NEXTERA ENERGY POINT BEACH, LLC

DOCKET NO. 50-266

RENEWED FACILITY OPERATING LICENSE

Renewed License No. DPR-24

1. The Nuclear Regulatory Commission (NRC or the Commission), having previously made the findings set forth in License DPR-24 issued on October 5, 1970, has now found that:

   A. The application to renew operating License No. DPR-24 filed by Nuclear Management Company, LLC (NMC) 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 1, and all required notifications to other agencies or bodies have been duly made;

   B. Construction of the Point Beach Nuclear Plant Unit 1 (the facility) has been substantially completed, in conformity with Provisional Construction Permit No. CPPR-32, as amended, the application as amended, the provisions of the Act, and the rules and regulations of the Commission;

   C. Actions have been identified and have been or will be taken with respect to (1) managing the effects of aging during the 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 the renewed operating license will continue to be conducted in accordance with the current licensing basis, as defined in 10 CFR 54.3, for the facility, and that any changes made to the facility's current licensing basis in order to comply with 10 CFR 54.29(a) are in accordance with the Act and the Commission's regulations;

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

   E. There is reasonable assurance (1) that the activities authorized by the renewed operating license can be conducted without endangering the health and safety of the public, and (2) that such activities will be conducted in compliance with the regulations of the Commission set forth in 10 CFR Chapter 1;

F. NextEra Energy Point Beach is technically and financially qualified to engage in the activities authorized by this renewed operating license in accordance with the regulations of the Commission set forth in 10 CFR Chapter 1;

G. The applicable provisions of 10 CFR Part 140, "Financial Protection Requirements and Indemnity Agreements," have been satisfied; and

H. The issuance of this renewed operating license will not be inimical to the common defense and security or to the health and safety of the public.

2. This renewed operating license applies to the Point Beach Nuclear Plant Unit 1, a closed cycle, pressurized, light water moderated and cooled reactor, and associated steam generators and electric generating equipment (the facility). The facility is located on the Point Beach site, in the Town of Two Creeks, Manitowoc County, Wisconsin, and is described in the Final Safety Analysis Report (FSAR), as supplemented and amended.

3. Subject to the conditions and requirements incorporated herein the Commission hereby licenses:

A. Pursuant to Section 104b of the Act and 10 CFR Part 50, "Domestic Licensing of Production and Utilization Facilities," NextEra Energy Point Beach to possess, use and operate the facility at the designated location on the Point Beach site in accordance with the procedures and limitations set forth in this renewed operating license;

B. Pursuant to the Act and 10 CFR Part 70, NextEra Energy Point Beach 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 Final Facility Description and Safety Analysis Report, as supplemented and amended as of March 17, 1976;

C. Pursuant to the Act and 10 CFR Parts 30, 40 and 70, NextEra Energy Point Beach to receive, possess and use at any time any 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, NextEra Energy Point Beach to receive, possess and use in amounts as required any byproduct, source or special nuclear material without restriction to chemical or physical form, for sample analysis or instrument calibration or associated with radioactive apparatus or components; and

E. Pursuant to the Act and 10 CFR Parts 30 and 70, NextEra Energy Point Beach to possess such byproduct and special nuclear materials as may be produced by the operation of the facility, but not to separate such materials retained within the fuel cladding.

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

A. Maximum Power Levels

NextEra Energy Point Beach is authorized to operate the facility at reactor core power levels not in excess of 1800 megawatts thermal.

B. Technical Specifications

The Technical Specifications contained in Appendices A and B, as revised through Amendment No. 274, are hereby incorporated in the renewed operating license. NextEra Energy Point Beach shall operate the facility in accordance with Technical Specifications.

C. Spent Fuel Pool Modification

The licensee is authorized to modify the spent fuel storage pool to increase its storage capacity from 351 to 1502 assemblies as described in licensee's application dated March 21, 1978, as supplemented and amended. In the event that the on-site verification check for poison material in the poison assemblies discloses any missing boron plates, the NRC shall be notified and an on-site test on every poison assembly shall be performed.

D. Physical Protection

NextEra Energy Point Beach 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 contain Safeguards Information protected under 10 CFR 73.21, is entitled: "Point Beach Nuclear Plant Physical Security Plan, (Revision 4)," submitted by letter dated May 10, 2006. NextEra Energy Point Beach, LLC shall fully implement and maintain in effect all provisions of the Commission-approved Point Beach Nuclear Plant Cyber Security Plan (CSP), including changes made pursuant to the authority of 10 CFR 50.90 and 10 CFR 50.54(p). The NextEra Energy Point Beach CSP was approved by License Amendment No. 243 as supplemented by a change approved by License Amendment No. 247 and License Amendment No. 252.

E. Adoption of 10 CFR 50.69, "Risk-Informed categorization and treatment of structures, systems, and components for nuclear power plants"

1. NextEra Energy Point Beach is approved to implement 10 CFR 50.69 using the processes for categorization of Risk-Informed Safety Class (RISC)-1, RISC-2, RISC-3, and RISC-4 structures, systems, and components (SSCs) using: Probabilistic Risk Assessment (PRA) models to evaluate risk associated with internal events, including internal flooding, and internal fire; the shutdown safety assessment process to assess shutdown risk; the Arkansas Nuclear One, Unit 2 (AN0-2) passive categorization method to assess passive component risk for Class 2 and Class 3 SSCs and their associated supports; and the results of non-PRA evaluations that are based on the IPEEE Screening Assessment for External Hazards, i.e., seismic margin analysis (SMA) to evaluate seismic risk, and a screening of other external hazards updated using the external hazard screening significance process identified in ASME/ANS PRA Standard RA-Sa-2009; as specified in License Amendment No. 262 dated November 26, 2018.

2. Prior to implementation of the provisions of 10 CFR 50.69, NextEra Energy Point Beach shall complete the items below:

   a. Item A in Attachment 1, List of Categorization Prerequisites, to NextEra Energy Point Beach letter NRC 2017-0043, "License Amendment Request 287, Application to Adopt 10 CFR 50.69, 'Risk-Informed Categorization and Treatment of Structures, Systems, and Components (SSCs) for Nuclear Power Plants,' " dated August 31, 2017; and

   b. Attachment 1, Point Beach 10 CFR 50.69 PRA Implementation Items, in NextEra Energy Point Beach letter NRC-2018-0044, "Supplement to Response to Request for Additional Information Regarding License Amendment Request 287, Application to Adopt 10 CFR 50.69, 'Risk informed Categorization and Treatment of Structures, System, and Components (SSCs) for Nuclear Power Plants,' " dated September 28, 2018.

3. Prior NRC approval, under 10 CFR 50.90, is required for a change to the categorization process specified above (e.g., change from a seismic margins approach to a seismic probabilistic risk assessment approach).

F. NextEra Energy Point Beach Unit 1 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 license amendment request dated June 26, 2013, and supplements dated September 16, 2013, July 29, 2014, August 28, 2014, September 25, 2014, November 14, 2014, December 19, 2014, January 16, 2015, May 12, 2015, August 26, 2015, February 22, 2016, April 07, 2016, and May 3, 2016, and as approved in the safety evaluation report dated September 8, 2016. 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 license condition, and the criteria listed below are satisfied.

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

   A risk assessment of the change must demonstrate that the acceptance criteria below are met. The risk assessment approach, methods, and data shall be acceptable to the NRC and shall be appropriate for the nature and scope of the change being evaluated; be based on the as-built, as-operated, and maintained plant; and reflect the operating experience at the plant. Acceptable methods to assess the risk of the change may include methods that have been used in the peer-reviewed fire PRA model, methods that have been approved by NRC through a plant-specific license amendment or NRC approval of generic methods specifically for use in NFPA 805 risk assessments, or methods that have been demonstrated to bound the risk impact.

   a. 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.

   b. Prior NRC review and approval is not required for individual changes that result in a risk increase less than 1×10-7/year (yr) for CDF and less than 1×10-8/yr for LERF. 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.

2. Other Changes that May Be Made Without Prior NRC Approval

   a. 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.)

   b. 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 safety evaluation report dated September 8, 2016 to determine that certain fire protection program changes meet the minimal 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.

3. Transition License Conditions

   a. Before achieving full compliance with 10 CFR 50.48(c), as specified by 3.b and 3.c below, risk-informed changes to the licensee's fire protection program may not be made without prior NRC review and approval unless the change has been demonstrated to have no more than a minimal risk impact, as described in 2.b above.

   b. The licensee shall implement the modifications to its facility as described in Attachment S, Table S-2 "Plant Modifications Committed," of NextEra Energy Point Beach letter NRC-2016-0013 to complete the transition to full compliance with 10 CFR 50.48(c) no later than prior to startup from the second refueling outage (for each unit) after receipt of the license amendment. The licensee shall maintain appropriate compensatory measures in place until completion of these modifications.

   c. The licensee shall implement the items in Attachment S, Table S-3, "Implementation Items," of NextEra Energy Point Beach letter NRC-2016-0021, with the exception of items noted below, within 12 months after NRC approval unless that falls within a scheduled outage window; then in that case, completion will occur 60 days after the startup from that scheduled outage.

      i. Implementation item 120 is an exception as the industry guidance is under review by the NRC and the final resolution will occur 12 months after the guidance is available unless that falls within a scheduled outage window; then in that case, completion will occur 60 days after startup from that scheduled outage.

      ii. Implementation items 142 and 150 are exceptions because they are associated with completion of committed modifications identified in LAR Attachment S, Table S-2 and will not be completed until 3 months following the last refueling outage identified in item 3.b above.

G. Secondary Water Chemistry Monitoring Program

NextEra Energy Point Beach shall implement a secondary water chemistry monitoring program to inhibit steam generator tube degradation. This program shall include:

1. Identification of a sampling schedule for the critical parameters and control points for these parameters;
2. Identification of the procedures used to quantify parameters that are critical to control points;
3. Identification of process sampling points;
4. Procedure for the recording and management of data;
5. Procedures defining corrective actions for off control point chemistry condition; and
6. A procedure for identifying the authority responsible for the interpretation of the data, and the sequence and timing of administrative events required to initiate corrective action.

H. The licensee is authorized to repair Unit 1 steam generators by replacement of major components. Repairs shall be conducted in accordance with the licensee's commitments identified in the Commission approved Point Beach Nuclear Plant Unit No. 1 Steam Generator Repair Report, dated August 9, 1982 and revised March 1, 1983 and additional commitments identified in the staff's related safety evaluation.

I. Containment Building Construction Truss

NextEra Energy Point Beach shall complete implementation items 1, 2, 3, 5, and 6 included in Attachment 3 of licensee letter NRC 2019-0007 dated March 13, 2019 in accordance with the updated descriptions and completion dates in Attachment 3 of the Enclosure to licensee letter NRC 2020-0020 dated August 13, 2020.

J. Deleted

K. All capsules in the reactor vessel that are removed and tested must meet the test procedures and reporting requirements of American Society for Testing and Materials (ASTM) E 185-82 to the extent practicable for the configuration of the specimens in the capsule. Any changes to the capsule withdrawal schedule, including spare capsules, must be approved by the NRC prior to implementation. All capsules placed in storage must be maintained for future insertion. Any changes to storage requirements must be approved by the NRC, as required by 10 CFR Part 50, Appendix H.

L. Mitigation Strategy

Strategies shall be developed and maintained for addressing large fires and explosions that include the following key areas:

1. Fire fighting response strategy with the following elements:

   a. Pre-defined coordinated fire response strategy and guidance
   b. Assessment of mutual aid fire fighting assets
   c. Designated staging areas for equipment and materials
   d. Command and control
   e. Training of response personnel

2. Operations to mitigate fuel damage considering the following:

   a. Protection and use of personnel assets
   b. Communications
   c. Minimizing fire spread
   d. Procedures for implementing integrated fire response strategy
   e. Identification of readily-available pre-staged equipment
   f. Training on integrated fire response strategy
   g. Spent fuel pool mitigation measures

3. Actions to minimize release to include consideration of:

   a. Water spray scrubbing
   b. Dose to onsite responders

M. <u>Additional Conditions</u>

The additional conditions contained in Appendix C, as revised through Amendment No. 241, are hereby incorporated into this license. NextEra Energy Point Beach shall operate the facility in accordance with the additional conditions.

5. The issuance of this renewed operating license is without prejudice to subsequent licensing action which may be taken by the Commission with regard to the ongoing rulemaking hearing on the Interim Acceptance Criteria for Emergency Core Cooling Systems (Docket No. RM 50-1).

6. This renewed operating license is effective as of the date of issuance, and shall expire at midnight on October 5, 2030.

FOR THE NUCLEAR REGULATORY COMMISSION

Original Signed By

R. W. Borchardt, Deputy Director
Office of Nuclear Reactor Regulation

Attachments:
1. Appendix A - Technical Specifications
2. Appendix B – Environmental Technical Specifications
3. Appendix C - Additional Conditions

Date of Issuance: December 22, 2005

APPENDIX A

TO

FACILITY OPERATING LICENSE DPR-24

AND

FACILITY OPERATING LICENSE DPR-27

FOR POINT BEACH NUCLEAR PLANT UNIT NOS. 1 AND 2

NEXTERA ENERGY POINT BEACH

DOCKET NOS. 50-266 AND 50-301

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.
ACTUATION LOGIC TEST	An ACTUATION LOGIC TEST shall be the application of various simulated or actual input combinations in conjunction with each possible interlock logic state required for OPERABILITY of a logic circuit and the verification of the required logic output. The ACTUATION LOGIC TEST, as a minimum, shall include a continuity check of output devices.
AXIAL FLUX DIFFERENCE (AFD)	AFD shall be the difference in normalized flux signals between the top and bottom halves of a two section excore neutron detector.
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. 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. The CHANNEL CALIBRATION may be performed by means of any series of sequential, overlapping, or total channel steps, and each step must be performed within the Frequency in the Surveillance Frequency Control Program for the devices included in the step.
CHANNEL CHECK	A CHANNEL CHECK shall be 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.

1.1 Definitions

CHANNEL OPERATIONAL TEST (COT)	A COT shall be 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. The COT shall include adjustments, as necessary, of the required alarm, interlock, and trip setpoints required for channel OPERABILITY such that the setpoints are within the necessary range and accuracy. The COT may be performed by means of any series of sequential, overlapping, or total channel steps, and each step must be performed within the Frequency in the Surveillance Frequency Control Program for the devices included in the step.
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 parameter limits shall be determined for each reload cycle in accordance with Specification 5.6.4. 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 thyroid dose conversion factors from Table 2.1 of EPA Federal Guidance Report No. 11, 1988, "Limiting Values of Radionuclide Intake and Air Concentration and Dose Conversion Factors for Inhalation, Submersion, and Ingestion."
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 Deep Dose Equivalent 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" or the average gamma disintegration energies as provided in ICRP Publication 38, "Radionuclide Transformations," or similar source.
INSERVICE TESTING PROGRAM	The INSERVICE TESTING PROGRAM is the licensee program that fulfills the requirements of 10 CFR 50.55a(f).

1.1 Definitions

L_a — The maximum allowable primary containment leakage rate, L_a, shall be 0.2% of primary containment air weight per day at the peak design containment pressure (P_a).

LEAKAGE — LEAKAGE shall be:

a. Identified LEAKAGE

1. LEAKAGE, such as that from pump seals or valve packing (except reactor coolant pump (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 either not to interfere with the operation of leakage detection systems or not to be pressure boundary LEAKAGE; 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;

c. Pressure Boundary LEAKAGE

LEAKAGE (except primary to secondary LEAKAGE) through a nonisolable fault in an RCS component body, pipe wall, or vessel wall.

MASTER RELAY TEST — A MASTER RELAY TEST shall consist of energizing all master relays in the channel required for OPERABILITY and verifying the OPERABILITY of each required master relay. The MASTER RELAY TEST shall include a continuity check of each associated required slave relay. The MASTER RELAY TEST may be performed by means of any series of sequential, overlapping, or total channel steps.

1.1 Definitions

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).
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 Chapter 13, Initial Test Program of the FSAR; or b. Authorized under the provisions of 10 CFR 50.59; or c. Otherwise approved by the Nuclear Regulatory Commission.
PRESSURE AND TEMPERATURE LIMITS REPORT (PTLR)	The PTLR is the unit specific document that provides the reactor vessel pressure and temperature limits, including heatup and cooldown rates, and the LTOP arming temperature, for the current reactor vessel fluence period. These pressure and temperature limits shall be determined for each fluence period in accordance with Specification 5.6.5. Plant operation within these operating limits is addressed in LCO 3.4.3, "RCS Pressure and Temperature (P/T) Limits," and LCO 3.4.12, "Low Temperature Overpressure Protection (LTOP) System."
QUADRANT POWER TILT RATIO (QPTR)	QPTR shall be the ratio of the maximum upper excore detector calibrated output to the average of the upper excore detector calibrated outputs, or the ratio of the maximum lower excore detector calibrated output to the average of the lower excore detector calibrated outputs, whichever is greater.

1.1 Definitions

RATED THERMAL POWER (RTP)	RTP shall be a total reactor core heat transfer rate to the reactor coolant of 1800 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 rod cluster control assemblies (RCCAs) are fully inserted except for the single RCCA of highest reactivity worth, which is assumed to be fully withdrawn. However, with all RCCAs verified fully inserted by two independent means, it is not necessary to account for a stuck RCCA in the SDM calculation; b. With any RCCA not capable of being fully inserted, the reactivity worth of the RCCA must be accounted for in the determination of SDM; and c. In MODES 1 and 2, the fuel and moderator temperatures are changed to the nominal zero power design level.
SLAVE RELAY TEST	A SLAVE RELAY TEST shall consist of energizing all slave relays in the channel required for OPERABILITY and verifying the OPERABILITY of each required slave relay. The SLAVE RELAY TEST shall include a continuity check of associated required testable actuation devices. The SLAVE RELAY TEST may be performed by means of any series of sequential, overlapping, or total channel steps.
DELETED	
THERMAL POWER	THERMAL POWER shall be the total reactor core heat transfer rate to the reactor coolant.

1.1 Definitions

TRIP ACTUATING DEVICE OPERATIONAL TEST (TADOT)	A TADOT shall consist of operating the trip actuating device and verifying the OPERABILITY of all devices in the channel required for trip actuating device OPERABILITY. The TADOT may be performed by means of any series of sequential, overlapping, or total channel steps, and each step must be performed within the Frequency in the Surveillance Frequency Control Program for the devices included in the step.

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	≥ 350
4	Hot Shutdown(b)	< 0.99	NA	350 > T_{avg} > 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 time of 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. 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. 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 time of discovery of the situation that required entry into the Condition. 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 <u>not</u> 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.

1.3 Completion Times

DESCRIPTION (continued)

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.

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 . . ." Example 1.3-3 illustrates one use of this type of Completion Time. The 10 day Completion Time specified for Conditions A and B in Example 1.3-3 may not be extended.

1.3 Completion Times

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.	6 hours
	AND		
	B.2	Be in MODE 5.	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 (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 AND 10 days from discovery of failure to meet the LCO
B. One Function Y train inoperable.	B.1 Restore Function Y train to OPERABLE status.	72 hours AND 10 days from discovery of failure to meet the LCO
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 (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).

The Completion Times of Conditions A and B are modified by a logical connector with a separate 10 day Completion Time measured from the time it was discovered the LCO was not met. In this example, without the separate Completion Time, it would be 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. The separate Completion Time modified by the phrase "from discovery of failure to meet the LCO" is designed to prevent indefinite continued operation while not meeting the LCO. This Completion Time allows for an exception to the normal "time zero" for beginning the Completion Time "clock". In this instance, the Completion Time "time zero" is specified as commencing at the time the LCO was initially not met, instead of at the time the associated Condition was entered.

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.	6 hours
	AND		
	B.2	Be in MODE 4.	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 (including 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.	6 hours
	AND		
	B.2	Be in MODE 4.	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.

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,

1.3 Completion Times

EXAMPLES (continued)

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.

1.3 Completion Times

EXAMPLES (continued)

EXAMPLE 1.3-6

ACTIONS

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

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 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.

1.3 Completion Times

EXAMPLES (continued)

EXAMPLE 1.3-8

ACTIONS

CONDITION	REQUIRED ACTION		COMPLETION TIME
A. One subsystem inoperable.	A.1	Restore subsystem to OPERABLE status.	7 days OR In accordance with the Risk Informed Completion Time Program
B. Required Action and associated Completion Time not met.	B.1 AND B.2	Be in MODE 3. Be in MODE 5.	6 hours 36 hours

When a subsystem is declared inoperable, Condition A is entered. The 7 day Completion Time may be applied as discussed in Example 1.3-2. However, the licensee may elect to apply the Risk Informed Completion Time Program which permits calculation of a Risk Informed Completion Time (RICT) that may be used to complete the Required Action beyond the 7 day Completion Time. The RICT cannot exceed 30 days. After the 7 day Completion Time has expired, the subsystem must be restored to OPERABLE status within the RICT or Condition B must also be entered.

The Risk Informed Completion Time Program requires recalculation of the RICT to reflect changing plant conditions. For planned changes, the revised RICT must be determined prior to implementation of the change in configuration. For emergent conditions, the revised RICT must be determined within the time limits of the Required Action Completion Time (i.e., not the RICT) or 12 hours after the plant configuration change, whichever is less.

1.3 Completion Times

If the 7 day Completion Time clock of Condition A has expired and subsequent changes in plant condition result in exiting the applicability of the Risk Informed Completion Time Program without restoring the inoperable subsystem to OPERABLE status, Condition B is also entered and the Completion Time clocks for Required Actions B.1 and B.2 start.

If the RICT expires or is recalculated to be less than the elapsed time since the Condition was entered and the inoperable subsystem has not been restored to OPERABLE status, Condition B is also entered and the Completion Time clocks for Required Actions B.1 and B.2 start. If the inoperable subsystems are restored to OPERABLE status after Condition B is entered, Condition A is exited, and therefore, the Required Actions of Condition B may be terminated.

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.

1.4 Frequency

EXAMPLES (continued)

EXAMPLE 1.4-1

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
Perform CHANNEL CHECK.	12 hours

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 (1.25 x 12 = 15 hours) 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 (1.25 x 12 = 15 hours) 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 (1.25 x 12 = 15 hours) prior to entry into the MODE or other specified condition. Failure to do so would result in a violation of SR 3.0.4.

1.4 Frequency

EXAMPLES (continued)

EXAMPLE 1.4-2

SURVEILLANCE REQUIREMENTS

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

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 25% 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.

1.4 Frequency

EXAMPLES (continued)

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 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

In MODES 1 and 2, the combination of THERMAL POWER, Reactor Coolant System (RCS) highest loop average temperature, and pressurizer pressure shall not exceed the limits specified in the COLR in order to preserve the following fuel design criteria:

2.1.1.1 The departure from nucleate boiling ratio (DNBR) shall be maintained:

- ≥ 1.17 for the WRB-1 correlation
- ≥ 1.30 for the W-3 correlation when system pressure is > 1000 psia
- ≥ 1.45 for the W-3 correlation when system pressure is ≥ 500 psia and ≤ 1000 psia

2.1.1.2 The peak fuel centerline temperature shall be maintained < 5080 °F, decreasing by 58 °F per 10,000 MWD/MTU of burnup.

2.1.2 RCS Pressure SL

In MODES 1, 2, 3, 4, 5, and 6 the RCS pressure shall be maintained ≤ 2735 psig.

2.2 SL Violations

2.2.1 If SL 2.1.1 is violated, restore compliance and be in MODE 3 within 1 hour.

2.2.2 If SL 2.1.2 is violated:

2.2.2.1 In MODE 1 or 2, restore compliance and be in MODE 3 within 1 hour.

2.2.2.2 In MODE 3, 4, 5, or 6 restore compliance 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 and LCO 3.0.7.

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 7 hours;

b. MODE 4 within 13 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 operated 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 operated 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 5.5.14, "Safety Function Determination Program (SFDP)." If a loss of safety function is determined to exist by the SFDP evaluation, 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.

3.0 LCO APPLICABILITY (continued)

LCO 3.0.7

Test Exception LCOs allow 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 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.

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. 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 SDM shall be within the limits provided in the COLR.

APPLICABILITY: MODE 2 with $k_{eff} < 1.0$,
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 to be within limits.	In accordance with the Surveillance Frequency Control Program

3.1 REACTIVITY CONTROL SYSTEMS

3.1.2 Core Reactivity

LCO 3.1.2 The measured core reactivity shall be within ± 1% Δk/k of predicted values.

APPLICABILITY: MODES 1 and 2.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Measured core reactivity 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 3.	6 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.1.2.1	---------------------------NOTE-------------------------- 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 is within ± 1% Δk/k of predicted values.	Once prior to entering MODE 1 after each refueling <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 upper MTC limits shall be maintained within the limits specified in the COLR. The maximum upper MTC limits shall be ≤ 5 pcm/°F for power levels ≤70% RTP and ≤ 0 pcm/°F for power levels > 70% RTP.

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

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. MTC not within upper limits.	A.1 Establish administrative limits for boron concentration to maintain MTC within limits.	24 hours
B. Required Action and associated Completion Time not met.	B.1 Be in MODE 2 with $k_{eff} < 1.0$.	6 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.1.3.1 Verify MTC is within upper limits.	Once prior to entering MODE 1 after each refueling

3.1 REACTIVITY CONTROL SYSTEMS

3.1.4 Rod Group Alignment Limits

LCO 3.1.4 All shutdown and control rods shall be OPERABLE, with individual rod positions within limits.

APPLICABILITY: MODES 1 and 2.

ACTIONS

CONDITION	REQUIRED ACTION		COMPLETION TIME
A. One or more rod(s) inoperable.	A.1.1	Verify SDM to be within the limits provided in the COLR.	1 hour
	<u>OR</u>		
	A.1.2	Initiate boration to restore SDM to within limit.	1 hour
	<u>AND</u>		
	A.2	Be in MODE 3.	6 hours

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION		COMPLETION TIME
B. One rod not within alignment limits.	B.1.1	Verify SDM to be within the limits provided 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	Reduce THERMAL POWER to $\leq$ 75% RTP.	2 hours
	<u>AND</u>		
	B.3	Verify SDM to be within the limits provided in the COLR.	Once per 12 hours
	<u>AND</u>		
	B.4	Perform SR 3.2.1.1, 3.2.1.2, and 3.2.2.1.	72 hours
	<u>AND</u>		
	B.2.5	Re-evaluate safety analyses and confirm results remain valid for duration of operation under these conditions.	5 days
C. Required Action and associated Completion Time of Condition B not met.	C.1	Be in MODE 3.	6 hours

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
D. More than one rod not within alignment limit.	D.1.1 Verify SDM to be within the limits provided in the COLR.	1 hour
	OR	
	D.1.2 Initiate boration to restore required SDM to within limit.	1 hour
	AND	
	D.2 Be in MODE 3.	6 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.1.4.1	-------------------- NOTES ---------------------------- 1. Not required to be performed for rods associated with inoperable rod position indicator or demand position indicator. 2. Not required to be performed until 1 hour after associated rod motion. -- Verify position of individual rods within the following alignment limits: a. $\pm$ 18 steps of demanded position (as allowed by Table 3.1.4-1) in MODE 1 > 85 percent RTP when bank demand position is < 215 steps; <u>AND</u> b. $\pm$ 24 steps of demanded position (as allowed by Table 3.1.4-2) in MODE 1 > 85 percent RTP when bank demand position is $\geq$ 215 steps; <u>AND</u> c. $\pm$ 24 steps of demanded position in MODE 1 $\leq$ 85 percent RTP or in MODE 2.	In accordance with the Surveillance Frequency Control Program
SR 3.1.4.2	Verify rod freedom of movement (trippability) by moving each rod not fully inserted in the core $\geq$ 10 steps in either direction.	In accordance with the Surveillance Frequency Control Program
SR 3.1.4.3	Verify rod drop time of each rod, from the fully withdrawn position, is $\leq$ 2.2 seconds from the beginning of decay of stationary gripper coil voltage to dashpot entry, with: a. $T_{avg} \geq 500°F$; and b. All reactor coolant pumps operating.	Prior to reactor criticality after each removal of the reactor head

Table 3.1.4-1
Allowable Alignment Limits As A Function Of Measured Peaking Factor Margin ($F_Q(Z)$, $F^N_{\Delta H}$)
At Power Levels > 85% Of Rated Power And Bank D Demand < 215 Steps Withdrawn

ALIGNMENT LIMITS (STEPS)*	REQUIRED MARGIN TO $F^N_{\Delta H}$ LIMIT (%)	REQUIRED MARGIN TO $F_Q(Z)$ LIMIT (%)
12	0.00	0.00
13	0.33	0.83
14	0.67	1.67
15	1.00	2.50
16	1.33	3.33
17	1.67	4.17
18	2.00	5.00

* Between the bank demand position and the RPI System.

Table 3.1.4-2
Allowable Alignment Limits As A Function Of Measured Peaking Factor Margin ($F_Q(Z)$, $F^N_{\Delta H}$)
At Power Levels > 85% Of Rated Power And Bank D Demand ≥ 215 Steps Withdrawn

ALIGNMENT LIMITS (STEPS)*	REQUIRED MARGIN TO $F^N_{\Delta H}$ LIMIT (%)	REQUIRED MARGIN TO $F_Q(Z)$ LIMIT (%)
12	0.00	0.00
13	0.33	0.83
14	0.67	1.67
15	1.00	2.50
16	1.33	3.33
17	1.67	4.17
18	2.00	5.00
19	2.33	5.83
20	2.67	6.67
21	3.00	7.50
22	3.33	8.33
23	3.67	9.17
24	4.00	10.0

* Between the bank demand position and the RPI System.

3.1 REACTIVITY CONTROL SYSTEMS

3.1.5 Shutdown Bank Insertion Limits

LCO 3.1.5 Each shutdown bank shall be within insertion limits specified in the COLR.

-------------------------------------NOTE-------------------------------------
Not applicable to shutdown banks inserted while performing SR 3.1.4.2.

APPLICABILITY: MODES 1 and 2

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One shutdown bank inserted ≤ 10 steps beyond the insertion limits specified in the COLR	A.1 Verify all control banks are within the insertion limits specified in the COLR. <u>AND</u> A.2.1 Verify SDM is within the limits specified in the COLR. <u>OR</u> A.2.2 Initiate boration to restore SDM to within limit. <u>AND</u> A.3 Restore the shutdown bank to within the insertion limits specified in the COLR.	1 hour 1 hour 1 hour 24 hours

(continued)

CONDITION	REQUIRED ACTION		COMPLETION TIME
B. One or more shutdown banks not within limits for reasons other than Condition A.	B.1.1	Verify SDM to be within the limits provided 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	Restore shutdown banks to within limits.	2 hours
C. Required Action and associated Completion Time not met.	C.1	Be in MODE 3.	6 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.1.5.1	--------------------------- NOTE ------------------------ Not required to be performed until 1 hour after associated rod motion. --- Verify each shutdown bank is within the limits specified in the COLR.	In accordance with the Surveillance Frequency Control Program

3.1 REACTIVITY CONTROL SYSTEMS

3.1.6 Control Bank Insertion Limits

LCO 3.1.6 Control banks shall be within the insertion, sequence, and overlap limits specified in the COLR.

-----NOTE-----
Not applicable to control banks inserted while performing SR 3.1.4.2.

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

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Control bank A, B, or C inserted ≤ 10 steps beyond the insertion, sequence, or overlap limits specified in the COLR.	A.1 Verify all shutdown banks are within the insertion limits specified in the COLR.	1 hour
	AND	
	A.2.1 Verify SDM is within the limits specified in the COLR.	1 hour
	OR	
	A.2.2 Initiate boration to restore SDM to within limit.	1 hour
	AND	
	A.3 Restore the control bank to within the insertion, sequence, and limits specified in the COLR.	24 hours

(continued)

CONDITION	REQUIRED ACTION		COMPLETION TIME
B. Control bank insertion limits not met for reasons other than Condition A.	B.1.1	Verify SDM to be within the limits provided 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	Restore control bank(s) to within limits.	2 hours
C. Control bank sequence or overlap limits not met for reasons other than Condition A.	C.1.1	Verify SDM to be within the limits provided in the COLR.	1 hour
	<u>OR</u>		
	C.1.2	Initiate boration to restore SDM to within limit.	1 hour
	<u>AND</u>		
	C.2	Restore control bank sequence and overlap to within limits.	2 hours
D. Required Action and associated Completion Time not met.	D.1	Be in MODE 2 with $k_{eff} < 1.0$.	6 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.1.6.1	Verify estimated critical control bank position is within the limits specified in the COLR.	Within 4 hours prior to achieving criticality
SR 3.1.6.2	--------------------------- NOTE ------------------------ Not required to be performed until 1 hour after associated rod motion. --- Verify each control bank insertion is within the limits specified in the COLR.	In accordance with the Surveillance Frequency Control Program
SR 3.1.6.3	--------------------------- NOTE ------------------------ Not required to be performed until 1 hour after associated rod motion. --- Verify sequence and overlap limits specified in the COLR are met for control banks not fully withdrawn from the core.	In accordance with the Surveillance Frequency Control Program

3.1 REACTIVITY CONTROL SYSTEMS

3.1.7 Rod Position Indication

LCO 3.1.7 Individual control rod position indication (RPI) and bank demand indication shall be OPERABLE.

------------------------------------ NOTE ------------------------------------
Individual RPIs are not required to be OPERABLE for 1 hour following movement of the associated rods.

APPLICABILITY: MODES 1 and 2.

ACTIONS

--NOTE--
Separate Condition entry is allowed for each inoperable RPI per group and each bank demand position indicator per bank.

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more RPI(s) per group inoperable in one or more groups.	A.1.1 Verify the position of the rods with inoperable RPIs by using movable incore detectors.	8 hours
	<u>AND</u>	
	A.1.2 Verify the position of the rods with inoperable RPIs.	Once per 8 hours
	<u>OR</u>	
	A.2 Reduce THERMAL POWER to $\leq$ 50% RTP	8 hours

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION		COMPLETION TIME
B. One or more RPIs inoperable in one or more groups and associated rod has been moved >24 steps in one direction since the last determination of the rod's position.	B.1	Verify the position of the rods with inoperable RPIs.	4 hours
	OR		
	B.2	Reduce THERMAL POWER to ≤ 50% RTP.	8 hours
C. One or more bank demand position indicator(s) per bank inoperable in one or more banks.	C.1.1	Verify by administrative means all RPIs for the affected banks are OPERABLE.	Once per 8 hours
	AND		
	C.1.2	Verify the most withdrawn rod and the least withdrawn rod of the affected banks are: ≤ 12 steps apart when RTP is > 85 percent, and ≤ 24 steps apart when RTP is ≤ 85 percent.	Once per 8 hours
	OR		
	C.2	Reduce THERMAL POWER to ≤ 50% RTP.	8 hours
D. Required Action and associated Completion Time not met.	D.1	Be in MODE 3.	6 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.1.7.1	---------------------------NOTE--------------------------- Not required to be met for RPIs associated with rods that do not meet LCO 3.1.4. --- Perform CHANNEL CALIBRATION of each RPI.	Once prior to criticality after each removal of the reactor head.

3.1 REACTIVITY CONTROL SYSTEMS

3.1.8 PHYSICS TESTS Exceptions—MODE 2

LCO 3.1.8 During the performance of PHYSICS TESTS, the requirements of

LCO 3.1.3, "Moderator Temperature Coefficient (MTC)";
LCO 3.1.4, "Rod Group Alignment Limits";
LCO 3.1.5, "Shutdown Bank Insertion Limits";
LCO 3.1.6, "Control Bank Insertion Limits"; and
LCO 3.4.2, "RCS Minimum Temperature for Criticality"

may be suspended and the number of required channels for LCO 3.3.1, "RPS Instrumentation," Functions 2, 5, and 17.e, may be reduced to "3" required channels, provided:

a. RCS lowest loop average temperature is ≥ 530°F;

b. SDM is within the limits provided in the COLR; and

c. THERMAL POWER is ≤ 5% RTP.

APPLICABILITY: During PHYSICS TESTS initiated in MODE 2.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. SDM not within limit.	A.1 Initiate boration to restore SDM to within limit.	15 minutes
	AND	
	A.2 Suspend PHYSICS TESTS exceptions.	1 hour
B. THERMAL POWER not within limit.	B.1 Open reactor trip breakers.	Immediately

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION		COMPLETION TIME
C. RCS lowest loop average temperature not within limit.	C.1	Restore RCS lowest loop average temperature to within limit.	15 minutes
D. Required Action and associated Completion Time of Condition C not met.	D.1	Be in MODE 3.	15 minutes

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.1.8.1	Verify the RCS lowest loop average temperature is ≥ 530°F.	In accordance with the Surveillance Frequency Control Program
SR 3.1.8.2	Verify THERMAL POWER is ≤ 5% RTP.	In accordance with the Surveillance Frequency Control Program
SR 3.1.8.3	Verify SDM to be within the limits provided in the COLR.	In accordance with the Surveillance Frequency Control Program

3.2 POWER DISTRIBUTION LIMITS

3.2.1 Heat Flux Hot Channel Factor ($F_Q(Z)$)

LCO 3.2.1 $F_Q(Z)$, as approximated by $F_Q^C(Z)$ and $F_Q^W(Z)$, shall be within the limits specified in the COLR.

APPLICABILITY: MODE 1.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
------------NOTE------------ Required Action A.4 shall be completed whenever this Condition is entered prior to increasing THERMAL POWER above the limit of Required Action A.1. SR 3.2.1.2 is not required to be performed if this condition is entered prior to THERMAL POWER exceeding 70% RTP after a refueling. -------------------------------	A.1 Reduce THERMAL POWER ≥ 1% RTP for each 1% $F_Q^C(Z)$ exceeds limit.	15 minutes after each $F_Q^C(Z)$ determination
	<u>AND</u>	
	A.2 Reduce Power Range Neutron Flux — High trip setpoints ≥ 1% for each 1% that THERMAL POWER is limited below RATED THERMAL POWER by Required Action A.1.	72 hours after each $F_Q^C(Z)$ determination
	<u>AND</u>	
A. $F_Q^C(Z)$ not within limit.	A.3 Reduce Overpower ΔT trip setpoints ≥ 1% for each 1% that THERMAL POWER is limited below RATED THERMAL POWER by Required Action A.1.	72 hours after each $F_Q^C(Z)$ determination
	<u>AND</u>	(continued)

ACTIONS

CONDITION	REQUIRED ACTION		COMPLETION TIME
A. (continued)	A.4	Perform SR 3.2.1.1 and SR 3.2.1.2.	Prior to increasing THERMAL POWER above the limit of Required Action A.1
B. $F_Q^W(Z)$ not within limits.	B.1.1	Implement a CAOC operating space if specified in the COLR that restores $F_Q^W(Z)$ to within limits.	4 hours
		<u>AND</u>	
	B.1.2	Perform SR 3.2.1.1 and SR 3.2.1.2 if control rod motion is required to comply with the new operating space.	72 hours
	<u>OR</u>		
	B.2.1	----------NOTE---------- Required Action B.2.4 shall be completed whenever Required Action B.2.1 is performed prior to increasing THERMAL POWER above the limit of Required Action B.2.1. -----------------------------	
		Limit THERMAL POWER to less than RATED THERMAL POWER as specified in the COLR.	4 hours
		<u>AND</u>	
	B.2.2	Reduce Power Range Neutron Flux-High trip setpoints $\geq$ 1% for each 1% that THERMAL POWER is limited below RATED THERMAL POWER by Required Action B.2.1	72 hours

(continued)

ACTIONS

CONDITION	REQUIRED ACTION		COMPLETION TIME
B. (continued)		AND	
	B.2.3	Reduce the Overpower ΔT trip setpoints $\geq$ 1% for each 1% that THERMAL POWER is limited below RATED THERMAL POWER by Required Action B.2.1	72 hours
		AND	
	B.2.4	Perform SR 3.2.1.1 and SR 3.2.1.2.	Prior to increasing THERMAL POWER above the limit of Required Action B.2.1.
C. Required Action and associated Completion Time not met.	C.1	Be in MODE 2.	6 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.2.1.1	Verify $F_Q^C(Z)$ is within limit.	Once after each refueling prior to THERMAL POWER exceeding 75% RTP <u>AND</u> Once within 24 hours after achieving equilibrium conditions after exceeding, by ≥ 10% RTP, the THERMAL POWER at which $F_Q^C(Z)$ was last verified <u>AND</u> In accordance with the Surveillance Frequency Control Program

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.2.1.2	Verify $F_Q^W(Z)$ is within limit.	Once after each refueling within 24 hours after THERMAL POWER exceeds 70% RTP <u>AND</u> Once within 24 hours after achieving equilibrium conditions after exceeding, by ≥ 10% RTP, the THERMAL POWER at which $F_Q^W(Z)$ was last verified. <u>AND</u> In accordance with the Surveillance Frequency Control Program

3.2 POWER DISTRIBUTION LIMITS

3.2.2 Nuclear Enthalpy Rise Hot Channel Factor ($F^N_{\Delta H}$)

LCO 3.2.2 $F^N_{\Delta H}$ shall be within the limits specified in the COLR.

APPLICABILITY: MODE 1.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. ----------NOTE----------- Required Actions A.2 and A.3 must be completed whenever Condition A is entered. -----------------------------	A.1.1 Restore $F^N_{\Delta H}$ to within limit.	4 hours
$F^N_{\Delta H}$ not within limit.	<u>OR</u>	
	A.1.2.1 Reduce THERMAL POWER to < 50% RTP.	4 hours
	<u>AND</u>	
	A.1.2.2 Reduce Power Range Neutron Flux - High trip setpoints to ≤ 55% RTP.	72 hours
	<u>AND</u>	
	A.2 Perform SR 3.2.2.1.	24 hours
	<u>AND</u>	

(continued)

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. (continued)	A.3 -----------NOTE----------- THERMAL POWER does not have to be reduced to comply with this Required Action. ------------------------------ Perform SR 3.2.2.1.	Prior to THERMAL POWER exceeding 50% RTP AND Prior to THERMAL POWER exceeding 75% RTP AND 24 hours after THERMAL POWER reaching ≥ 95% RTP
B. Required Action and associated Completion Time not met.	B.1 Be in MODE 2.	6 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.2.2.1	Verify $F^N_{\Delta H}$ is within limits specified in the COLR.	Once after each refueling prior to THERMAL POWER exceeding 75% RTP <u>AND</u> In accordance with the Surveillance Frequency Control Program

3.2 POWER DISTRIBUTION LIMITS

3.2.3 AXIAL FLUX DIFFERENCE (AFD)

LCO 3.2.3 The AFD:

a. Shall be maintained within the target band about the target flux difference. The target band is specified in the COLR.

b. May deviate outside the target band with THERMAL POWER <90% RTP but ≥ 50% RTP, provided AFD is within the acceptable operation limits and cumulative penalty deviation time is ≤ 1 hour during the previous 24 hours. The acceptable operation limits are specified in the COLR.

c. May deviate outside the target band with THERMAL POWER < 50% RTP.

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

1. The AFD shall be considered outside the target band when two or more OPERABLE excore channels indicate AFD to be outside the target band.

2. With THERMAL POWER ≥ 50% RTP, penalty deviation time shall be accumulated on the basis of a 1 minute penalty deviation for each 1 minute of power operation with AFD outside the target band.

3. With THERMAL POWER < 50% RTP and > 15% RTP, penalty deviation time shall be accumulated on the basis of a 0.5 minute penalty deviation for each 1 minute of power operation with AFD outside the target band.

4. A total of 16 hours of operation may be accumulated with AFD outside the target band without penalty deviation time during surveillance of power range channels in accordance with SR 3.3.1.6, provided AFD is maintained within acceptable operation limits.

APPLICABILITY: MODE 1 with THERMAL POWER > 15% RTP.

ACTIONS

CONDITION	REQUIRED ACTION		COMPLETION TIME
A. THERMAL POWER ≥ 90% RTP. AND AFD not within the target band	A.1	Restore AFD to within target band.	15 minutes
B. Required Action and associated Completion Time of Condition A not met.	B.1	Reduce THERMAL POWER TO <90% RTP.	15 minutes
C. ------------NOTE------------- Required Action C.1 must be completed whenever Condition C is entered. ------------------------------- THERMAL POWER < 90% and ≥ 50% RTP with cumulative penalty deviation time > 1 hour during the previous 24 hours. OR THERMAL POWER < 90% and ≥ 50% RTP with AFD not within the acceptable operation limits.	C.1	Reduce THERMAL POWER to < 50% RTP.	30 minutes
D. Required Action and associated Completion Time for Condition C not met.	D.1	Reduce THERMAL POWER to < 15% RTP.	9 hours

SURVEILLANCE REQUIREMENTS

	SURVEILLANCE	FREQUENCY
SR 3.2.3.1	Verify AFD within limits for each OPERABLE excore channel.	In accordance with the Surveillance Frequency Control Program
SR 3.2.3.2	Update target flux difference.	Once within 31 EFPD after each refueling AND In accordance with the Surveillance Frequency Control Program
SR 3.2.3.3	-------------------------------NOTE---------------------- The initial target flux difference after each refueling may be determined for design predictions. -- Determine, by measurement, the target flux difference.	Once within 31 EFPD after each refueling AND In accordance with the Surveillance Frequency Control Program

3.2 POWER DISTRIBUTION LIMITS

3.2.4 QUADRANT POWER TILT RATIO (QPTR)

LCO 3.2.4 The QPTR shall be ≤ 1.02.

APPLICABILITY: MODE 1 with THERMAL POWER > 50% RTP.

ACTIONS

CONDITION	REQUIRED ACTION		COMPLETION TIME
A. QPTR not within limit.	A.1	Reduce THERMAL POWER ≥ 3% from RTP for each 1% of QPTR > 1.00.	2 hours after each QPTR determination
	AND		
	A.2	Determine QPTR.	Once per 12 hours
	AND		
	A.3	Perform SR 3.2.1.1, SR 3.2.1.2, and SR 3.2.2.1.	24 hours after achieving equilibrium conditions from a thermal power reduction per Required Action A.1 AND Once per 7 days thereafter
	AND		

(continued)

ACTIONS

CONDITION	REQUIRED ACTION		COMPLETION TIME
A. (continued)	A.4	Reevaluate safety analyses and confirm results remain valid for duration of operation under this condition.	Prior to increasing THERMAL POWER above the limit of Required Action A.1
	<u>AND</u>		
	A.5	----------NOTES---------- 1. Perform Required Action A.5 only after Required Action A.4 is completed. 2. Required Action A.6 shall be completed if Required Action A.5 is performed. -----------------------------	
		Normalize the excore detectors to restore QPTR to within limits.	Prior to increasing THERMAL POWER above the limit of Required Action A.1
	<u>AND</u>		
			(continued)

ACTIONS

CONDITION	REQUIRED ACTION		COMPLETION TIME
A. (continued)	A.6	-----------NOTE----------- Perform Required Action A. 6 only after Required Action A.5 is completed. ------------------------------	
		Perform SR 3.2.1.1, SR 3.2.1.2, and SR 3. 2.2.1.	Within 24 hours after achieving equilibrium conditions at RTP. Not to exceed 48 hours after increasing THERMAL POWER above the limit of Required Action A.1
B. Required Action and associated Completion Time not met.	B.1	Reduce THERMAL POWER to ≤ 50% RTP.	4 hours

SURVEILLANCE REQUIREMENTS

	SURVEILLANCE	FREQUENCY
SR 3.2.4.1	-------------------------NOTES------------------------ 1. With input from one Power Range Neutron Flux channel inoperable and THERMAL POWER ≤ 75% RTP, the remaining three power range channels can be used for calculating QPTR. 2. SR 3.2.4.2 may be performed in lieu of this Surveillance. -- Verify QPTR is within limit by calculation.	In accordance with the Surveillance Frequency Control Program
SR 3.2.4.2	---------------------------NOTE------------------------- Not required to be performed until 12 hours after input from one or more Power Range Neutron Flux channels are inoperable with THERMAL POWER > 75% RTP. -- Verify QPTR is within limit using core power distribution information.	In accordance with the Surveillance Frequency Control Program

3.3 INSTRUMENTATION

3.3.1 Reactor Protection System (RPS) Instrumentation

LCO 3.3.1 The RPS instrumentation for each Function in Table 3.3.1-1 shall be OPERABLE.

APPLICABILITY: According to Table 3.3.1-1.

ACTIONS

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

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more Functions with one or more required channels or trains inoperable.	A.1 Enter the Condition referenced in Table 3.3.1-1 for the channel(s) or train(s).	Immediately
B. One Manual Reactor Trip channel inoperable.	B.1 Restore channel to OPERABLE status.	48 hours <u>OR</u> In accordance with the Risk Informed Completion Time Program
C. One Manual Reactor Trip channel inoperable.	C.1 Restore channel to OPERABLE status. <u>OR</u> C.2 Open reactor trip breakers (RTBs).	48 hours 49 hours

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION		COMPLETION TIME
D. One channel inoperable.	D.1	Place channel in trip.	1 hour OR In accordance with the Risk Informed Completion Time Program
E. One channel inoperable.	E.1	Place channel in trip.	6 hours OR In accordance with the Risk Informed Completion Time Program
F. One Intermediate Range Neutron Flux channel inoperable.	F.1	Reduce THERMAL POWER to < P-6.	24 hours
	OR		
	F.2	Increase THERMAL POWER to > P-10.	24 hours

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION		COMPLETION TIME
G. Two Intermediate Range Neutron Flux channels inoperable.	G.1	Suspend operations involving positive reactivity additions.	Immediately
	<u>AND</u>		
	G.2	Reduce THERMAL POWER to < P-6.	2 hours
H. One Source Range Neutron Flux channel inoperable.	H.1	Suspend operations involving positive reactivity additions.	Immediately
I. Two Source Range Neutron Flux channels inoperable.	I.1	Open RTBs.	Immediately
J. One Source Range Neutron Flux channel inoperable.	J.1	Restore channel to OPERABLE status.	48 hours
	<u>OR</u>		
	J.2	Open RTBs.	49 hours

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
K. One channel inoperable.	K.1 Place channel in trip.	1 hour <u>OR</u> In accordance with the Risk Informed Completion Time Program
L. One Reactor Coolant Flow-Low (Single Loop) channel inoperable.	L.1 Place channel in trip.	1 hour <u>OR</u> In accordance with the Risk Informed Completion Time Program
M. One Reactor Coolant Pump Breaker Position (Single Loop) channel inoperable.	M.1 Restore channel to OPERABLE status.	1 hour <u>OR</u> In accordance with the Risk Informed Completion Time Program

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
N. One inoperable channel.	N.1 Restore channel to OPERABLE status.	1 hour <u>OR</u> In accordance with the Risk Informed Completion Time Program
O. One turbine trip channel inoperable.	O.1 Place channel in trip.	1 hour <u>OR</u> In accordance with the Risk Informed Completion Time Program
P. One train inoperable.	-----------------NOTE----------------- One train may be bypassed for up to 8 hours for surveillance testing provided the other train is OPERABLE. -- P.1 Restore train to OPERABLE status.	 6 hours <u>OR</u> In accordance with the Risk Informed Completion Time Program

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
Q. One RTB inoperable.	------------------NOTE------------------ One RTB may be bypassed for up to 8 hours provided the other RTB is OPERABLE. --	
	Q.1 Restore RTB to OPERABLE status.	1 hour OR In accordance with the Risk Informed Completion Time Program
R. One or more channel(s) inoperable.	R.1 Verify interlock is in required state for existing unit conditions.	1 hour
	OR	
	R.2 Be in MODE 3.	7 hours
S. One or more channel(s) inoperable.	S.1 Verify interlock is in required state for existing unit conditions.	1 hour
	OR	
	S.2 Be in MODE 2.	7 hours
T. One RTB or trip mechanism for one RTB inoperable.	T.1 Restore RTB or RTB trip mechanism to OPERABLE status.	48 hours
	OR	
	T.2 Open RTBs.	49 hours

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION		COMPLETION TIME
U. One trip mechanism inoperable for one RTB.	U.1	Restore trip mechanism to OPERABLE status.	48 hours <u>OR</u> In accordance with the Risk Informed Completion Time Program
V. One reactor trip bypass breaker (RTBB) or trip mechanism for one RTBB inoperable.	V.1	Restore RTBB or RTBB trip mechanism to OPERABLE status.	1 hour
	<u>OR</u>		
	V.2	Be in MODE 3.	7 hours
W. One reactor trip bypass breaker (RTBB) or trip mechanism for one RTBB inoperable.	W.1	Restore RTBB or RTBB trip mechanism to OPERABLE status.	48 hours
	<u>OR</u>		
	W.2	Open RTBs and RTBBs.	49 hours
X. One train inoperable.	X.1	Restore train to OPERABLE status.	48 hours
	<u>OR</u>		
	X.2	Open RTBs.	49 hours

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION		COMPLETION TIME
Y. Required Action and associated Completion Time of Condition B, D, P, Q, or U not met.	Y.1	Be in Mode 3	6 hours
Z. Required Action and associated Completion Time of Condition E, K or N not met.	Z.1	Reduce THERMAL POWER to < P-7.	6 hours
AA. Required Action and associated Completion Time of Condition L or M not met.	AA.1	Reduce THERMAL POWER to < P-8.	4 hours
BB. Required Action and associated Completion Time of Condition O not met.	BB.1	Reduce THERMAL POWER to < P-9.	4 hours

SURVEILLANCE REQUIREMENTS

---NOTE---
Refer to Table 3.3.1-1 to determine which SRs apply for 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	---------------------------NOTES------------------------ 1. Adjust NIS channel if absolute difference is > 2%. 2. Not required to be performed until 12 hours after THERMAL POWER is ≥ 15% RTP. --- Compare results of calorimetric heat balance calculation to Nuclear Instrumentation System (NIS) channel output.	In accordance with the Surveillance Frequency Control Program
SR 3.3.1.3	---------------------------NOTES------------------------ 1. Adjust NIS channel if absolute difference is ≥ 3%. 2. Not required to be performed until 24 hours after THERMAL POWER is ≥ 50% RTP. --- Compare results of core power distribution information to NIS AFD.	In accordance with the Surveillance Frequency Control Program

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.3.1.4	-----------------------------NOTE----------------------------- This Surveillance must be performed on the reactor trip bypass breaker prior to placing the bypass breaker in service. --- Perform TADOT.	In accordance with the Surveillance Frequency Control Program
SR 3.3.1.5	----------------------------NOTES---------------------------- 1. Not required to be performed for the Source Range Neutron Flux Trip Function until 8 hours after power is below P-6. 2. Not required to be performed for the RCP Breaker Position (Two Loops), Reactor Coolant Flow — Low (Two Loops) and Underfrequency Bus A01 and A02 Trip Functions and the P-6, P-7, P-8, P-9 and P-10 Interlocks. --- Perform ACTUATION LOGIC TEST.	In accordance with the Surveillance Frequency Control Program
SR 3.3.1.6	-----------------------------NOTE----------------------------- Not required to be performed until 24 hours after THERMAL POWER is ≥ 50% RTP. --- Calibrate excore channels to agree with core power distribution information.	In accordance with the Surveillance Frequency Control Program

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.3.1.7	-----------------------------NOTE-------------------------- Not required to be performed for source range instrumentation prior to entering MODE 3 from MODE 2 until 4 hours after entry into MODE 3. -- Perform COT.	In accordance with the Surveillance Frequency Control Program

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.3.1.8	----------------------------NOTE------------------------- This Surveillance shall include verification that interlocks P-6 and P-10 are in their required state for existing unit conditions. --- Perform COT.	-------NOTE------- Only required when not performed within the frequency specified in the Surveillance Frequency Control Program ---------------------- Prior to reactor startup <u>AND</u> Four hours after reducing power below P-10 for power and intermediate range instrumentation <u>AND</u> Four hours after reducing power below P-6 for source range instrumentation <u>AND</u> In accordance with the Surveillance Frequency Control Program

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.3.1.9	Perform TADOT.	In accordance with the Surveillance Frequency Control Program
SR 3.3.1.10	----------------------------NOTE--------------------------- This Surveillance shall include verification that the time delays are adjusted to the prescribed values. --- Perform CHANNEL CALIBRATION.	In accordance with the Surveillance Frequency Control Program
SR 3.3.1.11	----------------------------NOTE--------------------------- Neutron detectors are excluded from CHANNEL CALIBRATION. --- Perform CHANNEL CALIBRATION.	In accordance with the Surveillance Frequency Control Program
SR 3.3.1.12	Perform COT.	In accordance with the Surveillance Frequency Control Program
SR 3.3.1.13	Perform TADOT.	In accordance with the Surveillance Frequency Control Program

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.3.1.14	Perform TADOT.	Prior to exceeding the P-9 interlock whenever the unit has been in MODE 3, if not performed within previous 31 days.
SR 3.3.1.15	---------------------------NOTE--------------------------- This Surveillance must be performed on the RCP Breaker Position (Two Loop), Reactor Coolant Flow - Low (Two Loop) and Underfrequency Bus A01 and A02 Trip Functions and the P-6 , P-7, P-8, P-9 and P-10 Interlocks. --- Perform ACTUATION LOGIC TEST.	In accordance with the Surveillance Frequency Control Program

Table 3.3.1-1 (page 1 of 8)
Reactor Protection System Instrumentation

FUNCTION	APPLICABLE MODES	REQUIRED CHANNELS	CONDITIONS	SURVEILLANCE REQUIREMENTS	ALLOWABLE VALUE	NOMINAL TRIP SETPOINT
1. Manual Reactor Trip	1,2	2	B	SR 3.3.1.13	NA	NA
	3(a), 4(a), 5(a)	2	C	SR 3.3.1.13	NA	NA
2. Power Range Neutron Flux						
a. High	1,2	4	D	SR 3.3.1.1 SR 3.3.1.2 SR 3.3.1.7(m) SR 3.3.1.11(m)	≤ 108% RTP	106% RTP
b. Low	1(b),2	4	D	SR 3.3.1.1 SR 3.3.1.8(m) SR 3.3.1.11(m)	≤ 27% RTP	20% RTP
3. Intermediate Range Neutron Flux	1(b), 2(c)	2	F,G	SR 3.3.1.1 SR 3.3.1.8(m) SR 3.3.1.11(m)	≤ 43% RTP	25% RTP
4. Source Range Neutron Flux	2(d)	2	H,I	SR 3.3.1.1 SR 3.3.1.8(m) SR 3.3.1.11(m)	≤ 3.0 E5 cps	1.5 E5 cps
	3(a), 4(a), 5(a)	2	I,J	SR 3.3.1.1 SR 3.3.1.7(m) SR 3.3.1.11(m)	≤ 3.0 E5 cps	1.5 E5 cps
5. Overtemperature ΔT	1,2	4	D	SR 3.3.1.1 SR 3.3.1.3 SR 3.3.1.6 SR 3.3.1.7(m) SR 3.3.1.11(m)	Refer to Note 1 (Page 3.3.1-18)	Refer to Note 1 (Page 3.3.1-18)
6. Overpower ΔT	1,2	4	D	SR 3.3.1.1 SR 3.3.1.7(m) SR 3.3.1.11(m)	Refer to Note 2 (Page 3.3.1-19)	Refer to Note 2 (Page 3.3.1-19)

(continued)

(a) With Reactor Trip Breakers (RTBs) closed and Rod Control System capable of rod withdrawal.
(b) Below the P-10 (Power Range Neutron Flux) interlock.
(c) Above the P-6 (Intermediate Range Neutron Flux) interlock.
(d) Below the P-6 (Intermediate Range Neutron Flux) interlock.
(m) Table 3.3.1-1 Notes 3 and 4 are applicable

Table 3.3.1-1 (page 2 of 8)
Reactor Protection System Instrumentation

FUNCTION	APPLICABLE MODES	REQUIRED CHANNELS	CONDITIONS	SURVEILLANCE REQUIREMENTS	ALLOWABLE VALUE	NOMINAL TRIP SETPOINT
7. Pressurizer Pressure						
a. Low	1(e)	4	K	SR 3.3.1.1 SR 3.3.1.7(m) SR 3.3.1.11(m)	≥ 1860 psig	1925 psig
b. High	1,2	3	D	SR 3.3.1.1 SR 3.3.1.7(m) SR 3.3.1.11(m)	≤ 2380 psig	2365 psig
8. Pressurizer Water Level — High	1(e)	3	K	SR 3.3.1.1 SR 3.3.1.7(m) SR 3.3.1.11(m)	≤ 85%	80%
9. Reactor Coolant Flow-Low						
a. Single Loop	1(f)	3 per loop	L	SR 3.3.1.1 SR 3.3.1.7(m) SR 3.3.1.11(m)	≥91%	93%
b. Two Loops	1(g)	3 per loop	K	SR 3.3.1.1 SR 3.3.1.7(m) SR 3.3.1.11(m)	≥91%	93%
10. Reactor Coolant Pump (RCP) Breaker Position						
a. Single Loop	1(f)	1 per RCP	M	SR 3.3.1.13	NA	NA
b. Two Loops	1(g)	1 per RCP	N	SR 3.3.1.13	NA	NA
11. Undervoltage Bus A01 & A02	1(e)	2 per bus	K	SR 3.3.1.9 SR 3.3.1.10(m)	≥ 3120 V	3170 V

(continued)

(e) Above the P-7 (Low Power Reactor Trips Block) interlock.
(f) Above the P-8 (Power Range Neutron Flux) interlock.
(g) Above the P-7 (Low Power Reactor Trips Block) interlock and below the P-8 (Power Range Neutron Flux) interlock.
(m) Table 3.3.1-1 Notes 3 and 4 are applicable

Table 3.3.1-1 (page 3 of 8)
Reactor Protection System Instrumentation

FUNCTION	APPLICABLE MODES	REQUIRED CHANNELS	CONDITIONS	SURVEILLANCE REQUIREMENTS	ALLOWABLE VALUE	NOMINAL TRIP SETPOINT
12. Underfrequency Bus A01 & A02	1(e)	2 per bus	E	SR 3.3.1.10(m)	≥ 55.0 Hz	57 Hz
13. Steam Generator (SG) Water Level — Low Low	1,2	3 per SG	D	SR 3.3.1.1 SR 3.3.1.7(m) SR 3.3.1.11(m)	≥ 29.5%	31%
14. SG Water Level — Low	1,2	2 per SG	D	SR 3.3.1.1 SR 3.3.1.7(m) SR 3.3.1.11(m)	≥ 11%	31%
Coincident with Steam Flow/Feedwater Flow Mismatch	1,2	2 per SG	D	SR 3.3.1.1 SR 3.3.1.7(m) SR 3.3.1.11(m)	≤ 1 E6 lbm/hr	0.8 E6 lbm/hr
15. Turbine Trip						
a. Low Autostop Oil Pressure	1(j)	3	O	SR 3.3.1.14	NA	NA
b. Turbine Stop Valve Closure	1(j)	2	O	SR 3.3.1.14	NA	NA
16. Safety Injection (SI) Input from Engineered Safety Feature Actuation System (ESFAS)	1,2	2 trains	P	SR 3.3.1.13	NA	NA

(continued)

(e) Above the P-7 (Low Power Reactor Trips Block) interlock.
(j) Above the P-9 (Power Range Neutron Flux) interlock.
(m) Table 3.3.1-1 Notes 3 and 4 are applicable

Table 3.3.1-1 (page 4 of 8)
Reactor Protection System Instrumentation

FUNCTION	APPLICABLE MODES	REQUIRED CHANNELS	CONDITIONS	SURVEILLANCE REQUIREMENTS	ALLOWABLE VALUE	NOMINAL TRIP SETPOINT
17. Reactor Trip System Interlocks						
a. Intermediate Range Neutron Flux, P-6	2(d)	2	R	SR 3.3.1.11 SR 3.3.1.12	≥ 4E-11 amp	1E-10 amp
b. Low Power Reactor Trips Block, P-7						
(1) Power Range Neutron Flux	1	4	S	SR 3.3.1.11 SR 3.3.1.12	≤ 13% RTP	10% RTP
(2) Turbine First Stage Pressure	1	2	S	SR 3.3.1.11 SR 3.3.1.12	≤ 12.8% turbine power	10% turbine power
c. Power Range Neutron Flux, P-8	1	4	S	SR 3.3.1.11 SR 3.3.1.12	≤ 38% RTP	35% RTP
d. Power Range Neutron Flux, P-9	1(k)	4	S	SR 3.3.1.11 SR 3.3.1.12	(h)	(i)
e. Power Range Neutron Flux, P-10	1,2	4	R	SR 3.3.1.11 SR 3.3.1.12	≥ 6% RTP and ≤ 12% RTP	9% RTP
18. Reactor Trip Breakers (RTBs)	1,2	2 trains	Q	SR 3.3.1.4	NA	NA
	3(a), 4(a), 5(a)	2 trains	T	SR 3.3.1.4	NA	NA
19. Reactor Trip Breaker Undervoltage and Shunt Trip Mechanisms	1,2	1 each per RTB	U	SR 3.3.1.4	NA	NA
	3(a), 4(a), 5(a)	1 each per RTB	T	SR 3.3.1.4	NA	NA

(continued)

(a) With the RTBs closed and the Rod Control System capable of rod withdrawal.

(d) Below the P-6 (Intermediate Range Neutron Flux) interlock.

(h) ≤ 38% RTP for full design power T_{avg} < 572°F or ≤ 53% RTP for full design power T_{avg} ≥ 572°F. For EOC coastdown, P-9 is not reset if T_{avg} decreases to < 572°F.

(i) 35% RTP for full design power T_{avg} < 572°F or 50% RTP for full design power T_{avg} ≥ 572°F. For EOC coastdown, P-9 is not reset if T_{avg} decreases to < 572°F.

(k) With 1 of 2 circulating water pump breakers closed and condenser vacuum ≥ 22 "Hg.

Table 3.3.1-1 (page 5 of 8)
Reactor Protection System Instrumentation

	FUNCTION	APPLICABLE MODES	REQUIRED CHANNELS	CONDITIONS	SURVEILLANCE REQUIREMENTS	ALLOWABLE VALUE	NOMINAL TRIP SETPOINT
20.	Reactor Trip Bypass Breaker and associated Undervoltage Trip Mechanism	$1^{(l)}$, $2^{(l)}$	1	V	SR 3.3.1.4	NA	NA
		$3^{(l)}$, $4^{(l)}$, $5^{(l)}$	1	W	SR 3.3.1.4	NA	NA
21.	Automatic Trip Logic	1, 2,	2 trains	P	SR 3.3.1.5 SR 3.3.1.15	NA	NA
		$3^{(a)}$, $4^{(a)}$, $5^{(a)}$	2 trains	X	SR 3.3.1.5	NA	NA

(a) With RTBs closed and Rod Control System capable of rod withdrawal.
(l) When Reactor Trip Bypass Breakers are racked in and closed and the Rod Control System is capable of rod withdrawal.

Table 3.3.1-1 (page 6 of 8)
Reactor Protection System Instrumentation

<u>Note 1: Overtemperature ΔT</u>

$$\Delta T \left(\frac{1}{1+\tau_3 S}\right) \le \Delta T_o \left(K_1 - K_2\left(T\left(\frac{1}{1+\tau_4 S}\right) - T'\right)\left(\frac{1+\tau_1 S}{1+\tau_2 S}\right) + K_3(P - P') - f(\Delta I)\right)$$

Where:

ΔT_o	=	indicated ΔT at RTP, °F
T	=	average temperature, °F
T'	≤	[*]°F
P	=	pressurizer pressure, psig
P'	=	[*] psig
K_1	≤	[*]
K_2	=	[*]
K_3	=	[*]
τ_1	=	[*] sec
τ_2	=	[*] sec
τ_3	=	[*] sec
τ_4	=	[*] sec

f(ΔI) =	[*] {[*] - (q_t - q_b)}	when (q_t - q_b) ≤ [*]% RTP
	0% of RTP	when [*]% RTP < (q_t - q_b) ≤ [*]% RTP
	[*] {(q_t - q_b) - [*]}	when (q_t - q_b) > [*]% RTP

Where q_t and q_b are percent RTP in the upper and lower halves of the core, respectively, and (q_t + q_b) is the total THERMAL POWER in percent RTP.

* The values denoted with [*] are specified in the COLR.

Table 3.3.1-1 (page 7 of 8)
Reactor Protection System Instrumentation

Note 2: Overpower ΔT

$$\Delta T \left(\frac{1}{1+\tau_3 S}\right) \le \Delta T_o \left[K_4 - K_5 \left(\frac{\tau_5 S}{\tau_5 S + 1}\right)\left(\frac{1}{1+\tau_4 S}\right) T - K_6 \left[T\left(\frac{1}{1+\tau_4 S}\right) - T'\right]\right]$$

Where:

ΔT_o	=	indicated ΔT at RTP, °F
T	=	average temperature, °F
T'	≤	[*]°F
K_4	≤	[*]
K_5	=	[*] for increasing T
	=	[*] for decreasing T
K_6	=	[*] for T ≥ T'
	=	[*] for T < T'
τ_5	=	[*] sec
τ_3	=	[*] sec
τ_4	=	[*] sec

* The values denoted with [*] are specified in the COLR.

Table 3.3.1-1 (page 8 of 8)
Reactor Protection System Instrumentation

Note 3:

If the as-found channel setpoint is outside its predefined as-found tolerance, then the channel shall be evaluated to verify that it is functioning as required before returning the channel to service.

Note 4:

The instrument channel setpoint shall be reset to a value that is within the as-left tolerance around the Nominal Trip Setpoint (NTSP) at the completion of the surveillance; otherwise, the channel shall be declared inoperable. Setpoints more conservative than the NTSP are acceptable provided that the as-found and as-left tolerances apply to the actual setpoint implemented in the Surveillance procedures (field setting) to confirm channel performance. The methodologies used to determine the as-found and the as-left tolerances are specified in FSAR Section 7.2.

3.3 INSTRUMENTATION

3.3.2 Engineered Safety Feature Actuation System (ESFAS) Instrumentation

LCO 3.3.2 The ESFAS instrumentation for each Function in Table 3.3.2-1 shall be OPERABLE.

APPLICABILITY: According to Table 3.3.2-1.

ACTIONS

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

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more Functions with one or more required channels or trains inoperable.	A.1 Enter the Condition referenced in Table 3.3.2-1 for the channel(s) or train(s).	Immediately
B. One channel inoperable.	B.1 Restore channel to OPERABLE status.	48 hours <u>OR</u> In accordance with the Risk Informed Completion Time Program

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION		COMPLETION TIME
C. One train inoperable.	C.1	Restore train to OPERABLE status.	6 hours OR --------NOTE-------- Not applicable to Function 2b, Containment Spray – Automatic Actuation Logic and Actuation Relays, of Table 3.3-2. -------------------------- In accordance with the Risk Informed Completion Time Program
D. One channel inoperable.	D.1	Place channel in trip.	1 hour OR --------NOTE-------- Not applicable to Function 2c, Containment Spray – Containment Pressure High-High, of Table 3.3-2. ------------------------- In accordance with the Risk Informed Completion Time Program

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
E. One or both channel(s) inoperable.	E.1 Restore channel(s) to OPERABLE status.	1 hour
	OR	
	E.2.1 Be in MODE 3.	7 hours
	AND	
	E.2.2 Be in MODE 5.	37 hours
F. One channel inoperable.	F.1 Restore channel to OPERABLE status.	1 hour OR In accordance with the Risk Informed Completion Time Program
G. One train inoperable.	G.1 Restore train to OPERABLE status.	6 hours OR In accordance with the Risk Informed Completion Time Program
H. One channel inoperable.	H.1 Place channel in trip.	6 hours OR In accordance with the Risk Informed Completion Time Program

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION		COMPLETION TIME
I. One or more channels inoperable.	I.1	Verify interlock is in required state for existing unit condition.	1 hour
	<u>OR</u>		
	I.2.1	Be in MODE 3.	7 hours
	<u>AND</u>		
	I.2.2	Be in MODE 4.	13 hours
-----------------NOTE----------------- Separate Condition entry is allowed for each AFW pump. --	J.1	Restore channel to OPERABLE status.	48 hours
	<u>OR</u>		
J. One channel inoperable.	J.2	Declare associated AFW pump inoperable.	
K. Required Action and associated Completion Time of Condition H not met.	K.1	Be in MODE 3.	6 hours
L. Required Action and associated Completion Time of Condition B or C not met.	L.1	Be in MODE 3.	6 hours
	<u>AND</u>		
	L.2	Be in MODE 5.	36 hours
M. Required Action and associated Completion Time of Condition D, F or G not met.	M.1	Be in MODE 3.	6 hours
	<u>AND</u>		
	M.2	Be in MODE 4.	12 hours

SURVEILLANCE REQUIREMENTS

---NOTE---
Refer to Table 3.3.2-1 to determine which SRs apply for each ESFAS Function.

SURVEILLANCE		FREQUENCY
SR 3.3.2.1	Perform CHANNEL CHECK.	In accordance with the Surveillance Frequency Control Program
SR 3.3.2.2	--------------------------NOTE-------------------------- The continuity check may be excluded. -- Perform ACTUATION LOGIC TEST.	In accordance with the Surveillance Frequency Control Program
SR 3.3.2.3	Perform COT.	In accordance with the Surveillance Frequency Control Program
SR 3.3.2.4	Perform MASTER RELAY TEST.	In accordance with the Surveillance Frequency Control Program

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.3.2.5	Perform SLAVE RELAY TEST.	In accordance with the Surveillance Frequency Control Program
SR 3.3.2.6	Perform TADOT.	In accordance with the Surveillance Frequency Control Program
SR 3.3.2.7	Perform TADOT.	In accordance with the Surveillance Frequency Control Program
SR 3.3.2.8	---------------------------NOTE-------------------------- This Surveillance shall include verification that the time constants are adjusted to the prescribed values. --- Perform CHANNEL CALIBRATION.	In accordance with the Surveillance Frequency Control Program

Table 3.3.2-1 (page 1 of 4)
Engineered Safety Feature Actuation System Instrumentation

FUNCTION	APPLICABLE MODES	REQUIRED CHANNELS	CONDITIONS	SURVEILLANCE REQUIREMENTS	ALLOWABLE VALUE	NOMINAL TRIP SETPOINT
1. Safety Injection						
a. Manual Initiation	1,2,3,4	2	B	SR 3.3.2.7	NA	NA
b. Automatic Actuation Logic and Actuation Relays	1,2,3,4	2 trains	C	SR 3.3.2.2 SR 3.3.2.4 SR 3.3.2.5	NA	NA
c. Containment Pressure—High	1,2,3	3	D	SR 3.3.2.1 SR 3.3.2.3[f] SR 3.3.2.8[f]	≤ 5.1 psig	4.8 psig
d. Pressurizer Pressure—Low	1,2,3[a]	3	D	SR 3.3.2.1 SR 3.3.2.3[f] SR 3.3.2.8[f]	≥ 1730 psig	1735 psig
e. Steam Line Pressure—Low	1,2,3[b]	3 per steam line	D	SR 3.3.2.1 SR 3.3.2.3[f] SR 3.3.2.8[f]	≥ 535[c] psig	545 psig
2. Containment Spray						
a. Manual Initiation	1,2,3,4	2	E	SR 3.3.2.7	NA	NA
b. Automatic Actuation Logic and Actuation Relays	1,2,3,4	2 trains	C	SR 3.3.2.2 SR 3.3.2.4 SR 3.3.2.5	NA	NA
c. Containment Pressure—High High	1,2,3	2 sets of 3	D	SR 3.3.2.1 SR 3.3.2.3[f] SR 3.3.2.8[f]	≤ 28 psig	25 psig

(continued)

(a) Pressurizer Pressure > 2000 psig.
(b) Pressurizer Pressure > 2000 psig, except during Reactor Coolant System hydrostatic testing.
(c) Time constants used in the lead/lag controller are $t_1 \geq 18$ seconds and $t_2 \leq 2$ seconds.
(f) Table 3.3.2-1 Notes 1 and 2 are applicable.

Table 3.3.2-1 (page 2 of 4)
Engineered Safety Feature Actuation System Instrumentation

FUNCTION	APPLICABLE MODES	REQUIRED CHANNELS	CONDITIONS	SURVEILLANCE REQUIREMENTS	ALLOWABLE VALUE	NOMINAL TRIP SETPOINT
3. Containment Isolation						
a. Manual Initiation	1,2,3,4	2	B	SR 3.3.2.7	NA	NA
b. Automatic Actuation Logic and Actuation Relays	1,2,3,4	2 trains	C	SR 3.3.2.4 SR 3.3.2.5	NA	NA
c. Safety Injection	Refer to Function 1 (Safety Injection) for all initiation functions and requirements, except Manual SI initiation.					
4. Steam Line Isolation						
a. Manual Initiation						
	$1,2^{(d)},3^{(d)}$	1/loop	F	SR 3.3.2.7	NA	NA
b. Automatic Actuation Logic and Actuation Relays	$1,2^{(d)},3^{(d)}$	2 trains	G	SR 3.3.2.2 SR 3.3.2.5	NA	NA
c. Containment Pressure—High High	$1,2^{(d)},3^{(d)}$	3	D	SR 3.3.2.1 SR 3.3.2.3[f] SR 3.3.2.8[f]	≤ 18 psig	15 psig
d. High Steam Flow	$1,2^{(d)},3^{(d)}$	2 per steam line	D	SR 3.3.2.1 SR 3.3.2.3[f] SR 3.3.2.8[f]	≤ Δp corresponding to 0.8 x 10^6 lb/hr at 1005 psig	Δp corresponding to 0.52 x 10^6 lb/hr at 1005 psig
Coincident with Safety Injection	Refer to Function 1 (Safety Injection) for all initiation functions and requirements.					
and						
Coincident with T_{avg}—Low	$1,2^{(d)},3^{(d)}$	3	D	SR 3.3.2.1 SR 3.3.2.3[f] SR 3.3.2.8[f]	≥ 542°F	543°F
e. High High Steam Flow	$1,2^{(d)},3^{(d)}$	2 per steam line	D	SR 3.3.2.1 SR 3.3.2.3[f] SR 3.3.2.8[f]	≤ Δp corresponding to 4.9 x 10^6 lb/hr at 586 psig	Δp corresponding to 4.85 x 10^6 lb/hr at 586 psig
Coincident with Safety Injection	Refer to Function 1 (Safety Injection) for all initiation functions and requirements.					

(continued)

(d) Except when all MSIVs are closed and de-activated.
(f) Table 3.3.2-1 Notes 1 and 2 are applicable.

Table 3.3.2-1 (page 3 of 4)
Engineered Safety Feature Actuation System Instrumentation

FUNCTION	APPLICABLE MODES	REQUIRED CHANNELS	CONDITIONS	SURVEILLANCE REQUIREMENTS	ALLOWABLE VALUE	NOMINAL TRIP SETPOINT
5. Feedwater Isolation						
a. Automatic Actuation Logic and Actuation Relays	1,2(e),3(e)	2 trains	G	SR 3.3.2.2 SR 3.3.2.4 SR 3.3.2.5	NA	NA
b. SG Water Level—High	1,2(e),3(e)	3 per SG	D	SR 3.3.2.1 SR 3.3.2.3(f) SR 3.3.2.8(f)	≤ 90%	78%
c. Safety Injection	Refer to Function 1 (Safety Injection) for all initiation functions and requirements.					
6. Auxiliary Feedwater						
a. Automatic Actuation Logic and Actuation Relays	1,2,3	2 trains	G	SR 3.3.2.2	NA	NA
b. SG Water Level—Low Low	1,2,3	3 per SG	D	SR 3.3.2.1 SR 3.3.2.3(f) SR 3.3.2.8(f)	≥ 29.5%	31%
c. Safety Injection	Refer to Function 1 (Safety Injection) for all initiation functions and requirements.					
d. Undervoltage Bus A01 and A02	1,2	2 per bus	H	SR 3.3.2.6 SR 3.3.2.8(f)	≥ 3120 V	3255 V
e. AFW Pump Suction Transfer on Suction Pressure - Low	1,2,3	1 per pump	J	SR 3.3.2.1 SR 3.3.2.3(f) SR 3.3.2.8(f)	≥ 5.8 psig	6.1 psig
7. SI Block-Pressurizer Pressure	1,2,3	3	I	SR 3.3.2.1 SR 3.3.2.3 SR 3.3.2.8	≤ 2005 psig	2000 psig

(e) Except when all MFIVs, MFRVs and associated bypass valves are closed and de-activated.
(f) Table 3.3.2-1 Notes 1 and 2 are applicable.

Table 3.3.2-1 (page 4 of 4)
Engineered Safety Feature Actuation System Instrumentation

Note 1:

If the as-found channel setpoint is outside its predefined as-found tolerance, then the channel shall be evaluated to verify that it is functioning as required before returning the channel to service.

Note 2:

The instrument channel setpoint shall be reset to a value that is within the as-left tolerance around the Nominal Trip Setpoint (NTSP) at the completion of the surveillance; otherwise, the channel shall be declared inoperable. Setpoints more conservative than the NTSP are acceptable provided that the as-found and as-left tolerances apply to the actual setpoint implemented in the Surveillance procedures (field setting) to confirm channel performance. The methodologies used to determine the as-found and the as-left tolerances are specified in FSAR Section 7.2.

3.3 INSTRUMENTATION

3.3.3 Post Accident Monitoring (PAM) Instrumentation

LCO 3.3.3 The PAM instrumentation for each Function in Table 3.3.3-1 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. 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
C. One or more Functions with two required channels inoperable.	C.1 Restore one channel to OPERABLE status.	7 days

(continued)

"Revised by correction letter dated January 31, 2005"

ACTIONS (continued)

CONDITION	REQUIRED ACTION		COMPLETION TIME
D. Required Action and associated Completion Time of Condition C not met.	D.1	Enter the Condition referenced in Table 3.3.3-1 for the channel.	Immediately
E. As required by Required Action D.1 and referenced in Table 3.3.3-1.	E.1	Be in MODE 3.	6 hours
	AND		
	E.2	Be in MODE 4.	12 hours
F. As required by Required Action D.1 and referenced in Table 3.3.3-1.	F.1	Initiate action in accordance with Specification 5.6.6.	Immediately

SURVEILLANCE REQUIREMENTS

---NOTE---
SR 3.3.3.1 applies to each PAM instrumentation Function in Table 3.3.3-1. SR 3.3.3.2 applies to each PAM instrumentation Function in Table 3.3.3-1, except Function 12. SR 3.3.3.3 applies to Function 12 only.

	SURVEILLANCE	FREQUENCY
SR 3.3.3.1	Perform CHANNEL CHECK for each required instrumentation channel that is normally energized.	In accordance with the Surveillance Frequency Control Program
SR 3.3.3.2	--------------------------NOTE-------------------------- CHANNEL CALIBRATION of Containment Area Radiation (High Range) detectors shall consist of verification of a response to a source. --- Perform CHANNEL CALIBRATION.	In accordance with the Surveillance Frequency Control Program
SR 3.3.3.3	Perform TADOT.	In accordance with the Surveillance Frequency Control Program

Table 3.3.3-1 (page 1 of 1)
Post Accident Monitoring Instrumentation

FUNCTION	REQUIRED CHANNELS	CONDITION REFERENCED FROM REQUIRED ACTION D.1
1. Reactor Coolant System (RCS) Subcooling Monitor	2	E
2. RCS Hot Leg Temperature (Wide Range)	2 per loop	E
3. RCS Cold Leg Temperature (Wide Range)	2 per loop	E
4. RCS Pressure (Wide Range)	2	E
5. RCS Pressure (Narrow Range)	2	E
6. Reactor Vessel Water Level (Wide Range)	2	E
7. Reactor Vessel Water Level (Narrow Range)	2	E
8. Containment Sump B Water Level	2	E
9. Containment Pressure (Wide Range)	2	E
10. Containment Pressure (Intermediate Range)	2	E
11. Containment Pressure (Low Range)	2	E
12. Containment Isolation Valve Position	2 per penetration flow path (a)(b)	E
13. Containment Area Radiation (High Range)	2	F
14. Pressurizer Level	2	E
15. Steam Generator Water Level (Wide Range)	2 per steam generator	E
16. Steam Generator Water Level (Narrow Range)	2 per steam generator	E
17. Steam Generator Pressure	2 per steam generator	E
18. Condensate Storage Tank Level	2 per tank	E
19. Core Exit Temperature — Quadrant 1	2	E
20. Core Exit Temperature — Quadrant 2	2	E
21. Core Exit Temperature — Quadrant 3	2	E
22. Core Exit Temperature — Quadrant 4	2	E
23. Auxiliary Feedwater Flow	2	E
24. Refueling Water Storage Tank Level	2	E

(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.

3.3 INSTRUMENTATION

3.3.4 Loss of Power (LOP) Diesel Generator (DG) Start Instrumentation

LCO 3.3.4 The following LOP DG Start Instrumentation shall be OPERABLE:

a. Three channels per bus of the 4.16 kV loss of voltage Function,

b. Three channels per bus of the 4.16 kV degraded voltage Function, and

c. Three channels per bus of the 480 V loss of voltage Function.

APPLICABILITY: MODES 1, 2, 3, and 4,
When associated DG is required to be OPERABLE by LCO 3.8.2, "AC Sources — Shutdown."

ACTIONS

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

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more Functions with one channel per bus inoperable.	A.1 Place channel in trip.	1 hour
B. Two or more 4.16 kV loss of voltage or 4.16 kV degraded voltage channels per bus inoperable.	B.1 Restore all but one channel to OPERABLE status.	1 hour

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION		COMPLETION TIME
C. Required Action and associated Completion Time of Condition A for 4.16 kV Functions or Condition B not met.	C.1	Enter applicable Condition(s) and Required Action(s) for the associated standby emergency power source made inoperable by LOP DG start instrumentation.	Immediately
D. Two or more 480 V loss of voltage channels per bus inoperable.	D.1	Restore all but one channel to OPERABLE status.	1 hour
E. Required Action and associated Completion Time of Condition A for 480 V loss of voltage Function or Condition D not met.	E.1	Be in MODE 3.	6 hours
	<u>AND</u>		
	E.2	Be in MODE 5.	36 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.3.4.1	Perform CHANNEL CHECK.	In accordance with the Surveillance Frequency Control Program
SR 3.3.4.2	Perform TADOT.	In accordance with the Surveillance Frequency Control Program

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.3.4.3	Perform CHANNEL CALIBRATION with Allowable Value as follows: a. 4.16 kV loss of voltage Allowable Value ≥ 3156 V with a time delay of ≥ 1.8 seconds and ≤ 2.3 seconds (Bus Loss of Voltage Relay) and ≥ 1.95 seconds and ≤ 3.55 seconds (EDG Breaker Close Delay Relay). b. 4.16 kV degraded voltage Allowable Value ≥ 3937 V with a time delay of < 5.68 seconds (Bus Degraded Voltage Relay) and < 39.14 seconds (Bus Time Delay Relay). c. 480 V loss of voltage Allowable Value 256 V ± 3% with a time delay of ≥ 1.15 seconds and ≤ 1.6 seconds.	In accordance with the Surveillance Frequency Control Program

3.3 INSTRUMENTATION

3.3.5 Control Room Emergency Filtration System (CREFS) Actuation Instrumentation

LCO 3.3.5 The CREFS actuation instrumentation for each Function 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 Function.

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more Functions inoperable.	A.1 Place CREFS in the emergency mode of operation.	7 days
B. Required Action and associated Completion Time not met.	-----------------NOTE----------------- Required Action B.1 is not applicable for inoperability of the Containment Isolation actuation function. --	
	B.1 Suspend movement of irradiated fuel assemblies.	Immediately
	<u>AND</u>	
	B.2 Be in MODE 3.	6 hours
	<u>AND</u>	
	B.3 Be in MODE 5.	36 hours

SURVEILLANCE REQUIREMENTS

--NOTE--
Refer to Table 3.3.5-1 to determine which SRs apply for each CREFS Actuation Function.

SURVEILLANCE		FREQUENCY
SR 3.3.5.1	Perform CHANNEL CHECK.	In accordance with the Surveillance Frequency Control Program
SR 3.3.5.2	Perform COT.	In accordance with the Surveillance Frequency Control Program
SR 3.3.5.3	Perform CHANNEL CALIBRATION.	In accordance with the Surveillance Frequency Control Program

Table 3.3.5-1 (page 1 of 1)
CREFS Actuation Instrumentation

FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	REQUIRED CHANNELS	SURVEILLANCE REQUIREMENTS	TRIP SETPOINT
1. Control Room Radiation				
a. Control Room Area Monitor	1, 2, 3, 4, (a)	1	SR 3.3.5.1 SR 3.3.5.2 SR 3.3.5.3	NA
b. Control Room Air Intake	1, 2, 3, 4, (a)	1	SR 3.3.5.1 SR 3.3.5.2 SR 3.3.5.3	NA
2. Containment Isolation	Refer to LCO 3.3.2, "ESFAS Instrumentation," Function 3, for all initiation functions and requirements.			

(a) During movement of irradiated fuel assemblies.

3.3 INSTRUMENTATION

3.3.6 Boron Dilution Alarm

LCO 3.3.6 Boron Dilution Alarm shall be OPERABLE.

APPLICABILITY: MODE 5.

ACTIONS

CONDITION	REQUIRED ACTIONS	COMPLETION TIME
A. Boron Dilution Alarm inoperable.	A.1 Close unborated water source isolation valve(s).	1 hour

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.3.6.1 Perform TADOT.	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 pressurizer pressure, RCS average temperature, and RCS total flow rate shall be within the limits specified below:

a. Pressurizer pressure is greater than or equal to the limits specified in the COLR;

b. RCS average temperature is within the limits specified in the COLR; and

c. RCS total flow rate ≥ 178,000 gpm and greater than or equal to the limit specified in the COLR.

APPLICABILITY: MODE 1.

-----------------------------------NOTE-----------------------------------
Pressurizer pressure limit does not apply during:

a. THERMAL POWER ramp > 5% RTP per minute; or

b. THERMAL POWER step > 10% RTP.

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.	6 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.4.1.1	Verify pressurizer pressure is greater than or equal to the limits specified in the COLR.	In accordance with the Surveillance Frequency Control Program
SR 3.4.1.2	Verify RCS average temperature is within the limits specified in the COLR.	In accordance with the Surveillance Frequency Control Program
SR 3.4.1.3	-------------------NOTE------------------- Not required to be performed until 24 hours after $\geq$ 90% RTP. -- Verify by precision heat balance that RCS total flow rate is $\geq$ 178,000 gpm and greater than or equal to the 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 (T_{avg}) shall be ≥ 540°F.

APPLICABILITY: MODE 1,
MODE 2 with k_{eff} ≥ 1.0.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. T_{avg} 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 T_{avg} in each loop ≥ 540°F.	In accordance with the Surveillance Frequency Control Program

3.4 REACTOR COOLANT SYSTEM (RCS)

3.4.3 RCS Pressure and Temperature (P/T) Limits

LCO 3.4.3 RCS pressure, RCS temperature, and RCS heatup and cooldown rates shall be maintained within the limits specified in the PTLR.

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
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 with RCS pressure < 500 psig.	6 hours 36 hours

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION		COMPLETION TIME
C. -----------NOTE----------- Required Action C.2 shall be completed whenever this Condition is entered. ------------------------------ Requirements of LCO not met any time in other than MODE 1, 2, 3, or 4.	C.1	Initiate action to restore parameter(s) to within limits.	Immediately
	AND		
	C.2	Determine RCS is acceptable for continued operation.	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 inservice leak and hydrostatic testing with $k_{eff} < 1.0$. --- Verify RCS pressure, RCS temperature, and RCS heatup and cooldown rates are within the limits specified in the PTLR.	In accordance with the Surveillance Frequency Control Program

3.4 REACTOR COOLANT SYSTEM (RCS)

3.4.4 RCS Loops — MODES 1 and 2

LCO 3.4.4 Two RCS loops shall be OPERABLE and in operation.

APPLICABILITY: MODES 1 and 2.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Requirements of LCO not met.	A.1 Be in MODE 3.	6 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.4.4.1	Verify each RCS loop is 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 one RCS loop shall be in operation.

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

All reactor coolant pumps may be not in operation for ≤ 1 hour per 8 hour period provided:

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

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

c. The Rod Control System is not capable of rod withdrawal.

APPLICABILITY: MODE 3.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One required RCS loop inoperable.	A.1 Restore required 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)

CONDITION	REQUIRED ACTION		COMPLETION TIME
C. Two RCS loops inoperable. <u>OR</u> No RCS loop in operation.	C.1	Place the Rod Control System in a condition incapable of rod withdrawal.	Immediately
	<u>AND</u>		
	C.2	Suspend all operations involving a reduction of RCS boron concentration.	Immediately
	<u>AND</u>		
	C.3	Initiate action to restore one RCS loop to OPERABLE status and operation.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.4.5.1	Verify one RCS loop is in operation.	In accordance with the Surveillance Frequency Control Program
SR 3.4.5.2	Verify steam generator secondary side water levels are $\geq$ 35% narrow range for required RCS loops.	In accordance with the Surveillance Frequency Control Program
SR 3.4.5.3	Verify correct breaker alignment and indicated power are 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 residual heat removal (RHR) loops shall be OPERABLE, and one loop shall be in operation.

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

1. All reactor coolant pumps (RCPs) and RHR pumps may be not 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. No RCP shall be started with any RCS cold leg temperature ≤ Low Temperature Overpressure Protection (LTOP) enabling temperature specified in the PTLR unless the secondary side water temperature of each steam generator (SG) is ≤ 50°F above each of the RCS cold leg temperatures.

APPLICABILITY: MODE 4.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One required RCS loop inoperable. AND Two RHR loops inoperable.	A.1 Initiate action to restore a second loop to OPERABLE status.	Immediately

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION		COMPLETION TIME
B. One required RHR loop inoperable. AND Two required RCS loops inoperable.	B.1	Be in MODE 5.	24 hours
C. Required RCS or RHR loops inoperable. OR No RCS or RHR loop in operation.	C.1	Suspend all operations involving a reduction of RCS boron concentration.	Immediately
	AND		
	C.2	Initiate action to restore one loop to OPERABLE status and operation.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.4.6.1	Verify one RHR or RCS loop is in operation.	In accordance with the Surveillance Frequency Control Program
SR 3.4.6.2	Verify SG secondary side water levels are $\geq$ 35% narrow range for required RCS loops.	In accordance with the Surveillance Frequency Control Program
SR 3.4.6.3	Verify correct breaker alignment and indicated power are available to the required pump that is not in operation.	In accordance with the Surveillance Frequency Control Program

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.4.6.4	-------------------------NOTE------------------------ Not required to be performed until 12 hours after entering MODE 4. --- Verify required RHR 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 residual heat removal (RHR) loop shall be OPERABLE and in operation, and either:

a. One additional RHR loop shall be OPERABLE; or

b. The secondary side water level of at least one steam generator (SG) shall be ≥ 35% narrow range.

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

1. The RHR pump of the loop in operation may be not 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 RHR loop may be inoperable for up to 2 hours for surveillance testing provided that the other RHR loop is OPERABLE and in operation.

3. No reactor coolant pump shall be started with one or more RCS cold leg temperatures ≤ Low Temperature Overpressure Protection (LTOP) arming temperature specified in the PTLR unless the secondary side water temperature of each SG is ≤ 50°F above each of the RCS cold leg temperatures.

4. All RHR loops may be removed from operation during planned heatup to MODE 4 or during the performance of required leakage or flow testing when at least one RCS loop is in operation.

APPLICABILITY: MODE 5 with RCS loops filled.

ACTIONS

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

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.4.7.1	Verify one RHR loop is in operation.	In accordance with the Surveillance Frequency Control Program
SR 3.4.7.2	Verify SG secondary side water level is ≥ 35% narrow range in the required SG.	In accordance with the Surveillance Frequency Control Program

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.4.7.3	Verify correct breaker alignment and indicated power are available to the required RHR pump that is not in operation.	In accordance with the Surveillance Frequency Control Program
SR 3.4.7.4	Verify required RHR 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 residual heat removal (RHR) loops shall be OPERABLE and one RHR loop shall be in operation.

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

1. All RHR pumps may be not in operation for ≤ 15 minutes when switching from one loop to another provided:

   a. The core outlet temperature is maintained > 10°F below saturation temperature.

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

APPLICABILITY: MODE 5 with RCS loops not filled.

ACTIONS

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

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
B. Required RHR loops inoperable. OR No RHR loop in operation.	B.1 Suspend all operations involving reduction in RCS boron concentration. AND B.2 Initiate action to restore one RHR loop to OPERABLE status and operation.	Immediately Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.4.8.1	Verify one RHR loop is in operation.	In accordance with the Surveillance Frequency Control Program
SR 3.4.8.2	Verify correct breaker alignment and indicated power are available to the required RHR pump that is not in operation.	In accordance with the Surveillance Frequency Control Program
SR 3.4.8.3	Verify RHR 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 ≤ 52% in MODE 1 or ≤ 88% in MODES 2 and 3; and

b. At least 100 kW of pressurizer heaters capable of being powered from an emergency power supply are OPERABLE.

APPLICABILITY: MODES 1, 2, and 3.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Pressurizer water level not within limit in MODE 1.	A.1 Restore pressurizer water level to within limit.	1 hour
B. Required pressurizer heaters inoperable.	B.1 Restore required pressurizer heaters to OPERABLE status.	1 hour
C. Required Action and associated Completion Time not met. <u>OR</u> Pressurizer water level not within limit in MODES 2 and 3.	C.1 Be in MODE 3. <u>AND</u> C.2 Be in MODE 4.	6 hours 12 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.4.9.1	Verify pressurizer water level is ≤ 52% in MODE 1 <u>OR</u> ≤ 88% in MODES 2 and 3.	In accordance with the Surveillance Frequency Control Program
SR 3.4.9.2	Verify capacity of required pressurizer heaters is ≥ 100 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 $\geq$ 2410 psig and $\leq$ 2547 psig.

APPLICABILITY: MODES 1, 2, and 3,
MODE 4 with all RCS cold leg temperatures > the LTOP enabling temperature specified in the PTLR.

-----NOTE-----
The lift settings are not required to be within the LCO limits during MODES 3 and 4 for the purpose of setting the pressurizer safety valves under ambient (hot) conditions. This exception is allowed for 36 hours following entry into 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 AND B.2	Be in MODE 3. Be in MODE 4 with any RCS cold leg temperature $\leq$ the LTOP enabling temperature specified in the PTLR.	6 hours 12 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 Pressurizer Power Operated Relief Valves (PORVs)

LCO 3.4.11 Each PORV and associated block valve shall be OPERABLE.

APPLICABILITY: MODES 1, 2, MODE 3 with RCS average temperature (T_{avg}) $\geq$ 500°F.

ACTIONS

---NOTE---
Separate Condition entry is allowed for each PORV and each block valve.

CONDITION	REQUIRED ACTION		COMPLETION TIME
A. One or more PORVs inoperable and capable of being manually cycled.	A.1	Close and maintain power to associated block valve.	1 hour
B. One PORV inoperable and not capable of being manually cycled.	B.1	Close associated block valve.	1 hour
	AND		
	B.2	Remove power from associated block valve.	1 hour
	AND		
	B.3	Restore PORV to OPERABLE status.	72 hours OR In accordance with the Risk Informed Completion Time Program

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
C. One block valve inoperable.	------------------NOTE------------------ Required Actions C.1 and C.2 do not apply when block valve is inoperable solely as a result of complying with Required Actions B.2 or E.2 ---	
	C.1 Place associated PORV in manual control.	1 hour
	AND	
	C.2 Restore block valve to OPERABLE status.	72 hours OR In accordance with the Risk Informed Completion Time Program
D. Required Action and associated Completion Time of Condition A, B, or C not met.	D.1 Be in MODE 3.	6 hours
	AND	
	D.2 Reduce T_{avg} to < 500°F.	12 hours

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
E. Two PORVs inoperable and not capable of being manually cycled.	E.1 Close associated block valves. AND E.2 Remove power from associated block valves. AND E.3 Be in MODE 3. AND E.4 Reduce T_{avg} to < 500°F.	1 hour 1 hour 6 hours 12 hours
F. Two block valves inoperable.	-----------------NOTE----------------- Required Action F.1 does not apply when block valve is inoperable solely as a result of complying with Required Actions B.2 or E.2 -- F.1 Restore one block valve to OPERABLE status.	2 hours
G. Required Action and associated Completion Time of Condition F not met.	G.1 Be in MODE 3. AND G.2 Reduce T_{avg} to < 500°F.	6 hours 12 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.4.11.1	---------------------------NOTE-------------------------- Not required to be met with block valve closed in accordance with the Required Action of Condition B or E. --- Perform a complete cycle of each block valve.	In accordance with the Surveillance Frequency Control Program
SR 3.4.11.2	Perform a complete cycle of each PORV.	In accordance with the Surveillance Frequency Control Program

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:

a. A maximum of one Safety Injection (SI) pump capable of injecting into the RCS;

b. Each accumulator isolated, whose pressure is ≥ the maximum RCS pressure for the existing RCS cold leg temperature allowed by the P/T limit curves provided in the PTLR, and

c. One of the following pressure relief capabilities:

1. Two power operated relief valves (PORVs) with lift settings within the limits specified in the PTLR, or

2. The RCS depressurized and an RCS vent path with venting capability equivalent to or greater than a PORV.

APPLICABILITY: MODE 4 when any RCS cold leg temperature is ≤ LTOP enabling temperature specified in the PTLR,
MODE 5,
MODE 6 when the reactor vessel head is on.

ACTIONS

-----NOTES-----

1. While this LCO is not met, entry into MODE 6, with the reactor vessel head on, from MODE 6, with the reactor vessel head removed, is not permitted.

2. LCO 3.0.4.b is not applicable when entering MODE 4.

CONDITION	REQUIRED ACTION		COMPLETION TIME
A. Two SI pumps capable of injecting into the RCS.	A.1	Initiate action to verify a maximum of one SI pump is capable of injecting into the RCS.	Immediately

(continued)

ACTIONS (continued)

B. An accumulator not isolated when the accumulator pressure is greater than or equal to the maximum RCS pressure for existing cold leg temperature allowed in the PTLR.	B.1 Isolate affected accumulator.	1 hour
C. Required Action and associated Completion Time of Condition B not met.	C.1 Increase RCS cold leg temperature to > LTOP enabling temperature specified in the PTLR. OR C.2 Depressurize affected accumulator to less than the maximum RCS pressure for existing cold leg temperature allowed in the PTLR.	12 hours 12 hours
D. One required PORV inoperable in MODE 4.	D.1 Restore required PORV to OPERABLE status.	7 days
E. One required PORV inoperable in MODE 5 or 6.	E.1 Restore required PORV to OPERABLE status.	24 hours

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION		COMPLETION TIME
F. Two required PORVs inoperable. <u>OR</u> Required Action and associated Completion Time of Condition A, C, D or E not met. <u>OR</u> LTOP System inoperable for any reason other than Condition A, B, C, D or E.	F.1	Depressurize RCS and establish RCS vent path with venting capability equivalent to or greater than a PORV.	8 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.4.12.1	Verify a maximum of one SI pump is capable of injecting into the RCS.	In accordance with the Surveillance Frequency Control Program
SR 3.4.12.2	------------------------------NOTE---------------------------- Only required when accumulator pressure is ≥ the maximum RCS pressure for existing cold leg temperature allowed by the P/T limit curves provided in the PTLR. --- Verify each accumulator is isolated.	In accordance with the Surveillance Frequency Control Program
SR 3.4.12.3	----------------------------NOTE----------------------------- Only required to be performed when complying with LCO 3.4.12.c.2. --- Verify required RCS vent path with venting capability equivalent to or greater than a PORV.	In accordance with the Surveillance Frequency Control Program
SR 3.4.12.4	Verify required trains of LTOP armed.	In accordance with the Surveillance Frequency Control Program
SR 3.4.12.5	Perform a COT on each required PORV, excluding actuation.	In accordance with the Surveillance Frequency Control Program

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.4.12.6	Perform CHANNEL CALIBRATION for each required PORV actuation channel.	In accordance with the Surveillance Frequency Control Program
SR 3.4.12.7	Perform a complete cycle of each required PORV solenoid air control valve and check valve on the nitrogen gas bottles.	In accordance with the Surveillance Frequency Control Program
SR 3.4.12.8	Perform a complete cycle of each required 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. 72 gallons per day (Unit 1) and 150 gallons per day (Unit 2) primary to secondary LEAKAGE through any one steam generator (SG).

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

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. RCS operational LEAKAGE not within limits for reasons other than pressure boundary LEAKAGE or primary to secondary LEAKAGE.	A.1 Reduce LEAKAGE to within limits.	4 hours
B. Required Action and associated Completion Time of Condition A not met. OR Pressure boundary LEAKAGE exists. OR Primary to secondary LEAKAGE not within limit.	B.1 Be in MODE 3. AND B.2 Be in MODE 5.	6 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. --- Verify RCS Operational LEAKAGE is within limits by performance of RCS water inventory balance.	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 $\leq$72 gallons per day (Unit 1) and $\leq$ 150 gallons per day (Unit 2) 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 each RCS PIV shall be within limit.

APPLICABILITY: MODES 1, 2, and 3,
MODE 4, except valves in the residual heat removal (RHR) flow path when in, or during the transition to or from, the RHR 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 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 in the reactor coolant pressure boundary or the high pressure portion of the system. --	
		(continued)

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 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 automatic, or check valve.	72 hours
B. Required Action and associated Completion Time for Condition A not met.	B.1	Be in MODE 3.	6 hours
	AND		
	B.2	Be in MODE 5.	36 hours

SURVEILLANCE REQUIREMENTS

	SURVEILLANCE	FREQUENCY
SR 3.4.14.1	-------------------------NOTES------------------------- 1. Not required to be performed in MODES 3 and 4. 2. Not required to be performed on the RCS PIVs located in the RHR flow path when in the shutdown cooling mode of operation. 3. RCS PIVs actuated during the performance of this Surveillance are not required to be tested more than once if a repetitive testing loop cannot be avoided. --- Verify leakage from each RCS PIV is within the limits contained in the RCS PIV Leakage Program.	In accordance with the INSERVICE TESTING PROGRAM, and 18 months AND Prior to entering MODE 2 whenever the unit has been in MODE 5 for 7 days or more, if leakage testing has not been performed in the previous 9 months AND (continued)

SURVEILLANCE	FREQUENCY
SR 3.4.14.1 (continued)	Within 24 hours following valve actuation due to automatic or manual action or flow through the valve

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 sump level alarm; and

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

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

ACTIONS

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

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION		COMPLETION TIME
B. Required containment atmosphere radioactivity monitor inoperable.	B.1.1	Analyze grab samples of the containment atmosphere.	Once per 24 hours
	<u>OR</u>		
		----------NOTE---------- Not required until 12 hours after establishment of steady state operation. ---------------------------	
	B.1.2	Perform SR 3.4.13.1.	Once per 24 hours
	<u>AND</u>		
	B.2	Restore required containment atmosphere radioactivity monitor to OPERABLE status.	30 days
C. Required Action and associated Completion Time not met.	C.1	Be in MODE 3.	6 hours
	<u>AND</u>		
	C.2	Be in MODE 5.	36 hours
D. All required monitors and level alarm inoperable.	D.1	Enter LCO 3.0.3.	Immediately

SURVEILLANCE REQUIREMENTS

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

3.4 REACTOR COOLANT SYSTEM (RCS)

3.4.16 RCS Specific Activity

LCO 3.4.16 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
	AND	
	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)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
C. Required Action and associated Completion Time of Condition A or B not met. OR DOSE EQUIVALENT I-131 >50 μCi/gm.	C.1 Be in MODE 3. <u>AND</u> C.2 Be in MODE 5.	6 hours 36 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.4.16.1	-------------------------NOTE------------------------- Only required to be performed in MODE 1. -- Verify reactor coolant DOSE EQUIVALENT Xe-133 Specific Activity ≤ 300 μCi/gm.	In accordance with the Surveillance Frequency Control Program
SR 3.4.16.2	-------------------------NOTE------------------------- Only required to be performed in MODE 1. -- Verify reactor coolant DOSE EQUIVALENT I-131 specific activity ≤ 0.5 μCi/gm.	In accordance with the Surveillance Frequency Control Program AND Between 2 and 6 hours after a THERMAL POWER change of ≥ 15% RTP within a 1 hour period

3.4 REACTOR COOLANT SYSTEM (RCS)

3.4.17 Steam Generator (SG) Tube Integrity

LCO 3.4.17 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.	6 hours
	AND		
	B.2	Be in MODE 5.	36 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.4.17.1	Verify SG tube integrity in accordance with the Steam Generator Program.	In accordance with the Steam Generator Program
SR 3.4.17.2	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 a SG tube inspection

3.5 EMERGENCY CORE COOLING SYSTEMS (ECCS)

3.5.1 Accumulators

LCO 3.5.1 Two Safety Injection Accumulators shall be OPERABLE.

APPLICABILITY: MODES 1 and 2,
MODE 3 with RCS pressure > 1000 psig.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One accumulator inoperable due to boron concentration not within limits.	A.1 Restore boron concentration to within limits.	72 hours
B. One accumulator inoperable for reasons other than Condition A.	B.1 Restore accumulator to OPERABLE status.	24 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 Reduce RCS pressure to ≤ 1000 psig.	6 hours 12 hours
D. Two accumulators inoperable.	D.1 Enter LCO 3.0.3.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.5.1.1	Verify each accumulator isolation valve is fully open.	In accordance with the Surveillance Frequency Control Program
SR 3.5.1.2	Verify borated water volume in each accumulator is ≥ 1100 ft^3 and ≤ 1136 ft^3.	In accordance with the Surveillance Frequency Control Program
SR 3.5.1.3	Verify nitrogen cover pressure in each accumulator is ≥ 700 psig and ≤ 800 psig.	In accordance with the Surveillance Frequency Control Program

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.5.1.4	Verify boron concentration in each accumulator is ≥ 2700 ppm and ≤ 3100 ppm.	In accordance with the Surveillance Frequency Control Program <u>AND</u> ------NOTE------ Only required to be performed for affected accumulators -------------------- Once within 24 hours after each solution volume increase of ≥ 5% of indicated level that is not the result of addition from the refueling water storage tank with boron concentration ≥ 2700 ppm and ≤ 3100 ppm
SR 3.5.1.5	Verify power is removed from each accumulator isolation valve operator when RCS pressure is > 1000 psig.	In accordance with the Surveillance Frequency Control Program

3.5 EMERGENCY CORE COOLING SYSTEMS (ECCS)

3.5.2 ECCS – Operating

LCO 3.5.2 Two ECCS trains shall be OPERABLE.

-------------------------------------NOTE--------------------------------------
In MODE 3, both safety injection (SI) pump flow paths may be isolated by closing the isolation valves for up to 2 hours to perform pressure isolation valve testing per SR 3.4.14.1.

APPLICABILITY: MODES 1, 2, and 3.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One ECCS train inoperable.	A.1 Restore train to OPERABLE status.	72 hours <u>OR</u> In accordance with the Risk Informed Completion Time Program
B. Required Action and associated Completion Time not met.	B.1 Be in MODE 3. <u>AND</u> B.2 Be in MODE 4.	6 hours 12 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.5.2.1	-------------------------NOTE------------------------- Not required to be met for system vent flow paths opened under administrative controls. --- Verify each ECCS manual, power operated, and automatic valve in the flow path, that is not locked, sealed, or otherwise secured in position, is in the correct position.	In accordance with the Surveillance Frequency Control Program
SR 3.5.2.2	Verify ECCS locations susceptible to gas accumulation are sufficiently filled with water.	In accordance with the Surveillance Frequency Control Program
SR 3.5.2.3	Verify each ECCS 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 ECCS 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

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.5.2.5	Verify each ECCS 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 ECCS train containment sump suction inlet is not restricted by debris and the suction inlet debris screens show no evidence of structural distress or abnormal corrosion.	In accordance with the Surveillance Frequency Control Program

3.5 EMERGENCY CORE COOLING SYSTEMS (ECCS)

3.5.3 ECCS — Shutdown

LCO 3.5.3 One ECCS train shall be OPERABLE.

------------------------------------NOTE------------------------------------
An RHR train may be considered OPERABLE during alignment and operation for decay heat removal, if capable of being manually realigned to the ECCS mode of operation.

APPLICABILITY: MODE 4.

ACTIONS

------------------------------------NOTE------------------------------------
LCO 3.0.4.b is not applicable to ECCS high head subsystem.

CONDITION	REQUIRED ACTION		COMPLETION TIME
A. Required ECCS residual heat removal (RHR) subsystem inoperable.	A.1	Initiate action to restore required ECCS RHR subsystem to OPERABLE status.	Immediately
B. Required ECCS SI subsystem inoperable.	B.1	Restore required ECCS SI subsystem to OPERABLE status.	1 hour
C. Required Action and associated Completion Time of Condition B not met.	C.1	Be in MODE 5.	24 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.5.3.1	The following SRs are applicable for all equipment required to be OPERABLE: SR 3.5.2.1 SR 3.5.2.4 SR 3.5.2.2 SR 3.5.2.5 SR 3.5.2.3 SR 3.5.2.6	In accordance with applicable SRs

3.5 EMERGENCY CORE COOLING SYSTEMS (ECCS)

3.5.4 Refueling Water Storage Tank (RWST)

LCO 3.5.4 The RWST shall be OPERABLE.

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

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. RWST boron concentration not within limits. <u>OR</u> RWST borated water temperature not within limits.	A.1 Restore RWST to OPERABLE status.	8 hours
B. RWST inoperable for reasons other than Condition A.	B.1 Restore RWST to OPERABLE status.	1 hour
C. Required Action and associated Completion Time not met.	C.1 Be in MODE 3. <u>AND</u> C.2 Be in MODE 5.	6 hours 36 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.5.4.1	Verify RWST borated water temperature is ≥ 42.5°F and ≤ 97.5°F.	In accordance with the Surveillance Frequency Control Program
SR 3.5.4.2	Verify RWST borated water volume is ≥ 275,000 gallons.	In accordance with the Surveillance Frequency Control Program
SR 3.5.4.3	Verify RWST boron concentration is ≥ 2800 ppm and ≤ 3200 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. AND B.2 Be in MODE 5.	6 hours 36 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.6.1.1	Perform required visual examinations and leakage rate testing except for containment air lock 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.

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more containment air locks with one bulkhead inoperable.	----------------NOTES---------------- 1. Required Actions A.1, A.2, and A.3 are not applicable if both bulkheads 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. --	(continued)

ACTIONS

CONDITION	REQUIRED ACTION		COMPLETION TIME
A. (continued)	A.1	Verify the bulkhead door and equalizing valve are closed on the OPERABLE bulkhead in the affected air lock.	1 hour
	AND		
	A.2	Lock the bulkhead door and equalizing valve closed on the OPERABLE bulkhead in the affected air lock.	24 hours
	AND		
	A.3	-----------NOTE----------- Bulkhead doors and equalizing valves in high radiation areas may be verified locked closed by administrative means. -----------------------------	
		Verify the bulkhead door and equalizing valve on the OPERABLE bulkhead in the affected air lock are locked closed.	Once per 31 days

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
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 bulkheads 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 the bulkhead door and equalizing valve are closed on an OPERABLE bulkhead in the affected air lock.	1 hour
	<u>AND</u>	
	B.2 Lock the bulkhead door and equalizing valve closed on an OPERABLE bulkhead in the affected air lock.	24 hours
	<u>AND</u>	(continued)

ACTIONS

CONDITIONS	REQUIRED ACTION	COMPLETION TIME
B. (continued)	B.3 -----------NOTE----------- Bulkhead doors and equalizing valves in high radiation areas may be verified locked closed by administrative means. ------------------------------ Verify the bulkhead door and equalizing valve on an OPERABLE bulkhead in the affected airlock are locked closed.	 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
	AND	
	C.2 Verify a bulkhead door and associated equalizing valve are closed in the affected air lock.	1 hour
	AND	
	C.3 Restore air lock to OPERABLE status.	36 hours OR In accordance with the Risk Informed Completion Time Program

(continued)

ACTIONS (continued)

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

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.6.2.1	-------------------------NOTES------------------------- 1. An inoperable air lock bulkhead 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 bulkhead door and its associated equalizing valve 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 path(s) except for the purge supply and exhaust 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 systems made inoperable by containment isolation valves.

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

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 AND	Isolate the affected penetration flow path by use of at least one closed and de-activated automatic valve, closed manual valve, blind flange, or check valve with flow through the valve secured.	4 hours OR In accordance with the Risk Informed Completion Time Program (continued)

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. (continued)	A.2 ----------NOTES---------- 1. Isolation devices in high radiation areas may be verified by use of administrative means. 2. Isolation devices that are locked, sealed or otherwise secured may be verified by use of administrative means. ------------------------------ Verify the affected penetration flow path is isolated.	Once per 31 days following isolation for isolation devices outside containment <u>AND</u> 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, 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, closed manual valve, or blind flange.	72 hours OR In accordance with the Risk Informed Completion Time Program
	AND		
	C.2	-----------NOTES---------- 1. Isolation devices in high radiation areas may be verified by use of administrative means. 2. Isolation devices that are locked, sealed, or otherwise secured may be verified by use of administrative means. ----------------------------- Verify the affected penetration flow path is isolated.	Once per 31 days following isolation 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

(continued)

ACTIONS (continued)

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

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.6.3.1	Deleted	
SR 3.6.3.2	--------------------------NOTE------------------------- Valves and blind flanges in high radiation areas may be verified by use of administrative controls. --- Verify each containment isolation manual 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

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
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 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
SR 3.6.3.4	Verify the isolation time of each automatic power operated containment isolation valve is within INSERVICE TESTING PROGRAM 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 ≥ -1.0 psig and ≤ +1.0 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.	6 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 Containment Air Temperature

LCO 3.6.5 Containment average air temperature shall be:

a. ≤ 116.3°F based on three averaged temperature channels,

b. ≤ 115.7°F based on two averaged temperature channels, or

c. ≤ 112.5°F based on a single temperature channel.

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

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Containment average air temperature not within limit.	A.1 Restore containment average air temperature to within limit.	8 hours
B. Required Action and associated Completion Time not met.	B.1 Be in MODE 3. AND B.2 Be in MODE 5.	6 hours 36 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.6.5.1	Verify containment average air temperature is within limit.	In accordance with the Surveillance Frequency Control Program

3.6 CONTAINMENT SYSTEMS

3.6.6 Containment Spray and Cooling Systems

LCO 3.6.6 Two containment spray trains and four accident fan cooler units shall be OPERABLE.

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

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One containment spray train inoperable.	A.1 Restore containment spray train to OPERABLE status.	72 hours <u>AND</u> 144 hours from discovery of failure to meet the LCO
B. Required Action and associated Completion Time of Condition A not met.	B.1 Be in MODE 3. <u>AND</u> B.2 Be in MODE 5.	6 hours 84 hours
C. One or two accident fan cooler unit(s) inoperable.	C.1 Restore accident fan cooler unit(s) to OPERABLE status.	72 hours <u>AND</u> 144 hours from discovery of failure to meet the LCO

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION		COMPLETION TIME
D. One required accident fan cooler unit service water outlet valve inoperable.	D.1	Restore required accident fan cooler unit outlet valve to OPERABLE status.	72 hours AND 144 hours from discovery of failure to meet the LCO
E. Required Action and associated Completion Time of Condition C or D not met.	E.1	Be in MODE 3.	6 hours
	AND		
	E.2	Be in MODE 5.	36 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.6.6.1	------------------------NOTE------------------------ Not required to be met for system vent flow paths opened under administrative controls. --- Verify each containment spray manual, power operated, and automatic valve in the flow path that is not locked, sealed, or otherwise secured in position is in the correct position.	In accordance with the Surveillance Frequency Control Program
SR 3.6.6.2	Operate each containment cooling accident fan.	In accordance with the Surveillance Frequency Control Program

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.6.6.3	Verify each containment fan cooler unit can achieve a cooling water flow rate within design limits with a fan cooler service water outlet valve open.	In accordance with the Surveillance Frequency Control Program
SR 3.6.6.4	Verify each containment 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 3.6.6.5	Verify each automatic containment spray and containment fan cooler unit service water outlet 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 3.6.6.6	Verify each containment spray pump starts automatically on an actual or simulated actuation signal.	In accordance with the Surveillance Frequency Control Program
SR 3.6.6.7	Verify each containment fan cooler unit accident fan starts automatically on an actual or simulated actuation signal.	In accordance with the Surveillance Frequency Control Program
SR 3.6.6.8	Verify proper operation of the accident fan cooler unit backdraft dampers.	In accordance with the Surveillance Frequency Control Program
		(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.6.6.9	Verify each spray nozzle is unobstructed.	In accordance with the Surveillance Frequency Control Program
SR 3.6.6.10	Verify containment spray locations susceptible to gas accumulation are sufficiently filled with water.	In accordance with the Surveillance Frequency Control Program

3.6 CONTAINMENT SYSTEMS

3.6.7 Spray Additive System

LCO 3.6.7 The Spray Additive System shall be OPERABLE.

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

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One Spray Additive System flowpath inoperable.	A.1 Restore Spray Additive System flowpath to OPERABLE status.	72 hours
B. Spray Additive System inoperable for any reason other than Condition A.	B.1 Restore at least one Spray Additive System flowpath 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. <u>AND</u> C.2 Be in MODE 5.	6 hours 84 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.6.7.1	Verify each spray additive manual, power operated, and automatic valve in the flow path that is not locked, sealed, or otherwise secured in position is in the correct position.	In accordance with the Surveillance Frequency Control Program
SR 3.6.7.2	Verify spray additive tank solution volume is $\geq$ 43%.	In accordance with the Surveillance Frequency Control Program
SR 3.6.7.3	Verify spray additive tank NaOH solution concentration is $\geq$ 30% and $\leq$ 33% by weight.	In accordance with the Surveillance Frequency Control Program
SR 3.6.7.4	Verify each spray additive 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

3.7 PLANT SYSTEMS

3.7.1 Main Steam Safety Valves (MSSVs)

LCO 3.7.1 Four MSSVs per steam generator shall be OPERABLE.

APPLICABILITY: MODES 1, 2, and 3.

ACTIONS

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

CONDITION	REQUIRED ACTION		COMPLETION TIME
A. One or more Steam Generators with one MSSV inoperable and Moderator Temperature Coefficient (MTC) zero or negative at all power levels.	A.1	Reduce THERMAL POWER to less than or equal to the Maximum Allowable % RTP specified in Table 3.7.1-1 for the number of OPERABLE MSSVs.	4 hours
B. One or more Steam Generators with two MSSVs inoperable. OR One or more Steam Generators with one MSSV inoperable and Moderator Temperature Coefficient (MTC) positive at any power level.	B.1 AND	Reduce THERMAL POWER to less than or equal to the Maximum Allowable % RTP specified in Table 3.7.1-1 for the number of OPERABLE MSSVs.	4 hours (continued)

ACTIONS

CONDITION	REQUIRED ACTION		COMPLETION TIME
B. (continued)		-----------NOTE----------- Only required in MODE 1. -----------------------------	
	B.2	Reduce the Power Range Neutron Flux - High reactor trip setpoint to less than or equal to the Maximum Allowable % RTP specified in Table 3.7.1-1 for the number of OPERABLE MSSVs.	36 hours
C. Required Action and associated Completion Time not met. OR One or more steam generators with three or more MSSVs inoperable.	C.1	Be in MODE 3.	6 hours
	AND		
	C.2	Be in MODE 4.	12 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.7.1.1	--------------------------NOTE------------------------ Only required to be performed in MODES 1 and 2. --- Verify each required MSSV lift setpoint per Table 3.7.1-2 in accordance with the INSERVICE TESTING PROGRAM. Following testing, lift setting shall be within ±1%.	In accordance with the INSERVICE TESTING PROGRAM

Table 3.7.1-1 (page 1 of 1)
OPERABLE Main Steam Safety Valves versus
Maximum Allowable Power

NUMBER OF OPERABLE MSSVs PER STEAM GENERATOR	MAXIMUM ALLOWABLE POWER (% RTP)
3	≤ 39
2	≤ 22

Table 3.7.1-2 (page 1 of 1)
Main Steam Safety Valve Lift Settings

VALVE NUMBER		LIFT SETTING (psig ± 3%)
STEAM GENERATOR		
A	B	
MS 2010	MS 2005	1085
MS 2011	MS 2006	1100
MS 2012	MS 2007	1105
MS 2013	MS 2008	1105

3.7 PLANT SYSTEMS

3.7.2 Main Steam Isolation Valves (MSIVs) and Non-Return Check Valves

LCO 3.7.2 Two MSIVs and two non-return check valves shall be OPERABLE.

APPLICABILITY: MODES 1, 2 and 3

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One Steam Generator flowpath with one or more inoperable valves in MODE 1.	A.1 Restore valve to OPERABLE status.	8 hours <u>OR</u> -------NOTE------- Not applicable when more than one valve inoperable in one SG flowpath. --------------------- In accordance with the Risk Informed Completion Time Program
B. Required Action and associated Completion Time of Condition A not met.	B.1 Be in MODE 2.	6 hours

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION		COMPLETION TIME
C. -----------NOTE----------- Separate Condition entry is allowed for each Steam Generator flowpath. ------------------------------	-------------------NOTE------------------- An inoperable flowpath may be opened under administrative controls to allow cool down of the affected unit. ---		
One or both MSIVs inoperable in MODE 2 or 3.	C.1	Close and de-activate the MSIV in the affected flowpath.	8 hours
<u>OR</u>	<u>AND</u>		
One or both non-return check valves inoperable in MODE 2 or 3.	C.2	Close non-return check valve in the affected flowpath.	8 hours
	<u>AND</u>		
	C.3	Verify MSIV and non-return check valve in the affected flowpath are closed and the MSIV is de-activated.	Once per 7 days
D. Required Action and associated Completion Time of Condition C not met.	D.1	Be in MODE 3.	6 hours
	<u>AND</u>		
	D.2	Be in MODE 4.	12 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.7.2.1	--------------------------NOTE------------------------- Only required to be performed in MODE 1. --- Verify closure time of each MSIV is within limits.	In accordance with the INSERVICE TESTING PROGRAM
SR 3.7.2.2	--------------------------NOTE------------------------- Only required to be performed in MODE 1. --- Verify each MSIV actuates to the isolation position on an actual or simulated actuation signal.	In accordance with the Surveillance Frequency Control Program
SR 3.7.2.3	Verify each main steam non-return check valve can close.	In accordance with the INSERVICE TESTING PROGRAM

3.7 PLANT SYSTEMS

3.7.3 Main Feedwater Isolation Valves (MFIVs), Main Feedwater Regulating Valves (MFRVs) and MFRV Bypass Valves

LCO 3.7.3 Main Feedwater Isolation shall be OPERABLE.

APPLICABILITY: MODES 1, 2, and 3.

ACTIONS

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

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more MFIVs inoperable.	A.1 Close or isolate MFIV. AND A.2 Verify MFIV is closed or isolated.	72 hours Once per 7 days
B. One or more MFRVs inoperable.	B.1 Close or isolate MFRV. AND B.2 Verify MFRV is closed or isolated.	72 hours Once per 7 days
C. One or more MFRV Bypass Valves inoperable.	C.1 Close or isolate MFRV Bypass Valve AND C.2 Verify MFRV Bypass Valve is closed or isolated	72 hours Once per 7 days

ACTIONS (continued)

CONDITION	REQUIRED ACTION		COMPLETION TIME
D. Two valves in the same flowpath inoperable.	D.1	Isolate affected flow path	8 hours
E. Required Action and associated Completion Time not met.	E.1	Be in MODE 3.	6 hours
	<u>AND</u>		
	E.2	Be in MODE 4.	12 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.7.3.1	Verify each MFIV, MFRV, and MFRV bypass valve, actuate to the isolation position on an actual or simulated actuation signal.	In accordance with the Surveillance Frequency Control Program
SR 3.7.3.2	Verify each MFIV, MFRV, and MFRV Bypass Valve isolation time is within limits.	In accordance with the INSERVICE TESTING PROGRAM

3.7 PLANT SYSTEMS

3.7.4 Atmospheric Dump Valve (ADV) Flowpaths

LCO 3.7.4 Two ADV flowpaths 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. One required ADV flowpath inoperable.	A.1	Restore required ADV flowpath to OPERABLE status.	7 days OR In accordance with the Risk Informed Completion Time Program
B. Two required ADV flowpaths inoperable.	B.1	Restore one ADV flowpath to OPERABLE status.	1 hour
C. Required Action and associated Completion Time not met.	C.1	Be in MODE 3.	6 hours
	AND		
	C.2	Be in MODE 4 without reliance upon steam generator for heat removal.	18 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.7.4.1	Verify one complete manual cycle of each ADV.	In accordance with the Surveillance Frequency Control Program
SR 3.7.4.2	Verify one complete manual cycle of each ADV block valve.	In accordance with the Surveillance Frequency Control Program

3.7 PLANT SYSTEMS

3.7.5 Auxiliary Feedwater (AFW)

LCO 3.7.5 The AFW System shall be OPERABLE with; one turbine driven AFW pump system and one motor driven AFW pump system:

-------------------------------------NOTE--------------------------------------
Only the motor driven AFW pump system is 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.

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Turbine driven AFW pump system inoperable due to one inoperable steam supply. <u>OR</u> -----------NOTE------------ Only applicable if MODE 2 has not been entered following refueling. ------------------------------ Turbine driven AFW pump system inoperable in MODE 3 following refueling.	A.1 Restore affected equipment to OPERABLE status.	7 days <u>OR</u> In accordance with the Risk Informed Completion Time Program

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION		COMPLETION TIME
B. One AFW pump system inoperable in MODE 1, 2 or 3 for reasons other than Condition A.	B.1	Restore AFW pump system to OPERABLE status.	72 hours <u>OR</u> In accordance with the Risk Informed Completion Time Program
C. Turbine driven AFW pump system inoperable due to one inoperable steam supply. <u>AND</u> Motor driven AFW pump system inoperable.	C.1	Restore the steam supply to the turbine driven pump system to OPERABLE status.	24 hours
	<u>OR</u>		<u>OR</u>
	C.2	Restore the motor driven AFW pump system to OPERABLE status.	48 hours if motor driven AFW pump system is available from the opposite unit.

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION		COMPLETION TIME
D. Required Action and associated Completion Time of Condition A, B, or C not met.	D.1	Be in MODE 3.	6 hours
	AND		
	D.2	Be in MODE 4.	18 hours
E. Two AFW pump systems 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 AFW pump system is restored to OPERABLE status. ------------------------------ Initiate action to restore one AFW pump system to OPERABLE status.	Immediately
F. Motor driven AFW pump system inoperable in MODE 4.	F.1	Initiate action to restore motor driven AFW pump system to OPERABLE status.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.7.5.1	-------------------------NOTE------------------------- AFW pump system(s) may be considered OPERABLE during alignment and operation for steam generator level control, if it is capable of being manually realigned to the AFW mode of operation. -- Verify each AFW manual, power operated, and automatic valve in each water flow path, and in both steam supply flow paths to the steam 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	-------------------------NOTE------------------------- Not required to be performed for the turbine driven AFW pump until 24 hours after THERMAL POWER exceeds 2% RTP. -- Verify the developed head of each required AFW 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------------------------- AFW pump system(s) may be considered OPERABLE during alignment and operation for steam generator level control, if it is capable of being manually realigned to the AFW mode of operation. -- Verify each AFW 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

SURVEILLANCE REQUIREMENTS (continued)

SR 3.7.5.4	---NOTES--- 1. Not required to be performed for the turbine driven AFW pump until 24 hours after ≥ 1000 psig in the steam generator. 2. AFW pump system(s) may be considered OPERABLE during alignment and operation for steam generator level control, if it is capable of being manually realigned to the AFW mode of operation. --- Verify each AFW 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 AFW flow paths by verifying flow from the condensate storage tank to each steam generator supplied by the respective AFW pump system.	Prior to THERMAL POWER exceeding 2% RTP whenever unit has been in MODE 5, MODE 6, or defueled for a cumulative period of > 30 days

3.7 PLANT SYSTEMS

3.7.6 Condensate Storage Tank (CST)

LCO 3.7.6 The CST 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. CST inoperable.	A.1 Restore CST to OPERABLE status.	7 days
B. Required Action and associated Completion Time not met.	B.1 Be in MODE 3.	6 hours
	AND	
	B.2 Be in MODE 4, without reliance on steam generator for heat removal.	18 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.7.6.1.A	Verify the CST level is ≥ 21,150 gallons. (2 CSTs either cross-tied or individually aligned)	In accordance with the Surveillance Frequency Control Program
OR		
SR 3.7.6.1.B	Verify the CST level is ≥ 35,837 gallons. (1 CST supplying two units)	
OR		
SR 3.7.6.1.C	Verify the CST level is ≥ 14,100 gallons. (2 CSTs supplying one unit)	

3.7 PLANT SYSTEMS

3.7.7 Component Cooling Water (CC) System

LCO 3.7.7 The CC System shall be OPERABLE with; two CC pumps, and two required CC heat exchangers.

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

ACTIONS

---NOTE---
Enter applicable Conditions and Required Actions of LCO 3.4.6, "RCS Loops — MODE 4," for residual heat removal loops made inoperable by CC.

CONDITION	REQUIRED ACTION		COMPLETION TIME
A. One CC pump inoperable.	A.1	Restore CC pump to OPERABLE status.	72 hours <u>OR</u> In accordance with the Risk Informed Completion Time Program
B. One required CC heat exchanger inoperable.	B.1	Restore required CC heat exchanger to OPERABLE status.	72 hours <u>OR</u> In accordance with the Risk Informed Completion Time Program

(continued)

ACTIONS (continued)

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

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.7.7.1	--------------------------NOTE------------------------- Isolation of CC flow to individual components does not render the CC System inoperable. --- Verify each CC manual, power operated, and automatic 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

3.7 PLANT SYSTEMS

3.7.8 Service Water (SW) System

LCO 3.7.8 The SW System shall be OPERABLE with:

a. Six OPERABLE SW pumps;

b. SW ring header continuous flowpath not interrupted;

c. Required automatic non-essential-SW-load isolation valves OPERABLE or affected non-essential flowpath isolated; and

d. Opposite unit containment accident fan cooler unit SW outlet motor operated valves closed or SW flowpath isolated.

-------------------------------------NOTE--------------------------------------
Only five SW pumps are required to be OPERABLE with one unit in MODE 5 or 6, or defueled, and the SW System capable of providing required cooling water flow to required equipment.

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

ACTIONS

--NOTE--
Enter applicable Conditions and Required Actions for systems made inoperable by SW System.

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One SW pump inoperable. AND Both units in MODES 1, 2, 3, or 4.	A.1 Restore SW pump to OPERABLE status.	7 days OR In accordance with the Risk Informed Completion Time Program

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
B. Two or three SW pumps inoperable.	B.1 Restore SW pump(s) to OPERABLE status.	72 hours
C. SW ring header continuous flowpath interrupted.	C.1 Verify SW System capable of providing required cooling water flow to required equipment.	1 hour
	<u>AND</u>	
	C.2 Restore the SW ring header continuous flowpath.	7 days <u>OR</u> In accordance with the Risk Informed Completion Time Program

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
D. ----------NOTE--------- Separate Condition entry is allowed for each non-essential-SW-load flowpath. -------------------------- One or more non-essential-SW-load flowpath(s) with one required automatic isolation valve inoperable. <u>AND</u> Affected non-essential flowpath(s) not isolated.	D.1 -----------NOTE---------- Not required to be met if in Condition E. ----------------------------- Verify required redundant automatic isolation valve in the affected non-essential flowpath(s) OPERABLE. <u>AND</u> D.2 Isolate the affected non-essential flowpath(s).	1 hour 72 hours <u>OR</u> In accordance with the Risk Informed Completion Time Program
E. One or more non-essential-SW-load flowpath(s) with two required automatic isolation valves inoperable. <u>AND</u> Affected non-essential flowpath(s) not isolated.	E.1 Isolate the affected non-essential flowpath(s).	1 hour

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
F. One or more opposite unit containment accident fan cooler unit SW outlet motor operated valves open. AND Opposite unit containment accident fan cooler unit SW flowpath not isolated.	F.1 Verify SW System capable of providing required cooling water flow to required equipment. AND F.2 Isolate the opposite unit containment accident fan cooler unit SW flowpath.	1 hour 72 hours AND 14 days from discovery of failure to meet the LCO
G. Four or more SW pumps inoperable.	G.1 Restore SW pump(s) to OPERABLE status.	1 hour
H. Required Action and associated Completion Time not met.	H.1 Be in MODE 3. AND H.2 Be in MODE 5.	6 hours 36 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.7.8.1	--------------------------NOTE-------------------------- Isolation of SW flow to individual components does not render the SW System inoperable. -- Verify each SW manual, power operated, and automatic 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 3.7.8.2	Verify each required SW automatic non-essential-SW-load isolation valve that is not locked, sealed, or otherwise secured in the closed position, actuates to the closed position on an actual or simulated actuation signal.	In accordance with the Surveillance Frequency Control Program
SR 3.7.8.3	Verify each SW pump starts automatically on an actual or simulated actuation signal.	In accordance with the Surveillance Frequency Control Program

3.7 PLANT SYSTEMS

3.7.9 Control Room Emergency Filtration System (CREFS)

LCO 3.7.9 CREFS shall be OPERABLE with:

a. Two control room recirculation fans,

b. Two control room emergency fans,

c. One filter train,

d. Two control room emergency fan control dampers, and

e. Two isolation dampers in the kitchen area exhaust duct.

---------------------------------------NOTE---------------------------------------
The control room envelope (CRE) boundary may be opened intermittently under administrative controls.

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

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. -----------NOTE----------- Separate Condition entry is allowed for each component. ------------------------------ One control room recirculation fan inoperable. OR One control room emergency fan inoperable. OR One control room emergency fan control damper inoperable.	A.1 Restore inoperable fan or damper to OPERABLE status.	7 days

ACTIONS (continued)

CONDITION	REQUIRED ACTION		COMPLETION TIME
B. One isolation damper in the kitchen area exhaust duct inoperable.	B.1	Restore isolation damper to OPERABLE status.	7 days
	<u>OR</u>		
	B.2	Place and maintain the other isolation damper in the same duct in the closed position.	7 days
C. -----------NOTE----------- Separate Condition entry is allowed for each component. ---------------------------------	C.1	Initiate actions to implement mitigating actions.	Immediately
	<u>AND</u>		
Two control room recirculation fans inoperable.	C.2	Suspend movement of irradiated fuel assemblies.	Immediately
<u>OR</u>	<u>AND</u>		
Two control room emergency fans inoperable.	C.3	Verify mitigating actions ensure CRE occupant radiological exposures will not exceed limits.	24 hours
<u>OR</u>	<u>AND</u>		
Two control room emergency fan control dampers inoperable.	C.4	Restore inoperable fans, dampers or filter train to OPERABLE status.	7 days
<u>OR</u>			
Filter train inoperable for reasons other than Condition D.			

ACTIONS (continued)

CONDITION	REQUIRED ACTION		COMPLETION TIME
D. -----------NOTE----------- Separate Condition entry is allowed for each component. ------------------------------	D.1	Initiate actions to implement mitigating actions.	Immediately
	AND		
Filter train inoperable due to an inoperable CRE boundary	D.2	Suspend movement of irradiated fuel assemblies.	Immediately
OR	AND		
Two isolation dampers in the kitchen exhaust duct inoperable.	D.3	Verify mitigating actions ensure CRE occupant radiological and chemical exposures will not exceed limits, and CRE occupants are protected from smoke hazards.	24 hours
	AND		
	D.4	Restore CRE boundary to OPERABLE status.	90 days
E. Required Action and associated Completion Time of Condition A, B, C, or D not met in MODE 1, 2, 3, or 4 or not met during movement of irradiated fuel assemblies.	E.1	Suspend movement of irradiated fuel assemblies.	Immediately
	AND		
	E.2	Be in MODE 3.	6 hours
	AND		
	E.3	Be in MODE 5.	36 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.7.9.1	Operate the CREFS for ≥ 15 minutes.	In accordance with the Surveillance Frequency Control Program
SR 3.7.9.2	Perform required CREFS filter testing in accordance with the Ventilation Filter Testing Program (VFTP).	In accordance with the VFTP
SR 3.7.9.3	Verify each CREFS emergency and recirculation fan actuates on an actual or simulated actuation signal.	In accordance with the Surveillance Frequency Control Program
SR 3.7.9.4	Verify each CREFS automatic damper in the emergency mode flow path actuates to the correct position on an actual or simulated actuation signal.	In accordance with the Surveillance Frequency Control Program
SR 3.7.9.5	Verify CREFS manual start capability and alignment.	In accordance with the Surveillance Frequency Control Program
SR 3.7.9.6	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

3.7 PLANT SYSTEMS

3.7.10 Fuel Storage Pool Water Level

LCO 3.7.10 The fuel storage pool water level shall be ≥ 23 ft over the top of irradiated fuel assemblies seated in the storage racks.

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

ACTIONS

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

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.7.10.1	Verify the fuel storage pool water level is ≥ 23 ft above the top of the irradiated fuel assemblies seated in the storage racks.	In accordance with the Surveillance Frequency Control Program

3.7 PLANT SYSTEMS

3.7.11 Fuel Storage Pool Boron Concentration

LCO 3.7.11 The fuel storage pool boron concentration shall be ≥ 2100 ppm.

APPLICABILITY: When fuel assemblies are stored in the spent fuel storage pool.

ACTIONS

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

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.7.11.1	Verify the fuel storage pool boron concentration is within limit.	In accordance with the Surveillance Frequency Control Program

3.7 PLANT SYSTEMS

3.7.12 Spent Fuel Pool Storage

LCO 3.7.12 The combination of initial enrichment, burnup and decay time of each fuel assembly stored in the spent fuel pool shall be within the Acceptable range of Figure 3.7.12-1 or in accordance with Specification 4.3.1.1.

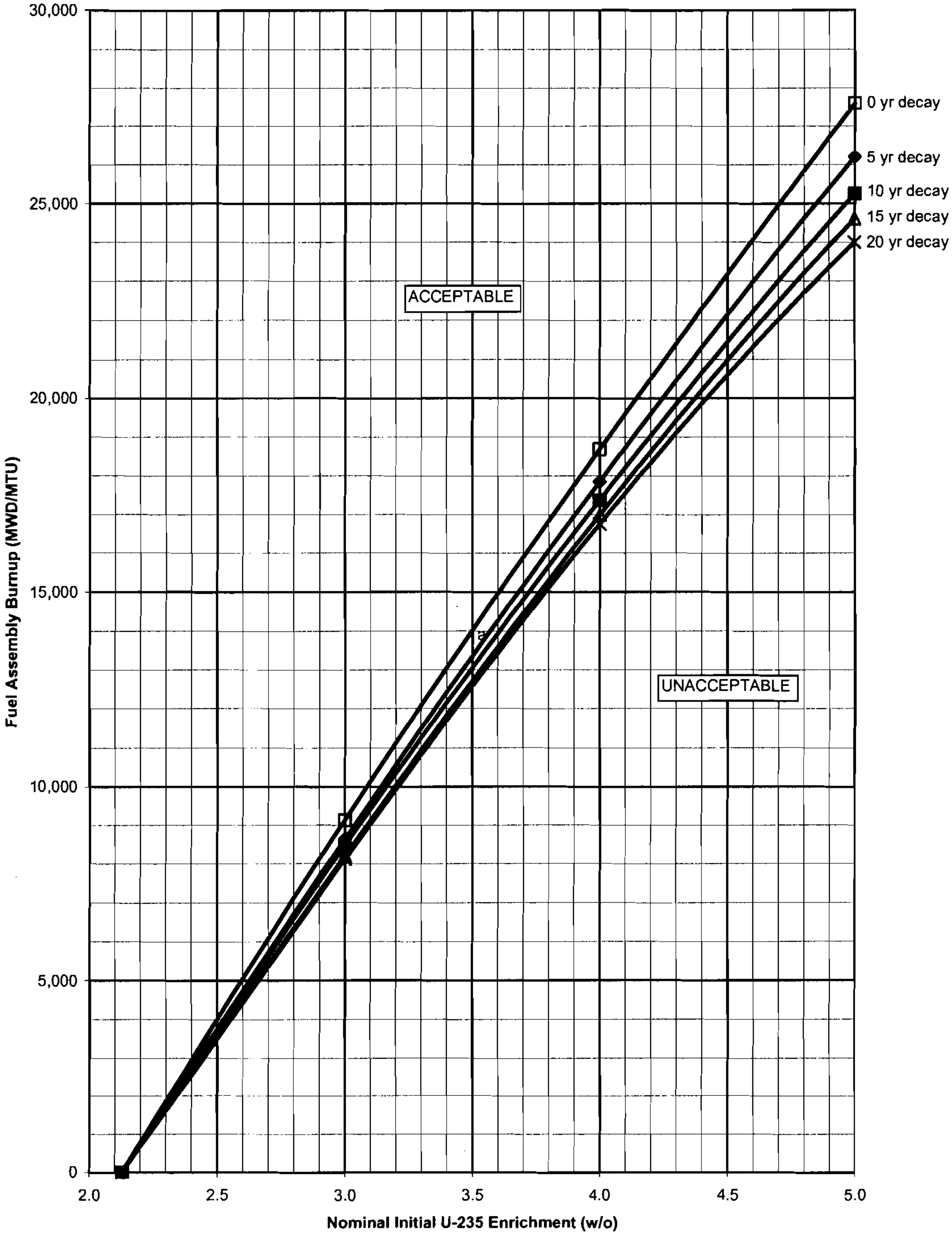
APPLICABILITY: Whenever any fuel assembly is stored in the spent fuel storage pool.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Requirements of the LCO not met.	-------------------NOTE----------------------- LCO 3.0.3 is not applicable. --	
	A.1 Restore the spent fuel pool within fuel storage limits.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.7.12.1	Verify by administrative means each fuel assembly meets fuel storage limits.	Prior to storing the fuel assemblies in the spent fuel storage pool



0 yr decay =	$71.56e^3 - 1166.69e^2 + 15059.19e - 27474.43$
5 yr decay =	$-11.14e^3 - 287.32e^2 + 11630.42e - 23361.60$
10 yr decay=	$-16.28e^3 - 308.68e^2 + 11655.01e - 23267.42$
15 yr decay=	$-85.22e^3 + 436.68e^2 + 8884.52e - 20081.62$
20 yr decay=	$-113.81e^3 + 669.67e^2 + 8161.13e - 19321.65$

Figure 3.7.12-1
Fuel Assembly Burnup Requirement of "All-Cell" Storage Configuration

3.7 PLANT SYSTEMS

3.7.13 Secondary Specific Activity

LCO 3.7.13 The specific activity of the secondary coolant shall be $\leq$ 0.1 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.	6 hours 36 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.7.13.1 Verify the specific activity of the secondary coolant is $\leq$ 0.1 μCi/gm DOSE EQUIVALENT I-131.	In accordance with the Surveillance Frequency Control Program

3.8 ELECTRICAL POWER SYSTEMS

3.8.1 AC Sources—Operating

LCO 3.8.1 The following AC electrical power sources shall be OPERABLE:

a. One circuit between the offsite transmission network and the associated unit's 4.16 kV Class 1E safeguards buses, A05 and A06, utilizing the associated unit's 345/13.8 kV (X03) transformer or the opposite unit's 345/13.8 kV (X03) transformer with the gas turbine in operation, and the associated unit's 13.8/4.16 kV (X04) transformer;

b. One circuit between the offsite transmission network and the opposite unit's 4.16 kV Class 1E safeguards buses, A05 and A06; and

c. One standby emergency power source capable of supplying each 4.16 kV/480 V Class 1E safeguards bus.

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

ACTIONS

-----NOTE-----
LCO 3.0.4.b is not applicable to standby emergency power sources.

CONDITION	REQUIRED ACTION		COMPLETION TIME
A. Associated unit 345/13.8 kV (X03) transformer inoperable. OR Gas turbine not in operation when utilizing opposite unit's 345/13.8 kV (X03) transformer.	A.1	Verify one circuit between the offsite transmission network and the associated unit's 4.16 kV Class 1E safeguards buses, A05 and A06, utilizing the opposite unit's 345/13.8 kV (X03) transformer.	24 hours
	AND		

(continued)

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. (continued)	A.2 Verify gas turbine in operation.	24 hours <u>OR</u> In accordance with the Risk Informed Completion Time Program
B. Associated unit's 13.8/4.16 kV (X04) transformer inoperable.	B.1 Restore associated unit's 13.8/4.16 kV (X04) transformer to OPERABLE status.	24 hours <u>OR</u> In accordance with the Risk Informed Completion Time Program
C. Associated unit's required offsite power source to buses A05 and A06 inoperable. <u>OR</u> Required offsite power source to buses 1A05 and 2A06 inoperable.	C.1 Restore required offsite power source(s) to OPERABLE status.	24 hours <u>OR</u> In accordance with the Risk Informed Completion Time Program

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION		COMPLETION TIME
D. One or more required offsite power source(s) to one or more required Class 1E 4.16 kV bus(es) inoperable.	D.1	Declare required feature(s) supported by the inoperable required offsite power source inoperable when its required redundant feature(s) is inoperable.	12 hours from discovery of Condition D concurrent with inoperability of redundant required feature(s)
	AND		
	D.2	Restore required offsite power source(s) to OPERABLE status.	7 days OR --------NOTE-------- Not applicable when more than one offsite power source inoperable or when one offsite power source to more than one required Class 1E 4.16kV bus inoperable. ----------------------- In accordance with the Risk Informed Completion Time Program

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION		COMPLETION TIME
------------NOTE------------ Separate Condition entry is allowed for each inoperable standby emergency power source. -------------------------------- E. One or more required standby emergency power source(s) inoperable.	E.1	Declare required feature(s) supported by the inoperable standby emergency power source inoperable when its required redundant feature(s) is inoperable.	4 hours from discovery of Condition E concurrent with inoperability of redundant required feature(s)
	<u>AND</u>		
	E.2.1	Determine other required standby emergency power source(s) is not inoperable due to common cause failure.	24 hours
	<u>OR</u>		
	E.2.2	Perform SR 3.8.1.2 for other required standby emergency power source(s).	24 hours
	<u>OR</u>		
	E.2.3	Declare other required standby emergency power source(s) inoperable.	24 hours
	<u>AND</u>		
	E.3	Restore required standby emergency power source(s) to OPERABLE status.	7 days <u>AND</u> 14 days from discovery of failure to meet LCO

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
F. One or more required offsite power source to one or more Class 1E 4.16 kV safeguards bus(es) inoperable. <u>AND</u> Standby emergency power inoperable to redundant equipment.	--------------NOTE------------------- Enter applicable Conditions and Required Actions of LCO 3.8.9, "Distribution Systems–Operating," when Condition F is entered with no AC power to any train. --- F.1 Restore required offsite circuit to OPERABLE status.	12 hours <u>OR</u> --------NOTE-------- Not applicable when more than one offsite power source inoperable or when one offsite power source to more than one Class 1E 4.16kV safeguard bus inoperable. ----------------------- In accordance with the Risk Informed Completion Time Program

(continued)

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
F. (continued)	OR F.2 Restore required standby emergency power source to OPERABLE status.	12 hours OR --------NOTE-------- Not applicable when more than one offsite power source inoperable or when one offsite power source to more than one Class 1E 4.16kV safeguard bus inoperable. ----------------------- In accordance with the Risk Informed Completion Time Program
G. Standby emergency power to buses 1A05/1B03 and 1A06/1B04 inoperable. OR Standby emergency power to buses 2A05/2B03 and 2A06/2B04 inoperable. OR Standby emergency power to buses 1A05/1B03 and 2A06/2B04 inoperable.	G.1 Restore one required standby emergency power source to OPERABLE status.	2 hours

(continued)

ACTIONS (continued)

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

SURVEILLANCE REQUIREMENTS

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

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.8.1.3	--------------------------NOTES-------------------------- 1. Standby emergency power source loadings may include gradual loading. 2. Momentary transients outside the load range do not invalidate this test. 3. This SR shall be preceded by and immediately follow without shutdown a successful performance of SR 3.8.1.2. --- Verify each standby emergency power source is synchronized and loaded and operates for $\geq$ 60 minutes at a load $\geq$ 2500 kW and $\leq$ 2850 kW.	In accordance with the Surveillance Frequency Control Program
SR 3.8.1.4	Verify the fuel oil transfer system operates to automatically transfer fuel oil from storage tank to the day tank.	In accordance with the Surveillance Frequency Control Program

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.8.1.5	-------------------------NOTE----------------------------- This surveillance shall not normally be performed with the associated unit in MODE 1, 2, 3, or 4. However, portions of the Surveillance may be performed to reestablish OPERABILITY provided an assessment determines the safety of the plant is maintained or enhanced. --- Verify on an actual or simulated loss of offsite power signal in conjunction with an actual or simulated ESF actuation signal: a. De-energization of emergency buses; b. Load shedding from emergency buses; and c. Standby emergency power source auto-starts from standby condition and: 1. energizes permanently connected loads, 2. energizes auto-connected emergency loads through load logic and sequencer, 3. achieves steady state voltage within limits, 4. achieves steady state frequency within limits, and 5. supplies permanently connected and auto-connected emergency loads for $\geq$ 5 minutes.	In accordance with the Surveillance Frequency Control Program

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.8.1.6	Verify each standby emergency power source: a. Synchronizes with offsite power source while loaded with emergency loads upon a simulated restoration of offsite power; b. Transfers loads to offsite power source; and c. Returns to ready-to-load operation.	In accordance with the Surveillance Frequency Control Program
SR 3.8.1.7	-----------------------NOTES------------------------------ 1. Momentary transients outside the load and power factor ranges do not invalidate this test. 2. This Surveillance may be performed to reestablish OPERABILITY provided an assessment determines the safety of the plant is maintained or enhanced. Credit may be taken for unplanned events that satisfy this SR. 3. If performed with the standby emergency power source synchronized with offsite power, it shall be performed at a power factor $\leq$ 0.87. However, if grid conditions do not permit, the power factor limit is not required to be met. Under this condition, the power factor shall be maintained as close to the limit as practicable. --- Verify each standby emergency power source operates for $\geq$ 24 hours at $\geq$ 2850 kW (G01/G02), $\geq$ 2848 kW (G03/04).	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 circuit between the offsite transmission network and the 480 V Class 1E safeguards bus(es) B03 and B04, required by LCO 3.8.10, "Distribution Systems—Shutdown"; and

b. One standby emergency power source capable of supplying one of the associated unit's 480 V Class 1E safeguards bus(es) B03 or B04, required by LCO 3.8.10.

APPLICABILITY: MODES 5 and 6.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One required offsite circuit inoperable.	A.1 Declare affected required feature(s) with no offsite power available inoperable.	Immediately
	AND	
	A.2 Initiate action to restore required offsite power circuit to OPERABLE status.	Immediately

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION		COMPLETION TIME
B. One required standby emergency power source inoperable.	B.1	Declare affected required feature(s) with no standby emergency power source available inoperable.	Immediately
	AND		
	B.2	Initiate action to restore required standby emergency power source to OPERABLE status.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.8.2.1	Verify correct breaker alignment and indicated power availability for each required offsite circuit.	In accordance with the Surveillance Frequency Control Program
SR 3.8.2.2	--------------------------NOTE-------------------------- All standby emergency power source starts may be preceded by an engine prelube period and followed by a warmup period prior to loading. -- Verify each required standby emergency power source starts from standby conditions and achieves rated voltage and frequency.	In accordance with the Surveillance Frequency Control Program
SR 3.8.2.3	Verify the fuel oil transfer system operates to automatically transfer fuel oil from storage tank to the day tank.	In accordance with the Surveillance Frequency Control Program

(continued)

SURVEILLANCE REQUIREMENTS (continued)

	SURVEILLANCE	FREQUENCY
SR 3.8.2.4	---------------------------NOTE--------------------------- The following SR is not required to be performed if it is not met solely due to an expired frequency. --	
	Verify on an actual or simulated loss of offsite power signal: 1. De-energization of the safeguards buses; 2. Load shedding of the 480 V safeguards bus; 3. Standby emergency power source auto-starts from standby condition and energizes the safeguards buses, and 4. supplies bus loads for ≥ 5 minutes.	In accordance with the Surveillance Frequency Control Program
SR 3.8.2.5	---------------------------NOTE--------------------------- The following SR is not required to be performed if it is not met solely due to an expired frequency. --	
	Verify each standby emergency power source synchronizes with offsite power source upon a simulated restoration of offsite power and returns to ready-to-load operation.	In accordance with the Surveillance Frequency Control Program

3.8 ELECTRICAL POWER SYSTEMS

3.8.3 Diesel Fuel Oil and Starting Air

LCO 3.8.3 Stored diesel fuel oil shall be within limits and starting air subsystem shall be OPERABLE for each required standby emergency power source.

APPLICABILITY: When associated standby emergency power source is required to be OPERABLE.

ACTIONS

-----NOTE-----
Separate Condition entry is allowed for each standby emergency power source.

CONDITION	REQUIRED ACTION		COMPLETION TIME
A. One or more standby emergency power sources with fuel level < 86.2% and > 71.3% in storage tank.	A.1	Restore fuel oil level to within limits.	48 hours
B. One or more standby emergency power sources with stored fuel oil total particulates not within limit.	B.1	Restore fuel oil total particulates within limit.	7 days
C. One or more standby emergency power sources with new fuel oil properties not within limits.	C.1	Restore stored fuel oil properties to within limits.	30 days

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION		COMPLETION TIME
D. One or more standby emergency power sources with inoperable starting air system(s).	D.1	Declare associated standby emergency power source(s) inoperable.	Immediately
E. Required Action and associated Completion Time not met. <u>OR</u> One or more standby emergency power sources' diesel fuel oil not within limits for reasons other than Condition A, B or C.	E.1	Declare associated standby emergency power source(s) inoperable.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.8.3.1	Verify each fuel oil storage tank contains ≥ 86.2% of fuel.	In accordance with the Surveillance Frequency Control Program
SR 3.8.3.2	Verify fuel oil properties of new and stored fuel oil are tested in accordance with, and maintained within the limits of, the Diesel Fuel Oil Testing Program.	In accordance with the Diesel Fuel Oil Testing Program
SR 3.8.3.3	Verify each standby emergency power source air start bottle bank pressure is ≥ 165 psig.	In accordance with the Surveillance Frequency Control Program
SR 3.8.3.4	Check for and remove accumulated water from each fuel oil storage tank.	In accordance with the Surveillance Frequency Control Program

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.8.3.4	Check for and remove accumulated water from each fuel oil storage tank.	92 days

3.8 ELECTRICAL POWER SYSTEMS

3.8.4 DC Sources—Operating

LCO 3.8.4 The D-01, D-02, D-03, and D-04 DC electrical power subsystems shall be OPERABLE.

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

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One DC electrical power subsystem inoperable.	-----------------NOTE---------------- Enter applicable Conditions and Required Actions of LCO 3.8.9, "Distribution Systems—Operating," when any DC bus is de-energized. --	
	A.1 Restore DC electrical power subsystem to OPERABLE status.	2 hours <u>OR</u> In accordance with the Risk Informed Completion Time Program
B. Required Action and Associated Completion Time not met.	B.1 Be in MODE 3.	6 hours
	<u>AND</u>	
	B.2 Be in MODE 5.	36 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.8.4.1	Verify correct battery terminal voltage is within limits on float charge.	In accordance with the Surveillance Frequency Control Program
SR 3.8.4.2	Verify no visible corrosion at battery terminals and connectors. OR Verify battery connection resistance is within limits.	In accordance with the Surveillance Frequency Control Program
SR 3.8.4.3	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 3.8.4.4	Remove visible terminal corrosion, and verify battery cell to cell and terminal connections are coated with anti-corrosion material.	In accordance with the Surveillance Frequency Control Program
SR 3.8.4.5	Verify battery connection resistance is within limits.	In accordance with the Surveillance Frequency Control Program

(continued)

SURVEILLANCE REQUIREMENTS (continued)

	SURVEILLANCE	FREQUENCY
SR 3.8.4.6	Verify battery chargers D-07, D-08, and D-09, while operating at the current limit setting, each supply ≥ 320 amps at greater than or equal to the minimum established float voltage for ≥ 8 hours, and battery chargers D-107, D-108, and D-109, while operating at the current limit setting, each supply ≥ 420 amps at greater than or equal to the minimum established float voltage for ≥ 8 hours. <u>OR</u> Verify each battery charger can recharge the battery to the fully charged state within 24 hours while supplying the largest combined demands of the various continuous steady-state loads, after a battery discharge to the bounding design basis event discharge state.	In accordance with the Surveillance Frequency Control Program
SR 3.8.4.7	-------------------------NOTES------------------------- The modified performance discharge test in SR 3.8.4.8 may be performed in lieu of SR 3.8.4.7. --- 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

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.8.4.8	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 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

3.8 ELECTRICAL POWER SYSTEMS

3.8.5 DC Sources—Shutdown

LCO 3.8.5 DC electrical power subsystem shall be OPERABLE to support the DC electrical power distribution subsystem(s) required by LCO 3.8.10, "Distribution Systems—Shutdown."

APPLICABILITY: MODES 5 and 6.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more required DC electrical power subsystems inoperable.	A.1 Declare affected required feature(s) inoperable.	Immediately
	AND	
	A.2 Initiate action to restore required DC electrical power subsystems to OPERABLE status.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.8.5.1	For DC sources required to be OPERABLE, the following SRs are applicable: SR 3.8.4.1 SR 3.8.4.4 SR 3.8.4.7 SR 3.8.4.2 SR 3.8.4.5 SR 3.8.4.8. SR 3.8.4.3 SR 3.8.4.6	In accordance with applicable SRs

3.8 ELECTRICAL POWER SYSTEMS

3.8.6 Battery Cell Parameters

LCO 3.8.6 Battery cell parameters for safety related batteries shall be within limits.

APPLICABILITY: When associated DC electrical power subsystems 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 Table 3.8.6-1 Category A or B limits.	A.1	Verify pilot cell(s) electrolyte level and float voltage meet Table 3.8.6-1 Category C limits.	1 hour
	<u>AND</u>		
	A.2	Verify battery cell parameters meet Table 3.8.6-1 Category C limits.	24 hours <u>AND</u> Once per 7 days thereafter
	<u>AND</u>		
	A.3	Restore battery cell parameters to Table 3.8.6-1 Category A and B limits.	31 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 Table 3.8.6-1 Category C values.	B.1 Declare associated battery inoperable.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.8.6.1	Verify battery cell parameters meet Table 3.8.6-1 Category A limits.	In accordance with the Surveillance Frequency Control Program

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.8.6.2	Verify battery cell parameters meet Table 3.8.6-1 Category B limits.	In accordance with the Surveillance Frequency Control Program AND Once within 24 hours after a battery discharge < 105 V AND Once within 24 hours after a battery overcharge > 142.8 V
SR 3.8.6.3	Verify average electrolyte temperature of representative cells is ≥ 60°F.	In accordance with the Surveillance Frequency Control Program

Table 3.8.6-1 (page 1 of 1)
Battery Cell Parameters 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	≥ 1.195 <u>AND</u> Average of all connected cells > 1.205	Not more than 0.020 below average of all connected cells <u>AND</u> Average of all connected cells ≥ 1.195

(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 charging is < 2 amps when on float charge.

(c) A battery charging 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 charging current is used to satisfy 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

3.8.7 Inverters—Operating

LCO 3.8.7 Four inverters shall be OPERABLE.

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

ACTIONS

CONDITION	REQUIRED ACTION		COMPLETION TIME
A. One required inverter inoperable.	A.1	-----------NOTE------------ Enter applicable Conditions and Required Actions of LCO 3.8.9, "Distribution Systems - Operating" with any vital bus de-energized. ------------------------------	
		Restore inverter to OPERABLE status.	8 hours <u>OR</u> In accordance with the Risk Informed Completion Time Program
B. Required Action and associated Completion Time not met.	B.1	Be in MODE 3.	6 hours
	<u>AND</u>		
	B.2	Be in MODE 5.	36 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.8.7.1	Verify correct inverter voltage, and alignment to required AC vital instrument buses.	In accordance with the Surveillance Frequency Control Program

3.8 ELECTRICAL POWER SYSTEMS

3.8.8 Inverters—Shutdown

LCO 3.8.8 Inverters shall be OPERABLE to support the onsite Class 1E AC vital instrument bus electrical power distribution subsystem(s) required by LCO 3.8.10, "Distribution Systems—Shutdown."

APPLICABILITY: MODES 5 and 6.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more required inverters inoperable.	A.1 Declare affected required feature(s) inoperable. AND A.2 Initiate action to restore required inverters to OPERABLE status.	Immediately Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.8.8.1	Verify correct inverter voltage and alignments to required AC vital instrument buses.	In accordance with the Surveillance Frequency Control Program

3.8 ELECTRICAL POWER SYSTEMS

3.8.9 Distribution Systems—Operating

LCO 3.8.9 The following electrical distribution buses shall be OPERABLE:

a. The 4.16 kV Class 1E safeguards buses 1A05, 1A06, 2A05, and 2A06;

b. The 480 V Class 1E safeguards buses 1B03, 1B04, 2B03, and 2B04;

c. The associated unit's 120 VAC Vital Instrument Buses Y01, Y02, Y03, Y04, Y101, Y102, Y103, and Y104;

d. DC distribution buses D01, D02, D03 and D04.

e. Motor Control Centers 1B30/2B30, 1B32/2B32, 1B40/2B40 and 1B42/2B42.

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

1. The opposite unit's 480 V Class 1E safeguards buses B03 and B04, may be cross-tied for ≤ 8 hours providing;

   a. The opposite unit is in MODE 5, or 6, or defueled;

   b. All required redundant shared features for the unit in MODE 1, 2, 3, or 4 are OPERABLE; and

   c. All AC electrical power sources required by LCO 3.8.1 for the required redundant shared features for the unit in MODE 1, 2, 3, or 4 are OPERABLE.

2. The opposite units 480 V Class 1E safeguards buses B03 and B04, may be cross-tied for > 8 hours and ≤ 7 days providing;

   a. The opposite unit is defueled;

   b. All required redundant shared features for the unit in MODE 1, 2, 3, or 4 are OPERABLE;

   c. All AC electrical power sources required by LCO 3.8.1 for the required redundant shared features for the unit in MODE 1, 2, 3, or 4 are OPERABLE; and

   d. Loads on the cross-tied buses are limited to preclude overloading of their standby emergency power source.

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

ACTIONS

CONDITION	REQUIRED ACTION		COMPLETION TIME
A. One or more electrical power distribution subsystem inoperable.	A.1	Declare associated supported required feature(s) inoperable.	Immediately
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

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.8.9.1	Verify correct breaker alignments and power available for required AC, DC, and AC vital instrument bus electrical power distribution subsystems.	In accordance with the Surveillance Frequency Control Program

3.8 ELECTRICAL POWER SYSTEMS

3.8.10 Distribution Systems—Shutdown

LCO 3.8.10 The necessary portion of AC, DC, and AC vital instrument bus electrical power distribution subsystems shall be OPERABLE to support equipment required to be OPERABLE.

-----------------------------------NOTE-----------------------------------
The unit specific 480 V Class 1E safeguards buses B03 and B04, may be cross-tied for ≤ 8 hours providing;

1. Two residual heat removal loops are OPERABLE when the unit is in MODE 5 or MODE 6 with reactor cavity water level < 23 ft above the top of reactor vessel flange; or

2. One residual heat removal loop is OPERABLE when the unit is in MODE 6 with reactor cavity water level ≥ 23 ft above the top of reactor vessel flange.

APPLICABILITY: MODES 5 and 6.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more required electrical power distribution subsystems inoperable.	A.1 Declare associated supported required feature(s) inoperable.	Immediately
	AND	
	A.2 Initiate actions to restore required AC, DC, and AC vital instrument bus electrical power distribution subsystems to OPERABLE status.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.8.10.1	Verify correct breaker alignments and power available for required AC, DC, and AC vital instrument bus electrical power distribution subsystems.	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, the refueling canal, and the refueling cavity shall be maintained within the limit specified in the COLR.

APPLICABILITY: MODE 6.

ACTIONS

CONDITION	REQUIRED ACTION		COMPLETION TIME
A. Boron concentration not within limit.	A.1	Suspend positive reactivity additions.	Immediately
	<u>AND</u>		
	A.2	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 Two source range neutron flux monitors shall be OPERABLE.

AND

One source range audible count rate circuit shall be OPERABLE.

APPLICABILITY: MODE 6.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One required source range neutron flux monitor inoperable.	A.1 Suspend positive reactivity additions.	Immediately
B. Two required source range neutron flux monitors inoperable.	B.1 Initiate action to restore one source range neutron flux monitor to OPERABLE status.	Immediately
	AND	
	B.2 Perform SR 3.9.1.1.	Once per 12 hours
C. Required source range audible count rate circuit inoperable.	C.1 Initiate action to isolate unborated water sources.	Immediately

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 with all bolts;

b. One door in each air lock is capable of being closed; and

c. Each Containment Purge and Exhaust System penetration either:

1. closed by a manual or automatic isolation valve, blind flange, or equivalent, or

2. capable of being closed by an OPERABLE Containment Purge and Exhaust Isolation System.

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	---------------------------NOTE------------------------ Not applicable to containment purge and exhaust valve(s) in penetrations closed to comply with LCO 3.9.3.c.1. --- Verify each required containment purge and exhaust valve actuates to the isolation position on an actual or simulated actuation signal.	In accordance with the Surveillance Frequency Control Program

3.9 REFUELING OPERATIONS

3.9.4 Residual Heat Removal (RHR) and Coolant Circulation—High Water Level

LCO 3.9.4 One RHR loop shall be OPERABLE and in operation.

-------------------------------------NOTES-------------------------------------
The required RHR loop may be not 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 ≥ 23 ft above the top of reactor vessel flange.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. RHR loop requirements not met.	A.1 Suspend operations involving a reduction in reactor coolant boron concentration.	Immediately
	AND	
	A.2 Suspend loading irradiated fuel assemblies in the core.	Immediately
	AND	
	A.3 Initiate action to satisfy RHR loop requirements.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.9.4.1	Verify one RHR loop is in operation.	In accordance with the Surveillance Frequency Control Program
SR 3.9.4.2	Verify required RHR 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 Residual Heat Removal (RHR) and Coolant Circulation—Low Water Level

LCO 3.9.5 Two RHR loops shall be OPERABLE, and one RHR loop shall be in operation.

APPLICABILITY: MODE 6 with the water level < 23 ft above the top of reactor vessel flange.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Less than the required number of RHR loops OPERABLE.	A.1 Initiate action to restore required RHR loops to OPERABLE status.	Immediately
	<u>OR</u>	
	A.2 Initiate action to establish ≥ 23 ft of water above the top of reactor vessel flange.	Immediately
B. No RHR loop 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 RHR loop to operation.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.9.5.1	Verify one RHR 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 RHR pump that is not in operation.	In accordance with the Surveillance Frequency Control Program
SR 3.9.5.3	Verify RHR 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 Refueling Cavity Water Level

LCO 3.9.6 Refueling cavity water level shall be maintained ≥ 23 ft above the top of reactor vessel flange.

APPLICABILITY: During movement of irradiated fuel assemblies within containment.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Refueling cavity 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 refueling cavity water level is ≥ 23 ft above the top of reactor vessel flange.	In accordance with the Surveillance Frequency Control Program

4.0 DESIGN FEATURES

4.1 Site Location

The Point Beach Nuclear Plant is located on property owned by NextEra Energy Point Beach at a site on the shore of Lake Michigan, approximately 30 miles southeast of the city of Green Bay. The minimum distance from the reactor containment center line to the site exclusion boundary as defined in 10 CFR 100.3 is 1200 meters.

4.2 Reactor Core

4.2.1 Fuel Assemblies

The reactor shall contain 121 fuel assemblies. Each assembly shall consist of a matrix of Zircaloy-4, ZIRLO®, or Optimized ZIRLO™ fuel rods with an initial composition of natural or slightly enriched uranium dioxide (UO_2) as fuel material. Limited substitutions of zirconium alloy or stainless steel filler rods or vacancies 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 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 Rod Cluster Control (RCC) Assemblies

The reactor core shall contain 33 RCC assemblies. The control material shall be silver indium cadmium alloy clad with stainless steel as approved by the NRC.

4.0 DESIGN FEATURES

4.3 Fuel Storage

4.3.1 Criticality

4.3.1.1 The spent fuel storage racks are designed and shall be maintained with:

a. Fuel assemblies having a maximum 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 Reference 1;

c. $k_{eff} \leq 0.95$ if fully flooded with water borated to 402 ppm, which includes an allowance for uncertainties as described in Reference 1;

d. A nominal 9.825 inch center to center distance between fuel assemblies placed in the fuel storage racks;

e. New or spent fuel assemblies with a combination of discharge burnup, initial enrichment and decay time in the "Acceptable" range of Figure 3.7.12-1 may be allowed unrestricted storage in the fuel storage racks; and

f. New or spent fuel assemblies with a combination of discharge burnup, initial enrichment and decay time in the "Unacceptable" range of Figure 3.7.12-1 will be stored in compliance with Figures 4.3.1-1 through 4.3.1-8.

4.3.1.2 The new fuel storage racks are designed and shall be maintained with:

a. Fuel assemblies having a maximum U-235 enrichment of 5.0 weight percent;

b. $k_{eff} \leq 0.95$ if fully flooded with unborated water, which includes an allowance for uncertainties as described in Section 9.4 of the FSAR;

c. $k_{eff} \leq 0.98$ under optimum moderator density conditions, which includes an allowance for uncertainties as described in Section 9.4 of the FSAR; and

d. A nominal 20 inch center to center distance between fuel assemblies placed in the storage racks.

L1	H1
L1	L1

H1: Fresh fuel assembly with maximum 5.0 w/o U-235.

No restriction on burnup.

L1: Spent fuel assemblies in the “Acceptable” range of Figure 4.3.1-6.

Figure 4.3.1-1
1-Out-of-4 for 5 w/o with no IFBA Storage Configuration

L2	H2
L2	L2

H2: Fresh fuel assembly with maximum 4.0 w/o U-235 with no IFBA or maximum 5.0 w/o U-235 with IFBA in the "Acceptable" range of Figure 4.3.1-8.

No restriction on burnup.

L2: Spent fuel assemblies in the "Acceptable" range of Figure 4.3.1-7.

Figure 4.3.1-2
1-Out-of-4 for 4 w/o with IFBA Storage Configuration

1-Out-of-4 for 5 w/o Fresh

A	A	A	A	A	A	A
A	A	A	A	A	A	A
A	A	A	A	A	A	A
L1	L1	L1	L1	A	A	A
H1	L1	H1	L1	A	A	A
L1	L1	L1	L1	A	A	A
H1	L1	H1	L1	A	A	A

All-Cell

A: Fuel assembly in "Acceptable" range of Figure 3.7.12-1.

H1: Fresh fuel assembly with maximum 5.0 w/o U-235.
No restriction on burnup.

L1: Spent fuel assemblies in the "Acceptable" range of Figure 4.3.1-6.

Figure 4.3.1-3
1-Out-of-4 for 5 w/o with no IFBA / "All Cell" Interface

1-Out-of-4 for 4 w/o Fresh with IFBA				All-Cell		
A	A	A	A	A	A	A
A	A	A	A	A	A	A
A	A	A	A	A	A	A
L2	L2	L2	L2	A	A	A
H2	L2	H2	L2	A	A	A
L2	L2	L2	L2	A	A	A
H2	L2	H2	L2	A	A	A

A: Fuel assembly in "Acceptable" range of Figure 3.7.12-1.

H2: Fresh fuel assembly with maximum 4.0 w/o U-235 with no IFBA or maximum 5.0 w/o U-235 with IFBA in the "Acceptable" range of Figure 4.3.1-8.

No restriction on burnup.

L2: Spent fuel assemblies in the "Acceptable" range of Figure 4.3.1-7.

Figure 4.3.1-4
1-Out-of-4 for 4 w/o with IFBA / "All Cell" Interface

1-Out-of-4 for 4 w/o Fresh with IFBA

1-Out-of-4 for 5 w/o Fresh

L1	L1	L1	L1	L1	L1	L1
L1	H1	L1	H1	L1	H1	L1
L1	L1	L1	L1	L1	L1	L1
L2	L2	L2	L2	L1	H1	L1
H2	L2	H2	L2	L1	L1	L1
L2	L2	L2	L2	L1	H1	L1
H2	L2	H2	L2	L1	L1	L1

H1: Fresh fuel assembly with maximum 5.0 w/o U-235.

No restriction on burnup.

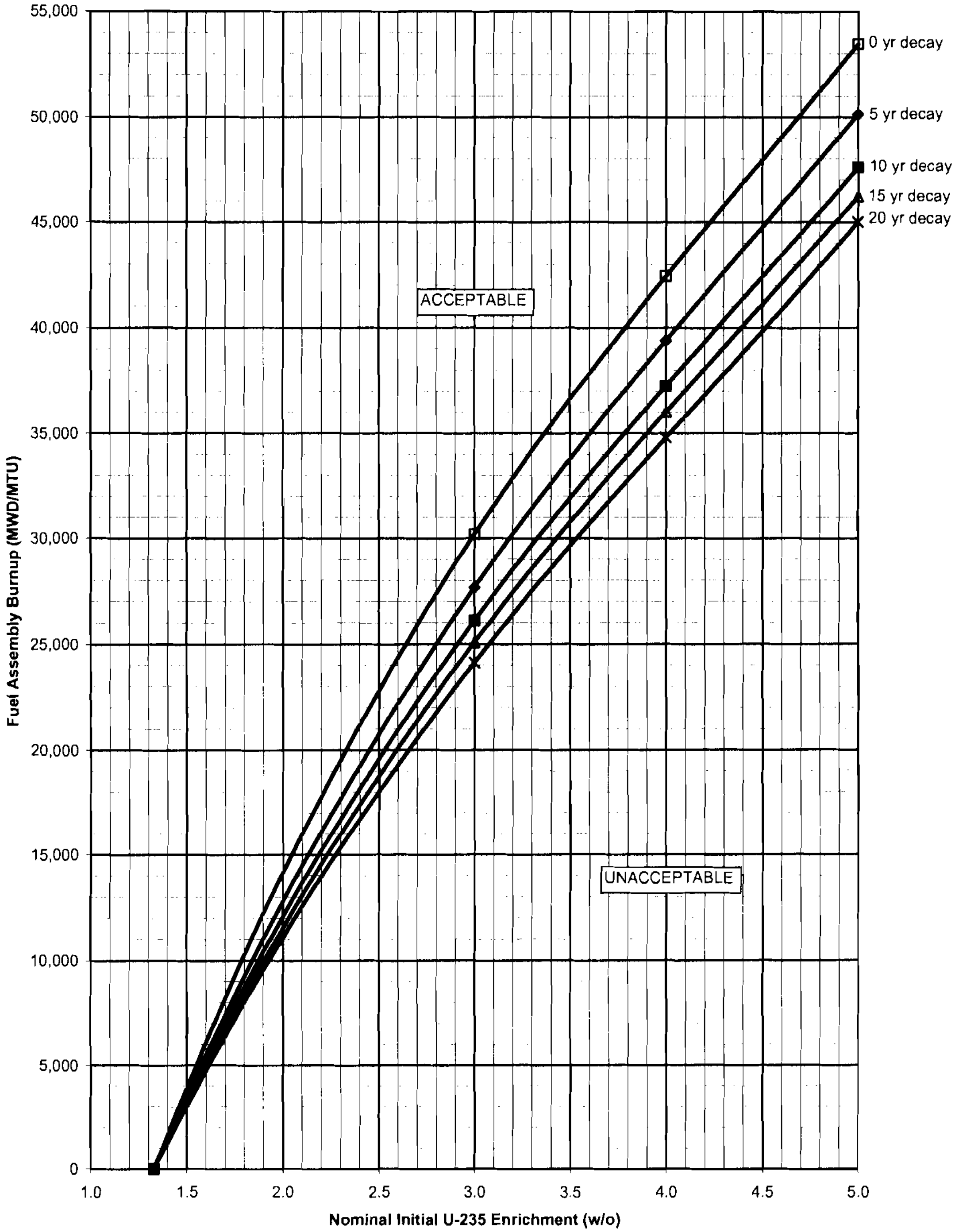
L1: Spent fuel assemblies in the "Acceptable" range of Figure 4.3.1-6.

H2: Fresh fuel assembly with maximum 4.0 w/o U-235 with no IFBA or maximum 5.0 w/o U-235 with IFBA in the "Acceptable" range of Figure 4.3.1-8.

No restriction on burnup.

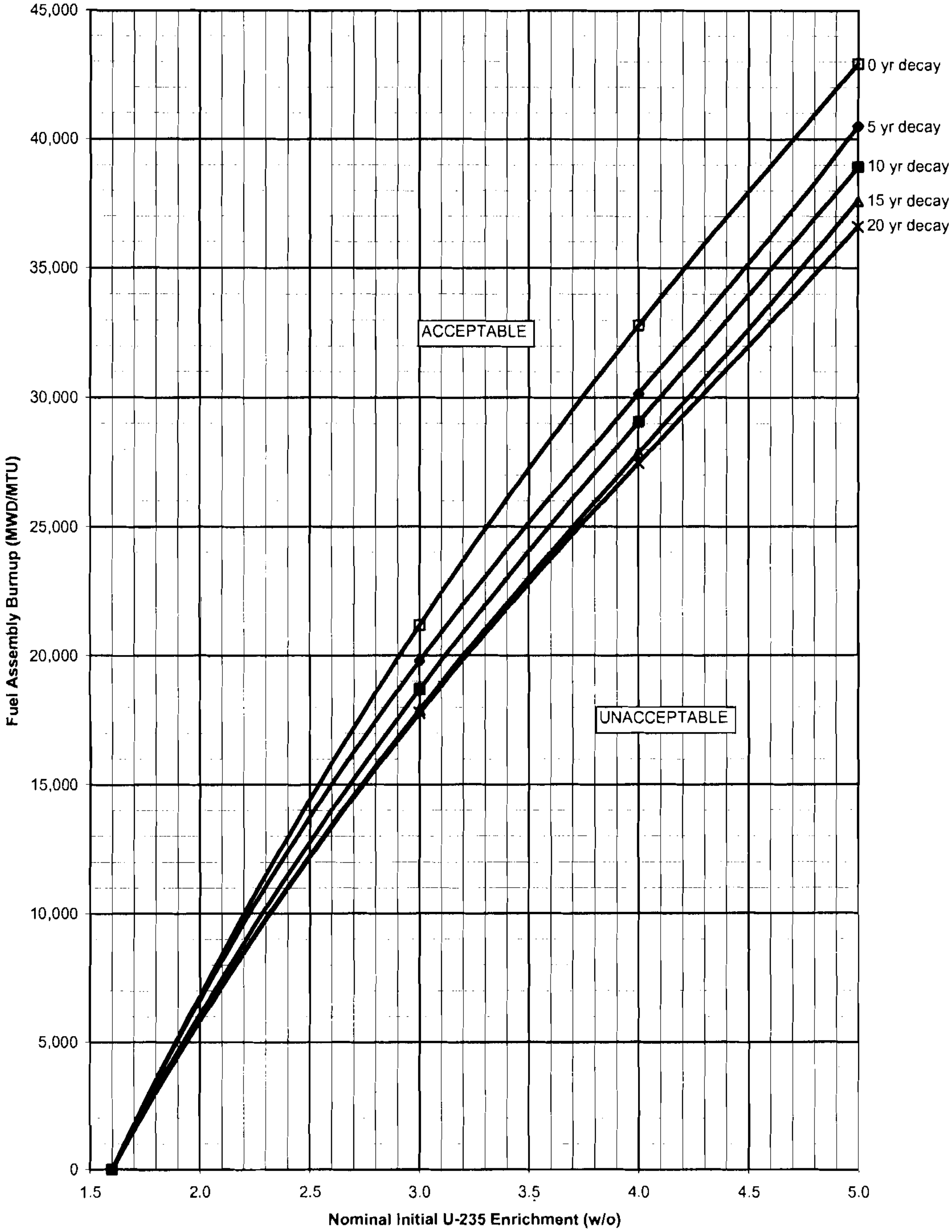
L2: Spent fuel assemblies in the "Acceptable" range of Figure 4.3.1-7.

Figure 4.3.1-5
1-Out-of-4 for 4 w/o with IFBA / 1-Out-of-4 for 5 w/o with no IFBA



0 yr decay = $428.92e^3 - 5757.04e^2 + 36677.22e - 39606.18$
5 yr decay = $354.71e^3 - 4760.55e^2 + 31941.49e - 34895.75$
10 yr decay= $346.35e^3 - 4566.17e^2 + 30296.34e - 33031.86$
15 yr decay= $321.26e^3 - 4212.08e^2 + 28522.05e - 31239.39$
20 yr decay= $326.36e^3 - 4138.31e^2 + 27551.88e - 30091.55$

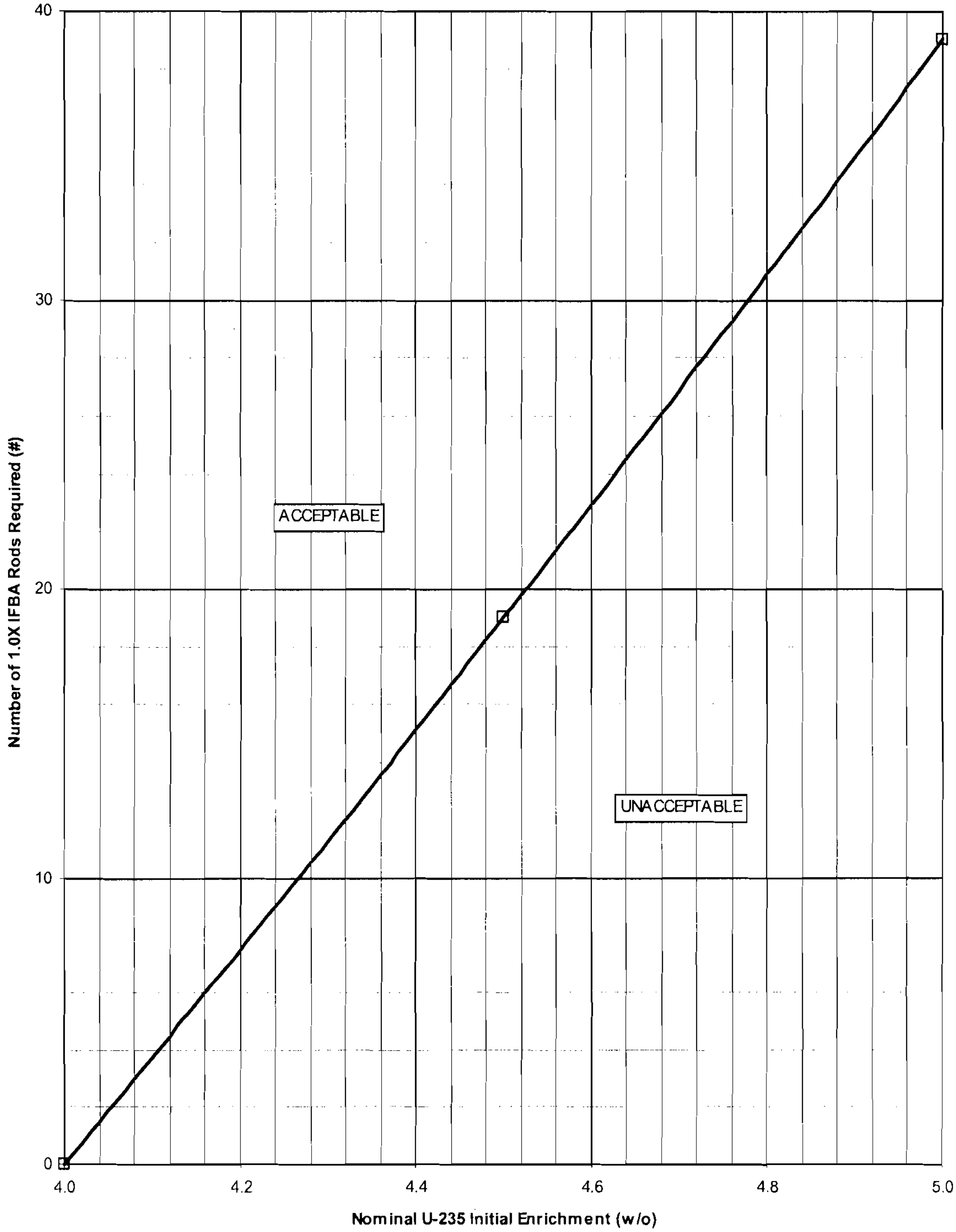
Figure 4.3.1-6
Spent Fuel Assembly Burnup Requirements for 1-Out-of-4 for 5.0 w/o with no IFBA



0 yr decay	$= 212.05e^3 - 3290.58e^2 + 26798.27e - 35321.90$
5 yr decay	$= 461.10e^3 - 5538.19e^2 + 32070.67e - 39023.97$
10 yr decay	$= 290.71e^3 - 3744.49e^2 + 25822.24e - 32920.44$
15 yr decay	$= 316.33e^3 - 3898.92e^2 + 25546.37e - 32188.62$
20 yr decay	$= 286.15e^3 - 3716.74e^2 + 25117.81e - 31845.90$

Figure 4.3.1-7
Spent Fuel Assembly Burnup Requirements for 1-Out-of-4 for 4.0 w/o with IFBA

4.0 DESIGN FEATURES



Number of IFBA Pins = $2e^2 + 21e - 116$

Figure 4.3.1-8
Fresh Fuel IFBA Requirements

5.0 ADMINISTRATIVE CONTROLS

5.1 Responsibility

5.1.1 The Plant Manager shall be responsible for overall facility 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 Duty Shift Superintendent (DSS) shall be responsible for the control room command function. During any absence of the DSS from the control room while either unit is in MODE 1, 2, 3, or 4, an individual with an active Senior Reactor Operator (SRO) license shall be designated to assume the control room command function. During any absence of the DSS from the control room while both units are 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, including the plant-specific titles of those personnel fulfilling the responsibilities of the positions delineated in these Technical Specifications, shall be documented in the FSAR;

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. A specified corporate officer shall have corporate 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; and

d. The individuals who train the operating staff, carry out health physics, 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 Organization

5.2.2 Facility Staff

The facility staff organization shall include the following:

a. A non-licensed operator shall be assigned to each reactor containing fuel and an additional non-licensed operator shall be assigned when either reactor is operating in MODES 1, 2, 3, or 4.

b. 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.e 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.

c. A radiation protection technician shall be on site when fuel is in either 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.

d. The Operations Manager or Assistant Operations Manager shall hold an SRO License at Point Beach.

e. An individual shall provide advisory technical support to the operations shift crew in the areas of thermal hydraulics, reactor engineering, and plant analysis with regard to the safe operation of the facility. This individual shall meet the qualifications specified by the Commission Policy Statement on Engineering Expertise on Shift.

5.0 ADMINISTRATIVE CONTROLS

5.3 Facility Staff Qualifications

5.3.1 Each member of the facility staff shall meet or exceed the minimum qualifications of ANSI N18.1-1971, as supplemented by Regulatory Guide 1.8, Revision 1, September 1975, for comparable positions, except:

a) The education and experience eligibility requirements for license applicants, and changes thereto, shall be those previously reviewed by the NRC, specifically those referenced in NRC Safety Evaluation letter dated October 24, 2003.

b) The Operations Manager shall meet one of the following:

i) Hold a Senior Operator's license, or

ii) Have held a Senior Operator's license on a similar unit (PWR), or

iii) Have been certified for equivalent Senior Operator knowledge.

5.3.2 For the purpose of 10 CFR 55.4, a licensed Senior Reactor Operator (SRO) and a licensed reactor operator (RO) are those individuals who, in addition to meeting the requirements of TS 5.3.1, perform the functions described in 10 CFR 50.54(m).

5.3.3 In the event the position of Health Physicist is vacated and the proposed replacement does not meet all the qualifications of TS 5.3.1, but is determined to be otherwise well qualified, the concurrence of NRC shall be sought in approving the qualification of that individual.

5.0 ADMINISTRATIVE CONTROLS

5.4 Procedures

5.4.1 Written procedures shall be established, implemented, and maintained covering the following activities:

a. Normal sequences of startup, operation and shutdown of components, systems and overall plant;
b. Refueling;
c. Specific and foreseen potential malfunctions of systems or components including abnormal reactivity changes;
d. Security Plan Implementation;
e. The emergency operating procedures required to implement the requirements of NUREG-0737 and to NUREG-0737, Supplement 1, as stated in Generic Letter 82-33;
f. Nuclear core testing;
g. Surveillance and Testing of safety related equipment;
h. (Deleted)
i. Quality Assurance for effluent and environmental monitoring;
j. 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)

a. 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; and

b. The ODCM shall also contain the radioactive effluent controls and radiological environmental monitoring activities, and descriptions of the information that should be included in the Annual Monitoring Report required by Specification 5.6.2.

c. Licensee initiated changes to the ODCM:

1. Shall be documented and records of reviews performed shall be retained. This documentation shall contain:

    i. sufficient information to support the change(s) together with the appropriate analyses or evaluations justifying the change(s), and

    ii. a determination that the change(s) maintain the levels of radioactive effluent control required by 10 CFR 20.1302, 40 CFR 190, 10 CFR 50.36a, and 10 CFR 50, Appendix I, and not adversely impact the accuracy or reliability of effluent, dose, or setpoint calculations;

2. Shall become effective after the approval of the Plant Manager; and

3. 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 Annual Monitoring 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 Programs and Manuals

5.5.2 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. The systems include Containment Spray, Safety Injection (High Head) and Safety Injection (Low Head) systems. 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.

5.5.3 DELETED

5.5 Programs and Manuals

5.5.4 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 the ODCM, 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 the concentration values in Appendix B, Table 2, Column 2 to 10 CFR 20.1001-20.2402;

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;

5.5 Programs and Manuals

5.5.4 Radioactive Effluent Controls Program (continued)

g. Limitations on the dose rate resulting from radioactive material released in gaseous effluents from the site to areas at or beyond the site boundary shall be in accordance with the following:

1. For noble gases: a dose rate ≤ 500mrem/yr to the whole body and a dose rate ≤ 3000 mrem/yr to the skin, and

2. For iodine-131, iodine-133, tritium, and all radionuclides in particulate form with half-lives greater than 8 days: a dose rate ≤ 1500 mrem/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

j. Limitations on the annual dose or dose commitment to any member of the public, beyond the site boundary, due to releases of radioactivity and to radiation from uranium fuel cycle sources, conforming to 40 CFR 190.

The provisions of SR 3.0.2 and SR 3.0.3 are applicable to the Radioactive Effluent Controls Program surveillance frequency.

5.5 Programs and Manuals

5.5.5 <u>Component Cyclic or Transient Limit</u>

This program provides controls to track the FSAR, Section 4.1, cyclic and transient occurrences to ensure that components are maintained within the design limits.

5.5.6 <u>Reactor Coolant Pump Flywheel Inspection Program</u>

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 Programs and Manuals

5.5.7 Risk Informed Completion Time Program

This program provides controls to calculate a Risk Informed Completion Time (RICT) and must be implemented in accordance with NEI 06-09, “Risk-Informed Technical Specifications Initiative 4b: Risk-Managed Technical Specifications (RMTS) Guidelines,” Revision 0-A, November 2006. The program shall include the following:

a. The RICT may not exceed 30 days;

b. A RICT may only be utilized in MODES 1 and 2;

c. When a RICT is being used, any change to the plant configuration, as defined in NEI 06-09-A, Appendix A, must be considered for the effect on the RICT.

  1. For planned changes, the revised RICT must be determined prior to implementation of the change in configuration.

  2. For emergent conditions, the revised RICT must be determined within the time limits of the Required Action Completion Time (i.e., not the RICT) or 12 hours after the plant configuration change, whichever is less.

  3. Revising the RICT is not required if the plant configuration change would lower plant risk and would result in a longer RICT.

d. For emergent conditions, if the extent of condition evaluation for inoperable structures, systems, or components (SSCs) is not complete prior to exceeding the Completion Time, the RICT shall account for the increased possibility of common cause failure (CCF) by either:

  1. Numerically accounting for the increased possibility of CCF in the RICT calculation, or

  2. Risk Management Actions (RMAs) not already credited in the RICT calculation shall be implemented that support redundant or diverse SSCs that perform the function(s) of the inoperable SSCs, and, if practicable, reduce the frequency of initiating events that challenge the function(s) performed by the inoperable SSCs.

5.5.7 Risk Informed Completion Time Program (continued)

e. The risk assessment approaches and methods shall be acceptable to the NRC. The plant PRA shall be based on the as-built, as-operated, and maintained plant; and reflect the operating experience at the plant, as specified in Regulatory Guide 1.200, Revision 2. Methods to assess the risk from extending the Completion Times must be PRA methods approved for use with this program, or other methods approved by the NRC for generic use; and any change in the PRA methods to assess risk that are outside these approval boundaries require prior NRC approval.

5.5.8 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.

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), and 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

5.5.8 Steam Generator (SG) (continued)

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 500 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.

The following alternate tube plugging criteria shall be applied as an alternative to the 40% depth based criteria:

For Unit 1 only, tubes with service-induced flaws located greater than 20.6 inches below the top of the tubesheet do not require plugging. Tubes with service-induced flaws located in the portion of the tube from the top of the tubesheet to 20.6 inches below the top of the tubesheet shall be plugged upon detection.

This alternate tube plugging criteria is not applicable to the tube at row 38 column 69 in the A steam generator, which is not expanded in the hot leg the full length of the tubesheet. This tube has been removed from service by plugging (during U1R31).

d. Provisions for SG tube inspections. Periodic SG tube inspections shall be performed. For Unit 1, 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 20.6 inches below the top of the tubesheet on the hot leg side to 20.6 inches below the top of the

5.5 Programs and Manuals

5.5.8 Steam Generator (SG) (continued)

tubesheet on the cold leg side and that may satisfy the applicable tube plugging criteria. For Unit 2, 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.

For Unit 1 and Unit 2: 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 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 location.

1. Inspect 100% of the tubes in each SG during the first refueling outage following SG installation.

2. i. Unit 1 (alloy 600 Thermally Treated tubes): After the first refueling outage following SG installation, inspect each SG at least every 48 effective full power months or at least every other 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, and c 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

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5.5.8 Steam Generator (SG) (continued)

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 120 effective full power months. This constitutes the first inspection period;

b) During the next 96 effective full power months, inspect 100% of the tubes. This constitutes the second inspection period; and

c) During the remaining life of the SGs, inspect 100% of the tubes every 72 effective full power months. This constitutes the third and subsequent inspection periods.

ii. Unit 2 (alloy 690 Thermally Treated tubes): 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.

5.5.8 Steam Generator (SG) (continued)

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.

3. For Unit 1, if crack indications are found in any SG tube from 20.6 inches below the top of the tubesheet on the hot leg side to 20.6 inches below the top of the tubesheet on the cold leg side, 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.

For Unit 2, 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.

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5.5.9 Secondary Water Chemistry Program

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, which shall include monitoring the discharge of the condensate pumps for evidence of condenser in leakage;

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.

5.5.10 Ventilation Filter Testing Program (VFTP)

A program shall be established to implement the following required testing of the Control Room Emergency Filtration System (F-16) at the frequencies specified in Regulatory Guide 1.52, Revision 2, and in accordance with ASTM D3803-1989 and the methodology of ANSI N510-1980, as prescribed below.

a. Demonstrate for the Control Room Emergency Filtration System (F-16) that an inplace test of the high efficiency particulate air (HEPA) filters shows a penetration and system bypass $\leq$1.0% when tested in accordance with the methodology of ANSI N510-1980, Section 10, excluding subsection 10.3, at a system flowrate of 4950 cfm ± 10%.

b. Demonstrate for the Control Room Emergency Filtration System (F-16) that an inplace test of the charcoal adsorber shows a penetration and system bypass $\leq$ 1.0% when tested in accordance with the methodology of ANSI N510-1980, Section 12, excluding subsection 12.3, at a system flowrate of 4950 cfm ± 10%.

5.5 Programs and Manuals

5.5.10 Ventilation Filter Testing Program (VFTP) (continued)

c. Demonstrate for the Control Room Emergency Filtration System (F-16) that a laboratory test of a sample of the charcoal adsorber, when obtained in accordance with the methodology of ANSI N510-1980, Section 13, excluding subsection 12.3, shows the methyl iodide penetration $\leq$ 2.5%, when tested in accordance with ASTM D3803-1989 at a temperature of 30°C and a relative humidity of 95%, applying the tolerances of ASTM D3803-1989.

d. Demonstrate for the Control Room Emergency Filtration System (F-16) that the pressure drop across the combined HEPA filters and the charcoal adsorbers is less than 6 inches of water when tested in accordance with the methodology of ANSI N510-1980, Sections 10 and 12, excluding subsections 10.3 and 12.3, at a system flowrate of 4950 cfm ± 10%.

The provisions of SR 3.0.2 and SR 3.0.3 are applicable to the VFTP test frequencies.

5.5.11 Explosive Gas Monitoring Program

This program provides controls for potentially explosive gas mixtures contained in the on-service Gas Decay Tank.

The program shall include a limit for oxygen concentration in the on-service Gas Decay Tank and a surveillance program to ensure the limit is maintained. This limit shall be appropriate to the system's design criteria (i.e., whether or not the system is designed to withstand a hydrogen explosion).

The provisions of SR 3.0.2 and SR 3.0.3 are applicable to the Explosive Gas Monitoring Program surveillance frequencies.

5.5 Programs and Manuals

5.5.12 Diesel Fuel Oil Testing Program

A diesel fuel oil testing program to implement required testing of both new fuel oil and stored 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 following:

a. Acceptability of new fuel oil for use prior to addition to storage tanks by determining that the fuel oil has:

   1. an API gravity or an absolute specific gravity within limits,

   2. a flash point and kinematic viscosity within limits for ASTM 2D fuel oil, and

   3. a clear and bright appearance with proper color;

b. Within 31 days of addition of the new fuel oil to storage tanks verify that the properties of the new fuel oil, other than those addressed in a. above, are within limits for ASTM 2D fuel oil; and

c. Total particulate concentration of the fuel oil is $\leq$ 10 mg/l when tested every 92 days in accordance with the applicable ASTM standard.

d. The provisions of SR 3.0.2 and SR 3.0.3 are applicable to the Diesel Fuel Oil Testing Program test frequencies.

5.5.13 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.

b. Licensees may make changes to Bases without prior NRC approval provided the changes do not involve 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.

5.5 Programs and Manuals

5.5.13 Technical Specifications (TS) Bases Control Program (continued)

c. The Bases Control Program shall contain provisions to ensure that the Bases are maintained consistent with the FSAR.

d. Proposed changes that meet the criteria of Specification 5.5.13b 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).

5.5.14 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 actions may 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 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

5.5.14 Safety Function Determination Program (SFDP) (continued)

A loss of safety function exists when, assuming no concurrent single failure, and assuming no concurrent loss of offsite power or loss of onsite diesel generator(s), 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.

When a loss of safety function is caused by the inoperability of a single Technical Specification support system, the appropriate Conditions and Required Actions to enter are those of the support system.

5.5.15 Containment Leakage Rate Testing Program

a. A program shall be established to implement 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. This program shall be in accordance with Nuclear Energy Institute (NEI) 94-01, Revision 3-A, “Industry Guidance for Implementing Performance Based Option of 10 CFR 50, Appendix J,” and the conditions and limitations specified in NEI 94-01, Revision 2-A.

5.5 Programs and Manuals

5.5.15 Containment Leakage Rate Testing Program (continued)

b. The peak design containment internal accident pressure, P_a, is 60 psig.

c. The maximum allowable containment leakage rate, L_a at P_a, shall be 0.2% of containment air weight per day.

d. Leakage rate acceptance criteria are:

1. Containment leakage rate acceptance criterion is $\leq$ 1.0 L_a.

2. During the first unit startup following testing in accordance with this program, the leakage rate acceptance are $\leq$ 0.6 L_a for the combined Type B and Type C tests and $\leq$ 0.75 L_a for the Type A tests.

3. Air lock testing acceptance criteria are:

i. Overall air lock leakage rate is $\leq$ 0.05 L_a when tested at $\geq$ P_a.

ii. For each door seal, leakage rate is equivalent to $\leq$ 0.02 L_a at $\geq$ P_a when tested at a differential pressure of $\geq$ to 10 inches of Hg.

e. The provisions of SR 3.0.2 do not apply to the test frequencies in the Containment Leakage Rate Testing Program.

f. The provisions of SR 3.0.3 are applicable to the Containment Leakage Rate Testing Program.

5.5 Programs and Manuals

5.5.16 Reactor Coolant System (RCS) Pressure Isolation Valve (PIV) Leakage Program

A program shall be established to verify the leakage from each RCS PIV is within the limits specified below, in accordance with the Event V Order, issued April 20, 1981.

a. Minimum differential test pressure shall not be less than 150 psid.

b. Leakage rate acceptance criteria are:

1. Leakage rates less than or equal to 1.0 gpm are considered acceptable.

2. Leakage rates greater than 1.0 gpm but less than or equal to 5.0 gpm are considered acceptable if the latest measured rate has not exceeded the rate determined by the previous test by an amount that reduces the margin between measured leakage rate and the maximum permissible rate of 5.0 gpm by 50% or greater.

3. Leakage rates greater than 1.0 gpm but less than or equal to 5.0 gpm are considered unacceptable if the latest measured rate exceeded the rate determined by the previous test by an amount that reduces the margin between measured leakage rate and the maximum permissible rate of 5.0 gpm by 50% or greater.

4. Leakage rates greater than 5.0 gpm are considered unacceptable.

5.5.17 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, except where an alternative, exemption, or relief has been authorized by the NRC.

The provisions of SR 3.0.3 are applicable to the Tendon Surveillance Program inspection frequencies.

5.5 Programs and Manuals

5.5.18 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 Emergency Filtration System (CREFS), CRE occupants can control the reactor safely under normal conditions and maintain it in a safe condition following a radiological event. 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. Additionally, separate from the CREFS, the program shall ensure CRE occupants can maintain the reactor in a safe condition following a hazardous chemical release or smoke challenge. 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 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 technical specification emergency mode of operation by the CREFS, operating at the flow rate required by the VFTP, at a Frequency of 18 months. The results shall be trended at a frequency of 18 months and used as part of the periodic 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.

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.

5.5 Programs and Manuals

5.5.18 Control Room Envelope Habitability Program (continued)

g. An adequate supply of self contained breathing apparatus (SCBA) units in the CRE to protect CRE occupants from a hazardous chemical release.

h. Portable smoke ejection equipment per the Fire Protection Evaluation Report and Safe Shutdown Analysis Report to address a potential smoke challenge.

5.5.19 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 Operations 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.

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 Monitoring Report

---NOTE---
A single submittal may be made that combines sections common to Units 1 and 2.

The Annual Monitoring Report covering the operation of the units during the previous calendar year shall be submitted by April 30 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.

"Revised by letter dated April 1, 2005"

5.6 Reporting Requirements

5.6.2 Annual Monitoring Report (continued)

The Annual Monitoring Report shall include the results of analyses of all radiological environmental samples and of all environmental radiation measurements taken during the period pursuant to the locations specified in the table and figures in the ODCM, as well as summarized and tabulated results of these analyses and measurements. In the event that some individual results are not available for inclusion with the report, the report shall be submitted noting and explaining the reasons for the missing results. The missing data shall be submitted in a supplementary report as soon as possible.

The Annual Monitoring Report shall also include The Radioactive Effluent Release Report covering the operation of the units in the previous year and submitted in accordance with 10 CFR 50.36a.

The submittal shall 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 report shall include a summary of the quantities of radioactive liquid and gaseous effluents and solid waste released from the units. 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 50, Appendix I, Section IV.B.1.

5.6.3 Deleted

5.6.4 CORE OPERATING LIMITS REPORT (COLR)

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) LCO 2.1.1, "Safety Limits (SLs)"
(2) LCO 3.1.1, "Shutdown Margin (SDM)"
(3) LCO 3.1.3, "Moderator Temperature Coefficient (MTC)"
(4) LCO 3.1.5, "Shutdown Bank Insertion Limits"
(5) LCO 3.1.6, "Control Bank Insertion Limits"
(6) LCO 3.2.1, "Heat Flux Hot Channel Factor ($F_Q(Z)$)"
(7) LCO 3.2.2, "Nuclear Enthalpy Rise Hot Channel Factor($F^N_{\Delta H}$)"

"Revised by letter dated April 1, 2005"

5.6 Reporting Requirements

5.6.4 CORE OPERATING LIMITS REPORT (COLR) (continued)

(8) LCO 3.2.3, "Axial Flux Difference (AFD)"
(9) LCO 3.3.1, "Reactor Protection System (RPS) Instrumentation - Overtemperature ΔT"
(10) LCO 3.3.1, "Reactor Protection System (RPS) Instrumentation - Overpower ΔT"
(11) LCO 3.4.1, "RCS Pressure, Temperature, and Flow Departure from Nucleate Boiling (DNB) Limits"
(12) LCO 3.9.1, "Boron Concentration"

b. The analytical methods used to determine the core operating limits shall be those previously reviewed and approved by the NRC. When an initial assumed power level of 102 percent of the original rated thermal power is specified in a previously approved method, 100.6 percent of uprated rated thermal power may be used only when the main feedwater flow measurement (used as the input for reactor thermal output) is provided by the Caldon leading edge flowmeter (LEFM) as described in reports 11 and 12 listed below. When main feedwater flow measurements from the LEFM are unavailable, a power measurement uncertainty consistent with the instruments used shall be applied.

Future revisions of approved analytical methods listed in this Technical Specification that currently reference the original Appendix K uncertainty of 102 percent of the original rated thermal power should include the condition given above allowing use of 100.6 percent of uprated rated thermal power in the safety analysis methodology when the LEFM is used for main feedwater flow measurement.

The approved analytical methods are described in the following documents:

(1) WCAP-14449-P-A, "Application of Best Estimate Large Break LOCA Methodology to Westinghouse PWR's with Upper Plenum Injection," Revision 1, October 1999. (cores containing 422V+ fuel)
(2) WCAP-9272-P-A, "Westinghouse Reload Safety Evaluation Methodology," July 1985.
(3) WCAP-11397-P-A, "Revised Thermal Design Procedure," April 1989.

5.6 Reporting Requirements

5.6.4 CORE OPERATING LIMITS REPORT (COLR) (continued)

(4) WCAP-14787, Rev 3, "Westinghouse Revised Thermal Design Procedure Instrument Uncertainty Methodology for Point Beach Units 1 & 2 Power Uprate (1775 MWt Core Power with Feedwater Venturis, or 1800 MWt Core Power with LEFM on Feedwater Header)"

(5) WCAP-10054-P-A, "Westinghouse Small Break ECCS Evaluation Model Using The NOTRUMP Code," August 1985.

(6) WCAP-10054-P-A, "Addendum to the Westinghouse Small Break ECCS Evaluation Model Using the NOTRUMP Code: Safety Injection into the Broken Loop and COSI Condensation Model," Addendum 2, Revision 1, July 1997.

(7) WCAP-8745-P-A, "Design Bases for the Thermal Overpower ΔT and Thermal Overtemperature ΔT Trip Functions," September 1986.

(8) DELETED

(9) WCAP-10924-P-A, "Large Break LOCA Best Estimate Methodology, Volume 2: Application to Two-Loop PWRs Equipped with Upper Plenum Injection," and Addenda, December 1988. (cores not containing 422 V+ fuel)

(10) WCAP-10924-P-A, "LBLOCA Best Estimate Methodology: Model Description and Validation: Model Revisions," Volume 1, Addendum 4, August 1990. (cores not containing 422 V+ fuel)

(11) Caldon, Inc., Engineering Report-80P, "TOPICAL REPORT: Improving Thermal Power Accuracy and Plant Safety While Increasing Operating Power Level Using the LEFM✓™ System," Revision 0, March 1997.

(12) Caldon, Inc., Engineering Report-160P, "Supplement to Topical Report R-80P: Basis for a Power Uprate With the LEFM✓™ System," Revision 0, May 2000.

(13) WCAP-16009-P-A, "Realistic Large-Break LOCA Evaluation Methodology Using the Automated Statistical Treatment of Uncertainty Method (ASTRUM)," January 2005.

(14) WCAP-16259-P-A, "Westinghouse Methodology for Application of 3-D Transient Neutronics to Non-LOCA Accident Analysis," August 2006.

(15) WCAP-8403 (nonproprietary), "Power Distribution Control and Load Following Procedures, "Westinghouse Electric Corporation," September 1974.

(16) NS-TMA-2198, Westinghouse to NRC Letter, Attachment "Operation and Safety Analysis Aspects of Improved Load Follow Package," January 31, 1980.

(17) NS-CE-687, Westinghouse to NRC Letter, "Power Distribution Control Analysis," July 16, 1975.

5.6 Reporting Requirements

5.6.4 CORE OPERATING LIMITS REPORT (COLR) (continued)

(18) WCAP-12610-P-A, "VANTAGE+ Fuel Assembly Reference Core Report," April 1995.
(19) WCAP-12610-P-A & CENPD-404-P-A, Addendum 1-A, "Optimized ZIRLO™," July 2006.

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 Systems (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.

5.6.5 Reactor Coolant System (RCS) PRESSURE AND TEMPERATURE LIMITS REPORT (PTLR)

a. RCS pressure and temperature limits for heat up, cooldown, low temperature operation, criticality, hydrostatic testing, LTOP enabling, and PORV lift settings as well as heatup and cooldown rates shall be established and documented in the PTLR for the following:

(1) LCO 3.4.3, "RCS Pressure and Temperature (P/T) Limits"
(2) LCO 3.4.6, "RCS Loops-MODE 4"
(3) LCO 3.4.7, "RCS Loops-MODE 5, Loops Filled"
(4) LCO 3.4.10, "Pressurizer Safety Valves"
(5) LCO 3.4.12, "Low Temperature Overpressure Protection (LTOP)"

b. The analytical methods used to determine the RCS pressure and temperature limits shall be those previously reviewed and approved by the NRC, specifically those described in the NRC Letters dated October 6, 2000, July 23, 2001, and October 18, 2007, and June 30, 2014.

c. The PTLR shall be provided to the NRC upon issuance for each reactor vessel fluence period and for any revision or supplement thereto.

5.6 Reporting Requirements

5.6.6 PAM Report

When a report is required by Condition B or F of LCO 3.3.3, "Post Accident Monitoring (PAM) Instrumentation," a report shall be submitted within the following 14 days. The report shall outline the preplanned alternate method of monitoring, the cause of the inoperability, and the plans and schedule for restoring the instrumentation channels of the Function to OPERABLE status.

5.6.7 Tendon Surveillance Report

Abnormal conditions observed during testing will be evaluated to determine the effect of such conditions on containment structural integrity. This evaluation should be completed within 30 days of the identification of the condition. Any condition which is determined in this evaluation to have a significant adverse effect on containment structural integrity will be considered an abnormal degradation of the containment structure.

Any abnormal degradation of the containment structure identified during the engineering evaluation of abnormal conditions shall be reported to the Nuclear Regulatory Commission pursuant to the requirements of 10 CFR 50.4 within thirty days of that determination. Other conditions that indicate possible effects on the integrity of two or more tendons shall be reportable in the same manner. Such reports shall include a description of the tendon condition, the condition of the concrete (especially at tendon anchorages), the inspection procedure 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 the Specification 5.5.8, Steam Generator (SG) Program. The report shall include:

a. The scope of inspections performed on each SG,

b. 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,

5.6 Reporting Requirements

5.6.8 Steam Generator Tube Inspection Report (continued)

e. Number of tubes plugged during the inspection outage for each degradation mechanism,

f. The number and percentage of tubes plugged to date, and the effective plugging percentage in each steam generator,

g. The results of condition monitoring, including the results of tube pulls and in-situ testing.

h. For Unit 1 only, the primary to secondary leakage rate observed in each SG (if it is not practical to assign the leakage to an individual SG, the entire primary to secondary leakage should be conservatively assumed to be from one SG) during the cycle preceding the inspection which is the subject of the report,

i. For Unit 1 only, the calculated accident induced leakage rate from the portion of the tubes below 20.6 inches from the top of the tubesheet for the most limiting accident in the most limiting SG. In addition, if the calculated accident induced leakage rate from the most limiting accident is less than 5.22 times the maximum operational primary to secondary leakage rate, the report should describe how it was determined, and

j. For Unit 1 only, the results of monitoring for tube axial displacement (slippage). If slippage is discovered, the implications of the discovery and corrective action shall be provided.

5.0 ADMINISTRATIVE CONTROLS

5.7 High Radiation Area

As provided in paragraph 20.1601(c) of 10 CFR Part 20, the following controls shall be applied to high radiation areas in place of controls required by paragraph 20.1601(a) and (b) of 10 CFR Part 20:

5.7.1 <u>High Radiation Areas with Dose Rates Not Exceeding 1.0 rem/hour at 30 Centimeters from the Radiation Source or from any Surface Penetrated by the Radiation</u>

a. Each entryway to such an area shall be barricaded and conspicuously posted as a high radiation area. Such barricades may be opened as necessary to permit entry or exit of personnel or equipment.

b. Access to, and activities in, each such area shall be controlled by means of Radiation Work Permit (RWP) or equivalent that includes specification of radiation dose rates in the immediate work area(s) and other appropriate radiation protection equipment and measures.

c. Individuals qualified in radiation protection procedures and personnel continuously escorted by such individuals may be exempted from the requirement for an RWP or equivalent while performing their assigned duties provided that they are otherwise following plant radiation protection procedures for entry to, exit from, and work in such areas.

d. Each individual or group entering such an area shall possess:

1. A radiation monitoring device that continuously displays radiation dose rates in the area; or

2. A radiation monitoring device that continuously integrates the radiation dose rates in the area and alarms when the device's dose alarm setpoint is reached, with an appropriate alarm setpoint, or

3. A radiation monitoring device that continuously transmits dose rate and cumulative dose information to a remote receiver monitored by radiation protection personnel responsible for controlling personnel radiation exposure within the area, or

5.7 High Radiation Area (continued)

5.7.1 High Radiation Areas with Dose Rates Not Exceeding 1.0 rem/hour at 30 Centimeters from the Radiation Source or from any Surface Penetrated by the Radiation (continued)

4. A self-reading dosimeter (e.g., pocket ionization chamber or electronic dosimeter) and,

   (i) Be under the surveillance, as specified in the RWP or equivalent, while in the area, of an individual qualified in radiation protection procedures, equipped with a radiation monitoring device that continuously displays radiation dose rates in the area; who is responsible for controlling personnel exposure within the area, or

   (ii) Be under the surveillance as specified in the RWP or equivalent, while in the area, by means of closed circuit television, of personnel qualified in radiation protection procedures, responsible for controlling personnel radiation exposure in the area, and with the means to communicate with individuals in the area who are covered by such surveillance.

e. Except for individuals qualified in radiation protection procedures, or personnel continuously escorted by such individuals, entry into such areas shall be made only after dose rates in the area have been determined and entry personnel are knowledgeable of them. These continuously escorted personnel will receive pre-job briefing prior to entry into such areas. This dose rate determination, knowledge, and pre-job briefing does not require documentation prior to initial entry.

5.7 High Radiation Area (continued)

5.7.2 <u>High Radiation Areas with Dose Rates Greater than 1.0 rem/hour at 30 Centimeters from the Radiation Source or from any Surface Penetrated by the Radiation, but less than 500 rads/hour at 1 Meter from the Radiation Source or from any Surface Penetrated by the Radiation</u>

a. Each entryway to such an area shall be conspicuously posted as a high radiation area and shall be provided with a locked or continuously guarded door or gate that prevents unauthorized entry, and, in addition:

   1. All such door and gate keys shall be maintained under the administrative control of the shift supervisor, radiation protection manager, or his or her designee.

   2. Doors and gates shall remain locked except during periods of personnel or equipment entry or exit.

b. Access to, and activities in, each such area shall be controlled by means of an RWP or equivalent that includes specification of radiation dose rates in the immediate work area(s) and other appropriate radiation protection equipment and measures.

c. Individuals qualified in radiation protection procedures may be exempted from the requirement for an RWP or equivalent while performing radiation surveys in such areas provided that they are otherwise following plant radiation protection procedures for entry to, exit from, and work in such areas.

d. Each individual or group entering such an area shall possess:

   1. A radiation monitoring device that continuously integrates the radiation rates in the area and alarms when the device's dose alarm setpoint is reached, with an appropriate alarm setpoint, or

   2. A radiation monitoring device that continuously transmits dose rate and cumulative dose information to a remote receiver monitored by radiation protection personnel responsible for controlling personnel radiation exposure within the area with the means to communicate with and control every individual in the area, or

5.7 High Radiation Area (continued)

5.7.2 High Radiation Areas with Dose Rates Greater than 1.0 rem/hour at 30 Centimeters from the Radiation Source or from any Surface Penetrated by the Radiation, but less than 500 rads/hour at 1 Meter from the Radiation Source or from any Surface Penetrated by the Radiation (continued)

3. A self-reading dosimeter (e.g., pocket ionization chamber or electronic dosimeter) and,

   (i) Be under the surveillance, as specified in the RWP or equivalent, while in the area, of an individual qualified in radiation protection procedures, equipped with a radiation monitoring device that continuously displays radiation dose rates in the area; who is responsible for controlling personnel exposure within the area, or

   (ii) Be under the surveillance as specified in the RWP or equivalent, while in the area, by means of closed circuit television, of personnel qualified in radiation protection procedures, responsible for controlling personnel radiation exposure in the area, and with the means to communicate with and control every individual in the area.

4. In those cases where option (2) and (3), above, are impractical or determined to be inconsistent with the "As Low As is Reasonably Achievable" principle, a radiation monitoring device that continuously displays radiation dose rates in the area.

e. Except for individuals qualified in radiation protection procedures, or personnel continuously escorted by such individuals, entry into such areas shall be made only after dose rates in the area have been determined and entry personnel are knowledgeable of them. These continuously escorted personnel will receive a pre-job briefing prior to entry into such areas. This dose rate determination, knowledge, and pre-job briefing does not require documentation prior to initial entry.

f. Such individual areas that are within a larger area where no enclosure exists for the purpose of locking and where no enclosure can reasonably be constructed around the individual area need not be controlled by a locked door or gate, nor continuously guarded, but shall be barricaded, conspicuously posted, and a clearly visible flashing light shall be activated at the area as a warning device.

APPENDIX B

TO

FACILITY OPERATING LICENSE DPR-24

AND

FACILITY OPERATING LICENSE DPR-27

FOR POINT BEACH NUCLEAR PLANT UNIT NOS. 1 AND 2

NEXTERA ENERGY POINT BEACH, LLC

DOCKET NOS. 50-266 AND 50-301

TABLE OF CONTENTS

16. NONRADIOLOGICAL TECHNICAL SPECIFICATIONS

16.1 Definitions

The definitions for terms used in these Nonradiological Technical Specifications for Unit 1 and 2 are stated below.

WPDES Permit

The WPDES permit is the Wisconsin Pollutant Discharge Elimination System Permit No. WI-0000957 issued by the State of Wisconsin Department of Natural Resources for the NextEra Energy Point Beach, LLC, Point Beach Nuclear Plant, and as subsequently amended.

16.2 Limiting Conditions for Operation

None required.*

16.3 Environmental Monitoring

None required.*

16.4 Recordkeeping and Monitoring Program for Nonradiological Parameters

None required.*

* In consideration of the provisions of the Clear Water Act (33 USC & 1251, et seq.) and in the interest of avoiding duplication of effort, the conditions and monitoring and recording requirements related to water quality and aquatic biota are specified in the WPDES Permit. As a matter of law, the NRC acknowledges the applicability of the WPDES Permit limitations for protection of the aquatic enfironment due to nonradiological effluents.

16.5 Reporting Requirements

Specification

1. As part of the Annual Monitoring Report, described in Section 5.6.2 of Appendix A, the following shall be reported:

   a. All scheduled and unscheduled chemical discharge to the condenser cooling water.

   b. A description of circulating water system operation for each unit which includes ambient temperature, intake temperature, discharge temperature, and circulating water system flow.

APPENDIX C
ADDITIONAL CONDITIONS
OPERATING LICENSE DPR-24

NextEra Energy Point Beach, LLC shall comply with the following conditions and the schedules noted below:

Amendment Number	Additional Conditions	Implementation Date
~~174~~	Deleted	
174	This amendment is authorized contingent on compliance with commitments provided by the licensee to operate Point Beach Nuclear Plant in accordance with its service water system analyses and approved procedures. Specifically, each unit will utilize only one component cooling water heat exchanger until such time as analyses are completed and the service water system reconfigured as necessary to allow operation of one or both units with two heat exchangers in service. If two component cooling water heat exchangers are required in one or both units for maintaining acceptable component cooling water temperature prior to completion of necessary analyses to allow operation in the required configuration, the service water system will be considered in an unanalyzed condition, declared inoperable, and action taken as specified by TS LCO 3.0.3 except for short periods of time as necessary to effect procedurally controlled changes in system lineups and unit operating conditions.	Immediately
~~201~~	Deleted	
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228	At the time of the closing of the transfer of the licenses from Wisconsin Electric Power Company (WEPCO) to FPLE Point Beach[1], WEPCO shall transfer to FPLE Point Beach* WEPCO's decommissioning funds in an aggregate minimum value of $200.8 million for Point Beach Unit 1. FPLE Point Beach* shall deposit such funds in an external decommissioning trust fund established by FPLE Point Beach* for Point Beach Units 1 and 2. The trust agreement shall be in a form acceptable to the NRC.	Immediately
	NextEra Energy Point Beach shall take no actions to cause FPL Group Capital, or its successors and assigns, to void, cancel, or modify its $70 million Support Agreement (Agreement) to NextEra Energy Point Beach, as presented in its application dated January 26, 2007, or cause it to fail to perform or impair its performance under the Agreement, without the prior written consent from the NRC. The Agreement may not be amended or modified without 30 days prior written notice to the Director of Nuclear Reactor Regulation or his designee. An executed copy of the Agreement shall be submitted to the NRC no later than 30 days after the completion of the license transfers. Also, NextEra Energy Point Beach shall inform the NRC in writing anytime it draws upon the $70 million Agreement.	Immediately
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[1] On April 16, 2009, the name "FPLE Point Beach, LLC" was changed to "NextEra Energy Point Beach, LLC."

APPENDIX C
ADDITIONAL CONDITIONS
OPERATING LICENSE DPR-24

NextEra Energy Point Beach, LLC shall comply with the following conditions and the schedules noted below:

Amendment Number	Additional Conditions	Implementation Date
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