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

DUKE ENERGY CAROLINAS, LLC

DOCKET NO. 50-269

OCONEE NUCLEAR STATION, UNIT 1

SUBSEQUENT RENEWED FACILITY OPERATING LICENSE

Subsequent Renewed License No. DPR-38

The U.S. Nuclear Regulatory Commission (Commission), having previously made the findings set forth in Renewed License No. DPR-38 issued on May 23, 2000, has now found that:

a. The application to subsequently renew facility operating license No. DPR-38 filed by Duke Energy Carolinas, LLC 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, and all required notifications to other agencies or bodies have been duly made;

b. Actions have been identified and have been or will be taken with respect to (1) managing the effects of aging during the subsequent period of extended operation on the functionality of structures and components that have been identified to require review under 10 CFR 54.21(a)(1), and (2) time-limited aging analyses that have been identified to require review under 10 CFR 54.21(c), such that there is reasonable assurance that the activities authorized by this subsequent renewed facility operating license will continue to be conducted in accordance with the current licensing basis, as defined in 10 CFR 54.3, for the Oconee Nuclear Station, Unit 1 (facility or plant), and that any changes made to the plant's current licensing basis in order to comply with 10 CFR 54.29(a) are in accord with the Act and the Commission's regulations;

c. There is reasonable assurance: (i) that the activities authorized by this subsequent renewed operating license can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with the applicable regulations set forth in 10 CFR Chapter I, except as exempted from compliance;

d. The licensee has satisfied the applicable provisions of 10 CFR Part 140, "Financial Protection Requirements and Indemnity Agreements;"

e. The subsequent renewal of this operating license will not be inimical to the common defense and security or the health and safety of the public; and

f. After weighing the environmental, economic, technical, and other benefits of the facility against environmental and other costs, and considering available alternatives, the subsequent renewal of this operating license is in accordance with 10 CFR Part 51 and all applicable requirements have been satisfied.

On the basis of the foregoing findings regarding this facility, Facility Operating License No. DPR-38, issued on May 23, 2000, is superseded by Subsequent Renewed Facility Operating License No. DPR-38, which is hereby issued to Duke Energy Carolinas, LLC, to read as follows:

1. This subsequent renewed operating license applies to the Oconee Nuclear Station, Unit 1, a pressurized water reactor and associated equipment (the facility) owned and operated by Duke Energy Carolinas, LLC. The facility is located in eastern Oconee County, about eight miles northeast of Seneca, South Carolina, and is described in the "Updated Final Safety Analysis Report" (UFSAR) as supplemented and amended and the Environmental Report as supplemented and amended.

2. Subject to the conditions and requirements incorporated herein, the Commission hereby licenses Duke Energy Carolinas, LLC (the licensee):

   A. Pursuant to Section 104b of the Act and 10 CFR Part 50, "Domestic Licensing of Production and Utilization Facilities," to possess, use, and operate the facility at the designated location on the Oconee Nuclear Station Site in accordance with the procedures and limitations set forth in this license;

   B. Pursuant to the Act and 10 CFR Part 70, to receive, possess, and use at any time special nuclear material as reactor fuel, in accordance with the limitations for storage and amounts required for reactor operation, as described in the UFSAR as supplemented and amended;

   C. Pursuant to the Act and 10 CFR Parts 30, 40 and 70 to receive, possess, and use at any time byproduct, source, and special nuclear material as sealed 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 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 and equipment calibration or associated with radioactive apparatus or components;

   E. Pursuant to the Act and 10 CFR Parts 30 and 70, to possess, but not separate, such byproduct and special nuclear materials as may be produced by the operation of the Oconee Nuclear Station, Units 1, 2 and 3.

3. This subsequent renewed operating license shall be deemed to contain and is subject to the conditions specified in the following Commission regulations in 10 CFR Chapter I, Part 20, Section 30.34 of Part 30, Section 40.41 of Part 40, Sections 50.54 and 50.59 of Part 50 and Section 70.32 of Part 70; is subject to all applicable provisions of the Act and to the rules, regulations, and orders of the Commission now or hereafter in effect; and is subject to the additional conditions specified or incorporated below:

   A. Maximum Power Level

      The licensee is authorized to operate the facility at steady state reactor core power levels not in excess of 2610 megawatts thermal.

   B. Technical Specifications

      The Technical Specifications contained in Appendix A, as revised through Amendment No. 432, are hereby incorporated in the subsequent renewed operating license. The licensee shall operate the facility in accordance with the Technical Specifications.

   C. This subsequent renewed operating license is subject to the following antitrust conditions:

      Applicant makes the commitments contained herein, recognizing that bulk power supply arrangements between neighboring entities normally tend to serve the public interest. In addition, where there are net benefits to all participants, such arrangements also serve the best interests of each of the participants. Among the benefits of such transactions are increased electric system reliability, a reduction in the cost of electric power, and minimization of the environmental effects of the production and sale of electricity.

      Any particular bulk power supply transaction may afford greater benefits to one participant than to another. The benefits realized by a small system may be proportionately greater than those realized by a larger system. The relative benefits to be derived by the parties from a proposed transaction, however, should not be controlling upon a decision with respect to the desirability of participating in the transaction. Accordingly, applicant will enter into proposed bulk power transactions of the types hereinafter described which, on balance, provide net benefits to applicant. There are net benefits in a transaction if applicant recovers the cost of the transaction (as defined in ¶1 (d) hereof) and there is no demonstrable net detriment to applicant arising from that transaction.

      1. As used herein:

         (a) “Bulk Power” means electric power and any attendant energy, supplied or made available at transmission or sub-transmission voltage by one electric system to another.

         (b) “Neighboring Entity” means a private or public corporation, a governmental agency or authority, a municipality, a cooperative, or a lawful association of any of the foregoing owning or operating, or proposing to own or operate, facilities for the generation and transmission of electricity which meets each of the following criteria: (1) its existing or proposed facilities are economically and technically feasible of interconnection with those of the applicant and (2) with the exception of municipalities, cooperatives, governmental agencies or authorities, and associations, it is, or upon commencement of operations will be, a public utility and subject to regulation with respect to rates and service under the laws of North Carolina or South Carolina or under the Federal Power Act; provided, however, that as to associations, each member of such association is either a public utility as discussed in this clause (2) or a municipality, a cooperative or a governmental agency or authority.

(c) Where the phrase "neighboring entity" is intended to include entities engaging or proposing to engage only in the distribution of electricity, this is indicated by adding the phrase "including distribution systems."

(d) "Cost" means any appropriate operating and maintenance expenses, together with all other costs, including a reasonable return on applicant's investment, which are reasonably allocable to a transaction. However, no value shall be included for loss of revenues due to the loss of any wholesale or retail customer as a result of any transaction hereafter described.

2. (a) Applicant will interconnect and coordinate reserves by means of the sale and exchange of emergency and scheduled maintenance bulk power with any neighboring entity(ies), when there are net benefits to each party, on terms that will provide for all of applicant's properly assignable costs as may be determined by the Federal Energy Regulatory Commission and consistent with such cost assignment will allow the other party the fullest possible benefits of such coordination.

(b) Emergency service and/or scheduled maintenance service to be provided by each party will be furnished to the fullest extent available from the supplying party and desired by the party in need. Applicant and each party will provide to the other emergency service and/or scheduled maintenance service if and when available from its own generation and, in accordance with recognized industry practice, from generation of others to the extent it can do so without impairing service to its customers, including other electric systems to whom it has firm commitments.

(c) Each party to a reserve coordination arrangement will establish its own reserve criteria, but in no event shall the minimum installed reserve on each system be less than 15%, calculated as a percentage of estimated peak load responsibility. Either party, if it has, or has firmly planned, installed reserves in excess of the amount called for by its own reserve criterion, will offer any such excess as may in fact be available at the time for which it is sought and for such period as the selling party shall determine for purchase in accordance with reasonable industry practice by the other party to meet such other party's own reserve requirement. The parties will provide such amounts of spinning reserve as may be adequate to avoid the imposition of unreasonable demands on the other party(ies) in meeting the normal contingencies of operating its (their) system(s). However, in no circumstances shall such spinning reserve requirement exceed the installed reserve requirement.

(d) Interconnections will not be limited to low voltages when higher voltages are available from applicant's installed facilities in the area where interconnection is desired and when the proposed arrangement is found to be technically and economically feasible.

(e) Interconnection and reserve coordination agreements will not embody provisions which impose limitations upon the use or resale of power and energy sold or exchanges pursuant to the agreement. Further, such arrangements will not prohibit the participants from entering into other interconnection and coordination arrangements, but may include appropriate provisions to assure that (i) applicant receives adequate notice of such additional interconnection or coordination, (ii) the parties will jointly consider and agree upon such measures, if any, as are reasonably necessary to protect the reliability of the interconnected systems and to prevent undue burdens from being imposed on any system, and (iii) applicant will be fully compensated for its costs. Reasonable industry practice as developed in the area from time to time will satisfy this provision.

3. Applicant currently has on file, and may hereafter file, with the Federal Energy Regulatory Commission contracts with neighboring entity(ies) providing for the sale and exchange of short-term power and energy, limited term power and energy, economy energy, non-displacement energy, and emergency capacity and energy. Applicant will enter into contracts providing for the same or for like transactions with any neighboring entity on terms which enable applicant to recover the full costs allocable to such transaction.

4. Applicant currently sells capacity and energy in bulk on a full requirements basis to several entities engaging in the distribution of electric power at retail. In addition, applicant supplies electricity directly to ultimate users in a number of municipalities. Should any such entity(ies) or municipality(ies) desire to become a neighboring entity as defined in 1(b) hereof (either alone or through combination with other), applicant will assist in facilitating the necessary transition through the sale of partial requirements firm power and energy. The provision of such firm partial requirements service shall be under such rates, terms and conditions as shall be found by the Federal Energy Regulatory Commission to provide for the recovery of applicant's costs. Applicant will sell capacity and energy in bulk on a full requirements basis to any municipality currently served by applicant when such municipality lawfully engages in the distribution of electric power at retail.

5. (a) Applicant will facilitate the exchange of electric power in bulk in wholesale transactions over its transmission facilities (1) between or among two or more neighboring entities, including distribution systems with which it is interconnected or may be interconnected in the future, and (2) between any such entity(ies) and any other electric system engaging in bulk power supply between whose facilities applicant's transmission lines and other transmission lines would form a continuous electric path, provided that permission to utilize such other transmission lines has been obtained. Such transaction shall be undertaken provided that the particular transaction reasonably can be accommodated by applicant's transmission system from a functional and technical standpoint and does not constitute the wheeling of power to a retail customer. Such transmission shall be on terms that fully compensate applicant for its cost. Any entity(ies) requesting such transmission arrangements shall give reasonable notice of its (their) schedule and requirements.

   (b) Applicant will include in its planning and construction program, sufficient transmission capacity as required for the transactions referred to in subparagraph (a) of this paragraph, provided that (1) the neighboring entity(ies) gives applicant sufficient advance notice as may be necessary reasonably to accommodate its (their) requirements from a functional and technical standpoint and (2) that such entity(ies) fully compensates applicant for its cost. In carrying out this subparagraph (b), however, applicant shall not be required to construct or add transmission facilities which (a) will be of no demonstrable present or future benefit to applicant, or (b) which could be constructed by the requesting entity(ies) without duplicating any portion of applicant's existing transmission lines, or (c) which would jeopardize applicant's ability to finance or construct on reasonable terms facilities needed to meet its own anticipated system requirements. Where regulatory or environmental approvals are required for the construction or addition of transmission facilities, needed for the transactions referred to in subparagraph (a) of this paragraph, it shall be the responsibility of the entity(ies) seeking the transaction to participate in obtaining such approvals, including sharing in the cost thereof.

6. To increase the possibility of achieving greater reliability and economy of electric generation and transmission facilities, applicant will discuss load projections and system development plans with any neighboring entity(ies).

7. When applicant's plans for future nuclear generating units (for which application will hereafter be made to the Nuclear Regulatory Commission) have reached the stage of serious planning, but before firm decisions have been made as to the size and desired completion date of the proposed nuclear units, applicant will notify all neighboring entities, including distribution systems with peak loads smaller than applicant's, that applicant plans to construct such nuclear units. Neither the timing nor the information provided need be such as to jeopardize obtaining the required site at the lowest possible cost.

8. The foregoing commitments shall be implemented in a manner consistent with the provisions of the Federal Power Act and all other lawful local, State and Federal regulation and authority. Nothing in these commitments is intended to determine in advance the resolution of issues which are properly raised at the Federal Energy Regulatory Commission concerning such commitments, including allocation of costs or the rates to be charged. Applicant will negotiate (including the execution of a contingent statement of intent) with respect to the foregoing commitments with any neighboring entity including distribution systems where applicable engaging in or proposing to engage in bulk power supply transactions, but applicant shall not be required to enter into any final arrangement prior to resolution of any substantial questions as to the lawful authority of an entity to engage in the transactions. In addition, applicant shall not be obligated to enter into a given bulk power supply transaction if: (1) to do so would violate, or incapacitate it from performing any existing lawful contract it has with a third party; (2) there is contemporaneously available to it, a competing or alternative arrangement which affords it greater benefits which would be mutually exclusive of such arrangement; (3) to do so would adversely affect its system operations or the reliability of power supply to its customers; or (4) if to do so would jeopardize applicant's ability to finance or construct on reasonable terms facilities needed to meet its own anticipated system requirements.

D. Fire Protection

Duke Energy Carolinas, LLC, shall implement and maintain in effect all provisions of the approved fire protection program that comply with 10 CFR 50.48(a) and 10 CFR 50.48(c), as specified in the revised licensee's amendment request dated April 14, 2010, supplemented by letters dated: January 30, 2009, February 9, 2009, February 23, 2009, May 31, 2009, August 3, 2009, September 29, 2009, November 30, 2009, September 13, 2010, September 27, 2010, October 14, 2010, November 19, 2010, and December 22, 2010, approved in the NRC safety evaluation (SE) dated December 29, 2010. Except where NRC approval for changes or deviations is required by 10 CFR 50.48(c), and provided no other regulation, technical specification, license condition or requirement would require prior NRC approval, the licensee may make changes to the fire protection program without prior approval of the Commission if those changes satisfy the provisions set forth in 10 CFR 50.48(a) and 10 CFR 50.48(c), the change does not require a change to a technical specification or a license condition, and the criteria listed below are satisfied.

Risk-Informed Changes that May Be Made Without Prior NRC Approval:

Prior NRC review and approval is not required for changes that clearly result in a decrease in risk. The proposed change must also be consistent with the defense-in-depth philosophy and must maintain sufficient safety margins. The change may be implemented following completion of the plant change evaluation.

Due to the need for the licensee to have an industry full-scope peer review of its Fire PRA and to resolve the findings of that peer review, the licensee is not allowed to self-approve quantitative risk-informed fire protection program changes, except those implementation items needing a plant change evaluation as part of the Transition License Condition below. To enable self-approval of quantitative risk- informed fire protection program changes, the licensee will need to make a 10 CFR 50.90 submittal to the NRC requesting to change this license condition. The submittal should describe how the licensee has addressed each of the peer review findings and justify the adequacy of its Fire PRA for use in this application.

Other Changes that May Be Made Without Prior NRC Approval:

1) Changes to NFPA 805, Chapter 3, Fundamental Fire Protection Program

Prior NRC review and approval are not required for changes to the NFPA 805, Chapter 3 fundamental fire protection program elements and design requirements for which an engineering evaluation demonstrates that the alternative to the Chapter 3 element is functionally equivalent or adequate for the hazard. The licensee may use an engineering evaluation to demonstrate that a change to an NFPA 805, Chapter 3 element is functionally equivalent to the corresponding technical requirement. A qualified fire protection engineer shall perform the engineering evaluation and conclude that the change has not affected the functionality of the component, system, procedure, or physical arrangement, using a relevant technical requirement or standard.

The licensee may use an engineering evaluation to demonstrate that changes to certain NFPA 805, Chapter 3 elements are acceptable because the alternative is "adequate for the hazard." Prior NRC review and approval would not be required for alternatives to four specific sections of NFPA 805, Chapter 3 for which an engineering evaluation demonstrates that the alternative to the Chapter 3 element is adequate for the hazard. A qualified fire protection engineer shall perform the engineering evaluation and conclude that the change has not affected the functionality of the component, system, procedure, or physical arrangement, using a relevant technical requirement or standard. The four specific sections of NFPA 805, Chapter 3 are as follows:

- “Fire Alarm and Detection Systems” (Section 3.8);
- “Automatic and Manual Water-Based Fire Suppression Systems" (Section 3.9);
- "Gaseous Fire Suppression Systems" (Section 3.10); and
- "Passive Fire Protection Features" (Section 3.11)

This License Condition does not apply to any demonstration of equivalency under Section 1.7 of NFPA 805.

2) Fire Protection Program Changes that Have No More than Minimal Risk Impact

Prior NRC review and approval are not required for changes to the licensee's fire protection program that have been demonstrated to have no more than a minimal risk impact. The licensee may use its screening process as approved in the NRC SE dated December 29, 2010, to determine that certain fire protection program changes meet the minimal risk criterion. The licensee shall ensure that fire protection defense-in-depth and safety margins are maintained when changes are made to the fire protection program.

Transition License Conditions

1) The licensee shall complete the items described in Section 2.9, Table 2.9-1, "Implementation Items," in the NRC SE dated December 29, 2010, prior to January 1, 2013. Implementation items that result in a risk increase, as part of a plant change evaluation, can be self-approved by the licensee, as long as the overall transition risk remains a decrease (i.e., collective risk increases of transition and implementation are offset by the PSW modification risk decrease).

2) To complete the transition to full compliance with 10 CFR 50.48(c), the licensee shall implement the modifications listed in Section 2.8, Table 2.8.1-1, "Committed Plant Modifications," in the NRC SE dated December 29, 2010.

3) The licensee shall maintain appropriate compensatory measures in place until completion of all modifications and implementation items delineated above.

E. Physical Protection

Duke Energy Carolinas, LLC shall fully implement and maintain in effect all provisions of the Commission-approved physical security, training and qualification and safeguards contingency plans including amendments made pursuant to provisions of the Miscellaneous Amendments and Search Requirements revisions to 10 CFR 73.55 (51 FR 27817 and 27822) and to the authority of 10 CFR 50.90 and 10 CFR 50.54(p). The combined set of plans, which contains safeguards information protected under 10 CFR 73.21, is entitled: "Duke Energy Physical Security Plan" submitted by letter dated September 8, 2004, and supplemented on September 30, 2004, October 15, 2004, October 21, 2004, and October 27, 2004.

Duke Energy Carolinas, LLC shall fully implement and maintain in effect all provisions of the Commission-approved cyber security plan (CSP), including changes made pursuant to the authority of 10 CFR 50.90 and 10 CFR 50.54(p). The Duke Energy Carolinas, LLC CSP was approved by License Amendment No. 378, as supplemented by a change approved by License Amendment No. 391.

F. In the update to the UFSAR required pursuant to 10 CFR 50.71(e)(4) scheduled for July 2001, the licensee shall update the UFSAR to include the UFSAR supplement submitted pursuant to 10 CFR 54.21(d) as revised on March 27, 2000. Until the UFSAR update is complete, the licensee may make changes to the programs described in its UFSAR supplement without prior Commission approval, provided that the licensee evaluates each such change pursuant to the criteria set forth in 10 CFR 50.59 and otherwise complies with the requirements in that section.

G. The licensee's UFSAR supplement submitted pursuant to 10 CFR 54.21(d), as revised on March 27, 2000, describes certain future inspection activities to be completed before the period of extended operation. The licensee shall complete these activities no later than February 6, 2013.

H. Mitigation Strategy License Condition

Develop and maintain strategies for addressing large fires and explosions and that include the following key areas:

(a) Fire fighting response strategy with the following elements:

1. Pre-defined coordinated fire response strategy and guidance
2. Assessment of mutual aid fire fighting assets
3. Designated staging areas for equipment and materials
4. Command and control
5. Training of response personnel

(b) Operations to mitigate fuel damage considering the following:

1. Protection and use of personnel assets
2. Communications
3. Minimizing fire spread
4. Procedures for implementing integrated fire response strategy
5. Identification of readily-available pre-staged equipment
6. Training on integrated fire response strategy
7. SFP mitigation measures

(c) Actions to minimize release to include consideration of:

1. Water spray scrubbing
2. Dose to onsite responders

I. Protected Service Water System Seismic Assessment License Condition

Duke Energy Carolinas, LLC (Duke Energy) shall perform a seismic probabilistic risk assessment (SPRA) which includes the Protected Service Water (PSW) system, in accordance with the Electric Power Research Institute (EPRI) Report No. 1025287, "Seismic Evaluation Guidance: Screening, Prioritization and Implementation Details (SPID) for the Resolution of Fukushima Near-Term Task Force Recommendation 2.1: Seismic," (i.e., the SPID report, November 2012) for the Oconee Nuclear Station (ONS). Duke Energy shall expand the Seismic Equipment List (SEL) to include the PSW system.

J. Upon implementation of Amendment No. 408 adopting TSTF-448, Revision 3, the determination of CRE unfiltered air in-leakage as required by TS SR 3.7.9.4, in accordance with TS 5.5.23.c.(i); the assessment of CRE habitability as required by TS 5.5.23.c.(ii); and the measurement of pressure as required by TS 5.5.23.d, shall be considered met. Following implementation:

(a) The first performance of SR 3.7.9.4 in accordance with Specification 5.5.23.c.(i), shall be within the specified Frequency of 6 years, plus the 18 month (25%) allowance of SR 3.0.2, as measured from the date of the most recent successful tracer gas test, or within the next 18 months if the time period since the most recent successful tracer gas test is greater than 6 years.

(b) The first performance of the periodic assessment of CRE habitability, TS 5.5.23.c.(ii), shall be within 3 years, plus the 9 month (25%) allowance of SR 3.0.2, as measured from the date of the most recent successful tracer gas test or within the next 9 months if the time period since the most recent successful tracer gas test is greater than 3 years.

(c) The first performance of the periodic measurement of CRE pressure, TS 5.5.23.d shall be within 24 months plus the 6 months allowed by SR 3.0.2, as measured from the most recent successful pressure measurement test, or within 6 months if not performed previously.

K. Subsequent License Renewal License Conditions

1. The information in the Updated Final Safety Analysis Report supplement submitted as required by 10 CFR 54.21(d), and revised during the application review process, and the licensee's commitments listed in Appendix A of the "Safety Evaluation Report Related to the Subsequent License Renewal of Oconee Nuclear Station, Units 1, 2, and 3," dated December 19, 2022, are collectively the "Subsequent License Renewal Updated Final Safety Analysis Report Supplement." This Supplement is henceforth part of the Updated Final Safety Analysis Report which will be updated in accordance with 10 CFR 50.71(e).

   As such, the licensee may make changes to the programs, activities, and commitments described in the Subsequent License Renewal Updated Final Safety Analysis Report Supplement, provided the licensee evaluates such changes pursuant to 10 CFR 50.59, "Changes, Tests and Experiments," and otherwise complies with the requirements in that section.

2. This Subsequent License Renewal Updated Final Safety Analysis Report Supplement, as defined in subsequent renewed operating license condition [1] above, describes programs to be implemented and activities to be completed before the subsequent period of extended operation, which is the period following the February 6, 2033, expiration of the initial renewed license.

   (a) The licensee shall implement those new programs and enhancements to existing programs no later than the date 6 months before the subsequent period of extended operation.

   (b) The licensee shall complete those activities by the date 6 months prior to the subsequent period of extended operation or by the end of the last refueling outage before the subsequent period of extended operation, whichever occurs later.

   (c) The licensee shall notify the NRC in writing within 30 days after having accomplished item 2(a) above and include the status of those activities that have been or remain to be completed in item 2(b) above.

   (d) The programs and commitments described in the Subsequent License Renewal Updated Final Safety Analysis Report Supplement shall continue in effect during the subsequent period of extended operation, to the extent set forth therein, unless modified in accordance with the process set forth in 10 CFR 50.59.

4. This subsequent renewed operating license is effective as of the date of issuance and shall expire at midnight on February 6, 2053.

FOR THE NUCLEAR REGULATORY COMMISSION

/RA/

Laura Dudes, Acting Director
Office of Nuclear Reactor Regulation

Attachment:

Appendix A - Technical Specifications Subsequent Renewed Operating License No. DPR-38

Date of Issuance: March 28, 2025

Appendix A: Technical Specifications (ML052840238)

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1.0 USE AND APPLICATION

1.1 Definitions

------------------------------------NOTE------------------------------------
The defined terms of this section appear in capitalized type and are applicable throughout these Technical Specifications and Bases.

Term	Definition
ACTIONS	ACTIONS shall be that part of a Specification that prescribes Required Actions to be taken under designated Conditions within specified Completion Times.
ALLOWABLE THERMAL POWER	ALLOWABLE THERMAL POWER shall be the maximum reactor core heat transfer rate to the reactor coolant permitted by consideration of the number and configuration of reactor coolant pumps (RCPs) in operation.
AXIAL POWER IMBALANCE	AXIAL POWER IMBALANCE shall be the power in the top half of the core, expressed as a percentage of RATED THERMAL POWER (RTP), minus the power in the bottom half of the core, expressed as a percentage of RTP.
AXIAL POWER SHAPING RODS (APSRs)	APSRs shall be the control components with part length absorbers used to control the axial power distribution of the reactor core. The APSRs are positioned manually by the operator and are not trippable.
CHANNEL CALIBRATION	A CHANNEL CALIBRATION shall be the adjustment, as necessary, of the channel output such that it responds within the necessary range and accuracy to known values of the parameter that the channel monitors. The CHANNEL CALIBRATION shall encompass all devices in the channel required for channel OPERABILITY and the CHANNEL FUNCTIONAL TEST. Calibration of instrument channels with resistance temperature detector (RTD) or thermocouple sensors may consist of an inplace qualitative assessment of sensor behavior and normal calibration of the remaining adjustable devices in the channel.

1.1 Definitions

CHANNEL CALIBRATION (continued)	The CHANNEL CALIBRATION may be performed by means of any series of sequential, overlapping, or total channel steps so that the entire channel is calibrated.
CHANNEL CHECK	A CHANNEL CHECK shall be: a. Analog and bistable channels - the qualitative assessment, by observation, of channel behavior during operation. This determination shall include, where possible, comparison of the channel indication and status to other indications or status derived from independent instrument channels measuring the same parameter. b. Digital computer channels – the verification through the absence of alarms from the automatic analog and binary process signal monitoring features used to monitor channel behavior during operation. Deviation beyond the established acceptance criteria is alarmed to allow appropriate action to be taken. This determination shall include, where possible, comparison of channel indication and status to other indications or status derived from the independent channels measuring the same parameter. This determination can be made using computer software or be performed manually.
CHANNEL FUNCTIONAL TEST	A CHANNEL FUNCTIONAL TEST shall be: a. Analog and bistable channels - the injection of a simulated or actual signal into the channel as close to the sensor as practicable to verify OPERABILITY of all devices in the channel required for channel OPERABILITY, and b. Digital computer channels – the use of diagnostic programs to test digital computer hardware and the injection of simulated process data into the channel to verify channel OPERABILITY of all devices in the channel required for channel OPERABILITY. The CHANNEL FUNCTIONAL TEST may be performed by means of any series of sequential, overlapping, or total channel steps so that the entire channel is tested

1.1 Definitions (continued)

CONTROL RODS	CONTROL RODS shall be all full length safety and regulating rods that are used to shut down the reactor and control power level during maneuvering operations.
CORE ALTERATION	CORE ALTERATION shall be the movement of any fuel, sources, or reactivity control components, within the reactor vessel with the vessel head removed and fuel in the vessel. Suspension of CORE ALTERATIONS shall not preclude completion of movement of a component to a safe position.
CORE OPERATING LIMITS REPORT (COLR)	The COLR is the unit specific document that provides cycle specific parameter limits for the current reload cycle. These cycle specific limits shall be determined for each reload cycle in accordance with Specification 5.6.5. Plant operation within these limits is addressed in individual Specifications.
DOSE EQUIVALENT I-131	DOSE EQUIVALENT I-131 shall be that concentration of I-131 (microcuries per gram) that alone would produce the same dose when inhaled as the combined activities of iodine isotopes I-131, I-132, I-133, I-134, and I-135 actually present. The determination of DOSE EQUIVALENT I-131 shall be performed using Committed Dose Equivalent (CDE) or Committed Effective Dose Equivalent (CEDE) dose conversion factors from Table 2.1 of the Environmental Protection Agency (EPA) Federal Guidance Report No. 11.
DOSE EQUIVALENT XE-133	DOSE EQUIVALENT XE-133 shall be that concentration of Xe-133 (microcuries per gram) that alone would produce the same acute dose to the whole body as the combined activities of noble gas nuclides Kr-85m, Kr-85, Kr-87, Kr-88, Xe-131m, Xe-133m, Xe-133, Xe-135m, Xe-135, and Xe-138 actually present. If a specific noble gas nuclide is not detected, it should be assumed to be present at the minimum detectable activity. The determination of DOSE EQUIVALENT XE-133 shall be performed using effective dose conversion factors for air submersion listed in Table III.1 of EPA Federal Guidance Report No. 12, 1993, "External Exposure to Radionuclides in Air, Water, and Soil."
INSERVICE TESTING PROGRAM	The INSERVICE TESTING PROGRAM is the licensee program that fulfills the requirements of 10 CFR 50.55a(f).

1.1 Definitions (continued)

LEAKAGE

LEAKAGE shall be:

a. Identified LEAKAGE

1. LEAKAGE, such as that from pump seals or valve packing (except RCP seal water injection or leakoff), that is captured and conducted to collection systems or a sump or collecting tank;

2. LEAKAGE into the containment atmosphere from sources that are both specifically located and known to not interfere with the operation of leakage detection systems; or

3. Reactor Coolant System (RCS) LEAKAGE through a steam generator to the Secondary System (primary to secondary LEAKAGE);

b. Unidentified LEAKAGE

All LEAKAGE (except RCP seal water injection or leakoff) that is not identified LEAKAGE; and

c. Pressure Boundary LEAKAGE

LEAKAGE (except primary to secondary LEAKAGE) through a fault in an RCS component body, pipe wall, or vessel wall. LEAKAGE past seals, packing, and gaskets is not pressure boundary LEAKAGE.

MODE

A MODE shall correspond to any one inclusive combination of core reactivity condition, power level, average reactor coolant temperature, and reactor vessel head closure bolt tensioning specified in Table 1.1-1 with fuel in the reactor vessel.

OPERABLE – OPERABILITY

A system, subsystem, train, component, or device shall be OPERABLE or have OPERABILITY when it is capable of performing its specified safety function(s) and when all necessary attendant instrumentation, controls, normal or emergency electrical power, cooling and seal water, lubrication, and other auxiliary equipment that are required for the system, subsystem, train, component, or device to perform its specified safety function(s) are also capable of performing their related support function(s).

1.1 Definitions (continued)

PHYSICS TESTS	PHYSICS TESTS shall be those tests performed to measure the fundamental nuclear characteristics of the reactor core and related instrumentation. These tests are: a. Described in the UFSAR; b. Authorized under the provisions of 10 CFR 50.59; or c. Otherwise approved by the Nuclear Regulatory Commission.
QUADRANT POWER TILT (QPT)	QPT shall be defined by the following equation and is expressed as a percentage. $QPT = 100\left(\frac{\text{Power in any Core Quadrant}}{\text{Average Power of all Quadrants}} - 1\right)$
RATED THERMAL POWER (RTP)	RTP shall be a total reactor core heat transfer rate to the reactor coolant of 2568 MWt.*
SHUTDOWN MARGIN (SDM)	SDM shall be the instantaneous amount of reactivity by which the reactor is subcritical or would be subcritical from its present condition assuming: a. All full length CONTROL RODS (safety and regulating) are fully inserted except for the single CONTROL ROD of highest reactivity worth, which is assumed to be fully withdrawn. However, with all CONTROL RODS verified fully inserted by two independent means, it is not necessary to account for a stuck CONTROL ROD in the SDM calculation. With any CONTROL ROD not capable of being fully inserted, the reactivity worth of these CONTROL RODS must be accounted for in the determination of SDM; b. In MODES 1 and 2, the fuel and moderator temperatures are changed to the nominal zero power design level; and c. There is no change in APSR position.

*Following implementation of MUR on the respective unit, the value of RTP shall be 2610 MWt.

1.1 Definitions

THERMAL POWER	THERMAL POWER shall be the total reactor core heat transfer rate to the reactor coolant.

Table 1.1-1 (page 1 of 1)
MODES

MODE	TITLE	REACTIVITY CONDITION (k_{eff})	% RATED THERMAL POWER[a]	AVERAGE REACTOR COOLANT TEMPERATURE (°F)
1	Power Operation	≥ 0.99	> 5	NA
2	Startup	≥ 0.99	≤ 5	NA
3	Hot Standby	< 0.99	NA	≥ 250
4	Hot Shutdown[b]	< 0.99	NA	250 > T > 200
5	Cold Shutdown[b]	< 0.99	NA	≤ 200
6	Refueling[c]	NA	NA	NA

(a) Excluding decay heat.

(b) All reactor vessel head closure bolts fully tensioned.

(c) One or more reactor vessel head closure bolts less than fully tensioned.

1.0 USE AND APPLICATION

1.2 Logical Connectors

PURPOSE

The purpose of this section is to explain the meaning of logical connectors.

Logical connectors are used in Technical Specifications (TS) to discriminate between, and yet connect, discrete Conditions, Required Actions, Completion Times, Surveillances, and Frequencies. The only logical connectors that appear in TS are AND and OR. The physical arrangement of these connectors constitutes logical conventions with specific meanings.

BACKGROUND

Several levels of logic may be used to state Required Actions. These levels are identified by the placement (or nesting) of the logical connectors and by the number assigned to each Required Action. The first level of logic is identified by the first digit of the number assigned to a Required Action and the placement of the logical connector in the first level of nesting (i.e., left justified with the number of the Required Action). The successive levels of logic are identified by additional digits of the Required Action number and by successive indentations of the logical connectors.

When logical connectors are used to state a Condition, Completion Time, Surveillance, or Frequency, only the first level of logic is used, and the logical connector is left justified with the statement of the Condition, Completion Time, Surveillance, or Frequency.

EXAMPLES

The following examples illustrate the use of logical connectors.

1.2 Logical Connectors

EXAMPLES (continued)

EXAMPLE 1.2-1

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. LCO not met.	A.1 Verify . . . AND A.2 Restore . . .	

In this example the logical connector AND is used to indicate that when in Condition A, both Required Actions A.1 and A.2 must be completed.

1.2 Logical Connectors

EXAMPLES (continued)

EXAMPLE 1.2-2

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. LCO not met.	A.1 Trip . . . OR A.2.1 Verify . . . AND A.2.2.1 Reduce . . . OR A.2.2.2 Perform . . . OR A.3 Align . . .	

This example represents a more complicated use of logical connectors. Required Actions A.1, A.2, and A.3 are alternative choices, only one of which must be performed as indicated by the use of the logical connector OR and the left justified placement. Any one of these three Actions may be chosen. If A.2 is chosen, then both A.2.1 and A.2.2 must be performed as indicated by the logical connector AND. Required Action A.2.2 is met by performing A.2.2.1 or A.2.2.2. The indented position of the logical connector OR indicates that A.2.2.1 and A.2.2.2 are alternative choices, only one of which must be performed.

1.0 USE AND APPLICATION

1.3 Completion Times

PURPOSE

The purpose of this section is to establish the Completion Time convention and to provide guidance for its use.

BACKGROUND

Limiting Conditions for Operation (LCOs) specify minimum requirements for ensuring safe operation of the unit. The ACTIONS associated with an LCO state Conditions that typically describe the ways in which the requirements of the LCO can fail to be met. Specified with each stated Condition are Required Action(s) and Completion Time(s).

DESCRIPTION

The Completion Time is the amount of time allowed for completing a Required Action. It is referenced to the discovery of a situation (e.g., inoperable equipment or variable not within limits) that requires entering an ACTIONS Condition unless otherwise specified, providing the unit is in a MODE or specified condition stated in the Applicability of the LCO.

Unless otherwise specified, the Completion Time begins when a senior licensed operator on the operating shift crew with responsibility for plant operations makes the determination that an LCO Is not met and an ACTIONS Condition Is entered. The "otherwise specified" exceptions are varied, such as a Required Action Note or Surveillance Requirement Note that provides an alternative time to perform specific tasks, such as testing, without starting the Completion Time. While utilizing the Note, should a Condition be applicable for any reason not addressed by the Note, the Completion Time begins. Should the time allowance in the Note be exceeded, the Completion Time begins at that point. The exceptions may also be incorporated into the Completion Time. For example, LCO 3.8.1, "AC Sources - Operating," Required Action C.2.2.1, requires energizing both standby buses from the Lee Combustion Turbine (LCT) via the isolated power path. The Completion Time states, "72 hours AND 1 hour from subsequent discovery of deenergized standby bus." In this case the 1-hour Completion Time does not begin until the conditions In the Completion Time (i.e., discovery of the deenergized standby bus) are satisfied.

Required Actions must be completed prior to the expiration of the specified Completion Time. An ACTIONS Condition remains in effect and the Required Actions apply until the Condition no longer exists or the unit is not within the LCO Applicability.

1.3 Completion Times

DESCRIPTION (continued)

If situations are discovered that require entry into more than one Condition at a time within a single LCO (multiple Conditions), the Required Actions for each Condition must be performed within the associated Completion Time. When in multiple Conditions, separate Completion Times are tracked for each Condition starting from the discovery of the situation that required entry into the Condition, unless otherwise specified.

Once a Condition has been entered, subsequent trains, subsystems, components, or variables expressed in the Condition, discovered to be inoperable or not within limits, will not result in separate entry into the Condition, unless specifically stated. The Required Actions of the Condition continue to apply to each additional failure, with Completion Times based on initial entry into the Condition, unless otherwise specified.

However, when a subsequent train, subsystem, component, or variable, expressed in the Condition, is discovered to be inoperable or not within limits, the Completion Time(s) may be extended. To apply this Completion Time extension, two criteria must first be met. The subsequent inoperability:

a. Must exist concurrent with the first inoperability; and

b. Must remain inoperable or not within limits after the first inoperability is resolved.

The total Completion Time allowed for completing a Required Action to address the subsequent inoperability shall be limited to the more restrictive of either:

a. The stated Completion Time, as measured from the initial entry into the Condition, plus an additional 24 hours; or

b. The stated Completion Time as measured from discovery of the subsequent inoperability.

The above Completion Time extensions do not apply to those Specifications that have exceptions that allow completely separate re-entry into the Condition (for each train, subsystem, component, or variable expressed in the Condition) and separate tracking of Completion Times based on this re-entry. These exceptions are stated in individual Specifications.

1.3 Completion Times

DESCRIPTION (continued)

The above Completion Time extension does not apply to a Completion Time with a modified "time zero." This modified "time zero" may be expressed as a repetitive time (i.e., "once per 8 hours," where the Completion Time is referenced from a previous completion of the Required Action versus the time of Condition entry) or as a time modified by the phrase "from discovery . . ."

EXAMPLES

The following examples illustrate the use of Completion Times with different types of Conditions and changing Conditions.

EXAMPLE 1.3-1

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
B. Required Action and associated Completion Time not met.	B.1 Be in MODE 3. AND B.2 Be in MODE 5.	6 hours 36 hours

Condition B has two Required Actions. Each Required Action has its own separate Completion Time. Each Completion Time is referenced to the time that Condition B is entered.

The Required Actions of Condition B are to be in MODE 3 within 6 hours AND in MODE 5 within 36 hours. A total of 6 hours is allowed for reaching MODE 3 and a total of 36 hours (not 42 hours) is allowed for reaching MODE 5 from the time that Condition B was entered. If MODE 3 is reached within 3 hours, the time allowed for reaching MODE 5 is the next 33 hours because the total time allowed for reaching MODE 5 is 36 hours.

If Condition B is entered while in MODE 3, the time allowed for reaching MODE 5 is the next 36 hours.

1.3 Completion Times

EXAMPLES (continued)

EXAMPLE 1.3-2

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One pump inoperable.	A.1 Restore pump to OPERABLE status.	7 days
B. Required Action and associated Completion Time not met.	B.1 Be in MODE 3. AND B.2 Be in MODE 5.	6 hours 36 hours

When a pump is declared inoperable, Condition A is entered. If the pump is not restored to OPERABLE status within 7 days, Condition B is also entered and the Completion Time clocks for Required Actions B.1 and B.2 start. If the inoperable pump is restored to OPERABLE status after Condition B is entered, Condition A and B are exited, and therefore, the Required Actions of Condition B may be terminated.

When a second pump is declared inoperable while the first pump is still inoperable, Condition A is not re-entered for the second pump. LCO 3.0.3 is entered, since the ACTIONS do not include a Condition for more than one inoperable pump. The Completion Time clock for Condition A does not stop after LCO 3.0.3 is entered, but continues to be tracked from the time Condition A was initially entered.

While in LCO 3.0.3, if one of the inoperable pumps is restored to OPERABLE status and the Completion Time for Condition A has not expired, LCO 3.0.3 may be exited and operation continued in accordance with Condition A.

1.3 Completion Times

EXAMPLES

EXAMPLE 1.3-2 (continued)

While in LCO 3.0.3, if one of the inoperable pumps is restored to OPERABLE status and the Completion Time for Condition A has expired, LCO 3.0.3 may be exited and operation continued in accordance with Condition B. The Completion Time for Condition B is tracked from the time the Condition A Completion Time expired.

On restoring one of the pumps to OPERABLE status, the Condition A Completion Time is not reset, but continues from the time the first pump was declared inoperable. This Completion Time may be extended if the pump restored to OPERABLE status was the first inoperable pump. A 24 hour extension to the stated 7 days is allowed, provided this does not result in the second pump being inoperable for > 7 days.

1.3 Completion Times

EXAMPLES (continued)

EXAMPLE 1.3-3

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One Function X train inoperable.	A.1 Restore Function X train to OPERABLE status.	7 days
B. One Function Y train inoperable.	B.1 Restore Function Y train to OPERABLE status.	72 hours
C. One Function X train inoperable. AND One Function Y train inoperable.	C.1 Restore Function X train to OPERABLE status. OR C.2 Restore Function Y train to OPERABLE status.	72 hours 72 hours

1.3 Completion Times

EXAMPLES

EXAMPLE 1.3-3 (continued)

When one Function X train and one Function Y train are inoperable, Condition A and Condition B are concurrently applicable. The Completion Times for Condition A and Condition B are tracked separately for each train starting from the time each train was declared inoperable and the Condition was entered. A separate Completion Time is established for Condition C and tracked from the time the second train was declared inoperable (i.e., the time the situation described in Condition C was discovered).

If Required Action C.2 is completed within the specified Completion Time, Conditions B and C are exited. If the Completion Time for Required Action A.1 has not expired, operation may continue in accordance with Condition A. The remaining Completion Time in Condition A is measured from the time the affected train was declared inoperable (i.e., initial entry into Condition A).

It is possible to alternate between Conditions A, B, and C in such a manner that operation could continue indefinitely without ever restoring systems to meet the LCO. However, doing so would be inconsistent with the basis of the Completion Times. Therefore, there shall be administrative controls to limit the maximum time allowed for any combination of Conditions that result in a single contiguous occurrence of failing to meet the LCO. These administrative controls shall ensure that the Completion Times for those Conditions are not inappropriately extended.

1.3 Completion Times

EXAMPLES (continued)

EXAMPLE 1.3-4

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more valves inoperable.	A.1 Restore valve(s) to OPERABLE status.	4 hours
B. Required Action and associated Completion Time not met.	B.1 Be in MODE 3. AND B.2 Be in MODE 4.	6 hours 12 hours

A single Completion Time is used for any number of valves inoperable at the same time. The Completion Time associated with Condition A is based on the initial entry into Condition A and is not tracked on a per valve basis. Declaring subsequent valves inoperable, while Condition A is still in effect, does not trigger the tracking of separate Completion Times.

Once one of the valves has been restored to OPERABLE status, the Condition A Completion Time is not reset, but continues from the time the first valve was declared inoperable. The Completion Time may be extended if the valve restored to OPERABLE status was the first inoperable valve. The Condition A Completion Time may be extended for up to 4 hours provided this does not result in any subsequent valve being inoperable for > 4 hours.

If the Completion Time of 4 hours (plus the extension) expires while one or more valves are still inoperable, Condition B is entered.

1.3 Completion Times

EXAMPLES (continued)

EXAMPLE 1.3-5

ACTIONS

-----------------------------------NOTE-----------------------------------
Separate Condition entry is allowed for each inoperable valve.

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more valves inoperable.	A.1 Restore valve to OPERABLE status.	4 hours
B. Required Action and associated Completion Time not met.	B.1 Be in MODE 3. AND B.2 Be in MODE 4.	6 hours 12 hours

The Note above the ACTIONS Table is a method of modifying how the Completion Time is tracked. If this method of modifying how the Completion Time is tracked was applicable only to a specific Condition, the Note would appear in that Condition rather than at the top of the ACTIONS Table.

The Note allows Condition A to be entered separately for each inoperable valve, and Completion Times tracked on a per valve basis. When a valve is declared inoperable, Condition A is entered and its Completion Time starts. If subsequent valves are declared inoperable, Condition A is entered for each valve and separate Completion Times start and are tracked for each valve.

1.3 Completion Times

EXAMPLES

EXAMPLE 1.3-5 (continued)

If the Completion Time associated with a valve in Condition A expires, Condition B is entered for that valve. If the Completion Times associated with subsequent valves in Condition A expire, Condition B is entered separately for each valve and separate Completion Times start and are tracked for each valve. If a valve that caused entry into Condition B is restored to OPERABLE status, Condition B is exited for that valve.

Since the Note in this example allows multiple Condition entry and tracking of separate Completion Times, Completion Time extensions do not apply.

EXAMPLE 1.3-6

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One channel inoperable.	A.1 Perform SR 3.x.x.x. OR A.2 Reduce THERMAL POWER to ≤ 50% RTP.	Once per 8 hours 8 hours
B. Required Action and associated Completion Time not met.	B.1 Be in MODE 3.	6 hours

1.3 Completion Times

EXAMPLES

EXAMPLE 1.3-6 (continued)

Entry into Condition A offers a choice between Required Action A.1 or A.2. Required Action A.1 has a "once per" Completion Time, which qualifies for the 25% extension, per SR 3.0.2, to each performance after the initial performance. The initial 8 hour interval of Required Action A.1 begins when Condition A is entered and the initial performance of Required Action A.1 must be complete within the first 8 hour interval. If Required Action A.1 is followed and the Required Action is not met within the Completion Time (plus the extension allowed by SR 3.0.2), Condition B is entered. If Required Action A.2 is followed and the Completion Time of 8 hours is not met, Condition B is entered.

If after entry into Condition B, Required Action A.1 or A.2 is met, Condition B is exited and operation may then continue in Condition A.

1.3 Completion Times

EXAMPLES (continued)

EXAMPLE 1.3-7

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One subsystem inoperable.	A.1 Verify affected subsystem isolated.	1 hour AND Once per 8 hours thereafter
	AND	
	A.2 Restore subsystem to OPERABLE status.	72 hours
B. Required Action and associated Completion Time not met.	B.1 Be in MODE 3.	6 hours
	AND	
	B.2 Be in MODE 5.	36 hours

Required Action A.1 has two Completion Times. The 1 hour Completion Time begins at the time the Condition is entered and each "Once per 8 hours thereafter" interval begins upon performance of Required Action A.1.

If after Condition A is entered, Required Action A.1 is not met within either the initial 1 hour or any subsequent 8 hour interval from the previous performance (plus the extension allowed by SR 3.0.2), Condition B is entered. The Completion Time clock for Condition A does not stop after Condition B is entered, but continues from the time

1.3 Completion Times

EXAMPLES	<u>EXAMPLE 1.3-7</u> (continued) Condition A was initially entered. If Required Action A.1 is met after Condition B is entered, Condition B is exited and operation may continue in accordance with Condition A, provided the Completion Time for Required Action A.2 has not expired.
IMMEDIATE COMPLETION TIME	When "Immediately" is used as a Completion Time, the Required Action should be pursued without delay and in a controlled manner.

1.0 USE AND APPLICATION

1.4 Frequency

PURPOSE

The purpose of this section is to define the proper use and application of Frequency requirements.

DESCRIPTION

Each Surveillance Requirement (SR) has a specified Frequency in which the Surveillance must be met in order to meet the associated LCO. An understanding of the correct application of the specified Frequency is necessary for compliance with the SR.

The "specified Frequency" is referred to throughout this section and each of the Specifications of Section 3.0, Surveillance Requirement (SR) Applicability. The "specified Frequency" consists of the requirements of the Frequency column of each SR, as well as certain Notes in the Surveillance column that modify performance requirements.

Situations where a Surveillance could be required (i.e., its Frequency could expire), but where it is not possible or not desired that it be performed until sometime after the associated LCO is within its Applicability, represent potential SR 3.0.4 conflicts. To avoid these conflicts, the SR (i.e., the Surveillance or the Frequency) is stated such that it is only "required" when it can be and should be performed. With an SR satisfied, SR 3.0.4 imposes no restriction.

EXAMPLES

The following examples illustrate the various ways that Frequencies are specified. In these examples, the Applicability of the LCO (LCO not shown) is MODES 1, 2, and 3.

EXAMPLE 1.4-1

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
Perform CHANNEL CHECK.	12 hours

1.4 Frequency

EXAMPLES (continued)

Example 1.4-1 contains the type of SR most often encountered in the Technical Specifications (TS). The Frequency specifies an interval (12 hours) during which the associated Surveillance must be performed at least one time. Performance of the Surveillance initiates the subsequent interval. Although the Frequency is stated as 12 hours, an extension of the time interval to 1.25 times the stated Frequency is allowed by SR 3.0.2 for operational flexibility. The measurement of this interval continues at all times, even when the SR is not required to be met per SR 3.0.1 (such as when the equipment is inoperable, a variable is outside specified limits, or the unit is outside the Applicability of the LCO). If the interval specified by SR 3.0.2 is exceeded while the unit is in a MODE or other specified condition in the Applicability of the LCO, and the performance of the Surveillance is not otherwise modified (refer to Example 1.4-3), then SR 3.0.3 becomes applicable.

If the interval as specified by SR 3.0.2 is exceeded while the unit is not in a MODE or other specified condition in the Applicability of the LCO for which performance of the SR is required, the Surveillance must be performed within the Frequency requirements of SR 3.0.2 prior to entry into the MODE or other specified condition. Failure to do so would result in a violation of SR 3.0.4.

EXAMPLE 1.4-2

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
Verify flow is within limits.	Once within 12 hours after $\geq$ 25% RTP AND 24 hours thereafter

1.4 Frequency

EXAMPLES (continued)

Example 1.4-2 has two Frequencies. The first is a one time performance Frequency, and the second is of the type shown in Example 1.4-1. The logical connector "AND" indicates that both Frequency requirements must be met. Each time reactor power is increased from a power level < 25% RTP to ≥ 25% RTP, the Surveillance must be performed within 12 hours.

The use of "once" indicates a single performance will satisfy the specified Frequency (assuming no other Frequencies are connected by "AND"). This type of Frequency does not qualify for the extension allowed by SR 3.0.2. "Thereafter" indicates future performances must be established per SR 3.0.2, but only after a specified condition is first met (i.e., the "once" performance in this example). If reactor power decreases to < 25% RTP, the measurement of both intervals stops. New intervals start upon reactor power reaching 25% RTP.

EXAMPLE 1.4-3

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
-----NOTE----- Not required to be performed until 12 hours after ≥ 25% RTP. ----------	
Perform channel adjustment.	7 days

The interval continues whether or not the unit operation is < 25% RTP between performances.

As the Note modifies the required performance of the Surveillance, it is construed to be part of the "specified Frequency." Should the 7 day interval be exceeded while operation is < 25% RTP, this Note allows 12 hours after power reaches ≥ 25% RTP to perform the Surveillance. The Surveillance is still considered to be performed within the "specified Frequency." Therefore, if the Surveillance were not performed within the

1.4 Frequency

EXAMPLES (continued)

7 day (plus the extension allowed by SR 3.0.2) interval, but operation was < 25% RTP, it would not constitute a failure of the SR or failure to meet the LCO. Also, no violation of SR 3.0.4 occurs when changing MODES, even with the 7 day Frequency not met, provided operation does not exceed 12 hours with power ≥ 25% RTP.

Once the unit reaches 25% RTP, 12 hours would be allowed for completing the Surveillance. If the Surveillance were not performed within this 12 hour interval, there would then be a failure to perform a Surveillance within the specified Frequency, and the provisions of SR 3.0.3 would apply.

2.0 SAFETY LIMITS (SLs)

2.1 SLs

2.1.1 Reactor Core SLs

2.1.1.1 --NOTE--
Following transition to the COPERNIC Fuel Performance Methodology the TACO and GDTACO Fuel Performance Methodologies are not applicable.

In MODES 1 and 2, for UO_2 fuel, the maximum local fuel pin centerline temperature for TACO applications shall be $\leq$ 4656 - (5.8×10^{-3} x (Burnup, MWD/MTU)) – 709.04|chi| - 786.62(chi)^2 + 1087.07(chi)^3 °F where chi is the quantity oxygen-to-uranium ratio minus 2.0. For Gadolinia fuel, the local fuel pin centerline temperature for GDTACO applications shall be $\leq$ 4656 – (6.5×10^{-3} x (Burnup, MWD/MTU)) °F. For COPERNIC applications the maximum local fuel pin centerline temperature shall be $\leq$ 4901 – (1.37×10^{-3} x (Burnup, MWD/MTU)) °F. Operation within these limits is ensured by compliance with the Axial Power Imbalance Protective Limits as specified in the Core Operating Limits Report.

2.1.1.2 In MODES 1 and 2, the departure from nucleate boiling ratio shall be maintained greater than the limit of 1.18 for the BWC correlation, 1.19 for the BWU correlation, and 1.132 for the BHTP correlation. Operation within these limits is ensured by compliance with the Axial Power Imbalance Protective Limits and RCS Variable Low Pressure Protective Limits as specified in the Core Operating Limits Report.

2.1.2 RCS Pressure SL

In MODES 1, 2, 3, 4, and 5, the RCS pressure shall be maintained $\leq$ 2750 psig.

2.2 SL Violations

With any SL violation, the following actions shall be completed:

2.2.1 In MODE 1 or 2, if SL 2.1.1.1 or SL 2.1.1.2 is violated, be in MODE 3 within 1 hour.

2.2.2 In MODE 1 or 2, if SL 2.1.2 is violated, restore compliance within limits and be in MODE 3 within 1 hour.

2.2.3 In MODES 3, 4, and 5, if SL 2.1.2 is violated, restore RCS pressure to $\leq$ 2750 psig within 5 minutes.

3.0 LIMITING CONDITION FOR OPERATION (LCO) APPLICABILITY

LCO 3.0.1

LCOs shall be met during the MODES or other specified conditions in the Applicability, except as provided in LCO 3.0.2, LCO 3.0.7, LCO 3.0.8, and LCO 3.0.9.

LCO 3.0.2

Upon discovery of a failure to meet an LCO, the Required Actions of the associated Conditions shall be met, except as provided in LCO 3.0.5 and LCO 3.0.6.

If the LCO is met or is no longer applicable prior to expiration of the specified Completion Time(s), completion of the Required Action(s) is not required, unless otherwise stated.

LCO 3.0.3

When an LCO is not met and the associated ACTIONS are not met, an associated ACTION is not provided, or if directed by the associated ACTIONS, the unit shall be placed in a MODE or other specified condition in which the LCO is not applicable. Action shall be initiated within 1 hour to place the unit, as applicable, in:

a. MODE 3 within 12 hours;

b. MODE 4 within 18 hours; and

c. MODE 5 within 37 hours.

Exceptions to this Specification are stated in the individual Specifications.

Where corrective measures are completed that permit operation in accordance with the LCO or ACTIONS, completion of the actions required by LCO 3.0.3 is not required.

LCO 3.0.3 is only applicable in MODES 1, 2, 3, and 4.

LCO 3.0.4

When an LCO is not met, entry into a MODE or other specified condition in the Applicability shall only be made:

a. When the associated ACTIONS to be entered permit continued operation in the MODE or other specified condition in the Applicability for an unlimited period of time;

3.0 LCO APPLICABILITY

LCO 3.0.4 (continued)

b. After performance of a risk assessment addressing inoperable systems and components, consideration of the results, determination of the acceptability of entering the MODE or other specified condition in the Applicability, and establishment of risk management actions, if appropriate; exceptions to this Specification are stated in the individual Specifications, or

c. When an allowance is stated in the individual value, parameter, or other Specification.

This Specification shall not prevent changes in MODES or other specified conditions in the Applicability that are required to comply with ACTIONS or that are part of a shutdown of the unit.

LCO 3.0.5

Equipment removed from service or declared inoperable to comply with ACTIONS may be returned to service under administrative control solely to perform testing required to demonstrate its OPERABILITY or the OPERABILITY of other equipment. This is an exception to LCO 3.0.2 for the system returned to service under administrative control to perform the testing required to demonstrate OPERABILITY.

LCO 3.0.6

When a supported system LCO is not met solely due to a support system LCO not being met, the Conditions and Required Actions associated with this supported system are not required to be entered. Only the support system LCO ACTIONS are required to be entered. This is an exception to LCO 3.0.2 for the supported system. In this event, an evaluation shall be performed in accordance with Specification 5.5.16, "Safety Function Determination Program (SFDP)." If a loss of safety function is determined to exist by this program, the appropriate Conditions and Required Actions of the LCO in which the loss of safety function exists are required to be entered.

When a support system's Required Action directs a supported system to be declared inoperable or directs entry into Conditions and Required Actions for a supported system, the applicable Conditions and Required Actions shall be entered in accordance with LCO 3.0.2.

LCO 3.0.7

Test Exception LCO 3.1.8 allows specified Technical Specification (TS) requirements to be changed to permit performance of special tests and operations. Unless otherwise specified, all other TS requirements remain unchanged. Compliance with Test Exception LCOs is optional. When a Test Exception LCO is desired to be met but is not met, the ACTIONS of the Test Exception LCO shall be met. When a Test Exception LCO is not

3.0 LCO APPLICABILITY

LCO 3.0.7 (continued)

desired to be met, entry into a MODE or other specified condition in the Applicability shall be made in accordance with the other applicable Specifications.

LCO 3.0.8

When one or more required snubbers are unable to perform their associated support function(s), any affected supported LCO(s) are not required to be declared not met solely for this reason if risk is assessed and managed, and:

a. the snubbers not able to perform their associated support function(s) are associated with only one train of a multiple train system or are associated with a single train system and are able to perform their associated support function within 72 hours; or

b. the snubbers not able to perform their associated support function(s) are associated with more than one train of a multiple train system and are able to perform their associated support function within 12 hours.

At the end of the specified period the required snubbers must be able to perform their associated support function(s), or the affected supported system LCO(s) shall be declared not met.

LCO 3.0.9

When one or more required barriers are unable to perform their related support function(s), any supported system LCO(s) are not required to be declared not met solely for this reason for up to 30 days provided that at least one train or subsystem of the supported system is OPERABLE and supported by barriers capable of providing their related support function(s), and risk is assessed and managed. This specification may be concurrently applied to more than one train or subsystem of a multiple train or subsystem supported system provided at least one train or subsystem of the supported system is OPERABLE and the barriers supporting each of these trains or subsystems provide their related support function(s) for different categories of initiating events.

If the required OPERABLE train or subsystem becomes inoperable while this specification is in use, it must be restored to OPERABLE status within 24 hours or the provisions of this specification cannot be applied to the trains or subsystems supported by the barriers that cannot perform their related support function(s).

At the end of the specified period, the required barriers must be able to perform their related support function(s) or the supported system LCO(s) shall be declared not met.

3.0 SURVEILLANCE REQUIREMENT (SR) APPLICABILITY

SR 3.0.1

SRs shall be met during the MODES or other specified conditions in the Applicability for individual LCOs, unless otherwise stated in the SR. Failure to meet a Surveillance, whether such failure is experienced during the performance of the Surveillance or between performances of the Surveillance, shall be failure to meet the LCO. Failure to perform a Surveillance within the specified Frequency shall be failure to meet the LCO except as provided in SR 3.0.3. Surveillances do not have to be performed on inoperable equipment or variables outside specified limits.

SR 3.0.2

The specified Frequency for each SR is met if the Surveillance is performed within 1.25 times the interval specified in the Frequency, as measured from the previous performance or as measured from the time a specified condition of the Frequency is met.

For Frequencies specified as "once," the above interval extension does not apply.

If a Completion Time requires periodic performance on a "once per . . ." basis, the above Frequency extension applies to each performance after the initial performance.

Exceptions to this Specification are stated in the individual Specifications.

SR 3.0.3

If it is discovered that a Surveillance was not performed within its specified Frequency, then compliance with the requirement to declare the LCO not met may be delayed, from the time of discovery, up to 24 hours or up to the limit of the specified Frequency, whichever is greater. This delay period is permitted to allow performance of the Surveillance. The delay period is only applicable when there is a reasonable expectation the surveillance will be met when performed. A risk evaluation shall be performed for any Surveillance delayed greater than 24 hours, and the risk impact shall be managed.

If the Surveillance is not performed within the delay period, the LCO must immediately be declared not met, and the applicable Condition(s) must be entered.

When the Surveillance is performed within the delay period and the Surveillance is not met, the LCO must immediately be declared not met, and the applicable Condition(s) must be entered.

3.0 SR APPLICABILITY (continued)

SR 3.0.4

Entry into a MODE or other specified condition in the Applicability of an LCO shall only be made when the LCO's Surveillances have been met within their specified Frequency, except as provided by SR 3.0.3. When an LCO is not met due to Surveillances not having been met, entry into a MODE or other specified condition in the Applicability shall only be made in accordance with LCO 3.0.4.

This provision shall not prevent entry into MODES or other specified conditions in the Applicability that are required to comply with ACTIONS or that are part of a shutdown of the unit.

3.1 REACTIVITY CONTROL SYSTEMS

3.1.1 SHUTDOWN MARGIN (SDM)

LCO 3.1.1 The SDM shall be within the limit specified in the COLR.

APPLICABILITY: MODES 3, 4, and 5.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. SDM not within limit.	A.1 Initiate boration to restore SDM to within limit.	15 minutes

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.1.1.1	Verify SDM is within the limit specified in the COLR.	In accordance with the Surveillance Frequency Control Program

3.1 REACTIVITY CONTROL SYSTEMS

3.1.2 Reactivity Balance

LCO 3.1.2 The measured core reactivity balance shall be within ± 1% $\Delta k/k$ of predicted values.

APPLICABILITY: MODE 1.

ACTIONS

CONDITION	REQUIRED ACTION		COMPLETION TIME
A. Measured core reactivity balance not within limit.	A.1	Re-evaluate core design and safety analysis and determine that the reactor core is acceptable for continued operation.	7 days
	AND		
	A.2	Establish appropriate operating restrictions and SRs.	7 days
B. Required Action and associated Completion Time not met.	B.1	Be in MODE 2.	12 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.1.2.1	-----------------------NOTES----------------------- The predicted reactivity values may be adjusted (normalized) to correspond to the measured core reactivity prior to exceeding a fuel burnup of 60 effective full power days (EFPD) after each fuel loading. --- Verify measured core reactivity balance is within ±1% Δk/k of predicted values.	Prior to entering MODE 1 after each fuel loading <u>AND</u> ----------NOTE----------- Only required after 60 EFPD ----------------------------- In accordance with the Surveillance Frequency Control Program

3.1 REACTIVITY CONTROL SYSTEMS

3.1.3 Moderator Temperature Coefficient (MTC)

LCO 3.1.3 The MTC shall be maintained within the limits specified in the COLR. The maximum positive limit shall be $\leq 0.0\ \Delta k/k/°F$ at $\geq 95\%$ RTP.

APPLICABILITY: MODES 1 and 2.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. MTC not within limits.	A.1 Be in MODE 3.	12 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.1.3.1 Verify MTC is within the limits specified in the COLR.	Prior to entering MODE 1 after each fuel loading

3.1 REACTIVITY CONTROL SYSTEMS

3.1.4 CONTROL ROD Group Alignment Limits

LCO 3.1.4 Each CONTROL ROD shall be OPERABLE and aligned to within 6.5% of its group average height.

APPLICABILITY: MODES 1 and 2.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One trippable CONTROL ROD inoperable, or not aligned to within 6.5% of its group average height, or both.	A.1 Restore CONTROL ROD alignment.	1 hour
	OR	
	A.2.1.1 Verify SDM is within the limit specified in the COLR.	1 hour AND Once per 12 hours thereafter
	OR	
	A.2.1.2 Initiate boration to restore SDM to within limit.	1 hour
	AND	
		(continued)

ACTIONS

CONDITION	REQUIRED ACTION		COMPLETION TIME
A. (continued)	A.2.2	Reduce THERMAL POWER to ≤ 60% of the ALLOWABLE THERMAL POWER.	2 hours
	<u>AND</u>		
	A.2.3	Reduce the nuclear overpower trip setpoints, based on flux and flux/flow imbalance, to ≤ 65.5% of the ALLOWABLE THERMAL POWER.	10 hours
	<u>AND</u>		
	A.2.4	Verify the potential ejected rod worth is within the assumptions of the rod ejection analysis.	72 hours
B. Required Action and associated Completion Time for Condition A not met.	B.1	Be in MODE 3.	12 hours
C. More than one trippable CONTROL ROD inoperable, or not aligned within 6.5% of its group average height, or both.	C.1.1	Verify SDM is within the limit specified in the COLR.	1 hour
	<u>OR</u>		
			(continued)

ACTIONS

CONDITION	REQUIRED ACTION		COMPLETION TIME
C. (continued)	C.1.2	Initiate boration to restore SDM to within limit.	1 hour
	<u>AND</u>		
	C.2	Be in MODE 3.	12 hours
D. One or more rods untrippable.	D.1.1	Verify SDM is within the limit specified in the COLR.	1 hour
	<u>OR</u>		
	D.1.2	Initiate boration to restore SDM to within limit.	1 hour
	<u>AND</u>		
	D.2	Be in MODE 3.	12 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.1.4.1	Verify individual CONTROL ROD positions are within 6.5% of their group average height.	In accordance with the Surveillance Frequency Control Program
SR 3.1.4.2	Verify CONTROL ROD freedom of movement (trippability) by moving each individual CONTROL ROD that is not fully inserted by an amount in any direction sufficient to demonstrate the absence of thermal binding.	In accordance with the Surveillance Frequency Control Program
SR 3.1.4.3	Verify the rod drop time for each CONTROL ROD, from the fully withdrawn position, is ≤ 1.66 seconds at reactor coolant full flow conditions or ≤ 1.40 seconds at no flow conditions from power interruption at the CONTROL ROD drive breakers to ¾ insertion (25% withdrawn position).	Prior to reactor criticality after each removal of the reactor vessel head

3.1 REACTIVITY CONTROL SYSTEMS

3.1.5 Safety Rod Position Limits

LCO 3.1.5 Each safety rod shall be fully withdrawn.

------------------------------NOTE------------------------------
Not required for any safety rod positioned to perform SR 3.1.4.2.

APPLICABILITY: MODES 1 and 2.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One safety rod not fully withdrawn.	A.1 Withdraw the rod fully.	1 hour
	<u>OR</u>	
	A.2.1.1 Verify SDM is within the limit specified in the COLR.	1 hour
	<u>OR</u>	
	A.2.1.2 Initiate boration to restore SDM to within limit.	1 hour
	<u>AND</u>	
	A.2.2 Declare the rod inoperable.	1 hour

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
B. More than one safety rod not fully withdrawn.	B.1.1 Verify SDM is within the limit specified in the COLR.	1 hour
	<u>OR</u>	
	B.1.2 Initiate boration to restore SDM to within limit.	1 hour
	<u>AND</u>	
	B.2 Be in MODE 3.	12 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.1.5.1	Verify each safety rod is fully withdrawn.	In accordance with the Surveillance Frequency Control Program

3.1 REACTIVITY CONTROL SYSTEMS

3.1.6 AXIAL POWER SHAPING ROD (APSR) Alignment Limits

LCO 3.1.6 Each APSR shall be OPERABLE and aligned within 6.5% of its group average height.

APPLICABILITY: MODES 1 and 2, when the APSRs are not fully withdrawn.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One APSR inoperable, not aligned within its limits, or both.	A.1 Perform SR 3.2.2.1.	2 hours AND 2 hours after each APSR movement
B. Required Action and associated Completion Time not met.	B.1 Be in MODE 3.	12 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.1.6.1	Verify position of each APSR is within 6.5% of the group average height.	In accordance with the Surveillance Frequency Control Program

3.1 REACTIVITY CONTROL SYSTEMS

3.1.7 Position Indicator Channels

LCO 3.1.7 One position indicator channel for each CONTROL ROD and APSR shall be OPERABLE.

APPLICABILITY: MODES 1 and 2.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. The required position indicator channel inoperable for one or more rods.	A.1 Declare the rod(s) inoperable.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.1.7.1	Perform CHANNEL CHECK of required position indicator channel.	In accordance with the Surveillance Frequency Control Program

3.1 REACTIVITY CONTROL SYSTEMS

3.1.8 PHYSICS TESTS Exceptions – MODE 2

LCO 3.1.8 During performance of PHYSICS TESTS, the requirements of

LCO 3.1.3, "Moderator Temperature Coefficient (MTC)";
LCO 3.1.5, "Safety Rod Position Limits";
LCO 3.2.1, "Regulating Rod Position Limits"; and
LCO 3.4.2, "RCS Minimum Temperature for Criticality"

may be suspended, provided:

a. THERMAL POWER is ≤ 5% RTP;

b. Nuclear overpower trip setpoint set to ≤ 5% RTP;

c. Nuclear instrumentation wide range high startup rate CONTROL ROD withdrawal inhibit is OPERABLE; and

d SDM is within the limit specified in the COLR.

APPLICABILITY MODE 2 during PHYSICS TESTS.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. THERMAL POWER not within limit	A.1 Open control rod drive trip breakers.	Immediately

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
B. SDM not within limit.	B.1 Initiate boration to restore SDM to within limit. AND B.2 Suspend PHYSICS TESTS exceptions.	15 minutes 1 hour
C. Nuclear overpower trip setpoint is not within limit. OR Nuclear instrumentation wide range high startup rate CONTROL ROD withdrawal inhibit inoperable.	C.1 Suspend PHYSICS TESTS exceptions.	1 hour

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.1.8.1	Verify nuclear overpower trip setpoint is $\leq$ 5% RTP.	Once within 8 hours prior to performance of PHYSICS TESTS
SR 3.1.8.2	Verify SDM is within the limit specified in the COLR.	In accordance with the Surveillance Frequency Control Program

3.2 POWER DISTRIBUTION LIMITS

3.2.1 Regulating Rod Position Limits

LCO 3.2.1 Regulating rod groups shall be within the physical position, sequence, and overlap limits specified in the COLR.

-----NOTE-----
Not required for any regulating rod positioned to perform SR 3.1.4.2.

APPLICABILITY: MODES 1 and 2.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Regulating rod groups sequence or overlap requirements not met.	A.1 Restore regulating rod groups to within limits.	2 hours

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION		COMPLETION TIME
B. Regulating rod groups positioned in restricted or unacceptable region.	B.1	----------NOTE---------- Not applicable to regulating rod groups positioned in the restricted region. ------------------------------	
		Initiate boration to restore SDM to within the limits specified in the COLR.	15 minutes
	AND		
	B.2.1	Restore regulating rod groups to within acceptable region.	2 hours
	OR		
	B.2.2	Reduce THERMAL POWER to less than or equal to THERMAL POWER allowed by regulating rod group position limits.	2 hours
C. Required Action and associated Completion Time of Condition A or B not met.	C.1	Be in MODE 3.	12 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.2.1.1	Verify regulating rod groups are within the sequence and overlap limits as specified in the COLR.	In accordance with the Surveillance Frequency Control Program
SR 3.2.1.2	Verify regulating rod groups meet the position limits as specified in the COLR.	In accordance with the Surveillance Frequency Control Program
SR 3.2.1.3	Verify SDM to be within the limit as specified in the COLR.	Within 4 hours prior to achieving criticality

3.2 POWER DISTRIBUTION LIMITS

3.2.2 AXIAL POWER IMBALANCE Operating Limits

LCO 3.2.2 AXIAL POWER IMBALANCE shall be maintained within the limits specified in the COLR.

APPLICABILITY: MODE 1 with THERMAL POWER > 40% RTP.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. AXIAL POWER IMBALANCE not within limits.	A.1 Restore AXIAL POWER IMBALANCE to within limits.	2 hours
B. Required Action and associated Completion Time not met.	B.1 Reduce THERMAL POWER to ≤ 40% RTP.	2 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.2.2.1	Verify AXIAL POWER IMBALANCE is within limits as specified in the COLR.	In accordance with the Surveillance Frequency Control Program

3.2 POWER DISTRIBUTION LIMITS

3.2.3 QUADRANT POWER TILT (QPT)

LCO 3.2.3 QPT shall be maintained less than or equal to the steady state limits specified in the COLR.

APPLICABILITY: MODE 1 with THERMAL POWER > 20% RTP.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. QPT greater than the steady state limit and less than or equal to the transient limit.	A.1 Reduce THERMAL POWER ≥ 2% RTP from the ALLOWABLE THERMAL POWER for each 1% of QPT greater than the steady state limit.	2 hours
	<u>AND</u>	
	A.2 Reduce nuclear overpower trip setpoints, based on flux and flux/flow imbalance, ≥ 2% RTP for each 1% of QPT greater than the steady state limit.	10 hours
	<u>AND</u>	
	A.3 Restore QPT to less than or equal to the steady state limit.	24 hours from discovery of failure to meet the LCO

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION		COMPLETION TIME
B. QPT greater than the transient limit and less than or equal to the maximum limit due to misalignment of a CONTROL ROD or an APSR.	B.1	Reduce THERMAL POWER $\geq$ 2% RTP from ALLOWABLE THERMAL POWER for each 1% of QPT greater than the steady state limit.	30 minutes
	<u>AND</u>		
	B.2	Restore QPT to less than or equal to the transient limit.	2 hours
C. Required Action and associated Completion Time of Condition A or B not met.	C.1	Reduce THERMAL POWER to < 60% of the ALLOWABLE THERMAL POWER.	2 hours
	<u>AND</u>		
	C.2	Reduce nuclear overpower trip setpoints, based on flux and flux/flow imbalance, to $\leq$ 65.5% of the ALLOWABLE THERMAL POWER.	10 hours

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION		COMPLETION TIME
D. QPT greater than the transient limit and less than or equal to the maximum limit due to causes other than the misalignment of either CONTROL ROD or APSR.	D.1	Reduce THERMAL POWER to < 60% of the ALLOWABLE THERMAL POWER.	2 hours
	<u>AND</u>		
	D.2	Reduce nuclear overpower trip setpoints, based on flux and flux/flow imbalance, to ≤ 65.5% of the ALLOWABLE THERMAL POWER.	10 hours
E. Required Action and associated Completion Time for Condition C or D not met.	E.1	Reduce THERMAL POWER to ≤ 20% RTP.	4 hours
F. QPT greater than the maximum limit.	F.1	Reduce THERMAL POWER to ≤ 20% RTP.	4 hours

SURVEILLANCE REQUIREMENTS

	SURVEILLANCE	FREQUENCY
SR 3.2.3.1	Verify QPT is within limits as specified in the COLR.	In accordance with the Surveillance Frequency Control Program <u>AND</u> When QPT has been restored to less than or equal to the steady state limit, 1 hour for 12 consecutive hours, or until verified acceptable at ≥ 95% RTP

3.3 INSTRUMENTATION

3.3.1 Reactor Protective System (RPS) Instrumentation

LCO 3.3.1 Three channels of RPS instrumentation for each Function in Table 3.3.1-1 shall be OPERABLE.

APPLICABILITY: According to Table 3.3.1-1.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One required channel inoperable.	A.1 Place channel in trip.	4 hours
B. Two or more required channels inoperable. <u>OR</u> Required Action and associated Completion Time of Condition A not met.	B.1 Enter the Condition referenced in Table 3.3.1-1 for the Function.	Immediately

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
C. As required by Required Action B.1 and referenced in Table 3.3.1-1.	C.1 Be in MODE 3. AND C.2 Open all control rod drive (CRD) trip breakers.	12 hours 12 hours
D. As required by Required Action B.1 and referenced in Table 3.3.1-1.	D.1 Open all CRD trip breakers.	6 hours
E. As required by Required Action B.1 and referenced in Table 3.3.1-1.	E.1 Reduce THERMAL POWER < 30% RTP.	6 hours
F. As required by Required Action B.1 and referenced in Table 3.3.1-1.	F.1 Reduce THERMAL POWER < 2% RTP.	12 hours

SURVEILLANCE REQUIREMENTS

------------------------------NOTE------------------------------
Refer to Table 3.3.1-1 to determine which SRs apply to each RPS Function.

SURVEILLANCE		FREQUENCY
SR 3.3.1.1	Perform CHANNEL CHECK.	In accordance with the Surveillance Frequency Control Program
SR 3.3.1.2	------------NOTE------------ Not required to be performed until 24 hours after THERMAL POWER is ≥ 15% RTP. --------------------------- Compare results of calorimetric heat balance calculation to the power range channel output and adjust power range channel output if calorimetric exceeds power range channel output by ≥ 2% RTP.	In accordance with the Surveillance Frequency Control Program
SR 3.3.1.3	------------NOTE------------ Not required to be performed until 24 hours after THERMAL POWER is ≥ 15% RTP. --------------------------- Compare out of core measured AXIAL POWER IMBALANCE (API_0) to incore measured AXIAL POWER IMBALANCE (API_I) as follows: $(RTP/TP)(API_0 - (CS \times API_I))$ = imbalance error where CS is CORRELATION SLOPE Adjust power range channel output if the absolute value of imbalance error is ≥ 2% RTP.	In accordance with the Surveillance Frequency Control Program

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.3.1.4	Not Applicable	Not Applicable
SR 3.3.1.5	Manually verify the setpoints are correct.	In accordance with the Surveillance Frequency Control Program
SR 3.3.1.6	Manually actuate the output channel interposing relays.	In accordance with the Surveillance Frequency Control Program
SR 3.3.1.7	-----NOTE----- Neutron detectors are excluded from CHANNEL CALIBRATION. ---------- Perform CHANNEL CALIBRATION.	In accordance with the Surveillance Frequency Control Program

Table 3.3.1-1 (page 1 of 2)
Reactor Protective System Instrumentation

FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	CONDITIONS REFERENCED FROM REQUIRED ACTION B.1	SURVEILLANCE REQUIREMENTS	ALLOWABLE VALUE
1. Nuclear Overpower				
a. High Setpoint	1,2[(a)]	C	SR 3.3.1.1 SR 3.3.1.2 SR 3.3.1.5 SR 3.3.1.6 SR 3.3.1.7[(d)(e)]	≤ 105.5% RTP with four pumps operating, and ≤ 80.5% RTP[(g)] when reset for three pumps operating per LCO 3.4.4, “RCS Loops - MODES 1 and 2”[(f)]
b. Low Setpoint	2[(b)],3[(b)] 4[(b)],5[(b)]	D	SR 3.3.1.1 SR 3.3.1.5 SR 3.3.1.6 SR 3.3.1.7	≤ 5% RTP
2. RCS High Outlet Temperature	1,2	C	SR 3.3.1.1 SR 3.3.1.5 SR 3.3.1.6 SR 3.3.1.7	≤ 618°F
3. RCS High Pressure	1,2[(a)]	C	SR 3.3.1.1 SR 3.3.1.5 SR 3.3.1.6 SR 3.3.1.7	≤ 2355 psig
4. RCS Low Pressure	1,2[(a)]	C	SR 3.3.1.1 SR 3.3.1.5 SR 3.3.1.6 SR 3.3.1.7	≥ 1800 psig
5. RCS Variable Low Pressure	1,2[(a)]	C	SR 3.3.1.1 SR 3.3.1.5 SR 3.3.1.6 SR 3.3.1.7	As specified in the COLR
6. Reactor Building High Pressure	1,2,3[(c)]	C	SR 3.3.1.1 SR 3.3.1.6 SR 3.3.1.7	≤ 4 psig
7. Reactor Coolant Pump to Power	1,2[(a)]	C	SR 3.3.1.1 SR 3.3.1.5 SR 3.3.1.6 SR 3.3.1.7	>2% RTP with ≤ 2 pumps operating
8. Nuclear Overpower Flux/Flow Imbalance	1,2[(a)]	C	SR 3.3.1.1 SR 3.3.1.3 SR 3.3.1.5 SR 3.3.1.6 SR 3.3.1.7	As specified in the COLR

Table 3.3.1-1 (page 2 of 2)
Reactor Protective System Instrumentation

FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	CONDITIONS REFERENCED FROM REQUIRED ACTION B.1	SURVEILLANCE REQUIREMENTS	ALLOWABLE VALUE
9. Main Turbine Trip (Hydraulic Fluid Pressure)	≥ 30% RTP	E	SR 3.3.1.5 SR 3.3.1.6 SR 3.3.1.7	≥ 800 psig
10. Loss of Main Feedwater Pumps (Hydraulic Oil Pressure)	≥ 2% RTP	F	SR 3.3.1.5 SR 3.3.1.6 SR 3.3.1.7	≥ 75 psig
11. Shutdown Bypass RCS High Pressure	2(b),3(b) 4(b),5(b)	D	SR 3.3.1.1 SR 3.3.1.5 SR 3.3.1.6 SR 3.3.1.7	≤ 1720 psig

(a) When not in shutdown bypass operation.

(b) During shutdown bypass operation with any CRD trip breakers in the closed position and the CRD System capable of rod withdrawal.

(c) With any CRD trip breaker in the closed position and the CRD System capable of rod withdrawal.

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

(e) The instrument channel setpoint shall be reset to a value that is within the as-left tolerance around the Nominal Trip Setpoint or a value that is more conservative than the Nominal Trip Setpoint; otherwise the channel shall be declared inoperable. The Nominal Trip Setpoint and the methodologies used to determine the predefined as-found acceptance criteria band and the as-left setpoint tolerance band are specified in the Selected Licensee Commitments Manual.

(f) If the high accuracy indication (including the Leading Edge Flow Meter) is unavailable, reduce the overpower trip setpoint as specified in Selected Licensee Commitment 16.7.18, “Leading Edge Flow Meter.”

(g) Following implementation of MUR on the respective unit, the value shall be 79.3% RTP.

3.3 INSTRUMENTATION

3.3.2 Reactor Protective System (RPS) Manual Reactor Trip

LCO 3.3.2 The RPS Manual Reactor Trip Function shall be OPERABLE.

APPLICABILITY: MODES 1 and 2,
MODES 3, 4, and 5 with any control rod drive (CRD) trip breaker in the closed position and the CRD System capable of rod withdrawal.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Manual Reactor Trip Function inoperable.	A.1 Restore Function to OPERABLE status.	1 hour
B. Required Action and associated Completion Time not met in MODE 1, 2, or 3.	B.1 Be in MODE 3. AND B.2 Open all CRD trip breakers.	12 hours 12 hours
C. Required Action and associated Completion Time not met in MODE 4 or 5.	C.1 Open all CRD trip breakers.	6 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.3.2.1	Perform CHANNEL FUNCTIONAL TEST.	Once prior to each reactor startup if not performed within the previous 7 days

3.3 INSTRUMENTATION

3.3.3 Reactor Protective System (RPS) – Reactor Trip Component (RTC)

LCO 3.3.3 Four RTCs shall be OPERABLE.

APPLICABILITY: MODES 1 and 2,
MODES 3, 4, and 5 with any control rod drive (CRD) trip breaker in the closed position and the CRD System capable of rod withdrawal.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One RTC inoperable.	A.1 Trip the associated CRD trip breaker. OR A.2 Remove power from the associated CRD trip breaker.	1 hour 1 hour
B. Two or more RTCs inoperable in MODE 1, 2, or 3. OR Required Action and associated Completion Time not met in MODE 1, 2, or 3.	B.1 Be in MODE 3. AND B.2.1 Open all CRD trip breakers. OR B.2.2 Remove power from all CRD trip breakers.	12 hours 12 hours 12 hours

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
C. Two or more RTCs inoperable in MODE 4 or 5. OR Required Action and associated Completion Time not met in MODE 4 or 5.	C.1 Open all CRD trip breakers. OR C.2 Remove power from all CRD trip breakers.	6 hours 6 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.3.3.1	Perform CHANNEL FUNCTIONAL TEST.	In accordance with the Surveillance Frequency Control Program

3.3 INSTRUMENTATION

3.3.4 Control Rod Drive (CRD) Trip Devices

LCO 3.3.4 Four AC CRD trip breakers shall be OPERABLE.

APPLICABILITY: MODES 1 and 2,
MODES 3, 4, and 5 when any CRD trip breaker is in the closed position and the CRD System is capable of rod withdrawal.

ACTIONS

-----NOTE-----
Separate Condition entry is allowed for each CRD trip device.

CONDITION	REQUIRED ACTION		COMPLETION TIME
A. One or more CRD trip breakers diverse trip Functions inoperable.	A.1	Trip the CRD trip breaker.	48 hours
	<u>OR</u>		
	A.2	Remove power from the CRD trip breaker.	48 hours
B. One or more CRD trip breakers inoperable for reasons other than Condition A.	B.1	Trip the CRD trip breaker.	1 hour
	<u>OR</u>		
	B.2	Remove power from the CRD trip breaker.	1 hour

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
C. Required Action and associated Completion Time not met in MODE 1, 2, or 3.	C.1 Be in MODE 3. AND C.2.1 Open all CRD trip breakers. OR C.2.2 Remove power from all CRD trip breakers.	12 hours 12 hours 12 hours
D. Required Action and associated Completion Time not met in MODE 4 or 5.	D.1 Open all CRD trip breakers. OR D.2 Remove power from all CRD trip breakers.	6 hours 6 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.3.4.1	Perform CHANNEL FUNCTIONAL TEST.	In accordance with the Surveillance Frequency Control Program

3.3 INSTRUMENTATION

3.3.5 Engineered Safeguards Protective System (ESPS) Input Instrumentation

LCO 3.3.5 Three channels of ESPS input instrumentation for each Parameter in Table 3.3.5-1 shall be OPERABLE.

APPLICABILITY: According to Table 3.3.5-1.

ACTIONS

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

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more Parameters with one channel inoperable.	A.1 Place channel in trip.	4 hours
B. One or more Parameters with two or more channels inoperable. <u>OR</u> Required Action and associated Completion Time not met.	B.1 Be in MODE 3. <u>AND</u> B.2.1 ---------NOTE--------- Only required for RCS Pressure – Low. ------------------------------ Reduce RCS pressure < 1750 psig. <u>AND</u>	12 hours 36 hours (continued)

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
B. (continued)	B.2.2 -----------NOTE----------- Only required for RCS Pressure – Low Low. ------------------------------	
	Reduce RCS pressure < 900 psig.	36 hours
	AND	
	B.2.3 ----------NOTE------------ Only required for Reactor Building Pressure – High and High High. ------------------------------	
	Be in MODE 5.	36 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.3.5.1	Perform CHANNEL CHECK.	In accordance with the Surveillance Frequency Control Program

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.3.5.2	---NOTE--- Not applicable to Reactor Building Pressure – High High parameter. --- Manually verify that the setpoints are correct.	In accordance with the Surveillance Frequency Control Program
SR 3.3.5.3	Not Applicable	Not Applicable
SR 3.3.5.4	Perform CHANNEL CALIBRATION.	In accordance with the Surveillance Frequency Control Program

Table 3.3.5-1 (page 1 of 1)
Engineered Safeguards Protective System Input Instrumentation

PARAMETER	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	ALLOWABLE VALUE
1. Reactor Coolant System Pressure – Low	≥ 1750 psig	≥ 1590 psig
2. Reactor Coolant System Pressure – Low Low	≥ 900 psig	≥ 500 psig
3. Reactor Building (RB) Pressure – High	1,2,3,4	≤ 4 psig
4. Reactor Building Pressure – High High	1,2,3,4	≤ 15 psig

3.3 INSTRUMENTATION

3.3.6 Engineered Safeguards Protective System (ESPS) Manual Initiation

LCO 3.3.6 Two manual initiation channels of each one of the ESPS Functions below shall be OPERABLE:

a. High Pressure Injection, Reactor Building (RB) Non-Essential Isolation, Keowee Start, Load Shed and Standby Breaker Input, and Keowee Standby Bus Feeder Breaker Input (ES Channels 1 and 2);

b. Low Pressure Injection (ES Channels 3 and 4);

c. RB Cooling and RB Essential Isolation (ES Channels 5 and 6); and

d. RB Spray (ES Channels 7 and 8).

APPLICABILITY: MODES 1 and 2,
MODES 3 and 4 when associated engineered safeguard equipment is required to be OPERABLE.

ACTIONS

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

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more ESPS Functions with one channel inoperable.	A.1 Restore channel to OPERABLE status.	72 hours

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
B. Required Action and associated Completion Time not met.	B.1 Be in MODE 3. AND B.2 Be in MODE 5.	12 hours 36 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.3.6.1	Perform CHANNEL FUNCTIONAL TEST.	In accordance with the Surveillance Frequency Control Program

3.3 INSTRUMENTATION

3.3.7 Engineered Safeguards Protective System (ESPS) Automatic Actuation Output Logic Channels

LCO 3.3.7 Eight ESPS Automatic Actuation Output Logic Channels shall be OPERABLE.

APPLICABILITY: MODES 1 and 2,
MODES 3 and 4 when associated engineered safeguard (ES) equipment is required to be OPERABLE.

ACTIONS

-----NOTE-----
Separate Condition entry is allowed for each automatic actuation output logic channel.

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more automatic actuation output logic channels inoperable.	A.1 Place associated component(s) in ES configuration.	1 hour
	<u>OR</u>	
	A.2 Declare the associated component(s) inoperable.	1 hour

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.3.7.1	Manually actuate the output channel interposing relays.	In accordance with the Surveillance Frequency Control Program
SR 3.3.7.2	Perform automatic actuation output logic CHANNEL FUNCTIONAL TEST.	In accordance with the Surveillance Frequency Control Program

3.3 INSTRUMENTATION

3.3.8 Post Accident Monitoring (PAM) Instrumentation

LCO 3.3.8 The PAM instrumentation for each Function in Table 3.3.8-1 shall be OPERABLE.

APPLICABILITY: MODES 1, 2, and 3.

ACTIONS

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

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. -----------NOTE----------- Not applicable to Functions 14, 18, 19, and 22. ------------------------------ One or more Functions with one required channel inoperable.	A.1 Restore required channel to OPERABLE status.	30 days
B. Required Action and associated Completion Time of Condition A not met.	B.1 Initiate action in accordance with Specification 5.6.6.	Immediately

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
C. -----------NOTE----------- Not applicable to Functions 14, 18, 19, and 22. ------------------------------ One or more Functions with two required channels inoperable.	C.1 Restore one channel to OPERABLE status.	7 days
D. Not Used	D.1 Not Used	Not Used
E. -----------NOTE----------- Only applicable to Function 14. ------------------------------ One required channel inoperable.	E.1 Restore required channel to OPERABLE status.	24 hours

(continued)

Corrected by letter dated, October 26, 2006

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
F. -----------NOTE----------- Only applicable to Functions 18, 19, and 22. ----------------------------- One or more Functions with required channel inoperable.	F.1 Declare the affected train inoperable.	Immediately
G. Required Action and associated Completion Time of Condition C or E not met.	G.1 Enter the Condition referenced in Table 3.3.8-1 for the channel.	Immediately
H. As required by Required Action G.1 and referenced in Table 3.3.8-1.	H.1 Be in MODE 3. AND H.2 Be in MODE 4.	12 hours 18 hours
I. As required by Required Action G.1 and referenced in Table 3.3.8-1.	I.1 Initiate action in accordance with Specification 5.6.6.	Immediately

SURVEILLANCE REQUIREMENTS

--NOTE--
These SRs apply to each PAM instrumentation Function in Table 3.3.8-1 except where indicated.

SURVEILLANCE		FREQUENCY
SR 3.3.8.1	Perform CHANNEL CHECK for each required instrumentation channel that is normally energized.	In accordance with the Surveillance Frequency Control Program
SR 3.3.8.2	--------------------------NOTE-------------------------- Only applicable to PAM Functions 7 and 22. --- Perform CHANNEL CALIBRATION.	In accordance with the Surveillance Frequency Control Program
SR 3.3.8.3	------------------------NOTES------------------------ 1. Neutron detectors are excluded from CHANNEL CALIBRATION. 2. Not applicable to PAM Functions 7 and 22. --- Perform CHANNEL CALIBRATION.	In accordance with the Surveillance Frequency Control Program

Table 3.3.8-1 (page 1 of 1)
Post Accident Monitoring Instrumentation

	FUNCTION	REQUIRED CHANNELS	CONDITIONS REFERENCED FROM REQUIRED ACTION G.1
1.	Wide Range Neutron Flux	2	H
2.	RCS Hot Leg Temperature	2	H
3.	RCS Hot Leg Level	2	I
4.	RCS Pressure (Wide Range)	2	H
5.	Reactor Vessel Head Level	2	I
6.	Containment Sump Water Level (Wide Range)	2	H
7.	Containment Pressure (Wide Range)	2	H
8.	Containment Isolation Valve Position	2 per penetration flow path[a][b][c]	H
9.	Containment Area Radiation (High Range)	2	I
10.	Not Used		
11.	Pressurizer Level	2	H
12.	Steam Generator Water Level	2 per SG	H
13.	Steam Generator Pressure	2 per SG	H
14.	Borated Water Storage Tank Water Level	2	H
15.	Upper Surge Tank Level	2	H
16.	Core Exit Temperature	2 independent sets of 5[d]	H
17.	Subcooling Monitor	2	H
18.	HPI System Flow	1 per train	NA
19.	LPI System Flow	1 per train	NA
20.	Not used		
21.	Emergency Feedwater Flow	2 per SG	H
22.	Low Pressure Service Water Flow to LPI Coolers	1 per train	NA

(a) Not required for isolation valves whose associated penetration is isolated by at least one closed and deactivated automatic valve, closed manual valve, blind flange, or check valve with flow through the valve secured.

(b) Only one position indication channel is required for penetration flow paths with only one installed control room indication channel.

(c) Position indication requirements apply only to containment isolation valves that are electrically controlled.

(d) The subcooling margin monitor takes the average of the five highest CETs for each of the ICCM trains.

3.3 INSTRUMENTATION

3.3.9 Source Range Neutron Flux

LCO 3.3.9 Two source range neutron flux channels shall be OPERABLE.

APPLICABILITY: MODES 2, 3, 4, and 5.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One required source range neutron flux channel inoperable with THERMAL POWER level ≤ 4E-4% RTP on the wide range neutron flux channels.	A.1 Restore channel to OPERABLE status.	Prior to increasing THERMAL POWER
B. Two required source range neutron flux channels inoperable with THERMAL POWER level ≤ 4E-4% RTP on the wide range neutron flux channels.	B.1 Suspend operations involving positive reactivity changes. AND B.2 Initiate action to insert all CONTROL RODS. AND B.3 Open CONTROL ROD drive trip breakers. AND	Immediately Immediately 1 hour (continued)

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
B. (continued)	B.4 Verify SDM to be within the limit specified in the COLR.	1 hour AND Once per 12 hours thereafter
C. One or more required source range neutron flux channel(s) inoperable with THERMAL POWER level > 4E-4% RTP on the wide range neutron flux channels.	C.1 Initiate action to restore affected channel(s) to OPERABLE status.	1 hour

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.3.9.1	Perform CHANNEL CHECK.	In accordance with the Surveillance Frequency Control Program
SR 3.3.9.2	-------------------------NOTE------------------------- Neutron detectors are excluded from CHANNEL CALIBRATION. -- Perform CHANNEL CALIBRATION.	In accordance with the Surveillance Frequency Control Program

3.3 INSTRUMENTATION

3.3.10 Wide Range Neutron Flux

LCO 3.3.10 Two wide range neutron flux channels shall be OPERABLE.

APPLICABILITY: MODE 2,
MODES 3, 4, and 5 with any control rod drive (CRD) trip breaker in the closed position and the CRD System capable of rod withdrawal.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One required channel inoperable.	A.1 Reduce THERMAL POWER to < 4E-4% RTP.	2 hours
B. Two required channels inoperable.	B.1 Suspend operations involving positive reactivity changes.	Immediately
	<u>AND</u>	
	B.2 Open CRD trip breakers.	1 hour

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.3.10.1	Perform CHANNEL CHECK.	In accordance with the Surveillance Frequency Control Program
SR 3.3.10.2	-------------------------NOTE------------------------- Neutron detectors are excluded from CHANNEL CALIBRATION. -- Perform CHANNEL CALIBRATION.	In accordance with the Surveillance Frequency Control Program
SR 3.3.10.3	Verify at least one decade overlap between source range and wide range neutron flux channels.	Once each reactor startup prior to the source range indication exceeding 10^5 cps if not performed within the previous 7 days

3.3 INSTRUMENTATION

3.3.11 Automatic Feedwater Isolation System (AFIS) Instrumentation

LCO 3.3.11 Four AFIS analog instrumentation channels per steam generator (SG) shall be OPERABLE.

APPLICABILITY: MODES 1 and 2,
MODE 3 with main steam header pressure ≥ 700 psig.

ACTIONS

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

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One analog channel inoperable or tripped.	A.1 Place channel in bypass.	4 hours
B. Two analog channels inoperable. <u>OR</u> Required Action and associated Completion Time of Condition A not met.	B.1 Restore channel(s) to operable status.	72 hours

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION		COMPLETION TIME
C. Required Action and associated Completion Time of Condition B not met.	C.1	Be in MODE 3.	12 hours
	AND		
	C.2	Reduce main steam header pressure to <700 psig.	18 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.3.11.1	Perform CHANNEL CHECK.	In accordance with the Surveillance Frequency Control Program
SR 3.3.11.2	Perform CHANNEL FUNCTIONAL TEST.	In accordance with the Surveillance Frequency Control Program
SR 3.3.11.3	Perform CHANNEL CALIBRATION.	In accordance with the Surveillance Frequency Control Program

3.3 INSTRUMENTATION

3.3.12 Automatic Feedwater Isolation System (AFIS) Manual Initiation

LCO 3.3.12 Two AFIS Manual Initiation switches per steam generator (SG) shall be OPERABLE.

APPLICABILITY: MODES 1 and 2,
MODE 3 with main steam header pressure ≥ 700 psig.

ACTIONS

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

CONDITION	REQUIRED ACTION		COMPLETION TIME
A. One manual initiation switch per SG inoperable.	A.1	Restore manual initiation switch to OPERABLE status.	72 hours
B Two manual initiation switches per SG inoperable. OR Required Action and associated Completion Time of Condition A not met.	B.1 AND B.2	Be in MODE 3. Reduce main steam header pressure to < 700 psig.	12 hours 18 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.3.12.1	Perform CHANNEL FUNCTIONAL TEST.	In accordance with the Surveillance Frequency Control Program

3.3 INSTRUMENTATION

3.3.13 Automatic Feedwater Isolation System (AFIS) Digital Channels

LCO 3.3.13 Two AFIS digital channels per steam generator (SG) shall be OPERABLE.

APPLICABILITY: MODES 1 and 2,
MODE 3 with main steam header pressure ≥ 700 psig.

ACTIONS

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

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One digital channel inoperable.	A.1 Restore digital channel to OPERABLE status.	72 hours
B. Two digital channels inoperable. <u>OR</u> Required Action and associated Completion Time of Condition A not met.	B.1 Be in MODE 3. <u>AND</u> B.2 Reduce main steam header pressure to < 700 psig	12 hours 18 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.3.13.1 Perform CHANNEL FUNCTIONAL TEST.	In accordance with the Surveillance Frequency Control Program

3.3 INSTRUMENTATION

3.3.14 Emergency Feedwater (EFW) Pump Initiation Circuitry

LCO 3.3.14 Two loss of main feedwater (LOMF) pump instrumentation channels for each automatic initiation circuit, and an automatic and manual initiation circuit for each EFW pump shall be OPERABLE.

-----NOTE-----
The EFW pump automatic initiation circuit is not required to be OPERABLE in MODES 3 and 4.

APPLICABILITY: MODES 1, 2 and 3,
MODE 4 when the steam generator is relied upon for heat removal.

ACTIONS

-----NOTE-----
Separate Condition entry is allowed for each EFW pump initiation circuit.

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more EFW pump automatic initiation circuits with one LOMF channel inoperable.	A.1 Place channel(s) in trip.	1 hour
B. One or more required EFW pump initiation circuits inoperable. <u>OR</u> Required Action and associated Completion Time not met.	B.1 Declare the affected EFW pump(s) inoperable.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.3.14.1	Perform CHANNEL FUNCTIONAL TEST for each LOMF pump instrumentation channel.	In accordance with the Surveillance Frequency Control Program
SR 3.3.14.2	Perform CHANNEL FUNCTIONAL TEST for each manual initiation circuit.	In accordance with the Surveillance Frequency Control Program
SR 3.3.14.3	Perform CHANNEL FUNCTIONAL TEST for each automatic initiation circuit.	In accordance with the Surveillance Frequency Control Program
SR 3.3.14.4	Perform CHANNEL CALIBRATION for each LOMF pump instrumentation channel.	In accordance with the Surveillance Frequency Control Program

3.3 INSTRUMENTATION

3.3.15 Turbine Stop Valve (TSV) Closure

LCO 3.3.15 Two TSV Closure channels shall be OPERABLE.

APPLICABILITY: MODES 1, 2, and 3 except when all TSVs are closed.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more TSV Closure channel(s) inoperable.	A.1 Declare the TSVs inoperable.	1 hour

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.3.15.1	Perform CHANNEL FUNCTIONAL TEST.	In accordance with the Surveillance Frequency Control Program

3.3 INSTRUMENTATION

3.3.16 Reactor Building (RB) Purge Isolation – High Radiation

LCO 3.3.16 One channel of Reactor Building Purge Isolation – High Radiation shall be OPERABLE.

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

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One channel inoperable.	A.1 Place and maintain RB purge valves in closed positions.	Immediately
	<u>OR</u>	
	A.2 Suspend movement of recently irradiated fuel assemblies within the containment.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.3.16.1	Perform CHANNEL CHECK.	In accordance with the Surveillance Frequency Control Program
SR 3.3.16.2	Perform CHANNEL FUNCTIONAL TEST.	Once each refueling outage prior to movement of recently irradiated fuel assemblies within containment
SR 3.3.16.3	Perform CHANNEL CALIBRATION.	In accordance with the Surveillance Frequency Control Program

3.3 INSTRUMENTATION

3.3.17 Emergency Power Switching Logic (EPSL) Automatic Transfer Function

LCO 3.3.17 Two channels of the EPSL Automatic Transfer Function shall be OPERABLE.

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

ACTIONS

CONDITION	REQUIRED ACTION		COMPLETION TIME
A. One channel inoperable.	A.1	-----------NOTE----------- The Completion Time is reduced when in Condition L of LCO 3.8.1. ------------------------------ Restore channel to OPERABLE status.	24 hours
B. Required Action and associated Completion Time not met.	B.1	Be in MODE 3.	12 hours
	<u>AND</u>		
	B.2	Be in MODE 5.	84 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.3.17.1	Perform CHANNEL FUNCTIONAL TEST.	In accordance with the Surveillance Frequency Control Program

3.3 INSTRUMENTATION

3.3.18 Emergency Power Switching Logic (EPSL) Voltage Sensing Circuits

LCO 3.3.18 Three channels of each of the following EPSL voltage sensing circuits shall be OPERABLE:

a. Startup Transformer;
b. Standby Bus 1;
c. Standby Bus 2; and
d. Auxiliary Transformer.

-----NOTES-----

1. If both N breakers are open, Auxiliary Transformer voltage sensing circuits are not required to be OPERABLE.
2. When not in MODES 1, 2, 3 and 4, only EPSL voltage sensing circuit(s) associated with required AC power source(s) are required to be OPERABLE.

APPLICABILITY: MODES 1, 2, 3, 4, 5 and 6,
During movement of irradiated fuel assemblies.

ACTIONS

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

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more required circuits with one channel inoperable.	A.1 -----NOTE----- The Completion Time is reduced when in Condition L of LCO 3.8.1. ----- Restore channel to OPERABLE status.	24 hours

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
B. Required Action and associated Completion Time not met in MODES 1, 2, 3, and 4.	B.1 Be in MODE 3. <u>AND</u> B.2 Be in MODE 5.	12 hours 84 hours
C. Two or more channels of a required circuit inoperable when not in MODES 1, 2, 3, and 4. <u>OR</u> Required Action and associated Completion Time not met when not in MODES 1, 2, 3, and 4.	C.1 Declare affected AC power source(s) inoperable.	Immediately
D. Required Action and associated Completion Time not met during movement of irradiated fuel assemblies.	D.1 Suspend movement of irradiated fuel assemblies.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.3.18.1	Perform CHANNEL FUNCTIONAL TEST.	In accordance with the Surveillance Frequency Control Program

3.3 INSTRUMENTATION

3.3.19 Emergency Power Switching Logic (EPSL) 230 kV Switchyard Degraded Grid Voltage Protection (DGVP)

LCO 3.3.19 Three DGVP voltage sensing channels and two DGVP actuation logic channels shall be OPERABLE.

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

ACTIONS

-----NOTE-----
The Completion Times for Required Actions A and B are reduced when in Condition L of LCO 3.8.1.

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One voltage sensing channel inoperable.	A.1 Place channel in trip.	72 hours
B. One actuation logic channel inoperable.	B.1 Restore channel to OPERABLE status.	72 hours
C. Required Action and associated Completion Time of Condition A or B not met.	C.1 Be in MODE 3. <u>AND</u> C.2 Be in MODE 5.	12 hours 84 hours

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
D. Two or more voltage sensing channels inoperable. <u>OR</u> Two actuation logic channels inoperable.	D.1 Declare the overhead emergency power path inoperable.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.3.19.1	Perform a CHANNEL FUNCTIONAL TEST.	In accordance with the Surveillance Frequency Control Program
SR 3.3.19.2	Perform a CHANNEL CALIBRATION of the voltage sensing channel with the setpoint allowable value as follows: Degraded voltage $\geq$ 226 kV and $\leq$ 229 kV with a time delay of 9 seconds $\pm$ 1 second.	In accordance with the Surveillance Frequency Control Program

3.3 INSTRUMENTATION

3.3.20 Emergency Power Switching Logic (EPSL) CT-5 Degraded Grid Voltage Protection (DGVP)

LCO 3.3.20 Three CT-5 DGVP voltage sensing channels and two CT-5 DGVP actuation logic channels shall be OPERABLE.

APPLICABILITY: MODES 1, 2, 3, and 4 when the Central Switchyard is energizing the standby buses.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One voltage sensing channel inoperable.	A.1 Place channel in trip.	72 hours
B. One actuation logic channel inoperable.	B.1 Restore channel to OPERABLE status.	72 hours
C. Two or more voltage sensing channels inoperable. <u>OR</u> Two actuation logic channels inoperable. <u>OR</u> Required Action and associated Completion Time of Condition A or B not met.	C.1 Open SL breakers.	1 hour

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.3.20.1	Perform a CHANNEL FUNCTIONAL TEST.	In accordance with the Surveillance Frequency Control Program
SR 3.3.20.2	Perform a CHANNEL CALIBRATION of the voltage sensing channel with the setpoint allowable value as follows: a. Degraded voltage ≥ 4143 V and ≤ 4185 V with a time delay of 9 seconds ± 1 second for the first level undervoltage inputs; and b. Degraded voltage ≥ 3871 V and ≤ 3901 V for the second level undervoltage inputs.	In accordance with the Surveillance Frequency Control Program

3.3 INSTRUMENTATION

3.3.21 Emergency Power Switching Logic (EPSL) Keowee Emergency Start Function

LCO 3.3.21 Two channels of the EPSL Keowee Emergency Start Function shall be OPERABLE.

APPLICABILITY: MODES 1, 2, 3 and 4.

ACTIONS

CONDITION	REQUIRED ACTION		COMPLETION TIME
A. One channel inoperable.	A.1	----------NOTE---------- The Completion Time is reduced when in Condition L of LCO 3.8.1. ------------------------------ Restore channel to OPERABLE status.	 72 hours
B. Required Action and associated Completion Time not met.	B.1	Be in MODE 3.	12 hours
	AND		
	B.2	Be in MODE 5.	84 hours
C. Two channels inoperable	C.1	Declare both Keowee Hydro Units inoperable.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.3.21.1	Perform CHANNEL FUNCTIONAL TEST.	In accordance with the Surveillance Frequency Control Program

3.3 INSTRUMENTATION

3.3.22 Emergency Power Switching Logic (EPSL) Manual Keowee Emergency Start Function

LCO 3.3.22 One channel of the EPSL Manual Keowee Emergency Start Function shall be OPERABLE.

APPLICABILITY: MODES 5 and 6,
During movement of irradiated fuel assemblies.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Required channel inoperable.	A.1 Declare both Keowee Hydro Units inoperable.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.3.22.1	Perform CHANNEL FUNCTIONAL TEST.	In accordance with the Surveillance Frequency Control Program

3.3 INSTRUMENTATION

3.3.23 Main Feeder Bus Monitor Panel (MFBMP)

LCO 3.3.23 Three MFBMP undervoltage sensing relay channels per bus and two MFBMP undervoltage actuation logic channels shall be OPERABLE.

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

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. --------NOTE-------- Separate Condition entry is allowed. ---------------------- One voltage sensing channel inoperable on one or both MFBs.	A.1 Place channel in trip.	7 days
B. One actuation logic channel inoperable.	B.1 Restore channel to OPERABLE status.	7 days
C. --------NOTE-------- Separate Condition entry is allowed. ---------------------- Two or more voltage sensing channels inoperable on one or both MFBs. <u>OR</u> Two actuation logic channels inoperable.	C.1 Restore two of three undervoltage sensing channels to OPERABLE status. <u>AND</u> C.2 Restore one logic channel to OPERABLE status.	24 hours 24 hours

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
D. Required Action and associated Completion Time not met.	D.1 Initiate action in accordance with Specification 5.6.6.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.3.23.1	Perform a CHANNEL FUNCTIONAL TEST.	In accordance with the Surveillance Frequency Control Program

3.3 INSTRUMENTATION

3.3.24 Not Used

3.3 INSTRUMENTATION

3.3.25 Not Used

3.3 INSTRUMENTATION

3.3.26 Not Used

3.3 INSTRUMENTATION

3.3.27 Low Pressure Service Water (LPSW) Reactor Building (RB) Waterhammer Prevention Circuitry

LCO 3.3.27 Three LPSW RB Waterhammer Prevention analog channels and two digital logic channels shall be OPERABLE.

APPLICABILITY: MODES 1, 2, 3, and 4

ACTIONS

CONDITION	REQUIRED ACTION		COMPLETION TIME
A. One required LPSW RB Waterhammer Prevention analog channel inoperable.	A.1	Restore required LPSW RB Waterhammer Prevention analog channel to OPERABLE status.	7 days
B. One required LPSW RB Waterhammer Prevention digital logic channel inoperable.	B.1	Restore required LPSW RB Waterhammer Prevention digital logic channel to OPERABLE status.	7 days

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
C. Two or more required LPSW RB Waterhammer Prevention analog channels inoperable. OR Two required LPSW RB Waterhammer Prevention digital logic channels inoperable. OR Required Actions and associated Completion Times of Condition A or B not met.	C.1 Open two LPSW RB Waterhammer Prevention Pneumatic Discharge Isolation valves in the same header. AND C.2 Initiate actions to restore required LPSW RB Waterhammer Prevention analog or digital logic channels to OPERABLE status.	Immediately Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.3.27.1	Perform CHANNEL CHECK.	In accordance with the Surveillance Frequency Control Program
SR 3.3.27.2	Perform CHANNEL FUNCTIONAL TEST.	In accordance with the Surveillance Frequency Control Program
SR 3.3.27.3	Perform CHANNEL CALIBRATION.	In accordance with the Surveillance Frequency Control Program

3.3 INSTRUMENTATION

3.3.28 Low Pressure Service Water (LPSW) Standby Pump Auto-Start Circuitry

LCO 3.3.28 LPSW Standby Pump Auto-Start Circuitry shall be OPERABLE.

-----------------------------------NOTE-----------------------------------
LPSW Standby Pump auto-start circuit is not required to be OPERABLE on running LPSW pumps.

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

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. LPSW standby pump auto-start circuitry inoperable.	A.1 Restore LPSW standby pump auto-start circuitry to OPERABLE status.	7 days
B. Required Action and associated Completion Time not met.	B.1 Be in MODE 3.	12 hours
	<u>AND</u>	
	B.2 Be in MODE 5.	60 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.3.28.1	Perform CHANNEL FUNCTIONAL TEST.	In accordance with the Surveillance Frequency Control Program
SR 3.3.28.2	Perform CHANNEL CALIBRATION.	In accordance with the Surveillance Frequency Control Program

3.4 REACTOR COOLANT SYSTEM (RCS)

3.4.1 RCS Pressure, Temperature, and Flow Departure from Nucleate Boiling (DNB) Limits

LCO 3.4.1 RCS DNB parameters for loop pressure, loop average temperature, and RCS total flow rate shall be within the limits specified in the COLR.

APPLICABILITY: MODE 1 during steady state operation.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more RCS DNB parameters not within limits.	A.1 Restore RCS DNB parameter(s) to within limit.	2 hours
B. Required Action and associated Completion Time not met.	B.1 Be in MODE 2.	12 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.4.1.1	-------------------------NOTE------------------------ With three RCPs operating, the limits are applied to the loop with the highest pressure. --- Verify RCS loop pressure is within limits specified in the COLR.	 In accordance with the Surveillance Frequency Control Program
SR 3.4.1.2	-------------------------NOTE------------------------ With three RCPs operating, the limits are applied to the loop with the lowest loop average temperature for the condition where there is a 0°F ΔTc setpoint. --- Verify RCS loop average temperature is within limits specified in the COLR.	 In accordance with the Surveillance Frequency Control Program
SR 3.4.1.3	Verify RCS total flow is within limits specified in the COLR.	In accordance with the Surveillance Frequency Control Program
SR 3.4.1.4	-------------------------NOTE------------------------ Not required to be performed until 7 days after stable thermal conditions are established in the higher power range of MODE 1. --- Verify by measurement RCS total flow rate is within limit specified in the COLR.	 In accordance with the Surveillance Frequency Control Program

3.4 REACTOR COOLANT SYSTEM (RCS)

3.4.2 RCS Minimum Temperature for Criticality

LCO 3.4.2 Each RCS loop average temperature shall be ≥ 525°F.

APPLICABILITY: MODE 1,
MODE 2 with $k_{eff} \geq 1.0$.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Loop average temperature in one or more RCS loops not within limit	A.1 Be in MODE 2 with $k_{eff} < 1.0$.	30 minutes

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.4.2.1	Verify RCS average temperature in each loop ≥ 525°F.	-----------NOTE----------- Only required if any RCS loop average temperature < 530°F. ------------------------------ 30 minutes thereafter

3.4 REACTOR COOLANT SYSTEM (RCS)

3.4.3 RCS Pressure and Temperature (P/T) Limits

LCO 3.4.3 RCS pressure and temperature shall be within the limits specified in Figures 3.4.3-1 and 3.4.3-2 for Unit 1; Figures 3.4.3-4 and 3.4.3-5 for Unit 2; and Figures 3.4.3-7 and 3.4.3-8 for Unit 3. RCS heatup and cooldown rates and allowable RC pump combinations shall be maintained within the limits specified in Tables 3.4.3-1 and 3.4.3-2.

-----NOTES-----

1. For leak tests of the RCS, leak tests of connected systems required by Specification 5.5.3 where RCS allowable combinations of temperature and pressure are controlling the RCS may be pressurized to within the limits of Figure 3.4.3-3 for Unit 1, Figure 3.4.3-6 for Unit 2 and Figure 3.4.3-9 for Unit 3.

2. For thermal steady state system hydro tests required by ASME Section XI the RCS may be pressurized to within the limits of Specification 2.1.2 and Figure 3.4.3-3 for Unit 1, Figure 3.4.3-6 for Unit 2 and Figure 3.4.3-9 for Unit 3.

3. Not applicable to the pressurizer.

APPLICABILITY: At all times.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. -----NOTE----- Required Action A.2 shall be completed whenever this Condition is entered. ----- Requirements of LCO not met in MODE 1, 2, 3, or 4.	A.1 Restore parameter(s) to within limits. AND A.2 Determine RCS is acceptable for continued operation.	30 minutes 72 hours

(continued)

ACTIONS (continued)

*CONDITION	REQUIRED ACTION	COMPLETION TIME
B. Required Action and associated Completion Time of Condition A not met.	B.1 Be in MODE 3. AND B.2 Be in MODE 5.	12 hours 36 hours
C. -----------NOTE------------ Required Action C.2 shall be completed whenever this Condition is entered. ------------------------------- Requirements of LCO not met in other than MODE 1, 2, 3, or 4.	C.1 Initiate action to restore parameter(s) to within limit. AND C.2 Determine RCS is acceptable for continued operation.	Immediately Prior to entering MODE 4

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.4.3.1	-----------------------NOTE------------------------ Only required to be performed during RCS heatup and cooldown operations and RCS leak and hydrostatic testing. --- Verify RCS pressure, RCS temperature and RCS heatup and cooldown rates are within limits.	 In accordance with the Surveillance Frequency Control Program

Table 3.4.3-1 (page 1 of 1)
Operational Requirements for Unit Heatup

CONSTRAINT	RC TEMPERATURE[a]	HEATUP RATE	ALLOWED PUMP COMBINATION
RC Temperature[a]	T < 270°F T ≥ 270°F	≤ 30°F in any ½ hr period ≤ 50°F in any ½ hr period	NA NA
RC Pumps	T < 100°F 100°F ≤ T < 300°F T ≥ 300°F	NA NA NA	No pumps ≤ two pumps Any

(a) RC Temperature is cold leg temperature if one or more RC pumps are in operation; otherwise it is the LPI cooler outlet temperature.

Table 3.4.3-2 (page 1 of 1)
Operational Requirements for Unit Cooldown

CONSTRAINT	RC TEMPERATURE[a]	COOLDOWN RATE[b]	ALLOWED PUMP COMBINATION
RC Temperature[a]	T ≥ 270°F	≤ 50°F in any 1/2 hour period	NA
	140°F ≤ T < 270°F	≤ 25°F in any 1/2 hour period	NA
	T< 140°F	≤ 50°F in any one hour period	NA
	RCS depressurized[c]	≤ 50°F in any one hour period	NA
RC Pumps	T ≥ 300°F	NA	Any
	100°F ≤ T < 300°F	NA	≤ two pumps
	T < 100°F	NA	No pumps

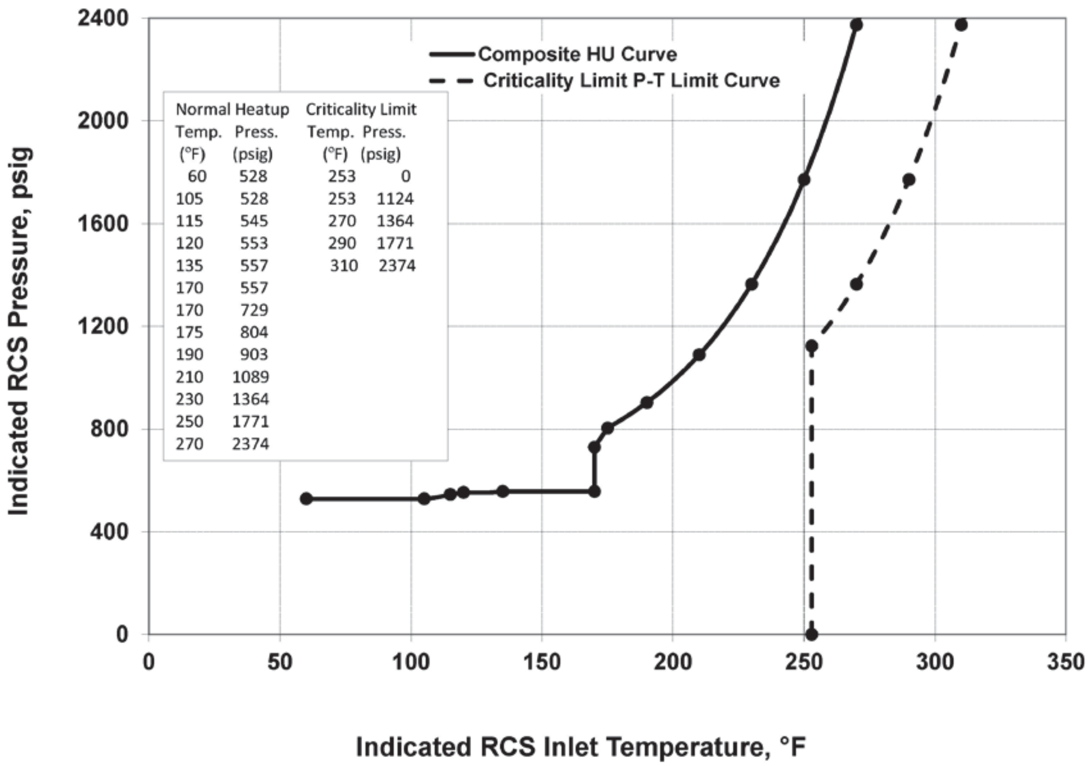
(a) RC Temperature is cold leg temperature if one or more RC pumps are in operation or if on natural circulation cooldown; otherwise it is the LPI cooler outlet temperature.

(b) These rate limits must be applied to the change in temperature indication from cold leg temperature to LPI cooler outlet temperature per Note (a).

(c) When the RCS is depressurized such that all three of the following conditions exist:

a) RCS temperature < 200°F,
b) RCS pressure < 50 psig,
c) All RC Pumps off,

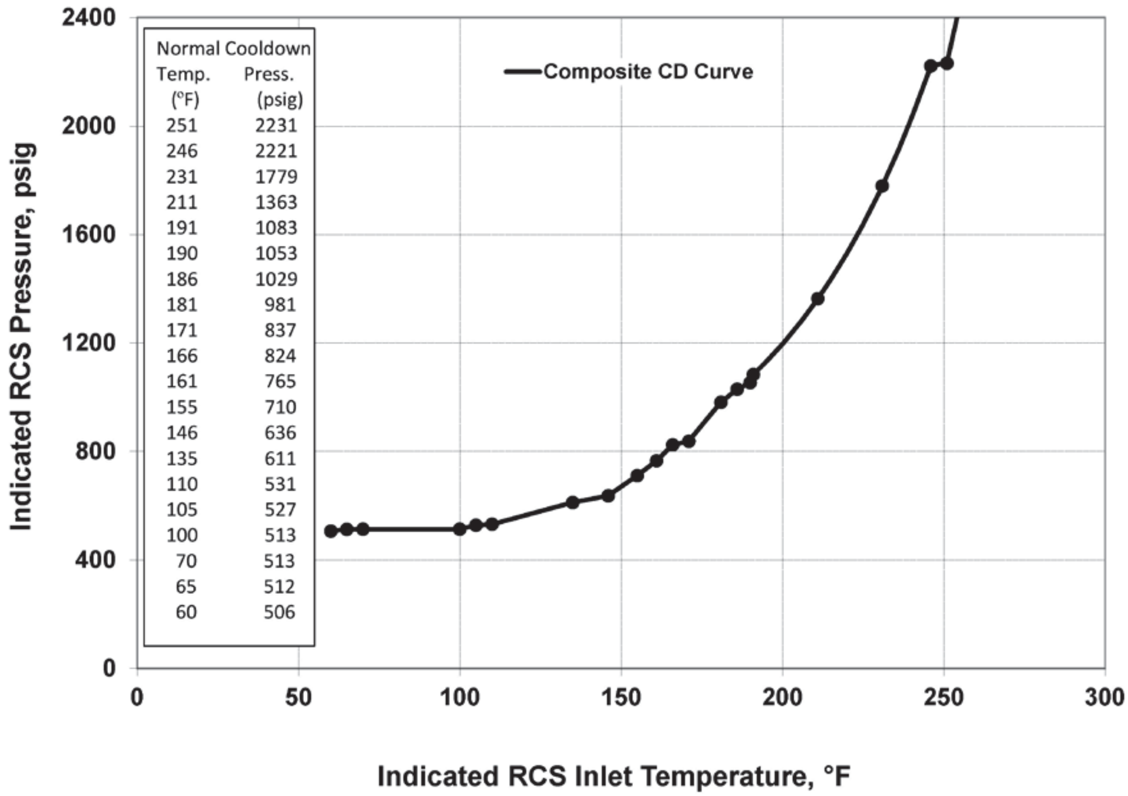
the maximum cooldown rate shall be relaxed to ≤ 50°F in any 1 hour period.



The regions of acceptable operation are below and to the right of the limit curves. Margins are included for the pressure differential between point of system pressure measurement and the pressure on the reactor vessel region controlling the limit curve. Margins for instrument error are not included.

Note: Heatup and Cooldown rate restrictions and Reactor Coolant Pump combination restrictions during Heatup and Cooldown are required, as identified in text.

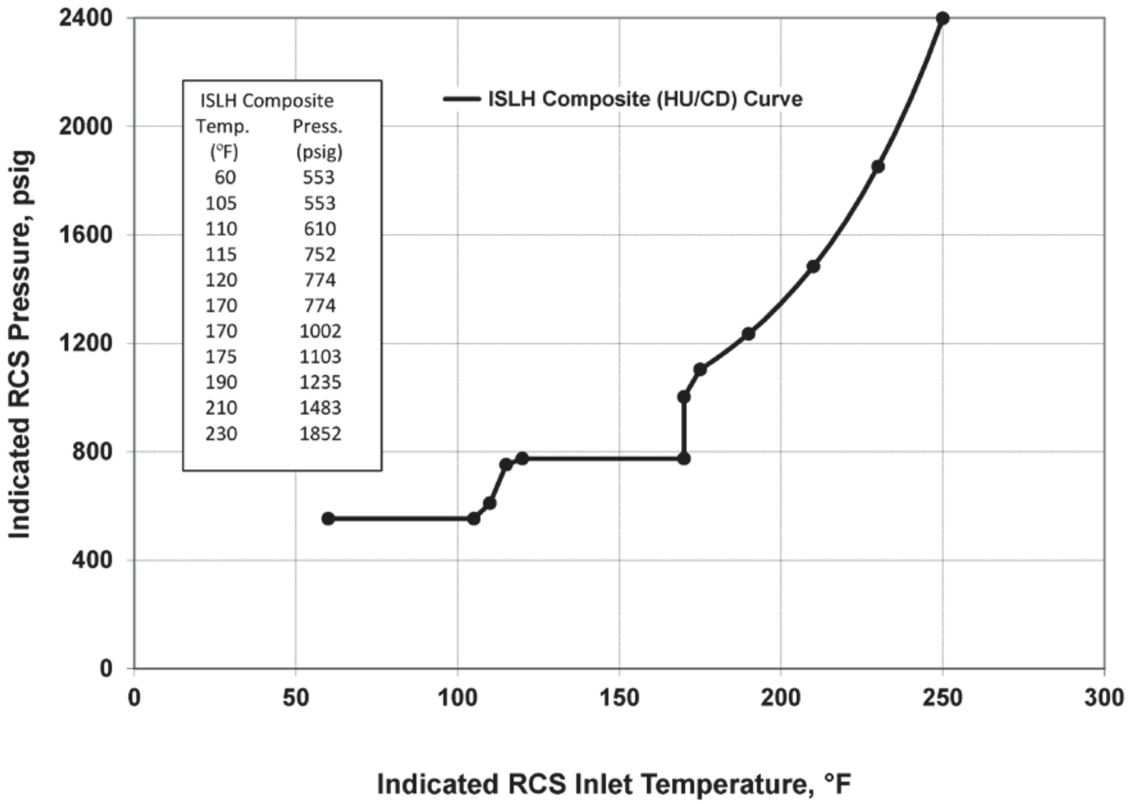
Figure 3.4.3-1 (page 1 of 1)
RCS Normal Operational Heatup Limitations
Applicable for the First 44.6 EFPY - Oconee Nuclear Station Unit 1



The regions of acceptable operation are below and to the right of the limit curves. Margins are included for the pressure differential between point of system pressure measurement and the pressure on the reactor vessel region controlling the limit curve. <u>Margins for instrument error are not included</u>.

<u>Note</u>: Heatup and Cooldown rate restrictions and Reactor Coolant Pump combination restrictions during Heatup and Cooldown are required, as identified in text.

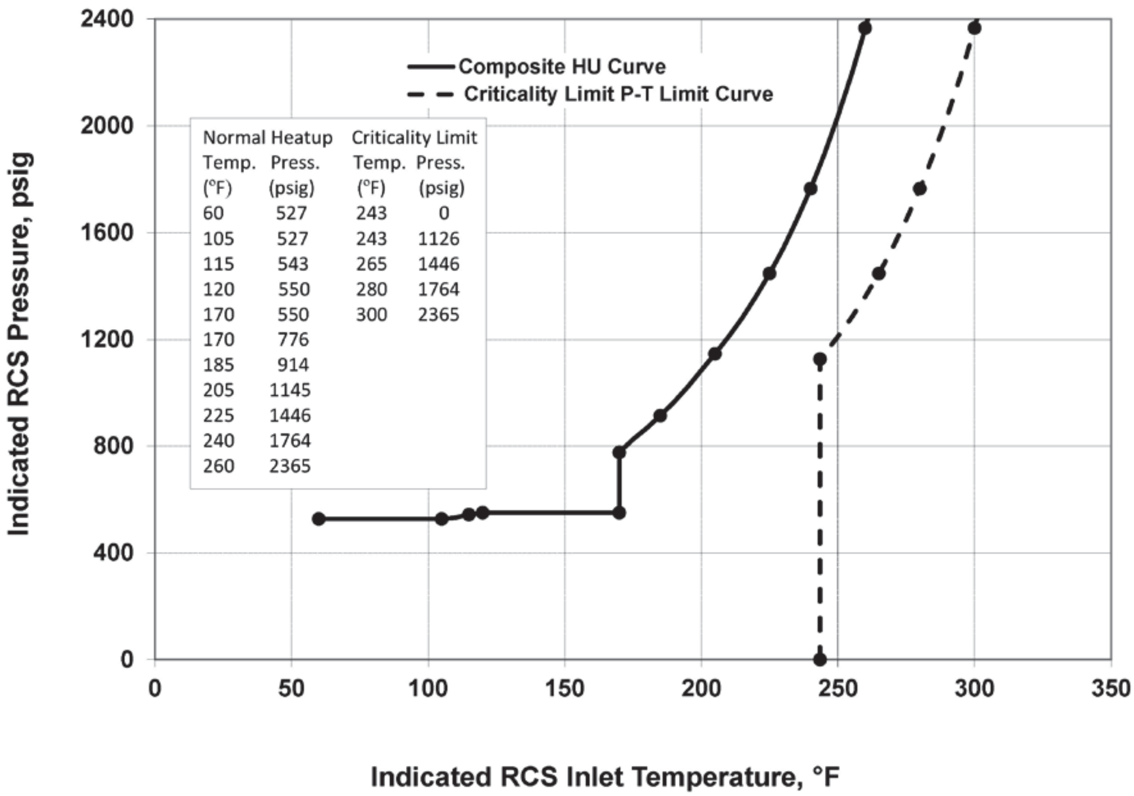
Figure 3.4.3-2 (page 1 of 1)
RCS Normal Operational Cooldown Limitations
Applicable for the First 44.6 EFPY - Oconee Nuclear Station Unit 1



The regions of acceptable operation are below and to the right of the limit curves. Margins are included for the pressure differential between point of system pressure measurement and the pressure on the reactor vessel region controlling the limit curve. Margins for instrument error are not included.

Note: Heatup and Cooldown rate restrictions and Reactor Coolant Pump combination restrictions during Heatup and Cooldown are required, as identified in text.

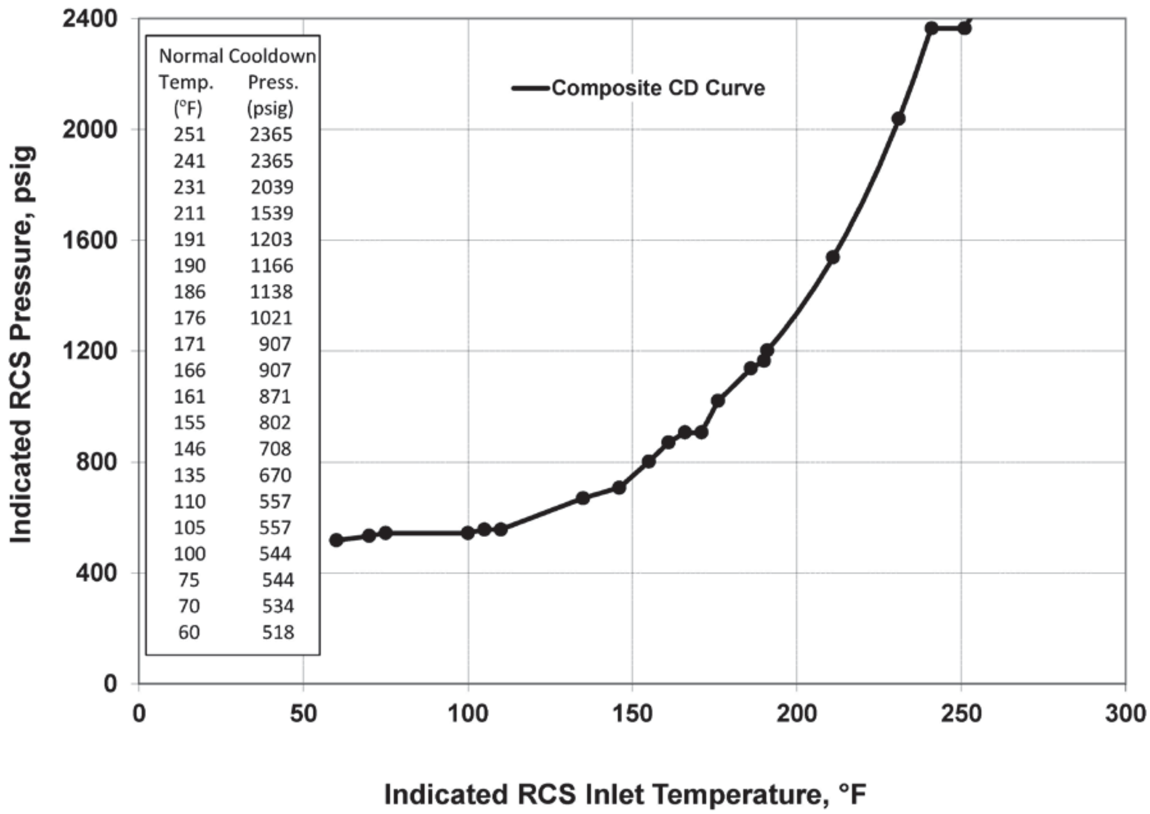
Figure 3.4.3-3 (page 1 of 1)
RCS Leak and Hydrostatic Test Heatup and Cooldown Limitations
Applicable for the First 44.6 EFPY - Oconee Nuclear Station Unit 1



The regions of acceptable operation are below and to the right of the limit curves. Margins are included for the pressure differential between point of system pressure measurement and the pressure on the reactor vessel region controlling the limit curve. Margins for instrument error are not included.

Note: Heatup and Cooldown rate restrictions and Reactor Coolant Pump combination restrictions during Heatup and Cooldown are required, as identified in text.

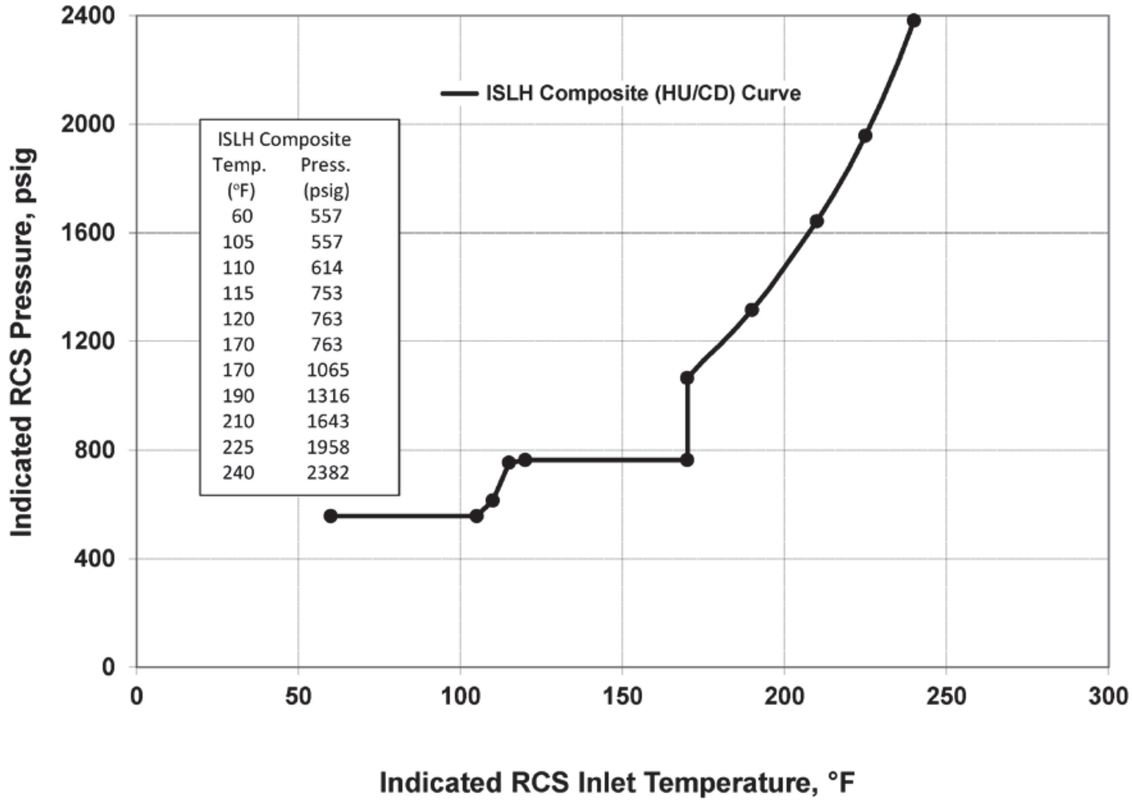
Figure 3.4.3-4 (page 1 of 1)
RCS Normal Operational Heatup Limitations
Applicable for the First 45.3 EFPY - Oconee Nuclear Station Unit 2



The regions of acceptable operation are below and to the right of the limit curves. Margins are included for the pressure differential between point of system pressure measurement and the pressure on the reactor vessel region controlling the limit curve. Margins for instrument error are not included.

Note: Heatup and Cooldown rate restrictions and Reactor Coolant Pump combination restrictions during Heatup and Cooldown are required, as identified in text.

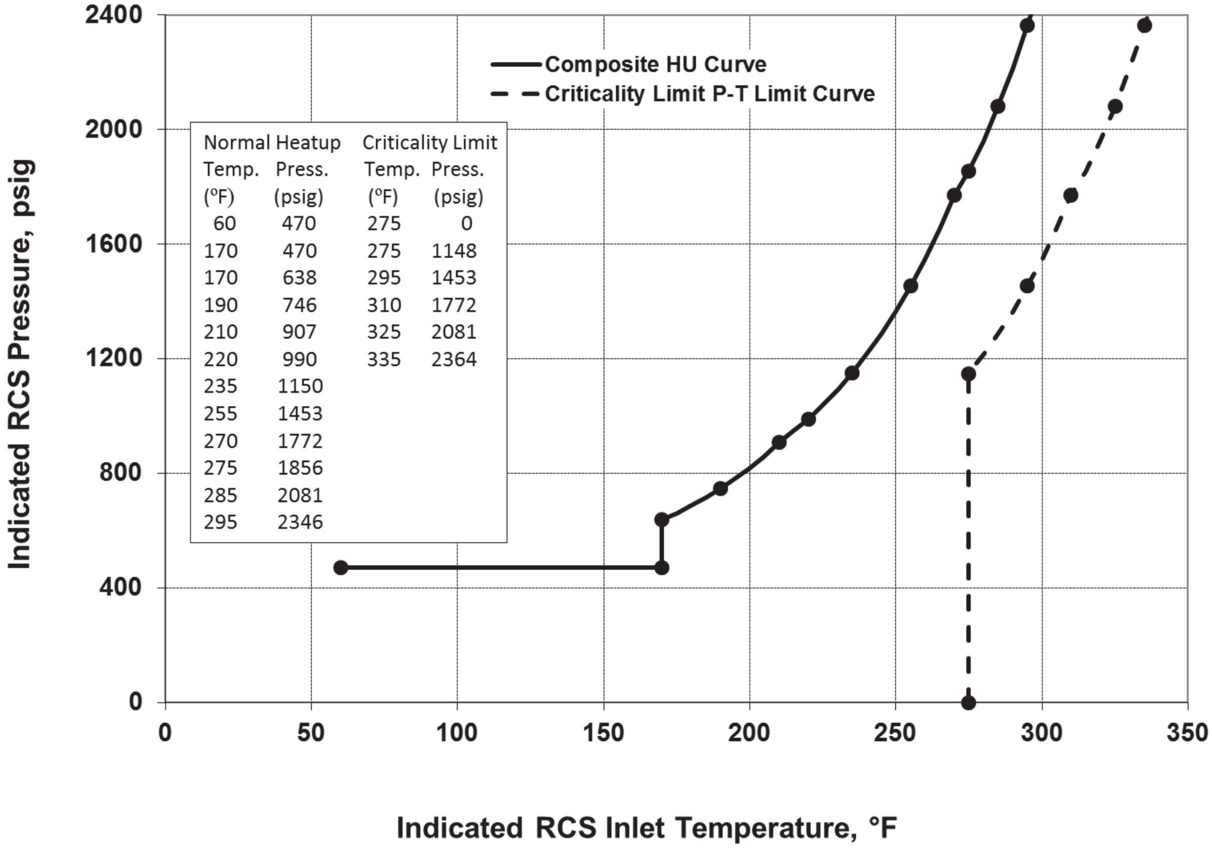
Figure 3.4.3-5 (page 1 of 1)
RCS Normal Operational Cooldown Limitations
Applicable for the First 45.3 EFPY - Oconee Nuclear Station Unit 2



The regions of acceptable operation are below and to the right of the limit curves. Margins are included for the pressure differential between point of system pressure measurement and the pressure on the reactor vessel region controlling the limit curve. Margins for instrument error are not included.

Note: Heatup and Cooldown rate restrictions and Reactor Coolant Pump combination restrictions during Heatup and Cooldown are required, as identified in text.

Figure 3.4.3-6 (page 1 of 1)
RCS Leak and Hydrostatic Test Heatup and Cooldown Limitations
Applicable for the First 45.3 EFPY - Oconee Nuclear Station Unit 2

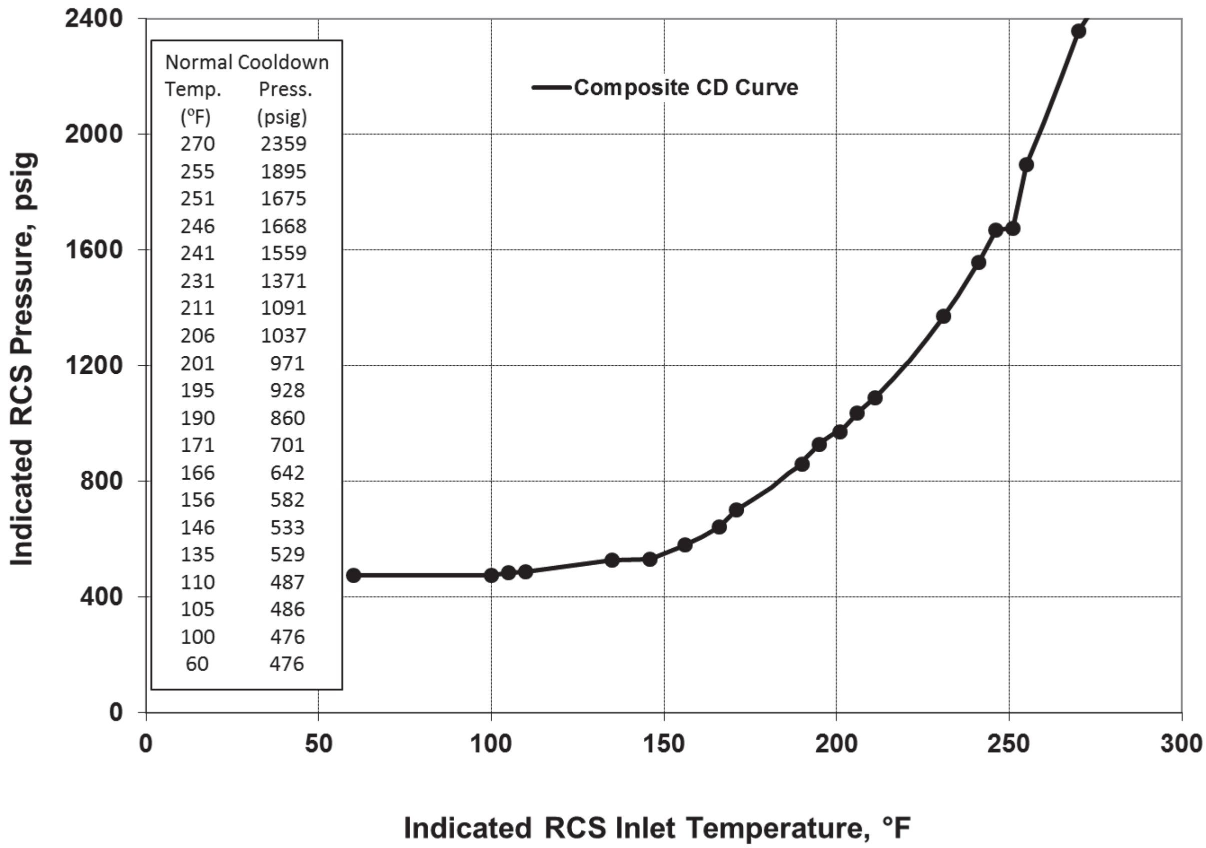


Normal Heatup Temp. (°F)	Normal Heatup Press. (psig)	Criticality Limit Temp. (°F)	Criticality Limit Press. (psig)
60	470	275	0
170	470	275	1148
170	638	295	1453
190	746	310	1772
210	907	325	2081
220	990	335	2364
235	1150		
255	1453		
270	1772		
275	1856		
285	2081		
295	2346		

The regions of acceptable operation are below and to the right of the limit curves. Margins are included for the pressure differential between point of system pressure measurement and the pressure on the reactor vessel region controlling the limit curve. Margins for instrument error are not included.

Note: Heatup and Cooldown rate restrictions and Reactor Coolant Pump combination restrictions during Heatup and Cooldown are required, as identified in text.

Figure 3.4.3-7 (page 1 of 1)
RCS Normal Operational Heatup Limitations
Applicable for the First 43.8 EFPY - Oconee Nuclear Station Unit 3

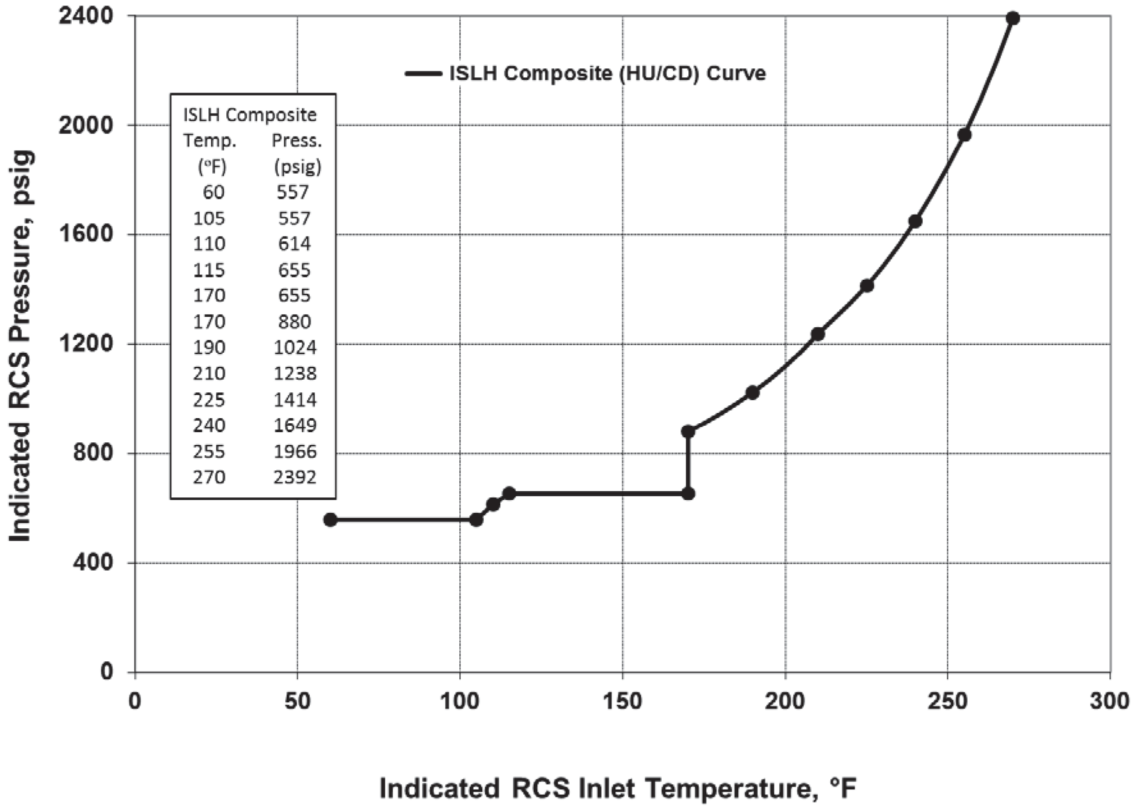


Normal Cooldown Temp. (°F)	Press. (psig)
270	2359
255	1895
251	1675
246	1668
241	1559
231	1371
211	1091
206	1037
201	971
195	928
190	860
171	701
166	642
156	582
146	533
135	529
110	487
105	486
100	476
60	476

The regions of acceptable operation are below and to the right of the limit curves. Margins are included for the pressure differential between point of system pressure measurement and the pressure on the reactor vessel region controlling the limit curve. <u>Margins for instrument error are not included</u>.

<u>Note</u>: Heatup and Cooldown rate restrictions and Reactor Coolant Pump combination restrictions during Heatup and Cooldown are required, as identified in text.

Figure 3.4.3-8 (page 1 of 1)
RCS Normal Operational Cooldown Limitations
Applicable for the First 43.8 EFPY - Oconee Nuclear Station Unit 3



The regions of acceptable operation are below and to the right of the limit curves. Margins are included for the pressure differential between point of system pressure measurement and the pressure on the reactor vessel region controlling the limit curve. Margins for instrument error are not included.

Note: Heatup and Cooldown rate restrictions and Reactor Coolant Pump combination restrictions during Heatup and Cooldown are required, as identified in text.

Figure 3.4.3-9 (page 1 of 1)
RCS Leak and Hydrostatic Test Heatup and Cooldown Limitations
Applicable for the First 43.8 EFPY - Oconee Nuclear Station Unit 3

3.4 REACTOR COOLANT SYSTEM (RCS)

3.4.4 RCS Loops – MODES 1 and 2

LCO 3.4.4 Two RCS Loops shall be in operation, with:

a. Four reactor coolant pumps (RCPs) operating; or

b. Three RCPs operating and:
   1. THERMAL POWER is ≤ 75% RTP*; and
   2. LCO 3.3.1, “Reactor Protection System (RPS) Instrumentation,” Function 1.a (Nuclear Overpower – High Setpoint), Allowable Value of Table 3.3.1-1 is reset for 3 RCPs operating.

APPLICABILITY: MODES 1 and 2.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Requirements of LCO 3.4.4.b not met.	A.1 Reset the RPS to satisfy the requirements of LCO 3.4.4.b.2.	10 hours
B. Required Action and associated Completion Time of Condition A not met. <u>OR</u> Requirements of LCO not met for reasons other than Condition A.	B.1 Be in MODE 3.	12 hours

* Following implementation of MUR on the respective unit, the value shall be 73.8% RTP.

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.4.4.1	Verify required RCS loops are in operation.	In accordance with the Surveillance Frequency Control Program

3.4 REACTOR COOLANT SYSTEM (RCS)

3.4.5 RCS Loops – MODE 3

LCO 3.4.5 Two RCS loops shall be OPERABLE and at least one RCS loop shall be in operation.

-----NOTE-----
All reactor coolant pumps (RCPs) may not be in operation for ≤ 8 hours per 24 hour period for the transition to or from the Decay Heat Removal System, and all RCPs may not be in operation for ≤ 1 hour per 8 hour period for any other reason, provided:

a. No operations are permitted that would cause reduction of the RCS boron concentration; and

b. Core outlet temperature is maintained at least 10°F below saturation temperature.

APPLICABILITY: MODE 3.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One RCS loop inoperable.	A.1 Restore RCS loop to OPERABLE status.	72 hours
B. Required Action and associated Completion Time of Condition A not met.	B.1 Be in MODE 4.	12 hours

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION		COMPLETION TIME
C. Two RCS loops inoperable. <u>OR</u> Required RCS loop not in operation.	C.1	Suspend all operations involving a reduction of RCS boron concentration.	Immediately
	<u>AND</u>		
	C.2	Initiate action to restore one RCS loop to OPERABLE status and operation.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.4.5.1	Verify required RCS loop is in operation.	In accordance with the Surveillance Frequency Control Program
SR 3.4.5.2	Verify correct breaker alignment and indicated power available to the required pump that is not in operation.	In accordance with the Surveillance Frequency Control Program

3.4 REACTOR COOLANT SYSTEM (RCS)

3.4.6 RCS Loops – MODE 4

LCO 3.4.6 Two loops consisting of any combination of RCS loops and decay heat removal (DHR) loops shall be OPERABLE and at least one loop shall be in operation.

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

1. All reactor coolant pumps (RCPs) may not be in operation for ≤ 8 hours per 24 hour period for the transition to or from the DHR System, and all RCPs and DHR pumps may not be in operation for ≤ 1 hour per 8 hour period for any other reason, provided:

    a. No operations are permitted that would cause reduction of the RCS boron concentration; and

    b. Core outlet temperature is maintained at least 10°F below saturation temperature.

2. A DHR loop may be considered OPERABLE if capable of being manually realigned to the DHR mode of operation.

APPLICABILITY: MODE 4.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One required loop inoperable.	A.1 Initiate action to restore a second loop to OPERABLE status.	Immediately
	AND	
	A.2 ---------Note--------- Only required if DHR loop is OPERABLE. ------------------------ Be in MODE 5.	24 hours

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
B. Two required loops inoperable. <u>OR</u> Required loop not in operation.	B.1 Suspend all operations involving a reduction in RCS boron concentration. <u>AND</u> B.2 Initiate action to restore one loop to OPERABLE status and operation.	Immediately Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.4.6.1	Verify required DHR or RCS loop is in operation.	In accordance with the Surveillance Frequency Control Program
SR 3.4.6.2	Verify correct breaker alignment and indicated power available to the required pump that is not in operation.	In accordance with the Surveillance Frequency Control Program
SR 3.4.6.3	-------------------------NOTE-------------------------- Not required to be performed until 12 hours after entering MODE 4. -- Verify required DHR loop locations susceptible to gas accumulation are sufficiently filled with water.	In accordance with the Surveillance Frequency Control Program

3.4 REACTOR COOLANT SYSTEM (RCS)

3.4.7 RCS Loops – MODE 5, Loops Filled

LCO 3.4.7 One decay heat removal (DHR) loop shall be OPERABLE and in operation, and either:

a. One additional DHR loop shall be OPERABLE; or

b. The secondary side water level of each steam generator (SG) shall be ≥ 50%.

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

1. The DHR pump of the loop in operation may not be in operation for ≤ 1 hour per 8 hour period provided:

   a. No operations are permitted that would cause reduction of the RCS boron concentration; and

   b. Core outlet temperature is maintained at least 10°F below saturation temperature.

2. One required DHR loop may be inoperable for ≤ 2 hours for surveillance testing provided that the other DHR loop is OPERABLE and in operation.

3. All DHR loops may be removed from operation during planned heatup to MODE 4 when at least one RCS loop is in operation.

4. A DHR loop may be considered OPERABLE if capable of being manually realigned to the DHR mode of operation.

APPLICABILITY: MODE 5 with RCS loops filled.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One required DHR loop inoperable. AND Any required SG with secondary side water levels not within limits.	A.1 Initiate action to restore a second DHR loop to OPERABLE status. OR A.2 Initiate action to restore SG secondary side water levels to within limits.	Immediately Immediately
B. No required DHR loops OPERABLE. OR Required DHR loop not in operation.	B.1 Suspend all operations involving a reduction in RCS boron concentration. AND B.2 Initiate action to restore one DHR loop to OPERABLE status and operation.	Immediately Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.4.7.1	Verify required DHR loop is in operation.	In accordance with the Surveillance Frequency Control Program
SR 3.4.7.2	Verify required SG secondary side water levels are ≥ 50%.	In accordance with the Surveillance Frequency Control Program
SR 3.4.7.3	Verify correct breaker alignment and indicated power available to the required DHR pump that is not in operation.	In accordance with the Surveillance Frequency Control Program
SR 3.4.7.4	Verify required DHR loop locations susceptible to gas accumulation are sufficiently filled with water.	In accordance with the Surveillance Frequency Control Program

3.4 REACTOR COOLANT SYSTEM (RCS)

3.4.8 RCS Loops – MODE 5, Loops Not Filled

LCO 3.4.8 Two decay heat removal (DHR) loops shall be OPERABLE and one DHR loop shall be in operation.

-----NOTES-----

1. All DHR pumps may not be in operation for ≤ 15 minutes when switching from one loop to another or for testing provided:
   a. The maximum RCS temperature is ≤ 140°F;
   b. No operations are permitted that would cause a reduction of the RCS boron concentration; and
   c. No draining operations to further reduce the RCS water volume are permitted.
2. One DHR loop may be inoperable for ≤ 2 hours for surveillance testing provided that the other DHR loop is OPERABLE and in operation.
3. A DHR loop may be considered OPERABLE if capable of being manually realigned to the DHR mode of operation.

APPLICABILITY: MODE 5 with RCS loops not filled.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One required DHR loop inoperable.	A.1 Initiate action to restore DHR loop to OPERABLE status.	Immediately

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
B. Two DHR loops inoperable. OR Required DHR loop not in operation.	B.1 Suspend all operations involving reduction in RCS boron concentration. AND B.2 Initiate action to restore one DHR loop to OPERABLE status and operation.	Immediately Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.4.8.1	Verify required DHR loop is in operation.	In accordance with the Surveillance Frequency Control Program
SR 3.4.8.2	Verify correct breaker alignment and indicated power available to the required DHR pump that is not in operation.	In accordance with the Surveillance Frequency Control Program
SR 3.4.8.3	Verify DHR loop locations susceptible to gas accumulation are sufficiently filled with water.	In accordance with the Surveillance Frequency Control Program

3.4 REACTOR COOLANT SYSTEM (RCS)

3.4.9 Pressurizer

LCO 3.4.9 The pressurizer shall be OPERABLE with:

a. Pressurizer water level ≤ 285 inches; and

b. A minimum of 400 kW of pressurizer heaters OPERABLE and capable of being powered from an emergency power supply.

APPLICABILITY: MODES 1 and 2,
MODE 3 with RCS temperature > 325°F.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Pressurizer water level not within limit.	A.1 Restore level to within limit.	1 hour
B. Required Action and associated Completion Time of Condition A not met.	B.1 Be in MODE 3.	12 hours
	AND	
	B.2 Be in MODE 3 with RCS temperature ≤ 325°F.	18 hours
C. Capacity of pressurizer heaters capable of being powered by emergency power supply less than limit.	C.1 Restore pressurizer heater capability.	72 hours

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION		COMPLETION TIME
D. Required Action and associated Completion Time of Condition C not met.	D.1	Be in MODE 3.	12 hours
	<u>AND</u>		
	D.2	Reduce RCS temperature to ≤ 325°F.	18 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.4.9.1	Verify pressurizer water level ≤ 285 inches.	In accordance with the Surveillance Frequency Control Program
SR 3.4.9.2	Verify capacity of required pressurizer heaters and associated power supplies are ≥ 400 kW.	In accordance with the Surveillance Frequency Control Program

3.4 REACTOR COOLANT SYSTEM (RCS)

3.4.10 Pressurizer Safety Valves

LCO 3.4.10 Two pressurizer safety valves shall be OPERABLE with lift settings ≥ 2425 psig and ≤ 2575 psig.

APPLICABILITY: MODES 1 and 2,
MODE 3 with all RCS cold leg temperatures > 325°F.

------------------------------NOTE------------------------------
The lift settings are not required to be within the LCO limits for entry into the applicable portions of MODE 3 for the purpose of setting the pressurizer safety valves under ambient (hot) conditions. This exception is allowed for 36 hours following entry into the applicable portions of MODE 3 provided a preliminary cold setting was made prior to heatup.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One pressurizer safety valve inoperable.	A.1 Restore valve to OPERABLE status.	15 minutes
B. Required Action and associated Completion Time not met. OR Two pressurizer safety valves inoperable.	B.1 Be in MODE 3. AND B.2 Be in MODE 3 with any RCS cold leg temperature ≤ 325°F.	12 hours 18 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.4.10.1	Verify each pressurizer safety valve is OPERABLE in accordance with the INSERVICE TESTING PROGRAM. Following testing, lift settings shall be within ± 1%.	In accordance with the INSERVICE TESTING PROGRAM

3.4 REACTOR COOLANT SYSTEM (RCS)

3.4.11 RCS Specific Activity

LCO 3.4.11 The RCS DOSE EQUIVALENT I-131 and DOSE EQUIVALENT XE-133 specific activity shall be within limits.

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

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. DOSE EQUIVALENT I-131 not within limit.	------------------NOTE------------------ LCO 3.0.4.c is applicable. ---	
	A.1 Verify DOSE EQUIVALENT I-131 ≤ 50 μCi/gm.	Once per 4 hours
	<u>AND</u>	
	A.2 Restore DOSE EQUIVALENT I-131 to within limit.	48 hours
B. DOSE EQUIVALENT XE-133 not within limit.	------------------NOTE------------------ LCO 3.0.4.c is applicable. ---	
	B.1 Restore DOSE EQUIVALENT XE-133 to within limit	48 hours

(continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
C. Required Action and associated Completion Time of Condition A or B not met. <u>OR</u> DOSE EQUIVALENT I-131 > 50 μCi/gm.	C.1 Be in MODE 3. <u>AND</u> C.2 Be in MODE 5.	12 hours 36 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.4.11.1	---------------------------NOTE------------------------- Only required to be performed in MODE 1, 2, and 3 with RCS average temperature ≥ 500F. -- Verify reactor coolant DOSE EQUIVALENT XE-133 specific activity ≤ 280 μCi/gm.	In accordance with the Surveillance Frequency Control Program
SR 3.4.11.2	Verify reactor coolant DOSE EQUIVALENT I-131 specific activity ≤ 1.0 μCi/gm.	In accordance with the Surveillance Frequency Control Program <u>AND</u> Between 2 and 6 hours after THERMAL POWER change of ≥ 15% RTP within a 1 hour period

3.4 REACTOR COOLANT SYSTEM (RCS)

3.4.12 Low Temperature Overpressure Protection (LTOP) System

LCO 3.4.12 An LTOP System shall be OPERABLE with high pressure injection (HPI) deactivated, and the core flood tanks (CFTs) isolated and:

a. An OPERABLE power operated relief valve (PORV) with a lift setpoint of ≤ 535 psig; and

b. Administrative controls implemented that assure ≥ 10 minutes are available for operator action to mitigate an LTOP event.

APPLICABILITY: MODE 3 when any RCS cold leg temperature is ≤ 325°F,
MODES 4, 5, and 6 when an RCS vent path capable of mitigating the most limiting LTOP event is not open.

-----NOTES-----

1. CFT isolation is only required when CFT pressure is greater than or equal to the maximum RCS pressure for the existing RCS temperature allowed by the pressure and temperature limit curves provided in Specification 3.4.3.

2. The PORV is not required to be OPERABLE when no HPI pumps are running and RCS pressure < 100 psig.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. HPI activated.	A.1 Initiate action to deactivate HPI.	Immediately
B. A CFT not isolated when CFT pressure is greater than or equal to the maximum RCS pressure for existing temperature allowed by Specification 3.4.3.	B.1 Isolate affected CFT.	1 hour
C. Required Action and associated Completion Time of Condition B not met.	C.1 Be in MODE 4 with RCS temperature > 200°F.	12 hours
	<u>OR</u>	
	C.2 Depressurize affected CFT to < 373 psig.	12 hours
D. PORV inoperable.	D.1 Restore PORV to OPERABLE status.	1 hour
E. Required Action and associated Completion Time of Condition D not met.	E.1 Be in MODE 3 with RCS average temperature > 325°F.	23 hours
	<u>OR</u>	
	E.2 Depressurize RCS to < 100 psig.	35 hours

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
F. Administrative Controls that assure ≥ 10 minutes are available to mitigate consequences of an LTOP event not implemented.	F.1 Provide compensatory measures to monitor for initiation of an LTOP event.	4 hours
G. Required Action and associated Completion Time of Condition F not met.	G.1 Depressurize the RCS and establish an RCS vent path capable of mitigating the most limiting LTOP event.	12 hours
H. Administrative Controls that assure ≥ 10 minutes are available to mitigate the consequences of an LTOP event not implemented and PORV inoperable. <u>OR</u> LTOP System inoperable for any reason other than Condition A through Condition G.	H.1 Restore system to OPERABLE status. <u>OR</u> H.2 Depressurize RCS and establish RCS vent path capable of mitigating the most limiting LTOP event.	1 hour 12 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.4.12.1	Verify HPI is deactivated.	In accordance with the Surveillance Frequency Control Program
SR 3.4.12.2	Verify each CFT is isolated.	In accordance with the Surveillance Frequency Control Program
SR 3.4.12.3	Verify pressurizer level is ≤ level necessary to assure ≥ 10 minutes are available for operator action to mitigate an LTOP event.	30 minutes during RCS heatup and cooldown <u>AND</u> In accordance with the Surveillance Frequency Control Program
SR 3.4.12.4	Verify PORV block valve is open.	In accordance with the Surveillance Frequency Control Program
SR 3.4.12.5	Perform CHANNEL FUNCTIONAL TEST for PORV.	In accordance with the Surveillance Frequency Control Program

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.4.12.6	Verify Administrative Controls, other than limits for pressurizer level, that assure ≥ 10 minutes are available for operator action to mitigate an LTOP event are implemented for the following: a. RCS pressure when RCS temperature is < 325°F; b. Makeup flow rate; c. Alarms; d. High pressure Nitrogen System; and e. Verify pressurizer heater bank 3 or 4 is deactivated	In accordance with the Surveillance Frequency Control Program
SR 3.4.12.7	Perform CHANNEL CALIBRATION for PORV.	In accordance with the Surveillance Frequency Control Program

3.4 REACTOR COOLANT SYSTEM (RCS)

3.4.13 RCS Operational LEAKAGE

LCO 3.4.13 RCS operational LEAKAGE shall be limited to:

a. No pressure boundary LEAKAGE;

b. 1 gpm unidentified LEAKAGE;

c. 10 gpm identified LEAKAGE; and

d. 150 gallons per day primary to secondary LEAKAGE through any one steam generator (SG).

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

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Pressure boundary LEAKAGE exists.	A.1 Isolate affected component, pipe, or vessel from the RCS by use of a closed manual valve, closed and de-activated automatic valve, blind flange, or check valve.	4 hours
B. RCS operational LEAKAGE not within limits for reasons other than pressure boundary LEAKAGE or primary to secondary LEAKAGE.	B.1 Reduce LEAKAGE to within limits.	4 hours

(continued)

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
C. Required Action and associated Completion Time not met. OR Primary to secondary LEAKAGE not within limit.	C.1 Be in MODE 3. AND C.2 Be in MODE 5.	12 hours 36 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.4.13.1	-------------------------NOTES------------------------ 1. Not required to be performed until 12 hours after establishment of steady state operation. 2. Not applicable to primary to secondary LEAKAGE. --- Evaluate RCS Operational LEAKAGE.	In accordance with the Surveillance Frequency Control Program
SR 3.4.13.2	-------------------------NOTE-------------------------- Not required to be performed until 12 hours after establishment of steady state operation. --- Verify primary to secondary LEAKAGE is ≤ 150 gallons per day through any one SG.	In accordance with the Surveillance Frequency Control Program

3.4 REACTOR COOLANT SYSTEM (RCS)

3.4.14 RCS Pressure Isolation Valve (PIV) Leakage

LCO 3.4.14 Leakage from the following RCS PIV shall be within limits:

a. CF-12,
b. CF-14,
c. LP-47,
d. LP-48,
e. LP-176, and
f. LP-177

-----NOTES-----

1. The limits of LP-47 and LP-48 are not applicable except as stated in Note 2 below.

2. The limits of both LP-47 and LP-48 may be met in lieu of either LP-176 or LP-177 limits.

APPLICABILITY: MODES 1, 2, and 3,
MODE 4 except valves in the decay heat removal (DHR) flow path when in, or during the transition to or from, the DHR mode of operation.

ACTIONS

-----NOTES-----

1. Separate Condition entry is allowed for each flow path.
2. Enter applicable Conditions and Required Actions for systems made inoperable by an inoperable PIV.

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more flow paths with leakage from one or more required RCS PIVs not within limit.	-----NOTE----- Each valve used to satisfy Required Action A.1 and Required Action A.2 must have been verified to meet SR 3.4.14.1 and be on the RCS pressure boundary or the high pressure portion of the system. -----	

(continued)

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. (continued)	A.1 Isolate the high pressure portion of the affected system from the low pressure portion by use of one closed manual, deactivated non-automatic power operated, deactivated automatic, or check valve.	4 hours
	AND	
	A.2 Isolate the high pressure portion of the affected system from the low pressure portion by use of a second closed manual, deactivated non-automatic power operated, deactivated automatic, or check valve.	72 hours
B. Required Action and associated Completion Time not met.	B.1 Be in MODE 3.	12 hours
	AND	
	B.2 Be in MODE 5.	36 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.4.14.1	-------------------------NOTE-------------------------- Not required to be performed in MODES 3 and 4. --- Verify leakage from each required RCS PIV is equivalent to ≤ 0.5 gpm per nominal inch of valve size up to a maximum of 5 gpm at an RCS pressure ≥ 2150 psia and ≤ 2190 psia.	In accordance with the INSERVICE TESTING PROGRAM

3.4 REACTOR COOLANT SYSTEM (RCS)

3.4.15 RCS Leakage Detection Instrumentation

LCO 3.4.15 The following RCS leakage detection instrumentation shall be OPERABLE:

a. One containment normal sump level indication; and

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

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

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Containment sump level indication inoperable.	A.1 -----------NOTE----------- Not required until 12 hours after establishment of steady state operation. ------------------------------ Perform SR 3.4.13.1.	 Once per 24 hours
	<u>AND</u>	
	A.2 Restore containment sump level indication to OPERABLE status.	30 days

(continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
B. Required containment atmosphere radioactivity monitor inoperable.	B.1.1 Analyze grab samples of the containment atmosphere. OR B.1.2 -----------NOTE----------- Not required until 12 hours after establishment of steady state operation. ----------------------------- Perform SR 3.4.13.1. AND B.2 Restore required containment atmosphere radioactivity monitor to OPERABLE status.	Once per 24 hours Once per 24 hours 30 days
C. --------NOTE------------ Only applicable when the containment atmosphere gaseous radiation monitor is the only OPERABLE monitor. ------------------------------ Containment sump level indication inoperable.	C.1 Analyze grab samples of the containment atmosphere. AND C.2 Restore containment sump level indication to OPERABLE status.	Once per 12 hours 7 days
D. Required Action and associated Completion Time not met.	D.1 Be in MODE 3. AND D.2 Be in MODE 5.	12 hours 36 hours

CONDITION	REQUIRED ACTION	COMPLETION TIME
E. Both required instrument functions inoperable.	E.1 Enter LCO 3.0.3.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.4.15.1	Perform CHANNEL CHECK of required containment atmosphere radioactivity monitor.	In accordance with the Surveillance Frequency Control Program
SR 3.4.15.2	Perform CHANNEL FUNCTIONAL TEST of required containment atmosphere radioactivity monitor.	In accordance with the Surveillance Frequency Control Program
SR 3.4.15.3	Perform CHANNEL CALIBRATION of required containment sump level indication.	In accordance with the Surveillance Frequency Control Program
SR 3.4.15.4	Perform CHANNEL CALIBRATION of required containment atmosphere radioactivity monitor.	In accordance with the Surveillance Frequency Control Program

3.4 REACTOR COOLANT SYSTEM (RCS)

3.4.16 Steam Generator (SG) Tube Integrity

LCO 3.4.16 SG Tube integrity shall be maintained.

AND

All SG tubes satisfying the tube plugging criteria shall be plugged in accordance with the Steam Generator Program.

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

ACTIONS

-----NOTE-----

Separate Condition entry is allowed for each SG tube.

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more SG tubes satisfying the tube plugging criteria and not plugged in accordance with the Steam Generator Program.	A.1 Verify tube integrity of the affected tube(s) is maintained until the next refueling outage or SG tube inspection.	7 days
	AND	
	A.2 Plug the affected tube(s) in accordance with the Steam Generator Program.	Prior to entering MODE 4 following the next refueling outage or SG tube inspection
B. Required Action and associated Completion Time of Condition A not met. OR SG tube integrity not maintained.	B.1 Be in MODE 3.	12 hours
	AND	
	B.2 Be in MODE 5.	36 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.4.16.1	Verify SG tube integrity in accordance with the Steam Generator Program.	In accordance with the Steam Generator Program
SR 3.4.16.2	Verify that each inspected SG tube that satisfies the tube plugging criteria is plugged in accordance with the Steam Generator Program.	Prior to entering MODE 4 following an SG tube inspection

3.5 EMERGENCY CORE COOLING SYSTEMS (ECCS)

3.5.1 Core Flood Tanks (CFTs)

LCO 3.5.1 Two CFTs shall be OPERABLE.

APPLICABILITY: MODES 1 and 2,
MODE 3 with Reactor Coolant System (RCS) pressure > 800 psig.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One CFT inoperable due to boron concentration not within limits.	A.1 Restore boron concentration to within limits.	72 hours
B. One CFT inoperable for reasons other than Condition A.	B.1 Restore CFT to OPERABLE status.	1 hour
C. Required Action and associated Completion Time of Condition A or B not met.	C.1 Be in MODE 3. AND C.2 Reduce RCS pressure to ≤ 800 psig.	12 hours 18 hours
D. Two CFTs inoperable.	D.1 Enter LCO 3.0.3.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.5.1.1	Verify each CFT isolation valve is fully open.	In accordance with the Surveillance Frequency Control Program
SR 3.5.1.2	Verify borated water volume in each CFT is $\geq$ 1010 ft^3 and $\leq$ 1070 ft^3.	In accordance with the Surveillance Frequency Control Program
SR 3.5.1.3	Verify nitrogen cover pressure in each CFT is $\geq$ 575 psig and $\leq$ 625 psig.	In accordance with the Surveillance Frequency Control Program
SR 3.5.1.4	Verify boron concentration in each CFT is within the limit specified in the COLR.	In accordance with the Surveillance Frequency Control Program <u>AND</u> ----------NOTE------------ Only required to be performed for affected CFT ----------------------------- Once within 12 hours after each solution volume increase of $\geq$ 80 gallons that is not the result of addition from a borated water source that meets CFT boron concentration requirements.

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.5.1.5	Verify power is removed from each CFT isolation valve operator.	In accordance with the Surveillance Frequency Control Program

3.5 EMERGENCY CORE COOLING SYSTEMS (ECCS)

3.5.2 High Pressure Injection (HPI)

LCO 3.5.2 The HPI System shall be OPERABLE with:

a. Two HPI trains OPERABLE;

b. An additional HPI pump OPERABLE;

c. Two LPI-HPI flow paths OPERABLE;

d. Two HPI discharge crossover valves OPERABLE;

e. HPI suction headers cross-connected; and

f. HPI discharge headers separated.

APPLICABILITY: MODES 1 and 2,
MODE 3 with Reactor Coolant System (RCS) temperature > 350°F.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One HPI pump inoperable.	A.1 Restore HPI pump to OPERABLE status.	72 hours
<u>OR</u>	<u>AND</u>	
One or more HPI discharge crossover valve(s) inoperable.	A.2 Restore HPI discharge crossover valve(s) to OPERABLE status.	72 hours

(continued)

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ACTIONS (continued)

CONDITION	REQUIRED ACTION		COMPLETION TIME
B. Required Action and associated Completion Time of Condition A not met.	B.1	Reduce THERMAL POWER to ≤ 50% RTP.	12 hours
	AND		
	B.2	Verify by administrative means that the ADV flow path for each steam generator is OPERABLE.	12 hours
	AND		
	B.3	Restore HPI pump to OPERABLE status.	30 days from initial entry into Condition A
	AND		
	B.4	Restore HPI discharge crossover valve(s) to OPERABLE status.	30 days from initial entry into Condition A

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION		COMPLETION TIME
C. One HPI train inoperable.	C.1	————NOTE———— Only required when inoperable HPI train is incapable of automatic actuation and incapable of actuation through remote manual alignment. ————————	
		Reduce THERMAL POWER to ≤ 50% RTP.	3 hours
	<u>AND</u>		
	C.2	————NOTE———— Only required when THERMAL POWER ≤ 50% RTP. ————————	
		Verify by administrative means that the ADV flow path for each steam generator is OPERABLE.	3 hours
	<u>AND</u>		
	C.3	Restore HPI train to OPERABLE status.	72 hours
D. HPI suction headers not cross-connected.	D.1	Cross-connect HPI suction headers.	72 hours
E. HPI discharge headers cross-connected.	E.1	Hydraulically separate HPI discharge headers.	72 hours

(continued)

ACTIONS (continued)

CONDITION		REQUIRED ACTION		COMPLETION TIME
F.	One LPI-HPI flow path inoperable.	F.1	Restore LPI-HPI flow path to OPERABLE status.	72 hours
G.	Required Action and associated Completion Time of Condition B, C, D, E, or F not met.	G.1	Be in MODE 3.	12 hours
		AND		
		G.2	Reduce RCS temperature to ≤ 350°F.	60 hours
H.	Two HPI trains inoperable. OR Two LPI-HPI flow paths inoperable.	H.1	Enter LCO 3.0.3.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.5.2.1	--------------------------NOTE------------------------ Not required to be met for system vent flow paths opened under administrative control. --- Verify each HPI manual and non-automatic power operated valve in the flow path, that is not locked, sealed, or otherwise secured in position, is in the correct position.	In accordance with the Surveillance Frequency Control Program
SR 3.5.2.2	Verify HPI locations susceptible to gas accumulation are sufficiently filled with water.	In accordance with the Surveillance Frequency Control Program

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.5.2.3	Verify each HPI pump's developed head at the test flow point is greater than or equal to the required developed head.	In accordance with the INSERVICE TESTING PROGRAM
SR 3.5.2.4	Verify each HPI automatic valve in the flow path that is not locked, sealed, or otherwise secured in position, actuates to the correct position on an actual or simulated actuation signal.	In accordance with the Surveillance Frequency Control Program
SR 3.5.2.5	Verify each HPI pump starts automatically on an actual or simulated actuation signal.	In accordance with the Surveillance Frequency Control Program
SR 3.5.2.6	Verify, by visual inspection, each HPI train reactor building sump suction inlet is not restricted by debris and suction inlet strainers show no evidence of structural distress or abnormal corrosion.	In accordance with the Surveillance Frequency Control Program
SR 3.5.2.7	Cycle each HPI discharge crossover valve and LPI-HPI flow path discharge valve.	In accordance with the Surveillance Frequency Control Program

3.5 EMERGENCY CORE COOLING SYSTEMS (ECCS)

3.5.3 Low Pressure Injection (LPI)

LCO 3.5.3 Two LPI trains shall be OPERABLE.

--NOTES--

1. Only one LPI train is required to be OPERABLE in MODE 4.

2. In MODE 4, an LPI train may be considered OPERABLE during alignment, when aligned or when operating for decay heat removal (DHR) if capable of being manually realigned to the LPI mode of operation.

3. In MODES 1, 2, and 3, the LPI discharge header crossover valves inside containment shall be open.

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

ACTIONS

--NOTE--

LCO 3.0.4.b is not applicable to ECCS DHR loops.

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One LPI train inoperable in MODE 1, 2, or 3.	A.1 Restore LPI train to OPERABLE status.	7 days
B. One or more LPI discharge header crossover valve(s) inside containment not open in MODE 1, 2, or 3.	B.1 Open LPI discharge header crossover valve(s) inside containment.	7 days

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION		COMPLETION TIME
C. Required Action and associated Completion Time of Condition A or B not met.	C.1	Be in MODE 3.	12 hours
	AND		
	C.2	Be in MODE 4.	60 hours
D. One required LPI train inoperable in MODE 4.	D.1	Initiate action to restore required LPI train to OPERABLE status.	Immediately
	AND		
	D.2	----------NOTE----------- Only required if DHR loop is OPERABLE. ---------------------------- Be in MODE 5.	24 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.5.3.1	--------------------------NOTE---------------------- Not required to be met for system vent flow paths opened under administrative control. --- Verify each LPI manual and non-automatic power operated valve in the flow path, that is not locked, sealed, or otherwise secured in position, is in the correct position.	In accordance with the Surveillance Frequency Control Program

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.5.3.2	Verify LPI locations susceptible to gas accumulation are sufficiently filled with water.	In accordance with the Surveillance Frequency Control Program
SR 3.5.3.3	Verify each LPI pump's developed head at the test flow point is greater than or equal to the required developed head.	In accordance with the INSERVICE TESTING PROGRAM
SR 3.5.3.4	Verify each LPI automatic valve in the flow path that is not locked, sealed, or otherwise secured in position, actuates to the correct position on an actual or simulated actuation signal.	In accordance with the Surveillance Frequency Control Program
SR 3.5.3.5	Verify each LPI pump starts automatically on an actual or simulated actuation signal.	In accordance with the Surveillance Frequency Control Program
SR 3.5.3.6	Verify, by visual inspection, each LPI train reactor building sump suction inlet is not restricted by debris and suction inlet strainers show no evidence of structural distress or abnormal corrosion.	In accordance with the Surveillance Frequency Control Program

3.5 EMERGENCY CORE COOLING SYSTEMS (ECCS)

3.5.4 Borated Water Storage Tank (BWST)

LCO 3.5.4 The BWST shall be OPERABLE.

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

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. BWST boron concentration not within limits. OR BWST water temperature not within limits.	A.1 Restore BWST to OPERABLE status.	8 hours
B. BWST inoperable for reasons other than Condition A.	B.1 Restore BWST to OPERABLE status.	1 hour
C. Required Action and associated Completion Time not met.	C.1 Be in MODE 3. AND C.2 Be in MODE 5.	12 hours 36 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.5.4.1	------------------------NOTE------------------------ Only required to be performed when ambient air temperature is < 45°F or > 115°F. --- Verify BWST borated water temperature is ≥ 45°F and ≤ 115°F.	In accordance with the Surveillance Frequency Control Program
SR 3.5.4.2	Verify BWST borated water volume is ≥ 350,000 gallons.	In accordance with the Surveillance Frequency Control Program
SR 3.5.4.3	Verify BWST boron concentration is: a. Within limits specified in the COLR; AND b. ≥ 2220 ppm.	In accordance with the Surveillance Frequency Control Program

3.6 CONTAINMENT SYSTEMS

3.6.1 Containment

LCO 3.6.1 Containment shall be OPERABLE.

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

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Containment inoperable.	A.1 Restore containment to OPERABLE status.	1 hour
B. Required Action and associated Completion Time not met.	B.1 Be in MODE 3. <u>AND</u> B.2 Be in MODE 5.	12 hours 36 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.6.1.1	Perform required visual examinations and leakage rate testing except for containment airlock testing in accordance with the Containment Leakage Rate Testing Program.	In accordance with the Containment Leakage Rate Testing Program
SR 3.6.1.2	Verify containment structural integrity in accordance with the Containment Tendon Surveillance Program.	In accordance with the Containment Tendon Surveillance Program

3.6 CONTAINMENT SYSTEMS

3.6.2 Containment Air Locks

LCO 3.6.2 Two containment air locks shall be OPERABLE.

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

ACTIONS

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

1. Entry and exit is permissible to perform repairs on the affected air lock components.

2. Separate Condition entry is allowed for each air lock.

3. Enter applicable Conditions and Required Actions of LCO 3.6.1, "Containment," when air lock leakage results in exceeding the overall containment leakage rate acceptance criteria.

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more containment air locks with one containment air lock door inoperable.	---------NOTES--------- 1. Required Actions A.1, A.2, and A.3 are not applicable if both doors in the same air lock are inoperable and Condition C is entered. 2. Entry and exit is permissible for 7 days under administrative controls if both air locks are inoperable. ------------------------------	
	A.1 Verify the OPERABLE door is closed in the affected air lock(s).	1 hour
	AND	
		(continued)

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. (continued)	A.2 Lock the OPERABLE door closed in the affected air lock(s).	24 hours
	AND	
	A.3 ---NOTE--- Air lock doors in high radiation areas may be verified locked closed by administrative means. ------	
	Verify the OPERABLE door is locked closed in the affected air lock(s).	Once per 31 days
B. One or more containment air locks with containment air lock interlock mechanism inoperable.	---NOTES--- 1. Required Actions B.1, B.2, and B.3 are not applicable if both doors in the same air lock are inoperable and Condition C is entered. 2. Entry and exit of containment is permissible under the control of a dedicated individual. ------	
	B.1 Verify an OPERABLE door is closed in the affected air lock(s).	1 hour
	AND	
		(continued)

ACTIONS

CONDITION	REQUIRED ACTION		COMPLETION TIME
B. (continued)	B.2	Lock an OPERABLE door closed in the affected air lock(s).	24 hours
	<u>AND</u>		
	B.3	----------NOTE---------- Air lock doors in high radiation areas may be verified locked closed by administrative means. ------------------------------	
		Verify an OPERABLE door is locked closed in the affected air lock(s).	Once per 31 days
C. One or more containment air locks inoperable for reasons other than Condition A or B.	C.1	Initiate action to evaluate overall containment leakage rate per LCO 3.6.1.	Immediately
	<u>AND</u>		
	C.2	Verify a door is closed in the affected air lock(s).	1 hour
	<u>AND</u>		
	C.3	Restore air lock(s) to OPERABLE status.	24 hours
D. Required Action and associated Completion Time not met.	D.1	Be in MODE 3.	12 hours
	<u>AND</u>		
	D.2	Be in MODE 5.	36 hours

SURVEILLANCE REQUIREMENTS

	SURVEILLANCE	FREQUENCY
SR 3.6.2.1	-----NOTES----- 1. An inoperable air lock door does not invalidate the previous successful performance of the overall air lock leakage test. 2. Results shall be evaluated against acceptance criteria applicable to SR 3.6.1.1. ----- Perform required air lock leakage rate testing in accordance with the Containment Leakage Rate Testing Program.	In accordance with the Containment Leakage Rate Testing Program
SR 3.6.2.2	Verify only one door in the air lock can be opened at a time.	In accordance with the Surveillance Frequency Control Program

3.6 CONTAINMENT SYSTEMS

3.6.3 Containment Isolation Valves

LCO 3.6.3 Each containment isolation valve shall be OPERABLE.

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

ACTIONS

-----NOTES-----

1. Penetration flow paths except for 48 inch purge valve penetration flow paths may be unisolated intermittently under administrative controls.

2. Separate Condition entry is allowed for each penetration flow path.

3. Enter applicable Conditions and Required Actions for system(s) made inoperable by containment isolation valves.

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. -----NOTE----- Only applicable to penetration flow paths with two containment isolation valves. ----- One or more penetration flow paths with one containment isolation valve inoperable.	A.1 Isolate the affected penetration flow path by use of at least one closed and de-activated automatic valve, one closed and de-activated non-automatic power operated valve, closed manual valve, blind flange, or check valve with flow through the valve secured. <u>AND</u>	4 hours (continued)

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. (continued)	A.2 ---------NOTE--------- Isolation devices in high radiation areas may be verified by use of administrative means. ------------------------- Verify the affected penetration flow path is isolated.	Once per 31 days for isolation devices outside containment AND Prior to entering MODE 4 from MODE 5 if not performed within the previous 92 days for isolation devices inside containment
B. ---------NOTE--------- Only applicable to penetration flow paths with two containment isolation valves. ------------------------- One or more penetration flow paths with two containment isolation valves inoperable.	B.1 Isolate the affected penetration flow path by use of at least one closed and de-activated automatic valve, one closed and de-activated non-automatic power operated valve, closed manual valve, or blind flange.	1 hour

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION		COMPLETION TIME
C. ----------NOTE---------- Only applicable to penetration flow paths with only one containment isolation valve and a closed system. ------------------------ One or more penetration flow paths with one containment isolation valve inoperable.	C.1	Isolate the affected penetration flow path by use of at least one closed and de-activated automatic valve, one closed and de-activated non-automatic power operated valve, closed manual valve, or blind flange.	4 hours
	AND		
	C.2	---------NOTE---------- Isolation devices in high radiation areas may be verified by use of administrative means. ------------------------ Verify the affected penetration flow path is isolated.	Once per 31 days
D. Required Action and associated Completion Time not met	D.1	Be in MODE 3.	12 hours
	AND		
	D.2	Be in MODE 5.	36 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.6.3.1	Verify each 48 inch purge valve is sealed closed.	In accordance with the Surveillance Frequency Control Program
SR 3.6.3.2	-------------------------NOTE------------------------- Valves and blind flanges in high radiation areas may be verified by use of administrative means. -- Verify each containment isolation manual and non-automatic power operated valve and blind flange that is located outside containment and not locked, sealed, or otherwise secured and required to be closed during accident conditions is closed, except for containment isolation valves that are open under administrative controls.	In accordance with the Surveillance Frequency Control Program
SR 3.6.3.3	-------------------------NOTE------------------------- Valves and blind flanges in high radiation areas may be verified by use of administrative means. -- Verify each containment isolation manual and non-automatic power operated valve and blind flange that is located inside containment and not locked, sealed, or otherwise secured and required to be closed during accident conditions is closed, except for containment isolation valves that are open under administrative controls.	Prior to entering MODE 4 from MODE 5 if not performed within the previous 92 days

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.6.3.4	Verify the isolation time of each automatic power operated containment isolation valve is within limits.	In accordance with the INSERVICE TESTING PROGRAM
SR 3.6.3.5	Verify each automatic containment isolation valve that is not locked, sealed, or otherwise secured in position, actuates to the isolation position on an actual or simulated actuation signal.	In accordance with the Surveillance Frequency Control Program

3.6 CONTAINMENT SYSTEMS

3.6.4 Containment Pressure

LCO 3.6.4 Containment pressure shall be ≥ -2.45 psig and ≤ +1.2 psig.

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

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Containment pressure not within limits.	A.1 Restore containment pressure to within limits.	1 hour
B. Required Action and associated Completion Time not met.	B.1 Be in MODE 3. AND B.2 Be in MODE 5.	12 hours 36 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.6.4.1 Verify containment pressure is within limits.	In accordance with the Surveillance Frequency Control Program

3.6 CONTAINMENT SYSTEMS

3.6.5 Reactor Building Spray and Cooling Systems

LCO 3.6.5 Two reactor building spray trains and three reactor building cooling trains shall be OPERABLE.

---NOTE--
Only one train of reactor building spray and two trains of reactor building cooling are required to be OPERABLE during MODES 3 and 4.

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

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One reactor building spray train inoperable in MODE 1 or 2.	A.1 Restore reactor building spray train to OPERABLE status.	7 days
B. One reactor building cooling train inoperable in MODE 1 or 2.	B.1 Restore reactor building cooling train to OPERABLE status.	7 days

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
C. One reactor building spray train and one reactor building cooling train inoperable in MODE 1 or 2.	C.1 Restore one train to OPERABLE status.	24 hours
D. Required Action and associated Completion Time of Condition A, B, or C are not met.	D.1 Be in MODE 3.	12 hours
E. One required reactor building cooling train inoperable in MODE 3 or 4.	E.1 Restore required reactor building cooling train to OPERABLE status.	24 hours
F. One required reactor building spray train inoperable in MODE 3 or 4.	F.1 Restore required reactor building spray train to OPERABLE status.	24 hours
G. Required Action and associated Completion Time of Condition E or F not met.	G.1 Be in MODE 5.	36 hours

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
H. Two reactor building spray trains inoperable in MODE 1 or 2. <u>OR</u> Two reactor building cooling trains inoperable in MODE 1 or 2. <u>OR</u> Any combination of three or more trains inoperable in MODE 1 or 2. <u>OR</u> Any combination of two or more required trains inoperable in MODE 3 or 4.	H.1 Enter LCO 3.0.3.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.6.5.1	--------------------------NOTE---------------------- Not required to be met for reactor building spray system vent flow paths opened under administrative control. --- Verify each reactor building spray and cooling manual and non-automatic power operated valve in the flow path that is not locked, sealed, or otherwise secured in position is in the correct position.	In accordance with the Surveillance Frequency Control Program
SR 3.6.5.2	Operate each required reactor building cooling train fan unit for ≥ 15 minutes.	In accordance with the Surveillance Frequency Control Program
SR 3.6.5.3	Verify each required reactor building spray pump's developed head at the flow test point is greater than or equal to the required developed head.	In accordance with the INSERVICE TESTING PROGRAM
SR 3.6.5.4	Verify that the containment heat removal capability is sufficient to maintain post accident conditions within design limits.	In accordance with the Surveillance Frequency Control Program

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.6.5.5	Verify each automatic reactor building spray and cooling valve in each required flow path that is not locked, sealed, or otherwise secured in position, actuates to the correct position on an actual or simulated actuation signal.	In accordance with the Surveillance Frequency Control Program
SR 3.6.5.6	Verify each required reactor building spray pump starts automatically on an actual or simulated actuation signal.	In accordance with the Surveillance Frequency Control Program
SR 3.6.5.7	Verify each required reactor building cooling train starts automatically on an actual or simulated actuation signal.	In accordance with the Surveillance Frequency Control Program
SR 3.6.5.8	Verify each spray nozzle is unobstructed.	In accordance with the Surveillance Frequency Control Program
SR 3.6.5.9	Verify reactor building spray locations susceptible to gas accumulation are sufficiently filled with water.	In accordance with the Surveillance Frequency Control Program

3.7 PLANT SYSTEMS

3.7.1 Main Steam Relief Valves (MSRVs)

LCO 3.7.1 Eight MSRVs shall be OPERABLE on each main steam line.

APPLICABILITY: MODES 1, 2, and 3.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more MSRVs inoperable.	A.1 Be in MODE 3.	12 hours
	AND	
	A.2 Be in MODE 4.	18 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.7.1.1	-----------------------NOTE-------------------------- Only required to be performed in MODES 1 and 2. --- Verify each MSRV lift setpoint in accordance with the INSERVICE TESTING PROGRAM.	In accordance with the INSERVICE TESTING PROGRAM

3.7 PLANT SYSTEMS

3.7.2 Turbine Stop Valves (TSVs)

LCO 3.7.2 Four TSVs shall be OPERABLE.

APPLICABILITY: MODES 1, 2 and 3 except when all TSVs are closed.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or both TSVs for one main steam line inoperable in MODE 1.	A.1 Restore TSV(s) to OPERABLE status.	8 hours
B. Required Action and associated Completion Time of Condition A not met.	B.1 Be in MODE 2.	6 hours
C. ------------NOTE------------ Separate Condition entry is allowed for each TSV. ------------------------------ One or more TSVs inoperable in MODE 2 or 3.	C.1 Close TSV. AND C.2 Verify TSV is closed.	8 hours Once per 7 days
D. Required Action and associated Completion Time of Condition B or C not met.	D.1 Be in MODE 3. AND D.2 Be in MODE 4.	12 hours 18 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.7.2.1	------------------------NOTE------------------------ Only required to be performed in MODES 1 and 2. --- Verify closure time of each TSV is ≤ 1.0 seconds on an actual or simulated actuation signal from Channel A.	In accordance with the Surveillance Frequency Control Program
SR 3.7.2.2	------------------------NOTE------------------------ Only required to be performed in MODES 1 and 2. --- Verify closure time of each TSV is ≤ 1.0 second on an actual or simulated actuation signal from Channel B.	In accordance with the Surveillance Frequency Control Program

3.7 PLANT SYSTEMS

3.7.3 Main Feedwater Control Valves (MFCVs), and Startup Feedwater Control Valves (SFCVs)

LCO 3.7.3 Two MFCVs and two SFCVs shall be OPERABLE.

APPLICABILITY: MODES 1, 2, and 3 except when all MFCVs and SFCVs are closed and deactivated or isolated by a closed manual valve.

ACTIONS

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

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One MFCV in one or more flow paths inoperable.	A.1 Close or isolate MFCV.	8 hours
	<u>AND</u>	
	A.2 Verify MFCV is closed or isolated.	Once per 7 days
B. One SFCV in one or more flow paths inoperable.	B.1 Close or isolate SFCV.	8 hours
	<u>AND</u>	
	B.2 Verify SFCV is closed or isolated.	Once per 7 days

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION		COMPLETION TIME
C. Required Action and associated Completion Time not met.	C.1	Be in MODE 3.	12 hours
	AND		
	C.2	Be in MODE 4.	18 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.7.3.1	------------------------NOTE------------------------ Only required to be performed in MODES 1 and 2. --- Verify the closure time of each MFCV and SFCV is $\leq$ 25 seconds on an actual or simulated actuation signal.	In accordance with the INSERVICE TESTING PROGRAM

3.7 PLANT SYSTEMS

3.7.4 Atmospheric Dump Valve (ADV) Flow Paths

LCO 3.7.4 The ADV flow path for each steam generator shall be OPERABLE.

APPLICABILITY: MODES 1, 2, and 3, and MODE 4 when steam generator is relied upon for heat removal.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or both ADV flow path(s) inoperable.	A.1 Be in MODE 3.	12 hours
	<u>AND</u>	
	A.2 Be in MODE 4 without reliance upon steam generator for heat removal.	24 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.7.4.1	Cycle the valves that comprise the ADV flow paths.	In accordance with the Surveillance Frequency Control Program

3.7 PLANT SYSTEMS

3.7.5 Emergency Feedwater (EFW) System

LCO 3.7.5 The EFW System shall be OPERABLE as follows:

a. Three EFW pumps shall be OPERABLE, and

b. Two EFW flow paths shall be OPERABLE.

--NOTE--
Only one motor driven emergency feedwater (MDEFW) pump and one EFW flow path are required to be OPERABLE in MODE 4.

APPLICABILITY: MODES 1, 2, and 3,
MODE 4 when steam generator is relied upon for heat removal.

ACTIONS

--NOTE--
LCO 3.0.4.b is not applicable when entering MODE 1.

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One MDEFW pump inoperable in MODE 1, 2, or 3.	A.1 Restore MDEFW pump to OPERABLE status.	7 days
B. Turbine driven EFW pump inoperable in MODE 1, 2, or 3. <u>OR</u> One EFW flow path inoperable in MODE 1, 2, or 3.	B.1 Restore turbine driven EFW pump and EFW flow path to OPERABLE status.	72 hours

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
C. Two MDEFW pumps inoperable in MODE 1, 2, or 3.	C.1 Restore one MDEFW pump to OPERABLE status.	12 hours
D. Required Action and associated Completion Time of Condition A, B, or C not met. <u>OR</u> Turbine driven EFW pump and one EFW flow path inoperable in MODE 1, 2, or 3.	D.1 Be in MODE 3. <u>AND</u> D.2 Be in MODE 4.	12 hours 24 hours

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION		COMPLETION TIME
E. Three EFW pumps inoperable in MODE 1, 2, or 3. OR Two EFW flow path inoperable in MODE 1, 2, or 3.	E.1	---------NOTE---------- LCO 3.0.3 and all other LCO Required Actions requiring MODE changes are suspended until one EFW pump and one EFW flow path are restored to OPERABLE status. ---------------------------- Initiate action to restore one EFW pump and one EFW flow path to OPERABLE status.	 Immediately
F. Required MDEFW pump inoperable in MODE 4. OR Required EFW flow path inoperable in MODE 4.	F.1	Initiate action to restore required MDEFW pump and required EFW flow path to OPERABLE status.	Immediately

SURVEILLANCE REQUIREMENTS

	SURVEILLANCE	FREQUENCY
SR 3.7.5.1	Verify each EFW manual, and non-automatic power operated valve in each water flow path and in the steam supply flow path to the turbine driven pump, that is not locked, sealed, or otherwise secured in position, is in the correct position.	In accordance with the Surveillance Frequency Control Program
SR 3.7.5.2	Verify the developed head of each EFW pump at the flow test point is greater than or equal to the required developed head.	In accordance with the INSERVICE TESTING PROGRAM
SR 3.7.5.3	-------------------------NOTE------------------------ Not required to be met in MODES 3 and 4. --- Verify each EFW automatic valve that is not locked, sealed, or otherwise secured in position, actuates to the correct position on an actual or simulated actuation signal.	 In accordance with the Surveillance Frequency Control Program
SR 3.7.5.4	-------------------------NOTE------------------------- Not required to be met in MODES 3 and 4. --- Verify each EFW pump starts automatically on an actual or simulated actuation signal.	 In accordance with the Surveillance Frequency Control Program
SR 3.7.5.5	Verify proper alignment of the required EFW flow paths by verifying valve alignment from the upper surge tank to each steam generator.	Prior to entering MODE 2 whenever unit has been in MODE 5 or 6 for > 30 days

3.7 PLANT SYSTEMS

3.7.6 Upper Surge Tank (UST) and Hotwell (HW)

LCO 3.7.6 The UST and HW shall be OPERABLE.

APPLICABILITY: MODES 1, 2, and 3,
MODE 4 when steam generator is relied upon for heat removal.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Requirements of the LCO not met.	A.1 Be in MODE 3. AND A.2 Be in MODE 4 without reliance on steam generator for heat removal.	12 hours 24 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.7.6.1	Verify combined inventory in the UST and HW is ≥ 155,000 gal. AND Inventory in the UST is ≥ 30,000 gal.	In accordance with the Surveillance Frequency Control Program

3.7 PLANT SYSTEMS

3.7.7 Low Pressure Service Water (LPSW) System

LCO 3.7.7 For Unit 1 or Unit 2, three LPSW pumps and one flow path shall be OPERABLE.

For Unit 3, two LPSW pumps and one flow path shall be OPERABLE.

The LPSW Waterhammer Prevention System (WPS) shall be OPERABLE.

--NOTE--
With either Unit 1 or Unit 2 defueled and appropriate LPSW loads secured on the defueled Unit, such that one LPSW pump is capable of mitigating the consequences of a design basis accident on the remaining Unit, only two LPSW pumps for Unit 1 or Unit 2 are required.

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

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One required LPSW pump inoperable.		-------------NOTE------------ During a Unit 2 refueling outage with Unit 2 defueled, appropriate LPSW loads secured, and contingent on implementation of the compensatory measures described in Attachment 1 of letter RA-22-0089 dated April 14, 2022, the Completion Time is 360 hours for the tie-in and testing of an alternate suction source to the shared Unit 1/2 LPSW Pumps A and B. Only applicable one time and expires December 31, 2027. ----------------------------------
	A.1 Restore required LPSW pump to OPERABLE status.	72 hours

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
B. LPSW WPS inoperable.	B.1 Restore the LPSW WPS to OPERABLE status.	7 days
C. Required Action and associated Completion Time of Condition A or B not met.	C.1 Be in MODE 3. AND C.2 Be in MODE 5.	12 hours 60 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.7.7.1	Verify LPSW leakage accumulator level is within Water levels between 20.5” to 41”. During LPSW testing, accumulator level > 41” is acceptable.	In accordance with the Surveillance Frequency Control Program
SR 3.7.7.2	-------------------------NOTE-------------------------- Isolation of LPSW flow to individual components does not render the LPSW System inoperable. -- Verify each LPSW manual, and non-automatic power operated valve in the flow path servicing safety related equipment, that is not locked, sealed, or otherwise secured in position, is in the correct position.	In accordance with the Surveillance Frequency Control Program
SR 3.7.7.3	Verify each LPSW automatic valve in the flow path that is not locked, sealed, or otherwise secured in position, actuates to the correct position on an actual or simulated actuation signal.	In accordance with the Surveillance Frequency Control Program
SR 3.7.7.4	Verify each LPSW pump starts automatically on an actual or simulated actuation signal.	In accordance with the Surveillance Frequency Control Program
SR 3.7.7.5	Verify LPSW leakage accumulator is able to provide makeup flow lost due to boundary valve leakage.	In accordance with the Surveillance Frequency Control Program
SR 3.7.7.6	Verify LPSW WPS boundary valve leakage is ≤ 20 gpm.	In accordance with the Surveillance Frequency Control Program

3.7 PLANT SYSTEMS

3.7.8 Emergency Condenser Circulating Water (ECCW) System

LCO 3.7.8 Two ECCW siphon headers shall be OPERABLE.

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

ACTIONS

CONDITION	REQUIRED ACTION		COMPLETION TIME
A. One required ECCW siphon header inoperable.	A.1	Restore required ECCW siphon header to OPERABLE status.	72 hours
B. Required Action and associated Completion Time not met.	B.1	Be in MODE 3.	12 hours
	AND		
	B.2	Be in MODE 5.	60 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.7.8.1	Verify required Essential Siphon Vacuum (ESV) pumps are in operation.	In accordance with the Surveillance Frequency Control Program

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.7.8.2	Verify Keowee Lake water level is within limits.	In accordance with the Surveillance Frequency Control Program
SR 3.7.8.3	Verify average water temperature of Condenser Circulating Water (CCW) inlet is $\leq 90°F$ and less than the limits for containment heat removal specified in the Updated Final Safety Analysis Report.	In accordance with the Surveillance Frequency Control Program
SR 3.7.8.4	Verify each manual and non-automatic power operated valve in each ECCW siphon header flow path, required ESV flow paths and required SSW flow paths that is not locked, sealed, or otherwise secured in position is in the correct position.	In accordance with the Surveillance Frequency Control Program
SR 3.7.8.5	Verify upon an actual or simulated actuation signal each ESV float valve actuates to the correct position.	In accordance with the Surveillance Frequency Control Program
SR 3.7.8.6	Verify upon an actual or simulated actuation signal each required ESV and Siphon Seal Water (SSW) valve actuates to the correct position.	In accordance with the Surveillance Frequency Control Program
SR 3.7.8.7	Verify the developed capacity of each required ESV pump at the test point is greater than or equal to the required capacity.	In accordance with the Surveillance Frequency Control Program

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.7.8.8	Verify each required ESV pump automatically starts in ≤ 1200 seconds upon an actual or simulated restoration of emergency power.	In accordance with the Surveillance Frequency Control Program
SR 3.7.8.9	------------------------NOTE------------------------ Not required to be performed for Units 1 and 2 with the shared Unit 1 and 2 LPSW System taking suction from the siphon. -- Verify upon an actual or simulated trip of the CCW pumps and ESV pumps that the rate of water level drop in the ECCW siphon header is within limits.	In accordance with the Surveillance Frequency Control Program

3.7 PLANT SYSTEMS

3.7.9 Control Room Ventilation System (CRVS) Booster Fans

LCO 3.7.9 Two CRVS Booster Fan trains shall be OPERABLE.

---NOTE---
The control room envelope (CRE) boundary may be opened intermittently under administrative control if it is confirmed by analysis that the CRE boundary can be restored and the CRE pressurized in time to ensure accident analysis assumptions remain valid.

APPLICABILITY: MODES 1, 2, 3, 4, 5, and 6,
During movement of recently irradiated fuel assemblies for any unit.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One CRVS Booster Fan train inoperable for reasons other than Condition B.	A.1 Restore CRVS Booster Fan train to OPERABLE status.	7 days
B. One or more CRVS Booster Fan trains inoperable due to inoperable CRE boundary in MODE 1, 2, 3, or 4.	B.1 Initiate action to implement mitigating actions.	Immediately
	<u>AND</u>	
	B.2 Verify mitigating actions ensure CRE occupant radiological exposures will not exceed limits and CRE occupants are protected from chemical and smoke hazards.	24 hours
	<u>AND</u>	
	B.3 Restore CRE boundary to OPERABLE status.	90 days

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
C. Required Action and associated Completion Time of Condition A or B not met in MODE 1, 2, 3, or 4.	C.1 Be in MODE 3. AND C.2 Be in MODE 5.	12 hours 36 hours
D. Required Action and associated Completion Time of Condition A not met in MODE 5 or 6, or during movement of recently irradiated fuel assemblies.	D.1 Start the OPERABLE CRVS Booster Fan train. OR D.2 Suspend movement of recently irradiated fuel assemblies.	Immediately Immediately
E. Two CRVS Booster Fan trains inoperable in MODE 5 or 6, or during movement of recently irradiated fuel assemblies. OR One or more CRVS Booster Fan trains inoperable due to an inoperable CRE boundary in MODE 5 or 6, or during movement of recently irradiated fuel assemblies.	E.1 Suspend movement of recently irradiated fuel assemblies.	Immediately

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION		COMPLETION TIME
F. Two CRVS Booster Fan trains inoperable in MODE 1, 2, 3, or 4 for reasons other than Condition B.	F.1	Restore one CRVS Booster Fan train to OPERABLE status.	24 hours
G. Required Action and associated Completion Time of Condition F not met.	G.1	Enter LCO 3.0.3.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.7.9.1	Operate each CRVS Booster Fan train for ≥ 1 hour.	In accordance with the Surveillance Frequency Control Program
SR 3.7.9.2	Perform required CRVS Booster Fan train filter testing in accordance with the Ventilation Filter Testing Program (VFTP).	In accordance with the VFTP
SR 3.7.9.3	Verify the control room isolates on a manual actuation signal, except for dampers that are locked, sealed, or otherwise secured in the actuated position.	In accordance with the Surveillance Frequency Control Program
SR 3.7.9.4	Perform required CRE unfiltered air inleakage testing in accordance with the Control Room Envelope Habitability Program.	In accordance with the Control Room Envelope Habitability Program

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.7.9.5	Verify the system makeup flow rate is ≥ 1215 and ≤ 1485 cfm when supplying the control room with outside air.	In accordance with the Surveillance Frequency Control Program

3.7 PLANT SYSTEMS

3.7.10a Protected Service Water (PSW) Battery Cell Parameters

LCO 3.7.10a Battery Cell parameters for the required PSW battery shall be within limits.

APPLICABILITY: When the PSW system is required to be OPERABLE.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Required battery with one or more battery cell float voltages ≤ 2.07 V.	A.1 Perform SR 3.7.10.1	2 hours
	AND	
	A.2 Perform SR 3.7.10a.1.	2 hours
	AND	
	A.3 Restore affected cell voltage > 2.07 V.	24 hours
B. Required battery with float current > 2 amps.	B.1 Perform SR 3.7.10.1	2 hours
	AND	
	B.2 Restore battery float current to ≤ 2 amps.	12 hours

(continued)

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.7.10.1	Verify the required PSW battery terminal voltage is greater than or equal to the minimum established float voltage.	In accordance with the Surveillance Frequency Control Program.
SR 3.7.10.2	Verify the required Keowee Hydroelectric Station power supply can be aligned to and power the PSW electrical system.	In accordance with the Surveillance Frequency Control Program.
SR 3.7.10.3	Verify developed head of PSW primary and booster pumps at flow test point is greater than or equal to the required developed head.	In accordance with the INSERVICE TESTING PROGRAM.
SR 3.7.10.4	Verify PSW battery capacity of the required battery is adequate to supply, and maintain in OPERABLE status, required emergency loads for the design duty cycle when subjected to a battery service test.	In accordance with the Surveillance Frequency Control Program.
SR 3.7.10.5	Verify the required PSW battery charger supplies ≥ 300 amps at greater than or equal to the minimum established float voltage for > 8 hours. <u>OR</u> Verify the required battery charger can recharge the battery to the fully charged state within 24 hours while supplying the largest combined demands of the various continuous steady state loads, after a battery discharge to the bounding PSW event discharge state.	In accordance with the Surveillance Frequency Control Program.
SR 3.7.10.6	---------------------------NOTE--------------------------- Both HPI pump motors are individually tested although only one (1) HPI pump motor is required to support PSW system OPERABILITY. -- Verify that the required PSW switchgear and transfer switches can be aligned and power both the "A" and "B" HPI pump motors.	In accordance with the Surveillance Frequency Control Program.
SR 3.7.10.7	Perform functional test of required power transfer switches used for pressurizer heaters, PSW control, electrical panels, vital I&C chargers, and valves.	In accordance with the Surveillance Frequency Control Program.

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.7.10.8	---NOTE--- Cooling water flow to the HPI pump motors are individually tested although only flow to the HPI pump motor aligned to PSW power is required to support PSW system OPERABILITY. ------ Verify PSW booster pump and valves can provide adequate cooling water flow to HPI pump motor coolers.	In accordance with the INSERVICE TESTING PROGRAM.
SR 3.7.10.9	Verify developed head of PSW portable pump at the flow test point is greater than or equal to required developed head.	In accordance with the Surveillance Frequency Control Program.
SR 3.7.10.10	Verify the required PSW valves are tested in accordance with the INSERVICE TESTING PROGRAM.	In accordance with the INSERVICE TESTING PROGRAM.
SR 3.7.10.11	Perform CHANNEL CHECK for each required PSW instrument channel.	In accordance with the Surveillance Frequency Control Program.
SR 3.7.10.12	Perform CHANNEL CALIBRATION for each required PSW instrument channel.	In accordance with the Surveillance Frequency Control Program.
SR 3.7.10.13	Verify for the required PSW battery that the cells, cell plates and racks show no visual indication of physical damage or abnormal deterioration that could degrade battery performance.	In accordance with the Surveillance Frequency Control Program.

3.7 PLANT SYSTEMS

3.7.10a Protected Service Water (PSW) Battery Cell Parameters

LCO 3.7.10a Battery Cell parameters for the required PSW battery shall be within limits.

APPLICABILITY: When the PSW system is required to be OPERABLE.

ACTIONS

---NOTE---

LCO 3.0.4 is not applicable.

CONDITION	REQUIRED ACTION		COMPLETION TIME
A. Required battery with one or more battery cell float voltages ≤ 2.07 V.	A.1	Perform SR 3.7.10.1	2 hours
	AND		
	A.2	Perform SR 3.7.10a.1.	2 hours
	AND		
	A.3	Restore affected cell voltage > 2.07 V.	24 hours
B. Required battery with float current > 2 amps.	B.1	Perform SR 3.7.10.1	2 hours
	AND		
	B.2	Restore battery float current to ≤ 2 amps.	12 hours

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
--------------NOTE------------ Required Actions C.1 and C.2 shall be completed if electrolyte level was below the top of plates. ---	----------------NOTE--------------- Required Actions C.1 and C.2 are only applicable if electrolyte level was below the top of plates. ---	
C. Required battery with one or more cells electrolyte level less than minimum established design limits.	C.1 Restore electrolyte level to above top of plates.	8 hours
	<u>AND</u>	
	C.2 Verify no evidence of leakage.	12 hours
	<u>AND</u>	
	C.3 Restore electrolyte level to greater than or equal to minimum established design limits.	31 days
D. Required battery with pilot cell electrolyte temperature less than minimum established design limits.	D.1 Restore battery pilot cell temperature to greater than or equal to minimum established design limits.	12 hours

(continued)

ACTIONS (continued)

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

SURVEILLANCE REQUIREMENTS

	SURVEILLANCE	FREQUENCY
SR 3.7.10a.1	----------------------NOTE------------------------ Not required to be met when battery terminal voltage is less than the minimum established float voltage of SR 3.7.10.1. --- Verify battery float current is ≤ 2 amps.	In accordance with the Surveillance Frequency Control Program.
SR 3.7.10a.2	Verify battery pilot cell voltage is > 2.07 V.	In accordance with the Surveillance Frequency Control Program.
SR 3.7.10a.3	Verify battery connected cell electrolyte level is greater than or equal to minimum established design limits.	In accordance with the Surveillance Frequency Control Program.
SR 3.7.10a.4	Verify battery pilot cell temperature is greater than or equal to minimum established design limits.	In accordance with the Surveillance Frequency Control Program.

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SR 3.7.10a.5	Verify battery connected cell voltage is > 2.07 V.	In accordance with the Surveillance Frequency Control Program.
SR 3.7.10a.6	Verify battery capacity is ≥ 80% of the manufacturer's rating when subjected to a performance discharge test or a modified performance discharge test.	In accordance with the Surveillance Frequency Control Program. <u>AND</u> 12 months when battery shows degradation or has reached 85% of the expected life with capacity < 100% of manufacturer's rating. <u>AND</u> 24 months when battery has reached 85% of the expected life with capacity ≥ 100% of manufacturer's rating.

3.7 PLANT SYSTEMS

3.7.11 Spent Fuel Pool Water Level

LCO 3.7.11 The Spent Fuel Pool water level shall be $\geq$ 21.34 ft over the top of irradiated fuel assemblies seated in the storage racks.

APPLICABILITY: During movement of irradiated fuel assemblies in the Spent Fuel Pool, During movement of cask over the Spent Fuel Pool.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Spent Fuel Pool water level not within limit.	------------------NOTE------------------ LCO 3.0.3 is not applicable. --	
	A.1 Suspend movement of irradiated fuel assemblies in Spent Fuel Pool.	Immediately
	AND	
	A.2 Suspend movement of cask over Spent Fuel Pool.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.7.11.1	Verify the Spent Fuel Pool water level is $\geq$ 21.34 ft above the top of irradiated fuel assemblies seated in the storage racks.	In accordance with the Surveillance Frequency Control Program

3.7 PLANT SYSTEMS

3.7.12 Spent Fuel Pool Boron Concentration

LCO 3.7.12 The spent fuel pool boron concentration limit shall be within limits.

APPLICABILITY: When fuel assemblies are stored in the spent fuel pool or when fuel assemblies are in a site-specific licensed dry spent fuel storage cask located in the spent fuel pool.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Spent fuel pool boron concentration not within limit.	------------------NOTE------------------ LCO 3.0.3 is not applicable. --	
	A.1 Suspend movement of fuel assemblies in the spent fuel pool.	Immediately
	AND	
	A.2 Initiate action to restore spent fuel pool boron concentration to within limit.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.7.12.1	Verify the spent fuel pool boron concentration is: a. Within limits specified in the COLR; AND b. $\geq$ 2220 ppm.	In accordance with the Surveillance Frequency Control Program

3.7 PLANT SYSTEMS

3.7.13 Fuel Assembly Storage

LCO 3.7.13

The combination of initial enrichment and burnup of each new or spent fuel assembly stored in the spent fuel pool storage racks shall be within the following configurations:

a. Fuel may be stored in the spent fuel pool shared between Units 1 and 2 in accordance with these limits:

1. Unrestricted storage meeting the criteria of Table 3.7.13-1.

2. Restricted storage in accordance with Figure 3.7.13-1 of fuel which meets the criteria of Table 3.7.13-2 (Restricted Fuel assemblies) and Table 3.7.13-3 (Filler Fuel assemblies).

3. Checkerboard storage in accordance with Figure 3.7.13-2 of fuel which does not meet the criteria of Table 3.7.13-2.

b. Fuel may be stored in the spent fuel pool for Unit 3 in accordance with these limits:

1. Unrestricted storage meeting the criteria of Table 3.7.13-4.

2. Restricted storage in accordance with Figure 3.7.13-3 of fuel which meets the criteria of Table 3.7.13-5 (Restricted Fuel assemblies) and Table 3.7.13-6 (Filler Fuel assemblies).

2. Checkerboard storage in accordance with Figure 3.7.13-4 of fuel which does not meet the criteria of Table 3.7.13-5.

APPLICABILITY: Whenever any fuel assembly is stored in the spent fuel pool.

ACTIONS

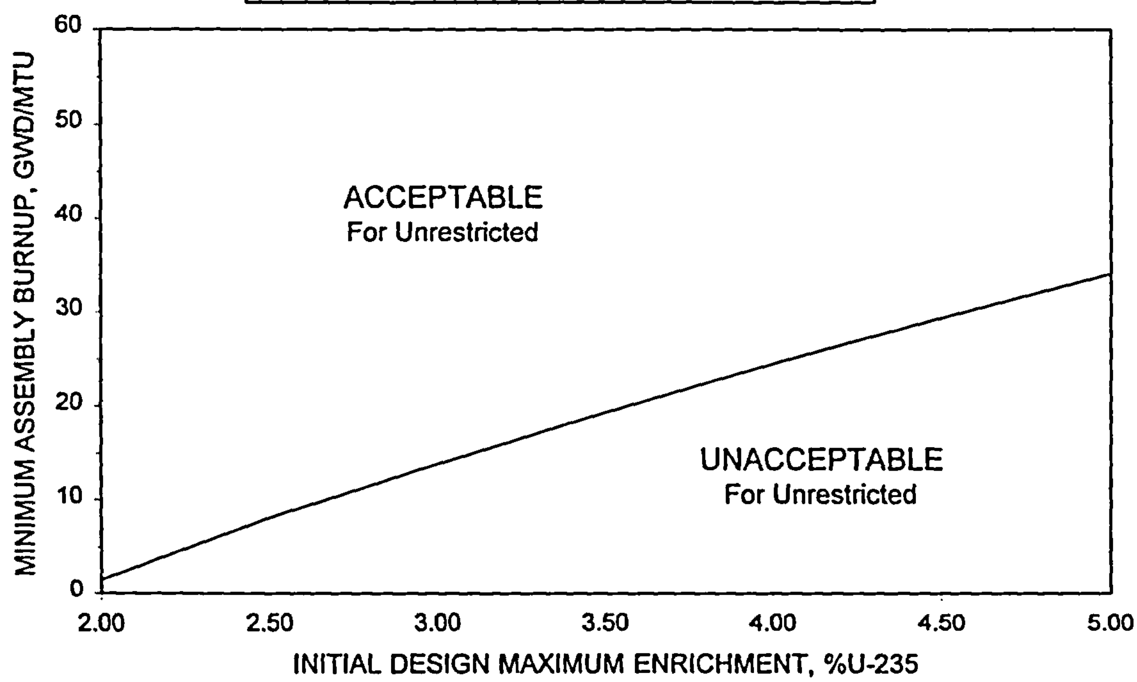
CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Requirements of the LCO not met.	A.1 ----------NOTE---------- LCO 3.0.3 is not applicable. --------------------------------- Initiate action to move the noncomplying fuel assembly to the correct location.	 Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.7.13.1	Verify by administrative means the planned spent fuel pool location is acceptable for the fuel assembly being stored.	Prior to storing the fuel assembly in the spent fuel pool

Table 3.7.13-1 (page 1 of 1)
Minimum Qualifying Burnup versus Design Maximum Enrichment
for Unrestricted Storage in the Units 1 and 2 Spent Fuel Pool

Initial Design Maximum Enrichment (Weight% U-235)	Minimum Assembly Burnup (GWD/MTU)
1.91 (or less)	0
2.00	1.43
2.50	8.08
3.00	13.85
3.50	19.30
4.00	24.47
4.50	29.35
5.00	34.07



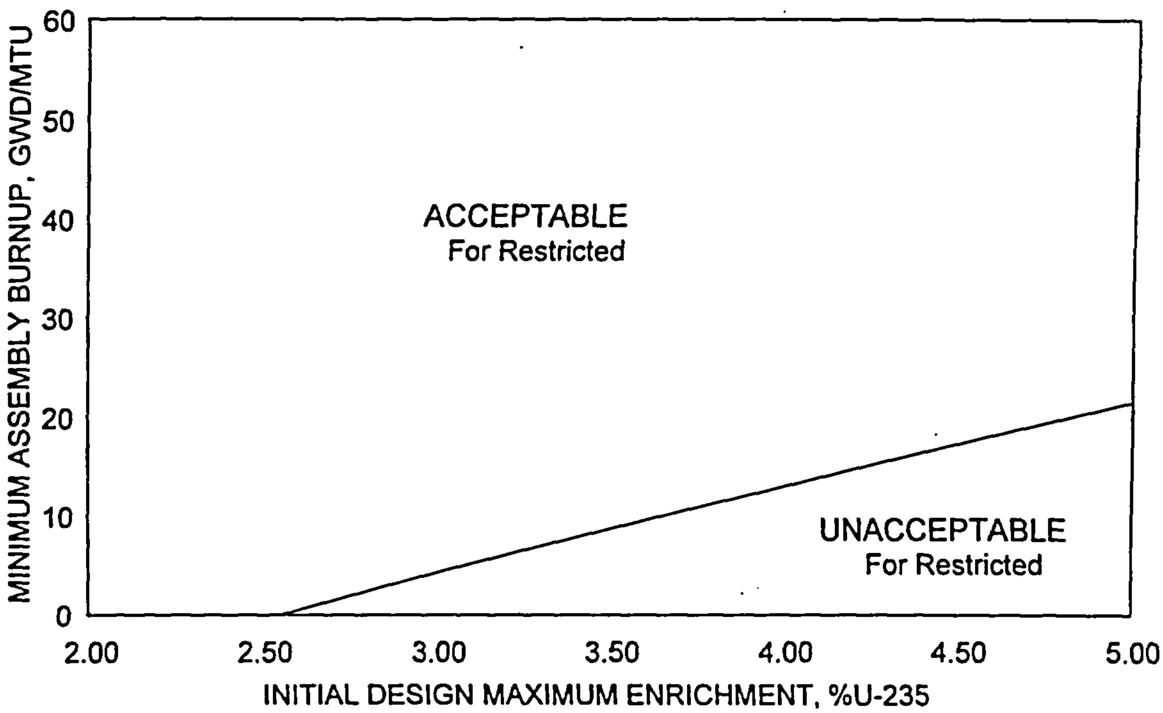
NOTES:

The Design Maximum enrichment indicated above is the nominal maximum enrichment of any fuel pin in the fuel assembly being considered. The as-built enrichment of a fuel assembly may exceed its specified Design Maximum by up to 0.05 wt % U-235 and still be stored in accordance with the above burnup limits for that Design Maximum enrichment.

Fuel which differs from those designs used to determine the requirements of Table 3.7.13-1 may be qualified for Unrestricted storage by means of an analysis using NRC approved methodology to assure that k_{eff} is less than 1.0 with no boron and less than or equal to 0.95 with credit for soluble boron.

Table 3.7.13-2 (page 1 of 1)
Minimum Qualifying Burnup versus Design Maximum Enrichment
for Restricted Storage in the Units 1 and 2 Spent Fuel Pool

Initial Design Maximum Enrichment (Weight% U-235)	Minimum Assembly Burnup (GWD/MTU)
2.56 (or less)	0
3.00	4.19
3.50	8.68
4.00	13.02
4.50	17.31
5.00	21.53



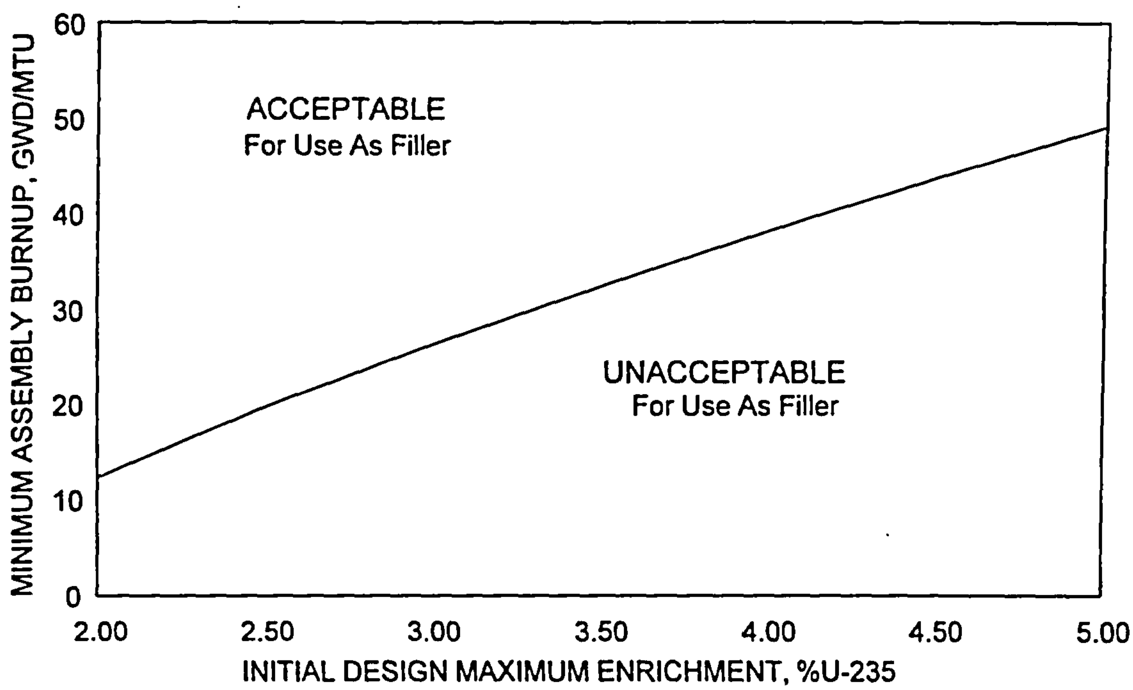
NOTES:

The Design Maximum enrichment indicated above is the nominal maximum enrichment of any fuel pin in the fuel assembly being considered. The as-built enrichment of a fuel assembly may exceed its specified Design Maximum by up to 0.05 wt % U-235 and still be stored in accordance with the above burnup limits for that Design Maximum enrichment.

Fuel which differs from those designs used to determine the requirements of Table 3.7.13-2 may be qualified for use as a Restricted Assembly by means of an analysis using NRC approved methodology to assure that k_{eff} is less than 1.0 with no boron and less than or equal to 0.95 with credit for soluble boron.

Table 3.7.13-3 (page 1 of 1)
Minimum Qualifying Burnup Versus Design Maximum Enrichment
for Filler Assemblies in the Unit 1 and 2 Spent Fuel Pool

Initial Design Maximum Enrichment (Weight% U-235)	Minimum Assembly Burnup (GWD/MTU)
1.41 (or less)	0
2.00	12.28
2.50	19.68
3.00	26.28
3.50	32.39
4.00	38.18
4.50	43.73
5.00	49.09



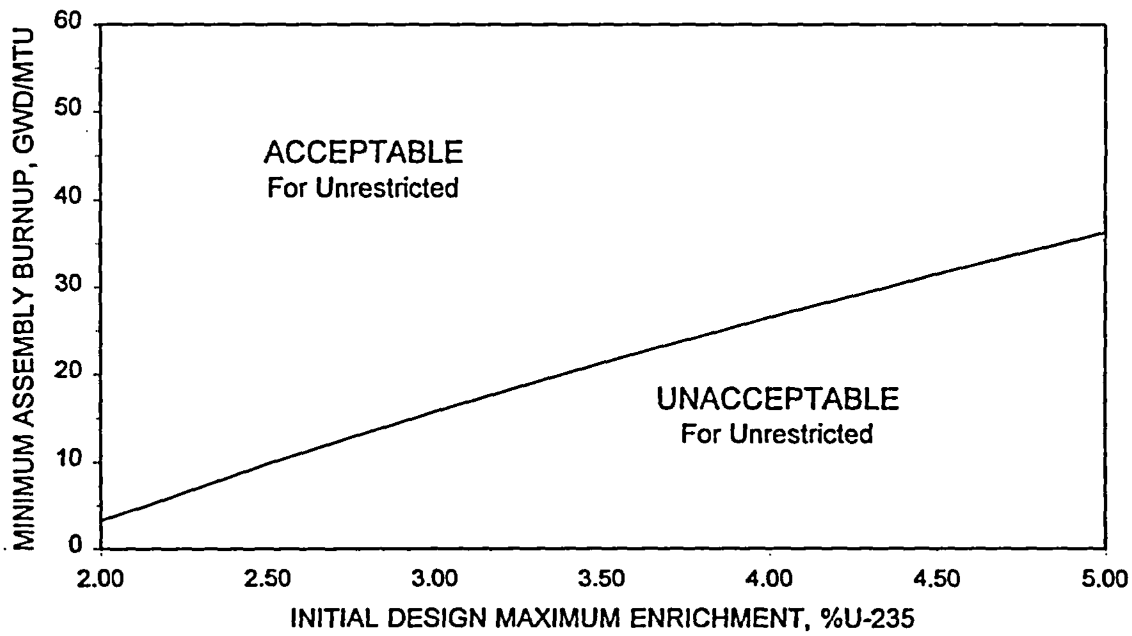
NOTES:

The Design Maximum enrichment indicated above is the nominal maximum enrichment of any fuel pin in the fuel assembly being considered. The as-built enrichment of a fuel assembly may exceed its specified Design Maximum by up to 0.05 wt % U-235 and still be stored in accordance with the above burnup limits for that Design Maximum enrichment.

Fuel which differs from those designs used to determine the requirements of Table 3.7.13-3 may be qualified for use as a Filler Assembly by means of an analysis using NRC approved methodology to assure that k_{eff} is less than 1.0 with no boron and less than or equal to 0.95 with credit for soluble boron.

Table 3.7.13-4 (page 1 of 1)
Minimum Qualifying Burnup versus Design Maximum Enrichment
for Unrestricted Storage in the Unit 3 Spent Fuel Pool

Initial Design Maximum Enrichment (Weight% U-235)	Minimum Assembly Burnup (GWD/MTU)
1.81 (or less)	0
2.00	3.16
2.50	9.79
3.00	15.72
3.50	21.30
4.00	26.54
4.50	31.50
5.00	36.30



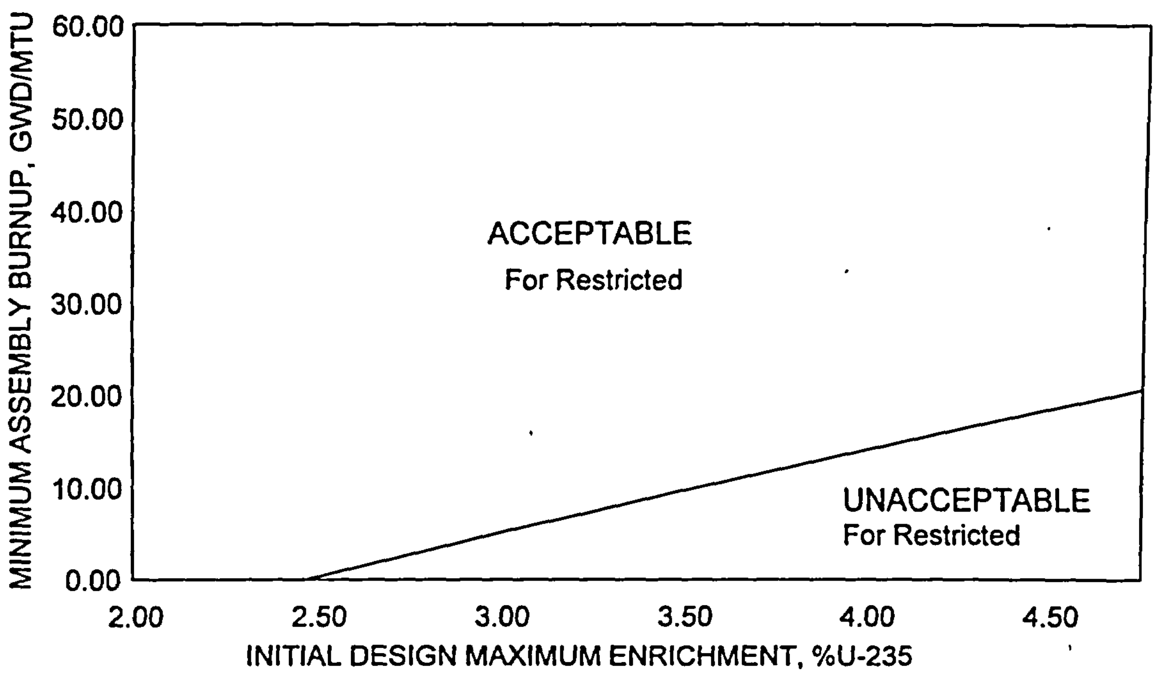
NOTES:

The Design Maximum enrichment indicated above is the nominal maximum enrichment of any fuel pin in the fuel assembly being considered. The as-built enrichment of a fuel assembly may exceed its specified Design Maximum by up to 0.05 wt % U-235 and still be stored in accordance with the above burnup limits for that Design Maximum enrichment.

Fuel which differs from those designs used to determine the requirements of Table 3.7.13-4 may be qualified for Unrestricted storage by means of an analysis using NRC approved methodology to assure that k_{eff} is less than 1.0 with no boron and less than or equal to 0.95 with credit for soluble boron.

Table 3.7.13-5 (page 1 of 1)
Minimum Qualifying Burnup Versus Design Maximum Enrichment
for Restricted Assemblies in the Unit 3 Spent Fuel Pool

Initial Design Maximum Enrichment (Weight% U-235)	Minimum Assembly Burnup (GWD/MTU)
2.48 (or less)	0
3.00	5.00
3.50	9.59
4.00	14.01
4.50	18.38
5.00	22.60



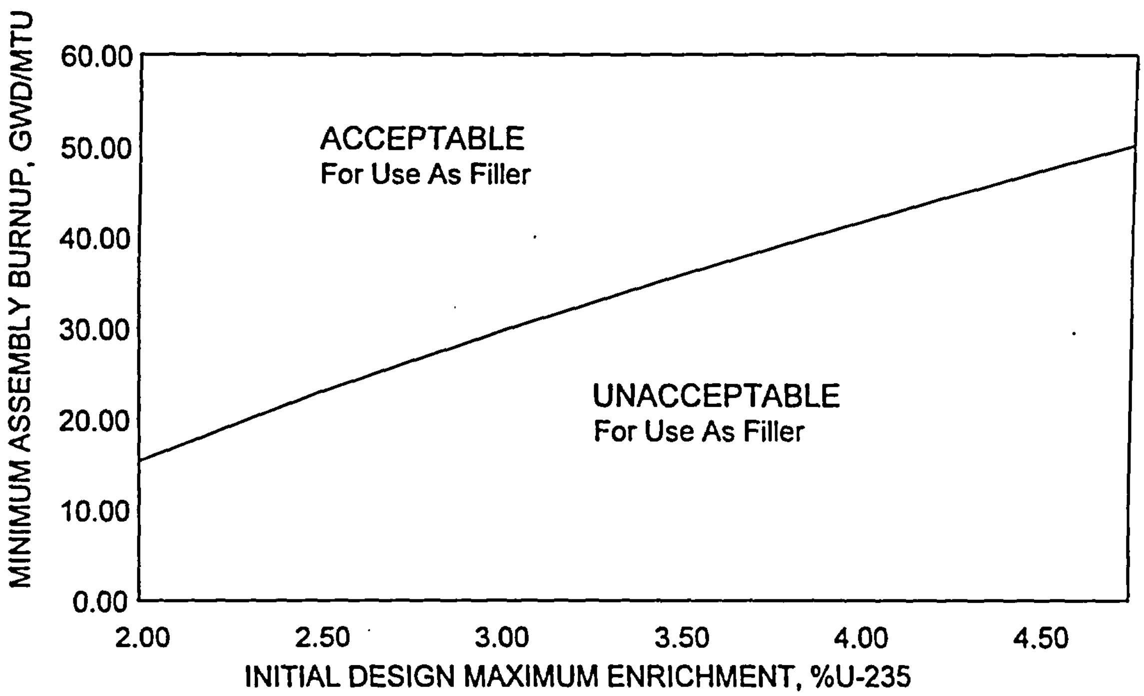
NOTES:

The Design Maximum enrichment indicated above is the nominal maximum enrichment of any fuel pin in the fuel assembly being considered. The as-built enrichment of a fuel assembly may exceed its specified Design Maximum by up to 0.05 wt % U-235 and still be stored in accordance with the above burnup limits for that Design Maximum enrichment.

Fuel which differs from those designs used to determine the requirements of Table 3.7.13-5 may be qualified for use as a Restricted Assembly by means of an analysis using NRC approved methodology to assure that k_{eff} is less than 1.0 with no boron and less than or equal to 0.95 with credit for soluble boron.

Table 3.7.13-6 (page 1 of 1)
Minimum Qualifying Burnup Versus Design Maximum Enrichment
for Filler Assemblies in the Unit 3 Spent Fuel Pool

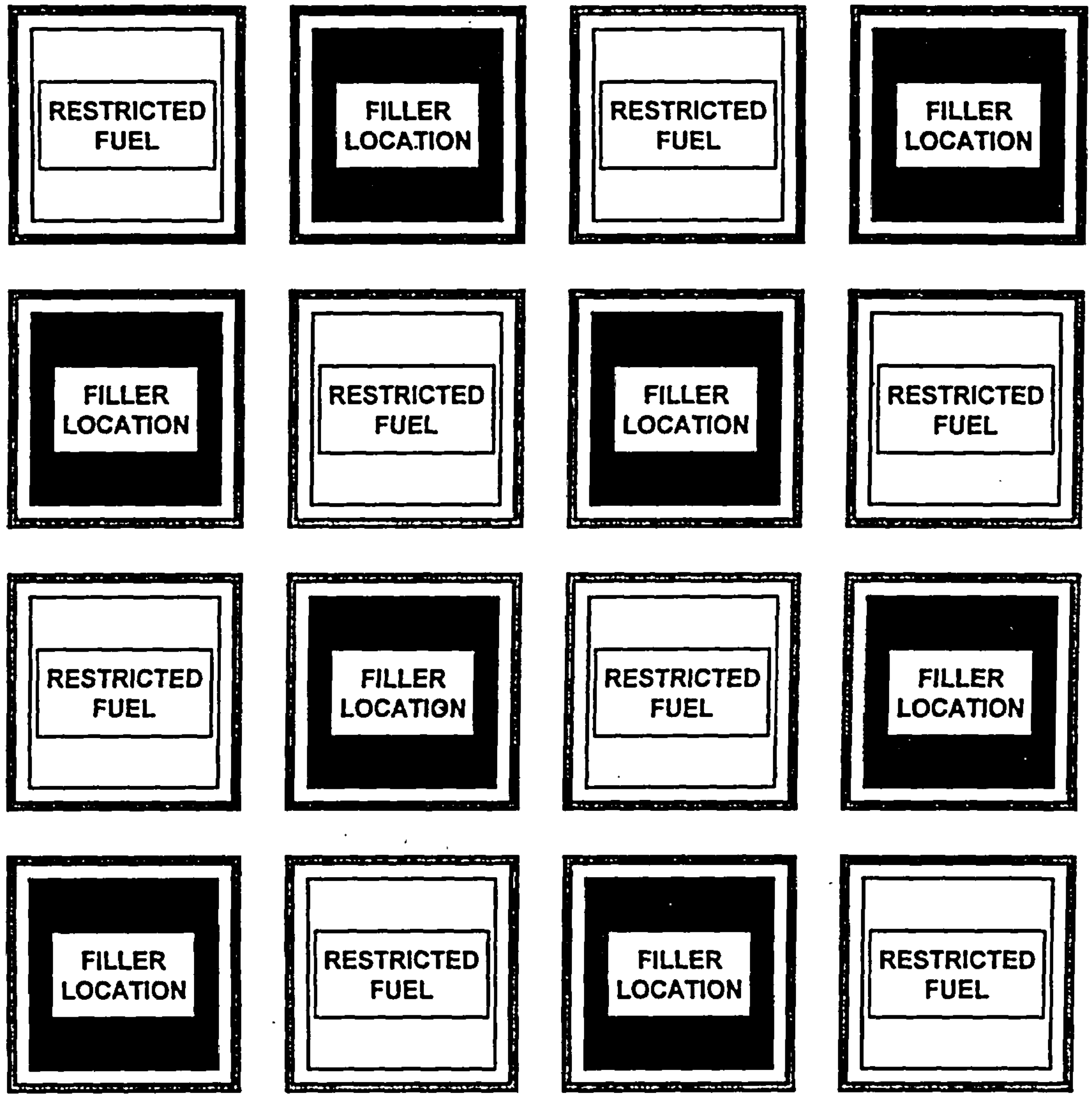
Initial Design Maximum Enrichment (Weight% U-235)	Minimum Assembly Burnup (GWD/MTU)
1.31 (or less)	0
2.00	15.40
2.50	22.96
3.00	29.59
3.50	35.82
4.00	41.76
4.50	47.45
5.00	52.93



NOTES:

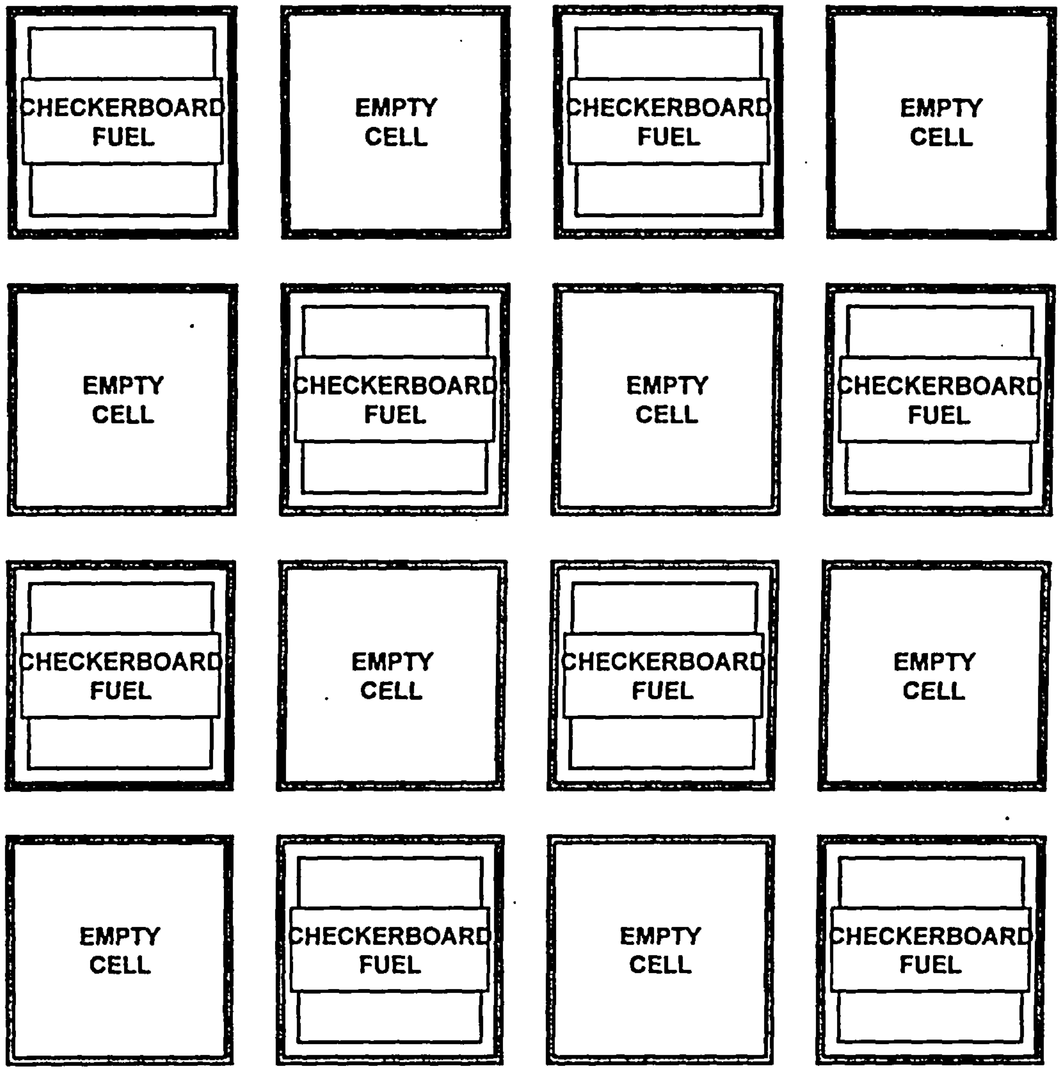
The Design Maximum enrichment indicated above is the nominal maximum enrichment of any fuel pin in the fuel assembly being considered. The as-built enrichment of a fuel assembly may exceed its specified Design Maximum by up to 0.05 wt % U-235 and still be stored in accordance with the above burnup limits for that Design Maximum enrichment.

Fuel which differs from those designs used to determine the requirements of Table 3.7.13-6 may be qualified for use as a Filler Assembly by means of an analysis using NRC approved methodology to assure that k_{eff} is less than 1.0 with no boron and less than or equal to 0.95 with credit for soluble boron.



Restricted Fuel:	Fuel which meets the minimum burnup requirements of Table 3.7.13-2, or non-fuel components or an empty cell.
Filler Location:	Either fuel which meets the minimum burnup requirements of Table 3.7.13-3, or non-fuel components or an empty cell.
Boundary Condition:	Storage regions of Restricted Fuel shall not be bounded by Checkerboard Fuel regions. Therefore, Restricted Fuel regions must be bounded by either i) one row of fuel qualifying as Unrestricted Fuel (including empty cells as necessary), ii) one row of empty cells, or iii) a wall of the spent fuel pool.

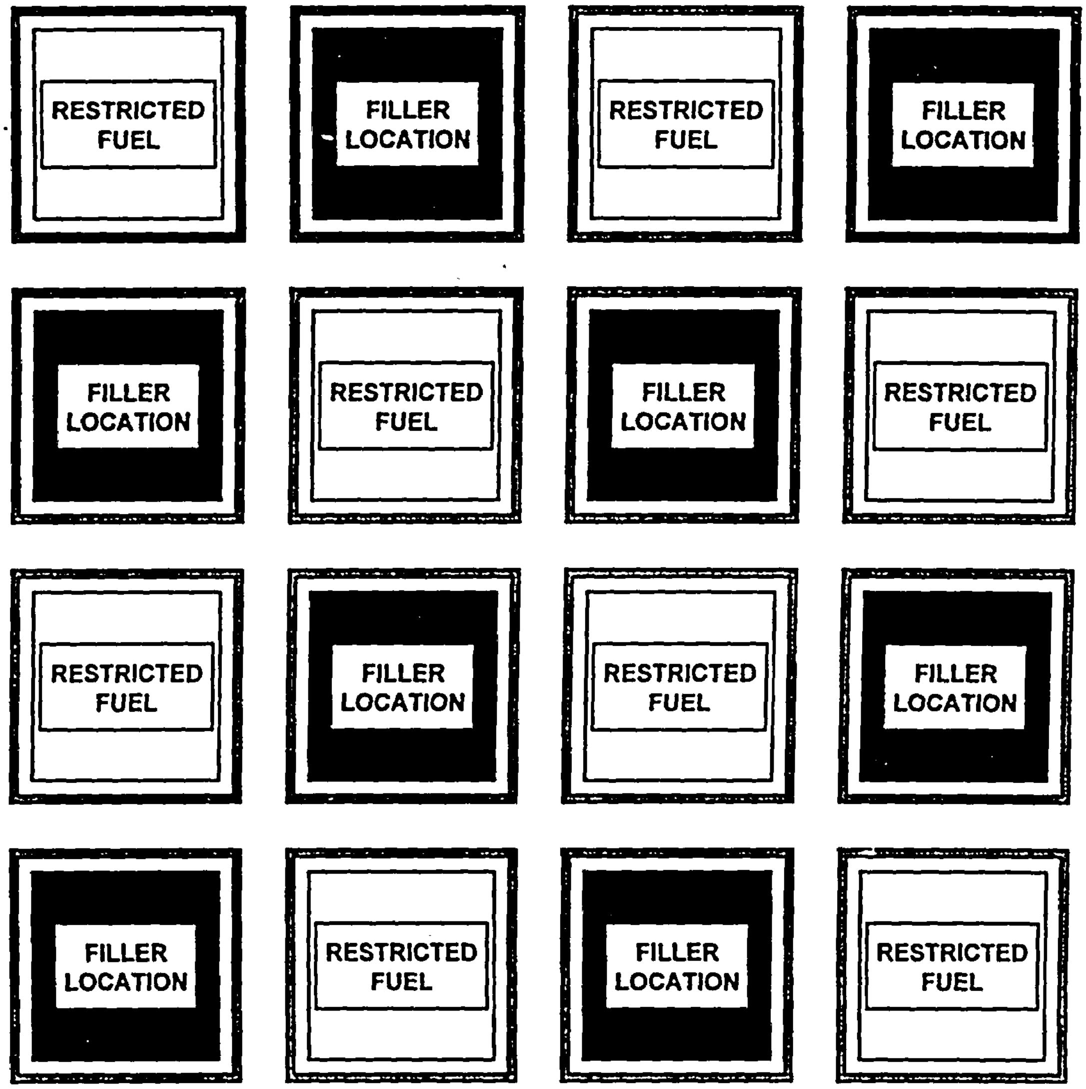
Figure 3.7.13-1 (page 1 of 1)
Required Loading Pattern for Restricted Storage
in the Units 1 and 2 Spent Fuel Pool



Checkerboard Fuel: Fuel which does <u>not</u> meet the minimum burnup requirements of Table 3.7.13-2. (Fuel which does meet the requirements of Table 3.7.13-2, or non-fuel components, or an empty cell may be placed in checkerboard fuel locations as needed)

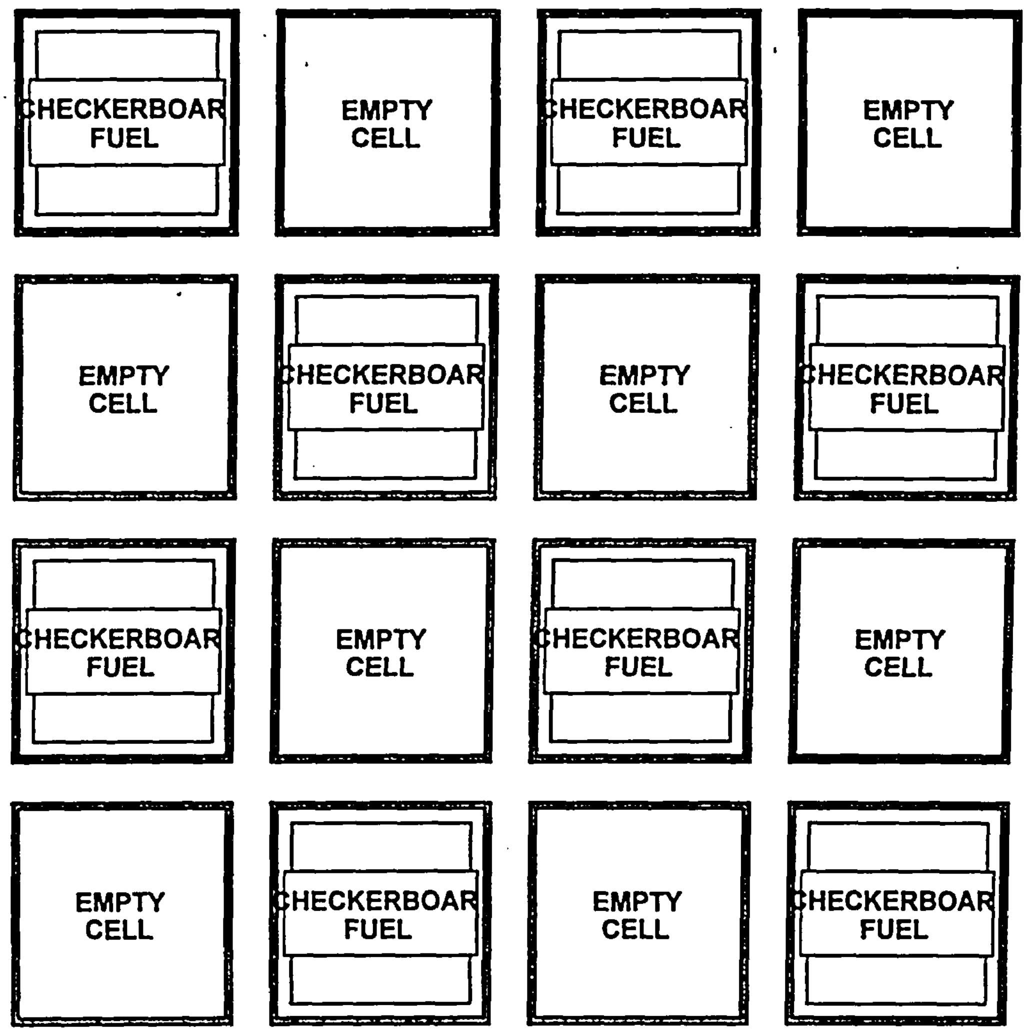
Boundary Condition: Storage regions of Checkerboard Fuel shall <u>not</u> be bounded by Restricted Fuel regions. Therefore, Checkerboard Fuel regions must be bounded by either i) one row of fuel qualifying as Unrestricted Fuel (including empty cells as necessary), ii) one row of empty cells, or iii) a wall of the spent fuel pool. In addition, at least three of the four faces of each Checkerboard Fuel assembly must be adjacent to an empty cell at all boundaries between storage regions.

Figure 3.7.13-2 (page 1 of 1)
Required Loading Pattern for Checkerboard Storage
in the Units 1 and 2 Spent Fuel Pool



Restricted Fuel:	Fuel which meets the minimum burnup requirements of Table 3.7.13-5, or non-fuel components or an empty cell.
Filler Location:	Either fuel which meets the minimum burnup requirements of Table 3.7.13-6, or non-fuel components or an empty cell.
Boundary Condition:	Storage regions of Restricted Fuel shall not be bounded by Checkerboard Fuel regions. Therefore, Restricted Fuel regions must be bounded by either i) one row of fuel qualifying as Unrestricted Fuel (including empty cells as necessary), ii) one row of empty cells, or iii) a wall of the spent fuel pool.

Figure 3.7.13-3 (page 1 of 1)
Required Loading Pattern for Restricted Storage
in the Unit 3 Spent Fuel Pool



Checkerboard Fuel: Fuel which does not meet the minimum burnup requirements of Table 3.7.13-5. (Fuel which does meet the requirements of Table 3.7.13-5, or non-fuel components, or an empty cell may be placed in checkerboard fuel locations as needed)

Boundary Condition: Storage regions of Checkerboard Fuel shall not be bounded by Restricted Fuel regions. Therefore, Checkerboard Fuel regions must be bounded by either i) one row of fuel qualifying as Unrestricted Fuel (including empty cells as necessary), ii) one row of empty cells, or iii) a wall of the spent fuel pool. In addition, at least three of the four faces of each Checkerboard Fuel assembly must be adjacent to an empty cell at all boundaries between storage regions.

Figure 3.7.13-4 (page 1 of 1)
Required Loading Pattern for Checkerboard Storage
in the Unit 3 Spent Fuel Pool

3.7 PLANT SYSTEMS

3.7.14 Secondary Specific Activity

LCO 3.7.14 The specific activity of the secondary coolant shall be $\leq$ 0.10 μCi/gm DOSE EQUIVALENT I-131.

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

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Specific activity not within limit.	A.1 Be in MODE 3. AND A.2 Be in MODE 5.	12 hours 36 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.7.14.1	Verify the specific activity of the secondary coolant is $\leq$ 0.10 μCi/gm DOSE EQUIVALENT I-131.	In accordance with the Surveillance Frequency Control Program

3.7 PLANT SYSTEMS

3.7.15 Decay Time for Fuel Assemblies in Spent Fuel Pool (SFP)

LCO 3.7.15 Decay time for irradiated fuel assemblies in the SFP shall be as follows:

a. For spent fuel shipping cask movement in the Unit 1 and 2 SFP area, each irradiated fuel assembly stored in the first 36 rows closest to the spent fuel cask handling area shall be decayed ≥ 55 days;

b. For spent fuel shipping cask movement in the Unit 3 SFP area, each irradiated fuel assembly stored in the first 33 rows closest to the spent fuel cask handling area shall be decayed ≥ 70 days;

c. For dry storage transfer cask movement in the Unit 1 and 2 SFP area, each irradiated fuel assembly stored in the first 64 rows closest to the spent fuel cask handling area shall be decayed ≥ 65 days; and

d. For dry storage transfer cask movement in the Unit 3 SFP area, each irradiated fuel assembly stored in the SFP shall be decayed ≥ 57 days.

APPLICABILITY: During movement of spent fuel shipping cask or dry storage transfer cask in the SFP area

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Requirements of the LCO not met.	A.1 ----------NOTE---------- LCO 3.0.3 is not applicable. --------------------------------- Suspend movement of cask in SFP area.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.7.15.1	Verify by administrative means the decay time for fuel assemblies is within limit.	Prior to cask movement in the spent fuel pool

3.7 PLANT SYSTEMS

3.7.16 Control Room Area Cooling Systems (CRACS)

LCO 3.7.16 Two CRACS trains shall be OPERABLE as follows:

a. Two trains of the Control Room Ventilation System (CRVS) shall be OPERABLE, and

b. Two trains of the Chilled Water (WC) System shall be OPERABLE.

APPLICABILITY: MODES 1, 2, 3, and 4,
During movement of recently irradiated fuel assemblies.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One CRVS train inoperable.	A.1 Restore CRVS train to OPERABLE status.	30 days
B. One WC train inoperable.	B.1 Restore WC train to OPERABLE status.	30 days
C. Control Room area air temperature not within limit.	C.1 Restore Control Room area air temperature within limit.	7 days

(continued)

CONDITION	REQUIRED ACTION		COMPLETION TIME
D. Required Action and associated Completion Time not met in MODE 1, 2, 3, or 4.	D.1	Be in MODE 3.	12 hours
	AND		
	D.2	Be in MODE 5.	36 hours
E. Required Action and associated Completion Time not met during movement of recently irradiated fuel assemblies.	E.1	Place OPERABLE CRACS train in operation.	Immediately
	OR		
	E.2	Suspend movement of recently irradiated fuel assemblies.	Immediately
F. Two CRVS trains inoperable during MODE 1, 2, 3, or 4. OR Two WC Trains inoperable during MODE 1,2,3, or 4.	F.1	Enter LCO 3.0.3.	Immediately
G. Two CRACS trains inoperable during movement of recently irradiated fuel assemblies.	G.1	Suspend movement of recently irradiated fuel assemblies.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.7.16.1	Verify temperature in Control Room and Cable Room is ≤ 80°F and temperature in Electrical Equipment Room is ≤ 85°F.	In accordance with the Surveillance Frequency Control Program

3.7 PLANT SYSTEMS

3.7.17 Spent Fuel Pool Ventilation System (SFPVS)

LCO 3.7.17 Two SFPVS trains shall be OPERABLE.

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

ACTIONS

CONDITION	REQUIRED ACTION		COMPLETION TIME
A. One SFPVS train inoperable.	A.1	Place OPERABLE SFPVS train in operation.	Immediately
	<u>OR</u>		
	A.2	Suspend movement of recently irradiated fuel assemblies in the spent fuel pool.	Immediately
B. Two SFPVS trains inoperable.	B.1	Suspend movement of recently irradiated fuel assemblies in the spent fuel pool.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.7.17.1	Operate each SFPVS train for ≥ 15 minutes.	Within 31 days prior to movement of recently irradiated fuel assemblies
SR 3.7.17.2	Perform required SFPVS filter testing in accordance with the Ventilation Filter Testing Program (VFTP).	In accordance with the VFTP

3.7 PLANT SYSTEMS

3.7.18 Dry Spent Fuel Storage Cask Loading and Unloading

LCO 3.7.18 The combination of initial enrichment, burnup and post-irradiation cooling time of each fuel assembly in a dry spent fuel storage cask shall meet the criteria of Table 3.7.18-1.

APPLICABILITY: Whenever any fuel assembly is in a site-specific licensed dry spent fuel storage cask located in the spent fuel pool.

ACTIONS

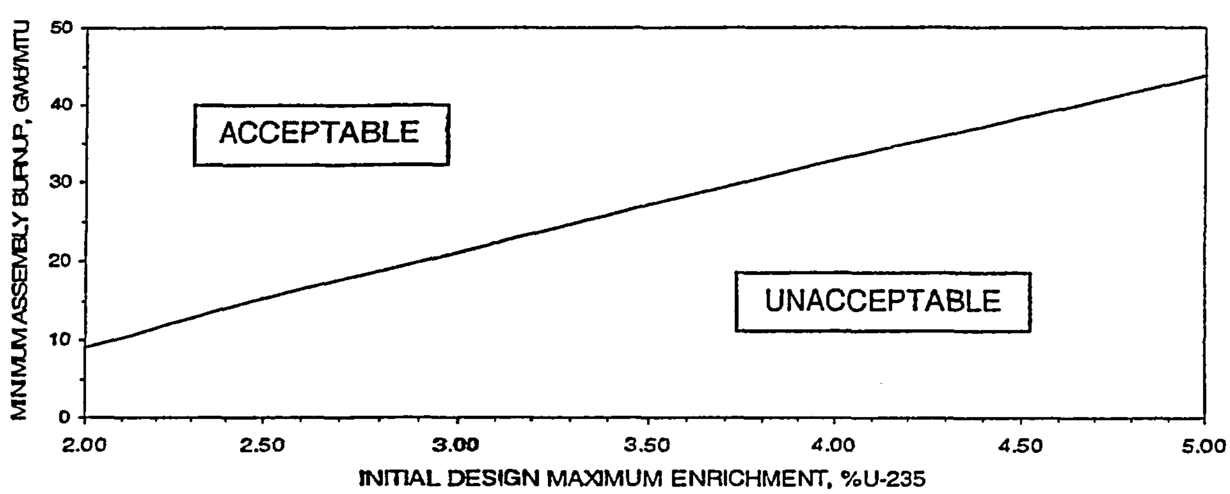
CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Requirements of the LCO not met.	A.1 -----------NOTE----------- LCO 3.0.3 is not applicable. ------------------------------ Initiate action to move the noncomplying fuel assembly to an acceptable storage location.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.7.18.1	Verify by administrative means the initial enrichment, burnup, and post-irradiation cooling time of the fuel assembly is in accordance with Table 3.7.18-1.	Prior to placing the fuel assembly into a dry spent fuel storage cask for loading AND Prior to placing a dry spent fuel storage cask into the spent fuel pool for unloading.

Table 3.7.18-1 (page 1 of 1)
Minimum Qualifying Burnup versus Design Maximum Enrichment
for Dry Spent Fuel Storage Cask Loading and Unloading

Initial Design Maximum Enrichment (Weight% U-235)	Minimum Assembly Burnup (GWD/MTU)
1.60 (or less)	0
2.00	8.93
2.50	15.34
3.00	21.02
3.50	27.12
4.00	32.78
4.50	38.33
5.00	43.77



NOTES:

The Design Maximum enrichment indicated above is the nominal maximum enrichment of any fuel pin in the fuel assembly being considered. The as-built enrichment of a fuel assembly may exceed its specified Design Maximum by up to 0.05 wt % U-235 and still be loaded in accordance with the above burnup limits for that Design Maximum enrichment. The minimum burnup requirements indicated above are based on a minimum post-irradiation cooling time of 5 years.

Fuel which differs from those designs used to determine the requirements of Table 3.7.18-1 may be qualified by means of an analysis using NRC approved methodology to assure that k_{eff} is less than 1.0 with no boron and less than or equal to 0.95 with credit for soluble boron.

3.7 Plant Systems

3.7.19 Spent Fuel Pool Cooling (SFPC) Purification System Isolation from Borated Water Storage Tank (BWST)

LCO 3.7.19

a. Two SFPC Purification System BWST automatic isolation valves shall be OPERABLE.

b. SFPC Purification System branch line manual valves shall be closed and meet INSERVICE TESTING PROGRAM leakage requirements.

APPLICABILITY: MODES 1, 2, 3 and 4 when the SFPC Purification System is not isolated from the BWST

ACTIONS

-----NOTES-----

1. SFPC Purification System flow path from the BWST may be unisolated intermittently under administrative controls.
2. Separate Condition entry allowed for each SFPC Purification System branch line manual valve.

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One automatic isolation valve inoperable.	A.1 Isolate the flow path by use of at least one closed and de-activated automatic valve, one closed and de-activated non-automatic power operated valve, closed manual valve, or blind flange. AND A.2 Verify the flow path is isolated.	4 hours Once per 31 days

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION		COMPLETION TIME
B. Two automatic isolation valves inoperable.	B.1	Isolate the flow path by use of at least one closed and de-activated automatic valve, one closed and de-activated non-automatic power operated valve, closed manual valve, or blind flange.	1 hour
C. Required SFPC Purification System branch line manual valve not closed or not meeting leakage requirements.	C.1	Isolate the flow path by use of at least one closed and de-activated automatic valve, one closed and de-activated non-automatic power operated valve, closed manual valve, or blind flange.	1 hour
	AND		
	C.2	Verify the flow path is isolated.	Once per 31 days
D. Required Action and associated Completion Time of Condition A, B, or C not met.	D.1	Be in MODE 3.	12 hours
	AND		
	D.2	Be in MODE 5.	36 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.7.19.1	Verify SFPC Purification System branch line manual valves that are not locked, sealed, or otherwise secured in position are closed.	In accordance with the Surveillance Frequency Control Program
SR 3.7.19.2	Verify SFPC Purification System branch line manual valves meet INSERVICE TESTING PROGRAM Leakage Requirements.	In accordance with the INSERVICE TESTING PROGRAM
SR 3.7.19.3	Verify SFPC Purification System BWST automatic isolation valves are OPERABLE in accordance with the INSERVICE TESTING PROGRAM.	In accordance with the INSERVICE TESTING PROGRAM
SR 3.7.19.4	Verify each SFPC Purification System BWST automatic isolation valve that is not locked, sealed, or otherwise secured in position, actuates to the isolation position on an actual or simulated actuation signal.	In accordance with the Surveillance Frequency Control Program

3.8 ELECTRICAL POWER SYSTEMS

3.8.1 AC Sources – Operating

LCO 3.8.1

a. The following AC electrical power sources shall be OPERABLE:

1. Two offsite sources on separate towers connected to the 230 kV switchyard to a unit startup transformer and capable of automatically supplying power to one main feeder bus; and

2. Two Keowee Hydro Units (KHUs) with one capable of automatically providing power through the underground emergency power path to both main feeder buses and the other capable of automatically providing power through the overhead emergency power path to both main feeder buses.

b. The Keowee Reservoir level shall be ≥ 775 feet above sea level.

c. The zone overlap protection circuitry shall be OPERABLE when the overhead electrical disconnects for the KHU associated with the underground power path are closed.

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

1. A unit startup transformer may be shared with a unit in MODES 5 or 6.

2. The requirements of Specification 5.5.18, "KHU Commercial Power Generation Testing Program," shall be met for commercial KHU power generation.

3. The requirements of Specification 5.5.19, "Lee Combustion Turbine Testing Program," shall be met when a Lee Combustion Turbine (LCT) is used to comply with Required Actions.

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

ACTIONS

---NOTE---

LCO 3.0.4.b is not applicable to KHUs.

CONDITION	REQUIRED ACTION		COMPLETION TIME
A. Both required offsite sources and the overhead emergency power path inoperable due to inoperable unit startup transformer.	A.1	Perform SR 3.8.1.3.	1 hour if not performed in previous 12 hours
	AND		
	A.2	Align the emergency startup bus to share another unit's startup transformer.	12 hours
	AND		
	A.3.1	Restore unit startup transformer to OPERABLE status and normal startup bus alignment.	36 hours
	OR		
	A.3.2	Designate one unit, sharing the startup transformer, to be shutdown.	36 hours
B. Unit designated to be shutdown due to sharing a unit startup transformer.	B.1	Be in MODE 3.	12 hours
	AND		
	B.2	Be in MODE 5.	36 hours

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION		COMPLETION TIME
C. KHU or its required overhead emergency power path inoperable due to reasons other than Condition A.	C.1	Perform SR 3.8.1.3 for OPERABLE KHU.	1 hour if not performed in previous 12 hours <u>AND</u> Once per 7 days thereafter
	<u>AND</u>		
	C.2.1	Restore the KHU and its required overhead emergency power path to OPERABLE status.	72 hours
	<u>OR</u>		
	C.2.2.1	Energize both standby buses from LCT via isolated power path.	72 hours <u>AND</u> 1 hour from subsequent discovery of deenergized standby bus
		<u>AND</u>	
	C.2.2.2	Suspend KHU generation to grid except for testing. <u>AND</u>	72 hours
			(continued)

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
C. (continued)	C.2.2.3 ------------NOTE------------ Not applicable to remaining KHU and its required underground emergency power path or LCO 3.3.21 when in Condition H to perform generator stator replacement work. ------------------------------- Verify by administrative means that the remaining KHU and its required underground emergency power path and both required offsite sources are OPERABLE and the requirements of LCO 3.8.3, "DC Sources-Operating," LCO 3.8.6, "Vital Inverters-Operating," LCO 3.8.8, "Distribution Systems-Operating," LCO 3.3.17, "EPSL Automatic Transfer Function," LCO 3.3.18, "EPSL Voltage Sensing Circuits," LCO 3.3.19, "EPSL 230 kV Switchyard DGVP," and LCO 3.3.21, "EPSL Keowee Emergency Start Function" are met. <u>AND</u>	 72 hours

(continued)

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
C. (continued)	C.2.2.4 Verify alternate power source capability by performing SR 3.8.1.16. AND	72 hours AND Every 31 days thereafter
	C.2.2.5 Restore KHU and its required overhead emergency power path to OPERABLE status.	28 days when Condition due to an inoperable Keowee main step-up transformer AND -------------NOTE------------ 1. Not to exceed 45 days cumulative per rolling 3-year time period for each KHU. 2. Not applicable during generator stator replacement work. 3. Not applicable until 1 year after the KHU is declared OPERABLE following generator stator replacement work for planned work. -------------------------------- 45 days from discovery of initial inoperability when Condition due to an inoperable KHU

(continued)

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
C. (continued)		AND -------------NOTE------------ 1. No discretionary maintenance or testing allowed on SSF, PSW, EFW and essential AC Power Systems. 2. Only applicable one time for each KHU due to generator stator replacement work and expires on September 30, 2021. 3. Only applicable if the SSF, PSW, and EFW are administratively verified OPERABLE prior to entering the extended Completion Time. -------------------------------- 55 days from initial inoperability when Condition due to an inoperable KHU to perform generator stator replacement work
D. KHU or its required underground power path inoperable.	D.1 Perform SR 3.8.1.4 for OPERABLE KHU. AND D.2 Energize either standby bus from LCT via isolated power path.	1 hour if not performed in previous 12 hours 24 hours AND 1 hour from subsequent discovery of deenergized required standby bus

(continued)

ACTIONS

CONDITION	REQUIRED ACTION		COMPLETION TIME
D. (continued)	AND		
	D.3	Restore KHU and its required underground emergency power path to OPERABLE status.	72 hours
E. Required Action and associated Completion Time not met for Required Action D.2.	E.1	Be in MODE 3.	12 hours for one unit AND 24 hours for other unit(s)
	AND		
	E.2	Be in MODE 5.	84 hours
F. Zone overlap protection circuitry inoperable when overhead electrical disconnects for KHU associated with the underground power path are closed.	F.1	Restore zone overlap protection circuitry to OPERABLE status.	72 hours
	OR		
	F.2	Open overhead electrical disconnects for KHU associated with the underground power path.	72 hours
G. Both emergency power paths inoperable due to one inoperable E breaker and one inoperable S breaker on the same main feeder bus.	G.1	Restore one breaker to OPERABLE status.	24 hours

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION		COMPLETION TIME
H. -----------NOTE----------- Condition may be entered only when both required offsite sources are verified by administrative means to be OPERABLE and the requirements of LCO 3.8.3, "DC Sources-Operating;" LCO 3.8.6, "Vital Inverters-Operating;" LCO 3.8.8, "Distribution Systems-Operating;" LCO 3.3.17, "EPSL Automatic Transfer Function;" LCO 3.3.18, "EPSL Voltage Sensing Circuits;" LCO 3.3.19, "EPSL 230 kV Switchyard DGVP," are verified by administrative means to be met. ------------------------------ Both KHUs or their required emergency power paths inoperable for planned maintenance or test with both standby buses energized from LCT via isolated power path.	H.1	Energize both standby buses from LCT via isolated power path.	1 hour from discovery of deenergized standby bus
	<u>AND</u>		
	H.2	Restore one KHU and its required emergency power path to OPERABLE status.	60 hours <u>AND</u> 240 hours cumulative per 3-year rolling time period when entered during the 45-day Completion Time of Required Action C.2.2.5

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION		COMPLETION TIME
I. Both KHUs or their required emergency power paths inoperable for reasons other than Condition G and H.	I.1	Energize both standby buses from LCT via isolated power path.	1 hour AND 1 hour from subsequent discovery of deenergized standby bus
	AND		
	I.2	Determine by administrative means the OPERABILITY status of both required offsite sources, and of equipment required by LCO 3.8.3, "DC Sources-Operating," LCO 3.8.6, "Vital Inverters-Operating," LCO 3.8.8, "Distribution Systems-Operating," LCO 3.3.17, "EPSL Automatic Transfer Function," LCO 3.3.18, "EPSL Voltage Sensing Circuits," LCO 3.3.19, "EPSL 230 kV Switchyard DGVP."	1 hour
	AND		
	I.3	Restore one KHU and its required emergency power path to OPERABLE status.	12 hours

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION		COMPLETION TIME
J. One or both required offsite sources inoperable due to reasons other than Condition A.	J.1	Energize both standby buses from LCT via isolated power path.	1 hour AND 1 hour from subsequent discovery of deenergized standby bus
	AND		
	J.2	Determine by administrative means the OPERABILITY status of both KHUs and their required emergency power paths and of equipment required by LCO 3.8.3, "DC Sources-Operating," LCO 3.8.6, "Vital Inverters-Operating," LCO 3.8.8, "Distribution Systems-Operating," LCO 3.3.17, "EPSL Automatic Transfer Function," LCO 3.3.18, "EPSL Voltage Sensing Circuits," LCO 3.3.19, "EPSL 230 kV Switchyard DGVP," and LCO 3.3.21, "EPSL Keowee Emergency Start Function."	1 hour
	AND		
	J.3	Restore both offsite sources to OPERABLE status.	24 hours

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
K. ---------NOTE--------- Separate Condition entry is allowed for each breaker. ------------------------ One trip circuit in one or both closed N breakers inoperable. <u>OR</u> One trip circuit in one or both closed SL breakers inoperable.	K.1 Restore each trip circuit to OPERABLE status.	24 hours

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
L. ----------NOTE------------- Separate Condition entry is permitted for each inoperable AC Source, and LCO or SR not met. -------------------------------	------------------NOTE---------------- Not required when a KHU or its required emergency power path are made inoperable for the purpose of restoring the other KHU to OPERABLE status. ---	
AC Source inoperable or LCO not met, as stated in Note for Condition H entry. OR AC Source inoperable or LCO not met, as stated in Required Action C.2.2.3 when in Condition C for > 72 hours. OR AC Source inoperable or LCO not met, as stated in Required Actions I.2 or J.2 when in Conditions I or J for > 1 hour. OR SR 3.8.1.16 not met.	L.1 Restore inoperable AC Source to OPERABLE status. AND L.2 Restore compliance with LCO. AND L.3 Restore compliance with SR 3.8.1.16.	4 hours 4 hours 4 hours

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
M. Required Action and associated Completion Time for Condition C, F, G, H, I, J, K or L not met. OR Required Action and associated Completion Time not met for Required Action D.1 or D.3.	M.1 Be in MODE 3. AND M.2 Be in MODE 5.	12 hours 84 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.8.1.1	Verify correct breaker alignment and indicated power availability for each required offsite source.	In accordance with the Surveillance Frequency Control Program
SR 3.8.1.2	Verify battery terminal voltage is ≥ 125 V on float charge for each KHU's battery.	In accordance with the Surveillance Frequency Control Program
SR 3.8.1.3	Verify the KHU associated with the underground emergency power path starts automatically and energizes the underground emergency power path. Manually close the SK breaker to each de-energized standby bus.	In accordance with the Surveillance Frequency Control Program

(continued)

SURVEILLANCE REQUIREMENTS (continued)

	SURVEILLANCE	FREQUENCY
SR 3.8.1.4	------------------NOTE------------------ The requirement to energize the underground emergency power path is not applicable 1) when the overhead disconnects are open for the KHU associated with the underground emergency power path or 2) when complying with Required Action D.1. --- Verify the KHU associated with the overhead emergency power path starts automatically and automatically or manually synchronize it to the Yellow bus in 230 kV switchyard. Energize the underground emergency power path after removing the KHU from the overhead emergency power path.	In accordance with the Surveillance Frequency Control Program
SR 3.8.1.5	------------------NOTE------------------ Not required to be performed for an SL breaker when its standby bus is energized from a LCT via an isolated power path. --- Verify each closed SL and each closed N breaker opens manually or on an actual or simulated actuation signal.	In accordance with the Surveillance Frequency Control Program
SR 3.8.1.6	------------------NOTE------------------ Not required to be performed for an S breaker when its standby bus is energized from a LCT via an isolated power path. --- Operate each S and each E breaker through a full cycle.	In accordance with the Surveillance Frequency Control Program

(continued)

SURVEILLANCE REQUIREMENTS (continued)

	SURVEILLANCE	FREQUENCY
SR 3.8.1.7	Verify both KHU's underground tie breakers cannot be closed simultaneously.	In accordance with the Surveillance Frequency Control Program
SR 3.8.1.8	Verify each KHU's overhead emergency power path tie breaker cannot be closed when tie breaker to underground emergency power path is closed.	In accordance with the Surveillance Frequency Control Program
SR 3.8.1.9	Verify on an actual or simulated emergency actuation signal each KHU auto starts and: a. Achieves frequency ≥ 57 Hz and ≤ 63 Hz and voltage ≥ 13.5 kV and ≤ 14.49 kV in ≤ 23 seconds; b. Achieves steady state frequency ≥ 59.4Hz and ≤ 61.8 Hz; and c. Supplies the equivalent of one Unit's Loss of Coolant Accident (LOCA) loads plus two Unit's Loss of Offsite Power (LOOP) loads when synchronized to system grid and loaded at maximum practical rate.	In accordance with the Surveillance Frequency Control Program
SR 3.8.1.10	Verify each KHU's battery capacity is adequate to supply, and maintain in OPERABLE status, required emergency loads for design duty cycle when subjected to a battery service test.	In accordance with the Surveillance Frequency Control Program
SR 3.8.1.11	Verify each KHU's battery cells, cell end plates, and racks show no visual indication of physical damage or abnormal deterioration that could degrade battery performance.	In accordance with the Surveillance Frequency Control Program

(continued)

SURVEILLANCE REQUIREMENTS (continued)

	SURVEILLANCE	FREQUENCY
SR 3.8.1.12	Verify each KHU's battery cell to cell and terminal connections are clean and tight, and are coated with anti-corrosion material.	In accordance with the Surveillance Frequency Control Program
SR 3.8.1.13	-------------------------NOTE------------------------- Only applicable when the overhead electrical disconnects for the KHU associated with the underground emergency power path are closed. ---	
	Verify on an actual or simulated zone overlap fault signal each KHU's overhead tie breaker and underground tie breaker actuate to the correct position.	In accordance with the Surveillance Frequency Control Program
SR 3.8.1.14	------------------------NOTE------------------------- Not required to be performed for an SL breaker when its standby bus is energized from a LCT via an isolated power path. ---	
	Verify each closed SL and closed N breaker opens on an actuation of each redundant trip coil.	In accordance with the Surveillance Frequency Control Program
SR 3.8.1.15	Verify each 230 kV switchyard circuit breaker actuates to the correct position on a switchyard isolation actuation signal.	In accordance with the Surveillance Frequency Control Program

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.8.1.16	-------------------------NOTE-------------------------- Only applicable when complying with Required Action C.2.2.4. -- Verify one KHU provides an alternate manual AC power source capability by manual or automatic KHU start with manual synchronize, or breaker closure, to energize its non-required emergency power path.	As specified by Required Action C.2.2.4
SR 3.8.1.17	Verify each KHU's Voltage and Frequency out of tolerance logic trips and blocks closure of the appropriate overhead or underground power path breakers. The allowable values with a time delay of 5 seconds ± 1 second shall be as follows: a. Undervoltage ≥ 12.42 kV and ≤ 12.63 kV b. Overvoltage ≥ 14.90 kV and ≤ 15.18 kV c. Underfrequency ≥ 53.992 hz and ≤ 54.008 hz d. Overfrequency ≥ 65.992 hz and ≤ 66.008 hz	In accordance with the Surveillance Frequency Control Program
SR 3.8.1.18	Verify the ability of each KHU auxiliary power system to automatically transfer from its normal auxiliary power source to its alternate auxiliary power source	In accordance with the Surveillance Frequency Control Program

3.8 ELECTRICAL POWER SYSTEMS

3.8.2 AC Sources – Shutdown

LCO 3.8.2 The following AC electrical power sources shall be OPERABLE:

a. One source from the offsite transmission network to the onsite AC electrical power distribution system(s) required by LCO 3.8.9, "Distribution Systems – Shutdown". The offsite power source shall be an offsite circuit available or connected to one of the following:

1. 230 kV switchyard to a unit startup transformer to one main feeder bus,
2. 230 kV switchyard, or 525 kV switchyard for Unit 3, to the main step-up and unit auxiliary transformers to one main feeder bus, or
3. Central switchyard to one main feeder bus.

b. One emergency power source capable of supplying the onsite AC electrical power distribution system(s) required by LCO 3.8.9. The emergency power source shall include one of the following:

1. One Keowee Hydro Unit (KHU) capable of providing power through the underground emergency power path to one main feeder bus,
2. One KHU capable of providing power through the overhead emergency power path to one main feeder bus, or
3. One LCT energizing one standby bus via an isolated power path to one main feeder bus.

--NOTES--

1. A unit startup transformer may be shared with a Unit in MODES 1 through 6.
2. The requirements of ITS 5.5.19, "Lee Combustion Turbine Testing Program," shall be met when a LCT is used for the emergency power requirements.
3. The required emergency power source and required offsite power source shall not be susceptible to a failure disabling both sources.

APPLICABILITY: MODES 5 and 6,
During movement of recently irradiated fuel assemblies.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One required offsite source inoperable.	-----NOTE----- Enter applicable Conditions and Required Actions of LCO 3.8.9, with required equipment de-energized as a result of Condition A. -----	
	A.1 Declare affected required feature(s) with no offsite power available inoperable.	Immediately
	OR	
	A.2.1 Suspend CORE ALTERATIONS.	Immediately
	AND	
	A.2.2 Suspend movement of recently irradiated fuel assemblies.	Immediately
	AND	
	A.2.3 Initiate action to suspend operations involving positive reactivity additions.	Immediately
	AND	
	A.2.4 Initiate action to restore required offsite power source to OPERABLE status.	Immediately

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION		COMPLETION TIME
B. One required emergency power source inoperable.	B.1	Suspend CORE ALTERATIONS.	Immediately
	AND		
	B.2	Suspend movement of recently irradiated fuel assemblies.	Immediately
	AND		
	B.3	Initiate action to suspend operations involving positive reactivity additions.	Immediately
	AND		
	B.4	Initiate action to restore required emergency power source to OPERABLE status.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.8.2.1	-------------------------NOTES------------------------- 1. SR requirements for both standby buses or both main feeder buses are reduced to one standby bus and one main feeder bus. 2. SR 3.8.1.4 requirement to energize the underground emergency power path is not applicable. --- For AC sources required to be OPERABLE, the SRs of Specification 3.8.1, "AC Sources – Operating," except SR 3.8.1.7, SR 3.8.1.13, SR 3.8.1.14, SR 3.8.1.15 and SR 3.8.1.16, are applicable.	In accordance with applicable SRs

3.8 ELECTRICAL POWER SYSTEMS

3.8.3 DC Sources – Operating

LCO 3.8.3 DC Sources shall be OPERABLE as follows:

a. Three of four 125 VDC Vital I&C power sources for each unit as follows,

Unit 1 - 1CA, 1CB, 2CA, 2CB

Unit 2 - 2CA, 2CB, 3CA, 3CB

Unit 3 - 3CA, 3CB, 1CA, 1CB;

and each aligned to at least one panelboard provided that a power source is not the only source for two or more of the Unit's panelboards.

b. Two additional 125 VDC Vital I&C power sources when any other Unit is in MODES 1, 2, 3, or 4;

c. One additional 125 VDC Vital I&C power source when no other Unit is in MODES 1, 2, 3, or 4;

d. Two 230 kV Switchyard 125 VDC power sources.

---NOTES---

1. For Units 2 and 3, a 125 VDC Vital I&C power source shall not be the only source for panelboards 1DIC and 1DID required by LCO 3.8.8.

2. Each additional 125 VDC Vital I&C source required by LCO 3.8.3 part b or part c shall be connected to at least one panelboard associated with the unit where the source is physically located.

3. The additional 125 VDC Vital I&C power source required by LCO 3.8.3 part c shall not be a 125 VDC Vital I&C power source that is available to meet the three of four requirement of LCO 3.8.3 part a.

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

ACTIONS

-----NOTE-----
The Completion Times for Required Actions A through D are reduced when in Condition L of LCO 3.8.1.

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One required 125 VDC Vital I&C power source inoperable.	A.1 -----NOTE----- Not applicable for up to 72 hours to perform equalization charge after completion of a performance or service test. ----- Restore required power source to OPERABLE status.	24 hours
B. One required 125 VDC Vital I&C power source the only source for two or more of the Unit's panelboards.	B.1 Align sources such that one power source is not the only source for two or more of the Unit's panelboards.	24 hours
C. -----NOTE----- Only applicable to Units 2 and 3. ----- One 125 VDC Vital I&C power source the only source for panelboards 1DIC and 1DID.	C.1 Align sources such that one power source is not the only source to panelboards 1DIC and 1DID.	24 hours

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION		COMPLETION TIME
D. One 230 kV switchyard 125 VDC power source inoperable.	D.1	---------NOTES-------- 1. Not applicable for up to 72 hours to perform equalization charge after completion of a performance or service test. 2. Not applicable for up to 10 days to replace entire battery bank and perform required tests to restore operability. ------------------------------ Restore power source to OPERABLE status.	24 hours
E. Required Action and Associated Completion Time not met.	E.1 AND E.2	Be in MODE 3. Be in MODE 5.	12 hours 84 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.8.3.1	Verify correct breaker alignments and voltage availability from required distribution centers to isolating transfer diodes.	In accordance with the Surveillance Frequency Control Program
SR 3.8.3.2	Verify battery terminal voltage is ≥ 125V on float charge.	In accordance with the Surveillance Frequency Control Program
SR 3.8.3.3	Verify battery cells, cell plates, and racks show no visual indication of physical damage or abnormal deterioration that could degrade battery performance.	In accordance with the Surveillance Frequency Control Program
SR 3.8.3.4	Verify battery cell to cell and terminal connections are clean and tight, and are coated with anti-corrosion material.	In accordance with the Surveillance Frequency Control Program
SR 3.8.3.5	Verify battery capacity is adequate to supply, and maintain in OPERABLE status, the required emergency loads for the design duty cycle when subjected to a battery service test.	In accordance with the Surveillance Frequency Control Program
SR 3.8.3.6	Verify battery capacity is in accordance with the Battery Discharge Testing Program.	In accordance with the Battery Discharge Testing Program

3.8 ELECTRICAL POWER SYSTEMS

3.8.4 DC Sources – Shutdown

LCO 3.8.4 125 VDC Vital I&C power source(s) shall be OPERABLE to support the 125 VDC Vital I&C power panelboard(s) required by LCO 3.8.9,"Distribution Systems – Shutdown" and shall include at least one of the unit's 125 VDC Vital I&C power sources.

APPLICABILITY: MODES 5 and 6,
During movement of recently irradiated fuel assemblies.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more required 125 VDC Vital I&C power sources inoperable.	A.1 Declare affected required feature(s) inoperable.	Immediately
	<u>OR</u>	
	A.2.1 Suspend CORE ALTERATIONS.	Immediately
	<u>AND</u>	
	A.2.2 Suspend movement of recently irradiated fuel assemblies.	Immediately
	<u>AND</u>	
	A.2.3 Initiate action to suspend operations involving positive reactivity additions.	Immediately
	<u>AND</u>	
		(continued)

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. (continued)	A.2.4 Initiate action to restore required power sources to OPERABLE status.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.8.4.1	------NOTE------ The following SRs are not required to be performed: SR 3.8.3.5 and SR 3.8.3.6. ------------- For 125 VDC Vital I&C power sources required to be OPERABLE, the following SRs are applicable: SR 3.8.3.1 SR 3.8.3.2 SR 3.8.3.3 SR 3.8.3.4 SR 3.8.3.5 SR 3.8.3.6	In accordance with applicable SRs

3.8 ELECTRICAL POWER SYSTEMS

3.8.5 Battery Cell Parameters

LCO 3.8.5 Battery cell parameters for the Keowee Hydro Unit (KHU), 125 VDC Vital I&C, and 230 kV 125 VDC switchyard batteries shall be within the limits of Table 3.8.5-1.

APPLICABILITY: When associated DC power sources are required to be OPERABLE.

ACTIONS

---NOTE--

Separate Condition entry is allowed for each battery.

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more batteries with one or more battery cell parameters not within Category A or B limits.	A.1 Verify pilot cell electrolyte level and float voltage meet Table 3.8.5-1 Category C values.	1 hour
	AND	
	A.2 Verify battery cell parameters meet Table 3.8.5-1 Category C values.	24 hours AND Once per 7 days thereafter
	AND	
	A.3 Restore battery cell parameters to Category A and B limits of Table 3.8.5-1.	90 days

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
B. Required Action and associated Completion Time of Condition A not met. <u>OR</u> One or more batteries with average electrolyte temperature of the representative cells < 60°F. <u>OR</u> One or more batteries with one or more battery cell parameters not within Category C values.	B.1 Declare associated battery inoperable.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.8.5.1	Verify battery cell parameters meet Table 3.8.5-1 Category A limits.	In accordance with the Surveillance Frequency Control Program
SR 3.8.5.2	Verify battery cell parameters meet Table 3.8.5-1 Category B limits.	In accordance with the Surveillance Frequency Control Program
SR 3.8.5.3	Verify average electrolyte temperature of representative cells is ≥ 60°F.	In accordance with the Surveillance Frequency Control Program

Table 3.8.5-1 (page 1 of 1)
Battery Cell Surveillance Requirements

PARAMETER	CATEGORY A: LIMITS FOR EACH DESIGNATED PILOT CELL	CATEGORY B: LIMITS FOR EACH CONNECTED CELL	CATEGORY C: ALLOWABLE LIMITS FOR EACH CONNECTED CELL
Electrolyte Level	≥ Minimum level indication mark, and ≤ ¼ inch above maximum level indication mark(a)	≥ Minimum level indication mark, and ≤ ¼ inch above maximum level indication mark(a)	Above top of plates, and not overflowing
Float Voltage	≥ 2.13 V	≥ 2.13 V	> 2.07 V
Specific Gravity(b)(c)	≥ 1.200	≥ 1.200 <u>AND</u> Not more than 0.010 below average of all connected cells	≥ 1.200

(a) It is acceptable for the electrolyte level to temporarily increase above the specified maximum during equalizing charges provided it is not overflowing.

(b) Corrected for electrolyte temperature and level. Level correction is not required, however, when battery float current is < 2 amps when on float charge.

(c) A battery float current of < 2 amps when on float charge is acceptable for meeting specific gravity limits following a battery recharge, for a maximum of 7 days. When float current is used in lieu of specific gravity requirements, specific gravity of each connected cell shall be measured prior to expiration of the 7 day allowance.

3.8 ELECTRICAL POWER SYSTEMS

3.8.6 Vital Inverters – Operating

LCO 3.8.6 Four vital inverters shall be OPERABLE.

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

ACTIONS

CONDITION	REQUIRED ACTION		COMPLETION TIME
A. One vital inverter inoperable.	A.1	----------NOTES-------- 1. Enter applicable Conditions and Required Actions of LCO 3.8.8, "Distribution Systems - Operating," with any 120 VAC Vital Instrumentation power panelboard de-energized. 2. The Completion Time is reduced when in Condition L of LCO 3.8.1. ------------------------------ Restore inverter to OPERABLE status.	7 days
B. Required Action and associated Completion Time not met.	B.1	Be in MODE 3.	12 hours
	AND		
	B.2	Be in MODE 5.	84 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.8.6.1	Verify correct inverter voltage, frequency, and alignment to required 120 VAC Vital Instrumentation power panelboards.	In accordance with the Surveillance Frequency Control Program

3.8 ELECTRICAL POWER SYSTEMS

3.8.7 Vital Inverters – Shutdown

LCO 3.8.7 Vital Inverters shall be OPERABLE to support the onsite 120 VAC Vital Instrumentation power panelboard(s) required by LCO 3.8.9, "Distribution Systems – Shutdown."

APPLICABILITY: MODES 5 and 6,
During movement of recently irradiated fuel assemblies.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more required vital inverters inoperable.	A.1 Declare affected required equipment inoperable.	Immediately
	<u>OR</u>	
	A.2.1 Suspend CORE ALTERATIONS.	Immediately
	<u>AND</u>	
	A.2.2 Suspend movement of recently irradiated fuel assemblies.	Immediately
	<u>AND</u>	
	A.2.3 Initiate action to suspend operations involving positive reactivity additions.	Immediately
	<u>AND</u>	
	A.2.4 Initiate action to restore required inverters to OPERABLE status.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.8.7.1	Verify correct inverter voltage, frequency, and alignments to required 120 VAC Vital Instrumentation power panelboards.	In accordance with the Surveillance Frequency Control Program

3.8 ELECTRICAL POWER SYSTEMS

3.8.8 Distribution Systems – Operating

LCO 3.8.8 AC, DC, and AC vital electrical power distribution systems shall be OPERABLE as follows:

a. Two main feeder buses each connected to two or more ES power strings;

b. Three ES power strings;

c. 125 VDC Vital I&C power panelboards DIA, DIB, DIC, and DID;

d. For Units 2 or 3, 125 VDC Vital I&C power panelboards 1DIC and 1DID;

e. 230 kV switchyard 125 VDC power panelboards DYA, DYB, DYC, DYE, DYF, and DYG; and

f. 120 VAC Vital Instrumentation power panelboards KVIA, KVIB, KVIC, and KVID.

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

ACTIONS

-----NOTE-----
The Completion Times for Required Actions A through F are reduced when in Condition L of LCO 3.8.1.

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One main feeder bus inoperable or not connected to two ES power strings.	A.1 Restore main feeder bus to OPERABLE status and connect to at least two ES power strings.	24 hours

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION		COMPLETION TIME
B. One ES power string inoperable.	B.1	Restore ES power string to OPERABLE status.	24 hours
C. One of the unit's 125 VDC Vital I&C power panelboard inoperable.	C.1	Restore panelboard to OPERABLE status.	24 hours
D. ---------NOTES--------- 1. Separate Condition entry is allowed for each 230 kV switchyard 125 VDC power panelboard. 2. Not applicable to the following loss of function combinations: DYA and DYE, DYB and DYF, and DYC and DYG. ------------------------- One or more required 230 kV switchyard 125 VDC power panelboards inoperable.	D.1	Restore required panelboards to OPERABLE status.	24 hours

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
E. ----------NOTE---------- Only applicable to Units 2 and 3. ------------------------- One required 125 VDC Unit 1 Vital I&C power panelboard inoperable.	E.1 Restore panelboard to OPERABLE status.	24 hours
F. One 120 VAC Vital Instrumentation power panelboard inoperable.	F.1 Restore panelboard to OPERABLE status.	4 hours when Condition due to KVIA or KVIB being inoperable <u>AND</u> 24 hours when Condition due to KVIC or KVID being inoperable
G. Required Action and associated Completion Time not met.	G.1 Be in MODE 3. <u>AND</u> G.2 Be in MODE 5.	12 hours 84 hours
H. Entry into two or more Conditions that result in a loss of function	H.1 Enter LCO 3.0.3	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
3.8.8.1	Verify correct breaker alignments and voltage to required main feeder buses.	In accordance with the Surveillance Frequency Control Program
3.8.8.2	Verify correct breaker alignments and voltage availability to required ES power strings, 125 VDC Vital I&C power panelboards, 230 kV Switchyard 125 VDC power panelboards and 120 VAC Vital Instrumentation power panelboards.	In accordance with the Surveillance Frequency Control Program

3.8 ELECTRICAL POWER SYSTEMS

3.8.9 Distribution Systems – Shutdown

LCO 3.8.9 The necessary portion of main feeder buses, ES power strings, 125 VDC Vital I&C power panelboards, 230 kV Switchyard 125 VDC power panelboards and 120 VAC Vital Instrumentation power panelboards shall be OPERABLE to support equipment required to be OPERABLE.

APPLICABILITY: MODES 5 and 6,
During movement of recently irradiated fuel assemblies.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more required main feeder buses, ES power strings, 125 VDC Vital I&C power panelboards, 230 kV Switchyard 125 VDC power panelboards or 120 VAC Vital Instrumentation power panelboards inoperable.	A.1 Declare associated supported required equipment inoperable.	Immediately
	<u>OR</u>	
	A.2.1 Suspend CORE ALTERATIONS.	Immediately
	<u>AND</u>	
	A.2.2 Suspend movement of recently irradiated fuel assemblies.	Immediately
	<u>AND</u>	
	A.2.3 Initiate action to suspend operations involving positive reactivity additions.	Immediately
	<u>AND</u>	
		(continued)

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. (continued)	A.2.4 Initiate actions to restore required main feeder buses, ES power strings, 125 VDC Vital I&C power panelboards, 230 kV Switchyard 125 VDC power panelboards or 120 VAC Vital Instrumentation power panelboards to OPERABLE status.	Immediately
	AND	
	A.2.5 Declare associated required decay heat removal loop(s) inoperable and not in operation.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.8.9.1	Verify correct breaker alignments and voltage to required main feeder buses.	In accordance with the Surveillance Frequency Control Program
SR 3.8.9.2	Verify correct breaker alignments and voltage availability to required ES power strings, 125 VDC Vital I&C power panelboards, 230 kV Switchyard 125 VDC power panelboards and 120 VAC Vital Instrumentation power panelboards.	In accordance with the Surveillance Frequency Control Program

3.9 REFUELING OPERATIONS

3.9.1 Boron Concentration

LCO 3.9.1 Boron concentrations of the Reactor Coolant System and the refueling canal shall be maintained within the limit specified in the COLR.

APPLICABILITY: MODE 6.

---NOTE---
Only applicable to the refueling canal when connected to the RCS.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Boron concentration not within limit.	A.1 Suspend CORE ALTERATIONS.	Immediately
	<u>AND</u>	
	A.2 Suspend positive reactivity additions.	Immediately
	<u>AND</u>	
	A.3 Initiate action to restore boron concentration to within limit.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.9.1.1	Verify boron concentration is within the limit specified in the COLR.	In accordance with the Surveillance Frequency Control Program

3.9 REFUELING OPERATIONS

3.9.2 Nuclear Instrumentation

LCO 3.9.2

a. One source range neutron flux monitor shall be OPERABLE, and

b. One additional source range neutron flux monitor shall be OPERABLE during CORE ALTERATIONS and during positive reactivity additions.

APPLICABILITY: MODE 6.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One required source range neutron flux monitor inoperable during CORE ALTERATIONS or positive reactivity additions.	A.1 Suspend CORE ALTERATIONS. AND A.2 Suspend positive reactivity additions.	Immediately Immediately
B. No OPERABLE source range neutron flux monitors.	B.1 Initiate action to restore one source range neutron flux monitor to OPERABLE status. AND B.2 Perform SR 3.9.1.1.	Immediately 4 hours AND Once per 12 hours thereafter

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.9.2.1	Perform CHANNEL CHECK.	In accordance with the Surveillance Frequency Control Program
SR 3.9.2.2	-------------------------NOTE------------------------- Neutron detectors are excluded from CHANNEL CALIBRATION. -- Perform CHANNEL CALIBRATION.	In accordance with the Surveillance Frequency Control Program

3.9 REFUELING OPERATIONS

3.9.3 Containment Penetrations

LCO 3.9.3 The containment penetrations shall be in the following status:

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

b. One door in each air lock closed; and

-----NOTE-----
An emergency air lock door is not required to be closed when a temporary cover plate is installed.
----

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

1. closed by a manual, non-automatic power operated or automatic isolation valve, blind flange, or equivalent, or

2. capable of being closed by an OPERABLE Reactor Building Purge supply and exhaust isolation signal.

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

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more containment penetrations not in required status.	A.1 Suspend movement of recently irradiated fuel assemblies within containment.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.9.3.1	Verify each required containment penetration is in the required status.	In accordance with the Surveillance Frequency Control Program
SR 3.9.3.2	Verify each required Reactor Building Purge supply and exhaust isolation valve that is not locked, sealed or otherwise secured in the isolation position actuates to the isolation position on an actual or simulated high radiation actuation signal.	Once each refueling outage prior to movement of recently irradiated fuel assemblies within containment

3.9 REFUELING OPERATIONS

3.9.4 Decay Heat Removal (DHR) and Coolant Circulation – High Water Level

LCO 3.9.4 One DHR loop shall be OPERABLE and in operation.

-----NOTE-----
The required DHR loop may not be in operation for ≤ 1 hour per 8 hour period, provided no operations are permitted that would cause reduction of the Reactor Coolant System boron concentration.

APPLICABILITY: MODE 6 with the water level ≥ 21.34 ft above the top of reactor vessel flange.

ACTIONS

CONDITION	REQUIRED ACTION		COMPLETION TIME
A. DHR loop requirements not met.	A.1	Suspend operations involving a reduction in reactor coolant boron concentration.	Immediately
	<u>AND</u>		
	A.2	Suspend loading irradiated fuel assemblies in the core.	Immediately
	<u>AND</u>		
	A.3	Initiate action to satisfy DHR loop requirements.	Immediately
	<u>AND</u>		

(continued)

ACTIONS

CONDITION	REQUIRED ACTION		COMPLETION TIME
A. (continued)	A.4	Close all containment penetrations providing direct access from containment atmosphere to outside atmosphere.	4 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.9.4.1	Verify one DHR loop is in operation.	In accordance with the Surveillance Frequency Control Program
SR 3.9.4.2	Verify required DHR loop locations susceptible to gas accumulation are sufficiently filled with water.	In accordance with the Surveillance Frequency Control Program

3.9 REFUELING OPERATIONS

3.9.5 Decay Heat Removal (DHR) and Coolant Circulation – Low Water Level

LCO 3.9.5 Two DHR loops shall be OPERABLE, and one DHR loop shall be in operation.

APPLICABILITY: MODE 6 with the water level < 21.34 ft above the top of reactor vessel flange.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Less than required number of DHR loops OPERABLE.	A.1 Initiate action to restore DHR loop to OPERABLE status.	Immediately
	<u>OR</u>	
	A.2 Initiate action to establish ≥ 21.34 ft of water above the top of reactor vessel flange.	Immediately
B. No DHR loop OPERABLE or in operation.	B.1 Suspend operations involving a reduction in reactor coolant boron concentration.	Immediately
	<u>AND</u>	
	B.2 Initiate action to restore one DHR loop to OPERABLE status and to operation.	Immediately
	<u>AND</u>	
		(continued)

ACTIONS

CONDITION	REQUIRED ACTION		COMPLETION TIME
B. (continued)	B.3	Close all containment penetrations providing direct access from containment atmosphere to outside atmosphere.	4 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.9.5.1	Verify one DHR loop is in operation.	In accordance with the Surveillance Frequency Control Program
SR 3.9.5.2	Verify correct breaker alignment and indicated power available to the required DHR pump that is not in operation.	In accordance with the Surveillance Frequency Control Program
SR 3.9.5.3	Verify DHR loop locations susceptible to gas accumulation are sufficiently filled with water.	In accordance with the Surveillance Frequency Control Program

3.9 REFUELING OPERATIONS

3.9.6 Fuel Transfer Canal Water Level

LCO 3.9.6 Fuel transfer canal water level shall be maintained ≥ 21.34 ft above the top of the reactor vessel flange.

APPLICABILITY: During movement of irradiated fuel assemblies within containment.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Fuel transfer canal water level not within limit.	A.1 Suspend movement of irradiated fuel assemblies within containment.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.9.6.1	Verify fuel transfer canal water level is $\geq$ 21.34 ft above the top of reactor vessel flange.	In accordance with the Surveillance Frequency Control Program

3.9 REFUELING OPERATIONS

3.9.7 Unborated Water Source Isolation Valves

LCO 3.9.7 Each valve used to isolate unborated water sources shall be secured in the closed position.

APPLICABILITY: MODE 6.

ACTIONS

------------------------------------NOTE------------------------------------
Separate Condition entry is allowed for each unborated water source isolation valve.

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. ------------NOTE----------- Required Action A.3 must be completed whenever Condition A is entered. ------------------------------ One or more valves not secured in closed position.	A.1 Suspend CORE ALTERATIONS. <u>AND</u> A.2 Initiate actions to secure valve in closed position. <u>AND</u> A.3 Perform SR 3.9.1.1.	Immediately Immediately 4 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.9.7.1	Verify each valve that isolates unborated water sources is secured in the closed position.	In accordance with the Surveillance Frequency Control Program

3.9 REFUELING OPERATIONS

3.9.8 Reverse Osmosis (RO) System Operating Restrictions for Spent Fuel Pool (SFP)

LCO 3.9.8 The RO System shall be isolated from the spent fuel pool by breaking the siphon from the SFP.

APPLICABILITY: During movement of irradiated fuel assemblies in the SFP, During movement of cask over the SFP.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. RO System not isolated	-------------------NOTE---------------- LCO 3.0.3 is not applicable --	
	A.1 Suspend the movement of irradiated fuel assemblies in the SFP	Immediately
	AND	
	A.2 Suspend the movement of cask over the SFP	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.9.8.1	Verify RO System is isolated by breaking the siphon from the SFP.	In accordance with the Surveillance Frequency Control Program

3.10 STANDBY SHUTDOWN FACILITY

3.10.1 Standby Shutdown Facility (SSF)

LCO 3.10.1 The SSF Instrumentation and the following SSF Systems shall be OPERABLE:

a. SSF Auxiliary Service Water System;

b. SSF Portable Pumping System;

c. SSF Reactor Coolant Makeup System; and

d. SSF Power System.

APPLICABILITY: MODES 1, 2, and 3.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. SSF Auxiliary Service Water System inoperable.	A.1 Restore SSF Auxiliary Service Water System to OPERABLE status.	7 days
B. SSF Portable Pumping System inoperable.	B.1 Restore SSF Portable Pumping System to OPERABLE status.	7 days

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
C. SSF Reactor Coolant Makeup System inoperable.	C.1 Restore SSF Reactor Coolant Makeup System to OPERABLE status.	7 days
D. SSF Power System inoperable.	D.1 Restore SSF Power System to OPERABLE status.	7 days
E. SSF Instrumentation inoperable.	E.1 Restore SSF Instrumentation to OPERABLE status.	7 days
F. Required Action and associated Completion Time of Condition A, B, C, D, or E not met when SSF Systems or Instrumentation are inoperable due to maintenance.	F.1 Restore to OPERABLE status.	-----------NOTE----------- Not to exceed 45 days cumulative per calendar year ------------------------------ 45 days from discovery of initial inoperability
G. Required Action and associated Completion Time of Condition F not met. <u>OR</u> Required Action and associated Completion Time of Condition A, B, C, D, or E not met for reasons other than Condition F.	G.1 Be in MODE 3. <u>AND</u> G.2 Be in MODE 4.	12 hours 84 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.10.1.1	-----------------------NOTE----------------------------- Not applicable to RCS temperature instrument channels. -- Perform CHANNEL CHECK for each required SSF instrument channel.	In accordance with the Surveillance Frequency Control Program
SR 3.10.1.2	Verify required SSF battery terminal voltage is ≥ 125 VDC on float charge.	In accordance with the Surveillance Frequency Control Program
SR 3.10.1.3	Verify the day tank contains ≥ 200 gallons of fuel.	In accordance with the Surveillance Frequency Control Program
SR 3.10.1.4	Verify the underground oil storage tank contains ≥ 25,000 gallons of fuel.	In accordance with the Surveillance Frequency Control Program
SR 3.10.1.5	-----------------------NOTE----------------------------- All DG starts may be preceded by an engine prelube period followed by a warmup period prior to loading. -- Verify the DG starts from standby conditions and achieves steady state voltage and frequency.	In accordance with the Surveillance Frequency Control Program
SR 3.10.1.6	Verify DG required air start receiver pressure is ≥ 150 psig.	In accordance with the Surveillance Frequency Control Program

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.10.1.7	Verify the fuel oil transfer system operates to automatically transfer fuel oil from the storage tank to the day tank.	In accordance with the Surveillance Frequency Control Program
SR 3.10.1.8	Verify the fuel oil properties of the fuel oil stored in the day tank and underground storage tank are tested in accordance with, and maintained within the limits of the Diesel Fuel Oil Testing Program.	In accordance with the Surveillance Frequency Control Program
SR 3.10.1.9	--------------------NOTES-------------------- 1. DG loadings may include gradual loading as recommended by the manufacturer. 2. Momentary transients outside the load range do not invalidate this test. 3. All DG starts may be preceded by an engine prelube period followed by a warmup period prior to loading. -- Verify the SSF DG is synchronized and loaded and operated for $\geq$ 60 minutes at a load $\geq$ 3280 kW.	In accordance with the Surveillance Frequency Control Program
SR 3.10.1.10	Verify for required SSF battery that the cells, cell plates and racks show no visual indication of physical damage or abnormal deterioration that could degrade battery performance.	In accordance with the Surveillance Frequency Control Program

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.10.1.11	Verify for required SSF battery that the cell to cell and terminal connections are clean, tight and coated with anti-corrosion material.	In accordance with the Surveillance Frequency Control Program
SR 3.10.1.12	Verify battery capacity of required battery is adequate to supply, and maintain in OPERABLE status, the required maximum loads for the design duty cycle when subjected to a battery service test.	In accordance with the Surveillance Frequency Control Program
SR 3.10.1.13	Perform CHANNEL CALIBRATION for each required SSF instrument channel.	In accordance with the Surveillance Frequency Control Program
SR 3.10.1.14	Verify OPERABILITY OF SSF valves in accordance with the INSERVICE TESTING PROGRAM.	In accordance with the INSERVICE TESTING PROGRAM
SR 3.10.1.15	--------------------NOTE-------------------------- Not applicable to the SSF submersible pump. --- Verify the developed head of each required SSF pump at the flow test point is greater than or equal to the required developed head.	 In accordance with the INSERVICE TESTING PROGRAM
SR 3.10.1.16	Verify the developed head of the SSF submersible pump at the flow test point is greater than or equal to the required developed head.	In accordance with the Surveillance Frequency Control Program

3.10 STANDBY SHUTDOWN FACILITY

3.10.2 Standby Shutdown Facility (SSF) Battery Cell Parameters

LCO 3.10.2 Battery cell parameters for the SSF batteries shall be within the limits of Table 3.10.2-1.

APPLICABILITY: When the associated SSF Power System battery is required to be OPERABLE.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Required SSF battery with one or more battery cell parameters not within Category A or B limits.	A.1 Verify pilot cell(s) electrolyte level and float voltage meet Table 3.10.2-1 Category C values.	1 hour
	AND	
	A.2 Verify battery cell parameters meet Table 3.10.2-1 Category C values.	24 hours AND Once per 7 days thereafter
	AND	
	A.3 Restore battery cell parameters to Category A and B limits of Table 3.10.2-1.	90 days

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
B. Required Action and associated Completion Time of Condition A not met. OR Required SSF battery with average electrolyte temperature of the representative cells < 60°F. OR Required SSF battery with one or more battery cell parameters not within Category C values.	B.1 Declare SSF Power System inoperable.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.10.2.1	Verify battery cell parameters meet Table 3.10.2-1 Category A limits.	In accordance with the Surveillance Frequency Control Program
SR 3.10.2.2	Verify battery cell parameters meet Table 3.10.2-1 Category B limits.	In accordance with the Surveillance Frequency Control Program
SR 3.10.2.3	Verify average electrolyte temperature of representative cells is ≥ 60°F.	In accordance with the Surveillance Frequency Control Program

Table 3.10.2-1 (page 1 of 1)
Battery Cell Surveillance Requirements

PARAMETER	CATEGORY A: LIMITS FOR EACH DESIGNATED PILOT CELL	CATEGORY B: LIMITS FOR EACH CONNECTED CELL	CATEGORY C: ALLOWABLE LIMITS FOR EACH CONNECTED CELL
Electrolyte Level	≥ Minimum level indication mark, and ≤ ¼ inch above maximum level indication mark[a]	≥ Minimum level indication mark, and ≤ ¼ inch above maximum level indication mark[a]	Above top of plates, and not overflowing
Float Voltage	≥ 2.13 V	≥ 2.13 V	> 2.07 V
Specific Gravity[b][c]	≥ 1.200	≥ 1.200 <u>AND</u> Not more than 0.010 below average of all connected cells	≥ 1.200

(a) It is acceptable for the electrolyte level to temporarily increase above the specified maximum during equalizing charges provided it is not overflowing.

(b) Corrected for electrolyte temperature and level. Level correction is not required, however, when battery float current is < 2 amps when on float charge.

(c) A battery float current of < 2 amps when on float charge is acceptable for meeting specific gravity limits following a battery recharge, for a maximum of 7 days. When float current is used in lieu of specific gravity requirements, the specific gravity of each connected cell shall be measured prior to expiration of the 7 day allowance.

4.0 DESIGN FEATURES

4.1 Site Location

The Oconee Nuclear Station is approximately eight miles northeast of Seneca, South Carolina. The minimum distance from the reactor center line to the boundary of the exclusion area and to the outer boundary of the low population zone, as defined in 10 CFR 100.3, shall be one mile and six miles respectively.

4.2 Reactor Core

4.2.1 Fuel Assemblies

The reactor shall contain 177 fuel assemblies. Each assembly shall consist of a matrix of zirconium alloy or M5 clad fuel rods with an initial composition of natural or slightly enriched uranium dioxide (UO_2) as fuel material. Limited substitutions of zirconium alloy, M5, or stainless steel filler rods for fuel rods, in accordance with approved applications of fuel rod configurations, may be used. Fuel assemblies shall be limited to those fuel designs that have been analyzed with applicable NRC staff approved codes and methods and shown by tests or analyses to comply with all fuel safety design bases. A limited number of lead test assemblies that have not completed representative testing may be placed in nonlimiting core regions.

4.2.2 Control Assemblies

The reactor core shall contain 61 full-length CONTROL ROD Assemblies (CRAs) and 8 APSR assemblies. The full-length CRAs and APSR assemblies shall conform to the design described in the UFSAR or reload report.

4.3 Fuel Storage

4.3.1 Criticality

The spent fuel storage racks are designed and shall be maintained with:

a. Fuel assemblies having a maximum nominal U-235 enrichment of 5.0 weight percent;

4.0 DESIGN FEATURES

4.3 Fuel Storage (continued)

b. $k_{eff} < 1.0$ if fully flooded with unborated water, which includes an allowance for uncertainties as described in Section 9.1 of the UFSAR;

c. $k_{eff} \leq 0.95$ if fully flooded with water borated to 430 ppm, which includes an allowance for uncertainties as described in Section 9.1 of the UFSAR. Maintaining the normal spent fuel pool boron concentration within the TS limits assures $k_{eff} \leq 0.95$ for any accident condition;

d. A nominal 10.65 inch center to center distance between fuel assemblies placed in spent fuel storage racks serving Units 1 and 2;

e. A nominal 10.60 inch center to center distance between fuel assemblies placed in spent fuel storage racks serving Unit 3;

f. A nominal 25.75 inch center to center spacing between fuel assemblies placed in the fuel transfer canal.

4.3.2 Capacity

The spent fuel storage pool is designed and shall be maintained with a storage capacity limited to no more than 1312 fuel assemblies in the spent fuel storage racks serving Units 1 and 2 and 825 fuel assemblies in the spent fuel storage racks serving Unit 3. In addition, up to 4 assemblies and/or 1 failed fuel container may be stored in each fuel transfer canal when the canal is at refueling level. Spent fuel may also be stored in the Oconee Nuclear Station Independent Spent Fuel Storage Installation.

4.0 DESIGN FEATURES

4.4 Dry Spent Fuel Storage Cask Loading and Unloading for ISFSI site-specific licensed storage casks (site-specific licensed storage casks are contained in horizontal storage modules 1 through 40).

4.4.1 Criticality

Dry spent fuel storage cask loading or unloading in the spent fuel pool shall be maintained with:

a. Fuel assemblies having a maximum nominal U-235 enrichment of 5.0 weight percent;

b. $k_{eff} < 1.0$ if fully flooded with unborated water, which includes an allowance for uncertainties as described in Section 9.1 of the UFSAR;

c. $k_{eff} \leq 0.95$ if fully flooded with water borated to 430 ppm, which includes an allowance for uncertainties as described in Section 9.1 of the UFSAR. Maintaining the normal spent fuel pool boron concentration within the TS limits assures $k_{eff} \leq 0.95$ for any accident condition.

d. Dry spent fuel storage cask designs limited to NUHOMS®-24P or NUHOMS®-24PHB.

5.0 ADMINISTRATIVE CONTROLS

5.1 Responsibility

5.1.1 The Plant Manager shall be responsible for overall plant operation and shall delegate in writing the succession to this responsibility during his absence.

The Plant Manager or his designee shall approve, prior to implementation, each proposed test, experiment or modification to systems or equipment that affect nuclear safety.

5.1.2 The Control Room Supervisor (CRS) shall be responsible for the control room command function. During any absence of the CRS from the control room while the unit is in MODE 1, 2, 3, or 4, an individual [other than the Shift Technical Advisor (STA)] with an active Senior Reactor Operator (SRO) license shall be designated to assume the control room command function. During any absence of the CRS from the control room while the unit is in MODE 5 or 6, an individual with an active SRO license or Reactor Operator license shall be designated to assume the control room command function.

5.0 ADMINISTRATIVE CONTROLS

5.2 Organization

5.2.1 Onsite and Offsite Organizations

Onsite and offsite organizations shall be established for unit operation and corporate management, respectively. The onsite and offsite organizations shall include the positions for activities affecting safety of the nuclear power plant.

a. Lines of authority, responsibility, and communication shall be defined and established throughout highest management levels, intermediate levels, and all operating organization positions. These relationships shall be documented and updated, as appropriate, in organization charts, functional descriptions of departmental responsibilities and relationships, and job descriptions for key personnel positions, or in equivalent forms of documentation. These requirements shall be documented in the UFSAR;

b. The Plant Manager shall be responsible for overall safe operation of the plant and shall have control over those onsite activities necessary for safe operation and maintenance of the plant;

c. The Vice-President, Oconee Nuclear Site, shall have responsibility for overall plant nuclear safety and shall take any measures needed to ensure acceptable performance of the staff in operating, maintaining, and providing technical support to the plant to ensure nuclear safety;

d. The Chief Nuclear Officer will be the Senior Nuclear Executive and have corporate responsibility for overall nuclear safety; and

e. The individuals who train the operating staff, carry out radiation protection, or perform quality assurance functions may report to the appropriate onsite manager; however, these individuals shall have sufficient organizational freedom to ensure their independence from operating pressures.

5.2.2 Unit Staff

The unit staff organization shall include the following:

a. A non-licensed operator shall be onsite for each reactor containing fuel and an additional non-licensed operator shall be onsite for each control room from which a reactor is operating in MODES 1, 2, 3, or 4.

5.2 Organization

5.2.2 Unit Staff (continued)

b. At least one licensed Reactor Operator (RO) per unit shall be present in the control room when fuel is in the reactor. In addition, while the unit is in MODE 1, 2, 3, or 4, at least one licensed Senior Reactor Operator (SRO) shall be present in the control room.

c. Shift crew composition may be less than the minimum requirement of 10 CFR 50.54(m)(2)(i) and 5.2.2.a and 5.2.2.g for a period of time not to exceed 2 hours in order to accommodate unexpected absence of on-duty shift crew members provided immediate action is taken to restore the shift crew composition to within the minimum requirements.

d. A Radiation Protection Technician shall be on site when fuel is in the reactor. The position may be vacant for not more than 2 hours, in order to provide for unexpected absence, provided immediate action is taken to fill the required position.

e. Deleted.

f. The Operations Manager or Assistant Operations Manager - Shift shall hold an SRO license.

g. The Shift Technical Advisor (STA) shall provide advisory technical support to the Shift Manager in the areas of thermal hydraulics, reactor engineering, and plant analysis with regard to the safe operation of the unit. In addition, the STA shall meet the qualifications specified by the Commission Policy Statement on Engineering Expertise on Shift.

5.2 Organization

5.2.2 Unit Staff (continued)

h. The qualified manpower necessary for achieving alternate shutdown using the Standby Shutdown Facility (SSF) will be available at the plant at all times. The manpower necessary to operate the SSF will be exclusive of the fire brigade and the minimum operating shift that is required to be present in the Control Room.

5.0 ADMINISTRATIVE CONTROLS

5.3 Unit Staff Qualifications

5.3.1 Each member of the unit staff shall meet or exceed the minimum qualifications referenced for comparable positions, as specified in the Duke Energy Corporation Quality Assurance Program Description (DUKE-QAPD-001-A).

5.0 ADMINISTRATIVE CONTROLS

5.4 Procedures

5.4.1 Written procedures shall be established, implemented, and maintained covering the following activities:

a. The applicable procedures recommended in Regulatory Guide 1.33, Revision 2, Appendix A, February 1978;

b. The emergency operating procedures required to implement the requirements of NUREG-0737 and NUREG-0737, Supplement 1, as stated in Generic Letter 82-33;

c. Quality assurance for effluent and environmental monitoring; and

d. All programs specified in Specification 5.5.

5.0 ADMINISTRATIVE CONTROLS

5.5 Programs and Manuals

The following programs shall be established, implemented, and maintained.

5.5.1 Offsite Dose Calculation Manual (ODCM)

The ODCM shall contain the methodology and parameters used in the calculation of offsite doses resulting from radioactive gaseous and liquid effluents, in the calculation of gaseous and liquid effluent monitoring alarm and trip setpoints, and in the conduct of the radiological environmental monitoring program.

Licensee initiated changes to the ODCM:

a. Shall be documented and records of reviews performed shall be retained. This documentation shall contain:

   1. sufficient information to support the change(s) together with the appropriate analyses or evaluations justifying the change(s), and

   2. a determination that the change(s) do not adversely impact the accuracy or reliability of effluent, dose, or setpoint calculations;

b. Shall become effective after the approval of the Plant Manager or Radiation Protection Manager; and

c. Shall be submitted to the NRC in the form of a complete, legible copy of the entire ODCM as a part of or concurrent with the Radioactive Effluent Release Report for the period of the report in which any change in the ODCM was made. Each change shall be identified by markings in the margin of the affected pages, clearly indicating the area of the page that was changed, and shall indicate the date (i.e., month and year) the change was implemented.

5.5.2 Containment Leakage Rate Testing Program

A program shall establish the leakage rate testing of the containment as required by 10 CFR 50.54(o) and 10 CFR 50, Appendix J, Option B, as modified by approved exemptions. The next Unit 1 ILRT following the November 29, 2014 test shall be performed no later than November 29, 2026. The next Unit 2 ILRT following the November 7, 2015 test shall be performed no later than November 28, 2027. The next Unit 3 ILRT following the May 10, 2016 test shall be performed no later than May 25, 2028. This program shall be in accordance with the guidelines contained in Regulatory Guide 1.163, “Performance-Based

5.5 Programs and Manuals

Containment Leak-Test Program," dated September 1995. Containment system visual examinations required by Regulatory Guide 1.163, Regulatory Position C.3 shall be performed as follows:

1. Accessible concrete surfaces and post-tensioning system component surfaces of the concrete containment shall be visually examined prior to initiating SR 3.6.1.1 Type A test. These visual examinations, or any portion thereof, shall be performed no earlier than 90 days prior to the start of refueling outages in which Type A tests will be performed. The validity of these visual examinations will be evaluated should any event or condition capable of affecting the integrity of the containment system occur between the completion of the visual examinations and the Type A test.

2. Accessible interior and exterior surfaces of metallic pressure retaining components of the containment system shall be visually examined at least three times every ten years, including during each shutdown for SR 3.6.1.1 Type A test, prior to initiating the Type A test.

The calculated peak containment internal pressure for the design basis loss of coolant accident, P_a, is 59 psig. The containment design pressure is 59 psig.

The maximum allowable containment leakage rate, L_a, at P_a, shall be 0.20% of the containment air weight per day.

Leakage rate acceptance criterion is:

a. Containment leakage rate acceptance criterion is $\leq 1.0\ L_a$. During the first unit startup following testing in accordance with this program, the leakage rate acceptance criteria are $\leq 0.60\ L_a$ for the Type B and C tests, and $\leq 0.75\ L_a$ for Type A tests;

The provisions of SR 3.0.3 are applicable to the Containment Leakage Rate Testing Program.

Nothing in these Technical Specifications shall be construed to modify the testing Frequencies of 10 CFR 50, Appendix J.

5.5 Programs and Manuals (continued)

5.5.3 Primary Coolant Sources Outside Containment

This program provides controls to minimize leakage from those portions of systems outside containment that could contain highly radioactive fluids during a serious transient or accident to levels as low as practicable. These systems include High Pressure Injection, Low Pressure Injection, Reactor Building Spray, Gaseous Waste Disposal, Makeup and Purification, Chemical Addition and Sampling, and Coolant Treatment. The program shall include the following:

a. Preventive maintenance and periodic visual inspection requirements; and

b. Integrated leak test requirements for each system at refueling cycle intervals or less.

5.5.4 DELETED

5.5.5 Radioactive Effluent Controls Program

This program conforms to 10 CFR 50.36a for the control of radioactive effluents and for maintaining the doses to members of the public from radioactive effluents as low as reasonably achievable. The program shall be contained in UFSAR Chapter 16, shall be implemented by procedures, and shall include remedial actions to be taken whenever the program limits are exceeded. The program shall include the following elements:

a. Limitations on the functional capability of radioactive liquid and gaseous monitoring instrumentation including surveillance tests and setpoint determination in accordance with the methodology in the ODCM;

b. Limitations on the concentrations of radioactive material released in liquid effluents to unrestricted areas, conforming to ten times 10 CFR Part 20.1001 - 20.2401, Appendix B, Table 2, Column 2;

5.5 Programs and Manuals

5.5.5 Radioactive Effluent Controls Program (continued)

c. Monitoring, sampling, and analysis of radioactive liquid and gaseous effluents in accordance with 10 CFR 20.1302 and with the methodology and parameters in the ODCM;

d. Limitations on the annual and quarterly doses or dose commitment to a member of the public from radioactive materials in liquid effluents released from each unit to unrestricted areas, conforming to 10 CFR 50, Appendix I;

e. Determination of cumulative and projected dose contributions from radioactive effluents for the current calendar quarter and current calendar year in accordance with the methodology and parameters in the ODCM at least every 31 days;

f. Limitations on the functional capability and use of the liquid and gaseous effluent treatment systems to ensure that appropriate portions of these systems are used to reduce releases of radioactivity when the projected doses in a period of 31 days would exceed 2% of the guidelines for the annual dose or dose commitment, conforming to 10 CFR 50, Appendix I;

g. Limitations on the dose rate resulting from radioactive material released in gaseous effluents to areas beyond the site boundary shall be limited to the following:

   1. For noble gases; Less than or equal to a dose rate of 500 mrems/yr to the total body and less than or equal to a dose rate of 3000 mrems/yr to the skin, and

   2. For iodine-131, for iodine-133, for tritium, and for all radionuclides in particulate form with half-lives greater than 8 days; less than or equal to a dose rate of 1500 mrems/yr to any organ.

h. Limitations on the annual and quarterly air doses resulting from noble gases released in gaseous effluents from each unit to areas beyond the site boundary, conforming to 10 CFR 50, Appendix I;

i. Limitations on the annual and quarterly doses to a member of the public from iodine-131, iodine-133, tritium, and all radionuclides in particulate form with half lives > 8 days in gaseous effluents released from each unit to areas beyond the site boundary, conforming to 10 CFR 50, Appendix I; and

5.5 Programs and Manuals

5.5.5 Radioactive Effluent Controls Program (continued)

j. Limitations on the annual dose or dose commitment to any member of the public due to releases of radioactivity and to radiation from uranium fuel cycle sources, conforming to 40 CFR 190.

k. Descriptions of the information that should be included in the Annual Radiological Environmental Operating, and Radioactive Effluent Release Reports required by Specification 5.6.2 and Specification 5.6.3.

Licensee initiated changes to the Radiological Effluent Controls of the UFSAR:

a. Shall be documented and records of reviews performed shall be retained. This documentation shall contain:

   1. Sufficient information to support the change(s) together with the appropriate analyses or evaluations justifying the change(s), and

   2. A determination that the change(s) maintain the overall conformance of the solidified waste product to existing requirements of Federal, State, or other applicable regulations or a determination that the change will maintain the level of radioactive effluent control required by 10 CFR 20.1302, 40 CFR Part 190, 10 CFR 50.36a, and Appendix I to 10 CFR Part 50 and not adversely impact the accuracy or reliability of effluent, dose, or setpoint calculations;

b. Shall become effective after approval of the station manager.

c. Shall be submitted to the Commission in the form of a complete, legible copy of the entire Section 16.11 of the UFSAR as a part of or concurrent with the Radioactive Effluent Release Report for the period of the report in which any changes to Section 16.11 of the UFSAR was made. Each change shall be identified by markings in the margin of the affected pages, clearly indicating the area of the page that was changed, and shall indicate the date (i.e., month/year) the change was implemented.

5.5.6 Component Cyclic or Transient Limit

This program provides controls to track the UFSAR, Section 5.2.1.4, cyclic and transient occurrences to ensure that components are maintained within the design limits.

5.5 Programs and Manuals

5.5.7 Pre-Stressed Concrete Containment Tendon Surveillance Program

This program provides controls for monitoring any tendon degradation in pre-stressed concrete containments, including effectiveness of its corrosion protection medium, to ensure containment structural integrity. The program shall include baseline measurements prior to initial operations. The Tendon Surveillance Program, inspection frequencies, and acceptance criteria shall be in accordance with Section XI, Subsection IWL of the ASME Boiler and Pressure Vessel Code and applicable addenda as required by 10 CFR 50.55a, as amended by relief granted in accordance with 10 CFR 50.55a(a)(3).

The provisions of SR 3.0.3 are applicable to the Tendon Surveillance Program inspection frequencies.

5.5.8 Reactor Coolant Pump Flywheel Inspection Program

This program shall provide for the inspection of each reactor coolant pump flywheel per the recommendations of Regulatory Position C.4.b of Regulatory Guide 1.14, Revision 1, August 1975.

In lieu of Position C.4.b(1) and C.4.b(2), a qualified in-place UT examination over the volume from the inner bore of the flywheel to the circle one-half of the outer radius or a surface examination (MT and/or PT) of exposed surfaces of the removed flywheels may be conducted at 20 year intervals.

5.5.9 Inservice Testing Program (Deleted)

Note: See Section 1.1 for the definition of INSERVICE TESTING PROGRAM.

5.5 Programs and Manuals

5.5.10 Steam Generator (SG) Program

A Steam Generator Program shall be established and implemented to ensure that SG tube integrity is maintained. In addition, the Steam Generator Program shall include the following:

a. Provisions for condition monitoring assessments. Condition monitoring assessment means an evaluation of the "as found" condition of the tubing with respect to the performance criteria for structural integrity and accident induced leakage. The "as found" condition refers to the condition of the tubing during an SG inspection outage, as determined from the inservice inspection results or by other means, prior to the plugging of tubes. Condition monitoring assessments shall be conducted during each outage during which the SG tubes are inspected or plugged to confirm that the performance criteria are being met.

5.5 Programs and Manuals

5.5.10 Steam Generator (SG) Program (continued)

b. Performance Criteria for SG tube integrity. SG tube integrity shall be maintained by meeting the performance criteria for tube structural integrity, accident induced leakage, and operational LEAKAGE.

1. Structural integrity performance criterion: All in-service steam generator tubes shall retain structural integrity over the full range of normal operating conditions (including startup, operation in the power range, hot standby, and cool down), all anticipated transients included in the design specification, and design basis accidents. This includes retaining a safety factor of 3.0 against burst under normal steady state full power operation primary-to-secondary pressure differential and a safety factor of 1.4 against burst applied to the design basis accident primary-to-secondary pressure differentials. Apart from the above requirements, additional loading conditions associated with the design basis accidents, or combination of accidents in accordance with the design and licensing basis, shall also be evaluated to determine if the associated loads contribute significantly to burst or collapse. In the assessment of tube integrity, those loads that do significantly affect burst or collapse shall be determined and assessed in combination with the loads due to pressure with a safety factor of 1.2 on the combined primary loads and 1.0 on axial secondary loads.

2. Accident induced leakage performance criterion: The primary to secondary accident induced leakage rate for any design basis accident, other than a SG tube rupture, shall not exceed the leakage rate assumed in the accident analysis in terms of total leakage rate for all SGs and leakage rate for an individual SG. Leakage is not to exceed 150 gallons per day per SG.

3. The operational LEAKAGE performance criterion is specified in LCO 3.4.13, "RCS Operational LEAKAGE."

c. Provisions for SG tube plugging criteria. Tubes found by inservice inspection to contain flaws with a depth equal to or exceeding 40% of the nominal tube wall thickness shall be plugged.

d. Provisions for SG tube inspections. Periodic tube inspections shall be performed. The number and portions of the tubes inspected and methods of inspection shall be performed with the objective of detecting flaws of any type (e.g., volumetric flaws, axial and circumferential cracks) that may be present along the length of the tube, from the tube-to-tubesheet weld at the tube inlet to the tube-to-tubesheet weld at the tube outlet, and that may satisfy the applicable tube plugging criteria. The tube-to-tubesheet weld is not part of the tube. In addition to meeting the requirements of d.1, d.2, and d.3 below, the inspection scope, inspection methods, and inspection intervals shall be

5.5 Programs and Manuals

5.5.10 Steam Generator (SG) Program (continued)

such as to ensure that SG tube integrity is maintained until the next SG inspection. A degradation assessment shall be performed to determine the type and location of flaws to which the tubes may be susceptible and, based on this assessment, to determine which inspection methods need to be employed and at what locations.

1. Inspect 100% of the tubes in each SG during the first refueling outage following SG installation.

2. After the first refueling outage following SG installation, inspect each SG at least every 72 effective full power months or at least every third refueling outage (whichever results in more frequent inspections). In addition, the minimum number of tubes inspected at each scheduled inspection shall be the number of tubes in all SGs divided by the number of SG inspection outages scheduled in each inspection period as defined in a, b, c and d below. If a degradation assessment indicates the potential for a type of degradation to occur at a location not previously inspected with a technique capable of detecting this type of degradation at this location and that may satisfy the applicable tube plugging criteria, the minimum number of locations inspected with such a capable inspection technique during the remainder of the inspection period may be prorated. The fraction of locations to be inspected for this potential type of degradation at this location at the end of the inspection period shall be no less than the ratio of the number of times the SG is scheduled to be inspected in the inspection period after the determination that a new form of degradation could potentially be occurring at this location divided by the total number of times the SG is scheduled to be inspected in the inspection period. Each inspection period defined below may be extended up to 3 effective full power months to include a SG inspection outage in an inspection period and the subsequent inspection period begins at the conclusion of the included SG inspection outage.

   a) After the first refueling outage following SG installation, inspect 100% of the tubes during the next 144 effective full power months. This constitutes the first inspection period;

   b) During the next 120 effective full power months, inspect 100% of the tubes. This constitutes the second inspection period;

   c) During the next 96 effective full power months, inspect 100% of the tubes. This constitutes the third inspection period; and

   d) During the remaining life of the SGs, inspect 100% of the tubes every 72 effective full power months. This constitutes the fourth and subsequent inspection periods.

5.5 Programs and Manuals

5.5.10 Steam Generator (SG) Program (continued)

3. If crack indications are found in any SG tube, then the next inspection for each affected and potentially affected SG for the degradation mechanism that caused the crack indication shall not exceed 24 effective full power months or one refueling outage (whichever results in more frequent inspections). If definitive information, such as from examination of a pulled tube, diagnostic non-destructive testing, or engineering evaluation indicates that a crack-like indication is not associated with a crack(s), then the indication need not be treated as a crack.

e. Provisions for monitoring operational primary to secondary LEAKAGE.

5.5.11 Secondary Water Chemistry

This program provides controls for monitoring secondary water chemistry to inhibit SG tube degradation. The program shall include:

a. Identification of a sampling schedule for the critical variables and control points for these variables;

b. Identification of the procedures used to measure the values of the critical variables;

c. Identification of process sampling points;

d. Procedures for the recording and management of data;

e. Procedures defining corrective actions for all off control point chemistry conditions; and

f. A procedure identifying the authority responsible for the interpretation of the data and the sequence and timing of administrative events, which is required to initiate corrective action.

5.5.12 Ventilation Filter Testing Program (VFTP)

A program shall be established to implement the following required testing of filter ventilation systems at the frequencies specified in Regulatory Guide 1.52, Revision 2, except that the testing specified at a frequency of 18 months is required at a frequency of 24 months.

5.5 Programs and Manuals

5.5.12 Ventilation Filter Testing Program (VFTP) (continued)

The VFTP is applicable to the Control Room Ventilation System (CRVS) Booster Fan Trains and the Spent Fuel Pool Ventilation System (SFPVS).

a. Demonstrate, for the CRVS Booster Fan Trains, that a DOP test of the HEPA filters shows ≥ 99.5% removal when tested in accordance with ANSI N510-1975 at the system design flow rate ± 10%.

b. Demonstrate, for the CRVS Booster Fan Trains, that a halogenated hydrocarbon test of the carbon adsorber shows ≥ 99% removal when tested in accordance with ANSI N510-1975 at the system design flow rate ± 10%.

c. Demonstrate, for the CRVS Booster Fan Trains and SFPVS, that a laboratory test of a sample of the carbon adsorber shows ≥ 97.5% and 90% radioactive methyl iodide removal when tested in accordance with ASTM D3803-1989 (30°C, 95% RH), respectively.

d. Demonstrate, for the CRVS Booster Fan Trains, that the pressure drop across the pre-filter is ≤ 1 in. of water and the pressure drop across the HEPA filters is ≤ 2 in. of water at the system design flow rate ± 10%.

e. Demonstrate, for the SFPVS, that a dioctyl phthalate (DOP) test of the high efficiency particulate air (HEPA) filters shows ≥ 99% removal when tested in accordance with ANSI N510-1975 at the system design flow rate ± 10%.

f. Demonstrate, for the SFPVS, that a halogenated hydrocarbon test of the carbon adsorber shows ≥ 99% removal when tested in accordance with ANSI N510-1975 at the system design flow rate ± 10%.

The provisions of SR 3.0.2 and SR 3.0.3 are applicable to the VFTP test frequencies.

5.5.13 Explosive Gas and Storage Tank Radioactivity Monitoring Program

This program provides controls for potentially explosive gas mixtures contained in the waste gas holdup tanks and the quantity of radioactivity contained in waste gas holdup tanks, and the quantity of radioactivity contained in unprotected outdoor liquid storage tanks. The gaseous radioactivity quantities shall be determined. The liquid radwaste quantities shall be determined by analyzing a representative sample of the tank's contents at least once per 7 days when radioactive materials are being added to the tank.

5.5 Programs and Manuals

5.5.13 Explosive Gas and Storage Tank Radioactivity Monitoring Program (continued)

The program shall include:

a. The limit for concentration of hydrogen in the waste gas holdup tanks and a surveillance program to ensure the limit is maintained. The limit shall be appropriate to the system's design criteria (i.e., whether or not the system is designed to withstand a hydrogen explosion);

b. A surveillance program to ensure that the quantity of radioactivity contained in each waste gas holdup tank is less than the amount that would result in a whole body exposure of ≥ 0.5 rem to any individual at the nearest exclusion area boundary, in the event of an uncontrolled release of the tank's contents.

c. A surveillance program to ensure that the quantity of radioactivity contained in all outdoor liquid radwaste tanks that are not surrounded by liners, dikes, or walls, capable of holding the tanks' contents and that do not have tank overflows and surrounding area drains connected to the Liquid Radwaste Treatment System is less than 10 curies excluding tritium and dissolved or entrained gases.

The provisions of SR 3.0.2 and SR 3.0.3 are applicable to the Explosive Gas and Storage Tank Radioactivity Monitoring Program surveillance frequencies.

5.5.14 Standby Shutdown Facility (SSF) Diesel Fuel Oil Testing Program

A diesel fuel oil testing program to implement required testing of SSF fuel oil shall be established. The program shall include sampling and testing requirements, and acceptance criteria, all in accordance with applicable ASTM Standards. The purpose of the program is to establish the acceptability of Day Tank and Underground Storage Tank fuel oil for use by determining that the fuel oil viscosity, water and sediment are within limits.

5.5.15 Technical Specifications (TS) Bases Control Program

This program provides a means for processing changes to the Bases of these Technical Specifications.

a. Changes to the Bases of the TS shall be made under appropriate administrative controls and reviews.

5.5 Programs and Manuals

5.5.15 Technical Specifications (TS) Bases Control Program (continued)

b. Licensees may make changes to Bases without prior NRC approval provided the changes do not require either of the following:

1. A change in the TS incorporated in the license; or

2. A change to the updated FSAR or Bases that requires NRC approval pursuant to 10 CFR 50.59.

c. The Bases Control Program shall contain provisions to ensure that the Bases are maintained consistent with the UFSAR .

d. Proposed changes that meet the criteria of 5.5.15.b.1 or 5.5.15.b.2 above shall be reviewed and approved by the NRC prior to implementation. Changes to the Bases implemented without prior NRC approval shall be provided to the NRC on a frequency consistent with 10 CFR 50.71(e).

5.5.16 Safety Function Determination Program (SFDP)

This program ensures loss of safety function is detected and appropriate actions taken. Upon entry into LCO 3.0.6, an evaluation shall be made to determine if loss of safety function exists. Additionally, other appropriate limitations and remedial or compensatory actions may be identified to be taken as a result of the support system inoperability and corresponding exception to entering supported system Condition and Required Actions. This program implements the requirements of LCO 3.0.6. The SFDP shall contain the following:

a. Provisions for cross train checks to ensure a loss of the capability to perform the safety function assumed in the accident analysis does not go undetected;

b. Provisions for ensuring the plant is maintained in a safe condition if a loss of safety function condition exists;

c. Provisions to ensure that an inoperable supported system's Completion Time is not inappropriately extended as a result of multiple support system inoperabilities; and

d. Other appropriate limitations and remedial or compensatory actions.

5.5 Programs and Manuals

5.5.16 Safety Function Determination Program (SFDP) (continued)

A loss of safety function exists when, assuming no concurrent single failure, a safety function assumed in the accident analysis cannot be performed. For the purpose of this program, a loss of safety function may exist when a support system is inoperable, and:

a. A required system redundant to the system(s) supported by the inoperable support system is also inoperable; or

b. A required system redundant to the system(s) in turn supported by the inoperable supported system is also inoperable; or

c. A required system redundant to the support system(s) for the supported systems (a) and (b) above is also inoperable.

The SFDP identifies where a loss of safety function exists. If a loss of safety function is determined to exist by this program, the appropriate Conditions and Required Actions of the LCO in which the loss of safety function exists are required to be entered.

5.5.17 Backup Method for Determining Subcooling Margin

This program ensures the capability to accurately monitor the Reactor Coolant System Subcooling Margin. The program shall include the following:

a. Training of personnel, and

b. Procedures for monitoring.

5.5.18 KHU Commercial Power Generation Testing Program

The KHU Commercial Power Generation Testing Program shall include the following and shall be met during periods of KHU commercial power generation:

a. Verify upon an actual or simulated actuation signal, each KHU's overhead tie breaker and underground tie breaker actuate to the correct position from an initial condition of commercial power generation every 18 months.

b. Verify upon an actual or simulated actuation signal, each KHU's frequency is $\leq$ 66 Hz in $\leq$ 23 seconds from an initial condition of commercial power generation every 18 months.

5.5 Programs and Manuals (continued)

5.5.18 KHU Commercial Power Generation Testing Program (continued)

The provisions of SR 3.0.2 and SR 3.0.3 are applicable to the KHU Commercial Power Generation Testing Program surveillance frequencies.

5.5.19 Lee Combustion Turbine Testing Program

The Lee Combustion Turbine (LCT) Testing program shall include the following and shall be met when a LCT is used to comply with Required Actions of Specification 3.8.1, "AC Sources-Operating" or as a emergency power source as allowed by LCO 3.8.2, "AC Sources-Shutdown":

a. Verify an LCT can energize both standby buses using 100kV line electrically separated from system grid and offsite loads every 12 months.

b. Verify an LCT can supply equivalent of one Unit's Loss of Coolant Accident (LOCA) loads plus two Unit's Loss of Offsite Power (LOOP) loads when connected to system grid every 12 months.

c. Verify an LCT can provide equivalent of one Unit's LOCA loads within one hour through 100kV line electrically separated from system grid and offsite loads every 24 months.

The provisions of SR 3.0.2 and SR 3.0.3 are applicable to the Lee Combustion Turbine Testing Program surveillance frequencies.

5.5.20 Battery Discharge Testing Program

The Battery Discharge Testing Program shall include the following and shall be met for batteries used to comply with LCO 3.8.3, "DC Sources Operating."

a. Verify battery capacity is ≥ 80% of the manufacturer's rating when subjected to a performance discharge test or a modified performance discharge test once every 60 months. This frequency shall be reduced to 12 months when battery shows degradation, or has reached 90% of the expected life with capacity < 100% of manufacturer's rating, and 24 months when battery has reached 90% of the expected life with capacity ≥ 100% of manufacturer's rating.

5.5 Programs and Manuals

5.5.20 Battery Discharge Testing Program (continued)

b. If battery capacity is determined to be < 80% of the manufacturer's rating an OPERABILITY evaluation shall be initiated immediately and completed within the guidelines of the Oconee OPERABILITY program. If the OPERABILITY evaluation determines the battery OPERABLE, battery capacity shall be restored to ≥ 80% of the manufacturer's rating within a time frame commensurate with the safety significance of the issue. Otherwise, the battery shall be declared inoperable and the applicable Condition of Specification 3.8.3 shall be entered.

The provisions of SR 3.0.2 and SR 3.0.3 are applicable to the Battery Discharge Testing Program surveillance frequencies.

5.5.21 Surveillance Frequency Control Program

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

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

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

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

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5.5.22 Protected Service Water System Battery Monitoring and Maintenance Program

This program is applicable only to the Protected Service Water Battery cells and provides for battery restoration and maintenance, based on the recommendation of IEEE Standard 450-1995. "IEEE Recommended Practice for Maintenance, Testing, and Replacement of Vented Lead-Acid Batteries for Stationary Applications," including the following:

1. Actions to restore battery cells with float voltage ≤ 2.13 V;
2. Actions to determine whether the float voltage of the remaining battery cells is > 2.13 V when the float voltage of a battery cell has been found to be ≤ 2.13 V;
3. Actions to equalize and test battery cells that had been discovered with electrolyte level below the top of the plates;
4. Limits on average electrolyte temperature, battery connection resistance, and battery terminal voltage; and
5. A requirement to obtain specific gravity readings of all cells at each discharge test, consistent with manufacturer recommendations

5.5.23 Control Room Envelope Habitability Program

A Control Room Envelope (CRE) Habitability Program shall be established and implemented to ensure that CRE habitability is maintained such that, with an OPERABLE Control Room Ventilation System, CRE occupants can control the reactor safely under normal conditions and maintain it in a safe condition following a radiological event, hazardous chemical release, or a smoke challenge. The program shall ensure that adequate radiation protection is provided to permit access and occupancy of the CRE under design basis accident (DBA) conditions without personnel receiving radiation exposures in excess of 5 rem total effective dose equivalent (TEDE) for the duration of the accident.

The program shall include the following elements:

a. The definition of the CRE and the CRE boundary.

b. Requirements for maintaining the CRE boundary in its design condition including configuration control and preventive maintenance.

c. Requirements for (i) determining the unfiltered air inleakage past the CRE boundary into the CRE in accordance with the testing methods and at the Frequencies specified in Sections C.1 and C.2 of Regulatory Guide 1.197, "Demonstrating Control Room Envelope Integrity at Nuclear Power Reactors," Revision 0, May 2003, and (ii) assessing CRE habitability at the

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5.5.23 Control Room Envelope Habitability Program (continued)

Frequencies specified in Sections C.1 and C.2 of Regulatory Guide 1.197, Revision 0.

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

e. The quantitative limits on unfiltered air inleakage into the CRE. These limits shall be stated in a manner to allow direct comparison to the unfiltered air inleakage measured by the testing described in paragraph c. The unfiltered air inleakage limit for radiological challenges is the inleakage flow rate assumed in the licensing basis analyses of DBA consequences. Unfiltered air inleakage limits for hazardous chemicals must ensure that exposure of CRE occupants to these hazards will be within the assumptions in the licensing basis.

f. The provisions of SR 3.0.2 are applicable to the Frequencies for assessing CRE habitability, determining CRE unfiltered inleakage, and measuring CRE pressure and assessing the CRE boundary as required by paragraphs c and d, respectively.

5.0 ADMINISTRATIVE CONTROLS

5.6 Reporting Requirements

The following reports shall be submitted in accordance with 10 CFR 50.4.

5.6.1 Deleted

5.6.2 Annual Radiological Environmental Operating Report

-----NOTE-----
A single submittal may be made for a multiple unit station. The submittal should combine sections common to all units at the station.

The Annual Radiological Environmental Operating Report covering the operation of the unit during the previous calendar year shall be submitted by May 15 of each year.

The report shall include summaries, interpretations, and analyses of trends of the results of the radiological environmental monitoring program for the reporting period. The material provided shall be consistent with the objectives outlined in the Offsite Dose Calculation Manual (ODCM), and in 10 CFR 50, Appendix I, Sections IV.B.2, IV.B.3, and IV.C.

5.6 Reporting Requirements (continued)

5.6.3 Radioactive Effluent Release Report

---NOTE---
A single submittal may be made for a multiple unit station. The submittal should combine sections common to all units at the station; however, for units with separate radwaste systems, the submittal shall specify the releases of radioactive material from each unit.

The Radioactive Effluent Release Report covering the operation of the unit in the previous year shall be submitted prior to May 1 of each year in accordance with 10 CFR 50.36a. The report shall include a summary of the quantities of radioactive liquid and gaseous effluents and solid waste released from the unit. The material provided shall be consistent with the objectives outlined in the ODCM and Process Control Program and in conformance with 10 CFR 50.36a and 10 CFR part 50, Appendix I, Section IV.B.1.

5.6.4 Deleted

5.6.5 CORE OPERATING LIMITS REPORT (COLR)

Core operating limits shall be established, determined and issued in accordance with the following:

a. Core operating limits shall be established prior to each reload cycle, or prior to any remaining portion of a reload cycle, and shall be documented in the COLR for the following:

   1. Shutdown Margin limit for Specification 3.1.1;

   2. Moderator Temperature Coefficient limit for Specification 3.1.3;

   3. Physical Position, Sequence and Overlap limits for Specification 3.2.1 Rod Insertion Limits;

   4. AXIAL POWER IMBALANCE operating limits for Specification 3.2.2;

   5. QUADRANT POWER TILT (QPT) limits for Specification 3.2.3;

5.6 Reporting Requirements

5.6.5 CORE OPERATING LIMITS REPORT (COLR) (continued)

6. Nuclear Overpower Flux/Flow/Imbalance and RCS Variable Low Pressure allowable value limits for Specification 3.3.1;

7. RCS Pressure, Temperature, and Flow Departure from Nucleate Boiling (DNB) Limits for Specification 3.4.1

8. Core Flood Tanks Boron concentration limits for Specification 3.5.1;

9. Borated Water Storage Tank Boron concentration limits for Specification 3.5.4;

10. Spent Fuel Pool Boron concentration limits for Specification 3.7.12;

11. RCS and Transfer Canal boron concentration limits for Specification 3.9.1; and

12. AXIAL POWER IMBALANCE protective limits and RCS Variable Low Pressure protective limits for Specification 2.1.1.

b. The analytical methods used to determine the core operating limits shall be those previously reviewed and approved by the NRC, specifically those described in the following documents:

(1) DPC-NE-1002-A, Reload Design Methodology II;

(2) NFS-1001-A, Reload Design Methodology;

(3) DPC-NE-2003-P-A, Oconee Nuclear Station Core Thermal Hydraulic Methodology Using VIPRE-01;

(4) DPC-NE-1004-A, Nuclear Design Methodology Using CASMO-3/SIMULATE-3P;

(5) DPC-NE-2008-P-A, Fuel Mechanical Reload Analysis Methodology Using TACO3 and GDTACO;

(6) BAW-10192-P-A, BWNT LOCA - BWNT Loss of Coolant Accident Evaluation Model for Once-Through Steam Generator Plants;

5.6 Reporting Requirements

5.6.5 CORE OPERATING LIMITS REPORT (COLR) (continued)

(7) DPC-NE-3000-P-A, Thermal Hydraulic Transient Analysis Methodology;

(8) DPC-NE-2005-P-A, Thermal Hydraulic Statistical Core Design Methodology;

(9) DPC-NE-3005-P-A, UFSAR Chapter 15 Transient Analysis Methodology :

(10) BAW-10227-P-A, Evaluation of Advanced Cladding and Structural Material (M5) in PWR Reactor Fuel;

(11) BAW-10164P-A, RELAP 5/MOD2-B&W – An Advanced Computer Program for Light Water Reactor LOCA and non-LOCA Transient Analysis; and

(12) DPC-NE-1006-P-A, Oconee Nuclear Design Methodology Using CASMO-4/SIMULATE-3 (Revision 0, May 2009).

The COLR will contain the complete identification for each of the Technical Specifications referenced topical reports used to prepare the COLR (i.e., report number, title, revision number, report date or NRC SER date, and any supplements).

c. The core operating limits shall be determined such that all applicable limits (e.g., fuel thermal mechanical limits, core thermal hydraulic limits, Emergency Core Cooling System (ECCS) limits, nuclear limits such as SDM, transient analysis limits, and accident analysis limits) of the safety analysis are met.

d. The COLR, including any midcycle revisions or supplements, shall be provided upon issuance for each reload cycle to the NRC.

5.6.6 Post Accident Monitoring (PAM) and Main Feeder Bus Monitor Panel (MFPMP) Report

When a report is required by Condition B or G of LCO 3.3.8, "Post Accident Monitoring (PAM) Instrumentation" or Condition D of LCO 3.3.23, "Main Feeder Bus Monitor Panel," a report shall be submitted within the following 14 days. The report shall outline the preplanned alternate method of monitoring (PAM only), the cause of the inoperability, and the plans and schedule for restoring the instrumentation channels of the Function to OPERABLE status.

5.6 Reporting Requirements

5.6.7 Tendon Surveillance Report

Any abnormal degradation of the containment structure detected during the tests required by the Pre-stressed Concrete Containment Tendon Surveillance Program shall be reported to the NRC within 30 days. The report shall include a description of the tendon condition, the condition of the concrete (especially at tendon anchorages), the inspection procedures, the tolerances on cracking, and the corrective action taken.

5.6.8 Steam Generator Tube Inspection Report

A report shall be submitted within 180 days after the initial entry into MODE 4 following completion of an inspection performed in accordance with Specification 5.5.10, Steam Generator (SG) Program. The report shall include:

a. The scope of inspections performed on each SG,

b. Active degradation mechanisms found,

c. Nondestructive examination techniques utilized for each degradation mechanism,

d. Location, orientation (if linear), and measured sizes (if available) of service induced indications,

e. Number of tubes plugged during the inspection outage for each active degradation mechanism,

f. Total number and percentage of tubes plugged to date,

g. The results of condition monitoring, including the results of tube pulls and in-situ testing, and

h. The effective plugging percentage for all plugging in each SG.