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

June 22, 2015

Mr. Mano Nazar
President and Chief Nuclear Officer
Nuclear Division
NextEra Energy
P.O. Box 14000
Juno Beach, FL 33408-0420

SUBJECT: ST. LUCIE PLANT, UNIT NOS. 1 AND 2 - ISSUANCE OF AMENDMENTS REGARDING RISK-INFORMED JUSTIFICATIONS FOR THE RELOCATION OF SPECIFIC SURVEILLANCE FREQUENCY REQUIREMENTS TO A LICENSEE-CONTROLLED PROGRAM (TAC NOS. MF3495 AND MF3496)

Dear Mr. Nazar:

The U.S. Nuclear Regulatory Commission (NRC or the Commission) has issued the enclosed Amendment No. 223 to Renewed Facility Operating License No. DPR-67 and Amendment No. 173 to Renewed Facility Operating License No. NPF-16 for the St. Lucie Plant, Unit Nos. 1 and 2 (St. Lucie 1 and 2), respectively. The amendments consist of changes to the St. Lucie Technical Specifications (TSs) in response to the application from Florida Power & Light Company, et al. (the licensee), dated February 20, 2014, as supplemented by letters dated December 11, 2014, and January 13, January 28, April 18, and May 19, 2015.

The amendments revise the St. Lucie 1 and 2 TSs by relocating specific surveillance frequencies to a licensee-controlled program. The TSs are revised to require that changes to such surveillance frequencies will be made in accordance with Nuclear Energy Institute (NEI) 04-10, "Risk-Informed Technical Specifications Initiative 5b, Risk-Informed Method for Control of Surveillance Frequencies." The changes are consistent with NRC-approved Technical Specification Task Force (TSTF) Standard Technical Specifications Change TSTF-425, Revision 3, "Relocate Surveillance Frequencies to Licensee Control – RITSTF [Risk Informed Technical Specifications Task Force] Initiative 5b," Revision 3. The *Federal Register* notice published on July 6, 2009 (74 FR 31996), announced the availability of the TSTF. The NRC staff's safety evaluation of the amendments is enclosed.

The Notice of Issuance will be included in the Commission's biweekly *Federal Register* notice.

Sincerely,

for Farideh E. Saba, Senior Project Manager
Plant Licensing Branch II-2
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket Nos. 50-335 and 50-389

Enclosures:
1. Amendment No. 223 to DPR-67
2. Amendment No. 173 to NPF-16
3. Safety Evaluation

cc w/enclosures: Distribution via Listserv

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

FLORIDA POWER & LIGHT COMPANY

DOCKET NO. 50-335

ST. LUCIE PLANT UNIT NO. 1

AMENDMENT TO RENEWED FACILITY OPERATING LICENSE

Amendment No. 223
Renewed License No. DPR-67

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

   A. The application for amendment by Florida Power & Light Company (the licensee) dated February 20, and December 11, 2014, and January 13, January 28, April 18, and May 19, 2015, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act) and the Commission's rules and regulations set forth in 10 CFR Chapter I;

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

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

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

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

2. Accordingly, Renewed Facility Operating License No. DPR-67 is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment, and by amending paragraph 3.B to read as follows:

   B. Technical Specifications

   The Technical Specifications contained in Appendices A and B, as revised through Amendment No. 223 , are hereby incorporated in the renewed license. FPL shall operate the facility in accordance with the Technical Specifications.

3. This license amendment is effective as of its date of issuance and shall be implemented within 90 days of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

Faidah E. Sabo

RVW Shana R. Helton, Chief
Plant Licensing Branch II-2
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Attachment:
Changes to Operating License No. DPR-67
and the Technical Specifications

Date of Issuance: June 22, 2015

ATTACHMENT TO LICENSE AMENDMENT

AMENDMENT NO. 223 TO RENEWED FACILITY OPERATING LICENSE NO. DPR-67

DOCKET NO. 50-335

Replace Page 3 of Renewed Facility Operating License DPR-67 with the attached Page 3.

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

Remove pages	Insert pages	Remove pages	Insert pages	Remove pages	Insert pages
1-8	1-8	3/4 4-1a	3/4 4-1a	3/4 7-14	3/4 7-14
3/4 1-1	3/4 1-1	3/4 4-1c	3/4 4-1c	3/4 7-16	3/4 7-16
3/4 1-2	3/4 1-2	3/4 4-1d	3/4 4-1d	3/4 7-18	3/4 7-18
3/4 1-3	3/4 1-3	3/4 4-1e	3/4 4-1e	3/4 7-21	3/4 7-21
3/4 1-4	3/4 1-4	3/4 4-12	3/4 4-12	3/4 7-23	3/4 7-23
3/4 1-7	3/4 1-7	3/4 4-14	3/4 4-14	3/4 7-24	3/4 7-24
3/4 1-8	3/4 1-8	3/4 4-14a	3/4 4-14a	3/4 7-27	3/4 7-27
3/4 1-11	3/4 1-11	3/4 4-16	3/4 4-16	3/4 8-3	3/4 8-3
3/4 1-16	3/4 1-16	3/4 4-17	3/4 4-17	3/4 8-4	3/4 8-4
3/4 1-17	3/4 1-17	3/4 4-19	3/4 4-19	3/4 8-5	3/4 8-5
3/4 1-18	3/4 1-18	3/4 4-22	3/4 4-22	3/4 8-6a	3/4 8-6a
3/4 1-22	3/4 1-22	3/4 4-25	3/4 4-25	3/4 8-6b	3/4 8-6b
3/4 1-25	3/4 1-25	3/4 4-58	3/4 4-58	3/4 8-8	3/4 8-8
3/4 1-26	3/4 1-26	3/4 4-59	3/4 4-59	3/4 8-9	3/4 8-9
3/4 1-27	3/4 1-27	3/4 4-61	3/4 4-61	3/4 8-10	3/4 8-10
3/4 1-29	3/4 1-29	3/4 5-1	3/4 5-1	3/4 8-11	3/4 8-11
3/4 2-1	3/4 2-1	3/4 5-2	3/4 5-2	3/4 8-11a	3/4 8-11a
3/4 2-2	3/4 2-2	3/4 5-4	3/4 5-4	3/4 8-13	3/4 8-13
3/4 2-9	3/4 2-9	3/4 5-5	3/4 5-5	3/4 9-1	3/4 9-1
3/4 2-11	3/4 2-11	3/4 5-8	3/4 5-8	3/4 9-2	3/4 9-2
3/4 2-13	3/4 2-13	3/4 6-1	3/4 6-1	3/4 9-4	3/4 9-4
3/4 3-1	3/4 3-1	3/4 6-11	3/4 6-11	3/4 9-5	3/4 9-5
3/4 3-7	3/4 3-7	3/4 6-12	3/4 6-12	3/4 9-8	3/4 9-8
3/4 3-9	3/4 3-9	3/4 6-13	3/4 6-13	3/4 9-8a	3/4 9-8a
3/4 3-18	3/4 3-18	3/4 6-15a	3/4 6-15a	3/4 9-9	3/4 9-9
3/4 3-19	3/4 3-19	3/4 6-16	3/4 6-16	3/4 9-10	3/4 9-10
3/4 3-20	3/4 3-20	3/4 6-16a	3/4 6-16a	3/4 9-11	3/4 9-11
3/4 3-21	3/4 3-21	3/4 6-16b	3/4 6-16b	3/4 9-12	3/4 9-12
3/4 3-22	3/4 3-22	3/4 6-19	3/4 6-19	3/4 9-14	3/4 9-14
3/4 3-24	3/4 3-24	3/4 6-27	3/4 6-27	3/4 10-1	3/4 10-1
3/4 3-24a	3/4 3-24a	3/4 6-30	3/4 6-30	3/4 10-2	3/4 10-2
3/4 3-33	3/4 3-33	3/4 7-4	3/4 7-4	3/4 10-5	3/4 10-5
3/4 3-35	3/4 3-35	3/4 7-5	3/4 7-5	3/4 11-15	3/4 11-15
3/4 3-41	3/4 3-41	3/4 7-6	3/4 7-6	6-15h	6-15h
3/4 3-44	3/4 3-44	3/4 7-7	3/4 7-7		
3/4 4-1	3/4 4-1	3/4 7-8	3/4 7-8		

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:

A. Maximum Power Level

FPL is authorized to operate the facility at steady state reactor core power levels not in excess of 3020 megawatts (thermal).

B. Technical Specifications

The Technical Specifications contained in Appendices A and B, as revised through Amendment No. 223are hereby incorporated in the renewed license. FPL shall operate the facility in accordance with the Technical Specifications.

Appendix B, the Environmental Protection Plan (Non-Radiological), contains environmental conditions of the renewed license. If significant detrimental effects or evidence of irreversible damage are detected by the monitoring programs required by Appendix B of this license, FPL will provide the Commission with an analysis of the problem and plan of action to be taken subject to Commission approval to eliminate or significantly reduce the detrimental effects or damage.

C. Updated Final Safety Analysis Report

The Updated Final Safety Analysis Report supplement submitted pursuant to 10 CFR 54.21(d), as revised on March 28, 2003, describes certain future activities to be completed before the period of extended operation. FPL shall complete these activities no later than March 1, 2016, and shall notify the NRC in writing when implementation of these activities is complete and can be verified by NRC inspection.

The Updated Final Safety Analysis Report supplement as revised on March 28, 2003, described above, shall be included in the next scheduled update to the Updated Final Safety Analysis Report required by 10 CFR 50.71(e)(4), following issuance of this renewed license. Until that update is complete, FPL may make changes to the programs described in such supplement without prior Commission approval, provided that FPL evaluates each such change pursuant to the criteria set forth in 10 CFR 50.59 and otherwise complies with the requirements in that section.

D. Sustained Core Uncovery Actions

Procedural guidance shall be in place to instruct operators to implement actions that are designed to mitigate a small-break loss-of-coolant accident prior to a calculated time of sustained core uncovery.

TABLE 1.1

FREQUENCY NOTATION

NOTATION	FREQUENCY
S	At least once per 12 hours
D	At least once per 24 hours
W	At least once per 7 days
4/M*	At least 4 per month at intervals of no greater than 9 days and a minimum of 48 per year
M	At least once per 31 days
Q	At least once per 92 days
SA	At least once per 184 days
R	At least once per 18 months
S/U	Prior to each reactor startup
P**	Completed prior to each release
SFCP	In accordance with the Surveillance Frequency Control Program
N.A.	Not applicable

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* For Radioactive Effluent Sampling

** For Radioactive Batch Releases Only

3/4.1 REACTIVITY CONTROL SYSTEMS

3/4.1.1 BORATION CONTROL

SHUTDOWN MARGIN - T_{avg} > 200 °F

LIMITING CONDITION FOR OPERATION

3.1.1.1 The SHUTDOWN MARGIN shall be within the limits specified in the COLR.

APPLICABILITY: MODES 1, 2*, 3 and 4.

ACTION:

With the SHUTDOWN MARGIN not within limits immediately initiate and continue boration at ≥ 40 gpm of greater than or equal to 1900 ppm boron or equivalent until the required SHUTDOWN MARGIN is restored.

SURVEILLANCE REQUIREMENTS

4.1.1.1.1 The SHUTDOWN MARGIN shall be determined to be within the COLR limits:

a. Within one hour after detection of an inoperable CEA(s) and at least once per 12 hours thereafter while the CEA(s) is inoperable. If the inoperable CEA is not fully inserted, and is immovable as a result of excessive friction or mechanical interference or is known to be untrippable, the above required SHUTDOWN MARGIN shall be increased by an amount at least equal to the withdrawn worth of the immovable or untrippable CEA(s).

b. When in MODES 1 or 2#, in accordance with the Surveillance Frequency Control Program by verifying that CEA group withdrawal is within the Power Dependent Insertion Limits of Specification 3.1.3.6.

c. When in MODE 2## at least once during CEA withdrawal and in accordance with the Surveillance Frequency Control Program until the reactor is critical.

d. Prior to initial operation above 5% RATED THERMAL POWER after each fuel loading, by consideration of the factors of e below, with the CEA groups at the Power Dependent Insertion Limits of Specification 3.1.3.6.

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* See Special Test Exception 3.10.1.

\# With $K_{eff} \geq 1.0$.

\## With $K_{eff} < 1.0$.

SURVEILLANCE REQUIREMENTS (Continued)

e. When in MODES 3 or 4, in accordance with the Surveillance Frequency Control Program by consideration of the following factors:

1. Reactor coolant system boron concentration,
2. CEA position,*
3. Reactor coolant system average temperature,
4. Fuel burnup based on gross thermal energy generation,
5. Xenon concentration, and
6. Samarium concentration.

4.1.1.1.2 The overall core reactivity balance shall be compared to predicted values to demonstrate agreement within ± 1000 pcm in accordance with the Surveillance Frequency Control Program. This comparison shall consider at least those factors stated in Specification 4.1.1.1.1.e, above. The predicted reactivity values shall be adjusted (normalized) to correspond to the actual core conditions prior to exceeding a fuel burnup of 60 Effective Full Power Days after each fuel loading.

* For Modes 3 and 4, during calculation of shutdown margin with all CEA's verified fully inserted, the single CEA with the highest reactivity worth need not be assumed to be stuck in the fully withdrawn position.

REACTIVITY CONTROL SYSTEMS

SHUTDOWN MARGIN - $T_{avg} \leq 200$ °F

LIMITING CONDITION FOR OPERATION

3.1.1.2 The SHUTDOWN MARGIN shall be:

Within the limits specified in the COLR, and in addition with the Reactor Coolant System drained below the hot leg centerline, one charging pump shall be rendered inoperable.*

APPLICABILITY: MODE 5.

ACTION:

If the SHUTDOWN MARGIN requirements cannot be met, immediately initiate and continue boration at $\geq$ 40 gpm of greater than or equal to 1900 ppm boron or equivalent until the required SHUTDOWN MARGIN is restored.

SURVEILLANCE REQUIREMENTS

4.1.1.2 The SHUTDOWN MARGIN requirements of Specification 3.1.1.2 shall be determined:

a. Within one hour after detection of an inoperable CEA(s) and at least once per 12 hours thereafter while the CEA(s) is inoperable. If the inoperable CEA is immovable or untrippable, the above required SHUTDOWN MARGIN shall be increased by an amount at least equal to the withdrawn worth of the immovable or untrippable CEA(s).

b. In accordance with the Surveillance Frequency Control Program by consideration of the following factors:

1. Reactor coolant system boron concentration,
2. CEA position,
3. Reactor coolant system average temperature,
4. Fuel burnup based on gross thermal energy generation,
5. Xenon concentration, and
6. Samarium concentration.

c. At least once per 24 hours, when the Reactor Coolant System is drained below the hot leg centerline, by consideration of the factors in 4.1.1.2.b and by verifying at least one charging pump is rendered inoperable.*

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* Breaker racked-out.

REACTIVITY CONTROL SYSTEMS

BORON DILUTION

LIMITING CONDITION FOR OPERATION

3.1.1.3 The flow rate of reactor coolant to the reactor pressure vessel shall be ≥ 3000 gpm whenever a reduction in Reactor Coolant System boron concentration is being made.

APPLICABILITY: ALL MODES.

ACTION:

With the flow rate of reactor coolant to the reactor pressure vessel < 3000 gpm, immediately suspend all operations involving a reduction in boron concentration of the Reactor Coolant System.

SURVEILLANCE REQUIREMENTS

4.1.1.3 The flow rate of reactor coolant to the reactor pressure vessel shall be determined to be ≥ 3000 gpm within one hour prior to the start of and in accordance with the Surveillance Frequency Control Program during a reduction in the Reactor Coolant System boron concentration by either:

a. Verifying at least one reactor coolant pump is in operation, or

b. Verifying that at least one low pressure safety injection pump is in operation and supplying ≥ 3000 gpm to the reactor pressure vessel.

REACTIVITY CONTROL SYSTEMS

MINIMUM TEMPERATURE FOR CRITICALITY

LIMITING CONDITION FOR OPERATION

3.1.1.5 The Reactor Coolant System lowest operating loop temperature (T_{avg}) shall be $\geq$ 515°F when the reactor is critical.

APPLICABILITY: MODES 1 and 2#.

ACTION:

With a Reactor Coolant System operating loop temperature (T_{avg}) < 515°F, restore T_{avg} to within its limit within 15 minutes or be in HOT STANDBY within the next 15 minutes.

SURVEILLANCE REQUIREMENTS

4.1.1.5 The Reactor Coolant System temperature (T_{avg}) shall be determined to be $\geq$ 515°F.

a. Within 15 minutes prior to achieving reactor criticality, and

b. In accordance with the Surveillance Frequency Control Program when the reactor is critical and the Reactor Coolant System temperature (T_{avg}) is < 525°F.

With $K_{eff} \geq 1.0$.

REACTIVITY CONTROL SYSTEMS

3/4.1.2 BORATION SYSTEMS

FLOW PATHS – SHUTDOWN

LIMITING CONDITION FOR OPERATION

3.1.2.1 As a minimum, one of the following boron injection flow paths shall be OPERABLE and capable of being powered from an OPERABLE emergency power source.

a. A flow path from the boric acid makeup tank via either a boric acid pump or a gravity feed connection and any charging pump to the Reactor Coolant System if only the boric acid makeup tank in Specification 3.1.2.7a is OPERABLE, or

b. The flow path from the refueling water tank via either a charging pump or a high pressure safety injection pump* to the Reactor Coolant System if only the refueling water tank in Specification 3.1.2.7b is OPERABLE.

APPLICABILITY: MODES 5 and 6.

ACTION:

With none of the above flow paths OPERABLE, suspend all operations involving CORE ALTERATIONS or positive reactivity changes** until at least one injection path is restored to OPERABLE status.

SURVEILLANCE REQUIREMENTS

4.1.2.1 At least one of the above required flow paths shall be demonstrated OPERABLE:

a. In accordance with the Surveillance Frequency Control Program by verifying that each valve (manual, power operated or automatic) in the flow path that is not locked, sealed, or otherwise secured in position, is in its correct position.

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* The flow path from the RWT to the RCS via a single HPSI pump shall only be established if: (a) the RCS pressure boundary does not exist, or (b) RCS pressure boundary integrity exists and no charging pumps are operable. In the latter case, all charging pumps shall be disabled.

** Plant temperature changes are allowed provided the temperature change is accounted for in the calculated SHUTDOWN MARGIN.

4.1.2.2 At least two of the above required flow paths shall be demonstrated OPERABLE:

a. In accordance with the Surveillance Frequency Control Program by verifying that each valve (manual, power operated or automatic) in the flow path that is not locked, sealed, or otherwise secured in position, is in its correct position.

b. In accordance with the Surveillance Frequency Control Program during shutdown by verifying that each automatic valve in the flow path actuates to its correct position on a Safety Injection Actuation Signal.

c. At least once per 24 hours when the Reactor Auxiliary Building air temperature is below 55°F by verifying that the solution temperature of the Boric Acid Makeup Tank(s) is above 55°F.

REACTIVITY CONTROL SYSTEMS

BORATED WATER SOURCES – SHUTDOWN

LIMITING CONDITION FOR OPERATION

3.1.2.7 As a minimum, one of the following borated water sources shall be OPERABLE:

a. One boric acid makeup tank with a minimum borated water volume of 3650 gallons of 3.0 to 3.5 weight percent boric acid (5245 to 6119 ppm boron).

b. The refueling water tank with:

1. A minimum contained volume of 125,000 gallons,

2. A minimum boron concentration of 1900 ppm, and

3. A minimum solution temperature of 40°F.

APPLICABILITY: MODES 5 and 6.

ACTION:

With no borated water sources OPERABLE, suspend all operations involving positive reactivity changes* until at least one borated water source is restored to OPERABLE status.

SURVEILLANCE REQUIREMENTS

4.1.2.7 The above required borated water source shall be demonstrated OPERABLE:

a. In accordance with the Surveillance Frequency Control Program by:

1. Verifying the boron concentration of the water,

2. Verifying the water level of the tank, and.

b. At least once per 24 hours by verifying the RWT temperature when it is the source of borated water and the site ambient air temperature is < 40°F.

c. At least once per 24 hours when the Reactor Auxiliary Building air temperature is less than 55°F by verifying that the Boric Acid Makeup Tank solution temperature is greater than 55°F when that Boric Acid Makeup Tank is required to be OPERABLE.

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* Plant temperature changes are allowed provided the temperature change is accounted for in the calculated SHUTDOWN MARGIN.

REACTIVITY CONTROL SYSTEMS

BORATED WATER SOURCES – OPERATING

LIMITING CONDITION FOR OPERATION

3.1.2.8 At least two of the following four borated water sources shall be OPERABLE:

a. Boric Acid Makeup Tank 1A in accordance with Figure 3.1-1.

b. Boric Acid Makeup Tank 1B in accordance with Figure 3.1-1.

c. Boric Acid Makeup Tanks 1A and 1B with a minimum combined contained borated water volume in accordance with Figure 3.1-1.

d. The refueling water tank with:

1. A minimum contained volume of 477,360 gallons of water,

2. A minimum boron concentration of 1900 ppm,

3. A maximum solution temperature of 100°F,

4. A minimum solution temperature of 55°F when in MODES 1 and 2, and

5. A minimum solution temperature of 40°F when in MODES 3 and 4.

APPLICABILITY: MODES 1, 2, 3 and 4.

ACTION:

With only one borated water source OPERABLE, restore at least two borated water sources to OPERABLE status within 72 hours or make the reactor subcritical within the next 2 hours and borate to a SHUTDOWN MARGIN equivalent to the requirements of Specification 3.1.1.2 at 200°F; restore at least two borated water sources to OPERABLE status within the next 7 days or be in COLD SHUTDOWN within the next 30 hours.

SURVEILLANCE REQUIREMENTS

4.1.2.8 At least two borated water sources shall be demonstrated OPERABLE:

a. In accordance with the Surveillance Frequency Control Program by:

1. Verifying the boron concentration of the water source,

2. Verifying the water level in each water source.

b. In accordance with the Surveillance Frequency Control Program by verifying the RWT temperature.

c. At least once per 24 hours by verifying that the Boric Acid Makeup Tank solution temperature is greater than 55°F when the Reactor Auxiliary Building air temperature is below 55°F.

FULL LENGTH CEA POSITION (continued)

LIMITING CONDITION FOR OPERATION (continued)

b) The SHUTDOWN MARGIN requirement of Specification 3.1.1.1 is determined at least once per 12 hours.

Otherwise, be at least HOT STANDBY within the next 6 hours.

g. With more than one full length CEA inoperable or misaligned from any other CEA in its group by 15 inches (indicated position) or more, be in HOT STANDBY within 6 hours.

h. With one full length CEA inoperable due to causes other than addressed by ACTION a above, and inserted beyond the long term steady state insertion limits but within its above specified alignment requirements, operation in MODES 1 and 2 may continue pursuant to the requirements of Specification 3.1.3.6.

SURVEILLANCE REQUIREMENTS

4.1.3.1.1 The position of each full-length CEA shall be determined to be within 7.5 inches (indicated position) of all other CEAs in its group in accordance with the Surveillance Frequency Control Program except during time intervals when the Deviation Circuit and/or CEA Block Circuit are inoperable, then verify the individual CEA positions at least once per 4 hours.

4.1.3.1.2 Each full length CEA not fully inserted shall be determined to be OPERABLE by inserting it at least 7.5 inches in accordance with the Surveillance Frequency Control Program.

4.1.3.1.3 The CEA Block Circuit shall be demonstrated OPERABLE in accordance with the Surveillance Frequency Control Program by a functional test which verifies that the circuit prevents any CEA from being misaligned from all other CEAs in its group by more than 7.5 inches (indicated position).

4.1.3.1.4 The CEA Block Circuit shall be demonstrated OPERABLE by a functional test which verifies that the circuit maintains the CEA group overlap and sequencing requirements of Specification 3.1.3.6 and that the circuit prevents the regulating CEAs from being inserted beyond the Power Dependent Insertion Limit of COLR Figure 3.1-2:

*a. Prior to each entry into MODE 2 from MODE 3, except that such verification need not be performed more often than once per 92 days, and

b. In accordance with the Surveillance Frequency Control Program.

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* The licensee shall be excepted from compliance during the startup test program for an entry into MODE 2 from MODE 3 made in association with a measurement of power defect.

POSITION INDICATOR CHANNELS (Continued)

LIMITING CONDITION FOR OPERATION

b) The CEA group(s) with the inoperable position indicator is fully inserted, and subsequently maintained fully inserted, while maintaining the withdrawal sequence and THERMAL POWER level required by Specification 3.1.3.6 and when this CEA group reaches its fully inserted position, the "Full In" limit of the CEA with the inoperable position indicator is actuated and verifies this CEA to be fully inserted. Subsequent operation shall be within the limits of Specification 3.1.3.6.

c. With a maximum of one reed switch position indicator channel per group or one pulse counting position indicator channel per group inoperable and the CEA(s) with the inoperable position indicator channel at either its fully inserted position or fully withdrawn position, operation may continue provided:

1. The position of this CEA is verified immediately and at least once per 12 hours thereafter by its "Full In" or "Full Out" limit (as applicable),

2. The fully inserted CEA group(s) containing the inoperable position indicator channel is subsequently maintained fully inserted, and

3. Subsequent operation is within the limits of Specification 3.1.3.6.

d. With one or more pulse counting position indicator channels inoperable, operation in MODES 1 and 2 may continue for up to 24 hours provided all of the reed switch position indicator channels are OPERABLE.

SURVEILLANCE REQUIREMENTS

4.1.3.3 Each position indicator channel shall be determined to be OPERABLE by verifying the pulse counting position indicator channels and the reed switch position indicator channels agree within 4.5 inches in accordance with the Surveillance Frequency Control Program except during time intervals when the Deviation circuit is inoperable, then compare the pulse counting position indicator and reed switch position indicator channels at least once per 4 hours.

REACTIVITY CONTROL SYSTEMS

CEA DROP TIME

LIMITING CONDITION FOR OPERATION

3.1.3.4 The individual full length (shutdown and control) CEA drop time, from a fully withdrawn position, shall be $\leq$ 3.1 seconds from when electrical power is interrupted to the CEA drive mechanism until the CEA reaches its 90 percent insertion position with:

a. $T_{avg} \geq 515°F$, and

b. All reactor coolant pumps operating.

APPLICABILITY: MODE 3.

ACTION:

a. With the drop time of any full length CEA determined to exceed the above limit, restore the CEA drop time to within the above limit prior to proceeding to MODE 1 or 2.

b. With the CEA drop times within limits but determined at less than full reactor coolant flow, operation may proceed provided THERMAL POWER is restricted to less than or equal to the maximum THERMAL POWER level allowable for the reactor coolant pump combination operating at the time of CEA drop time determination.

SURVEILLANCE REQUIREMENTS

4.1.3.4 The CEA drop time of full length CEAs shall be demonstrated through measurement prior to reactor criticality:

a. For all CEAs following each removal of the reactor vessel head,

b. For specifically affected individual CEAs following any maintenance on or modification to the CEA drive system which could affect the drop time of those specific CEAs, and

c. In accordance with the Surveillance Frequency Control Program.

REACTIVITY CONTROL SYSTEMS

SHUTDOWN CEA INSERTION LIMIT

LIMITING CONDITION FOR OPERATION

3.1.3.5 All shutdown CEAs shall be withdrawn to at least 129.0 inches.

APPLICABILITY: MODES 1 and 2*#.

ACTION:

With a maximum of one shutdown CEA withdrawn, except for surveillance testing pursuant to Specification 4.1.3.1.2, to less than 129.0 inches, within one hour either:

a. Withdraw the CEA to at least 129.0 inches, or

b. Declare the CEA inoperable and apply Specification 3.1.3.1.

SURVEILLANCE REQUIREMENTS

4.1.3.5 Each shutdown CEA shall be determined to be withdrawn to at least 129.0 inches:

a. Within 15 minutes prior to withdrawal of any CEAs in regulating groups during an approach to reactor criticality, and

b. In accordance with the Surveillance Frequency Control Program.

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* See Special Test Exception 3.10.2.

\# With $K_{eff} \geq 1.0$.

REGULATING CEA INSERTION LIMITS (Continued)

LIMITING CONDITION FOR OPERATION

c. With the regulating CEA groups inserted between the Long Term Steady State Insertion Limits and the Power Dependent Insertion Limits for intervals > 5 EFPD per 30 EFPD interval or > 14 EFPD per calendar year, except during operations pursuant to the provisions of ACTION items c. and d. of Specification 3.1.3.1, either:

1. Restore the regulating groups to within the Long Term Steady State Insertion Limits within two hours, or

2. Be in HOT STANDBY within 6 hours.

SURVEILLANCE REQUIREMENTS

4.1.3.6 The position of each regulating CEA group shall be determined to be within the Power Dependent Insertion Limits in accordance with the Surveillance Frequency Control Program except during time intervals when the PDIL Auctioneer Alarm Circuit is inoperable, then verify the individual CEA positions at least once per 4 hours. The accumulated times during which the regulating CEA groups are inserted between the Long Term Steady State Insertion Limits and the Power Dependent Insertion Limits shall be determined in accordance with the Surveillance Frequency Control Program.

3/4.2 POWER DISTRIBUTION LIMITS

LINEAR HEAT RATE

LIMITING CONDITION FOR OPERATION

3.2.1 The linear heat rate shall not exceed the limits specified in the COLR.

APPLICABILITY: MODE 1.

ACTION:

With the linear heat rate exceeding its limits, as indicated by four or more coincident incore channels or by the AXIAL SHAPE INDEX outside of the power dependent control limits of COLR Figure 3.2-2, within 15 minutes initiate corrective action to reduce the linear heat rate to within the limits and either:

a. Restore the linear heat rate to within its limits within one hour, or

b. Be in HOT STANDBY within the next 6 hours.

SURVEILLANCE REQUIREMENTS

4.2.1.1 The provisions of Specification 4.0.4 are not applicable.

4.2.1.2 The linear heat rate shall be determined to be within its limits by continuously monitoring the core power distribution with either the excore detector monitoring system or with the incore detector monitoring system.

4.2.1.3 Excore Detector Monitoring System – The excore detector monitoring system may be used for monitoring the linear heat rate by:

a. Verifying in accordance with the Surveillance Frequency Control Program that the full length CEAs are withdrawn to and maintained at or beyond the Long Term Steady State Insertion Limit of Specification 3.1.3.6.

b. Verifying in accordance with the Surveillance Frequency Control Program that the AXIAL SHAPE INDEX alarm setpoints are adjusted to within the limits shown on COLR Figure 3.2-2.

SURVEILLANCE REQUIREMENTS (continued)

c. Verifying that the AXIAL SHAPE INDEX is maintained within the allowable limits of COLR Figure 3.2-2, where 100 percent of maximum allowable power represents the maximum THERMAL POWER allowed by the following expression:

M x N

where:

1. M is the maximum allowable THERMAL POWER level for the existing Reactor Coolant Pump combination.

2. N is the maximum allowable fraction of RATED THERMAL POWER as determined by the F_r^T curve of COLR Figure 3.2-3.

4.2.1.4 Incore Detector Monitoring System[#] – The incore detector monitoring system may be used for monitoring the linear heat rate by verifying that the incore detector Local Power Density alarms:

a. Are adjusted to satisfy the requirements of the core power distribution map which shall be updated in accordance with the Surveillance Frequency Control Program in MODE 1.

b. Have their alarm setpoint adjusted to less than or equal to the limits shown on COLR Figure 3.2-1.

If the incore system become inoperable, reduce power to M x N within 4 hours and monitor linear heat rate in accordance with Specification 4.2.1.3.

POWER DISTRIBUTION LIMITS

TOTAL INTEGRATED RADIAL PEAKING FACTOR - F_r^T

LIMITING CONDITION FOR OPERATION

3.2.3 The calculated value of F_r^T shall be within the limits specified in the COLR.

APPLICABILITY: MODE 1*.

ACTION:

With F_r^T not within limits, within 6 hours either:

a. Be in at least HOT STANDBY, or

b. Reduce THERMAL POWER to bring the combination of THERMAL POWER and F_r^T to within the limits of COLR Figure 3.2-3 and withdraw the full length CEAs to or beyond the Long Term Steady State Insertion Limits of Specification 3.1.3.6. The THERMAL POWER limit determined from COLR Figure 3.2-3 shall then be used to establish a revised upper THERMAL POWER level limit on COLR Figure 3.2-4 (truncate Figure 3.2-4 at the allowable fraction of RATED THERMAL POWER determined by COLR Figure 3.2-3) and subsequent operation shall be maintained within the reduced acceptable operation region of COLR Figure 3.2-4.

SURVEILLANCE REQUIREMENTS

4.2.3.1 The provisions of Specification 4.0.4 are not applicable.

4.2.3.2 F_r^T shall be calculated by the expression $F_r^T = F_r (1 + T_q)$ when F_r is calculated with a non-full core power distribution analysis code and shall be calculated as $F_r^T = F_r$ when calculations are performed with a full core power distribution analysis code. F_r^T shall be determined to be within its limit at the following intervals.

a. Prior to operation above 70 percent of RATED THERMAL POWER after each fuel loading.

b. In accordance with the Surveillance Frequency Control Program in MODE 1, and

c. Within four hours if the AZIMUTHAL POWER TILT (T_q) is > 0.03.

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* See Special Test Exception 3.10.2

POWER DISTRIBUTION LIMITS

AZIMUTHAL POWER TILT – T_q

LIMITING CONDITION FOR OPERATION

3.2.4 The AZIMUTHAL POWER TILT (T_q) shall not exceed 0.03.

APPLICABILITY: MODE 1*.

ACTION:

a. With the indicated AZIMUTHAL POWER TILT determined to be > .030 but ≤ 0.10, either correct the power tilt within two hours or determine within the next 2 hours and at least once per subsequent 8 hours, that the TOTAL INTEGRATED RADIAL PEAKING FACTOR (F_r^T) is within the limits of Specification 3.2.3.

b. With the indicated AZIMUTHAL POWER TILT determined to be > 0.10, operation may proceed for up to 2 hours provided that the TOTAL INTEGRATED RADIAL PEAKING FACTOR (F_r^T) is within the limits of Specification 3.2.3. Subsequent operation for the purpose of measurement and to identify the cause of the tilt is allowable provided the THERMAL POWER level is restricted to ≤ 20% of the maximum allowable THERMAL POWER level for the existing Reactor Coolant Pump combination.

SURVEILLANCE REQUIREMENT

4.2.4.1 The provisions of Specification 4.0.4 are not applicable.

4.2.4.2 The AZIMUTHAL POWER TILT shall be determined to be within the limit by:

a. Calculating the tilt in accordance with the Surveillance Frequency Control Program when the Subchannel Deviation Alarm is OPERABLE,

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* See Special Test Exception 3.10.2.

POWER DISTRIBUTION LIMITS

DNB PARAMETERS

LIMITING CONDITION FOR OPERATION

3.2.5 The following DNB related parameters shall be maintained within the limits:

a. Cold Leg Temperature as shown on Table 3.2-1 of the COLR,

b. Pressurizer Pressure* as shown on Table 3.2-1 of the COLR,

c. Reactor Coolant System Total Flow Rate - greater than or equal to 375,000 gpm, and

d. AXIAL SHAPE INDEX as shown on Figure 3.2-4 of the COLR.

APPLICABILITY: MODE 1.

ACTION:

With any of the above parameters exceeding its limit, restore the parameter to within its limit within 2 hours or reduce THERMAL POWER to $\leq$ 5% of RATED THERMAL POWER within the next 4 hours.

SURVEILLANCE REQUIREMENTS

4.2.5.1 Each of the DNB related parameters shall be verified to be within their limits by instrument readout in accordance with the Surveillance Frequency Control Program.

4.2.5.2 The Reactor Coolant System total flow rate shall be determined to be within its limit by measurement** in accordance with the Surveillance Frequency Control Program.

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* Limit not applicable during either a THERMAL POWER ramp increase in excess of 5% per minute of RATED THERMAL POWER or a THERMAL POWER step increase of greater than 10% of RATED THERMAL POWER.

** Not required to be performed until THERMAL POWER is $\geq$ 90% of RATED THERMAL POWER.

3/4.3 INSTRUMENTATION

3/4.3.1 REACTOR PROTECTIVE INSTRUMENTATION

LIMITING CONDITION FOR OPERATION

3.3.1.1 As a minimum, the reactor protective instrumentation channels and bypasses of Table 3.3-1 shall be OPERABLE.

APPLICABILITY: As shown in Table 3.3-1.

ACTION:

As shown in Table 3.3-1.

SURVEILLANCE REQUIREMENTS

4.3.1.1.1 Each reactor protective instrumentation channel shall be demonstrated OPERABLE by the performance of the CHANNEL CHECK, CHANNEL CALIBRATION and CHANNEL FUNCTIONAL TEST operations during the modes and at the frequencies shown in Table 4.3-1.

4.3.1.1.2 The logic for the bypasses shall be demonstrated OPERABLE during the at power CHANNEL FUNCTIONAL TEST of channels affected by bypass operation. The total bypass function shall be demonstrated OPERABLE in accordance with the Surveillance Frequency Control Program during CHANNEL CALIBRATION testing of each channel affected by bypass operation.

4.3.1.1.3 The REACTOR TRIP SYSTEM RESPONSE TIME of each reactor trip function shall be demonstrated to be within its limit in accordance with the Surveillance Frequency Control Program. Neutron detectors are exempt from response time testing. Each test shall include at least one channel per function.

TABLE 4.3-1

REACTOR PROTECTIVE INSTRUMENTATION SURVEILLANCE REQUIREMENTS

FUNCTIONAL UNIT	CHANNEL CHECK	CHANNEL CALIBRATION	CHANNEL FUNCTIONAL TEST	MODES IN WHICH SURVEILLANCE REQUIRED
1. Manual Reactor Trip	N/A	N.A.	S/U(1)	N/A
2. Power Level – High				
a. Nuclear Power	SFCP	SFCP(2), SFCP(3), SFCP(5)	SFCP	1,2
b. ΔT Power	SFCP	SFCP(4), SFCP	SFCP	1
3. Reactor Coolant Flow – Low	SFCP	SFCP	SFCP	1, 2
4. Pressurizer Pressure – High	SFCP	SFCP	SFCP	1, 2
5. Containment Pressure – High	SFCP	SFCP	SFCP	1, 2
6. Steam Generator Pressure – Low	SFCP	SFCP	SFCP	1, 2
7. Steam Generator Water Level – Low	SFCP	SFCP	SFCP(6, 7)	1, 2
8. Local Power Density – High	SFCP	SFCP	SFCP	1
9. Thermal Margin/Low Pressure	SFCP	SFCP	SFCP	1, 2
9a. Steam Generator Pressure Difference – High	SFCP	SFCP	SFCP	1, 2
10. Loss of Turbine -- Hydraulic Fluid Pressure – Low	N.A.	N.A.	S/U(1)	N.A.
11. Wide Range Logarithmic Neutron Flux Monitor	SFCP	N.A.	S/U(1)	1, 2, 3, 4, 5 and *
12. Reactor Protection System Logic	N.A.	N.A.	SFCP and S/U(1)	1, 2 and *
13. Reactor Trip Breakers	N.A.	N.A.	SFCP	1, 2 and *

INSTRUMENTATION

3/4.3.2 ENGINEERED SAFETY FEATURE ACTUATION SYSTEM INSTRUMENTATION

LIMITING CONDITION FOR OPERATION

3.3.2.1 The Engineered Safety Feature Actuation System (ESFAS) instrumentation channels and bypasses shown in Table 3.3-3 shall be OPERABLE with their trip setpoints set consistent with the values shown in the Trip Setpoint column of Table 3.3-4.

APPLICABILITY: As shown in Table 3.3-3.

ACTION:

a. With an ESFAS instrumentation channel trip setpoint less conservative than the value shown in the Allowable Values column of Table 3.3-4, declare the channel inoperable and apply the applicable ACTION requirement of Table 3.3-3 until the channel is restored to OPERABLE status with the trip setpoint adjusted consistent with the Trip Setpoint value.

b. With an ESFAS instrumentation channel inoperable, take the ACTION shown in Table 3.3-3.

SURVEILLANCE REQUIREMENTS

4.3.2.1.1 Each ESFAS instrumentation channel shall be demonstrated OPERABLE by the performance of the CHANNEL CHECK, CHANNEL CALIBRATION and CHANNEL FUNCTIONAL TEST operations during the modes and at the frequencies shown in Table 4.3-2.

4.3.2.1.2 The logic for the bypasses shall be demonstrated OPERABLE during the at power CHANNEL FUNCTIONAL TEST of channels affected by bypass operation. The total bypass function shall be demonstrated OPERABLE in accordance with the Surveillance Frequency Control Program during CHANNEL CALIBRATION testing of each channel affected by bypass operation.

4.3.2.1.3 The ENGINEERED SAFETY FEATURES RESPONSE TIME of each ESFAS function shall be demonstrated to be within the limit in accordance with the Surveillance Frequency Control Program. Each test shall include at least one channel per function.

TABLE 4.3-2

ENGINEERED SAFETY FEATURE ACTUATION SYSTEM INSTRUMENTATION SURVEILLANCE REQUIREMENTS

FUNCTIONAL UNIT	CHANNEL CHECK	CHANNEL CALIBRATION	CHANNEL FUNCTIONAL TEST	MODES IN WHICH SURVEILLANCE REQUIRED
1. SAFETY INJECTION (SIAS)				
a. Manual (Trip Buttons)	N.A.	N.A.	SFCP	N.A.
b. Containment Pressure – High	SFCP	SFCP	SFCP	1, 2, 3
c. Pressurizer Pressure – Low	SFCP	SFCP	SFCP	1, 2, 3
d. Automatic Actuation Logic	N.A.	N.A.	SFCP(1)	1, 2, 3
2. CONTAINMENT SPRAY (CSAS)				
a. Manual (Trip Buttons)	N.A.	N.A.	SFCP	N.A.
b. Containment Pressure – — High-High	SFCP	SFCP	SFCP	1, 2, 3
c. Automatic Actuation Logic	N.A.	N.A.	SFCP(1)	1, 2, 3
3. CONTAINMENT ISOLATION (CIS)				
a. Manual (Trip Buttons)	N.A.	N.A.	SFCP	N.A.
b. Containment Pressure – High	SFCP	SFCP	SFCP	1, 2, 3
c. Containment Radiation – High	SFCP	SFCP	SFCP	1, 2, 3, 4
d. Automatic Actuation Logic	N.A.	N.A.	SFCP(1)	1, 2, 3
e. SIAS	N.A.	N.A.	SFCP	N.A.
4. MAIN STEAM LINE ISOLATION (MSIS)				
a. Manual (Trip Buttons)	N.A.	N.A.	SFCP	N.A.
b. Steam Generator Pressure – Low	SFCP	SFCP	SFCP	1, 2, 3
c. Automatic Actuation Logic	N.A.	N.A.	SFCP(1)	1, 2, 3
5. CONTAINMENT SUMP RECIRCULATION (RAS)				
a. Manual RAS (Trip Buttons)	N.A.	N.A.	SFCP	N.A.
b. Refueling Water Storage Tank – Low	SFCP	SFCP	SFCP	1, 2, 3
c. Automatic Actuation Logic	N.A.	N.A.	SFCP(1)	1, 2, 3

TABLE 4.3-2 (Continued)

ENGINEERED SAFETY FEATURE ACTUATION SYSTEM INSTRUMENTATION SURVEILLANCE REQUIREMENTS

FUNCTIONAL UNIT	CHANNEL CHECK	CHANNEL CALIBRATION	FUNCTIONAL TEST	MODES IN WHICH SURVEILLANCE REQUIRED
6. LOSS OF POWER				
a. 4.16 kv Emergency Bus Undervoltage (Loss of Voltage)	SFCP	SFCP	SFCP	1, 2, 3
b. 4.16 kv Emergency Bus Undervoltage (Degraded Voltage)	SFCP	SFCP	SFCP	1, 2, 3
c. 480 V Emergency Bus Undervoltage (Degraded Voltage)	SFCP	SFCP	SFCP	1, 2, 3
7. AUXILIARY FEEDWATER (AFAS)				
a. Manual (Trip Buttons)	N.A.	N.A.	SFCP	1, 2, 3
b. SG Level (A/B) – Low	SFCP	SFCP	SFCP	1, 2, 3
c. Automatic Actuation Logic	N.A.	N.A.	SFCP	1, 2, 3
8. AUXILIARY FEEDWATER ISOLATION				
a. SG Level (A/B) – Low and SG Differential Pressure (BtoA/AtoB) – High	N.A.	SFCP	SFCP	1, 2, 3
b. SG Level (A/B) – Low and Feedwater Header Differential Pressure (BtoA/AtoB) – High	N.A.	SFCP	SFCP	1, 2, 3

TABLE 4.3-2 (Continued)

TABLE NOTATION

(1) The logic circuits shall be tested manually in accordance with the Surveillance Frequency Control Program.

INSTRUMENTATION

3/4.3.3 MONITORING INSTRUMENTATION

RADIATION MONITORING

LIMITING CONDITION FOR OPERATION

3.3.3.1 The radiation monitoring instrumentation channels shown in Table 3.3-6 shall be OPERABLE with their alarm/trip setpoints within the specified limits.

APPLICABILITY: As shown in Table 3.3-6.

ACTION:

a. With a radiation monitoring channel alarm/trip setpoint exceeding the value shown in Table 3.3-6, adjust the setpoint to within the limit within 4 hours or declare the channel inoperable.

b. With one or more radiation monitoring channels inoperable, take the ACTION shown in Table 3.3-6.

c. The provisions of Specification 3.0.3 are not applicable.

SURVEILLANCE REQUIREMENTS

4.3.3.1 Each radiation monitoring instrumentation channel shall be demonstrated OPERABLE by the performance of the CHANNEL CHECK, CHANNEL CALIBRATION and CHANNEL FUNCTIONAL TEST operations in accordance with the Surveillance Frequency Control Program.

4.3.3.2 In accordance with the Surveillance Frequency Control Program, each Control Room Isolation radiation monitoring instrumentation channel shall be demonstrated OPERABLE by verifying that the response time of the channel is within limits.

TABLE 3.3-6

RADIATION MONITORING INSTRUMENTATION

INSTRUMENT	MINIMUM CHANNELS OPERABLE	APPLICABLE MODES	ALARM/TRIP SETPOINT	MEASUREMENT RANGE	ACTION
1. AREA MONITORS					
a. Fuel Storage Pool Area	1	*	$\leq$ 15 mR/hr	$10^{-1} - 10^{4}$ mR/hr	13
b. Containment (CIS)	3	****	$\leq$ 90 mR/hr	$1 - 10^{5}$ mR/hr	16
c. Containment Area – Hi Range	1	1, 2, 3, & 4	$\leq$ 10 R/hr	$1 - 10^{7}$ R/hr	15
d. Control Room Isolation	1 per intake	ALL MODES	$\leq$ 320 cpm	$10 - 10^{7}$ cpm	17
2. PROCESS MONITORS					
a. Containment					
i. Gaseous Activity RCS Leakage Detection	1	1, 2, 3 & 4	Not Applicable	$10 - 10^{6}$ cpm	14
ii. Particulate Activity RCS Leakage Detection	1	1, 2, 3 & 4	Not Applicable	$10 - 10^{6}$ cpm	14
b. Fuel Storage Pool Area Ventilation System					
i. Gaseous Activity	1	**	***	$10^{-7} - 10^{5}$ μCi/cc	12
ii. Particulate Activity	1	**	***	$1 - 10^{6}$ cpm	12

* With fuel in the storage pool or building.
** With recently irradiated or irradiated fuel in the storage pool.
*** The Alarm Setpoints are determined and set in accordance with requirements of the Offsite Dose Calculation Manual.
**** During movement of recently irradiated fuel assemblies within containment.

DELETED

DELETED

INSTRUMENTATION

REMOTE SHUTDOWN INSTRUMENTATION

LIMITING CONDITION FOR OPERATION

3.3.3.5 The remote shutdown monitoring instrumentation channels shown in Table 3.3-9 shall be OPERABLE with readouts displayed external to the control room.

APPLICABILITY: MODES 1, 2 and 3.

ACTION:

With the number of OPERABLE remote shutdown monitoring channels less than required by Table 3.3-9, either:

a. Restore the inoperable channel to OPERABLE status within 30 days, or

b. Be in HOT SHUTDOWN within the next 12 hours.

SURVEILLANCE REQUIREMENTS

NOTE
CHANNEL CALIBRATION is not applicable to the reactor trip breaker indication.

4.3.3.5 Each remote shutdown monitoring instrumentation channel shall be demonstrated OPERABLE by performance of the CHANNEL CHECK and CHANNEL CALIBRATION operations in accordance with the Surveillance Frequency Control Program.

DELETED

INSTRUMENTATION

ACCIDENT MONITORING INSTRUMENTATION

LIMITING CONDITION FOR OPERATION

3.3.3.8 The accident monitoring instrumentation channels shown in Table 3.3-11 shall be OPERABLE.

APPLICABILITY: MODES 1, 2 and 3.

ACTION:

a. Actions per Table 3.3-11.

SURVEILLANCE REQUIREMENTS

4.3.3.8 Each accident monitoring instrumentation channel shall be demonstrated OPERABLE by performance of the CHANNEL CHECK and CHANNEL CALIBRATION operations in accordance with the Surveillance Frequency Control Program.

DELETED

3/4.4 REACTOR COOLANT SYSTEM

REACTOR COOLANT LOOPS AND COOLANT CIRCULATION

STARTUP AND POWER OPERATION

LIMITING CONDITION FOR OPERATION

3.4.1.1 Both reactor coolant loops and both reactor coolant pumps in each loop shall be in operation.

APPLICABILITY: MODES 1 and 2.

ACTION:

With less than the above required reactor coolant pumps in operation, be in at least HOT STANDBY within 1 hour.

SURVEILLANCE REQUIREMENTS

4.4.1.1 The above required reactor coolant loops shall be verified to be in operation and circulating reactor coolant in accordance with the Surveillance Frequency Control Program.

REACTOR COOLANT SYSTEM

HOT STANDBY

LIMITING CONDITION FOR OPERATION

3.4.1.2 The reactor coolant loops listed below shall be OPERABLE and at least one of these reactor coolant loops shall be in operation.*

a. Reactor Coolant Loop A and its associated steam generator and at least one associated reactor coolant pump.

b. Reactor Coolant Loop B and its associated steam generator and at least one associated reactor coolant pump.

APPLICABILITY: MODE 3.

ACTION:

a. With less than the above required reactor coolant loops OPERABLE, restore the required loops to OPERABLE status within 72 hours or be in HOT SHUTDOWN within the next 12 hours.

b. With no reactor coolant loop in operation, suspend operations that would cause introduction into the RCS, coolant with boron concentration less than required to meet SHUTDOWN MARGIN of Technical Specification 3.1.1.1 and within one (1) hour initiate corrective action to return the required reactor coolant loop to operation.

SURVEILLANCE REQUIREMENTS

4.4.1.2.1 At least the above required reactor coolant pumps, if not in operation, shall be determined to be OPERABLE in accordance with the Surveillance Frequency Control Program by verifying correct breaker alignments and indicated power availability.

4.4.1.2.2 At least one reactor coolant loop shall be verified to be in operation and circulating reactor coolant in accordance with the Surveillance Frequency Control Program.

4.4.1.2.3 The required steam generators shall be determined OPERABLE by verifying the secondary side water level to be $\geq$ 10% of narrow range indication in accordance with the Surveillance Frequency Control Program.

---

* All reactor coolant pumps may be de-energized for up to 1 hour provided (1) no operations are permitted that would cause introduction into the RCS, coolant with boron concentration less than required to meet the SHUTDOWN MARGIN of Technical Specification 3.1.1.1 and (2) core outlet temperature is maintained at least 10°F below saturation temperature.

HOT SHUTDOWN

SURVEILLANCE REQUIREMENTS

4.4.1.3.1 The required reactor coolant pump(s), if not in operation, shall be determined to be OPERABLE in accordance with the Surveillance Frequency Control Program by verifying correct breaker alignments and indicated power availability.

4.4.1.3.2 The required steam generator(s) shall be determined OPERABLE by verifying the secondary side water level to be $\geq$ 10% of narrow range indication in accordance with the Surveillance Frequency Control Program.

4.4.1.3.3 At least one reactor coolant or shutdown cooling loop shall be verified to be in operation and circulating reactor coolant in accordance with the Surveillance Frequency Control Program.

REACTOR COOLANT SYSTEM

COLD SHUTDOWN – LOOPS FILLED

LIMITING CONDITION FOR OPERATION

3.4.1.4.1 At least one shutdown cooling loop shall be OPERABLE and in operation* and either:

a. One additional shutdown cooling loop shall be OPERABLE#, or

b. The secondary side water level of at least two steam generators shall be greater than 10% of narrow range indication.

APPLICABILITY: MODE 5 with reactor coolant loops filled##.

ACTION:

a. With less than the above required loops OPERABLE or with less than the required steam generator level, within one (1) hour initiate corrective action to return the required loops to OPERABLE status or to restore the required level.

b. With no shutdown cooling loop in operation, suspend operations that would cause introduction into the RCS, coolant with boron concentration less than required to meet SHUTDOWN MARGIN of Technical Specification 3.1.1.2 and within one (1) hour initiate corrective action to return the required shutdown loop to operation.

SURVEILLANCE REQUIREMENTS

4.4.1.4.1.1 The secondary side water level of at least two steam generators when required shall be determined to be within limits in accordance with the Surveillance Frequency Control Program.

4.4.1.4.1.2 At least one shutdown cooling loop shall be determined to be in operation and circulating reactor coolant in accordance with the Surveillance Frequency Control Program.

---

* The shutdown cooling pump may be de-energized for up to 1 hour provided 1) no operations are permitted that would cause introduction into the RCS, coolant with boron concentration less than required to meet the SHUTDOWN MARGIN of Technical Specification 3.1.1.2 and 2) core outlet temperature is maintained at least 10°F below saturation temperature.

\# One shutdown cooling loop may be inoperable for up to 2 hours for surveillance testing provided the other shutdown cooling loop is OPERABLE and in operation.

\## A reactor coolant pump shall not be started with two idle loops unless the secondary water temperature of each steam generator is less than 30°F above each of the Reactor Coolant System cold leg temperatures.

REACTOR COOLANT SYSTEM

COLD SHUTDOWN – LOOPS NOT FILLED

LIMITING CONDITION FOR OPERATION

3.4.1.4.2 Two shutdown cooling loops shall be OPERABLE[#] and at least one shutdown cooling loop shall be in operation*.

APPLICABILITY: MODE 5 with reactor coolant loops not filled.

ACTION:

a. With less than the above required loops OPERABLE, within one (1) hour initiate corrective action to return the required loops to OPERABLE status.

b. With no shutdown cooling loop in operation, suspend operations that would cause introduction into the RCS, coolant with boron concentration less than required to meet SHUTDOWN MARGIN of Technical Specification 3.1.1.2 and within one (1) hour initiate corrective action to return the required shutdown cooling loop to operation.

SURVEILLANCE REQUIREMENTS

4.4.1.4.2 At least one shutdown cooling loop shall be determined to be in operation and circulating reactor coolant in accordance with the Surveillance Frequency Control Program.

One shutdown cooling loop may be inoperable for up to 2 hours for surveillance testing provided the other shutdown cooling loop is OPERABLE and in operation.

* The shutdown cooling pump may be de-energized for up to 1 hour provided 1) no operations are permitted that would cause introduction into the RCS, coolant with boron concentration less than required to meet the SHUTDOWN MARGIN of Technical Specification 3.1.1.2 and 2) core outlet temperature is maintained at least 10°F below saturation temperature.

REACTOR COOLANT SYSTEM

3/4.4.6 REACTOR COOLANT SYSTEM LEAKAGE

LEAKAGE DETECTION SYSTEMS

LIMITING CONDITION FOR OPERATION

3.4.6.1 The following RCS leakage detection systems will be OPERABLE:

a. The reactor cavity sump inlet flow monitoring system; and

b. One containment atmosphere radioactivity monitor (gaseous or particulate).

APPLICABILITY: MODES 1, 2, 3, and 4.

ACTION:

a. With the reactor cavity sump inlet flow monitoring system inoperable with an operable containment particulate radioactivity monitor, perform a RCS water inventory balance at least once per 24* hours and restore the sump inlet flow monitoring system to OPERABLE status within 30 days; otherwise, be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

b. With the reactor cavity sump inlet flow monitoring system inoperable with only the containment gaseous radioactivity monitor operable, perform an RCS water inventory balance at least once per 24* hours and analyze grab samples of the containment atmosphere at least once per 12 hours, and either restore the sump inlet flow monitoring system to OPERABLE status within 7 days or restore the containment particulate radioactivity monitor to OPERABLE status within 7 days and enter action a. above with the time in this action applied against the allowed outage time of action a.; otherwise, be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

c. With the required radioactivity monitor inoperable, analyze grab samples of the containment atmosphere or perform a RCS water inventory balance at least once per 24* hours, and restore the required radioactivity monitor to OPERABLE status within 30 days; otherwise, be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

d. With all required monitors inoperable, enter LCO 3.0.3 immediately.

SURVEILLANCE REQUIREMENTS

4.4.6.1 The RCS leakage detection instruments shall be demonstrated OPERABLE by:

a. Performance of the CHANNEL CHECK, CHANNEL FUNCTIONAL TEST, and CHANNEL CALIBRATION of the required containment atmosphere radioactivity monitor in accordance with Surveillance Requirement 4.3.3.1.

b. Performance of the CHANNEL CALIBRATION of the reactor cavity sump inlet flow monitoring system in accordance with the Surveillance Frequency Control Program.

* Not required to be performed until 12 hours after establishment of steady state operation.

REACTOR COOLANT SYSTEM

REACTOR COOLANT SYSTEM LEAKAGE

LIMITING CONDITION FOR OPERATION

3.4.6.2 Reactor Coolant System operational leakage shall be limited to:

a. No PRESSURE BOUNDARY LEAKAGE,

b. 1 GPM UNIDENTIFIED LEAKAGE,

c. 150 gallons per day primary-to-secondary leakage through any one steam generator (SG),

d. 10 GPM IDENTIFIED LEAKAGE from the Reactor Coolant System, and

e. Leakage as specified in Table 3.4.6-1 for each Reactor Coolant System Pressure Isolation Valve identified in Table 3.4.6-1.

APPLICABILITY: MODES 1, 2, 3 and 4.

ACTION:

a. With any PRESSURE BOUNDARY LEAKAGE, or with primary-to-secondary leakage not within limit, be in at least HOT STANDBY within 6 hours and in COLD SHUTDOWN within the following 30 hours.

b. With any Reactor Coolant System operational leakage greater than any one of the above limits, excluding primary-to-secondary leakage, PRESSURE BOUNDARY LEAKAGE, and Reactor Coolant System Pressure Isolation Valve leakage, reduce the leakage rate to within limits within 4 hours or be in at least HOT STANDBY within 6 hours and in COLD SHUTDOWN within the following 30 hours.

c. With any Reactor Coolant System Pressure Isolation Valve leakage greater than the limit in 3.4.6.2.e above reactor operation may continue provided that at least two valves, including check valves, in each high pressure line having a non-functional valve are in and remain in the mode corresponding to the isolated condition. Motor operated valves shall be placed in the closed position, and power supplies deenergized. (Note, however, that this may lead to ACTION requirements for systems involved.) Otherwise, reduce the leakage rate to within limits within 4 hours or be in at least HOT STANDBY within 6 hours and in COLD SHUTDOWN within the following 30 hours.

SURVEILLANCE REQUIREMENTS

4.4.6.2 Reactor Coolant System operational leakages shall be demonstrated to be within each of the above limits by:

a. Monitoring the containment atmosphere gaseous and particulate radioactivity in accordance with the Surveillance Frequency Control Program.

SURVEILLANCE REQUIREMENTS (Continued)

b. Monitoring the containment sump inventory and discharge in accordance with the Surveillance Frequency Control Program,

c. *Performance of a Reactor Coolant System water inventory balance in accordance with the Surveillance Frequency Control Program except when operating in the shutdown cooling mode,

d. Monitoring the reactor head flange leakoff system in accordance with the Surveillance Frequency Control Program, and

e. Verifying each Reactor Coolant System Pressure Isolation Valve leakage (Table 3.4.6-1) to be within limits:

1. Prior to entering MODE 2 after refueling,

2. Prior to entering MODE 2, whenever the plant has been in COLD SHUTDOWN for 7 days or more if leakage testing has not been performed in the previous 9 months,

3. Prior to returning the valve to service following maintenance, repair or replacement work on the valve.

4. The provision of Specification 4.0.4 is not applicable for entry into MODE 3 or 4.

f. Whenever integrity of a pressure isolation valve listed in Table 3.4.6-1 cannot be demonstrated the integrity of the remaining check valve in each high pressure line having a leaking valve shall be determined and recorded daily. In addition, the position of one other valve located in each high pressure line having a leaking valve shall be recorded daily; and

g. Primary-to-secondary leakage shall be verified ≤150 gallons per day through any one steam generator in accordance with the Surveillance Frequency Control Program.**

* Not required to be performed until 12 hours after establishment of steady state operation. Not applicable to primary-to-secondary leakage.

** Not required to be performed until 12 hours after establishment of steady state operation.

TABLE 3.4-1

REACTOR COOLANT SYSTEM

CHEMISTRY LIMITS

PARAMETER	STEADY STATE LIMIT	TRANSIENT LIMIT
DISSOLVED OXYGEN	$\leq$ 0.10 ppm*	$\leq$ 1.00 ppm*
CHLORIDE	$\leq$ 0.15 ppm	$\leq$ 1.50 ppm
FLUORIDE	$\leq$ 0.10 ppm	$\leq$ 1.00 ppm

* Limit not applicable with $T_{avg} \leq 250°F$.

TABLE 4.4-3

REACTOR COOLANT SYSTEM

CHEMISTRY LIMITS SURVEILLANCE REQUIREMENTS

PARAMETER	MINIMUM SAMPLING FREQUENCIES	MAXIMUM TIME BETWEEN SAMPLES
DISSOLVED OXYGEN	SFCP*	72 hours
CHLORIDE	SFCP	72 hours
FLUORIDE	SFCP	72 hours

* Not required with $T_{avg} \leq 250°F$.

REACTOR COOLANT SYSTEM

SPECIFIC ACTIVITY

LIMITING CONDITION FOR OPERATION

3.4.8 The specific activity of the primary coolant shall be limited to:

a. $\leq$ 1.0 μCi/gram DOSE EQUIVALENT I-131, and

b. $\leq$ 518.9 μCi/gram DOSE EQUIVALENT XE-133.

APPLICABILITY: MODES 1, 2, 3, and 4.

ACTION:

a. With the specific activity of the primary coolant >1.0 μCi/gram DOSE EQUIVALENT I-131, verify DOSE EQUIVALENT I-131 is $\leq$ 60.0 μCi/gram once per four hours.

b. With the specific activity of the primary coolant > 1.0 μCi/gram DOSE EQUIVALENT I-131, but $\leq$ 60.0 μCi/gram DOSE EQUIVALENT I-131, operation may continue for up to 48 hours while efforts are made to restore DOSE EQUIVALENT I-131 to within the 1.0 μCi/gram limit. LCO 3.0.4.c is applicable.

c. With the specific activity of the primary coolant > 1.0 μCi/gram DOSE EQUIVALENT I-131 for greater than 48 hours during one continuous time interval, or > 60.0 μCi/gram DOSE EQUIVALENT I-131, be in HOT STANDBY within 6 hours and COLD SHUTDOWN within the following 30 hours.

d. With the specific activity of the primary coolant > 518.9 μCi/gram DOSE EQUIVALENT XE-133, operation may continue for up to 48 hours while efforts are made to restore DOSE EQUIVALENT XE-133 to within the 518.9 μCi/gram DOSE EQUIVALENT XE-133 limit. LCO 3.0.4.c is applicable.

e. With the specific activity of the primary coolant > 518.9 μCi/gram DOSE EQUIVALENT XE-133 for greater than 48 hours during one continuous time interval, be in HOT STANDBY within 6 hours and COLD SHUTDOWN within the following 30 hours.

SURVEILLANCE REQUIREMENTS

4.4.8 The specific activity of the primary coolant shall be determined to be within the limits by performing sampling and analysis as described in Table 4.4-4.

TABLE 4.4-4

PRIMARY COOLANT SPECIFIC ACTIVITY SAMPLE AND ANALYSIS

TYPE OF MEASUREMENT AND ANALYSIS	MINIMUM FREQUENCY	MODES IN WHICH SAMPLE AND ANALYSIS REQUIRED
1. DOSE EQUIVALENT XE-133 Determination	SFCP	1, 2, 3 and 4
2. Isotopic Analysis for DOSE EQUIVALENT I-131 Concentration	SFCP	1
3. Isotopic Analysis for Iodine Including I-131, I-132, I-133, I-134, and I-135	a) Once per 4 hours, whenever the DOSE EQUIVALENT I-131 exceeds 1.0 μCi/gram, and	$1^{\#}$, $2^{\#}$, $3^{\#}$, and $4^{\#}$
	b) One sample between 2 and 6 hours following a THERMAL POWER change exceeding 15 percent of the RATED THERMAL POWER within a one hour period.	1, 2, 3

Until the specific activity of the primary coolant system is restored within its limits.

SURVEILLANCE REQUIREMENTS

4.4.9.1

a. The Reactor Coolant System temperature and pressure shall be determined to be within the limits in accordance with the Surveillance Frequency Control Program during system heatup, cooldown, and inservice leak and hydrostatic testing operations.

b. The Reactor Coolant System temperature and pressure conditions shall be determined to be to the right of the criticality limit line within 15 minutes prior to achieving reactor criticality.

c. The reactor vessel material irradiation surveillance specimens shall be removed and examined, to determine changes in material properties as required by 10 CFR 50 Appendix H. The results of these examinations shall be used to update Figures 3.4-2a and 3.4-2b.

REACTOR COOLANT SYSTEM

PRESSURIZER

LIMITING CONDITION FOR OPERATION

3.4.9.2 The pressurizer temperature shall be limited to:

a. A maximum heatup of 100°F in any one hour period,

b. A maximum cooldown of 200°F in any one hour period, and

c. A maximum Reactor Coolant System spray water temperature differential of 350°F.

APPLICABILITY: At all times.

ACTION:

With the pressurizer temperature limits in excess of any of the above limits, restore the temperature to within the limits within 30 minutes; perform an analysis to determine the effects of the out-of-limit condition on the fracture toughness properties of the pressurizer; determine that the pressurizer remains acceptable for continued operation or be in at least HOT STANDBY within the next 6 hours and reduce the pressurizer pressure to less than 500 psia within the following 30 hours.

SURVEILLANCE REQUIREMENTS

4.4.9.2 The pressurizer temperatures shall be determined to be within the limits in accordance with the Surveillance Frequency Control Program during system heatup or cooldown. The spray water temperature differential shall be determined to be within the limit in accordance with the Surveillance Frequency Control Program during steady state operation.

REACTOR COOLANT SYSTEM

PORV BLOCK VALVES

LIMITING CONDITION FOR OPERATION

3.4.12 Each Power Operated Relief Valve (PORV) Block Valve shall be OPERABLE.

APPLICABILITY: MODES 1, 2, and 3.

ACTION:

With one or more block valve(s) inoperable, within 1 hour either restore the block valve(s) to OPERABLE status or close the block valve(s) and remove power from the block valve(s); otherwise, be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

SURVEILLANCE REQUIREMENTS

4.4.12 Each block valve shall be demonstrated OPERABLE in accordance with the Surveillance Frequency Control Program by operating the valve through one complete cycle of full travel.

REACTOR COOLANT SYSTEM

POWER OPERATED RELIEF VALVES

LIMITING CONDITION FOR OPERATION

3.4.13 Two power operated relief valves (PORVs) shall be OPERABLE, with their setpoints selected to the low temperature mode of operation as follows:

a. A setpoint of less than or equal to 350 psia shall be selected during heatup, cooldown and isothermal conditions when the temperature of any RCS cold leg is less than or equal to 200°F.

b. A setpoint of less than or equal to 530 psia shall be selected during heatup, cooldown and isothermal conditions when the temperature of any RCS cold leg is greater than 200°F and less than or equal to 300°F.

APPLICABILITY: MODE 4 when the temperature of any RCS cold leg is less than or equal to 300°F, MODE 5, and MODE 6 when the head is on the reactor vessel; and the RCS is not vented through greater than a 1.75 square inch vent.

ACTION:

a. With one PORV inoperable in MODE 4, restore the inoperable PORV to OPERABLE status within 7 days; or depressurize and vent the RCS through greater than a 1.75 square inch vent within the next 8 hours.

b. With one PORV inoperable in MODES 5 or 6, either (1) restore the inoperable PORV to OPERABLE status within 24 hours, or (2) complete depressurization and venting of the RCS through greater than a 1.75 square inch vent within a total of 32 hours.

c. With both PORVs inoperable, restore at least one PORV to operable status or complete depressurization and venting of the RCS through greater than a 1.75 square inch vent within 24 hours.

d. With the RCS vented per ACTIONS a, b, or c, verify the vent pathway at least once per 31 days when the pathway is provided by a valve(s) that is locked, sealed, or otherwise secured in the open position; otherwise, verify the vent pathway every 12 hours.

e. In the event either the PORVs or the RCS vent(s) are used to mitigate an RCS pressure transient, a Special Report shall be prepared and submitted to the Commission pursuant to Specification 6.9.2 within 30 days. The report shall describe the circumstances initiating the transient, the effect of the PORVs or RCS vent(s) on the transient, and any corrective action necessary to prevent recurrence.

f. LCO 3.0.4.b is not applicable to PORVs when entering MODE 4.

SURVEILLANCE REQUIREMENTS

4.4.13 Each PORV shall be demonstrated OPERABLE by:

a. Verifying the PORV isolation valve is open in accordance with the Surveillance Frequency Control Program; and

b. Performance of a CHANNEL FUNCTION TEST, but excluding valve operation, in accordance with the Surveillance Frequency Control Program; and

c. Performance of a CHANNEL CALIBRATION in accordance with the Surveillance Frequency Control Program.

REACTOR COOLANT SYSTEM

3/4.4.15 REACTOR COOLANT SYSTEM VENTS

LIMITING CONDITION FOR OPERATION

3.4.15 At least one Reactor Coolant System vent path consisting of two vent valves and one block valve powered from emergency buses shall be OPERABLE and closed at each of the following locations:

a. Pressurizer steam space, and

b. Reactor vessel head.

APPLICABILITY: MODES 1, 2, 3 and 4.

ACTION:

a. With one of the above Reactor Coolant System vent paths inoperable, STARTUP and/or POWER OPERATION may continue provided the inoperable vent path is maintained closed with power removed from the valve actuator of all the vent valves and block valves in the inoperable vent path; restore the inoperable vent path to OPERABLE status within 30 days, or be in HOT STANDBY within 6 hours and in COLD SHUTDOWN within the following 30 hours.

b. With both Reactor Coolant System vent paths inoperable, maintain the inoperable vent paths closed with power removed from the valve actuators of all the vent valves and block valves in the inoperable vent paths, and restore at least one of the vent paths to OPERABLE status within 72 hours or be in HOT STANDBY within 6 hours and in COLD SHUTDOWN within the following 30 hours.

SURVEILLANCE REQUIREMENTS

4.4.15 Each Reactor Coolant System vent path shall be demonstrated OPERABLE in accordance with the Surveillance Frequency Control Program by:

1. Verifying all manual isolation valves in each vent path are locked in the open position.

2. Cycling each vent valve through at least one complete cycle of full travel from the control room.

3. Verifying flow through the Reactor Coolant System vent paths during venting.

3/4.5 EMERGENCY CORE COOLING SYSTEMS (ECCS)

SAFETY INJECTION TANKS (SIT)

LIMITING CONDITION FOR OPERATION

3.5.1 Each reactor coolant system safety injection tank shall be OPERABLE with:

a. The isolation valve open,

b. Between 1090 and 1170 cubic feet of borated water,

c. A minimum boron concentration of 1900 ppm, and

d. A nitrogen cover-pressure of between 230 and 280 psig.

APPLICABILITY: MODES 1, 2 and 3.*

ACTION:

a. With one SIT inoperable due to boron concentration not within limits, or due to an inability to verify the required water volume or nitrogen cover-pressure, restore the inoperable SIT to OPERABLE status with 72 hours; otherwise, be in at least HOT STANDBY within the next 6 hours and in HOT SHUTDOWN within the following 6 hours.

b. With one SIT inoperable due to reasons other than those stated in ACTION-a, restore the inoperable SIT to OPERABLE status within 24 hours; otherwise, be in at least HOT STANDBY within the next 6 hours and in HOT SHUTDOWN within the following 6 hours.

SURVEILLANCE REQUIREMENTS

4.5.1 Each safety injection tank shall be demonstrated OPERABLE:

a. In accordance with the Surveillance Frequency Control Program by:

1. Verifying that the borated water volume and nitrogen cover-pressure in the tanks are within their limits, and

2. Verifying that each safety injection tank isolation valve is open.

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* With pressurizer pressure $\geq$ 1750 psia.

SURVEILLANCE REQUIREMENTS (continued)

b. In accordance with the Surveillance Frequency Control Program and once within 6 hours after each solution volume increase of $\geq$ 1% of tank volume by verifying the boron concentration of the safety injection tank solution. This latter surveillance is not required when the volume increase makeup source is the RWT and the RWT has not been diluted since verifying that the RWT boron concentration is equal to or greater than the safety injection tank boron concentration limit.

c. In accordance with the Surveillance Frequency Control Program when the RCS pressure is above 1750 psia, by verifying that power to the isolation valve operator is removed by maintaining the breaker open under administrative control.

d. In accordance with the Surveillance Frequency Control Program by verifying that each safety injection tank isolation valve opens automatically under each of the following conditions:

   1. When the RCS pressure exceeds 350 psia, and

   2. Upon receipt of a safety injection test signal.

SURVEILLANCE REQUIREMENTS

4.5.2 Each ECCS subsystem shall be demonstrated OPERABLE:

a. In accordance with the Surveillance Frequency Control Program by verifying that the following valves are in the indicated positions with power to the valve operators removed:

Valve Number	Valve Function	Valve Position
1. V-3659	1. Mini-flow isolation	1. Open
2. V-3660	2. Mini-flow isolation	2. Open

b. In accordance with the Surveillance Frequency Control Program by:

1. Verifying that each valve (manual, power operated or automatic) in the flow path that is not locked, sealed, or otherwise secured in position, is in its correct position.

c. By a visual inspection which verifies that no loose debris (rags, trash, clothing, etc.) is present in the containment which could be transported to the containment sump and cause restriction of the pump suctions during LOCA conditions. This visual inspection shall be performed:

1. For all accessible areas of the containment prior to establishing CONTAINMENT INTEGRITY, and

2. At least once daily of the areas affected within containment by the containment entry and during the final entry when CONTAINMENT INTEGRITY is established.

d. In accordance with the Surveillance Frequency Control Program by:

1. Verifying proper operation of the open permissive interlock (OPI) and the valve open/high SDCS pressure alarms for isolation valves V3651, V3652, V3480, V3481.

2. A visual inspection of the containment sump and verifying that the subsystem suction inlets are not restricted by debris and that the sump components (trash racks, screens, etc.) show no evidence of structural distress or corrosion.

SURVEILLANCE REQUIREMENTS (continued)

e. In accordance with the Surveillance Frequency Control Program, during shutdown, by:

1. Verifying that each automatic valve in the flow paths actuates to its correct position on a Safety Injection Actuation Signal.

2. Verifying that each of the following pumps start automatically upon receipt of a Safety Injection Actuation Signal;

a. High-Pressure Safety Injection Pumps.

b. Low-Pressure Safety Injection Pumps.

c. Charging Pumps.

3. Verifying that upon receipt of an actual or simulated Recirculation Actuation Signal: each low-pressure safety injection pump stops, each containment sump isolation valve opens, each refueling water tank outlet valve closes, and each safety injection system recirculation valve to the refueling water tank closes.

f. By verifying that each of the following pumps develops the specified total developed head when tested pursuant to the Inservice Testing Program.

1. High-Pressure Safety Injection pumps.

2. Low-Pressure Safety Injection pumps.

EMERGENCY CORE COOLING SYSTEMS

REFUELING WATER TANK

LIMITING CONDITION FOR OPERATION

3.5.4 The refueling water tank shall be OPERABLE with:

a. A minimum contained volume 477,360 gallons of borated water,

b. A minimum boron concentration of 1900 ppm,

c. A maximum water temperature of 100°F,

d. A minimum water temperature of 55°F when in MODES 1 and 2, and

e. A minimum water temperature of 40°F when in MODES 3 and 4

APPLICABILITY: MODES 1, 2, 3 and 4.

ACTION:

With the refueling water tank inoperable, restore the tank to OPERABLE status within 1 hour or be in at least HOT STANDBY within 6 hours and in COLD SHUTDOWN within the following 30 hours.

SURVEILLANCE REQUIREMENTS

4.5.4 The RWT shall be demonstrated OPERABLE:

a. In accordance with the Surveillance Frequency Control Program by:

1. Verifying the water level in the tank, and

2. Verifying the boron concentration of the water.

b. In accordance with the Surveillance Frequency Control Program by verifying the RWT temperature.

3/4.6 CONTAINMENT SYSTEMS

3/4.6.1 CONTAINMENT VESSEL

CONTAINMENT VESSEL INTEGRITY

LIMITING CONDITION FOR OPERATION

3.6.1.1 CONTAINMENT VESSEL INTEGRITY shall be maintained.

APPLICABILITY: MODES 1, 2, 3 and 4.

ACTION:

Without CONTAINMENT VESSEL INTEGRITY, restore CONTAINMENT VESSEL INTEGRITY within one hour or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

SURVEILLANCE REQUIREMENTS

4.6.1.1 CONTAINMENT VESSEL INTEGRITY shall be demonstrated:

a. In accordance with the Surveillance Frequency Control Program by verifying that:

1. All containment vessel penetrations* not capable of being closed by OPERABLE containment automatic isolation valves and required to be closed during accident conditions are closed by valves, blind flanges, or deactivated automatic valves secured in their positions, except for valves that are open on an intermittent basis under administrative control, and

2. All containment vessel equipment hatches are closed and sealed.

b. By verifying that each containment vessel air lock is OPERABLE per Specification 3.6.1.3

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* Except valves, blind flanges, and deactivated automatic valves which are located inside the containment and are locked, sealed or otherwise secured in the closed position. These penetrations shall be verified closed during each COLD SHUTDOWN except that such verification need not be performed more often than once per 92 days.

SURVEILLANCE REQUIREMENTS (continued)

a. By verifying leakage rates and air lock door seals in accordance with the Containment Leakage Rate Testing Program; and

b. In accordance with the Surveillance Frequency Control Program by verifying that only one door in each air lock can be opened at a time.

CONTAINMENT SYSTEMS

INTERNAL PRESSURE

LIMITING CONDITION FOR OPERATION

3.6.1.4 Primary containment internal pressure shall be maintained between –0.7 and +0.5 psig.

APPLICABILITY: MODES 1, 2, 3 and 4.

ACTION:

With the containment internal pressure outside of the limits above, restore the internal pressure to within the limits within 1 hour or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

SURVEILLANCE REQUIREMENTS

4.6.1.4 The primary containment internal pressure shall be determined to be within the limits in accordance with the Surveillance Frequency Control Program.

CONTAINMENT SYSTEMS

AIR TEMPERATURE

LIMITING CONDITION FOR OPERATION

3.6.1.5 Primary containment average air temperature shall not exceed 120°F.

APPLICABILITY: MODES 1, 2, 3 and 4.

ACTION:

With the containment average air temperature > 120°F, reduce the average air temperature to within the limit within 8 hours, or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

SURVEILLANCE REQUIREMENTS

4.6.1.5 The primary containment average air temperature shall be the arithmetical average of the temperatures at three of the following locations and shall be determined in accordance with the Surveillance Frequency Control Program:

Location

a. Containment fan cooler No. 1A air intake, elevation 45 feet.

b. Containment fan cooler No. 1B air intake, elevation 45 feet.

c. Containment fan cooler No. 1C air intake, elevation 62 feet.

d. Containment fan cooler No. 1D air intake, elevation 45 feet.

SURVEILLANCE REQUIREMENTS

4.6.2.1 Each containment spray system shall be demonstrated OPERABLE:

a. In accordance with the Surveillance Frequency Control Program by verifying that each valve (manual, power operated or automatic) in the flow path that is not locked, sealed, or otherwise secured in position, is positioned to take suction from the RWT on a Containment Pressure -- High High test signal.

b. By verifying that each spray pump develops the specified discharge pressure when tested pursuant to the Inservice Testing Program.

SURVEILLANCE REQUIREMENTS (Continued)

c. In accordance with the Surveillance Frequency Control Program, during shutdown, by:

1. Verifying that each automatic valve in the flow path actuates to its correct position on a CSAS test signal.

2. Verifying that each spray pump starts automatically on a CSAS test signal.

3. Verifying that upon a recirculation actuation signal, the containment sump isolation valves open and that a recirculation mode flow path via an OPERABLE shutdown cooling heat exchanger is established.

d. By verifying each spray nozzle is unobstructed following maintenance which could result in nozzle blockage.

4.6.2.1.1. Each containment cooling train shall be demonstrated OPERABLE:

a. In accordance with the Surveillance Frequency Control Program by:

1. Starting each cooling train fan unit from the control room and verifying that each unit operates for at least 15 minutes, and

2. Verifying a cooling water flow rate of greater than or equal to 1200 gpm to each cooling unit.

b. In accordance with the Surveillance Frequency Control Program, during shutdown, by verifying that each containment cooling train starts automatically on an SIAS test signal.

CONTAINMENT SYSTEMS

SPRAY ADDITIVE SYSTEM

LIMITING CONDITION FOR OPERATION

3.6.2.2 The spray additive system shall be OPERABLE with:

a. A spray additive tank containing a volume of between 4010 and 5000 gallons of between 28.5 and 30.5% by weight NaOH solution, and

b. Two spray additive eductors each capable of adding NaOH solution from the chemical additive tank to a containment spray system pump flow.

APPLICABILITY: MODES 1, 2 and 3.*

ACTION:

With the spray additive system inoperable, restore the system to OPERABLE status within 72 hours or be in at least HOT STANDBY within the next 6 hours; restore the spray additive system to OPERABLE status within the next 48 hours or be in COLD SHUTDOWN within the following 30 hours.

SURVEILLANCE REQUIREMENTS

4.6.2.2 The spray additive system shall be demonstrated OPERABLE:

a. In accordance with the Surveillance Frequency Control Program by verifying that each valve (manual, power operated or automatic) in the flow path that is not locked, sealed, or otherwise secured in position, is in its correct position.

b. In accordance with the Surveillance Frequency Control Program by:

1. Verifying the contained solution volume in the tank, and

2. Verifying the concentration of the NaOH solution by chemical analysis.

c. In accordance with the Surveillance Frequency Control Program, during shutdown, by verifying that each automatic valve in the flow path actuates to its correct position on a CSAS test signal.

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* Applicable when pressurizer pressure is $\geq$ 1750 psia.

SURVEILLANCE REQUIREMENTS (Continued)

d. In accordance with the Surveillance Frequency Control Program by verifying a minimum sodium hydroxide (NaOH) flow rate of 10.5 gpm from the spray additive tank to a drain connection immediately downstream of the tank outlet valve, and a demineralized water flow rate of 18 $\pm$ 1.5 gpm from that same drain connection to each containment spray pump.

SURVEILLANCE REQUIREMENTS (continued)

4.6.3.1.2 Each containment isolation valve shall be demonstrated OPERABLE during the COLD SHUTDOWN or REFUELING MODE in accordance with the Surveillance Frequency Control Program by:

a. Verifying that on a Containment Isolation test signal, and/or SIAS test signal, each isolation valve actuates to its isolation position.

4.6.3.1.3 The isolation time of each power operated or automatic containment isolation valve shall be determined to be within its limit when tested pursuant to the Inservice Testing Program.

CONTAINMENT SYSTEMS

3/4.6.6 SECONDARY CONTAINMENT

SHIELD BUILDING VENTILATION SYSTEM

LIMITING CONDITION FOR OPERATION

3.6.6.1 Two independent shield building ventilation systems shall be OPERABLE.

APPLICABILITY: MODES 1, 2, 3 and 4.

ACTION:

With one shield building ventilation system inoperable, restore the inoperable system to OPERABLE status within 7 days or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

SURVEILLANCE REQUIREMENTS

4.6.6.1 Each shield building ventilation system shall be demonstrated OPERABLE:

a. In accordance with the Surveillance Frequency Control Program by initiating, from the control room, flow through the HEPA filter and charcoal adsorber train and verifying that the train operates for at least 10 hours with the heaters on.

b. By performing required shield building ventilation system filter testing in accordance with the Ventilation Filter Testing Program.

c. In accordance with the Surveillance Frequency Control Program by:

1. Verifying that the air flow distribution is uniform within 20% across HEPA filters and charcoal adsorbers when tested in accordance with ASME N510-1989.

2. Verifying that the filtration system starts automatically on a Containment Isolation Signal (CIS).

3. Verifying that the filter cooling makeup air and cross connection valves can be manually opened.

4. Verifying that each system produces a negative pressure of $\geq$ 2.0 inches W.G. in the annulus within 2 minutes after a Containment Isolation Signal (CIS).

CONTAINMENT SYSTEMS

SHIELD BUILDING INTEGRITY

LIMITING CONDITION FOR OPERATION

3.6.6.2 SHIELD BUILDING INTEGRITY shall be maintained.

APPLICABILITY: MODES 1, 2, 3 and 4.

ACTION:

Without SHIELD BUILDING INTEGRITY, restore SHIELD BUILDING INTEGRITY within 24 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

SURVEILLANCE REQUIREMENTS

4.6.6.2 SHIELD BUILDING INTEGRITY shall be demonstrated in accordance with the Surveillance Frequency Control Program by verifying that the door in each access opening is closed except when the access opening is being used for normal transit entry and exit.

PLANT SYSTEMS

AUXILIARY FEEDWATER SYSTEM

LIMITING CONDITION FOR OPERATION

3.7.1.2 At least three independent steam generator auxiliary feedwater pumps and associated flow paths shall be OPERABLE with:

a. Two motor driven feedwater pumps, and

b. One feedwater pump capable of being powered from an OPERABLE steam supply system.

APPLICABILITY: MODES 1, 2 and 3.

ACTION:

a. With one auxiliary feedwater pump inoperable, restore at least three auxiliary feedwater pumps (two motor driven pumps and one capable of being powered by an OPERABLE steam supply system) to OPERABLE status within 72 hours or be in HOT SHUTDOWN within the next 12 hours.

b. LCO 3.0.4.b is not applicable.

SURVEILLANCE REQUIREMENTS

4.7.1.2 Each auxiliary feedwater pump shall be demonstrated OPERABLE:

a. In accordance with the Surveillance Frequency Control Program by:

SURVEILLANCE REQUIREMENTS (Continued)

1. Verifying that each valve (manual, power operated or automatic) in the flow path that is not locked, sealed, or otherwise secured in position, is in its correct position.

b. In accordance with the Surveillance Frequency Control Program during shutdown by:

1. Verifying that each automatic valve in the flowpath actuates to its correct position upon receipt of the Auto Start actuation test signal.

2. Verifying that each auxiliary feedwater pump starts automatically as designed upon receipt of the Auto Start actuation test signal.

c. By verifying the developed head of each AFW pump at the flow test point is greater than or equal to the required developed head when tested in accordance with the Inservice Testing Program. The provisions of Specification 4.0.4 are not applicable for entry into MODE 3 when testing the steam turbine-driven AFW pump and this Surveillance must be performed within 24 hours after entering MODE 3 and prior to entering MODE 2.

PLANT SYSTEMS

CONDENSATE STORAGE TANK

LIMITING CONDITION FOR OPERATION

3.7.1.3 The condensate storage tank shall be OPERABLE with a minimum contained volume of 153,400 gallons.

APPLICABILITY: MODES 1, 2 and 3.

ACTION:

With the condensate storage tank inoperable, restore the condensate storage tank to OPERABLE status within 4 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

SURVEILLANCE REQUIREMENTS

4.7.1.3 The condensate storage tank shall be demonstrated OPERABLE in accordance with the Surveillance Frequency Control Program by verifying the water level.

PLANT SYSTEMS

ACTIVITY

LIMITING CONDITION FOR OPERATION

3.7.1.4 The specific activity of the secondary coolant system shall be $\leq$ 0.10 μCi/gram DOSE EQUIVALENT I-131.

APPLICABILITY: MODES 1, 2, 3 and 4.

ACTION:

With the specific activity of the secondary coolant system > 0.10 μCi/ gram DOSE EQUIVALENT I-131, be in at least HOT STANDBY within 6 hours and in COLD SHUTDOWN within the following 30 hours.

SURVEILLANCE REQUIREMENTS

4.7.1.4 The specific activity of the secondary coolant system shall be determined to be within the limit by performing sampling and analysis as described in Table 4.7-2.

TABLE 4.7-2

SECONDARY COOLANT SYSTEM SPECIFIC ACTIVITY SAMPLE AND ANALYSIS

TYPE OF MEASUREMENT AND ANALYSIS	MINIMUM FREQUENCY
1. Gross Activity Determination	SFCP
2. Isotopic Analysis for DOSE EQUIVALENT I-131 Concentration	a) 1 per 31 days, whenever the gross activity determination indicates iodine concentrations greater than 10% of the allowable limit. b) 1 per 6 months, whenever the gross activity determination indicates iodine concentrations below 10% of the allowable limit.

3/4.7.3 COMPONENT COOLING WATER SYSTEM

LIMITING CONDITION FOR OPERATION

3.7.3.1 At least two independent component cooling water loops shall be OPERABLE.

APPLICABILITY: MODES 1, 2, 3 and 4.

ACTION:

With only one component cooling water loop OPERABLE, restore at least two loops to OPERABLE status within 72 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

SURVEILLANCE REQUIREMENTS

4.7.3.1 At least two component cooling water loops shall be demonstrated OPERABLE:

a. In accordance with the Surveillance Frequency Control Program by verifying that each valve (manual, power operated or automatic) servicing safety related equipment that is not locked, sealed or otherwise secured in position, is in its correct position.

b. In accordance with the Surveillance Frequency Control Program during shutdown by verifying that each automatic valve servicing safety related equipment actuates to its correct position on a Safety Injection Actuation Signal.

PLANT SYSTEMS

3/4.7.4 INTAKE COOLING WATER SYSTEM

LIMITING CONDITION FOR OPERATION

3.7.4.1 At least two independent intake cooling water loops shall be OPERABLE.

APPLICABILITY: MODES 1, 2, 3 and 4.

ACTION:

With only one intake cooling water loop OPERABLE, restore at least two loops to OPERABLE status within 72 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

SURVEILLANCE REQUIREMENTS

4.7.4.1 At least two intake cooling water loops shall be demonstrated OPERABLE:

a. In accordance with the Surveillance Frequency Control Program by verifying that each valve (manual, power operated or automatic) servicing safety related equipment that is not locked, sealed, or otherwise secured in position, is in its correct position.

b. In accordance with the Surveillance Frequency Control Program during shutdown by verifying that each automatic valve servicing safety related equipment actuates to its correct position on a Safety Injection Actuation signal.

3/4.7.5 ULTIMATE HEAT SINK

LIMITING CONDITION FOR OPERATION

3.7.5.1 The ultimate heat sink shall be OPERABLE with:

a. Cooling water from the Atlantic Ocean providing a water level above –10.5 feet elevation, Mean Low Water, at the plant intake structure, and

b. Two OPERABLE valves in the barrier dam between Big Mud Creek and the intake structure.

APPLICABILITY: At all times.

ACTION:

a. With the water level requirement of the above Specification not satisfied, be in at least HOT STANDBY within six hours and provide cooling water from Big Mud Creek within the next 12 hours.

b. With one isolation valve in the barrier dam between Big Mud Creek and the intake structure inoperable, restore the inoperable valve to OPERABLE status within 72 hours or, within the next 24 hours, install a temporary flow barrier and open the barrier dam isolation valve. The availability of the onsite equipment capable of removing the barrier shall be verified at least once per seven days thereafter.

c. With both of the isolation valves in the barrier dam between the intake structure and Big Mud Creek inoperable, within 24 hours either:

1) Install both temporary flow barriers and manually open both barrier dam isolation valves. The availability of the onsite equipment capable of removing the barriers shall be verified at least once per seven days thereafter, or

2) Be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

SURVEILLANCE REQUIREMENTS

4.7.5.1.1 The ultimate heat sink shall be determined OPERABLE in accordance with the Surveillance Frequency Control Program by verifying the average water level to be within the limits.

4.7.5.1.2 The isolation valves in the barrier dam between the intake structure and Big Mud Creek shall be demonstrated OPERABLE in accordance with the Surveillance Frequency Control Program by cycling each valve through at least one complete cycle of full travel.

ACTION: (continued)

MODES 5 and 6 or during movement of irradiated fuel assemblies:

a. With one booster fan inoperable, restore the inoperable fan to OPERABLE status within 7 days or initiate and maintain operation of the remaining OPERABLE control room emergency ventilation system in the recirculation mode or suspend movement of irradiated fuel assemblies.

b. With one isolation valve in an air duct inoperable, maintain the other isolation valve in the same air duct closed or suspend movement of irradiated fuel assemblies.

c. With the filter train inoperable, suspend movement of irradiated fuel assemblies.

d. With only one air conditioning unit OPERABLE, restore at least two air conditioning units to OPERABLE status within 7 days or suspend movement of irradiated fuel assemblies.

SURVEILLANCE REQUIREMENTS

4.7.7.1 The control room emergency ventilation system shall be demonstrated OPERABLE:

a. In accordance with the Surveillance Frequency Control Program by verifying that the control room air temperature is $\leq$ 120°F.

b. In accordance with the Surveillance Frequency Control Program by:

1. Initiating flow through the HEPA filter and charcoal adsorber train and verifying that each booster fan operates for at least 15 minutes.

2. Starting (unless already operating) each air conditioning unit and verifying that it operates for at least 8 hours.

c. By performing required control room emergency ventilation system filter testing in accordance with the Ventilation Filter Testing Program.

SURVEILLANCE REQUIREMENTS (Continued)

d. In accordance with the Surveillance Frequency Control Program by verifying that on a containment isolation signal the system automatically isolates the control room within 35 seconds and switches into a recirculation mode of operation with flow through the HEPA filters and charcoal adsorber banks.

e. By performing required Control Room Envelope unfiltered air inleakage testing in accordance with the Control Room Envelope Habitability Program.

PLANT SYSTEMS

3/4.7.8 ECCS AREA VENTILATION SYSTEM

LIMITING CONDITION FOR OPERATION

3.7.8.1 Two independent ECCS area exhaust air filter trains shall be OPERABLE.

APPLICABILITY: MODES 1, 2, 3 and 4.

ACTION:

With one ECCS area exhaust air filter train inoperable, restore the inoperable train to OPERABLE status within 7 days or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

SURVEILLANCE REQUIREMENTS

4.7.8.1 Each ECCS area exhaust air filter train shall be demonstrated OPERABLE:

a. In accordance with the Surveillance Frequency Control Program by initiating, from the control room, flow through the HEPA filter and charcoal adsorber train and verifying that the train operates for at least 15 minutes.

b. By performing required ECCS area ventilation system filter testing in accordance with the Ventilation Filter Testing Program.

c. In accordance with the Surveillance Frequency Control Program:

1. Verifying that the air flow distribution is uniform within 20% across HEPA filters and charcoal adsorbers when tested in accordance with ASME N510-1989.

2. Verifying that the filter train starts on a Safety Injection Actuation Signal.

PLANT SYSTEMS

3/4.7.9 SEALED SOURCE CONTAMINATION

LIMITING CONDITION FOR OPERATION

3.7.9.1 Each sealed source containing radioactive material either in excess of 100 microcuries of beta and/or gamma emitting material or 5 microcuries of alpha emitting material shall be free of $\geq$ 0.005 microcuries of removable contamination.

APPLICABILITY: At all times.

ACTION:

a. Each sealed source with removable contamination in excess of the above limit shall be immediately withdrawn from use and:

1. Either decontaminated and repaired, or

2. Disposed of in accordance with Commission Regulations.

b. The provisions of Specification 3.0.3 are not applicable.

SURVEILLANCE REQUIREMENTS

4.7.9.1.1 Test Requirements – Each sealed source shall be tested for leakage and/or contamination by:

a. The licensee, or

b. Other persons specifically authorized by the Commission or an Agreement State.

The test method shall have a detection sensitivity of at least 0.005 microcuries per test sample.

4.7.9.1.2 Test Frequencies – Each category of sealed sources shall be tested at the frequencies described below.

a. Sources in use (excluding startup sources previously subjected to core flux) – In accordance with the Surveillance Frequency Control Program for all sealed sources containing radioactive material:

ACTION (continued)

e. With two of the above required diesel generators inoperable, demonstrate the OPERABILITY of two offsite A.C. circuits by performing Surveillance Requirement 4.8.1.1.1.a within 1 hour and at least once per 8 hours thereafter; restore one of the inoperable diesel generators to OPERABLE status within 2 hours or be in the at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours. Following restoration of one diesel generator unit, follow ACTION Statement b. with the time requirement of that ACTION Statement based on the time of initial loss of the remaining inoperable diesel generator.

f. With one Unit 1 startup transformer (1A or 1B) inoperable and with a Unit 2 startup transformer (2A or 2B) connected to the same A or B offsite power circuit and administratively available to both units, then should Unit 2 require the use of the startup transformer administratively available to both units, Unit 1 shall demonstrate the OPERABILITY of the remaining A.C. sources by performing Surveillance Requirement 4.8.1.1.1.a within 1 hour and at least once per 8 hours thereafter. Restore the inoperable startup transformer to OPERABLE status within 72 hours or be in at least HOT STANDBY within the next 6 hours and COLD SHUTDOWN within the following 30 hours.

g. LCO 3.0.4.b is not applicable to diesel generators.

SURVEILLANCE REQUIREMENTS

4.8.1.1.1 Each of the above required independent circuits between the offsite transmission network and the onsite Class 1E distribution system shall be:

a. Determined OPERABLE in accordance with the Surveillance Frequency Control Program by verifying correct breaker alignments, indicated power availability; and

b. Demonstrated OPERABLE in accordance with the Surveillance Frequency Control Program by transferring (manually and automatically) unit power supply from the auxiliary transformer to the startup transformer.

4.8.1.1.2 Each diesel generator shall be demonstrated OPERABLE:

a. In accordance with the Surveillance Frequency Control Program by:

1. Verifying fuel level in the engine-mounted fuel tank,

2. Verifying the fuel level in the fuel storage tank,

3. Verifying the fuel transfer pump can be started and transfers fuel from the storage system to the engine-mounted tank,

SURVEILLANCE REQUIREMENTS (continued)

4. Verifying the diesel starts from ambient condition and accelerates to approximately 900 rpm in less than or equal to 10 seconds**. The generator voltage and frequency shall be 4160 ± 420 volts and 60 ± 1.2 Hz within 10 seconds after the start signal**. The diesel generator shall be started for this test by using one of the following signals:

   a) Manual/Local

   b) Simulated loss-of-offsite power by itself.

   c) Simulated loss-of-offsite power in conjunction with an ESF actuation test signal.

   d) An ESF actuation test signal by itself.

5. Verifying the generator is synchronized, loaded to greater than or equal to 3500 kW in accordance with the manufacturer's recommendations and operates within a load band of 3300 to 3500 kW*** for at least an additional 60 minutes, and

6. Verifying the diesel generator is aligned to provide standby power to the associated emergency busses.

b. By removing accumulated water:

   1. From the engine-mounted fuel tank in accordance with the Surveillance Frequency Control Program and after each occasion when the diesel is operated for greater than 1 hour, and

   2. From the storage tank in accordance with the Surveillance Frequency Control Program.

** The diesel generator start (10 sec.) from ambient conditions shall be performed in accordance with the Surveillance Frequency Control Program in these surveillance tests. All other diesel generator starts for the purposes of this surveillance testing may be preceded by an engine prelube period and may also include warmup procedures (e.g., gradual acceleration) as recommended by the manufacturer so that mechanical stress and wear on the diesel generator is minimized.

*** The indicated load band is meant as guidance to avoid routine overloading. Variations in loads in excess of the band due to changing bus loads shall not invalidate this test.

SURVEILLANCE REQUIREMENTS (Continued)

c. 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.

d. DELETED

e. In accordance with the Surveillance Frequency Control Program during shutdown by:

1. DELETED

2. Verifying generator capability to reject a load of greater than or equal to 600 hp while maintaining voltage at 4160 $\pm$ 420 volts and frequency at 60 $\pm$ 1.2 Hz.

3. Simulating a loss of offsite power by itself, and:

a) Verifying deenergization of the emergency busses and load shedding from the emergency busses.

SURVEILLANCE REQUIREMENTS (Continued)

6. Verifying the diesel generator operates for at least 24 hours****. During the first 2 hours of this test, the diesel generator shall be loaded within a load band of 3800 to 3960 kW# and during the remaining 22 hours of this test, the diesel generator shall be loaded within a load band of 3300 to 3500 kW#. The generator voltage and frequency shall be 4160 $\pm$ 420 volts and 60 $\pm$ 1.2 Hz within 10 seconds after the start signal; the steady state generator voltage and frequency shall be maintained within these limits during this test.

7. Verifying that the auto-connected loads do not exceed the 2000-hour rating of 3730 kW.

8. Verifying the diesel generator's capability to:

   a) Synchronize with the offsite power source while the generator is loaded with its emergency loads upon a simulated restoration of offsite power.

   b) Transfer its load to the offsite power source, and

   c) Be restored to its standby status.

9. Verifying that with the diesel generator operating in a test mode (connected to its bus), a simulated safety injection signal overrides the test mode by (1) returning the diesel generator to standby operation and (2) automatically energizes the emergency loads with offsite power.

10. Verifying that the fuel transfer pump transfers fuel from each fuel storage tank to the engine-mounted tanks of each diesel via the installed cross connection lines.

11. Verifying that the automatic load sequence timers are operable with the interval between each load block within $\pm$ 1 second of its design interval.

f. In accordance with the Surveillance Frequency Control Program or after any modification which could affect diesel generator independence by starting**** the diesel generators simultaneously, during shutdown, and verifying that the diesel generators accelerate to approximately 900 rpm in less than or equal to 10 seconds.

This band is meant as guidance to avoid routine overloading of the engine. Variations in load in excess of this band due to changing bus loads shall not invalidate this test.

**** This test may be conducted in accordance with the manufacturer's recommendations concerning engine prelube period.

SURVEILLANCE REQUIREMENTS (continued)

g. In accordance with the Surveillance Frequency Control Program by:

1. Draining each fuel storage tank, removing the accumulated sediment and cleaning the tank using an appropriate cleaning compound, and

2. Performing a pressure test of those portions of the diesel fuel oil system designed to USAS B31.7 Class 3 requirements in accordance with the Inservice Inspection Program.

4.8.1.1.3 Reports – (Not Used)

4.8.1.1.4 The Class 1E underground cable system shall be demonstrated OPERABLE within 30 days after the movement of any loads in excess of 80% of the ground surface design basis load over the cable ducts by pulling a mandrel with a diameter of at least 80% of the duct's inside diameter through a duct exposed to the maximum loading (duct nearest the ground's surface) and verifying that the duct has not been damaged.

ELECTRICAL POWER SYSTEMS

3/4.8.2 ONSITE POWER DISTRIBUTION SYSTEMS

A.C. DISTRIBUTION - OPERATING

LIMITING CONDITION FOR OPERATION

3.8.2.1 The following A.C. electrical busses shall be OPERABLE and energized from sources of power other than the diesel generator sets:

4160	volt Emergency Bus	1A3
4160	volt Emergency Bus	1B3
480	volt Emergency Bus	1A2
480	volt Emergency Bus	1B2
480	volt Emergency MCC Busses	1A5, 1A6, 1A7
480	volt Emergency MCC Busses	1B5, 1B6, 1B7
120	volt A.C. Instrument Bus	1MA
120	volt A.C. Instrument Bus	1MB
120	volt A.C. Instrument Bus	1MC
120	volt A.C. Instrument Bus	1MD

APPLICABILITY: MODES 1, 2, 3 and 4.

ACTION:

With less than the above complement of A.C. busses OPERABLE, restore the inoperable bus to OPERABLE status within 8 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

SURVEILLANCE REQUIREMENTS

4.8.2.1 The specified A.C. busses shall be determined OPERABLE and energized from A.C. sources other than the diesel generators in accordance with the Surveillance Frequency Control Program by verifying indicated power availability.

ELECTRICAL POWER SYSTEMS

A.C. DISTRIBUTION - SHUTDOWN

LIMITING CONDITION FOR OPERATION

3.8.2.2 As a minimum, the following A.C. electrical busses shall be OPERABLE and energized from sources of power other than a diesel generator set but aligned to an OPERABLE diesel generator set:

1 - 4160 volt Emergency Bus

1 - 480 volt Emergency Bus

3 - 480 volt Emergency MCC Busses

2 - 120 volt A.C. Instrument Busses

APPLICABILITY: MODES 5 and 6

ACTION:

With less than the above complement of A.C. busses OPERABLE and energized, establish CONTAINMENT INTEGRITY within 8 hours.

SURVEILLANCE REQUIREMENTS

4.8.2.2 The specified A.C. busses shall be determined OPERABLE and energized from A.C. sources other than the diesel generators in accordance with the Surveillance Frequency Control Program by verifying indicated power availability.

ELECTRICAL POWER SYSTEMS

D.C. DISTRIBUTION - OPERATING

LIMITING CONDITION FOR OPERATION

3.8.2.3 As a minimum the following D.C. electrical sources shall be OPERABLE:

a. 125-volt D.C. bus No. 1A, 125-volt Battery bank No. 1A and a full capacity charger.

b. 125-volt D.C. bus No. 1B, 125-volt Battery bank No. 1B and a full capacity charger.

APPLICABILITY: MODES 1, 2, 3 and 4.

ACTION:

a. With one of the required battery banks or busses inoperable, restore the inoperable battery bank or bus to OPERABLE status within 2 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

b. With one of the required full capacity chargers inoperable, demonstrate the OPERABILITY of its associated battery banks by performing Surveillance Requirement 4.8.2.3.2.a.1 within 1 hour, and at least once per 8 hours thereafter. If any Category A limit in Table 4.8-2 is not met, declare the battery inoperable.

SURVEILLANCE REQUIREMENTS

4.8.2.3.1 Each D.C. bus train shall be determined OPERABLE and energized in accordance with the Surveillance Frequency Control Program by verifying indicated power availability.

4.8.2.3.2 Each 125-volt battery bank and charger shall be demonstrated OPERABLE:

a. In accordance with the Surveillance Frequency Control Program by verifying that:

1. The parameters in Table 4.8-2 meet the Category A limits, and

2. The total battery terminal voltage is greater than or equal to 129-volts on float charge.

SURVEILLANCE REQUIREMENTS (Continued)

b. In accordance with the Surveillance Frequency Control Program and within 7 days after a battery discharge with battery terminal voltage below 110 volts, or battery overcharge with battery terminal voltage above 150 volts, by verifying that:

1. The parameters in Table 4.8-2 meet the Category B limits,

2. There is no visible corrosion at either terminals or connectors, and

3. The average electrolyte temperature of 10% (60 cells total) of connected cells is above 50°F.

c. In accordance with the Surveillance Frequency Control Program by verifying that:

1. The cells, cell plates, and battery racks show no visual indication of physical damage or abnormal deterioration,

2. The cell-to-cell and terminal connections are clean, tight, and coated with anti-corrosion material,

3. Battery cell inter-connection resistance values are maintained at the values below:

Battery Inter-Connection Measurement Limits		
Battery Inter-Connection Type	Maximum Individual Inter-Connection Resistance	Maximum Average Inter-Connection Resistance [Battery Bank*]
Inter-Cell	≤ 150 x 10-6 ohms	≤ 50 x 10-6 ohms
Inter-Tier	≤ 200 x 10-6 ohms	
Inter-Rack	≤ 200 x 10-6 ohms	
Output Terminal	≤ 150 x 10-6 ohms	

* The battery bank average interconnection resistance limit is the average of all inter-cell, inter-tier, inter-rack and output terminal connection resistance measurements for all series connections in the battery string

and,

4. The battery charger will supply at least 300 amperes at 140 volts for at least 6 hours.

SURVEILLANCE REQUIREMENTS (Continued)

d. In accordance with the Surveillance Frequency Control Program, during shutdown, by verifying that the battery capacity is adequate to supply and maintain in OPERABLE status all of the actual or simulated emergency loads for the design duty cycle when the battery is subjected to a battery service test.

e. In accordance with the Surveillance Frequency Control Program, during shutdown, by verifying that the battery capacity is at least 80% of the manufacturer's rating when subjected to a performance discharge test. This performance discharge test may be performed in lieu of the battery service test required by Surveillance Requirement 4.8.2.3.2.d.

f. Annual performance discharge tests of battery capacity shall be given to any battery that shows signs of degradation or has reached 85% of the service life expected for the application. Degradation is indicated when the battery capacity drops more than 10% of rated capacity from its average on previous performance tests, or is below 90% of the manufacturer's rating.

ELECTRICAL POWER SYSTEMS

D.C. DISTRIBUTION - SHUTDOWN

LIMITING CONDITION FOR OPERATION

3.8.2.4 As a minimum, the following D.C. electrical equipment and bus shall be energized and OPERABLE:

1 - 125-volt D.C. bus, and

1 - 125-volt battery bank and charger supplying the above D.C. bus.

APPLICABILITY: MODES 5 and 6.

ACTION:

With less than the above complement of D.C. equipment and bus OPERABLE, establish CONTAINMENT INTEGRITY within 8 hours.

SURVEILLANCE REQUIREMENTS

4.8.2.4.1 The above required 125-volt D.C. bus shall be determined OPERABLE and energized in accordance with the Surveillance Frequency Control Program by verifying indicated power availability.

4.8.2.4.2 The above required 125-volt battery bank and charger shall be demonstrated OPERABLE per Surveillance Requirement 4.8.2.3.2.

3/4.9 REFUELING OPERATIONS

BORON CONCENTRATION

LIMITING CONDITION FOR OPERATION

3.9.1 With the reactor vessel head unbolted or removed, the boron concentration of all filled portions of the Reactor Coolant System and the refueling cavity shall be maintained within the limit specified in the COLR.

APPLICABILITY: MODE 6*.

ACTION:

With the requirements of the above specification not satisfied, immediately suspend all operations involving CORE ALTERATIONS or positive reactivity changes and initiate and continue boration at $\geq$ 40 gpm of greater than or equal to 1900 ppm boron or its equivalent to restore boron concentration to within limits.

SURVEILLANCE REQUIREMENTS

4.9.1.1 The boron concentration limit shall be determined prior to:

a. Removing or unbolting the reactor vessel head, and

b. Withdrawal of any full length CEA in excess of 3 feet from its fully inserted position.

4.9.1.2 The boron concentration of the refueling cavity shall be determined by chemical analysis in accordance with the Surveillance Frequency Control Program.

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* The reactor shall be maintained in MODE 6 when the reactor vessel head is unbolted or removed.

REFUELING OPERATIONS

INSTRUMENTATION

LIMITING CONDITION FOR OPERATION

3.9.2 As a minimum, two wide range logarithmic neutron flux monitors shall be operating, each with continuous visual indication in the control room and one with audible indication in the containment.

APPLICABILITY: MODE 6.

ACTION:

With the requirements of the above specification not satisfied, immediately suspend all operations involving CORE ALTERATIONS or operations that would cause introduction into the RCS, coolant with boron concentration less than required to meet the boron concentration of Technical Specification 3.9.1. The provisions of Specification 3.0.3 are not applicable.

SURVEILLANCE REQUIREMENTS

4.9.2 Each wide range logarithmic neutron flux monitor shall be demonstrated OPERABLE by performance of:

a. A CHANNEL FUNCTIONAL TEST in accordance with the Surveillance Frequency Control Program.

b. A CHANNEL FUNCTIONAL TEST within 8 hours prior to the start of CORE ALTERATIONS, and

c. A CHANNEL CHECK in accordance with the Surveillance Frequency Control Program during CORE ALTERATIONS.

REFUELING OPERATIONS

CONTAINMENT PENETRATIONS

LIMITING CONDITION FOR OPERATION

3.9.4 The containment penetrations shall be in the following status:

a. The equipment door closed and held in place by a minimum of four bolts.

b. A minimum of one door in each airlock is closed.

c. Each penetration providing direct access from the containment atmosphere to the outside atmosphere shall be either:

1. Closed by isolation valve, blind flange, or manual valve except for valves that are open on an intermittent basis under administrative control, or

2. Be capable of being closed by an OPERABLE automatic containment isolation valve, or

3. Be capable of being closed by an OPERABLE containment vacuum relief valve.

Note: Penetration flow path(s) providing direct access from the containment atmosphere to the outside atmosphere may be unisolated under administrative controls.

APPLICABILITY: During movement of recently irradiated fuel within the containment.

ACTION:

With the requirements of the above specification not satisfied, immediately suspend all operations involving movement of recently irradiated fuel in the containment. The provisions of Specification 3.0.3 are not applicable.

SURVEILLANCE REQUIREMENTS

4.9.4 Each of the above required containment penetrations shall be determined to be either in its closed/isolated condition or capable of being closed by an OPERABLE automatic containment isolation valve within 72 hours prior to the start of and in accordance with the Surveillance Frequency Control Program during movement of recently irradiated fuel in the containment by:

a. Verifying the penetrations are in their closed/isolated condition, or

b. Testing of containment isolation valves per the applicable portions of Specifications 4.6.3.1.1. and 4.6.3.1.2.

REFUELING OPERATIONS

COMMUNICATIONS

LIMITING CONDITION FOR OPERATION

3.9.5 Direct communications shall be maintained between the control room and personnel at the refueling station.

APPLICABILITY: During CORE ALTERATIONS.

ACTION:

When direct communications between the control room and personnel at the refueling station cannot be maintained, suspend all CORE ALTERATIONS. The provisions of Specification 3.0.3 are not applicable.

SURVEILLANCE REQUIREMENTS

4.9.5 Direct communications between the control room and personnel at the refueling station shall be demonstrated within one hour prior to the start of and in accordance with the Surveillance Frequency Control Program during CORE ALTERATIONS.

REFUELING OPERATIONS

SHUTDOWN COOLING AND COOLANT CIRCULATION

HIGH WATER LEVEL

LIMITING CONDITION FOR OPERATION

3.9.8.1 At least one shutdown cooling loop shall be OPERABLE and in operation*.

APPLICABILITY: MODE 6 when the water level above the top of irradiated fuel assemblies seated within the reactor pressure vessel is greater than or equal to 23 feet.

ACTION:

a. With less than one shutdown cooling loop in operation, suspend all operations involving an increase in reactor decay heat load or operations that would cause introduction into the RCS, coolant with boron concentration less than required to meet the boron concentration of Technical Specification 3.9.1. Close all containment penetrations providing direct access from the containment atmosphere to the outside atmosphere within 4 hours.

b. The provisions of Specification 3.0.3 are not applicable.

SURVEILLANCE REQUIREMENTS

4.9.8.1 At least one shutdown cooling loop shall be verified to be in operation and circulating reactor coolant at a flow rate of greater than or equal to 3000 gpm in accordance with the Surveillance Frequency Control Program.

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* The shutdown cooling loop may be removed from operation for up to 1 hour per 8 hour period during the performance of CORE ALTERATIONS in the vicinity of reactor pressure vessel hot legs, provided no operations are permitted that would cause introduction into the RCS, coolant with boron concentration less than required to meet the SHUTDOWN MARGIN of Technical Specification 3.9.1.

REFUELING OPERATIONS

LOW WATER LEVEL

LIMITING CONDITION FOR OPERATION

3.9.8.2 Two independent shutdown cooling loops shall be OPERABLE and at least one shutdown cooling loop shall be in operation.*

APPLICABILITY: MODE 6 when the water level above the top of irradiated fuel assemblies seated within the reactor pressure vessel is less than 23 feet.

ACTION:

a. With less than the required shutdown cooling loops OPERABLE, within one (1) hour 1) initiate corrective action to return the required loops to OPERABLE status, or 2) establish greater than or equal to 23 feet of water above irradiated fuel assemblies seated within the reactor pressure vessel.

b. With no shutdown cooling loop in operation, suspend operations that would cause introduction into the RCS, coolant with boron concentration less than required to meet the boron concentration of Technical Specification 3.9.1. and within one (1) hour initiate corrective action to return the required shutdown cooling loop to operation. Close all containment penetrations providing direct access from the containment atmosphere to the outside atmosphere within 4 hours.

c. The provisions of Specification 3.0.3 are not applicable.

SURVEILLANCE REQUIREMENTS

4.9.8.2 At least one shutdown cooling loop shall be verified to be in operation and circulating reactor coolant at a flow rate of greater than or equal to 3000 gpm in accordance with the Surveillance Frequency Control Program.

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* One required shutdown cooling loop may be inoperable for up to 2 hours for surveillance testing, provided that the other shutdown cooling loop is OPERABLE and in operation.

REFUELING OPERATIONS

CONTAINMENT ISOLATION SYSTEM

LIMITING CONDITION FOR OPERATION

3.9.9 The containment isolation system shall be OPERABLE.

APPLICABILITY: During movement of recently irradiated fuel assemblies within containment.

ACTION:

With the containment isolation system inoperable, either suspend all operations involving movement of recently irradiated fuel assemblies within containment or close each of the penetrations providing direct access from the containment atmosphere to the outside atmosphere.

SURVEILLANCE REQUIREMENTS

4.9.9 The containment isolation system shall be demonstrated OPERABLE within 72 hours prior to the start of and in accordance with the Surveillance Frequency Control Program during movement of recently irradiated fuel assemblies by verifying that containment isolation occurs on manual initiation and on a high radiation signal from two of the containment radiation monitoring instrumentation channels.

REFUELING OPERATIONS

WATER LEVEL – REACTOR VESSEL

LIMITING CONDITION FOR OPERATION

3.9.10 At least 23 feet of water shall be maintained over the top of irradiated fuel assemblies seated within the reactor pressure vessel.

APPLICABILITY: During CORE ALTERATIONS.
During movement of irradiated fuel assemblies within containment.

ACTION:

With the requirements of the above specifications not satisfied, immediately suspend CORE ALTERATIONS and movement of irradiated fuel assemblies within containment, and immediately initiate action to restore refueling cavity water level to within limits.

SURVEILLANCE REQUIREMENTS

4.9.10 The water level shall be determined to be at least its minimum required depth within 2 hours prior to the start of and in accordance with the Surveillance Frequency Control Program during CORE ALTERATIONS and during movement of irradiated fuel assemblies within containment.

REFUELING OPERATIONS

SPENT FUEL STORAGE POOL

LIMITING CONDITION FOR OPERATION

3.9.11 The Spent Fuel Pool shall be maintained with:

a. The fuel storage pool water level greater than or equal to 23 ft over the top of irradiated fuel assemblies seated in the storage racks, and

b. The fuel storage pool boron concentration greater than or equal to 1900 ppm.

APPLICABILITY: Whenever irradiated fuel assemblies are in the spent fuel storage pool.

ACTION:

a. With the water level requirement not satisfied, immediately suspend all movement of fuel assemblies and crane operations with loads in the fuel storage areas and restore the water level to within its limit within 4 hours.

b. With the boron concentration requirement not satisfied, immediately suspend all movement of fuel assemblies in the fuel storage pool and initiate action to restore the fuel storage pool boron concentration to within the required limit.

c. The provisions of Specification 3.0.3 are not applicable.

SURVEILLANCE REQUIREMENTS

4.9.11 The water level in the spent fuel storage pool shall be determined to be at least its minimum required depth in accordance with the Surveillance Frequency Control Program when irradiated fuel assemblies are in the fuel storage pool.

4.9.11.1 Verify the fuel storage pool boron concentration is within limit in accordance with the Surveillance Frequency Control Program.

REFUELING OPERATIONS

FUEL POOL VENTILATION SYSTEM – FUEL STORAGE

LIMITING CONDITION FOR OPERATION

3.9.12 At least one fuel pool ventilation system shall be OPERABLE.

APPLICABILITY: Whenever recently irradiated fuel is in the spent fuel pool.

ACTION:

a. With no fuel pool ventilation system OPERABLE, suspend all operations involving movement of recently irradiated fuel within the spent fuel pool or crane operation with loads over the recently irradiated spent fuel until at least one fuel pool ventilation system is restored to OPERABLE status.

b. The provisions of Specification 3.0.3 are not applicable.

SURVEILLANCE REQUIREMENTS

4.9.12 The above required fuel pool ventilation system shall be demonstrated OPERABLE:

a. In accordance with the Surveillance Frequency Control Program by initiating flow through the HEPA filter and charcoal adsorber train and verifying that the train operates for at least 15 minutes.

b. In accordance with the Surveillance Frequency Control Program or (1) after any structural maintenance on the HEPA filter or charcoal adsorber housings, or (2) following painting, fire or chemical release in any ventilation zone communicating with the system by:

SURVEILLANCE REQUIREMENTS (Continued)

c. In accordance with the Surveillance Frequency Control Program by:

1. Verifying that the pressure drop across the combined HEPA filters and charcoal adsorber banks is < 4.15 inches Water Gauge while operating the ventilation system at a flow rate of 10,350 cfm ± 10%.

2. Verifying that the air flow distribution is uniform within 20% across HEPA filters and charcoal adsorbers when tested in accordance with ANSI N510-1975.

3. Verifying that the ventilation system maintains the spent fuel storage pool area at a negative pressure of ≥ 1/8 inches Water Gauge relative to the outside atmosphere during system operation.

d. After each complete or partial replacement of a HEPA filter bank by verifying that the HEPA filter banks remove ≥ 99% of the DOP when they are tested in-place in accordance with ANSI N510-1975 while operating the ventilation system at a flow rate of 10,350 cfm ± 10%.

e. After each complete or partial replacement of a charcoal adsorber bank by verifying that the charcoal adsorbers remove ≥ 99% of a halogenated hydrocarbon refrigerant test gas when they are tested in-place in accordance with ANSI N510-1975 while operating the ventilation system at a flow rate of 10,350 cfm ± 10%.

3/4.10 SPECIAL TEST EXCEPTIONS

SHUTDOWN MARGIN

LIMITING CONDITION FOR OPERATION

3.10.1 The SHUTDOWN MARGIN requirement of Specification 3.1.1.1 may be suspended for measurement of CEA worth and shutdown margin provided reactivity equivalent to at least the highest estimated CEA worth is available for trip insertion from OPERABLE CEA(s).

APPLICABILITY: MODE 2.

ACTION:

a. With any full length CEA not fully inserted and with less than the above reactivity equivalent available for trip insertion, immediately initiate and continue boration at $\geq$ 40 gpm of 1900 ppm boric acid solution or its equivalent until the SHUTDOWN MARGIN required by Specification 3.1.1.1 is restored.

b. With all full length CEAs inserted and the reactor subcritical by less than the above reactivity equivalent, immediately initiate and continue boration at $\geq$ 40 gpm of 1900 ppm boric acid solution or its equivalent until the SHUTDOWN MARGIN required by Specification 3.1.1.1 is restored.

SURVEILLANCE REQUIREMENTS

4.10.1.1 The position of each full length CEA required either partially or fully withdrawn shall be determined in accordance with the Surveillance Frequency Control Program.

4.10.1.2 Each CEA not fully inserted shall be demonstrated capable of full insertion when tripped from at least the 50% withdrawn position within 7 days prior to reducing the SHUTDOWN MARGIN to less than the limits of Specification 3.1.1.1.

SPECIAL TEST EXCEPTIONS

GROUP HEIGHT, INSERTION AND POWER DISTRIBUTION LIMITS

LIMITING CONDITION FOR OPERATION

3.10.2 The group height, insertion and power distribution limits of Specifications 3.1.1.4, 3.1.3.1, 3.1.3.5, 3.1.3.6, 3.2.3 and 3.2.4 may be suspended during the performance of PHYSICS TESTS provided:

a. The THERMAL POWER is restricted to the test power plateau which shall not exceed 85% of RATED THERMAL POWER, and

b. The limits of Specification 3.2.1 are maintained and determined as specified in Specification 4.10.2.2 below.

APPLICABILITY: MODES 1 and 2.

ACTION:

With any of the limits of Specification 3.2.1 being exceeded while the requirements of Specifications 3.1.1.4, 3.1.3.1, 3.1.3.5, 3.1.3.6, 3.2.3 and 3.2.4 are suspended, either:

a. Reduce THERMAL POWER sufficiently to satisfy the requirements of Specification 3.2.1, or

b. Be in HOT STANDBY within 6 hours.

SURVEILLANCE REQUIREMENTS

4.10.2.1 The THERMAL POWER shall be determined in accordance with the Surveillance Frequency Control Program during PHYSICS TESTS in which the requirements of Specifications 3.1.1.4, 3.1.3.1, 3.1.3.5, 3.1.3.6, 3.2.3, or 3.2.4 are suspended and shall be verified to be within the test power plateau.

4.10.2.2 The linear heat rate shall be determined to be within the limits of Specification 3.2.1 by monitoring it continuously with the Incore Detector Monitoring System pursuant to the requirements of Specifications 4.2.1.4 during PHYSICS TESTS above 5% of RATED THERMAL POWER in which the requirements of Specifications 3.1.1.4, 3.1.3.1, 3.1.3.5, 3.1.3.6, 3.2.3, or 3.2.4 are suspended.

SPECIAL TEST EXCEPTIONS

CENTER CEA MISALIGNMENT

LIMITING CONDITION FOR OPERATION

3.10.5 The requirements of Specifications 3.1.3.1 and 3.1.3.6 may be suspended during the performance of PHYSICS TESTS to determine the isothermal temperature coefficient and power coefficient provided:

a. Only the center CEA (CEA #1) is misaligned, and

b. The limits of Specification 3.2.1 are maintained and determined as specified in Specification 4.10.5.2 below.

APPLICABILITY: MODES 1 and 2.

ACTION:

With any of the limits of Specification 3.2.1 being exceeded while the requirements of Specifications 3.1.3.1 and 3.1.3.6 are suspended, either:

a. Reduce THERMAL POWER sufficiently to satisfy the requirements of Specification 3.2.1, or

b. Be in HOT STANDBY within 6 hours.

SURVEILLANCE REQUIREMENTS

4.10.5.1 The THERMAL POWER shall be determined in accordance with the Surveillance Frequency Control Program during PHYSICS TESTS in which the requirements of Specifications 3.1.3.1 and/or 3.1.3.6 are suspended and shall be verified to be within the test power plateau.

4.10.5.2 The linear heat rate shall be determined to be within the limits of Specification 3.2.1 by monitoring it continuously with the Incore Detector Monitoring System pursuant to the requirements of Specification 4.2.1.4 during PHYSICS TESTS above 5% of RATED THERMAL POWER in which the requirements of Specifications 3.1.3.1 and/or 3.1.3.6 are suspended.

RADIOACTIVE EFFLUENTS

GAS STORAGE TANKS

LIMITING CONDITION FOR OPERATION

3.11.2.6 The quantity of radioactivity contained in each gas storage tank shall be limited to less than or equal to 165,000 curies noble gases (considered as Xe-133).

APPLICABILITY: At all times.

ACTION:

a. With the quantity of radioactive material in any gas storage tank exceeding the above limit, immediately suspend all additions of radioactive material to the tank.

b. The provisions of Specification 3.0.3 are not applicable.

SURVEILLANCE REQUIREMENTS

4.11.2.6 The quantity of radioactive material contained in each gas storage tank shall be determined to be within the above limit in accordance with the Surveillance Frequency Control Program when radioactive materials are being added to the tank when reactor coolant system activity exceeds 518.9 μCi/gram DOSE EQUIVALENT XE-133.

o. Surveillance Frequency Control Program

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

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

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

c. The provisions of Surveillance Requirements 4.0.2 and 4.0.3 are applicable to the frequencies established in the Surveillance Frequency Control Program.

6.9 REPORTING REQUIREMENTS

ROUTINE REPORTS

6.9.1 In addition to the applicable reporting requirements of Title 10, Code of Federal Regulations, the following reports shall be submitted to the NRC.

STARTUP REPORT

6.9.1.1 A summary report of plant startup and power escalation testing shall be submitted following:

(1) receipt of an operating license,

(2) amendment of the license involving a planned increase in power level,

(3) installation of fuel that has a different design or has been manufactured by a different fuel supplier, and

(4) modifications that may have significantly altered the nuclear, thermal or hydraulic performance of the plant.

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

FLORIDA POWER & LIGHT COMPANY

ORLANDO UTILITIES COMMISSION OF

THE CITY OF ORLANDO, FLORIDA

AND

FLORIDA MUNICIPAL POWER AGENCY

DOCKET NO. 50-389

ST. LUCIE PLANT UNIT NO. 2

AMENDMENT TO RENEWED FACILITY OPERATING LICENSE

Amendment No. 173
Renewed License No. NPF-16

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

   A. The application for amendment by Florida Power & Light Company, et al. (the licensee) dated February 20, and December 11, 2014, and January 13, January 28, April 18, and May 19, 2015, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act) and the Commission's rules and regulations set forth in 10 CFR Chapter I;

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

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

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

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

2. Accordingly, Renewed Facility Operating License No. NPF-16 is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment, and by amending paragraph 3.B to read as follows:

   B. Technical Specifications

   The Technical Specifications contained in Appendices A and B, as revised through Amendment No. 173 are hereby incorporated into the license. The licensee shall operate the facility in accordance with the Technical Specifications.

3. This license amendment is effective as of its date of issuance and shall be implemented within 90 days of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

Farideh E Saba

for Shana R. Helton, Chief
Plant Licensing Branch II-2
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Attachment:
Changes to Operating License No. NPF-16
and the Technical Specifications

Date of Issuance: June 22, 2015

ATTACHMENT TO LICENSE AMENDMENT

AMENDMENT NO. 173 TO RENEWED FACILITY OPERATING LICENSE NO. NPF-16

DOCKET NO. 50-389

Replace Page 3 of Renewed Facility Operating License NPF-16 with the attached Page 3.

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

Remove pages	Insert pages	Remove pages	Insert pages	Remove pages	Insert pages
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XXIII	XXIII	3/4 3-43	3/4 3-43	3/4 7-4	3/4 7-4
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neutron sources for reactor startup, sealed sources for reactor instrumentation and radiation monitoring equipment calibration, and as fission detectors in amounts as required.

D. Pursuant to the Act and 10 CFR Parts 30, 40, and 70, FPL 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

E. Pursuant to the Act and 10 CFR Parts 30, 40, and 70, FPL to possess, but not separate, such byproduct and special nuclear materials as may be produced by the operation of the facility.

3. This renewed license shall be deemed to contain and is subject to the conditions specified in the following Commission's regulations: 10 CFR Part 20, Section 30.34 of 10 FR Part 30, Section 40.41 of 10 CFR Part 40, Section 50.54 and 50.59 of 10 CFR Part 50, and Section 70.32 of 10 CFR Part 70; 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 below:

A. Maximum Power Level

FPL is authorized to operate the facility at steady state reactor core power levels not in excess of 3020 megawatts (thermal).

B. Technical Specifications

The Technical Specifications contained in Appendices A and B, as revised through Amendment No. 173 are hereby incorporated in the renewed license. FPL shall operate the facility in accordance with the Technical Specifications.

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FREQUENCY NOTATION

NOTATION	FREQUENCY
S	At least once per 12 hours
D	At least once per 24 hours
W	At least once per 7 days
4/M*	At least 4 per month at intervals of no greater than 9 days and a minimum of 48 per year
M	At least once per 31 days
Q	At least once per 92 days
SA	At least once per 184 days
R	At least once per 18 months
S/U	Prior to each reactor startup
P**	Completed prior to each release
SFCP	In accordance with the Surveillance Frequency Control Program
N.A.	Not applicable

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* For Radioactive Effluent Sampling.

** For Radioactive Batch Releases only.

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3/4.1 REACTIVITY CONTROL SYSTEMS

3/4.1.1 BORATION CONTROL

SHUTDOWN MARGIN - T_{avg} GREATER THAN 200°F

LIMITING CONDITION FOR OPERATION

3.1.1.1 The SHUTDOWN MARGIN shall be within the limits specified in the COLR.

APPLICABILITY: MODES 1, 2*, 3 and 4.

ACTION:

With the SHUTDOWN MARGIN outside the COLR limits, immediately initiate and continue boration at greater than or equal to 40 gpm of a solution containing greater than or equal to 1900 ppm boron or equivalent until the required SHUTDOWN MARGIN is restored.

SURVEILLANCE REQUIREMENTS

4.1.1.1.1 The SHUTDOWN MARGIN shall be determined to be within the COLR limits:

a. Within one hour after detection of an inoperable CEA(s) and at least once per 12 hours thereafter while the CEA(s) is inoperable. If the inoperable CEA is not fully inserted, and is immovable as a result of excessive friction or mechanical interference or is known to be untrippable, the above required SHUTDOWN MARGIN shall be verified acceptable with an increased allowance for the withdrawn worth of the immovable or untrippable CEA(s).

b. When in MODE 1 or MODE 2 with Keff greater than or equal to 1.0, in accordance with the Surveillance Frequency Control Program by verifying that CEA group withdrawal is within the Power Dependent Insertion Limits of Specification 3.1.3.6.

c. When in MODE 2 with Keff less than 1.0, within 4 hours prior to achieving reactor criticality by verifying that the predicted critical CEA position is within the limits of Specification 3.1.3.6.

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* See Special Test Exception 3.10.1.

SURVEILLANCE REQUIREMENTS (Continued)

d. Prior to initial operation above 5% RATED THERMAL POWER after each fuel loading, by consideration of the factors of e. below, with the CEA groups at the Power Dependent Insertion Limits of Specification 3.1.3.6.

e. When in MODE 3 or 4, in accordance with the Surveillance Frequency Control Program by consideration of at least the following factors:

1. Reactor coolant system boron concentration,

2. CEA position,

3. Reactor coolant system average temperature,

4. Fuel burnup based on gross thermal energy generation,

5. Xenon concentration, and

6. Samarium concentration.

4.1.1.1.2 The overall core reactivity balance shall be compared to predicted values to demonstrate agreement within $\pm$ 1000 pcm in accordance with the Surveillance Frequency Control Program. This comparison shall consider at least those factors stated in Specification 4.1.1.1.1e., above. The predicted reactivity values shall be adjusted (normalized) to correspond to the actual core conditions prior to exceeding a fuel burnup of 60 EFPDs after each fuel loading.

REACTIVITY CONTROL SYSTEMS

SHUTDOWN MARGIN - T_{avg} LESS THAN OR EQUAL TO 200°F

LIMITING CONDITION FOR OPERATION

3.1.1.2 The SHUTDOWN MARGIN shall be within the limits specified in the COLR.

APPLICABILITY: MODE 5.

ACTION:

With the SHUTDOWN MARGIN outside the COLR limits, immediately initiate and continue boration at greater than or equal to 40 gpm of a solution containing greater than or equal to 1900 ppm boron or equivalent until the required SHUTDOWN MARGIN is restored.

SURVEILLANCE REQUIREMENTS

4.1.1.2 The SHUTDOWN MARGIN shall be determined to be within the COLR limits:

a. Within 1 hour after detection of an inoperable CEA(s) and at least once per 12 hours thereafter while the CEA(s) is inoperable. If the inoperable CEA is immovable or untrippable, the above required SHUTDOWN MARGIN shall be increased by an amount at least equal to the withdrawn worth of the immovable or untrippable CEA(s).

b. In accordance with the Surveillance Frequency Control Program by consideration of the following factors:

1. Reactor coolant system boron concentration,
2. CEA position,
3. Reactor coolant system average temperature,
4. Fuel burnup based on gross thermal energy generation,
5. Xenon concentration, and
6. Samarium concentration.

c. At least once per 24 hours, when the Reactor Coolant System is drained below the hot leg centerline, by consideration of the factors in 4.1.1.2b and by verifying at least two charging pumps are rendered inoperable by racking out their motor circuit breakers.

REACTIVITY CONTROL SYSTEMS

BORON DILUTION

LIMITING CONDITION FOR OPERATION

3.1.1.3 The flow rate of reactor coolant to the reactor pressure vessel shall be $\geq$ 3000 gpm whenever a reduction in Reactor Coolant System boron concentration is being made.

APPLICABILITY: ALL MODES.

ACTION:

With the flow rate of reactor coolant to the reactor pressure vessel < 3000 gpm, immediately suspend all operations involving a reduction in boron concentration of the Reactor Coolant System.

SURVEILLANCE REQUIREMENTS

4.1.1.3 The flow rate of reactor coolant to the reactor pressure vessel shall be determined to be $\geq$ 3000 gpm within 1 hour prior to the start of and in accordance with the Surveillance Frequency Control Program during a reduction in the Reactor Coolant System boron concentration by either:

a. Verifying at least one reactor coolant pump is in operation, or

b. Verifying that at least one low pressure safety injection pump is in operation and supplying $\geq$ 3000 gpm to the reactor pressure vessel.

REACTIVITY CONTROL SYSTEMS

MINIMUM TEMPERATURE FOR CRITICALITY

LIMITING CONDITION FOR OPERATION

3.1.1.5 The Reactor Coolant System lowest operating loop temperature (T_{avg}) shall be greater than or equal to 515°F.

APPLICABILITY: MODES 1 and 2#.

ACTION:

With a Reactor Coolant System operating loop temperature (T_{avg}) less than 515°F , restore T_{avg} to within its limit within 15 minutes or be in HOT STANDBY within the next 15 minutes.

SURVEILLANCE REQUIREMENTS

4.1.1.5 The Reactor Coolant System temperature (T_{avg}) shall be determined to be greater than or equal to 515°F:

a. Within 15 minutes prior to achieving reactor criticality, and

b. In accordance with the Surveillance Frequency Control Program when the reactor is critical and the Reactor Coolant System T_{avg} is less than 525°F.

With K_{eff} greater than or equal to 1.0.

REACTIVITY CONTROL SYSTEMS

3/4.1.2 BORATION SYSTEMS

FLOW PATHS – SHUTDOWN

LIMITING CONDITION FOR OPERATION

3.1.2.1 As a minimum, one of the following boron injection flow paths shall be OPERABLE and capable of being powered from an OPERABLE emergency power source:

a. A flow path from the boric acid makeup tank via either a boric acid makeup pump or a gravity feed connection and any charging pump to the Reactor Coolant System if only the boric acid makeup tank in Specification 3.1.2.7a. is OPERABLE, or

b. The flow path from the refueling water tank via either a charging pump or a high pressure safety injection pump to the Reactor Coolant System if only the refueling water tank in Specification 3.1.2.7b. is OPERABLE.

APPLICABILITY: MODES 5 and 6.

ACTION:

With none of the above flow paths OPERABLE or capable of being powered from an OPERABLE emergency power source, suspend all operations involving CORE ALTERATIONS or positive reactivity changes*.

SURVEILLANCE REQUIREMENTS

4.1.2.1 At least one of the above required flow paths shall be demonstrated OPERABLE:

a. In accordance with the Surveillance Frequency Control Program by verifying that each valve (manual, power-operated, or automatic) in the flow path that is not locked, sealed, or otherwise secured in position, is in its correct position.

b. At least once per 24 hours when the Reactor Auxiliary Building air temperature is less than 55°F by verifying that the Boric Acid Makeup Tank solution temperature is greater than 55°F (when the flow path from the Boric Acid Makeup Tank is used).

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* Plant temperature changes are allowed provided the temperature change is accounted for in the calculated SHUTDOWN MARGIN.

SURVEILLANCE REQUIREMENTS

4.1.2.2 At least two of the above required flow paths shall be demonstrated OPERABLE:

a. At least once per 24 hours, when the Reactor Auxiliary Building air temperature is below 55°F, by verifying that the solution temperature of the Boric Acid Makeup Tanks is above 55°F.

b. In accordance with the Surveillance Frequency Control Program by verifying that each valve (manual, power-operated or automatic) in the flow path that is not locked, sealed, or otherwise secured in position, is in its correct position.

c. In accordance with the Surveillance Frequency Control Program during shutdown by verifying that each automatic valve in the flow path actuates to its correct position on an SIAS test signal.

d. In accordance with the Surveillance Frequency Control Program by verifying that the flow path required by Specification 3.1.2.2a and 3.1.2.2b delivers at least 40 gpm to the Reactor Coolant System.

REACTIVITY CONTROL SYSTEMS

CHARGING PUMPS – OPERATING

LIMITING CONDITION FOR OPERATION

3.1.2.4 At least two charging pumps shall be OPERABLE.

APPLICABILITY: MODES 1, 2, 3 and 4.

ACTION:

With only one charging pump OPERABLE, restore at least two charging pumps to OPERABLE status within 72 hours or be in at least HOT STANDBY and borated to a SHUTDOWN MARGIN equivalent to its COLR limit at 200°F within the next 6 hours; restore at least two charging pumps to OPERABLE status within the next 7 days or be in COLD SHUTDOWN within the next 30 hours.

SURVEILLANCE REQUIREMENTS

4.1.2.4.1 At least two charging pumps shall be demonstrated OPERABLE by verifying that each pump develops a flow rate of greater than or equal to 40 gpm when tested pursuant to the Inservice Testing Program.

4.1.2.4.2 In accordance with the Surveillance Frequency Control Program verify that each charging pump starts automatically on an SIAS test signal.

REACTIVITY CONTROL SYSTEMS

BORATED WATER SOURCES – SHUTDOWN

LIMITING CONDITION FOR OPERATION

3.1.2.7 As a minimum, one of the following borated water sources shall be OPERABLE:

a. One boric acid makeup tank with a minimum borated water volume of 3550 gallons of 3.1 to 3.5 weight percent boric acid (5420 to 6119 ppm boron).

b. The refueling water tank with:

1. A minimum contained borated water volume of 125,000 gallons,

2. A minimum boron concentration of 1900 ppm, and

3. A solution temperature between 40°F and 120°F.

APPLICABILITY: MODES 5 and 6.

ACTION:

With no borated water sources OPERABLE, suspend all operations involving CORE ALTERATIONS or positive reactivity changes*.

SURVEILLANCE REQUIREMENTS

4.1.2.7 The above required borated water source shall be demonstrated OPERABLE:

a. In accordance with the Surveillance Frequency Control Program by:

1. Verifying the boron concentration of the water,

2. Verifying the contained borated water volume of the tank, and

b. At least once per 24 hours by verifying the RWT temperature when it is the source of borated water and the outside air temperature is outside the range of 40°F and 120°F.

c. At least once per 24 hours when the Reactor Auxiliary Building air temperature is less than 55°F, by verifying that the boric acid makeup tank solution temperature is greater than 55°F when that boric acid makeup tank is required to be OPERABLE.

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* Plant temperature changes are allowed provided the temperature change is accounted for in the calculated SHUTDOWN MARGIN.

REACTIVITY CONTROL SYSTEMS

BORATED WATER SOURCES – OPERATING

LIMITING CONDITION FOR OPERATION

3.1.2.8 At least two of the following four borated water sources shall be OPERABLE:

a. Boric Acid Makeup Tank 2A in accordance with Figure 3.1-1.

b. Boric Acid Makeup Tank 2B in accordance with Figure 3.1-1.

c. Boric Acid Makeup Tanks 2A and 2B with a minimum combined contained borated water volume in accordance with Figure 3.1-1.

d. The refueling water tank with:

1. A minimum contained borated water volume of 477,360 gallons,

2. A boron concentration of between 1900 and 2200 ppm of boron, and

3. A solution temperature of between 55°F and 100°F.

APPLICABILITY: MODES 1, 2, 3 and 4.

ACTION:

a. With the above required boric acid makeup tank(s) inoperable, restore the tank(s) to OPERABLE status within 72 hours or be in at least HOT STANDBY within the next 6 hours and borated to a SHUTDOWN MARGIN equivalent to its COLR limit at 200°F; restore the above required boric acid makeup tank(s) to OPERABLE status within the next 7 days or be in COLD SHUTDOWN within the next 30 hours.

b. With the refueling water tank inoperable, restore the tank to OPERABLE status within 1 hour or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

SURVEILLANCE REQUIREMENTS

4.1.2.8 At least two required borated water sources shall be demonstrated OPERABLE:

a. In accordance with the Surveillance Frequency Control Program by:

1. Verifying the boron concentration in the water and

2. Verifying the contained borated water volume of the water source.

b. At least once per 24 hours by verifying the RWT temperature when the outside air temperature is outside the range of 55°F and 100°F.

c. At least once per 24 hours when the Reactor Auxiliary Building air temperature is less than 55°F, by verifying that the boric acid makeup tank solution is greater than 55°F.

ACTION: (Continued)

h. With one full-length CEA inoperable due to causes other than addressed by ACTION a., above, but within its above specified alignment requirements and either fully withdrawn or within the Long Term Steady State Insertion Limits if in full-length CEA group 5, operation in MODES 1 and 2 may continue.

SURVEILLANCE REQUIREMENTS

4.1.3.1.1 The Position of each full-length CEA shall be determined to be within 7.0 inches (indicated position) of all other CEAs in its group in accordance with the Surveillance Frequency Control Program except during time intervals when the Deviation Circuit and/or CEA Block Circuit are inoperable, then verify the individual CEA positions at least once per 4 hours.

4.1.3.1.2 Each full-length CEA not fully inserted in the core shall be determined to be OPERABLE by movement of at least 7.0 inches in any one direction in accordance with the Surveillance Frequency Control Program.

4.1.3.1.3 The CEA Block Circuit shall be demonstrated OPERABLE in accordance with the Surveillance Frequency Control Program by a functional test which verifies that the circuit prevents any CEA from being misaligned from all other CEAs in its group by more than 7.0 inches (indicated position).

4.1.3.1.4 The CEA Block Circuit shall be demonstrated OPERABLE by a functional test which verifies that the circuit maintains the CEA group overlap and sequencing requirements of Specification 3.1.3.6 and that the circuit prevents the regulating CEAs from being inserted beyond the Power Dependent Insertion Limit of COLR Figure 3.1-2:

*a. Prior to each entry into MODE 2 from MODE 3, except that such verification need not be performed more often than once per 92 days, and

b. In accordance with the Surveillance Frequency Control Program.

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* The licensee shall be excepted from compliance during the initial startup test program for an entry into MODE 2 from MODE 3 made in association with a measurement of power defect.

POSITION INDICATOR CHANNELS - OPERATING

ACTION: (Continued)

b. With a maximum of one reed switch position indicator channel per group or one pulse counting position indicator channel per group inoperable and the full-length CEA(s) with the inoperable position indicator channel at either its fully inserted position or fully withdrawn position, operation may continue provided:

   1. The position of an affected full-length CEA is verified immediately and at least once per 12 hours thereafter by its "Full In" or "Full Out" limit (as applicable), and

   2. The fully inserted full-length CEA group(s) containing the inoperable position indicator channel is subsequently maintained fully inserted, and

   3. Subsequent operation is within the limits of Specification 3.1.3.6.

c. With two or more pulse counting position indicators channels per group inoperable, operation in MODES 1 and 2 may continue for up to 72 hours provided no more than one reed switch position indicator per group is inoperable.

SURVEILLANCE REQUIREMENTS

4.1.3.2 Each position indicator channel shall be determined to be OPERABLE by verifying the pulse counting position indicator channels and the reed switch position indicator channels agree within 5.0 inches in accordance with the Surveillance Frequency Control Program except during time intervals when the Deviation Circuit is inoperable, then compare the pulse counting position indicator and reed switch position indicator channels at least once per 4 hours.

REACTIVITY CONTROL SYSTEMS

POSITION INDICATOR CHANNELS - SHUTDOWN

LIMITING CONDITION FOR OPERATION

3.1.3.3 At least one CEA position indicator channel shall be OPERABLE for each shutdown or regulating CEA not fully inserted.

APPLICABILITY: MODES 3*, 4*, and 5*.

ACTION:

With less than the above required position indicator channel(s) OPERABLE, immediately open the reactor trip breakers.

SURVEILLANCE REQUIREMENTS

4.1.3.3 Each of the above required CEA position indicator channel(s) shall be determined to be OPERABLE by performance of a CHANNEL FUNCTIONAL TEST in accordance with the Surveillance Frequency Control Program.

* With the reactor trip breakers in the closed position.

REACTIVITY CONTROL SYSTEMS

CEA DROP TIME

LIMITING CONDITION FOR OPERATION

3.1.3.4 The individual full-length (shutdown and regulating) CEA drop time, from a fully withdrawn position, shall be less than or equal to 3.25 seconds from when the electrical power is interrupted to the CEA drive mechanism until the CEA reaches its 90% insertion position with:

a. T_{avg} greater than or equal to 515°F, and

b. All reactor coolant pumps operating.

APPLICABILITY: MODES 1 and 2.

ACTION:

a. With the drop time of any full-length CEA determined to exceed the above limit:

1. If in MODE 1 or 2, be in at least HOT STANDBY within 6 hours, or

2. If in MODE 3, 4, or 5, restore the CEA drop time to within the above limit prior to proceeding to MODE 1 or 2.

b. With the CEA drop times within limits but determined at less than full reactor coolant flow, operation may proceed provided THERMAL POWER is restricted to less than or equal to the maximum THERMAL POWER level allowable for the reactor coolant pump combination operating at the time of CEA drop time determination.

SURVEILLANCE REQUIREMENTS

4.1.3.4 The CEA drop time of full-length CEAs shall be demonstrated through measurement prior to reactor criticality:

a. For all CEAs following each removal and installation of the reactor vessel head,

b. For specifically affected individual CEAs following any maintenance on or modification to the CEA drive system which could affect the drop time of those specific CEAs, and

c. In accordance with the Surveillance Frequency Control Program.

REACTIVITY CONTROL SYSTEMS

SHUTDOWN CEA INSERTION LIMIT

LIMITING CONDITION FOR OPERATION

3.1.3.5 All shutdown CEAs shall be withdrawn to greater than or equal to 129.0 inches.

APPLICABILITY: MODES 1 and 2*#.

ACTION:

With a maximum of one shutdown CEA withdrawn to less than 129.0 inches, except for surveillance testing pursuant to Specification 4.1.3.1.2, within 1 hour either:

a. Withdraw the CEA to greater than or equal to 129.0 inches, or

b. Declare the CEA inoperable and apply Specification 3.1.3.1.

SURVEILLANCE REQUIREMENTS

4.1.3.5 Each shutdown CEA shall be determined to be withdrawn to greater than or equal to 129.0 inches:

a. Within 15 minutes prior to withdrawal of any CEAs in regulating groups during an approach to reactor criticality, and

b. In accordance with the Surveillance Frequency Control Program thereafter.

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* See Special Test Exception 3.10.2.

\# With K_{eff} greater than or equal to 1.0.

ACTION: (Continued)

c. With the regulating CEA groups inserted between the Long Term Steady State Insertion Limits and the Power Dependent Insertion Limits for intervals greater than 5 EFPD per 30 EFPD interval or greater than 14 EFPD per calendar year, either:

1. Restore the regulating groups to within the Long Term Steady State Insertion Limits within 2 hours, or

2. Be in at least HOT STANDBY within 6 hours.

SURVEILLANCE REQUIREMENTS

4.1.3.6 The position of each regulating CEA group shall be determined to be within the Power Dependent Insertion Limits in accordance with the Surveillance Frequency Control Program except during time intervals when the PDIL Auctioneer Alarm Circuit is inoperable, then verify the individual CEA positions at least once per 4 hours. The accumulated times during which the regulating CEA groups are inserted beyond the Long Term Steady State Insertion Limits but within the Power Dependent Insertion Limits shall be determined in accordance with the Surveillance Frequency Control Program.

3/4.2 POWER DISTRIBUTION LIMITS

3/4 2.1 LINEAR HEAT RATE

LIMITING CONDITION FOR OPERATION

3.2.1 The linear heat rate shall not exceed the limits specified in the COLR.

APPLICABILITY: MODE 1.

ACTION:

With the linear heat rate exceeding its limits, as indicated by four or more coincident incore channels or by the AXIAL SHAPE INDEX outside of the power dependent control limits of COLR Figure 3.2-2, within 15 minutes initiate corrective action to reduce the linear heat rate to within the limits and either:

a. Restore the linear heat rate to within its limits within 1 hour, or

b. Be in at least HOT STANDBY within the next 6 hours.

SURVEILLANCE REQUIREMENTS

4.2.1.1 The provisions of Specification 4.0.4 are not applicable.

4.2.1.2 The linear heat rate shall be determined to be within its limits by continuously monitoring the core power distribution with either the excore detector monitoring system or with the incore detector monitoring system.

4.2.1.3 Excore Detector Monitoring System – The excore detector monitoring system may be used for monitoring the linear heat rate by:

a. Verifying in accordance with the Surveillance Frequency Control Program that the full-length CEAs are withdrawn to and maintained at or beyond the Long Term Steady State Insertion Limit of Specification 3.1.3.6.

b. Verifying in accordance with the Surveillance Frequency Control Program that the AXIAL SHAPE INDEX alarm setpoints are adjusted to within the limits shown on COLR Figure 3.2-2.

SURVEILLANCE REQUIREMENTS (Continued)

4.2.1.4 Incore Detector Monitoring System# – The incore detector monitoring system may be used for monitoring the linear rate by verifying that the incore detector Local Power Density alarms:

a. Are adjusted to satisfy the requirements of the core power distribution map which shall be updated in accordance with the Surveillance Frequency Control Program in MODE 1.

b. Have their alarm setpoint adjusted to less than or equal to the limits shown on COLR Figure 3.2-1.

If incore system becomes inoperable, reduce power to M x N within 4 hours and monitor linear heat rate in accordance with Specification 4.2.1.3.

POWER DISTRIBUTION LIMITS

TOTAL INTEGRATED RADIAL PEAKING FACTOR - F_r^T

LIMITING CONDITION FOR OPERATION

3.2.3 The calculated value of F_r^T shall be within the limits specified in COLR.

APPLICABILITY: MODE 1*.

ACTION:

With F_r^T not within limits, within 6 hours either:

a. Be in at least HOT STANDBY, or

b. Reduce THERMAL POWER to bring the combination of THERMAL POWER and F_r^T to within the limits of COLR Figure 3.2-3 and withdraw the full-length CEAs to or beyond the Long Term Steady State Insertion Limits of Specification 3.1.3.6. The THERMAL POWER limit determined from COLR Figure 3.2-3 shall then be used to establish a revised upper THERMAL POWER level limit on COLR Figure 3.2-4 (truncate COLR Figure 3.2-4 at the allowable fraction of RATED THERMAL POWER determined by COLR Figure 3.2-3) and subsequent operation shall be maintained within the reduced acceptable operation region of COLR Figure 3.2-4.

SURVEILLANCE REQUIREMENTS

4.2.3.1 The provisions of Specification 4.0.4 are not applicable.

4.2.3.2 F_r^T shall be calculated by the expression $F_r^T = F_r (1 + T_q)$ when F_r is calculated with a non-full core power distribution analysis code and shall be calculated as $F_r^T = F_r$ when calculations are performed with a full core power distribution analysis code. F_r^T shall be determined to be within its limit at the following intervals:

a. Prior to operation above 70% of RATED THERMAL POWER after each fuel loading,

b. In accordance with the Surveillance Frequency Control Program in MODE 1, and

c. Within four hours if the AZIMUTHAL POWER TILT (T_q) is > 0.03.

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* See Special Test Exception 3.10.2

POWER DISTRIBUTION LIMITS

3/4.2.4 AZIMUTHAL POWER TILT – T_q

LIMITING CONDITION FOR OPERATION

3.2.4 The AZIMUTHAL POWER TILT (T_q) shall not exceed 0.03.

APPLICABILITY: MODE 1*.

ACTION:

a. With the indicated AZIMUTHAL POWER TILT determined to be > .030 but $\leq$ 0.10, either correct the power tilt within 2 hours or determine within the next 2 hours and at least once per subsequent 8 hours, that the TOTAL INTEGRATED RADIAL PEAKING FACTOR (F_r^T) is within the limits of Specification 3.2.3.

b. With the indicated AZIMUTHAL POWER TILT determined to be > 0.10, operation may proceed for up to 2 hours provided that the TOTAL INTEGRATED RADIAL PEAKING FACTOR (F_r^T) is within the limits of Specification 3.2.3. Subsequent operation for the purpose of measurement and to identify the cause of the tilt is allowable provided the THERMAL POWER level is restricted to $\leq$ 20% of the maximum allowable THERMAL POWER level for the existing Reactor Coolant Pump combination.

SURVEILLANCE REQUIREMENTS

4.2.4.1 The provisions of Specification 4.0.4 are not applicable.

4.2.4.2 The AZIMUTHAL POWER TILT shall be determined to be within the limit by:

a. Calculating the tilt in accordance with the Surveillance Frequency Control Program.

b. Using the incore detectors to determine the AZIMUTHAL POWER TILT at least once per 12 hours when one excore channel is inoperable and THERMAL POWER is > 75% of RATED THERMAL POWER.

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* See Special Test Exception 3.10.2.

POWER DISTRIBUTION LIMITS

DNB PARAMETERS

LIMITING CONDITION FOR OPERATION

3.2.5 The following DNB-related parameters shall be maintained within the limits:

a. Cold Leg Temperature as shown on Table 3.2-2 of the COLR,

b. Pressurizer Pressure* as shown on Table 3.2-2 of the COLR,

c. Reactor Coolant System Total Flow Rate - greater than or equal to 375,000 gpm, and

d. AXIAL SHAPE INDEX as shown on Figure 3.2-4 of the COLR.

APPLICABILITY: MODE 1.

ACTION:

With any of the above parameters exceeding its limit, restore the parameter to within its limit within 2 hours or reduce THERMAL POWER to $\leq$ 5% of RATED THERMAL POWER within the next 4 hours.

SURVEILLANCE REQUIREMENTS

4.2.5.1 Each of the DNB-related parameters shall be verified to be within their limits by instrument readout in accordance with the Surveillance Frequency Control Program.

4.2.5.2 The Reactor Coolant System total flow rate shall be determined to be within its limit by measurement** in accordance with the Surveillance Frequency Control Program.

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* Limit not applicable during either a THERMAL POWER ramp increase in excess of 5% per minute of RATED THERMAL POWER or a THERMAL POWER step increase of greater than 10% of RATED THERMAL POWER.

** Not required to be performed until THERMAL POWER is $\geq$ 90% of RATED THERMAL POWER.

3/4.3 INSTRUMENTATION

3/4.3.1 REACTOR PROTECTIVE INSTRUMENTATION

LIMITING CONDITION FOR OPERATION

3.3.1 As a minimum, the reactor protective instrumentation channels and bypasses of Table 3.3-1 shall be OPERABLE.

APPLICABILITY: As shown in Table 3.3-1.

ACTION:

As shown in Table 3.3-1.

SURVEILLANCE REQUIREMENTS

4.3.1.1 Each reactor protective instrumentation channel shall be demonstrated OPERABLE by the performance of the CHANNEL CHECK, CHANNEL CALIBRATION and CHANNEL FUNCTIONAL TEST operations for the MODES and at the frequencies shown in Table 4.3-1.

4.3.1.2 The logic for the bypasses shall be demonstrated OPERABLE prior to each reactor startup unless performed during the preceding 92 days. The total bypass function shall be demonstrated OPERABLE in accordance with the Surveillance Frequency Control Program during CHANNEL CALIBRATION testing of each channel affected by bypass operation.

4.3.1.3 The REACTOR TRIP SYSTEM RESPONSE TIME of each reactor trip function shall be demonstrated to be within its limit in accordance with the Surveillance Frequency Control Program. Neutron detectors are exempt from response time testing. Each test shall include at least one channel per function.

TABLE 4.3-1

REACTOR PROTECTIVE INSTRUMENTATION SURVEILLANCE REQUIREMENTS

	FUNCTIONAL UNIT	CHANNEL CHECK	CHANNEL CALIBRATION	CHANNEL FUNCTIONAL TEST	MODES FOR WHICH SURVEILLANCE IS REQUIRED
1.	Manual Reactor Trip	N/A	N.A.	S/U(1)	1, 2, 3*, 4*, 5*
2.	Variable Power Level – High				
	a. Nuclear Power	SFCP	SFCP(2), SFCP(3), SFCP(4)	SFCP	1,2
	b. ΔT Power	SFCP	SFCP(5), SFCP(4)		1
3.	Pressurizer Pressure – High	SFCP	SFCP	SFCP	1, 2
4.	Thermal Margin/Low Pressure	SFCP	SFCP	SFCP	1, 2
5.	Containment Pressure – High	SFCP	SFCP	SFCP	1, 2
6.	Steam Generator Pressure – Low	SFCP	SFCP	SFCP	1, 2
7.	Steam Generator Pressure Difference – High	SFCP	SFCP	SFCP	1, 2
8.	Steam Generator Level – Low	SFCP	SFCP	SFCP(8, 9)	1, 2
9.	Local Power Density – High	SFCP	SFCP	SFCP	1
10.	Loss of Component Cooling Water to Reactor Coolant Pumps	N.A.	N.A.	SFCP	N.A.
11.	Reactor Protection System Logic	N.A.	N.A.	SFCP(7)	1, 2, 3*, 4*, 5*

TABLE 4.3-1 (Continued)

REACTOR PROTECTIVE INSTRUMENTATION SURVEILLANCE REQUIREMENTS

FUNCTIONAL UNIT	CHANNEL CHECK	CHANNEL CALIBRATION	CHANNEL FUNCTIONAL TEST	MODES FOR WHICH SURVEILLANCE IS REQUIRED
12. Reactor Trip Breakers	N.A.	N.A.	S/U(1), SFCP, SFCP(6)	1, 2, 3*, 4*, 5*
13. Wide Range Logarithmic Neutron Flux Monitor	SFCP	SFCP	S/U(1),SFCP	1, 2, 3, 4, 5
14. Reactor Coolant Flow – Low	SFCP	SFCP	SFCP	1, 2
15. Loss of Load (Turbine Hydraulic Fluid Pressure – Low)	SFCP	N.A.	SFCP	1

TABLE 4.3-1 (Continued)

TABLE NOTATION

* - Only if the reactor trip breakers are in the closed position and the CEA drive system is capable of CEA withdrawal.

(1) - Each startup or when required with the reactor trip breakers closed and the CEA drive system capable of rod withdrawal, if not performed in the previous 7 days.

(2) - Heat balance only (CHANNEL FUNCTIONAL TEST not included), above 15% of RATED THERMAL POWER; adjust "Nuclear Power Calibrate" potentiometer to null "Nuclear Power – ΔT Power". During PHYSICS TESTS, these daily calibrations may be suspended provided these calibrations are performed upon reaching each major test power plateau and prior to proceeding to the next major test power plateau.

(3) - Above 15% of RATED THERMAL POWER, recalibrate the excore detectors which monitor the AXIAL SHAPE INDEX by using the incore detectors or restrict THERMAL POWER during subsequent operations to $\leq$ 90% of the maximum allowed THERMAL POWER level with the existing reactor coolant pump combination.

(4) - Neutron detectors may be excluded from CHANNEL CALIBRATION.

(5) - Adjust "ΔT Pwr Calibrate" potentiometers to make ΔT power signals agree with calorimetric calculation.

(6) - In accordance with the Surveillance Frequency Control Program and following maintenance or adjustment of the reactor trip breakers, the CHANNEL FUNCTIONAL TEST shall include verification of the independent OPERABILITY of the undervoltage and shunt trips.

(7) - The fuse circuitry in the matrix fault protection circuitry shall be determined to be OPERABLE by testing with the installed test circuitry.

(8) - If the as-found channel setpoint is either outside its predefined as-found acceptance criteria band or is not conservative with respect to the Allowable Value, then the channel shall be declared inoperable and shall be evaluated to verify that it is functioning as required before returning the channel to service.

(9) - The instrument channel setpoint shall be reset to a value that is within the as-left tolerance of the Field Trip Setpoint, otherwise that channel shall not be returned to OPERABLE status. The Field Trip Setpoint and the methodology used to determine the Field Trip Setpoint, the as-found acceptance criteria band, and the as-left acceptance criteria are specified in UFSAR Section 7.2.

INSTRUMENTATION

3/4.3.2 ENGINEERED SAFETY FEATURES ACTUATION SYSTEM INSTRUMENTATION

LIMITING CONDITION FOR OPERATION

3.3.2 The Engineered Safety Features Actuation System (ESFAS) instrumentation channels and bypasses shown in Table 3.3-3 shall be OPERABLE with their trip setpoints set consistent with the values shown in the Trip Setpoint column of Table 3.3-4.

APPLICABILITY: As shown in Table 3.3-3.

ACTION:

a. With an ESFAS instrumentation channel trip setpoint less conservative than the value shown in the Allowable Values column of Table 3.3-4, declare the channel inoperable and apply the applicable ACTION requirement of Table 3.3-3 until the channel is restored to OPERABLE status with the trip setpoint adjusted consistent with the Trip Setpoint value.

b. With an ESFAS instrumentation channel inoperable, take the ACTION shown in Table 3.3-3.

SURVEILLANCE REQUIREMENTS

4.3.2.1 Each ESFAS instrumentation channel shall be demonstrated OPERABLE by the performance of the CHANNEL CHECK, CHANNEL CALIBRATION and CHANNEL FUNCTIONAL TEST operations during the MODES and at the frequencies shown in Table 4.3-2.

4.3.2.2 The logic for the bypasses shall be demonstrated OPERABLE during the at power CHANNEL FUNCTIONAL TEST of channels affected by bypass operation. The total bypass function shall be demonstrated OPERABLE in accordance with the Surveillance Frequency Control Program during CHANNEL CALIBRATION testing of each channel affected by bypass operation.

4.3.2.3 The ENGINEERED SAFETY FEATURES RESPONSE TIME of each ESFAS function shall be demonstrated to be within the limit in accordance with the Surveillance Frequency Control Program. Each test shall include at least one channel per function.

TABLE 4.3-2

ENGINEERED SAFETY FEATURES ACTUATION SYSTEM INSTRUMENTATION SURVEILLANCE REQUIREMENTS

FUNCTIONAL UNIT	CHANNEL CHECK	CHANNEL CALIBRATION	CHANNEL FUNCTIONAL TEST	MODES FOR WHICH SURVEILLANCE IS REQUIRED
1. SAFETY INJECTION (SIAS)				
a. Manual (Trip Buttons)	N.A.	N.A.	SFCP	1, 2, 3, 4
b. Containment Pressure – High	SFCP	SFCP	SFCP	1, 2, 3
c. Pressurizer Pressure – Low	SFCP	SFCP	SFCP	1, 2, 3
d. Automatic Actuation Logic	N.A.	N.A.	SFCP(1), SFCP(3)	1, 2, 3, 4
2. CONTAINMENT SPRAY (CSAS)				
a. Manual (Trip Buttons)	N.A.	N.A.	SFCP	1, 2, 3, 4
b. Containment Pressure – High-High	SFCP	SFCP	SFCP	1, 2, 3
c. Automatic Actuation Logic	N.A.	N.A.	SFCP(1), SFCP(3)	1, 2, 3, 4
3. CONTAINMENT ISOLATION (CIAS)				
a. Manual CIAS (Trip Buttons)	N.A.	N.A.	SFCP	1, 2, 3, 4
b. Safety Injection SIAS	N.A.	N.A.	SFCP	1, 2, 3, 4
c. Containment Pressure – High	SFCP	SFCP	SFCP	1, 2, 3
d. Containment Radiation – High	SFCP	SFCP	SFCP	1, 2, 3
e. Automatic Actuation Logic	N.A.	N.A.	SFCP(1), SFCP(3)	1, 2, 3, 4
4. MAIN STEAM LINE ISOLATION				
a. Manual (Trip Buttons)	N.A.	N.A.	SFCP	1, 2, 3
b. Steam Generator Pressure – Low	SFCP	SFCP	SFCP	1, 2, 3
c. Containment Pressure – High	SFCP	SFCP	SFCP	1, 2, 3
d. Automatic Actuation Logic	N.A.	N.A.	SFCP(1), SFCP(3)	1, 2, 3, 4
5. CONTAINMENT SUMP RECIRCULATION (RAS)				
a. Manual RAS (Trip Buttons)	N.A.	N.A.	SFCP	N.A.
b. Refueling Water Storage Tank – Low	SFCP	SFCP	SFCP	1, 2, 3
c. Automatic Actuation Logic	N.A.	N.A.	SFCP(1), SFCP(3)	1, 2, 3

TABLE 4.3-2 (Continued)

ENGINEERED SAFETY FEATURES ACTUATION SYSTEM INSTRUMENTATION SURVEILLANCE REQUIREMENTS

	FUNCTIONAL UNIT	CHANNEL CHECK	CHANNEL CALIBRATION	CHANNEL FUNCTIONAL TEST	MODES FOR WHICH SURVEILLANCE IS REQUIRED	
6.	LOSS OF POWER (LOV)					
	a. 4.16 kV and 480 V Emergency Bus Undervoltage (Loss of Voltage)	SFCP	SFCP	SFCP	1, 2, 3, 4	|
	b. 4.16 kV and 480 V Emergency Bus Undervoltage (Degraded Voltage)	SFCP	SFCP	SFCP	1, 2, 3, 4	|
7.	AUXILIARY FEEDWATER (AFAS)					
	a. Manual (Trip Buttons)	N.A.	N.A.	SFCP	1, 2, 3	|
	b. SG Level (A/B) – Low	SFCP	SFCP	SFCP	1, 2, 3	|
	c. Automatic Actuation Logic	N.A.	N.A.	SFCP(1), SFCP(2)	1, 2, 3	|
8.	AUXILIARY FEEDWATER ISOLATION					
	a. SG Level (A/B) – Low and SG Differential Pressure (B to A/A to B) – High	N.A.	SFCP	SFCP	1, 2, 3	|
	b. SG Level (A/B) – Low and Feedwater Header Differential Pressure (B to A/A to B) – High	N.A.	SFCP	SFCP	1, 2, 3	|

TABLE NOTATION

(1) Testing of Automatic Actuation Logic shall include energization/de-energization of each initiation relay (solid-state component) and verification of the OPERABILITY of each initiation relay (solid-state component).

(2) An actuation relay test shall be performed which shall include the energization/de-energization of each actuation relay and verification of the OPERABILITY of each actuation relay.

(3) A subgroup relay test shall be performed which shall include the energization/de-energization of each subgroup relay and verification of the OPERABILITY of each subgroup relay. Testing of the ESFAS subgroup relays shall be performed in accordance with the Surveillance Frequency Control Program. |

INSTRUMENTATION

3/4.3.3 MONITORING INSTRUMENTATION

RADIATION MONITORING INSTRUMENTATION

LIMITING CONDITION FOR OPERATION

3.3.3.1 The radiation monitoring instrumentation channels shown in Table 3.3-6 shall be OPERABLE with their alarm/trip setpoints within the specified limits.

APPLICABILITY: As shown in Table 3.3-6.

ACTION:

a. With a radiation monitoring channel alarm/trip setpoint exceeding the value shown in Table 3.3-6, adjust the setpoint to within the limit within 4 hours or declare the channel inoperable.

b. With one or more radiation monitoring channels inoperable, take the ACTION shown in Table 3.3-6.

c. The provisions of Specification 3.0.3 are not applicable.

SURVEILLANCE REQUIREMENTS

4.3.3.1 Each radiation monitoring instrumentation channel shall be demonstrated OPERABLE by the performance of the CHANNEL CHECK, CHANNEL CALIBRATION and CHANNEL FUNCTIONAL TEST operations in accordance with the Surveillance Frequency Control Program.

4.3.3.2 In accordance with the Surveillance Frequency Control Program, each Control Room Isolation radiation monitoring instrumentation channel shall be demonstrated OPERABLE by verifying that the response time of the channel is within limits.

TABLE 3.3-6

RADIATION MONITORING INSTRUMENTATION

	INSTRUMENT	MINIMUM CHANNELS OPERABLE	APPLICABLE MODES	ALARM/TRIP SETPOINT	MEASUREMENT RANGE	ACTION
1.	AREA MONITORS					
	a. Fuel Storage Pool Area					
	i. Criticality and Ventilation System Isolation Monitor	4	*	$\leq$ 20 mR/hr	10^{-1} – 10^{+4} mR/hr	22
	b. Containment Isolation	3	****	$\leq$ 90 mR/hr	1 – 10^{+1} mR/hr	25
	c. Containment Area – Hi Range	1	1, 2, 3 & 4	Not Applicable	1 - 10^{+1} R/hr	27
	d. Control Room Isolation	1 per intake	ALL MODES	$\leq$ 320 cpm	10^{-7} – 10^{-2} µCi/cc	26
2.	PROCESS MONITORS					
	a. Fuel Storage Pool Area Ventilation System					
	i. Gaseous Activity	1	**	***	10^{-1} – 10^{+5} µCi/cc	24
	ii. Particulate Activity	1	**	***	1 – 10^{+5} cpm	24
	b. Containment					
	i. Gaseous Activity RCS Leakage Detection	1	1, 2, 3 & 4	Not Applicable	10^{-7} – 10^{-2} µCi/cc	23
	ii. Particulate Activity RCS Leakage Detection	1	1, 2, 3 & 4	Not Applicable	1 – 10^{6} cpm	23

* With fuel in the storage pool or building.

** With irradiated fuel in the storage pool and during movement of recently irradiated fuel assemblies or during crane operations with loads over recently irradiated fuel assemblies in the spent fuel storage pool.

*** The Alarm/Trip Setpoints are determined and set in accordance with requirements of the Offsite Dose Calculation Manual.

**** During movement of recently irradiated fuel assemblies within containment.

DELETED

DELETED

INSTRUMENTATION

REMOTE SHUTDOWN SYSTEM INSTRUMENTATION

LIMITING CONDITION FOR OPERATION

3.3.3.5 The remote shutdown system transfer switches, control and instrumentation channels shown in Table 3.3-9 shall be OPERABLE.

APPLICABILITY: MODES 1, 2, and 3.

ACTION:

a. With the number of OPERABLE remote shutdown channels less than the Required Number of Channels shown in Table 3.3-9, either restore the inoperable channel to OPERABLE status within 30 days or be in HOT SHUTDOWN within the next 12 hours.

b. With the number of OPERABLE remote shutdown channels less than the Minimum Channels OPERABLE requirements of Table 3.3-9, either restore the inoperable channel to OPERABLE status within 7 days, or be in HOT SHUTDOWN within the next 12 hours.

SURVEILLANCE REQUIREMENTS

NOTE
CHANNEL CALIBRATION is not applicable to reactor trip breaker indication.

4.3.3.5.1 Each remote shutdown monitoring instrumentation channel shall be demonstrated OPERABLE by performance of the CHANNEL CHECK and CHANNEL CALIBRATION operations in accordance with the Surveillance Frequency Control Program.

4.3.3.5.2 Each remote shutdown system instrumentation transfer switch and control circuit shall be demonstrated OPERABLE by verifying its capability to perform its intended function(s) in accordance with the Surveillance Frequency Control Program.

DELETED

SURVEILLANCE REQUIREMENTS

4.3.3.6 Each accident monitoring instrumentation channel will be demonstrated OPERABLE by performance of the CHANNEL CHECK and CHANNEL CALIBRATION operations in accordance with the Surveillance Frequency Control Program.

DELETED

3/4.4 REACTOR COOLANT SYSTEM

3/4.4.1 REACTOR COOLANT LOOPS AND COOLANT CIRCULATION

STARTUP AND POWER OPERATION

LIMITING CONDITION FOR OPERATION

3.4.1.1 Both Reactor Coolant loops and both Reactor Coolant pumps in each loop shall be in operation.

APPLICABILITY: 1 and 2.*

ACTION:

With less than the above required Reactor Coolant pumps in operation, be in at least HOT STANDBY within 1 hour.

SURVEILLANCE REQUIREMENTS

4.4.1.1 The above required Reactor Coolant loops shall be verified to be in operation and circulating Reactor Coolant in accordance with the Surveillance Frequency Control Program.

---

* See Special Test Exception 3.10.3

REACTOR COOLANT SYSTEM

HOT STANDBY

LIMITING CONDITION FOR OPERATION

3.4.1.2 The Reactor Coolant loops listed below shall be OPERABLE and at least one of these Reactor Coolant loops shall be in operation.*

a. Reactor Coolant Loop 2A and its associated steam generator and at least one associated Reactor Coolant pump.

b. Reactor Coolant Loop 2B and its associated steam generator and at least one associated Reactor Coolant pump.

APPLICABILITY: MODE 3

ACTION:

a. With less than the above required Reactor Coolant loops OPERABLE, restore the required loops to OPERABLE status within 72 hours or be in HOT SHUTDOWN within the next 12 hours.

b. With no Reactor Coolant loop in operation, suspend operations that would cause introduction into the RCS, coolant with boron concentration less than required to meet SHUTDOWN MARGIN of Technical Specification 3.1.1.1 and immediately initiate corrective action to return the required Reactor Coolant loop to operation.

SURVEILLANCE REQUIREMENTS

4.4.1.2.1 At least the above required Reactor Coolant pumps, if not in operation, shall be determined to be OPERABLE in accordance with the Surveillance Frequency Control Program by verifying correct breaker alignments and indicated power availability.

4.4.1.2.2 At least one Reactor Coolant loop shall be verified to be in operation and circulating reactor coolant in accordance with the Surveillance Frequency Control Program.

4.4.1.2.3 The required steam generator(s) shall be determined OPERABLE verifying the secondary side water level to be $\geq$ 10% indicated narrow range level in accordance with the Surveillance Frequency Control Program.

---

* All Reactor Coolant pumps may be deenergized for up to 1 hour provided (1) no operations are permitted that would cause introduction into the RCS, coolant with boron concentration less than required to meet the SHUTDOWN MARGIN of Technical Specification 3.1.1.1 and (2) core outlet temperature is maintained at least 10°F below saturation temperature.

HOT SHUTDOWN

SURVEILLANCE REQUIREMENTS

4.4.1.3.1 The required Reactor Coolant pump(s), if not in operation, shall be determined to be OPERABLE in accordance with the Surveillance Frequency Control Program by verifying correct breaker alignments and indicated power availability.

4.4.1.3.2 The required steam generator(s) shall be determined OPERABLE by verifying the secondary side water level to be $\geq$ 10% indicated narrow range level in accordance with the Surveillance Frequency Control Program.

4.4.1.3.3 At least one Reactor Coolant or shutdown cooling loop shall be verified to be in operation and circulating Reactor Coolant in accordance with the Surveillance Frequency Control Program.

REACTOR COOLANT SYSTEM

COLD SHUTDOWN – LOOPS FILLED

LIMITING CONDITION FOR OPERATION

3.4.1.4.1 At least one shutdown cooling loop shall be OPERABLE and in operation*, and either:

a. One additional shutdown cooling loop shall be OPERABLE#, or

b. The secondary side water level of at least two steam generators shall be greater than 10% indicated narrow range level.

APPLICABILITY: MODE 5 with Reactor Coolant loops filled##.

ACTION:

a. With one of the shutdown cooling loops inoperable and with less than the required steam generator level, immediately initiate corrective action to return the inoperable shutdown cooling loop to OPERABLE status or to restore the required steam generator level as soon as possible.

b. With no shutdown cooling loop in operation, suspend operations that would cause introduction into the RCS, coolant with boron concentration less than required to meet SHUTDOWN MARGIN of Technical Specification 3.1.1.2 and immediately initiate corrective action to return the required shutdown cooling loop to operation.

SURVEILLANCE REQUIREMENTS

4.4.1.4.1.1 The secondary side water level of at least two steam generators when required shall be determined to be within limits in accordance with the Surveillance Frequency Control Program.

4.4.1.4.1.2 At least one shutdown cooling loop shall be determined to be in operation and circulating reactor coolant in accordance with the Surveillance Frequency Control Program.

---

* The shutdown cooling pump may be de-energized for up to 1 hour provided 1) no operations are permitted that would cause introduction into the RCS, coolant with boron concentration less than required to meet the SHUTDOWN MARGIN of Technical Specification 3.1.1.2 and 2) core outlet temperature is maintained at least 10°F below saturation temperature.

\# One shutdown cooling loop may be inoperable for up to 2 hours for surveillance testing provided the other shutdown cooling loop is OPERABLE and in operation.

\## A Reactor Coolant pump shall not be started with two idle loops unless the secondary water temperature of each steam generator is less than 40°F above each of the Reactor Coolant System cold leg temperatures.

REACTOR COOLANT SYSTEM

COLD SHUTDOWN – LOOPS NOT FILLED

LIMITING CONDITION FOR OPERATION

3.4.1.4.2 Two shutdown cooling loops shall be OPERABLE[#] and at least one shutdown cooling loop shall be in operation.*

APPLICABILITY: MODE 5 with reactor coolant loops not filled.

ACTION:

a. With less than the above required loops OPERABLE, within 1 hour initiate corrective action to return the required loops to OPERABLE status as soon as possible.

b. With no shutdown cooling loop in operation, suspend operations that would cause introduction into the RCS, coolant with boron concentration less than required to meet SHUTDOWN MARGIN of Technical Specification 3.1.1.2 and within 1 hour initiate corrective action to return the required shutdown cooling loop to operation.

SURVEILLANCE REQUIREMENTS

4.4.1.4.2 At least one shutdown cooling loop shall be determined to be in operation and circulating reactor coolant in accordance with the Surveillance Frequency Control Program.

One shutdown cooling loop may be inoperable for up to 2 hours for surveillance testing provided the other shutdown cooling loop is OPERABLE and in operation.

* The shutdown cooling pump may be deenergized for up to 1 hour provided (1) no operations are permitted that would cause introduction into the RCS, coolant with boron concentration less than required to meet the SHUTDOWN MARGIN of Technical Specification 3.1.1.2 and (2) core outlet temperature is maintained at least 10°F below saturation temperature.

3/4.4.3 PRESSURIZER

LIMITING CONDITION FOR OPERATION

3.4.3 The pressurizer shall be OPERABLE with a minimum water level of greater than or equal to 27% indicated level and a maximum water level of less than or equal to 68% indicated level and at least two groups of pressurizer heaters capable of being powered from 1E buses each having a nominal capacity of at least 150 kW.

APPLICABILITY: MODES 1, 2 and 3.

ACTION:

a. With one group of the above required pressurizer heaters inoperable, restore at least two groups to OPERABLE status within 72 hours or be in at least HOT STANDBY within the next 6 hours and in HOT SHUTDOWN within the following 6 hours.

b. With the pressurizer otherwise inoperable, be in at least HOT STANDBY with the reactor trip breakers open within 6 hours and in HOT SHUTDOWN within the following 6 hours.

SURVEILLANCE REQUIREMENTS

4.4.3.1 The pressurizer water volume shall be determined to be within its limits in accordance with the Surveillance Frequency Control Program.

4.4.3.2 The capacity of each of the above required groups of pressurizer heaters shall be verified to be at least 150 kW in accordance with the Surveillance Frequency Control Program.

4.4.3.3 The emergency power supply for the pressurizer heaters shall be demonstrated OPERABLE in accordance with the Surveillance Frequency Control Program by verifying that on an Engineered Safety Features Actuation test signal concurrent with a loss of offsite power:

a. the pressurizer heaters are automatically shed from the emergency power sources, and

b. the pressurizer heaters can be reconnected to their respective buses manually from the control room after resetting of the ESFAS test signal.

REACTOR COOLANT SYSTEM

3/4.4.4 PORV BLOCK VALVES

LIMITING CONDITION FOR OPERATION

3.4.4 Each Power Operated Relief Valve (PORV) Block valve shall be OPERABLE. No more than one block valve shall be open at any one time.

APPLICABILITY: MODES 1, 2 and 3.

ACTION:

a. With one or more block valve(s) inoperable, within 1 hour either restore the block valve(s) to OPERABLE status or close the block valve(s) and remove power from the block valve(s); otherwise, be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

b. With both block valves open, close one block valve within 1 hour, otherwise be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

SURVEILLANCE REQUIREMENTS

4.4.4 Each block valve shall be demonstrated OPERABLE in accordance with the Surveillance Frequency Control Program by operating the valve through one complete cycle of full travel unless the block valve is closed with power removed in order to meet the requirements of Action a. or b. above.

REACTOR COOLANT SYSTEM

3/4.4.6 REACTOR COOLANT SYSTEM LEAKAGE

LEAKAGE DETECTION SYSTEMS

LIMITING CONDITION FOR OPERATION

3.4.6.1 The following RCS leakage detection systems will be OPERABLE:

a. The reactor cavity sump inlet flow monitoring system; and

b. One containment atmosphere radioactivity monitor (gaseous or particulate).

APPLICABILITY: MODES 1, 2, 3, and 4.

ACTION:

a. With the reactor cavity sump inlet flow monitoring system inoperable with an operable containment particulate radioactivity monitor, perform a RCS water inventory balance at least once per 24* hours and restore the sump inlet flow monitoring system to OPERABLE status within 30 days; otherwise, be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

b. With the reactor cavity sump inlet flow monitoring system inoperable with only the containment gaseous radioactivity monitor operable, perform an RCS water inventory balance at least once per 24* hours and analyze grab samples of the containment atmosphere at least once per 12 hours, and either restore the sump inlet flow monitoring system to OPERABLE status within 7 days or restore the containment particulate radioactivity monitor to OPERABLE status within 7 days and enter action a. above with the time in this action applied against the allowed outage time of action a.; otherwise, be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

c. With the required radioactivity monitor inoperable, analyze grab samples of the containment atmosphere or perform a RCS water inventory balance at least once per 24* hours, and restore the required radioactivity monitor to OPERABLE status within 30 days; otherwise, be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

d. With all required monitors inoperable, enter LCO 3.0.3 immediately.

SURVEILLANCE REQUIREMENTS

4.4.6.1 The RCS leakage detection instruments shall be demonstrated OPERABLE by:

a. Performance of the CHANNEL CHECK, CHANNEL FUNCTIONAL TEST, and CHANNEL CALIBRATION of the required containment atmosphere radioactivity monitor in accordance with surveillance 4.3.3.1.

b. Performance of the CHANNEL CALIBRATION of the reactor cavity sump inlet flow monitoring system in accordance with the Surveillance Frequency Control Program.

* Not required to be performed until 12 hours after establishment of steady state operation.

REACTOR COOLANT SYSTEM

OPERATIONAL LEAKAGE

LIMITING CONDITION FOR OPERATION

3.4.6.2 Reactor Coolant System operational leakage shall be limited to:

a. No PRESSURE BOUNDARY LEAKAGE,

b. 1 gpm UNIDENTIFIED LEAKAGE,

c. 150 gallons per day primary-to-secondary leakage through any one steam generator (SG),

d. 10 gpm IDENTIFIED LEAKAGE from the Reactor Coolant System, and

e. 1 gpm leakage (except as noted in Table 3.4-1) at a Reactor Coolant System pressure of 2235 $\pm$ 20 psig from any Reactor Coolant System Pressure Isolation Valve specified in Table 3.4-1.

APPLICABILITY: MODES 1, 2, 3, and 4.

ACTION:

a. With any PRESSURE BOUNDARY LEAKAGE or with primary-to-secondary leakage not within limit, be in at least HOT STANDBY within 6 hours and in COLD SHUTDOWN within the following 30 hours.

b. With any Reactor Coolant System operational leakage greater than any one of the limits, excluding primary-to-secondary leakage, PRESSURE BOUNDARY LEAKAGE, and leakage from Reactor Coolant System Pressure Isolation Valves, reduce the leakage rate to within limits within 4 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

c. With any Reactor Coolant System Pressure Isolation Valve leakage greater than the above limit, isolate the high pressure portion of the affected system from the low pressure portion within 4 hours by use of at least two closed manual or deactivated automatic valves, or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

d. With RCS leakage alarmed and confirmed in a flow path with no flow indication, commence an RCS water inventory balance within 1 hour to determine the leak rate.

SURVEILLANCE REQUIREMENTS

4.4.6.2.1 Reactor Coolant System operational leakages shall be demonstrated to be within each of the above limits by:

a. Monitoring the containment atmosphere gaseous and particulate radioactivity monitor in accordance with the Surveillance Frequency Control Program.

b. Monitoring the containment sump inventory and discharge in accordance with the Surveillance Frequency Control Program.

c. *Performance of a Reactor Coolant System water inventory balance in accordance with the Surveillance Frequency Control Program.

d. Monitoring the reactor head flange leakoff system in accordance with the Surveillance Frequency Control Program.

e. Verifying primary-to-secondary leakage is ≤ 150 gallons per day through any one steam generator in accordance with the Surveillance Frequency Control Program.**

4.4.6.2.2 Each Reactor Coolant System Pressure Isolation Valve check valve specified in Table 3.4-1 shall be demonstrated OPERABLE by verifying leakage to be within its limit:

a. In accordance with the Surveillance Frequency Control Program,

b. Prior to entering MODE 2 whenever the plant has been in COLD SHUTDOWN for 7 days or more and if leakage testing has not been performed in the previous 9 months,

c. Prior to returning the valve to service following maintenance, repair or replacement work on the valve,

d. Following valve actuation due to automatic or manual action or flow through the valve:

1. Within 24 hours by verifying valve closure, and

2. Within 31 days by verifying leakage rate.

4.4.6.2.3 Each Reactor Coolant System Pressure Isolation Valve motor-operated valve specified in Table 3.4-1 shall be demonstrated OPERABLE by verifying leakage to be within its limit;

a. In accordance with the Surveillance Frequency Control Program, and

b. Prior to returning the valve to service following maintenance, repair, or replacement work on the valve.

The provisions of Specification 4.0.4 are not applicable for entry into MODE 3 or 4.

* Not required to be performed until 12 hours after establishment of steady state operation. Not applicable to primary-to-secondary leakage.

** Not required to be performed until 12 hours after establishment of steady state operation.

TABLE 4.4-3

REACTOR COOLANT SYSTEM

CHEMISTRY LIMITS SURVEILLANCE REQUIREMENTS

PARAMETER	MINIMUM SAMPLING FREQUENCIES	MAXIMUM TIME BETWEEN SAMPLES
DISSOLVED OXYGEN	SFCP*	72 hours
CHLORIDE	SFCP	72 hours
FLUORIDE	SFCP	72 hours

* Not required with $T_{avg} \leq 250°F$

REACTOR COOLANT SYSTEM

3/4.4.8 SPECIFIC ACTIVITY

LIMITING CONDITION FOR OPERATION

3.4.8 The specific activity of the primary coolant shall be limited to:

a. Less than or equal to 1.0 microcurie/gram DOSE EQUIVALENT I-131, and

b. Less than or equal to 518.9 microcuries/gram DOSE EQUIVALENT XE-133.

APPLICABILITY: MODES 1, 2, 3, and 4

ACTION:

a. With the specific activity of the primary coolant > 1.0 µCi/gram DOSE EQUIVALENT I-131, verify DOSE EQUIVALENT I-131 is ≤ 60.0 µCi/gram once per four hours.

b. With the specific activity of the primary coolant > 1.0 µCi/gram DOSE EQUIVALENT I-131, but ≤ 60.0 µCi/gram DOSE EQUIVALENT I-131, operation may continue for up to 48 hours while efforts are made to restore DOSE EQUIVALENT I-131 to within the 1.0 µCi/gram limit. LCO 3.0.4.c is applicable.

c. With the specific activity of the primary coolant > 1.0 µCi/gram DOSE EQUIVALENT I-131 for greater than 48 hours during one continuous time interval, or > 60.0 µCi/gram DOSE EQUIVALENT I-131, be in HOT STANDBY within 6 hours and COLD SHUTDOWN within the following 30 hours.

d. With the specific activity of the primary coolant > 518.9 µCi/gram DOSE EQUIVALENT XE-133, operation may continue for up to 48 hours while efforts are made to restore DOSE EQUIVALENT XE-133 to within the 518.9 µCi/gram DOSE EQUIVALENT XE-133 limit. LCO 3.0.4.c is applicable.

e. With the specific activity of the primary coolant > 518.9 µCi/gram DOSE EQUIVALENT XE-133 for greater than 48 hours during one continuous time interval, be in HOT STANDBY within 6 hours and COLD SHUTDOWN within the following 30 hours.

SURVEILLANCE REQUIREMENTS

4.4.8 The specific activity of the primary coolant shall be determined to be within the limits by performing sampling and analysis as described in Table 4.4-4.

TABLE 4.4-4

PRIMARY COOLANT SPECIFIC ACTIVITY SAMPLE AND ANALYSIS

	TYPE OF MEASUREMENT AND ANALYSIS	MINIMUM FREQUENCY	MODES IN WHICH SAMPLE AND ANALYSIS REQUIRED
1.	DOSE EQUIVALENT XE-133 Determination	SFCP	1, 2, 3, and 4
2.	Isotopic Analysis for DOSE EQUIVALENT I-131 Concentration	SFCP	1
3.	Isotopic Analysis for Iodine Including I-131, I-132, I-133, I-134, and I-135	a) Once per 4 hours, whenever the specific activity exceeds 1 micro-Ci/gram, DOSE EQUIVALENT I-131, and	1#, 2#, 3#, and 4#
		b) One sample between 2 and 6 hours following a THERMAL POWER change exceeding 15% of the RATED THERMAL POWER within a 1-hour period.	1, 2, 3

Until the specific activity of the primary coolant system is restored within its limits.

3/4.4.9 PRESSURE/TEMPERATURE LIMITS

REACTOR COOLANT SYSTEM

LIMITING CONDITION FOR OPERATION

3.4.9.1 The Reactor Coolant System (except the pressurizer) temperature and pressure shall be limited in accordance with the limit lines shown on Figures 3.4-2 and 3.4-3 during heatup, cooldown, criticality, and inservice leak and hydrostatic testing.

APPLICABILITY: At all times.

ACTION:

With any of the above limits exceeded, restore the temperature and/or pressure to within the limits within 30 minutes; perform an engineering evaluation to determine the effects of the out-of-limit condition on the structural integrity of the Reactor Coolant System; determine that the Reactor Coolant System remains acceptable for continued operations or be in at least HOT STANDBY within the next 6 hours and reduce the RCS T_{avg} to less than 200°F within the next 30 hours in accordance with Figure 3.4-3.

SURVEILLANCE REQUIREMENTS

4.4.9.1.1 The Reactor Coolant System temperature and pressure shall be determined to be within the limits in accordance with the Surveillance Frequency Control Program during system heatup, cooldown, and inservice leak and hydrostatic testing operations.

REACTOR COOLANT SYSTEM

PRESSURIZER HEATUP/COOLDOWN LIMITS

LIMITING CONDITION FOR OPERATION

3.4.9.2 The pressurizer temperature shall be limited to:

a. A maximum heatup of 100°F in any 1-hour period, and

b. A maximum cooldown of 200°F in any 1-hour period.

APPLICABILITY: At all times.

ACTION:

With the pressurizer temperature limits in excess of any of the above limits, restore the temperature to within the limits within 30 minutes; perform an engineering evaluation to determine the effects of the out-of-limit condition on the structural integrity of the pressurizer; determine that the pressurizer remains acceptable for continued operation or be in at least HOT STANDBY within the next 6 hours and reduce the pressurizer pressure to less than 500 psig within the following 30 hours.

SURVEILLANCE REQUIREMENTS

4.4.9.2 The pressurizer temperatures shall be determined to be within the limits in accordance with the Surveillance Frequency Control Program during system heatup or cooldown.

LIMITING CONDITION FOR OPERATION

ACTION: (Continued)

c. In the event either the PORVs, SDCRVs or the RCS vent(s) are used to mitigate a RCS pressure transient, a Special Report shall be prepared and submitted to the Commission pursuant to Specification 6.9.2 within 30 days. The report shall describe the circumstances initiating the transient, the effect of the PORVs, SDCRVs or vent(s) on the transient and any corrective action necessary to prevent recurrence.

d. LCO 3.0.4.b is not applicable to PORVs when entering MODE 4.

SURVEILLANCE REQUIREMENTS

4.4.9.3.1 Each PORV shall be demonstrated OPERABLE by:

a. In addition to the requirements of the Inservice Testing Program, operating the PORV through one complete cycle of full travel in accordance with the Surveillance Frequency Control Program.

SURVEILLANCE REQUIREMENTS (Continued)

b. Performance of a CHANNEL FUNCTIONAL TEST on the PORV actuation channel, but excluding valve operation, within 31 days prior to entering a condition in which the PORV is required OPERABLE and in accordance with the Surveillance Frequency Control Program thereafter when the PORV is required OPERABLE.

c. Performance of a CHANNEL CALIBRATION on the PORV actuation channel in accordance with the Surveillance Frequency Control Program.

d. Verifying the PORV isolation valve is open in accordance with the Surveillance Frequency Control Program when the PORV is being used for overpressure protection.

4.4.9.3.2 The RCS vent(s) shall be verified to be open in accordance with the Surveillance Frequency Control Program* when the vent(s) is being used for overpressure protection.

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* Except when the vent pathway is provided with a valve which is locked, sealed, or otherwise secured in the open position, then verify these valves open in accordance with the Surveillance Frequency Control Program.

REACTOR COOLANT SYSTEM

3/4.4.10 REACTOR COOLANT SYSTEM VENTS

LIMITING CONDITION FOR OPERATION

3.4.10 At least one Reactor Coolant System vent path consisting of two vent valves and one block valve powered from emergency buses shall be OPERABLE and closed at each of the following locations:

a. Pressurizer steam space, and

b. Reactor vessel head.

APPLICABILITY: MODES 1, 2, 3, and 4.

ACTION:

a. With one of the above Reactor Coolant System vent paths inoperable, STARTUP and/or POWER OPERATION may continue provided the inoperable vent path is maintained closed with power removed from the valve actuator of all the vent valves and block valves in the inoperable vent path; restore the inoperable vent path to OPERABLE status within 30 days, or, be in HOT STANDBY within 6 hours and in COLD SHUTDOWN within the following 30 hours.

b. With both Reactor Coolant System vent paths inoperable, maintain the inoperable vent paths closed with power removed from the valve actuators of all the vent valves and block valves in the inoperable vent paths, and restore at least one of the vent paths to OPERABLE status within 72 hours or be in HOT STANDBY within 6 hours and in COLD SHUTDOWN within the following 30 hours.

SURVEILLANCE REQUIREMENTS

4.4.10.1 Each Reactor Coolant System vent path shall be demonstrated OPERABLE in accordance with the Surveillance Frequency Control Program by:

1. Verifying all manual isolation valves in each vent path are locked in the open position.

2. Cycling each vent valve through at least one complete cycle of full travel from the control room.

3. Verifying flow through the Reactor Coolant System vent paths during venting.

3/4.5 EMERGENCY CORE COOLING SYSTEMS (ECCS)

3/4.5.1 SAFETY INJECTION TANKS (SIT)

LIMITING CONDITION FOR OPERATION

3.5.1 Each Reactor Coolant System safety injection tank shall be OPERABLE with:

a. The isolation valve open,

b. A contained borated water volume of between 1420 and 1556 cubic feet,

c. A boron concentration of between 1900 and 2200 ppm of boron, and

d. A nitrogen cover-pressure of between 500 and 650 psig.

APPLICABILITY: MODES 1, 2 and 3*.

ACTION:

a. With one SIT inoperable due to boron concentration not within limits, or due to an inability to verify the required water volume or nitrogen cover-pressure, restore the inoperable SIT to OPERABLE status with 72 hours; otherwise, be in at least HOT STANDBY within the next 6 hours and in HOT SHUTDOWN within the following 6 hours.

b. With one SIT inoperable due to reasons other than those stated in ACTION-a, restore the inoperable SIT to OPERABLE status within 24 hours; otherwise, be in at least HOT STANDBY within the next 6 hours and in HOT SHUTDOWN within the following 6 hours.

SURVEILLANCE REQUIREMENTS

4.5.1.1 Each safety injection tank shall be demonstrated OPERABLE:

a. In accordance with the Surveillance Frequency Control Program by:

1. Verifying that the borated water volume and nitrogen cover-pressure in the tanks are within their limits, and

2. Verifying that each safety injection tank isolation valve is open.

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* With pressurizer pressure greater than or equal to 1750 psia. When pressurizer pressure is less than 1750 psia, at least three safety injection tanks shall be OPERABLE, each with a minimum pressure of 235 psig and a maximum pressure of 650 psig and a contained water volume of between 1250 and 1556 cubic feet with a boron concentration of between 1900 and 2200 ppm of boron. With all four safety injection tanks OPERABLE, each tank shall have a minimum pressure of 235 psig and a maximum pressure of 650 psig and a contained water volume of between 833 and 1556 cubic feet with a boron concentration of between 1900 and 2200 ppm of boron.

SURVEILLANCE REQUIREMENTS (Continued)

b. In accordance with the Surveillance Frequency Control Program and once within 6 hours after each solution volume increase of greater than or equal to 1% of tank volume by verifying the boron concentration of the safety injection tank solution. This latter surveillance is not required when the volume increase makeup source is the RWT and the RWT has not been diluted since verifying that the RWT boron concentration is equal to or greater than the safety injection tank boron concentration limit.

c. In accordance with the Surveillance Frequency Control Program when the RCS pressure is above 700 psia, by verifying that power to the isolation valve operator is disconnected by maintaining the breaker open by administrative controls.

d. In accordance with the Surveillance Frequency Control Program by verifying that each safety injection tank isolation valve opens automatically under each of the following conditions:

   1. When an actual or simulated RCS pressure signal exceeds 515 psia, and

   2. Upon receipt of a safety injection test signal.

SURVEILLANCE REQUIREMENTS

4.5.2 Each ECCS subsystem shall be demonstrated OPERABLE:

a. In accordance with the Surveillance Frequency Control Program by verifying that the following valves are in the indicated positions with power to the valve operators removed:

Valve Number	Valve Function	Valve Position
a. V3733 V3734	a. SIT Vent Valves	a. Locked Closed
b. V3735 V3736	b. SIT Vent Valves	b. Locked Closed
c. V3737 V3738 V3739 V3740	c. SIT Vent Valves	c. Locked Closed

b. In accordance with the Surveillance Frequency Control Program by verifying that each valve (manual, power-operated or automatic) in the flow path that is not locked, sealed, or otherwise secured in position, is in its correct position.

c. By verifying that the ECCS piping is full of water by venting the accessible piping high points following maintenance, shutdown cooling system operation and/or any other activity which could cause the introduction of air into the system.

d. By a visual inspection which verifies that no loose debris (rags, trash, clothing, etc.) is present in the containment which could be transported to the containment sump and cause restriction of the pump suctions during LOCA conditions. This visual inspection shall be performed:

1. For all accessible areas of the containment prior to establishing CONTAINMENT INTEGRITY, and

2. At least once daily of the areas affected within containment by the containment entry and during the final entry when CONTAINMENT INTEGRITY is established.

e. In accordance with the Surveillance Frequency Control Program by:

1. Verifying automatic isolation and interlock action of the shutdown cooling system from Reactor Coolant System when RCS pressure (actual or simulated) is greater than or equal to 515 psia, and that the interlocks prevent opening the shutdown cooling system isolation valves when RCS pressure (actual or simulated) is greater than or equal to 276 psia.

SURVEILLANCE REQUIREMENTS (continued)

2. A visual inspection of the containment sump and verifying that the subsystem suction inlets are not restricted by debris and that the sump components (trash racks, screens, etc.) show no evidence of structural distress or corrosion.

3. Verifying that a minimum total of 173 cubic feet of solid granular trisodium phosphate dodecahydrate (TSP) is contained within the TSP storage baskets.

4. Verifying that when a representative sample of 70.5 $\pm$ 0.5 grams of TSP from a TSP storage basket is submerged, without agitation, in 10.0 $\pm$ 0.1 gallons of 120 $\pm$ 10°F borated water from the RWT, the pH of the mixed solution is raised to greater than or equal to 7 within 4 hours.

f. In accordance with the Surveillance Frequency Control Program, during shutdown, by:

1. Verifying that each automatic valve in the flow paths actuates to its correct position on SIAS and/or RAS test signals.

2. Verifying that each of the following pumps start automatically upon receipt of a Safety Injection Actuation Test Signal:

a. High-Pressure Safety Injection pumps.

b. Low-Pressure Safety Injection pumps.

c. Charging Pumps

3. Verifying that upon receipt of an actual or simulated Recirculation Actuation Signal: each low-pressure safety injection pump stops, each containment sump isolation valve opens, each refueling water tank outlet valve closes, and each safety injection system recirculation valve to the refueling water tank closes.

g. By verifying that each of the following pumps develops the specified total developed head when tested pursuant to the Inservice Testing Program:

1. High-Pressure Safety Injection pumps.

2. Low-Pressure Safety Injection pumps.

h. By verifying the correct position of each electrical and/or mechanical position stop for the following ECCS throttle valves:

1. During valve stroking operation or following maintenance on the valve and prior to declaring the valve OPERABLE when the ECCS subsystems are required to be OPERABLE.

SURVEILLANCE REQUIREMENTS (Continued)

2. In accordance with the Surveillance Frequency Control Program.

HPSI System Valve Number	LPSI System Valve Number
a. HCV 3616/3617	a. HCV 3615
b. HCV 3626/3627	b. HCV 3625
c. HCV 3636/3637	c. HCV 3635
d. HCV 3646/3647	d. HCV 3645
e. V3523/V3540	

EMERGENCY CORE COOLING SYSTEMS

3/4.5.4 REFUELING WATER TANK

LIMITING CONDITION FOR OPERATION

3.5.4 The refueling water tank shall be OPERABLE with:

a. A minimum contained borated water volume 477,360 gallons,

b. A boron concentration of between 1900 and 2200 ppm of boron, and

c. A solution temperature of between 55°F and 100°F.

APPLICABILITY: MODES 1, 2, 3 and 4.

ACTION:

With the refueling water tank inoperable, restore the tank to OPERABLE status within 1 hour or be in at least HOT STANDBY within 6 hours and in COLD SHUTDOWN within the following 30 hours.

SURVEILLANCE REQUIREMENTS

4.5.4 The RWT shall be demonstrated OPERABLE:

a. In accordance with the Surveillance Frequency Control Program by:

1. Verifying the contained borated water volume in the tank, and

2. Verifying the boron concentration of the water.

b. At least once per 24 hours by verifying the RWT temperature when the outside air temperature is less then 55°F or greater than 100°F.

3/4.6 CONTAINMENT SYSTEMS

3/4.6.1 PRIMARY CONTAINMENT

CONTAINMENT INTEGRITY

LIMITING CONDITION FOR OPERATION

3.6.1.1 Primary CONTAINMENT INTEGRITY shall be maintained.

APPLICABILITY: MODES 1*, 2*, 3, and 4.

ACTION:

Without primary CONTAINMENT INTEGRITY, restore CONTAINMENT INTEGRITY within 1 hour or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

SURVEILLANCE REQUIREMENTS

4.6.1.1 Primary CONTAINMENT INTEGRITY shall be demonstrated:

a. In accordance with the Surveillance Frequency Control Program by verifying that all penetrations** not capable of being closed by OPERABLE containment automatic isolation valves and required to be closed during accident conditions are closed by valves, blind flanges, or deactivated automatic valves secured in their positions, except for valves that are open on an intermittent basis under administrative control.

b. By verifying that each containment air lock is in compliance with the requirements of Specification 3.6.1.3.

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* In MODES 1 and 2, the RCB polar crane shall be rendered inoperable by locking the power supply breaker open.

** Except valves, blind flanges, and deactivated automatic valves which are located inside the containment and are locked, sealed or otherwise secured in the closed position. These penetrations shall be verified closed during each COLD SHUTDOWN except that such verification need not be performed more often than once per 92 days.

SURVEILLANCE REQUIREMENTS

4.6.1.3 Each containment air lock shall be demonstrated OPERABLE:

a. By verifying leakage rates and air lock door seals in accordance with the Containment Leakage Rate Testing Program; and

b. In accordance with the Surveillance Frequency Control Program by verifying that only one door in each air lock can be opened at a time.

CONTAINMENT SYSTEMS

INTERNAL PRESSURE

LIMITING CONDITION FOR OPERATION

3.6.1.4 Primary containment internal pressure shall be maintained between –0.368 and +0.400 psig.

APPLICABILITY: MODES 1, 2, 3, and 4.

ACTION:

With the containment internal pressure outside of the limits above, restore the internal pressure to within the limits within 1 hour or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

SURVEILLANCE REQUIREMENTS

4.6.1.4 The primary containment internal pressure shall be determined to be within the limits in accordance with the Surveillance Frequency Control Program.

CONTAINMENT SYSTEMS

AIR TEMPERATURE

LIMITING CONDITION FOR OPERATION

3.6.1.5 Primary containment average air temperature shall not exceed 120°F.

APPLICABILITY: MODES 1, 2, 3, and 4.

ACTION:

With the containment average air temperature greater than 120°F, reduce the average air temperature to within the limit within 8 hours, or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

SURVEILLANCE REQUIREMENTS

4.6.1.5 The primary containment average air temperature shall be the arithmetical average* of the temperatures at the following locations and shall be determined in accordance with the Surveillance Frequency Control Program:

Location

a. TE-07-3A NW RCB Elevation 70'

b. TE-07-3B SW RCB Elevation 70'

* With one temperature detector inoperable, use the air intake temperature detectors of the operating containment fan coolers.

LIMITING CONDITION FOR OPERATION (continued)

SURVEILLANCE REQUIREMENTS

4.6.1.7.1 Each 48-inch containment purge supply and exhaust isolation valve shall be verified to be sealed-closed in accordance with the Surveillance Frequency Control Program.

4.6.1.7.2 Documentation shall be reviewed in accordance with the Surveillance Frequency Control Program to confirm that purging and venting were performed in accordance with Specification 3.6.1.7.b.

4.6.1.7.3 In accordance with the Surveillance Frequency Control Program each sealed closed 48-inch containment purge supply and exhaust isolation valve with resilient material seals shall be demonstrated OPERABLE by verifying that the measured leakage rate is less than or equal to 0.05 L_a when pressurized to P_a.

4.6.1.7.4 In accordance with the Surveillance Frequency Control Program, each 8-inch containment purge supply and exhaust isolation valve with resilient material seals shall be demonstrated OPERABLE by verifying that the measured leakage rate is less than or equal to 0.05 L_a when pressurized to P_a.

SURVEILLANCE REQUIREMENTS

4.6.2.1 Each containment spray system shall be demonstrated OPERABLE:

a. In accordance with the Surveillance Frequency Control Program by verifying that each valve (manual, power-operated, or automatic) in the flow path that is not locked, sealed, or otherwise secured in position, is positioned to take suction from the RWT on a Containment Pressure -- High-High test signal.

b. By verifying that each spray pump develops the specified discharge pressure when tested pursuant to the Inservice Testing Program.

c. In accordance with the Surveillance Frequency Control Program, during shutdown, by:

1. Verifying that each automatic valve in the flow path actuates to its correct position on a CSAS test signal.

2. Verifying that upon a Recirculation Actuation Test Signal (RAS), the containment sump isolation valves open and that a recirculation mode flow path via an OPERABLE shutdown cooling heat exchanger is established.

SURVEILLANCE REQUIREMENTS (Continued)

3. Verifying that each spray pump starts automatically on a CSAS test signal.

d. By verifying each spray nozzle is unobstructed following maintenance which could result in nozzle blockage.

4.6.2.1.1. Each containment cooling train shall be demonstrated OPERABLE:

a. In accordance with the Surveillance Frequency Control Program by:

1. Starting each cooling train fan unit from the control room and verifying that each unit operates for at least 15 minutes, and

2. Verifying a cooling water flow rate of greater than or equal to 1200 gpm to each cooling unit.

b. In accordance with the Surveillance Frequency Control Program, during shutdown, by verifying that each containment cooling train starts automatically on an SIAS test signal.

CONTAINMENT SYSTEMS

IODINE REMOVAL SYSTEM (IRS)

LIMITING CONDITION FOR OPERATION

3.6.2.2 The Iodine Removal System shall be OPERABLE with:

a. A hydrazine storage tank containing a minimum volume of 675 gallons of $\geq$ 25.4% by weight N_2H_4 (Hydrazine) solution, and

b. Two iodine removal pumps each capable of adding N_2H_4 solution from the hydrazine storage tank to a containment spray system pump flow.

APPLICABILITY: MODES 1, 2 and 3*.

ACTION:

With the Iodine Removal Spray inoperable restore the system to OPERABLE status within 72 hours or be in at least HOT STANDBY within the next 6 hours; restore the Iodine Removal System to OPERABLE status within the next 48 hours or be in COLD SHUTDOWN within the following 30 hours.

SURVEILLANCE REQUIREMENTS

4.6.2.2 The Iodine Removal System shall be demonstrated OPERABLE:

a. In accordance with the Surveillance Frequency Control Program by verifying that each valve (manual, power-operated, or automatic) in the flow path that is not locked, sealed, or otherwise secured in position, is in its correct position.

b. The above required iodine removal pumps shall be demonstrated OPERABLE by verifying a flow rate of between 0.71 gpm and 0.82 gpm when tested pursuant to the Inservice Testing Program.

c. In accordance with the Surveillance Frequency Control Program by:

1. Verifying the contained solution volume in the tank, and

2. Verifying the concentration of the N_2H_4 solution by chemical analysis.

d. In accordance with the Surveillance Frequency Control Program, during shutdown, by verifying that each automatic valve in the flow path actuates to its correct position on a CSAS test signal.

* Applicable only when pressurizer pressure is $\geq$ 1750 psia.

SURVEILLANCE REQUIREMENTS (Continued)

4.6.3.2 Each automatic containment isolation valve shall be demonstrated OPERABLE during the COLD SHUTDOWN or REFUELING MODE in accordance with the Surveillance Frequency Control Program by:

a. Verifying that on a Containment Isolation test signal (CIAS) and/or a Safety Injection test signal (SIAS), each isolation valve actuates to its isolation position.

b. Verifying that on a Containment Radiation-High test signal, each containment purge valve actuates to its isolation position.

4.6.3.3 The isolation time of each power-operated or automatic containment isolation valve shall be determined to be within its limit when tested pursuant to the Inservice Testing Program.

CONTAINMENT SYSTEMS

3/4.6.6 SECONDARY CONTAINMENT

SHIELD BUILDING VENTILATION SYSTEM (SBVS)

LIMITING CONDITION FOR OPERATION

3.6.6.1 Two independent Shield Building Ventilation Systems shall be OPERABLE.

APPLICABILITY: At all times in MODES 1, 2, 3, and 4.
In addition, during movement of recently irradiated fuel assemblies or during crane operations with loads over recently irradiated fuel assemblies in the Spent Fuel Storage Pool in MODES 5 and 6.

ACTION:

a. With the SBVS inoperable solely due to loss of the SBVS capability to provide design basis filtered air evacuation from the Spent Fuel Pool area, only ACTION-c is required. If the SBVS is inoperable for any other reason, concurrently implement ACTION-b and ACTION-c.

b. (1) With one SBVS inoperable in MODE 1, 2, 3, or 4, restore the inoperable system to OPERABLE status within 7 days; otherwise, be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

(2) With both SBVS inoperable in MODE 1, 2, 3, or 4, immediately enter LCO 3.0.3.

c. (1) With one SBVS inoperable in any MODE, restore the inoperable system to OPERABLE status within 7 days; otherwise, suspend movement of recently irradiated fuel assemblies within the Spent Fuel Storage Pool and crane operations with loads over recently irradiated fuel in the Spent Fuel Storage Pool.

(2) With both SBVS inoperable in any MODE, immediately suspend movement of recently irradiated fuel assemblies within the Spent Fuel Storage Pool and crane operations with loads over recently irradiated fuel in the Spent Fuel Storage Pool.

SURVEILLANCE REQUIREMENTS

4.6.6.1 Each Shield Building Ventilation System shall be demonstrated OPERABLE:

a. In accordance with the Surveillance Frequency Control Program by initiating, from the control room, flow through the HEPA filters and charcoal adsorbers and verifying that the system operates for at least 10 hours with the heaters on.

b. In accordance with the Surveillance Frequency Control Program or (1) after any structural maintenance on the HEPA filter or charcoal adsorber housings, or (2) following painting, fire, or chemical release in any ventilation zone communicating with the system by:

1. Performing a visual examination of SBVS in accordance with ASME N510-1989.

SURVEILLANCE REQUIREMENTS (continued)

2. Performing airflow distribution to HEPA filters and charcoal adsorbers in accordance with ASME N510-1989. The distribution shall be ± 20% of the average flow per unit.

c. By performing required shield building ventilation system filter testing in accordance with the Ventilation Filter Testing Program.

d. In accordance with the Surveillance Frequency Control Program by:

1. Verifying that the system starts on a Unit 2 containment isolation signal and on a fuel pool high radiation signal.

2. Verifying that the filter cooling makeup and cross connection valves can be manually opened.

3. Verifying that each system produces a negative pressure of greater than or equal to 2.0 inches WG in the annulus within 99 seconds after a start signal.

4. Verifying that each system achieves a negative pressure of greater than 0.125 inch WG in the fuel storage building after actuation of a fuel storage building high radiation test signal.

CONTAINMENT SYSTEMS

SHIELD BUILDING INTEGRITY

LIMITING CONDITION FOR OPERATION

3.6.6.2 SHIELD BUILDING INTEGRITY shall be maintained.

APPLICABILITY: MODES 1, 2, 3, and 4.

ACTION:

Without SHIELD BUILDING INTEGRITY, restore SHIELD BUILDING INTEGRITY within 24 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

SURVEILLANCE REQUIREMENTS

4.6.6.2 SHIELD BUILDING INTEGRITY shall be demonstrated in accordance with the Surveillance Frequency Control Program by verifying that the door in each access opening is closed except when the access opening is being used for normal transit entry and exit.

PLANT SYSTEMS

AUXILIARY FEEDWATER SYSTEM

LIMITING CONDITION FOR OPERATION

3.7.1.2 At least three independent steam generator auxiliary feedwater pumps and associated flow paths shall be OPERABLE with:

a. Two feedwater pumps, each capable of being powered from separate OPERABLE emergency busses, and

b. One feedwater pump capable of being powered from an OPERABLE steam supply system.

APPLICABILITY: MODES 1, 2, and 3.

ACTION:

a. With one auxiliary feedwater pump inoperable, restore the required auxiliary feedwater pumps to OPERABLE status within 72 hours or be in at least HOT STANDBY within the next 6 hours and in HOT SHUTDOWN within the following 6 hours.

b. With two auxiliary feedwater pumps inoperable be in at least HOT STANDBY within 6 hours and in HOT SHUTDOWN within the following 6 hours.

c. With three auxiliary feedwater pumps inoperable, immediately initiate corrective action to restore at least one auxiliary feedwater pump to OPERABLE status.

d. LCO 3.0.4.b is not applicable.

SURVEILLANCE REQUIREMENTS

4.7.1.2 Each auxiliary feedwater pump shall be demonstrated OPERABLE:

a. In accordance with the Surveillance Frequency Control Program by:

1. Verifying that each valve (manual, power-operated, or automatic) in the flow path that is not locked, sealed, or otherwise secured in position, is in its correct position.

SURVEILLANCE REQUIREMENTS (Continued)

b. In accordance with the Surveillance Frequency Control Program during shutdown by:

1. Verifying that each automatic valve in the flowpath path actuates to its correct position upon receipt of an auxiliary feedwater actuation test signal.

2. Verifying that each pump starts automatically upon receipt of an auxiliary feedwater actuation test signal.

c. Following an extended cold shutdown (30 days or longer) and prior to entering MODE 2, a flow test shall be performed to verify the normal flow path from the condensate storage tank (CST) to the steam generators.

d. By verifying the developed head of each AFW pump at the flow test point is greater than or equal to the required developed head when tested in accordance with the Inservice Testing Program. The provisions of Specification 4.0.4 are not applicable for entry into MODE 3 when testing the steam turbine-driven AFW pump and this Surveillance must be performed within 24 hours after entering MODE 3 and prior to entering MODE 2.

PLANT SYSTEMS

CONDENSATE STORAGE TANK

LIMITING CONDITION FOR OPERATION

3.7.1.3 The condensate storage tank (CST #2) shall be OPERABLE with a contained volume of at least 307,000 gallons.

APPLICABILITY: MODES 1, 2, and 3.

ACTION:

With the condensate storage tank inoperable, within 4 hours restore the CST to OPERABLE status or be in at least HOT STANDBY within the next 6 hours and in HOT SHUTDOWN within the following 6 hours.

SURVEILLANCE REQUIREMENTS

4.7.1.3 The condensate storage tank shall be demonstrated OPERABLE in accordance with the Surveillance Frequency Control Program by verifying the contained water volume is within its limits when the tank is the supply source for the auxiliary feedwater pumps.

PLANT SYSTEMS

ACTIVITY

LIMITING CONDITION FOR OPERATION

3.7.1.4 The specific activity of the secondary coolant system shall be less than or equal to 0.10 microcuries/gram DOSE EQUIVALENT I-131.

APPLICABILITY: MODES 1, 2, 3 and 4.

ACTION:

With the specific activity of the secondary coolant system greater than 0.10 microcuries/gram DOSE EQUIVALENT I-131, be in at least HOT STANDBY within 6 hours and in COLD SHUTDOWN within the following 30 hours.

SURVEILLANCE REQUIREMENTS

4.7.1.4 The specific activity of the secondary coolant system shall be determined to be within the limit by performing sampling and analysis as described in Table 4.7-1.

TABLE 4.7-1

SECONDARY COOLANT SYSTEM SPECIFIC ACTIVITY SAMPLE AND ANALYSIS

TYPE OF MEASUREMENT AND ANALYSIS	SAMPLE AND ANALYSIS FREQUENCY
1. Gross Activity Determination	SFCP
2. Isotopic Analysis for DOSE EQUIVALENT I-131 Concentration	a) 1 per 31 days, whenever the gross activity determination indicates iodine concentrations greater than 10% of the allowable limit. b) 1 per 6 months, whenever the gross activity determination indicates iodine concentrations below 10% of the allowable limit.

PLANT SYSTEMS

ATMOSPHERIC DUMP VALVES

LIMITING CONDITION FOR OPERATION

3.7.1.7 The atmospheric dump and associated block valves shall be OPERABLE with:

a. All atmospheric dump valves in manual control above 15% of RATED THERMAL POWER, and

b. No more than one atmospheric dump valve per steam generator in automatic control below 15% of RATED THERMAL POWER.

APPLICABILITY: MODE 1.

ACTION:

a. With less than one atmospheric dump and associated block valve per steam generator OPERABLE, restore the required atmospheric dump and associated block valve to OPERABLE status within 72 hours, or be in at least HOT STANDBY within the next 6 hours.

b. With more than the permissible number of atmospheric dump valves in automatic control, return the atmospheric dump valves to manual control within 1 hour, or be in at least HOT STANDBY within the next 6 hours.

SURVEILLANCE REQUIREMENTS

4.7.1.7 Each atmospheric dump valve shall be verified to be in the manual operation mode in accordance with the Surveillance Frequency Control Program during operation at $\geq$ 15% of RATED THERMAL POWER.

PLANT SYSTEMS

3/4.7.3 COMPONENT COOLING WATER SYSTEM

LIMITING CONDITION FOR OPERATION

3.7.3 At least two independent component cooling water loops shall be OPERABLE.*

APPLICABILITY: MODES 1, 2, 3, and 4.

ACTION:

With only one component cooling water loop OPERABLE, restore at least two loops to OPERABLE status within 72 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

SURVEILLANCE REQUIREMENTS

4.7.3 At least two component cooling water loops shall be demonstrated OPERABLE:

a. In accordance with the Surveillance Frequency Control Program by verifying that each valve (manual, power-operated or automatic) servicing safety-related equipment that is not locked, sealed, or otherwise secured in position, is in its correct position.

b. In accordance with the Surveillance Frequency Control Program during shutdown by verifying that each automatic valve servicing safety-related equipment actuates to its correct position on an SIAS test signal.

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* When CCW pump 2C is being used to satisfy the requirements of this specification, the alignment of the discharge valves shall be verified to be consistent with the appropriate power supply at least once per 24 hours. Upon receipt of annunciation for improper alignment of the pump 2C motor power in relation to any of its motor-operated discharge valves positions, restore proper system alignment within 2 hours.

PLANT SYSTEMS

3/4.7.4 INTAKE COOLING WATER SYSTEM

LIMITING CONDITION FOR OPERATION

3.7.4 At least two independent intake cooling water loops shall be OPERABLE.*

APPLICABILITY: MODES 1, 2, 3, and 4.

ACTION:

With only one intake cooling water loop OPERABLE, restore at least two loops to OPERABLE status within 72 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

SURVEILLANCE REQUIREMENTS

4.7.4 At least two intake cooling water loops shall be demonstrated OPERABLE:

a. In accordance with the Surveillance Frequency Control Program by verifying that each valve (manual, power-operated, or automatic) servicing safety-related equipment that is not locked, sealed or otherwise secured in position, is in its correct position.

b. In accordance with the Surveillance Frequency Control Program during shutdown, by verifying that each automatic valve servicing safety-related equipment actuates to its correct position on a SIAS test signal.

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* When ICW pump 2C is being used to satisfy the requirements of this specification, the alignment of the discharge valves must be verified to be consistent with the appropriate power supply at least once per 24 hours.

PLANT SYSTEMS

3/4.7.5 ULTIMATE HEAT SINK

LIMITING CONDITION FOR OPERATION

3.7.5.1 The ultimate heat sink shall be OPERABLE with:

a. Cooling water from the Atlantic Ocean providing a water level above –10.5 feet elevation, Mean Low Water, at the plant intake structure, and

b. Two OPERABLE valves in the barrier dam between Big Mud Creek and the intake structure.

APPLICABILITY: At all times.

ACTION:

a. With the water level requirement of the above specification not satisfied, be in at least HOT STANDBY within 6 hours and provide cooling water from Big Mud Creek within the next 12 hours.

b. With one isolation valve in the barrier dam between Big Mud Creek and the intake structure inoperable, restore the inoperable valve to OPERABLE status within 72 hours, or within the next 24 hours, install a temporary flow barrier and open the barrier dam isolation valve. The availability of the onsite equipment capable of removing the barrier shall be verified at least once per 7 days thereafter.

c. With both of the isolation valves in the barrier dam between the intake structure and Big Mud Creek inoperable, within 24 hours, either:

1. Install both temporary flow barriers and manually open both barrier dam isolation valves. The availability of the onsite equipment capable of removing the barriers shall be verified at least once per 7 days thereafter, or

2. Be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

SURVEILLANCE REQUIREMENTS

4.7.5.1.1 The ultimate heat sink shall be determined OPERABLE in accordance with the Surveillance Frequency Control Program by verifying the average water level to be within the limits.

4.7.5.1.2 The isolation valves in the barrier dam between the intake structure and Big Mud Creek shall be demonstrated OPERABLE in accordance with the Surveillance Frequency Control Program by cycling each valve through at least one complete cycle of full travel.

SURVEILLANCE REQUIREMENTS

4.7.7 Each control room emergency air cleanup system shall be demonstrated OPERABLE:

a. In accordance with the Surveillance Frequency Control Program by verifying that the control room air temperature is $\leq$ 120°F.

b. In accordance with the Surveillance Frequency Control Program by (1) initiating, from the control room, flow through the HEPA filters and charcoal adsorbers and verifying that the system operates for at least 15 minutes and (2) starting, unless already operating each air conditioning unit and verifying that it operates for at least 8 hours.

c. By performing required control room emergency air cleanup system filter testing in accordance with the Ventilation Filter Testing Program.

SURVEILLANCE REQUIREMENTS (Continued)

d. In accordance with the Surveillance Frequency Control Program by:

1. Verifying that on a containment isolation test signal from Unit 2, the system automatically switches into a recirculation mode of operation with flow through the HEPA filters and charcoal adsorber banks.

2. Verifying that on a containment isolation test signal from Unit 1 the system automatically switches into a recirculation mode of operation with flow through the HEPA filters and charcoal adsorber banks.

e. By performing required Control Room Envelope unfiltered air inleakage testing in accordance with the Control Room Envelope Habitability Program.

PLANT SYSTEMS

3/4.7.8 ECCS AREA VENTILATION SYSTEM

LIMITING CONDITION FOR OPERATION

3.7.8 Two independent ECCS area ventilation systems shall be OPERABLE.

APPLICABILITY: MODES 1, 2, 3, and 4.

ACTION:

With one ECCS area ventilation system inoperable, restore the inoperable system to OPERABLE status within 7 days or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

SURVEILLANCE REQUIREMENTS

4.7.8 Each ECCS area ventilation system shall be demonstrated OPERABLE:

a. In accordance with the Surveillance Frequency Control Program by initiating from the control room and verifying that the system operates for at least 15 minutes.

b. By performing required ECCS area ventilation system filter testing in accordance with the Ventilation Filter Testing Program.

c. In accordance with the Surveillance Frequency Control Program by verifying that the system starts on a safety injection actuation test signal.

PLANT SYSTEMS

3/4.7.10 SEALED SOURCE CONTAMINATION

LIMITING CONDITION FOR OPERATION

3.7.10 Each sealed source containing radioactive material either in excess of 100 microcuries of beta and/or gamma emitting material or 5 microcuries of alpha emitting material shall be free of greater than or equal to 0.005 microcuries of removable contamination.

APPLICABILITY: At all times.

ACTION:

a. With a sealed source having removable contamination in excess of the above limit, immediately withdraw the sealed source from use and either:

1. Decontaminate and repair the sealed source, or

2. Dispose of the sealed source in accordance with Commission Regulations.

b. The provisions of Specification 3.0.3 are not applicable.

SURVEILLANCE REQUIREMENTS

4.7.10.1 Test Requirements – Each sealed source shall be tested for leakage and/or contamination by:

a. The licensee, or

b. Other persons specifically authorized by the Commission or an Agreement State.

The test method shall be a detection sensitivity of at least 0.005 microcuries per test sample.

4.7.10.2 Test Frequencies – Each category of sealed sources (excluding startup sources and fission detectors previously subjected to core flux) shall be tested at the frequencies described below.

a. Sources in use – In accordance with the Surveillance Frequency Control Program for all sealed sources containing radioactive material:

1. With a half-life greater than 30 days (excluding Hydrogen 3), and

2. In any form other than gas.

ACTION: (Continued)

d. With two of the required offsite A.C. circuits inoperable, restore one of the inoperable offsite sources to OPERABLE status within 24 hours or be in at least HOT STANDBY within the next 6 hours. Following restoration of one offsite source, follow ACTION Statement a. with the time requirement of that ACTION Statement based on the time of the initial loss of the remaining inoperable offsite A.C. circuit.

e. With two of the above required diesel generators inoperable, demonstrate the OPERABILITY of two offsite A.C. circuits by performing Surveillance Requirement 4.8.1.1.1.a within 1 hour and at least once per 8 hours thereafter; restore one of the inoperable diesel generators to OPERABLE status within 2 hours or be in the at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours. Following restoration of one diesel generator unit, follow ACTION Statement b. with the time requirement of that ACTION Statement based on the time of initial loss of the remaining inoperable diesel generator.

f. With one Unit 2 startup transformer (2A or 2B) inoperable and with a Unit 1 startup transformer (1A or 1B) connected to the same A or B offsite power circuit and administratively available to both units, then should Unit 1 require the use of the startup transformer administratively available to both units, Unit 2 shall demonstrate the operability of the remaining A.C. sources by performing Surveillance Requirement 4.8.1.1.1a. within 1 hour and at least once per 8 hours thereafter. Restore the inoperable startup transformer to OPERABLE status within 72 hours or be in at least HOT STANDBY within the next 6 hours and COLD SHUTDOWN within the following 30 hours.

g. LCO 3.0.4.b is not applicable to diesel generators.

SURVEILLANCE REQUIREMENTS

4.8.1.1.1 Each of the above required independent circuits between the offsite transmission network and the onsite Class 1E distribution system shall be:

a. Determined OPERABLE in accordance with the Surveillance Frequency Control Program by verifying correct breaker alignments, indicated power availability; and

b. Demonstrated OPERABLE in accordance with the Surveillance Frequency Control Program by transferring (manually and automatically) unit power supply from the normal circuit to the alternate circuit.

4.8.1.1.2 Each diesel generator shall be demonstrated OPERABLE:

a. In accordance with the Surveillance Frequency Control Program by:

SURVEILLANCE REQUIREMENTS (Continued)

1. Verifying fuel level in the engine-mounted fuel tank,

2. Verifying the fuel level in the fuel storage tank,

3. Verifying the fuel transfer pump can be started and transfers fuel from the storage system to the engine-mounted tank,

4. Verifying the diesel starts from ambient condition and accelerates to approximately 900 rpm in less than or equal to 10 seconds**. The generator voltage and frequency shall be 4160 $\pm$ 420 volts and 60 $\pm$ 1.2 Hz within 10 seconds after the start signal**. The diesel generator shall be started for this test by using one of the following signals:

   a) Manual/Local.

   b) Simulated loss-of-offsite power by itself.

   c) Simulated loss-of-offsite power in conjunction with an ESF actuation test signal.

   d) An ESF actuation test signal by itself.

5. Verifying the generator is synchronized, loaded to greater than or equal to 3685 kW in accordance with the manufacturer's recommendations, and operates within a load band of 3450 to 3685 kW*** for at least an additional 60 minutes, and

6. Verifying the diesel generator is aligned to provide standby power to the associated emergency busses.

b. By removing accumulated water:

   1. From the engine-mounted fuel tank in accordance with the Surveillance Frequency Control Program and after each occasion when the diesel is operated for greater than 1 hour, and

   2. From the storage tank in accordance with the Surveillance Frequency Control Program.

** The diesel generator start (10 sec.) from ambient conditions shall be performed in accordance with the Surveillance Frequency Control Program in these surveillance tests. All other diesel generator starts for purposes of this surveillance testing may be preceded by an engine prelube period and may also include warmup procedures (e.g., gradual acceleration) as recommended by the manufacturer so that mechanical stress and wear on the diesel generator is minimized.

*** The indicated load band is meant as guidance to avoid routine overloading. Variations in loads in excess of the band due to changing bus loads shall not invalidate this test.

SURVEILLANCE REQUIREMENTS (continued)

c. 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.

d. DELETED

e. In accordance with the Surveillance Frequency Control Program during shutdown by:

1. DELETED

2. Verifying generator capability to reject a load of greater than or equal to 453 kW while maintaining voltage at 4160 $\pm$ 420 volts and frequency at 60 $\pm$ 1.2 Hz.

3. Verifying the generator capability to reject a load of 3685 kW without tripping. The generator voltage shall not exceed 4784 volts during and following the load rejection.

SURVEILLANCE REQUIREMENTS (Continued)

12. Verifying that the automatic load sequence timers are operable with the interval between each load block within ±1 second of its design interval.

13. Performing Surveillance Requirement 4.8.1.1.2a.4 within 5 minutes of shutting down the diesel generator after it has operated within a load band of 3450 kW to 3685 kW# for at least 2 hours or until operating temperatures have stabilized.

f. In accordance with the Surveillance Frequency Control Program or after any modifications which could affect diesel generator interdependence by starting**** the diesel generators simultaneously, during shutdown, and verifying that the diesel generators accelerate to approximately 900 rpm in less than or equal to 10 seconds.

g. In accordance with the Surveillance Frequency Control Program by:

1. Draining each fuel oil storage tank, removing the accumulated sediment and cleaning the tank using a sodium hypochlorite solution, and

2. Performing a pressure test of those portions of the diesel fuel oil system designed to Section III, subsection ND of the ASME Code in accordance with the Inservice Inspection Program.

4.8.1.1.3 Reports – (Not Used).

4.8.1.1.4 The Class 1E underground cable system shall be demonstrated OPERABLE within 30 days after the movement of any loads in excess of 80% of the ground surface design basis load over the cable ducts by pulling a mandrel with a diameter of at least 80% of the duct's inside diameter through a duct exposed to the maximum loading (duct nearest the ground's surface) and verifying that the duct has not been damaged.

This band is meant as guidance to avoid routine overloading of the engine. Variations in load in excess of this band due to changing bus loads shall not invalidate this test.

**** This test may be conducted in accordance with the manufacturer's recommendations concerning engine prelube period.

ELECTRICAL POWER SYSTEMS

3/4.8.2 D.C. SOURCES

OPERATING

LIMITING CONDITION FOR OPERATION

3.8.2.1 As a minimum the following D.C. electrical sources shall be OPERABLE:

a. 125-volt Battery bank No. 2A and a full capacity charger.

b. 125-volt Battery bank No. 2B and a full capacity charger.

APPLICABILITY: MODES 1, 2, 3, and 4.

ACTION:

a. With one of the required battery banks inoperable, restore the inoperable battery bank to OPERABLE status within 2 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

b. With one of the required full capacity chargers inoperable, demonstrate the OPERABILITY of its associated battery banks by performing Surveillance Requirement 4.8.2.1a.1 within 1 hour, and at least once per 8 hours thereafter. If any Category A limit in Table 4.8-2 is not met, declare the battery inoperable.

SURVEILLANCE REQUIREMENTS

4.8.2.1 Each 125-volt battery bank and charger shall be demonstrated OPERABLE:

a. In accordance with the Surveillance Frequency Control Program by verifying that:

1. The parameters in Table 4.8-2 meet the Category A limits, and

2. The total battery terminal voltage is greater than or equal to 129-volts on float charge.

SURVEILLANCE REQUIREMENTS (Continued)

b. In accordance with the Surveillance Frequency Control Program and within 7 days after a battery discharge with battery terminal voltage below 110 volts, or battery overcharge with battery terminal voltage above 150 volts, by verifying that:

1. The parameters in Table 4.8-2 meet the Category B limits,

2. There is no visible corrosion at either terminals or connectors, and

3. The average electrolyte temperature of 10% (60 cells total) of connected cells is above 50°F.

c. In accordance with the Surveillance Frequency Control Program by verifying that:

1. The cells, cell plates, and battery racks show no visual indication of physical damage or abnormal deterioration,

2. The cell-to-cell and terminal connections are clean, tight, and coated with anti-corrosion material,

3. Battery cell inter-connection resistance values are maintained at the values below:

Battery Inter-Connection Measurement Limits		
Battery Inter-Connection Type	Maximum Individual Inter-Connection Resistance	Maximum Average Inter-Connection Resistance [Battery Bank*]
Inter-Cell	≤ 150 x 10-6 ohms	≤ 50 x 10-6 ohms
Inter-Tier	≤ 200 x 10-6 ohms	
Inter-Rack	≤ 200 x 10-6 ohms	
Output Terminal	≤ 150 x 10-6 ohms	

* The battery bank average interconnection resistance limit is the average of all inter-cell, inter-tier, inter-rack and output terminal connection resistance measurements for all series connections in the battery string

and,

4. The battery charger will supply at least 300 amperes at 140 volts for at least 6 hours.

SURVEILLANCE REQUIREMENTS (Continued)

d. In accordance with the Surveillance Frequency Control Program, during shutdown, by verifying that the battery capacity is adequate to supply and maintain in OPERABLE status all of the actual or simulated emergency loads for the design duty cycle when the battery is subjected to a battery service test.

e. In accordance with the Surveillance Frequency Control Program, during shutdown, by verifying that the battery capacity is at least 80% of the manufacturer's rating when subjected to a performance discharge test. This performance discharge test may be performed in lieu of the battery service test required by Surveillance Requirement 4.8.2.1d.

f. Annual performance discharge tests of battery capacity shall be given to any battery that shows signs of degradation or has reached 85% of the service life expected for the application. Degradation is indicated when the battery capacity drops more than 10% of rated capacity from its average on previous performance tests, or is below 90% of the manufacturer's rating.

ELECTRICAL POWER SYSTEMS

ACTION:

a. With one of the required trains of A.C. Emergency busses not fully energized, re-energize the train within 8 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

b. With one A.C. Instrument Bus either not energized from its associated inverter, or with the inverter not connected to its associated D.C. Bus: (1) re-energize the A.C. Instrument Bus within 2 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours and (2) re-energize the A.C. Instrument Bus from its associated inverter connected to its associated D.C. Bus within 24 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

c. With one D.C. Bus not energized from its associated Battery Bank, re-energize the D.C. Bus from its associated Battery Bank within 2 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

SURVEILLANCE REQUIREMENTS

4.8.3.1 The specified busses shall be determined energized in the required manner in accordance with the Surveillance Frequency Control Program by verifying correct breaker alignment and indicated voltage on the busses.

ELECTRICAL POWER SYSTEMS

ONSITE POWER DISTRIBUTION

SHUTDOWN

LIMITING CONDITION FOR OPERATION

3.8.3.2 As a minimum, the following electrical busses shall be energized and in the specified manner:

a. One train of A.C. emergency busses consisting of one 4160 volt and two 480 volt A.C. emergency busses.

b. Two 120 volt A.C. Instrument Busses energized from their associated inverters connected to their respective D.C. busses.

c. One 125 volt D.C. bus energized from its associated battery bank.

APPLICABILITY: MODES 5 and 6.

ACTION:

With any of the above required electrical busses not energized in the required manner, immediately suspend all operations involving CORE ALTERATIONS, operations involving positive reactivity additions that could result in loss of required SHUTDOWN MARGIN or boron concentration, or movement of irradiated fuel, initiate corrective action to energize the required electrical busses in the specified manner as soon as possible, and within 8 hours depressurize and vent the RCS through a 3.58 square inch vent.

SURVEILLANCE REQUIREMENTS

4.8.3.2 The specified busses shall be determined energized in the required manner in accordance with the Surveillance Frequency Control Program by verifying correct breaker alignment and indicated voltage on the busses.

ELECTRICAL POWER SYSTEMS

3/4.8.4 ELECTRICAL EQUIPMENT PROTECTIVE DEVICES

MOTOR-OPERATED VALVES THERMAL OVERLOAD PROTECTION BYPASS DEVICES

LIMITING CONDITION FOR OPERATION

3.8.4 The thermal overload protection bypass devices, integral with the motor starter, of each valve listed in Table 3.8-1 shall be OPERABLE.

APPLICABILITY: Whenever the motor-operated valve is required to be OPERABLE.

ACTION:

With one or more of the thermal overload protection bypass devices inoperable, declare the affected valve(s) inoperable and apply the appropriate ACTION Statement(s) for the affected valve(s).

SURVEILLANCE REQUIREMENTS

4.8.4 The above required thermal overload protection bypass devices shall be demonstrated OPERABLE.

a. In accordance with the Surveillance Frequency Control Program by visually verifying the bypass switch to be in the bypass position for those thermal overload devices which are either:

   1. Continuously bypassed and temporarily placed in force only when the valve motors are undergoing periodic or maintenance testing, or

   2. Normally in force during plant operation and bypassed under accident conditions.

b. In accordance with the Surveillance Frequency Control Program by the performance of a CHANNEL CALIBRATION of a representative sample of at least 25% of:

   1. All thermal overload devices which are not bypassed, such that each non-bypassed device is calibrated at least once per 6 years.

   2. All thermal overload devices which are continuously bypassed and temporarily placed in force only when the valve motors are undergoing periodic or maintenance testing, and thermal overload devices normally in force and bypassed under accident conditions such that each thermal overload is calibrated and each valve is cycled through at least one complete cycle of full travel with the motor-operator when the thermal overload is OPERABLE and not bypassed, at least once per 6 years.

3/4.9 REFUELING OPERATIONS

3/4.9.1 BORON CONCENTRATION

LIMITING CONDITION FOR OPERATION

3.9.1 With the reactor vessel head closure bolts less than fully tensioned or with the head removed, the boron concentration of all filled portions of the Reactor Coolant System and the refueling cavity shall be maintained within the limit specified in the COLR.

APPLICABILITY: MODE 6*.

ACTION:

With the requirements of the above specification not satisfied, immediately suspend all operations involving CORE ALTERATIONS or positive reactivity changes and initiate and continue boration at greater than or equal to 40 gpm of a solution containing 1900 ppm boron or greater to restore boron concentration to within limits.

SURVEILLANCE REQUIREMENTS

4.9.1.1 The boron concentration limit shall be determined prior to:

a. Removing or unbolting the reactor vessel head, and

b. Withdrawal of any full length CEA in excess of 3 feet from its fully inserted position within the reactor pressure vessel.

4.9.1.2 The boron concentration of the reactor coolant system and the refueling canal shall be determined by chemical analysis in accordance with the Surveillance Frequency Control Program.

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* The reactor shall be maintained in MODE 6 whenever fuel is in the reactor vessel with the reactor vessel head closure bolts less than fully tensioned or with the head removed.

REFUELING OPERATIONS

3/4.9.2 INSTRUMENTATION

LIMITING CONDITION FOR OPERATION

3.9.2 As a minimum, two startup range neutron flux monitors shall be OPERABLE and operating, each with continuous visual indication in the control room and one with audible indication in the containment and control room.

APPLICABILITY: MODE 6.

ACTION:

a. With one of the above required monitors inoperable or not operating, immediately suspend all operations involving CORE ALTERATIONS or operations that would cause introduction into the RCS, coolant with boron concentration less than required to meet the boron concentration of Technical Specification 3.9.1.

b. With both of the above required monitors inoperable or not operating, determine the boron concentration of the Reactor Coolant System at least once per 12 hours.

c. The provisions of Specification 3.0.3 are not applicable.

SURVEILLANCE REQUIREMENTS

4.9.2 Each startup range neutron flux monitor shall be demonstrated OPERABLE by performance of:

a. A CHANNEL CHECK in accordance with the Surveillance Frequency Control Program,

b. A CHANNEL FUNCTIONAL TEST within 8 hours prior to the initial start of CORE ALTERATIONS, and

c. A CHANNEL FUNCTIONAL TEST in accordance with the Surveillance Frequency Control Program.

REFUELING OPERATIONS

3/4.9.4 CONTAINMENT BUILDING PENETRATIONS

LIMITING CONDITION FOR OPERATION

3.9.4 The containment building penetrations shall be in the following status:

a. The equipment door closed and held in place by a minimum of four bolts.

b. A minimum of one door in each airlock is closed.

c. Each penetration providing direct access from the containment atmosphere to the outside atmosphere shall be either:

1. Closed by an isolation valve, blind flange, or manual valve, or

2. Be capable of being closed by an OPERABLE automatic containment isolation valve.

Note: Penetration flow path(s) providing direct access from the containment atmosphere to the outside atmosphere may be unisolated under administrative controls.

APPLICABILITY: During movement of recently irradiated fuel within the containment.

ACTION:

With the requirements of the above specification not satisfied, immediately suspend all operations involving movement of recently irradiated fuel in the containment building.

SURVEILLANCE REQUIREMENTS

4.9.4 Each of the above required containment building penetrations shall be determined to be either in its closed/isolated condition or capable of being closed by an OPERABLE automatic containment isolation valve within 72 hours prior to the start of and in accordance with the Surveillance Frequency Control Program during movement of recently irradiated fuel in the containment building by:

a. Verifying the penetrations are in their closed/isolated condition, or

b. Testing of containment isolation valves per the applicable portions of Specification 4.6.3.2.

REFUELING OPERATIONS

3/4.9.5 COMMUNICATIONS

LIMITING CONDITION FOR OPERATION

3.9.5 Direct communications shall be maintained between the control room and personnel at the refueling station.

APPLICABILITY: During CORE ALTERATIONS.

ACTION:

When direct communications between the control room and personnel at the refueling station cannot be maintained, suspend all CORE ALTERATIONS.

SURVEILLANCE REQUIREMENTS

4.9.5 Direct communications between the control room and personnel at the refueling station shall be demonstrated within 1 hour prior to the start of and in accordance with the Surveillance Frequency Control Program during CORE ALTERATIONS.

REFUELING OPERATIONS

3/4.9.8 SHUTDOWN COOLING AND COOLANT CIRCULATION

HIGH WATER LEVEL

LIMITING CONDITION FOR OPERATION

3.9.8.1 At least one shutdown cooling loop shall be OPERABLE and in operation.*

APPLICABILITY: MODE 6 when the water level above the top of the reactor pressure vessel flange is greater than or equal to 23 feet.

ACTION:

With no shutdown cooling loop OPERABLE and in operation, suspend all operations involving an increase in reactor decay heat load or operations that would cause introduction into the RCS, coolant with boron concentration less than required to meet the boron concentration of Technical Specification 3.9.1 and within 1 hour initiate corrective action to return the required shutdown cooling loop to OPERABLE and operating status as soon as possible. Close all containment penetrations providing direct access from the containment atmosphere to the outside atmosphere within 4 hours.

SURVEILLANCE REQUIREMENTS

4.9.8.1 In accordance with the Surveillance Frequency Control Program:

a. At least one shutdown cooling loop shall be verified to be in operation

b. The total flow rate of reactor coolant to the reactor pressure vessel shall be verified to be greater than or equal to 3000 gpm.**

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* The shutdown cooling loop may be removed from operation for up to 1 hour per 8-hour period during the performance of CORE ALTERATIONS in the vicinity of reactor pressure vessel hot legs, provided no operations are permitted that would cause introduction into the RCS, coolant with boron concentration less than required to meet the SHUTDOWN MARGIN of Technical Specification 3.9.1.

** The reactor coolant flow rate requirement may be reduced to 1850 gpm if the following conditions are satisfied before the reduced requirement is implemented: the reactor has been determined to have been subcritical for at least 125 hours, the maximum RCS temperature is $\leq$ 117°F, and the temperature of CCW to the shutdown cooling heat exchanger is $\leq$ 87°F.

REFUELING OPERATIONS

LOW WATER LEVEL

LIMITING CONDITION FOR OPERATION

3.9.8.2 Two independent shutdown cooling loops shall be OPERABLE and at least one shutdown cooling loop shall be in operation.**

APPLICABILITY: MODE 6 when the water level above the top of the reactor pressure vessel flange is less than 23 feet.

ACTION:

a. With less than the required shutdown cooling loops OPERABLE, within 1 hour initiate corrective action to return the required loops to OPERABLE status, or to establish greater than or equal to 23 feet of water above the reactor pressure vessel flange, as soon as possible.

b. With no shutdown cooling loop in operation, suspend operations that would cause introduction into the RCS, coolant with boron concentration less than required to meet the boron concentration of Technical Specification 3.9.1 and within 1 hour initiate corrective action to return the required shutdown cooling loop to operation. Close all containment penetrations providing direct access from the containment atmosphere to the outside atmosphere within 4 hours.

SURVEILLANCE REQUIREMENTS

4.9.8.2 In accordance with the Surveillance Frequency Control Program:

a. At least one shutdown cooling loop shall be verified to be in operation.

b. The total flow rate of reactor coolant to the reactor pressure vessel shall be verified to be greater than or equal to 3000 gpm.*

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* The reactor coolant flow rate requirement may be reduced to 1850 gpm if the following conditions are satisfied before the reduced requirement is implemented: the reactor has been determined to have been subcritical for at least 125 hours, the maximum RCS temperature is $\leq$ 117°F, and the temperature of CCW to the shutdown cooling heat exchanger is $\leq$ 87°F.

** One required shutdown cooling loop may be inoperable for up to 2 hours for surveillance testing, provided that the other shutdown cooling loop is OPERABLE and in operation.

REFUELING OPERATIONS

3/4.9.9 CONTAINMENT ISOLATION SYSTEM

LIMITING CONDITION FOR OPERATION

3.9.9 The containment isolation system shall be OPERABLE.

APPLICABILITY: During movement of recently irradiated fuel within containment.

ACTION:

With the containment isolation system inoperable, either suspend all operations involving movement of recently irradiated fuel assemblies within containment or close each of the containment penetrations providing direct access from the containment atmosphere to the outside atmosphere.

SURVEILLANCE REQUIREMENTS

4.9.9 The containment isolation system shall be demonstrated OPERABLE within 72 hours prior to the start of and in accordance with the Surveillance Frequency Control Program during movement of recently irradiated fuel by verifying that containment isolation occurs on manual initiation and on a high radiation test signal from each of the containment radiation monitoring instrumentation channels.

REFUELING OPERATIONS

3/4.9.10 WATER LEVEL – REACTOR VESSEL

LIMITING CONDITION FOR OPERATION

3.9.10 At least 23 feet of water shall be maintained over the top of the reactor pressure vessel flange.

APPLICABILITY: During CORE ALTERATIONS.
During movement of irradiated fuel assemblies within containment.

ACTION:

With the requirements of the above specifications not satisfied, immediately suspend CORE ALTERATIONS and movement of irradiated fuel assemblies within containment, and immediately initiate action to restore refueling cavity water level to within limits.

SURVEILLANCE REQUIREMENTS

4.9.10 The water level shall be determined to be at least its minimum required depth within 2 hours prior to the start of and in accordance with the Surveillance Frequency Control Program thereafter during CORE ALTERATIONS and during movement of irradiated fuel assemblies within containment.

REFUELING OPERATIONS

3/4.9.11 SPENT FUEL STORAGE POOL

LIMITING CONDITION FOR OPERATION

3.9.11 The Spent Fuel Pool shall be maintained with:

a. The fuel storage pool water level greater than or equal to 23 ft over the top of irradiated fuel assemblies seated in the storage racks, and

b. The fuel storage pool boron concentration greater than or equal to 1900 ppm.

APPLICABILITY: Whenever irradiated fuel assemblies are in the spent fuel storage pool.

ACTION:

a. With the water level requirement not satisfied, immediately suspend all movement of fuel assemblies and crane operations with loads in the fuel storage areas and restore the water level to within its limit within 4 hours.

b. With the boron concentration requirement not satisfied, immediately suspend all movement of fuel assemblies in the fuel storage pool and initiate action to restore fuel storage pool boron concentration to within the required limit.

c. The provisions of Specification 3.0.3 are not applicable.

SURVEILLANCE REQUIREMENTS

4.9.11 The water level in the spent fuel storage pool shall be determined to be at least its minimum required depth in accordance with the Surveillance Frequency Control Program when irradiated fuel assemblies are in the fuel storage pool.

4.9.11.1 Verify the fuel storage pool boron concentration is within limit in accordance with the Surveillance Frequency Control Program.

3/4.10 SPECIAL TEST EXCEPTIONS

3/4.10.1 SHUTDOWN MARGIN

LIMITING CONDITION FOR OPERATION

3.10.1 The SHUTDOWN MARGIN requirement of Specification 3.1.1.1 may be suspended for measurement of CEA worth, MTC, and SHUTDOWN MARGIN provided reactivity equivalent to at least the highest estimated CEA worth is available for trip insertion from OPERABLE CEA(s).

APPLICABILITY: MODES 2 and 3*.

ACTION:

a. With any full-length CEA not fully inserted and with less than the above reactivity equivalent available for trip insertion, immediately initiate and continue boration at greater than or equal to 40 gpm of a solution containing greater than or equal to 1900 ppm boron or its equivalent until the SHUTDOWN MARGIN required by Specification 3.1.1.1 is restored.

b. With all full-length CEAs inserted and the reactor subcritical by less than the above reactivity equivalent, immediately initiate and continue boration at greater than or equal to 40 gpm of a solution containing greater than or equal to 1900 ppm boron or its equivalent until the SHUTDOWN MARGIN required by Specification 3.1.1.1 is restored.

SURVEILLANCE REQUIREMENTS

4.10.1.1 The position of each full-length CEA required either partially or fully withdrawn shall be determined in accordance with the Surveillance Frequency Control Program.

4.10.1.2 Each CEA not fully inserted shall be demonstrated capable of full insertion when tripped from at least the 50% withdrawn position within 7 days prior to reducing the SHUTDOWN MARGIN to less than the limits of Specification 3.1.1.1.

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* Operation in MODE 3 shall be limited to 6 consecutive hours.

SPECIAL TEST EXCEPTIONS

3/4.10.2 MODERATOR TEMPERATURE COEFFICIENT, GROUP HEIGHT, INSERTION AND POWER DISTRIBUTION LIMITS

LIMITING CONDITION FOR OPERATION

3.10.2 The moderator temperature coefficient, group height, insertion and power distribution limits of Specifications 3.1.1.4, 3.1.3.1, 3.1.3.5, 3.1.3.6, 3.2.3 and 3.2.4 may be suspended during performance of PHYSICS TESTS provided:

a. The THERMAL POWER is restricted to the test power plateau which shall not exceed 85% of RATED THERMAL POWER, and

b. The limits of Specification 3.2.1 are maintained and determined as specified in Specification 4.10.2.2 below.

APPLICABILITY: MODES 1 and 2.

ACTION:

With any of the limits of Specification 3.2.1 being exceeded while the requirements of Specifications 3.1.1.4, 3.1.3.1, 3.1.3.5, 3.1.3.6, 3.2.3 and 3.2.4 are suspended, either:

a. Reduce THERMAL POWER sufficiently to satisfy the requirements of Specification 3.2.1, or

b. Be in HOT STANDBY within 6 hours.

SURVEILLANCE REQUIREMENTS

4.10.2.1 The THERMAL POWER shall be determined in accordance with the Surveillance Frequency Control Program during PHYSICS TESTS in which the requirements of Specifications 3.1.1.4, 3.1.3.1,3.1.3.5, 3.1.3.6, 3.2.3, or 3.2.4 are suspended and shall be verified to be within the test power plateau.

4.10.2.2 The linear heat rate shall be determined to be within the limits of Specification 3.2.1 by monitoring it continuously with the Incore Detector Monitoring System pursuant to the requirements of Specifications 4.2.1.4 during PHYSICS TESTS above 5% of RATED THERMAL POWER in which the requirements of Specifications 3.1.1.4, 3.1.3.1, 3.1.3.5, 3.1.3.6, 3.2.3, or 3.2.4 are suspended.

SPECIAL TEST EXCEPTIONS

3/4.10.3 REACTOR COOLANT LOOPS

LIMITING CONDITION FOR OPERATION

3.10.3 The limitations of Specification 3.4.1 and noted requirements of Tables 2.2-1 and 3.3-1 may be suspended during the performance of startup and PHYSICS TESTS, provided:

a. The THERMAL POWER does not exceed 5% of RATED THERMAL POWER, and

b. The reactor trip setpoints of the OPERABLE power level channels are set at less than or equal to 20% of RATED THERMAL POWER.

APPLICABILITY: During startup and PHYSICS TESTS.

ACTION:

With the THERMAL POWER greater then 5% of RATED THERMAL POWER, immediately trip the reactor.

SURVEILLANCE REQUIREMENTS

4.10.3.1 The THERMAL POWER shall be determined to be less than or equal to 5% of RATED THERMAL POWER in accordance with the Surveillance Frequency Control Program during startup and PHYSICS TESTS.

4.10.3.2 Each wide range logarithmic and power level neutron flux monitoring channel shall be subjected to a CHANNEL FUNCTIONAL TEST within 12 hours prior to initiating startup and PHYSICS TESTS.

RADIOACTIVE EFFLUENTS

GAS STORAGE TANKS

LIMITING CONDITION FOR OPERATION

3.11.2.6 The quantity of radioactivity contained in each gas storage tank shall be limited to less than or equal to 165,000 curies noble gases (considered as Xe-133).

APPLICABILITY: At all times.

ACTION:

a. With the quantity of radioactive material in any gas storage tank exceeding the above limit, immediately suspend all additions of radioactive material to the tank.

b. The provisions of Specification 3.0.3 are not applicable.

SURVEILLANCE REQUIREMENTS

4.11.2.6 The quantity of radioactive material contained in each gas storage tank shall be determined to be within the above limit in accordance with the Surveillance Frequency Control Program when radioactive materials are being added to the tank when reactor coolant system activity exceeds 518.9 µCi/gram DOSE EQUIVALENT XE-133.

q. Surveillance Frequency Control Program

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

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

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

c. The provisions of Surveillance Requirements 4.0.2 and 4.0.3 are applicable to the frequencies established in the Surveillance Frequency Control Program.

6.9 REPORTING REQUIREMENTS

ROUTINE REPORTS

6.9.1 In addition to the applicable reporting requirements of Title 10, Code of Federal Regulations, the following reports shall be submitted to the NRC.

STARTUP REPORT

6.9.1.1 A summary report of plant startup and power escalation testing shall be submitted following (1) receipt of an operating license, (2) amendment to the license involving a planned increase in power level, (3) installation of fuel that has a different design or has been manufactured by a different fuel supplier; and (4) modifications that may have significantly altered the nuclear, thermal or hydraulic performance of the plant.

6.9.1.2 The startup report shall address each of the tests identified in the FSAR and shall include a description of the measured values of the operating conditions or characteristics obtained during the test program and a comparison of these values with design predictions and specifications. Any corrective actions that were required to obtain satisfactory operation shall also be described. Any additional specific details required in license conditions based on other commitments shall be included in this report.

6.9.1.3 Startup reports shall be submitted within (1) 90 days following completion of the startup test program, (2) 90 days following resumption or commencement of commercial power operation, or (3) 9 months following initial criticality, whichever is earliest. If the Startup Report does not cover all three events (i.e., initial criticality, completion of startup test program, and resumption or commencement of commercial operation), supplementary reports shall be submitted at least every three months until all three events have been completed.

ANNUAL REPORTS [1/]

6.9.1.4 Annual reports covering the activities of the unit as described below for the previous calendar year shall be submitted prior to March 1 of each year. The initial report shall be submitted prior to March 1 of the year following initial criticality.

6.9.1.5 Reports required on an annual basis shall include the results of specific activity analysis in which the primary coolant exceeded the limits of Specification 3.4.8. The following information shall be included: (1) Reactor power history starting 48 hours prior to the first sample in which the limit was exceeded; (2) Results of the last isotopic analysis for radioiodine performed prior to exceeding the limit, results of analysis while the limit was exceeded and results of one analysis after the radioiodine activity was reduced to less than the limit. Each result should include date and time of sampling and the radioiodine concentrations; (3) Clean-up system flow history starting 48 hours prior to the first sample in which the limit was exceeded; (4) Graph of the I-131 concentration and one other radioiodine isotope concentration in microcuries per gram as a function of time for the duration of the specific activity above the steady-state level; and (5) The time duration when the specific activity of the primary coolant exceeded the radioiodine limit.

MONTHLY OPERATING REPORTS

6.9.1.6 Deleted

1/ A single submittal may be made for a multiple unit station. The submittal should combine those sections that are common to all units at the station.

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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION FOR AMENDMENT NO. 223 TO RENEWED FACILITY OPERATING LICENSE NO. DPR-67 AND AMENDMENT NO. 173 TO RENEWED FACILITY OPERATING LICENSE NO. NPF-16 FLORIDA POWER & LIGHT COMPANY, ET AL. ST. LUCIE PLANT, UNIT NOS. 1 AND 2 DOCKET NOS. 50-355 and 50-389

1.0 INTRODUCTION

By application dated February 20, 2014, as supplemented by letters dated December 11, 2014, and January 13, January 28, April 18, and May 19, 2015,[1] Florida Power & Light Company, et al. (the licensee), requested changes to the Technical Specifications (TSs) for the St. Lucie Plant, Unit Nos. 1 and 2 (St. Lucie 1 and 2), which are contained in Appendix A of Renewed Facility Operating License Nos. DPR-67 and NPF-16. The licensee requested to revise St. Lucie 1 and 2 TSs by relocating specific surveillance requirement (SR) frequencies to a licensee-controlled program. The licensee requested to revise the TSs to require that changes to such surveillance frequencies will be made in accordance with Nuclear Energy Institute (NEI) 04-10, Revision 1, "Risk-Informed Technical Specifications Initiative 5b, Risk-Informed Method for Control of Surveillance Frequencies."[2] The requested change is the adoption of the U.S. Nuclear Regulatory Commission (NRC)-approved Technical Specification Task Force (TSTF) Standard Technical Specifications (STSs) Change, TSTF-425, Revision 3, "Relocate Surveillance Frequencies to Licensee Control – RITSTF [Risk Informed TSTF] Initiative 5b."[3] The *Federal Register* (FR) notice published on July 6, 2009 (74 FR 31996), announced the availability of the TSTF.

By electronic mail (e-mail) dated November 17, 2014, and December 19, 2014,[4] the NRC requested additional information from the licensee. By letters dated December 11, 2014, and January 13, 2015, the licensee responded to these requests. These letters provided clarifying information that did not expand the scope of the application and did not change the NRC staff's original proposed no significant hazards consideration (NSHC) determination, as published in the FR on July 22, 2014 (79 FR 44550).

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[1] Agencywide Documents Access and Management System (ADAMS) Accession Nos. ML14070A087, ML14349A333, ML15029A497, ML15042A122, ML15119A219, and ML15142A413, respectively.
[2] ADAMS Accession No. ML071360456.
[3] ADAMS Accession No. ML090850642.
[4] ADAMS Accession Nos. ML14322A925 and ML14355A000, respectively.

By letter dated January 28, 2015, the licensee supplemented its amendment request with a proposed change that expanded the scope of the request. Therefore, the NRC published a second proposed NSHC determination in the FR on March 3, 2015 (80 FR 11477), which superseded the notice dated July 22, 2014 (79 FR 44550). The licensee's supplements dated April 18, 2015, and May 19, 2015, provided clarifying information that did not expand the scope of the submittal and did not change the NRC staff's proposed NSHC determination, as published in the notice dated March 3, 2015 (80 FR 11477).

2.0 REGULATORY EVALUATION

2.1 Description of the Proposed Changes

The licensee proposed to modify the St. Lucie 1 and 2 TSs by relocating specific surveillance frequencies to a licensee-controlled program (i.e., the Surveillance Frequency Control Program (SFCP)) in accordance with NEI 04-10, Revision 1. The licensee stated that the proposed change is consistent with the adoption of NRC-approved TSTF-425, Revision 3. When implemented, TSTF-425 relocates most periodic frequencies of TS surveillances to the SFCP and provides requirements for the new program in the Administrative Controls section of the TSs. All surveillance frequencies can be relocated except the following:

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

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

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

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

The licensee proposed to add the SFCP to TSs Section 6.0, "Administrative Controls," Subsection 6.8, "Procedures and Programs." The SFCP describes the requirements for controlling changes to the relocated surveillance frequencies. The TS Bases for each affected surveillance would be revised to state that the frequency is controlled under the SFCP. Some SR TS Bases do not contain a discussion of the frequency. The proposed TS Bases changes revise only those TS Bases that currently discuss surveillance frequencies. The existing TS Bases information describing the basis for the surveillance frequencies will be relocated to the SFCP. The proposed changes to the Administrative Controls section of the TSs to incorporate the SFCP include a specific reference to NEI 04-10, Revision 1, as the basis for making any changes to the surveillance frequencies once they are relocated out of the TSs.

In a letter dated September 19, 2007,[5] the NRC staff approved NEI Topical Report (TR) NEI 04-10, Revision 1, as acceptable for referencing in licensing actions to the extent specified and under the limitations delineated in NEI 04-10, Revision 1, and the safety evaluation (SE) providing the basis for NRC acceptance of NEI 04-10, Revision 1.

The licensee proposed other changes and deviations from TSTF-425, which are discussed in Section 3.3 of this SE.

2.2 Applicable Commission Policy Statements

In the "Final Policy Statement: Technical Specifications for Nuclear Power Plants," dated July 22, 1993 (58 FR 39132), the NRC addressed the use of probabilistic safety analysis (PSA, currently referred to as probabilistic risk assessment or PRA) in STSs. In this 1993 publication, the NRC states, 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 [of Title 10 of the *Code of Federal Regulations* (10 CFR), Section 50.36] 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 Technical Specifications, new requirements, and industry proposals for risk-based Technical Specification changes.

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

> The Commission believes that an overall policy on the use of PRA methods in nuclear regulatory activities should be established so that the many potential applications of PRA can be implemented in a consistent and predictable manner

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[5] ADAMS Accession No. ML072570267.

that would promote regulatory stability and efficiency. In addition, the Commission believes that the use of PRA technology in NRC regulatory activities should be increased to the extent supported by the state-of-the-art in PRA methods and data and in a manner that complements the NRC's deterministic approach....

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

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

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

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

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

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

(4) The Commission's safety goals for nuclear power plants and subsidiary numerical objectives are to be used with appropriate consideration of

uncertainties in making regulatory judgments on the need for proposing and backfitting new generic requirements on nuclear power plant licensees.

2.3 Applicable Regulations

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

Paragraph 50.36(c)(3) of 10 CFR states, "Surveillance requirements are requirements relating to test, calibration, or inspection to assure that the necessary quality of systems and components is maintained, that facility operation will be within safety limits, and that the limiting conditions for operation will be met." The FR notice published on July 6, 2009 (74 FR 31996), which announced the availability of TSTF-425, Revision 3, states that the addition of the SFCP to the TSs provides the necessary administrative controls to require that surveillance frequencies relocated to the SFCP are conducted at a frequency to assure that the necessary quality of systems and components is maintained, that facility operation will be within safety limits, and that the limiting conditions for operation will be met. The FR notice also states that changes to surveillance frequencies in the SFCP are made using the methodology contained in NEI 04-10, Revision 1, including qualitative considerations, results of risk analyses, sensitivity studies and any bounding analyses, and recommended monitoring of structures, systems, and components (SSCs), and are required to be documented.

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

2.4 Applicable NRC Regulatory Guides and Review Plans

Regulatory Guide (RG) 1.174, "An Approach for Using Probabilistic Risk Assessment in Risk-Informed Decisions on Plant-Specific Changes to the Licensing Basis," Revision 2,[6] describes an acceptable risk-informed approach for assessing the nature and impact of proposed permanent licensing basis changes by considering engineering issues and applying risk insights. This RG also provides risk acceptance guidelines for evaluating the results of such evaluations.

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[6] ADAMS Accession No. ML100910006.

RG 1.177, "An Approach for Plant-Specific, Risk-Informed Decisionmaking: Technical Specifications," Revision 1,[7] describes an acceptable risk-informed approach specifically for assessing proposed TS changes.

RG 1.200, "An Approach for Determining the Technical Adequacy of Probabilistic Risk Assessment Results for Risk-Informed Activities," Revision 2,[8] describes an acceptable approach for determining whether the quality of the PRA, in total or the parts that are used to support an application, is sufficient to provide confidence in the results such that the PRA can be used in regulatory decisionmaking for light water-reactors.

General guidance for evaluating the technical basis for proposed risk-informed changes is provided in NUREG-0800, "Standard Review Plan [SRP] for the Review of Safety Analysis Reports for Nuclear Power Plants: LWR [Light-Water Reactor] Edition," Chapter 19, Section 19.2, "Review of Risk Information Used to Support Permanent Plant Specific Changes to the Licensing Basis: General Guidance."[9] Guidance on evaluating PRA technical adequacy is provided in the SRP, Chapter 19, Section 19.1, "Determining the Technical Adequacy of Probabilistic Risk Assessment Results for Risk-Informed License Amendment Requests After Initial Fuel Load," Revision 3.[10] More specific guidance related to risk-informed TS changes is provided in SRP, Section 16.1, "Risk-Informed Decisionmaking: Technical Specifications," Revision 1,[11] which includes changes to surveillance test intervals (i.e., surveillance frequencies) as part of risk-informed decisionmaking. Section 19.2 of the SRP references the same criteria as RG 1.177, Revision 1, and RG 1.174, Revision 2, and states that a risk-informed application should be evaluated to ensure that the proposed changes meet the following key principles:

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

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[7] ADAMS Accession No. ML100910008.
[8] ADAMS Accession No. ML090410014.
[9] ADAMS Accession No. ML071700658.
[10] ADAMS Accession No. ML12193A107.
[11] ADAMS Accession No. ML070380228.

3.0 TECHNICAL EVALUATION

The licensee's adoption of TSTF-425, Revision 3 provides for administrative relocation of applicable surveillance frequencies, and it provides for the addition of the SFCP to the Administrative Controls section of the TSs. The changes to the Administrative Controls section of the TSs will also require the application of NEI 04-10, Revision 1, for any changes to surveillance frequencies within the SFCP. The licensee's application for the changes described in TSTF-425, Revision 3 included documentation regarding the PRA technical adequacy consistent with RG 1.200, Revision 2. NEI 04-10, Revision 1, states that PRA methods are used with plant performance data and other considerations to identify and justify modifications to the surveillance frequencies of equipment at nuclear power plants. This is consistent with guidance provided in RG 1.174, Revision 2, and RG 1.177, Revision 1, in support of changes to surveillance test intervals.

3.1 Review Methodology

RG 1.177, Revision 1, identifies five key safety principles to be applied to risk-informed changes to TSs. Each of these principles is addressed by NEI 04-10, Revision 1.

3.1.1 The Proposed Change Meets Current Regulations

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

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

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

meets the first key safety principle of RG 1.177, Revision 1, by complying with current regulations.

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

The defense-in-depth philosophy (i.e., the second key safety principle of RG 1.177, Revision 1) 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; and
- The intent of the General Design Criteria in 10 CFR Part 50, Appendix A, is maintained.

The changes to the Administrative Controls section of the TSs will require the application of NEI 04-10, Revision 1, for any changes to surveillance frequencies within the SFCP. NEI 04-10, Revision 1, uses both the CDF and the large early release frequency (LERF) metrics to evaluate the impact of proposed changes to surveillance frequencies. The guidance of RG 1.174, Revision 2, and RG 1.177, Revision 1, for changes to CDF and LERF is achieved by evaluation using a comprehensive risk analysis, which assesses the impact of proposed changes, including contributions from human errors and 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. The staff concludes that both the quantitative risk analysis and the qualitative considerations assure that a reasonable balance of defense-in-depth is maintained to ensure protection of public health and safety, thus satisfying the second key safety principle of RG 1.177, Revision 1.

3.1.3 The Proposed Change Maintains Sufficient Safety Margins

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

The design, operation, testing methods, and acceptance criteria for SSCs specified in applicable codes and standards (or alternatives approved for use by the NRC) will continue to be met as described in the plants' licensing bases, including the Updated Final Safety Analysis Report and TS Bases, because these are not affected by changes to the surveillance frequencies. Similarly, there is no impact to safety analysis acceptance criteria as described in the plants' licensing bases. On this basis, the staff concludes that safety margins are maintained by the proposed methodology, and the third key safety principle of RG 1.177, Revision 1, is satisfied.

3.1.4 When Proposed Changes Result in an Increase in CDF or Risk, the Increases Should Be Small and Consistent with the Intent of the Commission's Safety Goal Policy Statement

RG 1.177, Revision 1, provides a framework for evaluating the risk impact of proposed changes to surveillance frequencies, which requires 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. The changes to the Administrative Controls section of the TSs will require application of NEI 04-10, Revision 1, in the SFCP. NEI 04-10, Revision 1, satisfies the intent of RG 1.177, Revision 1, requirements for evaluating the change in risk and for assuring that such changes are small by providing the technical methodology to support risk-informed TSs for control of surveillance frequencies.

3.1.4.1 Quality of the PRA

The quality of the licensee's PRA must be commensurate with the safety significance of the proposed TS change and the role the PRA plays in justifying the change. That is, the higher the change in risk or the greater the uncertainty in that risk from the requested TS change, or both, the more rigor that must go into ensuring the quality of the PRA.

RG 1.200 provides regulatory guidance for assessing the technical adequacy of a PRA. The current revision (i.e., Revision 2) of this RG endorses, with clarifications and qualifications, the use of (1) the American Society of Mechanical Engineers (ASME)/American Nuclear Society (ANS) Standard, RA-Sa-2009, "Addenda to ASME RA-S-2008 Standard for Level 1/Large Early Release Frequency Probabilistic Risk Assessment for Nuclear Power Plant Applications" (i.e., the PRA Standard), (2) NEI 00-02, "Probabilistic Risk Assessment (PRA) Peer Review Process

Guidance,"[12] and (3) NEI 05-04, Revision 2, "Process for Performing Internal Events PRA Peer Reviews Using the ASME/ANS PRA Standard."[13]

The licensee has performed an assessment of the PRA models used to support the SFCP using the guidance of RG 1.200, Revision 2, to assure that the PRA models are capable of determining the change in risk due to changes to surveillance frequencies of SSCs using plant-specific data and models. Capability Category II of the endorsed PRA standard is the target capability level for supporting requirements for the internal events PRA for this application. 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, in accordance with NEI 04-10, Revision 1.

In 2002, an Industry PSA Certification peer review of the St. Lucie internal events PRA was performed. All peer review facts and observations (F&Os) findings from this peer review have been addressed in model updates. In 2005, a self-assessment was performed against ASME-RA-Sa-2003. Focused-scope peer reviews were conducted in 2009, 2011, and 2013. The first peer review done in 2009 was for the LERF analysis element using ASME-RA-Sb-2005, as endorsed by RG 1.200, Revision 1.[14] The second focused-scope peer review done in 2009 addressed all supporting requirements in ASME/ANS RA-Sa-2009, as endorsed by RG 1.200, Revision 2, related to common-cause failure. In 2011, focused-scope peer reviews were performed for internal flooding and for the internal events PRA elements for Human Reliability Analysis (HR) and Data Analysis using ASME/ANS RA-Sa-2009, as endorsed by RG 1.200, Revision 2. The 2013 peer review addressed all supporting requirements in ASME/ANS RA-Sa-2009, as endorsed by RG 1.200, Revision 2, related to Interfacing-Systems Loss-of-Coolant Accident (ISLOCA). Attachment A to Attachment 2 of the licensee's application dated February 20, 2014, provides a list of all significant F&Os from the Internal Events and Internal Flooding peer reviews. Attachment B to Attachment 2 of the application provides a list of the open F&Os that do not currently meet Capability Category II, as identified by the licensee.

In its letter dated December 11, 2014, the licensee responded to the NRC's request for additional information (RAI) APLA RAI 3, and confirmed that a gap assessment to the current endorsed version of the PRA standard (ASME/ANS RA-Sa-2009) was performed for the internal events PRA to support the adoption of National Fire Protection Association Standard 805 (NFPA 805), "Performance-Based Standard for Fire Protection for Light Water Reactor Electric Generating Plants." The results of this self-assessment and a sensitivity analysis for the cumulative impact of the F&Os are included in the licensee's responses to NFPA 805 PRA RAI 16.[15] In its response to APLA RAI 3, the licensee summarized the results of the self-assessment and stated, "[N]o gaps were identified in the compliance with ASME/ANS RA-Sa-2009 as endorsed by RG 1.200, Revision 2 for all [supporting requirements] that have been reviewed by earlier standards, except those associated with the F&Os from the most recent focused scope peer review for ISLOCA."

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[12] ADAMS Accession Nos. ML061510619 and ML063390588.
[13] ADAMS Accession No. ML083430462.
[14] ADAMS Accession No. ML063170035.
[15] ADAMS Accession Nos. ML14114A458 and ML14135A395.

The NRC staff notes that the F&Os from the 2013 peer review (i.e., IE-C5-01, IE-C6-01, IE-C9-01, and SY-A2-01) are also identified in Attachment B to Attachment 2 of the licensee's application dated February 20, 2014. The sensitivity study performed in response to NFPA 805 PRA RAI 16 shows that the cumulative impact of resolving F&Os IE-C5-01, IE-C9-01, and SY-A2-01, would decrease both internal events CDF and LERF metrics for St. Lucie 1 and 2. The NFPA 805 RAI response also explains that F&O IE-C6-01 is a documentation issue that will not affect risk results. Therefore, the staff concludes that, based on this information, the licensee has adequately dispositioned these F&Os for the application. Attachment B also identifies F&Os IE-07, AS-03, and AS-06. Attachment B states that F&O IE-07 is a documentation issue related to operator interviews. This F&O will not affect the risk calculations performed to support surveillance frequency changes and the NRC staff concludes that the disposition is acceptable for the application.

F&Os AS-03 and AS-06 are discussed further in Attachment A to Attachment 2 of the application dated February 20, 2014. F&O AS-03 pertains to crediting Main Feedwater (MFW) post-trip, and F&O AS-06 pertains to crediting low pressure feed (e.g., condensate pumps) in scenarios associated with recoverable Loss of Main Feedwater (LOMFW). The resolution to F&O AS-03 states, "MFW modeling was enhanced and credited post trip where applicable." The staff finds this disposition to be acceptable because it reduces conservatism in the baseline model and addresses the peer review finding. For F&O AS-06, in the response to APLA RAI 3, the licensee states, "No credit is currently considered for low pressure feed in scenarios associated with recoverable Loss of Main Feedwater (LOMFW). Current PRA results indicate that recoverable LOMFW scenarios represent only about 2 [percent] and 5 [percent] of internal events' CDF values in Unit 1 and Unit 2, respectively." Given the minimal impact on CDF/LERF, the NRC staff concludes that the disposition is acceptable for the application.

For F&O HR-G6-01 in the licensee's application dated February 20, 2014, the comment in Table A-1, under the Comment heading, states that the licensee should "[a]pply a lower bound for total combined human failures." The licensee, however, did not modify any joint Human Error Probability (HEP) values in response to this finding. In APLA RAI 4, the NRC staff noted that use of an HEP floor could increase the importance of equipment with respect to plant risk. A surveillance frequency change would then have a greater delta risk because the risk significance of the component has increased. Surveillance frequency changes for equipment associated with long-term cooling for Unit 1 could be significantly impacted by use of a joint HEP floor. The NRC staff requested that the licensee describe how the St. Lucie SFCP considers the impact of sensitivities for joint HEP floors for surveillance frequency changes associated with this equipment.

In the response to APLA RAIs 3 and 4 provided in licensee's letter dated December 11, 2014, the licensee explained that it has the capability to perform sensitivity studies for components supporting long-term cooling for Unit 1 and that the "analysis will be reviewed in detail for those components on a case-by-case basis." The licensee also noted, "[Electric Power Research Institute (EPRI) TR] 1021081 specifies a lower floor of 1E-06 for combinations where one of the [human failure events (HFEs)] appearing later in the chronological sequence has an alarm as a cue." EPRI TR 1021081 also states, "[I]f the criteria for 'independent' HFEs are met, it should not be necessary to employ an alternative minimum value rather than the one calculated." Furthermore, NEI 04-10, Revision 1, Section 4.0, Step 14, also states that qualitative considerations can be used to support surveillance frequency changes, even though the change

may not be supported by the sensitivity study. The use of sensitivity studies is discussed further in Section 3.1.4.5 of this SE. The staff concludes that, based on this information, the licensee has more than adequately dispositioned this F&O for the application.

Based on the licensee's assessments using the currently applicable PRA standard and revision of RG 1.200, the staff concludes that the level of PRA quality, combined with the proposed evaluation and disposition of gaps, is sufficient to support the evaluation of changes proposed to surveillance frequencies within the SFCP and is consistent with Regulatory Position 2.3.1 of RG 1.177, Revision 1.

3.1.4.2 Scope of the PRA

The changes to the Administrative Controls section of the TSs will require the licensee to evaluate each proposed change to a relocated surveillance frequency using the guidance contained in NEI 04-10, Revision 1, to determine its potential impact on risk (CDF and LERF) from internal events, fires, seismic, other external events, and shutdown conditions. In cases where a PRA of sufficient scope or quantitative risk models is unavailable, the licensee uses bounding analyses or other conservative quantitative evaluations. A qualitative screening analysis may be used when the surveillance frequency impact on plant risk is shown to be negligible or zero.

The licensee has an at-power internal events and internal flooding PRA model, as well as an at-power fire PRA to support the adoption of NFPA 805. In accordance with NEI 04-10, Revision 1, the licensee will use these models to perform quantitative evaluations to support the development of changes to surveillance frequencies in the SFCP. In Attachment 2 to its application dated February 20, 2014, the licensee noted, "[T]he [fire] PRA is a conservative representation of the fire risk from the operation of St. Lucie. The fire PRA model will be exercised to obtain quantitative fire risk insights, but refinements may need to be made on a case-by-case basis." This is acceptable because the NRC-approved methodology in NEI 04-10, Revision 1, allows for more refined analysis to be performed to support changes to surveillance frequencies in the SFCP.

In Attachment 2 to its application dated February 20, 2014, the licensee stated that it does not have a seismic PRA or seismic margin analysis and that St. Lucie 1 and 2 are sited in an area of very low seismicity. The licensee also stated, "Staff at St. Lucie recently performed additional seismic walkdowns in response to Near-Term Task Force Recommendation 2.3 ... to identify and address plant degraded, non-conforming, or unanalyzed conditions, with respect to the current seismic licensing basis," and, "No operability concerns were identified." In its letter dated December 11, 2014, the licensee responded to APLA RAI 3 and explained that there is no impact to the St. Lucie 1 and 2 SFCP from revised seismic risk values based on the "plant-level high confidence of a Low Probability of Failure (HCLPF) using plant-specific Ground Motion Response Spectra (GMRS) that was recently developed by EPRI." This supports the licensee's conclusion that seismic risk will not be a significant factor for the St. Lucie 1 and 2 SFCP. Similarly, for other external hazards for which there is no PRA model, the licensee stated, "[A] qualitative or a bounding approach will be utilized in most cases." This is an acceptable approach in accordance with NEI 04-10, Revision 1.

In its letter dated December 11, 2014, the licensee responded to APLA RAI 2 and explained that St. Lucie does not currently have a shutdown PRA model that meets the guidance in RG 1.200. However, the licensee explained that the guidance in NEI 04-10, Revision 1, will also be applied for shutdown events. This includes the use of the St. Lucie shutdown safety program developed in support of NUMARC 91-06, "Guidelines for Industry Actions to Assess Shutdown Management," as applicable, consistent with NEI 04-10, Revision 1.

Thus, the staff concludes that through the application of NEI 04-10, Revision 1, the licensee's evaluation methodology is sufficient to ensure that 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, Revision 1.

3.1.4.3 PRA Modeling

The licensee's methodology includes the determination of whether the SSCs affected by a proposed change to a surveillance frequency are modeled in the PRA. Where the SSC is directly or implicitly modeled, a quantitative evaluation of the risk impact may be carried out. The methodology adjusts the failure probability of the impacted SSCs, including any impacted common cause failure modes, based on the proposed change to the surveillance frequency. Where the SSC is not modeled in the PRA, bounding analyses are performed to characterize the impact of the proposed change to the surveillance frequency. Potential impacts on the risk analyses due to screening criteria and truncation levels are addressed by the requirements for PRA technical adequacy consistent with guidance contained in RG 1.200, Revision 2, and by sensitivity studies identified in NEI 04-10, Revision 1.

Thus, the staff concludes that through the application of NEI 04-10, Revision 1, the St. Lucie 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, Revision 1.

3.1.4.4 Assumptions for Time-Related Failure Contributions

The failure probabilities of SSCs modeled in PRAs may include a standby time-related contribution and a cyclic demand-related contribution. In its letter dated December 11, 2014, the licensee responded to APLA RAI 1 and explained that the St. Lucie 1 and 2 SFCP plant procedures are consistent with NEI 04-10, Revision 1, and that the standby time-related contribution evaluation will be performed in accordance with NEI 04-10, Revision 1. NEI 04-10, Revision 1, criteria adjust the time-related failure contribution of SSCs affected by the proposed change to a surveillance frequency. This is consistent with RG 1.177, Revision 1, Section 2.3.3, which permits separation of the failure rate contributions into demand and standby for evaluation of SRs. If the available data do not support distinguishing between the time-related failures and demand failures, then the change to a 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 the surveillance frequency is implemented. The process requires consideration of qualitative sources of information with regard to potential impacts of test frequency on SSC performance, including industry and plant-specific operating experience,

vendor recommendations, industry standards, and code-specified test intervals. Thus, the process is not reliant upon risk analyses as the sole basis for the proposed changes.

The potential benefits of a reduced surveillance frequency, including reduced downtime and reduced potential for restoration errors, test-caused transients, and test-caused wear of equipment, are identified qualitatively, but not quantitatively assessed. Thus, the staff concludes that through the application of NEI 04-10, Revision 1, 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, Revision 1.

3.1.4.5 Sensitivity and Uncertainty Analyses

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

3.1.4.6 Acceptance Guidelines

The licensee will be required to quantitatively evaluate the change in total risk (including internal and external events contributions) in terms of CDF and LERF for both the individual risk impact of a proposed change in surveillance frequency and the cumulative impact from all individual changes to surveillance frequencies using NEI 04-10, Revision 1, in accordance with the TS SFCP. Each individual change to a surveillance frequency must show a risk impact below 1E-6 per year for changes to CDF, and below 1E-7 per year for changes to LERF. These changes to CDF and LERF are consistent with the acceptance criteria of RG 1.174, Revision 2, for very small changes in risk. Where the RG 1.174, Revision 2, acceptance criteria are not met, the process in NEI 04-10, Revision 1 either considers revised surveillance frequencies, which are consistent with RG 1.174, Revision 2, or the process terminates without permitting the proposed changes. Where quantitative results are unavailable for comparison with the acceptance guidelines, appropriate qualitative analyses are required to demonstrate that the associated risk impact of a proposed change to surveillance frequency is negligible or 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, Revision 2, 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 of less than 1E-5 per year for changes to CDF and less than 1E-6 per year for changes to LERF. Further, the total CDF and total LERF must be reasonably shown to be less than 1E-4 per year and 1E-5 per year, respectively. These values are consistent with the acceptance criteria of RG 1.174, Revision 2, as referenced by RG 1.177, Revision 1, for changes to surveillance frequencies.

Consistent with the NRC's SE dated September 19, 2007, for NEI 04-10, Revision 1, the TS SFCP will require the licensee to calculate the total change in risk (i.e., the cumulative risk) by comparing a baseline model that uses failure probabilities based on surveillance frequencies prior to being changed per the SFCP to a revised model that uses failure probabilities based on the changed surveillance frequencies. The NRC staff further notes that the licensee includes a provision to exclude the contribution to cumulative risk from individual changes to surveillance frequencies associated with insignificant risk increases (i.e., less than 5E-8 CDF and 5E-9 LERF) once the baseline PRA models are updated to include the effects of the revised surveillance frequencies.

The quantitative acceptance guidance of RG 1.174, Revision 2, is supplemented by qualitative information to evaluate the proposed changes to surveillance frequencies, including industry and plant-specific operating experience, vendor recommendations, industry standards, the results of sensitivity studies, and SSC performance data and test history. The final acceptability of the proposed change is based on all of these considerations and not solely on the PRA results. Post-implementation performance monitoring and feedback are also required to assure continued reliability of the components. The licensee's application of NEI 04-10, Revision 1, provides acceptable methods for evaluating the risk increase associated with proposed changes to surveillance frequencies, consistent with Regulatory Position 2.4 of RG 1.177, Revision 1. Therefore, the staff concludes that the proposed methodology satisfies the fourth key safety principle of RG 1.177, Revision 1, by assuring any increase in risk is small, 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, Revision 3, requires application of NEI 04-10, Revision 1, in the SFCP. NEI 04-10, Revision 1, requires performance monitoring of SSCs whose surveillance frequencies have been revised as part of a feedback process to assure that the change in test frequency has not resulted in degradation of equipment performance and operational safety. The monitoring and feedback include consideration of Maintenance Rule monitoring of equipment performance. In the event of SSC performance degradation, the surveillance frequency will be reassessed in accordance with the methodology, in addition to any corrective actions that may be required by the Maintenance Rule. The performance monitoring and feedback specified in NEI 04-10, Revision 1, is sufficient to reasonably assure acceptable SSC performance and is consistent with Regulatory Position 3.2 of RG 1.177, Revision 1. Thus, the staff concludes that the fifth key safety principle of RG 1.177, Revision 1 is satisfied.

3.2 Addition of Surveillance Frequency Control Program to Administrative Controls

The licensee proposed including the SFCP and specific requirements into the St. Lucie 1 and 2 TSs, Section 6.0, "Administrative Controls," as follows:

Surveillance Frequency Control Program

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

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

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

c. The provisions of Surveillance Requirements 4.0.2 and 4.0.3 are applicable to the frequencies established in the Surveillance Frequency Control Program.

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

3.3 Deviations from TSTF-425 and Other Changes

3.3.1 Revised Clean TS Pages

In its application dated February 20, 2014, the licensee stated that revised (i.e., clean) TS pages are not included in the amendment request because of the number of TS pages affected, the straightforward nature of the proposed changes, and outstanding license amendment requests that may affect some of the same TS pages. The licensee stated that providing only markups of the proposed TS changes satisfies the requirements of 10 CFR 50.90, "Application for amendment of license, construction permit, or early site permit," in that the markups fully describe the changes desired. The licensee stated that this is an administrative deviation from the NRC staff's model application dated July 6, 2009 (74 FR 31996), with no impact on the NRC staff's model SE published in the same FR notice. The licensee stated that because of this deviation, the contents and numbering of the attachments for the amendment request differ from the attachments specified in the NRC staff's model application. The NRC staff finds this acceptable.

3.3.2 Differences Between St. Lucie 1 and 2 TSs and NUREG-1432

In its application dated February 20, 2014, the licensee stated that the St. Lucie 1 and 2 TS surveillance numbers and associated TS Bases numbers differ from those in NUREG-1432, Revision 4, "Standard Technical Specifications – Combustion Engineering Plants," Volumes 1 and 2,[16] and TSTF-425, Revision 3. In addition, the Administrative Controls section in the

[16] ADAMS Accession Nos. ML12102A165 and ML12102A169.

St. Lucie 1 and 2 TSs is Section 6.0, versus Section 5.0, for NUREG-1432. There are also surveillances contained in NUREG-1432 that are not contained in the St. Lucie 1 and 2 TSs. These surveillances identified in TSTF-425 for NUREG-1432 are not applicable to St. Lucie. In its letter dated January 28, 2015, the licensee stated that in some instances, a table notation or footnote in the St. Lucie TSs specifies the frequency for an SR, and the licensee proposed to relocate these frequencies to the SFCP. These differences are administrative deviations from TSTF-425 with no impact on the NRC staff's model SE dated July 6, 2009 (74 FR 31996). The NRC staff finds this acceptable.

In its application dated February 20, 2014, the licensee noted that the St. Lucie 1 and 2 TSs include plant-specific surveillances that are not contained in NUREG-1432, and therefore, are not included in the NUREG-1432 surveillances provided in TSTF-425. In its letters dated February 20, 2014, and January 28, 2015, the licensee requested that some plant-specific surveillance frequencies be relocated to the SFCP. The relocation of the plant-specific surveillance frequencies is consistent with TSTF-425 and with the NRC staff's model SE dated July 6, 2009 (74 FR 31996), including the scope exclusions identified in Section 1.0, "Introduction," of the model SE, because the plant-specific surveillance frequencies involve fixed period frequencies. Changes to the frequencies for these plant-specific surveillances would be controlled under the SFCP. The NRC staff finds this acceptable.

In its application dated February 20, 2014, the licensee stated that the SR for the reactor trip and engineered safety features actuation system instrumentation in St. Lucie 1 and 2 TSs 3.3.1 and 3.3.2 are presented in tabular format, which is different from the format for the same instrumentation in NUREG-1432. To accommodate this difference, the licensee proposed to include the use of "SFCP" as a frequency notation in the tables that specify instrumentation SRs. This is an administrative deviation from TSTF-425 due to differences in format between St. Lucie 1 and 2 TSs and NUREG-1432, which has no impact on the NRC staff's model SE dated July 6, 2009 (74 FR 31996). The NRC staff finds this acceptable.

3.3.3 Definition of Staggered Test Basis

In its application dated February 20, 2014, the licensee stated that the definition of STAGGERED TEST BASIS is being retained in Section 1.0, "Definitions," of the St. Lucie 1 and 2 TSs because the terminology is used in Section 6.8.4.m, "Control Room Envelope Habitability Program," of the St. Lucie 1 and 2 TSs. This is an administrative deviation from TSTF-425 with no impact on the NRC staff's model SE dated July 6, 2009 (74 FR 31996). The NRC staff finds this acceptable.

3.3.4 TS Bases

In its application dated February 20, 2014, the licensee noted that the insert (Insert 2) provided in TSTF-425 for the TS Bases states, "The Surveillance Frequency is based on operating experience, equipment reliability, and plant risk and is controlled under the Surveillance Frequency Control Program." The licensee also noted that in the NRC letter to the TSTF, dated April 14, 2010,[17] the NRC staff agreed that the insert applies to surveillance frequencies that are

[17] ADAMS Accession No. ML100990099.

relocated and subsequently evaluated and changed in accordance with the SFCP, but does not apply to frequencies relocated to the SFCP and not changed. Therefore, the licensee proposed that the insert for the TS Bases be revised to state, "The Surveillance Frequency is controlled under the Surveillance Frequency Control Program." This is an administrative deviation from TSTF-425 with no impact on the NRC staff's model SE dated July 6, 2009 (74 FR 31996). The NRC staff finds this acceptable.

In its application dated February 20, 2014, the licensee stated that the St. Lucie 1 and 2 TS Bases are not as comprehensive as the bases in NUREG-1432, which discusses most SRs. Therefore, many of the TS Bases markups in TSTF-425 are not applicable to the St. Lucie 1 and 2 TSs. The proposed TS Bases changes in the licensee's application revise only those TS Bases that currently discuss surveillance frequencies. This is an administrative deviation from TSTF-425 with no impact on the NRC staff's model SE dated July 6, 2009 (74 FR 31996). The licensee stated that the existing TS Bases information describing the basis for the surveillance frequencies will be relocated to the SFCP. The NRC staff finds this acceptable.

3.3.5 Changes to SR 4.3.3.1 and Table 3.3-6, "Radiation Monitoring Instrumentation"

In its application dated February 20, 2014, the licensee proposed to delete "during the modes and at the frequencies shown in Table 4.3-3," from SR 4.3.3.1. In its letter dated December 11, 2014, the licensee stated that the requirement to demonstrate operability of instrument channels during the modes shown in Table 4.4-3 is not a restriction on the modes in which SR 4.3.3.1 is to be performed. The licensee stated that the modes shown in Table 4.4-3 are identical to the modes during which the instrument channels are required to be operable. The licensee also stated that SR 4.0.1 requires SRs to be met during the operational modes or other specified conditions in the Applicability for individual LCOs unless otherwise stated in the SR; therefore, the reference to modes in SR 4.3.3.1 is redundant to the requirements of SR 4.0.1. The NRC staff determined that deleting the reference to modes from SR 4.3.3.1 is an administrative deviation from TSTF-425 with no impact on the NRC staff's model SE published in the *Federal Register* on July 6, 2009 (74 FR 31996). The NRC staff finds this acceptable.

In its letter dated December 11, 2014, the licensee noted that although Table 4.3-3 will be deleted from the St. Lucie 1 TSs, the clarifying information in it and in the Table 3.3-6 footnotes must be aligned. The licensee proposed revising Table 3.3-6, Footnote **, which currently states, "With recently irradiated fuel in the storage pool," to state, "With recently irradiated or irradiated fuel in the storage pool." In its letter dated December 11, 2014, the licensee noted that Table 4.3-3, and the clarifying information in it, will be deleted from the St. Lucie 2 TSs, and the Table 3.3-6 footnotes must be aligned. The licensee proposed revising Table 3.3-6, Footnote **, which currently states, "During movement of recently irradiated fuel assemblies or during crane operations with loads over recently irradiated fuel assemblies in the spent fuel storage pool," to state, "With irradiated fuel in the storage pool and during movement of recently irradiated fuel assemblies or during crane operations with loads over recently irradiated fuel assemblies in the spent fuel storage pool." The NRC staff reviewed these proposed changes and determined that they provide additional conservatism to the applicable modes for the operational requirements of the Fuel Storage Pool Area Ventilation System and are, therefore, acceptable.

3.3.6 Changes to Unit 1 TS SR 4.3.3.5 and Unit 2 TS SR 4.3.3.5.1

In its application dated February 20, 2014, the licensee proposed the following change to SR 4.3.3.5 (St. Lucie 1) and SR 4.3.3.5.1 (St. Lucie 2) regarding remote shutdown instrumentation (deletions shown as stricken text and additions shown in italicized text):

> Each remote shutdown monitoring instrumentation channel shall be demonstrated OPERABLE by performance of the CHANNEL CHECK and CHANNEL CALIBRATION operations ~~at the frequencies shown in Table 4.3-6~~ *in accordance with the Surveillance Frequency Control Program.*

In its letter dated January 28, 2015, the licensee noted that with the proposed change to the SR, listing the SR frequencies in Table 4.3-6 would be redundant to the SR; therefore, the proposed change also included deleting Table 4.3-6. However, Table 4.3-6 shows that the SR for a channel calibration is not applicable to reactor trip breaker indication. As a result, the licensee proposed to modify the change to add a note to the proposed SR stating that the channel calibration is not applicable to the reactor trip breaker indication. The NRC staff determined that this is an administrative deviation from TSTF-425 with no impact on the NRC staff's model SE dated July 6, 2009 (74 FR 31996). The NRC finds this acceptable.

3.3.7 Deletion of "Program" Terminology

In its letter dated January 28, 2015, the licensee stated that TSTF-425 excludes relocating frequencies that reference other approved programs for the specific interval, such as the Inservice Testing Program or the Primary Containment Leakage Rate Testing Program. The approved programs for St. Lucie are described in Section 6.0, "Administrative Controls," of the St. Lucie 1 and 2 TSs. The licensee stated that the titles of TS Table 4.4-4, "Primary Coolant Specific Activity Sample and Analysis Program," and Tables 4.7-2 (Unit 1) and 4.7-1 (Unit 2), "Secondary Coolant System Specific Activity Sample and Analysis Program," may be misconstrued as programs. However, the licensee stated that Section 6.0 of the TSs does not contain programs for sampling and analysis of reactor coolant or secondary coolant specific activity. To avoid a misunderstanding of these SRs, the licensee proposed to delete the word "Program" from the titles of TS Table 4.4-4, Table 4.7-2 (Unit 1), and Table 4.7-1 (Unit 2). The licensee also proposed deleting the word "program" from SR 4.4.8 and SR 4.7.1.4, which refers to the tables. The NRC staff determined that this is an administrative deviation from TSTF-425 with no impact on the NRC staff's model SE dated July 6, 2009 (74 FR 31996). The NRC staff finds the proposed changes acceptable.

3.3.8 Editorial Corrections

In its letter dated December 11, 2014, the licensee proposed to correct a typographical error in the footnote to Table 4.3-3 in the St. Lucie 2 TSs. The licensee proposed to revise the footnote to state (with proposed deletion in stricken text), "Not required with T_{avg} ~~less than or equal to~~ ≤ 250°F." This is an administrative deviation from TSTF-425 with no impact on the NRC staff's model SE dated July 6, 2009 (74 FR 31996). The NRC staff determined that this editorial change is acceptable.

In its letter dated January 28, 2015, the licensee proposed to correct a typographical error in Table 4.3-2, "Engineering Safety Features Actuation System Instrumentation Surveillance Requirements," of the St. Lucie 1 and 2 TSs. Functional Unit 5, "Containment Sump Recirculation (RAS)," in Table 4.3-2 contains three items designated a, b, and d. The designation for the third item, "Automatic Actuation Logic," is changed from *d* to *c*. This is an administrative deviation from TSTF-425 with no impact on the NRC staff's model SE dated July 6, 2009 (74 FR 31996). The NRC staff determined that these editorial changes are acceptable.

3.3.9 Conforming Changes

SR 4.4.6.1.a in the St. Lucie 1 and 2 TSs states, "The RCS leakage detection instruments shall be demonstrated OPERABLE by [...] performance of the CHANNEL CHECK, CHANNEL FUNCTIONAL TEST, and CHANNEL CALIBRATION of the required containment atmosphere radioactivity monitor at the frequencies specified in Table 4.3-3." In its application dated February 20, 2014, the licensee proposed to change this SR to state, "The RCS leakage detection instruments shall be demonstrated OPERABLE by [...] performance of the CHANNEL CHECK, CHANNEL FUNCTIONAL TEST, and CHANNEL CALIBRATION of the required containment atmosphere radioactivity monitor in accordance with Surveillance Requirement 4.3.3.1." The NRC staff finds that this proposed change is acceptable because it is a conforming change to the deletion of Table 4.3-3 from the St. Lucie 1 and 2 TSs.

In its letters dated February 20, 2014, and April 18, 2015, the licensee proposed conforming changes to the St. Lucie 2 TSs Index that reflect new page numbering in the Administrative Controls section of the TSs; deletion of Table 4.3-3, "Radiation Monitoring Instrumentation Surveillance Requirements," Table 4.3-6, "Remote Shutdown System Instrumentation Surveillance Requirements," and Table 4.3-7, "Accident Monitoring Instrumentation Surveillance Requirements"; and the renaming of Table 4.4-4 from "Primary Coolant Specific Activity Sample and Analysis Program" to "Primary Coolant Specific Activity Sample and Analysis." The NRC staff finds these changes acceptable.

3.4 Summary and Conclusions

The NRC staff has reviewed the licensee's proposed relocation of some surveillance frequencies to a licensee controlled document and controlling changes to surveillance frequencies in accordance with a new program, the SFCP, identified in the Administrative Controls section of TSs. The NRC staff confirmed that this amendment does not relocate surveillance frequencies that reference other approved programs for the specific interval, are purely event-driven, are event-driven but have a time component for performing the surveillance on a one-time basis once the event occurs, or are related to specific conditions. The SFCP and TSs Section 6.0, Subsection 6.8.4, references NEI 04-10, Revision 1, which provides a risk-informed methodology using plant-specific risk insights and performance data to revise surveillance frequencies within the SFCP. This methodology supports relocating surveillance frequencies from the TSs to a licensee-controlled document, provided those frequencies are changed in accordance with NEI 04-10, Revision 1, which is specified in the Administrative Controls section of the TSs.

The proposed licensee adoption of TSTF-425, Revision 3, and risk-informed methodology of NEI 04-10, Revision 1, as referenced in the Administrative Controls section of the TSs, satisfies the key principles of risk-informed decisionmaking applied to changes to TSs as delineated in RG 1.177, Revision 1, and RG 1.174, Revision 2, in that:

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

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

4.0 STATE CONSULTATION

In accordance with the Commission's regulations, the NRC staff notified the State of Florida official (Ms. Cynthia Becker, M.P.H., Chief of the Bureau of Radiation Control, Florida Department of Health) on April 28, 2015,[18] of the proposed issuance of the amendments. The State official had no comments.

5.0 ENVIRONMENTAL CONSIDERATION

These amendments change a requirement with respect to installation or use of facility components located within the restricted area as defined in 10 CFR Part 20 or changes 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 (80 FR 11477, dated March 3, 2015). Accordingly, these amendments meet the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9).

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[18] The NRC staff notified the State official by telephone and by e-mail. The e-mail is in ADAMS under Accession No. ML15138A275.

Pursuant to 10 CFR 51.22(b) no environmental impact statement or environmental assessment need be prepared in connection with the issuance of these amendments.

6.0 CONCLUSION

Based on the aforementioned considerations, the NRC staff concluded that (1) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, (2) there is reasonable assurance that such activities will be conducted in compliance with the Commission's regulations, and (3) the issuance of the amendments will not be inimical to the common defense and security or to the health and safety of the public.

Principal Contributors: Jonathan E. Evans
David J. Gennardo
Audrey L. Klett

Date: June 22, 2015

The Notice of Issuance will be included in the Commission's biweekly *Federal Register* notice.

Sincerely,

/RA by AKlett for/

Farideh E. Saba, Senior Project Manager
Plant Licensing Branch II-2
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket Nos. 50-335 and 50-389

Enclosures:
1. Amendment No. 223 to DPR-67
2. Amendment No. 173 to NPF-16
3. Safety Evaluation

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