RENEWED FACILITY OPERATING LICENSE DPR-22

FOR

MONTICELLO NUCLEAR GENERATING PLANT

UNIT 1

MONTICELLO, MINNESOTA

NORTHERN STATES POWER COMPANY

DOCKET NO. 50-263

November 8, 2006

NORTHERN STATES POWER COMPANY

DOCKET NO. 50-263

MONTICELLO NUCLEAR GENERATING PLANT, UNIT NO. 1

SUBSEQUENT RENEWED FACILITY OPERATING LICENSE

Subsequent Renewed License No. DPR-22

1. The Nuclear Regulatory Commission (NRC or the Commission), having previously made the findings set forth in renewed License No. DPR-22 issued on November 8, 2006, has now found that:

   A. The application to subsequently renew operating License No. DPR-22 filed by Nuclear Management Company, LLC* (NMC) complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations set forth in 10 CFR Chapter I, and all required notifications to other agencies or bodies have been duly made;

   B. Construction of the Monticello Nuclear Generating Plant, Unit No. 1 (the facility), has been completed in conformity with Construction Permit No. CPPR-31 and the application, the provisions of the Act, and the regulations of the Commission;

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

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

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

   F. Northern States Power Company (NSPM) is technically and financially qualified to engage in the activities authorized by this subsequent renewed operating license in accordance with the Commission's regulations set forth in 10 CFR Chapter I;

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* NMC is maintained as historical information.

G. NSPM has satisfied the applicable provisions of 10 CFR Part 140, “Financial Protection Requirements and Indemnity Agreements,” of the Commission’s regulations;

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

I. After weighing the environmental, economic, technical, and other benefits of the facility against environmental and other costs and considering available alternatives, the issuance of this Subsequent Renewed Facility Operating License No. DPR-22, subject to the conditions for protection of the environment set forth herein, is in accordance with 10 CFR Part 51 (formerly Appendix D to Part 50), of the Commission’s regulations and all applicable requirements have been satisfied; and

J. The receipt, possession, and use of source, byproduct, and special nuclear material as authorized by this subsequent renewed operating license will be in accordance with the Commission’s regulations in 10 CFR Parts 30, 40, and 70.

2. The renewed Facility Operating License No. DPR-22 dated November 8, 2006, is superseded by Subsequent Renewed Facility Operating License No. DPR-22, hereby issued to NSPM[1] to read as follows:

   A. This subsequent renewed operating license applies to the Monticello Nuclear Generating Plant, Unit No. 1, a single cycle, forced circulation, boiling water nuclear reactor and electric generating equipment (the facility). The facility is located in Wright County on the Northern States’ site in Wright and Sherburne Counties, Minnesota, and is described in the “Final Safety Analysis Report,” as supplemented and amended (Amendment Nos. 9 through 28) and in its Environmental Report, as supplemented and amended.

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

      1. Pursuant to Section 104(b) of the Act, and 10 CFR Part 50, “Licensing of Production and Utilization Facilities,” NSPM to possess, use, and operate the facility as a utilization facility at the designated location in Wright County, Minnesota, in accordance with the procedures and limitation set forth in this subsequent renewed license;

      2. Pursuant to the Act and 10 CFR Part 70, NSPM to receive, possess, and use at any time special nuclear material as reactor fuel, in accordance with the limitations for storage and amounts required for reactor operations, as described in the Final Safety Analysis Report, as supplemented and amended, and the licensee’s filings dated August 16, 1974 (those portions dealing with handling of reactor fuel);

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[1] Northern States Power Company was incorporated in Minnesota as a wholly owned subsidiary of Xcel Energy, Inc. effective August 18, 2000. This license, as amended, was amended effective this date to reflect the Commission’s consent per 10 CFR Part 50, Section 50.80 to the license transfer approved by Order dated May 12, 2000.

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

C. This subsequent renewed operating license shall be deemed to contain and is subject to the conditions specified in the Commission's regulations in 10 CFR Chapter I and is subject to all applicable provisions of the Act and to the rules, regulations, and orders of the Commission, now or hereafter in effect; and is subject to the additional conditions specified or incorporated below:

1. Maximum Power Level

   NSPM is authorized to operate the facility at steady state reactor core power levels not in excess of 2004 megawatts (thermal).

2. Technical Specifications

   The Technical Specifications contained in Appendix A, as revised through Amendment No. 216, are hereby incorporated in the subsequent renewed license. NSPM shall operate the facility in accordance with the Technical Specifications.

3. Physical Protection

   NSPM shall implement and maintain in effect all provisions of the Commission-approved physical security, guard training and qualification, and safeguards contingency plans including amendments made pursuant to provisions of the Miscellaneous Amendments and Search

   Requirements revisions to 10 CFR 73.55 (51 FR 27817 and 27822) and to the authority of 10 CFR 50.90 and 10 CFR 50.54(p)(2). The combined set of plans which contain Safeguards Information protected under 10 CFR 73.21, are entitled: "Monticello Nuclear Generating Plant Physical Security, Training and Qualification, and Safeguards Contingency Plan," with revisions submitted through May 12, 2006.

   NSPM shall fully implement and maintain in effect all provisions of the Commission-approved Northern States Power Company - Minnesota (NSPM)

Cyber Security Plan (CSP), including changes made pursuant to the authority of 10 CFR 50.90 and 10 CFR 50.54(p). The NSPM CSP was approved by License Amendment No. 166 and supplemented by License Amendment No.186.

4. Fire Protection

NSPM shall implement and maintain in effect all provisions of the approved fire protection program as described in the Updated Safety Analysis Report for the facility and as approved in the SER dated August 29, 1979, and supplements dated February 12, 1981 and October 2, 1985, subject to the following provision:

> NSPM may make changes to the approved fire protection program without prior approval of the Commission only if those changes would not adversely affect the ability to achieve and maintain safe shutdown in the event of a fire.

5. Emergency Preparedness Plan

NSPM shall follow and maintain in effect emergency plans which meet the standards of 10 CFR 50.47(b) and the requirements in 10 CFR 50, Appendix E, including amendments and changes made pursuant to the authority of 10 CFR 50.54(q). The licensee shall meet the requirements of 10 CFR 50.54(s), 50.54(t), and 50.54(u).

6. TMI Action Plan

NSPM has satisfactorily met all TMI-2 Lessons Learned Category "A" requirements applicable to the facility. NSPM shall make a timely submittal in response to the letter dated October 31, 1980 regarding post- TMI requirements from Darrell G. Eisenhut, Director, Division of Licensing, Office of Nuclear Reactor Regulation to All Licensees of Operating Plants and Applicants for Operating Licenses and Holders of Construction Permits (NUREG-0737).

7. Repairs to the Recirculation System Piping

The repairs to the recirculation system piping are approved and the unit is hereby authorized to return to power operation, subject to the following condition:

> Prior to the startup of Cycle 11, NSPM shall submit by August 1, 1983 for the Commission's review and approval, a program for inspection and/or modification of the recirculation system piping.

8. Additional Conditions

The Additional Conditions contained in Appendix C, as revised through Amendment No. 110, are hereby incorporated into this subsequent renewed license. NSPM shall operate the facility in accordance with the Additional Conditions.

9. Implementation of New and Revised Surveillance Requirements

   For surveillance requirements that are new in Amendment No. 146, the first performance is due at the end of the first surveillance interval, which begins on the date of implementation of this amendment.

   For surveillance requirements that existed prior to Amendment No. 146, whose intervals of performance are being reduced, the first reduced surveillance interval begins upon completion of the first surveillance performed after implementation of this amendment.

   For surveillance requirements that existed prior to amendment No. 146 that have modified acceptance criteria, the first performance is due at the end of the first surveillance interval that began on the date the surveillance was last performed prior to the implementation of this amendment.

   For surveillance requirements that existed prior to Amendment No. 146, whose intervals of performance are being extended, the first extended surveillance interval begins upon completion of the last surveillance performed prior to implementation of this amendment.

10. Removed Details and Requirements Relocated to Other Controlled Documents

    License Amendment No. 146 authorizes the relocation of certain technical specifications to other licensee-controlled documents. Implementation of this amendment shall include relocation of these requirements to the specified documents, as described in (1) Section 5.0 of the NRC staff's Safety Evaluation, and (2) Table LA, Removed Detail Changes, and Table R, Relocated Specifications, attached to the NRC staff's Safety Evaluation.

11. Mitigation Strategy License Condition

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

    (a) Fire fighting response strategy with the following elements:
        1. Pre-defined coordinated fire response strategy and guidance
        2. Assessment of mutual aid fire fighting assets
        3. Designated staging areas for equipment and materials
        4. Command and control
        5. Training of response personnel

    (b) Operations to mitigate fuel damage considering the following:
        1. Protection and use of personnel assets
        2. Communications
        3. Minimizing fire spread
        4. Procedures for implementing integrated fire response strategy
        5. Identification of readily-available pre-staged equipment
        6. Training on integrated fire response strategy
        7. Spent fuel pool mitigation measures

(c) Actions to minimize release to include consideration of:
   1. Water spray scrubbing
   2. Dose to onsite responders

12. The licensee shall implement and maintain all Actions required by Attachment 2 to NRC Order EA-06-137, issued June 20, 2006, except the last action that requires incorporation of the strategies into the site security plan; contingency plan, emergency plan and/or guard training and qualification plan, as appropriate.

13. The current licensing basis is revised to remove the capability to automatically transfer to the 1AR Transformer as a source of power to the essential buses on degraded voltage and instead directly transfer to the Emergency Diesel Generators.

14. Leak rate tests required by surveillance requirements (SR) 3.6.1.1.1, SR 3.6.1.2.1, SR 3.6.1.3.11, SR 3.6.1.3.12, and SR 3.6.1.3.13 are not required to be performed until their next scheduled performance. The next scheduled performance is due at the end of the first surveillance interval that begins on the date the SR was last performed prior to implementation of Amendment No. 176.

15. In conjunction with the license amendment to revise paragraph 2.C.1 of Renewed Facility Operating License No. DPR-22 to reflect the new maximum licensed reactor core power level of 2004 megawatts thermal (MWt), the license is also amended to add the following license conditions. These license conditions provide for monitoring, evaluating, and taking prompt action in response to potential adverse flow effects as a result of power uprate operation on plant structures, systems, and components (including verifying the continued structural integrity of the steam dryer). These license conditions are applicable to the initial power ascension from 1775 MWt to 2004 MWt (EPU) conditions:

   (a) The following requirements are placed on the initial operation of the facility above the thermal power level of 1775 MWt for the power ascension to 2004 MWt. These conditions are applicable until the first time full EPU conditions (2004 MWt) are achieved. If the number of active strain gauges is less than two strain gauges (180 degrees apart) at any of the eight MSL locations, NSPM will stop power ascension and repair/replace the damaged strain gauges and only then resume power ascension.

      1. NSPM shall monitor the MNGP main steam line (MSL) strain gauges during power ascension above 1775 MWt for - increasing pressure fluctuations in the steam lines. Upon the initial increase of power above 1775 MWt until reaching 2004 MWt, NSPM shall collect data from the MSL strain gauges at nominal 2.5 percent thermal power increments and evaluate steam dryer performance based on this data.

2. During power ascension at each nominal 2.5 percent power level above 1775 MWt, the licensee shall compare the MSL data to the approved limit curves and determine the minimum alternating stress ratio. A summary of the results shall be provided for NRC review at approximately 105 percent and 110 percent of 1775 MWt.

3. NSPM shall hold the facility at approximately 105 percent and 110 percent of 1775 MWt to perform the following:

   a. Collect strain data from the MSL strain gauges;

   b. Collect vibration data from the accelerometers in the following locations: MSLs (including those in the drywell, turbine building and in the steam tunnel), Feedwater Lines (FWLs) (including those in the drywell and turbine building), Safety Relief Valves (SRVs), Main Steam Isolation Valves (MSIVs) in the drywell, and Turbine Stop Valves (TSVs);

   c. Evaluate steam dryer performance based on MSL strain gauge data;

   d. Evaluate the measured vibration data collected from the vibration monitoring instruments at that power level, data projected to EPU conditions, trends, and to the acceptance limits;

   e. Provide the steam dryer evaluation and the vibration evaluation, including the data collected, to the NRC staff by facsimile or electronic transmission to the NRC project manager upon completion of the evaluation;

   f. NSPM shall not increase power above each hold point until 96 hours after the NRC project manager confirms receipt of the evaluations transmission or until verbal approval by NRC to increase power is provided, whichever comes first.

4. If any frequency peak from the MSL strain gauge data exceeds the Level 1 limit curves, NSPM shall return the facility to a power level at which the limit curve is not exceeded. NSPM shall resolve the discrepancy, evaluate and document the continued structural integrity of the steam dryer, and provide that documentation by facsimile or electronic transmission to the NRC project manager prior to further increases in reactor power. If a revised stress analysis is required to be performed and new limit curves are developed, then NSPM shall not further increase power above each hold point until 96 hours after the NRC project manager confirms receipt of the transmission or until verbal approval by NRC to increase power is provided, whichever comes first.

5. In addition to evaluating the MSL strain gauge data, NSPM shall monitor reactor pressure vessel water level instrumentation, and MSL piping accelerometers when power levels are increasing. If resonance frequencies are identified as increasing above nominal levels in proportion to strain gauge instrumentation data, NSPM shall stop power ascension, evaluate and document the continued structural integrity of the steam dryer, and provide that documentation to NRC staff by facsimile or electronic transmission to the NRC project manager prior to further increases in reactor power.

(b) NSPM shall implement the following actions for the initial power ascension from 1775 MWt to 2004 MWt condition.

1. In the event that acoustic signals (in MSL strain gauge signals) are identified that exceed the Level 1 limit curves during power ascension above 1775 MWt, NSPM shall evaluate dryer loads, and stresses, and re-establish the limit curves. In the event that stress analyses are re-performed based on new strain gauge data to address paragraph 15(a)4. above, the revised load definition, stress analysis, and limit curves shall include:

    a. Application of the ACE 2.0 and ACE 2.0-SPM values for percent bias error and for percent uncertainty to all the SRV acoustic resonances.

    b. Use of bump-up factors associated with all the SRV acoustic resonances as determined from the scale model test results.

    c. Evaluation of the effects of ±10 percent frequency shifts in increments of 2.5 percent.

2. After reaching 2004 MWt, NSPM shall obtain measurements from the MSL strain gauges and establish the steam dryer flow-induced vibration load fatigue margin for the facility, update the dryer stress report, and re-establish the limit curves with the updated load definition. This data will be provided to the NRC staff as described in license condition 15(e).

(c) NSPM shall prepare the EPU power ascension test procedure to include:

1. The stress limit curves to be applied for evaluating steam dryer performance;

2. Specific hold points and their duration during EPU power ascension;

3. Activities to be accomplished during the hold points;

4. Plant parameters to be monitored;

5. Inspections and walkdowns to be conducted for steam, feedwater, and condensate systems and components during the hold points;

6. Methods to be used to trend plant parameters;

7. Acceptance criteria for monitoring and trending plant parameters, and conducting the walkdowns and inspections;

8. Actions to be taken if acceptance criteria are not satisfied; and

9. Verification of the completion of commitments and planned actions specified in its application and all supplements to the application in support of the EPU license amendment request pertaining to the steam dryer prior to power increase above 1775 MWt. NSPM shall provide the related EPU startup test procedure sections to the NRC by facsimile or electronic transmission to the NRC project manager prior to increasing power above 1775 MWt.

(d) The following key attributes of the program for verifying the continued structural integrity of the steam dryer shall not be made less restrictive without prior NRC approval:

1. During initial power ascension testing above 1775 MWt, each test plateau increment shall be approximately 5 percent of 1775 MWt.

2. Level 1 performance criteria; and

3. The methodology for establishing the limit curves used for the Level 1 and Level 2 performance.

(e) The results of the power ascension testing to verify the continued structural integrity of the steam dryer shall be submitted to the NRC staff in a report that includes a final load definition and stress report of the steam dryer, including the results of a complete re-analysis using the ACE 2.0 and ACE2.0-SPM specific bias and uncertainties. The report will be provided within 90 days of the completion of EPU power ascension testing.

(f) During the first two scheduled refueling outages after reaching EPU conditions, a visual inspection shall be conducted of all accessible, susceptible locations of the steam dryer in accordance with the inspection guidelines provided to the NRC.

(g) The results of the visual inspections of the steam dryer shall be reported to the NRC staff within 90 days following startup from the respective refueling outage.

(h) At the end of the second refueling outage, following the implementation of the EPU, the licensee shall submit a long-term steam dryer inspection plan based on industry operating experience along with the baseline inspection results for NRC review and approval.

The license conditions described above shall expire (1) upon satisfaction of the requirements in Paragraphs 15(f) and 15(g), provided that a visual inspection of the steam dryer does not reveal any new unacceptable flaw(s) or unacceptable flaw growth that is due to fatigue, and (2) upon satisfaction of the requirements specified in Paragraph 15(h).

16. <u>Adoption of 10 CFR 50.69, "Risk-informed categorization and treatment of structures, systems, and components for nuclear power plants"</u>

    NSPM is approved to implement 10 CFR 50.69 using the approaches 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, with 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 SSCs and their associated supports; and the results of non-PRA evaluations that are based on the IPEEE Screening Assessment for External Hazards, i.e., seismic margin analysis (SMA) to evaluate seismic risk, and a screening of other external hazards (e.g., external flooding and high winds) updated using the external hazard screening significance criteria identified in ASME/ANS PRA Standard RA-Sa-2009, as endorsed in RG 1.200, Revision 2; as specified in MNGP License Amendment No. 203 dated August 29, 2019.

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

D. NSPM shall immediately notify the NRC of any accident at this facility which could result in an unplanned release of quantities of fission products in excess of allowable limits for normal operation established by the Commission.

E. NSPM shall have and maintain financial protection of such type and in such amounts as the Commission shall require in accordance with Section 170 of the Atomic Energy Act of 1954, as amended, to cover public liability claims.

F. NSPM shall observe such standards and requirements for the protection of the environment as are validly imposed pursuant to authority established under Federal and State law and as determined by the Commission to be applicable to the facility covered by this subsequent renewed facility operating license.

G. The Updated Safety Analysis Report supplement, as revised, submitted pursuant to 10 CFR 54.21(d), shall be included in the next scheduled update to the Updated Safety Analysis Report required by 10 CFR 50.71(e)(4) following the issuance of this renewed operating license. Until that update is complete, NSPM may make changes to the programs and activities described in the supplement without prior Commission approval, provided that NSPM evaluates such changes pursuant to the criteria set forth in 10 CFR 50.59 and otherwise complies with the requirements in that section.

H. The Updated Safety Analysis Report supplement, as revised, describes certain future activities to be completed prior to the period of extended operation. NSPM shall complete these activities no later than September 8, 2010, and shall notify the NRC in writing when implementation of these activities is complete and can be verified by NRC inspection.

I. All capsules in the reactor vessel that are removed and tested must meet the test procedures and reporting requirements of the most recent NRC-approved version of the Boiling Water Reactor Vessels and Internals Project (BWRVIP) Integrated Surveillance Program (ISP) appropriate for the configuration of the specimens in the capsule. All capsules placed in storage must be maintained for future insertion. Any changes to storage requirements must be approved by the NRC, as required by 10 CFR Part 50, Appendix H.

J. Upon implementation of Amendment No. 160 adopting TSTF-448, Revision 3, the determination of control room envelope (CRE) unfiltered air inleakage as required by SR 3.7.4.4, in accordance with TS 5.5.13.c(i), the assessment of CRE habitability as required by Specification 5.5.13.c(ii), and the measurement of CRE pressure as required by Specification 5.5.13.d, shall be considered met. Following implementation:

(a) The first performance of SR 3.7.4.4, in accordance with Specifications 5.5.1.3.c(i), shall be within the specified frequency of 6 years, plus the 18-month allowance of SR 3.0.2, as measured from June 4, 2004, the date of the most recent successful tracer gas test, as stated in the letter (L-MT-04-049, dated November 18, 2004) in response to Generic Letter 2003-01, or within the next 18 months if the time period since the most recent successful tracer gas test is greater than 6 years.

(b) The first performance of the periodic assessment of CRE habitability, Specifications 5.5.13.c(ii), shall be within 3-years, plus the 9-month allowance of SR 3.0.2, as measured from June 4, 2004, the date of the most recent successful tracer gas test, as stated in the letter (L-MT-04- 049, dated November 18, 2004) in 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.

(c) The first performance of the periodic measurement of CRE pressure, Specification 5.5.13.d, shall be within 24 months, plus the 184 days allowed by SR 3.0.2, as measured from October 17, 2008, the date of the most recent pressure measurement test, or within 184 days if not performed previously.

K. <u>Subsequent License Renewal License Conditions</u>

1. The information in the Updated Final Safety Analysis Report Supplement submitted as required by 10 CFR 54.21(d), and revised during the application review process, and the licensee’s commitments listed in Appendix A of the “Safety Evaluation to the SLRA of Monticello Nuclear Generating Plant, Unit 1,” dated March 2024, are collectively the “Subsequent License Renewal Updated Final Safety Analysis Report Supplement.” This supplement is henceforth part of the Updated Final Safety Analysis Report which will be updated in accordance with 10 CFR 50.71(e).

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

2. This Subsequent License Renewal Updated Final Safety Analysis Report Supplement, as defined in subsequent renewed license condition [1] above, describes programs to be implemented and activities to be completed before the subsequent period of extended operation, which is the period following the September 8, 2030, expiration of the initial renewed license.

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

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

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

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

L. This subsequent renewed operating license is effective as of the date of issuance and shall expire at midnight, September 8, 2050.

FOR THE NUCLEAR REGULATORY COMMISSION

/RA/

Andrea D. Veil, Director
Office of Nuclear Reactor Regulation

Attachments: 1. Appendix A - Technical Specifications
2. Appendix B - (Deleted per Amendment 15, 12/17/82)
3. Appendix C - Additional Conditions

Date of Issuance: December 30, 2024

APPENDIX A

TO

RENEWED FACILITY OPERATING LICENSE DPR-22

TECHNICAL SPECIFICATIONS

FOR

MONTICELLO NUCLEAR GENERATING PLANT

UNIT 1

MONTICELLO, MINNESOTA

NORTHERN STATES POWER COMPANY

DOCKET NO. 50-263

October 29, 2006

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.
AVERAGE PLANAR LINEAR HEAT GENERATION RATE (APLHGR)	The APLHGR shall be applicable to a specific planar height and is equal to the sum of the LHGRs for all the fuel rods in the specified bundle at the specified height divided by the number of fuel rods in the fuel bundle at the height.
CHANNEL CALIBRATION	A CHANNEL CALIBRATION shall be the adjustment, as necessary, of the channel output such that it responds within the necessary range and accuracy to known values of the parameter that the channel monitors. The CHANNEL CALIBRATION shall encompass all devices in the channel required for channel OPERABILITY and the CHANNEL FUNCTIONAL TEST. Calibration of instrument channels with resistance temperature detector (RTD) or thermocouple sensors may consist of an inplace qualitative assessment of sensor behavior and normal calibration of the remaining adjustable devices in the channel. The CHANNEL CALIBRATION may be performed by means of any series of sequential, overlapping, or total channel steps.
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 FUNCTIONAL TEST	A CHANNEL FUNCTIONAL TEST shall be the injection of a simulated or actual signal into the channel as close to the sensor as practicable to verify OPERABILITY of all devices in the channel required for channel OPERABILITY. The CHANNEL FUNCTIONAL TEST may be performed by means of any series of sequential, overlapping, or total channel steps.

1.1 Definitions

CORE ALTERATION	CORE ALTERATION shall be the movement of any fuel, sources, or reactivity control components, within the reactor vessel with the vessel head removed and fuel in the vessel. The following exceptions are not considered to be CORE ALTERATIONS: a. Movement of source range monitors, local power range monitors, intermediate range monitors, traversing incore probes, or special movable detectors (including undervessel replacement); and b. Control rod movement, provided there are no fuel assemblies in the associated core cell. Suspension of CORE ALTERATIONS shall not preclude completion of movement of a component to a safe position.
CORE OPERATING LIMITS REPORT (COLR)	The COLR is the unit specific document that provides cycle specific parameter limits for the current reload cycle. These cycle specific limits shall be determined for each reload cycle in accordance with Specification 5.6.3. 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 dose as the quantity and isotopic mixture of I-131, I-132, I-133, I-134, and I-135 actually present. The dose conversion factors used for this calculation shall be those listed in Federal Guidance Report (FGR)-11, "Limiting Values of Radionuclide Intake and Air Concentration Factors for Inhalation, Submersion and Ingestion," September 1988, and FGR-12, "External Exposure to Radionuclides in Air, Water and Soil," September 1993.
DRAIN TIME	The DRAIN TIME is the time it would take for the water inventory in and above the Reactor Pressure Vessel (RPV) to drain to the top of the active fuel (TAF) seated in the RPV assuming: a) The water inventory above the TAF is divided by the limiting drain rate; b) The limiting drain rate is the larger of the drain rate through a single penetration flow path with the highest flow rate, or the sum of the drain rates through multiple penetration flow paths susceptible to a common mode

1.1 Definitions

DRAIN TIME (continued)

failure, for all penetration flow paths below the TAF except:

1. Penetration flow paths connected to an intact closed system, or isolated by manual or automatic valves that are closed and administratively controlled in the closed position, blank flanges, or other devices that prevent flow of reactor coolant through the penetration flow paths;

2. Penetration flow paths capable of being isolated by valves that will close automatically without offsite power prior to the RPV water level being equal to the TAF when actuated by RPV water level isolation instrumentation; or

3. Penetration flow paths with isolation devices that can be closed prior to the RPV water level being equal to the TAF by a dedicated operator trained in the task, who in continuous communication with the control room, is stationed at the controls, and is capable of closing the penetration flow path isolation device without offsite power.

c) The penetration flow paths required to be evaluated per paragraph b) are assumed to open instantaneously and are not subsequently isolated, and no water is assumed to be subsequently added to the RPV water inventory;

d) No additional draining events occur; and

e) Realistic cross-sectional areas and drain rates are used.

A bounding DRAIN TIME may be used in lieu of a calculated value.

INSERVICE TESTING PROGRAM

The INSERVICE TESTING PROGRAM is the licensee program that fulfills the requirements of 10 CFR 50.55a(f)

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1.1 Definitions

LEAKAGE	LEAKAGE shall be: a. <u>Identified LEAKAGE</u> 1. LEAKAGE into the drywell, such as that from pump seals or valve packing that is captured and conducted to a sump or collecting tank; or 2. LEAKAGE into the drywell atmosphere from sources that are both specifically located and known to not interfere with the operation of leakage detection systems; b. <u>Unidentified LEAKAGE</u> All LEAKAGE into the drywell that is not identified LEAKAGE; c. <u>Total LEAKAGE</u> Sum of the identified and unidentified LEAKAGE; and d. <u>Pressure Boundary LEAKAGE</u> LEAKAGE through a fault in a Reactor Coolant System (RCS) component body, pipe wall, or vessel wall. LEAKAGE past seals, packing, and gaskets is not pressure boundary LEAKAGE.
LINEAR HEAT GENERATION RATE (LHGR)	The LHGR shall be the heat generation rate per unit length of fuel rod. It is the integral of the heat flux over the heat transfer area associated with the unit length.
LOGIC SYSTEM FUNCTIONAL TEST	A LOGIC SYSTEM FUNCTIONAL TEST shall be a test of all logic components required for OPERABILITY of a logic circuit, from as close to the sensor as practicable up to, but not including, the actuated device, to verify OPERABILITY. The LOGIC SYSTEM FUNCTIONAL TEST may be performed by means of any series of sequential, overlapping, or total system steps so that the entire logic system is tested.
MINIMUM CRITICAL POWER RATIO (MCPR)	The MCPR shall be the smallest critical power ratio (CPR) that exists in the core for each class of fuel. The CPR is that power in the assembly that is calculated by application of the appropriate correlation(s) to cause some point in the assembly to experience boiling transition, divided by the actual assembly operating power.

1.1 Definitions

MODE	A MODE shall correspond to any one inclusive combination of mode switch position, 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, division, 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, division, component, or device to perform its specified safety function(s) are also capable of performing their related support function(s).
PRESSURE AND TEMPERATURE LIMITS REPORT (PTLR)	The PTLR is the unit specific document that provides the reactor vessel pressure and temperature limits, including heatup and cooldown rates, for the current reactor vessel fluence period. These pressure and temperature limits shall be determined for each fluence period in accordance with Specification 5.6.5.
RATED THERMAL POWER (RTP)	RTP shall be a total reactor core heat transfer rate to the reactor coolant of 2004 MWt.
REACTOR PROTECTION SYSTEM (RPS) RESPONSE TIME	The RPS RESPONSE TIME shall be that time interval from initiation of any RPS channel trip to the de-energization of the scram pilot valve solenoids. The response time may be measured by means of any series of sequential, overlapping, or total steps so that the entire response time is measured.
SHUTDOWN MARGIN (SDM)	SDM shall be the amount of reactivity by which the reactor is subcritical or would be subcritical throughout the operating cycle assuming that: a. The reactor is xenon free; b. The moderator temperature is ≥ 68°F corresponding to the most reactive state; and c. All control rods are fully inserted except for the single control rod of highest reactivity worth, which is assumed to be fully withdrawn. With control rods not capable of being fully inserted, the reactivity worth of these control rods must be accounted for in the determination of SDM.

1.1 Definitions

STAGGERED TEST BASIS	A STAGGERED TEST BASIS shall consist of the testing of one of the systems, subsystems, channels, or other designated components during the interval specified by the Surveillance Frequency, so that all systems, subsystems, channels, or other designated components are tested during *n* Surveillance Frequency intervals, where *n* is the total number of systems, subsystems, channels, or other designated components in the associated function.
THERMAL POWER	THERMAL POWER shall be the total reactor core heat transfer rate to the reactor coolant.
TURBINE BYPASS SYSTEM RESPONSE TIME	The TURBINE BYPASS SYSTEM RESPONSE TIME shall be that time interval from when the main turbine trip solenoid is activated until 80% of the turbine bypass capacity is established. The response time may be measured by means of any series of sequential, overlapping, or total steps so that the entire response time is measured.

Table 1.1-1 (page 1 of 1)
MODES

MODE	TITLE	REACTOR MODE SWITCH POSITION	AVERAGE REACTOR COOLANT TEMPERATURE (°F)
1	Power Operation	Run	NA
2	Startup	Refuel[a] or Startup/Hot Standby	NA
3	Hot Shutdown[a]	Shutdown	> 212
4	Cold Shutdown[a]	Shutdown	≤ 212
5	Refueling[b]	Shutdown or Refuel	NA

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

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

1.0 USE AND APPLICATION

1.2 Logical Connectors

PURPOSE

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

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

BACKGROUND

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

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

EXAMPLES

The following examples illustrate the use of logical connectors.

EXAMPLE 1.2-1

ACTIONS

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

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

1.2 Logical Connectors

EXAMPLES (continued)

EXAMPLE 1.2-2

ACTIONS

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

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

1.0 USE AND APPLICATION

1.3 Completion Times

PURPOSE	The purpose of this section is to establish the Completion Time convention and to provide guidance for its use.
BACKGROUND	Limiting Conditions for Operation (LCOs) specify minimum requirements for ensuring safe operation of the unit. The ACTIONS associated with an LCO state Conditions that typically describe the ways in which the requirements of the LCO can fail to be met. Specified with each stated Condition are Required Action(s) and Completion Time(s).

DESCRIPTION

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

Unless otherwise specified, the Completion Time begins when a senior licensed operator on the operating shift crew with responsibility for plant operations makes the determination that an LCO is not met and an ACTIONS Condition is entered. The "otherwise specified" exceptions are varied, such as a Required Action Note or Surveillance Requirement Note that provides an alternative time to perform specific tasks, such as testing, without starting the Completion Time. While utilizing the Note, should a Condition be applicable for any reason not addressed by the Note, the Completion Time begins. Should the time allowance in the Note be exceeded, the Completion Time begins at that point. The exceptions may also be incorporated into the Completion Time. For example, LCO 3.8.1, "AC Sources - Operating," Required Action 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 unit is not within the LCO Applicability.

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

1.3 Completion Times

DESCRIPTION (continued)

discovery of the situation that required entry into the Condition, unless otherwise specified.

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

a. Must exist concurrent with the first inoperability; and

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

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

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

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

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

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

1.3 Completion Times

EXAMPLES

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

EXAMPLE 1.3-1

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
B. Required Action and associated Completion Time not met.	B.1 Be in MODE 3. AND B.2 Be in MODE 4.	12 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 12 hours AND in MODE 4 within 36 hours. A total of 12 hours is allowed for reaching MODE 3 and a total of 36 hours (not 48 hours) is allowed for reaching MODE 4 from the time that Condition B was entered. If MODE 3 is reached within 6 hours, the time allowed for reaching MODE 4 is the next 30 hours because the total time allowed for reaching MODE 4 is 36 hours.

If Condition B is entered while in MODE 3, the time allowed for reaching MODE 4 is the next 36 hours.

1.3 Completion Times

EXAMPLES (continued)

EXAMPLE 1.3-2

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One pump inoperable.	A.1 Restore pump to OPERABLE status.	7 days
B. Required Action and associated Completion Time not met.	B.1 Be in MODE 3. AND B.2 Be in MODE 4.	12 hours 36 hours

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

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

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

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

1.3 Completion Times

EXAMPLES (continued)

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

EXAMPLE 1.3-3

ACTIONS

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

1.3 Completion Times

EXAMPLES (continued)

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

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

1.3 Completion Times

EXAMPLES (continued)

EXAMPLE 1.3-4

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more valves inoperable.	A.1 Restore valve(s) to OPERABLE status.	4 hours
B. Required Action and associated Completion Time not met.	B.1 Be in MODE 3. AND B.2 Be in MODE 4.	12 hours 36 hours

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

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

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

1.3 Completion Times

EXAMPLES (continued)

EXAMPLE 1.3-5

ACTIONS

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

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more valves inoperable.	A.1 Restore valve to OPERABLE status.	4 hours
B. Required Action and associated Completion Time not met.	B.1 Be in MODE 3. AND B.2 Be in MODE 4.	12 hours 36 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.

1.3 Completion Times

EXAMPLES (continued)

EXAMPLE 1.3-6

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One channel inoperable.	A.1 Perform SR 3.x.x.x. OR A.2 Reduce THERMAL POWER to ≤ 50% RTP.	Once per 8 hours 8 hours
B. Required Action and associated Completion Time not met.	B.1 Be in MODE 3.	12 hours

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

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

1.3 Completion Times

EXAMPLES (continued)

EXAMPLE 1.3-7

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One subsystem inoperable.	A.1 Verify affected subsystem isolated.	1 hour AND Once per 8 hours thereafter
	AND A.2 Restore subsystem to OPERABLE status.	72 hours
B. Required Action and associated Completion Time not met.	B.1 Be in MODE 3. AND B.2 Be in MODE 4.	12 hours 36 hours

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

If after Condition A is entered, Required Action A.1 is not met within either the initial 1 hour or any subsequent 8 hour interval from the previous performance (plus the extension allowed by SR 3.0.2), Condition B is entered. The Completion Time clock for Condition A does not stop after Condition B is entered, but continues from the time Condition A was initially entered. If Required Action A.1 is met after Condition B is entered, Condition B is exited and operation may continue in accordance with Condition A, provided the Completion Time for Required Action A.2 has not expired.

1.3 Completion Times

EXAMPLES (continued)

EXAMPLE 1.3-8

ACTIONS

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

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

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

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.

1.3 Completion Times

EXAMPLES (continued)

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.

Sometimes special situations dictate when the requirements of a Surveillance are to be met. They are "otherwise stated" conditions allowed by SR 3.0.1. They may be stated as clarifying Notes in the Surveillance, as part of the Surveillance, or both.

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.

The use of "met" or "performed" in these instances conveys specific meanings. A Surveillance is "met" only when the acceptance criteria are satisfied. Known failure of the requirements of a Surveillance, even without a Surveillance specifically being "performed," constitutes a Surveillance not "met." "Performance" refers only to the requirement to specifically determine the ability to meet the acceptance criteria.

Some Surveillances contain Notes that modify the Frequency of performance or the conditions during which the acceptance criteria must be satisfied. For these Surveillances, the MODE-entry restrictions of SR 3.0.4 may not apply. Such a Surveillance is not required to be performed prior to entering a MODE or other specified condition in the Applicability of the associated LCO if any of the following three conditions are satisfied:

1.4 Frequency

DESCRIPTION (continued)

a. The Surveillance is not required to be met in the MODE or other specified condition to be entered;

b. The Surveillance is required to be met in the MODE or other specified condition to be entered, but has been performed within the specified Frequency (i.e., it is current) and is known not to be failed; or

c. The Surveillance is required to be met, but not performed, in the MODE or other specified condition to be entered, and is known not to be failed.

Examples 1.4-3, 1.4-4, 1.4-5, and 1.4-6 discuss these special situations.

EXAMPLES

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

EXAMPLE 1.4-1

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
Perform CHANNEL CHECK.	12 hours

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 interval specified in the Frequency is allowed by SR 3.0.2 for operational flexibility. The measurement of this interval continues at all times, even when the SR is not required to be met per SR 3.0.1 (such as when the equipment is inoperable, a variable is outside specified limits, or the unit is outside the Applicability of the LCO). If the interval specified by SR 3.0.2 is exceeded while the unit is in a MODE or other specified condition in the Applicability of the LCO, and the performance of the Surveillance is not otherwise modified (refer to Examples 1.4-3 and 1.4-4), then SR 3.0.3 becomes applicable.

1.4 Frequency

EXAMPLES (continued)

If the interval as specified by SR 3.0.2 is exceeded while the unit is not in a MODE or other specified condition in the Applicability of the LCO for which performance of the SR is required, then SR 3.0.4 becomes applicable. The Surveillance must be performed within the Frequency requirements of SR 3.0.2, as modified by SR 3.0.3, prior to entry into the MODE or other specified condition or the LCO is considered not met (in accordance with SR 3.0.1) and LCO 3.0.4 becomes applicable.

EXAMPLE 1.4-2

SURVEILLANCE REQUIREMENTS

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

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

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

1.4 Frequency

EXAMPLES (continued)

EXAMPLE 1.4-3

SURVEILLANCE REQUIREMENTS

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

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

As the Note modifies the required performance of the Surveillance, it is construed to be part of the "specified Frequency." Should the 7 day interval be exceeded while operation is < 25% RTP, this Note allows 12 hours after power reaches ≥ 25% RTP to perform the Surveillance. The Surveillance is still considered to be within the "specified Frequency." Therefore, if the Surveillance was not performed within the 7 day interval (plus the extension allowed by SR 3.0.2), 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 (plus the extension allowed by SR 3.0.2) with power ≥ 25% RTP.

Once the unit reaches 25% RTP, 12 hours would be allowed for completing the Surveillance. If the Surveillance was not performed within this 12 hour interval (plus the extension allowed by SR 3.0.2), there would then be a failure to perform a Surveillance within the specified Frequency, and the provisions of SR 3.0.3 would apply.

1.4 Frequency

EXAMPLES (continued)

EXAMPLE 1.4-4

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
-----NOTE----- Only required to be met in MODE 1. -----	
Verify leakage rates are within limits.	24 hours

Example 1.4-4 specifies that the requirements of this Surveillance do not have to be met until the unit is in MODE 1. The interval measurement for the Frequency of this Surveillance continues at all times, as described in Example 1.4-1. However, the Note constitutes an "otherwise stated" exception to the Applicability of this Surveillance. Therefore, if the Surveillance was not performed within the 24 hour interval (plus the extension allowed by SR 3.0.2), but the unit was not in MODE 1, there would be no failure of the SR nor failure to meet the LCO. Therefore, no violation of SR 3.0.4 occurs when changing MODES, even with the 24 hour Frequency exceeded, provided the MODE change was not made into MODE 1. Prior to entering MODE 1 (assuming again that the 24 hour Frequency was not met), SR 3.0.4 would require satisfying the SR.

1.4 Frequency

EXAMPLES (continued)

EXAMPLE 1.4-5

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
---------------------------NOTE-------------------------- Only required to be performed in MODE 1. ---	
Perform complete cycle of the valve.	7 days

The interval continues, whether or not the unit operation is in MODE 1, 2, or 3 (the assumed Applicability of the associated LCO) between performances.

As the Note modifies the required performance of the Surveillance, the Note is construed to be part of the "specified Frequency." Should the 7 day interval be exceeded while operation is not in MODE 1, this Note allows entry into and operation in MODES 2 and 3 to perform the Surveillance. The Surveillance is still considered to be performed within the "specified Frequency" if completed prior to entering MODE 1. Therefore, if the Surveillance was not performed within the 7 day (plus the extension allowed by SR 3.0.2) interval, but operation was not in MODE 1, 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 result in entry into MODE 1.

Once the unit reaches MODE 1, the requirement for the Surveillance to be performed within its specified Frequency applies and would require that the Surveillance had been performed. If the Surveillance was not performed prior to entering MODE 1, there would then be a failure to perform a Surveillance within the specified Frequency, and the provisions of SR 3.0.3 would apply.

1.4 Frequency

EXAMPLES (continued)

EXAMPLE 1.4-6

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
-----------------------------NOTE----------------------------- Not required to be met in MODE 3. --	
Verify parameter is within limits.	24 hours

Example 1.4-6 specifies that the requirements of this Surveillance do not have to be met while the unit is in MODE 3 (the assumed Applicability of the associated LCO is MODES 1, 2, and 3). The interval measurement for the Frequency of this Surveillance continues at all times, as described in Example 1.4-1. However, the Note constitutes an "otherwise stated" exception to the Applicability of this Surveillance. Therefore, if the Surveillance was not performed within the 24 hour interval (plus the extension allowed by SR 3.0.2), and the unit was in MODE 3, there would be no failure of the SR nor failure to meet the LCO. Therefore, no violation of SR 3.0.4 occurs when changing MODES to enter MODE 3, even with the 24 hour Frequency exceeded, provided the MODE change does not result in entry into MODE 2. Prior to entering MODE 2 (assuming again that the 24 hour Frequency was not met), SR 3.0.4 would require satisfying the SR.

2.0 SAFETY LIMITS (SLs)

2.1 SLs

2.1.1 Reactor Core SLs

2.1.1.1 With the reactor steam dome pressure < 586 psig or core flow < 10% rated core flow:

THERMAL POWER shall be ≤ 25% RTP.

2.1.1.2 (Deleted)

2.1.1.3 With the reactor steam dome pressure ≥ 586 psig and core flow ≥ 10% rated core flow:

MCPR shall be ≥ 1.05.

2.1.1.4 Reactor vessel water level shall be greater than the top of active irradiated fuel.

2.1.2 Reactor Coolant System Pressure SL

Reactor steam dome pressure shall be ≤ 1332 psig.

2.0 SAFETY LIMITS (SLs)

2.2 SL VIOLATIONS

With any SL violation, the following actions shall be completed within 2 hours:

2.2.1 Restore compliance with all SLs; and

2.2.2 Insert all insertable control rods.

3.0 LIMITING CONDITION FOR OPERATION (LCO) Applicability

LCO 3.0.1	LCOs shall be met during the MODES or other specified conditions in the Applicability, except as provided in LCO 3.0.2, LCO 3.0.7, LCO 3.0.8, and LCO 3.0.9.
LCO 3.0.2	Upon discovery of a failure to meet an LCO, the Required Actions of the associated Conditions shall be met, except as provided in LCO 3.0.5 and LCO 3.0.6. If the LCO is met or is no longer applicable prior to expiration of the specified Completion Time(s), completion of the Required Action(s) is not required, unless otherwise stated.
LCO 3.0.3	When an LCO is not met and the associated ACTIONS are not met, an associated ACTION is not provided, or if directed by the associated ACTIONS, the unit shall be placed in a MODE or other specified condition in which the LCO is not applicable. Action shall be initiated within 1 hour to place the unit, as applicable, in: a. MODE 2 within 7 hours; b. MODE 3 within 13 hours; and c. MODE 4 within 37 hours. Exceptions to this Specification are stated in the individual Specifications. Where corrective measures are completed that permit operation in accordance with the LCO or ACTIONS, completion of the actions required by LCO 3.0.3 is not required. LCO 3.0.3 is only applicable in MODES 1, 2, and 3.
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.

LCO Applicability

LCO 3.0.4 (continued)

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

LCO 3.0.5

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

LCO 3.0.6

When a supported system LCO is not met solely due to a support system LCO not being met, the Conditions and Required Actions associated with this supported system are not required to be entered. Only the support system LCO ACTIONS are required to be entered. This is an exception to LCO 3.0.2 for the supported system. In this event, an evaluation shall be performed in accordance with Specification 5.5.10, "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

Special Operations LCOs in Section 3.10 allow specified Technical Specifications (TS) requirements to be changed to permit performance of special tests and operations. Unless otherwise specified, all other TS requirements remain unchanged. Compliance with Special Operations LCOs is optional. When a Special Operations LCO is desired to be met but is not met, the ACTIONS of the Special Operations LCO shall be met. When a Special Operations LCO is not desired to be met, entry into a MODE or other specified condition in the Applicability shall only 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:

LCO Applicability

LCO 3.0.8 (continued)

a. The snubbers not able to perform their associated support function(s) are associated with only one subsystem of a multiple subsystem supported system or are associated with a single 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 subsystem of a multiple 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) is/are not required to be declared not met solely for this reason for up to 30 days provided that at least one division 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 division or subsystem of a multiple division or subsystem supported system provided at least one division or subsystem of the supported system is OPERABLE and the barriers supporting each of these divisions or subsystems provide their related support function(s) for different categories of initiating events.

For the purposes of this specification, the High Pressure Coolant Injection (HPCI) system, the Reactor Core Isolation Cooling (RCIC) system, and the Automatic Depressurization System (ADS) are considered independent subsystems of a single system.

If the required OPERABLE division 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 divisions or subsystems supported by the barriers that cannot perform their related support function(s).

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

3.0 SURVEILLANCE REQUIREMENT (SR) Applicability

SR 3.0.1	SRs shall be met during the MODES or other specified conditions in the Applicability for individual LCOs, unless otherwise stated in the SR. Failure to meet a Surveillance, whether such failure is experienced during the performance of the Surveillance or between performances of the Surveillance, shall be failure to meet the LCO. Failure to perform a Surveillance within the specified Frequency shall be failure to meet the LCO except as provided in SR 3.0.3. Surveillances do not have to be performed on inoperable equipment or variables outside specified limits.
SR 3.0.2	The specified Frequency for each SR is met if the Surveillance is performed within 1.25 times the interval specified in the Frequency, as measured from the previous performance or as measured from the time a specified condition of the Frequency is met. For Frequencies specified as "once," the above interval extension does not apply. If a Completion Time requires periodic performance on a "once per . . ." basis, the above Frequency extension applies to each performance after the initial performance. Exceptions to this Specification are stated in the individual Specifications.
SR 3.0.3	If it is discovered that a Surveillance was not performed within its specified Frequency, then compliance with the requirement to declare the LCO not met may be delayed, from the time of discovery, up to 24 hours or up to the limit of the specified Frequency, whichever is greater. This delay period is permitted to allow performance of the Surveillance. The delay period is only applicable when there is a reasonable expectation the surveillance will be met when performed. A risk evaluation shall be performed for any Surveillance delayed greater than 24 hours and the risk impact shall be managed. If the Surveillance is not performed within the delay period, the LCO must immediately be declared not met, and the applicable Condition(s) must be entered. When the Surveillance is performed within the delay period and the Surveillance is not met, the LCO must immediately be declared not met, and the applicable Condition(s) must be entered.
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.

SR Applicability

SR 3.0.4 (continued)

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:

a. $\geq 0.38\%\ \Delta k/k$, with the highest worth control rod analytically determined; or

b. $\geq 0.28\%\ \Delta k/k$, with the highest worth control rod determined by test.

APPLICABILITY: MODES 1, 2, 3, 4, and 5.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. SDM not within limits in MODE 1 or 2.	A.1 Restore SDM to within limits.	6 hours
B. Required Action and associated Completion Time of Condition A not met.	B.1 Be in MODE 3.	12 hours
C. SDM not within limits in MODE 3.	C.1 Initiate action to fully insert all insertable control rods.	Immediately
D. SDM not within limits in MODE 4.	D.1 Initiate action to fully insert all insertable control rods.	Immediately
	<u>AND</u>	
	D.2 Initiate action to restore secondary containment to OPERABLE status.	1 hour
	<u>AND</u>	

ACTIONS (continued)

CONDITION	REQUIRED ACTION		COMPLETION TIME
	D.3	Initiate action to restore one standby gas treatment (SGT) subsystem to OPERABLE status.	1 hour
	AND		
	D.4	Initiate action to restore isolation capability in each required secondary containment penetration flow path not isolated.	1 hour
E. SDM not within limits in MODE 5.	E.1	Suspend CORE ALTERATIONS except for control rod insertion and fuel assembly removal.	Immediately
	AND		
	E.2	Initiate action to fully insert all insertable control rods in core cells containing one or more fuel assemblies.	Immediately
	AND		
	E.3	Initiate action to restore secondary containment to OPERABLE status.	1 hour
	AND		
	E.4	Initiate action to restore one SGT subsystem to OPERABLE status.	1 hour
	AND		

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
	E.5 Initiate action to restore isolation capability in each required secondary containment penetration flow path not isolated.	1 hour

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.1.1.1	Verify SDM to be within limits.	Prior to each in vessel fuel movement during fuel loading sequence AND Once within 4 hours after criticality following fuel movement within the reactor pressure vessel or control rod replacement

3.1 REACTIVITY CONTROL SYSTEMS

3.1.2 Reactivity Anomalies

LCO 3.1.2 The reactivity difference between the monitored control rod inventory and the predicted control rod inventory shall be within ± 1% $\Delta k/k$.

APPLICABILITY: MODES 1 and 2.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Core reactivity difference not within limit.	A.1 Restore core reactivity difference to within limit.	72 hours
B. Required Action and associated Completion Time not met.	B.1 Be in MODE 3.	12 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.1.2.1	Verify core reactivity difference between the monitored control rod inventory and the predicted control rod inventory is within ± 1% $\Delta k/k$.	Once within 24 hours after reaching equilibrium conditions following startup after fuel movement within the reactor pressure vessel or control rod replacement <u>AND</u> In accordance with the Surveillance Frequency Control Program

3.1 REACTIVITY CONTROL SYSTEMS

3.1.3 Control Rod OPERABILITY

LCO 3.1.3 Each control rod shall be OPERABLE.

APPLICABILITY: MODES 1 and 2.

ACTIONS

-----NOTE-----
Separate Condition entry is allowed for each control rod.

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One withdrawn control rod stuck.	-----NOTE----- Rod worth minimizer (RWM) may be bypassed as allowed by LCO 3.3.2.1, "Control Rod Block Instrumentation," if required, to allow continued operation. -----	
	A.1 Verify stuck control rod separation criteria are met.	Immediately
	<u>AND</u>	
	A.2 Disarm the associated control rod drive (CRD).	2 hours
	<u>AND</u>	

ACTIONS (continued)

CONDITION	REQUIRED ACTION		COMPLETION TIME
	A.3	Perform SR 3.1.3.2 for each withdrawn OPERABLE control rod.	24 hours from discovery of Condition A concurrent with THERMAL POWER greater than the low power setpoint (LPSP) of the RWM
	AND		
	A.4	Perform SR 3.1.1.1.	72 hours
B. Two or more withdrawn control rods stuck.	B.1	Be in MODE 3.	12 hours
C. One or more control rods inoperable for reasons other than Condition A or B.	C.1	--------------NOTE-------------- RWM may be bypassed as allowed by LCO 3.3.2.1, if required, to allow insertion of inoperable control rod and continued operation. ------------------------------------	
		Fully insert inoperable control rod.	3 hours
	AND		
	C.2	Disarm the associated CRD.	4 hours

ACTIONS (continued)

CONDITION	REQUIRED ACTION		COMPLETION TIME
D. -------------NOTE------------- Not applicable when THERMAL POWER > 10% RTP. ---------------------------------- Two or more inoperable control rods not in compliance with banked position withdrawal sequence (BPWS) and not separated by two or more OPERABLE control rods.	D.1	Restore compliance with BPWS.	4 hours
	<u>OR</u>		
	D.2	Restore control rod to OPERABLE status.	4 hours
E. Required Action and associated Completion Time of Condition A, C, or D not met. <u>OR</u> Nine or more control rods inoperable.	E.1	Be in MODE 3.	12 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.1.3.1	Determine the position of each control rod.	In accordance with the Surveillance Frequency Control Program

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.1.3.2	------------------------------NOTE------------------------------ Not required to be performed until 31 days after the control rod is withdrawn and THERMAL POWER is greater than the LPSP of RWM. --- Insert each withdrawn control rod at least one notch.	 In accordance with the Surveillance Frequency Control Program
SR 3.1.3.3	Verify each control rod scram time from fully withdrawn to notch position 06 is ≤ 7 seconds.	In accordance with SR 3.1.4.1, SR 3.1.4.2, SR 3.1.4.3, and SR 3.1.4.4
SR 3.1.3.4	Verify each control rod does not go to the withdrawn overtravel position.	Each time the control rod is withdrawn to “full out” position <u>AND</u> Prior to declaring control rod OPERABLE after work on control rod or CRD System that could affect coupling.

3.1 REACTIVITY CONTROL SYSTEMS

3.1.4 Control Rod Scram Times

LCO 3.1.4

a. No more than 8 OPERABLE control rods shall be "slow," in accordance with Table 3.1.4-1, and

b. No more than 2 OPERABLE control rods that are "slow" shall occupy adjacent locations.

APPLICABILITY: MODES 1 and 2.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Requirements of the LCO not met.	A.1 Be in MODE 3.	12 hours

SURVEILLANCE REQUIREMENTS

---NOTE---

During single control rod scram time Surveillances, the control rod drive (CRD) pumps shall be isolated from the associated scram accumulator.

SURVEILLANCE		FREQUENCY
SR 3.1.4.1	Verify each control rod scram time is within the limits of Table 3.1.4-1 with reactor steam dome pressure ≥ 800 psig.	Prior to exceeding 40% RTP after each reactor shutdown ≥ 120 days
SR 3.1.4.2	Verify, for a representative sample, each tested control rod scram time is within the limits of Table 3.1.4-1 with reactor steam dome pressure ≥ 800 psig.	In accordance with the Surveillance Frequency Control Program

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.1.4.3	Verify each affected control rod scram time is within the limits of Table 3.1.4-1 with any reactor steam dome pressure.	Prior to declaring control rod OPERABLE after work on control rod or CRD System that could affect scram time
SR 3.1.4.4	Verify each affected control rod scram time is within the limits of Table 3.1.4-1 with reactor steam dome pressure ≥ 800 psig.	Prior to exceeding 40% RTP after fuel movement within the affected core cell <u>AND</u> Prior to exceeding 40% RTP after work on control rod or CRD System that could affect scram time

Table 3.1.4-1 (page 1 of 1)
Control Rod Scram Times

---NOTES---

1. OPERABLE control rods with scram times not within the limits of this Table are considered "slow."

2. Enter applicable Conditions and Required Actions of LCO 3.1.3, "Control Rod OPERABILITY," for control rods with scram times > 7 seconds to notch position 06. These control rods are inoperable, in accordance with SR 3.1.3.3 and are not considered "slow."

NOTCH POSITION	SCRAM TIMES[(a)(b)] (seconds) WHEN REACTOR STEAM DOME PRESSURE ≥ 800 psig
46	0.44
36	1.08
26	1.83
06	3.35

(a) Maximum scram time from fully withdrawn position based on de-energization of scram pilot valve solenoids at time zero.

(b) Scram times as a function of reactor steam dome pressure when < 800 psig are within established limits.

3.1 REACTIVITY CONTROL SYSTEMS

3.1.5 Control Rod Scram Accumulators

LCO 3.1.5 Each control rod scram accumulator shall be OPERABLE.

APPLICABILITY: MODES 1 and 2.

ACTIONS

---NOTE---

Separate Condition entry is allowed for each control rod scram accumulator.

CONDITION	REQUIRED ACTION		COMPLETION TIME
A. One control rod scram accumulator inoperable with reactor steam dome pressure ≥ 900 psig.	A.1	--------------NOTE------------- Only applicable if the associated control rod scram time was within the limits of Table 3.1.4-1 during the last scram time Surveillance. --------------------------------	
		Declare the associated control rod scram time "slow."	8 hours
	<u>OR</u>		
	A.2	Declare the associated control rod inoperable.	8 hours
B. Two or more control rod scram accumulators inoperable with reactor steam dome pressure ≥ 900 psig.	B.1	Restore charging water header pressure to ≥ 940 psig.	20 minutes from discovery of Condition B concurrent with charging water header pressure < 940 psig
	<u>AND</u>		

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
	B.2.1 --------------NOTE-------------- Only applicable if the associated control rod scram time was within the limits of Table 3.1.4-1 during the last scram time Surveillance. ------------------------------------	
	Declare the associated control rod scram time "slow."	1 hour
	OR	
	B.2.2 Declare the associated control rod inoperable.	1 hour
C. One or more control rod scram accumulators inoperable with reactor steam dome pressure < 900 psig.	C.1 Verify all control rods associated with inoperable accumulators are fully inserted.	Immediately upon discovery of charging water header pressure < 940 psig
	AND	
	C.2 Declare the associated control rod inoperable.	1 hour
D. Required Action B.1 or C.1 and associated Completion Time not met.	D.1 --------------NOTE-------------- Not applicable if all inoperable control rod scram accumulators are associated with fully inserted control rods. ------------------------------------	
	Place the reactor mode switch in the shutdown position.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.1.5.1	Verify each control rod scram accumulator pressure is ≥ 940 psig.	In accordance with the Surveillance Frequency Control Program

3.1 REACTIVITY CONTROL SYSTEMS

3.1.6 Rod Pattern Control

LCO 3.1.6 OPERABLE control rods shall comply with the requirements of the banked position withdrawal sequence (BPWS).

APPLICABILITY: MODES 1 and 2 with THERMAL POWER ≤ 10% RTP.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more OPERABLE control rods not in compliance with BPWS.	A.1 ---------------NOTE-------------- Rod worth minimizer (RWM) may be bypassed as allowed by LCO 3.3.2.1, "Control Rod Block Instrumentation." ------------------------------------	
	Move associated control rod(s) to correct position.	8 hours
	<u>OR</u>	
	A.2 Declare associated control rod(s) inoperable.	8 hours
B. Nine or more OPERABLE control rods not in compliance with BPWS.	B.1 ---------------NOTE-------------- Rod worth minimizer (RWM) may be bypassed as allowed by LCO 3.3.2.1. ------------------------------------	
	Suspend withdrawal of control rods.	Immediately
	<u>AND</u>	
	B.2 Place the reactor mode switch in the shutdown position.	1 hour

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.1.6.1	Verify all OPERABLE control rods comply with BPWS.	In accordance with the Surveillance Frequency Control Program

3.1 REACTIVITY CONTROL SYSTEMS

3.1.7 Standby Liquid Control (SLC) System

LCO 3.1.7 Two SLC subsystems shall be OPERABLE.

APPLICABILITY: MODES 1, 2, and 3.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Concentration of sodium pentaborate in solution not within limits of Figure 3.1.7-1 and Table 3.1.7-1 Equation 2, but available volume of sodium pentaborate solution is within limits of Table 3.1.7-1 Equation 1.	A.1 Restore concentration of sodium pentaborate in solution to within limits.	7 days
B. One SLC subsystem inoperable for reasons other than Condition A.	B.1 Restore SLC subsystem to OPERABLE status.	7 days OR In accordance with the Risk Informed Completion Time Program
C. Two SLC subsystems inoperable for reasons other than Condition A.	C.1 Restore one SLC subsystem to OPERABLE status.	8 hours

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
D. Required Action and associated Completion Time not met.	D.1 Be in MODE 3. <u>AND</u> D.2 Be in MODE 4.	12 hours 36 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.1.7.1	Verify available volume of sodium pentaborate solution is within the limits of Figure 3.1.7-1 or Equation 1 of Table 3.1.7-1.	In accordance with the Surveillance Frequency Control Program
SR 3.1.7.2	Verify temperature of sodium pentaborate solution is within the limits of Figure 3.1.7-2.	In accordance with the Surveillance Frequency Control Program
SR 3.1.7.3	Verify temperature of room in the vicinity of the SLC pumps is within the solution temperature limits of Figure 3.1.7-2 or verify SLC pump suction lines heat tracing is OPERABLE.	In accordance with the Surveillance Frequency Control Program
SR 3.1.7.4	Verify continuity of explosive charge.	In accordance with the Surveillance Frequency Control Program

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.1.7.5	Verify the concentration of sodium pentaborate in solution is within the limits of Figure 3.1.7-1 or within the limits of Equation 2 of Table 3.1.7-1.	In accordance with the Surveillance Frequency Control Program <u>AND</u> Once within 24 hours after water or sodium pentaborate is added to solution <u>AND</u> Once within 24 hours after solution temperature is restored within the limits of Figure 3.1.7-2
SR 3.1.7.6	Verify each SLC subsystem manual valve in the flow path that is not locked, sealed, or otherwise secured in position is in the correct position, or can be aligned to the correct position.	In accordance with the Surveillance Frequency Control Program
SR 3.1.7.7	Verify each pump develops a flow rate ≥ 24 gpm at a discharge pressure ≥ 1275 psig.	In accordance with the INSERVICE TESTING PROGRAM

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.1.7.8	Verify flow through one SLC subsystem from pump into reactor pressure vessel.	In accordance with the Surveillance Frequency Control Program
SR 3.1.7.9	Verify all heat traced piping between storage tank and pump suction is unblocked.	In accordance with the Surveillance Frequency Control Program <u>AND</u> --------NOTE------- Only required if SLC pump suction lines heat tracing is inoperable. ------------------------ Once within 24 hours after room temperature in the vicinity of the SLC pumps is restored within the solution temperature limits of Figure 3.1.7-2
SR 3.1.7.10	Verify sodium pentaborate enrichment is ≥ 55.0 atom percent B-10.	Prior to addition to SLC tank

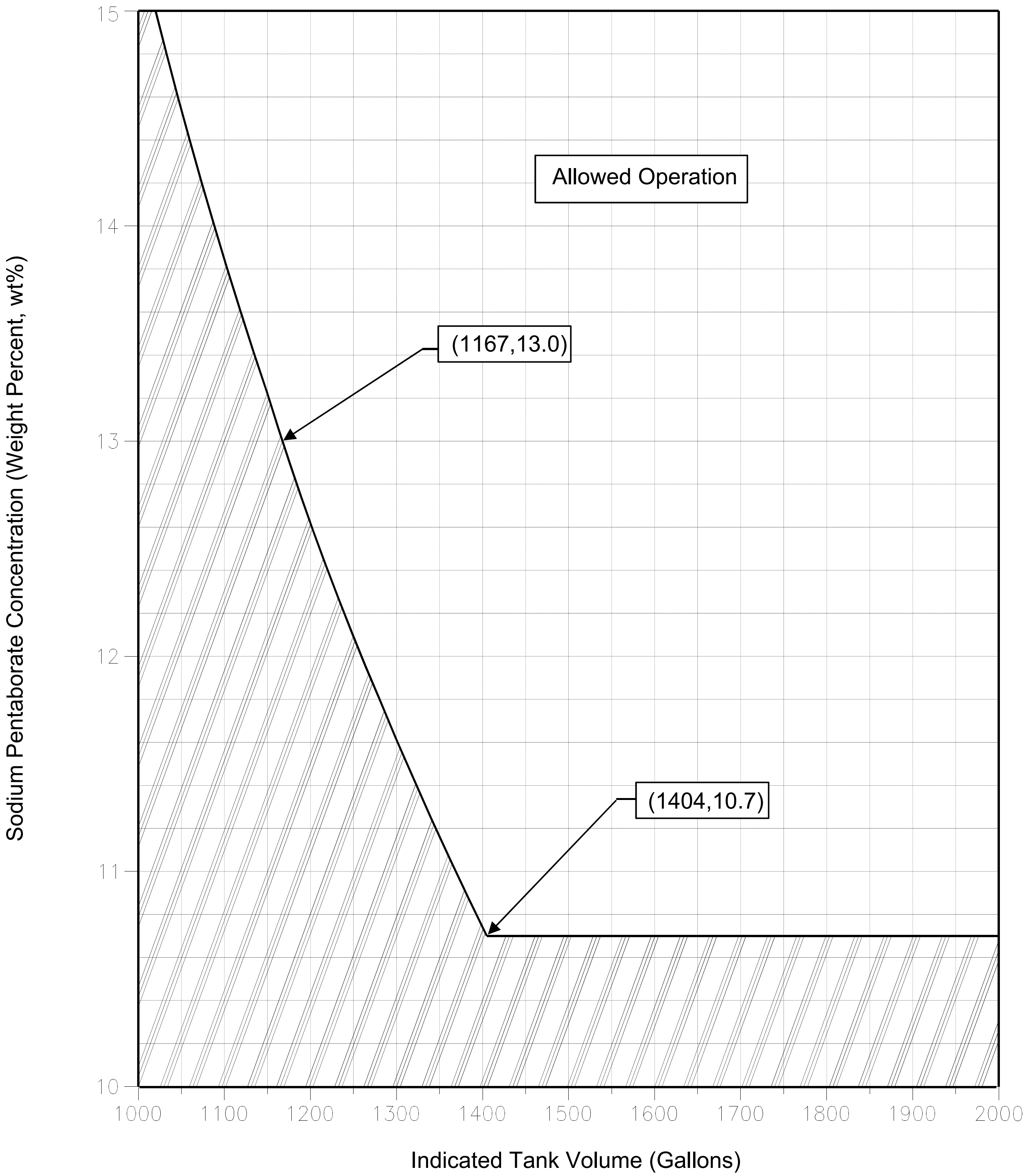

Figure 3.1.7-1 (page 1 of 1)
Sodium Pentaborate Solution Volume Versus Concentration Requirements

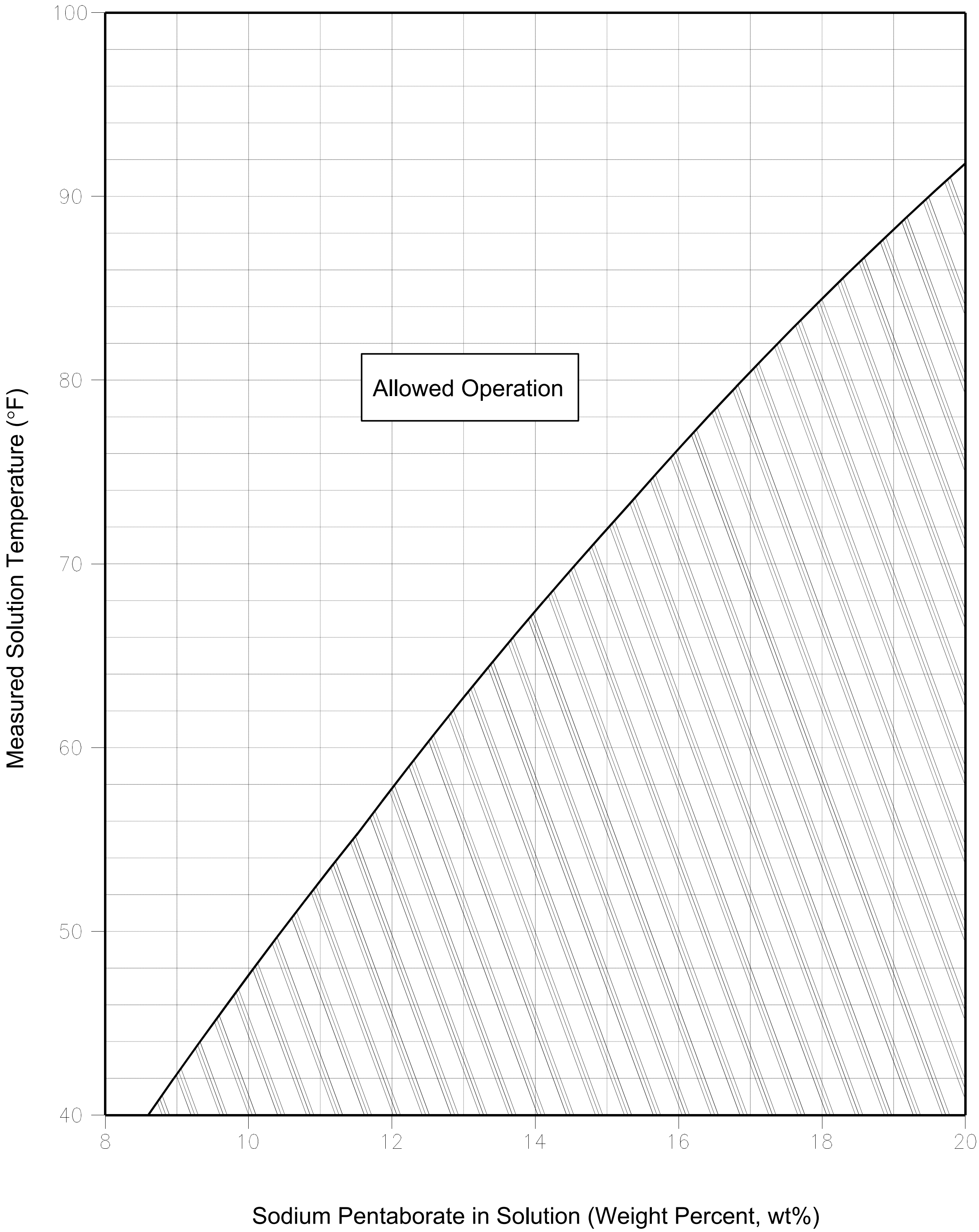

Figure 3.1.7-2 (page 1 of 1)
Sodium Pentaborate Solution Temperature Versus Concentration Requirements

Table 3.1.7-1 (page 1 of 1)
Equations for Required Sodium Pentaborate Tank Volume and Concentration

Equation 1

$$V \geq \left(\frac{71.18}{0.0051 \times C + 0.998}\right)\left(1 + \frac{4821}{1101 - E}\right)\left(\frac{19.8}{E}\right)\left(\frac{100}{C}\right) + 128 \text{ gal}$$

Where:

C = measured boron solution concentration (wt%)
E = measured boron solution enrichment (atom%)
V = indicated boron solution tank volume (gal)

Equation 2

$$C \geq 8.28\left(\frac{86}{Q}\right)\left(\frac{19.8}{E}\right)$$

Where:

C = measured boron solution concentration (wt%)
E = measured boron solution enrichment (atom%)
Q = measured pump flow rate (gpm) at 1275 psig

3.1 REACTIVITY CONTROL SYSTEMS

3.1.8 Scram Discharge Volume (SDV) Vent and Drain Valves

LCO 3.1.8 Each SDV vent and drain valve shall be OPERABLE.

APPLICABILITY: MODES 1 and 2.

ACTIONS

-----NOTES-----

1. Separate Condition entry is allowed for each SDV vent and drain line.
2. An isolated line may be unisolated under administrative control to allow draining and venting of the SDV.

CONDITION	REQUIRED ACTION		COMPLETION TIME
A. One or more SDV vent or drain lines with one valve inoperable.	A.1	Isolate the associated line.	7 days
B. One or more SDV vent or drain lines with both valves inoperable.	B.1	Isolate the associated line.	8 hours
C. Required Action and associated Completion Time not met.	C.1	Be in MODE 3.	12 hours

SURVEILLANCE REQUIREMENTS

	SURVEILLANCE	FREQUENCY
SR 3.1.8.1	------------------------------NOTE------------------------------ Not required to be met on vent and drain valves closed during performance of SR 3.1.8.2. --- Verify each SDV vent and drain valve is open.	In accordance with the Surveillance Frequency Control Program
SR 3.1.8.2	Cycle each SDV vent and drain valve to the fully closed and fully open position.	In accordance with the Surveillance Frequency Control Program
SR 3.1.8.3	Verify each SDV vent and drain valve: a. Closes in ≤ 30 seconds after receipt of an actual or simulated scram signal; and b. Opens when the actual or simulated scram signal is reset.	In accordance with the Surveillance Frequency Control Program

3.2 POWER DISTRIBUTION LIMITS

3.2.1 AVERAGE PLANAR LINEAR HEAT GENERATION RATE (APLHGR)

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

APPLICABILITY: THERMAL POWER ≥ 25% RTP.

ACTIONS

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

SURVEILLANCE REQUIREMENTS

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

3.2 POWER DISTRIBUTION LIMITS

3.2.2 MINIMUM CRITICAL POWER RATIO (MCPR)

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

APPLICABILITY: THERMAL POWER ≥ 25% RTP.

ACTIONS

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

SURVEILLANCE REQUIREMENTS

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

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.2.2.2	Determine the MCPR limits.	Once within 72 hours after each completion of SR 3.1.4.1 <u>AND</u> Once within 72 hours after each completion of SR 3.1.4.2 <u>AND</u> Once within 72 hours after each completion of SR 3.1.4.4

3.2 POWER DISTRIBUTION LIMITS

3.2.3 LINEAR HEAT GENERATION RATE (LHGR)

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

APPLICABILITY: THERMAL POWER ≥ 25% RTP.

ACTIONS

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

SURVEILLANCE REQUIREMENTS

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

3.3 INSTRUMENTATION

3.3.1.1 Reactor Protection System (RPS) Instrumentation

LCO 3.3.1.1 The RPS instrumentation for each Function in Table 3.3.1.1-1 shall be OPERABLE.

APPLICABILITY: According to Table 3.3.1.1-1.

ACTIONS

---NOTE---

1. Separate Condition entry is allowed for each channel.

2. When the Function 2.b and 2.c channels are not within the limit of SR 3.3.1.1.2 due to APRM indication not within limits, entry into associated Conditions and Required Actions may be delayed for up to 2 hours if the APRM is indicating a lower power value than the calculated power, and for up to 12 hours if the APRM is indicating a higher power value than the calculated power.

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more required channels inoperable.	A.1 Place channel in trip. OR	12 hours OR In accordance with the Risk Informed Completion Time Program

ACTIONS (continued)

CONDITION	REQUIRED ACTION		COMPLETION TIME
	A.2	--------------NOTE------------- Not applicable for Functions 2.a, 2.b, 2.c, 2.d, or 2.f. ------------------------------------ Place associated trip system in trip.	12 hours OR In accordance with the Risk Informed Completion Time Program
B. -----------NOTE------------ Not applicable for Functions 2.a, 2.b, 2.c, 2.d, or 2.f. ------------------------------- One or more Functions with one or more required channels inoperable in both trip systems.	B.1	Place channel in one trip system in trip.	6 hours OR In accordance with the Risk Informed Completion Time Program
	OR		
	B.2	Place one trip system in trip.	6 hours OR In accordance with the Risk Informed Completion Time Program
C. One or more Functions with RPS trip capability not maintained.	C.1	Restore RPS trip capability.	1 hour

ACTIONS (continued)

CONDITION	REQUIRED ACTION		COMPLETION TIME
D. Required Action and associated Completion Time of Condition A, B, or C not met.	D.1	Enter the Condition referenced in Table 3.3.1.1-1 for the channel.	Immediately
E. As required by Required Action D.1 and referenced in Table 3.3.1.1-1.	E.1	Reduce THERMAL POWER to ≤ 40% RTP.	4 hours
F. As required by Required Action D.1 and referenced in Table 3.3.1.1-1.	F.1	Be in MODE 2.	6 hours
	<u>AND</u>		
	F.2	--------------NOTE------------- Only applicable to Function 5. ------------------------------------ Reduce reactor pressure to < 600 psig.	12 hours
G. As required by Required Action D.1 and referenced in Table 3.3.1.1-1.	G.1	Be in MODE 3.	12 hours
H. As required by Required Action D.1 and referenced in Table 3.3.1.1-1.	H.1	Initiate action to fully insert all insertable control rods in core cells containing one or more fuel assemblies.	Immediately

ACTIONS (continued)

CONDITION	REQUIRED ACTION		COMPLETION TIME
I. As required by Required Action D.1 and referenced in Table 3.3.1.1-1.	I.1	Initiate alternate method to detect and suppress thermal hydraulic instability oscillations.	12 hours
	<u>AND</u>		
	I.2	-------------NOTE---------------- LCO 3.0.4 is not applicable ------------------------------------- Restore required channels to OPERABLE.	120 days
J. Required Action and associated Completion Time of Condition I not met.	J.1	Reduce THERMAL POWER to < 20% RTP.	4 hours

SURVEILLANCE REQUIREMENTS

---NOTES---
1. Refer to Table 3.3.1.1-1 to determine which SRs apply for each RPS Function.

2. When a channel is placed in an inoperable status solely for performance of required Surveillances, entry into associated Conditions and Required Actions may be delayed for up to 6 hours provided the associated Function maintains RPS trip capability.

SURVEILLANCE		FREQUENCY
SR 3.3.1.1.1	Perform CHANNEL CHECK.	In accordance with the Surveillance Frequency Control Program
SR 3.3.1.1.2	--------------------------------NOTE------------------------------- Not required to be performed until 12 hours after THERMAL POWER ≥ 25% RTP. --- Verify the absolute difference between the average power range monitor (APRM) channels and the calculated power is ≤ 2% RTP while operating at ≥ 25% RTP.	In accordance with the Surveillance Frequency Control Program
SR 3.3.1.1.3	--------------------------------NOTE------------------------------- Not required to be performed when entering MODE 2 from MODE 1 until 12 hours after entering MODE 2. --- Perform CHANNEL FUNCTIONAL TEST.	In accordance with the Surveillance Frequency Control Program

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.3.1.1.4	Perform a functional test of each RPS automatic scram contactor.	In accordance with the Surveillance Frequency Control Program
SR 3.3.1.1.5	Perform CHANNEL FUNCTIONAL TEST.	In accordance with the Surveillance Frequency Control Program
SR 3.3.1.1.6	Calibrate the local power range monitors.	In accordance with the Surveillance Frequency Control Program
SR 3.3.1.1.7	Perform CHANNEL FUNCTIONAL TEST.	In accordance with the Surveillance Frequency Control Program
SR 3.3.1.1.8	Calibrate the trip units.	In accordance with the Surveillance Frequency Control Program
SR 3.3.1.1.9	Perform CHANNEL CALIBRATION.	In accordance with the Surveillance Frequency Control Program
SR 3.3.1.1.10	Perform CHANNEL FUNCTIONAL TEST.	In accordance with the Surveillance Frequency Control Program

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.3.1.1.11	-------------------------------NOTES------------------------------ 1. Neutron detectors are excluded. 2. For Function 1, not required to be performed when entering MODE 2 from MODE 1 until 12 hours after entering MODE 2. 3. For Functions 2.b and 2.f, the recirculation flow transmitters that feed the APRMs are included. --- Perform CHANNEL CALIBRATION.	In accordance with the Surveillance Frequency Control Program
SR 3.3.1.1.12	Perform LOGIC SYSTEM FUNCTIONAL TEST.	In accordance with the Surveillance Frequency Control Program
SR 3.3.1.1.13	Verify Turbine Stop Valve - Closure and Turbine Control Valve Fast Closure, Acceleration Relay Oil Pressure - Low Functions are not bypassed when THERMAL POWER is > 40% RTP.	In accordance with the Surveillance Frequency Control Program
SR 3.3.1.1.14	Verify the RPS RESPONSE TIME is within limits.	In accordance with the Surveillance Frequency Control Program

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.3.1.1.15	-------------------------------NOTES------------------------------ 1. For Function 2.a, not required to be performed when entering MODE 2 from MODE 1 until 12 hours after entering MODE 2. 2. For Functions 2.b and 2.f, the CHANNEL FUNCTIONAL TEST includes the recirculation flow input processing, excluding the flow transmitters. --- Perform CHANNEL FUNCTIONAL TEST.	In accordance with the Surveillance Frequency Control Program
SR 3.3.1.1.16	Verify the oscillation power range monitor (OPRM) function is not bypassed when APRM Simulated Thermal Power is ≥ 25% RTP and drive flow is ≤ 60% of rated drive flow.	In accordance with the Surveillance Frequency Control Program

Table 3.3.1.1-1 (page 1 of 4)
Reactor Protection System Instrumentation

FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	REQUIRED CHANNELS PER TRIP SYSTEM	CONDITIONS REFERENCED FROM REQUIRED ACTION D.1	SURVEILLANCE REQUIREMENTS	ALLOWABLE VALUE
1. Intermediate Range Monitors					
a. Neutron Flux – High High	2	3	G	SR 3.3.1.1.1 SR 3.3.1.1.3 SR 3.3.1.1.4 SR 3.3.1.1.11 SR 3.3.1.1.12 SR 3.3.1.1.14	≤ 122/125 divisions of full scale
	5[(a)]	3	H	SR 3.3.1.1.1 SR 3.3.1.1.3 SR 3.3.1.1.4 SR 3.3.1.1.11 SR 3.3.1.1.12 SR 3.3.1.1.14	≤ 122/125 divisions of full scale
b. Inop.	2	3	G	SR 3.3.1.1.3 SR 3.3.1.1.4 SR 3.3.1.1.12	NA
	5[(a)]	3	H	SR 3.3.1.1.3 SR 3.3.1.1.4 SR 3.3.1.1.12	NA
2. Average Power Range Monitors					
a. Neutron Flux – High, (Setdown)	2	3[(c)]	G	SR 3.3.1.1.1 SR 3.3.1.1.4 SR 3.3.1.1.6 SR 3.3.1.1.11 SR 3.3.1.1.15	≤ 20% RTP
b. Simulated Thermal Power – High	1	3[(c)]	F	SR 3.3.1.1.1 SR 3.3.1.1.2 SR 3.3.1.1.4 SR 3.3.1.1.6 SR 3.3.1.1.11 SR 3.3.1.1.15	≤ 0.61W + 67.2% RTP[(b)] and ≤ 116% RTP

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

(b) ≤ 0.55 (W – Delta W) + 61.5% RTP when reset for single loop operation per LCO 3.4.1, "Recirculation Loops Operating." The cycle-specific value for Delta W is specified in the COLR.

(c) Each APRM / OPRM channel provides inputs to both trip systems.

Table 3.3.1.1-1 (page 2 of 4)
Reactor Protection System Instrumentation

FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	REQUIRED CHANNELS PER TRIP SYSTEM	CONDITIONS REFERENCED FROM REQUIRED ACTION D.1	SURVEILLANCE REQUIREMENTS	ALLOWABLE VALUE
c. Neutron Flux – High	1	3(c)	F	SR 3.3.1.1.1 SR 3.3.1.1.2 SR 3.3.1.1.4 SR 3.3.1.1.6 SR 3.3.1.1.11(f)(g) SR 3.3.1.1.15	≤ 122% RTP
d. Inop.	1, 2	3(c)	G	SR 3.3.1.1.4 SR 3.3.1.1.15	NA
e. 2-Out-Of-4 Voter	1, 2	2	G	SR 3.3.1.1.1 SR 3.3.1.1.4 SR 3.3.1.1.12 SR 3.3.1.1.14 SR 3.3.1.1.15	NA
f. OPRM Upscale	≥ 20% RTP	3(c)	I	SR 3.3.1.1.1 SR 3.3.1.1.4 SR 3.3.1.1.6 SR 3.3.1.1.11 SR 3.3.1.1.15 SR 3.3.1.1.16	As specified in COLR
3. Reactor Vessel Steam Dome Pressure – High	1, 2	2	G	SR 3.3.1.1.4 SR 3.3.1.1.7 SR 3.3.1.1.9 SR 3.3.1.1.12 SR 3.3.1.1.14	≤ 1075 psig

(c) Each APRM / OPRM channel provides inputs to both trip systems.

(f) If the as-found channel setpoint is not the Nominal Trip Setpoint but is conservative with respect to the Allowable Value, then the channel shall be evaluated to verify that it is functioning as required before returning the channel to service.

(g) The instrument channel setpoint shall be reset to the Nominal Trip Setpoint (NTSP) at the completion of the surveillance; otherwise, the channel shall be declared inoperable. The NTSP and the methodology used to determine the NTSP are specified in the Technical Requirements Manual.

Table 3.3.1.1-1 (page 3 of 4)
Reactor Protection System Instrumentation

FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	REQUIRED CHANNELS PER TRIP SYSTEM	CONDITIONS REFERENCED FROM REQUIRED ACTION D.1	SURVEILLANCE REQUIREMENTS	ALLOWABLE VALUE
4. Reactor Vessel Water Level – Low	1, 2	2	G	SR 3.3.1.1.1 SR 3.3.1.1.4 SR 3.3.1.1.7 SR 3.3.1.1.8 SR 3.3.1.1.11 SR 3.3.1.1.12 SR 3.3.1.1.14	≥ 7 inches
5. Main Steam Isolation Valve – Closure	1, 2[d]	8	F	SR 3.3.1.1.4 SR 3.3.1.1.7 SR 3.3.1.1.11 SR 3.3.1.1.12 SR 3.3.1.1.14	≤ 10% closed
6. Drywell Pressure – High	1, 2	2	G	SR 3.3.1.1.4 SR 3.3.1.1.7 SR 3.3.1.1.9 SR 3.3.1.1.12	≤ 2.0 psig
7. Scram Discharge Volume Water Level – High					
a. Resistance Temperature Detector	1, 2	2	G	SR 3.3.1.1.4 SR 3.3.1.1.7 SR 3.3.1.1.9 SR 3.3.1.1.12	≤ 56.0 gallons
	5[a]	2	H	SR 3.3.1.1.4 SR 3.3.1.1.7 SR 3.3.1.1.9 SR 3.3.1.1.12	≤ 56.0 gallons
b. Float Switch	1, 2	2	G	SR 3.3.1.1.4 SR 3.3.1.1.7 SR 3.3.1.1.9 SR 3.3.1.1.12	≤ 56.0 gallons
	5[a]	2	H	SR 3.3.1.1.4 SR 3.3.1.1.7 SR 3.3.1.1.9 SR 3.3.1.1.12	≤ 56.0 gallons

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

(d) With reactor pressure ≥ 600 psig.

Table 3.3.1.1-1 (page 4 of 4)
Reactor Protection System Instrumentation

FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	REQUIRED CHANNELS PER TRIP SYSTEM	CONDITIONS REFERENCED FROM REQUIRED ACTION D.1	SURVEILLANCE REQUIREMENTS	ALLOWABLE VALUE
8. Turbine Stop Valve – Closure	> 40% RTP	4	E	SR 3.3.1.1.4 SR 3.3.1.1.7 SR 3.3.1.1.11 SR 3.3.1.1.12 SR 3.3.1.1.13 SR 3.3.1.1.14	≤ 10% closed
9. Turbine Control Valve Fast Closure, Acceleration Relay Oil Pressure – Low	> 40% RTP	2	E	SR 3.3.1.1.4 SR 3.3.1.1.7 SR 3.3.1.1.9 SR 3.3.1.1.12 SR 3.3.1.1.13 SR 3.3.1.1.14	≥ 167.8 psig
10. Reactor Mode Switch – Shutdown Position	1, 2	1	G	SR 3.3.1.1.10 SR 3.3.1.1.12	NA
	5[(a)]	1	H	SR 3.3.1.1.10 SR 3.3.1.1.12	NA
11. Manual Scram	1, 2	1	G	SR 3.3.1.1.5 SR 3.3.1.1.12	NA
	5[(a)]	1	H	SR 3.3.1.1.5 SR 3.3.1.1.12	NA

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

3.3 INSTRUMENTATION

3.3.1.2 Source Range Monitor (SRM) Instrumentation

LCO 3.3.1.2 The SRM instrumentation in Table 3.3.1.2-1 shall be OPERABLE.

APPLICABILITY: According to Table 3.3.1.2-1.

ACTIONS

CONDITION	REQUIRED ACTION		COMPLETION TIME
A. One or more required SRMs inoperable in MODE 2 with intermediate range monitors (IRMs) on Range 2 or below.	A.1	Restore required SRMs to OPERABLE status.	4 hours
B. Three required SRMs inoperable in MODE 2 with IRMs on Range 2 or below.	B.1	Suspend control rod withdrawal.	Immediately
C. Required Action and associated Completion Time of Condition A or B not met.	C.1	Be in MODE 3.	12 hours
D. One or more required SRMs inoperable in MODE 3 or 4.	D.1	Fully insert all insertable control rods.	1 hour
	<u>AND</u>		
	D.2	Place reactor mode switch in the shutdown position.	1 hour

ACTIONS (continued)

CONDITION	REQUIRED ACTION		COMPLETION TIME
E. One or more required SRMs inoperable in MODE 5.	E.1	Suspend CORE ALTERATIONS except for control rod insertion.	Immediately
	<u>AND</u>		
	E.2	Initiate action to fully insert all insertable control rods in core cells containing one or more fuel assemblies.	Immediately

SURVEILLANCE REQUIREMENTS

---NOTE---

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

SURVEILLANCE		FREQUENCY
SR 3.3.1.2.1	Perform CHANNEL CHECK.	In accordance with the Surveillance Frequency Control Program

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.3.1.2.2	------------------------------NOTES------------------------------ 1. Only required to be met during CORE ALTERATIONS. 2. One SRM may be used to satisfy more than one of the following. --- Verify an OPERABLE SRM detector is located in: a. The fueled region; b. The core quadrant where CORE ALTERATIONS are being performed, when the associated SRM is included in the fueled region; and c. A core quadrant adjacent to where CORE ALTERATIONS are being performed, when the associated SRM is included in the fueled region.	In accordance with the Surveillance Frequency Control Program
SR 3.3.1.2.3	Perform CHANNEL CHECK.	In accordance with the Surveillance Frequency Control Program
SR 3.3.1.2.4	------------------------------NOTE------------------------------ Not required to be met with less than or equal to two fuel assemblies adjacent to the SRM and no other fuel assemblies in the associated core quadrant. --- Verify count rate is ≥ 3.0 cps with a signal to noise ratio ≥ 3:1.	In accordance with the Surveillance Frequency Control Program

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.3.1.2.5	--------------------------------NOTE-------------------------------- The determination of signal to noise ratio is not required to be met with less than or equal to two fuel assemblies adjacent to the SRM and no other fuel assemblies in the associated core quadrant. -- Perform CHANNEL FUNCTIONAL TEST and determination of signal to noise ratio.	In accordance with the Surveillance Frequency Control Program
SR 3.3.1.2.6	--------------------------------NOTE-------------------------------- Not required to be performed until 12 hours after IRMs on Range 2 or below. -- Perform CHANNEL FUNCTIONAL TEST and determination of signal to noise ratio.	In accordance with the Surveillance Frequency Control Program
SR 3.3.1.2.7	-------------------------------NOTES------------------------------- 1. Neutron detectors are excluded. 2. Not required to be performed until 12 hours after IRMS on Range 2 or below. -- Perform CHANNEL CALIBRATION.	In accordance with the Surveillance Frequency Control Program

Table 3.3.1.2-1 (page 1 of 1)
Source Range Monitor Instrumentation

FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	REQUIRED CHANNELS	SURVEILLANCE REQUIREMENTS
1. Source Range Monitor	2[(a)]	3	SR 3.3.1.2.1 SR 3.3.1.2.4 SR 3.3.1.2.6 SR 3.3.1.2.7
	3, 4	2	SR 3.3.1.2.3 SR 3.3.1.2.4 SR 3.3.1.2.6 SR 3.3.1.2.7
	5	2[(b), (c)]	SR 3.3.1.2.1 SR 3.3.1.2.2 SR 3.3.1.2.4 SR 3.3.1.2.5 SR 3.3.1.2.7

(a) With IRMs on Range 2 or below.

(b) Only one SRM channel is required to be OPERABLE during spiral offload or reload when the fueled region includes only that SRM detector.

(c) Special movable detectors may be used in place of SRMs if connected to normal SRM circuits.

3.3 INSTRUMENTATION

3.3.2.1 Control Rod Block Instrumentation

LCO 3.3.2.1 The control rod block instrumentation for each Function in Table 3.3.2.1-1 shall be OPERABLE.

APPLICABILITY: According to Table 3.3.2.1-1.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One rod block monitor (RBM) channel inoperable.	A.1 Restore RBM channel to OPERABLE status.	24 hours
B. Required Action and associated Completion Time of Condition A not met. OR Two RBM channels inoperable.	B.1 Place one RBM channel in trip.	1 hour
C. Rod worth minimizer (RWM) inoperable during reactor startup.	C.1 Suspend control rod movement except by scram. OR C.2.1.1 Verify ≥ 12 rods withdrawn. OR	Immediately Immediately

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
	C.2.1.2 Verify by administrative methods that startup with RWM inoperable has not been performed in the last 12 months. AND C.2.2 Verify movement of control rods is in compliance with banked position withdrawal sequence (BPWS) by a second licensed operator or other qualified member of the technical staff.	Immediately During control rod movement
D. RWM inoperable during reactor shutdown.	D.1 Verify movement of control rods is in compliance with BPWS by a second licensed operator or other qualified member of the technical staff.	During control rod movement
E. One or more Reactor Mode Switch - Shutdown Position channels inoperable.	E.1 Suspend control rod withdrawal. AND E.2 Initiate action to fully insert all insertable control rods in core cells containing one or more fuel assemblies.	Immediately Immediately

SURVEILLANCE REQUIREMENTS

--NOTES--

1. Refer to Table 3.3.2.1-1 to determine which SRs apply for each Control Rod Block Function.

2. When an RBM channel is placed in an inoperable status solely for performance of required Surveillances, entry into associated Conditions and Required Actions may be delayed for up to 6 hours provided the associated Function maintains control rod block capability.

SURVEILLANCE		FREQUENCY
SR 3.3.2.1.1	Perform CHANNEL FUNCTIONAL TEST.	In accordance with the Surveillance Frequency Control Program
SR 3.3.2.1.2	--------------------------------NOTE------------------------------- Not required to be performed until 1 hour after any control rod is withdrawn at ≤ 10% RTP in MODE 2. --- Perform CHANNEL FUNCTIONAL TEST.	In accordance with the Surveillance Frequency Control Program
SR 3.3.2.1.3	--------------------------------NOTE------------------------------- Not required to be performed until 1 hour after THERMAL POWER is ≤ 10% RTP in MODE 1. --- Perform CHANNEL FUNCTIONAL TEST.	In accordance with the Surveillance Frequency Control Program

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.3.2.1.4	-------------------------------NOTE------------------------------ Neutron detectors are excluded. --- Perform CHANNEL CALIBRATION.	In accordance with the Surveillance Frequency Control Program
SR 3.3.2.1.5	-------------------------------NOTE------------------------------ Neutron detectors are excluded. --- Verify the RBM: a. Low Power Range - Upscale Function is not bypassed when THERMAL POWER is ≥ 30% and < 65% RTP; b. Intermediate Power Range - Upscale Function is not bypassed when THERMAL POWER is ≥ 65% and < 85% RTP; and c. High Power Range – Upscale Function is not bypassed when THERMAL POWER is ≥ 85% RTP.	In accordance with the Surveillance Frequency Control Program
SR 3.3.2.1.6	Verify the RWM is not bypassed when THERMAL POWER is ≤ 10% RTP.	In accordance with the Surveillance Frequency Control Program

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.3.2.1.7	--------------------------------NOTE------------------------------- Not required to be performed until 1 hour after reactor mode switch is in the shutdown position. --- Perform CHANNEL FUNCTIONAL TEST.	In accordance with the Surveillance Frequency Control Program
SR 3.3.2.1.8	Verify control rod sequences input to the RWM are in conformance with BPWS.	Prior to declaring RWM OPERABLE following loading of sequence into RWM

Table 3.3.2.1-1 (page 1 of 1)
Control Rod Block Instrumentation

FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	REQUIRED CHANNELS	SURVEILLANCE REQUIREMENTS	ALLOWABLE VALUE
1. Rod Block Monitor				
a. Low Power Range - Upscale	(a)	2	SR 3.3.2.1.1 SR 3.3.2.1.4[(h)(i)] SR 3.3.2.1.5	As specified in COLR
b. Intermediate Power Range - Upscale	(b)	2	SR 3.3.2.1.1 SR 3.3.2.1.4[(h)(i)] SR 3.3.2.1.5	As specified in COLR
c. High Power Range - Upscale	(c), (d)	2	SR 3.3.2.1.1 SR 3.3.2.1.4[(h)(i)] SR 3.3.2.1.5	As specified in COLR
d. Inop	(d), (e)	2	SR 3.3.2.1.1	NA
2. Rod Worth Minimizer	1[(f)], 2[(f)]	1	SR 3.3.2.1.2 SR 3.3.2.1.3 SR 3.3.2.1.6 SR 3.3.2.1.8	NA
3. Reactor Mode Switch - Shutdown Position	(g)	2	SR 3.3.2.1.7	NA

(a) THERMAL POWER ≥ 30% and < 65% RTP and MCPR is below the limit specified in COLR.

(b) THERMAL POWER ≥ 65% and < 85% RTP and MCPR is below the limit specified in COLR.

(c) THERMAL POWER ≥ 85% and < 90% RTP and MCPR is below the limit specified in COLR.

(d) THERMAL POWER ≥ 90% RTP and MCPR is below the limit specified in COLR.

(e) THERMAL POWER ≥ 30% and < 90% RTP and MCPR is below the limit specified in COLR.

(f) With THERMAL POWER ≤ 10% RTP, except during the reactor shutdown process if the coupling of each withdrawn control rod has been confirmed.

(g) Reactor mode switch in the shutdown position.

(h) If the as-found channel setpoint is not the Nominal Trip Setpoint (NTSP) but is conservative with respect to the Allowable Value, then the channel shall be evaluated to verify that it is functioning as required before returning the channel to service.

(i) The instrument channel setpoint shall be reset to the Nominal Trip Setpoint at the completion of the surveillance; otherwise, the channel shall be declared inoperable. The NTSP shall be specified in the COLR. The methodology used to determine the NTSP is specified in the Technical Requirements Manual.

3.3 INSTRUMENTATION

3.3.2.2 Feedwater Pump and Main Turbine High Water Level Trip Instrumentation

LCO 3.3.2.2 Four channels of Feedwater Pump and Main Turbine High Water Level Trip Instrumentation shall be OPERABLE.

APPLICABILITY: THERMAL POWER ≥ 25% RTP.

ACTIONS

---NOTE---

Separate Condition entry is allowed for each channel.

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more feedwater pump and main turbine high water level trip channels inoperable.	A.1 Place channel in trip.	7 days <u>OR</u> In accordance with the Risk Informed Completion Time Program
B. Feedwater pump and main turbine high water level trip capability not maintained.	B.1 Restore feedwater pump and main turbine high water level trip capability.	2 hours

ACTIONS (continued)

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

SURVEILLANCE REQUIREMENTS

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

SURVEILLANCE		FREQUENCY
SR 3.3.2.2.1	Perform CHANNEL CHECK.	In accordance with the Surveillance Frequency Control Program
SR 3.3.2.2.2	Perform CHANNEL FUNCTIONAL TEST.	In accordance with the Surveillance Frequency Control Program

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.3.2.2.3	Calibrate the trip units.	In accordance with the Surveillance Frequency Control Program
SR 3.3.2.2.4	Perform CHANNEL CALIBRATION. The Allowable Value shall be ≤ 49 inches.	In accordance with the Surveillance Frequency Control Program
SR 3.3.2.2.5	Perform LOGIC SYSTEM FUNCTIONAL TEST including valve and breaker actuation.	In accordance with the Surveillance Frequency Control Program

3.3 INSTRUMENTATION

3.3.3.1 Post Accident Monitoring (PAM) Instrumentation

LCO 3.3.3.1 The PAM instrumentation for each Function in Table 3.3.3.1-1 shall be OPERABLE.

APPLICABILITY: MODES 1 and 2.

ACTIONS

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

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more Functions with one required channel inoperable.	A.1 Restore required channel to OPERABLE status.	30 days
B. Required Action and associated Completion Time of Condition A not met.	B.1 Initiate action in accordance with Specification 5.6.4.	Immediately
C. One or more Functions with two required channels inoperable.	C.1 Restore one required channel to OPERABLE status.	7 days
D. Required Action and associated Completion Time of Condition C not met.	D.1 Enter the Condition referenced in Table 3.3.3.1-1 for the channel.	Immediately

ACTIONS (continued)

CONDITION	REQUIRED ACTION		COMPLETION TIME
E. As required by Required Action D.1 and referenced in Table 3.3.3.1-1.	E.1	Be in MODE 3.	12 hours
F. As required by Required Action D.1 and referenced in Table 3.3.3.1-1.	F.1	Initiate action in accordance with Specification 5.6.4.	Immediately

SURVEILLANCE REQUIREMENTS

---NOTES---

1. These SRs apply to each Function in Table 3.3.3.1-1.

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

SURVEILLANCE		FREQUENCY
SR 3.3.3.1.1	Perform CHANNEL CHECK.	In accordance with the Surveillance Frequency Control Program
SR 3.3.3.1.2	Perform CHANNEL CALIBRATION.	In accordance with the Surveillance Frequency Control Program

Table 3.3.3.1-1 (page 1 of 1)
Post Accident Monitoring Instrumentation

FUNCTION	REQUIRED CHANNELS	CONDITIONS REFERENCED FROM REQUIRED ACTION D.1
1. Reactor Vessel Pressure	2	E
2. Reactor Vessel Water Level	2	E
3. Suppression Pool Water Level	2	E
4. Drywell Pressure	2	E
5. Primary Containment Area Radiation	2	F
6. Penetration Flow Path PCIV Position	2 per penetration flow path[(a)] [(b)]	E
7. Suppression Pool Water Temperature	2	F

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

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

3.3 INSTRUMENTATION

3.3.3.2 Alternate Shutdown System

LCO 3.3.3.2 The Alternate Shutdown System Functions shall be OPERABLE.

APPLICABILITY: MODES 1 and 2.

ACTIONS

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

CONDITION	REQUIRED ACTION		COMPLETION TIME
A. One or more required Functions inoperable.	A.1	Restore required Function to OPERABLE status.	30 days
B. Required Action and associated Completion Time not met.	B.1	Be in MODE 3.	12 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.3.3.2.1	Perform CHANNEL CHECK for each required instrumentation channel that is normally energized.	In accordance with the Surveillance Frequency Control Program
SR 3.3.3.2.2	Verify each required control circuit and transfer switch is capable of performing the intended function.	In accordance with the Surveillance Frequency Control Program

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.3.3.2.3	Perform CHANNEL CALIBRATION for each required instrumentation channel.	In accordance with the Surveillance Frequency Control Program

3.3 INSTRUMENTATION

3.3.4.1 Anticipated Transient Without Scram Recirculation Pump Trip (ATWS-RPT) Instrumentation

LCO 3.3.4.1 Two channels per trip system for each ATWS-RPT instrumentation Function listed below shall be OPERABLE:

a. Reactor Vessel Water Level - Low Low; and

b. Reactor Vessel Steam Dome Pressure - High.

APPLICABILITY: MODE 1.

ACTIONS

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

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more channels inoperable.	A.1 Restore channel to OPERABLE status. <u>OR</u>	14 days <u>OR</u> In accordance with the Risk Informed Completion Time Program

ACTIONS (continued)

CONDITION	REQUIRED ACTION		COMPLETION TIME
	A.2	---------------NOTE-------------- Not applicable if inoperable channel is the result of an inoperable breaker. ------------------------------------- Place channel in trip.	 14 days <u>OR</u> In accordance with the Risk Informed Completion Time Program
B. One Function with ATWS-RPT trip capability not maintained.	B.1	Restore ATWS-RPT trip capability.	72 hours
C. Both Functions with ATWS-RPT trip capability not maintained.	C.1	Restore ATWS-RPT trip capability for one Function.	1 hour
D. Required Action and associated Completion Time not met.	D.1	---------------NOTE-------------- Only applicable if inoperable channel is the result of an inoperable breaker. ------------------------------------- Remove the affected recirculation pump from service.	 6 hours
	<u>OR</u>		
	D.2	Be in MODE 2.	6 hours

SURVEILLANCE REQUIREMENTS

--NOTE--
When a channel is placed in an inoperable status solely for performance of required Surveillances, entry into associated Conditions and Required Actions may be delayed for up to 6 hours provided the associated Function maintains ATWS-RPT trip capability.

SURVEILLANCE		FREQUENCY
SR 3.3.4.1.1	--------------------------------NOTE------------------------------- Not required for the time delay portion of the Reactor Vessel Water Level - Low Low Function. --- Perform CHANNEL CHECK.	In accordance with the Surveillance Frequency Control Program
SR 3.3.4.1.2	Perform CHANNEL FUNCTIONAL TEST.	In accordance with the Surveillance Frequency Control Program
SR 3.3.4.1.3	Calibrate the trip units.	In accordance with the Surveillance Frequency Control Program
SR 3.3.4.1.4	Perform CHANNEL CALIBRATION of Reactor Vessel Water Level - Low Low time delay relays. The Allowable Value shall be ≥ 6 seconds and ≤ 8.6 seconds.	In accordance with the Surveillance Frequency Control Program

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.3.4.1.5	Perform CHANNEL CALIBRATION. The Allowable Values shall be: a. Reactor Vessel Water Level – Low Low $\geq$ -48 inches; and b. Reactor Vessel Steam Dome Pressure - High $\leq$ 1155 psig.	In accordance with the Surveillance Frequency Control Program
SR 3.3.4.1.6	Perform LOGIC SYSTEM FUNCTIONAL TEST including breaker actuation.	In accordance with the Surveillance Frequency Control Program

3.3 INSTRUMENTATION

3.3.5.1 Emergency Core Cooling System (ECCS) Instrumentation

LCO 3.3.5.1 The ECCS instrumentation for each Function in Table 3.3.5.1-1 shall be OPERABLE.

APPLICABILITY: According to Table 3.3.5.1-1.

ACTIONS

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

CONDITION	REQUIRED ACTION		COMPLETION TIME
A. One or more channels inoperable.	A.1	Enter the Condition referenced in Table 3.3.5.1-1 for the channel.	Immediately
B. As required by Required Action A.1 and referenced in Table 3.3.5.1-1.	B.1	--------------NOTE------------- Only applicable for Functions 1.a, 1.b, 2.a, 2.b, 2.f, 2.h, and 2.k. ------------------------------------	
		Declare supported feature(s) inoperable when its redundant feature ECCS initiation capability is inoperable.	1 hour from discovery of loss of initiation capability for feature(s) in both divisions
	AND		

ACTIONS (continued)

CONDITION	REQUIRED ACTION		COMPLETION TIME
	B.2	---------------NOTE-------------- Only applicable for Functions 3.a and 3.b. -------------------------------------	
		Declare High Pressure Coolant Injection (HPCI) System inoperable.	1 hour from discovery of loss of HPCI initiation capability
	AND		
	B.3	Place channel in trip.	24 hours OR -----------NOTE---------- Not applicable when a loss of function occurs. ----------------------------- In accordance with the Risk Informed Completion Time Program
C. As required by Required Action A.1 and referenced in Table 3.3.5.1-1.	C.1	--------------NOTE------------- Only applicable for Functions 1.c, 1.d, 1.e, 1.f, 2.c, 2.d, 2.e, 2.i, 2.j, 2.l, and 2.m. -------------------------------------	
		Declare supported feature(s) inoperable when its redundant feature ECCS initiation capability is inoperable.	1 hour from discovery of loss of initiation capability for feature(s) in both divisions
	AND		

ACTIONS (continued)

CONDITION	REQUIRED ACTION		COMPLETION TIME
	C.2	Restore channel to OPERABLE status.	24 hours <u>OR</u> -----------NOTE---------- Not applicable when a loss of function occurs. ----------------------------- In accordance with the Risk Informed Completion Time Program
D. As required by Required Action A.1 and referenced in Table 3.3.5.1-1.	D.1	---------------NOTE-------------- Only applicable if HPCI pump suction is not aligned to the suppression pool. ------------------------------------- Declare HPCI System inoperable.	1 hour from discovery of loss of HPCI initiation capability
	<u>AND</u>		
	D.2.1	Place channel in trip.	24 hours <u>OR</u> -----------NOTE---------- Not applicable when a loss of function occurs. ----------------------------- In accordance with the Risk Informed Completion Time Program
	<u>OR</u>		

ACTIONS (continued)

CONDITION	REQUIRED ACTION		COMPLETION TIME
	D.2.2	Align the HPCI pump suction to the suppression pool.	24 hours
E. As required by Required Action A.1 and referenced in Table 3.3.5.1-1.	E.1	--------------NOTE------------- Only applicable for Function 2.g. ------------------------------------	
		Declare supported feature(s) inoperable when its redundant feature ECCS initiation capability is inoperable.	1 hour from discovery of loss of initiation capability for subsystems in both divisions
	AND		
	E.2	Restore channel to OPERABLE status.	7 days OR -----------NOTE--------- Not applicable when a loss of function occurs. ----------------------------- In accordance with the Risk Informed Completion Time Program

ACTIONS (continued)

CONDITION	REQUIRED ACTION		COMPLETION TIME
F. As required by Required Action A.1 and referenced in Table 3.3.5.1-1.	F.1	Declare Automatic Depressurization System (ADS) valves inoperable.	1 hour from discovery of loss of ADS initiation capability in both trip systems
	AND		
	F.2	Place channel in trip.	-----------NOTE--------- Risk Informed Completion Time Program not applicable to loss of function. ----------------------------- 96 hours or in accordance with the Risk Informed Completion Time Program from discovery of inoperable channel concurrent with HPCI or reactor core isolation cooling (RCIC) inoperable AND 8 days or in accordance with the Risk Informed Completion Time Program
G. As required by Required Action A.1 and referenced in Table 3.3.5.1-1.	G.1	Declare ADS valves inoperable.	1 hour from discovery of loss of ADS initiation capability in both trip systems
	AND		

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
	G.2 Restore channel to OPERABLE status.	-----------NOTE--------- Risk Informed Completion Time Program not applicable to loss of function. ----------------------------- 96 hours or in accordance with the Risk Informed Completion Time Program from discovery of inoperable channel concurrent with HPCI or RCIC inoperable <u>AND</u> 8 days or in accordance with the Risk Informed Completion Time Program
H. Required Action and associated Completion Time of Condition B, C, D, E, F, or G not met.	H.1 Declare associated supported feature(s) inoperable.	Immediately

SURVEILLANCE REQUIREMENTS

---NOTES---

1. Refer to Table 3.3.5.1-1 to determine which SRs apply for each ECCS Function.

2. When a channel is placed in an inoperable status solely for performance of required Surveillances, entry into associated Conditions and Required Actions may be delayed as follows: (a) for up to 6 hours for Functions 3.c and 3.f; and (b) for up to 6 hours for Functions other than 3.c and 3.f provided the associated Function or the redundant Function maintains ECCS initiation capability.

SURVEILLANCE		FREQUENCY
SR 3.3.5.1.1	Perform CHANNEL CHECK.	In accordance with the Surveillance Frequency Control Program
SR 3.3.5.1.2	Perform CHANNEL FUNCTIONAL TEST.	In accordance with the Surveillance Frequency Control Program
SR 3.3.5.1.3	Calibrate the trip unit.	In accordance with the Surveillance Frequency Control Program
SR 3.3.5.1.4	Perform CHANNEL CALIBRATION.	In accordance with the Surveillance Frequency Control Program
SR 3.3.5.1.5	Perform CHANNEL FUNCTIONAL TEST.	In accordance with the Surveillance Frequency Control Program
SR 3.3.5.1.6	Perform CHANNEL CALIBRATION.	In accordance with the Surveillance Frequency Control Program

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.3.5.1.7	Perform CHANNEL CALIBRATION.	In accordance with the Surveillance Frequency Control Program
SR 3.3.5.1.8	Perform LOGIC SYSTEM FUNCTIONAL TEST.	In accordance with the Surveillance Frequency Control Program
SR 3.3.5.1.9	Perform CHANNEL FUNCTIONAL TEST.	In accordance with the Surveillance Frequency Control Program

Table 3.3.5.1-1 (page 1 of 6)
Emergency Core Cooling System Instrumentation

FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	REQUIRED CHANNELS PER FUNCTION	CONDITIONS REFERENCED FROM REQUIRED ACTION A.1	SURVEILLANCE REQUIREMENTS	ALLOWABLE VALUE
1. Core Spray System					
a. Reactor Vessel Water Level - Low Low	1, 2, 3	4[(a)]	B	SR 3.3.5.1.1 SR 3.3.5.1.2 SR 3.3.5.1.3 SR 3.3.5.1.7 SR 3.3.5.1.8	≥ -48 inches
b. Drywell Pressure - High	1, 2, 3	4[(a)]	B	SR 3.3.5.1.2 SR 3.3.5.1.4 SR 3.3.5.1.8	≤ 2 psig
c. Reactor Steam Dome Pressure - Low (Injection Permissive)	1, 2, 3	2	C	SR 3.3.5.1.2 SR 3.3.5.1.4[(b)(c)] SR 3.3.5.1.8	≥ 397 psig and ≤ 440 psig
d. Reactor Steam Dome Pressure Permissive - Low (Pump Permissive)	1, 2, 3	2	C	SR 3.3.5.1.2 SR 3.3.5.1.4[(b)(c)] SR 3.3.5.1.8	≥ 397 psig
e. Reactor Steam Dome Pressure Permissive - Bypass Timer (Pump Permissive)	1, 2, 3	2	C	SR 3.3.5.1.7 SR 3.3.5.1.8	≤ 18 minutes

(a) Also required to initiate the associated emergency diesel generator (EDG).

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

(c) The instrument channel setpoint shall be reset to a value that is within the as-left tolerance of the nominal trip setpoint; otherwise, the channel shall be declared inoperable. The nominal trip setpoint and the methodology used to determine the as-found tolerance and the as-left tolerance are specified in the Technical Requirements Manual (TRM).

Table 3.3.5.1-1 (page 2 of 6)
Emergency Core Cooling System Instrumentation

FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	REQUIRED CHANNELS PER FUNCTION	CONDITIONS REFERENCED FROM REQUIRED ACTION A.1	SURVEILLANCE REQUIREMENTS	ALLOWABLE VALUE
1. Core Spray System					
f. Core Spray Pump Start - Time Delay Relay	1, 2, 3	1 per pump	C	SR 3.3.5.1.7 SR 3.3.5.1.8	≤ 15.86 seconds
2. Low Pressure Coolant Injection (LPCI) System					
a. Reactor Vessel Water Level - Low Low	1, 2, 3	4	B	SR 3.3.5.1.1 SR 3.3.5.1.2 SR 3.3.5.1.3 SR 3.3.5.1.7 SR 3.3.5.1.8	≥ -48 inches
b. Drywell Pressure - High	1, 2, 3	4	B	SR 3.3.5.1.2 SR 3.3.5.1.4 SR 3.3.5.1.8	≤ 2 psig
c. Reactor Steam Dome Pressure - Low (Injection Permissive)	1, 2, 3	2	C	SR 3.3.5.1.2 SR 3.3.5.1.4(b)(c) SR 3.3.5.1.8	≥ 397 psig and ≤ 440 psig
d. Reactor Steam Dome Pressure Permissive - Low (Pump Permissive)	1, 2, 3	2	C	SR 3.3.5.1.2 SR 3.3.5.1.4(b)(c) SR 3.3.5.1.8	≥ 397 psig

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

(c) The instrument channel setpoint shall be reset to a value that is within the as-left tolerance of the nominal trip setpoint; otherwise, the channel shall be declared inoperable. The nominal trip setpoint and the methodology used to determine the as-found tolerance and the as-left tolerance are specified in the TRM.

Table 3.3.5.1-1 (page 3 of 6)
Emergency Core Cooling System Instrumentation

FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	REQUIRED CHANNELS PER FUNCTION	CONDITIONS REFERENCED FROM REQUIRED ACTION A.1	SURVEILLANCE REQUIREMENTS	ALLOWABLE VALUE
2. LPCI System					
e. Reactor Steam Dome Pressure Permissive - Bypass Timer (Pump Permissive)	1, 2, 3	2	C	SR 3.3.5.1.7 SR 3.3.5.1.8	≤ 18 minutes
f. Low Pressure Coolant Injection Pump Start - Time Delay Relay	1, 2, 3	4 per pump	B	SR 3.3.5.1.7 SR 3.3.5.1.8	
Pumps A, B					≤ 5.33 seconds
Pumps C, D					≤ 10.59 seconds
g. Low Pressure Coolant Injection Pump Discharge Flow - Low (Bypass)	1, 2, 3	1 per pump	E	SR 3.3.5.1.2 SR 3.3.5.1.7 SR 3.3.5.1.8	≥ 360 gpm and ≤ 745 gpm
h. Reactor Steam Dome Pressure - Low (Break Detection)	1, 2, 3	4	B	SR 3.3.5.1.2 SR 3.3.5.1.7 SR 3.3.5.1.8	≥ 873.6 psig and ≤ 923.4 psig
i. Recirculation Pump Differential Pressure - High (Break Detection)	1, 2, 3	4 per pump	C	SR 3.3.5.1.2 SR 3.3.5.1.7 SR 3.3.5.1.8	≥ 63.5 inches wc
j. Recirculation Riser Differential Pressure - High (Break Detection)	1, 2, 3	4	C	SR 3.3.5.1.2 SR 3.3.5.1.7(b)(c) SR 3.3.5.1.8	≤ 100.0 inches wc

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

(c) The instrument channel setpoint shall be reset to a value that is within the as-left tolerance of the nominal trip setpoint; otherwise, the channel shall be declared inoperable. The nominal trip setpoint and the methodology used to determine the as-found tolerance and the as-left tolerance are specified in the TRM.

Table 3.3.5.1-1 (page 4 of 6)
Emergency Core Cooling System Instrumentation

FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	REQUIRED CHANNELS PER FUNCTION	CONDITIONS REFERENCED FROM REQUIRED ACTION A.1	SURVEILLANCE REQUIREMENTS	ALLOWABLE VALUE
2. LPCI System					
k. Reactor Steam Dome Pressure - Time Delay Relay (Break Detection)	1, 2, 3	2	B	SR 3.3.5.1.7 SR 3.3.5.1.8 SR 3.3.5.1.9	≤ 2.97 seconds
l. Recirculation Pump Differential Pressure - Time Delay Relay (Break Detection)	1, 2, 3	2	C	SR 3.3.5.1.7 SR 3.3.5.1.8 SR 3.3.5.1.9	≤ 0.75 seconds
m. Recirculation Riser Differential Pressure - Time Delay Relay (Break Detection)	1, 2, 3	2	C	SR 3.3.5.1.7 SR 3.3.5.1.8 SR 3.3.5.1.9	≤ 0.75 seconds
3. High Pressure Coolant Injection (HPCI) System					
a. Reactor Vessel Water Level - Low Low	1, 2(d), 3(d)	4	B	SR 3.3.5.1.1 SR 3.3.5.1.2 SR 3.3.5.1.3 SR 3.3.5.1.7 SR 3.3.5.1.8	≥ -48 inches
b. Drywell Pressure - High	1, 2(d), 3(d)	4	B	SR 3.3.5.1.2 SR 3.3.5.1.4 SR 3.3.5.1.8	≤ 2 psig
c. Reactor Vessel Water Level - High	1, 2(d), 3(d)	2	C	SR 3.3.5.1.1 SR 3.3.5.1.2 SR 3.3.5.1.3 SR 3.3.5.1.7 SR 3.3.5.1.8	≤ 48 inches
d. Condensate Storage Tank Level - Low	1, 2(d), 3(d)	2	D	SR 3.3.5.1.7 SR 3.3.5.1.8	≥ 29.3 inches
e. Suppression Pool Water Level - High	1, 2(d), 3(d)	2	D	SR 3.3.5.1.5 SR 3.3.5.1.6 SR 3.3.5.1.8	≤ 3.0 inches
f. High Pressure Coolant Injection Pump Discharge Flow - Low (Bypass)	1, 2(d), 3(d)	1	E	SR 3.3.5.1.5 SR 3.3.5.1.6 SR 3.3.5.1.8	≥ 362 gpm and ≤ 849 gpm

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

Table 3.3.5.1-1 (page 5 of 6)
Emergency Core Cooling System Instrumentation

FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	REQUIRED CHANNELS PER FUNCTION	CONDITIONS REFERENCED FROM REQUIRED ACTION A.1	SURVEILLANCE REQUIREMENTS	ALLOWABLE VALUE
4. Automatic Depressurization System (ADS) Trip System A					
a. Reactor Vessel Water Level - Low Low	1, 2(d), 3(d)	2	F	SR 3.3.5.1.1 SR 3.3.5.1.2 SR 3.3.5.1.3 SR 3.3.5.1.7 SR 3.3.5.1.8	≥ -48 inches
b. Automatic Depressurization System Initiation Timer	1, 2(d), 3(d)	1	G	SR 3.3.5.1.7 SR 3.3.5.1.8	≤ 120 seconds
c. Core Spray Pump Discharge Pressure - High	1, 2(d), 3(d)	2	G	SR 3.3.5.1.2 SR 3.3.5.1.4(b)(c) SR 3.3.5.1.8	≥ 75 psig and ≤ 125 psig
d. Low Pressure Coolant Injection Pump Discharge Pressure - High	1, 2(d), 3(d)	4	G	SR 3.3.5.1.2 SR 3.3.5.1.4(b)(c) SR 3.3.5.1.8	≥ 75 psig and ≤ 125 psig
5. ADS Trip System B					
a. Reactor Vessel Water Level - Low Low	1, 2(d), 3(d)	2	F	SR 3.3.5.1.1 SR 3.3.5.1.2 SR 3.3.5.1.3 SR 3.3.5.1.7 SR 3.3.5.1.8	≥ -48 inches
b. Automatic Depressurization System Initiation Timer	1, 2(d), 3(d)	1	G	SR 3.3.5.1.7 SR 3.3.5.1.8	≤ 120 seconds

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

(c) The instrument channel setpoint shall be reset to a value that is within the as-left tolerance of the nominal trip setpoint; otherwise, the channel shall be declared inoperable. The nominal trip setpoint and the methodology used to determine the as-found tolerance and the as-left tolerance are specified in the TRM.

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

Table 3.3.5.1-1 (page 6 of 6)
Emergency Core Cooling System Instrumentation

FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	REQUIRED CHANNELS PER FUNCTION	CONDITIONS REFERENCED FROM REQUIRED ACTION A.1	SURVEILLANCE REQUIREMENTS	ALLOWABLE VALUE
5. ADS Trip System B					
c. Core Spray Pump Discharge Pressure - High	1, 2[(d)], 3[(d)]	2	G	SR 3.3.5.1.2 SR 3.3.5.1.4[(b)(c)] SR 3.3.5.1.8	≥ 75 psig and ≤ 125 psig
d. Low Pressure Coolant Injection Pump Discharge Pressure - High	1, 2[(d)], 3[(d)]	4	G	SR 3.3.5.1.2 SR 3.3.5.1.4[(b)(c)] SR 3.3.5.1.8	≥ 75 psig and ≤ 125 psig

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

(c) The instrument channel setpoint shall be reset to a value that is within the as-left tolerance of the nominal trip setpoint; otherwise, the channel shall be declared inoperable. The nominal trip setpoint and the methodology used to determine the as-found tolerance and the as-left tolerance are specified in the TRM.

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

3.3 INSTRUMENTATION

3.3.5.2 Reactor Core Isolation Cooling (RCIC) System Instrumentation

LCO 3.3.5.2 The RCIC System instrumentation for each Function in Table 3.3.5.2-1 shall be OPERABLE.

APPLICABILITY: MODE 1,
MODES 2 and 3 with reactor steam dome pressure > 150 psig.

ACTIONS

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

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more channels inoperable.	A.1 Enter the Condition referenced in Table 3.3.5.2-1 for the channel.	Immediately
B. As required by Required Action A.1 and referenced in Table 3.3.5.2-1.	B.1 Declare RCIC System inoperable.	1 hour from discovery of loss of RCIC initiation capability
	AND	
	B.2 Place channel in trip.	24 hours OR -----------NOTE---------- Not applicable when a loss of function occurs. ----------------------------- In accordance with the Risk Informed Completion Time Program

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
C. As required by Required Action A.1 and referenced in Table 3.3.5.2-1.	C.1 Restore channel to OPERABLE status.	24 hours
D. As required by Required Action A.1 and referenced in Table 3.3.5.2-1.	D.1 ---------------NOTE------------- Only applicable if RCIC pump suction is not aligned to the suppression pool. ------------------------------------	
	Declare RCIC System inoperable.	1 hour from discovery of loss of RCIC initiation capability
	AND	
	D.2.1 Place channel in trip.	24 hours OR -----------NOTE--------- Not applicable when a loss of function occurs. ---------------------------- In accordance with the Risk Informed Completion Time Program
	OR	
	D.2.2 Align RCIC pump suction to the suppression pool.	24 hours
E. Required Action and associated Completion Time of Condition B, C, or D not met.	E.1 Declare RCIC System inoperable.	Immediately

SURVEILLANCE REQUIREMENTS

-----NOTES-----

1. Refer to Table 3.3.5.2-1 to determine which SRs apply for each RCIC Function.

2. When a channel is placed in an inoperable status solely for performance of required Surveillances, entry into associated Conditions and Required Actions may be delayed as follows: (a) for up to 6 hours for Function 2; and (b) for up to 6 hours for Functions 1 and 3 provided the associated Function maintains RCIC initiation capability.

SURVEILLANCE		FREQUENCY
SR 3.3.5.2.1	Perform CHANNEL CHECK.	In accordance with the Surveillance Frequency Control Program
SR 3.3.5.2.2	Perform CHANNEL FUNCTIONAL TEST.	In accordance with the Surveillance Frequency Control Program
SR 3.3.5.2.3	Calibrate the trip units.	In accordance with the Surveillance Frequency Control Program
SR 3.3.5.2.4	Perform CHANNEL CALIBRATION.	In accordance with the Surveillance Frequency Control Program
SR 3.3.5.2.5	Perform LOGIC SYSTEM FUNCTIONAL TEST.	In accordance with the Surveillance Frequency Control Program

Table 3.3.5.2-1 (page 1 of 1)
Reactor Core Isolation Cooling System Instrumentation

FUNCTION	REQUIRED CHANNELS PER FUNCTION	CONDITIONS REFERENCED FROM REQUIRED ACTION A.1	SURVEILLANCE REQUIREMENTS	ALLOWABLE VALUE
1. Reactor Vessel Water Level - Low Low	4	B	SR 3.3.5.2.1 SR 3.3.5.2.2 SR 3.3.5.2.3 SR 3.3.5.2.4 SR 3.3.5.2.5	≥ -48 inches
2. Reactor Vessel Water Level - High	2	C	SR 3.3.5.2.1 SR 3.3.5.2.2 SR 3.3.5.2.3 SR 3.3.5.2.4 SR 3.3.5.2.5	≤ 48 inches
3. Condensate Storage Tank Level - Low	2	D	SR 3.3.5.2.4 SR 3.3.5.2.5	≥ 29.3 inches

3.3 INSTRUMENTATION

3.3.5.3 Reactor Pressure Vessel (RPV) Water Inventory Control Instrumentation

LCO 3.3.5.3 The RPV Water Inventory Control instrumentation for each Function in Table 3.3.5.3-1 shall be OPERABLE.

APPLICABILITY: According to Table 3.3.5.3-1.

ACTIONS

---NOTE---

Separate Condition entry is allowed for each channel.

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more channels inoperable.	A.1 Initiate action to place channel in trip.	Immediately
	<u>OR</u>	
	A.2.1 Declare associated penetration flow path(s) incapable of automatic isolation.	Immediately
	<u>AND</u>	
	A.2.2 Initiate action to calculate DRAIN TIME.	Immediately

SURVEILLANCE REQUIREMENTS

---NOTE---
These SRs apply to each Function in Table 3.3.5.3-1.

SURVEILLANCE		FREQUENCY
SR 3.3.5.3.1	Perform CHANNEL CHECK.	In accordance with the Surveillance Frequency Control Program
SR 3.3.5.3.2	Perform CHANNEL FUNCTIONAL TEST.	In accordance with the Surveillance Frequency Control Program

Table 3.3.5.3-1 (page 1 of 1)
RPV Water Inventory Control Instrumentation

FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	REQUIRED CHANNELS PER FUNCTION	ALLOWABLE VALUE
1. Shutdown Cooling System Isolation			
a. Reactor Vessel Water Level - Low	(b)	2 in one trip system	≥ 7 inches
2. Reactor Water Cleanup (RWCU) System Isolation			
a. Reactor Vessel Water Level - Low Low	(b)	2 in one trip system	≥ -48 inches

(a) (Deleted)

(b) When automatic isolation of the associated penetration flow path(s) is credited in calculating DRAIN TIME.

3.3 INSTRUMENTATION

3.3.6.1 Primary Containment Isolation Instrumentation

LCO 3.3.6.1 The primary containment isolation instrumentation for each Function in Table 3.3.6.1-1 shall be OPERABLE.

APPLICABILITY: According to Table 3.3.6.1-1.

ACTIONS

---NOTES---

1. Penetration flow paths may be unisolated intermittently under administrative controls.

2. Separate Condition entry is allowed for each channel.

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more required channels inoperable.	A.1 Place channel in trip.	12 hours or in accordance with the Risk Informed Completion Time Program for Functions 2.a, 2.b, 5.c, 6.b, 7.a, and 7.b <u>AND</u> 24 hours or in accordance with the Risk Informed Completion Time Program for Functions other than Functions 2.a, 2.b, 5.c, 6.b, 7.a, and 7.b
B. One or more Functions with primary containment isolation capability not maintained.	B.1 Restore primary containment isolation capability.	1 hour

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
C. Required Action and associated Completion Time of Condition A or B not met.	C.1 Enter the Condition referenced in Table 3.3.6.1-1 for the channel.	Immediately
D. As required by Required Action C.1 and referenced in Table 3.3.6.1-1.	D.1 Isolate associated main steam line (MSL).	12 hours
	<u>OR</u>	
	D.2.1 Be in MODE 3.	12 hours
	<u>AND</u>	
	D.2.2 Be in MODE 4.	36 hours
E. As required by Required Action C.1 and referenced in Table 3.3.6.1-1.	E.1 Be in MODE 2.	6 hours
F. As required by Required Action C.1 and referenced in Table 3.3.6.1-1.	F.1 Isolate the affected penetration flow path(s).	1 hour
G. As required by Required Action C.1 and referenced in Table 3.3.6.1-1.	G.1 Isolate the affected penetration flow path(s).	24 hours
H. As required by Required Action C.1 and referenced in Table 3.3.6.1-1.	H.1 Declare associated standby liquid control (SLC) subsystem inoperable.	1 hour
	<u>OR</u>	
	H.2 Isolate the Reactor Water Cleanup System.	1 hour

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
I. As required by Required Action C.1 and referenced in Table 3.3.6.1-1.	I.1 Initiate action to restore channel to OPERABLE status.	Immediately

SURVEILLANCE REQUIREMENTS

-----NOTES-----

1. Refer to Table 3.3.6.1-1 to determine which SRs apply for each Primary Containment Isolation Function.

2. When a channel is placed in an inoperable status solely for performance of required Surveillances, entry into associated Conditions and Required Actions may be delayed for up to 6 hours provided the associated Function maintains primary containment isolation capability.

SURVEILLANCE		FREQUENCY
SR 3.3.6.1.1	Perform CHANNEL CHECK.	In accordance with the Surveillance Frequency Control Program
SR 3.3.6.1.2	Perform CHANNEL FUNCTIONAL TEST.	In accordance with the Surveillance Frequency Control Program
SR 3.3.6.1.3	Calibrate the trip unit.	In accordance with the Surveillance Frequency Control Program

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.3.6.1.4	Perform CHANNEL CALIBRATION.	In accordance with the Surveillance Frequency Control Program
SR 3.3.6.1.5	Perform CHANNEL CALIBRATION.	In accordance with the Surveillance Frequency Control Program
SR 3.3.6.1.6	Perform LOGIC SYSTEM FUNCTIONAL TEST.	In accordance with the Surveillance Frequency Control Program

Table 3.3.6.1-1 (page 1 of 3)
Primary Containment Isolation Instrumentation

FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	REQUIRED CHANNELS PER TRIP SYSTEM	CONDITIONS REFERENCED FROM REQUIRED ACTION C.1	SURVEILLANCE REQUIREMENTS	ALLOWABLE VALUE
1. Main Steam Line Isolation					
a. Reactor Vessel Water Level - Low Low	1, 2, 3	2	D	SR 3.3.6.1.1 SR 3.3.6.1.2 SR 3.3.6.1.3 SR 3.3.6.1.5 SR 3.3.6.1.6	≥ -48 inches
b. Main Steam Line Pressure - Low	1	2	E	SR 3.3.6.1.2 SR 3.3.6.1.4 SR 3.3.6.1.6	≥ 815 psig
c. Main Steam Line Flow - High	1, 2, 3	2 per MSL	D	SR 3.3.6.1.1 SR 3.3.6.1.2 SR 3.3.6.1.4 SR 3.3.6.1.6	≤ 116.9% rated steam flow
d. Main Steam Line Tunnel Temperature - High	1, 2, 3	2 per trip string	D	SR 3.3.6.1.5 SR 3.3.6.1.6	≤ 209°F
2. Primary Containment Isolation					
a. Reactor Vessel Water Level - Low	1, 2, 3	2	F	SR 3.3.6.1.1 SR 3.3.6.1.2 SR 3.3.6.1.3 SR 3.3.6.1.5 SR 3.3.6.1.6	≥ 7 inches
b. Drywell Pressure - High	1, 2, 3	2	F	SR 3.3.6.1.2 SR 3.3.6.1.4 SR 3.3.6.1.6	≤ 2.0 psig
3. High Pressure Coolant Injection (HPCI) System Isolation					
a. HPCI Steam Line Flow - High	1, 2, 3	2	F	SR 3.3.6.1.2 SR 3.3.6.1.4 SR 3.3.6.1.6	≤ 300,000 lb/hour with ≤ 5.58 second time delay

Table 3.3.6.1-1 (page 2 of 3)
Primary Containment Isolation Instrumentation

FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	REQUIRED CHANNELS PER TRIP SYSTEM	CONDITIONS REFERENCED FROM REQUIRED ACTION C.1	SURVEILLANCE REQUIREMENTS	ALLOWABLE VALUE
3. HPCI System Isolation					
b. HPCI Steam Supply Line Pressure - Low	1, 2, 3	4	F	SR 3.3.6.1.2 SR 3.3.6.1.4 SR 3.3.6.1.6	≥ 95.5 psig
c. HPCI Steam Line Area Temperature - High	1, 2, 3	16	F	SR 3.3.6.1.2 SR 3.3.6.1.4 SR 3.3.6.1.6	≤ 196°F
4. Reactor Core Isolation Cooling (RCIC) System Isolation					
a. RCIC Steam Line Flow - High	1, 2, 3	2	F	SR 3.3.6.1.2 SR 3.3.6.1.4 SR 3.3.6.1.6	≤ 45,903 lb/hour with ≤ 7.16 second time delay
b. RCIC Steam Supply Line Pressure - Low	1, 2, 3	4	F	SR 3.3.6.1.2 SR 3.3.6.1.4 SR 3.3.6.1.6	≥ 54 psig
c. RCIC Steam Line Area Temperature - High	1, 2, 3	16	F	SR 3.3.6.1.2 SR 3.3.6.1.4 SR 3.3.6.1.6	≤ 196°F
5. Reactor Water Cleanup (RWCU) System Isolation					
a. RWCU Flow - High	1, 2, 3	2	F	SR 3.3.6.1.1 SR 3.3.6.1.2 SR 3.3.6.1.3 SR 3.3.6.1.5 SR 3.3.6.1.6	≤ 500 gpm with ≤ 11.4 second time delay
b. RWCU Room Temperature - High	1, 2, 3	2	F	SR 3.3.6.1.1 SR 3.3.6.1.2 SR 3.3.6.1.3 SR 3.3.6.1.5 SR 3.3.6.1.6	≤ 188°F
c. Drywell Pressure - High	1, 2, 3	2	F	SR 3.3.6.1.2 SR 3.3.6.1.4 SR 3.3.6.1.6	≤ 2.0 psig

Table 3.3.6.1-1 (page 3 of 3)
Primary Containment Isolation Instrumentation

FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	REQUIRED CHANNELS PER TRIP SYSTEM	CONDITIONS REFERENCED FROM REQUIRED ACTION C.1	SURVEILLANCE REQUIREMENTS	ALLOWABLE VALUE
5. RWCU System Isolation					
d. SLC System Initiation	1, 2, 3	1	H	SR 3.3.6.1.6	NA
e. Reactor Vessel Water Level - Low Low	1, 2, 3	2	F	SR 3.3.6.1.1 SR 3.3.6.1.2 SR 3.3.6.1.3 SR 3.3.6.1.5 SR 3.3.6.1.6	≥ -48 inches
6. Shutdown Cooling System Isolation					
a. Reactor Steam Dome Pressure - High	1, 2, 3	2	F	SR 3.3.6.1.2 SR 3.3.6.1.4 SR 3.3.6.1.6	≤ 81.8 psig
b. Reactor Vessel Water Level - Low	3	2	I	SR 3.3.6.1.1 SR 3.3.6.1.2 SR 3.3.6.1.3 SR 3.3.6.1.5 SR 3.3.6.1.6	≥ 7 inches
7. Traversing Incore Probe System Isolation					
a. Reactor Vessel Water Level - Low	1, 2, 3	2	G	SR 3.3.6.1.1 SR 3.3.6.1.2 SR 3.3.6.1.3 SR 3.3.6.1.5 SR 3.3.6.1.6	≥ 7 inches
b. Drywell Pressure - High	1, 2, 3	2	G	SR 3.3.6.1.2 SR 3.3.6.1.4 SR 3.3.6.1.6	≤ 2.0 psig

3.3 INSTRUMENTATION

3.3.6.2 Secondary Containment Isolation Instrumentation

LCO 3.3.6.2 The secondary containment isolation instrumentation for each Function in Table 3.3.6.2-1 shall be OPERABLE.

APPLICABILITY: According to Table 3.3.6.2-1.

ACTIONS

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

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more channels inoperable.	A.1 Place channel in trip.	12 hours for Functions 1 and 2 <u>AND</u> 24 hours for Functions other than Functions 1 and 2
B. One or more Functions with secondary containment isolation capability not maintained.	B.1 Restore secondary containment isolation capability.	1 hour
C. Required Action and associated Completion Time not met.	C.1.1 Isolate the associated penetration flow path(s). <u>OR</u> C.1.2 Declare associated secondary containment isolation valves inoperable. <u>AND</u>	1 hour 1 hour

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
	C.2.1 Place the associated standby gas treatment (SGT) subsystem in operation.	1 hour
	<u>OR</u>	
	C.2.2 Declare associated SGT subsystem inoperable.	1 hour

SURVEILLANCE REQUIREMENTS

---NOTES---

1. Refer to Table 3.3.6.2-1 to determine which SRs apply for each Secondary Containment Isolation Function.

2. When a channel is placed in an inoperable status solely for performance of required Surveillances, entry into associated Conditions and Required Actions may be delayed for up to 6 hours provided the associated Function maintains secondary containment isolation capability.

SURVEILLANCE		FREQUENCY
SR 3.3.6.2.1	Perform CHANNEL CHECK.	In accordance with the Surveillance Frequency Control Program
SR 3.3.6.2.2	Perform CHANNEL FUNCTIONAL TEST.	In accordance with the Surveillance Frequency Control Program
SR 3.3.6.2.3	Calibrate the trip unit.	In accordance with the Surveillance Frequency Control Program

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.3.6.2.4	Perform CHANNEL CALIBRATION.	In accordance with the Surveillance Frequency Control Program
SR 3.3.6.2.5	Perform CHANNEL CALIBRATION.	In accordance with the Surveillance Frequency Control Program
SR 3.3.6.2.6	Perform LOGIC SYSTEM FUNCTIONAL TEST.	In accordance with the Surveillance Frequency Control Program

Table 3.3.6.2-1 (page 1 of 1)
Secondary Containment Isolation Instrumentation

FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	REQUIRED CHANNELS PER TRIP SYSTEM	SURVEILLANCE REQUIREMENTS	ALLOWABLE VALUE
1. Reactor Vessel Water Level - Low Low	1, 2, 3	2	SR 3.3.6.2.1 SR 3.3.6.2.2 SR 3.3.6.2.3 SR 3.3.6.2.5 SR 3.3.6.2.6	≥ -48 inches
2. Drywell Pressure - High	1, 2, 3	2	SR 3.3.6.2.2 SR 3.3.6.2.4 SR 3.3.6.2.6	≤ 2 psig
3. Reactor Building Ventilation Exhaust Radiation - High	1, 2, 3, (a)	2	SR 3.3.6.2.1 SR 3.3.6.2.2 SR 3.3.6.2.4 SR 3.3.6.2.6	≤ 100 mR/hr
4. Refueling Floor Radiation - High	1, 2, 3, (a)	2	SR 3.3.6.2.1 SR 3.3.6.2.2 SR 3.3.6.2.4 SR 3.3.6.2.6	≤ 100 mR/hr

(a) During movement of recently irradiated fuel assemblies in secondary containment.

3.3 INSTRUMENTATION

3.3.6.3 Low-Low Set (LLS) Instrumentation

LCO 3.3.6.3 The LLS valve instrumentation for each Function in Table 3.3.6.3-1 shall be OPERABLE.

APPLICABILITY: MODES 1, 2, and 3.

ACTIONS

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

CONDITION	REQUIRED ACTION		COMPLETION TIME
A. One or more LLS valves with one or more channels inoperable.	A.1	Declare associated LLS valve inoperable.	1 hour from discovery of loss of LLS valve initiation capability in both trip systems
	AND		
	A.2	Restore channel(s) to OPERABLE status.	72 hours
B. Required Action and associated Completion Time not met.	B.1	Declare the associated LLS valve(s) inoperable.	Immediately

SURVEILLANCE REQUIREMENTS

---NOTES---

1. Refer to Table 3.3.6.3-1 to determine which SRs apply for each Function.

2. When a channel is placed in an inoperable status solely for performance of required Surveillances, entry into associated Conditions and Required Actions may be delayed for up to 6 hours provided the associated Function maintains LLS initiation capability.

SURVEILLANCE		FREQUENCY
SR 3.3.6.3.1	Perform CHANNEL CHECK.	In accordance with the Surveillance Frequency Control Program
SR 3.3.6.3.2	--------------------------------NOTE-------------------------------- For Function 1, only required to be performed prior to entering MODE 2 or 3 from MODE 4. --- Perform CHANNEL FUNCTIONAL TEST.	In accordance with the Surveillance Frequency Control Program
SR 3.3.6.3.3	Calibrate the trip unit.	In accordance with the Surveillance Frequency Control Program
SR 3.3.6.3.4	Perform CHANNEL CALIBRATION.	In accordance with the Surveillance Frequency Control Program
SR 3.3.6.3.5	Perform CHANNEL CALIBRATION.	In accordance with the Surveillance Frequency Control Program

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.3.6.3.6	Perform LOGIC SYSTEM FUNCTIONAL TEST.	In accordance with the Surveillance Frequency Control Program

Table 3.3.6.3-1 (page 1 of 1)
Low-Low Set Instrumentation

FUNCTION	REQUIRED CHANNELS PER FUNCTION	SURVEILLANCE REQUIREMENTS	ALLOWABLE VALUE
1. Reactor Scram Detection	4 per LLS valve	SR 3.3.6.3.2 SR 3.3.6.3.6	NA
2. Low-Low Set Pressure Setpoints	4 per LLS valve	SR 3.3.6.3.1 SR 3.3.6.3.2 SR 3.3.6.3.3 SR 3.3.6.3.5 SR 3.3.6.3.6	Low: Open ≤ 1066 psig Close ≤ 986 psig Medium: Open ≤ 1076 psig Close ≤ 996 psig High: Open ≤ 1086 psig Close ≤ 1006 psig
3. Tailpipe Pressure Switch	4 per LLS valve	SR 3.3.6.3.1 SR 3.3.6.3.2 SR 3.3.6.3.5 SR 3.3.6.3.6	≥ 27 psid and ≤ 33 psid
4. Inhibit Timers	4 per LLS valve	SR 3.3.6.3.2 SR 3.3.6.3.4 SR 3.3.6.3.6	≥ 8 seconds and ≤ 12 seconds

3.3 INSTRUMENTATION

3.3.7.1 Control Room Emergency Filtration (CREF) System Instrumentation

LCO 3.3.7.1 The CREF System instrumentation for each Function in Table 3.3.7.1-1 shall be OPERABLE.

APPLICABILITY: According to Table 3.3.7.1-1

ACTIONS

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

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more channels inoperable.	A.1 Declare associated CREF subsystem inoperable. AND A.2 Place channel in trip.	1 hour from discovery of loss of CREF initiation capability in both trip systems 12 hours
B. Required Action and associated Completion Time not met.	B.1 Place the associated CREF subsystem in the pressurization mode of operation. OR B.2 Declare associated CREF subsystem inoperable.	1 hour 1 hour

SURVEILLANCE REQUIREMENTS

---NOTES---

1. Refer to Table 3.3.7.1-1 to determine which SRs apply for each CREF System Function.
2. When a channel is placed in an inoperable status solely for performance of required Surveillances, entry into associated Conditions and Required Actions may be delayed for up to 6 hours provided the associated Function maintains CREF System initiation capability.

SURVEILLANCE		FREQUENCY
SR 3.3.7.1.1	Perform CHANNEL CHECK.	In accordance with the Surveillance Frequency Control Program
SR 3.3.7.1.2	Perform CHANNEL FUNCTIONAL TEST.	In accordance with the Surveillance Frequency Control Program
SR 3.3.7.1.3	Calibrate the trip unit.	In accordance with the Surveillance Frequency Control Program
SR 3.3.7.1.4	Perform CHANNEL CALIBRATION.	In accordance with the Surveillance Frequency Control Program
SR 3.3.7.1.5	Perform CHANNEL CALIBRATION.	In accordance with the Surveillance Frequency Control Program
SR 3.3.7.1.6	Perform LOGIC SYSTEM FUNCTIONAL TEST.	In accordance with the Surveillance Frequency Control Program

Table 3.3.7.1-1 (Page 1 of 1)
Control Room Emergency Filtration System Instrumentation

FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	REQUIRED CHANNELS PER TRIP SYSTEM	SURVEILLANCE REQUIREMENTS	ALLOWABLE VALUE
1. Reactor Vessel Water Level - Low Low	1, 2, 3	2	SR 3.3.7.1.1 SR 3.3.7.1.2 SR 3.3.7.1.3 SR 3.3.7.1.5 SR 3.3.7.1.6	≥ -48 inches
2. Drywell Pressure - High	1, 2, 3	2	SR 3.3.7.1.2 SR 3.3.7.1.4 SR 3.3.7.1.6	≤ 2 psig
3. Reactor Building Ventilation Exhaust Radiation - High	1, 2, 3, (a)	2	SR 3.3.7.1.1 SR 3.3.7.1.2 SR 3.3.7.1.4 SR 3.3.7.1.6	≤ 100 mR/hr
4. Refueling Floor Radiation - High	1, 2, 3, (a)	2	SR 3.3.7.1.1 SR 3.3.7.1.2 SR 3.3.7.1.4 SR 3.3.7.1.6	≤ 100 mR/hr

(a) During movement of recently irradiated fuel assemblies in the secondary containment.

3.3 INSTRUMENTATION

3.3.7.2 Mechanical Vacuum Pump Isolation Instrumentation

LCO 3.3.7.2 Four channels of the Main Steam Line Tunnel Radiation – High Function for the mechanical vacuum pump isolation shall be OPERABLE.

APPLICABILITY: MODES 1 and 2 with the mechanical vacuum pump in service and any main steam line not isolated.

ACTIONS

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

CONDITION	REQUIRED ACTION		COMPLETION TIME
A. One or more channels inoperable.	A.1	Restore channel to OPERABLE status.	12 hours <u>OR</u> In accordance with the Risk Informed Completion Time Program
	<u>OR</u>		
	A.2	--------------NOTE--------------- Not applicable if inoperable channel is the result of an inoperable mechanical vacuum pump breaker or isolation valve. ------------------------------------- Place channel in trip.	12 hours <u>OR</u> In accordance with the Risk Informed Completion Time Program

ACTIONS (continued)

CONDITION	REQUIRED ACTION		COMPLETION TIME
B. Mechanical vacuum pump isolation capability not maintained.	B.1	Restore mechanical vacuum pump isolation capability	1 hour
C. Required Action and associated Completion Time not met.	C.1	Isolate the mechanical vacuum pump.	12 hours
	<u>OR</u>		
	C.2	Isolate the main steam lines.	12 hours
	<u>OR</u>		
	C.3	Be in MODE 3.	12 hours

SURVEILLANCE REQUIREMENTS

---NOTE---

When a channel is placed in an inoperable status solely for performance of required Surveillances, entry into associated Conditions and Required Actions may be delayed for up to 6 hours provided the associated Function maintains mechanical vacuum pump isolation capability.

SURVEILLANCE		FREQUENCY
SR 3.3.7.2.1	Perform CHANNEL CHECK.	In accordance with the Surveillance Frequency Control Program
SR 3.3.7.2.2	Perform CHANNEL FUNCTIONAL TEST.	In accordance with the Surveillance Frequency Control Program

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.3.7.2.3	Perform CHANNEL CALIBRATION. The Allowable Value Shall be ≤ 6.9 R/hour.	In accordance with the Surveillance Frequency Control Program
SR 3.3.7.2.4	Perform LOGIC SYSTEM FUNCTIONAL TEST, including mechanical vacuum pump breaker and isolation valves actuation.	In accordance with the Surveillance Frequency Control Program

3.3 INSTRUMENTATION

3.3.8.1 Loss of Power (LOP) Instrumentation

LCO 3.3.8.1 The LOP instrumentation for each Function in Table 3.3.8.1-1 shall be OPERABLE.

APPLICABILITY: MODES 1, 2, and 3

ACTIONS

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

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more channels inoperable.	A.1 Place channel in trip.	1 hour <u>OR</u> -----------NOTE---------- Not applicable when a loss of function occurs. ----------------------------- In accordance with the Risk Informed Completion Time Program
B. Required Action and associated Completion Time not met.	B.1 Declare associated EDG inoperable.	Immediately

SURVEILLANCE REQUIREMENTS

---NOTES---

1. Refer to Table 3.3.8.1-1 to determine which SRs apply for each LOP Instrumentation Function.

2. When a channel is placed in an inoperable status solely for performance of required Surveillances, entry into associated Conditions and Required Actions may be delayed for up to 2 hours provided the associated Function maintains EDG initiation capability.

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

Table 3.3.8.1-1 (page 1 of 1)
Loss of Power Instrumentation

FUNCTION	REQUIRED CHANNELS PER BUS	SURVEILLANCE REQUIREMENTS	ALLOWABLE VALUE
1. 4.16 kV Essential Bus Loss of Voltage	4	SR 3.3.8.1.1 SR 3.3.8.1.3 SR 3.3.8.1.4	≥ 2345 V and ≤ 2905 V
2. 4.16 kV Essential Bus Degraded Voltage			
a. Bus Undervoltage	3	SR 3.3.8.1.1 SR 3.3.8.1.2 SR 3.3.8.1.4	≥ 3913 V and ≤ 3927 V
b. Time Delay	3	SR 3.3.8.1.1 SR 3.3.8.1.2 SR 3.3.8.1.4	≥ 8.8 seconds and ≤ 9.2 seconds

3.3 INSTRUMENTATION

3.3.8.2 Reactor Protection System (RPS) Electric Power Monitoring

LCO 3.3.8.2 Two RPS electric power monitoring assemblies shall be OPERABLE for each inservice RPS motor generator set or alternate power supply.

APPLICABILITY: MODES 1, 2, and 3,
MODES 4 and 5 with residual heat removal (RHR) shutdown cooling supply isolation valves open,
MODE 5 with any control rod withdrawn from a core cell containing one or more fuel assemblies,
During movement of recently irradiated fuel assemblies in the secondary containment.

ACTIONS

CONDITION	REQUIRED ACTION		COMPLETION TIME
A. One or both inservice power supplies with one electric power monitoring assembly inoperable.	A.1	Remove associated inservice power supply(s) from service.	72 hours
B. One or both inservice power supplies with both electric power monitoring assemblies inoperable.	B.1	Remove associated inservice power supply(s) from service.	1 hour
C. Required Action and associated Completion Time of Condition A or B not met in MODE 1, 2, or 3.	C.1	Be in MODE 3.	12 hours
	AND		
	C.2	Be in MODE 4.	36 hours

ACTIONS (continued)

CONDITION	REQUIRED ACTION		COMPLETION TIME
D. Required Action and associated Completion Time of Condition A or B not met in MODE 4 or 5 with RHR shutdown cooling supply isolation valves open.	D.1	Initiate action to restore one electric power monitoring assembly to OPERABLE status for inservice power supply(s) supplying required instrumentation.	Immediately
	OR		
	D.2	Initiate action to isolate the RHR Shutdown Cooling System.	Immediately
E. Required Action and associated Completion Time of Condition A or B not met in MODE 5 with any control rod withdrawn from a core cell containing one or more fuel assemblies.	E.1	Initiate action to fully insert all insertable control rods in core cells containing one or more fuel assemblies.	Immediately
F. Required Action and associated Completion Time of Condition A or B not met during movement of recently irradiated fuel assemblies in the secondary containment.	F.1.1	Isolate the associated secondary containment penetration flow path(s).	Immediately
	OR		
	F.1.2	Declare the associated secondary containment isolation valve(s) inoperable.	Immediately
	AND		
	F.2.1	Place the associated standby gas treatment (SGT) subsystem(s) in operation.	Immediately
	OR		

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
	F.2.2 Declare associated SGT subsystem(s) inoperable.	Immediately
	AND	
	F.3.1 Place the associated control room emergency filtration (CREF) subsystem(s) in operation.	Immediately
	OR	
	F.3.2 Declare associated CREF subsystem(s) inoperable.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.3.8.2.1	Perform CHANNEL FUNCTIONAL TEST.	In accordance with the Surveillance Frequency Control Program
SR 3.3.8.2.2	Perform CHANNEL CALIBRATION. The Allowable Values shall be: a. Overvoltage ≤ 128 V; b. Undervoltage ≥ 104 V; and c. Underfrequency ≥ 57 Hz.	In accordance with the Surveillance Frequency Control Program

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.3.8.2.3	Perform CHANNEL CALIBRATION of each Overvoltage, Undervoltage, and Underfrequency time delay relay. The Allowable Value shall be ≤ 4 seconds.	In accordance with the Surveillance Frequency Control Program
SR 3.3.8.2.4	Perform a system functional test.	In accordance with the Surveillance Frequency Control Program

3.4 REACTOR COOLANT SYSTEM (RCS)

3.4.1 Recirculation Loops Operating

LCO 3.4.1 Two recirculation loops with matched flows shall be in operation.

<u>OR</u>

One recirculation loop may be in operation provided the plant is not operating in the Extended Flow Window domain defined in the COLR and provided the following limits are applied when the associated LCO is applicable:

a. LCO 3.2.1, "AVERAGE PLANAR LINEAR HEAT GENERATION RATE (APLHGR)," single loop operation limits specified in the COLR;

b. LCO 3.2.2, "MINIMUM CRITICAL POWER RATIO (MCPR)," single loop operation limits specified in the COLR; and

c. LCO 3.3.1.1, "Reactor Protection System (RPS) Instrumentation," Function 2.b (Average Power Range Monitor Simulated Thermal Power - High), Allowable Value of Table 3.3.1.1-1 is reset for single loop operation.

APPLICABILITY: MODES 1 and 2.

ACTIONS

CONDITION	REQUIRED ACTION		COMPLETION TIME
A. Requirements of the LCO not met.	A.1	Satisfy the requirements of the LCO.	24 hours
B. Required Action and associated Completion Time of Condition A not met. <u>OR</u> No recirculation loops in operation.	B.1	Be in MODE 3.	12 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.4.1.1	--------------------------------NOTE------------------------------- Not required to be performed until 24 hours after both recirculation loops are in operation. -- Verify jet pump loop flow mismatch with both recirculation loops in operation is: a. ≤ 10% of rated core flow when operating at < 70% of rated core flow; and b. ≤ 5% of rated core flow when operating at ≥ 70% of rated core flow.	In accordance with the Surveillance Frequency Control Program

3.4 REACTOR COOLANT SYSTEM (RCS)

3.4.2 Jet Pumps

LCO 3.4.2 All jet pumps shall be OPERABLE.

APPLICABILITY: MODES 1 and 2.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more jet pumps inoperable.	A.1 Be in MODE 3.	12 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.4.2.1	------------------------------NOTES------------------------------ 1. Not required to be performed until 4 hours after associated recirculation loop is in operation. 2. Not required to be performed until 24 hours after > 25% RTP. --- Verify at least one of the following criteria (a or b) is satisfied for each operating recirculation loop: a. Recirculation pump flow to speed ratio differs by ≤ 5% from established patterns, and jet pump loop flow to recirculation pump speed ratio differs by ≤ 5% from established patterns; or b. Each jet pump diffuser to lower plenum differential pressure differs by ≤ 20% from established patterns.	In accordance with the Surveillance Frequency Control Program

3.4 REACTOR COOLANT SYSTEM (RCS)

3.4.3 Safety/Relief Valves (S/RVs)

LCO 3.4.3 The safety function of seven S/RVs shall be OPERABLE.

APPLICABILITY: MODES 1, 2, and 3.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or two required S/RVs inoperable.	A.1 Restore the required S/RVs to OPERABLE status.	14 days <u>OR</u> In accordance with the Risk Informed Completion Time Program
B. Required Action and associated Completion Time of Condition A not met. <u>OR</u> Three or more required S/RVs inoperable.	B.1 Be in MODE 3. <u>AND</u> B.2 Be in MODE 4.	12 hours 36 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.4.3.1	Verify the safety function lift setpoints of the required S/RVs are 1109 $\pm$ 33.2 psig. Following testing, lift settings shall be 1109 $\pm$ 11.0 psig.	In accordance with the INSERVICE TESTING PROGRAM
SR 3.4.3.2	-------------------------------NOTE------------------------------ Not required to be performed until 12 hours after reactor steam flow is adequate to perform the test. --- Verify each required S/RV is capable of being opened.	In accordance with the INSERVICE TESTING PROGRAM

3.4 REACTOR COOLANT SYSTEM (RCS)

3.4.4 RCS Operational LEAKAGE

LCO 3.4.4 RCS operational LEAKAGE shall be limited to:

a. No pressure boundary LEAKAGE;

b. ≤ 5 gpm unidentified LEAKAGE;

c. ≤ 25 gpm total LEAKAGE averaged over the previous 24 hour period; and

d. ≤ 2 gpm increase in unidentified LEAKAGE within the previous 24 hour period in MODE 1.

APPLICABILITY: MODES 1, 2, and 3.

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. Unidentified LEAKAGE not within limit. <u>OR</u> Total LEAKAGE not within limit.	B.1 Reduce LEAKAGE to within limits.	4 hours

ACTIONS (continued)

CONDITION	REQUIRED ACTION		COMPLETION TIME
C. Unidentified LEAKAGE increase not within limit.	C.1	Reduce LEAKAGE to within limits.	4 hours
	<u>OR</u>		
	C.2	Verify source of unidentified LEAKAGE increase is not service sensitive type 304 or type 316 austenitic stainless steel.	4 hours
D. Required Action and associated Completion Time not met.	D.1	Be in MODE 3.	12 hours
	<u>AND</u>		
	D.2	Be in MODE 4.	36 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.4.4.1	Verify RCS unidentified and total LEAKAGE and unidentified LEAKAGE increases are within limits.	In accordance with the Surveillance Frequency Control Program

3.4 REACTOR COOLANT SYSTEM (RCS)

3.4.5 RCS Leakage Detection Instrumentation

LCO 3.4.5 The following RCS leakage detection instrumentation shall be OPERABLE:

a. Either the drywell floor drain sump monitoring system or the drywell equipment drain sump monitoring system with the drywell floor drain sump overflowing to the drywell equipment drain sump; and

b. Drywell particulate radioactivity monitoring system.

APPLICABILITY: MODES 1, 2, and 3.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. LCO 3.4.5.a not met.	A.1 -------------NOTE------------ LCO 3.0.4.c is applicable. -------------------------------- Satisfy the requirements of LCO 3.4.5.a.	 30 days
B. Drywell particulate radioactivity monitoring system inoperable.	B.1 Analyze grab samples of primary containment atmosphere.	Once per 12 hours
C. All required leakage detection systems inoperable.	C.1 Satisfy the requirements of LCO 3.4.5.a. OR C.2 Restore drywell particulate radioactivity monitoring system to OPERABLE status.	1 hour 1 hour

ACTIONS (continued)

CONDITION	REQUIRED ACTION		COMPLETION TIME
D. Required Action and associated Completion Time not met.	D.1	Be in MODE 3.	12 hours
	AND		
	D.2	Be in MODE 4.	36 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.4.5.1	Perform a CHANNEL CHECK of required leakage detection instrumentation.	In accordance with the Surveillance Frequency Control Program
SR 3.4.5.2	Perform a CHANNEL FUNCTIONAL TEST of the drywell particulate radioactivity monitoring system and the flow instrumentation of the required drywell drain sump monitoring system.	In accordance with the Surveillance Frequency Control Program
SR 3.4.5.3	Perform a CHANNEL CALIBRATION of required leakage detection instrumentation.	In accordance with the Surveillance Frequency Control Program

3.4 REACTOR COOLANT SYSTEM (RCS)

3.4.6 RCS Specific Activity

LCO 3.4.6 The specific activity of the reactor coolant shall be limited to DOSE EQUIVALENT I-131 specific activity ≤ 0.2 μCi/gm.

APPLICABILITY: MODE 1,
MODES 2 and 3 with any main steam line not isolated.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Reactor coolant specific activity > 0.2 μCi/gm and ≤ 2.0 μCi/gm DOSE EQUIVALENT I-131.	------------------NOTE------------------ LCO 3.0.4.c is applicable. ---	
	A.1 Determine DOSE EQUIVALENT I-131.	Once per 4 hours
	<u>AND</u>	
	A.2 Restore DOSE EQUIVALENT I-131 to within limits.	48 hours
B. Required Action and associated Completion Time of Condition A not met. <u>OR</u> Reactor Coolant specific activity > 2.0 μCi/gm DOSE EQUIVALENT I-131.	B.1 Determine DOSE EQUIVALENT I-131.	Once per 4 hours
	<u>AND</u>	
	B.2.1 Isolate all main steam lines.	12 hours
	<u>OR</u>	
	B.2.2.1 Be in MODE 3.	12 hours
	<u>AND</u>	
	B.2.2.2 Be in MODE 4.	36 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.4.6.1	--------------------------------NOTE------------------------------- Only required to be performed in MODE 1. --- Verify reactor coolant DOSE EQUIVALENT I-131 specific activity is ≤ 0.2 μCi/gm.	In accordance with the Surveillance Frequency Control Program

3.4 REACTOR COOLANT SYSTEM (RCS)

3.4.7 Residual Heat Removal (RHR) Shutdown Cooling System - Hot Shutdown

LCO 3.4.7 Two RHR shutdown cooling subsystems shall be OPERABLE, and, with no recirculation pump in operation, at least one RHR shutdown cooling subsystem shall be in operation.

--NOTES--

1. Both RHR shutdown cooling subsystems and recirculation pumps may be removed from operation for up to 2 hours per 8 hour period.

2. One RHR shutdown cooling subsystem may be inoperable for up to 2 hours for the performance of Surveillances.

APPLICABILITY: MODE 3 with reactor steam dome pressure less than the RHR shutdown cooling supply isolation interlock.

ACTIONS

--NOTE--

Separate Condition entry is allowed for each RHR shutdown cooling subsystem.

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One required RHR shutdown cooling subsystem inoperable.	A.1 Verify an alternate method of decay heat removal is available.	1 hour <u>AND</u> Once per 24 hours thereafter
B. Required Action and associated Completion Time of Condition A not met.	B.1 Initiate action to restore RHR shutdown cooling subsystem to OPERABLE status.	Immediately

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
C. Two required RHR shutdown cooling subsystems inoperable.	C.1 Verify an alternate method of decay heat removal is available for each inoperable RHR shutdown cooling subsystem.	1 hour <u>AND</u> Once per 24 hours thereafter
D. Required Action and associated Completion Time of Condition C not met.	-------------------NOTE------------------- LCO 3.0.3 and all other LCO Required Actions requiring a MODE change to MODE 4 may be suspended until one RHR shutdown cooling subsystem is restored to OPERABLE status. --- D.1 Initiate action to restore one RHR shutdown cooling subsystem to OPERABLE status.	 Immediately
E. No RHR shutdown cooling subsystem in operation. <u>AND</u> No recirculation pump in operation.	E.1 Initiate action to restore one RHR shutdown cooling subsystem or one recirculation pump to operation. <u>AND</u> E.2 Verify reactor coolant circulation by an alternate method. <u>AND</u> E.3 Monitor reactor coolant temperature and pressure.	Immediately 1 hour from discovery of no reactor coolant circulation <u>AND</u> Once per 12 hours thereafter Once per hour

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.4.7.1	-------------------------------NOTE------------------------------ Not required to be met until 2 hours after reactor steam dome pressure is less than the RHR shutdown cooling supply isolation interlock. --- Verify one RHR shutdown cooling subsystem or recirculation pump is operating.	In accordance with the Surveillance Frequency Control Program
SR 3.4.7.2	-------------------------------NOTE------------------------------ Not required to be performed until 12 hours after reactor steam dome pressure is less than the RHR shutdown cooling supply isolation interlock. --- Verify RHR shutdown cooling subsystem locations susceptible to gas accumulation are sufficiently filled with water.	In accordance with the Surveillance Frequency Control Program

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
C. No RHR shutdown cooling subsystem in operation. AND No recirculation pump in operation.	C.1 Verify reactor coolant circulating by an alternate method.	1 hour from discovery of no reactor coolant circulation AND Once per 12 hours thereafter
	AND	
	C.2 Monitor reactor coolant temperature and pressure.	Once per hour

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.4.8.1	Verify one RHR shutdown cooling subsystem or recirculation pump is operating.	In accordance with the Surveillance Frequency Control Program
SR 3.4.8.2	Verify RHR shutdown cooling subsystem locations susceptible to gas accumulation are sufficiently filled with water.	In accordance with the Surveillance Frequency Control Program

ACTIONS (continued)

CONDITION	REQUIRED ACTION		COMPLETION TIME
	B.2	Monitor reactor coolant temperature and pressure.	Once per hour

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.4.8.1	Verify one RHR shutdown cooling subsystem or recirculation pump is operating.	In accordance with the Surveillance Frequency Control Program
SR 3.4.8.2	Verify RHR shutdown cooling subsystem 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 RCS Pressure and Temperature (P/T) Limits

LCO 3.4.9 RCS pressure, RCS temperature, RCS heatup and cooldown rates, and the recirculation pump starting temperature requirements shall be maintained within the limits specified in the PTLR.

APPLICABILITY: At all times.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. ------------NOTE------------ Required Action A.2 shall be completed if this Condition is entered. -------------------------------- Requirements of the LCO not met in MODE 1, 2, or 3.	A.1 Restore parameter(s) to within limits. <u>AND</u> A.2 Determine RCS is acceptable for continued operation.	30 minutes 72 hours
B. Required Action and associated Completion Time of Condition A not met.	B.1 Be in MODE 3. <u>AND</u> B.2 Be in MODE 4.	12 hours 36 hours
C. ------------NOTE------------ Required Action C.2 shall be completed if this Condition is entered. -------------------------------- Requirements of the LCO not met in other than MODES 1, 2, and 3.	C.1 Initiate action to restore parameter(s) to within limits. <u>AND</u> C.2 Determine RCS is acceptable for operation.	Immediately Prior to entering MODE 2 or 3

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.4.9.1	------------------------------NOTE------------------------------- Only required to be performed during RCS heatup and cooldown operations and RCS inservice leak and hydrostatic testing. --- Verify: a. RCS pressure and RCS temperature are within the applicable limits specified in the PTLR; and b. RCS heatup and cooldown rates are within the the limits specified in the PTLR.	In accordance with the Surveillance Frequency Control Program
SR 3.4.9.2	Verify RCS pressure and RCS temperature are within the criticality limits specified in the PTLR.	Once within 15 minutes prior to control rod withdrawal for the purpose of achieving criticality
SR 3.4.9.3	------------------------------NOTE------------------------------- Only required to be met in MODES 1, 2, 3, and 4 during recirculation pump startup. --- Verify the difference between the reactor coolant temperature in the recirculation loop to be started and the RPV coolant temperature is within the limits specified in the PTLR.	Once within 15 minutes prior to each startup of a recirculation pump
SR 3.4.9.4	------------------------------NOTE------------------------------- Only required to be performed when tensioning the reactor vessel head bolting studs. --- Verify reactor vessel flange and head flange temperature are within the limits specified in the PTLR.	In accordance with the Surveillance Frequency Control Program

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.4.9.5	-------------------------------NOTE------------------------------ Not required to be performed until 30 minutes after RCS temperature ≤ 80°F in MODE 4. --- Verify reactor vessel flange and head flange temperatures are within the limits specified in the PTLR.	In accordance with the Surveillance Frequency Control Program
SR 3.4.9.6	-------------------------------NOTE------------------------------ Not required to be performed until 12 hours after RCS temperature ≤ 100°F in MODE 4. --- Verify reactor vessel flange and head flange temperatures are within the limits specified in the PTLR.	In accordance with the Surveillance Frequency Control Program

3.4 REACTOR COOLANT SYSTEM (RCS)

3.4.10 Reactor Steam Dome Pressure

LCO 3.4.10 The reactor steam dome pressure shall be ≤ 1025.3 psig.

APPLICABILITY: MODES 1 and 2.

ACTIONS

CONDITION	REQUIRED ACTION		COMPLETION TIME
A. Reactor steam dome pressure not within limit.	A.1	Restore reactor steam dome pressure to within limit.	15 minutes
B. Required Action and associated Completion Time not met.	B.1	Be in MODE 3.	12 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.4.10.1	Verify reactor steam dome pressure is ≤ 1025.3 psig.	In accordance with the Surveillance Frequency Control Program

3.5 EMERGENCY CORE COOLING SYSTEM (ECCS), RPV WATER INVENTORY CONTROL, AND REACTOR CORE ISOLATION COOLING (RCIC) SYSTEM

3.5.1 ECCS - Operating

LCO 3.5.1 Each ECCS injection/spray subsystem and the Automatic Depressurization System (ADS) function of three safety/relief valves shall be OPERABLE.

APPLICABILITY: MODE 1,
MODES 2 and 3, except high pressure coolant injection (HPCI) and ADS valves are not required to be OPERABLE with reactor steam dome pressure ≤ 150 psig.

ACTIONS

--NOTE--

LCO 3.0.4.b is not applicable to HPCI.

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One LPCI pump inoperable.	A.1 Restore LPCI pump to OPERABLE status.	30 days
B. One LPCI subsystem inoperable for reasons other than Condition A. <u>OR</u> One Core Spray subsystem inoperable.	B.1 Restore low pressure ECCS injection/spray subsystem to OPERABLE status.	7 days <u>OR</u> In accordance with the Risk Informed Completion Time Program

ACTIONS (continued)

CONDITION	REQUIRED ACTION		COMPLETION TIME
C. One LPCI pump in both LPCI subsystems inoperable.	C.1	Restore one LPCI pump to OPERABLE status.	7 days OR In accordance with the Risk Informed Completion Time Program
D. Two LPCI subsystems inoperable for reasons other than Condition C or G.	D.1	Restore one LPCI subsystem to OPERABLE status.	72 hours OR In accordance with the Risk Informed Completion Time Program
E. One Core Spray subsystem inoperable. AND One LPCI subsystem inoperable. OR One or two LPCI pump(s) inoperable.	E.1	Restore Core Spray subsystem to OPERABLE status.	72 hours OR In accordance with the Risk Informed Completion Time Program
	OR		
	E.2	Restore LPCI subsystem to OPERABLE status.	72 hours OR In accordance with the Risk Informed Completion Time Program
	OR		

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
	E.3 Restore LPCI pump(s) to OPERABLE status.	72 hours OR In accordance with the Risk Informed Completion Time Program
F. Required Action and associated Completion Time of Condition A, B, C, D, or E not met.	F.1 Be in MODE 3. AND F.2 Be in MODE 4.	12 hours 36 hours
G. Two LPCI subsystems inoperable due to open RHR intertie return line isolation valve(s).	G.1 Isolate the RHR intertie line.	18 hours
H. Required Action and associated Completion Time of Condition G not met.	H.1 Be in MODE 2.	6 hours

ACTIONS (continued)

CONDITION	REQUIRED ACTION		COMPLETION TIME
I. HPCI System inoperable.	I.1	Verify by administrative means RCIC System is OPERABLE.	Immediately
	AND		
	I.2	Restore HPCI System to OPERABLE status.	14 days OR In accordance with the Risk Informed Completion Time Program
J. HPCI System inoperable. AND Condition A, B, or C entered.	J.1	Restore HPCI System to OPERABLE status.	72 hours OR In accordance with the Risk Informed Completion Time Program
	OR		
	J.2	Restore low pressure ECCS injection/spray subsystem(s) to OPERABLE status.	72 hours OR In accordance with the Risk Informed Completion Time Program
K. One ADS valve inoperable.	K.1	Restore ADS valve to OPERABLE status.	14 days OR In accordance with the Risk Informed Completion Time Program

ACTIONS (continued)

CONDITION	REQUIRED ACTION		COMPLETION TIME
L. Required Action and associated Completion Time of Condition I, J, or K not met. <u>OR</u> One ADS valve inoperable and Condition A, B, C, D, or G entered. <u>OR</u> Two or more ADS valves inoperable. <u>OR</u> HPCI System inoperable and Condition D, E, or G entered.	L.1 <u>AND</u> L.2	Be in MODE 3. Reduce reactor steam dome pressure to $\leq$ 150 psig.	12 hours 36 hours
M. Two or more low pressure ECCS injection/spray subsystems inoperable for reasons other than Condition C, D, E, or G. <u>OR</u> HPCI System and one or more ADS valves inoperable.	M.1	Enter LCO 3.0.3.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.5.1.1	Verify, for each ECCS injection/spray subsystem, locations susceptible to gas accumulation are sufficiently filled with water.	In accordance with the Surveillance Frequency Control Program
SR 3.5.1.2	-------------------------------NOTE------------------------------ Not required to be met for system vent flow paths opened under administrative control. -- Verify each ECCS injection/spray subsystem manual, power operated, and automatic valves in the flow path, that is not locked, sealed, or otherwise secured in position, is in the correct position.	In accordance with the Surveillance Frequency Control Program
SR 3.5.1.3	Verify ADS pneumatic pressure is as follows for each required ADS pneumatic supply: a. S/RV Accumulator Bank header pressure ≥ 88.3 psig; and b. Alternate Nitrogen System pressure is ≥ 1060 psig.	In accordance with the Surveillance Frequency Control Program
SR 3.5.1.4	-------------------------------NOTE------------------------------ Only required to be met in MODE 1. -- Verify the RHR System intertie return line isolation valves are closed.	In accordance with the Surveillance Frequency Control Program
SR 3.5.1.5	Verify correct breaker alignment to the LPCI swing bus.	In accordance with the Surveillance Frequency Control Program

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.5.1.6	Verify each recirculation pump discharge valve cycles through one complete cycle of full travel or is de-energized in the closed position.	In accordance with the INSERVICE TESTING PROGRAM
SR 3.5.1.7	Verify the following ECCS pumps develop the specified flow rate against a system head corresponding to the specified reactor to containment pressure. <table><tr><th>System</th><th>Flow Rate</th><th>No. of Pumps</th><th>System Head Corresponding to a Reactor to Containment Pressure of</th></tr><tr><td>Core Spray</td><td>≥ 2835 gpm</td><td>1</td><td>≥ 130 psi</td></tr><tr><td>LPCI</td><td>≥ 3870 gpm</td><td>1</td><td>≥ 20 psi</td></tr></table>	In accordance with the INSERVICE TESTING PROGRAM
SR 3.5.1.8	-------------------------------NOTE------------------------------ Not required to be performed until 12 hours after reactor steam pressure and flow are adequate to perform the test. --- Verify, with reactor steam dome pressure ≤ 1025.3 psig and ≥ 950 psig, the HPCI pump can develop a flow rate ≥ 2700 gpm against a system head corresponding to reactor pressure.	In accordance with the INSERVICE TESTING PROGRAM

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.5.1.9	-------------------------------NOTE------------------------------ Not required to be performed until 12 hours after reactor steam pressure and flow are adequate to perform the test. --- Verify, with reactor pressure ≤ 165 psig, the HPCI pump can develop a flow rate ≥ 2700 gpm against a system head corresponding to reactor pressure.	In accordance with the Surveillance Frequency Control Program
SR 3.5.1.10	-------------------------------NOTE------------------------------ Vessel injection/spray may be excluded. --- Verify each ECCS injection/spray subsystem actuates on an actual or simulated automatic initiation signal.	In accordance with the Surveillance Frequency Control Program
SR 3.5.1.11	-------------------------------NOTE------------------------------ Valve actuation may be excluded. --- Verify the ADS actuates on an actual or simulated automatic initiation signal.	In accordance with the Surveillance Frequency Control Program
SR 3.5.1.12	-------------------------------NOTE------------------------------ Not required to be performed until 12 hours after reactor steam flow is adequate to perform the test. --- Verify each ADS valve is capable of being opened.	In accordance with the INSERVICE TESTING PROGRAM

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.5.1.13	Verify automatic transfer capability of the LPCI swing bus power supply from the normal source to the backup source.	In accordance with the Surveillance Frequency Control Program

3.5 EMERGENCY CORE COOLING SYSTEM (ECCS), RPV WATER INVENTORY CONTROL, AND REACTOR CORE ISOLATION COOLING (RCIC) SYSTEM

3.5.2 Reactor Pressure Vessel (RPV) Water Inventory Control

LCO 3.5.2 DRAIN TIME of RPV water inventory to the top of active fuel (TAF) shall be ≥ 36 hours.

AND

One low pressure ECCS injection/spray subsystem shall be OPERABLE.

--NOTE--
A Low Pressure Coolant Injection (LPCI) subsystem may be considered OPERABLE during alignment and operation for decay heat removal if capable of being manually realigned and not otherwise inoperable.

APPLICABILITY: MODES 4 and 5

ACTIONS

CONDITION	REQUIRED ACTION		COMPLETION TIME
A. Required ECCS injection/spray subsystem inoperable.	A.1	Restore required ECCS injection/spray subsystem to OPERABLE status.	4 hours
B. Required Action and associated Completion Time of Condition A not met.	B.1	Initiate action to establish a method of water injection capable of operating without offsite electrical power.	Immediately
C. DRAIN TIME < 36 hours and ≥ 8 hours.	C.1	Verify secondary containment boundary is capable of being established in less than the DRAIN TIME.	4 hours
	AND		

ACTIONS (continued)

CONDITION	REQUIRED ACTION		COMPLETION TIME
	C.2	Verify each secondary containment penetration flow path is capable of being isolated in less than the DRAIN TIME.	4 hours
	AND		
	C.3	Verify one standby gas treatment (SGT) subsystem is capable of being placed in operation in less than the DRAIN TIME.	4 hours
D. DRAIN TIME < 8 hours.	D.1	----------- NOTE --------------- Required ECCS injection/spray subsystem or additional method of water injection shall be capable of operating without offsite electrical power. ------------------------------------	
		Initiate action to establish an additional method of water injection with water sources capable of maintaining RPV water level > TAF for ≥ 36 hours.	Immediately
	AND		
	D.2	Initiate action to restore secondary containment boundary.	Immediately
	AND		

ACTIONS (continued)

CONDITION	REQUIRED ACTION		COMPLETION TIME
	D.3	Initiate action to isolate each secondary containment penetration flow path or verify it can be manually isolated from the control room.	Immediately
	AND		
	D.4	Initiate action to verify one SGT subsystem is capable of being placed in operation.	Immediately
E. Required Action and associated Completion Time of Condition C or D not met. OR DRAIN TIME < 1 hour.	E.1	Initiate action to restore DRAIN TIME to ≥ 36 hours.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.5.2.1	Verify, for the required ECCS injection/spray subsystem, the: a. Suppression pool water level is ≥ -3 ft; or b. Condensate storage tank(s) water level is ≥ 7 ft for one tank operation and ≥ 4 ft for two tank operation.	In accordance with the Surveillance Frequency Control Program

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.5.2.2	Verify, for the required ECCS injection/spray subsystem, locations susceptible to gas accumulation are sufficiently filled with water.	In accordance with the Surveillance Frequency Control Program
SR 3.5.2.3	(Not Used)	
SR 3.5.2.4	------------------------------NOTES----------------------------- 1. Operation may be through the test return line. 2. Credit may be taken for normal system operation to satisfy this SR. --- Operate the required ECCS injection/spray subsystem for ≥ 10 minutes.	In accordance with the Surveillance Frequency Control Program
SR 3.5.2.5	-------------------------------NOTE------------------------------ Vessel injection/spray may be excluded. --- Verify the required ECCS injection/spray subsystem can be manually operated.	In accordance with the Surveillance Frequency Control Program
SR 3.5.2.6	Verify each valve credited for automatically isolating a penetration flow path actuates to the isolation position on an actual or simulated isolation signal.	In accordance with the Surveillance Frequency Control Program

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.5.2.7	Verify DRAIN TIME ≥ 36 hours.	In accordance with the Surveillance Frequency Control Program

3.5 EMERGENCY CORE COOLING SYSTEM (ECCS), RPV WATER INVENTORY CONTROL, AND REACTOR CORE ISOLATION COOLING (RCIC) SYSTEM

3.5.3 RCIC System

LCO 3.5.3 The RCIC System shall be OPERABLE.

APPLICABILITY: MODE 1,
MODES 2 and 3 with reactor steam dome pressure > 150 psig.

ACTIONS

--NOTE--
LCO 3.0.4.b is not applicable to the RCIC System.

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. RCIC System inoperable.	A.1 Verify by administrative means High Pressure Coolant Injection System is OPERABLE.	Immediately
	AND	
	A.2 Restore RCIC System to OPERABLE status.	14 days OR In accordance with the Risk Informed Completion Time Program
B. Required Action and associated Completion Time not met.	B.1 Be in MODE 3.	12 hours
	AND	
	B.2 Reduce reactor steam dome pressure to ≤ 150 psig.	36 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.5.3.1	-------------------------------NOTE------------------------------ Not required to be met for system vent flow paths opened under administrative control. --- Verify each RCIC System manual, power operated, and automatic valve in the flow path, that is not locked, sealed, or otherwise secured in position, is in the correct position.	In accordance with the Surveillance Frequency Control Program
SR 3.5.3.2	-------------------------------NOTE------------------------------ Not required to be performed until 12 hours after reactor steam pressure and flow are adequate to perform the test. --- Verify, with reactor pressure ≤ 1025.3 psig and ≥ 950 psig, the RCIC pump can develop a flow rate ≥ 400 gpm against a system head corresponding to reactor pressure.	In accordance with the INSERVICE TESTING PROGRAM
SR 3.5.3.3	-------------------------------NOTE------------------------------ Not required to be performed until 12 hours after reactor steam pressure and flow are adequate to perform the test. --- Verify, with reactor pressure ≤ 165 psig, the RCIC pump can develop a flow rate ≥ 400 gpm against a system head corresponding to reactor pressure.	In accordance with the Surveillance Frequency Control Program
SR 3.5.3.4	-------------------------------NOTE------------------------------ Vessel injection may be excluded. --- Verify the RCIC System actuates on an actual or simulated automatic initiation signal.	In accordance with the Surveillance Frequency Control Program

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.5.3.5	Verify the RCIC System locations susceptible to gas accumulation are sufficiently filled with water.	In accordance with the Surveillance Frequency Control Program

3.6 CONTAINMENT SYSTEMS

3.6.1.1 Primary Containment

LCO 3.6.1.1 Primary containment shall be OPERABLE.

APPLICABILITY: MODES 1, 2, and 3.

ACTIONS

CONDITION	REQUIRED ACTION		COMPLETION TIME
A. Primary containment inoperable.	A.1	Restore primary containment to OPERABLE status.	1 hour
B. Required Action and associated Completion Time not met.	B.1	Be in MODE 3.	12 hours
	AND		
	B.2	Be in MODE 4.	36 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.6.1.1.1	Perform required visual examinations and leakage rate testing except for primary containment air lock testing, in accordance with the Primary Containment Leakage Rate Testing Program.	In accordance with the Primary Containment Leakage Rate Testing Program

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.6.1.1.2	Verify drywell to suppression chamber bypass leakage is less than that equivalent to a one inch diameter orifice.	In accordance with the Surveillance Frequency Control Program <u>AND</u> ---------NOTE-------- Only required after two consecutive tests fail and continues until two consecutive tests pass ------------------------- 12 months

3.6 CONTAINMENT SYSTEMS

3.6.1.2 Primary Containment Air Lock

LCO 3.6.1.2 The primary containment air lock shall be OPERABLE.

APPLICABILITY: MODES 1, 2, and 3.

ACTIONS

--NOTES--

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

2. Enter applicable Conditions and Required Actions of LCO 3.6.1.1, "Primary Containment," when air lock leakage results in exceeding overall primary containment leakage rate acceptance criteria.

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One primary containment air lock door inoperable.	---------------NOTES--------------- 1. Required Actions A.1, A.2, and A.3 are not applicable if both doors in the air lock are inoperable and Condition C is entered. 2. Entry and exit is permissible for 7 days under administrative controls. ---	
	A.1 Verify the OPERABLE door is closed.	1 hour
	AND	
	A.2 Lock the OPERABLE door closed.	24 hours
	AND	

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
	A.3 ---------------NOTE--------------- Air lock doors in high radiation areas or areas with limited access due to inerting may be verified locked closed by administrative means. ------------------------------------	
	Verify the OPERABLE door is locked closed.	Once per 31 days
B. Primary containment air lock interlock mechanism inoperable.	------------------NOTES------------------ 1. Required Actions B.1, B.2, and B.3 are not applicable if both doors in the air lock are inoperable and Condition C is entered. 2. Entry into and exit from containment is permissible under the control of a dedicated individual. --	
	B.1 Verify an OPERABLE door is closed.	1 hour
	<u>AND</u>	
	B.2 Lock an OPERABLE door closed.	24 hours
	<u>AND</u>	

ACTIONS (continued)

CONDITION	REQUIRED ACTION		COMPLETION TIME
	B.3	---------------NOTE-------------- Air lock doors in high radiation areas or areas with limited access due to inerting may be verified locked closed by administrative means. ------------------------------------- Verify an OPERABLE door is locked closed.	 Once per 31 days
C. Primary containment air lock inoperable for reasons other than Condition A or B.	C.1	Initiate action to evaluate primary containment overall leakage rate per LCO 3.6.1.1, using current air lock test results.	Immediately
	<u>AND</u>		
	C.2	Verify a door is closed.	1 hour
	<u>AND</u>		
	C.3	Restore air lock to OPERABLE status.	24 hours <u>OR</u> In accordance with the Risk Informed Completion Time Program
D. Required Action and associated Completion Time not met.	D.1	Be in MODE 3.	12 hours
	<u>AND</u>		
	D.2	Be in MODE 4.	36 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.6.1.2.1	-------------------------------NOTES------------------------------ 1. An inoperable air lock door does not invalidate the previous successful performance of the overall air lock leakage test. 2. Results shall be evaluated against acceptance criteria applicable to SR 3.6.1.1.1. -- Perform required primary containment air lock leakage rate testing in accordance with the Primary Containment Leakage Rate Testing Program.	In accordance with the Primary Containment Leakage Rate Testing Program
SR 3.6.1.2.2	Verify only one door in the primary containment air lock can be opened at a time.	In accordance with the Surveillance Frequency Control Program

3.6 CONTAINMENT SYSTEMS

3.6.1.3 Primary Containment Isolation Valves (PCIVs)

LCO 3.6.1.3 Each PCIV, except reactor building-to-suppression chamber vacuum breakers, shall be OPERABLE.

APPLICABILITY: MODES 1, 2, and 3

ACTIONS

--NOTES--

1. Penetration flow paths may be unisolated intermittently under administrative controls.

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

3. Enter applicable Conditions and Required Actions for systems made inoperable by PCIVs.

4. Enter applicable Conditions and Required Actions of LCO 3.6.1.1, "Primary Containment," when PCIV leakage results in exceeding overall containment leakage rate acceptance criteria.

CONDITION	REQUIRED ACTION		COMPLETION TIME
A. ------------NOTE------------ Only applicable to penetration flow paths with two PCIVs. -------------------------------- One or more penetration flow paths with one PCIV inoperable for reasons other than Condition D or E.	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.	4 hours except for main steam line OR In accordance with the Risk Informed Completion Time Program AND 8 hours for main steam line OR In accordance with the Risk Informed Completion Time Program
	AND		

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
	A.2 --------------NOTES------------ 1. Isolation devices in high radiation areas may be verified by use of administrative means. 2. Isolation devices that are locked, sealed, or otherwise secured may be verified by use of administrative means. ------------------------------------- Verify the affected penetration flow path is isolated.	Once per 31 days following isolation for isolation devices outside primary containment AND Prior to entering MODE 2 or 3 from MODE 4 if primary containment was de-inerted while in MODE 4, if not performed within the previous 92 days, for isolation devices inside primary containment

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
B. ------------NOTE------------ Only applicable to penetration flow paths with two PCIVs. -------------------------------- One or more penetration flow paths with two PCIVs inoperable for reasons other than Condition D or E.	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 with only one PCIV. -------------------------------- One or more penetration flow paths with one PCIV 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. <u>AND</u>	4 hours except for excess flow check valves (EFCVs) and penetrations with a closed system <u>AND</u> 72 hours for EFCVs and penetrations with a closed system

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
	C.2 --------------NOTES------------ 1. Isolation devices in high radiation areas may be verified by use of administrative means. 2. Isolation devices that are locked, sealed, or otherwise secured may be verified by use of administrative means. ------------------------------------ Verify the affected penetration flow path is isolated.	 Once per 31 days following isolation for isolation devices outside primary containment <u>AND</u> Prior to entering MODE 2 or 3 from MODE 4 if primary containment was de-inerted while in MODE 4, if not performed within the previous 92 days, for isolation devices inside primary containment

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
D. One or more penetration flow paths with one or more 18 inch primary containment purge and vent valves not within purge and vent valve 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.	24 hours OR -----------NOTE---------- Not applicable when a loss of function occurs. ----------------------------- In accordance with the Risk Informed Completion Time Program
	AND	
	D.2 --------------NOTES------------ 1. Isolation devices in high radiation areas may be verified by use of administrative means. 2. Isolation devices that are locked, sealed, or otherwise secured may be verified by use of administrative means. ------------------------------------ Verify the affected penetration flow path is isolated.	Once per 31 days following isolation for isolation devices outside containment

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
E. One or more MSIVs with leakage rate not within limits.	E.1 Restore leakage rate to within limits.	8 hours
F. Required Action and associated Completion Time of Condition A, B, C, or D not met.	F.1 Be in MODE 3. AND F.2 Be in MODE 4.	12 hours 36 hours

SURVEILLANCE REQUIREMENTS

	SURVEILLANCE	FREQUENCY
SR 3.6.1.3.1	--------------------------------NOTE------------------------------- Not required to be met when the 18 inch primary containment purge and vent valves are open for inerting, de-inerting, pressure control, ALARA or air quality considerations for personnel entry, or Surveillances that require the valves to be open. --- Verify each 18 inch primary containment purge and vent valve is closed.	In accordance with the Surveillance Frequency Control Program
SR 3.6.1.3.2	-------------------------------NOTES------------------------------ 1. Valves and blind flanges in high radiation areas may be verified by use of administrative means. 2. Not required to be met for PCIVs that are open under administrative controls. --- Verify each primary containment isolation manual valve and blind flange that is located outside primary containment and not locked, sealed, or otherwise secured and is required to be closed during accident conditions is closed.	In accordance with the Surveillance Frequency Control Program

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.6.1.3.3	-------------------------------NOTES------------------------------ 1. Valves and blind flanges in high radiation areas may be verified by use of administrative means. 2. Not required to be met for PCIVs that are open under administrative controls. --- Verify each primary containment manual isolation valve and blind flange that is located inside primary containment and not locked, sealed, or otherwise secured and is required to be closed during accident conditions is closed.	Prior to entering MODE 2 or 3 from MODE 4 if primary containment was de-inerted while in MODE 4, if not performed within the previous 92 days
SR 3.6.1.3.4	Verify continuity of the traversing incore probe (TIP) shear isolation valve explosive charge.	In accordance with the Surveillance Frequency Control Program
SR 3.6.1.3.5	Verify the isolation time of each power operated automatic PCIV, except for MSIVs, is within limits.	In accordance with the Surveillance Frequency Control Program
SR 3.6.1.3.6	Verify the isolation time of each MSIV is $\geq$ 3 seconds and $\leq$ 9.9 seconds.	In accordance with the Surveillance Frequency Control Program
SR 3.6.1.3.7	Verify each automatic PCIV actuates to the isolation position on an actual or simulated isolation signal.	In accordance with the Surveillance Frequency Control Program

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.6.1.3.8	Verify each reactor instrumentation line EFCV actuates on a simulated instrument line break to restrict flow to ≤ 2 gpm.	In accordance with the Surveillance Frequency Control Program
SR 3.6.1.3.9	Verify each 18 inch primary containment purge and vent valve is blocked to restrict the valve from opening > 40°.	In accordance with the Surveillance Frequency Control Program
SR 3.6.1.3.10	Remove and test the explosive squib from each shear isolation valve of the TIP System.	In accordance with the Surveillance Frequency Control Program
SR 3.6.1.3.11	Perform leakage rate testing for each 18 inch primary containment purge and vent valve with resilient seals.	In accordance with the Primary Containment Leakage Rate Testing Program
SR 3.6.1.3.12	Verify leakage rate through each MSIV is: (a) ≤ 100 scfh when tested at ≥ 44.1 psig (P_a); or (b) ≤ 75.3 scfh when tested at ≥ 25 psig.	In accordance with the Primary Containment Leakage Rate Testing Program
SR 3.6.1.3.13	Verify leakage rate through the main steam pathway is: (a) ≤ 200 scfh when tested at ≥ 44.1 psig (P_a); or (b) ≤ 150.6 scfh when tested at ≥ 25 psig.	In accordance with the Primary Containment Leakage Rate Testing Program

3.6 CONTAINMENT SYSTEMS

3.6.1.4 Drywell Air Temperature

LCO 3.6.1.4 Drywell average air temperature shall be $\leq$ 135°F.

APPLICABILITY: MODES 1, 2, and 3.

ACTIONS

CONDITION	REQUIRED ACTION		COMPLETION TIME
A. Drywell average air temperature not within limit.	A.1	Restore drywell average air temperature to within limit.	8 hours
B. Required Action and associated Completion Time not met.	B.1	Be in MODE 3.	12 hours
	AND		
	B.2	Be in MODE 4.	36 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.6.1.4.1	Verify drywell average air temperature is within limit.	In accordance with the Surveillance Frequency Control Program

3.6 CONTAINMENT SYSTEMS

3.6.1.5 Low-Low Set (LLS) Valves

LCO 3.6.1.5 The LLS function of three safety/relief valves shall be OPERABLE.

APPLICABILITY: MODES 1, 2, and 3.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One LLS valve inoperable.	A.1 Restore LLS valve to OPERABLE status.	14 days
B. Required Action and associated Completion Time of Condition A not met. OR Two or more LLS valves inoperable.	B.1 Be in MODE 3. AND B.2 Be in MODE 4.	12 hours 36 hours

SURVEILLANCE REQUIREMENTS

	SURVEILLANCE	FREQUENCY
SR 3.6.1.5.1	-------------------------------NOTE------------------------------ Not required to be performed until 12 hours after reactor steam flow is adequate to perform the test. --- Verify each LLS valve is capable of being opened.	 In accordance with the INSERVICE TESTING PROGRAM
SR 3.6.1.5.2	-------------------------------NOTE------------------------------ Valve actuation may be excluded. --- Verify the LLS System actuates on an actual or simulated automatic initiation signal.	 In accordance with the Surveillance Frequency Control Program

3.6 CONTAINMENT SYSTEMS

3.6.1.6 Reactor Building-to-Suppression Chamber Vacuum Breakers

LCO 3.6.1.6 Each reactor building-to-suppression chamber vacuum breaker shall be OPERABLE.

APPLICABILITY: MODES 1, 2, and 3.

ACTIONS

---NOTE---

Separate Condition entry is allowed for each line.

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more lines with one reactor building-to-suppression chamber vacuum breaker not closed.	A.1 Close the open vacuum breaker.	72 hours
B. One or more lines with two reactor building-to-suppression chamber vacuum breakers not closed.	B.1 Close one open vacuum breaker.	1 hour
C. One line with one or more reactor building-to-suppression chamber vacuum breakers inoperable for opening.	C.1 Restore the vacuum breaker(s) to OPERABLE status.	72 hours <u>OR</u> In accordance with the Risk Informed Completion Time Program

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
D. Two lines with one or more reactor building-to-suppression chamber vacuum breakers inoperable for opening.	D.1 Restore all vacuum breakers in one line to OPERABLE status.	1 Hour
E. Required Action and Associated Completion Time not met.	E.1 Be in MODE 3. AND E.2 Be in MODE 4.	12 hours 36 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.6.1.6.1	-------------------------------NOTES------------------------------ 1. Not required to be met for vacuum breakers that are open during Surveillances. 2. Not required to be met for vacuum breakers open when performing their intended function. -- Verify each vacuum breaker is closed.	In accordance with the Surveillance Frequency Control Program
SR 3.6.1.6.2	Perform a functional test of each vacuum breaker.	In accordance with the Surveillance Frequency Control Program
SR 3.6.1.6.3	Verify the opening setpoint of each vacuum breaker is ≤ 0.5 psid.	In accordance with the Surveillance Frequency Control Program

3.6 CONTAINMENT SYSTEMS

3.6.1.7 Suppression Chamber-to-Drywell Vacuum Breakers

LCO 3.6.1.7 Seven suppression chamber-to-drywell vacuum breakers shall be OPERABLE for opening.

AND

Eight suppression chamber-to-drywell vacuum breakers shall be closed.

APPLICABILITY: MODES 1, 2, and 3.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One required suppression chamber-to-drywell vacuum breaker inoperable for opening.	A.1 Restore one vacuum breaker to OPERABLE status.	72 hours OR In accordance with the Risk Informed Completion Time Program
B. One suppression chamber-to-drywell vacuum breaker not closed.	B.1 Close the open vacuum breaker.	12 hours
C. Required Action and associated Completion Time not met.	C.1 Be in MODE 3. AND C.2 Be in MODE 4.	12 hours 36 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.6.1.7.1	-------------------------------NOTES----------------------------- 1. Not required to be met for vacuum breakers that are open during Surveillances. 2. Not required to be met for vacuum breakers performing their intended function. 3. Not required to be met for vacuum breakers being cycled, one at a time, during primary containment inerting and de-inerting operations. --- Verify each vacuum breaker is closed.	 In accordance with the Surveillance Frequency Control Program AND Within 12 hours after any operation that causes the drywell-to-suppression chamber differential pressure to be reduced by ≥ 0.5 psid if any vacuum breaker position indicator does not indicate closed
SR 3.6.1.7.2	Perform a functional test of each required vacuum breaker.	In accordance with the Surveillance Frequency Control Program

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.6.1.7.3	Verify the opening setpoint of each required vacuum breaker is ≤ 0.5 psid.	In accordance with the Surveillance Frequency Control Program

3.6 CONTAINMENT SYSTEMS

3.6.1.8 Residual Heat Removal (RHR) Drywell Spray

LCO 3.6.1.8 Two RHR drywell spray subsystems shall be OPERABLE.

APPLICABILITY: MODES 1, 2, and 3.

ACTIONS

CONDITION	REQUIRED ACTION		COMPLETION TIME
A. One RHR drywell spray subsystem inoperable.	A.1	Restore RHR drywell spray subsystem to OPERABLE status.	7 days <u>OR</u> In accordance with the Risk Informed Completion Time Program
B. Two RHR drywell spray subsystems inoperable.	B.1	Restore one RHR drywell spray subsystem to OPERABLE status.	8 hours
C. Required Action and associated Completion Time not met.	C.1	Be in MODE 3.	12 hours
	<u>AND</u>		
	C.2	Be in MODE 4.	36 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.6.1.8.1	Verify each RHR drywell spray subsystem manual and power operated valve in the flow path that is not locked, sealed, or otherwise secured in position is in the correct position or can be aligned to the correct position.	In accordance with the Surveillance Frequency Control Program
SR 3.6.1.8.2	Verify each drywell spray header and nozzle is unobstructed.	Following maintenance that could result in nozzle blockage
SR 3.6.1.8.3	Verify RHR drywell spray subsystem locations susceptible to gas accumulation are sufficiently filled with water.	In accordance with the Surveillance Frequency Control Program

3.6 CONTAINMENT SYSTEMS

3.6.2.1 Suppression Pool Average Temperature

LCO 3.6.2.1 Suppression pool average temperature shall be:

a. ≤ 90° F with THERMAL POWER > 1% RTP and no testing that adds heat to the suppression pool is being performed;

b. ≤ 100° F with THERMAL POWER > 1% RTP and testing that adds heat to the suppression pool is being performed; and

c. ≤ 110°F with THERMAL POWER ≤ 1% RTP.

APPLICABILITY: MODES 1, 2, and 3.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Suppression pool average temperature > 90°F but ≤ 110°F. <u>AND</u> THERMAL POWER > 1% RTP. <u>AND</u> Not performing testing that adds heat to the suppression pool.	A.1 Verify suppression pool average temperature ≤ 110°F. <u>AND</u> A.2 Restore suppression pool average temperature to ≤ 90°F.	Once per hour 24 hours
B. Required Action and associated Completion Time of Condition A not met.	B.1 Reduce THERMAL POWER to ≤ 1% RTP.	12 hours

ACTIONS (continued)

CONDITION	REQUIRED ACTION		COMPLETION TIME
C. Suppression pool average temperature > 100°F. AND THERMAL POWER > 1% RTP. AND Performing testing that adds heat to the suppression pool.	C.1	Suspend all testing that adds heat to the suppression pool.	Immediately
D. Suppression pool average temperature > 110°F.	D.1	Place the reactor mode switch in the shutdown position.	Immediately
	AND		
	D.2	Determine suppression pool average temperature.	Once per 30 minutes
	AND		
	D.3	Be in MODE 4.	36 hours
E. Suppression pool average temperature > 120°F.	E.1	Depressurize the reactor vessel to < 200 psig.	12 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.6.2.1.1	Verify suppression pool average temperature is within the acceptable limits.	In accordance with the Surveillance Frequency Control Program AND 5 minutes when performing testing that adds heat to the suppression pool

3.6 CONTAINMENT SYSTEMS

3.6.2.2 Suppression Pool Water Level

LCO 3.6.2.2 Suppression pool water level shall be ≥ - 4.0 inches and ≤ + 3.0 inches.

APPLICABILITY: MODES 1, 2, and 3.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Suppression pool water level not within limits.	A.1 Restore suppression pool water level to within limits.	2 hours
B. Required Action and associated Completion Time not met.	B.1 Be in MODE 3. <u>AND</u> B.2 Be in MODE 4.	12 hours 36 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.6.2.2.1	Verify suppression pool water level is within limits.	In accordance with the Surveillance Frequency Control Program

3.6 CONTAINMENT SYSTEMS

3.6.2.3 Residual Heat Removal (RHR) Suppression Pool Cooling

LCO 3.6.2.3 Two RHR suppression pooling cooling subsystems shall be OPERABLE.

APPLICABILITY: MODES 1, 2, and 3.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One RHR suppression pool cooling subsystem inoperable.	A.1 Restore RHR suppression pool cooling subsystem to OPERABLE status.	7 days <u>OR</u> In accordance with the Risk Informed Completion Time Program
B. Two RHR suppression pool cooling subsystems inoperable.	B.1 Restore one RHR suppression pool cooling subsystem to OPERABLE status.	8 hours
C. Required Action and associated Completion Time not met.	C.1 Be in MODE 3. <u>AND</u> C.2 Be in MODE 4.	12 hours 36 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.6.2.3.1	Verify each RHR suppression pool cooling subsystem manual and power operated valve in the flow path that is not locked, sealed, or otherwise secured in position is in the correct position or can be aligned to the correct position.	In accordance with the Surveillance Frequency Control Program
SR 3.6.2.3.2	Verify each required RHR pump develops a flow rate ≥ 3870 gpm through the associated heat exchanger while operating in the suppression pool cooling mode.	In accordance with the INSERVICE TESTING PROGRAM
SR 3.6.2.3.3	Verify RHR suppression pool cooling subsystem locations susceptible to gas accumulation are sufficiently filled with water.	In accordance with the Surveillance Frequency Control Program

3.6 CONTAINMENT SYSTEMS

3.6.3.1 Primary Containment Oxygen Concentration

LCO 3.6.3.1 The primary containment oxygen concentration shall be < 4.0 volume percent.

APPLICABILITY: MODE 1 during the time period:

a. From 24 hours after THERMAL POWER is > 15% RTP following startup, to

b. 24 hours prior to reducing THERMAL POWER to < 15% RTP prior to the next scheduled reactor shutdown.

ACTIONS

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

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.6.3.1.1	Verify primary containment oxygen concentration is within limits.	In accordance with the Surveillance Frequency Control Program

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.6.4.1.1	-----------------------------NOTE------------------------------- Not required to be met for 4 hours if analysis demonstrates one standby gas treatment (SGT) subsystem is capable of establishing the required secondary containment vacuum. -- Verify secondary containment vacuum is ≥ 0.25 inch of vacuum water gauge.	In accordance with the Surveillance Frequency Control Program
SR 3.6.4.1.2	Verify all secondary containment equipment hatches are closed and sealed.	In accordance with the Surveillance Frequency Control Program
SR 3.6.4.1.3	Verify one secondary containment access door in each access opening is closed, except when the access opening is being used for entry and exit.	In accordance with the Surveillance Frequency Control Program
SR 3.6.4.1.4	Verify the secondary containment can be maintained ≥ 0.25 inch of vacuum water gauge for 1 hour using one SGT subsystem at a flow rate ≤ 4000 cfm.	In accordance with the Surveillance Frequency Control Program

3.6 CONTAINMENT SYSTEMS

3.6.4.2 Secondary Containment Isolation Valves (SCIVs)

LCO 3.6.4.2 Each SCIV shall be OPERABLE.

APPLICABILITY: MODES 1, 2, and 3,
During movement of recently irradiated fuel assemblies in the secondary containment.

ACTIONS

---NOTES---

1. Penetration flow paths may be unisolated intermittently under administrative controls.
2. Separate Condition entry is allowed for each penetration flow path.
3. Enter applicable Conditions and Required Actions for systems made inoperable by SCIVs.

CONDITION	REQUIRED ACTION		COMPLETION TIME
A. One or more penetration flow paths with one SCIV inoperable.	A.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.	8 hours
	AND		

ACTIONS (continued)

CONDITION	REQUIRED ACTION		COMPLETION TIME
	A.2	------------NOTES------------ 1. Isolation devices in high radiation areas may be verified by use of administrative means. 2. Isolation devices that are locked, sealed, or otherwise secured may be verified by use of administrative means. --------------------------------	
		Verify the affected penetration flow path is isolated.	Once per 31 days
B. ------------NOTE------------ Only applicable to penetration flow paths with two isolation valves. -------------------------------- One or more penetration flow paths with two SCIVs inoperable.	B.1	Isolate the affected penetration flow path by use of at least one closed and de-activated automatic valve, closed manual valve, or blind flange.	4 hours
C. Required Action and associated Completion Time of Condition A or B not met in MODE 1, 2, or 3.	C.1	Be in MODE 3.	12 hours
	AND		
	C.2	Be in MODE 4.	36 hours

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
D. Required Action and associated Completion Time of Condition A or B not met during movement of recently irradiated fuel assemblies in the secondary containment.	D.1 ---------------NOTE-------------- LCO 3.0.3 is not applicable. ------------------------------------ Suspend movement of recently irradiated fuel assemblies in the secondary containment.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.6.4.2.1	-----------------------------NOTES---------------------------- 1. Valves and blind flanges in high radiation areas may be verified by use of administrative means. 2. Not required to be met for SCIVs that are open under administrative controls. --- Verify each secondary containment isolation manual valve and blind flange that is not locked, sealed, or otherwise secured and is required to be closed during accident conditions is closed.	In accordance with the Surveillance Frequency Control Program
SR 3.6.4.2.2	Verify the isolation time of each power operated, automatic SCIV is within limits.	In accordance with the Surveillance Frequency Control Program

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.6.4.2.3	Verify each automatic SCIV actuates to the isolation position on an actual or simulated actuation signal.	In accordance with the Surveillance Frequency Control Program

3.6 CONTAINMENT SYSTEMS

3.6.4.3 Standby Gas Treatment (SGT) System

LCO 3.6.4.3 Two SGT subsystems shall be OPERABLE.

APPLICABILITY: MODES 1, 2, and 3,
During movement of recently irradiated fuel assemblies in the secondary containment.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One SGT subsystem inoperable.	A.1 Restore SGT subsystem to OPERABLE status.	7 days
B. Required Action and associated Completion Time of Condition A not met in MODE 1, 2, or 3.	B.1 Be in MODE 3. AND B.2 Be in MODE 4.	12 hours 36 hours
C. Required Action and associated Completion Time of Condition A not met during movement of recently irradiated fuel assemblies in the secondary containment.	--------------------NOTE------------------- LCO 3.0.3 is not applicable. -- C.1 Place OPERABLE SGT subsystem in operation. OR C.2 Suspend movement of recently irradiated fuel assemblies in secondary containment.	 Immediately Immediately

ACTIONS (continued)

CONDITION	REQUIRED ACTION		COMPLETION TIME
D. Two SGT subsystems inoperable in MODE 1, 2, or 3.	D.1	Enter LCO 3.0.3.	Immediately
E. Two SGT subsystems inoperable during movement of recently irradiated fuel assemblies in the secondary containment.	E.1	---------------NOTE------------- LCO 3.0.3 is not applicable. ------------------------------------ Suspend movement of recently irradiated fuel assemblies in secondary containment.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.6.4.3.1	Operate each SGT subsystem for ≥ 15 continuous minutes.	In accordance with the Surveillance Frequency Control Program
SR 3.6.4.3.2	Perform required SGT filter testing in accordance with the Ventilation Filter Testing Program (VFTP).	In accordance with the VFTP
SR 3.6.4.3.3	Verify each SGT subsystem actuates on an actual or simulated initiation signal.	In accordance with the Surveillance Frequency Control Program

3.7 PLANT SYSTEMS

3.7.1 Residual Heat Removal Service Water (RHRSW) System

LCO 3.7.1 Two RHRSW subsystems shall be OPERABLE.

APPLICABILITY: MODES 1, 2, and 3.

ACTIONS

CONDITION	REQUIRED ACTION		COMPLETION TIME
A. One RHRSW subsystem inoperable.	A.1	---------------NOTE-------------- Enter applicable Conditions and Required Actions of LCO 3.4.7, "Residual Heat Removal (RHR) Shutdown Cooling System - Hot Shutdown," for RHR shutdown cooling made inoperable by RHRSW System. ------------------------------------- Restore RHRSW subsystem to OPERABLE status.	7 days <u>OR</u> In accordance with the Risk Informed Completion Time Program

ACTIONS (continued)

CONDITION	REQUIRED ACTION		COMPLETION TIME
B. Both RHRSW subsystems inoperable.	B.1	---------------NOTE-------------- Enter applicable Conditions and Required Actions of LCO 3.4.7 for RHR shutdown cooling made inoperable by RHRSW System. -------------------------------------	
		Restore one RHRSW subsystem to OPERABLE status.	8 hours
C. Required Action and associated Completion Time not met.	C.1	Be in MODE 3.	12 hours
	<u>AND</u>		
	C.2	Be in MODE 4.	36 hours

SURVEILLANCE REQUIREMENTS

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

3.7 PLANT SYSTEMS

3.7.2 Emergency Service Water (ESW) System and Ultimate Heat Sink (UHS)

LCO 3.7.2 Two ESW subsystems and UHS shall be OPERABLE.

APPLICABILITY: MODES 1, 2, and 3.

ACTIONS

CONDITION	REQUIRED ACTION		COMPLETION TIME
A. One ESW subsystem inoperable.	A.1	--------------NOTE-------------- Enter applicable Conditions and Required Actions of LCO 3.4.7, "Residual Heat Removal (RHR) Shutdown Cooling System - Hot Shutdown," for RHR shutdown cooling made inoperable by ESW. ------------------------------------- Restore the ESW subsystem to OPERABLE status.	 72 hours <u>OR</u> In accordance with the Risk Informed Completion Time Program

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
B. Required Action and associated Completion Time of Condition A not met. OR Both ESW subsystems inoperable. OR UHS inoperable.	B.1 Be in MODE 3. AND B.2 Be in MODE 4.	12 hours 36 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.7.2.1	Verify the water level in the intake structure is ≥ 899 ft mean sea level.	In accordance with the Surveillance Frequency Control Program
SR 3.7.2.2	Verify the average water temperature of UHS is ≤ 90°F.	In accordance with the Surveillance Frequency Control Program
SR 3.7.2.3	-------------------------------NOTE------------------------------ Isolation of flow to individual components does not render ESW System inoperable. -- Verify each ESW subsystem manual and automatic valve in the flow paths servicing safety related systems or components, that is not locked, sealed, or otherwise secured in position, is in the correct position.	In accordance with the Surveillance Frequency Control Program
SR 3.7.2.4	Verify each ESW subsystem actuates on an actual or simulated initiation signal.	In accordance with the Surveillance Frequency Control Program

3.7 PLANT SYSTEMS

3.7.3 Emergency Diesel Generator-Emergency Service Water (EDG-ESW) System

LCO 3.7.3 Two EDG-ESW subsystems shall be OPERABLE.

APPLICABILITY: MODES 1, 2, and 3.

ACTIONS

---NOTE---
Separate Condition entry is allowed for each EDG-ESW subsystem.

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more EDG-ESW subsystems inoperable.	A.1 Declare associated EDG inoperable.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.7.3.1	Verify each EDG-ESW subsystem manual valve in the flow path, that is not locked, sealed, or otherwise secured in position, is in the correct position.	In accordance with the Surveillance Frequency Control Program
SR 3.7.3.2	Verify each EDG-ESW subsystem pump starts automatically when the associated EDG starts and energizes the respective bus.	In accordance with the Surveillance Frequency Control Program

3.7 PLANT SYSTEMS

3.7.4 Control Room Emergency Filtration (CREF) System

LCO 3.7.4 Two CREF subsystems shall be OPERABLE.

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

APPLICABILITY: MODES 1, 2, and 3,
During movement of recently irradiated fuel assemblies in the secondary containment.

ACTIONS

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

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
C. Required Action and associated Completion Time of Condition A or B not met in MODE 1, 2, or 3.	C.1 Be in MODE 3. AND C.2 Be in MODE 4.	12 hours 36 hours
D. Required Action and associated Completion Time of Condition A not met during movement of recently irradiated fuel assemblies in the secondary containment.	--------------------NOTE------------------- LCO 3.0.3 is not applicable. --- D.1 Place OPERABLE CREF subsystem in pressurization mode. OR D.2 Suspend movement of recently irradiated fuel assemblies in the secondary containment.	 Immediately Immediately
E. Two CREF subsystems inoperable in MODE 1, 2, or 3 for reasons other than Condition B.	E.1 Enter LCO 3.0.3.	Immediately

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
F. Two CREF subsystems inoperable during movement of recently irradiated fuel assemblies in the secondary containment. <u>OR</u> One or more CREF subsystems inoperable due to an inoperable CRE boundary during movement of recently irradiated fuel assemblies in the secondary containment.	--------------------NOTE------------------- LCO 3.0.3 is not applicable. --- F.1 Suspend movement of recently irradiated fuel assemblies in the secondary containment.	 Immediately

SURVEILLANCE REQUIREMENTS

	SURVEILLANCE	FREQUENCY
SR 3.7.4.1	Operate each CREF subsystem for ≥ 15 continuous minutes.	In accordance with the Surveillance Frequency Control Program
SR 3.7.4.2	Perform required CREF filter testing in accordance with the Ventilation Filter Testing Program (VFTP).	In accordance with the VFTP
SR 3.7.4.3	Verify each CREF subsystem actuates on an actual or simulated initiation signal.	In accordance with the Surveillance Frequency Control Program

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.7.4.4	Perform required CRE unfiltered air in-leakage testing in accordance with the Control Room Envelope Habitability Program.	In accordance with the Control Room Envelope Habitability Program

3.7 PLANT SYSTEMS

3.7.5 Control Room Ventilation System

LCO 3.7.5 Two control room ventilation subsystems shall be OPERABLE.

APPLICABILITY: MODES 1, 2, and 3,
During movement of recently irradiated fuel assemblies in the secondary containment.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One control room ventilation subsystem inoperable.	A.1 Restore control room ventilation subsystem to OPERABLE status.	30 days
B. Two control room ventilation subsystems inoperable.	B.1 Verify control room area temperature < 90°F.	Once per 4 hours
	AND	
	B.2 Restore one control room ventilation subsystem to OPERABLE status.	72 hours
C. Required Action and associated Completion Time of Condition A or B not met in MODE 1, 2, or 3.	C.1 Be in MODE 3.	12 hours
	AND	
	C.2 Be in MODE 4.	36 hours
D. Required Action and associated Completion Time of Condition A not met during movement of recently irradiated fuel assemblies in the secondary containment.	-------------------NOTE------------------ LCO 3.0.3 is not applicable. ---	
	D.1 Place OPERABLE control room ventilation subsystem in operation.	Immediately
	OR	

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
	D.2 Suspend movement of recently irradiated fuel assemblies in the secondary containment.	Immediately
E. Required Action and associated Completion Time of Condition B not met during movement of recently irradiated fuel assemblies in the secondary containment.	--------------------NOTE------------------- LCO 3.0.3 is not applicable. --- E.1 Suspend movement of recently irradiated fuel assemblies in the secondary containment.	 Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.7.5.1	Verify each control room ventilation subsystem has the capability to remove the assumed heat load.	In accordance with the Surveillance Frequency Control Program

3.7 PLANT SYSTEMS

3.7.6 Main Condenser Offgas

LCO 3.7.6 The gross gamma activity rate of the noble gases measured at the main condenser offgas system pretreatment monitor station shall be ≤ 260 mCi/second after decay of 30 minutes.

APPLICABILITY: MODE 1,
MODES 2 and 3 with any main steam line not isolated and steam jet air ejector (SJAE) in operation.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Gross gamma activity rate of the noble gases not within limit.	A.1 Restore gross gamma activity rate of the noble gases to within limit.	72 hours
B. Required Action and associated Completion Time not met.	B.1 Isolate all main steam lines.	12 hours
	OR	
	B.2 Isolate SJAE.	12 hours
	OR	
	B.3.1 Be in MODE 3.	12 hours
	AND	
	B.3.2 Be in MODE 4.	36 hours

SURVEILLANCE REQUIREMENTS

	SURVEILLANCE	FREQUENCY
SR 3.7.6.1	-------------------------------NOTE------------------------------ Not required to be performed until 31 days after any main steam line not isolated and SJAE in operation. -- Verify the gross gamma activity rate of the noble gases is ≤ 260 mCi/second after decay of 30 minutes.	In accordance with the Surveillance Frequency Control Program <u>AND</u> Once within 4 hours after a ≥ 50% increase in the nominal steady state fission gas release after factoring out increases due to changes in THERMAL POWER level

3.7 PLANT SYSTEMS

3.7.7 Main Turbine Bypass System

LCO 3.7.7 The Main Turbine Bypass System shall be OPERABLE.

APPLICABILITY: THERMAL POWER ≥ 25% RTP.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Main Turbine Bypass System inoperable.	A.1 Restore Main Turbine Bypass System to OPERABLE status.	2 hours
B. Required Action and associated Completion Time not met.	B.1 Reduce THERMAL POWER to < 25% RTP.	4 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.7.7.1	Verify one complete cycle of each main turbine bypass valve.	In accordance with the Surveillance Frequency Control Program
SR 3.7.7.2	Perform a system functional test.	In accordance with the Surveillance Frequency Control Program

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.7.7.3	Verify the TURBINE BYPASS SYSTEM RESPONSE TIME is within limits.	In accordance with the Surveillance Frequency Control Program

3.7 PLANT SYSTEMS

3.7.8 Spent Fuel Storage Pool Water Level

LCO 3.7.8 The spent fuel storage pool water level shall be ≥ 37 ft above the bottom of the spent fuel storage pool.

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

ACTIONS

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

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.7.8.1	Verify the spent fuel storage pool water level is ≥ 37 ft above the bottom of the spent fuel storage pool.	In accordance with the Surveillance Frequency Control Program

3.8 ELECTRICAL POWER SYSTEMS

3.8.1 AC Sources - Operating

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

a. Two qualified circuits between the offsite transmission network and the onsite Class 1E AC Electrical Power Distribution System; and

b. Two emergency diesel generators (EDGs).

APPLICABILITY: MODES 1, 2, and 3.

ACTIONS

--NOTE--

LCO 3.0.4.b is not applicable to EDGs.

CONDITION	REQUIRED ACTION		COMPLETION TIME
A. One required offsite circuit inoperable.	A.1	Perform SR 3.8.1.1 for OPERABLE required offsite circuit.	1 hour AND Once per 8 hours thereafter
	AND		
	A.2	Declare required feature(s) with no offsite power available inoperable when the redundant required feature(s) are inoperable.	24 hours from discovery of no offsite power to one division concurrent with inoperability of redundant required feature(s)
	AND		

ACTIONS (continued)

CONDITION	REQUIRED ACTION		COMPLETION TIME
	A.3	Restore required offsite circuit to OPERABLE status.	72 hours <u>OR</u> In accordance with the Risk Informed Completion Time Program
B. One EDG inoperable.	B.1	Perform SR 3.8.1.1 for OPERABLE required offsite circuit(s).	1 hour <u>AND</u> Once per 8 hours thereafter
	<u>AND</u>		
	B.2	Declare required feature(s), supported by the inoperable EDG, inoperable when the redundant required feature(s) are inoperable.	4 hours from discovery of Condition B concurrent with inoperability of redundant required feature(s)
	<u>AND</u>		
	B.3.1	Determine OPERABLE EDG is not inoperable due to common cause failure.	24 hours
	<u>OR</u>		
	B.3.2	Perform SR 3.8.1.2 for OPERABLE EDG.	24 hours
	<u>AND</u>		

ACTIONS (continued)

CONDITION	REQUIRED ACTION		COMPLETION TIME
	B.4	Restore EDG to OPERABLE status.	7 days OR In accordance with the Risk Informed Completion Time Program
C. Two required offsite circuits inoperable.	C.1	Declare required feature(s) inoperable when the redundant required feature(s) are inoperable.	12 hours from discovery of Condition C concurrent with inoperability of redundant required feature(s)
	AND		
	C.2	Restore one required offsite circuit to OPERABLE status.	24 hours OR In accordance with the Risk Informed Completion Time Program

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
D. One required offsite circuit inoperable. AND One EDG inoperable.	--------------------NOTE------------------- Enter applicable Conditions and Required Actions of LCO 3.8.7, "Distribution Systems - Operating," when Condition D is entered with no AC power source to any division. --	
	D.1 Restore required offsite circuit to OPERABLE status.	12 hours OR In accordance with the Risk Informed Completion Time Program
	OR	
	D.2 Restore EDG to OPERABLE status.	12 hours OR In accordance with the Risk Informed Completion Time Program
E. Two EDGs inoperable.	E.1 Restore one EDG to OPERABLE status.	2 hours
F. Required Action and associated Completion Time of Condition A, B, C, D, or E not met.	F.1 Be in MODE 3.	12 hours
	AND	
	F.2 Be in MODE 4.	36 hours
G. Three or more required AC sources inoperable.	G.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 each required offsite circuit.	In accordance with the Surveillance Frequency Control Program
SR 3.8.1.2	------------------------------NOTES------------------------------ 1. All EDG starts may be preceded by an engine prelube period and followed by a warmup period prior to loading. 2. A modified EDG start involving idling and gradual acceleration to synchronous speed may be used for this SR as recommended by the manufacturer. --- Verify each EDG starts from standby conditions and achieves steady state voltage ≥ 3975 V and ≤ 4400 V and frequency ≥ 58.8 Hz and ≤ 61.2 Hz.	In accordance with the Surveillance Frequency Control Program

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.8.1.3	-------------------------------NOTES------------------------------ 1. EDG 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 EDG at a time. 4. This SR shall be preceded by and immediately follow, without shutdown, a successful performance of SR 3.8.1.2. --- Verify each EDG is synchronized and loaded and operates for ≥ 60 minutes at a load ≥ 2250 kW and ≤ 2500 kW.	In accordance with the Surveillance Frequency Control Program
SR 3.8.1.4	Check for and remove accumulated water from each day tank and base tank.	In accordance with the Surveillance Frequency Control Program
SR 3.8.1.5	Verify the fuel oil transfer system operates to transfer fuel oil from the storage tank to the day tanks and from each day tank to the associated base tank.	In accordance with the Surveillance Frequency Control Program

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.8.1.6	-------------------------------NOTE------------------------------ This Surveillance shall not normally be performed in MODE 1 or 2. However, this Surveillance may be performed to reestablish OPERABILITY provided an assessment determines the safety of the plant is maintained or enhanced. Credit may be taken for unplanned events that satisfy this SR. -- Verify automatic and manual transfer of unit power supply from the normal offsite circuit to the alternate offsite circuit.	In accordance with the Surveillance Frequency Control Program
SR 3.8.1.7	------------------------------NOTES----------------------------- 1. This Surveillance shall not normally be performed in MODE 1 or 2. However, this Surveillance may be performed to reestablish OPERABILITY provided an assessment determines the safety of the plant is maintained or enhanced. Credit may be taken for unplanned events that satisfy this SR. 2. If performed with EDG synchronized with offsite power, it shall be performed within the power factor limit. However, if grid conditions do not permit, the power factor limit is not required to be met. Under this condition the power factor shall be maintained as close to the limit as practicable. -- Verify each EDG rejects a load greater than or equal to its associated single largest post-accident load, and following load rejection, the frequency is ≤ 67.5 Hz.	In accordance with the Surveillance Frequency Control Program

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.8.1.8	-------------------------------NOTE------------------------------ This Surveillance shall not normally be performed in MODE 1 or 2. However, portions of the Surveillance may be performed to reestablish OPERABILITY provided an assessment determines the safety of the plant is maintained or enhanced. Credit may be taken for unplanned events that satisfy this SR. --- Verify on an actual or simulated Emergency Core Cooling System (ECCS) initiation signal, permanently connected loads remain energized from the offsite power system and emergency loads are auto-connected through the time delay relays from the offsite power system.	In accordance with the Surveillance Frequency Control Program
SR 3.8.1.9	------------------------------NOTES----------------------------- 1. Momentary transients outside the load and power factor ranges do not invalidate this test. 2. This Surveillance shall not normally be performed in MODE 1 or 2. However, this Surveillance may be performed to reestablish OPERABILITY provided an assessment determines the safety of the plant is maintained or enhanced. Credit may be taken for unplanned events that satisfy this SR. 3. If part b is performed with EDG synchronized with offsite power, it shall be performed within the power factor limit. However, if grid conditions do not permit, the power factor limit is not required to be met. Under this condition the power factor shall be maintained as close to the limit as practicable. --- Verify each EDG operates for ≥ 8 hours: a. For ≥ 2 hours loaded ≥ 2625 kW and ≤ 2750 kW; and b. For the remaining hours of the test loaded ≥ 2250 kW and ≤ 2500 kW.	In accordance with the Surveillance Frequency Control Program

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.8.1.10	------------------------------NOTES------------------------------ 1. This Surveillance shall be performed within 5 minutes of shutting down the EDG after the EDG has operated ≥ 2 hours loaded ≥ 2250 kW and ≤ 2500 kW. Momentary transients outside of load range do not invalidate this test. 2. All EDG starts may be preceded by an engine prelube period. ---	
	Verify each EDG starts and achieves: a. In ≤ 10 seconds, voltage ≥ 3975 V and frequency ≥ 58.8 Hz; and b. Steady state voltage ≥ 3975 V and ≤ 4400 V and frequency ≥ 58.8 Hz and ≤ 61.2 Hz.	In accordance with the Surveillance Frequency Control Program
SR 3.8.1.11	------------------------------NOTE------------------------------ This Surveillance shall not normally be performed in MODE 1, 2, or 3. However, this Surveillance may be performed to reestablish OPERABILITY provided an assessment determines the safety of the plant is maintained or enhanced. Credit may be taken for unplanned events that satisfy this SR. ---	
	Verify each EDG: a. Synchronizes with offsite power source while loaded with emergency loads upon a simulated restoration of offsite power; b. Transfers loads to offsite power source; and c. Returns to ready-to-load operation.	In accordance with the Surveillance Frequency Control Program

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.8.1.12	------------------------------NOTES------------------------------ 1. All EDG starts may be preceded by an engine prelube period. 2. This Surveillance shall not normally be performed in MODE 1, 2, or 3. However, portions of the Surveillance may be performed to reestablish OPERABILITY provided an assessment determines the safety of the plant is maintained or enhanced. Credit may be taken for unplanned events that satisfy this SR. ---	
	Verify, on an actual or simulated loss of offsite power signal in conjunction with an actual or simulated ECCS initiation signal: a. De-energization of emergency buses; b. Load shedding from emergency buses; and c. EDG auto-starts from standby condition and: 1. Energizes permanently connected loads in ≤ 10 seconds; 2. Energizes auto-connected emergency loads through time delay relays; 3. Achieves steady state voltage ≥ 3975 V and ≤ 4400 V; 4. Achieves steady state frequency ≥ 58.8 Hz and ≤ 61.2 Hz; and 5. Supplies permanently connected and auto-connected emergency loads for ≥ 5 minutes.	In accordance with the Surveillance Frequency Control Program

SURVEILLANCE REQUIREMENTS (continued)

	SURVEILLANCE	FREQUENCY
SR 3.8.1.13	-------------------------------NOTE------------------------------ This Surveillance shall not normally be performed in MODE 1, 2, or 3. However, this Surveillance may be performed to reestablish OPERABILITY provided an assessment determines the safety of the plant is maintained or enhanced. Credit may be taken for unplanned events that satisfy this SR. --- Verify interval between each sequenced load block is greater than or equal to the minimum design load interval.	 In accordance with the Surveillance Frequency Control Program

3.8 ELECTRICAL POWER SYSTEMS

3.8.2 AC Sources - Shutdown

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

a. One qualified circuit between the offsite transmission network and the onsite Class 1E AC electrical power distribution subsystem(s) required by LCO 3.8.8, "Distribution Systems - Shutdown;" and

b. One emergency diesel generator (EDG) capable of supplying one division of the onsite Class 1E AC electrical power distribution subsystem(s) required by LCO 3.8.8.

APPLICABILITY: MODES 4 and 5,
During movement of recently irradiated fuel assemblies in the secondary containment.

ACTIONS

------------------------------------NOTE------------------------------------
LCO 3.0.3 is not applicable.

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One required offsite circuit inoperable.	------------NOTE------------ Enter applicable Condition and Required Actions of LCO 3.8.8, with one required division de-energized as a result of Condition A. ----------------------------	
	A.1 Declare affected required feature(s), with no offsite power available, inoperable.	Immediately
	<u>OR</u>	

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
	A.2.1 Suspend CORE ALTERATIONS.	Immediately
	AND	
	A.2.2 Suspend movement of recently irradiated fuel assemblies in the secondary containment.	Immediately
	AND	
	A.2.3 Initiate action to restore required offsite power circuit to OPERABLE status.	Immediately
B. One required EDG inoperable.	B.1 Suspend CORE ALTERATIONS.	Immediately
	AND	
	B.2 Suspend movement of recently irradiated fuel assemblies in the secondary containment.	Immediately
	AND	
	B.3 Initiate action to restore required EDG to OPERABLE status.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.8.2.1	------------------------------NOTE----------------------------- 1. The following SRs are not required to be performed: SR 3.8.1.3, SR 3.8.1.7, SR 3.8.1.9, and SR 3.8.1.11. 2. SR 3.8.1.5 is not applicable during the fuel oil storage tank inspection during the 2023 Refueling Outage. This note expires upon completion of that inspection. --- The following SRs are applicable for AC sources required to be OPERABLE: SR 3.8.1.1 SR 3.8.1.5 SR 3.8.1.2 SR 3.8.1.7 SR 3.8.1.3 SR 3.8.1.9 SR 3.8.1.4 SR 3.8.1.11	In accordance with applicable SRs

3.8 ELECTRICAL POWER SYSTEMS

3.8.3 Diesel Fuel Oil, Lube Oil, and Starting Air

LCO 3.8.3 The stored diesel fuel oil, lube oil, and starting air subsystems shall be within limits for each required emergency diesel generator (EDG).

APPLICABILITY: When associated EDG is required to be OPERABLE.

ACTIONS

---NOTE---

1. Separate Condition entry is allowed for each EDG.

2. a. During the 2023 Refueling Outage the fuel oil storage tank (FOST) may be made inoperable and drained, to support cleaning, inspection, testing, and associated repair activities without entering Conditions A or G, provided Notes 2.b through 2.d are satisfied.

   If the FOST is not restored within 14 days, or Notes 2.b through 2.d are not satisfied, enter Condition G.

   b. Verify once per 24 hours that the Alternate Fuel Oil Supply System (AFOSS) contains at least a 7-day supply of fuel oil.

   c. While in standby, verify once per 24 hours that the required EDG day/base tanks, in combination, provides an 8-hour supply of fuel oil.

   d. The compensatory measures specified within Attachment 1 to letter L-MT-21-072 are applicable to performance of the FOST inspection evolution.

   e. SR 3.8.1.5 and SR 3.8.3.1 are not required to be met during the FOST inspection evolution.

   f. Note 2 expires upon completion of the FOST inspection evolution during the 2023 Refueling Outage.

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Fuel oil level < 7-day supply and > 6-day supply in storage tank.	A.1 Restore fuel oil level to within limits.	48 hours

ACTIONS (continued)

CONDITION	REQUIRED ACTION		COMPLETION TIME
B. One or more EDGs with lube oil inventory < 7-day supply and > 6-day supply.	B.1	Restore lube oil inventory to within limits.	48 hours
C. Stored fuel oil total particulates not within limit.	C.1	Restore fuel oil total particulates to within limit.	7 days
D. New fuel oil properties not within limits.	D.1	Restore stored fuel oil properties to within limits.	30 days
E. One or more EDGs with starting air receiver pressure in one starting air subsystem < 165 psig.	E.1	Restore starting air receiver pressure to ≥ 165 psig.	7 days
F. One or more EDGs with starting air receiver pressure in both starting air subsystems < 165 psig and ≥ 125 psig.	F.1	Restore starting air receiver pressure in one starting air subsystem to ≥ 165 psig.	48 hours
G. Required Action and associated Completion Time of Condition A, B, C, D, E, or F not met. OR One or more EDGs with diesel fuel oil, lube oil, or starting air subsystem(s) not within limits for reasons other than Condition A, B, C, D, E, or F.	G.1	Declare associated EDG inoperable.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.8.3.1	Verify the fuel oil storage tank contains ≥ a 7-day supply of fuel.	In accordance with the Surveillance Frequency Control Program
SR 3.8.3.2	Verify, for each EDG, lube oil inventory is ≥ a 7-day supply.	In accordance with the Surveillance Frequency Control Program
SR 3.8.3.3	Verify fuel oil properties of new and stored fuel oil are tested in accordance with, and maintained within the limits of, the Diesel Fuel Oil Testing Program.	In accordance with the Diesel Fuel Oil Testing Program
SR 3.8.3.4	Verify each EDG air start receiver pressure is ≥ 165 psig.	In accordance with the Surveillance Frequency Control Program
SR 3.8.3.5	Check for and remove accumulated water from the fuel oil storage tank.	In accordance with the Surveillance Frequency Control Program

3.8 ELECTRICAL POWER SYSTEMS

3.8.4 DC Sources - Operating

LCO 3.8.4 The Division 1 and Division 2 125 VDC and 250 VDC electrical power subsystems shall be OPERABLE.

APPLICABILITY: MODES 1, 2, and 3.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more required battery chargers on Division 1 or Division 2 inoperable.	A.1 Restore battery terminal voltage to greater than or equal to the minimum established float voltage.	2 hours
	AND	
	A.2 Verify battery float current $\leq$ 2 amps for 250 VDC batteries and $\leq$ 1 amp for 125 VDC batteries.	Once per 12 hours
	AND	
	A.3 Restore required Division 1 or Division 2 battery charger(s) to OPERABLE status.	7 days OR In accordance with the Risk Informed Completion Time Program
B. One Division 1 or Division 2 DC electrical power subsystem inoperable for reasons other than Condition A.	B.1 Restore Division 1 or Division 2 DC electrical power subsystem to OPERABLE status.	2 hours OR In accordance with the Risk Informed Completion Time Program

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
C. Required Action and associated Completion Time not met.	C.1 Be in MODE 3. AND C.2 Be in MODE 4.	12 hours 36 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.8.4.1	Verify battery terminal voltage is greater than or equal to the minimum established float voltage.	In accordance with the Surveillance Frequency Control Program
SR 3.8.4.2	Verify each required battery charger supplies the following: • ≥ 150 amps for 250 VDC Div 1 • ≥ 110 amps for 250 VDC Div 2 • ≥ 75 amps for 125 VDC subsystems, at greater than or equal to the minimum established float voltage for ≥ 4 hours.	In accordance with the Surveillance Frequency Control Program

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.8.4.3	-------------------------------NOTES------------------------------ 1. The modified performance discharge test in SR 3.8.6.6 may be performed in lieu of SR 3.8.4.3. 2. This Surveillance shall not normally be performed in MODE 1, 2, or 3. However, portions of the Surveillance may be performed to reestablish OPERABILITY provided an assessment determines the safety of the plant is maintained or enhanced. Credit may be taken for unplanned events that satisfy this SR. --- 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

3.8 ELECTRICAL POWER SYSTEMS

3.8.5 DC Sources - Shutdown

LCO 3.8.5 Division 1 or Division 2 125 VDC electrical power subsystem shall be OPERABLE to support one division of the DC Electrical Power Distribution System required by LCO 3.8.8, "Distribution Systems - Shutdown."

APPLICABILITY: MODES 4 and 5,
During movement of recently irradiated fuel assemblies in the secondary containment.

ACTIONS

---NOTE---

LCO 3.0.3 is not applicable.

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Required DC electrical power subsystem inoperable.	A.1 Suspend CORE ALTERATIONS.	Immediately
	<u>AND</u>	
	A.2 Suspend movement of recently irradiated fuel assemblies in the secondary containment.	Immediately
	<u>AND</u>	
	A.3 Initiate action to restore required DC electrical power subsystem to OPERABLE status.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.8.5.1	-----NOTE----- The following SR is not required to be performed: SR 3.8.4.3. ---------- For DC sources required to be OPERABLE, the following SRs are applicable: SR 3.8.4.1, SR 3.8.4.2, and SR 3.8.4.3.	In accordance with applicable SRs

3.8 ELECTRICAL POWER SYSTEMS

3.8.6 Battery Parameters

LCO 3.8.6 Battery parameters for the Division 1 and Division 2 125 VDC and 250 VDC batteries shall be within limits.

APPLICABILITY: When associated DC electrical power subsystems are required to be OPERABLE.

ACTIONS

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

CONDITION	REQUIRED ACTION		COMPLETION TIME
A. One or more batteries with one or more battery cells float voltage < 2.07 V.	A.1	Perform SR 3.8.4.1.	2 hours
	AND		
	A.2	Perform SR 3.8.6.1.	2 hours
	AND		
	A.3	Restore affected cell voltage ≥ 2.07 V.	24 hours
B. One or more batteries with float current > 2 amps for 250 VDC batteries or > 1 amp for 125 VDC batteries.	B.1	Perform SR 3.8.4.1.	2 hours
	AND		
	B.2	Restore battery float current to ≤ 2 amps for 250 VDC batteries or ≤ 1 amp for 125 VDC batteries.	12 hours

ACTIONS (continued)

CONDITION	REQUIRED ACTION		COMPLETION TIME
---NOTE--- Required Action C.2 shall be completed if electrolyte level was below the top of plates.	---NOTE--- Required Actions C.1 and C.2 are only applicable if electrolyte level was below the top of plates.		
C. One or more batteries with one or more cells electrolyte level less than minimum established design limits.	C.1	Restore electrolyte level to above top of plates.	8 hours
	<u>AND</u>		
	C.2	Verify no evidence of leakage.	12 hours
	<u>AND</u>		
	C.3	Restore electrolyte level to greater than or equal to minimum established design limits.	31 days
D. One or more batteries with pilot cell electrolyte temperature less than minimum established design limits.	D.1	Restore battery pilot cell temperature to greater than or equal to minimum established design limits.	12 hours
E. Batteries in redundant divisions with battery parameters not within limits.	E.1	Restore battery parameters for batteries in one division to within limits.	2 hours

ACTIONS (continued)

CONDITION	REQUIRED ACTION		COMPLETION TIME
F. Required Action and associated Completion Time of Condition A, B, C, D, or E not met. OR One or more batteries with one or more battery cells float voltage < 2.07 V and float current > 2 amps for 250 VDC batteries or > 1 amp for 125 VDC batteries. OR SR 3.8.6.6 not met.	F.1	Declare associated battery inoperable.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.8.6.1	-------------------------------NOTE------------------------------ Not required to be met when battery terminal voltage is less than the minimum established float voltage of SR 3.8.4.1. --- Verify each battery float current is ≤ 2 amps for 250 VDC batteries and ≤ 1 amp for 125 VDC batteries.	In accordance with the Surveillance Frequency Control Program

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.8.6.2	Verify each battery pilot cell voltage is ≥ 2.07 V.	In accordance with the Surveillance Frequency Control Program
SR 3.8.6.3	Verify each battery connected cell electrolyte level is greater than or equal to minimum established design limits.	In accordance with the Surveillance Frequency Control Program
SR 3.8.6.4	Verify each battery pilot cell temperature is greater than or equal to minimum established design limits.	In accordance with the Surveillance Frequency Control Program
SR 3.8.6.5	Verify each battery connected cell voltage is ≥ 2.07 V.	In accordance with the Surveillance Frequency Control Program

SURVEILLANCE REQUIREMENTS (continued)

	SURVEILLANCE	FREQUENCY
SR 3.8.6.6	-------------------------------NOTE------------------------------ This Surveillance shall not normally be performed in MODE 1, 2, or 3. However, portions of the Surveillance may be performed to reestablish OPERABILITY provided an assessment determines the safety of the plant is maintained or enhanced. Credit may be taken for unplanned events that satisfy this SR. --- Verify battery capacity is: • ≥ 90% of the manufacturer’s rating for 250 VDC batteries • ≥ 80% of the manufacturer's rating for 125 VDC batteries when subjected to a performance discharge test or a modified performance discharge test.	In accordance with the Surveillance Frequency Control Program <u>AND</u> 12 months when battery shows degradation, or has reached 85% of the expected life with capacity < 100% of manufacturer’s rating <u>AND</u> 24 months when battery has reached 85% of the expected life with capacity ≥ 100% of manufacturer’s rating

3.8 ELECTRICAL POWER SYSTEMS

3.8.7 Distribution Systems - Operating

LCO 3.8.7 Division 1 and Division 2 AC and DC electrical power distribution subsystems shall be OPERABLE.

APPLICABILITY: MODES 1, 2, and 3.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more AC electrical power distribution subsystems inoperable.	--------------------NOTE------------------- Enter applicable Conditions and Required Actions of LCO 3.8.4, "DC Sources - Operating," for DC divisions made inoperable by inoperable power distribution subsystems. --- A.1 Restore AC electrical power distribution subsystem(s) to OPERABLE status.	 8 hours <u>OR</u> In accordance with the Risk Informed Completion Time Program
B. One or more DC electrical power distribution subsystems inoperable.	B.1 Restore DC electrical power distribution subsystem(s) to OPERABLE status.	2 hours <u>OR</u> In accordance with the Risk Informed Completion Time Program

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
C. Required Action and associated Completion Time of Condition A or B not met.	C.1 Be in MODE 3. AND C.2 Be in MODE 4.	12 hours 36 hours
D. Two or more electrical power distribution subsystems inoperable that result in a loss of function.	D.1 Enter LCO 3.0.3.	Immediately

SURVEILLANCE REQUIREMENTS

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

3.8 ELECTRICAL POWER SYSTEMS

3.8.8 Distribution Systems - Shutdown

LCO 3.8.8 The necessary portions of the AC and DC electrical power distribution subsystems shall be OPERABLE to support equipment required to be OPERABLE.

APPLICABILITY: MODES 4 and 5,
During movement of recently irradiated fuel assemblies in the secondary containment.

ACTIONS

--NOTE--
LCO 3.0.3 is not applicable.

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more required AC or DC electrical power distribution subsystems inoperable.	A.1 Declare associated supported required feature(s) inoperable.	Immediately
	<u>OR</u>	
	A.2.1 Suspend CORE ALTERATIONS.	Immediately
	<u>AND</u>	
	A.2.2 Suspend handling of recently irradiated fuel assemblies in the secondary containment.	Immediately
	<u>AND</u>	

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
	A.2.3 Initiate actions to restore required AC and DC electrical power distribution subsystems to OPERABLE status.	Immediately
	<u>AND</u>	
	A.2.4 Declare associated required shutdown cooling subsystem(s) inoperable and not in operation.	Immediately

SURVEILLANCE REQUIREMENTS

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

3.9 REFUELING OPERATIONS

3.9.1 Refueling Equipment Interlocks

LCO 3.9.1 The refueling equipment interlocks associated with the reactor mode switch refuel position shall be OPERABLE.

APPLICABILITY: During in-vessel fuel movement with equipment associated with the interlocks when the reactor mode switch is in the refuel position.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more required refueling equipment interlocks inoperable.	A.1 Suspend in-vessel fuel movement with equipment associated with the inoperable interlock(s).	Immediately
	<u>OR</u>	
	A.2.1 Insert a control rod withdrawal block.	Immediately
	<u>AND</u>	
	A.2.2 Verify all control rods are fully inserted.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.9.1.1	Perform CHANNEL FUNCTIONAL TEST on each of the following required refueling equipment interlock inputs: a. All-rods-in; b. Refuel platform position; c. Refuel platform fuel grapple, fuel loaded; d. Refuel platform fuel grapple fully retracted position; e. Refuel platform frame mounted hoist, fuel loaded; f. Refuel platform monorail mounted hoist, fuel loaded; and g. Service platform hoist, fuel loaded.	In accordance with the Surveillance Frequency Control Program

3.9 REFUELING OPERATIONS

3.9.2 Refuel Position One-Rod-Out Interlock

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

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

ACTIONS

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

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.9.2.1	Verify reactor mode switch locked in refuel position.	In accordance with the Surveillance Frequency Control Program

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.9.2.2	--------------------------------NOTE------------------------------- Not required to be performed until 1 hour after any control rod is withdrawn. --- Perform CHANNEL FUNCTIONAL TEST.	In accordance with the Surveillance Frequency Control Program

3.9 REFUELING OPERATIONS

3.9.3 Control Rod Position

LCO 3.9.3 All control rods shall be fully inserted.

APPLICABILITY: When loading fuel assemblies into the core.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more control rods not fully inserted.	A.1 Suspend loading fuel assemblies into the core.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.9.3.1	Verify all control rods are fully inserted.	In accordance with the Surveillance Frequency control Program

3.9 REFUELING OPERATIONS

3.9.4 Control Rod Position Indication

LCO 3.9.4 The control rod "full-in" position indication channel for each control rod shall be OPERABLE.

APPLICABILITY: MODE 5.

ACTIONS

---NOTE---

Separate Condition entry is allowed for each channel.

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more control rod position indication channels inoperable.	A.1.1 Suspend in vessel fuel movement.	Immediately
	<u>AND</u>	
	A.1.2 Suspend control rod withdrawal.	Immediately
	<u>AND</u>	
	A.1.3 Initiate action to fully insert all insertable control rods in core cells containing one or more fuel assemblies.	Immediately
	<u>OR</u>	
	A.2.1 Initiate action to fully insert the control rod associated with the inoperable position indicator.	Immediately
	<u>AND</u>	

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
	A.2.2 Initiate action to disarm the control rod drive associated with the fully inserted control rod.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.9.4.1	Verify the channel has no "full-in" indication on each control rod that is not "full-in."	Each time the control rod is withdrawn from the "full-in" position

3.9 REFUELING OPERATIONS

3.9.5 Control Rod OPERABILITY - Refueling

LCO 3.9.5 Each withdrawn control rod shall be OPERABLE.

APPLICABILITY: MODE 5.

ACTIONS

CONDITION	REQUIRED ACTION		COMPLETION TIME
A. One or more withdrawn control rods inoperable.	A.1	Initiate action to fully insert inoperable withdrawn control rods.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.9.5.1	-------------------------------NOTE------------------------------ Not required to be performed until 7 days after the control rod is withdrawn. --- Insert each withdrawn control rod at least one notch.	In accordance with the Surveillance Frequency Control Program
SR 3.9.5.2	Verify each withdrawn control rod scram accumulator pressure is ≥ 940 psig.	In accordance with the Surveillance Frequency Control Program

3.9 REFUELING OPERATIONS

3.9.6 Reactor Pressure Vessel (RPV) Water Level

LCO 3.9.6 RPV water level shall be ≥ 21 ft 11 inches above the top of the RPV flange.

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

ACTIONS

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

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.9.6.1	Verify RPV water level is ≥ 21 ft 11 inches above the top of the RPV flange.	In accordance with the Surveillance Frequency Control Program

3.9 REFUELING OPERATIONS

3.9.7 Residual Heat Removal (RHR) - High Water Level

LCO 3.9.7 One RHR shutdown cooling subsystem shall be OPERABLE and in operation.

---NOTE---
The required RHR shutdown cooling subsystem may be removed from operation for up to 2 hours per 8 hour period.

APPLICABILITY: MODE 5 with irradiated fuel in the reactor pressure vessel (RPV) and the water level ≥ 21 ft 11 inches above the top of the RPV flange.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Required RHR shutdown cooling subsystem inoperable.	A.1 Verify an alternate method of decay heat removal is available.	1 hour AND Once per 24 hours thereafter
B. Required Action and associated Completion Time of Condition A not met.	B.1 Suspend loading irradiated fuel assemblies into the RPV. AND B.2 Initiate action to restore secondary containment to OPERABLE status. AND	Immediately Immediately

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
	B.3 Initiate action to restore one standby gas treatment subsystem to OPERABLE status. <u>AND</u> B.4 Initiate action to restore isolation capability in each required secondary containment penetration flow path not isolated.	Immediately Immediately
C. No RHR shutdown cooling subsystem in operation.	C.1 Verify reactor coolant circulation by an alternate method. <u>AND</u> C.2 Monitor reactor coolant temperature.	1 hour from discovery of no reactor coolant circulation <u>AND</u> Once per 12 hours thereafter Once per hour

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.9.7.1	Verify one RHR shutdown cooling subsystem is operating.	In accordance with the Surveillance Frequency Control Program

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.9.7.2	Verify required RHR shutdown cooling subsystem locations susceptible to gas accumulation are sufficiently filled with water.	In accordance with the Surveillance Frequency Control Program

3.9 REFUELING OPERATIONS

3.9.8 Residual Heat Removal (RHR) - Low Water Level

LCO 3.9.8 Two RHR shutdown cooling subsystems shall be OPERABLE, and one RHR shutdown cooling subsystem shall be in operation.

---------------------------------------NOTE---------------------------------------
The required operating shutdown cooling subsystem may be removed from operation for up to 2 hours per 8 hour period.

APPLICABILITY: MODE 5 with irradiated fuel in the reactor pressure vessel (RPV) and the water level < 21 ft 11 inches above the top of the RPV flange.

ACTIONS

CONDITION	REQUIRED ACTION		COMPLETION TIME
A. ------------NOTE------------ Separate Condition entry is allowed for each required RHR shutdown cooling subsystem. -------------------------------- One or two required RHR shutdown cooling subsystems inoperable.	A.1	Verify an alternate method of decay heat removal is available for the inoperable required RHR shutdown cooling subsystem.	1 hour <u>AND</u> Once per 24 hours thereafter
B. Required Action and associated Completion Time of Condition A not met.	B.1	Initiate action to restore secondary containment to OPERABLE status.	Immediately
	<u>AND</u>		
	B.2	Initiate action to restore one standby gas treatment subsystem to OPERABLE status.	Immediately
	<u>AND</u>		

ACTIONS (continued)

CONDITION	REQUIRED ACTION		COMPLETION TIME
	B.3	Initiate action to restore isolation capability in each required secondary containment penetration flow path not isolated.	Immediately
C. No RHR shutdown cooling subsystem in operation.	C.1	Verify reactor coolant circulation by an alternate method.	1 hour from discovery of no reactor coolant circulation AND Once per 12 hours thereafter
	AND		
	C.2	Monitor reactor coolant temperature.	Once per hour

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.9.8.1	Verify one RHR shutdown cooling subsystem is operating.	In accordance with the Surveillance Frequency Control Program
SR 3.9.8.2	Verify RHR shutdown cooling subsystem locations susceptible to gas accumulation are sufficiently filled with water.	In accordance with the Surveillance Frequency Control Program

3.10 SPECIAL OPERATIONS

3.10.1 Inservice Leak and Hydrostatic Testing Operation

LCO 3.10.1

The average reactor coolant temperature specified in Table 1.1-1 for MODE 4 may be changed to "NA," and operation considered not to be in MODE 3; and the requirements of LCO 3.4.8, "Residual Heat Removal (RHR) Shutdown Cooling System - Cold Shutdown," may be suspended, to allow reactor coolant temperature > 212°F provided the specific activity of the reactor coolant is ≤ 0.02 μCi/gm DOSE EQUIVALENT I-131:

- For performance of an inservice leak or hydrostatic test,
- As a consequence of maintaining adequate pressure for an inservice leak or hydrostatic test, or
- As a consequence of maintaining adequate pressure for control rod scram time testing initiated in conjunction with an inservice leak or hydrostatic test,

provided the following MODE 3 LCOs are met:

a. LCO 3.3.6.2, "Secondary Containment Isolation Instrumentation," Functions 1, 3, and 4 of Table 3.3.6.2-1;

b. LCO 3.6.4.1, "Secondary Containment";

c. LCO 3.6.4.2, "Secondary Containment Isolation Valves (SCIVs)"; and

d. LCO 3.6.4.3, "Standby Gas Treatment (SGT) System."

APPLICABILITY: MODE 4 with average reactor coolant temperature > 212°F.

ACTIONS

--NOTE--
Separate Condition entry is allowed for each requirement of the LCO.

CONDITION	REQUIRED ACTION		COMPLETION TIME
A. One or more of the LCO requirements not met.	A.1	------------NOTE------------ Required Actions to be in MODE 4 include reducing average reactor coolant temperature to ≤ 212°F. ------------------------------	
		Enter the applicable Condition of the affected LCO.	Immediately
	<u>OR</u>		
	A.2.1	Suspend activities that could increase the average reactor coolant temperature or pressure.	Immediately
	<u>AND</u>		
	A.2.2	Reduce average reactor coolant temperature to ≤ 212°F.	24 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.10.1.1	Perform the applicable SRs for the required MODE 3 LCOs.	According to the applicable SRs

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.10.1.2	Verify reactor coolant DOSE EQUIVALENT I-131 specific activity is ≤ 0.02 μCi/gm.	Once within 24 hours prior to increasing average reactor coolant temperature > 212°F

3.10 SPECIAL OPERATIONS

3.10.2 Reactor Mode Switch Interlock Testing

LCO 3.10.2 The reactor mode switch position specified in Table 1.1-1 for MODES 3, 4, and 5 may be changed to include the run, startup/hot standby, and refuel position, and operation considered not to be in MODE 1 or 2, to allow testing of instrumentation associated with the reactor mode switch interlock functions, provided:

a. All control rods remain fully inserted in core cells containing one or more fuel assemblies; and

b. No CORE ALTERATIONS are in progress.

APPLICABILITY: MODES 3 and 4 with the reactor mode switch in the run, startup/hot standby, or refuel position,
MODE 5 with the reactor mode switch in the run or startup/hot standby position.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Requirements of the LCO not met.	A.1 Suspend CORE ALTERATIONS except for control rod insertion.	Immediately
	<u>AND</u>	
	A.2 Fully insert all insertable control rods in core cells containing one or more fuel assemblies.	1 hour
	<u>AND</u>	
	A.3.1 Place the reactor mode switch in the shutdown position.	1 hour
	<u>OR</u>	

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
	A.3.2 ---------------NOTE-------------- Only applicable in MODE 5. ------------------------------------- Place the reactor mode switch in the refuel position.	 1 hour

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.10.2.1	Verify all control rods are fully inserted in core cells containing one or more fuel assemblies.	In accordance with the Surveillance Frequency Control Program
SR 3.10.2.2	Verify no CORE ALTERATIONS are in progress.	In accordance with the Surveillance Frequency Control Program

3.10 SPECIAL OPERATIONS

3.10.3 Single Control Rod Withdrawal - Hot Shutdown

LCO 3.10.3

The reactor mode switch position specified in Table 1.1-1 for MODE 3 may be changed to include the refuel position, and operation considered not to be in MODE 2, to allow withdrawal of a single control rod, provided the following requirements are met:

a. LCO 3.9.2, "Refuel Position One-Rod-Out Interlock";

b. LCO 3.9.4, "Control Rod Position Indication";

c. All other control rods are fully inserted; and

d.1. LCO 3.3.1.1, "Reactor Protection System (RPS) Instrumentation," MODE 5 requirements for Functions 1.a, 1.b, 7.a, 7.b, 10, and 11 of Table 3.3.1.1-1 and LCO 3.9.5, "Control Rod OPERABILITY - Refueling,"

<u>OR</u>

2. All other control rods in a five by five array centered on the control rod being withdrawn are disarmed; at which time LCO 3.1.1, "SHUTDOWN MARGIN (SDM)," MODE 3 requirements may be changed to allow the single control rod withdrawn to be assumed to be the highest worth control rod.

APPLICABILITY: MODE 3 with the reactor mode switch in the refuel position.

ACTIONS

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

Separate Condition entry is allowed for each requirement of the LCO.

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more of the LCO requirements not met.	A.1 --------------NOTES------------- 1. Required Actions to fully insert all insertable control rods include placing the reactor mode switch in the shutdown position. 2. Only applicable if the requirement not met is a required LCO. ------------------------------------ Enter the applicable Condition of the affected LCO.	Immediately
	OR	
	A.2.1 Initiate action to fully insert all insertable control rods.	Immediately
	AND	
	A.2.2 Place the reactor mode switch in the shutdown position.	1 hour

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.10.3.1	Perform the applicable SRs for the required LCOs.	According to the applicable SRs

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.10.3.2	------------------------------NOTE------------------------------ Not required to be met if SR 3.10.3.1 is satisfied for LCO 3.10.3.d.1 requirements. -- Verify all control rods, other than the control rod being withdrawn, in a five by five array centered on the control rod being withdrawn, are disarmed.	In accordance with the Surveillance Frequency Control Program
SR 3.10.3.3	Verify all control rods, other than the control rod being withdrawn, are fully inserted.	In accordance with the Surveillance Frequency Control Program

3.10 SPECIAL OPERATIONS

3.10.4 Single Control Rod Withdrawal - Cold Shutdown

LCO 3.10.4

The reactor mode switch position specified in Table 1.1-1 for MODE 4 may be changed to include the refuel position, and operation considered not to be in MODE 2, to allow withdrawal of a single control rod, and subsequent removal of the associated control rod drive (CRD) if desired, provided the following requirements are met:

a. All other control rods are fully inserted;

b.1. LCO 3.9.2, "Refuel Position One-Rod-Out Interlock," and LCO 3.9.4, "Control Rod Position Indication,"

<u>OR</u>

2. A control rod withdrawal block is inserted; and

c.1. LCO 3.3.1.1, "Reactor Protection System (RPS) Instrumentation," MODE 5 requirements for Functions 1.a, 1.b, 7.a, 7.b, 10, and 11 of Table 3.3.1.1-1, LCO 3.3.8.2, "Reactor Protection System (RPS) Electric Power Monitoring," MODE 5 requirements, and LCO 3.9.5, "Control Rod OPERABILITY - Refueling,"

<u>OR</u>

2. All other control rods in a five by five array centered on the control rod being withdrawn are disarmed; at which time LCO 3.1.1, "SHUTDOWN MARGIN (SDM)," MODE 4 requirements may be changed to allow the single control rod withdrawn to be assumed to be the highest worth control rod.

APPLICABILITY: MODE 4 with the reactor mode switch in the refuel position.

ACTIONS

-----NOTE-----
Separate Condition entry is allowed for each requirement of the LCO.

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more of the LCO requirements not met with the affected control rod insertable.	A.1 -----NOTES----- 1. Required Actions to fully insert all insertable control rods include placing the reactor mode switch in the shutdown position. 2. Only applicable if the requirement not met is a required LCO. ---------- Enter the applicable Condition of the affected LCO.	Immediately
	<u>OR</u>	
	A.2.1 Initiate action to fully insert all insertable control rods.	Immediately
	<u>AND</u>	
	A.2.2 Place the reactor mode switch in the shutdown position.	1 hour
B. One or more of the LCO requirements not met with the affected control rod not insertable.	B.1 Suspend withdrawal of the control rod and removal of associated CRD.	Immediately
	<u>AND</u>	
	B.2.1 Initiate action to fully insert all control rods.	Immediately
	<u>OR</u>	

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
	B.2.2 Initiate action to satisfy the requirements of this LCO.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.10.4.1	Perform the applicable SRs for the required LCOs.	According to the applicable SRs
SR 3.10.4.2	-------------------------------NOTE------------------------------ Not required to be met if SR 3.10.4.1 is satisfied for LCO 3.10.4.c.1 requirements. -- Verify all control rods, other than the control rod being withdrawn, in a five by five array centered on the control rod being withdrawn, are disarmed.	In accordance with the Surveillance Frequency Control Program
SR 3.10.4.3	Verify all control rods, other than the control rod being withdrawn, are fully inserted.	In accordance with the Surveillance Frequency Control Program
SR 3.10.4.4	-------------------------------NOTE------------------------------ Not required to be met if SR 3.10.4.1 is satisfied for LCO 3.10.4.b.1 requirements. -- Verify a control rod withdrawal block is inserted.	In accordance with the Surveillance Frequency Control Program

3.10 SPECIAL OPERATIONS

3.10.5 Single Control Rod Drive (CRD) Removal - Refueling

LCO 3.10.5 The requirements of:

LCO 3.3.1.1, "Reactor Protection System (RPS) Instrumentation";

LCO 3.3.8.2, "Reactor Protection System (RPS) Electric Power Monitoring";

LCO 3.9.1, "Refueling Equipment Interlocks";

LCO 3.9.2, "Refuel Position One-Rod-Out Interlock";

LCO 3.9.4, "Control Rod Position Indication"; and

LCO 3.9.5, "Control Rod OPERABILITY - Refueling";

may be suspended in MODE 5 to allow the removal of a single CRD associated with a control rod withdrawn from a core cell containing one or more fuel assemblies, provided the following requirements are met:

a. All other control rods are fully inserted;

b. All other control rods in a five by five array centered on the withdrawn control rod are disarmed;

c. A control rod withdrawal block is inserted and LCO 3.1.1, "SHUTDOWN MARGIN (SDM)," MODE 5 requirements may be changed to allow the single control rod withdrawn to be assumed to be the highest worth control rod; and

d. No other CORE ALTERATIONS are in progress.

APPLICABILITY: MODE 5 with LCO 3.9.5 not met.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Requirements of the LCO not met.	A.1 Suspend removal of the CRD mechanism.	Immediately
	<u>AND</u>	
	A.2.1 Initiate action to fully insert all control rods.	Immediately
	<u>OR</u>	
	A.2.2 Initiate action to satisfy the requirements of this LCO.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.10.5.1	Verify all control rods, other than the control rod withdrawn for the removal of the associated CRD, are fully inserted.	In accordance with the Surveillance Frequency Control Program
SR 3.10.5.2	Verify all control rods, other than the control rod withdrawn for the removal of the associated CRD, in a five by five array centered on the control rod withdrawn for the removal of the associated CRD, are disarmed.	In accordance with the Surveillance Frequency Control Program
SR 3.10.5.3	Verify a control rod withdrawal block is inserted.	In accordance with the Surveillance Frequency Control Program
SR 3.10.5.4	Perform SR 3.1.1.1.	According to SR 3.1.1.1

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.10.5.5	Verify no other CORE ALTERATIONS are in progress.	In accordance with the Surveillance Frequency Control Program

3.10 SPECIAL OPERATIONS

3.10.6 Multiple Control Rod Withdrawal - Refueling

LCO 3.10.6 The requirements of:

LCO 3.9.3, "Control Rod Position";

LCO 3.9.4, "Control Rod Position Indication"; and

LCO 3.9.5, "Control Rod OPERABILITY - Refueling";

may be suspended, and the "full-in" position indicators may be bypassed for any number of control rods in MODE 5, to allow withdrawal of these control rods, removal of associated control rod drives (CRDs), or both, provided the following requirements are met:

a. The four fuel assemblies are removed from the core cells associated with each control rod or CRD to be removed;

b. All other control rods in core cells containing one or more fuel assemblies are fully inserted; and

c. Fuel assemblies shall only be loaded in compliance with an approved reload sequence.

APPLICABILITY: MODE 5 with LCO 3.9.3, LCO 3.9.4, or LCO 3.9.5 not met.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Requirements of the LCO not met.	A.1 Suspend withdrawal of control rods and removal of associated CRDs.	Immediately
	AND	
	A.2 Suspend loading fuel assemblies.	Immediately
	AND	

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
	A.3.1 Initiate action to fully insert all control rods in core cells containing one or more fuel assemblies. OR A.3.2 Initiate action to satisfy the requirements of this LCO.	Immediately Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.10.6.1	Verify the four fuel assemblies are removed from core cells associated with each control rod or CRD removed.	In accordance with the Surveillance Frequency Control Program
SR 3.10.6.2	Verify all other control rods in core cells containing one or more fuel assemblies are fully inserted.	In accordance with the Surveillance Frequency Control Program
SR 3.10.6.3	-------------------------------NOTE------------------------------- Only required to be met during fuel loading. -- Verify fuel assemblies being loaded are in compliance with an approved reload sequence.	In accordance with the Surveillance Frequency Control Program

3.10 SPECIAL OPERATIONS

3.10.7 Control Rod Testing - Operating

LCO 3.10.7 The requirements of LCO 3.1.6, "Rod Pattern Control," may be suspended to allow performance of SDM demonstrations, control rod scram time testing, and control rod friction testing, provided:

a. The banked position withdrawal sequence requirements of SR 3.3.2.1.8 are changed to require the control rod sequence to conform to the specified test sequence;

<u>OR</u>

b. The RWM is bypassed; the requirements of LCO 3.3.2.1, "Control Rod Block Instrumentation," Function 2 are suspended; and conformance to the approved control rod sequence for the specified test is verified by a second licensed operator or other qualified member of the technical staff.

APPLICABILITY: MODES 1 and 2 with LCO 3.1.6 not met.

ACTIONS

CONDITION	REQUIRED ACTION		COMPLETION TIME
A. Requirements of the LCO not met.	A.1	Suspend performance of the test and exception to LCO 3.1.6.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.10.7.1	-----------------------------NOTE---------------------------- Not required to be met if SR 3.10.7.2 satisfied. -- Verify movement of control rods is in compliance with the approved control rod sequence for the specified test by a second licensed operator or other qualified member of the technical staff.	During control rod movement
SR 3.10.7.2	-----------------------------NOTE---------------------------- Not required to be met if SR 3.10.7.1 satisfied. -- Verify control rod sequence input to the RWM is in conformance with the approved control rod sequence for the specified test.	Prior to control rod movement

3.10 SPECIAL OPERATIONS

3.10.8 SHUTDOWN MARGIN (SDM) Test - Refueling

LCO 3.10.8

The reactor mode switch position specified in Table 1.1-1 for MODE 5 may be changed to include the startup/hot standby position, and operation considered not to be in MODE 2, to allow SDM testing, provided the following requirements are met:

a. All Reactor Protection System (RPS) shorting links are removed;

b.1. LCO 3.3.2.1, "Control Rod Block Instrumentation," MODE 2 requirements for Function 2 of Table 3.3.2.1-1, with the banked position withdrawal sequence requirements of SR 3.3.2.1.8 changed to require the control rod sequence to conform to the SDM test sequence,

<u>OR</u>

2. Conformance to the approved control rod sequence for the SDM test is verified by a second licensed operator or other qualified member of the technical staff;

c. Each withdrawn control rod shall be coupled to the associated CRD;

d. All control rod withdrawals during out of sequence control rod moves shall be made in the single notch withdrawal mode;

e. No other CORE ALTERATIONS are in progress; and

f. CRD charging water header pressure ≥ 940 psig.

APPLICABILITY: MODE 5 with the reactor mode switch in startup/hot standby position.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. ------------NOTE------------ Separate Condition entry is allowed for each control rod. --------------------------------- One or more control rods not coupled to its associated CRD.	--------------------NOTE------------------- Rod worth minimizer may be bypassed as allowed by LCO 3.3.2.1, "Control Rod Block Instrumentation," if required, to allow insertion of inoperable control rod and continued operation. --- A.1 Fully insert inoperable control rod. <u>AND</u> A.2 Disarm the associated CRD.	 3 hours 4 hours
B. Requirements of the LCO not met for reasons other than Condition A.	B.1 Place the reactor mode switch in the shutdown or refuel position.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.10.8.1	Verify all RPS shorting links are removed.	In accordance with the Surveillance Frequency Control Program
SR 3.10.8.2	--------------------------------NOTE------------------------------- Not required to be met if SR 3.10.8.3 satisfied. --- Perform the MODE 2 applicable SRs for LCO 3.3.2.1, Function 2 of Table 3.3.2.1-1	 According to the applicable SRs

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.10.8.3	--------------------------------NOTE------------------------------- Not required to be met if SR 3.10.8.2 satisfied. --- Verify movement of control rods is in compliance with the approved control rod sequence for the SDM test by a second licensed operator or other qualified member of the technical staff.	During control rod movement
SR 3.10.8.4	Verify no other CORE ALTERATIONS are in progress.	In accordance with the Surveillance Frequency Control Program
SR 3.10.8.5	Verify each withdrawn control rod does not go to the withdrawn overtravel position.	Each time the control rod is withdrawn to “full out” position <u>AND</u> Prior to satisfying LCO 3.10.8.c requirement after work on control rod or CRD System that could affect coupling
SR 3.10.8.6	Verify CRD charging water header pressure ≥ 940 psig.	In accordance with the Surveillance Frequency Control Program

4.0 DESIGN FEATURES

4.1 Site Location

4.1.1 Site and Exclusion Area Boundaries

The site area and exclusion area boundaries are as shown in Chapter 15, Figure ND-95208 of the USAR.

4.1.2 Low Population Zone

The low population zone is all the land within a 1 mile radius circle as shown in Chapter 15, Figure ND-95208 of the USAR.

4.2 Reactor Core

4.2.1 Fuel Assemblies

The reactor shall contain 484 fuel assemblies. Each assembly shall consist of a matrix of Zircalloy fuel rods with an initial composition of natural or slightly enriched uranium dioxide (UO_2) as fuel material and water rods. Some fuel rods may consist of a Zircalloy base and a zirconium inner liner. Fuel assemblies shall be limited to those fuel designs that have been analyzed with NRC staff approved codes and methods and have been shown by tests or analyses to comply with all 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 121 cruciform shaped control rod assemblies. The control material shall be boron carbide or hafnium metal as approved by the NRC.

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 k-infinity of 0.8825 in the normal spent fuel pool storage rack configuration;

b. $k_{eff} \leq 0.95$ for high density fuel racks and low density fuel racks if fully flooded with unborated water, which includes an allowance for uncertainties as described in Section 10.2.1 of the USAR;

4.0 DESIGN FEATURES

4.3 Fuel Storage (continued)

c. A nominal 6.563 inch center to center distance between fuel assemblies placed in the 13 x 13 high density storage racks, a nominal 6.625 inch center to center distance between fuel assemblies placed in the original storage rack, and a 12-inch gap between the high density racks and the original rack.

4.3.1.2 The new fuel vault shall not be used for fuel storage. The new fuel shall be stored in the spent fuel storage racks.

4.3.2 Drainage

The spent fuel storage pool is designed and shall be maintained to prevent inadvertent draining of the pool below elevation 1003 ft 7.25 inches.

4.3.3 Capacity

The spent fuel storage pool is designed and shall be maintained with a storage capacity limited to no more than 2217 fuel assemblies.

5.0 ADMINISTRATIVE CONTROLS

5.1 Responsibility

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

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

5.1.2 The shift supervisor shall be responsible for the control room command function. During any absence of the shift supervisor from the control room complex while the unit is in MODE 1, 2, or 3, 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 shift supervisor from the control room complex while the unit is in MODE 4 or 5, an individual with an active SRO license or reactor operator (RO) license shall be designated to assume the control room command function.

5.0 ADMINISTRATIVE CONTROLS

5.2 Organization

5.2.1 Onsite and Offsite Organizations

Onsite and offsite organizations shall be established for unit operation and corporate management, respectively. The onsite and offsite organizations shall include the positions for activities affecting safety of the nuclear power plant.

a. Lines of authority, responsibility, and communication shall be defined and established throughout highest management levels, intermediate levels, and all operating organization positions. These relationships shall be documented and updated, as appropriate, in organization charts, functional descriptions of departmental responsibilities and relationships, and job descriptions for key personnel positions, or in equivalent forms of documentation. These requirements including the plant-specific titles of those personnel fulfilling the responsibilities of the positions delineated in these Technical Specifications shall be documented in the USAR or Quality Assurance Topical Report.

b. The plant manager shall be responsible for overall safe operation of the plant and shall have control over those onsite activities necessary for safe operation and maintenance of the plant.

c. A specified corporate officer shall have corporate responsibility for overall plant nuclear safety and shall take any measures needed to ensure acceptable performance of the staff in operating, maintaining, and providing technical support to the plant to ensure nuclear safety.

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 Unit Staff

The unit staff organization shall include the following:

a. A non-licensed operator shall be assigned to each reactor containing fuel and an additional non-licensed operator shall be assigned for each control room from which a reactor is operating in MODES 1, 2, or 3.

b. Shift crew composition may be less than the minimum requirement of 10 CFR 50.54(m)(2)(i) and 5.2.2.a and 5.2.2.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.

5.2 Organization

5.2.2 Unit Staff (continued)

c. A radiation protection technician shall be on site when fuel is in the reactor. The position may be vacant for not more than 2 hours, in order to provide for unexpected absence, provided immediate action is taken to fill the required position.

d. Not Used.

e. The operations manager shall hold an SRO license or shall formerly have held an SRO license. If the operations manager does not hold an SRO license, another member of plant management shall hold an SRO license and shall be assigned to the plant operations group on a long term basis (approximately 2 years). This individual shall not be assigned to a rotating shift.

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

5.0 ADMINISTRATIVE CONTROLS

5.3 Unit Staff Qualifications

5.3.1 Each member of the unit staff shall meet or exceed the minimum qualifications of ANSI N18.1-1971 for comparable positions, except for the following:

- The radiation protection manager shall meet or exceed the qualifications of Regulatory Guide 1.8, Revision 1, September 1975.
- In addition, the operations manager shall be qualified as required by Specification 5.2.2.e.
- The licensed operators shall comply only with the requirements of 10 CFR 55.

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

5.0 ADMINISTRATIVE CONTROLS

5.4 Procedures

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

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

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

c. Quality assurance for effluent and environmental monitoring;

d. Fire Protection Program implementation; and

e. All programs specified in Specification 5.5.

5.0 ADMINISTRATIVE CONTROLS

5.5 Programs and Manuals

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

5.5.1 Offsite Dose Calculation Manual (ODCM)

a. The ODCM shall contain the methodology and parameters used in the calculation of offsite doses resulting from radioactive gaseous and liquid effluents, in the calculation of gaseous and liquid effluent monitoring alarm and trip setpoints, and in the conduct of the radiological environmental monitoring program; and

b. The ODCM shall also contain the radioactive effluent controls and radiological environmental monitoring activities, and descriptions of the information that should be included in the Annual Radiological Environmental Operating, and Radioactive Effluent Release Reports required by Specification 5.6.1 and Specification 5.6.2.

c. Licensee initiated changes to the ODCM:

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

   a) Sufficient information to support the change(s) together with the appropriate analyses or evaluations justifying the change(s); and

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

2. Shall become effective after the approval of the plant manager; and

3. Shall be submitted to the NRC in the form of a complete, legible copy of the entire ODCM as a part of or concurrent with the 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 Programs and Manuals

5.5.2 Primary Coolant Sources Outside Containment

This program provides controls to minimize leakage from those portions of systems outside containment that could contain highly radioactive fluids during a serious transient or accident to levels as low as practicable. The systems include Core Spray, High Pressure Coolant Injection, Residual Heat Removal, Reactor Core Isolation Cooling, process sampling, and Standby Gas Treatment. The program shall include the following:

a. Preventive maintenance and periodic visual inspection requirements; and

b. Integrated leak test requirements for each system at least once per 24 months.

The provisions of SR 3.0.2 are applicable.

5.5.3 Radioactive Effluent Controls Program

This program conforms to 10 CFR 50.36a for the control of radioactive effluents and for maintaining the doses to members of the public from radioactive effluents as low as reasonably achievable. The program shall be contained in the ODCM, shall be implemented by procedures, and shall include remedial actions to be taken whenever the program limits are exceeded. The program shall include the following elements:

a. Limitations on the functional capability of radioactive liquid and gaseous monitoring instrumentation including surveillance tests and setpoint determination in accordance with the methodology in the ODCM;

b. Limitations on the concentrations of radioactive material released in liquid effluents to unrestricted areas, conforming to ten times the concentration values in Appendix B, Table 2, Column 2 to 10 CFR 20.1001-20.2402;

c. Monitoring, sampling, and analysis of radioactive liquid and gaseous effluents in accordance with 10 CFR 20.1302 and with the methodology and parameters in the ODCM;

d. Limitations on the annual and quarterly doses or dose commitment to a member of the public from radioactive materials in liquid effluents released from each unit to unrestricted areas, conforming to 10 CFR 50, Appendix I;

e. Determination of cumulative 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. Determination of projected dose contributions from radioactive effluents in accordance with the methodology in the ODCM at least every 31 days;

5.5 Programs and Manuals

5.5.3 Radioactive Effluent Controls Program (continued)

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 from the site to areas at or beyond the site boundary shall be in accordance with the following:

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

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

h. Limitations on the annual and quarterly air doses resulting from noble gases released in gaseous effluents from each unit to areas beyond the site boundary, conforming to 10 CFR 50, Appendix I;

i. Limitations on the annual and quarterly doses to a member of the public from iodine-131, iodine-133, tritium, and all radionuclides in particulate form with half lives > 8 days in gaseous effluents released from each unit to areas beyond the site boundary, conforming to 10 CFR 50, Appendix I;

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

k. Limitations on venting and purging of the primary containment through the Standby Gas Treatment System to maintain releases as low as reasonably achievable.

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

5.5.4 Component Cyclic or Transient Limit

This program provides controls to track the USAR Table 4.2-1, cyclic and transient occurrences to ensure that components are maintained within the design limits.

5.5 Programs and Manuals

5.5.5 (Deleted)

5.5.6 Ventilation Filter Testing Program (VFTP)

A program shall establish the required testing of Engineered Safety Feature (ESF) filter ventilation systems. Tests described in Specifications 5.5.6.a and 5.5.6.b shall be performed once per 24 months and following painting, fire, or chemical release in any ventilation zone communicating with the subsystem while it is in operation that could adversely affect the high efficiency particulate air (HEPA) filters or charcoal adsorber capability.

5.5 Programs and Manuals

5.5.6 Ventilation Filter Testing Program (VFTP) (continued)

The test described in Specification 5.5.6.a shall be performed after any maintenance or testing that could affect the leak tight integrity of the HEPA filters.

The test described in Specification 5.5.6.b shall be performed after any maintenance or testing that could affect the leak tight integrity of the charcoal adsorber banks.

Tests described in Specification 5.5.6.c shall be performed once per 24 months; at least once per 720 hours of system operation; following painting, fire, or chemical release in any ventilation zone communicating with the subsystem while it is in operation that could adversely affect the charcoal adsorber capability.

The tests described in Specification 5.5.6.d shall be performed once per 92 days for the Standby Gas Treatment (SGT) System and once per 24 months for the Control Room Emergency Filtration (CREF) System.

(Deleted)

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

a. Demonstrate for each of the ESF systems that an inplace test of the HEPA filters shows a penetration and system bypass specified below when tested in accordance with Regulatory Guide 1.52, Revision 2, and ANSI N510-1989 at the system flowrate specified below.

ESF Ventilation System	Penetration (%)	Flowrate (cfm)
SGT System	≤ 1.0	≥ 3,150 and ≤ 3,850
CREF System	≤ 1.0 for each individual HEPA filter and ≤ 0.05 for each pair of HEPA filters	≥ 900 and ≤ 1,100

5.5 Programs and Manuals

5.5.6 Ventilation Filter Testing Program (VFTP) (continued)

b. Demonstrate for each of the ESF systems that an inplace test of the charcoal adsorber shows a penetration and system bypass specified below when tested in accordance with Regulatory Guide 1.52, Revision 2, and ANSI N510-1989 at the system flowrate specified below.

ESF Ventilation System	Penetration (%)	Flowrate (cfm)
SGT System	≤ 1.0	≥ 3,150 and ≤ 3,850
CREF System	≤ 1.0 for each individual charcoal adsorber section and ≤ 0.05 for each pair of charcoal adsorber sections	≥ 900 and ≤ 1,100

c. Demonstrate for each of the ESF systems that a laboratory test of a sample of the charcoal adsorber, when obtained as described in Regulatory Position C.6.b of Regulatory Guide 1.52, Revision 2, shows the methyl iodide penetration specified below when tested in accordance with ASTM D3803-1989 at a temperature of 30°C (86°F) and the relative humidity specified below.

ESF Ventilation System	Penetration (%)	RH (%)
SGT System	≤ 5.0	95
CREF System	≤ 0.5	95

d. Demonstrate for each of the ESF systems that the pressure drop across the combined filters is as specified below when tested in accordance with Regulatory Guide 1.52, Revision 2, and ANSI N510-1989 at the system flowrate specified below.

ESF Ventilation System	Delta P (inches water gauge)	Flowrate (cfm)
SGT System	≤ 6	≥ 3,150 and ≤ 3,850
CREF System	≤ 8	≥ 900 and ≤ 1,100

e. (Deleted)

5.5 Programs and Manuals

5.5.7 Explosive Gas and Storage Tank Radioactivity Monitoring Program

This program provides controls for potentially explosive gas mixtures contained in the Offgas Treatment System, the quantity of radioactivity contained in gas storage tanks or fed into the Offgas Treatment System, and the quantity of radioactivity contained in unprotected outdoor liquid storage tanks. The quantity of radioactivity after 12 hours holdup contained in each gas storage tank shall be $\leq$ 22,000 Ci of noble gases (considered as dose equivalent Xe-133). The quantity of liquid radioactive waste contained in each unprotected outdoor liquid storage tank shall be $\leq$ 10 Ci, excluding tritium and dissolved or entrained noble gases.

The program shall include:

a. The limits for concentrations of hydrogen and oxygen in the Offgas Treatment System 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);

b. A Surveillance program to ensure that the quantity of radioactivity contained in each gas storage tank and fed into the Offgas Treatment System is less than the amount that would result in a whole body exposure of $\geq$ 0.5 rem to any individual in an unrestricted area, in the event of an uncontrolled release of the tanks' contents; and

c. A Surveillance program to ensure that the quantity of radioactivity contained in all outdoor liquid radwaste tanks that are not surrounded by liners, dikes, or walls, capable of holding the tanks' contents and that do not have tank overflows and surrounding area drains connected to the Liquid Radwaste Treatment System is less than the amount that would result in concentrations less than the limits of 10 CFR 20, Appendix B, Table 2, Column 2, at the nearest potable water supply and the nearest surface water supply in an unrestricted area, in the event of an uncontrolled release of the tanks' contents.

5.5 Programs and Manuals

5.5.7 Explosive Gas and Storage Tank Radioactivity Monitoring Program (continued)

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.

5.5.8 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 the storage tank by determining that the fuel oil has:

   1. An API gravity within limit;

   2. A flash point and saybolt viscosity within limits; and

   3. A water and sediment content within limits;

b. Within 31 days following addition of the new fuel oil to the storage tank, verify that the properties of the new fuel oil, other than those addressed in Specification 5.5.8.a above, are within limits; and

c. Total particulate concentration of the fuel oil is $\leq$ 10 mg/l when tested every 31 days.

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

5.5.9 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 USAR or Bases that requires NRC approval pursuant to 10 CFR 50.59.

5.5 Programs and Manuals

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

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

d. Proposed changes that meet the criteria of Specification 5.5.9.b above shall be reviewed and approved by the NRC prior to implementation. Changes to the Bases implemented without prior NRC approval shall be provided to the NRC on a frequency consistent with 10 CFR 50.71(e).

5.5.10 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.

a. The SFDP shall contain the following:

1. 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;

2. Provisions for ensuring the plant is maintained in a safe condition if a loss of function condition exists;

3. Provisions to ensure that an inoperable supported system's Completion Time is not inappropriately extended as a result of multiple support system inoperabilities; and

4. Other appropriate limitations and remedial or compensatory actions.

b. A loss of safety function exists when, assuming no concurrent single failure, no concurrent loss of offsite power, or no concurrent loss of onsite emergency 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:

1. A required system redundant to the system(s) supported by the inoperable support system is also inoperable;

2. A required system redundant to the system(s) in turn supported by the inoperable supported system is also inoperable; or

5.5 Programs and Manuals

5.5.10 Safety Function Determination Program (SFDP) (continued)

3. A required system redundant to the support system(s) for the supported systems described in Specifications 5.5.10.b.1 and 5.5.10.b.2 above is also inoperable.

c. 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.

5.5.11 Primary Containment Leakage Rate Testing Program

a. A program shall establish the leakage rate testing of the containment as required by 10 CFR 50.54(o) and 10 CFR 50, Appendix J, Option B, as modified by approved exemptions. This program shall be in accordance with the guidelines contained in NEI 94-01, "Industry Guideline for Implementing Performance-Based Option of 10 CFR 50, Appendix J," Revision 2-A, dated October 2008, as modified by the following exceptions:

1. The main steam line pathway leakage contribution is excluded from the sum of the leakage rates from Type B and C tests specified in Section III.B of 10 CFR 50, Appendix J, Option B, Section 6.4.4 of ANSI/ANS 56.8-2002, and Section 10.2 of NEI 94-01, Revision 2-A; and

2. The main steam line pathway leakage contribution is excluded from the overall integrated leakage rate from Type A tests specified in Section III.A of 10 CFR 50, Appendix J, Option B, Section 3.2 of ANSI/ANS 56.8-2002, and Section 8.0 and 9.0 of NEI 94-01, Revision 2-A.

b. The calculated peak containment internal pressure for the design basis loss of coolant accident, P_a, is 44.1 psig. The containment design pressure is 56 psig.

c. The maximum allowable containment leakage rate, L_a, at P_a, shall be 1.2% of containment air weight per day.

5.5 Programs and Manuals

5.5.11 Primary Containment Leakage Rate Testing Program (continued)

d. Leakage rate acceptance criteria are:

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

2. Air lock testing acceptance criterion is an overall air lock leakage rate of $\leq 0.05\ L_a$ when tested at $\geq P_a$.

e. The resilient seals of each 18 inch primary containment purge and vent valve shall be replaced at least once every 9 years. The provisions of SR 3.0.2 are applicable to this requirement. If a common mode failure attributable to the resilient seals is identified based on the results of SR 3.6.1.3.11, the resilient seals of all 18 inch primary containment purge and vent valves shall be replaced.

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

5.5.12 Battery Monitoring and Maintenance Program

This Program provides for battery restoration and maintenance, based on the recommendations of IEEE Standard 450-1995, "IEEE Recommended Practice for Maintenance, Testing, and Replacement of Vented Lead-Acid Batteries for Stationary Applications," or of the battery manufacturer of the following:

a. Actions to restore battery cells with float voltage < 2.13 V; and

b. Actions to equalize and test battery cells that had been discovered with electrolyte level below the minimum established design limit.

5.5 Programs and Manuals

5.5.13 Control Room Envelope Habitability Program

A Control Room Envelope (CRE) Habitability Program shall be established and implemented to ensure that CRE habitability is maintained such that, with an OPERABLE Control Room Emergency Filtration (CREF) System, CRE occupants can control the reactor safely under normal conditions and maintain it in a safe condition following a radiological event, hazardous chemical release, or a smoke challenge. The program shall ensure that adequate radiation protection is provided to permit access and occupancy of the CRE under design basis accident (DBA) conditions without personnel receiving radiation exposures in excess of 5 rem total effective dose equivalent (TEDE) for the duration of the accident. The program shall include the following elements:

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

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

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

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

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

f. The provisions of SR 3.0.2 are applicable to the Frequencies for assessing CRE habitability, determining CRE unfiltered in-leakage, and measuring CRE pressure and assessing the CRE boundary as required by paragraphs c and d, respectively.

5.5 Programs and Manuals

5.5.14 Spent Fuel Pool Boral Monitoring Program

The program provides routine monitoring and actions to ensure that the condition of Boral in the spent fuel pool racks is appropriately monitored to ensure that the Boral neutron attenuation capability described in the criticality safety analysis of USAR Section 10.2.1 is maintained. The program shall include the following:

a. Periodic physical examination of representative Boral coupons or in situ storage racks at a frequency defined by observed trends or calculated projections of Boral degradation. The measurement will be performed to ensure that average thickness of the coupon (or average thickness of a representative area of the in situ storage rack) does not exceed the nominal design thickness of the coupon (or storage rack) plus the 0.055-inch dimension assumed for the analyzed blister.

b. Neutron attenuation testing of a representative Boral coupon or in situ storage rack shall be performed prior to December 31, 2015, and thereafter at a frequency of not more than 10 years, or more frequently based on observed trends or calculated projections of Boral degradation. The acceptance criterion for minimum boron areal density will be that value assumed in the criticality safety analysis (0.013 gm/cm^2).

c. Description of appropriate corrective actions for discovery of nonconforming Boral.

5.5.15 Surveillance Frequency Control Program

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

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

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

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

5.5 Programs and Manuals

5.5.16 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 MODE 1, 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 this license amendment, 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 Annual Radiological Environmental Operating Report

The Annual Radiological Environmental Operating Report covering the operation of the unit during the previous calendar year shall be submitted by May 15 of each year. The report shall include summaries, interpretations, and analyses of trends of the results of the Radiological Environmental Monitoring Program for the reporting period. The material provided shall be consistent with the objectives outlined in the Offsite Dose Calculation Manual (ODCM), and in 10 CFR 50, Appendix I, Sections IV.B.2, IV.B.3, and IV.C.

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.

5.6.2 Radiological Effluent Release Report

The Radioactive Effluent Release Report covering the operation of the unit during the previous year shall be submitted prior to May 15 of each year in accordance with 10 CFR 50.36a. The report shall include a summary of the quantities of radioactive liquid and gaseous effluents and solid waste released from the unit. The material provided shall be consistent with the objectives outlined in the ODCM and Process Control Program and in conformance with 10 CFR 50.36a and 10 CFR Part 50, Appendix I, Section IV.B.1.

5.6.3 CORE OPERATING LIMITS REPORT (COLR)

a. Core operating limits shall be established prior to each reload cycle, or prior to any remaining portion of a reload cycle, and shall be documented in the COLR for the following:

1. The APLHGR for Specification 3.2.1;

2. The MCPR and $MCPR_{99.9\%}$ for Specification 3.2.2;

3. The LHGR for Specification 3.2.3;

5.6 Reporting Requirements

5.6.3 CORE OPERATING LIMITS REPORT (COLR) (continued)

4. Control Rod Block Instrumentation Allowable Value for the Table 3.3.2.1-1 Rod Block Monitor Functions 1.a, 1.b, and 1.c and associated Applicability RTP levels;

5. Reactor Protection System Instrumentation Delta W value for Table 3.3.1.1-1, Function 2.b, APRM Simulated Thermal Power – High, Note b; and

6. The Manual Backup Stability Protection (BSP) Scram Region (Region I), the Manual BSP Controlled Entry Region (Region II), the Reactor Protection System Instrumentation Period Based Detection Algorithm OPRM Upscale trip setpoints associated with Table 3.3.1.1-1 Function 2.f.

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. NEDE-24011-P-A, "General Electric Standard Application for Reactor Fuel"

2. NEDO-31960-A, "BWR Owners' Group Long-Term Stability Solutions Licensing Methodology", with Supplement 1, dated November 1995

3. NEDO-32465-A, "Reactor Stability Detect and Suppress Solutions Licensing Basis Methodology and Reload Applications," August 1996

4. (Deleted)

5. XN-NF-81-58(P)(A) Revision 2 and Supplements 1 and 2, "RODEX2 Fuel Rod Thermal-Mechanical Response Evaluation Model," March 1984

6. EMF-85-74(P) Revision 0 Supplement 1(P)(A) and Supplement 2(P)(A), "RODEX2A (BWR) Fuel Rod Thermal-Mechanical Evaluation Model," February 1998

7. ANF-89-98(P)(A) Revision 1 and Supplement 1, "Generic Mechanical Design Criteria for BWR Fuel Designs," May 1995

5.6 Reporting Requirements

5.6.3 CORE OPERATING LIMITS REPORT (COLR) (continued)

8. XN-NF-80-19(P)(A) Volume 1 and Supplements 1 and 2, “Exxon Nuclear Methodology for Boiling Water Reactors - Neutronic Methods for Design and Analysis,” March 1983

9. XN-NF-80-19(P)(A) Volume 4 Revision 1, “Exxon Nuclear Methodology for Boiling Water Reactors: Application of the ENC Methodology to BWR Reloads,” June 1986

10. EMF-2158(P)(A) Revision 0, “Siemens Power Corporation Methodology for Boiling Water Reactors: Evaluation and Validation of CASMO-4/MICROBURN-B2,” October 1999

11. XN-NF-80-19(P)(A) Volume 3 Revision 2, “Exxon Nuclear Methodology for Boiling Water Reactors, THERMEX: Thermal Limits Methodology Summary Description,” January 1987

12. ANP-10333P-A, Revision 0, AURORA-B: An Evaluation Model for Boiling Water Reactors; Application to Control Rod Drop Accident (CRDA), Framatome Inc., March 2018

13. ANP-10300P-A, Revision 1, AURORA-B: An Evaluation Model for Boiling Water Reactors; Application to Transient and Accident Scenarios, Framatome Inc., January 2018

14. EMF-2209(P)(A) Revision 3, “SPCB Critical Power Correlation,” September 2009

15. EMF-2245(P)(A) Revision 0, “Application of Siemens Power Corporation's Critical Power Correlations to Co-Resident Fuel,” August 2000

16. EMF-2361(P)(A) Revision 0, “EXEM BWR-2000 ECCS Evaluation Model,” May 2001

17. EMF-2292(P)(A) Revision 0, “ATRIUM™-10: Appendix K Spray Heat Transfer Coefficients,” September 2000

18. EMF-CC-074(P)(A) Volume 4 Revision 0, “BWR Stability Analysis: Assessment of STAIF with Input from MICROBURN-B2,” August 2000

19. BAW-10247P-A Revision 0, “Realistic Thermal-Mechanical Fuel Rod Methodology for Boiling Water Reactors,” February 2008

20. ANP-10298P-A Revision 1, “ACE/ATRIUM 10XM Critical Power Correlation,” March 2014

5.6 Reporting Requirements

5.6.3 CORE OPERATING LIMITS REPORT (COLR) (continued)

21. ANP-10307P-A Revision 0, “AREVA MCPR Safety Limit Methodology for Boiling Water Reactors,” AREVA NP, Inc., June 2011

22. BAW-10255(P)(A) Revision 2, “Cycle-Specific DIVOM Methodology Using the RAMONA5-FA Code,” AREVA NP Inc., May 2008

23. ANP-10344P-A, Revision 0, “Framatome Best-estimate Enhanced Option III Methodology,” Framatome Inc., March 2021

24. ANP-3857P Revision 2, “Design Limits for Framatome Critical Power Correlations,” Framatome, Inc., July 2020

25. BAW-10247P-A, Supplement 2P-A, Revision 0, “Realistic Thermal-Mechanical Fuel Rod Methodology for Boiling Water Reactors Supplement 2: Mechanical Methods,” Framatome Inc., August 2018

26. ANP-10340P-A, Revision 0, “Incorporation of Chromia-Doped Fuel Properties in AREVA Approved Methods,” Framatome Inc., May 2018

27. ANP-10335P-A, Revision 0, “ACE/ATRIUM 11 Critical Power Correlation,” Framatome Inc., May 2018

28. ANP-10332P-A, Revision 0, “AURORA-B: An Evaluation Model for Boiling Water Reactors; Application to Loss of Coolant Accident Scenarios,” Framatome Inc., June 2019

The COLR will contain the complete identification for each of the Technical Specification referenced topical reports used to prepare the COLR (i.e., report number, title, revision, date, and any supplements).

c. The core operating limits shall be determined such that all applicable limits (e.g., fuel thermal mechanical limits, core thermal hydraulic limits, Emergency Core Cooling 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 Reporting Requirements

5.6.4 Post Accident Monitoring Report

When a report is required by Condition B or F of LCO 3.3.3.1, "Post Accident Monitoring (PAM) Instrumentation," a report shall be submitted within the following 14 days. The report shall outline the preplanned alternate method of monitoring, the cause of the inoperability, and the plans and schedule for restoring the instrumentation channels of the Function to OPERABLE status.

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

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

   1. Limiting Conditions for Operation Section 3.4.9, “RCS Pressure and Temperature (P/T) Limits”

   2. Surveillance Requirements Section 3.4.9, “RCS Pressure and Temperature (P/T) Limits”

b. The analytical methods used to determine the RCS pressure and temperature limits shall be those previously reviewed and approved by the NRC, specifically those described in the following documents:

   1. SIR-05-044-A, “Pressure-Temperature Limits Report Methodology for Boiling Water Reactors,” Revision 1, dated August 2013.

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

5.0 ADMINISTRATIVE CONTROLS

5.7 High Radiation Area

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

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

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

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

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

d. Each individual or group entering such an area shall possess one of the following:

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

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

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

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

5.7 High Radiation Area

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

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

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

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

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

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

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

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

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

5.7 High Radiation Area

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

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

d. Each individual or group entering such an area shall possess one of the following:

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

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

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

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

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

4. In those cases where Specifications 5.7.2.d.2 and 5.7.2.d.3, above, are impractical or determined to be inconsistent with the "As Low As is Reasonably Achievable" principle, a radiation monitoring device that continuously displays radiation dose rates in the area.

5.7 High Radiation Area

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

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

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

APPENDIX B

TO

FACILITY OPERATING LICENSE DPR-22

MONTICELLO NUCLEAR GENERATING PLANT UNIT 1

NORTHERN STATES POWER COMPANY

DOCKET NO. 50-263

App. "B" Deleted per Amdt. 15 12-17-82

Copy on fiche

Date:

APPENDIX C

ADDITIONAL CONDITIONS

RENEWED FACILITY OPERATING LICENSE NO. DPR-22

Northern States Power Company shall comply with the following conditions on the schedules noted below:

Amendment Number	Additional Condition	Implementation Date
98	The emergency operating procedures (EOPs) shall be changed to require manual isolation of torus and drywell sprays prior to the point where primary containment pressure would not provide adequate net positive suction head (NPSH) for the emergency core cooling system (ECCS) pumps, change the caution statement regarding NPSH in the Primary Containment Pressure EOP to include cores spray pumps, and add a caution statement regarding NPSH considerations for pressure control while venting to control primary containment pressure.	Prior to starting up from the current maintenance outage, or August 1, 1997, whichever is later.
98	Finalize the additional containment analysis and associated NPSH evaluation which extends the existing long-term cause evaluation to a time when the required containment overpressure returns to atmospheric conditions. Changes to the requested long-term containment overpressure, if any, shall be promptly reported to the NRC prior to starting up the unit from the current maintenance outage.	Prior to starting up from the current maintenance outage or August 1, 1997, whichever is later.
98	Submit the results of the additional containment analysis and associate NPSH evaluation discussed above.	Within 90 days from the date of the plant startup from the current maintenance outage or November 1, 1997, whichever is later.

Amendment Number	Additional Condition	Implementation Date
98	Update Section 5.2 of the Updated Safety Analysis Report by incorporating Figure E.2 of the NSP submittal dated July 16, 1997.	Within 90 days from the date of plant startup from the current maintenance outage, or November 1, 1997, whichever is later.
98	Process a 10 CFR 50.59 evaluation to change the EOP definition of adequate core cooling to 2/3 core height. The corresponding EOP changes and the required operator training shall also be completed. Final implementations shall be completed when all the 10 CFR 50.59 evaluation requirements are satisfied.	Within 180 days from the date of plant startup from the current maintenance outage, or February 1, 1998, whichever is later.
101	Conduct an independent evaluation of the testing methodology and the testing configuration of the EFT [emergency filtration testing] system by HEPA and charcoal filter testing experts. This evaluation shall include review of the exceptions to the ASME N510-1989 testing standard listed in Exhibit F of NSP's June 19, 1998, letter. The evaluation results shall be reported to the NRC.	Within 9 months of the date of issuance of Amendment No. 101.
101	Initiate appropriate modifications to the EFT system to comply with the ASME N510-1989 testing standard or obtain NRC approval for continued use of the exceptions.	Within 24 months of the date of issuance of Amendment No. 101.
102	All affected environmental qualification files, including service life and maintenance intervals if necessary, shall be revised to reflect the new environmental profile changes associated with power uprate.	Prior to implementation of Amendment No. 102 (prior to exceeding 1670 MWt).
102	All affected process computer and SPDS data points shall be changed to reflect uprate operating conditions.	Prior to implementation of Amendment No. 102 (prior to exceeding 1670 MWt).

Amendment Number	Additional Condition	Implementation Date
102	All affected process computer and SPDS data points shall be changed to reflect uprate operating conditions.	Prior to implementation of Amendment No. 102 (prior to exceeding 1670 MWt).
102	Control room simulator changes shall be completed in accordance with ANSI/ANS 3.5-1985 Section 5.4.1, Simulator Performance Testing, and Monticello simulator configuration control procedures.	Prior to implementation of Amendment No. 102 (prior to exceeding 1670 MWt).
102	Classroom and simulator training on new knowledge and abilities associated with the power uprate shall be provided in accordance with Monticello Training Center procedures.	Prior to implementation of Amendment No. 102 (prior to exceeding 1670 MWt).
102	NSPM shall monitor plant operational parameters for uprate impacts on the PRA models.	During and after the power uprate ascension test program.
102	Control room simulator changes shall be verified against actual plant startup data.	Within 3 months of completion of the power uprate ascension test program.
102	The applicable training programs and the simulator shall be modified, or appropriate compensatory actions shall be taken, in accordance with the Monticello Training Center procedures toi reflect issues and discrepancies identified during startup testing.	Within 6 months of completion of the power uprate ascension test program.
102	The MNGP USAR shall be updated to reflect the changes associated with power uprate operation. This update shall not include credit for suppression pool scrubbing in the MSIV leakage pathway in the revised LOCA analysis.	Within 9 months of completion of the power uprate ascension test program.

Amendment Number	Additional Condition	Implementation Date
102	NSP* shall evaluate whether MO-2034 and MO-4229 are capable of allowing a subsequent operation after the required isolation safety functions are completed. This evaluation may include an examination of assumptions and methodologies, additional administrative controls, and modifications. The evaluation shall be completed in order to institute the corrective actions, if any, by the end of the next scheduled refueling outage.	By the end of the next scheduled refueling outage from the date of Amendment No. 102.
102	NSP* shall evaluate the capacity margins of MO-2398 and MO-2034. This evaluation may include an examination of assumptions and methodologies, additional administrative controls, and modifications. The evaluation shall be completed in order to institute the corrective actions.	By the end of the next scheduled refueling outage from the date of Amendment No. 102.

* Reference to NSP is maintained for historical purposes.