensee did not document its basis for plant failure data except to identify that its Mitigating Systems Performance Indices (MSPI) database and plant experience was the source. In light of this, the NRC staff concludes that the F&O will not significantly affect the program as this is a documentation concern.

F&O 4-12 for SRs DA-C12 and DA-C13: The F&O was created because the licensee did not evaluate the unavailability data, obtained from the MSPI for issues of "double counting." Also, the licensee did not consider the handling of unavailability hours that occurred online versus during an outage. The licensee stated that, "MSPI unavailability data is by its own program considered for reactor 'critical' hours. Unknown potential 'double counting' of MSPI data would be slightly conservative." The NRC staff concludes that the disposition is acceptable for the application because the licensee's consideration of MSPI data may result in conservative unavailability hours.

The licensee's internal flooding model was also included in the 2012 full scope peer review. The internal flooding F&Os provided in the LAR show that the internal flooding model is incomplete and the F&Os have not been resolved. According to the LAR, the licensee is addressing these F&Os through a model update. The licensee indicated in the LAR that the internal flooding CDF and LERF contribution is expected to be small. The NRC staff finds that these F&Os can be addressed using the NEI 04-10 guidance on model incompleteness.

Based on the licensee's assessment using the applicable PRA standard and RG 1.200, the NRC staff concludes that the level of PRA quality, combined with the proposed evaluation and disposition of gaps, is sufficient to support the evaluation of changes proposed to surveillance frequencies within the SFCP and is consistent with Regulatory Position 2.3.1 of RG 1.177.

#### 3.1.4.2 Scope of the PRA

SSES has a full-power internal events and internal flood model that has received a peer review as discussed previously. The licensee is also required to evaluate each proposed change to a relocated surveillance frequency using the guidance contained in NEI 04-10 to determine its 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 is 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 negligible or zero.

The licensee will use these models to perform quantitative evaluations to support the development of changes to surveillance frequencies in the SFCP in accordance with NEI 04-10, Revision 1. In Attachment 1 to Reference 1, the licensee noted that the individual plant examination of external events (IPEEE) fire analysis "did yield a CDF, [but] the intent of the analysis was to identify the most risk significant fire areas in the plant using a screening process and by calculating conservative core damage frequencies for fire scenarios." The licensee also stated that its seismic analysis was also completed as part of the IPEEE. SSES used the Seismic Margins Assessment Electric Power Research Institute (EPRI) NP-6041-SLR1, A Methodology for Assessment of Nuclear Power Plant Seismic Margin (Revision 1)," August 1991. In response to RAI 9 (Reference 3), the licensee confirmed that the fire risk and other external events will reflect current plant configuration and operating experience. The licensee also clarified the intent for internal fire risk, seismic events, and other external hazards for which there is no PRA model by stating that it will utilize a qualitative approach. This is an acceptable approach in accordance with NEI 04-10, Revision 1.

In Reference 1, the licensee explained that it does not currently have a shutdown PRA model. However, the licensee explained that the guidance in NEI 04-10, Revision 1, will also be applied for shutdown events.

The licensee's evaluation methodology is sufficient to ensure the scope of the risk contribution of each surveillance frequency change is properly identified for evaluation and is consistent with Regulatory Position 2.3.2 of RG 1.177.

#### 3.1.4.3 PRA Modeling

The licensee's methodology includes the determination of whether the SSCs affected by a proposed change to a surveillance frequency are modeled in the PRA. Where the SSC is directly or implicitly modeled, a quantitative evaluation of the risk impact may be carried out. The methodology adjusts the failure probability of the impacted SSCs, including any impacted common cause failure modes, based on the proposed change to the surveillance frequency. Where the SSC is not modeled in the PRA, bounding analyses are performed to characterize the impact of the proposed change to the surveillance frequency. Potential impacts on the risk analyses due to screening criteria and truncation levels are addressed by the requirements for PRA technical adequacy consistent with guidance contained in RG 1.200 and by sensitivity studies identified in NEI 04-10.

The licensee's approach for the evaluations of the impact of selected testing strategy (i.e., staggered testing or sequential testing) is consistent with the guidance of NUREG/CR-6141 and NUREG/CR-5497, as discussed in NEI 04-10.

Thus, through the application of NEI 04-10, the SSES PRA modeling is sufficient to ensure an acceptable evaluation of risk for the proposed changes in surveillance frequency and is consistent with Regulatory Position 2.3.3 of RG 1.177.

#### 3.1.4.4 Assumptions for Time-Related Failure Contributions

The failure probabilities of SSCs modeled in PRAs may include a standby time-related contribution and a cyclic demand-related contribution. NEI 04-10 criteria adjust the time-related failure contribution of SSCs affected by the proposed change to surveillance frequency. This is consistent with RG 1.177, Section 2.3.3, which permits separation of the failure rate contributions into demand and standby for evaluation of SRs. If the available data do not support distinguishing between the time-related failures and demand failures, then the change to surveillance frequency is conservatively assumed to impact the total failure probability of the SSCs, including both standby and demand contributions. 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 and will be confirmed by the required monitoring and feedback implemented after the change in surveillance frequency is implemented. The process requires consideration of qualitative sources of information with regard 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 reduced surveillance frequency, including reduced downtime, lesser potential for restoration errors, reduction of potential for test caused transients, and reduced test-caused wear of equipment, are identified qualitatively, but not quantitatively assessed. NEI 04-10, provides for performance monitoring of SSCs whose surveillance frequencies have been revised as part of a feedback process to assure that the change in test frequency has not resulted in degradation of equipment performance and operational safety. The monitoring and feedback includes consideration of Maintenance Rule monitoring of equipment performance. In the event of SSC performance degradation, the surveillance frequency will be reassessed in accordance with the methodology, in addition to any corrective actions which may be required by the Maintenance Rule.

Thus, through the application of NEI 04-10, the licensee has employed reasonable assumptions with regard to extensions of surveillance test intervals, consistent with Regulatory Position 2.3.4 of RG 1.177.

#### 3.1.4.5 Sensitivity and Uncertainty Analyses

NEI 04-10 provides for sensitivity studies to 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 Capability Category II of the PRA standard. 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. Required monitoring and feedback of SSC performance once the revised surveillance frequencies are implemented will also be performed. Thus, through the application of NEI 04-10, the licensee has appropriately

considered the possible impact of PRA model uncertainty and sensitivity to key assumptions and model limitations, consistent with Regulatory Position 2.3.5 of RG 1.177.

#### 3.1.4.6 Acceptance Guidelines

The licensee will 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 the guidance contained in NRC approved NEI 04-10 in accordance with the TS SFCP. Each individual change to surveillance frequency must show a risk impact below  $1\text{E}-6$  per year for change to CDF and below  $1\text{E}-7$  per year for change to LERF. These are consistent with the acceptance criteria of RG 1.174 for very small changes in risk. Where the RG 1.174 acceptance criteria are not met, the process either considers revised surveillance frequencies that are consistent with RG 1.174, 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. Otherwise, bounding quantitative analyses are required that demonstrate the risk impact is at least one order of magnitude lower than the RG 1.174 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  $1\text{E}-5$  per year for change to CDF, and less than  $1\text{E}-6$  per year for change to LERF. The total CDF and total LERF must be reasonably shown to be less than  $1\text{E}-4$  per year and  $1\text{E}-5$  per year, respectively. These are consistent with the acceptance criteria of RG 1.174, as referenced by RG 1.177 for changes to 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 (less than  $5\text{E}-8$  CDF and  $5\text{E}-9$  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 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 SSCs. The licensee's application of NEI 04-10 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. Therefore, the proposed methodology satisfies the fourth key safety principle of RG 1.177 by assuring any increase in risk is small, consistent with the intent of the Commission's Safety Goal Policy Statement.

### 3.1.5 The Impact of the Proposed Change Should be Monitored Using Performance Measurement Strategies

The licensee's adoption of TSTF-425 requires application of NEI 04-10 in the SFCP. NEI 04-10 provides for performance monitoring of SSCs whose surveillance frequency has been revised as part of a feedback process to assure that the change in test frequency has not resulted in degradation of equipment performance and operational safety. The monitoring and feedback include consideration of Maintenance Rule monitoring of equipment performance. In the event of degradation of SSC performance, the surveillance frequency will be reassessed in accordance with the methodology, in addition to any corrective actions that may apply as part of the Maintenance Rule requirements. The performance monitoring and feedback specified in NEI 04-10 is sufficient to reasonably assure acceptable SSC performance and is consistent with Regulatory Position 3.2 of RG 1.177. Thus, the fifth key safety principle of RG 1.177 is satisfied.

### 3.2 Addition of Surveillance Frequency Control Program to Administrative Controls

The licensee proposed including the SFCP and specific requirements into the SSES TSs, Section 5.5.15, 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 Technical Specifications Initiative 5b, 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, and therefore, the NRC staff concludes that it is acceptable.

### 3.3 Deviations from TSTF-425 and Other Changes

The licensee did not propose any deviations from TSTF-425 in Reference 1. However, Reference 2 did provide some changes to the licensee's request in Reference 1 based on

responses to RAIs 6 and 7. Specifically, the licensee will not be moving the term "STAGGERED TEST BASIS," from TS Section 1.1, "Definitions," to the SFCP as was originally proposed because the term is retained in TS 5.5.14.d. Also, the licensee is no longer proposing to change the surveillance frequency of SR 3.6.1.1.2, based on its response to an RAI issued by the NRC staff in Reference 17.

### 3.4 Summary and Conclusions

The NRC staff has reviewed the licensee's proposed relocation of specific surveillance frequencies to a licensee-controlled document and controlling changes to these 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 TS Section 5.0, Subsection 5.5.15, 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 NEI 04-10, Revision 1, which is specified in the Administrative Controls section 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 section of TSs, satisfies the key principles of risk-informed decisionmaking applied to changes to TSs as delineated in RG 1.177 and RG 1.174, 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.

The regulation in 10 CFR 50.36(c) discusses the categories that will be included in TSs. 10 CFR 50.36(c)(3) specifically discusses the 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."

Based on the above evaluation, the NRC staff concludes 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(c)(3).

#### 4.0 STATE CONSULTATION

In accordance with the Commission's regulations, the NRC staff notified the appropriate Pennsylvania State official of the proposed issuance of the amendments. The State official had no comments.

#### 5.0 ENVIRONMENTAL CONSIDERATION

The amendments change 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 SRs. The NRC 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 NRC has previously issued a proposed finding that the amendment involves no significant hazards consideration and there has been no public comment on such finding (80 FR 11479). 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 amendments 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 Jon A. Franke to U.S. Nuclear Regulatory Commission, "Susquehanna Steam Electric Station Amendment Request for Adoption of Technical Specification Task Force Traveler (TSTF)-425, Revision 3, 'Relocate Surveillance Frequencies to Licensee Control - RITSTF Initiative 5b,' "October 27, 2014 (Agencywide Documents Access and Management System (ADAMS) Package Accession No. ML14317A052).
2. Letter from Jon A. Franke to U.S. Nuclear Regulatory Commission, "Susquehanna Steam Electric Station Response to Request for Additional Information on Technical Specification Changes to Adopt Traveler TSTF-425," July 2, 2015 (ADAMS Accession No. ML15183A248).
3. Letter from Jon A. Franke to U.S. Nuclear Regulatory Commission, "Susquehanna Steam Electric Station Response to Request for Additional Information Technical Specification Changes to Adopt Traveler TSTF-425," September 21, 2015 (ADAMS Accession No. ML15265A347).

4. Letter from Jon A. Franke to U.S. Nuclear Regulatory Commission, "Susquehanna Steam Electric Station Response to Request for Additional Information on Technical Specification Changes to Adopt Traveler TSTF-425," November 11, 2015 (ADAMS Accession No. ML15315A045).
5. TSTF-425, Revision 3, "Relocate Surveillance Frequencies to Licensee Control - RITSTF Initiative 5b," March 18, 2009 (ADAMS Package Accession No. ML090850642).
6. NEI 04-10, Revision 1, "Risk-Informed Technical Specifications Initiative 5b, Risk-Informed Method for Control of Surveillance Frequencies," April 2007 (ADAMS Accession No. ML071360456).
7. Final Safety Evaluation for NEI Topical Report 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. NRC Letter, "Susquehanna Steam Electric Station, Units 1 and 2 – Issuance of Conforming Amendment Re: Indirect Transfer of Renewed Facility Operating Licenses to Susquehanna Nuclear, LLC," June 1, 2015 (ADAMS Accession No. ML15054A066).
9. NRC, "Order Approving Transfer of Licenses and Conforming Amendments," related to the Susquehanna Steam Electric Station, Units 1 and 2, April 10, 2015 (ADAMS Accession No. ML15058A073).
10. Regulatory Guide 1.174, Revision 2, "An Approach for Using Probabilistic Risk Assessment in Risk-Informed Decisions on Plant-Specific Changes to the Licensing Basis," May 2011 (ADAMS Accession No. ML100910006).
11. Regulatory Guide 1.177, Revision 1, "An Approach for Plant-Specific, Risk-Informed Decisionmaking: Technical Specifications," May 2011 (ADAMS Accession No. ML100910008).
12. Regulatory Guide 1.200, Revision 2, "An Approach for Determining the Technical Adequacy of Probabilistic Risk Assessment Results for Risk-Informed Activities," March 2009 (ADAMS Accession No. ML090410014).
13. 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."
14. NEI 00-02, Revision 1, "Probabilistic Risk Assessment (PRA) Peer Review Process Guidance," May 2006 (ADAMS Accession No. ML061510614).
15. NEI 05-04, "Process for Performing Follow-On PRA Peer Reviews Using the ASME PRA Standard," Revision 0, August 2006.



16. ASME PRA Standard ASME RA-Sb-2005, Addenda to ASME RA-S-2002, "Standard for Probabilistic Risk Assessment for Nuclear Power Plant Applications."
17. NRC Letter, "Susquehanna Steam Electric Station, Units 1 and 2 - Request for Additional Information Re: License Amendment Request to Adopt Technical Specification Task Force Traveler (TSTF)-425," May 22, 2015 (ADAMS Accession No. ML15103A396).
18. Letter from Jon A. Franke to U.S. Nuclear Regulatory Commission, "Susquehanna Steam Electric Station Supplemental information on Technical Specification Changes to Adopt Traveler TSTF-425," January 29, 2016 (ADAMS Accession No. ML16032A324).

Principal Contributor: J. Evans, NRR

Date: May 20, 2016

J. Franke

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If you have any questions, please contact me by phone at 301-415-4090, or by e-mail at [jeffrey.whited@nrc.gov](mailto:jeffrey.whited@nrc.gov).

Sincerely,

/RA/

Jeffrey A. Whited, Project Manager  
Plant Licensing Branch I-2  
Division of Operating Reactor Licensing  
Office of Nuclear Reactor Regulation

Docket Nos. 50-387 and 50-388

Enclosures:

1. Amendment No. 266 to RFOL  
No. NPF-14
2. Amendment No. 247 to RFOL  
No. NPF-22
3. Safety Evaluation

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**ADAMS Accession Nos.: Package: ML16141A098**

**Amendment: ML16005A234**

**Non-Concurrence: ML16141A025** \*by e-mail

OFFICE	DORL/LPLI-2/PM	DORL/LPLI-2/LA	DRA/APLA/BC	DSS/STSB/BC (A)*	DE/EEEB	DE/EEEB	DE/EEEB
NAME	JWhited	LRonewicz	SRosenberg	AKlein	TMartinez-Navedo (non-concur)	SSom (non-concur)	GMatharu (non-concur)
DATE	02/18/2016	02/12/2016	05/20/2016	05/10/2016	04/13/2016	04/13/2016	04/13/2016
OFFICE	DE/EEEB	DE/EEEB	DE/EEEB/BC	OGC (NLO)	DORL/LPLI-2/BC (A)	DORL/LPLI-2/PM	
NAME	SRay (non-concur)	RMathew (non-concur)	JZimmerman (non-concur)	JLindell (w/ comments)	DBroaddus (AHon for)	JWhited	
DATE	04/13/2016	04/13/2016	04/26/2016	05/18/2016	05/20/2016	05/20/2016	

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