



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

February 24, 2011

Mr. Michael J. Pacilio
President and Chief Nuclear Officer
Exelon Nuclear
4300 Winfield Road
Warrenville, IL 60555

SUBJECT: LASALLE COUNTY STATION, UNITS 1 AND 2 - ISSUANCE OF
AMENDMENTS REGARDING RISK-INFORMED JUSTIFICATION FOR THE
RELOCATION OF SPECIFIC SURVEILLANCE FREQUENCY REQUIREMENTS
TO A LICENSEE-CONTROLLED PROGRAM (TAC NOS. ME3363
AND ME3364)

Dear Mr. Pacilio:

The U.S. Nuclear Regulatory Commission (the Commission) has issued the enclosed Amendment No. 200 to Facility Operating License No. NPF-11 and Amendment No. 187 to Facility Operating License No. NPF-18 for the LaSalle County Station, Units 1 and 2, respectively. The amendments are in response to your application dated February 15, 2010 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML100480009), as supplemented by letters dated April 26, June 23, and August 3, 2010 (ADAMS Accession Nos. ML101160374, ML101750102, and ML110390169, respectively).

The requested change is the adoption of Nuclear Regulatory Commission-approved Technical Specification Task Force (TSTF-425), Revision 3, "Relocate Surveillance Frequencies to Licensee Control—RITSTF Initiative 5b." When implemented, TSTF-425 relocates most periodic frequencies of Technical Specification (TS) surveillances to a licensee-controlled program, the Surveillance Frequency Control Program, and provides requirements for the new program in the Administrative Controls section of the TS.

A copy of the Safety Evaluation is also enclosed. The Notice of Issuance will be included in the Commission's biweekly *Federal Register* notice.

Sincerely,

/RA/

Eva Brown, Senior Project Manager
Plant Licensing Branch III-2
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket Nos. 50-373 and 50-374

Enclosures:

1. Amendment No. 200 to NPF-11
2. Amendment No. 187 to NPF-18
3. Safety Evaluation

cc w/encs: See next page



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

EXELON GENERATION COMPANY, LLC

DOCKET NO. 50-373

LASALLE COUNTY STATION, UNIT 1

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 200
License No. NPF-11


1. The U.S. Nuclear Regulatory Commission (the Commission) has found that:
 - A. The application for amendment filed by the Exelon Generation Company, LLC (the licensee), dated February 15, 2010, as supplemented by letters dated April 26, June 23, and August 3, 2010, 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 set forth in 10 CFR Chapter I;
 - D. The issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public; and
 - E. The issuance of this amendment is in accordance with 10 CFR Part 51 of the Commission's regulations and all applicable requirements have been satisfied.
2. Accordingly, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment and paragraph 2.C.(2) of the Facility Operating License No. NPF-11 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. 200 , and the Environmental Protection Plan contained in Appendix B, are hereby incorporated in the license. The licensee shall operate the facility in accordance with the Technical Specifications and the Environmental Protection Plan.

3. This license amendment is effective as of the date of its issuance and shall be implemented within 120 days of the date of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

A handwritten signature in black ink, appearing to read "Robert D. Carlson", with a long horizontal flourish extending to the right.

Robert D. Carlson, Chief
Plant Licensing Branch III-2
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Attachment: Changes to the Technical
Specifications and Facility Operating License

Date of Issuance: February 24, 2011



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

EXELON GENERATION COMPANY, LLC

DOCKET NO. 50-374

LASALLE COUNTY STATION, UNIT 2

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 187
License No. NPF-18

1. The U.S. Nuclear Regulatory Commission (the Commission) has found that:
 - A. The application for amendment filed by the Exelon Generation Company, LLC (the licensee), dated February 15, 2010, as supplemented by letters dated April 26, June 23, and August 3, 2010, 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 set forth in 10 CFR Chapter I;
 - D. The issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public; and
 - E. The issuance of this amendment is in accordance with 10 CFR Part 51 of the Commission's regulations and all applicable requirements have been satisfied.
2. Accordingly, the license is amended by changes to the Technical Specifications as indicated in the enclosure to this license amendment and paragraph 2.C.(2) of the Facility Operating License No. NPF-18 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. 187 , and the Environmental Protection Plan contained in Appendix B, are hereby incorporated in the license. The licensee shall operate the facility in accordance with the Technical Specifications and the Environmental Protection Plan.

3. This license amendment is effective as of the date of its issuance and shall be implemented within 120 days of the date of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

A handwritten signature in black ink, appearing to read 'Robert D. Carlson', with a long horizontal flourish extending to the right.

Robert D. Carlson, Chief
Plant Licensing Branch III-2
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Attachment: Changes to the Technical
Specifications and Facility Operating License

Date of Issuance: February 24, 2011

ATTACHMENT TO LICENSE AMENDMENT NOS. 200 AND 187

FACILITY OPERATING LICENSE NOS. NPF-11 AND NPF-18

DOCKET NOS. 50-373 AND 50-374

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

Remove

License NPF-11
Page 3

License NPF-18
Page 3

TSs

3.1.3-4
3.1.4-2
3.1.5-3
3.1.6-2
3.1.7-1
3.1.7-2
3.1.7-3
3.1.7-4
3.1.7-5

3.1.8-2
3.2.1-1
3.2.2-1
3.2.3-1
3.3.1.1-3
3.3.1.1-4
3.3.1.1-5
3.3.1.1-6
3.3.1.1-7
3.3.1.1-8
3.3.1.1-9

3.3.1.2-3
3.3.1.2-4
3.3.1.2-5
3.3.1.3-3

3.3.2.1-3
3.3.2.1-4
3.3.2.1-5

Insert

License NPF-11
Page 3

License NPF-18
Page 3

TSs

3.1.3-4
3.1.4-2
3.1.5-3
3.1.6-2
3.1.7-1
3.1.7-2
3.1.7-3
3.1.7-4
3.1.7-5
3.1.7-6
3.1.8-2
3.2.1-1
3.2.2-1
3.2.3-1
3.3.1.1-3
3.3.1.1-4
3.3.1.1-5
3.3.1.1-6
3.3.1.1-7
3.3.1.1-8
3.3.1.1-9
3.3.1.1-10
3.3.1.2-3
3.3.1.2-4
3.3.1.2-5
3.3.1.3-3
3.3.1.3-4
3.3.2.1-3
3.3.2.1-4
3.3.2.1-5

Remove

TSs

3.3.2.2-2
3.3.2.2-3
3.3.3.1-3
3.3.3.2-2
3.3.4.1-3
3.3.4.1-4
3.3.4.2-3
3.3.5.1-7
3.3.5.1-8
3.3.5.1-9
3.3.5.1-10
3.3.5.1-11

3.3.5.2-3
3.3.6.1-4
3.3.6.1-5
3.3.6.2-3
3.3.7.1-2

3.3.8.1-2
3.3.8.2-4
3.4.1-3
3.4.2-1
3.4.2-2
3.4.3-2
3.4.5-2
3.4.7-3
3.4.8-2
3.4.9-3
3.4.10-2
3.4.11-3
3.4.11-4
3.4.11-5
3.4.12-1
3.5.1-4
3.5.1-5
3.5.2-3
3.5.2-4
3.5.3-2
3.5.3-3
3.6.1.1-3
3.6.1.1-4
3.6.1.2-4
3.6.1.3-6
3.6.1.3-7

Insert

TSs

3.3.2.2-2
3.3.2.2-3
3.3.3.1-3
3.3.3.2-2
3.3.4.1-3
3.3.4.1-4
3.3.4.2-3
3.3.5.1-7
3.3.5.1-8
3.3.5.1-9
3.3.5.1-10
3.3.5.1-11
3.3.5.1-12

3.3.5.2-3
3.3.6.1-4
3.3.6.1-5
3.3.6.2-3
3.3.7.1-2
3.3.7.1-3

3.3.8.1-2
3.3.8.2-4
3.4.1-3
3.4.2-1
3.4.2-2
3.4.3-2
3.4.5-2
3.4.7-3
3.4.8-2
3.4.9-3
3.4.10-2
3.4.11-3
3.4.11-4
3.4.11-5
3.4.12-1
3.5.1-4
3.5.1-5
3.5.2-3
3.5.2-4
3.5.3-2
3.5.3-3
3.6.1.1-3
3.6.1.1-4
3.6.1.2-4
3.6.1.3-6
3.6.1.3-7

Remove

TSs

3.6.1.3-8
3.6.1.4-1
3.6.1.5-1
3.6.1.6-2
3.6.1.6-3
3.6.2.1-2
3.6.2.2-1
3.6.2.3-2
3.6.2.4-2
3.6.3.2-1
3.6.4.1-3
3.6.4.2-4
3.6.4.3-3
3.7.1-2
3.7.2-1
3.7.3-2
3.7.4-3
3.7.4-4
3.7.5-3
3.7.6-2
3.7.7-1
3.7.7-2
3.7.8-1
3.8.1-7
3.8.1-8
3.8.1-9
3.8.1-10
3.8.1-11
3.8.1-12
3.8.1-13
3.8.1-14
3.8.1-15
3.8.1-16
3.8.1-17
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3.8.3-3
3.8.4-3
3.8.4-4
3.8.4-5
3.8.6-3
3.8.6-4

Insert

TSs

3.6.1.3-8
3.6.1.4-1
3.6.1.5-1
3.6.1.6-2
3.6.1.6-3
3.6.2.1-2
3.6.2.2-1
3.6.2.3-2
3.6.2.4-2
3.6.3.2-1
3.6.4.1-3
3.6.4.2-4
3.6.4.3-3
3.7.1-2
3.7.2-1
3.7.3-2
3.7.4-3
3.7.4-4
3.7.5-3
3.7.6-2
3.7.7-1
3.7.7-2
3.7.8-1
3.8.1-7
3.8.1-8
3.8.1-9
3.8.1-10
3.8.1-11
3.8.1-12
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3.8.1-14
3.8.1-15
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3.8.1-17
3.8.1-18
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3.8.3-3
3.8.4-3
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3.8.6-3
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3.8.6-5

Remove

TSs

3.8.7-3
3.8.8-2
3.9.1-2
3.9.2-1
3.9.2-2
3.9.3-1
3.9.5-1
3.9.6-1
3.9.7-1
3.9.8-3
3.9.9-3
3.10.1-2
3.10.2-3
3.10.3-3
3.10.3-4
3.10.4-2
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5.5-15

Insert

TSs

3.8.7-3
3.8.8-2
3.9.1-2
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3.9.8-3
3.9.9-3
3.10.1-2
3.10.2-3
3.10.3-3
3.10.3-4
3.10.4-2
3.10.4-3
3.10.5-2
3.10.7-3
3.10.7-4
5.5-15
5.5-16

- (4) Exelon Generation Company, 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) Exelon Generation Company, 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 LaSalle County Station, Units 1 and 2.
- 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

The licensee is authorized to operate the facility at reactor core power levels not in excess of full power (3489 megawatts thermal).
 - (2) Technical Specifications and Environmental Protection Plan

The Technical Specifications contained in Appendix A, as revised through Amendment No. 200 , and the Environmental Protection Plan contained in Appendix B, are hereby incorporated in the license. The licensee shall operate the facility in accordance with the Technical Specifications and the Environmental Protection Plan.
 - (3) Conduct of Work Activities During Fuel Load and Initial Startup

The licensee shall review by committee all Unit 1 Preoperational Testing and System Demonstration activities performed concurrently with Unit 1 initial fuel loading or with the Unit 1 Startup Test Program to assure that the activity will not affect the safe performance of the Unit 1 fuel loading or the portion of the Unit 1 Startup Program being performed. The review shall address, as a minimum, system interaction, span of control, staffing, security and health physics, with respect to performance of the activity concurrently with the Unit 1 fuel loading or the portion of the Unit 1 Startup Program being performed. The committee for the review shall be composed of at least three members, knowledgeable in the above areas, and who meet the qualifications for professional-technical personnel specified by

- (5) Pursuant to the Act and 10 CFR Parts 30, 40, and 70 possess, but not separate, such byproduct and special nuclear materials as may be produced by the operation of LaSalle County Station Units 1 and 2.
- 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

The licensee is authorized to operate the facility at reactor core power levels not in excess of full power (3489 megawatts thermal). Items in Attachment 1 shall be completed as specified. Attachment 1 is hereby incorporated into this license.
 - (2) Technical Specifications and Environmental Protection Plan

The Technical Specifications contained in Appendix A, as revised through Amendment No. 187, and the Environmental Protection Plan contained in Appendix B, are hereby incorporated in the license. The licensee shall operate the facility in accordance with the Technical Specifications and the Environmental Protection Plan.
 - (3) Conduct of Work Activities During Fuel Load and Initial Startup

The licensee shall review by committee all Unit 2 Preoperational Testing and System Demonstration activities performed concurrently with Unit 2 initial fuel loading or with the Unit 2 Startup Test Program to assure that the activity will not affect the safe performance of the Unit 2 fuel loading or the portion of the Unit 2 Startup Program being performed. The review shall address, as a minimum, system interaction, span of control, staffing, security and health physics, with respect to performance of the activity concurrently with the Unit 2 fuel loading or the portion of the Unit 2 Startup Program being performed. The committee for the review shall be composed of at least three members, knowledgeable in the above areas, and who meet the qualifications for professional-technical personnel specified by section 4.4 of ANSI N18.7-1971. At least one of these three shall be a senior member of the Assistant Superintendent of Operation's staff.

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 DELETED | |
| 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 ≤ 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

| 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. | <p>Prior to exceeding 40% RTP after fuel movement within the affected core cell</p> <p><u>AND</u></p> <p>Prior to exceeding 40% RTP after work on control rod or CRD System that could affect scram time</p> |

Control Rod Scram Accumulators
3.1.5

ACTIONS

| CONDITION | REQUIRED ACTION | COMPLETION TIME |
|---|--|-----------------|
| C. (continued) | C.2 Declare the associated control rod inoperable. | 1 hour |
| D. Required Action B.1 or C.1 and associated Completion Time 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 pressure is \geq 940 psig. | In accordance with the Surveillance Frequency Control Program |

ACTIONS

| CONDITION | REQUIRED ACTION | COMPLETION TIME |
|--|--|-----------------|
| B. Nine or more OPERABLE control rods not in compliance with the analyzed rod position sequence. | B.1 -----NOTE----- 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 the analyzed rod position sequence. | In accordance with the Surveillance Frequency Control Program |

3.1 REACTIVITY CONTROL SYSTEMS

3.1.7 Standby Liquid Control (SLC) System

LCO 3.1.7 Two SLC subsystems shall be OPERABLE.

APPLICABILITY: MODES 1, 2, and 3.

ACTIONS

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

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 |

(continued)

SURVEILLANCE REQUIREMENTS

| SURVEILLANCE | | FREQUENCY |
|--------------|---|---|
| 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 up to the storage tank outlet valves is $\geq 68^{\circ}\text{F}$. | 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 |

(continued)

SURVEILLANCE REQUIREMENTS

| SURVEILLANCE | | FREQUENCY |
|--------------|--|--|
| 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> |
| SR 3.1.7.6 | Verify each SLC 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 3.1.7.7 | Verify each pump develops a flow rate ≥ 41.2 gpm at a discharge pressure ≥ 1220 psig. | In accordance with the Inservice Testing Program |

(continued)

SURVEILLANCE REQUIREMENTS

| SURVEILLANCE | | FREQUENCY |
|--------------|---|--|
| SR 3.1.7.8 | Verify flow through one SLC subsystem from pump into reactor pressure vessel. | In accordance with the Surveillance Frequency Control Program |
| SR 3.1.7.9 | Verify all heat traced piping between storage tank and storage tank outlet valves is unblocked. | In accordance with the Surveillance Frequency Control Program <u>AND</u> Once within 24 hours after piping temperature is restored within the limits of Figure 3.1.7-2 |

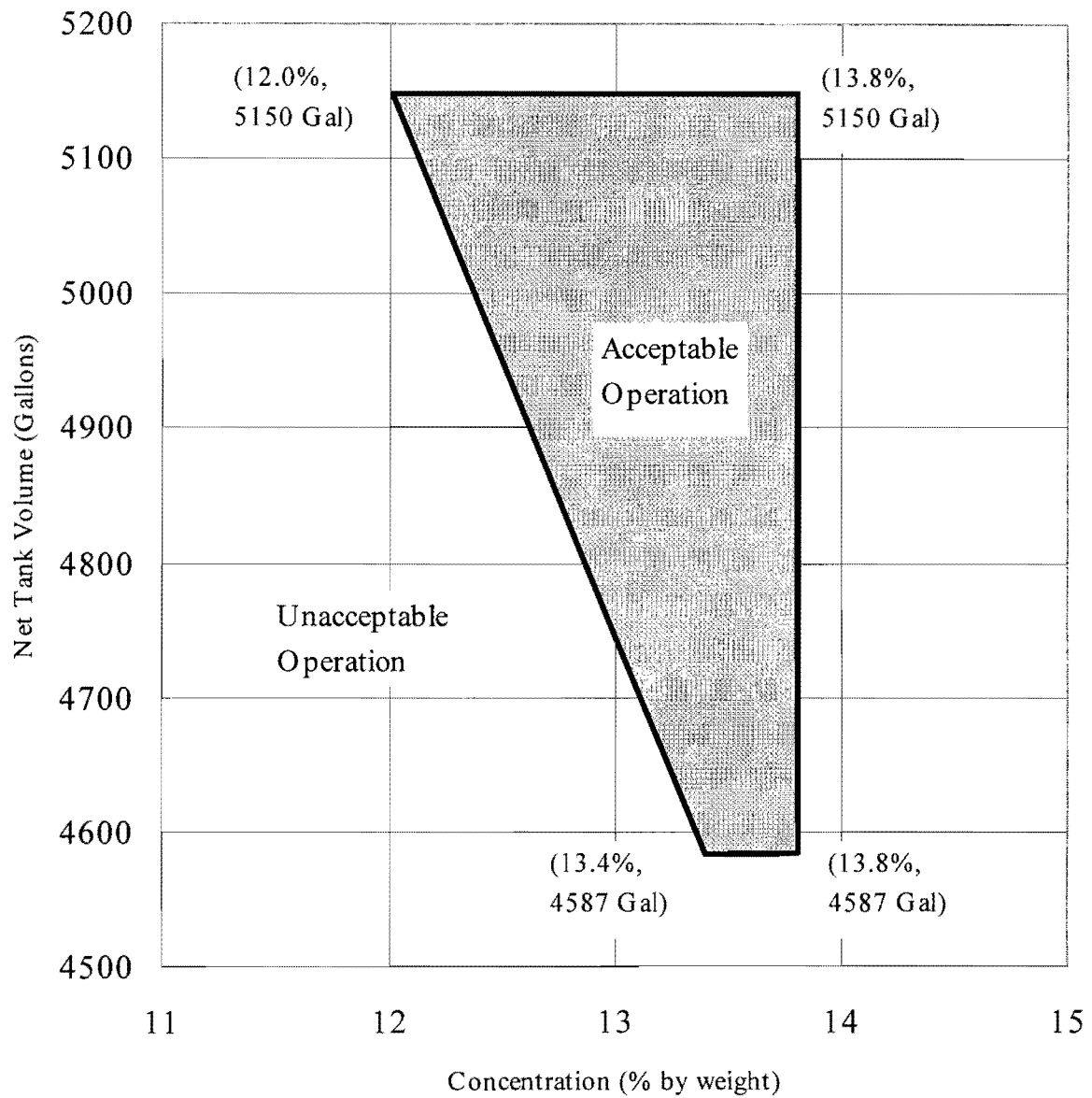


Figure 3.1.7-1 (page 1 of 1)
Sodium Pentaborate Solution Volume/Concentration Requirements

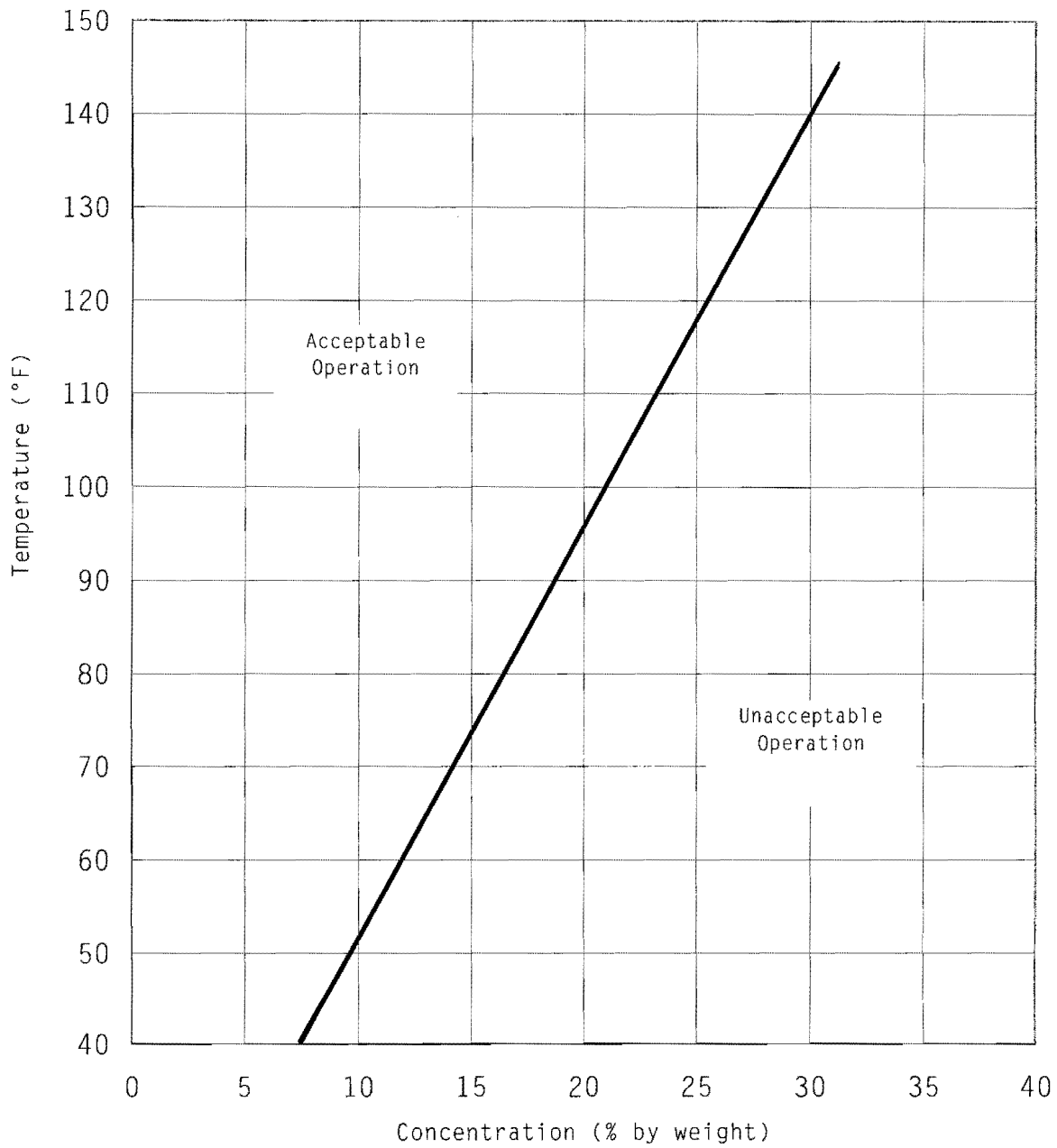


Figure 3.1.7-2 (page 1 of 1)
Sodium Pentaborate Solution Temperature/Concentration Requirements

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

3.2 POWER DISTRIBUTION LIMITS

3.2.1 AVERAGE PLANAR LINEAR HEAT GENERATION RATE (APLHGR)

LC0 3.2.1 All APLHGRs shall be less than or equal to the limits specified in the COLR.

APPLICABILITY: THERMAL POWER \geq 25% RTP.

ACTIONS

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

SURVEILLANCE REQUIREMENTS

| SURVEILLANCE | FREQUENCY |
|---|--|
| SR 3.2.1.1 Verify all APLHGRs are less than or equal to the limits specified in the COLR. | Once within 12 hours after \geq 25% RTP <u>AND</u> In accordance with the Surveillance Frequency Control Program |

3.2 POWER DISTRIBUTION LIMITS

3.2.2 MINIMUM CRITICAL POWER RATIO (MCPR)

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

APPLICABILITY: THERMAL POWER \geq 25% RTP.

ACTIONS

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

SURVEILLANCE REQUIREMENTS

| SURVEILLANCE | FREQUENCY |
|--|--|
| SR 3.2.2.1 Verify all MCPRs are greater than or equal to the limits specified in the COLR. | Once within 12 hours after \geq 25% RTP <u>AND</u> In accordance with the Surveillance Frequency Control Program |

(continued)

3.2 POWER DISTRIBUTION LIMITS

3.2.3 LINEAR HEAT GENERATION RATE (LHGR)

LC0 3.2.3 All LHGRs shall be less than or equal to the limits specified in the COLR.

APPLICABILITY: THERMAL POWER \geq 25% RTP.

ACTIONS

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

SURVEILLANCE REQUIREMENTS

| SURVEILLANCE | FREQUENCY |
|---|--|
| SR 3.2.3.1 Verify all LHGRs are less than or equal to the limits specified in the COLR. | Once within 12 hours after \geq 25% RTP <u>AND</u> In accordance with the Surveillance Frequency Control Program |

SURVEILLANCE REQUIREMENTS

- NOTES -----
1. Refer to Table 3.3.1.1-1 to determine which SRs apply for each RPS Function.
 2. When a channel is placed in an inoperable status solely for performance of required Surveillances, entry into associated Conditions and Required Actions may be delayed for up to 6 hours provided the associated Function maintains RPS trip capability.
-

| SURVEILLANCE | | FREQUENCY |
|--------------|--|---|
| SR 3.3.1.1.1 | Perform CHANNEL CHECK. | In accordance with the Surveillance Frequency Control Program |
| SR 3.3.1.1.2 | <p>-----NOTE----- Not required to be performed until 12 hours after THERMAL POWER \geq 25% RTP. -----</p> <p>Verify the absolute difference between the average power range monitor (APRM) channels and the calculated power \leq 2% RTP while operating at \geq 25% RTP.</p> | In accordance with the Surveillance Frequency Control Program |
| SR 3.3.1.1.3 | Adjust the channel to conform to a calibrated flow signal. | In accordance with the Surveillance Frequency Control Program |

(continued)

SURVEILLANCE REQUIREMENTS

| SURVEILLANCE | | FREQUENCY |
|--------------|---|---|
| SR 3.3.1.1.4 | <p>-----NOTE----- Not required to be performed when entering MODE 2 from MODE 1 until 24 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 |
| 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

| SURVEILLANCE | FREQUENCY |
|--|---|
| SR 3.3.1.1.9 Perform CHANNEL FUNCTIONAL TEST. | 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 -----NOTES----- 1. Neutron detectors are excluded. 2. For Function 2.a, not required to be performed when entering MODE 2 from MODE 1 until 24 hours after entering MODE 2. ----- Perform CHANNEL CALIBRATION. | In accordance with the Surveillance Frequency Control Program |
| SR 3.3.1.1.12 Perform CHANNEL FUNCTIONAL TEST. | In accordance with the Surveillance Frequency Control Program |

(continued)

SURVEILLANCE REQUIREMENTS

| SURVEILLANCE | | FREQUENCY |
|---------------|---|---|
| SR 3.3.1.1.13 | <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 24 hours after entering MODE 2.</p> <p>-----</p> <p>Perform CHANNEL CALIBRATION.</p> | In accordance with the Surveillance Frequency Control Program |
| SR 3.3.1.1.14 | Verify the APRM Flow Biased Simulated Thermal Power—Upscale time constant is ≤ 7 seconds. | 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 $\geq 25\%$ RTP. | In accordance with the Surveillance Frequency Control Program |

(continued)

SURVEILLANCE REQUIREMENTS

| SURVEILLANCE | FREQUENCY |
|--|--|
| <p>SR 3.3.1.1.17 -----NOTES-----</p> <ol style="list-style-type: none"> 1. Neutron detectors are excluded. 2. For Function 9, the RPS RESPONSE TIME is measured from start of turbine control valve fast closure. <p>-----</p> <p>Verify the RPS RESPONSE TIME is within limits.</p> | <p>In accordance with the Surveillance Frequency Control Program</p> |

RPS Instrumentation
3.3.1.1

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

| FUNCTION | APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS | REQUIRED CHANNELS PER TRIP SYSTEM | CONDITIONS REFERENCED FROM REQUIRED ACTION D.1 | SURVEILLANCE REQUIREMENTS | ALLOWABLE VALUE |
|---|---|--|---|--|--|
| 1. Intermediate Range Monitors | | | | | |
| a. Neutron Flux-High | 2 | 3 | G | SR 3.3.1.1.1 SR 3.3.1.1.4 SR 3.3.1.1.6 SR 3.3.1.1.7 SR 3.3.1.1.13 SR 3.3.1.1.15 | ≤ 123/125 divisions of full scale |
| | 5 ^(a) | 3 | H | SR 3.3.1.1.1 SR 3.3.1.1.5 SR 3.3.1.1.13 SR 3.3.1.1.15 | ≤ 123/125 divisions of full scale |
| b. Inop | 2 | 3 | G | SR 3.3.1.1.4 SR 3.3.1.1.15 | NA |
| | 5 ^(a) | 3 | H | SR 3.3.1.1.5 SR 3.3.1.1.15 | NA |
| 2. Average Power Range Monitors | | | | | |
| a. Neutron Flux-High, Setdown | 2 | 2 | G | SR 3.3.1.1.1 SR 3.3.1.1.4 SR 3.3.1.1.7 SR 3.3.1.1.8 SR 3.3.1.1.11 SR 3.3.1.1.15 | ≤ 20% RTP |
| b. Flow Biased Simulated Thermal Power-Upscale | 1 | 2 | F | SR 3.3.1.1.1 SR 3.3.1.1.2 SR 3.3.1.1.3 SR 3.3.1.1.8 SR 3.3.1.1.9 SR 3.3.1.1.11 ^(b) (c) SR 3.3.1.1.14 SR 3.3.1.1.15 | ≤ 0.61 W + 60.2% RTP and ≤ 115.5% RTP ^(d) |
| c. Fixed Neutron Flux-High | 1 | 2 | F | SR 3.3.1.1.1 SR 3.3.1.1.2 SR 3.3.1.1.8 SR 3.3.1.1.9 SR 3.3.1.1.11 SR 3.3.1.1.15 SR 3.3.1.1.17 | ≤ 120% RTP |

(continued)

- (a) With any control rod withdrawn from a core cell containing one or more fuel assemblies.
 (b) If the as-found channel setpoint is outside its predefined as-found tolerance, then the channel shall be evaluated to verify that it is functioning as required before returning the channel to service.
 (c) The instrument channel setpoint shall be reset to a value that is within the as-left tolerance around the nominal trip setpoint (NTSP) at the completion of the surveillance; otherwise, the channel shall be declared inoperable. Setpoints more conservative than the NTSP are acceptable provided that the as-found and as-left tolerances apply to the actual setpoint implemented in the surveillance procedures (field setting) to confirm channel performance. The NTSP and the methodologies used to determine the as-found and the as-left tolerances are specified in the Technical Requirements Manual.
 (d) Allowable Value is ≤ 0.54 W + 55.9% RTP and ≤ 112.3% RTP when reset for single loop operation per LCO 3.4.1, "Recirculation Loops Operating."

RPS Instrumentation
3.3.1.1

Table 3.3.1.1-1 (page 2 of 3)
Reactor Protection System Instrumentation

| FUNCTION | APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS | REQUIRED CHANNELS PER TRIP SYSTEM | CONDITIONS REFERENCED FROM REQUIRED ACTION D.1 | SURVEILLANCE REQUIREMENTS | ALLOWABLE VALUE |
|--|--|--|--|---|--------------------------------------|
| 2. Average Power Range Monitors (continued) | | | | | |
| d. Inop | 1,2 | 2 | G | SR 3.3.1.1.8 SR 3.3.1.1.9 SR 3.3.1.1.15 | NA |
| 3. Reactor Vessel Steam Dome Pressure-High | 1,2 | 2 | G | SR 3.3.1.1.9 SR 3.3.1.1.10 SR 3.3.1.1.15 | ≤ 1059.0 psig |
| 4. Reactor Vessel Water Level-Low, Level 3 | 1,2 | 2 | G | SR 3.3.1.1.1 SR 3.3.1.1.9 SR 3.3.1.1.13 SR 3.3.1.1.15 SR 3.3.1.1.17 | ≥ 11.0 inches |
| 5. Main Steam Isolation Valve-Closure | 1 | 8 | F | SR 3.3.1.1.9 SR 3.3.1.1.13 SR 3.3.1.1.15 SR 3.3.1.1.17 | ≤ 13.7% closed |
| 6. Drywell Pressure-High | 1,2 | 2 | G | SR 3.3.1.1.9 SR 3.3.1.1.13 SR 3.3.1.1.15 | ≤ 1.93 psig |
| 7. Scram Discharge Volume Water Level-High | | | | | |
| a. Transmitter/Trip Unit | 1,2 | 2 | G | SR 3.3.1.1.9 SR 3.3.1.1.13 SR 3.3.1.1.15 | ≤ 767 ft 8.55 inches elevation |
| | 5(a) | 2 | H | SR 3.3.1.1.9 SR 3.3.1.1.13 SR 3.3.1.1.15 | ≤ 767 ft 8.55 inches elevation |

(continued)

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

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

| FUNCTION | APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS | REQUIRED CHANNELS PER TRIP SYSTEM | CONDITIONS REFERENCED FROM REQUIRED ACTION D.1 | SURVEILLANCE REQUIREMENTS | ALLOWABLE VALUE |
|--|--|--|--|--|--------------------------------------|
| 7. Scram Discharge Volume Water Level-High (continued) | | | | | |
| b. Float Switch | 1,2 | 2 | G | SR 3.3.1.1.9 SR 3.3.1.1.13 SR 3.3.1.1.15 | ≤ 767 ft 8.55 inches elevation |
| | 5(a) | 2 | H | SR 3.3.1.1.9 SR 3.3.1.1.13 SR 3.3.1.1.15 | ≤ 767 ft 8.55 inches elevation |
| 8. Turbine Stop Valve— Closure | ≥ 25% RTP | 4 | E | SR 3.3.1.1.9 SR 3.3.1.1.13 SR 3.3.1.1.15 SR 3.3.1.1.16 SR 3.3.1.1.17 | ≤ 8.9% closed |
| 9. Turbine Control Valve Fast Closure, Trip Oil Pressure-Low | ≥ 25% RTP | 2 | E | SR 3.3.1.1.9 SR 3.3.1.1.13 SR 3.3.1.1.15 SR 3.3.1.1.16 SR 3.3.1.1.17 | ≥ 425.5 psig |
| 10. Reactor Mode Switch-Shutdown Position | 1,2 | 2 | G | SR 3.3.1.1.12 SR 3.3.1.1.15 | NA |
| | 5(a) | 2 | H | SR 3.3.1.1.12 SR 3.3.1.1.15 | NA |
| 11. Manual Scram | 1,2 | 2 | G | SR 3.3.1.1.5 SR 3.3.1.1.15 | NA |
| | 5(a) | 2 | H | SR 3.3.1.1.5 SR 3.3.1.1.15 | NA |

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

SURVEILLANCE REQUIREMENTS

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

| 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 -----NOTES----- 1. Only required to be met during CORE ALTERATIONS. 2. One SRM may be used to satisfy more than one of the following. ----- Verify an OPERABLE SRM detector is located in: a. The fueled region; b. The core quadrant where CORE ALTERATIONS are being performed when the associated SRM is included in the fueled region; and c. A core quadrant adjacent to where CORE ALTERATIONS are being performed, when the associated SRM is included in the fueled region.. | In accordance with the Surveillance Frequency Control Program |
| SR 3.3.1.2.3 Perform CHANNEL CHECK. | In accordance with the Surveillance Frequency Control Program |

(continued)

SURVEILLANCE REQUIREMENTS

| SURVEILLANCE | FREQUENCY |
|---|--|
| <p>SR 3.3.1.2.4 -----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. ----- Verify count rate is: a. ≥ 3.0 cps; or b. ≥ 0.7 cps with a signal to noise ratio $\geq 20:1$.</p> | <p>In accordance with the Surveillance Frequency Control Program</p> |
| <p>SR 3.3.1.2.5 -----NOTE----- The determination of signal to noise ratio is not required to be met with less than or equal to four fuel assemblies adjacent to the SRM and no other fuel assemblies in the associated core quadrant. ----- Perform CHANNEL FUNCTIONAL TEST and determination of signal to noise ratio.</p> | <p>In accordance with the Surveillance Frequency Control Program</p> |
| <p>SR 3.3.1.2.6 -----NOTE----- Not required to be performed until 12 hours after IRMs on Range 2 or below. ----- Perform CHANNEL FUNCTIONAL TEST and determination of signal to noise ratio.</p> | <p>In accordance with the Surveillance Frequency Control Program</p> |

(continued)

SURVEILLANCE REQUIREMENTS

| SURVEILLANCE | FREQUENCY |
|---|--|
| <p>SR 3.3.1.2.7 -----NOTES-----</p> <ol style="list-style-type: none"> 1. Neutron detectors are excluded. 2. Not required to be performed until 12 hours after IRMs on Range 2 or below. <p>-----</p> <p>Perform CHANNEL CALIBRATION.</p> | <p>In accordance with the Surveillance Frequency Control Program</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 the OPRM maintains trip capability.

| SURVEILLANCE | FREQUENCY |
|--|---|
| SR 3.3.1.3.1 Perform CHANNEL FUNCTIONAL TEST. | In accordance with the Surveillance Frequency Control Program |
| SR 3.3.1.3.2 Calibrate the local power range monitors. | In accordance with the Surveillance Frequency Control Program |
| SR 3.3.1.3.3 -----NOTE----- Neutron detectors are excluded. ----- Perform CHANNEL CALIBRATION. The setpoints for the trip function shall be as specified in the COLR. | In accordance with the Surveillance Frequency Control Program |
| SR 3.3.1.3.4 Perform LOGIC SYSTEM FUNCTIONAL TEST. | In accordance with the Surveillance Frequency Control Program |

(continued)

SURVEILLANCE REQUIREMENTS

| SURVEILLANCE | FREQUENCY |
|--|---|
| SR 3.3.1.3.5 Verify OPRM is not bypassed when THERMAL POWER is $\geq 28.1\%$ RTP and recirculation drive flow is $< 60\%$ of rated recirculation drive flow. | In accordance with the Surveillance Frequency Control Program |
| SR 3.3.1.3.6 -----NOTE----- Neutron detectors are excluded. ----- Verify the RPS RESPONSE TIME is within limits. | In accordance with the Surveillance Frequency Control Program |

Control Rod Block Instrumentation
3.3.2.1

ACTIONS

| CONDITION | REQUIRED ACTION | COMPLETION TIME |
|---|---|-----------------|
| E. One or more Reactor Mode Switch–Shutdown Position channels inoperable. | E.1 Suspend control rod withdrawal. | Immediately |
| | <u>AND</u> E.2 Initiate action to fully insert all insertable control rods in core cells containing one or more fuel assemblies. | Immediately |

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 |

(continued)

SURVEILLANCE REQUIREMENTS

| SURVEILLANCE | FREQUENCY |
|--|--|
| <p>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.</p> | <p>In accordance with the Surveillance Frequency Control Program</p> |
| <p>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.</p> | <p>In accordance with the Surveillance Frequency Control Program</p> |
| <p>SR 3.3.2.1.4 -----NOTE----- Neutron detectors are excluded. ----- Perform CHANNEL CALIBRATION.</p> | <p>In accordance with the Surveillance Frequency Control Program</p> |

(continued)

SURVEILLANCE REQUIREMENTS

| SURVEILLANCE | | FREQUENCY |
|--------------|--|--|
| SR 3.3.2.1.5 | <p>-----NOTE----- Neutron detectors are excluded. -----</p> <p>Verify the RBM is not bypassed when THERMAL POWER is $\geq 30\%$ RTP and a peripheral control rod is not selected.</p> | In accordance with the Surveillance Frequency Control Program |
| SR 3.3.2.1.6 | Verify the RWM is not bypassed when THERMAL POWER is $\leq 10\%$ RTP. | In accordance with the Surveillance Frequency Control Program |
| SR 3.3.2.1.7 | <p>-----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 |
| SR 3.3.2.1.8 | Verify control rod sequences input to the RWM are in conformance with analyzed rod position sequence. | Prior to declaring RWM OPERABLE following loading of sequence into RWM |
| SR 3.3.2.1.9 | Verify the bypassing and position of control rods required to be bypassed in RWM by a second licensed operator or other qualified member of the technical staff. | Prior to and during the movement of control rods bypassed in RWM |

Feedwater System and Main Turbine High Water Level Trip Instrumentation
3.3.2.2

ACTIONS

| CONDITION | REQUIRED ACTION | COMPLETION TIME |
|--|--|-----------------|
| C. Required Action and associated Completion Time not met. | C.1 -----NOTE----- Only applicable if inoperable channel is the result of an inoperable motor-driven feedwater pump breaker or feedwater turbine stop valve. ----- | |
| | Remove affected feedwater pump(s) from service | 4 hours |
| | <u>OR</u> | |
| | C.2 Reduce THERMAL POWER to < 25% RTP. | 4 hours |

SURVEILLANCE REQUIREMENTS

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

| SURVEILLANCE | FREQUENCY |
|-------------------------------------|---|
| SR 3.3.2.2.1 Perform CHANNEL CHECK. | In accordance with the Surveillance Frequency Control Program |

(continued)

Feedwater System and Main Turbine High Water Level Trip Instrumentation
3.3.2.2

SURVEILLANCE REQUIREMENTS

| SURVEILLANCE | | FREQUENCY |
|--------------|---|---|
| SR 3.3.2.2.2 | 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 ≤ 59.5 inches. | In accordance with the Surveillance Frequency Control Program |
| SR 3.3.2.2.4 | Perform LOGIC SYSTEM FUNCTIONAL TEST, including breaker and valve actuation. | In accordance with the Surveillance Frequency Control Program |

SURVEILLANCE REQUIREMENTS

- NOTES-----
1. These SRs apply to each Function in Table 3.3.3.1-1.
 2. When a channel is placed in an inoperable status solely for performance of required Surveillances, entry into associated Conditions and Required Actions may be delayed for up to 6 hours provided the other required channel in the associated Function is OPERABLE.
-

| SURVEILLANCE | FREQUENCY |
|---|---|
| SR 3.3.3.1.1 Perform CHANNEL CHECK. | In accordance with the Surveillance Frequency Control Program |
| SR 3.3.3.1.2 (Deleted) | |
| SR 3.3.3.1.3 Perform CHANNEL CALIBRATION. | In accordance with the Surveillance Frequency Control Program |

SURVEILLANCE REQUIREMENTS

-----NOTE-----
When an instrumentation 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.

| 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 | 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 | Perform CHANNEL FUNCTIONAL TEST. | In accordance with the Surveillance Frequency Control Program |
| SR 3.3.4.1.2 | Perform CHANNEL CALIBRATION. The Allowable Values shall be: a. TSV-Closure: $\leq 8.9\%$ closed; and b. TCV Fast Closure, Trip Oil Pressure-Low: ≥ 425.5 psig. | 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 $\geq 25\%$ RTP. | In accordance with the Surveillance Frequency Control Program |

(continued)

SURVEILLANCE REQUIREMENTS

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

| SURVEILLANCE | FREQUENCY |
|--|---|
| SR 3.3.4.2.1 Perform CHANNEL CHECK. | In accordance with the Surveillance Frequency Control Program |
| SR 3.3.4.2.2 Perform CHANNEL FUNCTIONAL TEST. | In accordance with the Surveillance Frequency Control Program |
| SR 3.3.4.2.3 Perform CHANNEL CALIBRATION. The Allowable Values shall be: a. Reactor Vessel Water Level--Low Low, Level 2: \geq -54 inches; and b. Reactor Steam Dome Pressure--High: \leq 1147 psig. | In accordance with the Surveillance Frequency Control Program |
| SR 3.3.4.2.4 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, 3.d, 3.e, and 3.f; and (b) for up to 6 hours for Functions other than 3.c, 3.d, 3.e, and 3.f, provided the associated Function or the redundant Function maintains ECCS initiation capability.
-

| SURVEILLANCE | FREQUENCY |
|---|---|
| SR 3.3.5.1.1 Perform CHANNEL CHECK. | In accordance with the Surveillance Frequency Control Program |
| SR 3.3.5.1.2 Perform CHANNEL FUNCTIONAL TEST. | In accordance with the Surveillance Frequency Control Program |
| SR 3.3.5.1.3 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 |

(continued)

SURVEILLANCE REQUIREMENTS

| SURVEILLANCE | FREQUENCY |
|--|---|
| SR 3.3.5.1.5 Perform LOGIC SYSTEM FUNCTIONAL TEST. | In accordance with the Surveillance Frequency Control Program |
| SR 3.3.5.1.6 Verify ECCS RESPONSE TIME is within limits. | In accordance with the Surveillance Frequency Control Program |

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

| FUNCTION | APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS | REQUIRED CHANNELS PER FUNCTION | CONDITIONS REFERENCED FROM REQUIRED ACTION A.1 | SURVEILLANCE REQUIREMENTS | ALLOWABLE VALUE |
|---|--|--------------------------------------|--|--|--|
| 1. Low Pressure Coolant Injection-A (LPCI) and Low Pressure Core Spray (LPCS) Subsystems | | | | | |
| a. Reactor Vessel Water Level—Low Low Low, Level 1 | 1,2,3, 4 ^(a) ,5 ^(a) | 2 ^(b) | B | SR 3.3.5.1.1 SR 3.3.5.1.2 SR 3.3.5.1.4 SR 3.3.5.1.5 SR 3.3.5.1.6 | ≥ -147.0 inches |
| b. Drywell Pressure—High | 1,2,3 | 2 ^(b) | B | SR 3.3.5.1.2 SR 3.3.5.1.4 SR 3.3.5.1.5 SR 3.3.5.1.6 | ≤ 1.77 psig |
| c. LPCI Pump A Start—Time Delay Relay | 1,2,3, 4 ^(a) ,5 ^(a) | 1 | C | SR 3.3.5.1.2 SR 3.3.5.1.4 SR 3.3.5.1.5 | ≤ 5.5 seconds |
| d. Reactor Steam Dome Pressure—Low (Injection Permissive) | 1,2,3 4 ^(a) ,5 ^(a) | 2 2 | D B | SR 3.3.5.1.2 SR 3.3.5.1.4 SR 3.3.5.1.5 SR 3.3.5.1.6 SR 3.3.5.1.2 SR 3.3.5.1.4 SR 3.3.5.1.5 SR 3.3.5.1.6 | ≥ 490 psig and ≤ 522 psig ≥ 490 psig and ≤ 522 psig |
| e. LPCS Pump Discharge Flow—Low (Bypass) | 1,2,3, 4 ^(a) ,5 ^(a) | 1 | D | SR 3.3.5.1.2 SR 3.3.5.1.3 SR 3.3.5.1.5 | ≥ 1240 gpm and ≤ 1835 gpm |
| f. LPCI Pump A Discharge Flow—Low (Bypass) | 1,2,3, 4 ^(a) ,5 ^(a) | 1 | D | SR 3.3.5.1.2 SR 3.3.5.1.3 SR 3.3.5.1.5 | ≥ 1330 gpm and ≤ 2144 gpm |
| g. LPCS and LPCI A Injection Line Pressure—Low (Injection Permissive) | 1,2,3 4 ^(a) ,5 ^(a) | 1 per valve 1 per valve | D B | SR 3.3.5.1.2 SR 3.3.5.1.4 SR 3.3.5.1.5 SR 3.3.5.1.6 SR 3.3.5.1.2 SR 3.3.5.1.4 SR 3.3.5.1.5 SR 3.3.5.1.6 | ≥ 490 psig and ≤ 522 psig ≥ 490 psig and ≤ 522 psig |
| h. Manual Initiation | 1,2,3, 4 ^(a) ,5 ^(a) | 1 | C | SR 3.3.5.1.5 | NA |

(continued)

(a) When associated ECCS subsystem(s) are required to be OPERABLE per LCO 3.5.2, "ECCS—Shutdown."

(b) Also required to initiate the associated diesel generator (DG).

Table 3.3.5.1-1 (page 2 of 4)
Emergency Core Cooling System Instrumentation

| FUNCTION | APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS | REQUIRED CHANNELS PER FUNCTION | CONDITIONS REFERENCED FROM REQUIRED ACTION A.1 | SURVEILLANCE REQUIREMENTS | ALLOWABLE VALUE |
|--|--|--------------------------------------|--|--|--|
| 2. LPCI B and LPCI C Subsystems | | | | | |
| a. Reactor Vessel Water Level—Low Low Low, Level 1 | 1,2,3, 4 ^(a) , 5 ^(a) | 2 ^(b) | B | SR 3.3.5.1.1 SR 3.3.5.1.2 SR 3.3.5.1.4 SR 3.3.5.1.5 SR 3.3.5.1.6 | ≥ -147.0 inches |
| b. Drywell Pressure—High | 1,2,3 | 2 ^(b) | B | SR 3.3.5.1.2 SR 3.3.5.1.4 SR 3.3.5.1.5 SR 3.3.5.1.6 | ≤ 1.77 psig |
| c. LPCI Pump B Start—Time Delay Relay | 1,2,3, 4 ^(a) , 5 ^(a) | 1 | C | SR 3.3.5.1.2 SR 3.3.5.1.4 SR 3.3.5.1.5 | ≤ 5.5 seconds |
| d. Reactor Steam Dome Pressure—Low (Injection Permissive) | 1,2,3 4 ^(a) , 5 ^(a) | 2 2 | D B | SR 3.3.5.1.2 SR 3.3.5.1.4 SR 3.3.5.1.5 SR 3.3.5.1.6 SR 3.3.5.1.2 SR 3.3.5.1.4 SR 3.3.5.1.5 SR 3.3.5.1.6 | ≥ 490 psig and ≤ 522 psig ≥ 490 psig and ≤ 522 psig |
| e. LPCI Pump B and LPCI Pump C Discharge Flow—Low (Bypass) | 1,2,3, 4 ^(a) , 5 ^(a) | 1 per pump | D | SR 3.3.5.1.2 SR 3.3.5.1.3 SR 3.3.5.1.5 | ≥ 1330 gpm and ≤ 2144 gpm |
| f. LPCI B and LPCI C Injection Line Pressure—Low (Injection Permissive) | 1,2,3 4 ^(a) , 5 ^(a) | 1 per valve 1 per valve | D B | SR 3.3.5.1.2 SR 3.3.5.1.4 SR 3.3.5.1.5 SR 3.3.5.1.6 SR 3.3.5.1.2 SR 3.3.5.1.4 SR 3.3.5.1.5 SR 3.3.5.1.6 | ≥ 490 psig and ≤ 522 psig ≥ 490 psig and ≤ 522 psig |
| g. Manual Initiation | 1,2,3, 4 ^(a) , 5 ^(a) | 1 | C | SR 3.3.5.1.5 | NA |

(continued)

(a) When associated ECCS subsystem(s) are required to be OPERABLE per LCO 3.5.2.

(b) Also required to initiate the associated DG.

ECCS Instrumentation
3.3.5.1

Table 3.3.5.1-1 (page 3 of 4)
Emergency Core Cooling System Instrumentation

| FUNCTION | APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS | REQUIRED CHANNELS PER FUNCTION | CONDITIONS REFERENCED FROM REQUIRED ACTION A.1 | SURVEILLANCE REQUIREMENTS | ALLOWABLE VALUE |
|---|--|--------------------------------------|--|--|------------------------------|
| 3. High Pressure Core Spray (HPCS) System | | | | | |
| a. Reactor Vessel Water Level—Low Low, Level 2 | 1,2,3, 4 ^(a) ,5 ^(a) | 4 ^(b) | B | SR 3.3.5.1.1 SR 3.3.5.1.2 SR 3.3.5.1.4 SR 3.3.5.1.5 SR 3.3.5.1.6 | ≥ -83 inches |
| b. Drywell Pressure—High | 1,2,3 | 4 ^(b) | B | SR 3.3.5.1.2 SR 3.3.5.1.4 SR 3.3.5.1.5 SR 3.3.5.1.6 | ≤ 1.77 psig |
| c. Reactor Vessel Water Level—High, Level 8 | 1,2,3, 4 ^(a) ,5 ^(a) | 2 | C | SR 3.3.5.1.1 SR 3.3.5.1.2 SR 3.3.5.1.4 SR 3.3.5.1.5 | ≤ 66.5 inches |
| d. HPCS Pump Discharge Pressure—High (Bypass) | 1,2,3, 4 ^(a) ,5 ^(a) | 1 | D | SR 3.3.5.1.2 SR 3.3.5.1.4 SR 3.3.5.1.5 | ≥ 113.2 psig |
| e. HPCS System Flow Rate—Low (Bypass) | 1,2,3, 4 ^(a) ,5 ^(a) | 1 | D | SR 3.3.5.1.2 SR 3.3.5.1.3 SR 3.3.5.1.5 | ≥ 1380 gpm and ≤ 2194 gpm |
| f. Manual Initiation | 1,2,3, 4 ^(a) ,5 ^(a) | 1 | C | SR 3.3.5.1.5 | NA |
| 4. Automatic Depressurization System (ADS) Trip System A | | | | | |
| a. Reactor Vessel Water Level—Low Low Low, Level 1 | 1,2 ^(c) ,3 ^(c) | 2 | E | SR 3.3.5.1.1 SR 3.3.5.1.2 SR 3.3.5.1.4 SR 3.3.5.1.5 | ≥ -147.0 inches |
| b. Drywell Pressure—High | 1,2 ^(c) ,3 ^(c) | 2 | E | SR 3.3.5.1.2 SR 3.3.5.1.4 SR 3.3.5.1.5 | ≤ 1.77 psig |
| c. ADS Initiation Timer | 1,2 ^(c) ,3 ^(c) | 1 | F | SR 3.3.5.1.2 SR 3.3.5.1.4 SR 3.3.5.1.5 | ≤ 118 seconds |

(continued)

(a) When associated ECCS subsystem(s) are required to be OPERABLE per LCO 3.5.2.

(b) Also required to initiate the associated DG.

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

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

| FUNCTION | APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS | REQUIRED CHANNELS PER FUNCTION | CONDITIONS REFERENCED FROM REQUIRED ACTION A.1 | SURVEILLANCE REQUIREMENTS | ALLOWABLE VALUE |
|---|--|--------------------------------------|--|--|-------------------------------------|
| 4. ADS Trip System A (continued) | | | | | |
| d. Reactor Vessel Water Level—Low, Level 3 (Confirmatory) | 1,2(c),3(c) | 1 | E | SR 3.3.5.1.1 SR 3.3.5.1.2 SR 3.3.5.1.4 SR 3.3.5.1.5 | ≥ 11.0 inches |
| e. LPCS Pump Discharge Pressure—High | 1,2(c),3(c) | 2 | F | SR 3.3.5.1.2 SR 3.3.5.1.4 SR 3.3.5.1.5 | ≥ 131.2 psig and ≤ 271.0 psig |
| f. LPCI Pump A Discharge Pressure—High | 1,2(c),3(c) | 2 | F | SR 3.3.5.1.2 SR 3.3.5.1.4 SR 3.3.5.1.5 | ≥ 105.0 psig and ≤ 128.6 psig |
| g. ADS Drywell Pressure Bypass Timer | 1,2(c),3(c) | 2 | F | SR 3.3.5.1.2 SR 3.3.5.1.4 SR 3.3.5.1.5 | ≤ 598 seconds |
| h. Manual Initiation | 1,2(c),3(c) | 2 | F | SR 3.3.5.1.5 | NA |
| 5. ADS Trip System B | | | | | |
| a. Reactor Vessel Water Level—Low Low Low, Level 1 | 1,2(c),3(c) | 2 | E | SR 3.3.5.1.1 SR 3.3.5.1.2 SR 3.3.5.1.4 SR 3.3.5.1.5 | ≥ -147.0 inches |
| b. Drywell Pressure—High | 1,2(c),3(c) | 2 | E | SR 3.3.5.1.2 SR 3.3.5.1.4 SR 3.3.5.1.5 | ≤ 1.77 psig |
| c. ADS Initiation Timer | 1,2(c),3(c) | 1 | F | SR 3.3.5.1.2 SR 3.3.5.1.4 SR 3.3.5.1.5 | ≤ 118 seconds |
| d. Reactor Vessel Water Level—Low, Level 3 (Confirmatory) | 1,2(c),3(c) | 1 | E | SR 3.3.5.1.1 SR 3.3.5.1.2 SR 3.3.5.1.4 SR 3.3.5.1.5 | ≥ 11.0 inches |
| e. LPCI Pumps B & C Discharge Pressure—High | 1,2(c),3(c) | 2 per pump | F | SR 3.3.5.1.2 SR 3.3.5.1.4 SR 3.3.5.1.5 | ≥ 105.0 psig and ≤ 128.6 psig |
| f. ADS Drywell Pressure Bypass Timer | 1,2(c),3(c) | 2 | F | SR 3.3.5.1.2 SR 3.3.5.1.4 SR 3.3.5.1.5 | ≤ 598 seconds |
| g. Manual Initiation | 1,2(c),3(c) | 2 | F | SR 3.3.5.1.5 | NA |

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

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 1 and 3 provided the associated Function maintains RCIC initiation capability.
-

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

Primary Containment Isolation Instrumentation
3.3.6.1

ACTIONS

| CONDITION | REQUIRED ACTION | COMPLETION TIME |
|--|--|-----------------|
| J. As required by Required Action C.1 and referenced in Table 3.3.6.1-1. | J.1 Initiate action to restore channel to OPERABLE status. | Immediately |
| | <u>OR</u> J.2 Initiate action to isolate the Residual Heat Removal (RHR) Shutdown Cooling (SDC) System. | Immediately |

SURVEILLANCE REQUIREMENTS

- NOTES-----
1. Refer to Table 3.3.6.1-1 to determine which SRs apply for each Primary Containment Isolation Function.
 2. When a channel is placed in an inoperable status solely for performance of required Surveillances, entry into associated Conditions and Required Actions may be delayed for up to 6 hours provided the associated Function maintains isolation capability.
-

| SURVEILLANCE | FREQUENCY |
|---|---|
| SR 3.3.6.1.1 Perform CHANNEL CHECK. | In accordance with the Surveillance Frequency Control Program |
| SR 3.3.6.1.2 Perform CHANNEL FUNCTIONAL TEST. | In accordance with the Surveillance Frequency Control Program |

(continued)

Primary Containment Isolation Instrumentation
3.3.6.1

SURVEILLANCE REQUIREMENTS

| SURVEILLANCE | | FREQUENCY |
|--------------|--|---|
| 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 |
| SR 3.3.6.1.6 | Verify the ISOLATION SYSTEM RESPONSE TIME of the Main Steam Isolation Valves is within limits. | In accordance with the Surveillance Frequency Control Program |

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 isolation capability.
-

| SURVEILLANCE | | FREQUENCY |
|--------------|---------------------------------------|---|
| SR 3.3.6.2.1 | Perform CHANNEL CHECK. | In accordance with the Surveillance Frequency Control Program |
| SR 3.3.6.2.2 | Perform CHANNEL FUNCTIONAL TEST. | In accordance with the Surveillance Frequency Control Program |
| SR 3.3.6.2.3 | Perform CHANNEL CALIBRATION. | In accordance with the Surveillance Frequency Control Program |
| SR 3.3.6.2.4 | Perform LOGIC SYSTEM FUNCTIONAL TEST. | In accordance with the Surveillance Frequency Control Program |

ACTIONS

| CONDITION | REQUIRED ACTION | COMPLETION TIME |
|--|--|-----------------|
| B. Required Action and associated Completion Time not met. | B.1 Place the associated CRAF subsystem in the pressurization mode of operation. | 1 hour |
| | <u>OR</u> B.2 Declare associated CRAF subsystem inoperable. | 1 hour |

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 CRAF subsystem initiation capability.

| SURVEILLANCE | FREQUENCY |
|---|---|
| SR 3.3.7.1.1 Perform CHANNEL CHECK. | In accordance with the Surveillance Frequency Control Program |
| SR 3.3.7.1.2 Perform CHANNEL FUNCTIONAL TEST. | In accordance with the Surveillance Frequency Control Program |

(continued)

SURVEILLANCE REQUIREMENTS

| SURVEILLANCE | | FREQUENCY |
|--------------|--|---|
| SR 3.3.7.1.3 | Perform CHANNEL CALIBRATION. The Allowable Value shall be ≤ 11.0 mR/hr. | In accordance with the Surveillance Frequency Control Program |
| SR 3.3.7.1.4 | Perform LOGIC SYSTEM FUNCTIONAL TEST. | In accordance with the Surveillance Frequency Control Program |

SURVEILLANCE REQUIREMENTS

- NOTES-----
1. Refer to Table 3.3.8.1-1 to determine which SRs apply for each LOP Function.
 2. When a channel is placed in an inoperable status solely for performance of required Surveillances, entry into associated Conditions and Required Actions may be delayed for up to 2 hours provided the associated Function maintains LOP initiation capability.
-

| SURVEILLANCE | | FREQUENCY |
|--------------|---------------------------------------|---|
| SR 3.3.8.1.1 | Perform CHANNEL FUNCTIONAL TEST. | In accordance with the Surveillance Frequency Control Program |
| SR 3.3.8.1.2 | Perform CHANNEL CALIBRATION. | In accordance with the Surveillance Frequency Control Program |
| SR 3.3.8.1.3 | Perform CHANNEL FUNCTIONAL TEST. | In accordance with the Surveillance Frequency Control Program |
| SR 3.3.8.1.4 | Perform CHANNEL CALIBRATION. | In accordance with the Surveillance Frequency Control Program |
| SR 3.3.8.1.5 | Perform LOGIC SYSTEM FUNCTIONAL TEST. | In accordance with the Surveillance Frequency Control Program |

SURVEILLANCE REQUIREMENTS

| SURVEILLANCE | FREQUENCY |
|--|--|
| <p>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. -----</p> <p>Perform CHANNEL FUNCTIONAL TEST.</p> | <p>In accordance with the Surveillance Frequency Control Program</p> |
| <p>SR 3.3.8.2.2 Perform CHANNEL CALIBRATION. The Allowable Values shall be:</p> <ul style="list-style-type: none"> a. Overvoltage ≤ 131.4 V (with time delay set to ≤ 3.92 seconds). b. Undervoltage ≥ 108.7 V (with time delay set to ≤ 3.92 seconds). c. Underfrequency ≥ 57.3 Hz (with time delay set to ≤ 3.92 seconds) | <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 |
|--|--|
| <p>SR 3.4.1.1 -----NOTE----- Not required to be performed until 24 hours after both recirculation loops are in operation. -----</p> <p>Verify recirculation loop jet pump flow mismatch with both recirculation loops in operation is:</p> <p>a. $\leq 10\%$ of rated core flow when operating at $< 70\%$ of rated core flow; and</p> <p>b. $\leq 5\%$ of rated core flow when operating at $\geq 70\%$ of rated core flow.</p> | <p>In accordance with the Surveillance Frequency Control Program</p> |

3.4 REACTOR COOLANT SYSTEM (RCS)

3.4.2 Flow Control Valves (FCVs)

LCO 3.4.2 A recirculation loop FCV shall be OPERABLE in each operating recirculation loop.

APPLICABILITY: MODES 1 and 2.

ACTIONS

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

| CONDITION | REQUIRED ACTION | COMPLETION TIME |
|--|----------------------|-----------------|
| A. One or two required FCVs inoperable. | A.1 Lock up the FCV. | 4 hours |
| B. Required Action and associated Completion Time not met. | B.1 Be in MODE 3. | 12 hours |

SURVEILLANCE REQUIREMENTS

| SURVEILLANCE | FREQUENCY |
|---|---|
| SR 3.4.2.1 Verify each FCV fails "as is" on loss of hydraulic pressure at the hydraulic unit. | In accordance with the Surveillance Frequency Control Program |

(continued)

SURVEILLANCE REQUIREMENTS

| SURVEILLANCE | | FREQUENCY |
|--------------|--|---|
| SR 3.4.2.2 | <p>Verify average rate of each FCV movement is:</p> <ul style="list-style-type: none"> a. $\leq 11\%$ of stroke per second for opening; and b. $\leq 11\%$ of stroke per second for closing. | In accordance with the Surveillance Frequency Control Program |

SURVEILLANCE REQUIREMENTS

| SURVEILLANCE | FREQUENCY |
|---|--|
| <p>SR 3.4.3.1 -----NOTES-----</p> <ol style="list-style-type: none"> 1. Not required to be performed until 4 hours after associated recirculation loop is in operation. 2. Not required to be performed until 24 hours after > 25% RTP. <p>-----</p> <p>Verify at least two of the following criteria (a, b, and c) are satisfied for each operating recirculation loop:</p> <ol style="list-style-type: none"> a. Recirculation loop drive flow versus flow control valve position differs by $\leq 10\%$ from established patterns. b. Indicated total core flow versus calculated total core flow differs by $\leq 10\%$ from established patterns. c. Each jet pump diffuser to lower plenum differential pressure differs by $\leq 20\%$ from established patterns. | <p>In accordance with the Surveillance Frequency Control Program</p> |

ACTIONS

| CONDITION | REQUIRED ACTION | COMPLETION TIME |
|--|---|------------------------------|
| B. (continued) | B.2 Verify source of unidentified LEAKAGE increase is not intergranular stress corrosion cracking susceptible material. | 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 3.4.5.1 Verify RCS unidentified and total LEAKAGE and unidentified LEAKAGE increase are within limits. | 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 other required leakage detection instrumentation is OPERABLE.

| SURVEILLANCE | | FREQUENCY |
|--------------|--|---|
| SR 3.4.7.1 | Perform CHANNEL CHECK of required drywell atmospheric monitoring system. | In accordance with the Surveillance Frequency Control Program |
| SR 3.4.7.2 | Perform CHANNEL FUNCTIONAL TEST of required leakage detection instrumentation. | In accordance with the Surveillance Frequency Control Program |
| SR 3.4.7.3 | Perform 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 |
| | <p style="text-align: center;"><u>AND</u></p> B.2.2.2 Be in MODE 4. | 36 hours |

SURVEILLANCE REQUIREMENTS

| SURVEILLANCE | FREQUENCY |
|---|---|
| SR 3.4.8.1 -----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 |

RHR Shutdown Cooling System—Hot Shutdown
3.4.9

SURVEILLANCE REQUIREMENTS

| SURVEILLANCE | FREQUENCY |
|--|--|
| <p>SR 3.4.9.1 -----NOTE----- Not required to be met until 2 hours after reactor vessel pressure is less than the RHR cut-in permissive pressure. ----- 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
3.4.10

ACTIONS

| 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> Once per 12 hours thereafter |
| | <u>AND</u> B.2 Monitor reactor coolant temperature and pressure. | Once per hour |

SURVEILLANCE REQUIREMENTS

| SURVEILLANCE | FREQUENCY |
|---|---|
| SR 3.4.10.1 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 3.4.11.1 -----NOTE----- Only required to be performed during RCS heatup and cooldown operations, and RCS inservice leak and hydrostatic testing. -----</p> <p>Verify:</p> <ul style="list-style-type: none"> a. RCS pressure and RCS temperature are within the applicable limits specified in Figures 3.4.11-1, 3.4.11-2, 3.4.11-3 for Unit 1 up to 20 EFPY, and Figures 3.4.11-4, 3.4.11-5, and 3.4.11-6 for Unit 2 up to 20 EFPY; b. RCS heatup and cooldown rates are $\leq 100^{\circ}\text{F}$ in any 1 hour period; and c. RCS temperature change during system leakage and hydrostatic testing is $\leq 20^{\circ}\text{F}$ in any one hour period when the RCS pressure and RCS temperature are not within the limits of Figure 3.4.11-2 for Unit 1 up to 20 EFPY and Figure 3.4.11-5 for Unit 2 up to 20 EFPY. | <p>In accordance with the Surveillance Frequency Control Program</p> |
| <p>SR 3.4.11.2 Verify RCS pressure and RCS temperature are within the criticality limits specified in Figure 3.4.11-3 for Unit 1 up to 20 EFPY and Figure 3.4.11-6 for Unit 2 up to 20 EFPY.</p> | <p>Once within 15 minutes prior to control rod withdrawal for the purpose of achieving criticality</p> |

(continued)

SURVEILLANCE REQUIREMENTS

| SURVEILLANCE | FREQUENCY |
|--|---|
| <p>SR 3.4.11.3 -----NOTE----- Only required to be met in MODES 1, 2, 3, and 4 during recirculation pump startup. -----</p> <p>Verify the difference between the bottom head coolant temperature and the reactor pressure vessel (RPV) coolant temperature is $\leq 145^{\circ}\text{F}$.</p> | <p>Once within 15 minutes prior to each startup of a recirculation pump</p> |
| <p>SR 3.4.11.4 -----NOTE----- Only required to be met in MODES 1, 2, 3, and 4 during recirculation pump startup. -----</p> <p>Verify the difference between the reactor coolant temperature in the recirculation loop to be started and the RPV coolant temperature is $\leq 50^{\circ}\text{F}$.</p> | <p>Once within 15 minutes prior to each startup of a recirculation pump</p> |
| <p>SR 3.4.11.5 -----NOTE----- Only required to be performed when tensioning the reactor vessel head bolting studs. -----</p> <p>Verify reactor vessel flange and head flange temperatures are $\geq 72^{\circ}\text{F}$ for Unit 1 and $\geq 86^{\circ}\text{F}$ for Unit 2.</p> | <p>In accordance with the Surveillance Frequency Control Program</p> |

(continued)

SURVEILLANCE REQUIREMENTS

| SURVEILLANCE | FREQUENCY |
|--|--|
| <p>SR 3.4.11.6 -----NOTE----- Not required to be performed until 30 minutes after RCS temperature $\leq 77^{\circ}\text{F}$ for Unit 1 and $\leq 91^{\circ}\text{F}$ for Unit 2 in MODE 4. -----</p> <p>Verify reactor vessel flange and head flange temperatures are $\geq 72^{\circ}\text{F}$ for Unit 1 and $\geq 86^{\circ}\text{F}$ for Unit 2.</p> | <p>In accordance with the Surveillance Frequency Control Program</p> |
| <p>SR 3.4.11.7 -----NOTE----- Not required to be performed until 12 hours after RCS temperature $\leq 92^{\circ}\text{F}$ for Unit 1 and $\leq 106^{\circ}\text{F}$ for Unit 2 in MODE 4. -----</p> <p>Verify reactor vessel flange and head flange temperatures are $\geq 72^{\circ}\text{F}$ for Unit 1 and $\geq 86^{\circ}\text{F}$ for Unit 2.</p> | <p>In accordance with the Surveillance Frequency Control Program</p> |

3.4 REACTOR COOLANT SYSTEM (RCS)

3.4.12 Reactor Steam Dome Pressure

LC0 3.4.12 The reactor steam dome pressure shall be ≤ 1020 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 3.4.12.1 Verify reactor steam dome pressure is ≤ 1020 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 | Verify each ECCS injection/spray subsystem manual, power operated, and automatic valve in the flow path, that is not locked, sealed, or otherwise secured in position, is in the correct position. | In accordance with the Surveillance Frequency Control Program | | | | | | | | | | | | | | | |
| SR 3.5.1.3 | Verify ADS accumulator supply header pressure is ≥ 150 psig. | In accordance with the Surveillance Frequency Control Program | | | | | | | | | | | | | | | |
| SR 3.5.1.4 | Verify ADS accumulator backup compressed gas system bottle pressure is ≥ 500 psig. <u>OR</u> Verify ADS accumulator reserve bottle pressure is ≥ 1100 psig. | In accordance with the Surveillance Frequency Control Program | | | | | | | | | | | | | | | |
| SR 3.5.1.5 | Verify each ECCS pump develops the specified flow rate against the specified test line pressure. <table> <tr> <th><u>SYSTEM</u></th><th><u>FLOW RATE</u></th><th><u>TEST LINE PRESSURE</u></th></tr> <tr> <td>LPCS</td><td>≥ 6350 gpm</td><td>≥ 290 psig</td></tr> <tr> <td>LPCI</td><td>≥ 7200 gpm</td><td>≥ 130 psig</td></tr> <tr> <td>HPCS (Unit 1)</td><td>≥ 6250 gpm</td><td>≥ 370 psig</td></tr> <tr> <td>HPCS (Unit 2)</td><td>≥ 6200 gpm</td><td>≥ 330 psig</td></tr> </table> | <u>SYSTEM</u> | <u>FLOW RATE</u> | <u>TEST LINE PRESSURE</u> | LPCS | ≥ 6350 gpm | ≥ 290 psig | LPCI | ≥ 7200 gpm | ≥ 130 psig | HPCS (Unit 1) | ≥ 6250 gpm | ≥ 370 psig | HPCS (Unit 2) | ≥ 6200 gpm | ≥ 330 psig | In accordance with the Inservice Testing Program |
| <u>SYSTEM</u> | <u>FLOW RATE</u> | <u>TEST LINE PRESSURE</u> | | | | | | | | | | | | | | | |
| LPCS | ≥ 6350 gpm | ≥ 290 psig | | | | | | | | | | | | | | | |
| LPCI | ≥ 7200 gpm | ≥ 130 psig | | | | | | | | | | | | | | | |
| HPCS (Unit 1) | ≥ 6250 gpm | ≥ 370 psig | | | | | | | | | | | | | | | |
| HPCS (Unit 2) | ≥ 6200 gpm | ≥ 330 psig | | | | | | | | | | | | | | | |

(continued)

SURVEILLANCE REQUIREMENTS

| SURVEILLANCE | FREQUENCY |
|--|--|
| <p>SR 3.5.1.6 -----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 3.5.1.7 -----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 3.5.1.8 -----NOTE----- Valve actuation may be excluded. -----</p> <p>Verify each required ADS valve actuator strokes when manually actuated.</p> | <p>In accordance with the Surveillance Frequency Control Program</p> |

SURVEILLANCE REQUIREMENTS

| SURVEILLANCE | | FREQUENCY | | | | | | | | | | | | | | | |
|---------------|---|---|------------------|---------------------------|------|-----------------|-----------------|------|-----------------|-----------------|---------------|-----------------|-----------------|---------------|-----------------|-----------------|--|
| SR 3.5.2.1 | Verify, for each required low pressure ECCS injection/spray subsystem, the suppression pool water level is \geq -12 ft 7 in. | In accordance with the Surveillance Frequency Control Program | | | | | | | | | | | | | | | |
| SR 3.5.2.2 | Verify, for the required High Pressure Core Spray (HPCS) System, the suppression pool water level is \geq -12 ft 7 in. | In accordance with the Surveillance Frequency Control Program | | | | | | | | | | | | | | | |
| 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. | In accordance with the Surveillance Frequency Control Program | | | | | | | | | | | | | | | |
| SR 3.5.2.4 | 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. | In accordance with the Surveillance Frequency Control Program | | | | | | | | | | | | | | | |
| SR 3.5.2.5 | <p>Verify each required ECCS pump develops the specified flow rate against the specified test line pressure.</p> <table> <tr> <th><u>SYSTEM</u></th><th><u>FLOW RATE</u></th><th><u>TEST LINE PRESSURE</u></th></tr> <tr> <td>LPCS</td><td>\geq 6350 gpm</td><td>\geq 290 psig</td></tr> <tr> <td>LPCI</td><td>\geq 7200 gpm</td><td>\geq 130 psig</td></tr> <tr> <td>HPCS (Unit 1)</td><td>\geq 6250 gpm</td><td>\geq 370 psig</td></tr> <tr> <td>HPCS (Unit 2)</td><td>\geq 6200 gpm</td><td>\geq 330 psig</td></tr> </table> | <u>SYSTEM</u> | <u>FLOW RATE</u> | <u>TEST LINE PRESSURE</u> | LPCS | \geq 6350 gpm | \geq 290 psig | LPCI | \geq 7200 gpm | \geq 130 psig | HPCS (Unit 1) | \geq 6250 gpm | \geq 370 psig | HPCS (Unit 2) | \geq 6200 gpm | \geq 330 psig | In accordance with the Inservice Testing Program |
| <u>SYSTEM</u> | <u>FLOW RATE</u> | <u>TEST LINE PRESSURE</u> | | | | | | | | | | | | | | | |
| LPCS | \geq 6350 gpm | \geq 290 psig | | | | | | | | | | | | | | | |
| LPCI | \geq 7200 gpm | \geq 130 psig | | | | | | | | | | | | | | | |
| HPCS (Unit 1) | \geq 6250 gpm | \geq 370 psig | | | | | | | | | | | | | | | |
| HPCS (Unit 2) | \geq 6200 gpm | \geq 330 psig | | | | | | | | | | | | | | | |

(continued)

SURVEILLANCE REQUIREMENTS

| SURVEILLANCE | FREQUENCY |
|---|--|
| <p>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.</p> | <p>In accordance with the Surveillance Frequency Control Program</p> |

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, is in the correct position. | In accordance with the Surveillance Frequency Control Program |
| SR 3.5.3.3 | <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 ≤ 1020 psig and ≥ 920 psig, the RCIC pump can develop a flow rate ≥ 600 gpm against a system head corresponding to reactor pressure.</p> | In accordance with the Surveillance Frequency Control Program |
| SR 3.5.3.4 | <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 ≤ 165 psig, the RCIC pump can develop a flow rate ≥ 600 gpm against a system head corresponding to reactor pressure.</p> | In accordance with the Surveillance Frequency Control Program |

(continued)

SURVEILLANCE REQUIREMENTS

| SURVEILLANCE | FREQUENCY |
|--|--|
| <p>SR 3.5.3.5 -----NOTE----- Vessel injection may be excluded. ----- 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

| SURVEILLANCE | FREQUENCY |
|--|--|
| <p>SR 3.6.1.1.3 Verify drywell-to-suppression chamber bypass leakage is $\leq 10\%$ of the acceptable A/\sqrt{k} design value of 0.030 ft² at an initial differential pressure of ≥ 1.5 psid.</p> | <p>In accordance with the Surveillance Frequency Control Program</p> <p><u>AND</u></p> <p>48 months following a test with bypass leakage greater than the bypass leakage limit</p> <p><u>AND</u></p> <p>24 months following 2 consecutive tests with bypass leakage greater than the bypass leakage limit until 2 consecutive tests are less than or equal to the bypass leakage limit</p> |

(continued)

SURVEILLANCE REQUIREMENTS

| SURVEILLANCE | FREQUENCY |
|--|--|
| <p>SR 3.6.1.1.4 -----NOTE----- Performance of SR 3.6.1.1.3 satisfies this surveillance. -----</p> <p>Verify individual drywell-to-suppression chamber vacuum relief valve bypass leakage is $\leq 1.2\%$ of the acceptable $A\sqrt{k}$ design value of 0.030 ft² at an initial differential pressure of ≥ 1.5 psid.</p> | <p>In accordance with the Surveillance Frequency Control Program</p> |
| <p>SR 3.6.1.1.5 -----NOTE----- Performance of SR 3.6.1.1.3 satisfies this surveillance. -----</p> <p>Verify total drywell-to-suppression chamber vacuum relief valve bypass leakage is $\leq 3.0\%$ of the acceptable $A\sqrt{k}$ design value of 0.030 ft² at an initial differential pressure of ≥ 1.5 psid.</p> | <p>In accordance with the Surveillance Frequency Control Program</p> |

ACTIONS

| CONDITION | REQUIRED ACTION | COMPLETION TIME |
|--|--|-----------------|
| C. (continued) | C.3 Restore air lock to OPERABLE status. | 24 hours |
| 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 -----NOTES-----</p> <ol style="list-style-type: none"> 1. An inoperable air lock door does not invalidate the previous successful performance of the overall air lock leakage test. 2. Results shall be evaluated against acceptance criteria applicable to SR 3.6.1.1.1. <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 |
| <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 |
|---|--|
| <p>SR 3.6.1.3.1 -----NOTE-----</p> <p>Not required to be met when the 8 inch and 26 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, provided the drywell purge valves and suppression chamber purge valves are not open simultaneously.</p> <p>-----</p> <p>Verify each 8 inch and 26 inch primary containment purge valve is closed.</p> | <p>In accordance with the Surveillance Frequency Control Program</p> |
| <p>SR 3.6.1.3.2 -----NOTES-----</p> <p>1. Valves and blind flanges in high radiation areas may be verified by use of administrative means.</p> <p>2. Not required to be met for PCIVs that are open under administrative controls.</p> <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> | <p>In accordance with the Surveillance Frequency Control Program</p> |

(continued)

SURVEILLANCE REQUIREMENTS

| SURVEILLANCE | | FREQUENCY |
|--------------|---|--|
| SR 3.6.1.3.3 | <p>-----NOTES-----</p> <ol style="list-style-type: none"> 1. Valves and blind flanges in high radiation areas may be verified by use of administrative means. 2. Not required to be met for PCIVs that are open under administrative controls. <p>-----</p> <p>Verify each primary containment isolation manual 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> | <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</p> |
| SR 3.6.1.3.4 | Verify continuity of the traversing incore probe (TIP) shear isolation valve explosive charge. | In accordance with the Surveillance Frequency Control Program |
| SR 3.6.1.3.5 | Verify the isolation time of each power operated, automatic PCIV, except MSIVs, is within limits. | In accordance with the Inservice Testing Program |

(continued)

SURVEILLANCE REQUIREMENTS

| SURVEILLANCE | | FREQUENCY |
|---------------|--|---|
| SR 3.6.1.3.6 | Verify the isolation time of each MSIV is ≥ 3 seconds and ≤ 5 seconds. | In accordance with the Inservice Testing Program |
| SR 3.6.1.3.7 | Verify each automatic PCIV actuates to the isolation position on an actual or simulated isolation signal. | In accordance with the Surveillance Frequency Control Program |
| SR 3.6.1.3.8 | Verify each reactor instrumentation line EFCV actuates to the isolation position on an actual or simulated instrument line break signal. | In accordance with the Surveillance Frequency Control Program |
| SR 3.6.1.3.9 | Remove and test the explosive squib from each shear isolation valve of the TIP System. | In accordance with the Surveillance Frequency Control Program |
| SR 3.6.1.3.10 | Verify leakage rate through any one main steam line is ≤ 200 scfh and through all four main steam lines is ≤ 400 scfh when tested at ≥ 25.0 psig. | In accordance with the Primary Containment Leakage Rate Testing Program |
| SR 3.6.1.3.11 | Verify combined leakage rate through hydrostatically tested lines that penetrate the primary containment is within limits. | In accordance with the Primary Containment Leakage Rate Testing Program |

Drywell and Suppression Chamber Pressure
3.6.1.4

3.6 CONTAINMENT SYSTEMS

3.6.1.4 Drywell and Suppression Chamber Pressure

LCO 3.6.1.4 Drywell and suppression chamber pressure shall be
≥ -0.5 psig and ≤ +0.75 psig.

APPLICABILITY: MODES 1, 2, and 3.

ACTIONS

| CONDITION | REQUIRED ACTION | COMPLETION TIME |
|---|--|-----------------|
| A. Drywell or suppression chamber pressure not within limits. | A.1 Restore drywell and suppression chamber pressure to within limits. | 1 hour |
| B. Required Action and associated Completion Time not met. | B.1 Be in MODE 3. <u>AND</u> | 12 hours |
| | B.2 Be in MODE 4. | 36 hours |

SURVEILLANCE REQUIREMENTS

| SURVEILLANCE | FREQUENCY |
|--|---|
| SR 3.6.1.4.1 Verify drywell and suppression chamber pressure is within limits. | In accordance with the Surveillance Frequency Control Program |

3.6 CONTAINMENT SYSTEMS

3.6.1.5 Drywell Air Temperature

LC0 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. <u>AND</u> | 12 hours |
| | 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

| CONDITION | REQUIRED ACTION | COMPLETION TIME |
|---|----------------------|-----------------|
| E. Two or more suppression chamber-to-drywell vacuum breakers inoperable. | E.1 Enter LCO 3.0.3. | Immediately |

SURVEILLANCE REQUIREMENTS

| SURVEILLANCE | FREQUENCY |
|--|---|
| SR 3.6.1.6.1 -----NOTES----- 1. Not required to be met for vacuum breakers that are open during Surveillances. 2. Not required to be met for vacuum breakers open when performing their intended function. ----- Verify each vacuum breaker is closed. | In accordance with the Surveillance Frequency Control Program |

(continued)

Suppression Chamber-to-Drywell Vacuum Breakers
3.6.1.6

SURVEILLANCE REQUIREMENTS

| SURVEILLANCE | | FREQUENCY |
|--------------|--|---|
| SR 3.6.1.6.2 | Perform a functional test of each vacuum breaker. | <p>In accordance with the Surveillance Frequency Control Program</p> <p><u>AND</u></p> <p>Within 12 hours after any discharge of steam to the suppression chamber from the safety/relief valves</p> |
| SR 3.6.1.6.3 | Verify the opening setpoint of each vacuum breaker is ≤ 0.5 psid. | In accordance with the Surveillance Frequency Control Program |

Suppression Pool Average Temperature
3.6.2.1

ACTIONS

| CONDITION | REQUIRED ACTION | COMPLETION TIME |
|--|---|---------------------|
| C. Suppression pool average temperature > 110°F but ≤ 120°F. | C.1 Place the reactor mode switch in the shutdown position. | Immediately |
| | <u>AND</u> | |
| | C.2 Verify suppression pool average temperature ≤ 120°F. | Once per 30 minutes |
| | <u>AND</u> | |
| | C.3 Be in MODE 4. | 36 hours |
| D. Suppression pool average temperature > 120°F. | D.1 Depressurize the reactor vessel to < 200 psig. | 12 hours |
| | <u>AND</u> | |
| | D.2 Be in MODE 4. | 36 hours |

SURVEILLANCE REQUIREMENTS

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

Suppression Pool Water Level
3.6.2.2

3.6 CONTAINMENT SYSTEMS

3.6.2.2 Suppression Pool Water Level

LC0 3.6.2.2 Suppression pool water level shall be ≥ -4.5 inches and $\leq +3$ 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 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 3.6.2.3.2 | Verify each required RHR pump develops a flow rate ≥ 7200 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 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 3.6.2.4.2 | Verify each required RHR pump develops a flow rate ≥ 450 gpm through the spray sparger while operating in the suppression pool spray mode. | In accordance with the Inservice Testing Program |

Primary Containment Oxygen Concentration
3.6.3.2

3.6 CONTAINMENT SYSTEMS

3.6.3.2 Primary Containment Oxygen Concentration

LC0 3.6.3.2 The primary containment oxygen concentration shall be < 4.0 volume percent.

APPLICABILITY: MODE 1 during the time period:

- a. From 24 hours after THERMAL POWER is > 15% RTP following startup, to
- b. 24 hours prior to reducing THERMAL POWER to < 15% RTP prior to the next scheduled reactor shutdown.

ACTIONS

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

SURVEILLANCE REQUIREMENTS

| SURVEILLANCE | FREQUENCY |
|--|---|
| SR 3.6.3.2.1 Verify primary containment oxygen concentration is within limits. | In accordance with the Surveillance Frequency Control Program |

SURVEILLANCE REQUIREMENTS

| SURVEILLANCE | | FREQUENCY |
|--------------|---|---|
| SR 3.6.4.1.1 | Verify secondary containment vacuum is ≥ 0.25 inch of vacuum water gauge. | In accordance with the Surveillance Frequency Control Program |
| SR 3.6.4.1.2 | Verify one secondary containment access door in each access opening is closed. | In accordance with the Surveillance Frequency Control Program |
| SR 3.6.4.1.3 | Verify the secondary containment can be drawn down to ≥ 0.25 inch of vacuum water gauge in ≤ 900 seconds using one standby gas treatment (SGT) subsystem. | In accordance with the Surveillance Frequency Control Program |
| SR 3.6.4.1.4 | Verify the secondary containment can be maintained ≥ 0.25 inch of vacuum water gauge for 1 hour using one SGT subsystem at a flow rate ≤ 4400 cfm. | In accordance with the Surveillance Frequency Control Program |
| SR 3.6.4.1.5 | Verify all secondary containment equipment hatches are closed and sealed. | In accordance with the Surveillance Frequency Control Program |

SURVEILLANCE REQUIREMENTS

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

ACTIONS

| CONDITION | REQUIRED ACTION | COMPLETION TIME |
|----------------|--|-----------------|
| E. (continued) | E.2 Suspend CORE ALTERATIONS. | Immediately |
| | <u>AND</u> | |
| | E.3 Initiate action to suspend OPDRVs. | Immediately |

SURVEILLANCE REQUIREMENTS

| SURVEILLANCE | | FREQUENCY |
|--------------|---|---|
| SR 3.6.4.3.1 | Operate each SGT subsystem for ≥ 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 |

ACTIONS

| CONDITION | REQUIRED ACTION | COMPLETION TIME |
|---|--|------------------------------|
| B. Required Action and associated Completion Time of Condition A not met. | B.1 Be in MODE 3. | 12 hours |
| C. Both RHRSW subsystems inoperable. | C.1 -----NOTE----- Enter applicable Conditions and Required Actions of LCO 3.4.9 for RHR shutdown cooling subsystems made inoperable by RHRSW System. ----- Restore one RHRSW subsystem to OPERABLE status. | 8 hours |
| D. Required Action and associated Completion Time of Condition C not met. | D.1 Be in MODE 3. <u>AND</u> D.2 Be in MODE 4. | 12 hours 36 hours |

SURVEILLANCE REQUIREMENTS

| SURVEILLANCE | FREQUENCY |
|--|---|
| SR 3.7.1.1 Verify each RHRSW manual, power operated, and automatic valve in the flow path, that is not locked, sealed, or otherwise secured in position, is in the correct position or can be aligned to the correct position. | In accordance with the Surveillance Frequency Control Program |

3.7 PLANT SYSTEMS

3.7.2 Diesel Generator Cooling Water (DGCW) System

LCO 3.7.2 The following DGCW subsystems shall be OPERABLE:

- a. Three DGCW subsystems; and
- b. The opposite unit Division 2 DGCW subsystem.

APPLICABILITY: MODES 1, 2, and 3.

ACTIONS

-----NOTE-----
Separate Condition entry is allowed for each DGCW subsystem.

| CONDITION | REQUIRED ACTION | COMPLETION TIME |
|--|--|-----------------|
| A. One or more DGCW subsystems inoperable. | A.1 Declare supported component(s) inoperable. | Immediately |

SURVEILLANCE REQUIREMENTS

| SURVEILLANCE | | FREQUENCY |
|--------------|--|---|
| SR 3.7.2.1 | Verify each DGCW 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. | In accordance with the Surveillance Frequency Control Program |
| SR 3.7.2.2 | Verify each DGCW pump starts automatically on each required actual or simulated initiation signal. | In accordance with the Surveillance Frequency Control Program |

SURVEILLANCE REQUIREMENTS

| SURVEILLANCE | | FREQUENCY |
|--------------|--|---|
| SR 3.7.3.1 | Verify cooling water temperature supplied to the plant from the CSCS pond is $\leq 101.25^{\circ}\text{F}$. | In accordance with the Surveillance Frequency Control Program |
| SR 3.7.3.2 | Verify sediment level is ≤ 1.5 ft in the intake flume and the CSCS pond. | In accordance with the Surveillance Frequency Control Program |
| SR 3.7.3.3 | Verify CSCS pond bottom elevation is ≤ 686.5 ft. | In accordance with the Surveillance Frequency Control Program |

ACTIONS

| CONDITION | REQUIRED ACTION | COMPLETION TIME |
|---|--|-----------------|
| F. Two CRAF subsystems inoperable during movement of irradiated fuel assemblies in the secondary containment, during CORE ALTERATIONS, or during OPDRVs. <u>OR</u> One or more CRAF subsystems inoperable due to inoperable CRE boundary during movement of irradiated fuel assemblies in the secondary containment, during CORE ALTERATIONS, or during OPDRVs. | -----NOTE----- LCO 3.0.3 is not applicable. ----- | |
| | F.1 Suspend movement of irradiated fuel assemblies in the 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 3.7.4.1 Operate each CRAF subsystem for ≥ 10 continuous hours with the heaters operating. | In accordance with the Surveillance Frequency Control Program |

(continued)

SURVEILLANCE REQUIREMENTS

| SURVEILLANCE | | FREQUENCY |
|--------------|--|---|
| SR 3.7.4.2 | Manually initiate flow through the CRAF recirculation filters for ≥ 10 hours. | In accordance with the Surveillance Frequency Control Program |
| SR 3.7.4.3 | Perform required CRAF filter testing in accordance with the Ventilation Filter Testing Program (VFTP). | In accordance with the VFTP |
| SR 3.7.4.4 | Verify each CRAF subsystem actuates on an actual or simulated initiation signal. | In accordance with the Surveillance Frequency Control Program |
| SR 3.7.4.5 | Perform required CRE unfiltered air inleakage testing in accordance with the Control Room Envelope Habitability Program. | In accordance with the Control Room Envelope Habitability Program |

Control Room Area Ventilation AC System
3.7.5

ACTIONS

| CONDITION | REQUIRED ACTION | COMPLETION TIME |
|---|---|-----------------|
| E. Required Action and associated Completion Time of Condition B not met 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 action to suspend OPDRVs. | Immediately |

SURVEILLANCE REQUIREMENTS

| SURVEILLANCE | FREQUENCY |
|--|---|
| SR 3.7.5.1 Monitor control room and auxiliary electric equipment room temperatures. | In accordance with the Surveillance Frequency Control Program |
| SR 3.7.5.2 Verify correct breaker alignment and indicated power are available to the control room area ventilation AC subsystems. | In accordance with the Surveillance Frequency Control Program |

SURVEILLANCE REQUIREMENTS

| SURVEILLANCE | FREQUENCY |
|--|--|
| <p>SR 3.7.6.1 -----NOTE----- Not required to be performed until 31 days after any main steam line not isolated and SJAE in operation. -----</p> <p>Verify the gross gamma activity rate of the noble gases is $\leq 340,000 \mu\text{Ci/second}$ after decay of 30 minutes.</p> | <p>In accordance with the Surveillance Frequency Control Program</p> <p><u>AND</u></p> <p>Once within 4 hours after a $\geq 50\%$ increase in the nominal steady state fission gas release after factoring out increases due to changes in THERMAL POWER level</p> |

3.7 PLANT SYSTEMS

3.7.7 Main Turbine Bypass System

LCO 3.7.7 The Main Turbine Bypass System shall be OPERABLE.

OR

LCO 3.2.2, "MINIMUM CRITICAL POWER RATIO (MCPR)," limits for an inoperable Main Turbine Bypass System, as specified in the COLR, are made applicable.

APPLICABILITY: THERMAL POWER \geq 25% RTP.

ACTIONS

| CONDITION | REQUIRED ACTION | COMPLETION TIME |
|--|--|-----------------|
| A. Requirements of the LCO not met. | A.1 Satisfy the requirements of the LCO. | 2 hours |
| B. Required Action and associated Completion Time not met. | B.1 Reduce THERMAL POWER to < 25% RTP. | 4 hours |

SURVEILLANCE REQUIREMENTS

| SURVEILLANCE | FREQUENCY |
|---|---|
| SR 3.7.7.1 Verify one complete cycle of each main turbine bypass valve. | In accordance with the Surveillance Frequency Control Program |

(continued)

SURVEILLANCE REQUIREMENTS

| SURVEILLANCE | | FREQUENCY |
|--------------|--|---|
| SR 3.7.7.2 | Perform a system functional test. | In accordance with the Surveillance Frequency Control Program |
| SR 3.7.7.3 | Verify the TURBINE BYPASS SYSTEM RESPONSE TIME is within limits. | In accordance with the Surveillance Frequency Control Program |

3.7 PLANT SYSTEMS

3.7.8 Spent Fuel Storage Pool Water Level

LC0 3.7.8 The spent fuel storage pool water level shall be ≥ 21 ft 4 inches 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,
During movement of new fuel assemblies in the spent fuel storage pool with irradiated fuel assemblies seated 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</p> <p>-----NOTE----- LCO 3.0.3 is not applicable. -----</p> <p>Suspend movement of fuel assemblies in the spent fuel storage pool.</p> | Immediately |

SURVEILLANCE REQUIREMENTS

| SURVEILLANCE REQUIREMENTS | | FREQUENCY |
|---------------------------|---|---|
| SR 3.7.8.1 | Verify the spent fuel storage pool water level is \geq 21 ft 4 inches 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

- NOTES-----
1. SR 3.8.1.1 through SR 3.8.1.20 are applicable only to the given unit's AC electrical power sources.
 2. SR 3.8.1.21 is applicable to the required opposite unit's DG.
-

| SURVEILLANCE | | FREQUENCY |
|--------------|--|---|
| SR 3.8.1.1 | Verify correct breaker alignment and indicated power availability for each required offsite circuit. | In accordance with the Surveillance Frequency Control Program |
| SR 3.8.1.2 | <p>-----NOTES-----</p> <ol style="list-style-type: none"> 1. All DG starts may be preceded by an engine prelube period and followed by a warmup period prior to loading. 2. A modified DG start involving idling and gradual acceleration to synchronous speed may be used for this SR as recommended by the manufacturer. When modified start procedures are not used, the time, voltage, and frequency tolerances of SR 3.8.1.7 must be met. 3. A single test of the common DG at the specified Frequency will satisfy the Surveillance for both units. <p>-----</p> <p>Verify each required DG starts from standby conditions and achieves steady state voltage ≥ 4010 V and ≤ 4310 V and frequency ≥ 58.8 Hz and ≤ 61.2 Hz.</p> | In accordance with the Surveillance Frequency Control Program |

(continued)

SURVEILLANCE REQUIREMENTS

| SURVEILLANCE | | FREQUENCY |
|--------------|---|---|
| SR 3.8.1.3 | <p>-----NOTES-----</p> <ol style="list-style-type: none"> 1. DG loadings may include gradual loading as recommended by the manufacturer. 2. Momentary transients outside the load range do not invalidate this test. 3. This Surveillance shall be conducted on only one DG at a time. 4. This SR shall be preceded by, and immediately follow, without shutdown, a successful performance of SR 3.8.1.2 or SR 3.8.1.7. 5. A single test of the common DG at the specified Frequency will satisfy the Surveillance for both units. <p>-----</p> <p>Verify each required DG is synchronized and loaded and operates for ≥ 60 minutes at a load ≥ 2400 kW and ≤ 2600 kW.</p> | In accordance with the Surveillance Frequency Control Program |
| SR 3.8.1.4 | Verify each required day tank contains ≥ 250 gal of fuel oil for Divisions 1 and 2 and ≥ 550 gal for Division 3. | In accordance with the Surveillance Frequency Control Program |
| SR 3.8.1.5 | Check for and remove accumulated water from each required day tank. | In accordance with the Surveillance Frequency Control Program |

(continued)

SURVEILLANCE REQUIREMENTS

| SURVEILLANCE | FREQUENCY |
|--|---|
| SR 3.8.1.6 Verify each required fuel oil transfer system operates to automatically transfer fuel oil from storage tanks to the day tank. | In accordance with the Surveillance Frequency Control Program |
| SR 3.8.1.7 -----NOTES----- 1. All DG starts may be preceded by an engine prelube period. 2. A single test of the common DG at the specified Frequency will satisfy the Surveillance for both units. ----- Verify each required DG starts from standby condition and achieves: a. In ≤ 13 seconds, voltage ≥ 4010 V and frequency ≥ 58.8 Hz; and b. Steady state voltage ≥ 4010 V and ≤ 4310 V and frequency ≥ 58.8 Hz and ≤ 61.2 Hz. | In accordance with the Surveillance Frequency Control Program |
| SR 3.8.1.8 -----NOTE----- This Surveillance shall not normally be performed in MODE 1 or 2. However, this Surveillance may be performed to reestablish OPERABILITY provided an assessment determines the safety of the plant is maintained or enhanced. Credit may be taken for unplanned events that satisfy this SR. ----- Verify manual transfer of unit power supply from the normal offsite circuit to the alternate offsite circuit. | In accordance with the Surveillance Frequency Control Program |

(continued)

SURVEILLANCE REQUIREMENTS

| SURVEILLANCE | FREQUENCY |
|--|--|
| <p>SR 3.8.1.9 -----NOTES-----</p> <ol style="list-style-type: none"> 1. This Surveillance shall not normally be performed in MODE 1 or 2. However, this Surveillance may be performed to reestablish OPERABILITY provided an assessment determines the safety of the plant is maintained or enhanced. Credit may be taken for unplanned events that satisfy this SR. 2. A single test of the common DG at the specified Frequency will satisfy the Surveillance for both units. <p>-----</p> <p>Verify each required DG rejects a load greater than or equal to its associated single largest post-accident load and following load rejection, the frequency is ≤ 66.7 Hz.</p> | <p>In accordance with the Surveillance Frequency Control Program</p> |
| <p>SR 3.8.1.10 -----NOTES-----</p> <ol style="list-style-type: none"> 1. This Surveillance shall not normally be performed in MODE 1 or 2. However, this Surveillance may be performed to reestablish OPERABILITY provided an assessment determines the safety of the plant is maintained or enhanced. Credit may be taken for unplanned events that satisfy this SR. 2. A single test of the common DG at the specified Frequency will satisfy the Surveillance for both units. <p>-----</p> <p>Verify each required DG does not trip and voltage is maintained ≤ 5000 V during and following a load rejection of a load ≥ 2600 kW.</p> | <p>In accordance with the Surveillance Frequency Control Program</p> |

(continued)

SURVEILLANCE REQUIREMENTS

| SURVEILLANCE | FREQUENCY |
|--|--|
| <p>SR 3.8.1.11 -----NOTES-----</p> <ol style="list-style-type: none"> 1. All DG starts may be preceded by an engine prelube period. 2. This Surveillance shall not normally be performed in MODE 1 or 2. However, portions of the Surveillance may be performed to reestablish OPERABILITY provided an assessment determines the safety of the plant is maintained or enhanced. Credit may be taken for unplanned events that satisfy this SR. <p>-----</p> <p>Verify on an actual or simulated loss of offsite power signal:</p> <ol style="list-style-type: none"> a. De-energization of emergency buses; b. Load shedding from emergency buses for Divisions 1 and 2 only; and c. DG auto-starts from standby condition and: <ol style="list-style-type: none"> 1. energizes permanently connected loads in ≤ 13 seconds, 2. energizes auto-connected shutdown loads, 3. maintains steady state voltage ≥ 4010 V and ≤ 4310 V, 4. maintains steady state frequency ≥ 58.8 Hz and ≤ 61.2 Hz, and 5. supplies permanently connected and auto-connected shutdown loads for ≥ 5 minutes. | <p>In accordance with the Surveillance Frequency Control Program</p> |

(continued)

SURVEILLANCE REQUIREMENTS

| SURVEILLANCE | FREQUENCY |
|--|--|
| <p>SR 3.8.1.12 -----NOTES-----</p> <ol style="list-style-type: none"> 1. All DG starts may be preceded by an engine prelube period. 2. This Surveillance shall not normally be performed in MODE 1 or 2. However, portions of the Surveillance may be performed to reestablish OPERABILITY provided an assessment determines the safety of the plant is maintained or enhanced. Credit may be taken for unplanned events that satisfy this SR. <p>-----</p> <p>Verify on an actual or simulated Emergency Core Cooling System (ECCS) initiation signal each required DG auto-starts from standby condition and:</p> <ol style="list-style-type: none"> a. In ≤ 13 seconds after auto-start, achieves voltage ≥ 4010 V and frequency ≥ 58.8 Hz; b. Achieves steady state voltage ≥ 4010 V and ≤ 4310 V and frequency ≥ 58.8 Hz and ≤ 61.2 Hz; and c. Operates for ≥ 5 minutes. | <p>In accordance with the Surveillance Frequency Control Program</p> |

(continued)

SURVEILLANCE REQUIREMENTS

| SURVEILLANCE | FREQUENCY |
|--|--|
| <p>SR 3.8.1.13 -----NOTE----- This Surveillance shall not normally be performed in MODE 1 or 2. However, this Surveillance may be performed to reestablish OPERABILITY provided an assessment determines the safety of the plant is maintained or enhanced. Credit may be taken for unplanned events that satisfy this SR. ----- Verify each required DG's automatic trips are bypassed on an actual or simulated ECCS initiation signal except:</p> <ul style="list-style-type: none"> a. Engine overspeed; and b. Generator differential current. | <p>In accordance with the Surveillance Frequency Control Program</p> |

(continued)

SURVEILLANCE REQUIREMENTS

| SURVEILLANCE | FREQUENCY |
|---|--|
| <p>SR 3.8.1.14 -----NOTES-----</p> <ol style="list-style-type: none"> 1. Momentary transients outside the load and power factor ranges do not invalidate this test. 2. This Surveillance shall not normally be performed in MODE 1 or 2 unless the other two DGs are OPERABLE. If either of the other two DGs becomes inoperable, this Surveillance shall be suspended. However, this Surveillance may be performed to reestablish OPERABILITY provided an assessment determines the safety of the plant is maintained or enhanced. Credit may be taken for unplanned events that satisfy this SR. 3. If grid conditions do not permit, the power factor limit is not required to be met. Under this condition, the power factor shall be maintained as close to the limit as practicable. 4. A single test of the common DG at the specified Frequency will satisfy the Surveillance for both units. <p>-----</p> <p>Verify each required DG operating within the power factor limit operates for ≥ 24 hours:</p> <ol style="list-style-type: none"> a. For ≥ 2 hours loaded ≥ 2860 kW; and b. For the remaining hours of the test loaded ≥ 2400 kW and ≤ 2600 kW. | <p>In accordance with the Surveillance Frequency Control Program</p> |

(continued)

SURVEILLANCE REQUIREMENTS

| SURVEILLANCE | FREQUENCY |
|---|--|
| <p>SR 3.8.1.15 -----NOTES-----</p> <ol style="list-style-type: none"> 1. This Surveillance shall be performed within 5 minutes of shutting down the DG after the DG has operated ≥ 2 hours loaded ≥ 2400 kW and ≤ 2600 kW. <p>Momentary transients outside of load range do not invalidate this test.</p> <ol style="list-style-type: none"> 2. All DG starts may be preceded by an engine prelube period. 3. A single test of the common DG at the specified Frequency will satisfy the Surveillance for both units. <p>-----</p> <p>Verify each required DG starts and achieves:</p> <ol style="list-style-type: none"> a. In ≤ 13 seconds, voltage ≥ 4010 V and frequency ≥ 58.8 Hz; and b. Steady state voltage ≥ 4010 V and ≤ 4310 V and frequency ≥ 58.8 Hz and ≤ 61.2 Hz. | <p>In accordance with the Surveillance Frequency Control Program</p> |

(continued)

SURVEILLANCE REQUIREMENTS

| SURVEILLANCE | FREQUENCY |
|--|--|
| <p>SR 3.8.1.16 -----NOTE-----</p> <p>This Surveillance shall not normally be performed in MODE 1 or 2. However, this Surveillance may be performed to reestablish OPERABILITY provided an assessment determines the safety of the plant is maintained or enhanced. Credit may be taken for unplanned events that satisfy this SR.</p> <p>-----</p> <p>Verify each required DG:</p> <ul style="list-style-type: none"> a. Synchronizes with offsite power source while loaded with emergency loads upon a simulated restoration of offsite power; b. Transfers loads to offsite power source; and c. Returns to ready-to-load operation. | <p>In accordance with the Surveillance Frequency Control Program</p> |

(continued)

SURVEILLANCE REQUIREMENTS

| SURVEILLANCE | FREQUENCY |
|--|--|
| <p>SR 3.8.1.17 -----NOTE----- This Surveillance shall not normally be performed in MODE 1 or 2. However, portions of the Surveillance may be performed to reestablish OPERABILITY provided an assessment determines the safety of the plant is maintained or enhanced. Credit may be taken for unplanned events that satisfy this SR. -----</p> <p>Verify, with a required DG operating in test mode and connected to its bus:</p> <ol style="list-style-type: none"> For Division 1 and 2 DGs, an actual or simulated ECCS initiation signal overrides the test mode by returning DG to ready-to-load operation; and For Division 3 DG, an actual or simulated DG overcurrent trip signal automatically disconnects the offsite power source while the DG continues to supply normal loads. | <p>In accordance with the Surveillance Frequency Control Program</p> |
| <p>SR 3.8.1.18 -----NOTE----- This Surveillance shall not normally be performed in MODE 1 or 2. However, this Surveillance may be performed to reestablish OPERABILITY provided an assessment determines the safety of the plant is maintained or enhanced. Credit may be taken for unplanned events that satisfy this SR. -----</p> <p>Verify interval between each sequenced load block, for Division 1 and 2 DGs only, is $\geq 90\%$ of the design interval for each time delay relay.</p> | <p>In accordance with the Surveillance Frequency Control Program</p> |

(continued)

SURVEILLANCE REQUIREMENTS

| SURVEILLANCE | FREQUENCY |
|---|--|
| <p>SR 3.8.1.19 -----NOTES-----</p> <ol style="list-style-type: none"> 1. All DG starts may be preceded by an engine prelube period. 2. This Surveillance shall not normally be performed in MODE 1 or 2. However, portions of the Surveillance may be performed to reestablish OPERABILITY provided an assessment determines the safety of the plant is maintained or enhanced. Credit may be taken for unplanned events that satisfy this SR. <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"> a. De-energization of emergency buses; b. Load shedding from emergency buses for Divisions 1 and 2 only; and c. DG auto-starts from standby condition and: <ol style="list-style-type: none"> 1. energizes permanently connected loads in ≤ 13 seconds, 2. energizes auto-connected emergency loads including through time delay relays, where applicable, 3. maintains steady state voltage ≥ 4010 V and ≤ 4310 V, 4. maintains steady state frequency ≥ 58.8 Hz and ≤ 61.2 Hz, and 5. supplies permanently connected and auto-connected emergency loads for ≥ 5 minutes. | <p>In accordance with the Surveillance Frequency Control Program</p> |

(continued)

SURVEILLANCE REQUIREMENTS

| SURVEILLANCE | FREQUENCY |
|--|--|
| <p>SR 3.8.1.20 -----NOTE----- All DG starts may be preceded by an engine prelube period. -----</p> <p>Verify, when started simultaneously from standby condition, each required DG achieves, in ≤ 13 seconds, voltage ≥ 4010 V and frequency ≥ 58.8 Hz.</p> | <p>In accordance with the Surveillance Frequency Control Program</p> |
| <p>SR 3.8.1.21 -----NOTE----- When the opposite unit is in MODE 4 or 5, or moving irradiated fuel assemblies in secondary containment, the following opposite unit SRs are not required to be performed: SR 3.8.1.3, SR 3.8.1.9 through SR 3.8.1.11, SR 3.8.1.14 through SR 3.8.1.16. -----</p> <p>For required opposite unit DG, the SRs of the opposite unit's Specification 3.8.1, except SR 3.8.1.12, SR 3.8.1.13, SR 3.8.1.17, SR 3.8.1.18, SR 3.8.1.19, and SR 3.8.1.20, are applicable.</p> | <p>In accordance with applicable SRs</p> |

SURVEILLANCE REQUIREMENTS

| SURVEILLANCE | FREQUENCY |
|---|--|
| <p>SR 3.8.3.1 Verify:</p> <p> a. \geq a 7-day supply of fuel in the combined fuel oil storage tank and day tank for the Division 1 and Division 2 DGs and the opposite unit Division 2 DG.</p> <p> b. \geq a 7-day supply of fuel in the combined fuel oil storage tank and day tank for the Division 3 DG.</p> | <p>In accordance with the Surveillance Frequency Control Program</p> |
| <p>SR 3.8.3.2 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.</p> | <p>In accordance with the Diesel Fuel Oil Testing Program</p> |
| <p>SR 3.8.3.3 Verify each DG air start receiver pressure is \geq 200 psig.</p> | <p>In accordance with the Surveillance Frequency Control Program</p> |
| <p>SR 3.8.3.4 Check for and remove accumulated water from each fuel oil storage tank.</p> | <p>In accordance with the Surveillance Frequency Control Program</p> |

ACTIONS

| CONDITION | REQUIRED ACTION | COMPLETION TIME |
|---|-------------------------------------|-----------------|
| F. Required Action and associated Completion Time of Condition A not met for the Division 1 or 2 125 VDC electrical power subsystem. <u>OR</u> Required Action and associated Completion Time of Condition E not met. | F.1 Be in MODE 3. | 12 hours |
| | <u>AND</u> F.2 Be in MODE 4. | 36 hours |
| G. Required Action and associated Completion Time of Condition B not met. | G.1 Be in MODE 3. | 12 hours |

SURVEILLANCE REQUIREMENTS

- NOTES-----
- SR 3.8.4.1 through SR 3.8.4.3 are applicable only to the given unit's DC electrical power sources.
 - SR 3.8.4.4 is applicable only to the opposite unit DC electrical power source.
-

| 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 |

(continued)

SURVEILLANCE REQUIREMENTS

| SURVEILLANCE | FREQUENCY |
|--|--|
| <p>SR 3.8.4.2 Verify each required battery charger supplies:</p> <ul style="list-style-type: none"> a. ≥ 200 amps at greater than or equal to the minimum established float voltage for ≥ 4 hours for the Division 1 and 2 125 V battery chargers; b. ≥ 50 amps at greater than or equal to the minimum established float voltage for ≥ 4 hours for the Division 3 125 V battery charger; and c. ≥ 200 amps at greater than or equal to the minimum established float voltage for ≥ 4 hours for the 250 V battery charger. <p><u>OR</u></p> <p>Verify each battery charger can recharge the battery to the fully charged state within 24 hours while supplying the largest combined demands of the various continuous steady state loads, after a battery discharge to the bounding design basis event discharge state.</p> | <p>In accordance with the Surveillance Frequency Control Program</p> |

(continued)

SURVEILLANCE REQUIREMENTS

| SURVEILLANCE | FREQUENCY |
|---|--|
| <p>SR 3.8.4.3 -----NOTES-----</p> <ol style="list-style-type: none"> 1. The modified performance discharge test in SR 3.8.6.6 may be performed in lieu of SR 3.8.4.3. 2. This Surveillance shall not normally be performed in MODE 1 or 2 for the 125 VDC batteries. However, portions of the Surveillance may be performed to reestablish OPERABILITY provided an assessment determines the safety of the plant is maintained or enhanced. Credit may be taken for unplanned events that satisfy this SR. <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 the opposite unit is in MODE 4 or 5, or moving irradiated fuel in the secondary containment, the following opposite unit SRs are not required to be performed: SR 3.8.4.2 and SR 3.8.4.3.</p> <p>-----</p> <p>For the opposite unit Division 2 DC electrical power subsystem, the SRs of the opposite unit Specification 3.8.4 are applicable.</p> | <p>In accordance with applicable SRs</p> |

ACTIONS

| CONDITION | REQUIRED ACTION | COMPLETION TIME |
|---|---|--------------------|
| <p>F. Required Action and associated Completion Time of Condition A, B, C, D, or E not met.</p> <p><u>OR</u></p> <p>One or more batteries with one or more battery cells float voltage < 2.07 V and float current > 2 amps.</p> | <p>F.1 Declare associated battery inoperable.</p> | <p>Immediately</p> |

SURVEILLANCE REQUIREMENTS

| SURVEILLANCE | FREQUENCY |
|---|--|
| <p>SR 3.8.6.1 -----NOTE----- Not required to be met when battery terminal voltage is less than the minimum established float voltage of SR 3.8.4.1. ----- Verify battery float current is ≤ 2 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 ≥ 2.07 V.</p> | <p>In accordance with the Surveillance Frequency Control Program</p> |

(continued)

SURVEILLANCE REQUIREMENTS

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

(continued)

SURVEILLANCE REQUIREMENTS

| SURVEILLANCE | FREQUENCY |
|--|---|
| <p>SR 3.8.6.6 -----NOTES-----</p> <ol style="list-style-type: none"> 1. This Surveillance shall not normally be performed in MODE 1 or 2 for the 125 VDC batteries. However, portions of the Surveillance may be performed to reestablish OPERABILITY provided an assessment determines the safety of the plant is maintained or enhanced. Credit may be taken for unplanned events that satisfy this SR. 2. In MODE 1, 2 or 3, and the opposite unit in MODE 4 or 5, or moving irradiated fuel in the secondary containment, this Surveillance is not required to be performed for the opposite unit Division 2 DC electrical power subsystem. 3. In MODE 4, 5 or during movement of irradiated fuel in the secondary containment in Mode 4, 5 or defueled, this Surveillance is not required to be performed. <p>-----</p> <p>Verify battery capacity is $\geq 80\%$ 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 life with capacity $< 100\%$ of manufacturer's rating</p> <p><u>AND</u></p> <p>24 months when battery has reached 85% of the expected life with capacity $\geq 100\%$ of manufacturer's rating</p> |

ACTIONS

| CONDITION | REQUIRED ACTION | COMPLETION TIME |
|--|---|-----------------|
| F. One or both Division 3 AC or DC electrical power distribution subsystems inoperable. | F.1 Declare associated supported features inoperable. | Immediately |
| G. Division 1 250 V DC electrical power subsystem inoperable. | G.1 Declare associated supported features inoperable. | Immediately |
| H. Two or more electrical power distribution subsystems inoperable that, in combination, result in a loss of function. | H.1 Enter LCO 3.0.3. | Immediately |

SURVEILLANCE REQUIREMENTS

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

ACTIONS

| CONDITION | REQUIRED ACTION | COMPLETION TIME |
|----------------|---|-----------------|
| A. (continued) | A.2.3 Initiate action to suspend operations with a potential for draining the reactor vessel. | Immediately |
| | <u>AND</u> | |
| | A.2.4 Initiate actions to restore required AC and DC electrical power distribution subsystems to OPERABLE status. | Immediately |
| | <u>AND</u> | |
| | A.2.5 Declare associated required shutdown cooling subsystem(s) inoperable and not in operation. | Immediately |

SURVEILLANCE REQUIREMENTS

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

SURVEILLANCE REQUIREMENTS

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

3.9 REFUELING OPERATIONS

3.9.2 Refuel Position One-Rod-Out Interlock

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

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

ACTIONS

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

Refuel Position One-Rod-Out Interlock
3.9.2

SURVEILLANCE REQUIREMENTS

| 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

LC0 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—Irradiated Fuel

LCO 3.9.6 RPV water level shall be ≥ 22 ft above the top of the RPV flange.

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

ACTIONS

| CONDITION | REQUIRED ACTION | COMPLETION TIME |
|--------------------------------------|--|-----------------|
| A. RPV water level not within limit. | A.1 Suspend movement of irradiated fuel assemblies within the RPV. | Immediately |

SURVEILLANCE REQUIREMENTS

| SURVEILLANCE | FREQUENCY |
|--|---|
| SR 3.9.6.1 Verify RPV water level is ≥ 22 ft above the top of the RPV flange. | In accordance with the Surveillance Frequency Control Program |

3.9 REFUELING OPERATIONS

3.9.7 Reactor Pressure Vessel (RPV) Water Level—New Fuel or Control Rods

LC0 3.9.7 RPV water level shall be ≥ 23 ft above the top of irradiated fuel assemblies seated within the RPV.

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

ACTIONS

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

SURVEILLANCE REQUIREMENTS

| SURVEILLANCE | FREQUENCY |
|--|---|
| SR 3.9.7.1 Verify RPV water level is ≥ 23 ft above the top of irradiated fuel assemblies seated within the RPV. | 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 |

SURVEILLANCE REQUIREMENTS

| SURVEILLANCE | | FREQUENCY |
|--------------|---|---|
| SR 3.9.9.1 | Verify one RHR shutdown cooling subsystem is operating. | In accordance with the Surveillance Frequency Control Program |

Reactor Mode Switch Interlock Testing
3.10.1

ACTIONS

| CONDITION | REQUIRED ACTION | COMPLETION TIME |
|----------------|--|-----------------|
| A. (continued) | A.3.1 Place the reactor mode switch in the shutdown position. | 1 hour |
| | <p style="text-align: center;"><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 3.10.1.1 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 3.10.1.2 Verify no CORE ALTERATIONS are in progress. | In accordance with the Surveillance Frequency Control Program |

Single Control Rod Withdrawal--Hot Shutdown
3.10.2

SURVEILLANCE REQUIREMENTS

| SURVEILLANCE | | FREQUENCY |
|--------------|--|---|
| SR 3.10.2.1 | Perform the applicable SRs for the required LCOs. | According to the applicable SRs |
| SR 3.10.2.2 | <p>-----NOTE----- Not required to be met if SR 3.10.2.1 is satisfied for LCO 3.10.2.d.1 requirements. -----</p> <p>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.</p> | In accordance with the Surveillance Frequency Control Program |
| SR 3.10.2.3 | Verify all control rods, other than the control rod being withdrawn, are fully inserted. | In accordance with the Surveillance Frequency Control Program |

Single Control Rod Withdrawal—Cold Shutdown
3.10.3

| 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 3.10.3.1 | Perform the applicable SRs for the required LCOs. | According to applicable SRs |
| SR 3.10.3.2 | <p>-----NOTE-----</p> <p>Not required to be met if SR 3.10.3.1 is satisfied for LCO 3.10.3.c.1 requirements.</p> <p>-----</p> <p>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.</p> | In accordance with the Surveillance Frequency Control Program |

(continued)

Single Control Rod Withdrawal-Cold Shutdown
3.10.3

SURVEILLANCE REQUIREMENTS

| SURVEILLANCE | | FREQUENCY |
|--------------|---|---|
| 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 |
| SR 3.10.3.4 | <p>-----NOTE----- Not required to be met if SR 3.10.3.1 is satisfied for LCO 3.10.3.b.1 requirements. -----</p> <p>Verify a control rod withdrawal block is inserted.</p> | 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 3.10.4.1 Verify all controls 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 3.10.4.2 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 3.10.4.3 Verify a control rod withdrawal block is inserted. | In accordance with the Surveillance Frequency Control Program |

(continued)

SURVEILLANCE REQUIREMENTS

| SURVEILLANCE | FREQUENCY |
|---|---|
| SR 3.10.4.4 Perform SR 3.1.1.1. | According to SR 3.1.1.1 |
| SR 3.10.4.5 Verify no other CORE ALTERATIONS are in progress. | In accordance with the Surveillance Frequency Control Program |

Multiple Control Rod Withdrawal—Refueling
3.10.5

ACTIONS

| CONDITION | REQUIRED ACTION | COMPLETION TIME |
|----------------|--|-----------------|
| A. (continued) | A.2.2 Initiate action to satisfy the requirements of this LCO. | Immediately |

SURVEILLANCE REQUIREMENTS

| SURVEILLANCE | FREQUENCY |
|--|---|
| SR 3.10.5.1 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 3.10.5.2 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 3.10.5.3 Verify fuel assemblies are not being loaded into or shuffled within the reactor pressure vessel. | In accordance with the Surveillance Frequency Control Program |

SURVEILLANCE REQUIREMENTS

| SURVEILLANCE | | FREQUENCY |
|--------------|--|---|
| SR 3.10.7.2 | <p>-----NOTE----- Not required to be met if SR 3.10.7.3 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> | According to the applicable SRs |
| SR 3.10.7.3 | <p>-----NOTE----- Not required to be met if SR 3.10.7.2 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> | During control rod movement |
| SR 3.10.7.4 | Verify no other CORE ALTERATIONS are in progress. | In accordance with the Surveillance Frequency Control Program |

(continued)

SURVEILLANCE REQUIREMENTS

| SURVEILLANCE | FREQUENCY |
|--|--|
| SR 3.10.7.5 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 3.10.7.c requirement after work on control rod or CRD System that could affect coupling |
| SR 3.10.7.6 Verify CRD charging water header pressure \geq 940 psig. | In accordance with the Surveillance Frequency Control Program |

5.5 Programs and Manuals

5.5.15 Control Room Envelope Habitability Program (continued)

- d. Measurement, at designated locations, of the CRE pressure relative to all external areas adjacent to the CRE boundary during the pressurization mode of operation by one train of the CRAF System, operating at the flow rate required by the VFTP, at a Frequency of 24 months on a STAGGERED TEST BASIS. The results shall be trended and used as part of the 24 month assessment of the CRE boundary.
- 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.

5.5.16 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.

(continued)

5.5 Programs and Manuals

5.5.16 Surveillance Frequency Control Program (continued)

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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION
RELATED TO AMENDMENT NO. 200 TO FACILITY OPERATING LICENSE NO. NPF-11
AND AMENDMENT NO. 187 TO FACILITY OPERATING LICENSE NO. NPF-18
EXELON GENERATION COMPANY, LLC
LASALLE COUNTY STATION, UNITS 1 AND 2
DOCKET NOS. 50-373 AND 50-374

1.0 INTRODUCTION

By letter to the Nuclear Regulatory Commission (NRC, the Commission) dated February 15, 2010 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML100480009), as supplemented by letters dated April 26, 2010 (ADAMS Accession No. ML101160374), June 23, 2010 (ADAMS Accession No. ML101750102), and August 3, 2010 (ADAMS Accession No. ML110390169) Exelon Generation Company, LLC (the licensee), requested changes to the technical specifications (TSs) for LaSalle County Station (LSCS), Units 1 and 2. The April 26, June 23, and August 3, 2010, supplements, contained clarifying information and did not change the NRC staff's initial proposed finding of no significant hazards consideration published in the *Federal Register* (75 FR 20636, April 20, 2010).

The requested change is the adoption of NRC-approved Technical Specification Task Force (TSTF-425), Revision 3, "Relocate Surveillance Frequencies to Licensee Control-RITSTF Initiative 5b." 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 TS. All surveillance frequencies can be relocated except:

- Frequencies that reference other approved programs for the specific interval (such as the In-Service Testing Program or the Primary Containment Leakage Rate Testing Program);
- Frequencies that are 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 (e.g., "drywell to suppression chamber differential pressure decrease.")

A new program is added to the Administrative Controls of TS Section 5 as 5.5.16 called the SFCP and describes the requirements for the program to control changes to the relocated surveillance frequencies. The TS Bases for each of the affected surveillance requirements are revised to state that the frequency is set in accordance with the SFCP. Some surveillance requirements 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 proposed licensee changes to the Administrative Controls of the TS to incorporate the SFCP include a specific reference to Nuclear Energy Institute (NEI) 04-10, "Risk-Informed Technical Specifications Initiative 5B, Risk-Informed Method for Control of Surveillance Frequencies," Revision 1, as the basis for making any changes to the surveillance frequencies once they are relocated out of the TS.

In a letter dated September 19, 2007, the NRC staff approved NEI 04-10, Revision 1, (ADAMS Accession No. ML072570267), 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.

2.0 REGULATORY EVALUATION

In the "Final Policy Statement on Technical Specifications Improvements for Nuclear Power Reactors," published in the *Federal Register* (58 FR 39132, July 22, 1993), the NRC addressed the use of Probabilistic Safety Analysis ((PSA), currently referred to as Probabilistic Risk Assessment (PRA) in Standard Technical Specifications. In discussing the use of PSA in Nuclear Power Plant Technical Specifications, the Commission wrote in part:

The Commission believes that it would be inappropriate at this time to allow requirements which meet one or more of the first three criteria 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.

The Commission Policy in this regard is consistent with its Policy Statement on "Safety Goals for the Operation of Nuclear Power Plants," (51 FR 30028, published on August 21, 1986). The Policy Statement on Safety Goals states in part, "... [probabilistic] results ... should also be reasonably balanced and supported through use of deterministic arguments. In this way, judgments can be made ... about the degree of confidence to be given these [probabilistic] estimates and assumptions. This is a key part of the process for determining the degree of regulatory conservatism that may be warranted for particular decisions. This defense-in-depth approach is expected to continue to ensure the protection of public health and safety."

The Commission will continue to use PSA, consistent with its policy on Safety Goals, as a tool in evaluating specific line item improvements to TSs new

requirements, and industry proposals for risk-based Technical Specification change.

Approximately two years later, the NRC provided additional detail concerning the use of PRAs in the "Use of Probabilistic Risk Assessment in Nuclear Regulatory Activities: Final Policy Statement," published in the *Federal Register* (60 FR 42622, August 16, 1995). The Commission, in discussing the deterministic and probabilistic approach to regulation, and the Commission's extension and enhancement of traditional regulation, wrote in part:

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.

The Commission provided its new policy, stating:

Although PRA methods and information have thus far been used successfully in nuclear regulatory activities, there have been concerns that PRA methods are not consistently applied throughout the agency, that sufficient agency PRA/statistics expertise is not available, and that the Commission is not deriving full benefit from the large agency and industry investment in the developed risk assessment methods. 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. Implementation of the policy statement will improve the regulatory process in three areas: Foremost, through safety decisionmaking enhanced by the use of PRA insights; through more efficient use of agency resources; and through a reduction in unnecessary burdens on licensees.

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.

In Title 10 of the *Code of Federal Regulations* (10 CFR) 50.36, the NRC established its regulatory requirements related to the content of TSs. Pursuant to 10 CFR 50.36, the 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; (3) surveillance requirements; (4) design features; and (5) administrative controls.

As stated in 10 CFR 50.36(c)(3),

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 conditions for operation will be met.

These categories will remain in the TS. The new TS SFCP provides the necessary administrative controls to require that surveillances 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 limiting conditions for operation will be met. Changes to surveillance frequencies in the SFCP are made using the methodology contained in NEI 04-10, including qualitative considerations, results of risk analyses, sensitivity studies and any bounding analyses, and recommended monitoring of structures, systems, and components (SSCs), and required to be documented. Furthermore, changes to frequencies are subject to regulatory review and oversight of the SFCP implementation through the rigorous NRC review of safety-related SSC performance provided by the reactor oversight program.

Licensees are required by the TS to perform surveillance test, calibration, or inspection on specific safety-related system equipment (e.g., reactivity control, power distribution, electrical, and instrumentation) to verify system operability. Surveillance frequencies, currently identified in the TSs, are based primarily upon deterministic methods such as engineering judgment, operating experience, and manufacturer's recommendations. The licensee's use of NRC-approved methodologies identified in NEI 04-10 provides a way to establish risk-informed surveillance frequencies that complement the deterministic approach and support the NRC's traditional defense-in-depth philosophy.

The licensee's SFCP ensures that surveillance requirements specified in the TSs are performed at intervals sufficient to assure the above regulatory requirements are met. Existing regulatory requirements, such as 10 CFR 50.65, "Requirements for Monitoring the Effectiveness of Maintenance at Nuclear Power Plants," and 10 CFR Part 50, Appendix B, (Corrective Action Program), require licensee monitoring of surveillance test failures and implementing corrective actions to address such failures. One of these actions may be to consider increasing the frequency at which a surveillance test is performed. In addition, the SFCP implementation guidance in NEI 04-10 requires monitoring the performance of SSCs for which surveillance frequencies are decreased to assure reduced testing does not adversely impact the SSCs. These requirements, and the monitoring required by NEI 04-10, ensure that surveillance frequencies are sufficient to assure that the requirements of 10 CFR 50.36 are satisfied and that any performance deficiencies will be identified and appropriate corrective actions taken.

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

In RG 1.177, "An Approach for Plant-Specific, Risk-Informed Decisionmaking: Technical Specifications," it describes an acceptable risk-informed approach specifically for assessing proposed permanent TS changes.

In RG 1.200, "An Approach for Determining the Technical Adequacy of Probabilistic Risk Assessment Results for Risk-Informed Activities," it 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 decision making for light-water reactors.

3.0 TECHNICAL EVALUATION

The licensee's adoption of TSTF-425 for LSCS provides for administrative relocation of applicable surveillance frequencies, and provides for the addition of the SFCP to the administrative controls of the 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 requirements of 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.

3.1 RG 1.177 Five Key Safety Principles

In RG 1.177, it identifies five key safety principles required for risk-informed changes to TSs. Each of these principles is addressed by the industry methodology document, NEI 04-10.

3.1.1 The Proposed Change Meets Current Regulations

Section 50.36(c)(3) to 10 CFR provides that TSs will include surveillances which are "requirements relating to test, calibration, or inspection to assure that necessary quality of systems and components is maintained, that facility operation will be within safety limits, and that the limiting conditions for operation will be met." 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 In-service 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

Consistency with 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.

In TSTF-425, it 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, which 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 with the principle that sufficient safety margins are maintained. The guidelines used for making that assessment will include ensuring that 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

A framework for evaluating the risk impact of proposed changes is provided in RG 1.177 to surveillance frequencies. This requires 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 requires application of NEI 04-10 in the SFCP. NEI 04-10 satisfies the intent of RG 1.177 requirements 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 LSCS PRA is compatible with the safety implications of the proposed TS change and the role the PRA plays in justifying the change. That is, the more the potential 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.

The licensee used RG 1.200 to address the technical adequacy of the LSCS PRA. RG 1.200 is NRC's developed regulatory guidance, which endorses with comments and qualifications the use of the American Society of Mechanical Engineers (ASME) RA-Sb-2005, "Addenda to

ASME RA-S-2002 Standard for Probabilistic Risk Assessment for Nuclear Power Plant Applications," NEI 00-02, "PRA Peer Review Process Guidelines," and NEI 05-04, "Process for Performing Follow-On PRA Peer Reviews Using the ASME PRA Standard." The licensee has performed an assessment of the PRA models used to support the SFCP against the requirements 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 ASME RA-Sb-2005 is applied as the standard, and any identified deficiencies to those requirements are assessed further to determine any impacts to proposed decreases to surveillance frequencies, including the use of sensitivity studies where appropriate.

The NRC staff reviewed the licensee's assessment of the LSCS PRA and the remaining open deficiencies that do not conform to capability Category II of the ASME PRA standard (Table A.2-1 of Attachment 2 of the license amendment request). The NRC staff's assessment of these open "gaps," to assure that they may be addressed and dispositioned for each surveillance frequency evaluation per the NEI 04-10 methodology, is provided below.

Gap IE-A7: A review of plant-specific initiating event precursors has not been performed such that this supporting requirement is met only at capability Category I. The licensee stated this is a documentation issue, and that no additional initiating event categories would be identified by conducting any further precursor reviews. The NRC staff concurs that a review of such precursors is unlikely to identify new significant initiators for LSCS, and therefore, this deficiency can be addressed per the methodology of NEI 04-10.

Gap IE-D3, AS-C3, SC-C3, SY-C3, HR-I3, DA-E3, IF-F3, QU-E2, QU-E4, QU-F4, LE-F3, LE-G4: Sources of model uncertainty and related assumptions have not been documented. Each individual surveillance frequency evaluation will follow the guidance available in NUREG-1855, and therefore, the NRC staff concurs that this documentation issue can be addressed per the methodology of NEI 04-10.

Gap SC-B5: The supporting engineering bases for success criteria were not adequately verified for reasonableness and acceptability. The licensee identified this as a documentation issue since the success criteria calculations do include cross-comparisons of different thermal hydraulic codes. The NRC staff concurs that the licensee has performed adequate verification of its success criteria bases, and therefore, this deficiency can be addressed per the methodology of NEI 04-10.

Gap SY-A4: The systems analysis notebooks do not consistently document the performance of walk downs as required by this supporting requirement. The peer review team and the licensee disposition of this item indicate that such walk downs were conducted in the original development of the PRA models, but the documentation was not retained in the system notebooks. The NRC staff concurs that this deficiency is related to the system notebook documentation and not the technical adequacy of the system models, and can be addressed per the methodology of NEI 04-10.

Gaps HR-A1, HR-A2, HR-B1: These supporting requirements address the identification of potential human error events by review of operational practices and procedures and applying appropriate screening criteria. The licensee identified these gaps as documentation issues based on the peer review team not identifying any events missing from the PRA model. The

NRC staff concurs that these documentation deficiencies can be addressed per the methodology of NEI 04-10.

Gap HR-G6: A comparison of human error probabilities is required by the standard but there was no discussion in the analysis of this being performed. The licensee stated that such a reasonableness check was performed for LSCS PRA model and that this is a documentation issue. The NRC staff concurs that this deficiency is related to documentation and not the technical adequacy of the human reliability analysis and can be addressed per the methodology of NEI 04-10.

Gap DA-C8: The standby status probabilities are not always based on plant operational data as required to meet capability Category II. The system or train standby times are estimated based on the surveillance test intervals, which is identified as consistent with actual practice. The use of scheduled and prescribed surveillance tests as the basis for the number of standby hours is equal to or greater than the actual number of hours between tests. Unplanned tests are not credited in the number of standby hours between tests. This is conservative since it leads to a slightly higher failure rate than might be calculated from the use of the plant operating records number of standby hours. This difference does not significantly impact the risk profile. The use of the frequency of LSCS component surveillance tests are appropriate estimates for the system or train standby times because the surveillance tests are monitored in accordance with specific plant and corporate procedures. The NRC staff concurs with the licensee's disposition of this item, and it can be addressed per the methodology of NEI 04-10.

Gap DA-C10: A review of surveillance test procedures to determine which component failure modes are fully tested has not been completed. The number of plant-specific demands is based on the number of surveillance tests performed, which is conservative (i.e., lower) with respect to the actual number of demands experienced. This approach captures the appropriate number of demands performed during each test (i.e., reflects the number of demands within the test procedure if more than one). Unplanned tests are not included in the number of demands. This is conservative since it leads to a slightly higher failure rate than might be calculated from the use of the actual demand count. Based on the Bayesian update process incorporated for calculating the LSCS component failure data, this difference does not significantly impact the risk profile. The NRC staff concurs with the licensee's disposition of this item, and it can be addressed per the methodology of NEI 04-10.

Gap IF-C3b: Flood barrier unavailability was identified as not being discussed, although the peer review team identified it as having minimal significance. The disposition of this deficiency stated that flood barrier unavailability was considered and included in the internal flood analysis, and therefore, is only a documentation issue. The NRC staff concurs that this documentation issue can be addressed per the methodology of NEI 04-10.

Gaps QU-D1a, QU-D4: The review of cutsets was identified as insufficient based on the number of cutsets reviewed. The licensee stated that additional reviews of more cutsets are performed but are not documented, and therefore, is only a documentation issue. The NRC staff concurs that this documentation issue can be addressed per the methodology of NEI 04-10.

Gaps QU-F3, QU-F6: These supporting requirements address documentation requirements for the model quantification which have no impact on the PRA model. The NRC staff concurs that this documentation issue can be addressed per the methodology of NEI 04-10.

Based on the licensee's assessment using the applicable PRA standard and RG 1.200, 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

The licensee is 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, due to impacts from internal events, fires, seismic, other external events, and from shutdown conditions. Consideration is made of both CDF and LERF metrics. In cases where a PRA of sufficient scope or where quantitative risk models were 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 has developed a fire PRA model, which is an interim implementation of the methodology of NUREG/CR-6850 because not all tasks identified in this document are completely addressed. The licensee identified the incomplete tasks and characterized the limitations of its existing fire PRA model. For surveillance interval evaluations, the licensee intends to employ the fire PRA model to obtain quantitative insights when needed to supplement a qualitative or bounding assessment.

The individual plant examination of external events (IPEEE) seismic margins analysis will be used to provide seismic insights. Other external hazards were screened during the IPEEE assessment, and will therefore, be qualitatively assessed for this application.

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 will determine 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 will perform quantitative evaluations of the impact of the selected testing strategy (i.e., staggered testing or sequential testing) 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 LSCS 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 the LSCS PRA 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 surveillance requirements. 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 SSC, including both standby and demand contributions. The SSC failure rate (per unit time) is assumed to be unaffected by the change in test frequency 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 regards to potential impacts of test frequency on SSC performance, including industry and plant-specific operating experience, vendor recommendations, industry standards, and code-specified test intervals. Thus, the process is not reliant upon risk analyses as the sole basis for the proposed changes.

The potential beneficial risk impacts 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 are conservatively not required to be quantitatively assessed. Thus, through the application of NEI 04-10, the licensee has employed reasonable assumptions with regard to extensions of surveillance test intervals, and is consistent with Regulatory Position 2.3.4 of RG 1.177.

3.1.4.5 Sensitivity and Uncertainty Analyses

In NEI 04-10, it requires sensitivity studies to assess the impact of uncertainties from key assumptions of the PRA, uncertainty in the failure probabilities of the affected SSCs, impact to the frequency of initiating events, and of any identified deviations from capability Category II of ASME PRA Standard (ASME RA-Sb-2005) (Reference 4). 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, and is 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 limits of RG 1.174 for very small changes in risk. Where the RG 1.174 limits are not met, the process either considers revised surveillance frequencies which are consistent with RG 1.174 or the process terminates without permitting the proposed changes. Where quantitative results are unavailable to permit comparison to acceptance guidelines, appropriate qualitative analyses are required to demonstrate that the associated risk impact of a proposed change to surveillance frequency is negligible or zero. Otherwise, bounding quantitative analyses are required which 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 below $1\text{E-}5$ per year for change to CDF, and below $1\text{E-}6$ per year for change to LERF, and 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 limits of RG 1.174 for acceptable changes in risk, as referenced by RG 1.177 for changes to surveillance frequencies. The NRC staff interprets this assessment of cumulative risk as a requirement to calculate the change in risk from a baseline model utilizing failure probabilities based on the surveillance frequencies prior to implementation of the SFCP, compared to a revised model with failure probabilities based on changed surveillance frequencies. The NRC staff further notes that Exelon includes a provision to exclude the contribution to cumulative risk from individual changes to surveillance frequencies associated with insignificant risk increases (less than $5\text{E-}8$ per year CDF and $5\text{E-}9$ per year 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 compared to numerical acceptance guidelines. Post implementation performance monitoring and feedback are also required to assure continued reliability of the components. The licensee's application of NEI 04-10 provides reasonable acceptance guidelines and methods for evaluating the risk increase of proposed changes to surveillance frequencies, consistent with Regulatory Position 2.4 of RG 1.177. Therefore, the proposed Exelon 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 requires 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 includes 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 which 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 has included the SFCP and specific requirements into the Administrative Controls, TS Section 5.5.16, Surveillance Frequency Control Program, as follows:

This program provides controls for Surveillance Frequencies. The program shall ensure that Surveillance Requirements specified in the TSs 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 the Surveillance Requirements for which the Frequency is controlled by the program.
- b. Changes to the Frequencies listed in the Surveillance Frequency Control Program shall be made in accordance with NEI 04-10, "Risk-Informed Method for Control of Surveillance Frequencies," Revision 1.
- c. The provisions of Surveillance Requirements 3.0.2 and 3.0.3 are applicable to the Frequencies established in the Surveillance Frequency Control Program.

The proposed program is consistent with the model application of TSTF-425, and is therefore acceptable.

The NRC staff has reviewed the licensee's proposed relocation of some surveillance frequencies to a licensee controlled document, and controlling changes to surveillance frequencies in accordance with a new program, the SFCP, identified in the administrative controls of TS. The SFCP and TS Section 5.5.16 references NEI 04-10, 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 TS to a licensee-controlled document, provided those frequencies are changed in accordance with NEI 04-10 which is specified in the Administrative Controls of the TSs.

The proposed licensee adoption of TSTF-425 and risk-informed methodology of NEI 04-10 as referenced in the Administrative Controls of TS, satisfies the key principles of risk-informed decisionmaking applied to changes to TS 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.

Section to 50.36(c)(3) to 10 CFR states "Technical specifications will include items in the following categories: Surveillance Requirements. Surveillance Requirements are requirements relating to test, calibration, or inspection to assure that the necessary quality of systems and components is maintained, that facility operation will be within safety limits, and that the limiting conditions for operation will be met." The NRC staff finds that with the proposed relocation of surveillance frequencies to an owner-controlled document and administratively controlled in accordance with the TS SFCP, Exelon continues to meet the regulatory requirement of 10 CFR 50.36, and, specifically, 10 CFR 50.36(c)(3), surveillance requirements.

3.3 Technical Summary

The NRC staff has reviewed the licensee's proposed relocation of some surveillance frequencies to a licensee-controlled document, and controlling changes to surveillance frequencies in accordance with a new program, the SFCP, identified in the administrative controls of TS. The SFCP and TS Section 5.5.16 references NEI 04-10, 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 a TS to a licensee-controlled document, provided those frequencies are changed in accordance with NEI 04-10 which is specified in the Administrative Controls of the TS.

The proposed licensee adoption of TSTF-425 and risk-informed methodology of NEI 04-10 as referenced in the Administrative Controls of the TS, satisfies the key principles of risk-informed decision making applied to changes to TS 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.

4.0 STATE CONSULTATION

In accordance with the Commission's regulations, the Illinois State official was notified of the proposed issuance of the amendments. The State official had no comments.

5.0 ENVIRONMENTAL CONSIDERATION

The amendments change surveillance requirements of the facilities components located within the restricted area as defined in 10 CFR Part 20 and surveillance requirements. The NRC staff has determined that the amendments involve no significant increase in the amounts and no significant change in the types of any effluents that may be released offsite, and that there is no significant increase in individual or cumulative occupational radiation exposure. The Commission has previously issued a proposed finding that the amendments involve no significant hazards consideration, and there has been no public comment on such finding (75 FR 20636; April 20, 2010). 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 amendments.

6.0 CONCLUSION

The NRC has concluded, on the basis of 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) such activities will be conducted in compliance with the NRC'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.

Principal Contributor: Andrew Howe, NRR

Date of issuance: February 24, 2011

February 24, 2011

Mr. Michael J. Pacilio
President and Chief Nuclear Officer
Exelon Nuclear
4300 Winfield Road
Warrenville, IL 60555

SUBJECT: LASALLE COUNTY STATION, UNITS 1 AND 2 - ISSUANCE OF
AMENDMENTS REGARDING RISK-INFORMED JUSTIFICATION FOR THE
RELOCATION OF SPECIFIC SURVEILLANCE FREQUENCY REQUIREMENTS
TO A LICENSEE-CONTROLLED PROGRAM (TAC NOS. ME3363
AND ME3364)

Dear Mr. Pacilio:

The U.S. Nuclear Regulatory Commission (the Commission) has issued the enclosed Amendment No. 200 to Facility Operating License No. NPF-11 and Amendment No. 187 to Facility Operating License No. NPF-18 for the LaSalle County Station, Units 1 and 2, respectively. The amendments are in response to your application dated February 15, 2010 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML100480009), as supplemented by letters dated April 26, June 23, and August 3, 2010 (ADAMS Accession Nos. ML101160374, ML101750102, and ML110390169, respectively).

The requested change is the adoption of Nuclear Regulatory Commission-approved Technical Specification Task Force (TSTF-425), Revision 3, "Relocate Surveillance Frequencies to Licensee Control—RITSTF Initiative 5b." When implemented, TSTF-425 relocates most periodic frequencies of Technical Specification (TS) surveillances to a licensee-controlled program, the Surveillance Frequency Control Program, and provides requirements for the new program in the Administrative Controls section of the TS.

A copy of the Safety Evaluation is also enclosed. The Notice of Issuance will be included in the Commission's biweekly *Federal Register* notice.

Sincerely,
/RA/

Eva Brown, Senior Project Manager
Plant Licensing Branch III-2
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket Nos. 50-373 and 50-374

Enclosures:

1. Amendment No. 200 to NPF-11
2. Amendment No. 187 to NPF-18
3. Safety Evaluation

cc w/encs: See next page

DISTRIBUTION:

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RidsAcrsAcnw_MailCTR Resource
Amendment Accession No. ML 110200143 *by memo dated 7/26/10

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| OFFICE | LPL3-2/PM | LPL3-2/LA | ITSB/BC | APLA/BC | OGC | LPL3-2/BC |
| NAME | EBrown | THarris/SRohrer | RElliott w/comment | DHarrison * | DRoth (NLO) | RCarlson |
| DATE | 2/8/11 | 1/28/11 | 01/25/11 | 7/26/10 | 2/4/11 | 2/24/11 |

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