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

R. E. GINNA NUCLEAR POWER PLANT, LLC

CONSTELLATION ENERGY GENERATION, LLC

DOCKET NO. 50-244

R. E. GINNA NUCLEAR POWER PLANT

RENEWED FACILITY OPERATING LICENSE NO. DPR-18

1. The U.S. Nuclear Regulatory Commission (the Commission) having previously made the findings set forth in License No. DPR-18 issued December 10, 1984, has now found that:

   A. The application to renew License No. DPR-18 filed by Rochester Gas and Electric Corporation (RG&E)* complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the rules and regulations of the Commission set forth in Title 10 of the Code of Federal Regulations (10 CFR) Chapter I and all required notifications to other agencies or bodies have been duly made;

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

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

* By Order dated October 9, 2009, as superseded by Order dated October 30, 2009, the transfer of this license to R. E. Ginna Nuclear Power Plant, LLC, was approved. By Order dated March 25, 2014, the transfer of the operating authority under this license to Exelon Generation Company, LLC was approved. The U.S. Nuclear Regulatory Commission approved a transaction on November 16, 2021, that resulted in Exelon Generation Company, LLC being renamed Constellation Energy Generation, LLC.

D. There is reasonable assurance (i) that the facility can be operated at power levels up to 1520 megawatts (thermal) without endangering the health and safety of the public; and (ii) that such activities will be conducted in compliance with the regulations of the Commission (except as exempted from compliance in Section 2.D below);

E. R. E. Ginna Nuclear Power Plant, LLC (Ginna LLC) and Constellation Energy Generation, LLC are technically and financially qualified to engage in the activities authorized by this renewed operating license in accordance with the rules and regulations of the Commission;

F. Constellation Energy Generation, LLC and Ginna LLC** have furnished proof of financial protection that satisfies the requirements of 10 CFR Part 140;

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

H. After weighing the environmental, economic, technical, and other benefits of the facility against environmental costs and considering available alternatives, the Commission concludes that the issuance of Renewed Operating License No. DPR-18 is in accordance with 10 CFR Part 51 of the Commission's regulations and all applicable requirements have been satisfied.

2. On the basis of the foregoing findings regarding this facility, Facility Operating License No. DPR-18, is superseded by Renewed Facility Operating License No. DPR-18, hereby issued to Ginna LLC and Constellation Energy Generation, LLC to read as follows:

A. This renewed license applies to the R. E. Ginna Nuclear Power Plant, a closed cycle, pressurized, light-water-moderated and cooled reactor, and electric generating equipment which is owned by Ginna LLC (owner licensee). The facility is located on the owner licensee's site on the south shore of Lake Ontario, Wayne County, New York, about 16 miles east of the City of Rochester and is described in the licensee's Updated Final Safety Analysis Report (UFSAR), as supplemented and amended.

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

(1) Pursuant to Section 104b of the Act and 10 CFR Part 50, "Domestic Licensing of Production and Utilization Facilities," (a) Ginna LLC to possess and (b) Constellation Energy Generation, LLC to possess, use and operate the facility at the designated location in Wayne County, New York, in accordance with the procedures and limitations set forth in this renewed license;

** Constellation Energy Generation, LLC is authorized to act for R. E. Ginna Nuclear Power Plant, LLC and has exclusive responsibility and control over the physical possession, operation, and maintenance of the facility.

(2) Constellation Energy Generation, LLC, pursuant to the Act and 10 CFR Part 70, to receive, possess, and use at any time special nuclear material or reactor fuel, in accordance with the limitations for storage and amounts required for reactor operation as described in the Final Safety Analysis Report, as amended, and Commission Safety Evaluations dated November 15,1976, October 5, 1984, November 14, 1984, and August 30, 1995.

(a) Constellation Energy Generation, LLC, pursuant to the Act and 10 CFR Part 70, to receive and store four (4) mixed oxide fuel assemblies in accordance with the RG&E's application dated December 14, 1979 (transmitted by letter dated December 20, 1979);

(b) Constellation Energy Generation, LLC, pursuant to the Act and 10 CFR Part 70, to possess and use four (4) mixed oxide fuel assemblies in accordance with the RG&E's application dated December 14, 1979 (transmitted by letter dated December 20, 1979), as supplemented February 20, 1980, and March 5, 1980;

(3) Constellation Energy Generation, LLC, pursuant to the Act and 10 CFR Parts 30, 40, and 70 to receive, possess, and use at any time any byproduct, source, and special nuclear material as sealed neutron sources for reactor startup, sealed sources for reactor instrumentation and radiation monitoring equipment calibration, and as fission detectors in amounts as required.

(4) Constellation Energy Generation, LLC, pursuant to the Act and 10 CFR Parts 30, 40, and 70, to receive, possess and use in amounts as required any byproduct, source or special nuclear material without restriction to chemical or physical form, for sample analysis or instrument calibration or associated with radioactive apparatus or components; and

(5) Constellation Energy Generation, LLC, pursuant to the Act and 10 CFR Parts 30 and 70, to possess, but not separate, such byproduct and special nuclear materials as may be produced by the operation of the facility.

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

(1) Maximum Power Level

Constellation Energy Generation, LLC is authorized to operate the facility at steady-state power levels up to a maximum of 1775 megawatts (thermal).

(2) Technical Specifications

The Technical Specifications contained in Appendix A, as revised through Amendment No. 156, are hereby incorporated in the renewed license. Constellation Energy Generation, LLC shall operate the facility in accordance with the Technical Specifications.

(3) Fire Protection

Constellation Energy Generation, LLC shall implement and maintain in effect all provisions of the approved fire protection program that comply with 10 CFR 50.48(a) and 10 CFR 50.48(c), as specified in the licensee's amendment request dated March 28, 2013, supplemented by letters dated December 17, 2013; January 29, 2014; February 28, 2014; September 5, 2014; September 24, 2014; December 4, 2014; March 18, 2015; June 11, 2015; August 7, 2015; and as approved in the safety evaluation report dated November 23, 2015. Except where NRC approval for changes or deviations is required by 10 CFR 50.48(c), and provided no other regulation, technical specification, license condition or requirement would require prior NRC approval, the licensee may make changes to the fire protection program without prior approval of the Commission if those changes satisfy the provisions set forth in 10 CFR 50.48(a) and 10 CFR 50.48(c), the change does not require a change to a technical specification or a license condition, and the criteria listed below are satisfied.

(a) 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.

1. 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.

2. 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.

(b) Other Changes that May Be Made Without Prior NRC Approval

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

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

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

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

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

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

Prior NRC review and approval are not required for changes to the licensee's fire protection program that have been demonstrated to have no more than a minimal risk impact. The licensee may use its screening process as approved in the NRC safety evaluation dated November 23, 2015, 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.

(c) Transition License Conditions

1. Before achieving full compliance with 10 CFR 50.48(c), as specified by (c)2 and (c)3 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 (b)2 above.

2. The licensee shall implement the modifications to its facility, as described in LAR Attachment S, Table S-2, "Plant Modifications Committed," of Exelon Generation letter dated June 11, 2015, as modified by the Exelon Generation letter dated June 30, 2017, to complete the transition to full compliance with 10 CFR 50.48(c) no later than prior to startup from the second refueling outage greater than 12 months after receipt of the safety evaluation dated November 23, 2015. The licensee shall maintain appropriate compensatory measures in place until completion of these modifications.

3. The licensee shall complete the implementation items listed in LAR Attachment S, Table S-3, "Implementation Items," of Exelon Generation letter dated June 11, 2015, as modified by Exelon Generation letter dated June 30, 2017, except Implementation Items 9, 10, 11, 12, 13, 14, 15, 19, 21, 23, and 24, by 180 days after NRC approval unless that date falls within a scheduled refueling outage, then implementation will occur 60 days after startup from that scheduled refueling outage. Implementation Items 9, 10, 11, 12, 13, 14, 15, 19, 21, 23, and 24 are associated with modifications described in Table S-2 and will be completed once the related modifications are installed and validated in the PRA model.

(4) Deleted

(5) Deleted

(6) Deleted

(7) Deleted

(8) Mitigation Strategy

Constellation Energy Generation, LLC shall develop and maintain strategies for addressing large fires and explosions and that include the following key areas:

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

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

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

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

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

1. Water spray scrubbing
2. Dose to onsite responders

(9) Control Room Envelope Habitability

Upon implementation of Amendment No. 105 adopting TSTF-448, Revision 3, the determination of control room envelope (CRE) unfiltered air inleakage as required by SR 3.7.9.4, in accordance with TS 5.5.16.c.i and the assessment of CRE habitability as required by 5.5.16.c.ii, shall be considered met. Following implementation:

(a) The first performance of SR 3.7.9.4 in accordance with Specification 5.5.16.c.i shall be within the specified Frequency of 6 years, plus the 18-month allowance of SR 3.0.2, as measured from February 8, 2005, the date of the most recent successful tracer gas test, as-stated in the April 6, 2007 letter response to Generic Letter 2003-01, or within the next 18 months if the time period since the most recent tracer gas test is greater than 6 years.

(b) The first performance of the periodic assessment of CRE habitability, Specification 5.5.16.c.ii, shall be within 3 years, plus the 9-month allowance of SR 3.0.2 as measured from February 8, 2005, the date of the most recent successful tracer gas test, as stated in-the April 6, 2007 letter response to Generic Letter 2003-01, or within the next 9 months if the time period since the most recent successful tracer gas test is greater than 3 years.

(10) Deleted

(11) Constellation Energy Generation, LLC shall, no later than the date the closing of the transaction approved on November 16, 2021, occurs, enter into a Support Agreement of approximately $118 million with the owner licensee. R. E. Ginna Nuclear Power Plant, LLC shall not take any action to cause Constellation Energy Generation, LLC, or its successors and assigns, to void, cancel, or materially modify the Constellation Energy Generation, LLC Support Agreement or cause it to fail to perform, or impair its performance under the Constellation Energy Generation, LLC Support Agreement, without the prior written consent of the NRC. The Constellation Energy Generation, LLC Support Agreement may not be amended or modified without 30 days prior written notice to the Director of the Office of Nuclear Reactor Regulation or their designee. An executed copy of the Constellation Energy Generation, LLC Support Agreement shall be submitted to the NRC no later than 30 days after the completion of the proposed transaction. Constellation Energy Generation, LLC shall inform the NRC in writing no later than 14 days after any funds are provided to or for the owner licensee under the Constellation Energy Generation, LLC Support Agreement.

(12) Deleted

(13) Within 14 days of the closing of the transaction approved on November 16, 2021, Constellation Energy Generation, LLC shall submit to the NRC the Nuclear Operating Services Agreement reflecting the terms set forth in the application dated February 25, 2021. Section 7.1 of the Nuclear Operating Services Agreement may not be modified in any material respect related to financial arrangements that would adversely impact the ability of the licensee to fund safety-related activities authorized by the license without the prior written consent of the Director of the Office of Nuclear Reactor Regulation.

(14) Deleted

(15) Deleted

(16) Deleted

(17) Adoption of Risk Informed Completion Times TSTF-505, Revision 2, "Provide Risk-Informed Extended Completion Times -RITSTF Initiative 4b"

Constellation Energy Generation, LLC is approved to implement TSTF-505, Revision 2, modifying the Technical Specification requirements related to Completion Times (CT) for Required Actions to provide the option to calculate a longer, risk-informed CT (RICT). The methodology for using the new Risk-Informed Completion Time Program is described in NEI 06-09-A, "Risk-Informed Technical Specifications Initiative 4b, Risk-Managed Technical Specifications (RMTS) Guidelines," Revision 0, which was approved by the NRC on May 17, 2007.

Constellation Energy Generation, LLC will complete the implementation items listed in Attachment 6 of Exelon Letter to the NRC dated May 20, 2021, prior to implementation of the RICT Program. All issues identified in the attachment will be addressed and any associated changes will be made, focused-scope peer reviews will be performed on changes that are PRA upgrades as defined in the PRA standard (ASME/ANS RA-Sa-2009, as endorsed by RG 1.200, Revision 2), and any findings will be resolved and reflected in the PRA of record prior to the implementation of the RICT Program.

(18) Deleted

(19) Constellation Energy Generation, LLC shall provide to the Director of the Office of Nuclear Reactor Regulation or the Director of the Office of Nuclear Material Safety and Safeguards, as applicable, a copy of any application, at the time it is filed, to transfer (excluding grants of security interests or liens) from Constellation Energy Generation, LLC to its direct or indirect parent, or to any other affiliated company, facilities for the production, transmission, or distribution of electric energy having a depreciated book value exceeding ten percent (10%) of Constellation Energy Generation, LLC's consolidated net utility plant, as recorded on Constellation Energy Generation, LLC's books of account.

(20) Constellation Energy Generation, LLC 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 (ANO-2) passive categorization method to assess passive component risk for Class 2 and Class 3 and non-Class SSCs and their associated supports; the results of the non-PRA evaluations that are based on the IPEEE Screening Assessment for External Hazards updated using the external hazard screening significance process identified in ASME/ANS PRA Standard RA-Sa-2009 for other external hazards except seismic; and the alternative seismic approach as described in Exelon's submittal letter dated May 20, 2021, and all its subsequent associated supplements as specified in License Amendment No. 151 dated June 22,2022.

Constellation Energy Generation, LLC will complete the implementation items listed in Attachment 7 of Exelon Letter to the NRC dated May 20, 2021, prior to implementation of 10 CFR 50.69. All issues identified in the attachment will be addressed and any associated changes will be made, focused-scope peer reviews will be performed on changes that are PRA upgrades as defined in the PRA standard (ASME/ANS RA-Sa - 2009, as endorsed by RG 1.200, Revision 2), and any findings will be resolved and reflected in the PRA of record prior to the implementation of 10 CFR 50.69.

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).

D. The facility requires an exemption from certain requirements of 10 CFR 50.46(a)(1). This includes an exemption from 50.46(a)(1), that emergency core cooling system (ECCS) performance be calculated in accordance with an acceptable calculational model which conforms to the provisions in Appendix K (SER dated April 18, 1978). The exemption will expire upon receipt and approval of revised ECCS calculations. The aforementioned exemption is authorized by law and will not endanger life property or the common defense and security and is otherwise in the public interest. Therefore, the exemption is hereby granted pursuant to 10 CFR 50.12

E. Constellation Energy Generation, LLC shall fully implement and maintain in effect all provisions of the Commission-approved physical security, training and qualification, and safeguards contingency plans including amendments made pursuant to provisions of the Miscellaneous Amendments and Search Requirements revisions to 10 CFR 73.55 (51 FR 27827 and 27822) and to the authority of 10 CFR 50.90 and 10 CFR 50.54(p). The combined set of plans, which contains Safeguards Information protected under 10 CFR 73.21, is entitled: “R. E. Ginna Nuclear Power Plant Security Plan, Training and Qualification Plan, and Safeguards Contingency Plan,” submitted by letter dated May 15, 2006.

Constellation Energy Generation, LLC shall fully implement and maintain in effect all provisions of the Commission-approved cyber security plan (CSP), including changes made pursuant to the authority of 10 CFR 50.90 and 10 CFR 50.54(p). The licensee’s CSP was approved by License Amendment No. 113 and modified by License Amendment No. 117. The licensee has obtained Commission authorization to use Section 161A preemption authority under 42 U.S.C. 2201a for weapons at its facility.

F. The Updated Final Safety Analysis Report supplement, submitted pursuant to 10 CFR 54.21 (d), describes certain future activities to be completed prior to the period of extended operation. Ginna LLC shall complete these activities no later than September 18, 2009, and shall notify the Commission in writing when implementation of these activities is complete and can be verified by NRC inspection.

The Updated Final Safety Analysis Report supplement, as revised, shall be included in the next scheduled update to the Updated Final Safety Analysis Report required by 1O CFR 50.71 (e)(4) following issuance of this renewed license. Until that update is complete, the licensee may make changes to the programs and activities described in the supplement without prior Commission approval, provided that the licensee evaluates each such change pursuant to the criteria set forth in 10 CFR 50.59 and otherwise complies with the requirements in that section.

G. All capsules in the reactor vessel that are removed and tested must meet the test procedures and reporting requirements of 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. Any capsules placed in storage must be maintained for future insertion, unless approved by the NRC.

H. This renewed license is effective as of the date of issuance and shall expire at midnight on September 18, 2029.

FOR THE NUCLEAR REGULATORY COMMISSION

Original Signed By

J. E. Dyer, Director
Office of Nuclear Reactor Regulation

Attachment: Appendix A - Technical Specifications

Date of Issuance: May 19, 2004

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 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 so that it responds within the required range and accuracy to known input. The CHANNEL CALIBRATION shall encompass the entire channel, including the required sensor, alarm, interlock, display, and trip functions. 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 calibrations or total channel steps so that the entire channel is calibrated, 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.

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 the OPERABILITY of required alarm, interlock, display, and trip functions. The COT shall include adjustments, as necessary, of the required alarm, interlock, and trip setpoints so that the setpoints are within the required 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 ALTERATIONS	CORE ALTERATIONS shall be the movement of any fuel, sources, or reactivity control components, within the reactor vessel with the vessel head removed and fuel in the vessel. Suspension of CORE ALTERATIONS shall not preclude completion of movement of a component to a safe position.
CORE OPERATING LIMITS REPORT (COLR)	The COLR is the plant 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 5.6.5. Plant operation within these limits is addressed in individual Specifications.
DOSE EQUIVALENT I-131	DOSE EQUIVALENT I-131 shall be that concentration of I-131 (microcuries/gram) that alone would produce the same thyroid dose as the quantity and isotopic mixture of I-131, I-132, I-133, I-134, and I-135 actually present. The thyroid dose conversion factors used for this calculation shall be those listed in ICRP 30, Supplement to Part 1, pages 192-212, table entitled, "Committed Dose Equivalent in Target Organs or Tissues per Intake of Unit Activity."
DOSE EQUIVALENT XE-133	DOSE EQUIVALENT XE-133 shall be that concentration of Xe-133 (microcuries per gram) that alone would produce the same acute dose to the whole body as the combined activities of noble gas nuclides Kr-85m, Kr-85, Kr-87, Kr-88, Xe-131m, Xe-133m, Xe-133, Xe-135m, Xe-135, and Xe-138 actually present. If a specific noble gas nuclide is not detected, it should be assumed to be present at the minimum detectable activity. The determination of DOSE EQUIVALENT XE-133 shall be performed using effective dose conversion factors for air submersion listed in Table III.1 of EPA Federal Guidance Report No. 12, "External Exposure to Radionuclides in Air, Water, and Soil," 1993.
INSERVICE TESTING PROGRAM	The INSERVICE TESTING PROGRAM is the licensee program that fulfills the requirements of 10 CFR 50.55a(f).

LEAKAGE	LEAKAGE from the RCS shall be: a. <u>Identified LEAKAGE</u> 1. LEAKAGE, such as that from pump seals or valve packing (except reactor coolant pump (RCP) seal water injection or return), that is captured and conducted to collection systems or a sump or collecting tank; 2. LEAKAGE into the containment atmosphere from sources that are both specifically located and known to not interfere with the operation of leakage detection systems; or 3. Reactor Coolant System (RCS) LEAKAGE through a steam generator to the Secondary System (primary to secondary LEAKAGE); b. <u>Unidentified LEAKAGE</u> All LEAKAGE (except RCP seal water injection or return) that is not identified LEAKAGE; and c. <u>Pressure Boundary LEAKAGE</u> LEAKAGE (except primary to secondary LEAKAGE) through a fault in an RCS component body, pipe wall, or vessel wall. LEAKAGE past seals, packing, and gaskets is not pressure boundary LEAKAGE.
MODE - MODES	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 14, Initial Test Program of the UFSAR;

b. Authorized under the provisions of 10 CFR 50.59; or

c. Otherwise approved by the Nuclear Regulatory Commission (NRC).

PRESSURE AND TEMPERATURE LIMITS REPORT (PTLR)

The PTLR is the plant specific document that provides the reactor vessel pressure and temperature limits, including heatup and cooldown rates, and the power operated relief valve lift settings and enable temperature associated with the Low Temperature Overpressurization Protection System for the current reactor vessel fluence period. These pressure and temperature limits shall be determined for each fluence period in accordance with Specification 5.6.6. Plant operation within these limits is addressed in individual specifications.

QUADRANT POWER TILT RATIO (QPTR)

QPTR shall be the ratio of the highest average nuclear power in any quadrant to the average nuclear power in the four quadrants.

RATED THERMAL POWER (RTP)

RTP shall be a total reactor core heat transfer rate to the reactor coolant of 1775 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. With any RCCAs not capable of being fully inserted, the reactivity worth of the RCCAs must be accounted for in the determination of SDM; and

b. In MODES 1 and 2, the fuel and moderator temperatures are changed to the nominal hot zero power temperature.

THERMAL POWER	THERMAL POWER shall be the total reactor core heat transfer rate to the reactor coolant.
TRIP ACTUATING DEVICE OPERATIONAL TEST (TADOT)	A TADOT shall consist of operating the trip actuating device and verifying the OPERABILITY of required alarm, interlock, display, and trip functions. The TADOT shall include adjustment, as necessary, of the trip actuating device so that it actuates at the required setpoint within the required accuracy. 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
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 Shutdown	< 0.99	NA	≥ 350
4	Hot Standby[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, 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 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, or Frequency.

EXAMPLES

The following examples illustrate the use of logical connectors.

EXAMPLE 1.2-1 LOGICAL CONNECTORS

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.

EXAMPLE 1.2-2 MULTIPLE LOGICAL CONNECTORS

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 plant. The ACTIONS associated with an LCO state Conditions that typically describe the ways in which the requirements of the LCO can fail to be met. Specified with each stated Condition are Required Action(s) and Completion Time(s).
DESCRIPTION	The Completion Time is the amount of time allowed for completing a Required Action. It is referenced to the discovery of a situation (e.g., inoperable equipment or variable not within limits) that requires entering an ACTIONS Condition unless otherwise specified, providing the plant is in a MODE or specified condition stated in the Applicability of the LCO. Unless otherwise specified, the Completion Time begins when a senior licensed operator on the operating shift crew with responsibility for plant operations makes the determination that an LCO is not met and an ACTIONS Condition is entered. The "otherwise specified " exceptions are varied, such as a Required Action Note or Surveillance Requirement Note that provides an alternative time to perform specific tasks, such as testing, without starting the Completion Time. While utilizing the Note, should a Condition be applicable for any reason not addressed by the Note, the Completion Time begins. Should the time allowance in the Note be exceeded, the Completion Time begins at that point. The exceptions may also be incorporated into the Completion Time. For example, LCO 3.8.1, "AC Sources - MODES 1, 2, 3, and 4," Required Action B.2, requires declaring required feature(s) supported by an inoperable diesel generator, inoperable when the redundant required feature(s) are inoperable. The Completion Time states, "4 hours from discovery of Condition B concurrent with inoperability of redundant required feature(s)." In this case the Completion Time does not begin until the conditions in the Completion Time are satisfied. Required Actions must be completed prior to the expiration of the specified Completion Time. An ACTIONS Condition remains in effect and the Required Actions apply until the Condition no longer exists or the plant 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 discovery of the situation that required entry into the Condition, unless otherwise specified.

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

However, when a subsequent train, subsystem, component, or variable expressed in the Condition is discovered to be inoperable or not within limits, the Completion Time(s) may be extended. The Completion time extension cannot be used to extend the stated Completion Time for the first inoperable train, subsystem, component, or variable. 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). An example of a modified "time zero" with the Completion Time expressed as "once per 8 hours" is illustrated in Example 1.3-6, Condition A. In this example, the Completion Time may not be extended.

EXAMPLES

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

EXAMPLE 1.3-1 COMPLETION TIMES

ACTIONS

CONDITION		REQUIRED ACTION		COMPLETION TIME
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

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.

EXAMPLE 1.3-2 DEFAULT CONDITIONS/LCO 3.0.3 ENTRY/ COMPLETION TIMES

ACTIONS

CONDITION		REQUIRED ACTION		COMPLETION TIME
A.	One train inoperable.	A.1	Restore train to OPERABLE status.	7 days

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

When a train is declared inoperable, Condition A is entered. If the train 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 train 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 train is declared inoperable while the first train is still inoperable, Condition A is not re-entered for the second train. LCO 3.0.3 is entered, since the ACTIONS do not include a Condition for more than one inoperable train. 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 trains 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.

While in LCO 3.0.3, if one of the inoperable trains 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.

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

EXAMPLE 1.3-3 MULTIPLE FUNCTION COMPLETION TIMES

ACTIONS

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

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).

EXAMPLE 1.3-4 MULTIPLE FUNCTION COMPLETION TIMES

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 AND	Be in MODE 3.	6 hours
		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 (plus the extension) expires while one or more valves are still inoperable, Condition B is entered.

EXAMPLE 1.3-5 SEPARATE ENTRY CONDITION

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 AND	Be in MODE 3.	6 hours
		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, Condition B is entered separately for each valve and separate Completion Times start and are tracked for each valve. If a valve that caused entry into Condition B is restored to OPERABLE status, Condition B is exited for that valve.

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

EXAMPLE 1.3-6 MULTIPLE ACTIONS WITHIN A CONDITION/ COMPLETION TIME EXTENSIONS

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 completed 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.

EXAMPLE 1.3-7 MULTIPLE ACTIONS WITHIN A CONDITION/ COMPLETION TIME EXTENSIONS

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.

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	Be in MODE 3.	6 hours
		B.2	Be in MODE 5.	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.

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.

EXAMPLE 1.4-1 SINGLE FREQUENCY

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 plant is outside the Applicability of the LCO). If the interval specified by SR 3.0.2 is exceeded while the plant is in a MODE or other specified condition in the Applicability of the LCO, and the performance of the Surveillance is not otherwise modified (refer to Example 1.4-3), then SR 3.0.3 becomes applicable.

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

EXAMPLE 1.4-2 MULTIPLE FREQUENCIES

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 1.25 times the stated Frequency extension allowed by SR 3.0.2. "Thereafter" indicates future performances must be established per SR 3.0.2, but only after a specified condition is first met (i.e., the "once" performance in this example). If reactor power decreases to < 25% RTP, the measurement of both intervals stops. New intervals start upon reactor power reaching 25% RTP.

EXAMPLE 1.4-3 FREQUENCY BASED ON SPECIFIED CONDITION

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
- NOTE - Required to be performed within 12 hours after ≥ 25% RTP.	
Perform channel adjustment.	7 days

The interval continues, whether or not the plant 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 plant 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)

2.0 SLs and SL Violations

2.1 SLs

2.1.1 Reactor Core SLs

In MODES 1 and 2, the combination of THERMAL POWER, Reactor Coolant System (RCS) average temperature, and pressurizer pressure shall not exceed the limits specified in the COLR; and the following SLs shall not be exceeded:

2.1.1.1 The departure from nucleate boiling ratio (DNBR) shall be maintained ≥ 1.17 for the WRB-1 correlation.

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, and 5, 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, or 5, restore compliance within 5 minutes.

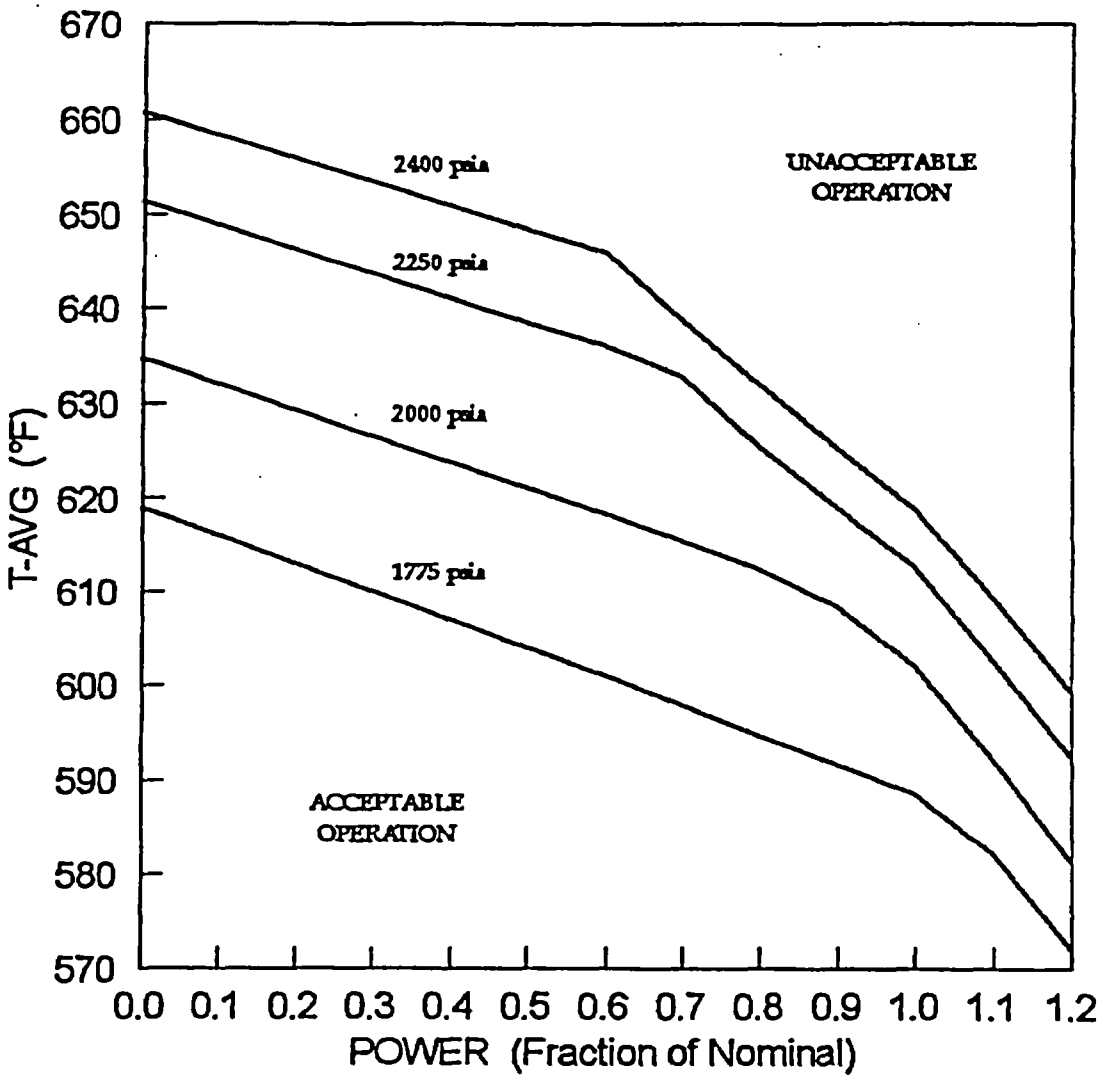

Figure 2.1.1-1
Reactor Safety Limits

3.0 LIMITING CONDITION FOR OPERATION (LCO) AND SURVEILLANCE REQUIREMENT (SR) APPLICABILITY

3.0 Limiting Condition For Operation (LCO) Applicability

LCO 3.0.1

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

LCO 3.0.2

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

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

LCO 3.0.3

When an LCO is not met and (1) the associated ACTIONS are not met, (2) an associated ACTION is not provided, or (3) if directed by the associated ACTIONS, the plant shall be placed in a MODE or other specified condition in which the LCO is not applicable. Action shall be initiated to place the plant, as applicable, in:

a. MODE 3 within 6 hours;

b. MODE 4 within 12 hours; and

c. MODE 5 within 36 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;

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

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

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

LCO 3.0.5

Equipment removed from service or declared inoperable to comply with ACTIONS may be returned to service under administrative control solely to perform testing required to demonstrate its OPERABILITY or the OPERABILITY of other equipment. This is an exception to LCO 3.0.2 for the system returned to service under administrative control to perform the testing required to determine 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, additional evaluations and limitations may be required in accordance with Specification 5.5.14, "Safety Function Determination Program (SFDP)." If a loss of safety function is determined to exist by this program, the appropriate Conditions and Required Actions of the LCO in which the loss of safety function exists are required to be entered.

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

LCO 3.0.7 Test Exception LCO 3.1.8, "PHYSICS TEST Exceptions - MODE 2," allows specified Technical Specification (TS) requirements to be changed to permit performance of special tests and operations. Unless otherwise specified, all other TS requirements remain unchanged. 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.

LCO 3.0.8 When one or more required snubbers are unable to perform their associated support function(s), any affected supported LCO(s) are not required to be declared not met solely for this reason if risk is assessed and managed, and:

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

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

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

LCO 3.0.9 When one or more required barriers are unable to perform their related support function(s), any supported system LCO(s) are not required to be declared not met solely for this reason for up to 30 days provided that at least one train or subsystem of the supported system is OPERABLE and supported by barriers capable of providing their related support function(s), and risk is assessed and managed. This specification may be concurrently applied to more than one train or subsystem of a multiple train or subsystem supported system provided at least one train or subsystem of the supported system is OPERABLE and the barriers supporting each of these trains or subsystems provide their related support function(s) for different categories of initiating events.

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

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

3.0 LIMITING CONDITION FOR OPERATION (LCO) AND SURVEILLANCE REQUIREMENT (SR) APPLICABILITY

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 SR, 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. 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. The delay period is only applicable when there is a reasonable expectation the surveillance will be met when performed. A risk evaluation shall be performed for any Surveillance delayed greater than 24 hours and the risk impact shall be managed. 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.

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 specified 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 is within the limits specified in the COLR.	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: MODE 1,
MODE 2 with $K_{eff} \geq 1.0$.

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. AND	72 hours
	A.2 Establish appropriate operating restrictions and SRs.	72 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 3.1.2.1	- NOTE - Required to be performed prior to entering MODE 1.	
	Verify measured core reactivity is within ± 1% Δk/k of predicted values.	Once after each refueling

	SURVEILLANCE	FREQUENCY
SR 3.1.2.2	- NOTE - 1. Only required after 60 effective full power days (EFPD). 2. The predicted reactivity values must be adjusted (normalized) to correspond to the measured core reactivity prior to exceeding a fuel burnup of 60 EFPD after each fuel loading. Verify measured core reactivity is within ± 1% Δk/k of predicted values.	In accordance with the Surveillance Frequency Control Program

3.1 REACTIVITY CONTROL SYSTEMS

3.1.3 Moderator Temperature Coefficient (MTC)

LCO 3.1.3 The MTC shall be maintained within the limits specified in the COLR. The maximum upper limit shall be less than or equal to 5 pcm/°F for power levels below 70% RTP and less than or equal to 0 pcm/°F at or above 70% RTP.

APPLICABILITY: MODE 1 and MODE 2 with $k_{eff} \geq 1.0$ for the upper MTC limit, MODES 1, 2, and 3 for the lower MTC limit.

ACTIONS

CONDITION		REQUIRED ACTION		COMPLETION TIME
A.	MTC not within upper limit.	A.1	Establish administrative withdrawal limits for control banks to maintain MTC within limit.	24 hours
B.	Required Action and associated Completion Time of Condition A not met.	B.1	Be in MODE 2 with k_{eff} < 1.0.	6 hours
C.	- NOTE - Required Action C.1 must be completed whenever Condition C is entered. Projected end of cycle life (EOL) MTC not within lower limit.	C.1	- NOTE - LCO 3.0.4.c is applicable. Re-evaluate core design and safety analysis, and determine that the reactor core is acceptable for continued operation.	Once prior to reaching the equivalent of an equilibrium RTP all rods out (ARO) boron concentration of 300 ppm
D.	Required Action and associated Completion Time of Condition C not met.	D.1	Be in MODE 4.	12 hours

SURVEILLANCE REQUIREMENTS

	SURVEILLANCE	FREQUENCY
SR 3.1.3.1	Verify MTC is within upper limit.	Once prior to entering MODE 1 after each refueling
SR 3.1.3.2	Confirm that MTC will be within limits at 70% RTP.	Once prior to entering MODE 1 after each refueling
SR 3.1.3.3	Confirm that MTC will be within limits at EOL.	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.

AND

Individual indicated rod positions shall be within 12 steps of their group step counter demand position.

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 specified in the COLR.	1 hour
	OR	
	A.1.2 Initiate boration to restore SDM to within limit.	1 hour
	AND	
	A.2 Be in MODE 3.	6 hours
B. One rod not within alignment limits.	B.1.1 Verify SDM to be within the limits specified in the COLR.	1 hour
	OR	
	B.1.2 Initiate boration to restore SDM to within limit.	1 hour
	AND	
	B.2 Reduce THERMAL POWER to ≤ 75% RTP.	2 hours
	AND	

CONDITION		REQUIRED ACTION		COMPLETION TIME
		B.3	Verify SDM is within the limits specified in the COLR.	Once per 12 hours
		AND		
		B.4	Perform SR 3.2.1.1, SR 3.2.1.2, and SR 3.2.2.1.	72 hours
		AND		
		B.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
D.	More than one rod not within alignment limit.	D.1.1	Verify SDM is within the limits specified 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	- NOTE - Not required to be performed for rods associated with inoperable rod position indicator or demand position indicator. Verify position of individual rods within alignment limit.	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 ≥ 8 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 ≤ 1.8 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 criticality after each removal of the reactor head

3.1 REACTIVITY CONTROL SYSTEMS

3.1.5 Shutdown Bank Insertion Limit

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

- NOTE -

Not applicable to the shutdown bank inserted while performing SR 3.1.4.2.

APPLICABILITY: MODES 1 and 2.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Shutdown bank inserted ≤ 8 steps beyond the insertion limits specified in the COLR.	A.1 Verify all control 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 shutdown bank to within the insertion limits specified in the COLR.	24 hours

CONDITION	REQUIRED ACTION	COMPLETION TIME
B. Shutdown bank not within limit for reasons other than Condition A.	B.1.1 Verify SDM is within the limits specified in the COLR. OR B.1.2 Initiate boration to restore SDM to within limit. AND B.2 Restore shutdown bank to within limit.	1 hour 1 hour 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	Verify the shutdown bank is within the insertion limit 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 –

Note 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 ≤ 8 steps beyond the insertion, sequence, or overlap limits specified in the COLR.	A.1 Verify the shutdown bank is within the insertion limit 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 overlap limits specified in the COLR.	24 hours

CONDITION	REQUIRED ACTION	COMPLETION TIME
B. Control bank insertion limits not met for reasons other than Condition A.	B.1.1 Verify SDM is within the limits specified in the COLR. OR B.1.2 Initiate boration to restore SDM to within limit. AND B.2 Restore control bank(s) to within limits.	1 hour 1 hour 2 hours
C. Control bank sequence or overlap limits not met for reasons other than Condition A.	C.1.1 Verify SDM is within the limits specified in the COLR. OR C.1.2 Initiate boration to restore SDM to within limit. AND C.2 Restore control bank sequence and overlap to within limits.	1 hour 1 hour 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	Verify each control bank insertion is within the insertion limits specified in the COLR.	In accordance with the Surveillance Frequency Control Program
SR 3.1.6.3	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 The Microprocessor Rod Position Indication (MRPI) System and the Demand Position Indication System shall be OPERABLE.

APPLICABILITY: MODES 1 and 2.

ACTIONS

- NOTE -

Separate Condition entry is allowed for each inoperable MRPI and each demand position indicator.

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One MRPI per group inoperable in one or more groups.	A.1 Verify the position of the rod with inoperable MRPI indirectly by using movable incore detectors. OR	Once per 8 hours
	A.2 Verify the position of the rods with inoperable MRPI indirectly by using the movable incore detectors.	8 hours AND Once per 31 EFPD thereafter AND 8 hours after discovery of each unintended rod movement AND 8 hours after each movement of rod with inoperable MRPI > 12 steps AND

CONDITION	REQUIRED ACTION		COMPLETION TIME
			Prior to THERMAL POWER exceeding 50% RTP AND 8 hours after reaching RTP
	OR		
	A.3	Reduce THERMAL POWER TO ≤ 50% RTP.	8 hours
B. More than one MRPI per group inoperable in one or more groups.	B.1	Place the control rods under manual control.	Immediately
	AND		
	B.2	Restore inoperable MRPIs to OPERABLE status such that a maximum of one MRPI per group is inoperable.	24 hours
C. One or more MPRI 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.	C.1	Verify the position of the rods with inoperable MRPIs indirectly by using movable incore detectors.	4 hours
	OR		
	C.2	Reduce THERMAL POWER to ≤ 50% RTP.	8 hours
D. One or more demand position indicators per bank inoperable in one or more banks.	D.1.1	Verify by administrative means all MRPIs for the affected banks are OPERABLE.	Once per 8 hours
		AND	

CONDITION	REQUIRED ACTION	COMPLETION TIME
	D.1.2 Verify the most withdrawn rod and the least withdrawn rod of the affected banks are ≤ 12 steps apart. OR	Once per 8 hours
	D.2 Reduce THERMAL POWER to ≤ 50% RTP.	8 hours
E. Required Action and associated Completion Time not met.	E.1 Be in MODE 3.	6 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.1.7.1 ---------- - NOTE – Not required to be met for MRPIs associated with rods that do not meet LCO 3.1.4. ---------- Verify each MRPI agrees within 12 steps of the group demand position for the full indicated range of rod travel.	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 Limit";

LCO 3.1.6, "Control Bank Insertion Limits";

LCO 3.4.2, "RCS Minimum Temperature for Criticality"

may be suspended, and the number of required channels for LCO 3.3.1, "RTS Instrumentation," Functions 2, 5, and 16.e, may be reduced to 3 required channels provided:

a. THERMAL POWER is maintained $\leq$ 5% RTP;

b. RCS lowest loop average temperature is $\geq$ 530°F; and

c. SDM is within the limits specified in the COLR.

APPLICABILITY: During PHYSICS TESTS.

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
C.	RCS lowest loop average temperature not within limit.	C.1	Restore RCS lowest loop average temperature to within limit.	15 minutes

CONDITION		REQUIRED ACTION		COMPLETION TIME
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	Perform a COT on power range and intermediate range channels per SR 3.3.1.7 and SR 3.3.1.8.	Once within 7 days prior to criticality
SR 3.1.8.2	Verify the RCS lowest loop average temperature is $\geq$ 530°F.	In accordance with the Surveillance Frequency Control Program
SR 3.1.8.3	Verify THERMAL POWER is $\leq$ 5% RTP.	In accordance with the Surveillance Frequency Control Program
SR 3.1.8.4	Verify SDM is within the limits specified 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	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
	AND		
A. $F_Q^C(Z)$ not within limit.	A.2	Reduce Power Range Neutron Flux - High trip setpoints ≥ 1% for each 1% $F_Q^C(Z)$ exceeds limit.	72 hours after each $F_Q^C(Z)$ determination
	AND		
	A.3	Reduce Overpower ΔT trip setpoints ≥ 1% for each 1% $F_Q^C(Z)$ exceeds limit.	72 hours after each $F_Q^C(Z)$ determination
	AND		
	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

CONDITION		REQUIRED ACTION		COMPLETION TIME
B.	---------- - NOTE - Required Action B.5 shall be completed whenever this Condition is entered. ---------- $F_Q^W(Z)$ not within limits.	B.1	Reduce THERMAL POWER as specified in the COLR.	4 hours
		AND		
		B.2	Reduce AFD limits as specified in the COLR.	4 hours
		AND		
		B.3	Reduce Power Range Neutron Flux - High trip setpoints ≥ 1% for each 1% that THERMAL POWER is limited below RATED THERMAL POWER by Required Action B.1.	72 hours
		AND		
		B.4	Reduce Overpower ΔT trip setpoints ≥ 1% for each 1% that THERMAL POWER is limited below RATED THERMAL POWER by Required Action B.1.	72 hours
		AND		
		B.5	Perform SR 3.2.1.1 and SR 3.2.1.2.	Prior to increasing THERMAL POWER and AFD limits of Required Actions B.1 and B.2.
C.	Required Action and associated Completion Time not met.	C.1	Be in MODE 2.	6 hours

SURVEILLANCE REQUIREMENTS

- NOTE -

During power escalation at the beginning of each cycle, THERMAL POWER may be increased until an equilibrium power level has been achieved, at which a power distribution map is obtained.

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 AND Once within 12 hours after achieving equilibrium conditions after exceeding, by ≥ 10% RTP, the THERMAL POWER at which $F_Q^C(Z)$ was last verified AND In accordance with the Surveillance Frequency Control Program

SURVEILLANCE	FREQUENCY
SR 3.2.1.2 ---------- NOTE - If $F_Q^W(Z)$ measurements indicate that either the maximum over Z $\left[\frac{F_Q^C(Z)}{K(Z)}\right]$ or maximum over Z $\left[\frac{F_Q^W(Z)}{K(Z)}\right]$ has increased since the previous evaluation of $F_Q^C(Z)$ or if $F_Q^W(Z)$ is expected to increase prior to the next evaluation $F_Q^C(Z)$: a. Increase $F_Q^W(Z)$ by the appropriate factor specified in the COLR and reverify $F_Q^W(Z)$ is within limits specified in the COLR; or b. Repeat SR 3.2.1.2 once per 7 EFPD until either a. above is met or two successive flux maps indicate that the maximum over over Z $\left[\frac{F_Q^C(Z)}{K(Z)}\right]$ and maximum over Z $\left[\frac{F_Q^W(Z)}{K(Z)}\right]$ has not increased. ---------- Verify $F_Q^W(Z)$ is within limit.	Once after each refueling prior to THERMAL POWER exceeding 75% RTP AND

(continued)

SURVEILLANCE	FREQUENCY
SR 3.2.1.2 (continued)	Once within 12 hours after achieving equilibrium conditions after exceeding, by ≥ 10% RTP, the THERMAL POWER at which $F_Q^W(Z)$ was last verified AND 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. $F^N_{\Delta H}$ not within limit.	A.1	Reduce THERMAL POWER ≥ 1% RTP for each 1% $F^N_{\Delta H}$ exceeds limit.	15 minutes
	AND		
	A.2	Reduce Power Range Neutron Flux-High trip setpoints ≥ 1% for each 1% $F^N_{\Delta H}$ exceeds limit.	72 hours
	AND		
	A.3	Reduce Overpower ΔT and Overtemperature ΔT trip setpoints ≥ 1% for each 1% $F^N_{\Delta H}$ exceeds limit.	72 hours
	AND		
	A.4	Perform SR 3.2.2.1 or SR 3.2.2.2.	Prior to increasing THERMAL POWER above the limit of Required Action A.1
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 AND In accordance with the Surveillance Frequency Control Program
SR 3.2.2.2	- NOTE - Only required to be performed if one power range channel is inoperable with THERMAL POWER ≥ 75% RTP. Verify $F^N_{\Delta H}$ is within limits specified in the COLR.	Once within 24 hours and 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 in % flux difference units shall be maintained within the limits spcified in the COLR.

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- NOTE -

The AFD shall be considered outside limits when two or more OPERABLE excore channels indicate AFD to be outside limits.

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

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. AFD not within limits.	A.1 Reduce THERMAL POWER to < 50% RTP.	30 minutes

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

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.	THERMAL POWER < 90% RTP and ≥ 50% RTP with cumulative penalty deviation time > 1 hour during the previous 24 hours. OR THERMAL POWER < 90% RTP and ≥ 50% RTP with AFD not within the target band and not within the acceptable operation limits.	C.1	Reduce THERMAL POWER to < 50% RTP.	30 minutes
D.	THERMAL POWER ≥ 90% RTP. AND AFD monitor alarm inoperable.	D.1	Perform SR 3.2.3.2.	Once every 15 minutes
E.	THERMAL POWER < 90% RTP. AND AFD monitor alarm inoperable.	E.1	Perform SR 3.2.3.3.	Once every 1 hour

SURVEILLANCE REQUIREMENTS

	SURVEILLANCE	FREQUENCY
SR 3.2.3.1	Verify AFD monitor is OPERABLE.	12 hours
SR 3.2.3.2	- NOTE - 1. Only required to be performed if AFD monitor alarm is inoperable when THERMAL POWER ≥ 90% RTP. 2. Assume logged values of AFD exist during the preceding 24 hour time interval if actual AFD values are not available.	
	Verify AFD is within limits and log AFD for each OPERABLE excore channel.	Once within 15 minutes and every 15 minutes thereafter
SR 3.2.3.3	- NOTE - 1. Only required to be performed if AFD monitor alarm is inoperable when THERMAL POWER < 90% RTP. 2. Assume logged values of AFD exist during the preceding 24 hour time interval if actual AFD values are not available.	
	Verify AFD is within limits and log AFD for each OPERABLE excore channel.	Once within 1 hour and every 1 hour thereafter
SR 3.2.3.4	Update target flux difference.	Once within 31 EFPD after each refueling AND 31 EFPD thereafter

	SURVEILLANCE	FREQUENCY
SR 3.2.3.5	- NOTE - The initial target flux difference after each refueling may be determined from design predictions. Determine, by measurement, the target flux difference.	Once within 31 EFPD after each refueling AND 92 EFPD thereafter

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		
	A.4	Reevaluate safety analyses and confirm results remain valid for the duration of operation under this condition.	Prior to increasing THERMAL POWER above the limit of Required Action A.1
	AND		

CONDITION	REQUIRED ACTION	COMPLETION TIME
	A.5 - NOTE - 1. Perform Required Action A.5 only after Required Action A.4 is completed. 2. Required Action A.6 shall be completed whenever Required Action A.5 is performed Normalize excore detectors to restore QPTR to within limit.	Prior to increasing THERMAL POWER above the limit of Required Action A.1
	AND 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 of Condition A not met.	B.1 Reduce THERMAL POWER to ≤ 50% RTP.	4 hours

SURVEILLANCE REQUIREMENTS

	SURVEILLANCE	FREQUENCY
SR 3.2.4.1	- NOTE - 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 24 hours after input from one or more Power Range Neutron Flux channels are inoperable with THERMAL POWER > 75% RTP. Perform SR 3.2.1.1, SR 3.2.1.2 and SR 3.2.2.1.	In accordance with the Surveillance Frequency Control Program

CONDITION	REQUIRED ACTION	COMPLETION TIME
	C.2 Perform SR 3.2.1.2 and SR 3.2.2.2.	Once within 24 hours and every 24 hours thereafter

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.2.4.1	Verify QPTR monitor alarm is OPERABLE.	12 hours
SR 3.2.4.2	- NOTE - 1. With one power range channel inoperable and THERMAL POWER < 75% RTP, the remaining three power range channels can be used for calculating QPTR. 2. With one power range channel inoperable and THERMAL POWER ≥ 75% RTP, perform SR 3.2.1.2 and SR 3.2.2.2. Verify QPTR is within limit by calculation.	7 days
SR 3.2.4.3	- NOTE - 1. Only required to be performed if the QPTR monitor alarm is inoperable. 2. With one power range channel inoperable and THERMAL POWER < 75% RTP, the remaining three power range channels can be used for calculating QPTR. 3. With one power range channel inoperable and THERMAL POWER ≥ 75% RTP, perform SR 3.2.1.2 and SR 3.2.2.2. Verify QPTR is within limit by calculation.	Once within 24 hours and every 24 hours thereafter

3.3 INSTRUMENTATION

3.3.1 Reactor Trip System (RTS) Instrumentation

LCO 3.3.1 The RTS 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 channel inoperable. OR Two source range channels inoperable.	A.1	Enter the Condition referenced in Table 3.3.1-1 for the channel(s).	Immediately
B.	As required by Required Action A.1 and referenced by Table 3.3.1-1.	B.1	Restore channel to OPERABLE status.	48 hours OR In accordance with the Risk Informed Completion Time Program
C.	Required Action and associated Completion Time of Condition B not met.	C.1 AND C.2 AND	Be in MODE 3. Initiate action to fully insert all rods.	6 hours 6 hours

CONDITION	REQUIRED ACTION		COMPLETION TIME
	C.3	Place Control Rod Drive System in a condition incapable of rod withdrawal.	7 hours
D. As required by Required Action A.1 and referenced by Table 3.3.1-1.	D.1	- NOTE – 1. For Functions 2a, 2b, 5, 6, 7b, 8, and 13, one channel may be bypassed for up to 12 hours for surveillance testing. 2. The inoperable channel may be bypassed for up to 12 hours for surveillance testing of other channels. - Place channel in trip.	72 hours <u>OR</u> -------NOTE------- Not applicable if there is a loss of function. ---------------------- In accordance with the Risk Informed Completion Time Program
E. As required by Required Action A.1 and referenced by Table 3.3.1-1.	E.1 <u>OR</u>	Reduce THERMAL POWER to < 5E-11 amps.	24 hours

CONDITION	REQUIRED ACTION	COMPLETION TIME
	E.2 - - - - - - - - - - - - - - - - - - - NOTE - Required Action E.2 is not applicable when: a. Two channels are inoperable, or b. THERMAL POWER is < 5E-11 amps. - - - - - - - - - - - - - - - - - - Increase THERMAL POWER to ≥ 8% RTP.	24 hours
F. As required by Required Action A.1 and referenced by Table 3.3.1-1.	F.1 Open RTBs and RTBBs upon discovery of two inoperable channels. AND F.2 - - - - - - - - - - - - - - - - - - - NOTE - Limited plant cooldown or boron dilution is allowed provided the change is accounted for in the calculated SDM. - - - - - - - - - - - - - - - - - - Suspend operations involving positive reactivity additions. AND F.3 Restore channel to OPERABLE status.	Immediately upon discovery of two inoperable channels Immediately 48 hours

CONDITION		REQUIRED ACTION		COMPLETION TIME
G.	Required Action and associated Completion Time of Condition D, E, or F is not met.	G.1	Be in MODE 3.	6 hours
H.	As required by Required Action A.1 and referenced by Table 3.3.1-1.	H.1	Restore at least one channel to OPERABLE status upon discovery of two inoperable channels.	1 hour from discovery of two inoperable channels
		AND		
		H.2	- NOTE - Limited plant cooldown or boron dilution is allowed provided the change is accounted for in the calculated SDM. Suspend operations involving positive reactivity additions.	Immediately
		AND		
		H.3	Restore channel to OPERABLE status.	48 Hours
I.	Required Action and associated Completion Time of Condition H not met.	I.1	Initiate action to fully insert all rods.	Immediately
		AND		
		I.2	Place the Control Rod Drive System in a condition incapable of rod withdrawal.	1 hour

CONDITION	REQUIRED ACTION	COMPLETION TIME
J. As required by Required Action A.1 and referenced by Table 3.3.1-1.	J.1 - NOTE - Plant temperature changes are allowed provided the temperature change is accounted for in the calculated SDM. Suspend operations involving positive reactivity additions.	Immediately
	AND	
	J.2 Perform SR 3.1.1.1.	12 hours AND Once per 12 hours thereafter
K. As required by Required Action A.1 and referenced by Table 3.3.1-1.	K.1 - NOTE – 1. For Functions 7a and 9b, one channel may be bypassed for up to 12 hours for surveillance testing. 2. The inoperable channel may be bypassed for up to 12 hours for surveillance testing of other channels. Place channel in trip.	72 hours OR -------NOTE------- Not applicable if there is a loss of function. ---------- In accordance with the Risk Informed Completion Time Program

CONDITION		REQUIRED ACTION		COMPLETION TIME
L.	Required Action and associated Completion Time of Condition K not met.	L.1	Reduce THERMAL POWER to < 8.5% RTP.	6 hours
M.	As required by Required Action A.1 and referenced by Table 3.3.1-1.	M.1	- - - - - NOTE - - - - - 1. For Function 9a, one channel may be bypassed for up to 12 hours for surveillance testing. 2. The inoperable channel may be bypassed for up to 12 hours for surveillance testing of other channels. - - - - - - - - - - - - - Place channel in trip.	72 hours OR In accordance with the Risk Informed Completion Time Program
N.	As required by Required Action A.1 and referenced by Table 3.3.1-1.	N.1	Restore channel to OPERABLE status.	6 hours OR -------NOTE------- Not applicable if there is a loss of function. --------------------- In accordance with the Risk Informed Completion Time Program
O.	Required Action and associated Completion Time of Condition M or N not met.	O.1	Reduce THERMAL POWER to < 30% RTP.	6 hours

CONDITION		REQUIRED ACTION		COMPLETION TIME
P.	As required by Required Action A.1 and referenced by Table 3.3.1-1.	P.1	- NOTE - The inoperable channel may be bypassed for up to 4 hours for surveillance testing of other channels. Place channel in trip.	6 hours OR In accordance with the Risk Informed Completion Time Program
Q.	Required Action and Associated Completion Time of Condition P not met.	Q.1	Reduce THERMAL POWER to < 50% RTP.	6 hours
		AND		
		Q.2.1	Verify Steam Dump System is OPERABLE.	7 hours
			OR	
		Q.2.2	Reduce THERMAL POWER to < 8% RTP.	7 hours
R.	As required by Required Action A.1 and referenced by Table 3.3.1-1.	R.1	- NOTE - One train may be bypassed for up to 4 hours for surveillance testing provided the other train is OPERABLE. Restore train to OPERABLE status.	6 hours OR In accordance with the Risk Informed Completion Time Program

CONDITION	REQUIRED ACTION	COMPLETION TIME
S. As required by Required Action A.1 and referenced by Table 3.3.1-1.	S.1 -NOTE- For Functions 16c, 16d, and 16e, one channel may be bypassed for up to 12 hours for surveillance testing. - Verify interlock is in required state for existing plant conditions.	1 hour
	OR	
	S.2 Declare associated RTS Function channel(s) inoperable.	1 hour
T. As required by Required Action A.1 and referenced by Table 3.3.1-1.	T.1 - NOTE - 1. One train may be bypassed for up to 4 hours for surveillance testing, provided the other train is OPERABLE. 2. One RTB may be bypassed for up to 6 hours for maintenance on undervoltage or shunt trip mechanisms, provided the other train is OPERABLE. - - - - - - - - - - - - - - - - - - - Restore train to OPERABLE status.	24 hour OR -------NOTE-------- Not applicable if there is a loss of function. ---------- In accordance with the Risk Informed Completion Time Program

CONDITION		REQUIRED ACTION		COMPLETION TIME
U.	As required by Required Action A.1 and referenced by Table 3.3.1-1.	U.1	Restore at least one trip mechanism to OPERABLE status upon discovery of two RTBs with inoperable trip mechanisms.	1 hour from discovery of two inoperable trip mechanisms
		AND		
		U.2	Restore trip mechanism to OPERABLE status.	48 hours OR In accordance with the Risk Informed Completion Time Program
V.	Required Action and associated Completion Time of Condition R, S, T, or U not met.	V.1	Be in MODE 3.	6 hours
W.	As required by Required Action A.1 and referenced by Table 3.3.1-1.	W.1	Restore at least one trip mechanism to OPERABLE status upon discovery of two RTBs with inoperable trip mechanisms.	1 hour from discovery of two inoperable trip mechanisms
		AND		
		W.2	Restore trip mechanism or train to OPERABLE status.	48 hours
X.	Required Action and associated Completion Time of Condition W not met.	X.1	Initiate action to fully insert all rods.	Immediately
		AND		
		X.2	Place the Control Rod Drive System in a Condition incapable of rod withdrawal.	1 hour

SURVEILLANCE REQUIREMENTS

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

	SURVEILLANCE	FREQUENCY
SR 3.3.1.1	Perform CHANNEL CHECK.	In accordance with the Surveillance Frequency Control Program
SR 3.3.1.2	- NOTE - Required to be performed within 12 hours after THERMAL POWER is ≥ 50% RTP. Compare results of calorimetric heat balance calculation to Nuclear Instrumentation System (NIS) channel output and adjust if calorimetric power is > 2% higher than indicated NIS power.	In accordance with the Surveillance Frequency Control Program
SR 3.3.1.3	- NOTE - 1. Required to be performed within 7 days after THERMAL POWER is ≥ 50% RTP but prior to exceeding 90% RTP following each refueling and if the Surveillance has not been performed within the last 31 EFPD. 2. Performance of SR 3.3.1.6 satisfies this SR. Compare results of the incore detector measurements to NIS AFD and adjust if absolute difference is ≥ 3%.	In accordance with the Surveillance Frequency Control Program

	SURVEILLANCE	FREQUENCY
SR 3.3.1.4	Perform TADOT.	In accordance with the Surveillance Frequency Control Program
SR 3.3.1.5	Perform ACTUATION LOGIC TEST.	In accordance with the Surveillance Frequency Control Program
SR 3.3.1.6	- NOTE - Not required to be performed until 7 days after THERMAL POWER is $\geq$ 50% RTP, but prior to exceeding 90% RTP following each refueling. Calibrate excore channels to agree with incore detector measurements.	In accordance with the Surveillance Frequency Control Program
SR 3.3.1.7	- NOTE - 1. Not required to be performed for source range instrumentation prior to entering MODE 3 from MODE 2 until 4 hours after entering MODE 3. 2. The RTS input relays are excluded from this surveillance for Functions 2a, 5, 6, 7a, 7b, 8, 9a, 9b, and 13. Perform COT.	In accordance with the Surveillance Frequency Control Program
SR 3.3.1.8	- NOTE - 1. Not required for power range and intermediate range instrumentation until 4 hours after reducing power < 6% RTP. 2. Not required for source range instrumentation until 4 hours after reducing power < 5E-11 amps. 3. The RTS input relay is excluded from this surveillance for Function 2b.	

SURVEILLANCE		FREQUENCY
SR 3.3.1.8 (continued)	Perform COT	In accordance with the Surveillance Frequency Control Program
SR 3.3.1.9	- NOTE - Setpoint verification is not required. Perform TADOT.	In accordance with the Surveillance Frequency Control Program
SR 3.3.1.10	- NOTE - Neutron detectors are excluded. Perform CHANNEL CALIBRATION.	In accordance with the Surveillance Frequency Control Program
SR 3.3.1.11	Perform TADOT.	In accordance with the Surveillance Frequency Control Program
SR 3.3.1.12	- NOTE - Setpoint verification is not required. Perform TADOT.	Prior to reactor startup if not performed within previous 31 days
SR 3.3.1.13	- NOTE - The RTS permissive input relays are excluded from this surveillance for Functions 16c, 16d, and 16e. Perform COT.	In accordance with the Surveillance Frequency Control Program

Table 3.3.1-1
Reactor Trip System Instrumentation

	FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	REQUIRED CHANNELS	CONDITIONS	SURVEILLANCE REQUIREMENTS	LIMITING SAFETY SYSTEM SETTINGS[a]
1.	Manual Reactor Trip	1, 2, 3[b], 4[b], 5[b]	2	B,C	SR 3.3.1.11	NA
2.	Power Range Neutron Flux					
	a. High	1, 2	4	D,G	SR 3.3.1.1 SR 3.3.1.2 SR 3.3.1.7 SR 3.3.1.10	≤ 109.27% RTP
	b. Low	1[c], 2	4	D,G	SR 3.3.1.1 SR 3.3.1.8 SR 3.3.1.10	≤ 29.28% RTP
3.	Intermediate Range Neutron Flux	1[c], 2	2	E,G	SR 3.3.1.1 SR 3.3.1.8 SR 3.3.1.10	(d)
4.	Source Range Neutron Flux	2[e]	2	F,G	SR 3.3.1.1 SR 3.3.1.8 SR 3.3.1.10	(d)
		3[b], 4[b], 5[b]	2	H,I	SR 3.3.1.1 SR 3.3.1.7 SR 3.3.1.10	(d)
		3[f], 4[f], 5[f]	1	J	SR 3.3.1.1 SR 3.3.1.10	NA
5.	Overtemperature ΔT	1, 2	4	D,G	SR 3.3.1.1 SR 3.3.1.3 SR 3.3.1.6 SR 3.3.1.7 SR 3.3.1.10	Refer to Note 1
6.	Overpower ΔT	1, 2	4	D,G	SR 3.3.1.1 SR 3.3.1.7 SR 3.3.1.10	Refer to Note 2

Table 3.3.1-1
Reactor Trip System Instrumentation

	FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	REQUIRED CHANNELS	CONDITIONS	SURVEILLANCE REQUIREMENTS	LIMITING SAFETY SYSTEM SETTINGS[a]
7.	Pressurizer Pressure					
	a. Low	1[g]	4	K,L	SR 3.3.1.1 SR 3.3.1.7 SR 3.3.1.10	≥ 1791.3 psig
	b. High	1, 2	3	D,G	SR 3.3.1.1 SR 3.3.1.7 SR 3.3.1.10	≤ 2396.2 psig
8.	Pressurizer Water Level-High	1, 2	3	D,G	SR 3.3.1.1 SR 3.3.1.7 SR 3.3.1.10	≤ 96.47%
9.	Reactor Coolant Flow-Low					
	a. Single Loop	1[h]	3 per loop	M,O	SR 3.3.1.1 SR 3.3.1.7 SR 3.3.1.10	≥ 89.86%
	b. Two Loops	1[i]	3 per loop	K,L	SR 3.3.1.1 SR 3.3.1.7 SR 3.3.1.10	≥ 89.86%
10.	Reactor Coolant Pump (RCP) Breaker Position					
	a. Single Loop	1[h]	1 per RCP	N,O	SR 3.3.1.11	NA
	b. Two Loops	1[j]	1 per RCP	K,L	SR 3.3.1.11	NA
11.	Undervoltage-Bus 11A and 11B	1[g]	2 per bus	K,L	SR 3.3.1.9 SR 3.3.1.10	[d]
12.	Underfrequency-Bus 11A and 11B	1[g]	2 per bus	K,L	SR 3.3.1.9 SR 3.3.1.10	≥ 57.5 HZ

Table 3.3.1-1
Reactor Trip System Instrumentation

	FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	REQUIRED CHANNELS	CONDITIONS	SURVEILLANCE REQUIREMENTS	LIMITING SAFETY SYSTEM SETTINGS[a]
13.	Steam Generator (SG) Water Level-Low Low	1, 2	3 per SG	D,G	SR 3.3.1.1 SR 3.3.1.7 SR 3.3.1.10	≥ 13.88%
14.	Turbine Trip					
	a. Low Autostop Oil Pressure	1[(k)(l)]	3	P,Q	SR 3.3.1.10 SR 3.3.1.12	(d)
	b. Turbine Stop Valve Closure	1[(k)(l)]	2	P,Q	SR 3.3.1.12	NA
15.	Safety Injection (SI) Input from Engineered Safety Feature Actuation System (ESFAS)	1, 2	2	R,V	SR 3.3.1.11	NA

Table 3.3.1-1
Reactor Trip System Instrumentation

	FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	REQUIRED CHANNELS	CONDITIONS	SURVEILLANCE REQUIREMENTS	LIMITING SAFETY SYSTEM SETTINGS[a]
16.	Reactor Trip System Interlocks					
	a. Intermediate Range Neutron Flux, P-6	2[e]	2	S,V	SR 3.3.1.10 SR 3.3.1.13	≥ 5E-11 amp
	b. Low Power Reactor Trips Block, P-7	1[g]	4 (power range only)	S,V	SR 3.3.1.10 SR 3.3.1.13	≤ 8.0% RTP
	c. Power Range Neutron Flux, P-8	1[h]	4	S,V	SR 3.3.1.10 SR 3.3.1.13	≤ 29.0% RTP
	d. Power Range Neutron Flux, P-9	1[l]	4	S,V	SR 3.3.1.10 SR 3.3.1.13	≤ 50.0% RTP
		1[k]	4	S,V	SR 3.3.1.10 SR 3.3.1.13	≤ 8.0% RTP
	e. Power Range Neutron Flux, P-10	1[c], 2	4	S,V	SR 3.3.1.10 SR 3.3.1.13	≥ 6.0% RTP
17.	Reactor Trip Breakers[m]	1, 2 3[b], 4[b], 5[b]	2 trains 2 trains	T,V W,X	SR 3.3.1.4 SR 3.3.1.4	NA NA
18.	Reactor Trip Breaker Undervoltage and Shunt Trip Mechanisms	1, 2 3[b], 4[b], 5[b]	1 each per RTB 1 each per RTB	U,V W,X	SR 3.3.1.4 SR 3.3.1.4	NA NA
19.	Automatic Trip Logic	1, 2 3[b], 4[b], 5[b]	2 trains 2 trains	R,V W,X	SR 3.3.1.5 SR 3.3.1.5	NA NA

A channel is OPERABLE when both of the following conditions are met:

(a) 1. The absolute difference between the as-found Trip Setpoint (TSP) and the previous as-left TSP is within the COT Acceptance Criteria. The COT Acceptance Criteria is defined as:

|as-found TSP - previous as-left TSP| ≤ COT uncertainty

The COT uncertainty shall not include the calibration tolerance.

2. The as-left TSP is within the established calibration tolerance band about the nominal TSP. The nominal TSP is the desired setting and shall not exceed the Limiting Safety System Setting (LSSS). The LSSS and the established calibration tolerance band are defined in accordance with the Ginna Instrument Setpoint Methodology. The channel is considered operable even if the as-left TSP is non-conservative with respect to the LSSS provided that the as-left TSP is within the established calibration tolerance band.

(b) With Control Rod Drive (CRD) System capable of rod withdrawal or all rods not fully inserted.

(c) THERMAL POWER < 6% RTP.

(d) UFSAR Table 7.2-3.

(e) Both Intermediate Range channels < 5E-11 amps.

(f) With CRD System incapable of withdrawal and all rods fully inserted. In this condition, the Source Range Neutron Flux function does not provide a reactor trip, only indication.

(g) THERMAL POWER ≥ 8.5% RTP.

(h) THERMAL POWER ≥ 30% RTP.

(i) THERMAL POWER ≥ 8.5% RTP and Reactor Coolant Flow-Low (Single Loop) trip Function blocked.

(j) THERMAL POWER ≥ 8.5% RTP and RCP Breaker Position (Single Loop) trip Function blocked.

(k) THERMAL POWER > 8% RTP, and either no circulating water pump breakers closed, or condenser vacuum ≤ 20".

(l) THERMAL POWER ≥ 50% RTP, 1 of 2 circulating water pump breakers closed, and condenser vacuum > 20".

(m) Including any reactor trip bypass breakers that are racked in and closed for bypassing an RTB.

Table 3.3.1-1 (Note 1)
Overtemperature ΔT

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

The Overtemperature ΔT Function Limiting Safety System Setting is defined by:

$$\text{Overtemperature } \Delta T \leq \Delta T_0 \{K_1 + K_2 (P-P') - K_3 (T-T') [(1+\tau_1 s) / (1+\tau_2 s)] - f_1(\Delta I)\}$$

Where:

ΔT is measured RCS ΔT, °F.
ΔT_0 is the indicated ΔT at RTP, °F.

s is the Laplace transform operator, sec^{-1}.

T is the measured RCS average temperature, °F.
T' is the nominal T_{avg} at RTP, °F.

P is the measured pressurizer pressure, psig.
P' is the nominal RCS operating pressure, psig.

K_1 is the Overtemperature ΔT reactor trip setpoint, [*].
K_2 is the Overtemperature ΔT reactor trip depressurization setpoint penalty coefficient, [*]/psi.
K_3 is the Overtemperature ΔT reactor trip heatup setpoint penalty coefficient, [*]/°F.

τ_1 is the measured lead time constant, [*] seconds.
τ_2 is the measured lag time constant, [*] seconds.

$f(\Delta I)$ is a function of the indicated difference between the top and bottom detectors of the Power Range Neutron Flux channels where q_t and q_b are the percent power in the top and bottom halves of the core, respectively, and $q_t + q_b$ is the total THERMAL POWER in percent RTP.

$f_1(\Delta I) = [*] \{[*] - (q_t - q_b)\}$ when $q_t - q_b \leq$ [*]% RTP

$f_1(\Delta I) = 0\%$ of RTP when [*] % RTP < $q_t - q_b \leq$ [*]% RTP

$f_1(\Delta I) = [*] \{(q_t - q_b) - [*]\}$ when $q_t - q_b >$ [*]% RTP

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

Table 3.3.1-1 (Note 2)
Overpower ΔT

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

The Overpower ΔT Function Limiting Safety System Setting is defined by:

$$\text{Overpower } \Delta T \leq \Delta T_0 \{K_4 - K_5 (T-T') - K_6 [(\tau_3 sT) / (\tau_3 s+1)] - f_2(\Delta I)\}$$

Where:

ΔT is measured RCS ΔT, °F.
ΔT_0 is the indicated ΔT at RTP, °F.

s is the Laplace transform operator, sec^{-1}.

T is the measured RCS average temperature, °F.
T' is the nominal T_{avg} at RTP, °F.

K_4 is the Overpower ΔT reactor trip setpoint, [*].
K_5 is the Overpower ΔT reactor trip heatup setpoint penalty coefficient which is:
[*]/°F for $T < T'$ and;
[*]/°F for $T \geq T'$.
K_6 is the Overpower ΔT reactor trip thermal time delay setpoint penalty which is:
[*]/°F for increasing T and;
[*]/°F for decreasing T.

τ_3 is the measured impulse/lag time constant, [*] seconds.

$f_2(\Delta I)$ = [*]

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

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 channel or train inoperable.	A.1	Enter the Condition referenced in Table 3.3.2-1 for the channel or train.	Immediately
B.	As required by Required Action A.1 and referenced by Table 3.3.2-1.	B.1	Restore channel to OPERABLE status.	48 hours OR ------NOTE------- Not applicable if there is a loss of function. ---------- In accordance with the Risk Informed Completion Time Program
C.	Required Action and associated Completion Time of Condition B not met.	C.1	Be in MODE 2.	6 hours

CONDITION		REQUIRED ACTION		COMPLETION TIME
D.	As required by Required Action A.1 and referenced by Table 3.3.2-1.	D.1	Restore channel to OPERABLE status.	48 hours OR In accordance with the Risk Informed Completion Time Program
E.	As required by Required Action A.1 and referenced by Table 3.3.2-1.	E.1	Restore train to OPERABLE status.	6 hours OR In accordance with the Risk Informed Completion Time Program
F.	As required by Required Action A.1 and referenced by Table 3.3.2-1.	F.1	- NOTE – 1. For Functions 4c, 5b, and 6c, one channel may be bypassed for up to 12 hours for surveillance testing. 2. The inoperable channel may be bypassed for up to 12 hours for surveillance testing of the other channels. - Place channel in trip.	72 hours OR In accordance with the Risk Informed Completion Time Program
G.	Required Action and associated Completion Time of Condition D, E, or F not met.	G.1 AND G.2	Be in MODE 3. Be in MODE 4.	6 hours 12 hours

CONDITION	REQUIRED ACTION	COMPLETION TIME
H. As required by Required Action A.1 and referenced by Table 3.3.2-1.	H.1 Restore channel to OPERABLE status.	48 hours OR -------NOTE------- Not applicable if there is a loss of function. ---------- In accordance with the Risk Informed Completion Time Program
I. As required by Required Action A.1 and referenced by Table 3.3.2-1.	I.1 Restore train to OPERABLE status.	6 hours OR In accordance with the Risk Informed Completion Time Program
J. As required by Required Action A.1 and referenced by Table 3.3.2-1.	J.1 - - - - - - - - - - - - - - - - - - - NOTE – 1. For Functions 1c, one channel may be bypassed for up to 12 hours for surveillance testing. 2. The inoperable channel may be bypassed for up to 12 hours for surveillance testing of the other channels. - - - - - - - - - - - - - - - - - - Place channel in trip.	72 hours OR In accordance with the Risk Informed Completion Time Program

CONDITION		REQUIRED ACTION		COMPLETION TIME
K.	Required Action and associated Completion Time of Condition H, I, or J not met.	K.1 AND K.2	Be in MODE 3. Be in MODE 5.	6 hours 36 hours
L.	As required by Required Action A.1 and referenced by Table 3.3.2-1.	L.1	- NOTE - 1. For Functions 1d and 1e, one channel may be bypassed for up to 12 hours for surveillance testing. 2. The inoperable channel may be bypassed for up to 12 hours for surveillance testing of the other channels. - Place channel in trip.	72 hours OR In accordance with the Risk Informed Completion Time Program
M.	Required Action and associated Completion Time of Condition L not met.	M.1 AND M.2	Be in MODE 3. Reduce pressurizer pressure to < 2000 psig.	6 hours 12 hours
N.	As required by Required Action A.1 and referenced by Table 3.3.2-1.	N.1	Declare associated Auxiliary Feedwater pump inoperable and enter applicable condition(s) of LCO 3.7.5, "Auxiliary Feedwater (AFW) System."	Immediately

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 ESFAS input relays are excluded from this surveillance for Functions 1c, 1d, 1e, 4c, 5b, and 6c. Perform COT.	In accordance with the Surveillance Frequency Control Program
SR 3.3.2.3	- NOTE - Verification of relay setpoints not required. Perform TADOT.	In accordance with the Surveillance Frequency Control Program
SR 3.3.2.4	- NOTE - Verification of relay setpoints not required. Perform TADOT.	In accordance with the Surveillance Frequency Control Program
SR 3.3.2.5	Perform CHANNEL CALIBRATION	In accordance with the Surveillance Frequency Control Program

SURVEILLANCE		FREQUENCY
SR 3.3.2.6	Verify the Pressurizer Pressure-Low and Steam Line Pressure-Low Functions are not bypassed when pressurizer pressure > 2000 psig.	In accordance with the Surveillance Frequency Control Program
SR 3.3.2.7	Perform ACTUATION LOGIC TEST.	In accordance with the Surveillance Frequency Control Program

Table 3.3.2-1
Engineered Safety Feature Actuation System Instrumentation

FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	REQUIRED CHANNELS	CONDITIONS	SURVEILLANCE REQUIREMENTS	LIMITING SAFETY SYSTEM SETTINGS[a]
1. Safety Injection					
a. Manual Initiation	1,2,3,4	2	H,K	SR 3.3.2.4	NA
b. Automatic Actuation Logic and Actuation Relays	1,2,3,4	2 trains	I,K	SR 3.3.2.7	NA
c. Containment Pressure-High	1,2,3,4	3	J,K	SR 3.3.2.1 SR 3.3.2.2 SR 3.3.2.5	≤ 4.61 psig
d. Pressurizer Pressure-Low	1,2,3[b]	3	L,M	SR 3.3.2.1 SR 3.3.2.2 SR 3.3.2.5 SR 3.3.2.6	≥ 1729.8 psig
e. Steam Line Pressure-Low	1,2,3[b]	3 per steam line	L,M	SR 3.3.2.1 SR 3.3.2.2 SR 3.3.2.5 SR 3.3.2.6	≥ 393.8 psig

Table 3.3.2-1
Engineered Safety Feature Actuation System Instrumentation

FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	REQUIRED CHANNELS	CONDITIONS	SURVEILLANCE REQUIREMENTS	LIMITING SAFETY SYSTEM SETTINGS[a]
2. Containment Spray					
a. Manual Initiation					
Left pushbutton	1,2,3,4	1	H,K	SR 3.3.2.4	NA
Right pushbutton	1,2,3,4	1	H,K	SR 3.3.2.4	NA
b. Automatic Actuation Logic and Actuation Relays	1,2,3,4	2 trains	I,K	SR 3.3.2.7	NA
c. Containment Pressure-High High	1,2,3,4	3 per set	J,K	SR 3.3.2.1 SR 3.3.2.2 SR 3.3.2.5	≤ 32.11 psig (narrow range) ≤ 29.6 psig (wide range)
3. Containment Isolation					
a. Manual Initiation	1,2,3,4,[c]	2	H,K	SR 3.3.2.4	NA
b. Automatic Actuation Logic and Actuation Relays	1,2,3,4	2 trains	I,K	SR 3.3.2.7	NA
c. Safety Injection	Refer to Function 1 (Safety Injection) for all automatic initiation functions and requirements.				

Table 3.3.2-1
Engineered Safety Feature Actuation System Instrumentation

	FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	REQUIRED CHANNELS	CONDITIONS	SURVEILLANCE REQUIREMENTS	LIMITING SAFETY SYSTEM SETTINGS[a]
4.	Steam Line Isolation					
a.	Manual Initiation	1,2[d],3[d]	1 per loop	D,G	SR 3.3.2.4	NA
b.	Automatic Actuation Logic and Actuation Relays	1,2[d],3[d]	2 trains	E,G	SR 3.3.2.7	NA
c.	Containment Pressure-High High	1,2[d],3[d]	3	F,G	SR 3.3.2.1 SR 3.3.2.2 SR 3.3.2.5	≤ 18.0 psig
d.	High Steam Flow	1,2[d],3[d]	2 per steam line	F,G	SR 3.3.2.1 SR 3.3.2.2 SR 3.3.2.5	≤ 1.30E6 lbm/hr @ 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]	2 per loop	F,G	SR 3.3.2.1 SR 3.3.2.2 SR 3.3.2.5	≥ 544.0°F
e.	High-High Steam Flow	1,2[d],3[d]	2 per steam line	F,G	SR 3.3.2.1 SR 3.3.2.2 SR 3.3.2.5	≤ 4.53E6 lbm/hr @ 785 psig
	Coincident with Safety Injection	Refer to Function 1 (Safety Injection) for all initiation functions and requirements.				

Table 3.3.2-1
Engineered Safety Feature Actuation System Instrumentation

	FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	REQUIRED CHANNELS	CONDITIONS	SURVEILLANCE REQUIREMENTS	LIMITING SAFETY SYSTEM SETTINGS[a]
5.	Feedwater Isolation					
a.	Automatic Actuation Logic and Actuation Relays	1,2[e],3[e]	2 trains	E,G	SR 3.3.2.7	NA
b.	SG Water Level-High	1,2[e],3[e]	3 per SG	F,G	SR 3.3.2.1 SR 3.3.2.2 SR 3.3.2.5	≤ 91.15%
c.	Safety Injection	Refer to Function 1 (Safety Injection) for all initiation functions and requirements.				

Table 3.3.2-1
Engineered Safety Feature Actuation System Instrumentation

	FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	REQUIRED CHANNELS	CONDITIONS	SURVEILLANCE REQUIREMENTS	LIMITING SAFETY SYSTEM SETTINGS[a]
6.	Auxiliary Feedwater (AFW)					
a.	Manual Initiation					
	AFW	1,2,3	1 per pump	N	SR 3.3.2.4	NA
	Standby AFW	1,2,3	1 per pump	N	SR 3.3.2.4	NA
b.	Automatic Actuation Logic and Actuation Relays	1,2,3	2 trains	E,G	SR 3.3.2.7	NA
c.	SG Water Level-Low Low	1,2,3	3 per SG	F,G	SR 3.3.2.1 SR 3.3.2.2 SR 3.3.2.5	≥ 13.88%
d.	Safety Injection (Motor driven pumps only)	Refer to Function 1 (Safety Injection) for all initiation functions and requirements.				
e.	Undervoltage - Bus 11A and 11B (Turbine driven pump only)	1,2,3	2 per bus	D,G	SR 3.3.2.3 SR 3.3.2.5	≥ 2597 V with ≤ 3.6 sec time delay
f.	Trip of Both Main Feedwater Pumps (Motor driven pumps only)	1	2 per MFW pump	B,C	SR 3.3.2.4	NA

(a)

A channel is OPERABLE when both of the following conditions are met:

1. The absolute difference between the as-found Trip Setpoint (TSP) and the previous as-left TSP is within the COT Acceptance Criteria. The COT Acceptance Criteria is defined as:

   |as-found TSP - previous as-left TSP| ≤ COT uncertainty

   The COT uncertainty shall not include the calibration tolerance.

2. The as-left TSP is within the established calibration tolerance band about the nominal TSP. The nominal TSP is the desired setting and shall not exceed the Limiting Safety System Setting (LSSS). The LSSS and the established calibration tolerance band are defined in accordance with the Ginna Instrument Setpoint Methodology. The channel is considered operable even if the as-left TSP is non-conservative with respect to the LSSS provided that the as-left TSP is within the established calibration tolerance band.

(b) Pressurizer Pressure ≥ 2000 psig.

(c) During CORE ALTERATIONS and movement of irradiated fuel assemblies within containment.

(d) Except when both MSIVs are closed and de-activated.

(e) Except when all Main Feedwater Regulating and associated bypass valves are closed and de-activated or isolated by a closed manual valve.

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. - NOTE - Not applicable to Functions 3 and 4. 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 to prepare and submit a special report.	Immediately
C. - NOTE - Only applicable to Functions 3 and 4. One or more Functions with required channel inoperable.	C.1 Restore required channel to OPERABLE status.	7 days

CONDITION		REQUIRED ACTION		COMPLETION TIME
D.	One or more Functions with two required channels inoperable.	D.1	Restore one channel to OPERABLE status.	7 days
E.	Required Action and associated Completion Time of Condition C or D not met.	E.1	Enter the Condition referenced in Table 3.3.3-1 for the channel.	Immediately
F.	As required by Required Action E.1 and referenced in Table 3.3.3-1.	F.1 AND F.2	Be in MODE 3. Be in MODE 4.	6 hours 12 hours
G.	As required by Required Action E.1 and referenced in Table 3.3.3-1.	G.1	Initiate action to prepare and submit a special report.	Immediately

SURVEILLANCE REQUIREMENTS

- NOTE -
SR 3.3.3.1 and SR 3.3.3.2 apply to each PAM instrumentation Function in Table 3.3.3-1.

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	Perform CHANNEL CALIBRATION.	In accordance with the Surveillance Frequency Control Program

Table 3.3.3-1
Post Accident Monitoring Instrumentation

	FUNCTION	REQUIRED CHANNELS	CONDITION
1.	Pressurizer Pressure	2	F
2.	Pressurizer Level	2	F
3.	Reactor Coolant System (RCS) Hot Leg Temperature	1 per loop	F
4.	RCS Cold Leg Temperature	1 per loop	F
5.	RCS Pressure (Wide Range)	2	F
6.	RCS Subcooling Monitor	2	F
7.	Reactor Vessel Water Level	2	G
8.	Containment Sump B Water Level	2	F
9.	Containment Pressure (Wide Range)	2	F
10.	Containment Area Radiation (High Range)	2	G
11.	Condensate Storage Tank Level	2	F
12.	Refueling Water Storage Tank Level	2	F
13.	Residual Heat Removal Flow	2	F
14.	Core Exit Temperature-Quadrant 1	2[(a)]	F
15.	Core Exit Temperature-Quadrant 2	2[(a)]	F
16.	Core Exit Temperature-Quadrant 3	2[(a)]	F
17.	Core Exit Temperature-Quadrant 4	2[(a)]	F
18.	Auxiliary Feedwater (AFW) Flow to Steam Generator (SG) A	2	F
19.	AFW Flow to SG B	2	F
20.	SG A Water Level (Narrow Range)	2	F
21.	SG B Water Level (Narrow Range)	2	F
22.	SG A Water Level (Wide Range)	2	F

Table 3.3.3-1
Post Accident Monitoring Instrumentation

	FUNCTION	REQUIRED CHANNELS	CONDITION
23.	SG B Water Level (Wide Range)	2	F
24.	SG A Pressure	2	F
25.	SG B Pressure	2	F

(a) A channel consists of two core exit thermocouples (CETs).

3.3 INSTRUMENTATION

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

LCO 3.3.4 Each 480 V safeguards bus shall have two OPERABLE channels of LOP DG Start Instrumentation.

APPLICABILITY: MODES 1, 2, 3, and 4,
When associated DG is required to be OPERABLE by LCO 3.8.2, "AC Sources - MODES 5 and 6."

ACTIONS

- NOTE -
Separate Condition entry is allowed for each 480 V safeguards bus.

CONDITION		REQUIRED ACTION		COMPLETION TIME
A.	One or more 480 V bus(es) with one channel inoperable.	A.1	Place channel(s) in trip.	6 hours OR In accordance with the Risk Informed Completion Time Program
B.	Required Action and associated Completion Time of Condition A not met. OR One or more 480 V bus(es) with two channels inoperable.	B.1	Enter applicable Condition(s) and Required Action(s) for the associated DG made inoperable by LOP DG start instrumentation.	Immediately

SURVEILLANCE REQUIREMENTS

- NOTE -

When a channel is placed in an inoperable status solely for the performance of required Surveillances, entry into the associated Conditions and Required Actions may be delayed for up to 4 hours provided the second channel maintains LOP DG start capability.

	SURVEILLANCE	FREQUENCY
SR 3.3.4.1	Perform TADOT.	In accordance with the Surveillance Frequency Control Program
SR 3.3.4.2	Perform CHANNEL CALIBRATION with Limiting Safety System Settings (LSSS)[(a)] for each 480 V bus as follows: a. Loss of voltage LSSS ≥ 372.0 V and ≤ 374.8 V with a time delay of ≥ 2.13 seconds and ≤ 2.62 seconds. b. Degraded voltage LSSS ≥ 420.0 V and ≤ 423.6 V with a time delay of ≥ 68.1 seconds and ≤ 125 seconds (@ 420 V) and ≥ 71.8 seconds and ≤ 125 seconds (@ 423.6 V).	In accordance with the Surveillance Frequency Control Program

(a) A channel is OPERABLE when both of the following conditions are met:

1. The absolute difference between the as-found Trip Setpoint (TSP) and the previous as-left TSP is within the CHANNEL CALIBRATION Acceptance Criteria. The CHANNEL CALIBRATION Acceptance Criteria is defined as:

   |as-found TSP - previous as-left TSP| ≤ CHANNEL CALIBRATION uncertainty

   The CHANNEL CALIBRATION uncertainty shall not include the calibration tolerance.

2. The as-left TSP is within the established calibration tolerance band about the nominal TSP. The nominal TSP is the desired setting and shall not exceed the LSSS. The LSSS and the established calibration tolerance band are defined in accordance with the Ginna Instrument Setpoint Methodology. The channel is considered operable even if the as-left TSP is non-conservative with respect to the LSSS provided that the as-left TSP is within the established calibration tolerance band.

3.3 INSTRUMENTATION

3.3.5 Containment Ventilation Isolation Instrumentation

LCO 3.3.5 The Containment Ventilation Isolation 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 radiation monitoring channel inoperable.	A.1 Restore the affected channel to OPERABLE status.	4 hours OR -------NOTE------ Not applicable if there is a loss of function. ---------- In accordance with the Risk Informed Completion Time Program
B. - NOTE - Only applicable in MODE 1, 2, 3, or 4. One or more Functions with one or more manual or automatic actuation trains inoperable. OR	B.1 Enter applicable Conditions and Required Actions of LCO 3.6.3, "Containment Isolation Boundaries," for containment mini-purge isolation valves made inoperable by isolation instrumentation.	Immediately

CONDITION	REQUIRED ACTION		COMPLETION TIME
Both radiation monitoring channels inoperable. OR Required Action and associated Completion Time of Condition A not met.			
C. - - - - - - - - - - - - - - - - - - - NOTE - Only applicable during CORE ALTERATIONS or movement of irradiated fuel assemblies within containment. - - - - - - - - - - - - - - - - - - One or more Functions with one or more manual or automatic actuation trains inoperable. OR Both radiation monitoring channels inoperable. OR Required Action and associated Completion Time for Condition A not met.	C.1 OR C.2	Place and maintain containment purge and exhaust valves in closed position. Enter applicable Conditions and Required Actions of LCO 3.9.3, "Containment Penetrations," for containment purge and exhaust isolation valves made inoperable by isolation instrumentation.	Immediately Immediately

SURVEILLANCE REQUIREMENTS

- NOTE -

Refer to Table 3.3.5-1 to determine which SRs apply for each Containment Ventilation Isolation 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 ACTUATION LOGIC TEST.	In accordance with the Surveillance Frequency Control Program
SR 3.3.5.4	Perform CHANNEL CALIBRATION.	In accordance with the Surveillance Frequency Control Program

Table 3.3.5-1
Containment Ventilation Isolation Instrumentation

	FUNCTION	APPLICABLE MODES AND OTHER SPECIFIED CONDITIONS	REQUIRED CHANNELS	SURVEILLANCE REQUIREMENTS	LIMITING SAFETY SYSTEM SETTINGS[a]
1.	Automatic Actuation Logic and Actuation Relays	1,2,3,4,[b]	2 trains	SR 3.3.5.3	NA
2.	Containment Radiation				
	a. Gaseous	1,2,3,4,[b]	1	SR 3.3.5.1 SR 3.3.5.2 SR 3.3.5.4	(c)
	b. Particulate	1,2,3,4,[b]	1	SR 3.3.5.1 SR 3.3.5.2 SR 3.3.5.4	(c)
3.	Containment Isolation - Manual Initiation	Refer to LCO 3.3.2, "ESFAS Instrumentation," Function 3.a, for all initiation functions and requirements.			
4.	Containment Spray - Manual Initiation	Refer to LCO 3.3.2, "ESFAS Instrumentation," Function 2.a, for all initiation functions and requirements.			
5.	Safety Injection	Refer to LCO 3.3.2, "ESFAS Instrumentation," Function 1, for all initiation functions and requirements.			

(a)

A channel is OPERABLE when both of the following conditions are met:

1. The absolute difference between the as-found Trip Setpoint (TSP) and the previous as-left TSP is within the COT Acceptance Criteria. The COT Acceptance Criteria is defined as:

   |as-found TSP - previous as-left TSP| ≤ COT uncertainty

   The COT uncertainty shall not include the calibration tolerance.

2. The as-left TSP is within the established calibration tolerance band about the nominal TSP. The nominal TSP is the desired setting and shall not exceed the Limiting Safety System Setting (LSSS). The LSSS and the established calibration tolerance band are defined in accordance with the Ginna Instrument Setpoint Methodology. The channel is considered operable even if the as-left TSP is non-conservative with respect to the LSSS provided that the as-left TSP is within the established calibration tolerance band.

(b) During CORE ALTERATIONS and movement of irradiated fuel assemblies within containment.

(c) Per Radiological Effluent Controls Program.

3.3 INSTRUMENTATION

3.3.6 Control Room Emergency Air Treatment System (CREATS) Actuation Instrumentation

LCO 3.3.6 The CREATS actuation instrumentation for each Function in Table 3.3.6-1 shall be OPERABLE.

APPLICABILITY: According to Table 3.3.6-1.

ACTIONS

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

CONDITION		REQUIRED ACTION		COMPLETION TIME
A.	One or more Functions with one channel or train inoperable.	A.1	Place one CREATS train in emergency mode.	7 days
B.	One or more Functions with two channels or two trains inoperable.	B.1.1	Place one CREATS train in emergency mode. AND	Immediately
		B.1.2	Enter applicable Conditions and Required Actions for one CREATS train made inoperable by inoperable CREATS actuation instrumentation.	Immediately
		OR		
		B.2	Place both CREATS trains in emergency mode.	Immediately
C.	Required Action and associated Completion Time of Condition A or B not met in MODE 1, 2, 3, or 4.	C.1	Be in MODE 3.	6 hours
		AND		
		C.2	Be in MODE 5.	36 hours

CONDITION	REQUIRED ACTION	COMPLETION TIME
D. Required Action and associated Completion Time of Condition A or B not met during movement of irradiated fuel assemblies.	D.1 Suspend movement of irradiated fuel assemblies.	Immediately

SURVEILLANCE REQUIREMENTS

- NOTE -
Refer to Table 3.3.6-1 to determine which SRs apply for each CREATS Actuation Function.

SURVEILLANCE		FREQUENCY
SR 3.3.6.1	Perform CHANNEL CHECK.	In accordance with the Surveillance Frequency Control Program
SR 3.3.6.2	Perform COT.	In accordance with the Surveillance Frequency Control Program
SR 3.3.6.3	- NOTE - Verification of setpoint is not required. Perform TADOT.	In accordance with the Surveillance Frequency Control Program
SR 3.3.6.4	Perform CHANNEL CALIBRATION.	In accordance with the Surveillance Frequency Control Program
SR 3.3.6.5	Perform ACTUATION LOGIC TEST.	In accordance with the Surveillance Frequency Control Program

Table 3.3.6-1
CREATS Actuation Instrumentation

	FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	REQUIRED CHANNELS	SURVEILLANCE REQUIREMENTS	LIMITING SAFETY SYSTEM SETTINGS[a]
1.	Manual Initiation	1, 2, 3, 4, (b)	2 trains	SR 3.3.6.3	NA
2.	Automatic Actuation Logic and Actuation Relays	1, 2, 3, 4, (b)	2 trains	SR 3.3.6.5	NA
3.	Control Room Radiation Intake Monitors	1, 2, 3, 4, (b)	2	SR 3.3.6.1 SR 3.3.6.2 SR 3.3.6.4	≤ .57 mR/hr
4.	Safety Injection	Refer to LCO 3.3.2, "ESFAS Instrumentation," Function 1, for all initiation functions and requirements.			

(a) A channel is OPERABLE when both of the following conditions are met:

1. The absolute difference between the as-found Trip Setpoint (TSP) and the previous as-left TSP is within the COT Acceptance Criteria. The COT Acceptance Criteria is defined as:

   |as-found TSP - previous as-left TSP| ≤ COT uncertainty

   The COT uncertainty shall not include the calibration tolerance.

2. The as-left TSP is within the established calibration tolerance band about the nominal TSP. The nominal TSP is the desired setting and shall not exceed the Limiting Safety System Setting (LSSS). The LSSS, COT uncertainty, and the established calibration tolerance band are defined in accordance with the Ginna instrument setpoint methodology. The channel is considered operable even if the as-left TSP is non-conservative with respect to the LSSS provided that the as-left TSP is within the established calibration tolerance band.

(b) During movement of irradiated fuel assemblies

3.4 REACTOR COOLANT SYSTEMS (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 in the COLR.

- NOTE -

Pressurizer pressure limit does not apply during pressure transients due to:

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

b. THERMAL POWER step > 10% RTP.

APPLICABILITY: MODE 1.

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 within limit specified in the COLR.	In accordance with the Surveillance Frequency Control Program
SR 3.4.1.2	Verify RCS average temperature is within limit specified in the COLR.	In accordance with the Surveillance Frequency Control Program

	SURVEILLANCE	FREQUENCY
SR 3.4.1.3	- NOTE - Required to be performed within 7 days after ≥ 95% RTP. Verify RCS total flow rate is within 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 both 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.	Within 30 minutes prior to achieving criticality.
SR 3.4.2.2	- NOTE - Only required if any RCS loop T_{avg} < 547°F and the low T_{avg} alarm is either inoperable or not reset. Verify RCS T_{avg} in each loop ≥ 540°F.	Once within 30 minutes and 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. Requirements of LCO not met in MODE 1, 2, 3, or 4.	A.1	Restore parameter(s) to within limits.	30 minutes
- NOTE - Required Action A.2 shall be completed whenever this Condition is entered.	AND		
	A.2	Determine RCS is acceptable for continued operation.	72 hours
B. Required Action and associated Completion Time of Condition A not met.	B.1	Be in MODE 3.	6 hours
	AND		
	B.2	Be in MODE 5 with RCS pressure < 500 psig.	36 hours
C. 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
- NOTE - Required Action C.2 shall be completed whenever this Condition is entered.	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.	
	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 - MODE 1 > 8.5% RTP

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

APPLICABILITY: MODE 1 > 8.5% RTP.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Requirements of LCO not met.	A.1 Be in MODE 1 ≤ 8.5% RTP.	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 - MODES 1 ≤ 8.5% RTP, 2, and 3

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

- NOTE -

Both reactor coolant pumps may be de-energized in MODE 3 for ≤ 1 hour per 8 hour period provided:

a. No operations are permitted that would cause introduction of coolant into the RCS with boron concentration less than required to meet the SDM of LCO 3.1.1; and

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

APPLICABILITY: MODES 1 ≤ 8.5% RTP,
MODES 2 and 3.

ACTIONS

CONDITION		REQUIRED ACTION		COMPLETION TIME
A.	One RCS loop inoperable.	A.1	Verify SDM is within limits specified in the COLR.	Once per 12 hours
		AND		
		A.2	Restore inoperable 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

CONDITION	REQUIRED ACTION	COMPLETION TIME
C. Both RCS loops inoperable. OR No RCS loop in operation.	C.1 De-energize all CRDMs. AND C.2 Suspend operations that would cause introduction of coolant into the RCS with boron concentration less than required to meet the SDM of LCO 3.1.1. AND C.3 Initiate action to restore one RCS loop to OPERABLE status and operation.	Immediately Immediately Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.4.5.1	Verify required RCS loop is in operation.	In accordance with the Surveillance Frequency Control Program
SR 3.4.5.2	Verify steam generator secondary side water levels are ≥ 16% for two 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 RCP 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.

- NOTE -

1. All reactor coolant pumps (RCPs) and RHR pumps may be de-energized for ≤ 1 hour per 8 hour period provided:

   a. No operations are permitted that would cause introduction of coolant into the RCS with boron concentration less than required to meet the SDM of LCO 3.1.1; 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 less than or equal to the LTOP enable temperature specified in the PTLR unless:

   a. The secondary side water temperature of each steam generator (SG) is ≤ 50°F above each of the RCS cold leg temperatures; or

   b. The pressurizer water volume is < 324 cubic feet (38% level).

APPLICABILITY: MODE 4.

ACTIONS

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

CONDITION	REQUIRED ACTION	COMPLETION TIME
B. One RHR loop inoperable. AND Two RCS loops inoperable.	- NOTE - Required Action B.1 is not applicable if all RCS and RHR loops are inoperable and Condition C is entered. B.1 Be in MODE 5.	24 hours
C. All RCS and RHR loops inoperable. OR No RCS or RHR loop in operation.	C.1 Suspend operations that would cause introduction of coolant into the RCS with boron concentration less than required to meet the SDM of LCO 3.1.1. AND C.2 Initiate action to restore one loop to OPERABLE status and operation.	Immediately 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 level is ≥ 16% for each required RCS loop.	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
SR 3.4.6.4	-NOTE- Not required to performed until 12 yours 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 ≥ 16%.

- -

- NOTE -

1. The RHR pump of the loop in operation may be de-energized for ≤ 1 hour per 8 hour period provided:

   a. No operations are permitted that would cause introduction of coolant into the RCS with boron concentration less than required to meet the SDM of LCO 3.1.1; and

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

2. One required RHR loop may be inoperable for ≤ 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 less than or equal to the LTOP enable temperature specified in the PTLR unless:

   a. The secondary side water temperature of each SG is ≤ 50°F above each of the RCS cold leg temperatures; or

   b. The pressurizer water volume is < 324 cubic feet (38% level).

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

- -

APPLICABILITY: MODE 5 with RCS loops filled.

*Beginning April 3, 2020, an alternative means of RHR as approved in Amendment No. 139 may be used until June 30, 2020. No increase in Mode changes will be permitted while utilizing the alternate approved means for RHR.

ACTIONS

CONDITION		REQUIRED ACTION		COMPLETION TIME
A.	One RHR loop inoperable. AND Both SGs secondary side water levels not within limits.	A.1	Initiate action to restore a second RHR loop to OPERABLE status. OR	Immediately
		A.2	Initiate action to restore required SG secondary side water levels to within limits.	Immediately
B.	Both RHR loops inoperable. OR No RHR loop in operation.	B.1	Suspend operations that would cause introduction of coolant into the RCS with boron concentration less than required to meet the SDM of LCO 3.1.1. AND	Immediately
		B.2	Initiate action to restore one RHR loop to OPERABLE status and operation.	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 $\geq$ 16% in the required SG.	In accordance with the Surveillance Frequency Control Program
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.*

- -

- NOTE -

1. All RHR pumps may be de-energized for ≤ 15 minutes when switching from one loop to another provided:

   a. No operations are permitted that would cause introduction of coolant into the RCS with boron concentration less than required to meet the SDM of LCO 3.1.1; and

   b. Core outlet temperature is maintained at least 10°F below saturation temperature; 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
B.	Both RHR loops inoperable. <u>OR</u> No RHR loop in operation.	B.1	Suspend operations that would cause introduction of coolant into the RCS with boron concentration less than required to meet the SDM of LCO 3.1.1. <u>AND</u>	Immediately

*Beginning April 3, 2020, an alternative means of RHR as approved in Amendment No. 139 may be used until June 30, 2020. No increase in Mode changes will be permitted while utilizing the alternate approved means for RHR.

CONDITION	REQUIRED ACTION		COMPLETION TIME
	B.2	Initiate action to restore one RHR loop to OPERABLE status and operation.	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 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.

APPLICABILITY: MODES 1, 2, and 3.

ACTIONS

CONDITION		REQUIRED ACTION		COMPLETION TIME
A.	Pressurizer water level not within limit.	A.1	Be in MODE 3 with reactor trip breakers open.	6 hours
		AND		
		A.2	Be in MODE 4.	12 hours
B.	Pressurizer heaters capacity not within limits.	B.1	Be in MODE 3.	6 hours
		AND		
		B.2	Be in MODE 4.	12 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.4.9.1	Verify pressurizer water level is $\leq$ 87%.	In accordance with the Surveillance Frequency Control Program
SR 3.4.9.2	Verify total capacity of the pressurizer heaters is $\geq$ 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 ≥ 2410 psig and ≤ 2542 psig.

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

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 Both pressurizer safety valves inoperable.	B.1 AND B.2	Be in MODE 3. Be in MODE 4 with any RCS cold leg temperature less than or equal to the LTOP enable temperature specified in the PTLR.	6 hours 12 hours

SURVEILLANCE REQUIREMENTS

	SURVEILLANCE	FREQUENCY
SR 3.4.10.1	- NOTE - Required to be performed within 36 hours of entering MODE 4 from MODE 5 with all RCS cold leg temperatures greater than the LTOP enable temperature specified in the PTLR for the purpose of setting the pressurizer safety valves under ambient (hot) conditions only provided a preliminary cold setting was made prior to heatup.	
	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, and 3.

ACTIONS

- NOTE -

1. Separate entry into Condition A is allowed for each PORV.

2. Separate entry into Condition C is allowed for each block valve.

CONDITION		REQUIRED ACTION		COMPLETION TIME
A.	One or both PORVs OPERABLE and not capable of being automatically controlled.	A.1	Close and maintain power to associated block valve.	1 hour
		OR		
		A.2	Place associated PORV in manual control.	1 hour
B.	One PORV inoperable.	B.1	Close associated block valve.	1 hour
		AND		
		B.2	Remove power from associated block valve.	1 hour
		AND		
		B.3.1	Restore PORV to OPERABLE status.	72 hours
			OR	
		B.3.2.1	Verify Opposite Train PORV and PORV Block Valve are OPERABLE	1 hour

CONDITION	REQUIRED ACTION	COMPLETION TIME
	AND	
	B.3.2.2 Restore PORV to OPERABLE status	72 hours OR -------NOTE------ Not applicable if there is a loss of function. ---------- In accordance with the Risk Informed Completion Time Program
C. One block valve inoperable.	C.1 Place associated PORV in manual control. AND	1 hour
	C.2.1 Restore block valve to OPERABLE status. OR	7 days
	C.2.2.1 Verify Opposite Train PORV and PORV Block Valve are OPERABLE AND	1 hour
	C.2.2.2 Restore PORV Block Valve to OPERABLE status	7 days OR -----NOTE------ Not applicable if there is a loss of function. ---------- In accordance with the Risk Informed Completion Time Program

CONDITION		REQUIRED ACTION		COMPLETION TIME
D.	Both block valves inoperable.	D.1	Place associated PORVs in manual control.	1 hour
		AND		
		D.2	Restore at least one block valve to OPERABLE status.	72 hours
E.	Required Action and associated Completion Time of Condition A, B, C, or D not met.	E.1	Be in MODE 3.	6 hours
		AND		
		E.2	Be in MODE 4.	12 hours
F.	Two PORVs inoperable.	F.1	Initiate action to restore one PORV to OPERABLE status.	Immediately
		AND		
		F.2	Close associated block valves.	1 hour
		AND		
		F.3	Remove power from associated block valves.	1 hour
		AND		
		F.4	Be in MODE 3 with T_{avg} < 500°F.	8 hours

SURVEILLANCE REQUIREMENTS

	SURVEILLANCE	FREQUENCY
SR 3.4.11.1	- NOTE - Not required to be performed with block valve closed per LCO 3.4.13. 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 the Emergency Core Cooling System (ECCS) accumulators isolated and either a or b below.

a. Two power operated relief valves (PORVs) with lift settings within the limits specified in the PTLR and no safety injection (SI) pump capable of injecting into the RCS.

b. The RCS depressurized and an RCS vent of ≥ 1.1 square inches and a maximum of one SI pump capable of injecting into the RCS.

- NOTE -

1. The PORVs and an RCS vent ≥ 1.1 square inches are not required to be OPERABLE during performance of the secondary side hydrostatic tests. However, no SI pump may be capable of injecting into the RCS during this test.

2. ECCS accumulator isolation is only required when accumulator pressure is greater than or equal to the maximum RCS pressure for the existing RCS cold leg temperature allowed by the P/T limit curves provided in the PTLR.

APPLICABILITY: MODE 4 when any RCS cold leg temperature is less than or equal to the LTOP enable temperature specified in the PTLR or when the RHR system is in the RHR mode of operation,
MODE 5 when the SG primary system manway and pressurizer manway are closed and secured in position,
MODE 6 when the reactor vessel head is on and the SG primary system manway and pressurizer manway are closed and secured in position.

ACTIONS

- NOTE -

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

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more SI pumps capable of injecting into the RCS. - NOTE - Only applicable to LCO 3.4.12.a.	A.1 Initiate action to verify no SI pump is capable of injecting into the RCS.	Immediately
B. One required PORV inoperable in MODE 4. - NOTE - Only applicable to LCO 3.4.12.a.	B.1 Restore required PORV to OPERABLE status.	7 days
C. One required PORV inoperable in MODE 5 or MODE 6. - NOTE - Only applicable to LCO 3.4.12.a.	C.1 Restore required PORV to OPERABLE status.	72 hours
D. Two or more SI pumps capable of injecting into the RCS. - NOTE - Only applicable to LCO 3.4.12.b.	D.1 Initiate action to verify a maximum of one SI pump is capable of injecting into the RCS.	Immediately

CONDITION		REQUIRED ACTION		COMPLETION TIME
E.	An ECCS accumulator not isolated when the accumulator pressure is greater than or equal to the maximum RCS pressure for the existing cold leg temperature allowed in the PTLR.	E.1	Isolate affected ECCS accumulator.	1 hour
F.	Required Action and associated Completion Time of Condition E not met.	F.1	Increase RCS cold leg temperature to greater than the LTOP enable temperature specified in the PTLR.	12 hours
		OR		
		F.2	Depressurize affected accumulator to less than the maximum RCS pressure for existing cold leg temperature allowed in the PTLR.	12 hours
G.	Two required PORVs inoperable for LCO 3.4.12.a.	G.1	Verify at least one charging pump is in the pull-stop position.	1 hour
	OR	AND		
	Required Action and associated Completion Time of Condition A, B, C, or F not met.	G.2	Depressurize RCS and establish RCS vent of ≥ 1.1 square inches.	8 hours
	OR			
	LTOP System inoperable for any reason other than Condition A, B, C, or E.			

SURVEILLANCE REQUIREMENTS

	SURVEILLANCE	FREQUENCY
SR 3.4.12.1	- NOTE - Only required to be performed when complying with LCO 3.4.12.a. Verify no 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 to be performed when complying with LCO 3.4.12.b. Verify a maximum of one SI pump is capable of injecting into the RCS.	In accordance with the Surveillance Frequency Control Program
SR 3.4.12.3	- NOTE - Only required to be performed when ECCS accumulator pressure is greater than or equal to the maximum RCS pressure for the existing RCS cold leg temperature allowed in the PTLR. Verify each ECCS accumulator motor operated isolation valve is closed.	Once within 12 hours and in accordance with the Surveillance Frequency Control Program
SR 3.4.12.4	- NOTE - Only required to be performed when complying with LCO 3.4.12.b. Verify RCS vent $\geq$ 1.1 square inches open.	In accordance with the Surveillance Frequency Control Program for unlocked open vent valve(s) AND In accordance with the Surveillance Frequency Control Program for locked open vent valve(s)

	SURVEILLANCE	FREQUENCY
SR 3.4.12.5	Verify PORV block valve is open for each required PORV.	In accordance with the Surveillance Frequency Control Program
SR 3.4.12.6	- NOTE - Required to be performed within 12 hours after decreasing RCS cold leg temperature to less than or equal to the LTOP enable temperature specified in the PTLR.	
	Perform a COT on each required PORV, excluding actuation.	In accordance with the Surveillance Frequency Control Program
SR 3.4.12.7	- NOTE - Only required to be performed when ECCS accumulator pressure is greater than or equal to the maximum RCS pressure for the existing RCS cold leg temperature allowed in the PTLR.	
	Verify power is removed from each ECCS accumulator motor operated isolation valve operator.	Once within 12 hours and in accordance with the Surveillance Frequency Control Program
SR 3.4.12.8	Perform CHANNEL CALIBRATION for each required PORV actuation channel.	In accordance with the Surveillance Frequency Control Program

3.4 REACTOR COOLANT SYSTEM (RCS)

3.4.13 RCS Operational LEAKAGE

LCO 3.4.13 RCS operational LEAKAGE shall be limited to:

a. No pressure boundary LEAKAGE;

b. 1 gpm unidentified LEAKAGE;

c. 10 gpm identified LEAKAGE; and

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

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

ACTIONS

CONDITION		REQUIRED ACTION		COMPLETION TIME
A.	Pressure boundary LEAKAGE exists.	A.1	Isolate affected component, pipe, or vessel from the RCS by use of a closed manual valve, closed and de-activated automatic valve, blind flange, or check valve.	4 hours
B.	RCS operational LEAKAGE not within limits for reasons other than pressure boundary LEAKAGE or primary to secondary LEAKAGE.	B.1	Reduce LEAKAGE to within limits.	4 hours
C.	Required Action and associated Completion Time not met. OR Primary to secondary LEAKAGE not within limit.	C.1 AND C.2	Be in MODE 3. Be in MODE 5.	6 hours 36 hours

SURVEILLANCE REQUIREMENTS

	SURVEILLANCE	FREQUENCY
SR 3.4.13.1	- NOTE - 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 ≤ 150 gallons per day through any one SG.	In accordance with the Surveillance Frequency Control Program

3.4 REACTOR COOLANT SYSTEM (RCS)

3.4.14 RCS Pressure Isolation Valve (PIV) Leakage

LCO 3.4.14 Leakage from each RCS PIV shall be within limit.

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

ACTIONS

- NOTE -

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 flowpaths 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 or SR 3.4.14.2 and be in the reactor coolant pressure boundary or the high pressure portion of the system.	
	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	

CONDITION		REQUIRED ACTION		COMPLETION TIME
		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 not met.	B.1 AND B.2	Be in MODE 3. Be in MODE 5.	6 hours 36 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.4.14.1	- NOTE - 1. Not required to be performed until prior to entering MODE 2 from MODE 3. 2. 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 SI cold leg injection line and each RHR RCS PIV is equivalent to ≤ 0.5 gpm per nominal inch of valve size up to a maximum of 5 gpm at an RCS pressure ≥ 2215 psig and ≤ 2255 psig.	In accordance with the Surveillance Frequency Control Program AND Within 24 hours following valve actuation due to automatic or manual action, flow through the valve, or maintenance on the valve

	SURVEILLANCE	FREQUENCY
SR 3.4.14.2	- NOTE - 1. Not required to be performed until prior to entering MODE 2 from MODE 3. 2. 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 SI hot leg injection line RCS PIV is equivalent to ≤ 0.5 gpm per nominal inch of valve size up to a maximum of 5 gpm at an RCS pressure ≥ 2215 psig and ≤ 2255 psig.	In accordance with the Surveillance Frequency Control Program AND Within 24 hours following valve actuation due to automatic or manual action, flow through the valve, or maintenance on 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 A monitor (level or pump actuation);

b. Gaseous containment atmosphere radioactivity monitor; and

c. Particulate containment atmosphere radioactivity monitor.

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

ACTIONS

CONDITION		REQUIRED ACTION		COMPLETION TIME
A.	Required containment sump monitor inoperable.	A.1.1	Perform SR 3.4.13.1.	Once per 24 hours
			OR	
		A.1.2	Verify containment air cooler condensate collection system is OPERABLE.	24 hours
		AND		
		A.2	Restore required containment sump monitor to OPERABLE status.	30 days
B.	Gaseous containment atmosphere radioactivity monitor inoperable.	B.1	Verify particulate containment atmosphere radiaoctivity monitor OPERABLE.	1 hour

CONDITION		REQUIRED ACTION		COMPLETION TIME
C.	Particulate containment atmosphere radioactivity monitor inoperable. OR Required Action and associated Completion Time of Condition B not met.	C.1 OR C.2	Analyze grab samples of the containment atmosphere. Perform SR 3.4.13.1.	Once within 12 hours and every 12 hours thereafter Once within 12 hours and every 12 hours thereafter
D.	Gaseous containment atmosphere radioactivity monitor inoperable. AND Particulate containment atmosphere radioactivity monitor inoperable.	D.1 OR D.2	Restore gaseous containment atmosphere radioactivity monitor to OPERABLE status. Restore particulate containment atmosphere radioactivity monitor to OPERABLE status.	30 days 30 days
E.	Required Action and associated Completion Time of Conditions A, C, or D not met.	E.1 AND E.2	Be in MODE 3. Be in MODE 5.	6 hours 36 hours
F.	All required monitors inoperable.	F.1	Enter LCO 3.0.3.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.4.15.1	Perform CHANNEL CHECK of containment atmosphere radioactivity monitors.	In accordance with the Surveillance Frequency Control Program
SR 3.4.15.2	Perform COT of containment atmosphere radioactivity monitors.	In accordance with the Surveillance Frequency Control Program
SR 3.4.15.3	Perform CHANNEL CALIBRATION of the required containment sump monitor.	In accordance with the Surveillance Frequency Control Program
SR 3.4.15.4	Perform CHANNEL CALIBRATION of containment atmosphere radioactivity monitors.	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 specific activity not within limit.	- NOTE – LCO 3.0.4.c is applicable.	
	A.1 Verify DOSE EQUIVALENT I-131 ≤ 60 μCi/gm.	Once per 8 hours
	AND	
	A.2 Restore DOSE EQUIVALENT I-131 to within limit.	7 days
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
C. Required Action and associated Completion Time of Condition A or B not met.	C.1 Be in MODE 3.	6 hours
OR	AND	
DOSE EQUIVALENT I-131 specific activity > 60 μCi/gm.	C.2 Be in MODE 5.	36 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.4.16.1	Verify reactor coolant DOSE EQUIVALENT XE-133 specific activity $\leq$ 650 μCi/gm.	In accordance with the Surveillance Frequency Control Program
SR 3.4.16.2	Verify reactor coolant DOSE EQUIVALENT I-131 specific activity $\leq$ 1.0 μCi/gm.	In accordance with the Surveillance Frequency Control Program AND Between 2 and 10 hours after a THERMAL POWER change of $\geq$ 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.	B.1	Be in MODE 3	6 hours
		AND		
		B.2	Be in MODE 5	36 hours
	OR			
	SG tube integrity not maintained.			

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 ECCS accumulators shall be OPERABLE.

APPLICABILITY: MODES 1 and 2,
MODE 3 with pressurizer pressure > 1600 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 AND C.2	Be in MODE 3. Reduce pressurizer pressure to ≤ 1600 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 motor operated 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 ≥ 1090 cubic feet (24%) and ≤ 1140 cubic feet (83%).	In accordance with the Surveillance Frequency Control Program

	SURVEILLANCE	FREQUENCY
SR 3.5.1.3	Verify nitrogen cover pressure in each accumulator is ≥ 700 psig and ≤ 790 psig.	In accordance with the Surveillance Frequency Control Program
SR 3.5.1.4	Verify boron concentration in each accumulator is ≥ 2550 ppm and ≤ 3050 ppm.	In accordance with the Surveillance Frequency Control Program (by inleakage monitoring) AND In accordance with the Surveillance Frequency Control Program (by sample)
SR 3.5.1.5	Verify power is removed from each accumulator motor operated isolation valve operator when pressurizer pressure is > 1600 psig.	In accordance with the Surveillance Frequency Control Program

3.5 EMERGENCY CORE COOLING SYSTEMS (ECCS)

3.5.2 ECCS - MODES 1, 2, and 3

LCO 3.5.2 Two ECCS trains shall be OPERABLE.

APPLICABILITY: MODES 1, 2, and 3.

- NOTE –

1. 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. Power may be restored to motor operated isolation valves 878B and 878D for up to 12 hours for the purpose of testing per SR 3.4.14.1 provided that power is restored to only one valve at a time.

2. Operation in MODE 3 with ECCS pumps declared inoperable pursuant to LCO 3.4.12, "Low Temperature Overpressure Protection (LTOP) System," is allowed for up to 4 hours or until the temperature of both RCS cold legs exceeds 375°F, whichever comes first.

ACTIONS

CONDITION		REQUIRED ACTION		COMPLETION TIME
A.	One train inoperable. AND At least 100% of the ECCS flow equivalent to a single OPERABLE ECCS train available.	A.1	Restore train to OPERABLE status.	72 hours OR ------NOTE------- Not applicable if there is a loss of function. ---------- 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 4.	6 hours 12 hours
C.	Two trains inoperable.	C.1	Enter LCO 3.0.3	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE				FREQUENCY
SR 3.5.2.1	Verify the following valves are in the listed position.			In accordance with the Surveillance Frequency Control Program
	Number	Position	Function	
	825A	Open	RWST Suction to SI Pumps	
	825B	Open	RWST Suction to SI Pumps	
	826A	Closed	BAST Suction to SI Pumps	
	826B	Closed	BAST Suction to SI Pumps	
	826C	Closed	BAST Suction to SI Pumps	
	826D	Closed	BAST Suction to SI Pumps	
	851A	Open	Sump B to RHR Pumps	
	851B	Open	Sump B to RHR Pumps	
	856	Open	RWST Suction to RHR Pumps	
	878A	Closed	SI Injection to RCS Hot Leg	
	878B	Open	SI Injection to RCS Cold Leg	
	878C	Closed	SI Injection to RCS Hot Leg	
	878D	Open	SI Injection to RCS Cold Leg	
	896A	Open	RWST Suction to SI and Containment Spray	
	896B	Open	RWST Suction to SI and Containment Spray	
SR 3.5.2.2	----------NOTE---------- Not required to be met for system vent flow paths opened under administrative control. ---------- 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

SURVEILLANCE		FREQUENCY
SR 3.5.2.3	Verify each breaker or key switch, as applicable, for each valve listed in SR 3.5.2.1, is in the correct position.	In accordance with the Surveillance Frequency Control Program
SR 3.5.2.4	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 3.5.2.5	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
SR 3.5.2.6	Verify each ECCS pump starts automatically on an actual or simulated actuation signal.	In accordance with the Surveillance Frequency Control Program
SR 3.5.2.7	Verify ECCS locations susceptible to gas accumulation are sufficiently filled with water.	In accordance with the Surveillance Frequency Control Program

3.5 EMERGENCY CORE COOLING SYSTEMS (ECCS)

3.5.3 ECCS - MODE 4

LCO 3.5.3 One ECCS train shall be OPERABLE.

APPLICABILITY: MODE 4.

ACTIONS

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 Safety Injection (SI) subsystem inoperable.	B.1	- NOTE - LCO 3.0.4.b is not applicable. 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	- 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.	
	SR 3.5.2.4 and SR 3.5.2.7 are applicable for all equipment required to be OPERABLE.	In accordance with applicable SR

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.	A.1	Restore RWST to OPERABLE status.	8 hours
B.	RWST water volume not within limits.	B.1	Restore RWST to OPERABLE status.	1 hour
C.	Required Action and associated Completion Time not met.	C.1 AND C.2	Be in MODE 3. Be in MODE 5.	6 hours 36 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.5.4.1	Verify RWST borated water volume is ≥ 300,000 gallons (88%).	In accordance with the Surveillance Frequency Control Program
SR 3.5.4.2	Verify RWST boron concentration is ≥ 2750 ppm and ≤ 3050 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 AND	Be in MODE 3.	6 hours
		B.2	Be in MODE 5.	36 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.6.1.1	- NOTE - SR 3.0.2 is not applicable. Perform required visual examinations and leakage rate testing except for containment air lock and containment mini-purge valve 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

- NOTE -

1. Entry and exit is permissible to perform repairs on the affected air lock components.
2. Separate Condition entry is allowed for each air lock.
3. Enter applicable Conditions and Required Actions of LCO 3.6.1, "Containment," when air lock leakage results in exceeding the overall containment leakage rate acceptance criteria.

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

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

CONDITION		REQUIRED ACTION		COMPLETION TIME
		B.3	- - - - - - - - - - - - - - - - - - - NOTE - Air lock doors in high radiation areas may be verified locked closed by administrative means. - - - - - - - - - - - - - - - - - - Verify an OPERABLE door is locked closed in the affected air lock.	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 door is closed in the affected air lock.	1 hour
		AND		
		C.3	Restore air lock to OPERABLE status.	24 hours OR ------NOTE------- Not applicable if there is a loss of function. ---------- In accordance with the Risk Informed Completion Time Program
D.	Required Action and associated Completion Time not met.	D.1	Be in MODE 3.	6 hours
		AND		
		D.2	Be in MODE 5.	36 hours

SURVEILLANCE REQUIREMENTS

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

LCO 3.6.3 Each containment isolation boundary shall be OPERABLE.

- NOTE -

1. Not applicable to the main steam safety valves in MODES 1, 2, and 3.

2. Not applicable to the main steam isolation valves (MSIVs) in MODE 1, and in MODES 2 and 3 with the MSIVs open or not deactivated.

3. Not applicable to the atmospheric relief valves in MODES 1 and 2, and in MODE 3 with the Reactor Coolant System average temperature (T_{avg}) ≥ 500°F.

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

ACTIONS

- NOTE -

1. Penetration flow path(s), except for Shutdown Purge System valve 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 boundaries.

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

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. - NOTE - Only applicable to penetration flow paths which do not use a closed system as a containment isolation boundary. One or more penetration flow paths with one containment isolation boundary inoperable except for mini-purge valve leakage not within limit.	A.1 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. AND A.2 - NOTE - Isolation boundaries in high radiation areas may be verified by use of administrative means. Verify the affected penetration flow path is isolated.	4 hours OR In accordance with the Risk Informed Completion Time Program Once per 31 days following isolation for isolation boundaries outside containment AND Prior to entering MODE 4 from MODE 5 if not performed within the previous 92 days for isolation boundaries inside containment.

CONDITION	REQUIRED ACTION	COMPLETION TIME
B. - NOTE - Only applicable to penetration flow paths which do not use a closed system as a containment isolation boundary. One or more penetration flow paths with two containment isolation boundaries inoperable except for mini-purge valve leakage not within limit.	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
C. - NOTE - Only applicable to penetration flow paths which use a closed system as a containment isolation boundary. One or more penetration flow paths with one containment isolation boundary 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. AND	72 hours OR In accordance with the Risk Informed Completion Time Program

CONDITION	REQUIRED ACTION	COMPLETION TIME
	C.2 - - - - - - - - - - - - - - - - - - - NOTE - Isolation boundaries in high radiation areas may be verified by use of administrative means. - - - - - - - - - - - - - - - - - - Verify the affected penetration flow path is isolated.	Once per 31 days following isolation for isolation boundaries outside containment AND Prior to entering MODE 4 from MODE 5 if not performed within the previous 92 days for isolation boundaries inside containment
D. One or more mini-purge penetration flow paths with one valve not within leakage limits.	D.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. AND	24 hours

CONDITION	REQUIRED ACTION	COMPLETION TIME
	D.2 - - - - - - - - - - - - - - - - - - - NOTE - Isolation boundaries in high radiation areas may be verified by use of administrative means. - - - - - - - - - - - - - - - - - - Verify the affected penetration flow path is isolated.	Once per 31 days for isolation boundaries outside containment AND Prior to entering MODE 4 from MODE 5 if not performed within the previous 92 days for isolation boundaries inside containment
E. One or more mini-purge penetration flow paths with two valves not within leakage limits.	E.1 Initiate action to evaluate overall containment leakage rate per LCO 3.6.1. AND E.2 Isolate the affected penetration flow path by use of at least one closed and de-activated automatic valve, closed manual valve, or blind flange.	Immediately 1 hour OR -------NOTE------- Not applicable if there is a loss of function. ---------- In accordance with the Risk Informed Completion Time Program
F. Required Action and associated Completion Time not met.	F.1 Be in MODE 3. AND F.2 Be in MODE 5.	6 hours 36 hours

SURVEILLANCE REQUIREMENTS

	SURVEILLANCE	FREQUENCY
SR 3.6.3.1	Verify each mini-purge valve is closed, except when the penetration flowpath(s) are permitted to be open under administrative control.	In accordance with the Surveillance Frequency Control Program
SR 3.6.3.2	- NOTE - 1. Isolation boundaries in high radiation areas may be verified by use of administrative controls. 2. Not applicable to containment isolation boundaries which receive an automatic containment isolation signal. Verify each containment isolation boundary that is located outside containment and not locked, sealed, or otherwise secured in the required position is performing its containment isolation accident function except for containment isolation boundaries that are open under administrative controls.	In accordance with the Surveillance Frequency Control Program
SR 3.6.3.3	- NOTE - 1. Isolation boundaries in high radiation areas may be verified by use of administrative means. 2. Not applicable to containment isolation boundaries which receive an automatic containment isolation signal. Verify each containment isolation boundary that is located inside containment and not locked, sealed, or otherwise secured in the required position is performing its containment isolation accident function, except for containment isolation boundaries 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 containment isolation valve is within limits.	In accordance with the INSERVICE TESTING PROGRAM
SR 3.6.3.5	Perform required leakage rate testing of containment mini-purge valves with resilient seals in accordance with the Containment Leakage Rate Testing Program.	In accordance with the Containment Leakage Rate Program.

SURVEILLANCE		FREQUENCY
SR 3.6.3.6	Verify each automatic containment isolation valve that is not locked, sealed, or otherwise secured in the required 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 $\geq$ -2.0 psig and $\leq$ 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.	8 hours
B.	Required Action and associated Completion Time not met.	B.1 AND	Be in MODE 3.	6 hours
		B.2	Be in MODE 5.	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 ≤ 125°F.

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.	24 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

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 (CS), Containment Recirculation Fan Cooler (CRFC), and NaOH Systems

LCO 3.6.6 Two CS trains, four CRFC units, and the NaOH system shall be OPERABLE.

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- NOTE -

In MODE 4, both CS pumps may be in pull-stop for up to 2 hours for the performance of interlock and valve testing of motor operated valves (MOVs) 857A, 857B, and 857C. Power may also be restored to MOVs 896A and 896B, and the valves placed in the closed position, for up to 2 hours for the purpose of each test.

- -

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

ACTIONS

CONDITION		REQUIRED ACTION		COMPLETION TIME
A.	One CS train inoperable.	A.1	Restore CS train to OPERABLE status. OR --------NOTE-------- Not applicable if there is a loss of function. ---------- In accordance with the Risk Informed Completion Time Program	72 hours
B.	NaOH system inoperable.	B.1	Restore NaOH System to OPERABLE status.	72 hours
C.	Required Action and associated Completion Time of Condition A or B not met.	C.1 AND C.2	Be in MODE 3. Be in MODE 5.	6 hours 84 hours

CONDITION		REQUIRED ACTION		COMPLETION TIME
D.	One or two CRFC units inoperable.	D.1	Restore CRFC unit(s) to OPERABLE status.	7 days OR --------NOTE-------- Not applicable if there is a loss of function. ---------- In accordance with the Risk Informed Completion Time Program
E.	Required Action and associated Completion Time of Condition D not met.	E.1	Be in MODE 3.	6 hours
			AND	
		E.2	Be in MODE 5.	36 hours
F.	Two CS trains inoperable. OR Three or more CRFC units inoperable.	F.1	Enter LCO 3.0.3.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.6.6.1	Perform SR 3.5.2.1 and SR 3.5.2.3 for valves 896A and 896B.	In accordance with applicable SRs.
SR 3.6.6.2	- - - - - - - - - - - - - - - - - -NOTE- - - - - - - - - - - - - - - - - Not required to be met for system vent flow paths opened under administrative control. - Verify each CS 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 3.6.6.3	Verify each NaOH System manual, power operated, and automatic valve in the flow path that is not locked, sealed, or otherwise secured in position is in the correct position.	In accordance with the Surveillance Frequency Control Program

SURVEILLANCE		FREQUENCY
SR 3.6.6.4	Operate each CRFC unit for ≥ 15 minutes.	In accordance with the Surveillance Frequency Control Program
SR 3.6.6.5	Verify cooling water flow through each CRFC unit.	In accordance with the Surveillance Frequency Control Program
SR 3.6.6.6	Verify each CS 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 3.6.6.7	Verify NaOH System solution volume is ≥ 3000 gal.	In accordance with the Surveillance Frequency Control Program
SR 3.6.6.8	Verify NaOH System tank NaOH solution concentration is ≥ 30% and ≤ 35% by weight.	In accordance with the Surveillance Frequency Control Program
SR 3.6.6.9	Perform required CRFC unit testing in accordance with the VFTP.	In accordance with the VFTP
SR 3.6.6.10	Verify each automatic CS 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 3.6.6.11	Verify each CS pump starts automatically on an actual or simulated actuation signal.	In accordance with the Surveillance Frequency Control Program
SR 3.6.6.12	Verify each CRFC unit starts automatically on an actual or simulated actuation signal.	In accordance with the Surveillance Frequency Control Program
SR 3.6.6.13	Verify each automatic NaOH System 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

	SURVEILLANCE	FREQUENCY
SR 3.6.6.14	Verify spray additive flow through each eductor path.	In accordance with the Surveillance Frequency Control Program
SR 3.6.6.15	Verify each spray nozzle is unobstructed.	Following maintenance which could result in nozzle blockage
SR 3.6.6.16	Verify CS 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 Containment Sump

LCO 3.6.7 The containment sump shall be OPERABLE.

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

ACTIONS

CONDITION	REQUIRED ACTION		COMPLETION TIME
A. Containment sump inoperable due to containment accident generated and transported debris exceeding the analyzed limits.	A.1	Initiate action to mitigate containment accident generated and transported debris.	Immediately
	AND		
	A.2	Perform SR 3.4.13.1.	Once per 24 hours
	AND		
	A.3	Restore the containment sump to OPERABLE status.	90 days

ACTIONS (continued)

CONDITION	REQUIRED ACTION		COMPLETION TIME
B. Containment sump inoperable for reasons other than Condition A.	B.1	----------NOTES---------- 1. Enter applicable Conditions and Required Actions of LCO 3.5.2, "ECCS – MODES 1, 2, and 3," and LCO 3.5.3, "ECCS – MODE 4," for emergency core cooling trains made inoperable by the containment sump. ---------- Restore the containment sump to OPERABLE status.	72 hours
C. Required Action and associated Completion Time not met.	C.1 <u>AND</u> C.2	Be in MODE 3. Be in MODE 5.	6 hours 36 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.6.7.1	Verify, by visual inspection, the containment sump does not show structural damage, abnormal corrosion, or debris blockage.	In accordance with the Surveillance Frequency Control Program

3.7 PLANT SYSTEMS

3.7.1 Main Steam Safety Valves (MSSVs)

LCO 3.7.1 Eight MSSVs 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 MSSVs inoperable.	A.1	Restore inoperable MSSV(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

SURVEILLANCE REQUIREMENTS

SURVEILLANCE				FREQUENCY
SR 3.7.1.1	- NOTE - Only required to be performed in MODES 1 and 2.			
	Verify each MSSV lift setpoint specified below in accordance with the INSERVICE TESTING PROGRAM. Following testing, lift settings shall be within ± 1%.			In accordance with the INSERVICE TESTING PROGRAM
	VALVE NUMBER		LIFT SETTING	
	SG A	SG B		
	3509	3508	1140 (psig + 1.4%, -4%)	
	3511	3510	1140 (psig + 1.4%, -4%)	
	3515	3512	1140 (psig + 1.4%, -4%)	
	3513	3514	1085 (psig + 1%, -3%)	

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: MODE 1,
MODES 2 and 3 except when all MSIVs are closed and de-activated.

ACTIONS

CONDITION		REQUIRED ACTION		COMPLETION TIME
A.	One or more valves inoperable in flowpath from a steam generator (SG) in MODE 1.	A.1	Restore valve(s) to OPERABLE status. OR -------NOTE------- Not applicable if there is a loss of function. ---------- In accordance with the Risk Informed Completion Time Program	8 hours
B.	Required Action and associated Completion Time of Condition A not met.	B.1	Be in MODE 2.	6 hours
C.	One or more valves inoperable in flowpath from a SG in MODE 2 or 3.	C.1 AND C.2	Close MSIV. Verify MSIV is closed.	8 hours Once per 7 days
D.	Required Action and Associated Completion Time of Condition C not met.	D.1 AND D.2	Be in MODE 3. Be in MODE 4.	6 hours 12 hours
E.	One or more valves inoperable in flowpath from each SG.	E.1	Enter LCO 3.0.3.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.7.2.1	Verify closure time of each MSIV is ≤ 5 seconds under no flow and no load conditions.	In accordance with the INSERVICE TESTING PROGRAM
SR 3.7.2.2	Verify each main steam non-return check valve can close.	In accordance with the INSERVICE TESTING PROGRAM
SR 3.7.2.3	Verify each MSIV can close on an actual or simulated actuation signal.	In accordance with the Surveillance Frequency Control Program

3.7 PLANT SYSTEMS

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

LCO 3.7.3 Two MFIVs, two MFRVs, and associated bypass valves shall be OPERABLE.

APPLICABILITY: MODES 1, 2, and 3 except when both steam generators are isolated from both main feedwater pumps.

ACTIONS

- NOTE -

Separate Condition entry is allowed for each valve.

CONDITION		REQUIRED ACTION		COMPLETION TIME
A.	One or more MFIV(s) inoperable.	A.1	Close or isolate MFIV(s).	72 hours
		AND		
		A.2	Verify MFIV(s) is closed or isolated.	Once per 7 days
B.	One or more MFRV(s) inoperable.	B.1	Close or isolate MFRV(s).	72 hours
		AND		
		B.2	Verify MFRV(s) is closed or isolated.	Once per 7 days
C.	One or more MFRV bypass valve(s) inoperable.	C.1	Close or isolate MFRV bypass valve(s).	72 hours
		AND		
		C.2	Verify MFRV bypass valve(s) is closed or isolated.	Once per 7 days
D.	Two valves in same flowpath inoperable.	D.1	Isolate affected flowpath	8 hours

CONDITION	REQUIRED ACTION	COMPLETION TIME
E. Required Action and associated Completion Time not met.	E.1 Be in MODE 3. AND E.2 Be in MODE 4.	6 hours 12 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.7.3.1	Verify the closure time of each MFIV is ≤ 30 seconds on an actual or simulated actuation signal.	In accordance with the INSERVICE TESTING PROGRAM
SR 3.7.3.2	Verify the closure time of each MFRV and associated bypass valve is ≤ 10 seconds on an actual or simulated actuation signal.	In accordance with the INSERVICE TESTING PROGRAM

3.7 PLANT SYSTEMS

3.7.4 Atmospheric Relief Valves (ARVs)

LCO 3.7.4 Two ARV lines shall be OPERABLE.

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

ACTIONS

CONDITION		REQUIRED ACTION		COMPLETION TIME
A.	One ARV line inoperable.	A.1	Restore ARV line to OPERABLE status.	7 days
B.	Required Action and associated Completion Time of Condition A not met.	B.1	Be in MODE 3 with T_{avg} < 500°F.	8 hours
C.	Two ARV lines inoperable.	C.1	Enter LCO 3.0.3.	Immediately

SURVEILLANCE REQUIREMENTS

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

3.7 PLANT SYSTEMS

3.7.5 Auxiliary Feedwater (AFW) System

LCO 3.7.5 Two motor driven AFW (MDAFW) trains, one turbine driven AFW (TDAFW) train, and two standby AFW (SAFW) trains shall be OPERABLE.

APPLICABILITY: MODES 1, 2, and 3.

ACTIONS

CONDITION		REQUIRED ACTION		COMPLETION TIME
A.	One TDAFW train flowpath inoperable.	A.1	Restore TDAFW train flowpath to OPERABLE status.	7 days OR In accordance with the Risk Informed Completion Time Program
B.	One MDAFW train inoperable.	B.1	Restore MDAFW train to OPERABLE status.	7 days OR In accordance with the Risk Informed Completion Time Program
C.	TDAFW train inoperable. OR Two MDAFW trains inoperable. OR One TDAFW train flowpath and one MDAFW train inoperable to opposite steam generators (SGs).	C.1	- - - - - - - - - - - - - - - - - - - NOTE - LCO 3.0.4.b is not applicable. - - - - - - - - - - - - - - - - - - Restore one MDAFW train or TDAFW train flowpath to OPERABLE status.	72 hours OR In accordance with the Risk Informed Completion Time Program

CONDITION		REQUIRED ACTION		COMPLETION TIME
D.	All MD and TD (preferred) AFW trains to one or more SGs inoperable.	D.1	- - - - - - - - - - - - - - - - - - - NOTE - LCO 3.0.4.b is not applicable. - - - - - - - - - - - - - - - - - - Restore one MDAFW train or TDAFW flowpath to each affected SG to OPERABLE status.	4 hours OR --------NOTE-------- Not applicable if there is a loss of function. ---------- In accordance with the Risk Informed Completion Time Program
E.	One SAFW train inoperable.	E.1	Restore SAFW train to OPERABLE status.	14 days OR In accordance with the Risk Informed Completion Time Program
F.	Both SAFW trains inoperable.	F.1	Restore one SAFW train to OPERABLE status.	7 days
G.	Required Action and associated Completion Time for Condition A, B, C, D, E, or F not met.	G.1 AND G.2	Be in MODE 3. Be in MODE 4.	6 hours 12 hours

CONDITION	REQUIRED ACTION	COMPLETION TIME
H. Three AFW trains and both SAFW trains inoperable.	H.1 - - - - - - - - - - - - - - - - - - - NOTE - LCO 3.0.3 and all other LCO Required Actions requiring MODE changes are suspended until one MDAFW, TDAFW, or SAFW train is restored to OPERABLE status. - - - - - - - - - - - - - - - - - - Initiate action to restore one MDAFW, TDAFW, or SAFW train to OPERABLE status.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.7.5.1	Verify each AFW and SAFW manual, power operated, and automatic valve in each water flow path, and in both steam supply flow paths to the turbine driven pump, that is not locked, sealed, or otherwise secured in position, is in the correct position.	In accordance with the Surveillance Frequency Control Program
SR 3.7.5.2	- NOTE - Required to be met prior to entering MODE 1 for the TDAFW pump. Verify the developed head of each 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	Verify the developed head of each SAFW pump at the flow test point is greater than or equal to the required developed head.	In accordance with the INSERVICE TESTING PROGRAM
SR 3.7.5.4	Perform a complete cycle of each AFW and SAFW motor operated suction valve from the Service Water System, each AFW and SAFW discharge motor operated isolation valve, and each SAFW cross-tie motor operated valve.	In accordance with the INSERVICE TESTING PROGRAM
SR 3.7.5.5	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
SR 3.7.5.6	- NOTE - Required to be met prior to entering MODE 1 for the TDAFW pump. Verify each AFW pump starts automatically on an actual or simulated actuation signal.	In accordance with the Surveillance Frequency Control Program
SR 3.7.5.7	Verify each SAFW train can be actuated and controlled from the control room.	In accordance with the Surveillance Frequency Control Program

3.7 PLANT SYSTEMS

3.7.6 Condensate Storage Tanks (CSTs)

LCO 3.7.6 The CSTs shall be OPERABLE.

APPLICABILITY: MODES 1, 2, and 3.

ACTIONS

CONDITION		REQUIRED ACTION		COMPLETION TIME
A.	CST water volume not within limit.	A.1	Verify by administrative means OPERABILITY of backup water supply.	4 hours
		AND		
		A.2	Restore CST water volume to within limit.	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.	12 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.7.6.1	Verify the CST water volume is $\geq$ 24,350 gal.	In accordance with the Surveillance Frequency Control Program

3.7 PLANT SYSTEMS

3.7.7 Component Cooling Water (CCW) System

LCO 3.7.7 Two CCW trains, two CCW heat exchangers, and the CCW loop header shall be OPERABLE.

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

ACTIONS

CONDITION		REQUIRED ACTION		COMPLETION TIME
A.	One CCW train inoperable.	A.1	Restore CCW train to OPERABLE status.	72 hours OR In accordance with the Risk Informed Completion Time Program
B.	One CCW heat exchanger inoperable.	B.1	Restore CCW heat exchanger to OPERABLE status.	31 days
C.	Required Action and associated Completion Time of Condition A or B not met.	C.1 AND C.2	Be in MODE 3. Be in MODE 5.	6 hours 36 hours

CONDITION	REQUIRED ACTION	COMPLETION TIME
D. Two CCW trains, two CCW heat exchangers, or loop header inoperable.	- - - - - - - - - - - - - - - - - - - NOTE - LCO 3.0.3 and all other LCO Required Actions requiring MODE changes are suspended until one CCW train, one CCW heat exchanger, and the loop header are restored to OPERABLE status. - - - - - - - - - - - - - - - - - -	
	D.1 Initiate Action to restore one CCW train, one heat exchanger, and loop header to OPERABLE status.	Immediately
	AND	6 hours
	D.2 Be in MODE 3.	
	AND	12 hours
	D.3 Be in MODE 4.	

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.7.7.1	- NOTE - Isolation of CCW flow to individual components does not render the CCW loop header inoperable. -	
	Verify each CCW manual and power operated valve in the CCW train and heat exchanger flow path and loop header that is not locked, sealed, or otherwise secured in position, is in the correct position.	In accordance with the Surveillance Frequency Control Program
SR 3.7.7.2	Perform a complete cycle of each motor operated isolation valve to the residual heat removal heat exchangers.	In accordance with the INSERVICE TESTING PROGRAM

3.7 PLANT SYSTEMS

3.7.8 Service Water (SW) System

LCO 3.7.8 Four SW pumps and the SW loop header shall be OPERABLE.

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

ACTIONS

CONDITION		REQUIRED ACTION		COMPLETION TIME
A.	One SW pump inoperable.	A.1	Restore SW pump to OPERABLE status. OR In accordance with the Risk Informed Completion Time Program	14 days
B.	Two SW pumps inoperable.	B.1	Restore SW pump(s) to OPERABLE status. OR In accordance with the Risk Informed Completion Time Program	72 hours
C.	Required Action and associated Completion Time of Condition A or B not met.	C.1 AND C.2	Be in MODE 3. Be in MODE 5.	6 hours 36 hours
D.	Three or more SW pumps or loop header inoperable.	D.1	- - - - - - - - - - - - - - - - - - - NOTE - Enter applicable conditions and Required Actions of LCO 3.7.7, "CCW System," for the component cooling water heat exchanger(s) made inoperable by SW. - - - - - - - - - - - - - - - - - - Enter LCO 3.0.3.	 Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.7.8.1	Verify screenhouse bay water level and temperature are within limits.	In accordance with the Surveillance Frequency Control Program
SR 3.7.8.2	- NOTE - Isolation of SW flow to individual components does not render the SW loop header inoperable. Verify each SW manual, power operated, and automatic valve in the SW flow path and loop header that is not locked, sealed, or otherwise secured in position, is in the correct position.	In accordance with the Surveillance Frequency Control Program
SR 3.7.8.3	Verify all SW loop header cross-tie valves are locked in the correct position.	In accordance with the Surveillance Frequency Control Program
SR 3.7.8.4	Verify each SW automatic valve in the flow path that is not locked, sealed, or otherwise secured in position, actuates to the correct position on an actual or simulated actuation signal.	In accordance with the Surveillance Frequency Control Program
SR 3.7.8.5	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 Air Treatment System (CREATS)

LCO 3.7.9 Two CREATS Trains shall be OPERABLE.

- NOTE -

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

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

ACTIONS

CONDITION		REQUIRED ACTION		COMPLETION TIME
A.	One CREATS train inoperable for reasons other than Condition B.	A.1	Restore CREATS train to OPERABLE status.	7 days
B.	One or more CREATS trains inoperable due to inoperable CRE boundary in MODE 1, 2, 3, or 4.	B.1	Initiate action to implement mitigating actions.	Immediately
		AND		
		B.2	Verify mitigating actions ensure CRE occupant exposures to radiological, chemical, and smoke hazards will not exceed limits.	24 hours
		AND		
		B.3	Restore CRE boundary to OPERABLE status.	90 days
C.	Required Action and associated Completion Time of Condition A or B not met in MODE 1, 2, 3, or 4.	C.1	Be in MODE 3.	6 hours
		AND		
		C.2	Be in MODE 5.	36 hours

CONDITION		REQUIRED ACTION		COMPLETION TIME
D.	Required Action and associated Completion Time of Condition A not met during movement of irradiated fuel assemblies.	D.1	Place OPERABLE CREATS train in emergency mode. OR	Immediately
		D.2	Suspend movement of irradiated fuel assemblies.	Immediately
E.	Two CREATS trains inoperable during movement of irradiated fuel assemblies. OR One or more CREATS trains inoperable due to an inoperable CRE boundary during movement of irradiated fuel assemblies.	E.1	Suspend movement of irradiated fuel assemblies.	Immediately
F.	Two CREATS trains inoperable in MODE 1, 2, 3, or 4 for reasons other than Condition B.	F.1	Enter LCO 3.0.3.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.7.9.1	Operate each CREATS filtration train ≥ 15 minutes.	In accordance with the Surveillance Frequency Control Program
SR 3.7.9.2	Perform required CREATS filter testing in accordance with the Ventilation Filter Testing Program (VFTP).	In accordance with the VFTP
SR 3.7.9.3	Verify each CREATS train actuates on an actual or simulated actuation signal, except for dampers and valves that are locked, sealed, or otherwise secured in the actuated position.	In accordance with the Surveillance Frequency Control Program

SURVEILLANCE		FREQUENCY
SR 3.7.9.4	Perform required CRE unfiltered air inleakage testing in accordance with the Control Room Envelope Habitability Program	In accordance with the Control Room Envelope Habitability Program

3.7 PLANT SYSTEMS

3.7.10 Auxiliary Building Ventilation System (ABVS)

LCO 3.7.10 The ABVS shall be OPERABLE and in operation.

APPLICABILITY: During movement of irradiated fuel assemblies in the Auxiliary Building when one or more fuel assemblies in the Auxiliary Building has decayed < 60 days since being irradiated.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. ABVS inoperable.	A.1 - - - - - - - - - - - - - - - - - - - NOTE - LCO 3.0.3 is not applicable. - - - - - - - - - - - - - - - - - - Suspend movement of irradiated fuel assemblies in the Auxiliary Building.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.7.10.1	Verify ABVS is in operation.	In accordance with the Surveillance Frequency Control Program
SR 3.7.10.2	Verify ABVS maintains a negative pressure with respect to the outside environment at the Auxiliary Building operating floor level.	In accordance with the Surveillance Frequency Control Program

3.7 PLANT SYSTEMS

3.7.11 Spent Fuel Pool (SFP) Water Level

LCO 3.7.11 The SFP 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 SFP.

ACTIONS

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

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.7.11.1	Verify the SFP 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

3.7.12 Spent Fuel Pool (SFP) Boron Concentration

LCO 3.7.12 The SFP boron concentration shall be ≥ 2300 ppm.

APPLICABILITY: Whenever any fuel assembly is stored in the SFP.

ACTIONS

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

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.7.12.1	Verify the SFP pool boron concentration is within limit.	In accordance with the Surveillance Frequency Control Program

3.7 PLANT SYSTEMS

3.7.13 Spent Fuel Pool (SFP) Storage

LCO 3.7.13 The combination of initial enrichment and burnup values, with appropriate decay times, of each fuel assembly stored in the spent fuel pool shall be within the acceptable burnup domain of the applicable Figures 3.7.13-1 through 3.7.13-11, based on region and cell type.

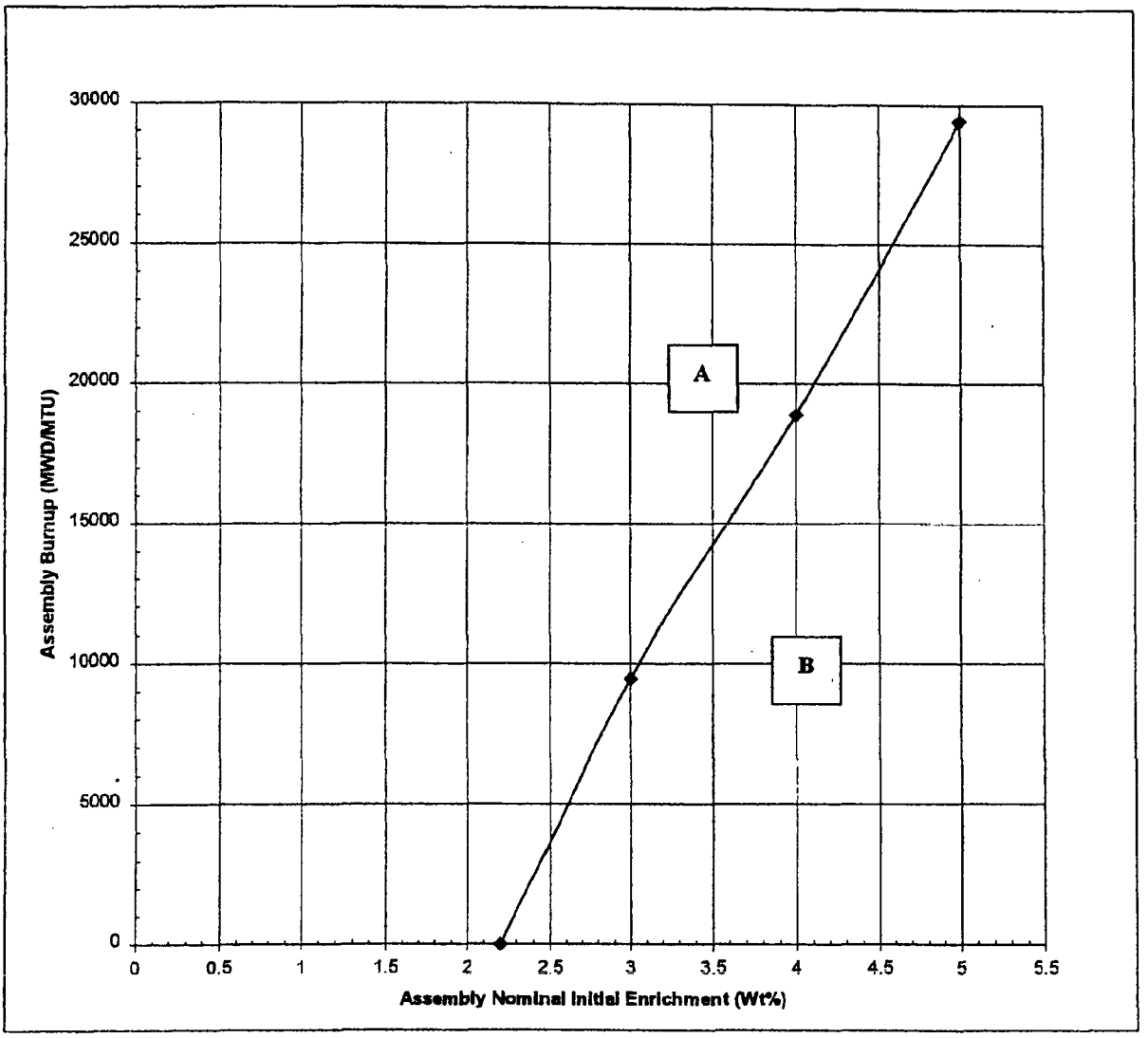
APPLICABILITY: Whenever any fuel assembly is stored in the spent fuel pool.

ACTIONS

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

SURVEILLANCE REQUIREMENTS

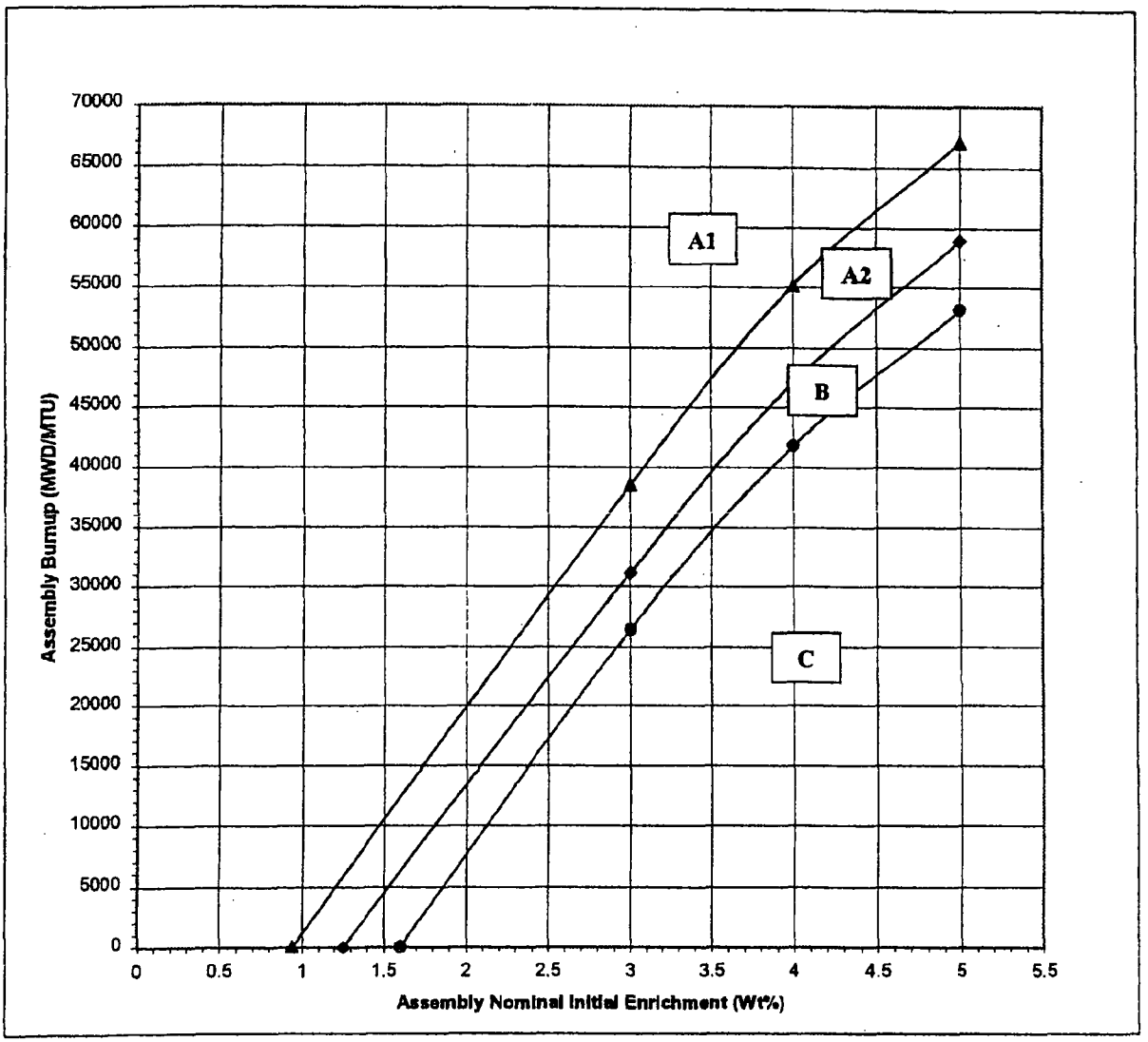
SURVEILLANCE		FREQUENCY
SR 3.7.13.1	Verify by administrative means the initial enrichment, burnup, and decay time of the fuel assembly is in accordance with the applicable Figures 3.7.13-1 through 3.7.13-11.	Prior to storing, or moving, the fuel assembly in the spent fuel pool



A Acceptable burnup domain for storage in any location within Region 1

B Acceptable burnup domain for storage in cells with lead-in funnels only

Figure 3.7.13-1
Burnup Vs Enrichment Curve for Region 1 Type 3 Cells (Not Pu-241 Decay Dependent)



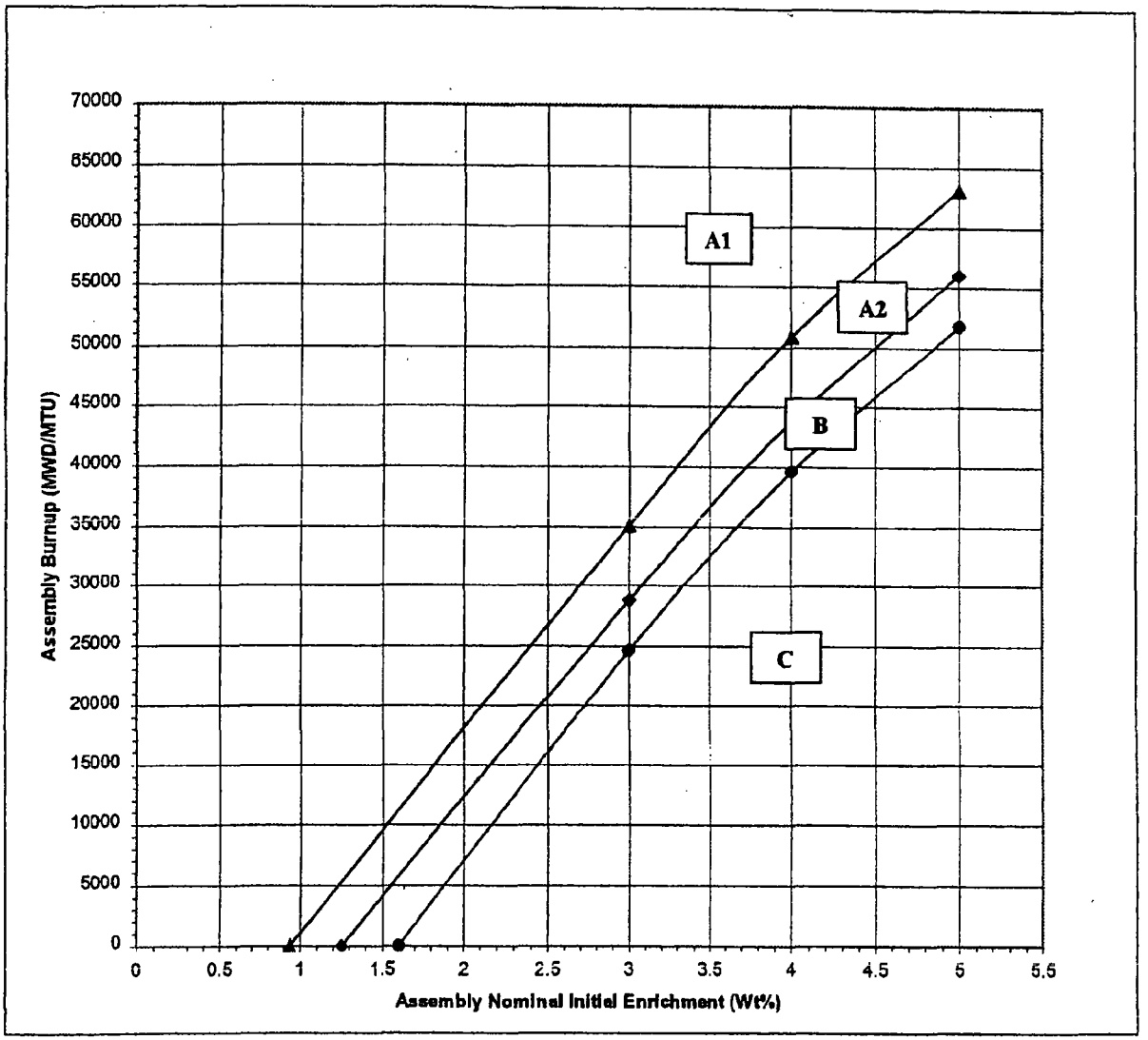
A1 Acceptable burnup domain for storage in any location within Region 2 Type 1 Cells

A2 Acceptable burnup domain for storage face-adjacent to a Type A1 or A2 assembly, or a water cell within Region 2 Type 1 Cells

B Acceptable burnup domain for storage face-adjacent to a Type A1 assembly, or a water cell within Region 2 Type 1 Cells

C Acceptable burnup domain for storage face-adjacent to a water cell only, within Region 2 Type 1 Cells

Figure 3.7.13-2
Burnup Vs Enrichment Curves for Region 2 Type 1 Cells (No Pu-241 Decay)



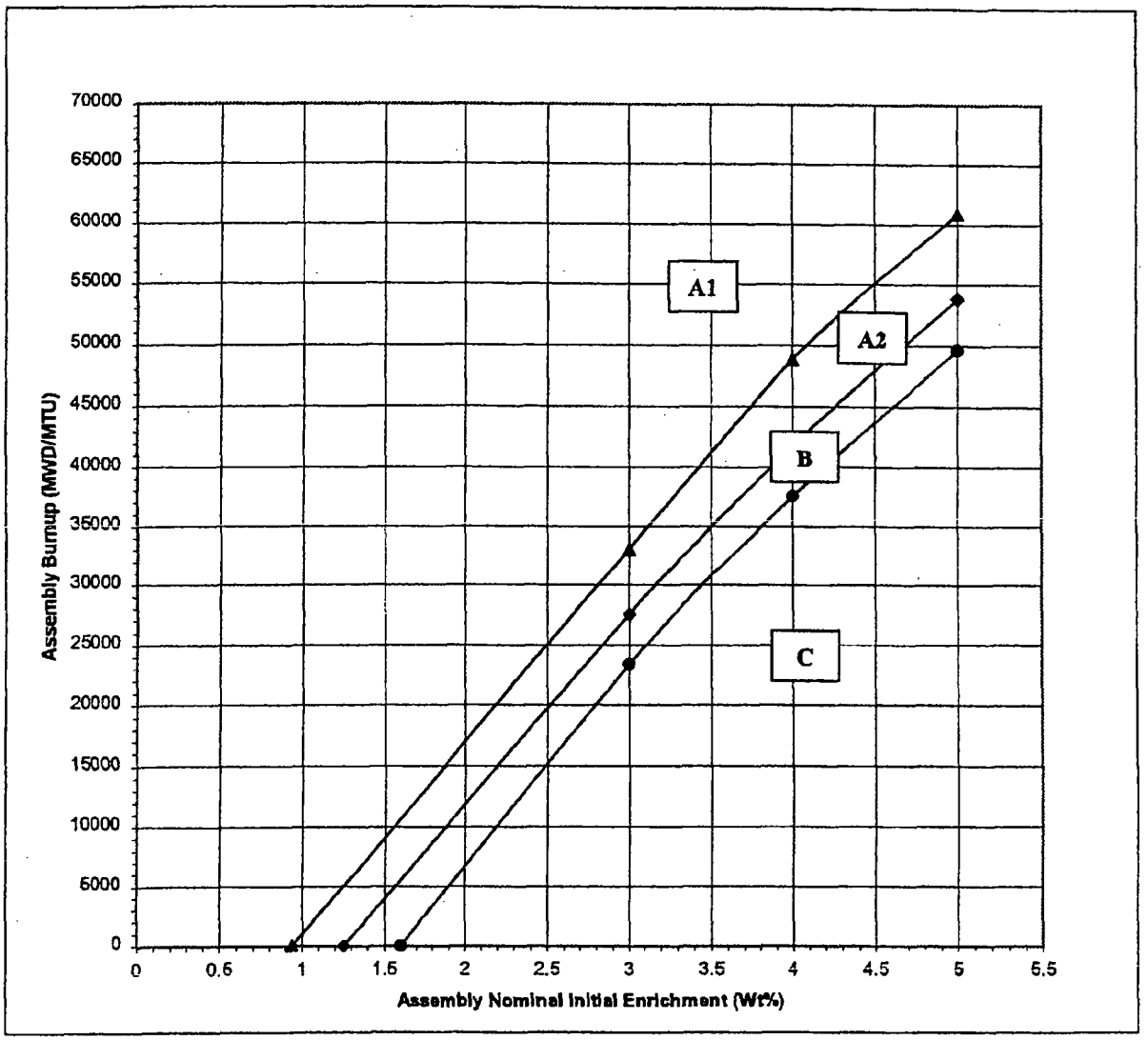
A1 Acceptable burnup domain for storage in any location within Region 2 Type 1 Cells

A2 Acceptable burnup domain for storage face-adjacent to a Type A1 or A2 assembly, or a water cell within Region 2 Type 1 Cells

B Acceptable burnup domain for storage face-adjacent to a Type A1 assembly, or a water cell within Region 2 Type 1 Cells

C Acceptable burnup domain for storage face-adjacent to a water cell only, within Region 2 Type 1 Cells

Figure 3.7.13-3
Burnup Vs Enrichment Curves for Region 2 Type 1 Cells (5-Year Pu-241 Decay)



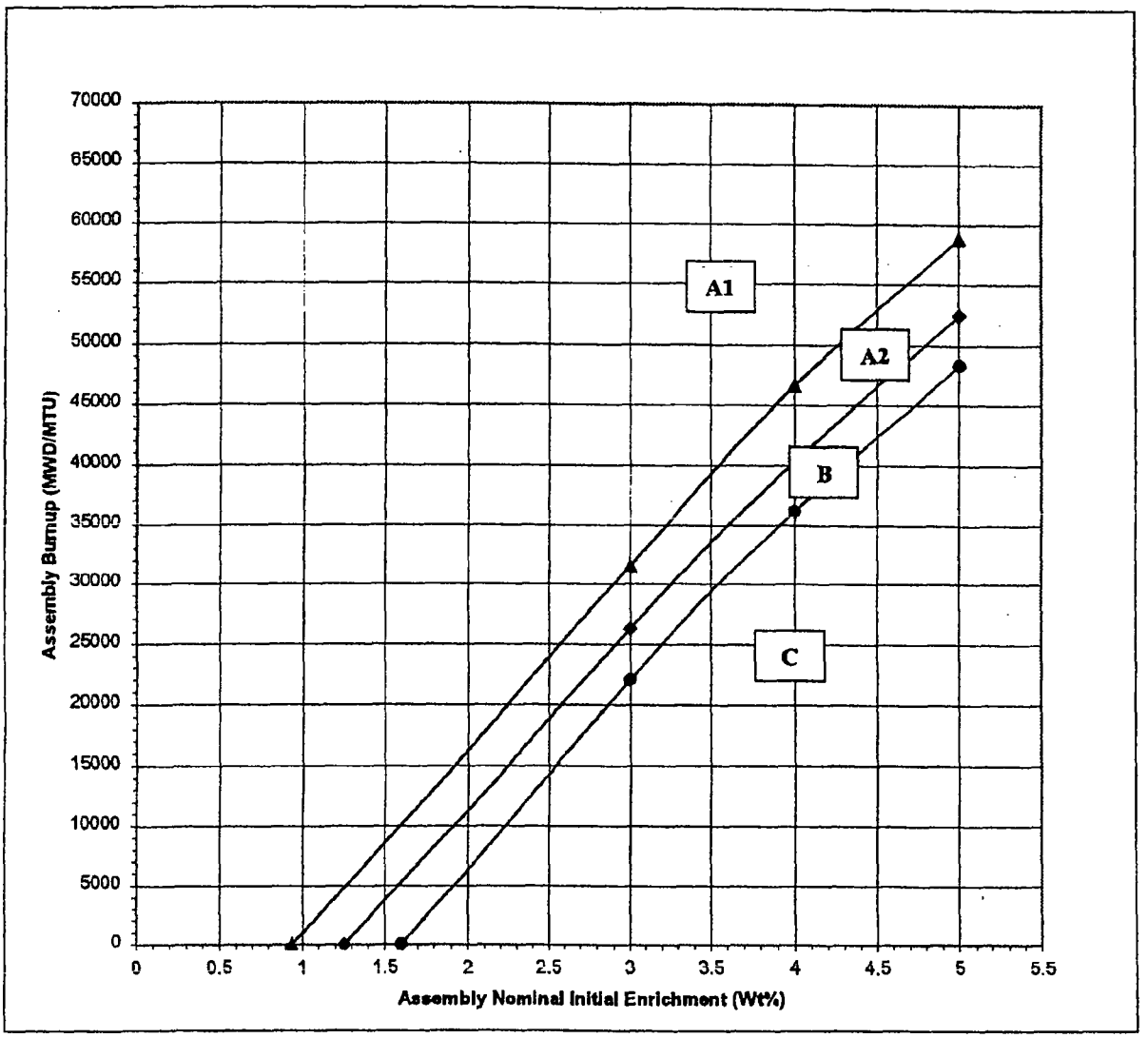
A1 Acceptable burnup domain for storage in any location within Region 2 Type 1 Cells

A2 Acceptable burnup domain for storage face-adjacent to a Type A1 or A2 assembly, or a water cell within Region 2 Type 1 Cells

B Acceptable burnup domain for storage face-adjacent to a Type A1 assembly, or a water cell within Region 2 Type 1 Cells

C Acceptable burnup domain for storage face-adjacent to a water cell only, within Region 2 Type 1 Cells

Figure 3.7.13-4
Burnup Vs Enrichment Curves for Region 2 Type 1 Cells (10-Year Pu-241 Decay)



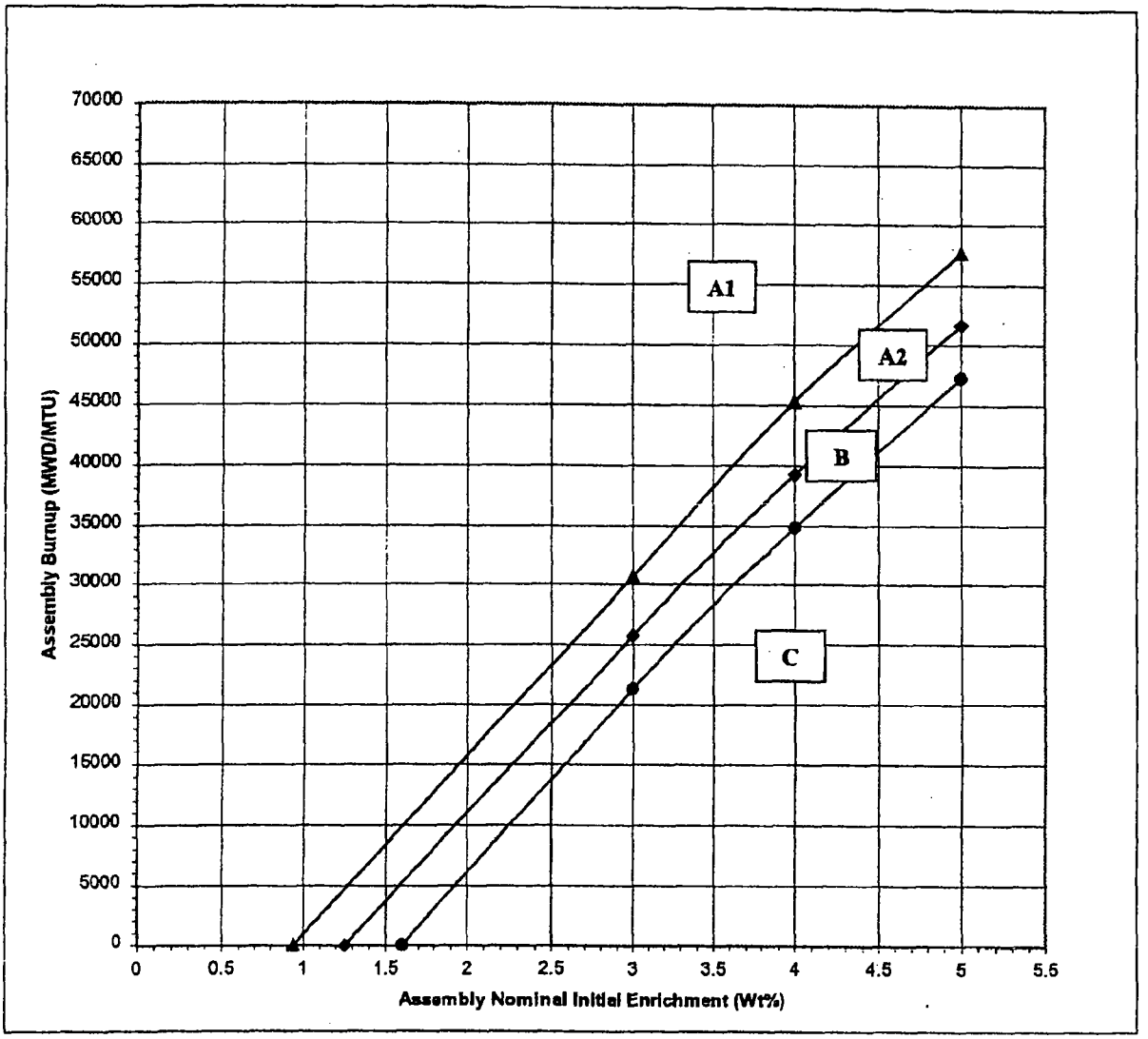
A1 Acceptable burnup domain for storage in any location within Region 2 Type 1 Cells

A2 Acceptable burnup domain for storage face-adjacent to a Type A1 or A2 assembly, or a water cell within Region 2 Type 1 Cells

B Acceptable burnup domain for storage face-adjacent to a Type A1 assembly, or a water cell within Region 2 Type 1 Cells

C Acceptable burnup domain for storage face-adjacent to a water cell only, within Region 2 Type 1 Cells

Figure 3.7.13-5
Burnup Vs Enrichment Curves for Region 2 Type 1 Cells (15-Year Pu-241 Decay)



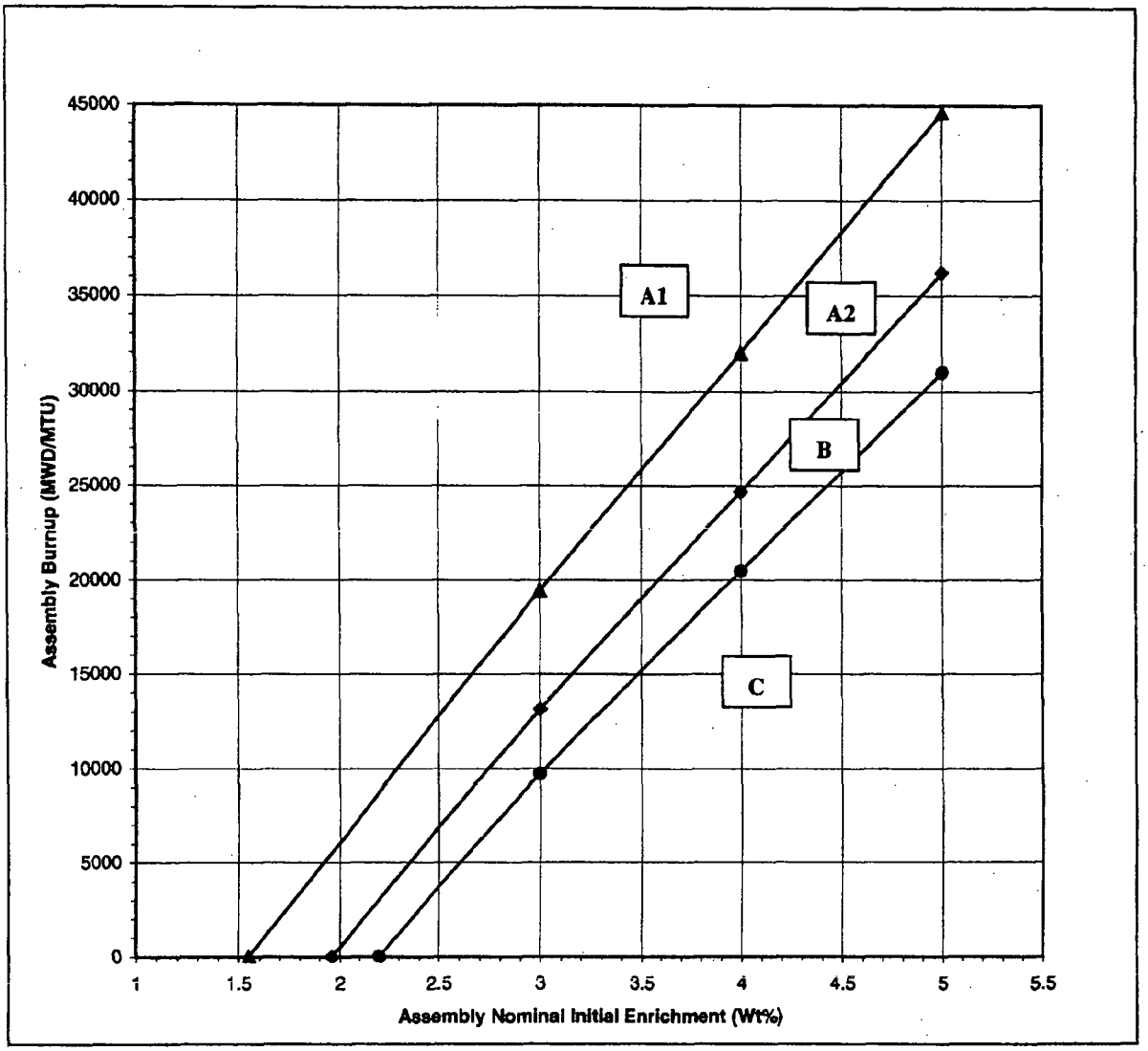
A1 Acceptable burnup domain for storage in any location within Region 2 Type 1 Cells

A2 Acceptable burnup domain for storage face-adjacent to a Type A1 or A2 assembly, or a water cell within Region 2 Type 1 Cells

B Acceptable burnup domain for storage face-adjacent to a Type A1 assembly, or a water cell within Region 2 Type 1 Cells

C Acceptable burnup domain for storage face-adjacent to a water cell only, within Region 2 Type 1 Cells

Figure 3.7.13-6
Burnup Vs Enrichment Curves for Region 2 Type 1 Cells (20-Year Pu-241 Decay)



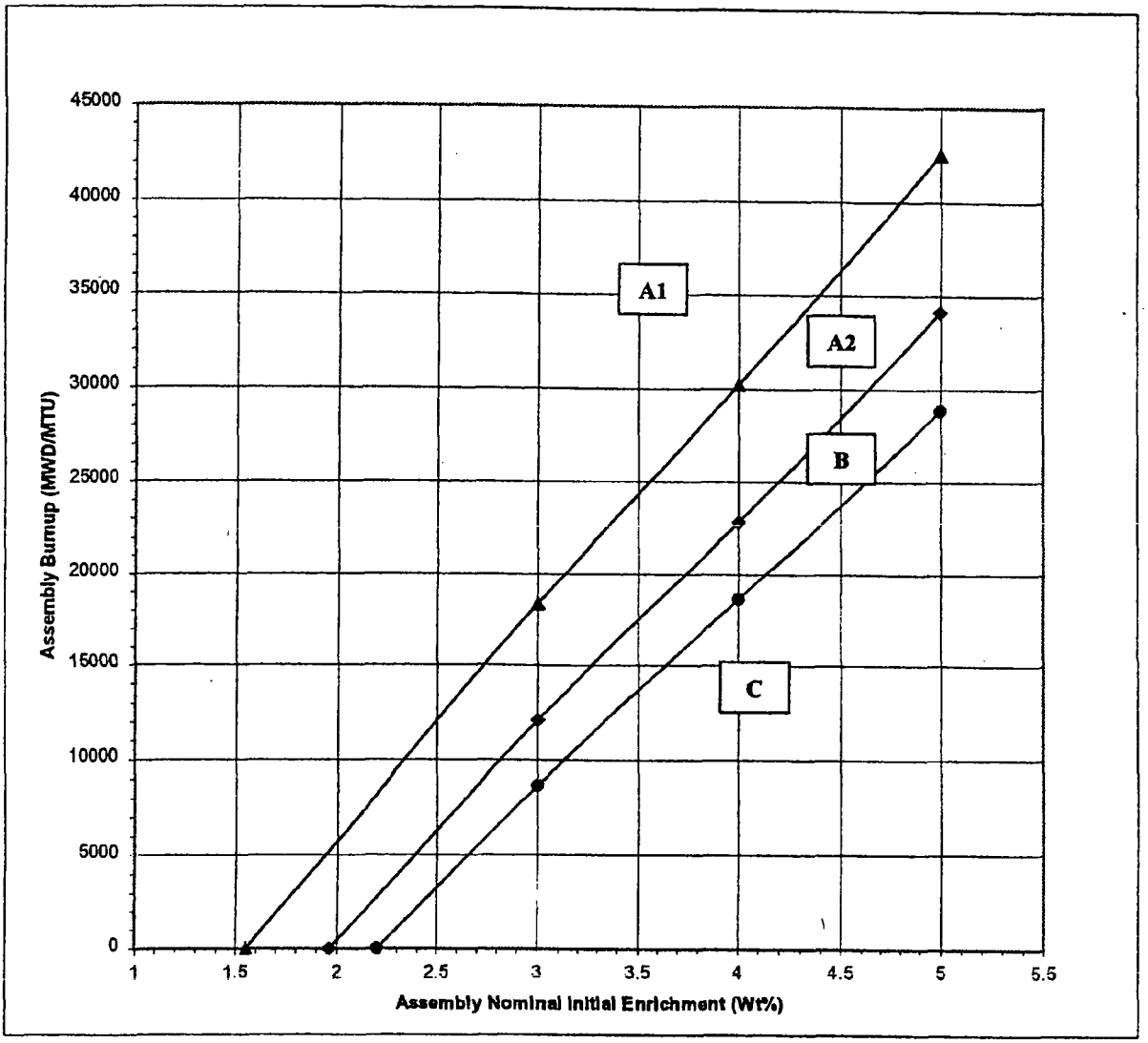
A1 Acceptable burnup domain for storage in any location within Region 2 Type 2 Cells

A2 Acceptable burnup domain for storage face-adjacent to a Type A1 or A2 assembly, or a water cell within Region 2 Type 2 Cells

B Acceptable burnup domain for storage face-adjacent to a Type A1 assembly, or a water cell within Region 2 Type 2 Cells

C Acceptable burnup domain for storage face-adjacent to a water cell only, within Region 2 Type 2 Cells

Figure 3.7.13-7
Burnup Vs Enrichment Curves for Region 2 Type 2 Cells (No Pu-241 Decay)



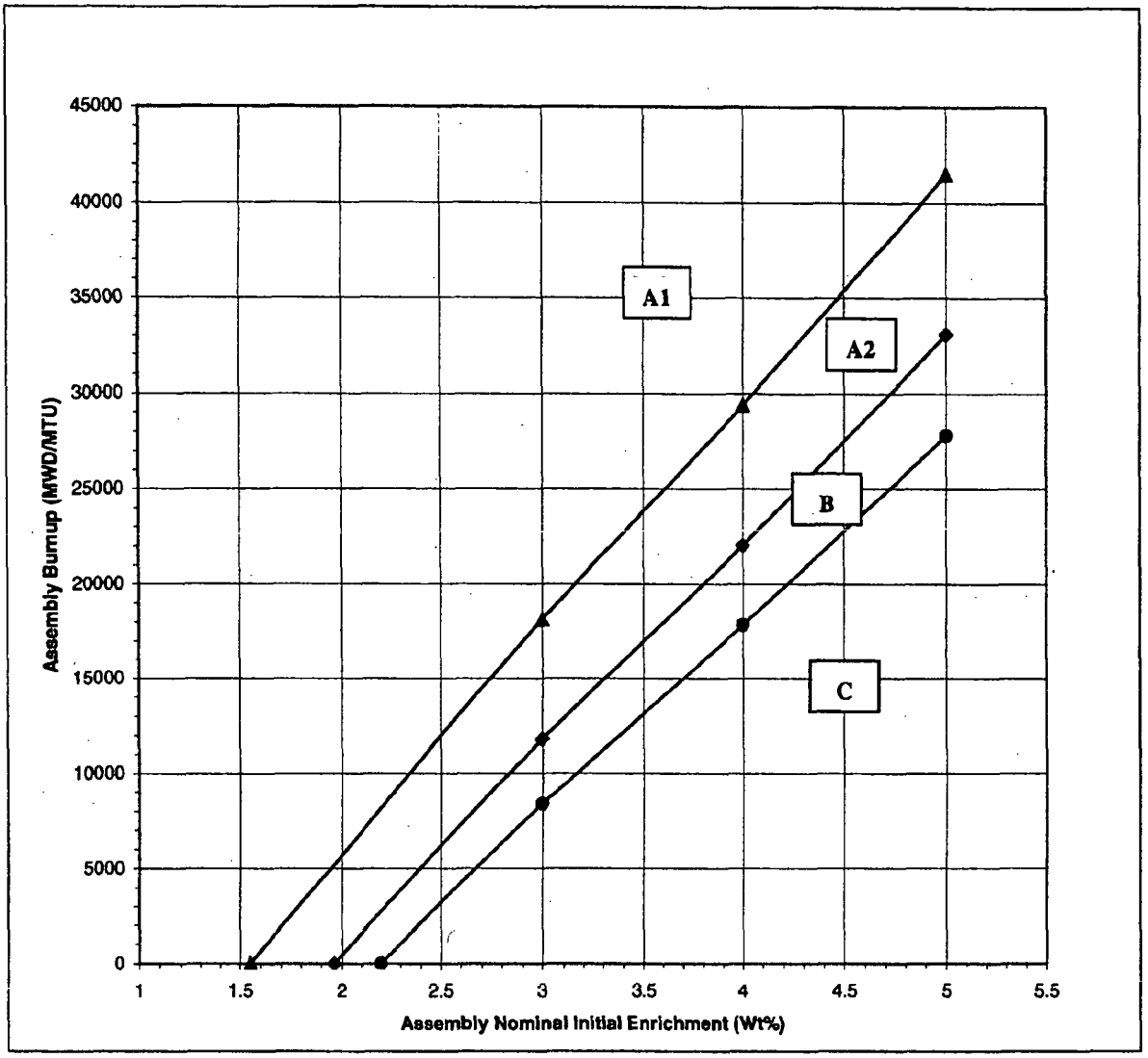
A1 Acceptable burnup domain for storage in any location within Region 2 Type 2 Cells

A2 Acceptable burnup domain for storage face-adjacent to a Type A1 or A2 assembly, or a water cell within Region 2 Type 2 Cells

B Acceptable burnup domain for storage face-adjacent to a Type A1 assembly, or a water cell within Region 2 Type 2 Cells

C Acceptable burnup domain for storage face-adjacent to a water cell only, within Region 2 Type 2 Cells

Figure 3.7.13-8
Burnup Vs Enrichment Curves for Region 2 Type 2 Cells (5-Year Pu-241 Decay)



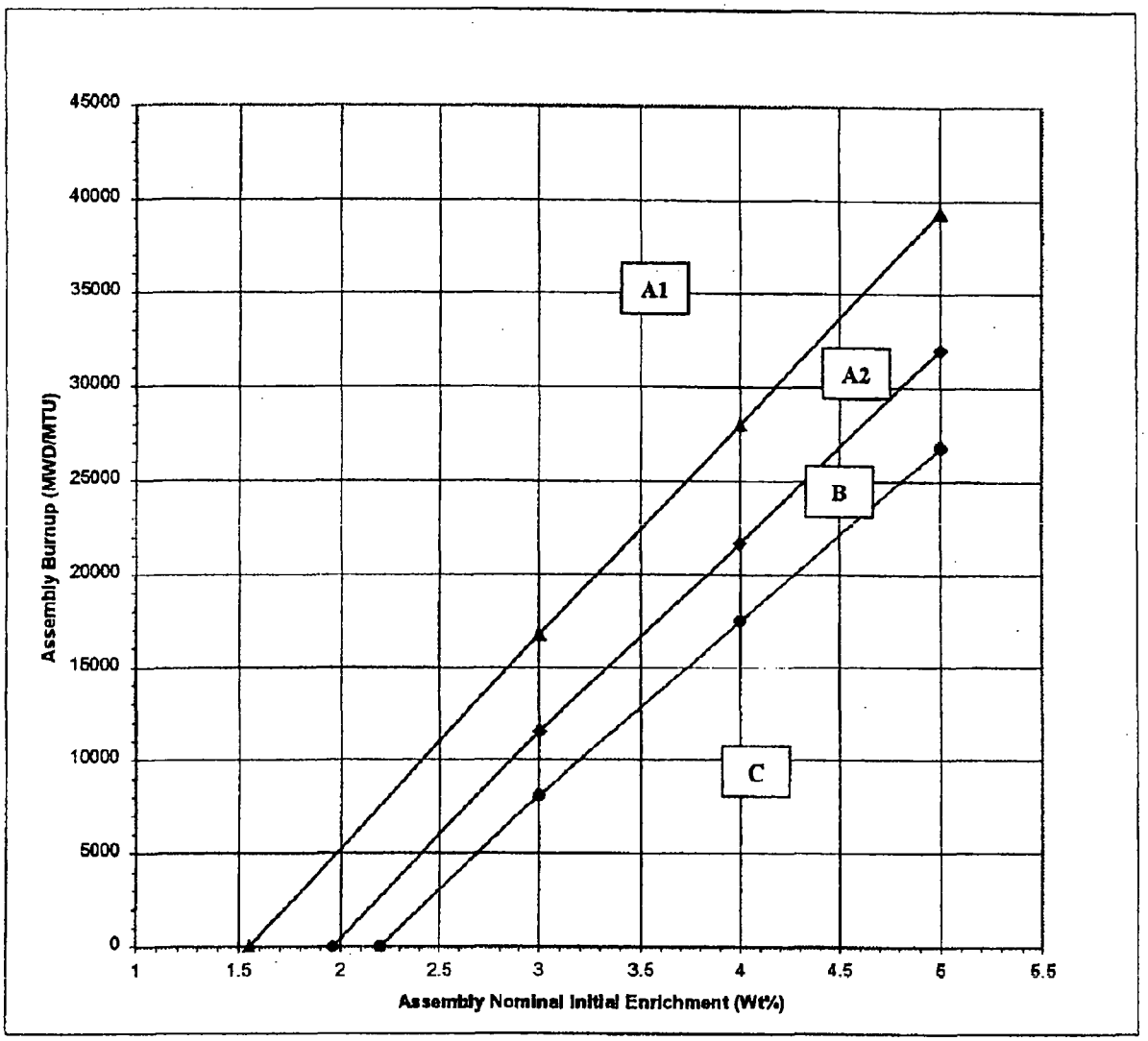
A1 Acceptable burnup domain for storage in any location within Region 2 Type 2 Cells

A2 Acceptable burnup domain for storage face-adjacent to a Type A1 or A2 assembly, or a water cell within Region 2 Type 2 Cells

B Acceptable burnup domain for storage face-adjacent to a Type A1 assembly, or a water cell within Region 2 Type 2 Cells

C Acceptable burnup domain for storage face-adjacent to a water cell only, within Region 2 Type 2 Cells

Figure 3.7.13-9
Burnup Vs Enrichment Curves for Region 2 Type 2 Cells (10-Year Pu-241 Decay)



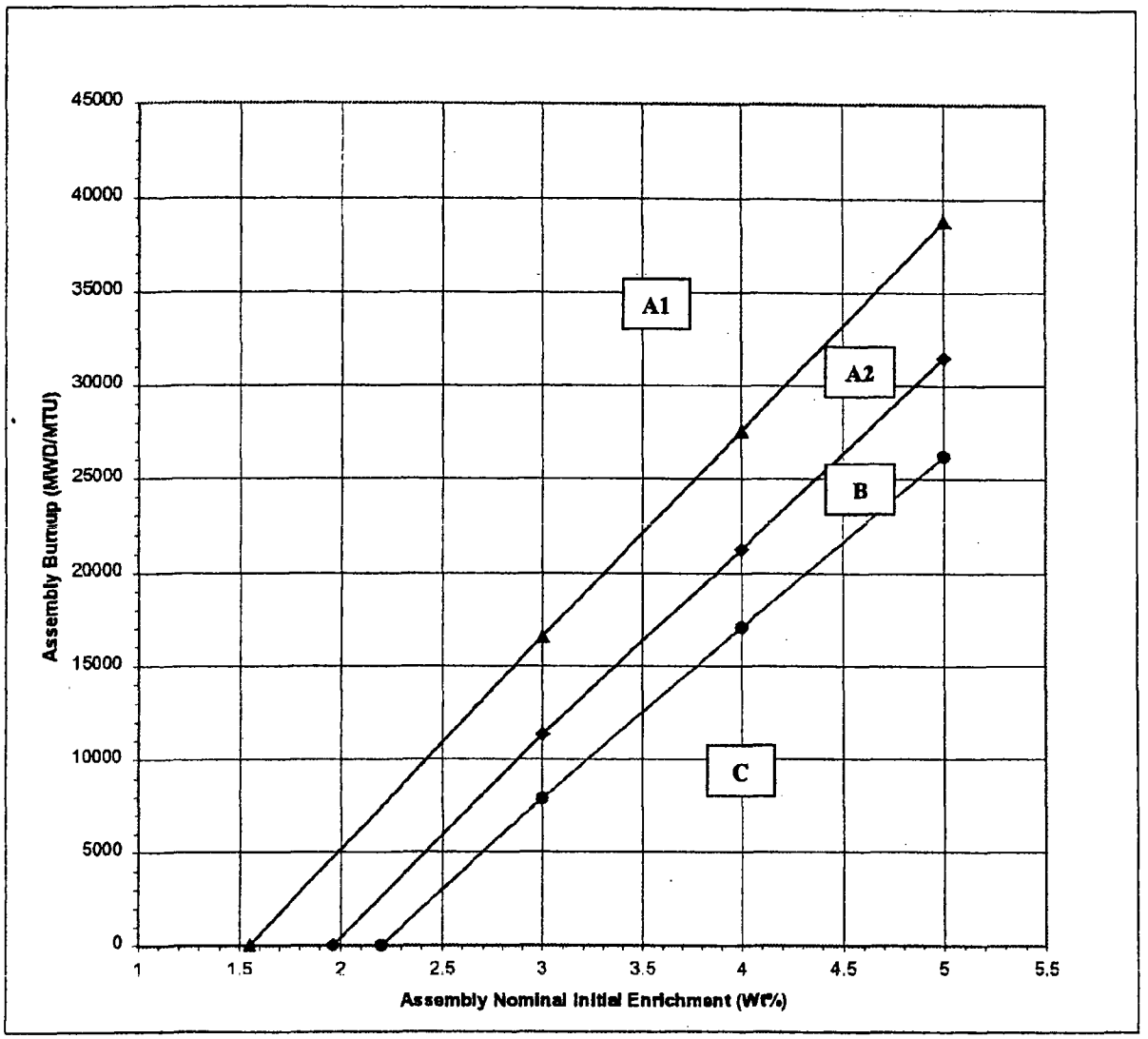
A1 Acceptable burnup domain for storage in any location within Region 2 Type 2 Cells

A2 Acceptable burnup domain for storage face-adjacent to a Type A1 or A2 assembly, or a water cell within Region 2 Type 2 Cells

B Acceptable burnup domain for storage face-adjacent to a Type A1 assembly, or a water cell within Region 2 Type 2 Cells

C Acceptable burnup domain for storage face-adjacent to a water cell only, within Region 2 Type 2 Cells

Figure 3.7.13-10
Burnup Vs Enrichment Curves for Region 2 Type 2 Cells (15-Year Pu-241 Decay)



A1 Acceptable burnup domain for storage in any location within Region 2 Type 2 Cells

A2 Acceptable burnup domain for storage face-adjacent to a Type A1 or A2 assembly, or a water cell within Region 2 Type 2 Cells

B Acceptable burnup domain for storage face-adjacent to a Type A1 assembly, or a water cell within Region 2 Type 2 Cells

C Acceptable burnup domain for storage face-adjacent to a water cell only, within Region 2 Type 2 Cells

Figure 3.7.13-11
Burnup Vs Enrichment Curves for Region 2 Type 2 Cells (20-Year Pu-241 Decay)

3.7 PLANT SYSTEMS

3.7.14 Secondary Specific Activity

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

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

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Specific activity not within limit.	A.1 Be in MODE 3. AND A.2 Be in MODE 5.	6 hours 36 hours

SURVEILLANCE REQUIREMENTS

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

3.8 ELECTRICAL POWER SYSTEMS

3.8.1 AC Sources - MODES 1, 2, 3, and 4

LCO 3.8.1 The following AC electrical sources shall be OPERABLE:

a. One qualified independent offsite power circuit connected between the offsite transmission network and each of the onsite 480 V safeguards buses required by LCO 3.8.9, "Distribution Subsystems - MODES 1, 2, 3, and 4"; and

b. Two emergency diesel generators (DGs) capable of supplying their respective onsite 480 V safeguards buses required by LCO 3.8.9.

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

ACTIONS

- NOTE -

LCO 3.0.4.b is not applicable to DGs.

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Offsite power to one or more 480 V safeguards bus(es) inoperable.	A.1 Declare required feature(s) inoperable when its redundant required feature(s) is inoperable.	12 hours from discovery of Condition A concurrent with inoperability of redundant required feature(s)
	AND	
	A.2 Restore offsite circuit to OPERABLE status.	72 hours OR -----NOTE------ Not applicable if there is a loss of function. ---------- In accordance with the Risk Informed Completion Time Program

CONDITION	REQUIRED ACTION	COMPLETION TIME
B. One DG inoperable.	B.1 Perform SR 3.8.1.1 for the offsite circuit.	1 hour AND Once per 8 hours thereafter
	AND	
	B.2 Declare required feature(s) supported by the inoperable DG inoperable when its required redundant feature(s) is inoperable.	4 hours from discovery of Condition B concurrent with inoperability of redundant required feature(s)
	AND	
	B.3.1 Determine OPERABLE DG is not inoperable due to common cause failure.	24 hours
	OR	
	B.3.2 Perform SR 3.8.1.2 for OPERABLE DG.	24 hours
	AND	
	B.4 Restore DG to OPERABLE status.	7 days OR In accordance with the Risk Informed Completion Time Program

CONDITION	REQUIRED ACTION	COMPLETION TIME
C. Offsite power to one or more 480 V safeguards bus(es) inoperable. AND One DG inoperable.	- - - - - - - - - - - - - - - - - - - NOTE - Enter applicable Conditions and Required Actions of LCO 3.8.9, "Distribution Systems - MODES 1, 2, 3, and 4," when Condition C is entered with no AC power source to one distribution train. - - - - - - - - - - - - - - - - - -	
	C.1 Restore required offsite circuit to OPERABLE status. <u>OR</u>	12 hours <u>OR</u> -----NOTE------ Not applicable if there is a loss of function. ---------- In accordance with the Risk Informed Completion Time Program
	C.2 Restore DG to OPERABLE status.	12 hours <u>OR</u> -----NOTE------ Not applicable if there is a loss of function. ---------- In accordance with the Risk Informed Completion Time Program

CONDITION		REQUIRED ACTION		COMPLETION TIME
D.	Required Action and associated Completion Time of Condition A, B, or C not met.	D.1 AND D.2	Be in MODE 3. Be in MODE 5.	6 hours 36 hours
E.	Two DGs inoperable.	E.1	Enter LCO 3.0.3.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.8.1.1	Verify correct breaker alignment and indicated power availability for the offsite circuit to each of the 480 V safeguards buses.	In accordance with the Surveillance Frequency Control Program
SR 3.8.1.2	- NOTE - 1. Performance of SR 3.8.1.9 satisfies this SR. 2. All DG starts may be preceded by an engine prelube period and followed by a warmup period prior to loading. Verify each DG starts from standby conditions and achieves rated voltage and frequency.	In accordance with the Surveillance Frequency Control Program

SURVEILLANCE		FREQUENCY
SR 3.8.1.3	- NOTE - 1. DG loadings may include gradual loading as recommended by the manufacturer. 2. Momentary transients outside the load range do not invalidate this test. 3. This Surveillance shall be conducted on only one DG at a time. 4. This SR shall be preceded by and immediately follow without shutdown a successful performance of SR 3.8.1.2 or SR 3.8.1.9. Verify each DG is synchronized and loaded and operates for ≥ 60 minutes and < 120 minutes at a load ≥ 2025 kW and < 2250 kW.	In accordance with the Surveillance Frequency Control Program
SR 3.8.1.4	Verify the fuel oil level in each day tank.	In accordance with the Surveillance Frequency Control Program
SR 3.8.1.5	Verify the DG fuel oil transfer system operates to transfer fuel oil from each storage tank to the associated day tank.	In accordance with the Surveillance Frequency Control Program
SR 3.8.1.6	Verify transfer of AC power sources from the 50/50 mode to the 100/0 mode and 0/100 mode.	In accordance with the Surveillance Frequency Control Program
SR 3.8.1.7	- NOTE - 1. This Surveillance shall not be performed in MODE 1, 2, 3, or 4. 2. Credit may be taken for unplanned events that satisfy this SR. Verify each DG does not trip during and following a load rejection of ≥ 295 kW.	In accordance with the Surveillance Frequency Control Program

	SURVEILLANCE	FREQUENCY
SR 3.8.1.8	- NOTE - 1. This Surveillance shall not be performed in MODE 1, 2, 3, or 4. 2. Credit may be taken for unplanned events that satisfy this SR. Verify each DG automatic trips are bypassed on an actual or simulated safety injection (SI) signal except: a. Engine overspeed; b. Low lube oil pressure; and c. Start failure (overcrank) relay.	In accordance with the Surveillance Frequency Control Program
SR 3.8.1.9	- NOTE - 1. All DG starts may be preceded by an engine prelube period. 2. This Surveillance shall not be performed in MODE 1, 2, 3, or 4. 3. Credit may be taken for unplanned events that satisfy this SR. Verify on an actual or simulated loss of offsite power signal in conjunction with an actual or simulated SI actuation signal: a. De-energization of 480 V safeguards buses; b. Load shedding from 480 V safeguards buses; and c. DG auto-starts from standby condition and: 1. energizes permanently connected loads, 2. energizes auto-connected emergency loads through the load sequencer, and 3. supplies permanently and auto-connected emergency loads for $\geq$ 5 minutes.	In accordance with the Surveillance Frequency Control Program

3.8 ELECTRICAL POWER SYSTEMS

3.8.2 AC Sources - MODES 5 and 6

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

a. One qualified independent offsite power circuit connected between the offsite transmission network and each of the onsite 480 V safeguard buses required by LCO 3.8.10, "Distribution Systems - MODES 5 and 6"; and

b. One emergency diesel generator (DG) capable of supplying one train of the onsite 480 V safeguard bus(es) required by LCO 3.8.10.

APPLICABILITY: MODES 5 and 6.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Offsite power to one or more required 480 V safeguards bus(es) inoperable.	- NOTE - Enter applicable Conditions and Required Actions of LCO 3.8.10, with one required train de-energized as a result of Condition A.	
	A.1 Declare affected required feature(s) inoperable.	Immediately
	OR	

CONDITION	REQUIRED ACTION	COMPLETION TIME
	A.2.1 Suspend CORE ALTERATIONS. AND	Immediately
	A.2.2 Suspend movement of irradiated fuel assemblies. AND	Immediately
	A.2.3 Suspend operations involving positive reactivity additions that could result in loss of required SDM or boron concentration. AND	Immediately
	A.2.4 Initiate action to restore required offsite power circuit to OPERABLE status.	Immediately
B. DG to the required 480 V safeguards bus(es) inoperable.	B.1 Suspend CORE ALTERATIONS. AND	Immediately
	B.2 Suspend movement of irradiated fuel assemblies. AND	Immediately
	B.3 Suspend operations involving positive reactivity additions that could result in loss of required SDM or boron concentration. AND	Immediately
	B.4 Initiate action to restore required DG to OPERABLE status.	Immediately

SURVEILLANCE REQUIREMENTS

	SURVEILLANCE	FREQUENCY
SR 3.8.2.1	For AC sources required to be OPERABLE, the following SRs are applicable: SR 3.8.1.1 SR 3.8.1.4 SR 3.8.1.2 SR 3.8.1.5	In accordance with applicable SRs

3.8 ELECTRICAL POWER SYSTEMS

3.8.3 Diesel Fuel Oil

LCO 3.8.3 The stored diesel fuel oil shall be within limits for each required emergency diesel generator (DG).

APPLICABILITY: MODES 1, 2, 3, and 4,
When associated DG is required to be OPERABLE by LCO 3.8.2, "AC Sources - MODES 5 and 6."

ACTIONS

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

CONDITION		REQUIRED ACTION		COMPLETION TIME
A.	One or more required DGs with onsite fuel oil supply not within limit.	A.1	Restore fuel oil level to within limit.	12 hours
B.	One or more required DGs with stored fuel oil total particulates not within limit.	B.1	Restore fuel oil total particulates within limit.	7 days
C.	One or more DGs with new fuel oil properties not within limits.	C.1	Restore stored fuel oil properties within limits.	30 days
D.	Required Action and associated Completion Time not met. OR One or more required DGs diesel fuel oil not within limits for reasons other than Condition A, B, or C.	D.1	Declare associated DG inoperable.	Immediately

SURVEILLANCE REQUIREMENTS

	SURVEILLANCE	FREQUENCY
SR 3.8.3.1	Verify each fuel oil storage tank contains ≥ 5000 gal of diesel fuel oil for each required DG.	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

3.8 ELECTRICAL POWER SYSTEMS

3.8.4 DC Sources - MODES 1, 2, 3, and 4

LCO 3.8.4 The Train A and Train B DC electrical power sources shall be OPERABLE.

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

ACTIONS

CONDITION		REQUIRED ACTION		COMPLETION TIME
A.	One DC electrical power source inoperable.	A.1	Restore DC electrical power source to OPERABLE status.	2 hours OR 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 3.	6 hours
		AND		
		B.2	Be in MODE 5.	36 hours
C.	Both DC electrical power sources inoperable.	C.1	Enter LCO 3.0.3.	Immediately

	SURVEILLANCE	FREQUENCY
SR 3.8.4.1	Verify battery terminal voltage is ≥ 129 V on float charge.	In accordance with the Surveillance Frequency Control Program
SR 3.8.4.2	- NOTE - 1. SR 3.8.4.3 may be performed in lieu of SR 3.8.4.2. 2. This Surveillance shall not be performed in MODE 1, 2, 3, or 4.	
	Verify battery capacity is adequate to supply, and maintain in OPERABLE status, the required emergency loads for the design duty cycle when subjected to a battery service test.	In accordance with the Surveillance Frequency Control Program
SR 3.8.4.3	- NOTE - This Surveillance shall not be performed in MODE 1, 2, 3, or 4.	
	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 AND 12 months when battery shows degradation, or has reached 85% of expected life with capacity < 100% of manufacturer's rating AND 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 - MODES 5 and 6

LCO 3.8.5 DC electrical power sources shall be OPERABLE to support the DC electrical power distribution subsystem required by LCO 3.8.10, "Distribution Systems - MODES 5 and 6."

APPLICABILITY: MODES 5 and 6.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more required DC electrical power source(s) inoperable.	A.1 Declare affected required feature(s) inoperable.	Immediately
	OR	
	A.2.1 Suspend CORE ALTERATIONS.	Immediately
	AND	
	A.2.2 Suspend movement of irradiated fuel assemblies.	Immediately
	AND	
	A.2.3 Suspend operations involving positive reactivity additions that could result in loss of required SDM or boron concentration.	Immediately
	AND	
	A.2.4 Initiate action to restore required DC electrical power source(s) to OPERABLE status.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.8.5.1	For DC sources required to be OPERABLE, SR 3.8.4.1 is applicable.	In accordance with applicable SR

3.8 ELECTRICAL POWER SYSTEMS

3.8.6 Battery Cell Parameters

LCO 3.8.6 Battery cell parameters for Train A and Train B batteries shall be within limits.

APPLICABILITY: MODES 1, 2, 3, and 4,
When associated DC electrical power sources are required to be OPERABLE by LCO 3.8.5, "DC Sources - MODES 5 and 6."

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 limits.	A.1	Declare associated battery inoperable.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.8.6.1	Verify electrolyte level of each connected battery cell is above the top of the plates and not overflowing.	In accordance with the Surveillance Frequency Control Program
SR 3.8.6.2	Verify the float voltage of each connected battery cell is > 2.07 V.	In accordance with the Surveillance Frequency Control Program
SR 3.8.6.3	Verify specific gravity of the designated pilot cell in each battery is ≥ 1.195.	In accordance with the Surveillance Frequency Control Program
SR 3.8.6.4	Verify average electrolyte temperature of the designated pilot cell in each battery is ≥ 55°F.	In accordance with the Surveillance Frequency Control Program

SURVEILLANCE		FREQUENCY
SR 3.8.6.5	Verify average electrolyte temperature of every fifth cell of battery is ≥ 55°F.	In accordance with the Surveillance Frequency Control Program
SR 3.8.6.6	Verify specific gravity of each connected battery cell is: a. Not more than 0.020 below average of all connected cells, and b. Average of all connected cells is ≥ 1.195.	In accordance with the Surveillance Frequency Control Program

3.8 ELECTRICAL POWER SYSTEMS

3.8.7 AC Instrument Bus Sources - MODES 1, 2, 3, and 4

LCO 3.8.7 The following AC instrument bus power sources shall be OPERABLE:

a. Inverters for Instrument Buses A and C; and

b. Class 1E constant voltage transformer (CVT) for Instrument Bus B.

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

ACTIONS

CONDITION		REQUIRED ACTION		COMPLETION TIME
A.	One inverter inoperable.	A.1	Power AC instrument bus from its Class 1E or non-Class 1E CVT.	2 hours
		AND		
		A.2	Power AC instrument bus from its Class 1E CVT.	24 hours
		AND		
		A.3	Restore inverter to OPERABLE status.	72 hours OR In accordance with the Risk Informed Completion Time Program
B.	Class 1E CVT for AC Instrument Bus B inoperable.	B.1	Power AC Instrument Bus B from its non-Class 1E CVT.	2 hours
		AND		
		B.2	Restore Class 1E CVT for AC Instrument Bus B to OPERABLE status.	7 days OR

CONDITION	REQUIRED ACTION	COMPLETION TIME
		-----NOTE------ Not applicable if there is a loss of function. ---------- In accordance with the Risk Informed Completion Time Program
C. Required Action and associated Completion Time of Condition A or B not met.	C.1 Be in MODE 3. AND C.2 Be in MODE 5.	6 hours 36 hours
D. Two or more required instrument bus sources inoperable.	D.1 Enter LCO 3.0.3.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.8.7.1	Verify correct static switch alignment to Instrument Bus A and C.	In accordance with the Surveillance Frequency Control Program
SR 3.8.7.2	Verify correct Class 1E CVT alignment to Instrument Bus B.	In accordance with the Surveillance Frequency Control Program

CONDITION		REQUIRED ACTION		COMPLETION TIME
D.	Two or more required instrument bus sources inoperable.	D.1	Enter LCO 3.0.3.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.8.7.1	Verify correct static switch alignment to Instrument Bus A and C.	In accordance with the Surveillance Frequency Control Program
SR 3.8.7.2	Verify correct Class 1E CVT alignment to Instrument Bus B.	In accordance with the Surveillance Frequency Control Program

3.8 ELECTRICAL POWER SYSTEMS

3.8.8 AC Instrument Bus Sources - MODES 5 and 6

LCO 3.8.8 AC instrument bus power sources shall be OPERABLE to support the onsite Class 1E AC instrument bus electrical power distribution subsystem required by LCO 3.8.10, "Distribution Systems - MODES 5 and 6."

APPLICABILITY: MODES 5 and 6.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more required AC instrument bus power source(s) inoperable.	A.1 Declare affected required feature(s) inoperable.	Immediately
	OR	
	A.2.1 Suspend CORE ALTERATIONS.	Immediately
	AND	
	A.2.2 Suspend movement of irradiated fuel assemblies.	Immediately
	AND	
	A.2.3 Suspend operations involving positive reactivity additions that could result in loss of required SDM or boron concentration.	Immediately
	AND	
	A.2.4 Initiate action to restore required AC instrument bus power source(s) to OPERABLE status.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.8.8.1	Verify correct static switch alignment to required AC instrument bus(es).	In accordance with the Surveillance Frequency Control Program
SR 3.8.8.2	Verify correct Class 1E CVT alignment to the required AC instrument bus.	In accordance with the Surveillance Frequency Control Program

3.8 ELECTRICAL POWER SYSTEMS

3.8.9 Distribution Systems - MODES 1, 2, 3, and 4

LCO 3.8.9 Train A and Train B of the following electrical power distribution subsystems shall be OPERABLE:

a. AC power;

b. AC instrument bus power; and

c. DC power.

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

ACTIONS

CONDITION		REQUIRED ACTION		COMPLETION TIME
A.	One AC electrical power distribution train inoperable.	A.1	Restore AC electrical power distribution train to OPERABLE status.	8 hours OR In accordance with the Risk Informed Completion Time Program
B.	One AC instrument bus electrical power distribution train inoperable.	B.1	Restore AC instrument bus electrical power distribution train to OPERABLE status.	2 hours OR -----NOTE------ Not applicable if there is a loss of function. ---------- In accordance with the Risk Informed Completion Time Program

CONDITION	REQUIRED ACTION	COMPLETION TIME
C. One DC electrical power distribution train inoperable.	C.1 Restore DC electrical power distribution train to OPERABLE status.	2 hours OR In accordance with the Risk Informed Completion Time Program
D. Required Action and associated Completion Time of Conditions A, B, or C not met.	D.1 Be in MODE 3. AND D.2 Be in MODE 5.	6 hours 36 hours
E. Two trains with inoperable electrical power distribution subsystems that result in a loss of safety function.	E.1 Enter LCO 3.0.3.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.8.9.1	Verify correct breaker alignments and voltage to required electrical power trains.	In accordance with the Surveillance Frequency Control Program

3.8 ELECTRICAL POWER SYSTEMS

3.8.10 Distribution Systems - MODES 5 and 6

LCO 3.8.10 The necessary trains(s) of the following electrical power distribution subsystems shall be OPERABLE to support equipment required to be OPERABLE:

a. AC power;

b. AC instrument bus power; and

c. DC power.

APPLICABILITY: MODES 5 and 6.

ACTIONS

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

CONDITION	REQUIRED ACTION	COMPLETION TIME
	A.2.1 Suspend CORE ALTERATIONS. AND	Immediately
	A.2.2 Suspend movement of irradiated fuel assemblies. AND	Immediately
	A.2.3 Suspend operations involving positive reactivity additions that could result in loss of required SDM or boron concentration. AND	Immediately
	A.2.4 Initiate actions to restore required electrical power distribution train(s) to OPERABLE status. AND	Immediately
	A.2.5 Declare associated required residual heat removal loop(s) inoperable and not in operation.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.8.10.1	Verify correct breaker alignments and voltage to required electrical power distribution trains.	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 CORE ALTERATIONS.	Immediately
	AND	
	A.2 Suspend positive reactivity additions.	Immediately
	AND	
	A.3 Initiate action to restore boron concentration to within limit.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.9.1.1	Verify boron concentration is within the limit specified in the COLR.	In accordance with the Surveillance Frequency Control Program

3.9 REFUELING OPERATIONS

3.9.2 Nuclear Instrumentation

LCO 3.9.2 Two source range neutron flux monitors shall be OPERABLE.

APPLICABILITY: MODE 6.

ACTIONS

CONDITION		REQUIRED ACTION		COMPLETION TIME
A.	One source range neutron flux monitor inoperable.	A.1	Suspend CORE ALTERATIONS.	Immediately
		AND		
		A.2	Suspend operations that would cause introduction of coolant into the RCS with boron concentration less than required to meet the boron concentration of LCO 3.9.1.	Immediately
B.	Two 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.	4 hours AND Once per 12 hours thereafter
C.	No audible count rate.	C.1	Suspend CORE ALTERATIONS.	Immediately
		AND		

CONDITION	REQUIRED ACTION	COMPLETION TIME
	C.2 Suspend positive reactivity additions. AND	Immediately
	C.3 Perform SR 3.9.1.1	4 hours AND Once per 12 hours thereafter

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.9.2.1	Perform CHANNEL CHECK.	In accordance with the Surveillance Frequency Control Program
SR 3.9.2.2	- NOTE - Neutron detectors are excluded from CHANNEL CALIBRATION. Perform CHANNEL CALIBRATION.	In accordance with the Surveillance Frequency Control Program

3.9 REFUELING OPERATIONS

3.9.3 Containment Penetrations

LCO 3.9.3 The containment penetrations shall be in the following status:

a. The equipment hatch shall be either:

1. bolted in place with at least one access door closed or capable of being closed under administrative control,

2. isolated by a closure plate that restricts air flow from containment with the associated emergency egress door closed or capable of being closed under administrative control, or

3. isolated by a roll up door and enclosure building with the roll up door closed or capable of being closed under administrative control.

b. One door in the personnel air lock shall be closed or capable of being closed under administrative control; and

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

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

2. capable of being closed by an OPERABLE Containment Ventilation Isolation System.

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

ACTIONS

CONDITION		REQUIRED ACTION		COMPLETION TIME
A.	One or more containment penetrations not in required status.	A.1 AND	Suspend CORE ALTERATIONS.	Immediately

CONDITION	REQUIRED ACTION	COMPLETION TIME
	A.2 Suspend movement of irradiated fuel assemblies within containment.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.9.3.1	Verify each required containment penetration is in the required status.	In accordance with the Surveillance Frequency Control Program
SR 3.9.3.2	Verify each required 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 - Water Level ≥ 23 Ft

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

- -
- NOTE -

The required RHR loop may be removed from operation for ≤ 1 hour per 8 hour period, provided no operations are permitted that would cause introduction of coolant into the Reactor Coolant System (RCS) with boron concentration less than that required to meet the minimum required boron concentration of LCO 3.9.1.
- -

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 that would cause introduction of coolant into the RCS with boron concentration less than required to meet the boron concentration of LCO 3.9.1.	Immediately
	AND		
	A.2	Suspend loading irradiated fuel assemblies in the core.	Immediately
	AND		
	A.3	Initiate action to satisfy RHR loop requirements.	Immediately
	AND		

*Beginning April 3, 2020, an alternative means of RHR as approved in Amendment No. 139 may be used until June 30, 2020. No increase in Mode changes will be permitted while utilizing the alternate approved means for RHR.

CONDITION	REQUIRED ACTION	COMPLETION TIME
	A.4 Close all containment penetrations providing direct access from containment atmosphere to outside atmosphere.	4 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.9.4.1	Verify one RHR loop is in operation and circulating reactor coolant.	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 - Water Level < 23 Ft

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 RHR loop(s) to OPERABLE status.	Immediately
		OR		
		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 that would cause introduction of coolant into the RCS with boron concentration less than required to meet the boron concentration of LCO 3.9.1.	Immediately
		AND		
		B.2	Initiate action to restore one RHR loop to operation.	Immediately
		AND		
		B.3	Close all containment penetrations providing direct access from containment to outside atmosphere.	4 hours

*Beginning April 3, 2020, an alternative means of RHR as approved in Amendment No. 139 may be used until June 30, 2020. No increase in Mode changes will be permitted while utilizing the alternate approved means for RHR.

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.9.5.1	Verify one RHR loop is in operation and circulating reactor coolant.	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, During CORE ALTERATIONS, except during latching and unlatching of control rod drive shafts.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Refueling cavity water level not within limit.	A.1 Suspend CORE ALTERATIONS. AND	Immediately
	A.2 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 site for the R.E. Ginna Nuclear Power Plant is located on the south shore of Lake Ontario, approximately 16 miles east of Rochester, New York.

The exclusion area boundary distances from the plant shall be as follows:

Direction	Distance (m)
N (including offshore)	8000
NNE	8000
NE	8000
ENE	8000
E	747
ESE	640
SE	503
SSE	450
S	450
SSW	450
SW	503
WSW	915
W	945
WNW	701
NW	8000
NNW	8000

4.0 DESIGN FEATURES

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, ZIRLO®, or Optimized ZIRLO™ clad fuel rods with an initial composition of natural or slightly enriched uranium dioxide (UO_2) as fuel material. Limited substitutions of zircaloy, ZIRLO, or stainless steel filler rods for fuel rods, in accordance with NRC approved applications of fuel rod configurations, may be used. Fuel assemblies shall be limited to those fuel designs that have been analyzed with applicable NRC staff approved codes and methods and shown by tests or cycle specific analyses to comply with all fuel safety design bases. A limited number of lead test assemblies that have not completed representative testing may be placed in nonlimiting core regions.

4.2.2 Control Rod Assemblies

The reactor core shall contain 29 control rod assemblies. The control material shall be silver indium cadmium.

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 nominal U-235 enrichment of 5.0 weight percent;

b. $k_{eff} < 1.0$ if fully flooded with unborated water, which includes an allowance for uncertainties as described in Section 9.1 of the UFSAR;

c. $k_{eff} \leq 0.95$ if fully flooded with water borated to ≥ 975 ppm, which includes an allowance for uncertainties as described in Section 9.1 of the UFSAR; and

d. Consolidated rod storage canisters may be stored in the spent fuel storage racks provided that the fuel assemblies from which the rods were removed meet all the requirements of LCO 3.7.13 for the region in which the canister is to be stored. The average decay heat of the fuel assembly from which the rods were removed for all consolidated fuel assemblies must also be ≤ 2150 BTU/hr.

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

a. Fuel assemblies having a maximum nominal 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 9.1 of the UFSAR; and

c. $k_{eff} \leq 0.98$ if moderated by aqueous foam, which includes an allowance for uncertainties as described in Section 9.1 of the UFSAR.

4.3.2 Drainage

The spent fuel pool is designed and shall be maintained to prevent inadvertent draining of the pool below elevation 257'0" (mean sea level).

4.3.3 Capacity

The spent fuel pool is designed and shall be maintained with a storage capacity limited to no more than 1321 fuel assemblies.

5.0 ADMINISTRATIVE CONTROLS

5.1 Responsibility

5.1.1 The plant manager shall be responsible for overall plant operation and shall delegate in writing the succession to this responsibility during his absence.

The plant manager, or his designee, shall approve prior to implementation, each proposed test, experiment or modification to structures, systems or components that affect nuclear safety.

5.1.2 The Shift Supervisor (SS) shall be responsible for the control room command function. During any absence of the SS from the control room while the plant 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 SS from the control room while the plant is in MODE 5 or 6, an individual with an active SRO license or Reactor Operator license shall be designated to assume the control room command function.

5.0 ADMINISTRATIVE CONTROLS

5.2 Organization

5.2.1 Onsite and Offsite Organizations

Onsite and offsite organizations shall be established for plant operation and corporate management, respectively. The onsite and offsite organizations shall include the positions for activities affecting the 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 UFSAR;

b. The plant manager shall report to the corporate vice president specified in 5.2.1.c, 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; and

c. A corporate vice president 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.

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.

5.2.2 Plant Staff

The plant staff organization shall include the following:

a. An auxiliary operator shall be assigned to the shift crew with fuel in the reactor. An additional auxiliary operator shall be assigned to the shift crew while the plant is in MODE 1, 2, 3 or 4.

b. Shift crew composition may be one less than the minimum requirement of 10 CFR 50.54(m)(2)(i) and Specifications 5.2.2.a and 5.2.2.f 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. An individual qualified in radiation protection procedures shall be on site when fuel is in the reactor. The position may be vacant for not more than 2 hours, in order to provide for unexpected absence, provided immediate action is taken to fill the required position.

d. Deleted.

e. The operations manager or operations middle manager shall hold a SRO license.

f. The Shift Technical Advisor (STA) shall provide advisory technical support to the Shift Supervisor (SS) in the areas of thermal hydraulics, reactor engineering, and plant analysis with regard to the safe operation of the plant. The STA shall be assigned to the shift crew while the plant is in MODE 1, 2, 3 or 4 and shall meet the qualifications contained in the STA training program specified in UFSAR Section 13.2.

5.0 ADMINISTRATIVE CONTROLS

5.3 Plant Staff Qualifications

5.3.1 Each member of the plant staff shall meet or exceed the minimum qualifications referenced for comparable positions as specified in the Constellation Energy Generation, LLC Quality Assurance Topical Report.

5.0 ADMINISTRATIVE CONTROLS

5.4 Procedures

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

a. The applicable procedures recommended in Regulatory Guide 1.33, Revision 2, Appendix A, February 1978;

b. The emergency operating procedures required to implement the requirements of NUREG-0737 and NUREG-0737, Supplement 1, as stated in Generic Letter 82-33;

c. Effluent and environmental monitoring;

d. Deleted; and

e. All programs specified in Specification 5.5.

5.0 ADMINISTRATIVE CONTROLS

5.5 Programs and Manuals

The following programs and manuals shall be established, implemented, and maintained.

5.5.1 Offsite Dose Calculation Manual (ODCM)

The ODCM shall contain:

a. 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 radioactive effluent controls and radiological environmental monitoring activities and descriptions of the information that should be included in the Annual Radiological Environmental Operating and Radioactive Effluent Release Reports.

Licensee initiated changes to the ODCM:

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

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

   2. 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 does not adversely impact the accuracy or reliability of effluent, dose, or setpoint calculations;

b. Shall become effective after review and acceptance by the onsite review function and the approval of the plant manager; and

c. Shall be submitted to the NRC in the form of a complete, legible copy of the entire ODCM as a part of or concurrent with the Radioactive Effluent Release Report for the period of the report in which any change in the ODCM was made. Each change shall be identified by markings in the margin of the affected pages, clearly indicating the area of the page that was changed, and shall indicate the date (i.e., month and year) the change was implemented.

5.5.2 Primary Coolant Sources Outside Containment Program

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. The systems include Containment Spray, Safety Injection, and Residual Heat Removal in the recirculation configuration. 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

5.5.4 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 10 CFR 20, Appendix B, Table 2, Column 2;

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 the plant to unrestricted areas, conforming to 10 CFR 50, Appendix I and 40 CFR 141;

e. Determination of cumulative and projected dose contributions from radioactive effluents for the current calendar quarter and current calendar year in accordance with the methodology and parameters in the ODCM at least every 31 days;

f. Limitations on the functional capability and use of the liquid and gaseous effluent treatment systems to ensure that appropriate portions of these systems are used to reduce releases of radioactivity when the projected doses in a period of 31 days would exceed 2% of the guidelines for the annual dose or dose commitment, conforming to 10 CFR 50, Appendix I;

g. Limitations on the dose rate resulting from radioactive material released in gaseous effluents to areas beyond the site boundary conforming to the dose associated with 10 CFR 20, Appendix B, Table 2, Column 1;

h. Limitations on the annual and quarterly air doses resulting from noble gases released in gaseous effluents from the plant 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 the plant 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 due to releases of radioactivity and to radiation from uranium fuel cycle sources, conforming to 40 CFR 190.

5.5.5 Component Cyclic or Transient Limit Program

This program provides controls to track the reactor coolant system cyclic and transient occurrences specified in UFSAR Table 5.1-4 to ensure that components are maintained within the design limits.

5.5.6 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 Tendon Surveillance Program, inspection frequencies, and acceptance criteria shall be in accordance with Regulatory Guide 1.35, Revision 2.

The provisions of SR 3.0.2 and SR 3.0.3 are applicable to the Tendon Surveillance Program inspection frequencies.

5.5.7 DELETED

5.5.8 Steam Generator (SG) Program

An SG Program shall be established and implemented to ensure that SG tube integrity is maintained. In addition, the SG 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 SG tubes shall retain structural integrity over the full range of normal operating conditions (including startup, operation in the power range, hot standby, and cool down), all anticipated transients included in the design specification, and design basis accidents. This includes retaining a safety factor of 3.0 against burst under normal steady state full power operation primary-to-secondary pressure differential and a safety factor of 1.4 against burst applied to the design basis accident primary-to-secondary pressure differentials. Apart from the above requirements, additional loading conditions associated with the design basis accidents, or combination of accidents in accordance with the design and licensing basis, shall also be evaluated to determine if the associated loads contribute significantly to burst or collapse. In the assessment of tube integrity, those loads that do significantly affect burst or collapse shall be determined and assessed in combination with the loads due to pressure with a safety factor of 1.2 on the combined primary loads and 1.0 on axial secondary loads.

2. Accident induced leakage performance criterion: The primary to secondary accident induced leakage rate for any design basis accident, other than a SG tube rupture, shall not exceed the leakage rate assumed in the accident analysis in terms of total leakage rate for each SG. Leakage is not to exceed 1 gpm per SG.

3. The operational LEAKAGE performance criterion is specified in LCO 3.4.13, "RCS Operational LEAKAGE."

c. Provisions for SG tube plugging criteria. Tubes found by inservice inspection to contain flaws with a depth equal to or exceeding 40% of the nominal tube wall thickness shall be plugged.

d. Provisions for SG tube inspections. Periodic SG tube inspections shall be performed. The number and portions of the tubes inspected and methods of inspection shall be performed with the objective of detecting flaws of any type (e.g., volumetric flaws, axial, and circumferential cracks) that may be present along the length of the tube, from the tube-to-tubesheet weld at the tube inlet to the tube-to-tubesheet weld at the tube outlet, and that may satisfy the applicable tube plugging criteria. The tube-to-tubesheet weld is not part of the tube. In addition to meeting the requirements of d.1, d.2, and d.3 below, the inspection scope, inspection methods, and inspection intervals shall be such as to ensure that SG tube integrity is maintained until the next SG inspection. A degradation assessment shall be performed to determine the type and location of flaws to which the tubes may be susceptible and, based on this assessment, to determine which inspection methods need to be employed and at what locations.

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

2. After the first refueling outage following SG installation, inspect 100% of the tubes in each SG at least every 96 effective full power months, which defines the inspection period.

3. If crack indications are found in any SG tube, then the next inspection for each affected and potentially affected SG for the degradation mechanism that caused the crack indication shall be at the next refueling outage. If definitive information, such as from examination of a pulled tube, diagnostic non-destructive testing, or engineering evaluation indicates that a crack-like indication is not associated with a crack(s), then the indication need not be treated as a crack.

e. Provisions for monitoring operational primary to secondary LEAKAGE

5.5.9 Secondary Water Chemistry Program

This program provides controls for monitoring secondary water chemistry to inhibit SG tube degradation. This program shall include:

a. Identification of a sampling schedule for the critical variables and control points for these variables;

b. Identification of the procedures used to measure the values of the critical variables;

c. Identification of process sampling points;

d. Procedures for the recording and management of data;

e. Procedures defining corrective actions for all off control point chemistry conditions; and

f. A procedure identifying the authority responsible for the interpretation of the data and the sequence and timing of administrative events, which is required to initiate corrective action.

5.5.10 Ventilation Filter Testing Program (VFTP)

A program shall be established to implement the following required testing of Engineered Safety Feature filter ventilation systems and the Spent Fuel Pool (SFP) Charcoal Adsorber System. The test frequencies will be in accordance with Regulatory Guide 1.52, Revision 2, except that in lieu of 18 month test intervals, a 24 month interval will be implemented. The test methods will be in accordance with Regulatory Guide 1.52, Revision 2, except as modified below.

a. Containment Recirculation Fan Cooler System

1. Demonstrate the pressure drop across the high efficiency particulate air (HEPA) filter bank is < 3 inches of water at a design flow rate (± 10%).

2. Demonstrate that an in-place dioctylphthalate (DOP) test of the HEPA filter bank shows a penetration and system bypass < 1.0%.

b. Control Room Emergency Air Treatment System (CREATS)

1. Demonstrate the pressure drop across the combined HEPA filters, the prefilters, the charcoal adsorbers and the post-filters is < 11 inches of water at a design flow rate (± 10%).

2. Demonstrate that an in-place DOP test of the HEPA filter bank shows a penetration and system bypass < 0.05%.

3. Demonstrate that an in-place Freon test of the charcoal adsorber bank shows a penetration and system bypass < 0.05%, when tested under ambient conditions.

4. Demonstrate that a laboratory test of a sample of the charcoal adsorber, when obtained as described in Regulatory Guide 1.52, Revision 2, shows a methyl iodide penetration of less than 1.5% when tested in accordance with ASTM D3803-1989 at a test temperature of 30°C (86°F), a relative humidity of 95%, and a face velocity of 61 ft/min.

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

5.5.11 Explosive Gas and Storage Tank Radioactivity Monitoring Program

This program provides controls for potentially explosive gas mixtures contained in the waste gas decay tanks and the quantity of radioactivity contained in waste gas decay tanks. The gaseous radioactivity quantities shall be determined following the methodology in NUREG-0133.

The program shall include:

a. The limits for concentrations of hydrogen and oxygen in the waste gas decay tanks and a surveillance program to ensure the limits are maintained. Such limits shall be appropriate to the system's design criteria (i.e., whether or not the system is designed to withstand a hydrogen explosion); and

b. A surveillance program to ensure that the quantity of radioactivity contained in each waste gas decay tank is less than the amount that would result in a whole body exposure of ≥ 0.5 rem to any individual in an unrestricted area, in the event of an uncontrolled release of the tanks' contents.

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

5.5.12 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 or a water and sediment content within limits; and

b. Within 31 days following addition of the new fuel to the 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 ≤ 10 mg/l when tested every 92 days.

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 require either of the following:

1. A change in the TS incorporated in the license; or

2. A change to the UFSAR or Bases that requires NRC approval pursuant to 10 CFR 50.59.

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

d. Proposed changes that meet the criteria of Specification 5.5.13.b.1 or Specification 5.5.13.b.2 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 50.71e.

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.

A loss of safety function exists when, assuming no concurrent single failure, no concurrent loss of offsite power or no concurrent 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 supported system(s) 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 inoperable 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 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 the guidelines contained in NEI 94-01, Revision 2-A, "Industry Guideline for Implementing Performance- Based Option of 10 CFR 50, Appendix J," dated October 2008.

The peak calculated containment internal pressure for the design basis loss of coolant accident, P_a, is 60 psig.

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

Leakage Rate acceptance criteria are:

a. Containment leakage rate acceptance criterion is $\leq 1.0\ L_a$. During the first plant startup following testing in accordance with this program, the leakage rate acceptance criteria are $\leq 0.60\ L_a$ for the Type B and Type C tests and $\leq 0.75\ L_a$ for Type A tests;

b. Air lock testing acceptance criteria are:

1. For each air lock, overall leakage rate is $\leq 0.05\ L_a$ when tested at $\geq P_a$, and

2. For each door, leakage rate is $\leq 0.01\ L_a$ when tested at $\geq P_a$.

c. Mini-purge valve acceptance criteria is $\leq 0.05\ L_a$ when tested at $\geq P_a$.

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

The provisions of SR 3.0.3 do not apply to the test frequencies specified in the Containment Leakage Rate Testing Program.

5.5.16 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 Air Treatment System (CREATS), CRE occupants can control the reactor safely under normal conditions and maintain it in a safe condition following a radiological event, hazardous chemical release, or a smoke challenge. The program shall ensure that adequate radiation protection is provided to permit access and occupancy of the CRE under design basis accident (DBA) conditions without personnel receiving radiation exposures in excess of 5 rem total effective dose equivalent (TEDE) for the duration of the accident. The program shall include the following elements:

a. The definition of the CRE and the CRE boundary.

b. Requirements for maintaining the CRE boundary in its design condition including configuration control and preventive maintenance.

c. Requirements for (i) determining the unfiltered air inleakage past the CRE boundary into the CRE in accordance with the testing methods and at the Frequencies specified in Sections C.1 and C.2 of Regulatory Guide 1.197, "Demonstrating Control Room Envelope Integrity at Nuclear Power Reactors," Revision 0, May 2003, and (ii) assessing CRE habitability at the Frequencies specified in Sections C.1 and C.2 of Regulatory Guide 1.197, Revision 0.

d. Licensee controlled programs that will be used to verify the integrity of the CRE boundary. Conditions that generate relevant information from these programs will be entered into the corrective action process and shall be trended and used as part of the 36 month assessments of the CRE boundary.

e. The quantitative limits on unfiltered air inleakage into the CRE. These limits shall be stated in a manner to allow direct comparison to the unfiltered air inleakage measured by the testing described in paragraph c. The unfiltered air inleakage limit for radiological challenges is the inleakage flow rate assumed in the licensing basis analyses of DBA consequences. Unfiltered air inleakage limits for hazardous chemicals must ensure that exposure of CRE occupants to these hazards will be within the assumptions in the licensing basis.

f. The provisions of SR 3.0.2 are applicable to the Frequencies for assessing CRE habitability and determining CRE unfiltered inleakage as required by paragraph c.

5.5.17 Surveillance Frequency Control Program

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

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

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

c. The provisions of Surveillance Requirement 3.0.2 and 3.0.3 are applicable to the Frequencies established in the Surveillance Frequency Control Program.

5.5.18 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-A, Revision 0, “Risk-Managed Technical Specifications (RMTS) Guidelines.”

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.

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 used to support License Amendment No. [XXX], 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.

5.0 ADMINISTRATIVE CONTROLS

5.6 Reporting Requirements

The following reports shall be submitted in accordance with 10 CFR 50.4.

5.6.1 Deleted

5.6.2 Annual Radiological Environmental Operating Report

The Annual Radiological Environmental Operating Report covering the operation of the plant during the previous calendar year shall be submitted by May 15 of each year. The report shall include summaries, interpretations, and analyses of trends of the results of the radiological environmental monitoring activities 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.

The Annual Radiological Environmental Operating 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 format of the table in the Radiological Assessment Branch Technical Position, Revision 1, November 1979. 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.

5.6.3 Radioactive Effluent Release Report

The Radioactive Effluent Release Report covering the operation of the plant shall be submitted in accordance with 10 CFR 50.36a. The report shall include a summary of the quantities of radioactive liquid and gaseous effluents and solid waste released from the plant. The material provided shall be consistent with the objectives outlined in the ODCM and in conformance with 10 CFR 50.36a and 10 CFR 50, Appendix I, Section IV.B.1.

5.6.4 Deleted

5.6.5 CORE OPERATING LIMITS REPORT (COLR)

The following administrative requirements apply to the 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:

2.1,	"Safety Limits (SLs)",
LCO 3.1.1,	"SHUTDOWN MARGIN (SDM)",
LCO 3.1.3,	"MODERATOR TEMPERATURE COEFFICIENT (MTC)",
LCO 3.1.4,	"Rod Group Alignment Limits",
LCO 3.1.5,	"Shutdown Bank Insertion Limit",
LCO 3.1.6,	"Control Bank Insertion Limits",
LCO 3.1.8	"PHYSICS TEST Exceptions – MODE 2",
LCO 3.2.1,	"Heat Flux Hot Channel Factor $\left(F_Q(Z)\right)$",
LCO 3.2.2,	"Nuclear Enthalpy Rise Hot Channel Factor($F^N{}_{\Delta H}$)",
LCO 3.2.3,	"AXIAL FLUX DIFFERENCE (AFD)",
LCO 3.3.1,	"Reactor Protection System (RPS) Instrumentation",
LCO 3.4.1,	"RCS Pressure, Temperature, and Flow Departure from Nucleate Boiling (DNB) Limits",
LCO 3.4.5,	"RCS Loops – MODES 1 ≤ 8.5% RTP, 2, and 3", and
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, specifically those described in the following documents:

1. WCAP-9272-P-A, "Westinghouse Reload Safety Evaluation Methodology," July 1985.
(Methodology for 2.1, LCO 3.1.1, LCO 3.1.3, LCO 3.1.5, LCO 3.1.6, LCO 3.2.1, LCO 3.2.2, LCO 3.2.3, and LCO 3.9.1.)

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

3. WCAP-10216-P-A, Rev. 1A, "Relaxation of Constant Axial Offset Control / FQ Surveillance Technical Specification," February 1994.
(Methodology for LCO 3.2.1 and LCO 3.2.3.)

4. WCAP-12610-P-A, "VANTAGE + Fuel Assembly Reference Core Report," April 1995.
(Methodology for LCO 3.2.1.)

5. WCAP 11397-P-A, "Revised Thermal Design Procedure," April 1989.
(Methodology for LCO 3.4.1 when using RTDP.)

6. WCAP-10054-P-A and WCAP-10081-A, "Westinghouse Small Break ECCS Evaluation Model Using the NOTRUMP Code," August 1985.
(Methodology for LCO 3.2.1.)

7. WCAP-10054-P-A, Addendum 2, Revision 1, "Addendum to the Westinghouse Small Break ECCS Evaluation Model Using the NOTRUMP Code: Safety Injection Into the Broken Loop and COSI Condensation Model," July 1997.
(Methodology for LCO 3.2.1)

8. WCAP-11145-P-A, "Westinghouse Small Break LOCA ECCS Evaluation Model Generic Study With the NOTRUMP Code," October 1986.
(Methodology for LCO 3.2.1)

9. WCAP-10079-P-A, "NOTRUMP - A Nodal Transient Small Break and General Network Code," August 1985.
(Methodology for LCO 3.2.1)

10. WCAP-8745-P-A, "Design Basis for the Thermal Overpower Delta T and Thermal Overtemperature Delta T Trip Functions," September 1986.
(Methodology for LCO 3.3.1.)

11. WCAP-14710-P-A, "1-D Heat Conduction Model for Annular Fuel Pellets," May, 1998.
(Methodology for LCO 3.2.1)

12. WCAP-12610-P-A & CENPD-404-P-A, Addendum 1-A, "Optimized ZIRLO™," July 2006.
(Methodology for LCO 3.2.1)

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.

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

The following administrative requirements apply to the PTLR:

a. RCS pressure and temperature limits for heatup, cooldown, criticality, and hydrostatic testing as well as heatup and cooldown rates shall be established and documented in the PTLR for the following:

LCO 3.4.3, "RCS Pressure and Temperature (P/T) Limits"

b. The power operated relief valve lift settings required to support the Low Temperature Overpressure Protection (LTOP) System, and the LTOP enable temperature shall be established and documented in the PTLR for the following:

LCO 3.4.6, "RCS Loops - MODE 4";

LCO 3.4.7, "RCS Loops - MODE 5, Loops Filled";

LCO 3.4.10, "Pressurizer Safety Valves"; and

LCO 3.4.12, "LTOP System."

c. The analytical methods used to determine the RCS pressure and temperature and LTOP limits shall be those previously reviewed and approved by the NRC. Specifically, the methodology is described in the following documents:

1. WCAP-14040-A, "Methodology Used to Develop Cold Overpressure Mitigating System Setpoints and RCS Heatup and Cooldown Limit Curves," Revision 4.

2. As an alternative to the use of WCAP-14040-A Section 3.2 methodology, the existing Ginna specific LTOP Setpoint Methodology submitted to the NRC in the letter to Guy S. Vissing (NRC) from Robert C. Mecredy (RG&E), "Application for Amendment to Facility Operating License, Revision to Reactor Coolant System (RCS) Pressure and Temperature Limits Report (PTLR) Administrative Controls Requirements," Attachment VI, Section 3.2, dated September 29, 1997 and approved in letter to Robert C. Mecredy (RG&E) from S. Singh Bajwa (NRC), "R.E. Ginna - Acceptance for Referencing of Pressure Temperature Limits Report," Revision 2 (TAC No. M96529), dated November 28, 1997, may be utilized.

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

5.6.7 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. The nondestructive examination techniques utilized for tubes with increased degradation susceptibility;

c. For each degradation mechanism found:

1. The nondestructive examination techniques utilized;

2. The location, orientation (if linear), measured size (if available), and voltage response for each indication. For tube wear at support structures less than 20 percent through-wall, only the total number of indications needs to be reported;

3. A description of the condition monitoring assessment and results, including the margin to the tube integrity performance criteria and comparison with the margin predicted to exist at the inspection by the previous forward-looking tube integrity assessment; and

4. The number of tubes plugged during the inspection outage.

d. An analysis summary of the tube integrity conditions predicted to exist at the next scheduled inspection (the forward-looking tube integrity assessment) relative to the applicable performance criteria, including the analysis methodology, inputs, and results;

e. The number and percentage of tubes plugged to date, and the effective plugging percentage in each SG; and

f. The results of any SG secondary side inspections.

5.0 ADMINISTRATIVE CONTROLS

5.7 High Radiation Area

Pursuant to 10 CFR Part 20, paragraph 20.1601(c), in lieu of the requirements of paragraph 20.1601(a) and 20.1601(b) of 10 CFR Part 20:

5.7.1 Access to each high radiation area, as defined in 10 CFR 20, in which an Individual could receive a deep dose equivalent > 0.1 rem in one hour (at 30 centimeters from the radiation source or from any surface penetrated by the radiation) shall be controlled as described below to prevent unauthorized entry.

a. Each 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. Entrance shall be controlled by requiring issuance of a Radiation Work Permit (RWP) or equivalent that includes specification of radiation dose rate in the immediate work area(s) and other appropriate radiation protection equipment and measures.

c. Individuals qualified in radiation protection procedures or personnel continuously escorted by such individuals may, for the performance of their assigned duties in high radiation areas, be exempt from the preceding requirements for issuance of an RWP or equivalent provided they are otherwise following plant radiation protection procedures for entry into, exit from, and work in such high radiation areas.

d. Each individual or group of individuals permitted to enter such areas shall possess, or be accompanied by, one or more of the following:

1. A radiation monitoring device that continuously indicates the radiation dose rate in the area.

2. A radiation monitoring device that continuously integrates the radiation dose rate in the area and alarms when a preset setpoint is reached. Entry into high radiation areas with this monitoring device may be made after the dose rate in the area has been determined and personnel have been made knowledgeable of it.

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.

5.7.2 In addition to the requirements of Specification 5.7.1, areas with radiation levels > 1000 mrem/hr at a distance of 30 cm shall be provided with locked or continuously guarded doors to prevent unauthorized entry and the keys shall be maintained under the administrative control of the Shift Supervisor on duty or radiation protection supervision. Doors shall remain locked except during periods of access by personnel under an approved RWP that shall specify the dose rate levels in the immediate work areas and the maximum allowable stay times for individuals in those areas. In lieu of the stay time specification of the RWP, direct or remote (such as closed circuit TV cameras) continuous surveillance may be made by personnel qualified in radiation protection procedures to provide positive exposure control over the activities being performed within the area.

5.7.3 In addition to the requirements of Specification 5.7.1, for individual high radiation areas with radiation levels of > 1000 mrem/hr at a distance of 30 cm, accessible to personnel, that are located within large areas such as reactor containment, where no enclosure exists for purposes of locking, or that cannot be continuously guarded, and where no enclosure can be reasonably constructed around the individual area, that individual area shall be barricaded and conspicuously posted, and a flashing light shall be activated as a warning device.