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

ENTERGY OPERATIONS, INC.

SYSTEM ENERGY RESOURCES, INC.

COOPERATIVE ENERGY, A MISSISSIPPI ELECTRIC COOPERATIVE

ENTERGY MISSISSIPPI, LLC

DOCKET NO. 50-416

GRAND GULF NUCLEAR STATION, UNIT 1

RENEWED FACILITY OPERATING LICENSE

Renewed License No. NPF-29

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

   A. The application for renewed license filed by Mississippi Power & Light Company (MP&L) (now renamed Entergy Mississippi, LLC), for itself and Middle South Energy, Inc., (now renamed System Energy Resources, Inc. (SERI), and South Mississippi Electric Power Association (SMEPA), (now renamed Cooperative Energy, A Mississippi electric cooperative (Cooperative Energy)), as amended, (hereinafter referred to as the licensees) complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's 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 Grand Gulf Nuclear Station, Unit 1 (the facility), has been substantially completed in conformity with Construction Permit No. CPPR-118 and the application, as amended, the provisions of the Act, and the regulations of the Commission;

   C. The facility will operate in conformity with the application, as amended, the provisions of the Act, and the regulations of the Commission (except as exempted from compliance in Section 2.D. below);

   D. There is reasonable assurance: (i) that the activities authorized by this 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 (except as exempted from compliance in Section 2.D. below);

E. Entergy Operations, Inc. (EOI), is technically qualified to engage in the activities authorized by this renewed operating license in accordance with the Commission's regulations set forth in 10 CFR Chapter I;

F. The licensees have satisfied the applicable provisions of 10 CFR Part 140, "Financial Protection Requirements and Indemnity Agreements," of the Commission's regulations;

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

H. After weighing the environmental, economic, technical, and other benefits of the facility against environmental and other costs and considering available alternatives, the issuance of Renewed Facility Operating License No. NPF-29, subject to the conditions for protection of the environment set forth in the Environmental Protection Plan attached as Appendix B, is in accordance with 10 CFR Part 51 of the Commission's regulations and all applicable requirements have been satisfied;

I. The receipt, possession, and use of source, by-product and special nuclear material as authorized by this renewed license will be in accordance with the Commission's regulations in 10 CFR Parts 30, 40, and 70; and

J. Actions have been identified and have been or will be taken with respect to (1) managing the effects of aging during the period of extended operation on the functionality of structures and components that have been identified to require review under 10 CFR 54.21(a)(1); and (2) time-limited aging analyses that have been identified to require review under 10 CFR 54.21(c), such that there is reasonable assurance that the activities authorized by this renewed license will continue to be conducted in accordance with the current licensing basis, as defined in 10 CFR 54.3, for 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.

2. Based on the foregoing findings regarding this facility and pursuant to Commission Order CLI-84-19, dated October 25, 1984, License NPF-13, as amended, is superseded by this Renewed Facility Operating License NPF-29 which is hereby issued to Entergy Operations, Inc., Entergy Mississippi, LLC, System Energy Resources, Inc., and Cooperative Energy to read as follows:

A. This renewed license applies to the Grand Gulf Nuclear Station (GGNS), Unit 1, a boiling water nuclear reactor and associated equipment (the facility), owned by System Energy Resources, Inc., and Cooperative Energy and operated by Entergy Operations, Inc. The facility is located in Claiborne County, Mississippi, and is described in the licensees' "Final Safety Analysis Report," as supplemented and amended, and in the licensees' Environmental Report, as supplemented and amended.

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

(1) Entergy Operations, Inc. (EOI) pursuant to Section 103 of the Act and 10 CFR Part 50, to possess, use, and operate the facility at the designated location in Claiborne County, Mississippi, in accordance with the procedures and limitations set forth in this renewed license;

(2) System Energy Resources, Inc., and Cooperative Energy to possess, but not operate, the facility at the designated location in Claiborne County, Mississippi, in accordance with the procedures and limitations set forth in this renewed license;

(3) EOI, pursuant to the Act and 10 CFR Part 70, to receive, possess and use at any time at the facility site and as designated solely for the facility special nuclear material as reactor fuel, in accordance with the limitations for storage and amounts required for reactor operation, as described in the Final Safety Analysis Report, as supplemented and amended;

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

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

(6) EOI, pursuant to the Act and 10 CFR Parts 30, 40, and 70, to possess, but not separate, such byproduct and special nuclear materials as may be produced by the operation of the facility.

(7) (a) SERI is authorized to transfer up to 15 percent of its 90.0 percent ownership share in Grand Gulf Nuclear Station, Unit 1 (GGNS Unit 1), to certain equity investors identified in the submissions of October 31, 1988 and November 11, 1988, and at the same time to lease back from such purchasers such interest sold in the facility. The term of the lease is for approximately 26 years subject to a right of renewal. Such sale and lease back transactions are subject to the condition that lessors and anyone else who may acquire an interest under these transactions are prohibited from exercising directly or indirectly any control over (i) GGNS Unit 1, (ii) power or energy produced by GGNS Unit 1, or (iii) the licensees of GGNS Unit 1. Further, any rights acquired under this authorization may be exercised only in compliance with and subject to the requirements and restrictions of this renewed operating license, the Atomic Energy Act of 1954, as amended, and the Commission's regulations. For purposes of this condition, the limitations of 10 CFR 50.81, as now in effect and as they may be subsequently

amended, are fully applicable to the lessors and any successors in interest to those lessors, as long as the renewed license of GGNS Unit 1 remains in effect.

(b) SERI is required to notify the NRC in writing prior to any change in (i) the terms or conditions of any new or existing sale or lease agreements executed as part of the above authorized financial transactions, (ii) the GGNS Unit 1 operating agreement, (iii) the existing property insurance coverage for GGNS Unit 1 that would materially alter the representations and conditions set forth in the Staff's Safety Evaluation Report dated December 19, 1988 attached to Amendment No. 54. In addition, SERI is required to notify the NRC of any action by a lessor or other successor in interest to SERI that may have an effect on the operation of the facility.

C. The renewed license shall be deemed to contain and is subject to the conditions specified in the Commission's regulations set forth 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

Entergy Operations, Inc. is authorized to operate the facility at reactor core power levels not in excess of 4408 megawatts thermal (100 percent power) in accordance with the conditions specified herein.

(2) Technical Specifications

The Technical Specifications contained in Appendix A and the Environmental Protection Plan contained in Appendix B, as revised through Amendment No. 232 are hereby incorporated into this renewed license. Entergy Operations, Inc. shall operate the facility in accordance with the Technical Specifications and the Environmental Protection Plan.

During Cycle 19, GGNS will conduct monitoring of the Oscillation Power Range Monitor (OPRM). During this time, the OPRM Upscale function (Function 2.f of Technical Specification Table 3.3.1.1-1) will be disabled and operated in an "indicate only" mode and technical specification requirements will not apply to this function. During such time, Backup Stability Protection measures will be implemented via GGNS procedures to provide an alternate method to detect and suppress reactor core thermal hydraulic instability oscillations. Once monitoring has been successfully completed, the OPRM Upscale function will be enabled and technical specification requirements will be applied to the function; no further operating with this function in an "indicate only" mode will be conducted.

(3) Antitrust Conditions

(a) Entergy Mississippi, LLC and SERI shall comply with the antitrust conditions delineated in Appendix C. SERI is authorized to transfer its rights to possess, to use and to operate the facility to EOI, provided however, that until further authorization of the Commission, Entergy Mississippi, LLC and SERI shall continue to be responsible for compliance with the obligations imposed on the licensees in these antitrust conditions, and provided further that EOI accepts the right to possess, use and operate the facility and SERI accepts the right to possess the facility subject to the outcome of the pending separate antitrust review of the antitrust considerations related to the application dated September 2, 1986. SERI is authorized to transfer its rights to operate the facility to EOI.

(b) Entergy Mississippi, LLC and SERI are responsible and accountable for the actions of their respective agents to the extent said agent's actions contravene the antitrust conditions in Appendix C.

(4) Independent Verification of Staff Performance and Other Plant Activities (Section 13.4, SER, SSER #2)

(a) MP&L[1] shall establish a subcommittee of the Corporate Safety Review Committee to review and evaluate the:

1. Status and readiness of the plant and systems needed to support intended modes of operation and/or testing;

2. Readiness of personnel to conduct intended operation and testing;

3. Morale and attitudes of plant personnel that have a bearing on safe plant operation;

4. Past performance in plant operations and adherence to procedures and administrative controls;

5. Changes in current organization with regard to experience and qualifications of plant management and supervisory personnel since the last evaluation;

6. Results and effectiveness of the Plant Safety Review Committee (PSRC),

[1] The original license authorized Mississippi Power & Light Company (MP&L) to operate the facility. Amendment 27 authorized SERI to operate the facility. Amendment 125 resulted in a name change for Mississippi Power & Light Company (MP&L) to Entergy Mississippi, Inc., which was subsequently changed to Entergy Mississippi, LLC.

7. Status of plant as compared to other BWR startups based on the subcommittee's knowledge and experience.

Reviews shall be conducted prior to exceeding 50 percent of full power and within 30 days following completion of the 100 hour warranty run. The subcommittee shall be composed of a minimum of three professionals not employees of MP&L, with experience which will be responsive to the concerns presented above. In conducting these evaluations, the subcommittee shall conduct interviews of representatives of all levels of plant staff management. The subcommittee shall report directly to the Chairman of the Corporate Safety Review Committee and, in turn, MP&L shall submit the report of these reviews to NRC.

(b) The Plant Safety Review Committee shall review all Unit 1 Preoperational Testing and System Demonstration activities performed concurrently with the Unit 1 Startup Test Program to assure that the activity will not affect the safe performance of the portion of the Unit 1 Startup Program being performed. The review shall address, as a minimum, system interaction, span of control, staffing, procedures, security and health physics, with respect to performance of the activities concurrent with the portion of the Unit 1 Startup Program being performed.

(5) Deferred Preoperational Deficiencies

MP&L shall satisfactorily resolve those deficiencies which were deferred from the preoperational testing program on a schedule that shall assure that the capability of a system required to be operable by Technical Specification is not degraded.

(6) Soil Structure Interaction (Section 3.7.1, SER, SSER #2)

Prior to startup following the first refueling outage, MP&L shall complete structural modifications, if required, as a result of the NRC staff's completion of its review of MP&L* responses.

(7) Seismic Instrumentation (Section 3.7.4, SER, SSER #2)

Prior to startup following the first refueling outage, the installation of triaxial strong motion accelerometers on reactor supports shall be completed.

(8) Masonry Walls (Section 3.8.3, SER, SSER #2)

Prior to startup following the first refueling outage, MP&L shall complete structural modifications, if required, as a result of the NRC staff's completion of its review of the MP&L response to IE Bulletin 80-11.

(9) Dynamic Testing (Section 3.9.2, SER, SSER #2, SSER #4, SSER #5)

MP&L shall conduct vibrational measurement and inspection programs during preoperational and initial startup testing in accordance with the guidelines of Regulatory Guide 1.20, "Comprehensive Vibration Assessment Program for Reactor Internals During Preoperational and Initial Startup Testing," for prototype reactors. An evaluation report demonstrating satisfactory results shall be provided to the NRC for review and approval no later than 6 months after completion of the startup test program.

(10) Dynamic Qualification (3.10, SER, SSER #1, SSER #2, SSER #4, SSER #5)

(a) Prior to startup following the first refueling outage, MP&L shall complete any modifications or replacement of equipment found necessary as a result of the fatigue evaluation. In the interim, MP&L shall document the occurrence of every safety relief valve actuation into the suppression pool; the associated cumulative damage factors shall be calculated for typical representative equipment and kept up-to-date; and EOI shall report to NRC any malfunction of equipment that occurs due to any safety relief valve discharge.

(b) MP&L shall perform an in-situ test of the High Pressure Core Spray (HPCS) service water pump and evaluate the effects of flow induced vibration on the HPCS service water pump. This evaluation shall be provided to the NRC for review and approval. Prior to startup following the first refueling outage, MP&L shall complete all modifications as a result of the NRC staff's review of the test results and evaluation.

(c) Prior to actual use in fuel handling operations, MP&L shall qualify the fuel-handling and auxiliary platform, in-vessel rack, and storage container for defective fuel.

(11) Environmental Qualification (Section 3.11, SER; SSER #1; Appendix H, SSER #2; SSER #5)

Prior to March 31, 1985, MP&L shall environmentally qualify all electrical equipment as required by 10 CFR 50.49.

(12) Surveillance of Control Blade (Section 4.2.3.14, SER)

Within 30 days after plant startup following the first refueling outage, System Energy Resources, LLC shall comply with items 1, 2 and 3 of Bulletin No. 79-26 and submit a written response to NRC on item 3.

(13) Core Stability Analysis and Prohibition of Natural Circulation (Section 4.4.1, SER)

(a) Prior to startup following the first refueling outage, MP&L shall submit a new core stability analysis for operation beyond cycle 1.

(b) Natural circulation shall be prohibited as an operating mode.

(14) Loose Parts Monitoring (Section 4.4.1, SER)

Prior to startup following the first refueling outage, MP&L shall submit an evaluation of the Loose Parts Monitoring System to address conformance to R.G. 1.133, Rev. 1, dated May 1981.

(15) Scram Discharge Volume (Sections 4.6, SER)

Prior to startup following the first refueling outage, MP&L shall incorporate the following additional modifications into the scram discharge volume system:

(a) Redundant vent and drain valves, and

(b) Diverse and redundant scram instrumentation for each instrumented volume, including both delta pressure sensors and float sensors.

(16) Containment Purge (Section 6.2.4, SSER #5)

(Deleted)

(17) Containment Pressure Boundary (Section 6.2.8, SER)

Prior to startup following the first refueling outage, MP&L shall replace the feedwater check valve disc with a disc made from a suitable material.

(18) Pressure Interlocks on Valves Interfacing at Low and High Pressure (Section 6.3.4, SSER #2)

Prior to startup following the first refueling outage, MP&L shall implement isolation protection against overpressurization of the low pressure emergency core cooling systems (RHR/LPCI and LPCS) at the high and low pressure interface containing a check valve and a closed motor-operated valve.

(19) IE Information Notice 79-22, Qualification of Control System (Section 7.8.C, SER, SSER #2)

Prior to startup following the first refueling outage, MP&L shall complete any design changes found necessary as a result of this review.

(20) Standby Service Water System (Section 9.2.1 SER, SSER #2)

(Deleted)

(21) Spent Fuel Pool Ventilation System (Section 9.4.2, SER, SSER #2)

If spent irradiated fuel is placed in the spent fuel pool prior to installation and operability of the safety related backup fuel pool cooling pump room coolers, the plant shall be placed in shutdown condition and remain shut down with the RHR System dedicated to the fuel pool cooling mode.

(22) Remote Shutdown Panel (Section 9.5.4.1, SER, SSER #2)

Prior to startup following the first refueling outage, MP&L shall install electrical isolation switches between the control room and the Division 1 remote shutdown panel.

(23) Fire Protection Program (Section 9.5.9, SER)

Replaced by Paragraph 2.C (41).

(24) Interplant Communication Systems (Section 9.6.1.2, SER, SSER #2, SSER #4, SSER #5)

Tests of the communication systems used to mitigate the consequences of an event and attain a safe plant shutdown shall be completed during preoperational and startup tests. An evaluation of the test results shall be provided for NRC review within 90 days after test completion. Any system modifications found necessary as a result of NRC review shall be completed prior to startup following the first refueling outage.

(25) Reliability of Diesel-Generators (Sections 8.3.1, 9.6.3 through 9.6.7, SER, SSER #2, SSER #4, SSER #6)

(a) Prior to startup following the first refueling outage, a heavy duty turbocharger gear drive assembly shall be installed on all EMD diesel-generators

(26) Turbine Disc Integrity (Section 10.2.1, SER, SSER #1)

(DELETED)

(27) Circulating Water System (Section 10.4.5, SER)

EOI shall not fill the Unit 2 circulating water system (including the natural draft cooling tower basin) until Unit 1 flooding concerns related to this system are resolved to the satisfaction of the NRC staff.

(28) Advisor to the Vice President

MP&L shall have on its nuclear operations staff, one or more corporate management officials or advisors (who may be either permanent employees or contracted consultants) who have substantial commercial nuclear power plant operating management experience and who will advise on all decisions affecting safe operation of the plant. This requirement shall be in effect until the plant has accumulated at least 6 months at power levels above 90 percent of full power.

(29) Operating Shift Advisor (Section 13.1.2, SER)

At least one individual on each operating shift shall have substantive previous BWR operating experience, including startup and shutdown of a BWR and under conditions that one might expect to encounter during the initial startup and power escalation at Grand Gulf plant. This individual is not required to be licensed on Grand Gulf Unit 1 and need not be a MP&L employee, but as a minimum shall be retained on a contract basis to act as a consultant or advisor to the GGNS shift crew. Such an experienced person shall be assigned to each operating shift until the plant achieves and demonstrates full power operation.

(30) Training Instructors (Section 13.2, SER)

[DELETED]

(31) Initial Test Program (Section 14, SER)

MP&L shall conduct the post-fuel-loading initial test program (set forth in Section 14 of the Final Safety Analysis Report, as amended) without making any major modifications of this program unless such modifications have been identified and have received prior NRC approval. Major modifications are defined as:

(a) Elimination of any test identified in Section 14 of the Final Safety Analysis Report, as amended, as being essential;

(b) Modification of test objectives, methods or acceptance criteria for any test identified in Section 14 of the Final Safety Analysis Report, as amended, as being essential;

(c) Performance of any test at a power level different from that described in the program; and

(d) Failure to complete any tests included in the described program (planned or scheduled for power levels up to the authorized power level).

(32) Deleted

(33) NUREG-0737 Conditions (Section 22.2)

The following conditions shall be completed to the satisfaction of the NRC. These conditions reference the appropriate items in Section 22.2, "TMI Action Plan Requirements for Applicants for Operating Licenses", in the Safety Evaluation Report and Supplements 1, 2, 3, 4, and 5 to NUREG-0831.

(a) Control Room Design Review (I.D.1, SER; Appendix E, SSER #2, SSER #4, SSER #5)

Prior to startup following the first refueling outage, SERI shall demonstrate the ability to maintain an "effective temperature" condition of 85°F or less in the remote shutdown panel (RSP) room for at least 8 hours with an ambient outdoor temperature of at least 95°F.

(b) Training During Low-Power Testing (I.G.1, SER)

Prior to restart following the first refueling outage, MP&L shall complete the additional training and testing related to TMI Action Plan I.G.1 as described in Section 2.3 of the MP&L submittal dated April 3, 1986.

(c) Deleted

(d) Hydrogen Control (Section II.B.7, SER, SSER #2, SSER #3, SSER #4, SSER #5)

1. During the first cycle of operation, MP&L shall maintain a suitable program of analysis and testing of the installed hydrogen ignition system. EOI shall submit to the NRC quarterly reports on the status of their research programs.

(i) EOI shall amend its research program on hydrogen control measures to include, but not be limited to, the following items:

1. Perform containment sensitivity analysis to determine the adequacy of the hydrogen control system for a spectrum of degraded core accidents including the determination of accident sequences for which equipment survivability is assured;

2. Research to investigate the conditions leading to and consequences resulting from hydrogen combustion in the wetwell and containment. Testing shall be performed in a larger scale

facility such as the one-quarter scale test facility proposed by MP&L;

3. Research to investigate the conditions leading to and consequences resulting from hydrogen combustion in the drywell;

4. Confirmatory tests on thermal response of selected equipment exposed to hydrogen burns.

(ii) EOI shall perform feasibility studies to examine the options for enhancing equipment survivability for essential equipment located in the vicinity of the suppression pool or other regions subjected to severe environments. The options to be studied in such feasibility studies shall include thermal shielding, additional cooling, and relocation of essential equipment.

2. (i) EOI shall complete its research program on hydrogen control to show that the hydrogen control system will perform its intended function in a manner that provides adequate safety margins. This research program shall be completed on a schedule which reflects the requirements of 10 CFR 50.44.

(ii) If it is determined that plant modifications are required to obtain NRC approval that an adequate hydrogen control system for Grand Gulf is installed, then these modifications shall be completed on a schedule which is approved by the NRC.

(e) Instrumentation for Detection of Inadequate Core Cooling (II.F.2, SER, SSER #2)

MP&L shall submit a report addressing the analysis performed by the BWR Owners' Group regarding additional instrumentation relative to inadequate core cooling and shall implement the staff's requirements after the completion of the staff's review of this report. These modifications shall be completed on a schedule acceptable to the staff.

(f) Modification of Automatic Depressurization System Logic - Feasibility for Increased Diversity for Some Event Sequences (II.K.3.18, SER, SSER, #2, SSER #4)

Prior to startup following the first refueling outage, MP&L shall provide, for NRC review, justification for the timer delay settings, revisions to the emergency procedures covering the use of the

manual inhibit switch, proposed Technical Specification surveillance procedures for the timer and switch, and shall implement alternative logic modification (Option 4) of the automatic depressurization system.

(g) Qualification of ADS Accumulators (II.K.3.28, SSER #5)

Prior to startup following the first refueling outage, MP&L shall perform an integrated leak test on the ADS air system, perform sampling to establish instrument air quality, provide instrumentation to monitor ADS air receiver pressure, establish suitable surveillance procedures for the ADS air system and provide proposed changes to the Technical Specifications associated with the surveillance procedures.

(34) SRV Test Program (Section A-39, Appendix C, SER, SSER #1, SSER #2)

During Cycle 1, an inplant SRV test program shall be carried out to confirm that the containment building response to SRV loads is acceptable. Results of these tests shall be provided to NRC no later than four months after test completion.

(35) Post-LOCA Vacuum Breaker Position Indicators

Prior to startup following the first refueling outage, MP&L shall install position indicators with redundant indication and alarm in the control room for the check valves associated with the drywell post-LOCA vacuum breakers.

(36) Emergency Response Facilities (Generic Letter 82-33, NUREG-0737 Supplement 1, SSER #5)

EOI shall complete the emergency response capabilities, as required by Attachment 1.

(37) Evaluation of Licensee's Technical Specification Problem Sheets (Section 16.3, SSER #6)

Prior to startup following the first refueling outage, MP&L shall implement the following modifications:

(a) Include an emergency override of the test mode of the Division 3 HPCS diesel generator to permit response to emergency signals and to return the control of the diesel generator to the emergency standby mode. (Item No. 333, T.S. 4.8.1.1.2.d.12.b)

(b) Provide the second level undervoltage protection for Division 3 power supply (Item No. 373, T.S. Table 3.3.3-2).

(c) Incorporate a bypass or coincident logic in all Division 1 and 2 diesel generator protective trips, except for trips on diesel engine overspeed and generator differential current (Item No. 808, T.S. 4.8.1.1.2.d.16.d).

(38) Control Room Leak Rate (Section 6.2.6, SSER #6)

EOI shall operate Grand Gulf Unit 1 during Modes 1 through 3 with an allowable control room leak rate not to exceed 2000 cfm (not including ingress/egress leakage of 10 cfm).

(39) Temporary Secondary Containment Boundary Change

For a period of time not to exceed 144 cumulative hours, the provisions of Specification 3/4.6.6.1 may be applied to the rail-road bay area including the exterior railroad bay door on the auxiliary building in lieu of the present secondary containment boundaries that isolate the railroad bay area. While the railroad bay area is being used as a secondary containment boundary, the railroad bay door may be opened for the purpose of moving trucks in and out provided the four hour limitation in ACTION a of Technical Specification 3.6.6.1 is reduced to one hour. A fire watch shall be established in the railroad bay area while the door is being used as a secondary containment boundary.

(40) Temporary Ultimate Heat Sink Change

With the plant in OPERATIONAL condition 4, SSW cooling tower basin A may be considered OPERABLE in accordance with Technical Specification 3.7.1.3 with less than a 30 day supply of water (without makeup) during the time that SSW basin B is drained to replace its associated service water pump provided:

(a) SSW basin A water level is maintained greater than or equal to 87".

(b) At least two sources of water (other than normal makeup with one source not dependent on offsite power) are available for makeup to SSW basin A.

This renewed license condition may remain in effect until plant startup following the outage scheduled for fall 1985.

(41) Fire Protection Program

Entergy Operations, Inc. shall implement and maintain in effect all provisions of the approved Fire Protection Program as described in Revision 5 to the Updated Final Safety Analysis Report, and as approved in the Safety Evaluations dated August 23, 1991, and September 29, 2006, subject to the following provisions:

The licensee 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.

(42) Mitigation Strategy Renewed License Condition

The Licensee shall develop and maintain strategies for addressing large fires and explosions and that include the following key areas:

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

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

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

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

(43) Control Room Habitability

Upon implementation of Amendment No. 178 adopting TSTF-448, Revision 3, the determination of Control Room Envelope (CRE) unfiltered

air inleakage as required by SR 3.7.3.4, in accordance with TS5.5.13.c.(i), and the assessment of CRE habitability as required by Specification 5.5.13.c.(ii), shall be considered met. Following implementation:

(a) The first performance of SR 3.7.3.4, in accordance with Specification 5.5.13.c.(i), shall be within the specified Frequency of 6 years, plus the 18-month allowance of SR 3.0.2, as measured from March 2005, the date of the most recent successful tracer gas test, as stated in the June 30, 2005 letter response to Generic Letter 2003-01, or within the next 18months 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, Specification 5.5.13.c. (ii), shall be within 3 years, plus the 9-month allowance of SR 3.0.2, as measured from March 2005, the date of the most recent successful tracer gas test, as stated in the June 30, 2005 letter response to Generic Letter 2003-01, or within the next 9 months if the time period since the most recent successful tracer gas test is greater than 3 years.

(c) The first performance of the periodic assessment of the CRE boundary, Specification 5.5.13.d, shall be within the next 18 months, plus the 136 days allowed by SR 3.0.2, as measured from the date of issuance of this amendment.

(44) Leak rate tests associated with Surveillance Requirements (SR) 3.6.1.1.1, 3.6.1.3.5, and 3.6.1.3.9, as required by TS 5.5.12 and in accordance with 10 CFR 50, Appendix J, Option B, and SRs 3.6.5.1.1 and 3.6.5.1.2 are not required to be performed until their next scheduled performance dates. The tests will be performed at the EPU calculated peak containment pressure or within EPU drywell bypass leakage limits, as appropriate.

(45) Deleted

(46) This renewed license condition provides 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) for power ascension from the CLTP (3898 MWt) to the EPU level of 4408 MWt (or 113 percent of CLTP or 115 percent of OLTP).

(a) The following requirements are placed on operation of the facility before and during the power ascension to 3898 MWt:

1. GGNS shall provide a Power Ascension Test (PAT) Plan for the Steam Dryer testing. This plan shall include:

   (i) Criteria for comparison and evaluation of projected strain and acceleration with on-dryer instrument data.

   (ii) Acceptance limits developed for each on-dryer strain gauge and accelerometer.

   (iii) Tables of predicted dryer stresses at CLTP, strain amplitudes and PSDs at strain gauge locations, acceleration amplitudes and PSDs at accelerometer locations, and maximum stresses and locations.

   The PAT plan shall provide correlations between measured accelerations and strains and the corresponding maximum stresses. The PAT plan shall be submitted to the NRC Project Manager no later than 10 days before start-up.

2. GGNS shall monitor the main steam line (MSL) strain gages and on-dryer instrumentation at a minimum of three power levels up to 3898 MWt. Based on a comparison of projected and measured strains and accelerations, GGNS will assess whether the dryer acoustic and structural models have adequately captured the response significant to peak stress projections.

   If the measured strains and accelerations are not within the CLTP acceptance limits, the new measured data will be used to re-perform the full structural re-analysis for the purposes of generating modified EPU acceptance limits.

3. GGNS shall provide a summary of the data and evaluation of predicted and measured pressures, strains, and accelerations. This data will include the GGNS-specific bias and uncertainty data and transfer function, revised peak stress table and any revised acceptance limits. The predicted pressures shall include those using both PBLE methods (that is, Method 1 using on-dryer data, and Method 2 using MSL data). It shall be provided to the NRC Project Manager upon completion of the evaluation.

GGNS shall not increase power above 3898 MWt until the NRC PM notifies GGNS the NRC accepts the evaluation or NRC questions regarding the evaluation have been addressed. If no questions are identified within 240 hours after the NRC receives the evaluation, power ascension may continue.

(b) The following requirements are placed on operation of the facility during the initial power ascension from 3898 MWt to the approved EPU level (4408 MWt):

1. GGNS shall increase power in increments of approximately 102 MWt, hold the facility at approximately steady state conditions and collect data from available main steam line (MSL) strain gages and available on-dryer instrumentation. This data will be evaluated, including the comparison of measured dryer strains and accelerations to acceptance limits and the comparison of predicted dryer loads based on MSL strain gage data to acceptance limits. It will also be used to trend and project loads at the next test point and to EPU conditions to demonstrate margin for continued power ascension.

2. Following the data collection and evaluation at the plateaus at approximately 4102 MWt, 4306 MWt, and 4408 MWt, GGNS shall provide a summary of the data and the evaluation performed in Section b.1 above to the NRC Project Manager. GGNS shall not increase power above these power levels for up to 96 hours to allow for NRC review of the information.

3. Should the measured strains and accelerations on the dryer exceed the level 1 acceptance limits, or alternatively if the dryer instrumentation is not available and the projected load on the dryer from the MSL strain gage data exceeds the Level 1 acceptance limits, GGNS shall return the facility to a power level at which the limits are not exceeded. GGNS shall resolve the discrepancy, evaluate and document the continued structural integrity of the steam dryer, and provide that documentation to the NRC Project Manager prior to further increases in reactor power. GGNS shall not increase power for up to 96 hours to allow for NRC review of the information.

   (i) In the event that acoustic signals (in MSL strain gage signals) are identified that challenge the dryer acceptance limits during power ascension above 3898 MWt, GGNS shall evaluate dryer loads, and stresses, including the effect of ± 10% frequency shift, and re-establish the acceptance limits and

determine whether there is margin for continued power ascension.

(ii) During power ascension above 3898 MWt, if an engineering evaluation for the steam dryer is required because a Level 1 acceptance limit is exceeded, GGNS shall perform the structural analysis using the Steam Dryer Analysis Report, Appendix A methods to address frequency uncertainties up to ± 10% and assure that peak responses that fall within this uncertainty band are addressed.

4. Following the data collection and evaluation at the EPU power level, GGNS shall provide a final load definition and stress report of the steam dryer, including the results of a complete re-analysis using the GGNS-specific bias and uncertainties and transfer function. The GGNS-specific bias and uncertainties summary shall include both PBLE Method 1 and Method 2. This report shall be transmitted to the NRC within 90 days of achieving the EPU power level. Should the results of this stress analysis indicate the allowable stress in any part of the dryer is exceeded, GGNS shall reduce power to a level at which the allowable stress is met, evaluate the dryer integrity, and assess any shortcomings in the predictive analysis. The results of this evaluation, including a recommended resolution of any identified issues and a demonstration of dryer integrity at EPU conditions, shall be provided to the NRC prior to return to EPU conditions.

(c) Entergy shall implement the following actions:

1. Entergy shall revise the post-EPU monitoring and inspection program to reflect long-term monitoring of plant parameters potentially indicative of steam dryer failure; to reflect consistency of the facility's steam dryer inspection program with GE SIL 644, "BWR Steam Dryer Failure," Revision 2; and with BWRVIP-139, "Steam Dryer Inspection and Flaw Evaluation Guidelines."

(d) Entergy shall prepare the EPU PATP to include the following and provide it to the NRC project manager before increasing power above 3898 MWt:

1. Level 1 and Level 2 acceptance limits for on-dryer strain gages, on-dryer accelerometers, and for projected dryer loads from MSL strain gauge data, to be used up to 113 percent of CLTP.

2. specific hold points and their duration during EPU power ascension

3. activities to be accomplished during 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

9. verification of the completion of commitments and planned actions specified in the Entergy application and all supplements to the application in support of the EPU LAR pertaining to the steam dryer before power increase above 3898 MWt

10. identify the NRC PM as the NRC point of contact for providing PAT plan information during power ascension

11. methodology for updating limit curves

(e) The key attributes of the PAT Plan shall not be made less restrictive without prior NRC approval. Changes to other aspects of the PAT Plan may be made in accordance with the guidance of NEI 99-04, "Guidelines for Managing NRC Commitments," issued July 1999.

(f) During the first two scheduled refueling outages after reaching full EPU conditions, Entergy shall conduct a visual inspection of all accessible, susceptible locations of the steam dryer in accordance with BWRVIP-139 and GE inspection guidelines. Entergy shall report the results of the visual inspections of the steam dryer to the NRC staff within 60 days following startup.

(g) 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.

(h) This renewed license condition shall expire upon satisfaction of the requirements in paragraph (f) provided that a visual inspection of the steam dryer does not reveal any new unacceptable flaw or unacceptable flaw growth that is caused by fatigue.

(47) Commitments made as required by standard TSTF safety evaluation, as discussed in the notice of availability, will be maintained as described in UFSAR Section 16, Technical Specifications. This condition applies to the following TSTFs as approved.

TSTF-423

Changes to the commitments can be made in accordance with 10CFR50.59.

(48) Feedwater Heaters Out-of-Service (FWHOOS)

Operation with FWHOOS in the Maximum Extended Load Line Limit Analysis Plus (MELLLA+) region is prohibited.

(49) Time Critical Operator Action Commitments made as required for the MELLLA+ LAR will be converted to a Renewed License Condition as follows:

Prior to Operation in the MELLLA+ Domain, Entergy will:

Train all active operating crews to perform the following three MELLLA+ time-critical operator actions:

(a) Initiate Reactor Water Level Reduction (90 seconds following failure to scram concurrent with no reactor recirculation pumps in service and CTP> 5%).

(b) Initiate Standby Liquid Control Injection (300 seconds if CTP> 5% or before Suppression Pool Temperature reaches 110 degrees F).

(c) Initiate Residual Heat Removal Suppression Pool Cooling (660 seconds).

GGNS will validate that all active operating crews have met the time requirements for the three MELLLA+ time-critical operator actions during evaluated scenarios.

GGNS will report any MELLLA+ time-critical actions that are converted to "immediate actions" to the NRC Project Manager.

The following are one-time actions which expire after the first report:

The results of the three MELLLA+ time-critical operator actions training will be reported to the NRC Project Manager within 60 days of completion of the training.

The reported results will include the full range of response times for each time-critical action and the average times for each crew.

Any MELLLA+ time-critical operator training failures during evaluated scenarios will be reported to the NRC within 60 days of any failures with a plan for resolution.

(50) License Renewal Conditions

(a) The information in the UFSAR supplement, submitted pursuant to 10 CFR 54.21(d), as revised during the license renewal application review process, and licensee commitments as listed in Appendix A of the "Safety Evaluation Report Related to the License Renewal of Grand Gulf Nuclear Station, Unit 1," are collectively the "License Renewal UFSAR Supplement." This Supplement is henceforth part of the UFSAR, 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 this Supplement, provided the licensee evaluates such changes pursuant to the criteria set forth in 10 CFR 50.59, "Changes, Tests and Experiments," and otherwise complies with the requirements in that section.

(b) The License Renewal UFSAR Supplement, as defined in license condition 50(a) above, describes certain programs to be implemented and activities to be completed prior to the period of extended operation (PEO).

1. The licensee shall implement those new programs and enhancements to existing programs no later than 6 months prior to the PEO

2. The licensee shall complete those activiteis by the 6-month date prior to the PEO operation or the last refueling outage prior to the PEO, whichever occurs later

3. The licensee shall notify the NRC in writing within 30 days after having accomplished item (b)1 above and include the status of those activities that have been or remain to be completed in item (b)2 above.

D. The facility required exemptions from certain requirements of Appendices A and J to 10 CFR Part 50 and from certain requirements of 10 CFR Part 100. These include: (a) exemption from General Design Criterion 17 of Appendix A until startup following the first refueling outage, for (1) the emergency override of the test mode for the Division 3 diesel engine, (2) the second level undervoltage

protection for the Division 3 diesel engine, and (3) the generator ground over current trip function for the Division 1 and 2 diesel generators (Section 8.3.1 of SSER #7) and (b) exemption from the requirements of Paragraph III.D.2(b)(ii) of Appendix J for the containment airlock testing following normal door opening when containment integrity is not required (Section 6.2.6 of SSER #7). These exemptions are authorized by law and will not endanger life or property or the common defense and security and are otherwise in the public interest. In addition, by exemption dated December 20, 1986, the Commission exempted licensees from 10 CFR 100.11(a)(1), insofar as it incorporates the definition of exclusion area in 10 CFR 100.3(a), until April 30, 1987 regarding demonstration of authority to control all activities within the exclusion area (safety evaluation accompanying Amendment No. 27 to Renewed License (NPF-29). This exemption is authorized by law, and will not present an undue risk to the public health and safety, and is consistent with the common defense and security. In addition, special circumstances have been found justifying the exemption. Therefore, these exemptions are hereby granted pursuant to 10 CFR 50.12 with the granting of these exemptions, the facility will operate, to the extent authorized herein, in conformity with the application, as amended, the provisions of the Act and the rules and regulations of the Commission.

E. The licensee shall fully implement and maintain in effect all provisions of the Commission-approved physical security, training and qualification, and safeguards contingency plans including amendments made pursuant to provisions of the Miscellaneous Amendments and Search Requirements revisions to 10 CFR 73.55 (51 FR 27817 and 27822) and to the authority of 10 CFR 50.90 and 10 CFR 50.54(p). The plans, which contain Safeguards Information protected under 10 CFR 73.21, are entitled: "Physical Security, Safeguards Contingency and Training and Qualification Plan," and were submitted to the NRC on May 18, 2006.

The licensee shall fully implement and maintain in effect all provisions of the Commission-approved cyber security plan (CSP), including changes made pursuant to the authority of 10 CFR 50.90 and 10 CFR 50.54(p). The licensee's CSP was approved by License Amendment No. 186 as supplemented by a change approved by License Amendment Nos. 192, 200 and 210.

F. EOI shall report any violations of the requirements contained in Section 2, Items C. (1), C.(4) through C.(38) of this renewed license within twenty-four (24) hours. Initial notification shall be made in accordance with the provisions of 10 CFR 50.72 with written follow-up in accordance with the procedures described in 10 CFR 50.73(b), (c), and (e).

G. The licensees 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.

H. This renewed license is effective as of the date of issuance and shall expire at midnight on November 1, 2044.

FOR THE NUCLEAR REGULATORY COMMISSION

ORIGINAL SIGNED BY:

William M. Dean, Director
Office of Nuclear Reactor Regulation

Attachments:
1. Attachments 1 and 2
2. Appendix A – Technical Specifications (NUREG-0934)
3. Appendix B – Environmental Protection Plan
4. Appendix C - Antitrust Conditions

Date of Issuance: December 1, 2016

Attachment 1

EOI shall complete the following requirements on the schedule noted below:

Emergency Response Facilities (Generic Letter 82-33, NUREG-0737 Supplement 1, SSER #5

EOI shall implement the specific items below, in the manner described in MP&L letter (AECM-83/0232) dated April 15, 1983, as modified in MP&L letter (AECM-83/0486) dated August 22, 1983, no later than the following specified dates:

(a)	Safety Parameter Display System (SPDS)	
	(1) Submit a safety analysis and implementation plan to the NRC	July 1985
	(2) SPDS fully operational and operator trained	Prior to startup following first refueling outage.
(b)	Detailed Control Room Design Review (DCRDR)	
	(1) Submit a program plan to the NRC	December 1984
	(2) Submit a summary report to the NRC including a proposed schedule for implementation	July 1986
(c)	Regulatory Guide 1.97 - Application to Emergency Response Facilities	
	(1) Submit a report to the NRC describing how the requirements of Supplement 1 to NUREG-0737 have been or will be met.	February 1985
	(2) Implement (installation or upgrade) requirements of R.G. 1.97 with exception of flux monitoring and coolant level monitoring.	Prior to startup following first refueling outage.
	(3) Implement (installation or upgrade) requirements of R.G. 1.97 for coolant level monitoring.	Prior to startup following second refueling outage.
	(4) (Deleted)	
(d)	Upgrade Emergency Operating Procedures (EOP's)	
	(1) Submit a Procedures Generation Package to the NRC.	April 1985

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(2) Implement the upgraded EOP's	Prior to startup following the first refueling outage
(e) Emergency Response Facilities	
(1) Technical Support Center fully functional with exception of Regulatory Guide 1.97 implementation	Prior to startup following the first refueling outage
(2) Operational Support Center fully functional with exception of Regulatory Guide 1.97 implementation	Prior to startup following the first refueling outage
(3) Emergency Operations Facility fully functional with exception of Regulatory Guide 1.97 implementation	Prior to startup following the first refueling outage

ATTACHMENT 2
(Deleted by Amendment 114)

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TECHNICAL SPECIFICATIONS

Grand Gulf Nuclear Station
Unit 1
Docket No. 50-416

Appendix "A" to
License No. NPF-29

*Issued with Amendment No. 120 dated 2-21-95.

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1.0 USE AND APPLICATION

1.1 Definitions

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

Term	Definition
ACTIONS	ACTIONS shall be that part of a Specification that prescribes Required Actions to be taken under designated Conditions within specified Completion Times.
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.
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 the entire channel, including the required sensor, alarm, display, and trip functions, and shall include 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, and each step must be performed within the Frequency in the Surveillance Frequency Control Program for the devices included in the step, so that the entire channel is calibrated.
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.

(continued)

1.1 Definitions (continued)

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, including required alarm, interlock, display, and trip functions, and channel failure trips. The CHANNEL FUNCTIONAL TEST may be performed by means of any series of sequential, overlapping, or total channel steps, and each step must be performed within the Frequency in the Surveillance Frequency Control Program for the devices included in the step, so that the entire channel is tested.
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 5.6.5. Plant operation within these limits is addressed in individual Specifications.
DOSE EQUIVALENT I-131	DOSE EQUIVALENT I-131 shall be that concentration of I-131 (microcuries/gram) that alone would produce the same thyroid dose as the quantity and isotopic mixture of I-131, I-132, I-133, I-134, and I-135 actually present. The thyroid dose conversion factors used for this calculation shall

(continued)

1.1 Definitions

DOSE EQUIVALENT I-131 (continued)	be those listed in Federal Guidance Report (FGR) 11, "Limiting Values of Radionuclide Intake and Air Concentration and Dose Conversion Factors for Inhalation, Submersion, and Ingestion," 1989.
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 failure (e.g., seismic event, loss of normal power, single human error), 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 locked, sealed, or otherwise secured 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 is in continuous communication with the control room, is stationed at the controls, and is capable of closing the penetration flow path isolation devices 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;

1.1 Definitions

DRAIN TIME (continued)	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.
EMERGENCY CORE COOLING SYSTEM (ECCS) RESPONSE TIME	The ECCS RESPONSE TIME shall be that time interval from when the monitored parameter exceeds its ECCS initiation setpoint at the channel sensor until the ECCS equipment is capable of performing its safety function (i.e., the valves travel to their required positions, pump discharge pressures reach their required values, etc.). Times shall include diesel generator starting and sequence loading delays, where applicable. 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.
END OF CYCLE RECIRCULATION PUMP TRIP (EOC-RPT) SYSTEM RESPONSE TIME	The EOC-RPT SYSTEM RESPONSE TIME shall be that time interval from initial movement of the associated turbine stop valve or the turbine control valve to complete suppression of the electric arc between the fully open contacts of the recirculation pump circuit breaker. 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, except for the breaker arc suppression time, which is not measured but is validated to conform to the manufacturer's design value.
INSERVICE TESTING PROGRAM	The INSERVICE TESTING PROGRAM is the licensee program that fulfills the requirements of 10 CFR 50.55a(f).
ISOLATION SYSTEM RESPONSE TIME	The ISOLATION SYSTEM RESPONSE TIME shall be that time interval from when the monitored parameter exceeds its isolation initiation setpoint at the channel sensor until the isolation valves travel to their required positions. 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.
L_a	The maximum allowable primary containment leakage rate, L_a, shall be 0.682% of primary containment air weight per day at the calculated peak containment pressure (P_a).

(continued)

1.1 Definitions (continued)

LEAKAGE	LEAKAGE shall be: a. Identified LEAKAGE 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. Unidentified LEAKAGE All LEAKAGE into the drywell that is not identified LEAKAGE; c. Total LEAKAGE Sum of the identified and unidentified LEAKAGE; d. Pressure Boundary LEAKAGE 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 required logic components (i.e., all required relays and contacts, trip units, solid state logic elements, etc.) 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

(continued)

1.1 Definitions

LOGIC SYSTEM FUNCTIONAL TEST (continued)	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.
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 C 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 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 5.6.6.
RATED THERMAL POWER (RTP)	RTP shall be a total reactor core heat transfer rate to the reactor coolant of 4408 MWt.
REACTOR PROTECTION SYSTEM (RPS) RESPONSE TIME	The RPS RESPONSE TIME shall be that time interval from when the monitored parameter exceeds its RPS trip setpoint at the channel sensor until 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.

(continued)

1.1 Definitions (continued)

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.
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.

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	> 200
4	Cold Shutdown[a]	Shutdown	≤ 200
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.

(continued)

1.2 Logical Connectors

EXAMPLES (continued)

EXAMPLE 1.2-1

ACTIONS

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

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

(continued)

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.

(continued)

1.3 Completion Times

DESCRIPTION (continued)

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 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.

(continued)

1.3 Completion Times

DESCRIPTION (continued)

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 extension does 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 . . ."

(continued)

1.3 Completion Times (continued)

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.	12 hours
	AND	
	B.2 Be in MODE 4.	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.

(continued)

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.

(continued)

1.3 Completion Times

EXAMPLES

EXAMPLE 1.3-2 (continued)

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

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

(continued)

1.3 Completion Times

EXAMPLES (continued)

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.	C.1 Restore Function X subsystem to OPERABLE status.	72 hours
AND	OR	
One Function Y subsystem inoperable.	C.2 Restore Function Y subsystem to OPERABLE status.	72 hours

(continued)

1.3 Completion Times

EXAMPLES

EXAMPLE 1.3-3 (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.

(continued)

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.

(continued)

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.

(continued)

1.3 Completion Times

EXAMPLES

EXAMPLE 1.3-5 (continued)

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

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

EXAMPLE 1.3-6

ACTIONS

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

(continued)

1.3 Completion Times

EXAMPLES

EXAMPLE 1.3-6 (continued)

Entry into Condition A offers a choice between Required Action A.1 or A.2. Required Action A.1 has a "once per" Completion Time, which qualifies for the 25% extension, per SR 3.0.2, to each performance after the initial performance. 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.

(continued)

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.	12 hours
	AND	
	B.2 Be in MODE 4.	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

(continued)

1.3 Completion Times

EXAMPLES	EXAMPLE 1.3-7 (continued) 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.
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 Limiting Condition for Operation (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. Example 1.4-4 discusses these special situations.

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 specified 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

(continued)

1.4 Frequency

DESCRIPTION (continued)

criteria. SR 3.0.4 restrictions would not apply if both the following conditions are satisfied:

a. The Surveillance is not required to be performed; and

b. The Surveillance is not required to be met or, even if required to be met, is not known to be failed.

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.

(continued)

1.4 Frequency

EXAMPLES

EXAMPLE 1.4-1 (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. Failure to do so would result in a violation of SR 3.0.4.

EXAMPLE 1.4-2

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
Verify flow is within limits.	Once within 12 hours after ≥ 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 extension allowed by SR 3.0.2.

(continued)

1.4 Frequency

EXAMPLES

EXAMPLE 1.4-2 (continued)

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

EXAMPLE 1.4-3

SURVEILLANCE REQUIREMENTS

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

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

As the Note modifies the required performance of the Surveillance, it is construed to be part of the "specified Frequency." Should the 7 day interval be exceeded while operation is < 25% RTP, this Note allows 12 hours after power reaches ≥ 25% RTP to perform the Surveillance. The Surveillance is still considered to be within the "specified Frequency." Therefore, if the Surveillance were 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.

(continued)

1.4 Frequency

EXAMPLES

EXAMPLE 1.4-3 (continued)

Once the unit reaches 25% RTP, 12 hours would be allowed for completing the Surveillance. If the Surveillance were not performed within this 12 hour interval (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.

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 were not performed within the 24 hour (plus the extension allowed by SR 3.0.2) interval, 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 were 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 < 685 psig or core flow < 10% rated core flow:

THERMAL POWER shall be ≤ 21.8% RTP.

2.1.1.2 With the reactor steam dome pressure ≥ 685 psig and core flow ≥ 10% rated core flow:

MCPR shall be ≥ 1.07

2.1.1.3 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 ≤ 1325 psig.

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.

(continued)

TEXT DELETED

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 3.09.
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;

(continued)

3.0 LCO APPLICABILITY

LCO 3.0.4 (continued)

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

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

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

LCO 3.0.5

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

LCO 3.0.6

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

(continued)

3.0 LCO APPLICABILITY (continued)

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:

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

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

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

LCO 3.0.9

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

(continued)

3.0 LCO APPLICABILITY

LCO 3.0.9 (continued)

of the supported system is OPERABLE and the barriers supporting each of these trains or subsystems provide their related support function(s) for different categories of initiating events.

For the purposes of this specification, the High Pressure Core Spray system, the Reactor Core Isolation Cooling system, and the Automatic Depressurization System are considered independent subsystems of a single system.

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

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

(continued)

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.

(continued)

3.0 SURVEILLANCE REQUIREMENT (SR) APPLICABILITY

SR 3.0.3 (continued)	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.

(continued)

3.0 SR APPLICABILITY (continued)

SR 3.0.4	Entry into a MODE or other specified condition in the Applicability of an LCO shall only be made when the LCO's Surveillances have been met within their specified Frequency, except as provided by SR 3.0.3. When an LCO is not met due to Surveillances not having been met, entry into a MODE or other specified condition in the Applicability shall only be made in accordance with LCO 3.0.4. This provision shall not prevent entry into MODES or other specified conditions in the Applicability that are required to comply with ACTIONS or that are part of a shutdown of the unit.

3.1 REACTIVITY CONTROL SYSTEMS

3.1.1 SHUTDOWN MARGIN (SDM)

LCO 3.1.1 SDM shall be:

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
	AND		
			(continued)

ACTIONS

CONDITION	REQUIRED ACTION		COMPLETION TIME
D. (continued)	D.2	Initiate action to restore secondary containment to OPERABLE status.	1 hour
	AND		
	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		
			(continued)

ACTIONS

CONDITION	REQUIRED ACTION		COMPLETION TIME
E. (continued)	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		
	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 is: a. ≥ 0.38% Δk/k with the highest worth control rod analytically determined; or b. ≥ 0.28% Δk/k with the highest worth control rod determined by test.	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 core k_{eff} and the predicted core k_{eff} 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 core k_{eff} and the predicted core k_{eff} 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 AND 1000 MWD/T thereafter during operation in MODE 1

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---------- A stuck rod may be bypassed in the Rod Action Control System (RACS) in accordance with SR 3.3.2.1.9 if required to allow continued operation. ----------	
	A.1 Verify stuck control rod separation criteria are met.	Immediately
	AND	
	A.2 Disarm the associated control rod drive (CRD).	2 hours
	AND	
		(continued)

ACTIONS

CONDITION	REQUIRED ACTION		COMPLETION TIME
A. (continued)	A.3	Perform SR 3.1.3.3 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 Rod Pattern Control System (RPCS)
	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.		--------NOTE--------- Inoperable control rods may be bypassed in RACS in accordance with SR 3.3.2.1.9, if required, to allow insertion of inoperable control rod and continued operation. ----------	
	C.1	Fully insert inoperable control rod.	3 hours
	AND		
	C.2	Disarm the associated CRD.	4 hours

(continued)

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
	OR	
	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. OR 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
SR 3.1.3.2	Deleted	
SR 3.1.3.3	----------NOTE---------- Not required to be performed until 31 days after the control rod is withdrawn and THERMAL POWER is greater than the LPSP of the RPCS. ---------- Insert each withdrawn control rod at least one notch.	In accordance with the Surveillance Frequency Control Program
SR 3.1.3.4	Verify each control rod scram time from fully withdrawn to notch position 13 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

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.1.3.5	Verify each control rod does not go to the withdrawn overtravel position.	Each time the control rod is withdrawn to "full out" position AND 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 14 OPERABLE control rods shall be "slow," in accordance with Table 3.1.4-1; and

b. No OPERABLE control rod that is "slow" shall occupy a location adjacent to another OPERABLE control rod that is "slow."

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 ≥ 950 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 ≥ 950 psig.	In accordance with the Surveillance Frequency Control Program
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

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
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 ≥ 950 psig.	Prior to exceeding 40% RTP after fuel movement within the affected core cell AND Prior to exceeding 40% RTP after work on control rod or CRD System that could affect scram time

Table 3.1.4-1
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 13. These control rods are inoperable, in accordance with SR 3.1.3.4, and are not considered "slow."

NOTCH POSITION	SCRAM TIMES[a][b] (seconds)	
	REACTOR STEAM DOME PRESSURE[c] 950 psig	REACTOR STEAM DOME PRESSURE[c] 1050 psig
43	0.30	0.31
29	0.78	0.84
13	1.40	1.53

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

(b) Scram times as a function of reactor steam dome pressure when < 950 psig are within established limits.

(c) For intermediate reactor steam dome pressures, the scram time criteria are determined by linear interpolation.

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 ≥ 600 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
	OR		
	A.2	Declare the associated control rod inoperable.	8 hours

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION		COMPLETION TIME
B. Two or more control rod scram accumulators inoperable with reactor steam dome pressure ≥ 600 psig.	B.1	Restore charging water header pressure to ≥ 1520 psig.	20 minutes from discovery of Condition B concurrent with charging water header pressure < 1520 psig
	AND		
	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 < 600 psig.	C.1	Verify all control rods associated with inoperable accumulators are fully inserted.	Immediately upon discovery of charging water header pressure < 1520 psig
	AND		

(continued)

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
C. (continued)	C.2 Declare the associated control rod inoperable.	1 hour
D. Required Action and associated Completion Time of Required Action B.1 or C.1 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 ≥ 1520 psig.	In accordance with the Surveillance Frequency Control Program

3.1 REACTIVITY CONTROL SYSTEMS

3.1.6 Control Rod Pattern

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--------- Affected control rods may be bypassed in Rod Action Control System (RACS) in accordance with SR 3.3.2.1.9. ----------	
		Move associated control rod(s) to correct position.	8 hours
	OR		
	A.2	Declare associated control rod(s) inoperable.	8 hours

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION		COMPLETION TIME
B. Nine or more OPERABLE control rods not in compliance with BPWS.	B.1	----------NOTE---------- Affected control rods may be bypassed in RACS in accordance with SR 3.3.2.1.9 for insertion only. ----------	
		Suspend withdrawal of control rods.	Immediately
	AND		
	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 and 2.

ACTIONS

CONDITION	REQUIRED ACTION		COMPLETION TIME
A. Product of Sodium Pentaborate concentration in weight percent (C) times Boron-10 enrichment in atom percent (E) < 420	A.1	Restore (C)(E) ≥ 420	8 hours
B. Sodium pentaborate solution volume < 4,200 gallons.	B.1	Restore Volume to ≥ 4,200 gallons.	8 hours
C. Sodium pentaborate solution temperature < 45°F or > 150°F.	C.1	Restore temperature to ≥ 45°F and ≤ 150°F.	8 hours
D. One SLC subsystem inoperable for reasons other than Conditions A, B or C.	D.1	Restore SLC subsystem to OPERABLE status.	7 days
E. Two SLC subsystems inoperable for reasons other than Conditions A, B or C.	E.1	Restore one SLC subsystem to OPERABLE status.	8 hours
F. Required Action and associated Completion Time not met.	F.1	Be in MODE 3.	12 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.1.7.1	Verify available volume of sodium pentaborate solution is ≥ 4,200 gallons.	In accordance with the Surveillance Frequency Control Program
SR 3.1.7.2	Verify temperature of sodium pentaborate solution is ≥ 45°F and ≤ 150°F.	In accordance with the Surveillance Frequency Control Program
SR 3.1.7.3	----------NOTE---------- Sodium pentaborate concentration (C), in weight percent, is determined by the performance of SR 3.1.7.5. Boron-10 enrichment (E), in atom percent, is determined by the performance of SR 3.1.7.9. ---------- Verify SLC System satisfies the following equation: (C)(E) ≥ 420.	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

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.1.7.5	Verify the percent weight of sodium pentaborate in solution is ≤ 9.5%.	In accordance with the Surveillance Frequency Control Program AND Once within 24 hours after water or boron is added to solution AND Once within 24 hours after solution temperature is restored to ≥ 45°F
SR 3.1.7.6	Verify each SLC subsystem 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
SR 3.1.7.7	Verify each pump develops a flow rate ≥ 41.2 gpm at a discharge pressure ≥ 1370 psig.	In accordance with the INSERVICE TESTING PROGRAM
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

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.1.7.9	Determine Boron-10 enrichment in atom percent (E).	Once within 24 hours after boron is added to the solution
SR 3.1.7.10	Verify piping between the storage tank and the pump suction is not blocked.	Once within 24 hours after solution temperature is restored to ≥ 45°F

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 ≥ 21.8% 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 < 21.8% 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 ≥ 21.8% RTP AND 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 ≥ 21.8% 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 < 21.8% 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 ≥ 21.8% RTP AND In accordance with the Surveillance Frequency Control Program

(continued)

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 AND Once within 72 hours after each completion of SR 3.1.4.2 AND 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 ≥ 21.8% 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 < 21.8% 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 ≥ 21.8% RTP AND 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----------
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		
		---------Note-------- Not applicable for Functions 2.a, 2.b, 2.c, 2.d, or 2.f. ----------	
	A.2	Place associated trip system in trip.	12 hours
---------NOTE--------- Not applicable for Functions 2.a, 2.b, 2.c, 2.d, or 2.f. ---------- B. 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		
	B.2	Place one trip system in trip.	6 hours

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
C. One or more Functions with RPS trip capability not maintained.	C.1 Restore RPS trip capability.	1 hour
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 < 35.4% RTP.	4 hours
F. As required by Required Action D.1 and referenced in Table 3.3.1.1-1.	F.1 Reduce THERMAL POWER to < 21.8% RTP.	4 hours
G. As required by Required Action D.1 and referenced in Table 3.3.1.1-1.	G.1 Be in MODE 2.	6 hours
H. As required by Required Action D.1 and referenced in Table 3.3.1.1-1.	H.1 Be in MODE 3.	12 hours

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 action to fully insert all insertable control rods in core cells containing one or more fuel assemblies.	Immediately
J. As required by Required Action D.1 and referenced in Table 3.3.1.1-1.	J.1	Initiate action to implement the Manual BSP Regions defined in the COLR.	Immediately
	AND		
	J.2	Implement the Automated BSP Scram Region using the modified APRM Flow Biased Simulated Thermal Power - High trip function setpoints defined in the COLR.	12 hours
	AND		
	J.3	Initiate action to submit an OPRM report in accordance with Specification 5.6.7.	Immediately
K. Required Action and associated Completion Time of Condition J not met.	K.1	Initiate action to implement the Manual BSP Regions defined in the COLR.	Immediately
	AND		
	K.2	Reduce operation to below the BSP Boundary defined in the COLR.	12 hours
	AND		
	K.3	------- NOTE -------- LCO 3.0.4 is not applicable. ---------- Restore required channels to OPERABLE.	120 days
L. Required Action and associated Completion Time of Condition K not met.	L.1	Reduce THERMAL POWER to < 16.8% 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 ≥ 21.8% RTP. ----------	
	Verify the absolute difference between the average power range monitor (APRM) channels and the calculated power ≤ 2% RTP while operating at ≥ 21.8% 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
SR 3.3.1.1.4	Perform CHANNEL FUNCTIONAL TEST.	In accordance with the Surveillance Frequency Control Program

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.3.1.1.5	Deleted	
SR 3.3.1.1.6	Deleted	
SR 3.3.1.1.7	Calibrate the local power range monitors.	In accordance with the Surveillance Frequency Control Program
SR 3.3.1.1.8	Perform CHANNEL FUNCTIONAL TEST.	In accordance with the Surveillance Frequency Control Program
SR 3.3.1.1.9	Calibrate the trip units.	In accordance with the Surveillance Frequency Control Program

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.3.1.1.10	----------NOTES---------- 1. Neutron detectors are excluded. 2. For Function 2.a, not required to be performed when entering MODE 2 from MODE 1 until 12 hours after entering MODE 2. 3. For Function 2.d, APRM recirculation flow transmitters are excluded. ---------- Perform CHANNEL CALIBRATION.	In accordance with the Surveillance Frequency Control Program

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.3.1.1.11	Perform CHANNEL FUNCTIONAL TEST.	In accordance with the Surveillance Frequency Control Program
SR 3.3.1.1.12	----------NOTES---------- 1. Neutron detectors are excluded. 2. For IRMs, not required to be performed when entering MODE 2 from MODE 1 until 12 hours after entering MODE 2. ---------- Perform CHANNEL CALIBRATION.	In accordance with the Surveillance Frequency Control Program
SR 3.3.1.1.13	Perform LOGIC SYSTEM FUNCTIONAL TEST.	In accordance with the Surveillance Frequency Control Program
SR 3.3.1.1.14	Verify Turbine Stop Valve Closure, Trip Oil Pressure – Low and Turbine Control Valve Fast Closure Trip Oil Pressure – Low Functions are not bypassed when THERMAL POWER is ≥ 35.4% RTP.	In accordance with the Surveillance Frequency Control Program

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.3.1.1.15	----------NOTES---------- 1. Neutron detectors are excluded. 2. For Functions 3, 4, and 5 in Table 3.3.1.1-1, the channel sensors may be excluded. ---------- Verify the RPS RESPONSE TIME is within limits.	In accordance with the Surveillance Frequency Control Program
SR 3.3.1.1.16	Deleted	
SR 3.3.1.1.17	Perform APRM recirculation flow transmitter calibration.	In accordance with the Surveillance Frequency Control Program
SR 3.3.1.1.18	Deleted	
SR 3.3.1.1.19	Perform CHANNEL CHECK.	In accordance with the Surveillance Frequency Control Program

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.3.1.1.20	----------NOTE---------- 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.a, 2.b, and 2.c, the APRM/OPRM channels and the 2-Out-Of-4 Voter channels are included in the CHANNEL FUNCTIONAL TEST. 3. For Functions 2.d and 2.f, the APRM/OPRM channels and the 2-Out-Of-4 Voter channels plus the flow input function, excluding the flow transmitters, are included in the CHANNEL FUNCTIONAL TEST. ----------	
	Perform CHANNEL FUNCTIONAL TEST.	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	2	3	H	SR 3.3.1.1.1 SR 3.3.1.1.3 SR 3.3.1.1.12 SR 3.3.1.1.13	≤ 122/125 divisions of full scale
	5[a]	3	I	SR 3.3.1.1.1 SR 3.3.1.1.4 SR 3.3.1.1.12 SR 3.3.1.1.13	≤ 122/125 divisions of full scale
b. Inop	2	3	H	SR 3.3.1.1.3 SR 3.3.1.1.13	NA
	5[a]	3	I	SR 3.3.1.1.4 SR 3.3.1.1.13	NA
2. Average Power Range Monitors					
a. Neutron Flux - High, Setdown	2	3[b]	H	SR 3.3.1.1.7 SR 3.3.1.1.10[c][d] SR 3.3.1.1.19 SR 3.3.1.1.20	≤ 20% RTP
b. Fixed Neutron Flux – High	1	3[b]	G	SR 3.3.1.1.2 SR 3.3.1.1.7 SR 3.3.1.1.10[c][d] SR 3.3.1.1.19 SR 3.3.1.1.20	≤ 119.3% RTP

(continued)

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

(b) Each channel provides inputs to both trip systems.

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

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

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
2. Average Power Range Monitors (continued)					
c. Inop	1,2	3[b]	H	SR 3.3.1.1.20	NA
d. Flow Biased Simulated Thermal Power - High	1	3[b]	G	SR 3.3.1.1.2 SR 3.3.1.1.7 SR 3.3.1.1.10[c][d] SR 3.3.1.1.17 SR 3.3.1.1.19 SR 3.3.1.1.20	(e), (f)
e. 2-Out-Of-4 Voter	1,2	2	H	SR 3.3.1.1.13 SR 3.3.1.1.15 SR 3.3.1.1.19 SR 3.3.1.1.20	NA
f. OPRM Upscale	≥ 16.8% RTP	3[b]	J	SR 3.3.1.1.7 SR 3.3.1.1.10[c][d] SR 3.3.1.1.19 SR 3.3.1.1.20	(g)

(continued)

(b) Each channel provides inputs to both trip systems.

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

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

(e) Two-Loop Operation: 0.64W + 61.8% RTP and ≤ 113% RTP
Single–Loop Operation: 0.58W + 37.4% RTP

(f) With the OPRM Upscale trip function (Function 2.f) inoperable, reset the APRM Flow Biased Simulated Thermal Power – High trip function (Function 2.d) setpoints to the values defined by the COLR to implement the Automated BSP Scram Region in accordance with Action J of this specification.

(g) The setpoint for the OPRM Upscale Confirmation Density Algorithm (CDA) is specified in the COLR.

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
3. Reactor Vessel Steam Dome Pressure - High	1,2	2	H	SR 3.3.1.1.1 SR 3.3.1.1.8 SR 3.3.1.1.9 SR 3.3.1.1.12 SR 3.3.1.1.13 SR 3.3.1.1.15	≤ 1079.7 psig
4. Reactor Vessel Water Level - Low, Level 3	1,2	2	H	SR 3.3.1.1.1 SR 3.3.1.1.8 SR 3.3.1.1.9 SR 3.3.1.1.12 SR 3.3.1.1.13 SR 3.3.1.1.15	≥ 10.8 inches
5. Reactor Vessel Water Level - High, Level 8	≥ 21.8% RTP	2	F	SR 3.3.1.1.1 SR 3.3.1.1.8 SR 3.3.1.1.9 SR 3.3.1.1.12 SR 3.3.1.1.13 SR 3.3.1.1.15	≤ 54.1 inches
6. Main Steam Isolation Valve - Closure	1	8	G	SR 3.3.1.1.8 SR 3.3.1.1.12 SR 3.3.1.1.13 SR 3.3.1.1.15	≤ 7% closed
7. Drywell Pressure - High	1,2	2	H	SR 3.3.1.1.1 SR 3.3.1.1.8 SR 3.3.1.1.9 SR 3.3.1.1.12 SR 3.3.1.1.13	≤ 1.43 psig
8. Scram Discharge Volume Water Level - High					
a. Transmitter/Trip Unit	1,2	2	H	SR 3.3.1.1.1 SR 3.3.1.1.8 SR 3.3.1.1.9 SR 3.3.1.1.12 SR 3.3.1.1.13	≤ 63% of full scale
	5[a]	2	I	SR 3.3.1.1.1 SR 3.3.1.1.8 SR 3.3.1.1.9 SR 3.3.1.1.12 SR 3.3.1.1.13	≤ 63% of full scale

(continued)

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

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. Scram Discharge Volume Water Level - High (continued)					
b. Float Switch	1,2	2	H	SR 3.3.1.1.8 SR 3.3.1.1.12 SR 3.3.1.1.13	≤ 65 inches
	5[a]	2	I	SR 3.3.1.1.8 SR 3.3.1.1.12 SR 3.3.1.1.13	≤ 65 inches
9. Turbine Stop Valve Closure Trip Oil Pressure - Low	≥ 35.4% RTP	4	E	SR 3.3.1.1.8 SR 3.3.1.1.9 (c)(d) SR 3.3.1.1.12 (c)(d) SR 3.3.1.1.13 SR 3.3.1.1.14 SR 3.3.1.1.15	≥ 644 psig
10. Turbine Control Valve Fast Closure, Trip Oil Pressure - Low	≥ 35.4% RTP	2	E	SR 3.3.1.1.8 SR 3.3.1.1.9 (c)(d) SR 3.3.1.1.12 (c)(d) SR 3.3.1.1.13 SR 3.3.1.1.14 SR 3.3.1.1.15	≥ 938 psig
11. Reactor Mode Switch -Shutdown Position	1,2	2	H	SR 3.3.1.1.11 SR 3.3.1.1.13	NA
	5[a]	2	I	SR 3.3.1.1.11 SR 3.3.1.1.13	NA
12. Manual Scram	1,2	2	H	SR 3.3.1.1.4 SR 3.3.1.1.13	NA
	5[a]	2	I	SR 3.3.1.1.4 SR 3.3.1.1.13	NA

(a) With any control rod withdrawn from a core cell containing one or more fuel assemblies.
(c) If the as-found channel setpoint is outside its pre-defined as-found tolerance, then the channel shall be evaluated to verify that it is functioning as required before returning the channel to service.
(d) The instrument channel setpoint shall be reset to a value that is within the as-left tolerance around the Nominal Trip Setpoint (NTSP) at the completion of the surveillance; otherwise, the channel shall be declared inoperable. Setpoints more conservative than the NTSP are acceptable provided the as-found and as-left tolerances apply to the actual setpoint implemented in the Surveillance procedures to confirm channel performance. The NTSP and the methodologies used to determine the as-found and as-left tolerances are specified in the Technical Requirements Manual.

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. Four 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

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION		COMPLETION TIME
D. One or more required SRMs inoperable in MODE 3 or 4.	D.1	Fully insert all insertable control rods.	1 hour
	AND		
	D.2	Place reactor mode switch in the shutdown position.	1 hour
E. One or more required SRMs inoperable in MODE 5.	E.1	Suspend CORE ALTERATIONS except for control rod insertion.	Immediately
	AND		
	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
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

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.3.1.2.4	----------NOTE---------- Not required to be met with less than or equal to four fuel assemblies adjacent to the SRM and no other fuel assemblies in the associated core quadrant. ---------- Verify count rate is: a. ≥ 3.0 cps, or b. ≥ 0.7 cps with a signal to noise ratio ≥ 2:1.	In accordance with the Surveillance Frequency Control Program
SR 3.3.1.2.5	----------NOTE---------- Not required to be performed until 12 hours after IRMs on Range 2 or below. ---------- Perform CHANNEL FUNCTIONAL TEST.	In accordance with the Surveillance Frequency Control Program
SR 3.3.1.2.6	----------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]	4	SR 3.3.1.2.1 SR 3.3.1.2.4 SR 3.3.1.2.5 SR 3.3.1.2.6
	3,4	2	SR 3.3.1.2.3 SR 3.3.1.2.4 SR 3.3.1.2.5 SR 3.3.1.2.6
	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 3.3.1.2.6

(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 or more rod withdrawal limiter (RWL) channels inoperable.	A.1 Suspend control rod withdrawal.	Immediately
B. One or more rod pattern controller channels inoperable.	B.1 Suspend control rod movement except by scram.	Immediately
C. One or more Reactor Mode Switch—Shutdown Position channels inoperable.	C.1 Suspend control rod withdrawal.	Immediately
	AND	
	C.2 Initiate action to fully insert all insertable control rods in core cells containing one or more fuel assemblies.	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 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 control rod block capability.

SURVEILLANCE		FREQUENCY
SR 3.3.2.1.1	----------NOTE---------- Not required to be performed until 1 hour after THERMAL POWER is greater than the RWL high power setpoint (HPSP). ---------- 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 THERMAL POWER is > 35% RTP and less than or equal to the RWL HPSP. ---------- 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 any control rod is withdrawn at ≤ 10% RTP in MODE 2. ---------- Perform CHANNEL FUNCTIONAL TEST.	In accordance with the Surveillance Frequency Control Program

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.3.2.1.4	----------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
SR 3.3.2.1.5	Calibrate the low power setpoint trip units. The Allowable Value shall be ≥ 10% RTP and ≤ 35% RTP.	In accordance with the Surveillance Frequency Control Program
SR 3.3.2.1.6	Verify the RWL high power Function is not bypassed when THERMAL POWER is > 70% RTP.	In accordance with the Surveillance Frequency Control Program
SR 3.3.2.1.7	Perform CHANNEL CALIBRATION.	In accordance with the Surveillance Frequency Control Program
SR 3.3.2.1.8	----------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

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.3.2.1.9	----------NOTE---------- Only one bypassed control rod may be moved at a time. ---------- Verify the bypassing and movement of control rods required to be bypassed in Rod Action Control System (RACS) is in conformance with applicable analyses by a second licensed operator or other qualified member of the technical staff.	Prior to and during the movement of control rods bypassed in RACS

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
1. Rod Pattern Control System			
a. Rod withdrawal limiter	(a)	2	SR 3.3.2.1.1 SR 3.3.2.1.6 SR 3.3.2.1.9
	(b)	2	SR 3.3.2.1.2 SR 3.3.2.1.5 SR 3.3.2.1.7 SR 3.3.2.1.9
b. Rod pattern controller	1[c],2[c]	2	SR 3.3.2.1.3 SR 3.3.2.1.4 SR 3.3.2.1.5 SR 3.3.2.1.7 SR 3.3.2.1.9
2. Reactor Mode Switch – Shutdown Position	(d)	2	SR 3.3.2.1.8

(a) THERMAL POWER greater than the HPSP.

(b) THERMAL POWER > 35% RTP and less than or equal to the HPSP.

(c) With THERMAL POWER ≤ 10% RTP.

(d) Reactor mode switch in the shutdown position.

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 to prepare and submit a Special Report.	Immediately
C. One or more Functions with two required channels inoperable.	C.1 Restore one required channel to OPERABLE status.	7 days

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
D. Required Action and associated Completion Time of Condition C not met.	D.1 Enter the Condition referenced in Table 3.3.3.1-1 for the channel.	Immediately
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 to prepare and submit a Special Report.	Immediately

SURVEILLANCE REQUIREMENTS

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

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	Deleted	
SR 3.3.3.1.3	----------NOTE---------- Neutron detectors are excluded. --- 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 — Wide Range	2	E
3. Reactor Vessel Water Level — Fuel Zone	2	E
4. Suppression Pool Water Level	2	E
5. Suppression Pool Sector Water Temperature	2[c]	E
6. Drywell Pressure	2	E
7. Drywell Temperature	2	E
8. CRD Cavity Temperature	2	E
9. Primary Containment Pressure — Wide Range	2	E
10. Primary Containment Pressure — Narrow Range	2	E
11. Primary Containment Air Temperature	2	E
12. Primary Containment Area Radiation	2	F
13. Drywell Area Radiation	2	F
14. Deleted		
15. Deleted		
16. Penetration Flow Path, Automatic PCIV Position	2 per penetration flow path [a][b]	E

(a) Not required for isolation valves whose associated penetration flow path is isolated.

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

(c) Monitoring each of six sectors.

3.3 INSTRUMENTATION

3.3.3.2 Remote Shutdown System

LCO 3.3.3.2 The Remote 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

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.3.3.2.2	Verify each required control circuit and transfer switch is capable of performing the intended functions.	In accordance with the Surveillance Frequency Control Program
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 End of Cycle Recirculation Pump Trip (EOC-RPT) Instrumentation

LCO 3.3.4.1

a. Two channels per trip system for each EOC-RPT instrumentation Function listed below shall be OPERABLE:

1. Turbine Stop Valve (TSV) Closure, Trip Oil Pressure - Low; and

2. Turbine Control Valve (TCV) Fast Closure, Trip Oil Pressure - Low.

OR

b. LCO 3.2.2, "MINIMUM CRITICAL POWER RATIO (MCPR)," limits for inoperable EOC-RPT as specified in the COLR are made applicable.

APPLICABILITY: THERMAL POWER ≥ 35.4% RTP with any recirculation pump in fast speed.

ACTIONS

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

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more required channels inoperable.	A.1 Restore channel to OPERABLE status. OR	72 hours (continued)

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. (continued)	A.2 -------NOTE---------- Not applicable if inoperable channel is the result of an inoperable breaker. ---------- Place channel in trip.	72 hours
B. One or more Functions with EOC-RPT trip capability not maintained.	B.1 Restore EOC-RPT trip capability.	2 hours
OR		
AND		
MCPR limit for inoperable EOC-RPT not made applicable.	B.2 Apply the MCPR limit for inoperable EOC-RPT as specified in the COLR.	2 hours
C. Required Action and associated Completion Time not met.	C.1 Remove the associated recirculation pump fast speed breaker from service.	4 hours
OR		
	C.2 Reduce THERMAL POWER to < 35.4% 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 the associated Function maintains EOC-RPT trip capability.

SURVEILLANCE		FREQUENCY
SR 3.3.4.1.1	Perform CHANNEL FUNCTIONAL TEST.	In accordance with the Surveillance Frequency Control Program
SR 3.3.4.1.2	----------NOTES---------- 1. If the as-found channel setpoint is outside its pre-defined as-found tolerance, then the channel shall be evaluated to verify that it is functioning as required before returning the channel to service. 2. The instrument channel setpoint shall be reset to a value that is within the as-left tolerance around the Nominal Trip Setpoint (NTSP) at the completion of the surveillance; otherwise, the channel shall be declared inoperable. Setpoints more conservative than the NTSP are acceptable provided the as-found and as-left tolerances apply to the actual setpoint implemented in the Surveillance procedures to confirm channel performance. The NTSP and the methodologies used to determine the as-found and as-left tolerances are specified in the Technical Requirements Manual. --- Calibrate the trip units.	In accordance with the Surveillance Frequency Control Program

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.3.4.1.3	----------NOTES---------- 1. If the as-found channel setpoint is outside its pre-defined as-found tolerance, then the channel shall be evaluated to verify that it is functioning as required before returning the channel to service. 2. The instrument channel setpoint shall be reset to a value that is within the as-left tolerance around the Nominal Trip Setpoint (NTSP) at the completion of the surveillance; otherwise, the channel shall be declared inoperable. Setpoints more conservative than the NTSP are acceptable provided the as-found and as-left tolerances apply to the actual setpoint implemented in the Surveillance procedures to confirm channel performance. The NTSP and the methodologies used to determine the as-found and as-left tolerances are specified in the Technical Requirements Manual. ---------- Perform CHANNEL CALIBRATION. The Allowable Values shall be: a. TSV Closure, Trip Oil Pressure - Low: ≥ 644 psig. b. TCV Fast Closure, Trip Oil Pressure -Low: ≥ 938 psig.	In accordance with the Surveillance Frequency Control Program
SR 3.3.4.1.4	Perform LOGIC SYSTEM FUNCTIONAL TEST, including breaker actuation.	In accordance with the Surveillance Frequency Control Program
SR 3.3.4.1.5	Verify TSV Closure, Trip Oil Pressure - Low and TCV Fast Closure, Trip Oil Pressure - Low Functions are not bypassed when THERMAL POWER is ≥ 35.4% RTP.	In accordance with the Surveillance Frequency Control Program

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.3.4.1.6	----------NOTE---------- Breaker interruption time may be assumed from the most recent performance of SR 3.3.4.1.7. ---------- Verify the EOC-RPT SYSTEM RESPONSE TIME is within limits.	In accordance with the Surveillance Frequency Control Program
SR 3.3.4.1.7	Determine RPT breaker interruption time.	In accordance with the Surveillance Frequency Control Program

3.3 INSTRUMENTATION

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

LCO 3.3.4.2 Two channels per trip system for each ATWS-RPT instrumentation Function listed below shall be OPERABLE:

a. Reactor Vessel Water Level—Low Low, Level 2; and

b. Reactor Vessel 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.	14 days
	OR		
	A.2	--------NOTE-------- Not applicable if inoperable channel is the result of an inoperable breaker. ----------	
		Place channel in trip.	14 days

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
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 Remove the associated recirculation pump from service. OR D.2 Be in MODE 2.	6 hours 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 3.3.4.2.1	Perform CHANNEL CHECK.	In accordance with the Surveillance Frequency Control Program

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.3.4.2.2	Perform CHANNEL FUNCTIONAL TEST.	In accordance with the Surveillance Frequency Control Program
SR 3.3.4.2.3	Calibrate the trip units.	In accordance with the Surveillance Frequency Control Program
SR 3.3.4.2.4	Perform CHANNEL CALIBRATION. The Allowable Values shall be: a. Reactor Vessel Water Level - Low Low, Level 2: ≥ -43.8 inches; and b. Reactor Vessel Pressure - High: ≤ 1139 psig.	In accordance with the Surveillance Frequency Control Program
SR 3.3.4.2.5	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 required 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 and 2.b. ---------- 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	

(continued)

ACTIONS

CONDITION	REQUIRED ACTION		COMPLETION TIME
B. (continued)	B.2	----------NOTE---------- Only applicable for Functions 3.a and 3.b. ----------	
		Declare High Pressure Core Spray (HPCS) System inoperable.	1 hour from discovery of loss of HPCS initiation capability
	AND		
	B.3	Place channel in trip.	24 hours
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, 2.c, and 2.d. ----------	
		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		
			(continued)

ACTIONS

CONDITION	REQUIRED ACTION		COMPLETION TIME
C. (continued)	C.2	Restore channel to OPERABLE status.	24 hours
D. As required by Required Action A.1 and referenced in Table 3.3.5.1-1.	D.1	--------NOTE--------- Only applicable if HPCS pump suction is not aligned to the suppression pool. ----------	
		Declare HPCS System inoperable.	1 hour from discovery of loss of HPCS initiation capability
	AND		
	D.2.1	Place channel in trip.	24 hours
	OR		
	D.2.2	Align the HPCS pump suction to the suppression pool.	24 hours

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION		COMPLETION TIME
E. As required by Required Action A.1 and referenced in Table 3.3.5.1-1.	E.1	----------NOTE---------- Only applicable for Functions 1.e, 1.f, and 2.e. ----------	
		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		
	E.2	Restore channel to OPERABLE status.	7 days
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		
			(continued)

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
F. (continued)	F.2 Place channel in trip.	96 hours from discovery of inoperable channel concurrent with HPCS or reactor core isolation cooling (RCIC) inoperable AND 8 days
G. As required by Required Action A.1 and referenced in Table 3.3.5.1-1.	G.1 --------NOTE--------- Only applicable for Functions 4.c, 4.e, 4.f, 4.g, 5.c, 5.e, and 5.f. ---------- Declare ADS valves inoperable. AND	1 hour from discovery of loss of ADS initiation capability in both trip systems (continued)

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
G. (continued)	G.2 Restore channel to OPERABLE status.	96 hours from discovery of inoperable channel concurrent with HPCS or RCIC inoperable AND 8 days
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, 3.f, 3.g, and 3.h; and (b) for up to 6 hours for Functions other than 3.c, 3.f, 3.g, and 3.h, 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 CALIBRATION.	In accordance with the Surveillance Frequency Control Program
SR 3.3.5.1.6	Perform LOGIC SYSTEM FUNCTIONAL TEST.	In accordance with the Surveillance Frequency Control Program

Table 3.3.5.1-1 (page 1 of 5)
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. Low Pressure Coolant Injection-A (LPCI) and Low Pressure Core Spray (LPCS) Subsystems					
a. Reactor Vessel Water Level - Low Low Low, Level 1	1,2,3	2[a]	B	SR 3.3.5.1.1 SR 3.3.5.1.2 SR 3.3.5.1.3 SR 3.3.5.1.5 SR 3.3.5.1.6	≥ -152.5 inches
b. Drywell Pressure - High	1,2,3	2[a]	B	SR 3.3.5.1.1 SR 3.3.5.1.2 SR 3.3.5.1.3 SR 3.3.5.1.5 SR 3.3.5.1.6	≤ 1.44 psig
c. LPCI Pump A Start - Time Delay Relay	1,2,3	1	C	SR 3.3.5.1.2 SR 3.3.5.1.4 SR 3.3.5.1.6	≤ 5.25 seconds
d. Reactor Vessel Pressure - Low (Injection Permissive)	1,2,3	3	C	SR 3.3.5.1.1 SR 3.3.5.1.2 SR 3.3.5.1.3 SR 3.3.5.1.5 SR 3.3.5.1.6	≥ 452 psig and ≤ 534 psig
e. LPCS Pump Discharge Flow - Low (Bypass)	1,2,3	1	E	SR 3.3.5.1.1 SR 3.3.5.1.2 SR 3.3.5.1.3 SR 3.3.5.1.5 SR 3.3.5.1.6	≥ 1285 gpm
f. LPCI Pump A Discharge Flow - Low (Bypass)	1,2,3	1	E	SR 3.3.5.1.1 SR 3.3.5.1.2 SR 3.3.5.1.3 SR 3.3.5.1.5 SR 3.3.5.1.6	≥ 1133 gpm
g. Manual Initiation	1,2,3	1	C	SR 3.3.5.1.6	NA

(continued)

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

Table 3.3.5.1-1 (page 2 of 5)
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 B and LPCI C Subsystems					
a. Reactor Vessel Water Level - Low Low Low, Level 1	1,2,3	2[a]	B	SR 3.3.5.1.1 SR 3.3.5.1.2 SR 3.3.5.1.3 SR 3.3.5.1.5 SR 3.3.5.1.6	≥ -152.5 inches
b. Drywell Pressure - High	1,2,3	2[a]	B	SR 3.3.5.1.1 SR 3.3.5.1.2 SR 3.3.5.1.3 SR 3.3.5.1.5 SR 3.3.5.1.6	≤ 1.44 psig
c. LPCI Pump B Start - Time Delay Relay	1,2,3	1	C	SR 3.3.5.1.2 SR 3.3.5.1.4 SR 3.3.5.1.6	≤ 5.25 seconds
d. Reactor Vessel Pressure - Low (Injection Permissive)	1,2,3	3	C	SR 3.3.5.1.1 SR 3.3.5.1.2 SR 3.3.5.1.3 SR 3.3.5.1.5 SR 3.3.5.1.6	≥ 452 psig and ≤ 534 psig
e. LPCI Pump B and LPCI Pump C Discharge Flow - Low (Bypass)	1,2,3	1 per pump	E	SR 3.3.5.1.1 SR 3.3.5.1.2 SR 3.3.5.1.3 SR 3.3.5.1.5 SR 3.3.5.1.6	≥ 1133 gpm
f. Manual Initiation	1,2,3	1	C	SR 3.3.5.1.6	NA
3. High Pressure Core Spray (HPCS) System					
a. Reactor Vessel Water Level - Low Low, Level 2	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 3.3.5.1.5 SR 3.3.5.1.6	≥ -43.8 inches

(continued)

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

Table 3.3.5.1-1 (page 3 of 5)
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
3. HPCS System (continued)					
b. Drywell Pressure - High	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 3.3.5.1.5 SR 3.3.5.1.6	≤ 1.44 psig
c. Reactor Vessel Water Level - High, Level 8	1,2,3	2	C	SR 3.3.5.1.1 SR 3.3.5.1.2 SR 3.3.5.1.3 SR 3.3.5.1.5 SR 3.3.5.1.6	≤ 55.7 inches
d. Condensate Storage Tank Level - Low	1,2,3	2	D	SR 3.3.5.1.1 SR 3.3.5.1.2 SR 3.3.5.1.3[b][c] SR 3.3.5.1.5[b][c] SR 3.3.5.1.6	≥ 4.7 ft
e. Suppression Pool Water Level - High	1,2,3	2	D	SR 3.3.5.1.1 SR 3.3.5.1.2 SR 3.3.5.1.3 SR 3.3.5.1.5 SR 3.3.5.1.6	≤ 7.0 inches
f. HPCS Pump Discharge Pressure - High (Bypass)	1,2,3	1	E	SR 3.3.5.1.1 SR 3.3.5.1.2 SR 3.3.5.1.3 SR 3.3.5.1.5 SR 3.3.5.1.6	≥ 108 psig and ≤ 1282 psig
g. HPCS System Flow Rate - Low (Bypass)	1,2,3	1	E	SR 3.3.5.1.1 SR 3.3.5.1.2 SR 3.3.5.1.3 SR 3.3.5.1.5 SR 3.3.5.1.6	≥ 1124 gpm and ≤ 1327 gpm

(continued)

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

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

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

Table 3.3.5.1-1 (page 4 of 5)
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
3. HPCS System (continued)					
h. Manual Initiation	1,2,3	1	C	SR 3.3.5.1.6	NA
4. Automatic Depressurization System (ADS) Trip System A					
a. Reactor Vessel Water Level – Low Low Low, Level 1	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 3.3.5.1.5 SR 3.3.5.1.6	≥ -152.5 inches
b. Drywell Pressure – High	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 3.3.5.1.5 SR 3.3.5.1.6	≤ 1.44 psig
c. ADS Initiation Timer	1,2[d],3[d]	1	G	SR 3.3.5.1.2 SR 3.3.5.1.4 SR 3.3.5.1.6	≤ 115 seconds
d. Reactor Vessel Water Level - Low, Level 3 (Confirmatory)	1,2[d],3[d]	1	F	SR 3.3.5.1.1 SR 3.3.5.1.2 SR 3.3.5.1.3 SR 3.3.5.1.5 SR 3.3.5.1.6	≥ 10.8 inches
e. LPCS Pump Discharge Pressure – High	1,2[d],3[d]	2	G	SR 3.3.5.1.1 SR 3.3.5.1.2 SR 3.3.5.1.3 SR 3.3.5.1.5 SR 3.3.5.1.6	≥ 125 psig and ≤ 165 psig
f. LPCI Pump A Discharge Pressure – High	1,2[d],3[d]	2	G	SR 3.3.5.1.1 SR 3.3.5.1.2 SR 3.3.5.1.3 SR 3.3.5.1.5 SR 3.3.5.1.6	≥ 115 psig and ≤ 135 psig

(continued)

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

Table 3.3.5.1-1 (page 5 of 5)
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. ADS Trip System A (continued)					
g. ADS Bypass Timer (High Drywell Pressure)	1,2[d],3[d]	2	G	SR 3.3.5.1.2 SR 3.3.5.1.4 SR 3.3.5.1.6	≤ 9.4 minutes
h. Manual Initiation	1,2[d],3[d]	2/system	G	SR 3.3.5.1.6	NA
5. ADS Trip System B					
a. Reactor Vessel Water Level - Low Low Low, Level 1	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 3.3.5.1.5 SR 3.3.5.1.6	≥ -152.5 inches
b. Drywell Pressure - High	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 3.3.5.1.5 SR 3.3.5.1.6	≤ 1.44 psig
c. ADS Initiation Timer	1,2[d],3[d]	1	G	SR 3.3.5.1.2 SR 3.3.5.1.4 SR 3.3.5.1.6	≤ 115 seconds
d. Reactor Vessel Water Level - Low, Level 3 (Confirmatory)	1,2[d],3[d]	1	F	SR 3.3.5.1.1 SR 3.3.5.1.2 SR 3.3.5.1.3 SR 3.3.5.1.5 SR 3.3.5.1.6	≥ 10.8 inches
e. LPCI Pumps B & C Discharge Pressure - High	1,2[d],3[d]	2 per pump	G	SR 3.3.5.1.1 SR 3.3.5.1.2 SR 3.3.5.1.3 SR 3.3.5.1.5 SR 3.3.5.1.6	≥ 115 psig and ≤ 135 psig
f. ADS Bypass Timer (High Drywell Pressure)	1,2[d],3[d]	2	G	SR 3.3.5.1.2 SR 3.3.5.1.4 SR 3.3.5.1.6	≤ 9.4 minutes
g. Manual Initiation	1,2[d],3[d]	2/system	G	SR 3.3.5.1.6	NA

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

3.3 INSTRUMENTATION

3.3.5.2 Reactor Pressure Vessel (RPV) Water Inventory Control Instrumentation

LCO 3.3.5.2 The RPV Water Inventory Control instrumentation for each Function in Table 3.3.5.2-1 shall be OPERABLE.

APPLICABILITY: According to Table 3.3.5.2-1.

ACTIONS

NOTE

Separate Condition entry is allowed for each channel.

CONDITION	REQUIRED ACTION		COMPLETION TIME
A. One or more channels inoperable.	A.1	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 associated penetration flow path(s) incapable of automatic isolation.	Immediately
	AND		
	B.2	Calculate DRAIN TIME.	Immediately
C. As required by Required Action A.1 and referenced in Table 3.3.5.2-1.	C.1	Place channel in trip.	1 hour

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION		COMPLETION TIME
D. As required by Required Action A.1 and referenced in Table 3.3.5.2-1.	D.1	Declare HPCS system inoperable.	1 hour
	OR		
	D.2	Align the HPCS pump suction to the suppression pool.	1 hour
E. As required by Required Action A.1 and referenced in Table 3.3.5.2-1.	E.1	Restore channel to OPERABLE status.	24 hours
F. Required Action and associated Completion Time of Condition C, D, or E not met.	F.1	Declare associated ECCS injection/spray subsystem inoperable.	Immediately

SURVEILLANCE REQUIREMENTS

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

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

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	Perform LOGIC SYSTEM FUNCTIONAL TEST.	In accordance with the Surveillance Frequency Control Program

Table 3.3.5.2-1 (page 1 of 2)
RPV Water Inventory Control Instrumentation

FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	REQUIRED CHANNELS PER FUNCTION	CONDITIONS REFERENCED FROM REQUIRED ACTION A.1	SURVEILLANCE REQUIREMENTS	ALLOWABLE VALUE
1. Low Pressure Coolant Injection-A (LPCI) and Low Pressure Core Spray (LPCS) Subsystems					
a. Reactor Vessel Pressure - Low (Injection Permissive)	4, 5	3[a]	C	SR 3.3.5.2.1 SR 3.3.5.2.2	≤ 534 psig
b. LPCS Pump Discharge Flow - Low (Bypass)	4, 5	1[a]	E	SR 3.3.5.2.1 SR 3.3.5.2.2	≥ 1285 gpm
c. LPCI Pump A Discharge Flow - Low (Bypass)	4, 5	1[a]	E	SR 3.3.5.2.1 SR 3.3.5.2.2	≥ 1133 gpm
d. Manual Initiation	4, 5	1[a]	E	SR 3.3.5.2.3	NA
2. LPCI B and LPCI C Subsystems					
a. Reactor Vessel Pressure - Low (Injection Permissive)	4, 5	3[a]	C	SR 3.3.5.2.1 SR 3.3.5.2.2	≤ 534 psig
b. LPCI Pump B and LPCI Pump C Discharge Flow - Low (Bypass)	4, 5	1 per pump[a]	E	SR 3.3.5.2.1 SR 3.3.5.2.2	≥ 1133 gpm
c. Manual Initiation	4, 5	1[a]	E	SR 3.3.5.2.3	NA

(continued)

(a) Associated with an ECCS subsystem required to be OPERABLE by LCO 3.5.2, "Reactor Pressure Vessel (RPV) Water Inventory Control."

Table 3.3.5.2-1 (page 2 of 2)
RPV Water Inventory Control Instrumentation

FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	REQUIRED CHANNELS PER FUNCTION	CONDITIONS REFERENCED FROM REQUIRED ACTION A.1	SURVEILLANCE REQUIREMENTS	ALLOWABLE VALUE
3. High Pressure Core Spray (HPCS) System					
a. Condensate Storage Tank Level - Low	4[b], 5[b]	1[a]	D	SR 3.3.5.2.1 SR 3.3.5.2.2	≥ 4.7 ft
b. HPCS Pump Discharge Pressure - High (Bypass)	4, 5	1[a]	E	SR 3.3.5.2.1 SR 3.3.5.2.2	≥ 108 psig and ≤ 1282 psig
c. HPCS System Flow Rate - Low (Bypass)	4, 5	1[a]	E	SR 3.3.5.2.1 SR 3.3.5.2.2	≥ 1124 gpm and ≤ 1327 gpm
4. RHR System Isolation					
a. Reactor Vessel Water Level - Low, Level 3	(c)	2 in one trip system	B	SR 3.3.5.2.1 SR 3.3.5.2.2	≥ 10.8 inches
5. Reactor Water Cleanup (RWCU) System Isolation					
a. Reactor Vessel Water Level - Low Low, Level 2	(c)	2 in one trip system	B	SR 3.3.5.2.1 SR 3.3.5.2.2	≥ -43.8 inches

(a) Associated with an ECCS subsystem required to be OPERABLE by LCO 3.5.2, "Reactor Pressure Vessel (RPV) Water Inventory Control."

(b) When HPCS is OPERABLE for compliance with LCO 3.5.2, "Reactor Pressure Vessel (RPV) Water Inventory Control," and aligned to the condensate storage tank.

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

3.3 INSTRUMENTATION

3.3.5.3 Reactor Core Isolation Cooling (RCIC) System Instrumentation

LCO 3.3.5.3 The RCIC System instrumentation for each Function in Table 3.3.5.3-1 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 3.3.5.3-1 for the channel.	Immediately
B. As required by Required Action A.1 and referenced in Table 3.3.5.3-1.	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
C. As required by Required Action A.1 and referenced in Table 3.3.5.3-1.	C.1	Restore channel to OPERABLE status.	24 hours

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION		COMPLETION TIME
D. As required by Required Action A.1 and referenced in Table 3.3.5.3-1.	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		
	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 3.3.5.3-1 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 Functions 2 and 5; and (b) for up to 6 hours for Functions 1, 3, and 4 provided the associated Function maintains RCIC initiation capability.

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
SR 3.3.5.3.3	Calibrate the trip units.	In accordance with the Surveillance Frequency Control Program
SR 3.3.5.3.4	Perform CHANNEL CALIBRATION.	In accordance with the Surveillance Frequency Control Program
SR 3.3.5.3.5	Perform LOGIC SYSTEM FUNCTIONAL TEST.	In accordance with the Surveillance Frequency Control Program

Table 3.3.5.3-1 (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, Level 2	4	B	SR 3.3.5.3.1 SR 3.3.5.3.2 SR 3.3.5.3.3 SR 3.3.5.3.4 SR 3.3.5.3.5	≥ -43.8 inches
2. Reactor Vessel Water Level - High, Level 8	2	C	SR 3.3.5.3.1 SR 3.3.5.3.2 SR 3.3.5.3.4 SR 3.3.5.3.5	≤ 55.7 inches
3. Condensate Storage Tank Level - Low	2	D	SR 3.3.5.3.1 SR 3.3.5.3.2 SR 3.3.5.3.4[(a)(b)] SR 3.3.5.3.5	≥ 3.7 ft
4. Suppression Pool Water Level - High	2	D	SR 3.3.5.3.1 SR 3.3.5.3.2 SR 3.3.5.3.4 SR 3.3.5.3.5	≤ 7.0 inches
5. Manual Initiation	1	C	SR 3.3.5.3.5	NA

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

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

3.3 INSTRUMENTATION

3.3.6.1 Primary Containment and Drywell Isolation Instrumentation

LCO 3.3.6.1 The primary containment and drywell 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 control.

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 for Functions 2.b, 5.b, 5.c, and 5.d AND 24 hours for Functions other than Functions 2.b, 5.b, 5.c, and 5.d
B. One or more automatic Functions with isolation capability not maintained.	B.1 Restore isolation capability.	1 hour

(continued)

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
	OR	
	D.2.1 Be in MODE 3.	12 hours
	AND	
	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

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION		COMPLETION TIME
H. As required by Required Action C.1 and referenced in Table 3.3.6.1-1. OR Required Action and associated Completion Time of Condition F or G not met.	H.1	Be in MODE 3.	12 hours
	AND		
	H.2	Be in MODE 4.	36 hours
I. As required by Required Action C.1 and referenced in Table 3.3.6.1-1.	I.1	Declare associated Standby Liquid Control subsystem inoperable.	1 hour
	OR		
	I.2	Isolate the Reactor Water Cleanup System.	1 hour
J. As required by Required Action C.1 and referenced in Table 3.3.6.1-1.	J.1	Initiate action to restore channel to OPERABLE status.	Immediately
	OR		

(continued)

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
J. (continued)	J.2.1 Initiate action to restore secondary containment to OPERABLE status.	Immediately
	AND	
	J.2.2 Initiate action to restore one standby gas treatment (SGT) subsystem to OPERABLE status.	Immediately
	AND	
	J.2.3 Initiate action to restore isolation capability in each required secondary containment penetration flow path not isolated.	Immediately
K. As required by Required Action C.1 and referenced in Table 3.3.6.1-1.	K.1 Isolate the affected penetration flow path(s).	Immediately
	OR	
	K.2 Suspend movement of recently irradiated fuel assemblies in the primary and secondary containment.	Immediately

SURVEILLANCE REQUIREMENTS

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

1. Refer to Table 3.3.6.1-1 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 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
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

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.3.6.1.7	Perform CHANNEL CALIBRATION.	In accordance with the Surveillance Frequency Control Program
SR 3.3.6.1.8	Perform LOGIC SYSTEM FUNCTIONAL TEST.	In accordance with the Surveillance Frequency Control Program
SR 3.3.6.1.9	----------NOTE---------- Channel sensors may be excluded. ---------- Verify the ISOLATION SYSTEM RESPONSE TIME for main steam isolation valves is within limits.	In accordance with the Surveillance Frequency Control Program

Table 3.3.6.1-1 (page 1 of 6)
Primary Containment and Drywell 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 Low, Level 1	1,2,3	2	D	SR 3.3.6.1.1 SR 3.3.6.1.2 SR 3.3.6.1.3 SR 3.3.6.1.7 SR 3.3.6.1.8 SR 3.3.6.1.9	≥ -152.5 inches
b. Main Steam Line Pressure - Low	1	2	E	SR 3.3.6.1.1 SR 3.3.6.1.2 SR 3.3.6.1.3 SR 3.3.6.1.7 SR 3.3.6.1.8 SR 3.3.6.1.9	≥ 837 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 3.3.6.1.3 SR 3.3.6.1.7 SR 3.3.6.1.8 SR 3.3.6.1.9	≤ 255.9 psid
d. Condenser Vacuum - Low	1,2[(a)], 3[(a)]	2	D	SR 3.3.6.1.1 SR 3.3.6.1.2 SR 3.3.6.1.3 SR 3.3.6.1.7 SR 3.3.6.1.8	≥ 8.7 inches Hg vacuum
e. Main Steam Tunnel Ambient Temperature - High	1,2,3	2	D	SR 3.3.6.1.1 SR 3.3.6.1.2 SR 3.3.6.1.5 SR 3.3.6.1.8	≤ 191°F
f. Manual Initiation	1,2,3	2	G	SR 3.3.6.1.8	NA

(continued)

(a) With any turbine stop valve not closed.

Table 3.3.6.1-1 (page 2 of 6)
Primary Containment and Drywell 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
2. Primary Containment and Drywell Isolation					
a. Reactor Vessel Water Level - Low Low, Level 2	1,2,3	2[b]	H	SR 3.3.6.1.1 SR 3.3.6.1.2 SR 3.3.6.1.3 SR 3.3.6.1.7 SR 3.3.6.1.8	≥ -43.8 inches
b. Drywell Pressure - High	1,2,3	2[b]	H	SR 3.3.6.1.1 SR 3.3.6.1.2 SR 3.3.6.1.3 SR 3.3.6.1.7 SR 3.3.6.1.8	≤ 1.43 psig
c. Reactor Vessel Water Level - Low Low Low, Level 1 (ECCS Divisions 1 and 2)	1,2,3	2[b]	F	SR 3.3.6.1.1 SR 3.3.6.1.2 SR 3.3.6.1.3 SR 3.3.6.1.7 SR 3.3.6.1.8	≥ -152.5 inches
d. Drywell Pressure – High (ECCS Divisions 1 and 2)	1,2,3	2	F	SR 3.3.6.1.1 SR 3.3.6.1.2 SR 3.3.6.1.3 SR 3.3.6.1.7 SR 3.3.6.1.8	≤ 1.44 psig
e. Reactor Vessel Water Level - Low Low, Level 2 (HPCS)	1,2,3	4	F	SR 3.3.6.1.1 SR 3.3.6.1.2 SR 3.3.6.1.3 SR 3.3.6.1.7 SR 3.3.6.1.8	≥ -43.8 inches
f. Drywell Pressure – High (HPCS)	1,2,3	4	F	SR 3.3.6.1.1 SR 3.3.6.1.2 SR 3.3.6.1.3 SR 3.3.6.1.7 SR 3.3.6.1.8	≤ 1.44 psig

(continued)

(b) Also required to initiate the associated drywell isolation function.

Table 3.3.6.1-1 (page 3 of 6)
Primary Containment and Drywell 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
2. Primary Containment and Drywell Isolation (continued)					
g. Containment and Drywell Ventilation Exhaust Radiation - High	1,2,3	2[b]	F	SR 3.3.6.1.1 SR 3.3.6.1.2 SR 3.3.6.1.5 SR 3.3.6.1.6	≤ 4.0 mR/hr
	(c)	2	K	SR 3.3.6.1.1 SR 3.3.6.1.2 SR 3.3.6.1.5 SR 3.3.6.1.6	≤ 4.0 mR/hr
h. Manual Initiation	1,2,3	2[b]	G	SR 3.3.6.1.8	NA
	(c)	2	G	SR 3.3.6.1.8	NA
3. Reactor Core Isolation Cooling (RCIC) System Isolation					
a. RCIC Steam Line Flow - High	1,2,3	1	F	SR 3.3.6.1.1 SR 3.3.6.1.2 SR 3.3.6.1.3 SR 3.3.6.1.7 SR 3.3.6.1.8	≤ 64 inches water
b. RCIC Steam Line Flow Time Delay	1,2,3	1	F	SR 3.3.6.1.2 SR 3.3.6.1.4 SR 3.3.6.1.8	≥ 3 seconds and ≤ 7 seconds
c. RCIC Steam Supply Line Pressure - Low	1,2[d],3[d]	1	F	SR 3.3.6.1.1 SR 3.3.6.1.2 SR 3.3.6.1.3 SR 3.3.6.1.7 SR 3.3.6.1.8	≥ 57 psig

(continued)

(b) Also required to initiate the associated drywell isolation function.

(c) During movement of recently irradiated fuel assemblies in primary or secondary containment.

(d) Not required to be OPERABLE in MODE 2 or 3 with reactor steam dome pressure less than 150 psig during reactor startup.

Table 3.3.6.1-1 (page 4 of 6)
Primary Containment and Drywell 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. RCIC System Isolation (continued)					
d. RCIC Turbine Exhaust Diaphragm Pressure - 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 3.3.6.1.7 SR 3.3.6.1.8	≤ 20 psig
e. RCIC Equipment Room Ambient Temperature - High	1,2,3	1	F	SR 3.3.6.1.1 SR 3.3.6.1.2 SR 3.3.6.1.5 SR 3.3.6.1.8	≤ 191°F
f. Main Steam Line Tunnel Ambient Temperature - High	1,2,3	1	F	SR 3.3.6.1.1 SR 3.3.6.1.2 SR 3.3.6.1.5 SR 3.3.6.1.8	≤ 191°F
g. Main Steam Line Tunnel Temperature Timer	1,2,3	1	F	SR 3.3.6.1.2 SR 3.3.6.1.4 SR 3.3.6.1.8	≤ 30 minutes
h. RHR Equipment Room Ambient Temperature - High	1,2,3	1 per room	F	SR 3.3.6.1.1 SR 3.3.6.1.2 SR 3.3.6.1.5 SR 3.3.6.1.8	≤ 171°F
i. RCIC/RHR Steam Line Flow – High	1,2,3	1	F	SR 3.3.6.1.1 SR 3.3.6.1.2 SR 3.3.6.1.3 SR 3.3.6.1.7 SR 3.3.6.1.8	≤ 43 inches water
j. Drywell Pressure - High	1,2,3	1	F	SR 3.3.6.1.1 SR 3.3.6.1.2 SR 3.3.6.1.3 SR 3.3.6.1.7 SR 3.3.6.1.8	≤ 1.44 psig
k. Manual Initiation	1,2,3	1	G	SR 3.3.6.1.8	NA

(continued)

Table 3.3.6.1-1 (page 5 of 6)
Primary Containment and Drywell 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
4. Reactor Water Cleanup (RWCU) System Isolation					
a. Differential Flow - High	1,2,3	1	F	SR 3.3.6.1.1 SR 3.3.6.1.2 SR 3.3.6.1.7 SR 3.3.6.1.8	≤ 89 gpm
b. Differential Flow - Timer	1,2,3	1	F	SR 3.3.6.1.2 SR 3.3.6.1.4 SR 3.3.6.1.8	≤ 57 seconds
c. RWCU Heat Exchanger Equipment Room Temperature – High	1,2,3	1	F	SR 3.3.6.1.1 SR 3.3.6.1.2 SR 3.3.6.1.5 SR 3.3.6.1.8	≤ 126°F
d. RWCU Pump Room Temperature – High	1,2,3	1 per room	F	SR 3.3.6.1.1 SR 3.3.6.1.2 SR 3.3.6.1.5 SR 3.3.6.1.8	≤ 176°F
e. RWCU Heat Exchanger Room Valve Nest Area Temperature - High	1,2,3	1	F	SR 3.3.6.1.1 SR 3.3.6.1.2 SR 3.3.6.1.5 SR 3.3.6.1.8	≤ 141°F
f. Main Steam Line Tunnel Ambient Temperature – High	1,2,3	1	F	SR 3.3.6.1.1 SR 3.3.6.1.2 SR 3.3.6.1.5 SR 3.3.6.1.8	≤ 191°F
g. Reactor Vessel Water Level - Low Low, Level 2	1,2,3	2	F	SR 3.3.6.1.1 SR 3.3.6.1.2 SR 3.3.6.1.3 SR 3.3.6.1.7 SR 3.3.6.1.8	≥ -43.8 inches
h. Standby Liquid Control System Initiation	1,2	1	I	SR 3.3.6.1.8	NA
i. Manual Initiation	1,2,3	2	G	SR 3.3.6.1.8	NA

(continued)

Table 3.3.6.1-1 (page 6 of 6)
Primary Containment and Drywell 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. RHR System Isolation					
a. RHR Equipment Room Ambient Temperature - High	1,2,3	1 per room	F	SR 3.3.6.1.1 SR 3.3.6.1.2 SR 3.3.6.1.5 SR 3.3.6.1.8	≤ 171°F
b. Reactor Vessel Water Level - Low, Level 3	1,2,3[e]	2	F	SR 3.3.6.1.1 SR 3.3.6.1.2 SR 3.3.6.1.3 SR 3.3.6.1.7 SR 3.3.6.1.8	≥ 10.8 inches
	3[f]	2	J	SR 3.3.6.1.1 SR 3.3.6.1.2 SR 3.3.6.1.3 SR 3.3.6.1.7 SR 3.3.6.1.8	≥ 10.8 inches
c. Reactor Steam Dome Pressure - 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 3.3.6.1.7 SR 3.3.6.1.8	≤ 150 psig
d. Drywell Pressure - 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 3.3.6.1.7 SR 3.3.6.1.8	≤ 1.43 psig
e. Manual Initiation	1,2,3	2	G	SR 3.3.6.1.8	NA

(e) With reactor steam dome pressure greater than or equal to the RHR cut-in permissive pressure.

(f) With reactor steam dome pressure less than the RHR cut-in permissive pressure.

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 Function 2 AND 24 hours for Functions other than Function 2
B. One or more automatic Functions with secondary containment isolation capability not maintained.	B.1 Restore secondary containment isolation capability.	1 hour
C. Required Action and associated Completion Time of Condition A or B not met.	C.1.1 Isolate the associated penetration flow path(s). OR	1 hour (continued)

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
C. (continued)	C.1.2 Declare associated secondary containment isolation valve(s) inoperable.	1 hour
	AND	
	C.2.1 Place the associated standby gas treatment (SGT) subsystem in operation.	1 hour
	OR	
	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

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
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
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
SR 3.3.6.2.7	----------NOTE---------- Radiation detectors may be excluded. ---------- Verify the ISOLATION SYSTEM RESPONSE TIME for air operated secondary containment isolation dampers is within limits.	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 AND OTHER SPECIFIED CONDITIONS	REQUIRED CHANNELS PER TRIP SYSTEM	SURVEILLANCE REQUIREMENTS	ALLOWABLE VALUE
1. Reactor Vessel Water Level - Low Low, Level 2	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	≥ -43.8 inches
2. Drywell Pressure - High	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	≤ 1.43 psig
3. Fuel Handling Area Ventilation Exhaust Radiation - High 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 SR 3.3.6.2.7	≤ 4.0 mR/hr
4. Fuel Handling Area Pool Sweep Exhaust Radiation - High 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 SR 3.3.6.2.7	≤ 35 mR/hr
5. Manual Initiation	1,2,3, (a)	2	SR 3.3.6.2.6	NA

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

3.3 INSTRUMENTATION

3.3.6.3 Residual Heat Removal (RHR) Containment Spray System Instrumentation

LCO 3.3.6.3 The RHR Containment Spray System 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 channel.

CONDITION	REQUIRED ACTION		COMPLETION TIME
A. One or more required channels inoperable.	A.1	Enter the Condition referenced in Table 3.3.6.3-1 for the channel.	Immediately
B. As required by Required Action A.1 and referenced in Table 3.3.6.3-1.	B.1	Declare associated RHR containment spray subsystem inoperable.	1 hour from discovery of loss of RHR containment spray initiation capability in both trip systems
	AND		
	B.2	Place channel in trip.	24 hours

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
C. As required by Required Action A.1 and referenced in Table 3.3.6.3-1.	C.1 Declare associated RHR containment spray subsystem inoperable.	1 hour from discovery of loss of RHR containment spray initiation capability in both trip systems
	AND	
	C.2 Restore channel to OPERABLE status.	24 hours
D. Required Action and associated Completion Time of Condition B or C not met.	D.1 Declare associated RHR containment spray subsystem inoperable.	Immediately

SURVEILLANCE REQUIREMENTS

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

1. Refer to Table 3.3.6.3-1 to determine which SRs apply for each RHR Containment Spray 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 RHR containment spray 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	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
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)
RHR Containment Spray System Instrumentation

FUNCTION	REQUIRED CHANNELS PER TRIP SYSTEM	CONDITIONS REFERENCED FROM REQUIRED ACTION A.1	SURVEILLANCE REQUIREMENTS	ALLOWABLE VALUE
1. Drywell Pressure—High	2	B	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	≤ 1.44 psig
2. Containment Pressure—High	1	C	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	≤ 8.34 psig
3. Reactor Vessel Water Level—Low Low Low, Level 1	2	B	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	≥ -152.5 inches
4. System A and System B Timers	1	C	SR 3.3.6.3.2 SR 3.3.6.3.4 SR 3.3.6.3.6	≥ 10.6 minutes and ≤ 11.1 minutes

3.3 INSTRUMENTATION

3.3.6.4 Suppression Pool Makeup (SPMU) System Instrumentation

LCO 3.3.6.4 The SPMU System instrumentation for each Function in Table 3.3.6.4-1 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 required channels inoperable.	A.1	Enter the Condition referenced in Table 3.3.6.4-1 for the channel.	Immediately
B. As required by Required Action A.1 and referenced in Table 3.3.6.4-1.	B.1	Declare associated SPMU subsystem inoperable.	1 hour from discovery of loss of SPMU initiation capability in both trip systems
	AND		
	B.2	Place channel in trip.	24 hours

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION		COMPLETION TIME
C. As required by Required Action A.1 and referenced in Table 3.3.6.4-1.	C.1	--------NOTE--------- Only applicable for Functions 3 and 6. ----------	
		Declare associated SPMU subsystem inoperable.	1 hour from discovery of loss of SPMU initiation capability in both trip systems
	AND		
	C.2	Restore channel to OPERABLE status.	24 hours
D. Required Action and associated Completion Time of Condition B or C not met.	D.1	Declare associated SPMU subsystem inoperable.	Immediately

SURVEILLANCE REQUIREMENTS

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

1. Refer to Table 3.3.6.4-1 to determine which SRs apply for each SPMU 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 SPMU initiation capability.

SURVEILLANCE		FREQUENCY
SR 3.3.6.4.1	Perform CHANNEL CHECK.	In accordance with the Surveillance Frequency Control Program
SR 3.3.6.4.2	Perform CHANNEL FUNCTIONAL TEST.	In accordance with the Surveillance Frequency Control Program
SR 3.3.6.4.3	Calibrate the trip unit.	In accordance with the Surveillance Frequency Control Program
SR 3.3.6.4.4	Perform CHANNEL CALIBRATION.	In accordance with the Surveillance Frequency Control Program
SR 3.3.6.4.5	Perform CHANNEL CALIBRATION.	In accordance with the Surveillance Frequency Control Program
SR 3.3.6.4.6	Perform LOGIC SYSTEM FUNCTIONAL TEST.	In accordance with the Surveillance Frequency Control Program

Table 3.3.6.4-1 (page 1 of 1)
Suppression Pool Makeup System Instrumentation

FUNCTION	REQUIRED CHANNELS PER TRIP SYSTEM	CONDITIONS REFERENCED FROM REQUIRED ACTION A.1	SURVEILLANCE REQUIREMENTS	ALLOWABLE VALUE
1. Drywell Pressure – High	2	B	SR 3.3.6.4.1 SR 3.3.6.4.2 SR 3.3.6.4.3 SR 3.3.6.4.5 SR 3.3.6.4.6	≤ 1.44 psig
2. Reactor Vessel Water Level – Low Low Low, Level 1	2	B	SR 3.3.6.4.1 SR 3.3.6.4.2 SR 3.3.6.4.3 SR 3.3.6.4.5 SR 3.3.6.4.6	≥ -152.5 inches
3. Suppression Pool Water Level – Low Low	1	C	SR 3.3.6.4.1 SR 3.3.6.4.2 SR 3.3.6.4.3 SR 3.3.6.4.5 SR 3.3.6.4.6	≥ 17 ft 2 inches
4. Drywell Pressure – High	2	B	SR 3.3.6.4.1 SR 3.3.6.4.2 SR 3.3.6.4.3 SR 3.3.6.4.5 SR 3.3.6.4.6	≤ 1.43 psig
5. Reactor Vessel Water Level – Low Low, Level 2	2	B	SR 3.3.6.4.1 SR 3.3.6.4.2 SR 3.3.6.4.3 SR 3.3.6.4.5 SR 3.3.6.4.6	≥ -43.8 inches
6. Timer	1	C	SR 3.3.6.4.2 SR 3.3.6.4.4 SR 3.3.6.4.6	≤ 29.5 minutes
7. Manual Initiation	2	C	SR 3.3.6.4.6	NA

3.3 INSTRUMENTATION

3.3.6.5 Relief and Low-Low Set (LLS) Instrumentation

LCO 3.3.6.5 Two relief and LLS instrumentation trip systems shall be OPERABLE.

APPLICABILITY: MODES 1, 2, and 3.

ACTIONS

CONDITION	REQUIRED ACTION		COMPLETION TIME
A. One trip system inoperable.	A.1	Restore trip system to OPERABLE status.	7 days
	OR		
	A.2	Declare associated relief and LLS valve(s) inoperable.	7 days
B. Required Action and associated Completion Time of Condition A not met. OR Two trip systems inoperable.	B.1	Be in MODE 3.	12 hours
	AND		
	B.2	Be in MODE 4.	36 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 LLS or relief initiation capability, as applicable.

SURVEILLANCE		FREQUENCY
SR 3.3.6.5.1	Perform CHANNEL FUNCTIONAL TEST.	In accordance with the Surveillance Frequency Control Program
SR 3.3.6.5.2	Calibrate the trip unit.	In accordance with the Surveillance Frequency Control Program
SR 3.3.6.5.3	Perform CHANNEL CALIBRATION. The Allowable Values shall be: a. Relief Function Low: 1103 ± 15 psig Medium: 1113 ± 15 psig High: 1123 ± 15 psig b. LLS Function Low open: 1033 ± 15 psig close: 926 ± 15 psig Medium open: 1073 ± 15 psig close: 936 ± 15 psig High open: 1113 ± 15 psig close: 946 ± 15 psig	In accordance with the Surveillance Frequency Control Program
SR 3.3.6.5.4	Perform LOGIC SYSTEM FUNCTIONAL TEST.	In accordance with the Surveillance Frequency Control Program

3.3 INSTRUMENTATION

3.3.7.1 Control Room Fresh Air (CRFA) System Instrumentation

LCO 3.3.7.1 The CRFA System instrumentation for manual isolation 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.	24 hours
B. Required Action and associated Completion Time not met.	B.1 Close associated isolation dampers.	1 hour

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 CR isolation capability is maintained.

SURVEILLANCE		FREQUENCY
SR 3.3.7.1.1	Perform LOGIC SYSTEM FUNCTIONAL TEST.	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,
When the associated diesel generator (DG) is required to be OPERABLE by LCO 3.8.2, "AC Sources—Shutdown."

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.	24 hours
B. One or more Functions with actuation capability not maintained.	B.1	Restore actuation capability.	1 hour
C. Required Action and associated Completion Time not met.	C.1	Declare associated DG inoperable.	Immediately

SURVEILLANCE REQUIREMENTS

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

1. Refer to Table 3.3.8.1-1 to determine which SRs apply for each LOP 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 DG 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 DIVISION	SURVEILLANCE REQUIREMENTS	ALLOWABLE VALUE
1. Divisions 1 and 2 - 4.16 kV Emergency Bus Undervoltage			
a. Loss of Voltage - 4.16 kV basis	4	SR 3.3.8.1.1 SR 3.3.8.1.2 SR 3.3.8.1.4	≥2621 V and ≤ 2912 V
b. Loss of Voltage - Time Delay	2	SR 3.3.8.1.3 SR 3.3.8.1.4	≥0.4 seconds and ≤1.0 seconds
c. Degraded Voltage - 4.16 kV basis	4	SR 3.3.8.1.1 SR 3.3.8.1.2 SR 3.3.8.1.4	≥3764.25 V and ≤3837.6 V
d. Degraded Voltage - Time Delay	2	SR 3.3.8.1.3 SR 3.3.8.1.4	≥8.5 seconds and ≤9.5 seconds
2. Division 3 - 4.16 kV Emergency Bus Undervoltage			
a. Loss of Voltage - 4.16 kV basis	4	SR 3.3.8.1.3 SR 3.3.8.1.4	≥2984 V and ≤3106 V
b. Loss of Voltage - Time Delay	2	SR 3.3.8.1.3 SR 3.3.8.1.4	≥2.0 seconds and ≤2.5 seconds
c. Degraded Voltage - 4.16 kV basis	4	SR 3.3.8.1.3 SR 3.3.8.1.4	≥3605 V and ≤3763.5 V
d. Degraded Voltage - Time Delay, No LOCA	2	SR 3.3.8.1.3 SR 3.3.8.1.4	≥4.5 minutes and ≤5.5 minutes
e. Degraded Voltage - Time Delay, LOCA	4	SR 3.3.8.1.3 SR 3.3.8.1.4	≥3.68 seconds and ≤4.4 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 any control rod withdrawn from a core cell containing one or more fuel assemblies.

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 -------Note-------- LCO 3.0.4.a is not applicable when entering MODE 3. ---------- Be in MODE 3.	12 hours

(continued)

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 any control rod withdrawn from a core cell containing one or more fuel assemblies.	D.1 Initiate action to fully insert all insertable control rods in core cells containing one or more fuel assemblies.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.3.8.2.1	----------NOTE---------- Only required to be performed prior to entering MODE 2 or 3 from MODE 4, when in MODE 4 for ≥ 24 hours. ---------- Perform CHANNEL FUNCTIONAL TEST.	In accordance with the Surveillance Frequency Control Program

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.3.8.2.2	Perform CHANNEL CALIBRATION. The Allowable Values shall be: a. Overvoltage Bus A ≤ 132.9 V Bus B ≤ 133.0 V b. Undervoltage Bus A ≥ 115.0 V Bus B ≥ 115.9 V c. Underfrequency (with time delay set to ≤ 4 seconds) Bus A ≥ 57 Hz Bus B ≥ 57 Hz	In accordance with the Surveillance Frequency Control Program
SR 3.3.8.2.3	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.

OR

One recirculation loop shall be in operation provided the plant is not operating in the MELLLA+ domain defined in the COLR and provided the required limits are modified for single loop operation as specified in the COLR.

----------NOTE----------
Required limit modifications for single recirculation loop operation may be delayed for up to 12 hours after transition from two recirculation loop operation to single recirculation loop operation.

APPLICABILITY: MODES 1 and 2.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Recirculation loop jet pump flow mismatch not within limits.	A.1 Shutdown one recirculation loop.	2 hours

(continued)

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ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
B. No recirculation loops in operation.	B.1 Be in MODE 3.	12 hours
C. Required limit modifications not performed.	C.1 Declare associated limit(s) not met.	Immediately

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 recirculation loop jet pump 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 Flow Control Valves (FCVs)

LCO 3.4.2 A recirculation loop FCV shall be OPERABLE in each operating recirculation loop.

APPLICABILITY: MODES 1 and 2.

ACTIONS

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

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or two required FCVs inoperable.	A.1 Lock up the FCV.	4 hours
B. Required Action and associated Completion Time not met.	B.1 Be in MODE 3.	12 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.4.2.1	Verify each FCV fails "as is" on loss of hydraulic pressure at the hydraulic unit.	In accordance with the Surveillance Frequency Control Program

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.4.2.2	Verify average rate of each FCV movement is: a. ≤ 11% of stroke per second for opening; and b. ≤ 11% of stroke per second for closing.	In accordance with the Surveillance Frequency Control Program

3.4 REACTOR COOLANT SYSTEM (RCS)

3.4.3 Jet Pumps

LCO 3.4.3 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 3.4.3.1	----------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 > 21.8% RTP. ---------- Verify at least two of the following criteria (a, b, and c) are satisfied for each operating recirculation loop: a. Recirculation loop drive flow versus flow control valve position differs by ≤ 10% from established patterns. b. Recirculation loop drive flow versus total core flow differs by ≤ 10% from established patterns. c. Each jet pump diffuser to lower plenum differential pressure differs by ≤ 20% from established patterns, or each jet pump flow differs by ≤ 10% from established patterns.	In accordance with the Surveillance Frequency Control Program

3.4 REACTOR COOLANT SYSTEM (RCS)

3.4.4 Safety/Relief Valves (S/RVs)

LCO 3.4.4 The safety function of nine S/RVs shall be OPERABLE

AND

The relief function of six additional S/RVs shall be OPERABLE.

APPLICABILITY: MODES 1, 2, and 3.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more required S/RVs inoperable.	A.1 Be in MODE 3. AND A.2 Be in MODE 4.	12 hours 36 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.4.4.1	Verify the safety function lift setpoints of the required S/RVs are as follows: Number of S/RVs — Setpoint (psig) 8 — 1165 ± 34.9 6 — 1180 ± 35.4 6 — 1190 ± 35.7	In accordance with the INSERVICE TESTING PROGRAM

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.4.4.2	----------NOTE---------- Valve actuation may be excluded. ---------- Verify each required relief function S/RV actuates on an actual or simulated automatic initiation signal.	In accordance with the Surveillance Frequency Control Program
SR 3.4.4.3	----------NOTE---------- Not required to be performed until 12 hours after reactor steam pressure and flow are adequate to perform the test. ---------- Verify each required S/RV relief-mode actuator strokes when manually actuated.	In accordance with the INSERVICE TESTING PROGRAM on a STAGGERED TEST BASIS for each valve solenoid

3.4 REACTOR COOLANT SYSTEM (RCS)

3.4.5 RCS Operational LEAKAGE

LCO 3.4.5 RCS operational LEAKAGE shall be limited to:

a. No pressure boundary LEAKAGE;

b. ≤ 5 gpm unidentified LEAKAGE;

c. ≤ 30 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. OR Total LEAKAGE not within limit.	B.1 Reduce LEAKAGE to within limits.	4 hours

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
C. Unidentified LEAKAGE increase not within limit.	C.1 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. AND D.2 Be in MODE 4.	12 hours 36 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.4.5.1	Verify RCS unidentified LEAKAGE, total LEAKAGE, and unidentified LEAKAGE increase are within limits.	In accordance with the Surveillance Frequency Control Program

3.4 REACTOR COOLANT SYSTEM (RCS)

3.4.6 RCS Pressure Isolation Valve (PIV) Leakage

LCO 3.4.6 The leakage from each RCS PIV shall be within limit.

APPLICABILITY: MODES 1 and 2,
MODE 3, except valves in the residual heat removal (RHR) shutdown cooling flowpath when in, or during the transition to or from, the shutdown cooling mode of operation.

ACTIONS

----------NOTES----------
1. Separate Condition entry is allowed for each flow path.

2. Enter applicable Conditions and Required Actions for systems made inoperable by PIVs.

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more flow paths with leakage from one or more RCS PIVs not within limit.	A.1 --------NOTE--------- Each valve used to satisfy Required Action A.1 shall have been verified to meet SR 3.4.6.1 and be in the high pressure portion of the system. --- Isolate the high pressure portion of the affected system from the low pressure portion by use of one closed manual, deactivated automatic, or check valve.	4 hours
	AND	(continued)

ACTIONS

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

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.4.6.1	----------NOTE---------- Only required to be performed in MODES 1 and 2. ---------- Verify equivalent leakage of each RCS PIV is ≤ 1 gpm, at an RCS pressure ≥ 1040 psig and ≤ 1060 psig.	In accordance with INSERVICE TESTING PROGRAM

3.4 REACTOR COOLANT SYSTEM (RCS)

3.4.7 RCS Leakage Detection Instrumentation

LCO 3.4.7 The following RCS leakage detection instrumentation shall be OPERABLE:

a. Drywell floor drain sump monitoring system;

b. One channel of either drywell atmospheric particulate or atmospheric gaseous monitoring system; and

c. Drywell air cooler condensate flow rate monitoring system.

APPLICABILITY: MODES 1, 2, and 3.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Drywell floor drain sump monitoring system inoperable.	A.1 Restore drywell floor drain sump monitoring system to OPERABLE status.	30 days
B. Required drywell atmospheric monitoring system inoperable.	B.1 Analyze grab samples of drywell atmosphere.	Once per 12 hours

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
C. Drywell air cooler condensate flow rate monitoring system inoperable.	----------NOTE---------- Not applicable when the required drywell atmospheric monitoring system is inoperable. ----------	
	C.1 Perform SR 3.4.7.1.	Once per 8 hours
D. Drywell floor drain sump monitoring system inoperable. <u>AND</u> Drywell air cooler condensate flow rate monitoring system inoperable.	-------NOTE---------- Only applicable when the drywell atmospheric gaseous monitoring system is the only OPERABLE monitor. ----------	
	D.1 Analyze grab samples of the drywell atmosphere.	Once per 12 hours
	<u>AND</u>	
	D.2 Monitor RCS Leakage by administrative means.	Once per 12 hours
	<u>AND</u>	
	D.3.1 Restore drywell floor drain sump monitoring system to OPERABLE status.	7 days
	<u>OR</u>	
	D.3.2 Restore drywell air cooler condensate flow rate monitoring system to OPERABLE status.	7 days

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
E. Required drywell atmospheric monitoring system inoperable.	E.1 Restore required drywell atmospheric monitoring system to OPERABLE status.	30 days
AND	OR	
Drywell air cooler condensate flow rate monitoring system inoperable.	E.2 Restore drywell air cooler condensate flow rate monitoring system to OPERABLE status.	30 days
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. All required leakage detection systems inoperable.	G.1 Enter LCO 3.0.3	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.4.7.1	Perform CHANNEL CHECK of required drywell atmospheric monitoring system.	In accordance with the Surveillance Frequency Control Program

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.4.7.2	Perform CHANNEL FUNCTIONAL TEST of required leakage detection instrumentation.	In accordance with the Surveillance Frequency Control Program
SR 3.4.7.3	Perform CHANNEL CALIBRATION of required leakage detection instrumentation.	In accordance with the Surveillance Frequency Control Program

3.4 REACTOR COOLANT SYSTEM (RCS)

3.4.8 RCS Specific Activity

LCO 3.4.8 The DOSE EQUIVALENT I-131 specific activity of the reactor coolant shall be ≤ 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 ≤ 4.0 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
	AND	
	A.2 Restore DOSE EQUIVALENT I-131 to within limits.	48 hours
B. Required Action and associated Completion Time of Condition A not met.	B.1 Determine DOSE EQUIVALENT I-131.	Once per 4 hours
	AND	
OR	B.2.1 Isolate all main steam lines.	12 hours
Reactor coolant specific activity > 4.0 μCi/gm DOSE EQUIVALENT I-131.	OR	
	B.2.2.1 Be in MODE 3.	12 hours
	AND	
	B.2.2.2 Be in MODE 4.	36 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.4.8.1	----------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)

3.4.9 Residual Heat Removal (RHR) Shutdown Cooling System — Hot Shutdown

LCO 3.4.9 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 not be in 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 performance of Surveillances.

APPLICABILITY: MODE 3 with reactor steam dome pressure less than the RHR cut in permissive pressure.

ACTIONS

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

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One 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

(continued)

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
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
C. Two 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 AND 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

(continued)

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
E. No RHR shutdown cooling subsystem in operation. AND No recirculation pump in operation.	E.1 Initiate action to restore one RHR shutdown cooling subsystem or one recirculation pump to operation.	Immediately
	AND	
	E.2 Verify reactor coolant circulation by an alternate method.	1 hour from discovery of no reactor coolant circulation AND Once per 12 hours thereafter
	AND	
	E.3 Monitor reactor coolant temperature and pressure.	Once per hour

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.4.9.1	----------NOTE---------- Not required to be met until 2 hours after reactor steam dome pressure is less than the RHR cut in permissive pressure. ---------- Verify one RHR shutdown cooling subsystem or recirculation pump is operating.	In accordance with the Surveillance Frequency Control Program
SR 3.4.9.2	----------NOTE---------- Not required to be performed until 12 hours after reactor steam dome pressure is < the RHR cut in permissive pressure. ---------- 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)

3.4.10 Residual Heat Removal (RHR) Shutdown Cooling System—Cold Shutdown

LCO 3.4.10 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 not be in operation for up to 2 hours per 8 hour.

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

3. Both RHR shutdown cooling subsystems and recirculation pumps may not be in operation during RCS inservice leak and hydrostatic testing.

APPLICABILITY: MODE 4.

ACTIONS

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

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or two RHR shutdown cooling subsystems inoperable.	A.1 Verify an alternate method of decay heat removal is available for each inoperable RHR shutdown cooling subsystem.	1 hour AND Once per 24 hours thereafter

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
B. Required Action and associated Completion Time of Condition A not met.	B.1 Initiate action to restore RHR shutdown cooling subsystem(s) to OPERABLE status.	Immediately
C. No RHR shutdown cooling subsystem in operation. AND No recirculation pump in operation.	C.1 Verify reactor coolant circulating by an alternate method. AND C.2 Monitor reactor coolant temperature and pressure.	1 hour from discovery of no reactor coolant circulation AND Once per 12 hours thereafter Once per hour

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.4.10.1	Verify one RHR shutdown cooling subsystem or recirculation pump is operating.	In accordance with the Surveillance Frequency Control Program
SR 3.4.10.2	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)

3.4.11 RCS Pressure and Temperature (P/T) Limits

LCO 3.4.11 RCS pressure, RCS temperature, RCS heatup and cooldown rates, and the recirculation loop 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. ----------	A.1 Restore parameter(s) to within the limits specified in the PTLR.	30 minutes
	AND	
Requirements of the LCO not met in MODES 1, 2, and 3.	A.2 Determine RCS is acceptable for continued operation.	72 hours
B. Required Action and associated Completion Time of Condition A not met.	B.1 Be in MODE 3.	12 hours
	AND	
	B.2 Be in MODE 4.	36 hours

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
C. ----------NOTE---------- Required Action C.2 shall be completed if this Condition is entered. ----------	C.1 Initiate action to restore parameter(s) to within limits specified in the PTLR.	Immediately
	AND	
Requirements of the LCO not met in other than MODES 1, 2, and 3.	C.2 Determine RCS is acceptable for operation.	Prior to entering MODE 2 or 3

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.4.11.1	----------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 limits specified in the PTLR based on the current effective full power year (EFPY), and b. RCS heatup and cooldown rates are within the limits specified in the PTLR.	In accordance with the Surveillance Frequency Control Program

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.4.11.2	----------NOTE---------- Only required to be met during control rod withdrawal for the purpose of achieving criticality. ---------- Verify RCS pressure and RCS temperature are within the criticality limits specified in the PTLR based on the on the current EFPY.	Once within 15 minutes prior to control rod withdrawal for the purpose of achieving criticality
SR 3.4.11.3	----------NOTE---------- Only required to be met in MODES 1, 2, 3, and 4 with reactor steam dome pressure ≥ 25 psig during recirculation pump start. ---------- Verify the difference between the bottom head coolant temperature and the reactor pressure vessel (RPV) coolant temperature is within the limits specified in the PTLR.	Once within 15 minutes prior to each startup of a recirculation pump
SR 3.4.11.4	----------NOTE---------- Only required to be met in MODES 1, 2, 3, and 4 during recirculation pump start. ---------- 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

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.4.11.5	----------NOTE---------- Only required to be performed when tensioning the reactor vessel head bolting studs. ---------- 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 3.4.11.6	----------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 3.4.11.7	----------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

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.4.11.8	----------NOTE---------- Only required to be met in single loop operation during increases in THERMAL POWER or recirculation loop flow with the operating recirculation pump not on high speed and THERMAL POWER < 36% of RTP. ---------- Verify the difference between the bottom head coolant temperature and the RPV coolant temperature is within the limits specified in the PTLR.	Once within 15 minutes prior to an increase in THERMAL POWER or an increase in loop flow
SR 3.4.11.9	----------NOTE---------- Only required to be met in single loop operation during increases in THERMAL POWER or recirculation loop flow with the operating recirculation pump not on high speed, and THERMAL POWER < 36% of RTP, and the idle recirculation loop not isolated from the RPV. ---------- Verify the difference between the reactor coolant temperature in the recirculation loop not in operation and the RPV coolant temperature is within the limits specified in the PTLR.	Once within 15 minutes prior to an increase in THERMAL POWER or an increase in loop flow

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3.4 REACTOR COOLANT SYSTEM (RCS)

3.4.12 Reactor Steam Dome Pressure

LCO 3.4.12 The reactor steam dome pressure shall be ≤ 1045 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 3.4.12.1	Verify reactor steam dome pressure is ≤ 1045 psig.	In accordance with the Surveillance Frequency Control Program

3.5 EMERGENCY CORE COOLING SYSTEMS (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 eight safety/relief valves shall be OPERABLE.

---NOTE---
Low pressure coolant injection (LPCI) subsystems may be considered OPERABLE during alignment and operation for decay heat removal with reactor steam dome pressure less than the residual heat removal cut in permissive pressure in MODE 3, if capable of being manually realigned and not otherwise inoperable.

APPLICABILITY: MODE 1,
MODES 2 and 3, except 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 HPCS.

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One low pressure ECCS injection/spray subsystem inoperable.	A.1 Restore low pressure ECCS injection/spray subsystem to OPERABLE status.	7 days

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
B. High Pressure Core Spray (HPCS) System inoperable.	B.1 Verify by administrative means RCIC System is OPERABLE when RCIC is required to be OPERABLE.	1 hour
	AND	
	B.2 Restore HPCS System to OPERABLE status.	14 days

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
C. Two ECCS injection subsystems inoperable. OR One ECCS injection and one ECCS spray subsystem inoperable.	C.1 Restore one ECCS injection/spray subsystem to OPERABLE status.	72 hours
D. Required Action and associated Completion Time of Condition A, B, or C not met.	D.1 -------NOTE-------- LCO 3.0.4.a is not applicable when entering MODE 3. ---------- Be in MODE 3.	 12 hours
E. One ADS valve inoperable.	E.1 Restore ADS valve to OPERABLE status.	14 days
F. One ADS valve inoperable. AND One low pressure ECCS injection/spray subsystem inoperable.	F.1 Restore ADS valve to OPERABLE status. OR F.2 Restore low pressure ECCS injection/spray subsystem to OPERABLE status.	72 hours 72 hours

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
G. Two or more ADS valves inoperable. OR Required Action and associated Completion Time of Condition E or F not met.	G.1 -------NOTE-------- LCO 3.0.4.a is not applicable when entering MODE 3. ---------- Be in MODE 3.	12 hours
H. HPCS and Low Pressure Core Spray (LPCS) Systems inoperable. OR Three or more ECCS injection/spray subsystems inoperable. OR HPCS System and one or more ADS valves inoperable. OR Two or more ECCS injection/spray subsystems and one or more ADS valves inoperable.	H.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 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 3.5.1.3	Verify ADS accumulator supply pressure is ≥ 150 psig.	In accordance with the Surveillance Frequency Control Program
SR 3.5.1.4	Verify each ECCS pump develops the specified flow rate with the specified total developed head. System / Flow Rate / Total Developed Head LPCS / ≥ 7115 gpm / ≥ 290 psid LPCI / ≥ 7450 gpm / ≥ 125 psid HPCS / ≥ 7115 gpm / ≥ 445 psid	In accordance with the INSERVICE TESTING PROGRAM

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.5.1.5	----------NOTE---------- Vessel injection/spray may be excluded. ---------- Verify each ECCS injection/spray subsystem actuates on an actual or simulated automatic initiation signal, except for valves that are locked, sealed, or otherwise secured in the actuated position.	In accordance with the Surveillance Frequency Control Program
SR 3.5.1.6	----------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 3.5.1.7	----------NOTE---------- Not required to be performed until 12 hours after reactor steam pressure and flow are adequate to perform the test. ---------- Verify each ADS valve relief-mode actuator strokes when manually actuated.	In accordance with the INSERVICE TESTING PROGRAM on a STAGGERED TEST BASIS for each valve solenoid

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.5.1.8	----------NOTE---------- ECCS Actuation instrumentation is excluded. ---------- Verify the ECCS RESPONSE TIME for HPCS System is within limits.	In accordance with the Surveillance Frequency Control Program

3.5 EMERGENCY CORE COOLING SYSTEMS (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 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 no 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

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION		COMPLETION TIME
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		
	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 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		

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION		COMPLETION TIME
D. (continued)	D.2	Initiate action to establish secondary containment boundary.	Immediately
	AND		
	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 standby gas treatment 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 DRAIN TIME ≥ 36 hours.	In accordance with the Surveillance Frequency Control Program
SR 3.5.2.2	Verify, for a required low pressure ECCS injection/spray subsystem, the suppression pool water level is ≥ 12 ft 8 inches.	In accordance with the Surveillance Frequency Control Program
SR 3.5.2.3	Verify, for the required High Pressure Core Spray (HPCS) System, the: a. Suppression pool water level is ≥ 12 ft 8 inches; or b. Condensate storage tank water level is ≥ 18 ft.	In accordance with the Surveillance Frequency Control Program
SR 3.5.2.4	Verify, for the required ECCS injection/ spray subsystem, locations susceptible to gas accumulation are sufficently filled with water.	In accordance with the Surveillance Frequency Control Program
SR 3.5.2.5	----------NOTE---------- Not required to be met for system vent flow paths opened under administrative control. ---------- Verify, for the required ECCS injection/spray subsystem, each 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

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.5.2.6	Operate the required ECCS injection/spray subsystem through the test return line for ≥ 10 minutes.	In accordance with the Surveillance Frequency Control Program
SR 3.5.2.7	Verify each valve credited for automatically isolating a penetration flow path actuates to the isolation position on an actual or simulated isolation signal, except for valves that are locked, sealed, or otherwise secured in the actuated position.	In accordance with the Surveillance Frequency Control Program
SR 3.5.2.8	----------NOTE---------- Vessel injection/spray may be excluded. ---------- Verify the required LPCI or LPCS subsystem actuates on a manual initiation signal, or the required HPCS System can be manually operated.	In accordance with the Surveillance Frequency Control Program

3.5 EMERGENCY CORE COOLING SYSTEMS (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 RCIC.

CONDITION	REQUIRED ACTIONS		COMPLETION TIME
A. RCIC System inoperable.	A.1	Verify by administrative means High Pressure Core Spray System is OPERABLE.	1 hour
	AND		
	A.2	Restore RCIC System to OPERABLE status.	14 days
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	Verify the RCIC System locations susceptible to gas accumulation are sufficiently filled with water.	In accordance with the Surveillance Frequency Control Program
SR 3.5.3.2	----------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 3.5.3.3	----------NOTE---------- Not required to be performed until 12 hours after reactor steam pressure and flow are adequate to perform the test. ----------	
	Verify, with RCIC steam supply pressure ≤ 1045 psig and ≥ 945 psig, the RCIC pump can develop a flow rate ≥ 800 gpm against a system head corresponding to reactor pressure.	In accordance with the Surveillance Frequency Control Program
SR 3.5.3.4	----------NOTE---------- Not required to be performed until 12 hours after reactor steam pressure and flow are adequate to perform the test. ----------	
	Verify, with RCIC steam supply pressure ≤ 165 psig and ≥ 150 psig, the RCIC pump can develop a flow rate ≥ 800 gpm against a system head corresponding to reactor pressure.	In accordance with the Surveillance Frequency Control Program

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.5.3.5	----------NOTE---------- Vessel injection may be excluded. ---------- Verify the RCIC System actuates on an actual or simulated automatic initiation signal, except for valves that are locked, sealed, or otherwise secured in the actuated position.	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 10 CFR 50, Appendix J, as modified by approved exemptions.	In accordance with 10 CFR 50, Appendix J, Testing Program

3.6 CONTAINMENT SYSTEMS

3.6.1.2 Primary Containment Air Locks

LCO 3.6.1.2 Two primary containment air locks shall be OPERABLE.

APPLICABILITY: MODES 1, 2, and 3.

ACTIONS

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

1. Entry and exit is permissible to perform repairs of the affected air lock components.
2. Separate Condition entry is allowed for each air lock.
3. Enter applicable Conditions and Required Actions of LCO 3.6.1.1, "Primary Containment," when air lock leakage results in exceeding overall containment leakage rate acceptance criteria.

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more primary containment air locks with 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 same air lock are inoperable and Condition C is entered. 2. Entry and exit is permissible for 7 days under administrative controls if both air locks are inoperable. ----------	(continued)

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. (continued)	A.1 Verify the OPERABLE door is closed in the affected air lock.	1 hour
	AND	
	A.2 Lock the OPERABLE door closed in the affected air lock.	24 hours
	AND	
	A.3 --------NOTE--------- Air lock doors in high radiation areas may be verified locked closed by administrative means. ----------	
	Verify the OPERABLE door is locked closed in the affected air lock.	Once per 31 days
B. One or more primary containment air locks with 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 same air lock are inoperable and Condition C is entered. 2. Entry and exit is permissible under the control of a dedicated individual. ----------	(continued)

ACTIONS

CONDITION	REQUIRED ACTION		COMPLETION TIME
B. (continued)	B.1	Verify an OPERABLE door is closed in the affected air lock.	1 hour
	AND		
	B.2	Lock an OPERABLE door closed in the affected air lock.	24 hours
	AND		
	B.3	--------NOTE--------- Air lock doors in high radiation areas may be verified locked closed by administrative means. ----------	
		Verify an OPERABLE door is locked closed in the affected air lock.	Once per 31 days
C. One or more primary containment air locks 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
	AND		
	C.2	Verify a door is closed in the affected air lock.	1 hour
	AND		
			(continued)

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
C. (continued)	C.3 Restore air lock to OPERABLE status.	24 hours
D. Required Action and associated Completion Time not met.	D.1 Be in MODE 3. AND D.2 Be in MODE 4.	12 hours 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. ---------- Perform required primary containment air lock leakage rate testing in accordance with 10 CFR 50, Appendix J, as modified by approved exemptions. The acceptance criteria for air lock testing are: a. Overall air lock leakage rate is ≤ 0.05 L_a when tested at ≥ P_a. b. For each door, leakage rate is ≤ 0.01 L_a when the gap between the door seals is pressurized to ≥ P_a.	In accordance with 10 CFR 50, Appendix J, Testing Program
SR 3.6.1.2.2	Verify primary containment air lock seal air flask pressure is ≥ 90 psig.	In accordance with the Surveillance Frequency Control Program

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.6.1.2.3	Verify only one door in the primary containment air lock can be opened at a time.	In accordance with the Surveillance Frequency Control Program
SR 3.6.1.2.4	Verify, from an initial pressure of 90 psig, the primary containment air lock seal pneumatic system pressure does not decay at a rate equivalent to > 2 psig for a period of 48 hours.	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 shall be OPERABLE.

APPLICABILITY: MODES 1, 2, and 3,
When associated isolation instrumentation is required to be OPERABLE per LCO 3.3.6.1 Function 2.g.

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 in MODES 1, 2, and 3.

(continued)

ACTION (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more penetration flow paths with one PCIV inoperable except due to leakage not within limit.	----------NOTE---------- Relief valves are not required to be de-activated provided the relief setpoint is at least 23 psig and one of the following criteria is met: 1. the relief valve is one-inch nominal size or less, or 2. the flow path is into a closed system whose piping pressure rating exceeds the containment design pressure rating. ----------	
	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 AND 8 hours for main steam line
	AND	
	A.2 --------NOTE--------- Isolation devices in high radiation areas may be verified by use of administrative means. ---------- Verify the affected penetration flow path is isolated.	Once per 31 days for isolation devices outside primary containment, drywell, and steam tunnel AND (continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. (continued)		Prior to entering MODE 2 or 3 from MODE 4, if not performed within the previous 92 days, for isolation devices inside primary containment, drywell, or steam tunnel
B. One or more penetration flow paths with two PCIVs inoperable except due to leakage not within limit.	----------NOTE---------- Relief valves are not required to be de-activated provided the relief setpoint is at least 23 psig and one of the following criteria is met: 1. the relief valve is one-inch nominal size or less, or 2. the flow path is into a closed system whose piping pressure rating exceeds the containment design pressure rating. ----------	
	B.1 Isolate the affected penetration flow path by use of at least one closed and de-activated automatic valve, closed manual valve, or blind flange.	1 hour

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
C. One or more penetration flow paths with leakage rate not within limit except for purge valve leakage.	C.1 Restore leakage rate to within limit.	4 hours

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION		COMPLETION TIME
D. One or more penetration flow paths with one or more primary containment purge valves not within purge 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
	AND		
	D.2	--------NOTE--------- Isolation devices in high radiation areas may be verified by use of administrative means. ----------	Once per 31 days for isolation devices outside primary containment
			AND
		Verify the affected penetration flow path is isolated.	Prior to entering MODE 2 or 3 from MODE 4 if not performed within the previous 92 days for isolation devices inside primary containment
	AND		
	D.3	Perform SR 3.6.1.3.5 for the resilient seal purge valves closed to comply with Required Action D.1.	Once per 92 days

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION		COMPLETION TIME
E. Required Action and associated Completion Time of Condition A, B, C, or D not met in MODE 1, 2, or 3.	E.1	Be in MODE 3.	12 hours
	AND		
	E.2	Be in MODE 4.	36 hours
F. Required Action and associated Completion Time of Condition A, B, C, or D not met for PCIV(s) required to be OPERABLE during movement of recently irradiated fuel assemblies in the primary or secondary containment.	F.1	----------NOTE---------- LCO 3.0.3 is not applicable. ---------- Suspend movement of recently irradiated fuel assemblies in primary and secondary containment.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.6.1.3.1	----------NOTES---------- 1. Only required to be met in MODES 1, 2, and 3. 2. Not required to be met when the 20 inch primary containment purge valves are open for pressure control, ALARA, or air quality considerations for personnel entry. 3. Not required to be met during Surveillances or special testing on the purge system that requires the valves to be open. 4. 20 inch primary containment purge valves shall not be open with 6 inch primary containment purge or drywell vent and purge supply and exhaust lines open. ---------- Verify each 20 inch primary containment purge 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, drywell, and steam tunnel 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

(continued)

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 isolation manual valve and blind flange that is located inside primary containment, drywell, or steam tunnel 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 not performed within the previous 92 days
SR 3.6.1.3.4	Verify the isolation time of each power operated, automatic PCIV, except MSIVs, is within limits.	In accordance with the INSERVICE TESTING PROGRAM

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.6.1.3.5	----------NOTE---------- Only required to be met in MODES 1, 2, and 3. ----------	
	Perform leakage rate testing for each primary containment purge valve with resilient seals.	In accordance with the Surveillance Frequency Control Program AND In accordance with 10 CFR 50, Appendix J, Testing Program AND --------NOTE-------- Not applicable to valves tested within 92 days prior to any purge valve failing to meet its acceptance criteria ---------- Once within 92 days, test all remaining purge valves, if any purge valve fails to meet its acceptance criteria

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.6.1.3.6	Verify the isolation time of each MSIV is ≥ 3 seconds and ≤ 5 seconds.	In accordance with the INSERVICE TESTING 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
SR 3.6.1.3.8	----------NOTE---------- Only required to be met in MODES 1, 2, and 3. ---------- Verify leakage rate through each main steam line is ≤ 100 scfh when tested at ≥ P_a, and the total leakage rate through all four main steam lines is ≤ 250 scfh when tested at ≥ P_a.	In accordance with 10 CFR 50, Appendix J, Testing Program
SR 3.6.1.3.9	----------NOTE---------- Only required to be met in MODES 1, 2, and 3. ---------- Verify combined leakage rate of 1 gpm times the total number of PCIVs through hydrostatically tested lines that penetrate the primary containment is not exceeded when these isolation valves are tested at ≥ 1.1 P_a.	In accordance with 10 CFR 50, Appendix J, Testing Program

3.6 CONTAINMENT SYSTEMS

3.6.1.4 Primary Containment Pressure

LCO 3.6.1.4 Primary containment to auxiliary building differential pressure shall be ≥ – 0.1 psid and ≤ 1.0 psid.

APPLICABILITY: MODES 1, 2, and 3.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Primary containment to auxiliary building differential pressure not within limits.	A.1 Restore primary containment to auxiliary building differential pressure to within limits.	1 hour
B. Required Action and associated Completion Time not met.	B.1 Be in MODE 3. AND B.2 Be in MODE 4.	12 hours 36 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.6.1.4.1	Verify primary containment to auxiliary building differential pressure is within limits.	In accordance with the Surveillance Frequency Control Program

3.6 CONTAINMENT SYSTEMS

3.6.1.5 Primary Containment Air Temperature

LCO 3.6.1.5 Primary containment average air temperature shall be ≤ 95°F.

APPLICABILITY: MODES 1, 2, and 3.

ACTIONS

CONDITION	REQUIRED ACTION		COMPLETION TIME
A. Primary containment average air temperature not within limit.	A.1	Restore primary containment 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 3.6.1.5.1	Verify primary containment average air temperature is within limit.	In accordance with the Surveillance Frequency Control Program

3.6 CONTAINMENT SYSTEMS

3.6.1.6 Low-Low Set (LLS) Valves

LCO 3.6.1.6 The LLS function of six 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.	B.1	-------NOTE-------- LCO 3.0.4.a is not applicable when entering MODE 3. ----------	
		Be in MODE 3.	12 hours
C. Two or more LLS valves inoperable.	C.1	Be in MODE 3.	12 hours
	AND		
	C.2	Be in Mode 4.	36 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.6.1.6.1	----------NOTE---------- Not required to be performed until 12 hours after reactor steam pressure and flow are adequate to perform the test. ---------- Verify each LLS valve relief-mode actuator strokes when manually actuated.	In accordance with the INSERVICE TESTING PROGRAM on a STAGGERED TEST BASIS for each valve solenoid
SR 3.6.1.6.2	----------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

3.6.1.7 Residual Heat Removal (RHR) Containment Spray System

LCO 3.6.1.7 Two RHR containment spray subsystems shall be OPERABLE.

APPLICABILITY: MODES 1, 2, and 3.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One RHR containment spray subsystem inoperable.	A.1 Restore RHR containment spray subsystem to OPERABLE status.	7 days
B. Two RHR containment spray subsystems inoperable.	B.1 Restore one RHR containment spray subsystem to OPERABLE status.	8 hours
C. Required Action and associated Completion Time not met.	C.1 -------NOTE------- LCO 3.0.4.a is not applicable when entering MODE 3. ---------- Be in MODE 3.	12 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.6.1.7.1	----------NOTE---------- 1. RHR containment spray subsystems may be considered OPERABLE during alignment and operation for decay heat removal when below the RHR cut in permissive pressure in MODE 3 if capable of being manually realigned and not otherwise inoperable. 2. Not required to be met for system vent flow paths opened under administrative control. ---------- Verify each RHR containment spray subsystem manual, power operated, and automatic valve in the flow path that is not locked, sealed, or otherwise secured in position is in the correct position.	In accordance with the Surveillance Frequency Control Program
SR 3.6.1.7.2	Verify RHR containment spray subsystem locations susceptible to gas accumulation are sufficiently filled with water.	In accordance with the Surveillance Frequency Control Program
SR 3.6.1.7.3	Verify each RHR pump develops a flow rate of ≥ 7450 gpm on recirculation flow through the associated heat exchanger to the suppression pool.	In accordance with the INSERVICE TESTING PROGRAM
SR 3.6.1.7.4	Verify each RHR containment spray subsystem automatic valve in the flow path actuates to its correct position on an actual or simulated automatic initiation signal, except for valves that are locked, sealed, or otherwise secured in the actuated position.	In accordance with the Surveillance Frequency Control Program

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.6.1.7.5	Verify each spray nozzle is unobstructed.	At first refueling AND In accordance with the Surveillance Frequency Control Program

3.6 CONTAINMENT SYSTEMS

3.6.1.8 Feedwater Leakage Control System (FWLCS)

LCO 3.6.1.8 Two FWLCS subsystems shall be OPERABLE.

APPLICABILITY: MODES 1, 2, and 3.

ACTIONS

CONDITION	REQUIRED ACTION		COMPLETION TIME
A. One FWLCS subsystem inoperable.	A.1	Restore FWLCS subsystems to OPERABLE status.	30 days
B. Two FWLCS subsystems inoperable.	B.1	Restore one FWLCS subsystem to OPERABLE status.	7 days
C. Required Action and associated Completion Time not met.	C.1	----------NOTE---------- LCO 3.0.4.a is not applicable when entering MODE 3. ---------- Be in MODE 3.	 12 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.6.1.8.1	Verify RHR jockey pump operates properly.	In accordance with the Surveillance Frequency Control Program

3.6 CONTAINMENT SYSTEMS

3.6.1.9 Main Steam Isolation Valve (MSIV) Leakage Control System (LCS)

LCO 3.6.1.9 Two MSIV LCS subsystems shall be OPERABLE.

APPLICABILITY: MODES 1, 2, and 3.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One MSIV LCS subsystem inoperable.	A.1 Restore MSIV LCS subsystem to OPERABLE status.	30 days
B. Two MSIV LCS subsystems inoperable.	B.1 Restore one MSIV LCS subsystem to OPERABLE status.	7 days
C. Required Action and associated Completion Time not met.	C.1 ----------NOTE---------- LCO 3.0.4.a is not applicable when entering MODE 3. ---------- Be in MODE 3.	12 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.6.1.9.1	Operate each outboard MSIV LCS blower ≥ 15 minutes.	In accordance with the Surveillance Frequency Control Program

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.6.1.9.2	Perform a system functional test of each MSIV LCS subsystem.	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. ≤ 95°F when THERMAL POWER is > 1% RTP and no testing that adds heat to the suppression pool is being performed;

b. ≤ 105°F when THERMAL POWER is > 1% RTP and testing that adds heat to the suppression pool is being performed; and

c. ≤ 110°F when THERMAL POWER is ≤ 1% RTP.

APPLICABILITY: MODES 1, 2, and 3.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Suppression pool average temperature > 95°F but ≤ 110°F. AND THERMAL POWER > 1% RTP. AND Not performing testing that adds heat to the suppression pool.	A.1 Verify suppression pool average temperature is ≤ 110°F. AND A.2 Restore suppression pool average temperature to ≤ 95°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

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
C. Suppression pool average temperature > 105°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 but ≤ 120°F.	D.1 Place the reactor mode switch in the shutdown position.	Immediately
	AND	
	D.2 Verify suppression pool average temperature is ≤ 120°F.	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
	AND	
	E.2 Be in MODE 4.	36 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.6.2.1.1	Verify suppression pool average temperature is within the applicable 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 ≥ 18 ft 4-1/12 inches and ≤ 18 ft 9-3/4 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.	12 hours
	AND		
	B.2	Be in MODE 4.	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 pool 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
B. Required Action and associated Completion Time of Condition A not met.	B.1	------NOTE-------- LCO 3.0.4.a is not applicable when entering MODE 3. ---------- Be in MODE 3.	12 hours
C. Two RHR suppression pool cooling subsystems inoperable.	C.1	Restore one RHR suppression pool cooling subsystem to OPERABLE status.	8 hours
D. Required Action and associated Completion Time of Condition C not met.	D.1	Be in MODE 3.	12 hours
	AND		
	D.2	Be in MODE 4.	36 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.6.2.3.1	Verify each RHR suppression pool cooling subsystem 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
SR 3.6.2.3.2	Verify RHR suppression pool cooling subsystem locations susceptible to gas accumulation are sufficiently filled with water.	In accordance with the Surveillance Frequency Control Program
SR 3.6.2.3.3	Verify each RHR pump develops a flow rate ≥ 7450 gpm through the associated heat exchangers to the suppression pool.	In accordance with the INSERVICE TESTING PROGRAM

3.6 CONTAINMENT SYSTEMS

3.6.2.4 Suppression Pool Makeup (SPMU) System

LCO 3.6.2.4 Two SPMU subsystems shall be OPERABLE.

APPLICABILITY: MODES 1, 2, and 3.

ACTIONS

CONDITION	REQUIRED ACTION		COMPLETION TIME
A. Upper containment pool water level not within limit.	A.1	Restore upper containment pool water level to within limit.	4 hours
B. Upper containment pool water temperature not within limit.	B.1	Restore upper containment pool water temperature to within limit.	24 hours
C. One SPMU subsystem inoperable for reasons other than Condition A or B.	C.1	Restore SPMU subsystem to OPERABLE status.	7 days
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 3.6.2.4.1	Verify upper containment pool water level is ≥ 23 ft 3 inches above the pool bottom.	In accordance with the Surveillance Frequency Control Program
SR 3.6.2.4.2	Verify upper containment pool water temperature is ≤ 125°F.	In accordance with the Surveillance Frequency Control Program
SR 3.6.2.4.3	Verify each SPMU subsystem manual, power operated, and automatic valve that is not locked, sealed, or otherwise secured in position is in the correct position.	In accordance with the Surveillance Frequency Control Program
SR 3.6.2.4.4	----------NOTE---------- Not required to be met when all upper containment pool levels are maintained per SR 3.6.2.4.1 and suppression pool water level is maintained ≥ 18 ft 5 1/12 inches (one inch above LCO 3.6.2.2 Low Water Level). ---------- Verify all upper containment pool gates are in the stored position or are otherwise removed from the upper containment pool.	In accordance with the Surveillance Frequency Control Program
SR 3.6.2.4.5	----------NOTE---------- Actual makeup to the suppression pool may be excluded. ---------- Verify each SPMU subsystem automatic valve actuates to the correct position on an actual or simulated automatic initiation signal.	In accordance with the Surveillance Frequency Control Program

3.6 CONTAINMENT SYSTEMS

3.6.3.2 Primary Containment and Drywell Hydrogen Igniters

LCO 3.6.3.2 Two divisions of primary containment and drywell hydrogen igniters shall be OPERABLE, each with > 90% of the associated igniter assemblies OPERABLE.

APPLICABILITY: MODES 1 and 2.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One primary containment and drywell hydrogen igniter division inoperable.	A.1 Restore primary containment and drywell hydrogen igniter division to OPERABLE status.	30 days
B. Two primary containment and drywell hydrogen igniter divisions inoperable.	B.1 Verify by administrative means that the hydrogen control function is maintained.	1 hour
	AND	
	B.2 Restore one primary containment and drywell hydrogen igniter division to OPERABLE status.	7 days

(continued)

ACTIONS (continued)

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

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.6.3.2.1	Energize each primary containment and drywell hydrogen igniter division and perform current versus voltage measurements to verify required igniters in service.	In accordance with the Surveillance Frequency Control Program
SR 3.6.3.2.2	----------NOTE---------- Not required to be performed until 92 days after discovery of four or more igniters in the division inoperable. ---------- Energize each primary containment and drywell hydrogen igniter division and perform current versus voltage measurements to verify required igniters in service.	In accordance with the Surveillance Frequency Control Program
SR 3.6.3.2.3	Verify each required igniter in inaccessible areas develops sufficient current draw for a ≥ 1700°F surface temperature.	In accordance with the Surveillance Frequency Control Program

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.6.3.2.4	Verify each required igniter in accessible areas develops a surface temperature of ≥ 1700°F.	In accordance with the Surveillance Frequency Control Program

3.6 CONTAINMENT SYSTEMS

3.6.3.3 Drywell Purge System

LCO 3.6.3.3 Two drywell purge subsystems shall be OPERABLE.

APPLICABILITY: MODES 1 and 2.

ACTIONS

CONDITION	REQUIRED ACTION		COMPLETION TIME
A. One drywell purge subsystem inoperable.	A.1	Restore drywell purge subsystem to OPERABLE status.	30 days
B. Two drywell purge subsystems inoperable.	B.1	Verify by administrative means that the hydrogen control function is maintained.	1 hour
	AND		
	B.2	Restore one drywell purge subsystem to OPERABLE status.	7 days
C. Required Action and associated Completion Time not met.	C.1	Be in MODE 3.	12 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.6.3.3.1	Perform a CHANNEL FUNCTIONAL TEST of the isolation valve pressure actuation instrumentation.	In accordance with the Surveillance Frequency Control Program
SR 3.6.3.3.2	Operate each drywell purge subsystem for ≥ 15 minutes.	In accordance with the Surveillance Frequency Control Program
SR 3.6.3.3.3	Verify each drywell purge subsystem flow rate is ≥ 1000 cfm.	In accordance with the Surveillance Frequency Control Program
SR 3.6.3.3.4	Verify the opening pressure differential of each vacuum breaker and isolation valve is ≤ 1.0 psid.	In accordance with the Surveillance Frequency Control Program

3.6 CONTAINMENT SYSTEMS

3.6.4.1 Secondary Containment

LCO 3.6.4.1 The secondary containment shall be OPERABLE.

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

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Secondary containment inoperable in MODE 1, 2, or 3.	A.1 Restore secondary containment to OPERABLE status.	4 hours
B. Required Action and associated Completion Time of Condition A not met.	B.1 ----------NOTE---------- LCO 3.0.4.a is not applicable when entering MODE 3. ---------- Be in MODE 3.	12 hours

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
C. Secondary containment inoperable during movement of recently irradiated fuel assemblies in the primary or secondary containment.	C.1 ----------NOTE---------- LCO 3.0.3 is not applicable. ---------- Suspend movement of recently irradiated fuel assemblies in the primary and secondary containment.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.6.4.1.1	Verify all auxiliary building and enclosure building equipment hatches and blowout panels are closed and sealed.	In accordance with the Surveillance Frequency Control Program
SR 3.6.4.1.2	Verify one auxiliary building and enclosure building 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

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.6.4.1.3	Verify the secondary containment can be drawn down to ≥ 0.25 inch of vacuum water gauge in ≤ 180 seconds using one standby gas treatment (SGT) subsystem.	In accordance with the Surveillance Frequency Control Program
SR 3.6.4.1.4	Verify the secondary containment can be maintained ≥ 0.266 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 primary or 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 or damper, closed manual valve or damper, or blind flange. AND	8 hours (continued)

ACTIONS

CONDITION	REQUIRED ACTION		COMPLETION TIME
A. (continued)	A.2	--------NOTE--------- Isolation devices in high radiation areas may be verified by use of administrative means. ----------	
		Verify the affected penetration flow path is isolated.	Once per 31 days
B. 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 or damper, closed manual valve or damper, 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

(continued)

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 primary or secondary containment.	D.1 ----------NOTE---------- LCO 3.0.3 is not applicable. ---------- Suspend movement of recently irradiated fuel assemblies in the primary and secondary containment.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.6.4.2.1	----------NOTES---------- 1. Valves, dampers, rupture disks, 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, damper, rupture disk, and blind flange that 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 INSERVICE TESTING PROGRAM
SR 3.6.4.2.3	Verify each automatic SCIV actuates to the isolation position on an actual or simulated automatic isolation 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 primary or 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 ----------NOTE---------- LCO 3.0.4.a is not applicable when entering MODE 3. ---------- Be in MODE 3.	12 hours
C. Required Action and associated Completion Time of Condition A not met during movement of recently irradiated fuel assemblies in the primary or secondary containment.	----------NOTE---------- LCO 3.0.3 is not applicable. ---------- C.1 Place OPERABLE SGT subsystem in operation. OR	Immediately

(continued)

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
C. (continued)	C.2 Suspend movement of recently irradiated fuel assemblies in the primary and secondary containment.	Immediately
D. Two SGT subsystems inoperable in MODE 1, 2, or 3.	D.1 ----------NOTE---------- LCO 3.0.4.a is not applicable when entering MODE 3. ---------- Be in MODE 3.	12 hours
E. Two SGT subsystems inoperable during movement of recently irradiated fuel assemblies in the primary or secondary containment.	E.1 Suspend movement of recently irradiated fuel assemblies in the primary and secondary containment.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.6.4.3.1	Operate each SGT subsystem for ≥ 15 continuous minutes with heaters operating.	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, except for dampers that are locked, sealed, or otherwise secured in the open position.	In accordance with the Surveillance Frequency Control Program

3.6 CONTAINMENT SYSTEMS

3.6.5.1 Drywell

LCO 3.6.5.1 The drywell shall be OPERABLE.

APPLICABILITY: MODES 1, 2, and 3.

ACTIONS

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

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.6.5.1.1	Verify bypass leakage is less than or equal to the bypass leakage limit. However, during the first unit startup following drywell bypass leak rate testing performed in accordance with this SR, the acceptance criterion is leakage ≤ 10% of the bypass leakage limit.	24 months following two consecutive tests with bypass leakage greater than the bypass leakage limit until two consecutive tests are less than or equal to the bypass leakage limit AND 48 months following a test with bypass leakage greater than the bypass leakage limit AND ----------NOTE-------- SR 3.0.2 is not applicable for extensions > 12 months. ---------- In accordance with the Surveillance Frequency Control Program except next drywell bypass leak rate test performed after the October 19, 2008 test shall be performed no later than plant restart after the End of Cycle 23 Refueling Outage

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.6.5.1.2	Visually inspect the exposed accessible interior and exterior surfaces of the drywell.	Once prior to performance of each Type A test required by SR 3.6.1.1.1
SR 3.6.5.1.3	Verify drywell air lock leakage by performing an air lock barrel leakage test at ≥ 3 psid.	In accordance with the Surveillance Frequency Control Program

3.6 CONTAINMENT SYSTEMS

3.6.5.2 Drywell Air Lock

LCO 3.6.5.2 The drywell air lock shall be OPERABLE.

APPLICABILITY: MODES 1, 2, and 3.

ACTIONS

----------NOTE----------
Entry and exit is permissible to perform repairs of the affected air lock components.

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One drywell 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. AND	1 hour (continued)

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. (continued)	A.2 Lock the OPERABLE door closed. AND A.3 Verify by administrative means the OPERABLE door is locked closed.	24 hours Once per 31 days
B. Drywell 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 and exit is permissible under the control of a dedicated individual. ---------- B.1 Verify an OPERABLE door is closed. AND B.2 Lock an OPERABLE door closed. AND B.3 Verify by administrative means an OPERABLE door is locked closed.	 1 hour 24 hours Once per 31 days

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION		COMPLETION TIME
C. Drywell air lock inoperable for reasons other than Condition A or B.	C.1	Verify a door is closed.	1 hour
	AND		
	C.2	Restore air lock to OPERABLE status.	24 hours
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 3.6.5.2.1	----------NOTE---------- Only required to be performed upon entry into drywell. ---------- Verify only one door in the drywell air lock can be opened at a time.	In accordance with the Surveillance Frequency Control Program

3.6 CONTAINMENT SYSTEMS

3.6.5.3 Drywell Isolation Valves

LCO 3.6.5.3 Each drywell isolation valve, except for Drywell Vacuum Relief System valves, 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 drywell isolation valves.

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more penetration flow paths with one drywell isolation valve inoperable.	A.1 Isolate the affected penetration flow path by use of at least one closed and de-activated automatic valve, closed manual valve, blind flange, or check valve with flow through the valve secured. AND	8 hours (continued)

ACTIONS

CONDITION	REQUIRED ACTION		COMPLETION TIME
A. (continued)	A.2	--------NOTE--------- Isolation devices in high radiation areas may be verified by use of administrative means. ----------	
		Verify the affected penetration flow path is isolated.	Prior to entering MODE 2 or 3 from MODE 4, if not performed within the previous 92 days
B. One or more penetration flow paths with two drywell isolation valves inoperable.	B.1	Isolate the affected penetration flow path by use of at least one closed and de-activated automatic valve, closed manual valve, blind flange, or check valve with flow through the valve secured.	4 hours
C. Required Action and associated Completion Time not met.	C.1	Be in MODE 3.	12 hours
	AND		
	C.2	Be in MODE 4.	36 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.6.5.3.1	----------NOTES---------- 1. Not required to be met when the drywell purge supply or exhaust valves are open for pressure control, ALARA, or air quality considerations for personnel entry. 2. Not required to be met during Surveillances or special testing on the purge system that requires the valves to be open. 3. Drywell purge supply or exhaust valves shall not be open in MODES 1 and 2 with the 6 inch or 20 inch primary containment purge system purge supply and exhaust lines open. ---------- Verify each 20 inch drywell purge isolation valve is closed.	In accordance with the Surveillance Frequency Control Program
SR 3.6.5.3.2	----------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 drywell isolation valves that are open under administrative controls. ---------- Verify each drywell isolation manual valve and blind flange that is required to be closed during accident conditions is closed.	Prior to entering MODE 2 or 3 from MODE 4, if not performed in the previous 92 days

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.6.5.3.3	Verify the isolation time of each power operated, automatic drywell isolation valve is within limits.	In accordance with the INSERVICE TESTING PROGRAM
SR 3.6.5.3.4	Verify each automatic drywell isolation valve actuates to the isolation position on an actual or simulated isolation signal.	In accordance with the Surveillance Frequency Control Program

3.6 CONTAINMENT SYSTEMS

3.6.5.4 Drywell Pressure

LCO 3.6.5.4 Drywell-to-primary containment differential pressure shall be ≥ – 0.25 psid and ≤ 2.0 psid.

APPLICABILITY: MODES 1, 2, and 3.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Drywell-to-primary containment differential pressure not within limits.	A.1 Restore drywell-to-primary containment differential pressure to within limits.	1 hour
B. Required Action and associated Completion Time not met.	B.1 Be in MODE 3. AND B.2 Be in MODE 4.	12 hours 36 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.6.5.4.1	Verify drywell-to-primary containment differential pressure is within limits.	In accordance with the Surveillance Frequency Control Program

3.6 CONTAINMENT SYSTEMS

3.6.5.5 Drywell Air Temperature

LCO 3.6.5.5 Drywell average air temperature shall be ≤ 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 3.6.5.5.1	Verify drywell average air temperature is within limit.	In accordance with the Surveillance Frequency Control Program

3.6 CONTAINMENT SYSTEMS

3.6.5.6 Drywell Vacuum Relief System

LCO 3.6.5.6 Two drywell post-LOCA and two drywell purge vacuum relief subsystems shall be OPERABLE.

APPLICABILITY: MODES 1, 2, and 3.

ACTIONS

----------NOTE----------
Enter applicable Conditions and Required Actions of LCO 3.6.5.1, "Drywell," when inoperable vacuum relief subsystem(s) results in exceeding overall drywell bypass leakage rate acceptance criteria.

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. ---------NOTE--------- Separate Condition entry is allowed for each vacuum relief subsystem. ---------- One or more vacuum relief subsystems not closed.	A.1 Close the subsystem.	4 hours
B. One or two drywell post-LOCA vacuum relief subsystems inoperable for reasons other than Condition A.	B.1 Restore drywell post-LOCA vacuum relief subsystem(s) to OPERABLE status.	30 days

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
C. One drywell purge vacuum relief subsystem inoperable for reasons other than Condition A.	C.1 Restore drywell purge vacuum relief subsystem to OPERABLE status.	30 days
D. Required Action and associated Completion Time of Condition B or C not met.	D.1 --------NOTE------ LCO 3.0.4.a is not applicable when entering MODE 3. ---------- Be in MODE 3.	12 hours
E. Two drywell purge vacuum relief subsystems inoperable for reasons other than Condition A.	E.1 Restore one drywell purge vacuum relief subsystem to OPERABLE status.	72 hours
F. Two drywell post-LOCA vacuum relief subsystems inoperable for reasons other than Condition A. AND One drywell purge vacuum relief subsystem inoperable for reasons other than Condition A.	F.1 Restore one drywell post-LOCA vacuum relief or drywell purge vacuum relief subsystem to OPERABLE status.	72 hours
G. Required Action and associated Completion Time of Condition A, E or F not met.	G.1 Be in MODE 3. AND G.2 Be in MODE 4.	12 hours 36 hours

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
H. Two drywell purge vacuum relief subsystems inoperable for reasons other than Condition A. AND One or two drywell post-LOCA vacuum relief subsystems inoperable for reasons other than Condition A.	H.1 Be in MODE 3. AND H.2 Be in MODE 4.	12 hours 36 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.6.5.6.1	----------NOTES---------- 1. Not required to be met for vacuum breakers or isolation valves open during surveillances. 2. Not required to be met for vacuum breakers or isolation valves open when performing their intended function. ---------- Verify each vacuum breaker and its associated isolation valve is closed.	In accordance with the Surveillance Frequency Control Program
SR 3.6.5.6.2	Perform a functional test of each vacuum breaker and its associated isolation valve.	In accordance with the Surveillance Frequency Control Program
SR 3.6.5.6.3	Verify the opening pressure differential of each vacuum breaker and isolation valve is ≤ 1.0 psid.	In accordance with the Surveillance Frequency Control Program

3.7 PLANT SYSTEMS

3.7.1 Standby Service Water (SSW) System and Ultimate Heat Sink (UHS)

LCO 3.7.1 Division 1 and 2 SSW subsystems and the UHS shall be OPERABLE.

APPLICABILITY: MODES 1, 2, and 3.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One UHS cooling tower with one cooling tower fan inoperable.	A.1 Restore UHS cooling tower fan to OPERABLE status.	7 days
B. One UHS cooling tower with two cooling tower fans inoperable.	B.1 Declare associated SSW subsystem inoperable.	Immediately
C. UHS basin level not within limit.	C.1 Restore UHS basin level to within limit.	72 hours

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
D. One SSW subsystem inoperable.	----------NOTES---------- 1. Enter applicable Conditions and Required Actions of LCO 3.8.1, "AC Sources — Operating," for diesel generator made inoperable by SSW. 2. Enter applicable Conditions and Required Actions of LCO 3.4.9, "Residual Heat Removal (RHR) Shutdown Cooling System — Hot Shutdown," for RHR shutdown cooling subsystem made inoperable by SSW. ---------- D.1 Restore SSW subsystem to OPERABLE status.	72 hours
E. Required Action and associated Completion Time of Condition A, C, or D not met.	E.1 ----------NOTE---------- LCO 3.0.4.a is not applicable when entering MODE 3. ---------- Be in MODE 3.	12 hours

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
F Both SSW subsystems inoperable. OR Two UHS cooling towers with one or more cooling tower fans inoperable. OR UHS basin inoperable for reasons other than Condition C.	F.1 Be in MODE 3. AND F.2 Be in MODE 4.	12 hours 36 Hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.7.1.1	Verify the water level of each UHS basin is ≥ 7.25 ft.	In accordance with the Surveillance Frequency Control Program
SR 3.7.1.2	Operate each SSW cooling tower fan for ≥ 15 minutes.	In accordance with the Surveillance Frequency Control Program

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.7.1.3	Verify each required SSW subsystem manual, power operated, and automatic valve in the flow path 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 3.7.1.4	Verify each SSW subsystem actuates on an actual or simulated Initiation signal, except for valves that are locked, sealed, or otherwise secured in the actuated position.	In accordance with the Surveillance Frequency Control Program

3.7 PLANT SYSTEMS

3.7.2 High Pressure Core Spray (HPCS) Service Water System (SWS)

LCO 3.7.2 The HPCS SWS shall be OPERABLE.

APPLICABILITY: MODES 1, 2, and 3.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. HPCS SWS inoperable.	A.1 Declare HPCS System inoperable.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.7.2.1	Verify each required HPCS SWS manual, power operated, and automatic valve in the flow path 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 3.7.2.2	Verify the HPCS SWS actuates on an actual or simulated initiation signal, except for valves that are locked, sealed, or otherwise secured in the actuated position.	In accordance with the Surveillance Frequency Control Program

3.7 PLANT SYSTEM

3.7.3 Control Room Fresh Air (CRFA) System

LCO 3.7.3 Two CRFA subsystems shall be OPERABLE.

APPLICABILITY: MODES 1, 2, and 3.

ACTIONS

NOTE

The Control Room Envelope (CRE) boundary may be opened intermittently under administrative control.

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

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
C. Required Action and associated Completion Time of Condition A or B not met in MODE 1, or 2.	C.1 ----------NOTE---------- LCO 3.0.4.a is not applicable when entering MODE 3. ---------- Be in MODE 3.	12 hours
D. Two CRFA subsystems inoperable in MODE 1, 2, or 3 for reasons other than Condition B.	D.1 ----------NOTE---------- LCO 3.0.4.a is not applicable when entering MODE 3. ---------- Be in MODE 3.	12 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.7.3.1	Operate each CRFA subsystem for ≥ 15 continuous minutes.	In accordance with the Surveillance Frequency Control Program
SR 3.7.3.2	Perform required CRFA filter testing in accordance with the Ventilation Filter Testing Program (VFTP).	In accordance with the VFTP

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.7.3.3	Verify each CRFA subsystem actuates on an actual or simulated initiation signal, except for dampers and valves that are locked, sealed, or otherwise secured in the actuated position.	In accordance with the Surveillance Frequency Control Program
SR 3.7.3.4	Perform required CRE unfiltered air inleakage testing in accordance with the Control Room Envelope Habitability Program.	In accordance with the Control Room Envelope Habitability Program

3.7 PLANT SYSTEMS

3.7.4 Control Room Air Conditioning (AC) System

LCO 3.7.4 Two control room AC subsystems shall be OPERABLE.

APPLICABILITY: MODES 1, 2, and 3.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One control room AC subsystem inoperable.	A.1 Restore control room AC subsystem to OPERABLE status.	30 days
B. Two control room AC subsystems inoperable.	B.1 Verify control room area temperature ≤ 90°F. AND B.2 Restore one control room AC subsystem to OPERABLE status.	Once per 4 hours 7 days
C. Required Action and associated Completion Time of Condition A or B not met in MODE 1, 2, or 3.	C.1 ----------NOTE---------- LCO 3.0.4.a is not applicable when entering MODE 3. ---------- Be in MODE 3.	 12 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.7.4.1	Verify each control room AC subsystem has the capability to remove the assumed heat load.	In accordance with the Surveillance Frequency Control Program

3.7 PLANT SYSTEMS

3.7.5 Main Condenser Offgas

LCO 3.7.5 The gross gamma activity rate of the noble gases measured at the offgas recombiner effluent shall be ≤ 380 mCi/second after decay of 30 minutes.

APPLICABILITY: MODE 1,
MODES 2 and 3 with any 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 SJAE. OR B.2 -------NOTE------- LCO 3.0.4.a is not applicable when entering MODE 3. ---------- Be in MODE 3.	12 hours 12 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.7.5.1	Verify the gross gamma activity rate of the noble gases is ≤ 380 mCi/second after decay of 30 minutes.	Once within 4 hours after a ≥ 50% increase in the nominal steady state fission gas release rate after factoring out increases due to changes in THERMAL POWER level
SR 3.7.5.2	----------NOTE---------- Not required to be performed until 31 days after any SJAE in operation. ----------	
	Verify the gross gamma activity rate of the noble gases is ≤ 380 mCi/second after decay of 30 minutes.	In accordance with the Surveillance Frequency Control Program

3.7 PLANT SYSTEMS

3.7.6 Fuel Pool Water Level

LCO 3.7.6 The fuel pool water level shall be ≥ 23 ft over the top of irradiated fuel assemblies seated in the spent fuel storage pool and upper containment fuel storage pool racks.

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

ACTIONS

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

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.7.6.1	Verify the fuel pool water level is ≥ 23 ft over the top of irradiated fuel assemblies seated in the storage racks.	In accordance with the Surveillance Frequency Control Program

3.7 PLANT SYSTEMS

3.7.7 Main Turbine Bypass System

LCO 3.7.7 The Main Turbine Bypass System shall be OPERABLE with two Main Turbine Bypass Valves.

OR

The following limits are made applicable:

a. LCO 3.2.2, "MINIMUM CRITICAL POWER RATIO (MCPR)," limits for an inoperable Main Turbine Bypass System, as specified in the COLR; and

b. LCO 3.2.3, "LINEAR HEAT GENERATION RATE (LHGR)," limits for an inoperable Main Turbine Bypass System, as specified in the COLR.

APPLICABILITY: THERMAL POWER ≥ 70% RTP

ACTION

CONDITION	REQUIRED ACTION		COMPLETION TIME
A. Requirements of the LCO not met.	A.1	Satisfy the requirements of the LCO.	2 hours
B. Required Action and associated Completion Time not met.	B.1	Reduce THERMAL POWER to < 70% 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

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 Electric Power Distribution System;

b. Three diesel generators (DGs); and

c. Division 1 and Division 2 automatic load sequencers.

APPLICABILITY: MODES 1, 2, and 3.

----------NOTE----------
Division 3 AC electrical power sources are not required to be OPERABLE when High Pressure Core Spray System is inoperable.

ACTIONS

----------NOTE----------
LCO 3.0.4.b is not applicable to DGs.

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One required offsite circuit inoperable for reasons other than Condition F.	A.1 Perform SR 3.8.1.1 for OPERABLE required offsite circuit. AND	1 hour AND Once per 8 hours thereafter (continued)

ACTIONS

CONDITION	REQUIRED ACTION		COMPLETION TIME
A. (continued)	A.2	Restore required offsite circuit to OPERABLE status.	72 hours AND 24 hours from discovery of two divisions with no offsite power
B. One required DG inoperable for reasons other than Condition F.	B.1	Perform SR 3.8.1.1 for OPERABLE required offsite circuit(s).	1 hour AND Once per 8 hours thereafter
	AND		
	B.2	Declare required feature(s), supported by the inoperable DG, inoperable when the redundant required feature(s) are inoperable.	4 hours from discovery of Condition B concurrent with inoperability of redundant required feature(s)
	AND		

(continued)

ACTIONS

CONDITION	REQUIRED ACTION		COMPLETION TIME
B. (continued)	B.3.1	Determine OPERABLE DG(s) are not inoperable due to common cause failure.	24 hours
	OR		
	B.3.2	Perform SR 3.8.1.2 for OPERABLE DG(s).	24 hours
	AND		
	B.4	Restore required DG to OPERABLE status.	72 hours from discovery of an inoperable Division 3 DG AND 14 days
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

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
D. One required offsite circuit inoperable for reasons other than Condition F. AND One required DG inoperable for reasons other than Condition F.	----------NOTE---------- Enter applicable Conditions and Required Actions of LCO 3.8.7, "Distribution Systems—Operating," when any required division is de-energized as a result of Condition D. ---------- D.1 Restore required offsite circuit to OPERABLE status. OR D.2 Restore required DG to OPERABLE status.	 12 hours 12 hours
E. Two required DGs inoperable.	E.1 Restore one required DG to OPERABLE status.	2 hours OR 24 hours if Division 3 DG is inoperable
F. One automatic load sequencer inoperable.	F.1 Restore automatic load sequencer to OPERABLE status.	24 hours
G. Required Action and associated Completion Time of Condition A, B, C, D, E, or F not met.	G.1 --------NOTE--------- LCO 3.0.4.a is not applicable when entering MODE 3. ---------- Be in MODE 3.	 12 hours

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
H. Three or more required AC sources inoperable.	H.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. Performance of SR 3.8.1.21 satisfies this SR. 2. All DG starts may be preceded by an engine prelube period and followed by a warmup period prior to loading. 3. A modified DG start involving idling and gradual acceleration to synchronous speed may be used for this SR as recommended by the manufacturer. When modified start procedures are not used, the time, voltage, and frequency tolerances of SR 3.8.1.21 must be met. ---------- Verify each DG starts from standby conditions and achieves steady state voltage ≥ 3744 V and ≤ 4576 V and frequency ≥ 58.8 Hz and ≤ 61.2 Hz.	In accordance with the Surveillance Frequency Control Program

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.8.1.3	----------NOTES---------- 1. DG loadings may include gradual loading as recommended by the manufacturer. 2. Momentary transients outside the load range do not invalidate this test. 3. This Surveillance shall be conducted on only one DG at a time. 4. This SR shall be preceded by, and immediately follow, without shutdown, a successful performance of SR 3.8.1.2 or SR 3.8.1.21. ---------- Verify each DG operates for ≥ 60 minutes at a load ≥ 5450 kW and ≤ 5740 kW for DG 11 and DG 12, and ≥ 3300 kW for DG 13.	In accordance with the Surveillance Frequency Control Program
SR 3.8.1.4	Verify each DG day tank contains ≥ 220 gal of fuel oil.	In accordance with the Surveillance Frequency Control Program
SR 3.8.1.5	Check for and remove accumulated water from each day tank.	In accordance with the Surveillance Frequency Control Program
SR 3.8.1.6	Verify the fuel oil transfer system operates to automatically transfer fuel oil from the storage tank to the day tank.	In accordance with the Surveillance Frequency Control Program
SR 3.8.1.7	Verify the load shedding and sequencing panels respond within design criteria.	In accordance with the Surveillance Frequency Control Program

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.8.1.8	----------NOTE---------- This Surveillance shall not be performed in MODE 1 and 2. However, credit may be taken for unplanned events that satisfy this SR. ---------- Verify manual transfer of unit power supply from the normal offsite circuit to required alternate offsite circuit.	In accordance with the Surveillance Frequency Control Program
SR 3.8.1.9	----------NOTES---------- 1. Credit may be taken for unplanned events that satisfy this SR. 2. If performed with the DG synchronized with offsite power, it shall be performed at a power factor ≤ 0.9 for DG 11 and DG 13 and ≤ 0.89 for DG 12. 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 DG rejects a load greater than or equal to its associated single largest post accident load and engine speed is maintained less than nominal plus 75% of the difference between nominal speed and the overspeed setpoint or 15% above nominal, whichever is lower.	In accordance with the Surveillance Frequency Control Program

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.8.1.10	----------NOTE---------- 1. Credit may be taken for unplanned events that satisfy this SR. 2. If performed with the DG synchronized with offsite power, it shall be performed at a power factor ≤ 0.9 for DG 11 and DG 13 ≤ 0.89 for DG 12. 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 DG does not trip and voltage is maintained ≤ 5000 V during and following a load rejection of a load ≥ 5450 kW and ≤ 5740 kW for DG 11 and DG 12 and ≥ 3300 kW for DG 13.	In accordance with the Surveillance Frequency Control Program

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.8.1.11	----------NOTES---------- 1. All DG starts may be preceded by an engine prelube period. 2. This Surveillance shall not be performed in MODE 1, 2, or 3 (Not Applicable to DG 13). However, credit may be taken for unplanned events that satisfy this SR. ---------- Verify on an actual or simulated loss of offsite power signal: a. De-energization of emergency buses; b. Load shedding from emergency buses for Divisions 1 and 2; and c. DG auto-starts from standby condition and: 1. energizes permanently connected loads in ≤ 10 seconds, 2. energizes auto-connected shutdown loads, 3. maintains steady state voltage ≥ 3744 V and ≤ 4576 V, 4. maintains steady state frequency ≥ 58.8 Hz and ≤ 61.2 Hz, and 5. supplies permanently connected and auto-connected shutdown loads for ≥ 5 minutes.	In accordance with the Surveillance Frequency Control Program

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.8.1.12	----------NOTES---------- 1. All DG starts may be preceded by an engine prelube period. 2. This Surveillance shall not be performed in MODE 1,or 2 (Not Applicable to DG 13). However, credit may be taken for unplanned events that satisfy this SR. ---------- Verify on an actual or simulated Emergency Core Cooling System (ECCS) initiation signal each DG auto-starts from standby condition and: a. In ≤ 10 seconds after auto-start and during tests, achieve voltage ≥ 3744 V and frequency ≥ 58.8 Hz; b. Achieves steady state voltage ≥ 3744 V and ≤ 4576 V and frequency ≥ 58.8 Hz and ≤ 61.2 Hz; c. Operates for ≥ 5 minutes; and d. Emergency loads are auto-connected to the offsite power system.	In accordance with the Surveillance Frequency Control Program

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.8.1.13	----------NOTE---------- Credit may be taken for unplanned events that satisfy this SR. ---------- Verify each DG's non-critical automatic trips are bypassed on an actual or simulated ECCS initiation signal.	In accordance with the Surveillance Frequency Control Program

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.8.1.14	----------NOTES---------- 1. Momentary transients outside the load and power factor ranges do not invalidate this test. 2. Credit may be taken for unplanned events that satisfy this SR. 3. If performed with the DG synchronized with offsite power, it shall be performed at a power factor ≤ 0.9 for DG 11 and DG 13 and ≤ 0.89 for DG 12. 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 DG operates for ≥ 24 hours: a. For DG 11 and DG 12 loaded ≥ 5450 kW and ≤ 5740 kW; and b. For DG 13: 1. For ≥ 2 hours loaded ≥ 3630 kW, and 2. For the remaining hours of the test loaded ≥ 3300 kW.	In accordance with the Surveillance Frequency Control Program

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.8.1.15	----------NOTES---------- 1. This Surveillance shall be performed within 5 minutes of shutting down the DG after the DG has operated ≥ 1 hour or until operating temperatures stabilized loaded ≥ 5450 kW and ≤ 5740 kW for DG 11 and DG 12, and ≥ 3300 kW for DG 13. Momentary transients outside of the load range do not invalidate this test. 2. All DG starts may be preceded by an engine prelube period. ----------	
	Verify each DG starts and achieves: a. in ≤ 10 seconds, voltage ≥ 3744 V and frequency ≥ 58.8 Hz; and b. steady state voltage ≥ 3744 V and ≤ 4576 V and frequency ≥ 58.8 Hz and ≤ 61.2 Hz.	In accordance with the Surveillance Frequency Control Program

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.8.1.16	----------NOTE---------- This Surveillance shall not be performed in MODE 1, 2, or 3 (Not Applicable to DG 13). However, credit may be taken for unplanned events that satisfy this SR. ---------- Verify each DG: 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

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.8.1.17	----------NOTE---------- Credit may be taken for unplanned events that satisfy this SR. ---------- Verify, with a DG operating in test mode and connected to its bus, an actual or simulated ECCS initiation signal overrides the test mode by: a. Returning DG to ready-to-load operation; and b. Automatically energizing the emergency loads from offsite power.	In accordance with the Surveillance Frequency Control Program
SR 3.8.1.18	----------NOTE---------- This Surveillance shall not be performed in MODE 1, 2, or 3. However, credit may be taken for unplanned events that satisfy this SR. ---------- Verify interval between each sequenced load block is within ± 10% of design interval for each automatic load sequencer.	In accordance with the Surveillance Frequency Control Program

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.8.1.19	----------NOTES---------- 1. All DG starts may be preceded by an engine prelube period. 2. This Surveillance shall not be performed in MODE 1, 2, or 3 (Not Applicable to DG 13). However, 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 for Divisions 1 and 2; and c. DG auto-starts from standby condition and: 1. energizes permanently connected loads in ≤ 10 seconds, 2. energizes auto-connected emergency loads, 3. achieves steady state voltage ≥ 3744 V and ≤ 4576 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

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.8.1.20	----------NOTE---------- All DG starts may be preceded by an engine prelube period. ---------- Verify, when started simultaneously from standby condition, each DG achieves: a. in ≤ 10 seconds, voltage ≥ 3744 V and frequency ≥ 58.8 Hz; and b. steady state voltage ≥ 3744 V and ≤ 4576 V and frequency ≥ 58.8 Hz and ≤ 61.2 Hz.	In accordance with the Surveillance Frequency Control Program
SR 3.8.1.21	----------NOTE---------- All DG starts may be preceded by an engine prelube period and followed by a warmup period prior to loading. ---------- Verify each DG starts from standby conditions and achieves: a. in ≤ 10 seconds, voltage ≥ 3744 V and frequency ≥ 58.8 Hz; and b. steady state voltage ≥ 3744 V and ≤ 4576 V and frequency ≥ 58.8 Hz and ≤ 61.2 Hz.	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 diesel generator (DG) capable of supplying one division of the Division 1 or 2 onsite Class 1E AC electrical power distribution subsystem(s) required by LCO 3.8.8; and

c. One qualified circuit, other than the circuit in LCO 3.8.2.a, between the offsite transmission network and the Division 3 onsite Class 1E electrical power distribution subsystem, or the Division 3 DG capable of supplying the Division 3 onsite Class 1E AC electrical power distribution subsystem, when the Division 3 onsite Class 1E electrical power distribution subsystem is required by LCO 3.8.8.

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

ACTIONS

NOTE

LCO 3.0.3 is not applicable.

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. LCO Item a not met.	NOTE Enter applicable Condition and Required Actions of LCO 3.8.8, when any required division is de-energized as a result of Condition A.	
	A.1 Declare affected required feature(s) with no offsite power available from a required circuit inoperable.	Immediately
	OR	
	A.2.1 Suspend CORE ALTERATIONS.	Immediately
	AND	
	A.2.2 Suspend movement of recently irradiated fuel assemblies in the primary and secondary containment.	Immediately
	AND	
		(continued)

ACTIONS

CONDITION	REQUIRED ACTION		COMPLETION TIME
A. (continued)	A.2.3	Initiate action to restore required offsite power circuit to OPERABLE status.	Immediately
B. LCO Item b not met.	B.1	Suspend CORE ALTERATIONS.	Immediately
	AND		
	B.2	Suspend movement of recently irradiated fuel assemblies in primary and secondary containment.	Immediately
	AND		
	B.3	Initiate action to restore required DG to OPERABLE status.	Immediately
C. LCO Item c not met.	C.1	Declare High Pressure Core Spray System inoperable.	72 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.8.2.1	----------NOTES---------- 1. The following SRs are not required to be performed: SR 3.8.1.3, SR 3.8.1.9 through SR 3.8.1.11, SR 3.8.1.13 through SR 3.8.1.16, SR 3.8.1.18, and SR 3.8.1.19. 2. SR 3.8.1.12 and SR 3.8.1.19 are not required to be met when the associated ECCS subsystem(s) are not required to be OPERABLE per LCO 3.5.2, "ECCS - Shutdown." ---------- For AC sources required to be OPERABLE, the following SRs are applicable: SR 3.8.1.1 SR 3.8.1.7 SR 3.8.1.14 SR 3.8.1.2 SR 3.8.1.9 SR 3.8.1.15 SR 3.8.1.3 SR 3.8.1.10 SR 3.8.1.16 SR 3.8.1.4 SR 3.8.1.11 SR 3.8.1.18 SR 3.8.1.5 SR 3.8.1.12 SR 3.8.1.19 SR 3.8.1.6 SR 3.8.1.13 SR 3.8.1.21	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 subsystem shall be within limits for each required diesel generator (DG).

APPLICABILITY: When associated DG is required to be OPERABLE.

ACTIONS

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

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more DGs with fuel oil level less than a 7 day supply and greater than a 6 day supply.	A.1 Restore fuel oil level to within limits.	48 hours
B. One or more DGs with lube oil inventory less than a 7 day supply and greater than a 6 day supply.	B.1 Restore lube oil inventory to within limits.	48 hours

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
C. One or more DGs with stored fuel oil total particulates not within limit.	C.1 Restore fuel oil total particulates to within limit.	7 days
D. One or more DGs with new fuel oil properties not within limits.	D.1 Restore stored fuel oil properties to within limits.	30 days
E. Required Actions and associated Completion Time not met. OR One or more DGs with diesel fuel oil, lube oil, or starting air subsystem not within limits for reasons other than Condition A, B, C, or D.	E.1 Declare associated DG inoperable.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.8.3.1	Verify each 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 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 required DG air start receiver pressure is: a. ≥ 160 psig for DGs 11 and 12; and b. ≥ 175 psig for DG 13.	In accordance with the Surveillance Frequency Control Program
SR 3.8.3.5	Check for and remove accumulated water from each fuel oil storage tank.	In accordance with the Surveillance Frequency Control Program

(continued)

3.8 ELECTRICAL POWER SYSTEMS

3.8.4 DC Sources—Operating

LCO 3.8.4 The Division 1, Division 2, and Division 3 DC electrical power subsystems shall be OPERABLE.

APPLICABILITY: MODES 1, 2, and 3.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One required battery charger inoperable.	----------NOTE---------- Entry into MODE 1, 2 or 3 is not allowed, except during power reductions. ----------	
	A.1 Verify battery cell parameters meet Table 3.8.6-1 Category A limits.	1 hour <u>AND</u> Once per 8 hours thereafter
B. Required Action and associated Completion Time of Condition A not met.	B.1 Declare associated battery inoperable.	Immediately
C. Division 1 or 2 DC electrical power subsystem inoperable for reasons other than Condition A.	C.1 Restore Division 1 and 2 DC electrical power subsystems to OPERABLE status.	2 hours

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
D. Required Action and associated Completion Time for Division 1 or 2 DC electrical power subsystem for Condition A, B, or C not met.	D.1 ----------NOTE---------- LCO 3.0.4.a is not applicable when entering MODE 3. ---------- Be in MODE 3.	12 hours
E. Division 3 DC electrical power subsystem inoperable for reasons other than Condition A.	E.1 Declare High Pressure Core Spray System inoperable.	Immediately
F. Required Action and associated Completion Time for Division 3 DC electrical power subsystem for Condition A, B or E not met.	F.1 Be in MODE 3. AND F.2 Be in MODE 4.	12 hours 36 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.8.4.1	Verify battery terminal voltage is ≥ 129 V on float charge.	In accordance with the Surveillance Frequency Control Program

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.8.4.2	Verify no visible corrosion at battery terminals and connectors. OR Verify battery connection resistance is ≤ 1.5 E-4 ohm for inter-cell connections, ≤ 1.5 E-4 ohm for inter-rack connections, ≤ 1.5 E-4 ohm for inter-tier connections, and ≤ 1.5 E-4 ohm for terminal connections.	In accordance with the Surveillance Frequency Control Program
SR 3.8.4.3	Verify battery cells, cell plates, and racks show no visual indication of physical damage or abnormal deterioration that could degrade battery performance.	In accordance with the Surveillance Frequency Control Program
SR 3.8.4.4	Remove visible corrosion and verify battery cell to cell and terminal connections are coated with anti-corrosion material.	In accordance with the Surveillance Frequency Control Program
SR 3.8.4.5	Verify battery connection resistance is ≤ 1.5 E-4 ohm for inter-cell connections, ≤ 1.5 E-4 ohm for inter-rack connections, ≤ 1.5 E-4 ohm for inter-tier connections, and ≤ 1.5 E-4 ohm for terminal connections.	In accordance with the Surveillance Frequency Control Program
SR 3.8.4.6	Verify each Division 1 and 2 required battery charger supplies ≥ 400 amps at ≥ 125 V for ≥ 10 hours; and the Division 3 battery charger supplies ≥ 50 amps at ≥ 125 V for ≥ 4 hours.	In accordance with the Surveillance Frequency Control Program

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.8.4.7	----------NOTES---------- 1. SR 3.8.4.8 may be performed in lieu of SR 3.8.4.7 once per 60 months. 2. This Surveillance shall not be performed in MODE 1, 2, or 3 (not applicable to Division 3). However, 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

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.8.4.8	----------NOTE---------- This Surveillance shall not be performed in MODE 1, 2, or 3 (not applicable to Division 3). However, credit may be taken for unplanned events that satisfy this SR. ----------	
	Verify battery capacity is ≥ 80% of the manufacturer's rating when subjected to a performance discharge test.	In accordance with the Surveillance Frequency Control Program AND 12 months when battery shows degradation, or has reached 85% of the expected life with capacity < 100% of manufacturer's rating AND 24 months when battery has reached 85% of the expected life with capacity ≥ 100% of manufacturer's rating

3.8 ELECTRICAL POWER SYSTEMS

3.8.5 DC Sources — Shutdown

LCO 3.8.5 The following shall be OPERABLE:

a. One Class 1E DC electrical power subsystem capable of supplying one division of the Division 1 or 2 onsite Class 1E DC electrical power distribution subsystem(s) required by LCO 3.8.8, "Distribution Systems - Shutdown";

b. One Class 1E battery or battery charger, other than the DC electrical power subsystem in LCO 3.8.5.a, capable of supplying the remaining Division 1 or 2 onsite Class 1E DC electrical power distribution subsystem(s) when required by LCO 3.8.8; and

c. The Division 3 DC electrical power subsystem capable of supplying the Division 3 onsite Class 1E DC electrical power distribution subsystem, when the Division 3 onsite Class 1E DC electrical power distribution subsystem is required by LCO 3.8.8.

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

ACTIONS

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

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One required battery charger inoperable.	----------NOTE---------- Entry into MODE 4 or 5, or commencing movement of recently irradiated fuel is not allowed, except entry into MODE 4 or 5 can be made as part of a unit shutdown. ----------	
	A.1 Verify battery cell parameters meet Table 3.8.6-1 Category A limits.	1 hour AND Once per 8 hours thereafter
B. Required Action and associated Completion Time of Condition A not met.	B.1 Declare associated battery inoperable.	Immediately
C. One or more required DC electrical power subsystems inoperable for reasons other than Condition A.	C.1 Declare affected required feature(s) inoperable.	Immediately
	OR	
	C.2.1 Suspend CORE ALTERATIONS.	Immediately
	AND	
		(continued)

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
C. (continued)	C.2.2 Suspend movement of recently irradiated fuel assemblies in the primary and secondary containment.	Immediately
	AND	
	C.2.3 Initiate action to restore required DC electrical power subsystems to OPERABLE status.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.8.5.1	----------NOTE---------- The following SRs are not required to be performed: SR 3.8.4.4, SR 3.8.4.6, SR 3.8.4.7, and SR 3.8.4.8. ----------	
	For DC sources required to be OPERABLE, the following SRs are applicable: SR 3.8.4.1, SR 3.8.4.2, SR 3.8.4.3, SR 3.8.4.4, SR 3.8.4.5, SR 3.8.4.6, SR 3.8.4.7, SR 3.8.4.8.	In accordance with applicable SRs

3.8 ELECTRICAL POWER SYSTEMS

3.8.6 Battery Cell Parameters

LCO 3.8.6 Battery cell parameters for the Division 1, 2, and 3 batteries shall be within limits.

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

ACTIONS

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

CONDITION	REQUIRED ACTION		COMPLETION TIME
A. One or more batteries with one or more battery cell parameters not within Table 3.8.6-1 Category A or B limits.	A.1	Verify pilot cell's electrolyte level and float voltage meet Table 3.8.6-1 Category C limits.	1 hour
	AND		
	A.2	Verify battery cell parameters meet Table 3.8.6-1 Category C limits.	24 hours AND Once per 7 days thereafter
	AND		
	A.3	Restore battery cell parameters to Table 3.8.6-1 Category A and B limits.	31 days

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
B. Required Action and associated Completion Time of Condition A not met. OR One or more batteries with average electrolyte temperature of the representative cells < 60°F. OR One or more batteries with one or more battery cell parameters not within Table 3.8.6-1 Category C limits.	B.1 Declare associated battery inoperable.	Immediately

SURVEILLANCE REQUIREMENTS

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

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.8.6.2	Verify battery cell parameters meet Table 3.8.6-1 Category B limits.	In accordance with the Surveillance Frequency Control Program AND Once within 72 hours after battery overcharge > 150 V
SR 3.8.6.3	Verify average electrolyte temperature of representative cells is ≥ 60°F.	In accordance with the Surveillance Frequency Control Program

Table 3.8.6-1 (page 1 of 1)
Battery Cell Parameter Requirements

PARAMETER	CATEGORY A: LIMITS FOR EACH DESIGNATED PILOT CELL	CATEGORY B: LIMITS FOR EACH CONNECTED CELL	CATEGORY C: LIMITS FOR EACH CONNECTED CELL
Electrolyte Level	> Minimum level indication mark, and ≤ 1/4 inch above maximum level indication mark[a]	> Minimum level indication mark, and ≤ 1/4 inch above maximum level indication mark[a]	Above top of plates, and not overflowing
Float Voltage	≥ 2.13 V	≥ 2.13 V	> 2.07 V
Specific Gravity[b][c]	≥ 1.195	≥ 1.190 AND Average of all connected cells ≥ 1.200	Not more than 0.020 below average of all connected cells AND Average of all connected cells ≥ 1.190

(a) It is acceptable for the electrolyte level to temporarily increase above the specified maximum level during equalizing charges provided it is not overflowing.

(b) Corrected for electrolyte temperature and level. Level correction is not required, however, when battery charging is < 2 amps when on float charge.

(c) A battery charging current of < 2 amps when on float charge is acceptable for meeting specific gravity limits following a battery recharge, for a maximum of 7 days. When charging current is used to satisfy specific gravity requirements, specific gravity of each connected cell shall be measured prior to expiration of the 7 day allowance.

3.8 ELECTRICAL POWER SYSTEMS

3.8.7 Distribution Systems—Operating

LCO 3.8.7 Division 1, Division 2, and Division 3 AC and DC electrical power distribution subsystems shall be OPERABLE.

APPLICABILITY: MODES 1, 2, and 3.

----------NOTE----------
Division 3 electrical power distribution subsystems are not required to be OPERABLE when High Pressure Core Spray System is inoperable.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more Division 1 or 2 AC electrical power distribution subsystem(s) inoperable.	A.1 Restore Division 1 and 2 AC electrical power distribution subsystems to OPERABLE status.	8 hours
B. One or more Division 1 or 2 DC electrical power distribution subsystem(s) inoperable.	B.1 Restore Division 1 and 2 DC electrical power distribution subsystems to OPERABLE status.	2 hours

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
C. Required Action and associated Completion Time of Condition A or B not met.	C.1 ----------NOTE---------- LCO 3.0.4.a is not applicable when entering MODE 3. ---------- Be in MODE 3.	12 hours
D. One or more Division 3 AC or DC electrical power distribution subsystems inoperable.	D.1 Declare High Pressure Core Spray System inoperable.	Immediately
E. Two or more divisions with inoperable distribution subsystems that result in a loss of function.	E.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 Division 1, Division 2, and Division 3 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 primary or 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
	OR	
	A.2.1 Suspend CORE ALTERATIONS.	Immediately
	AND	
	A.2.2 Suspend movement of recently irradiated fuel assemblies in the primary and secondary containment.	Immediately
	AND	
		(continued)

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. (continued)	A.2.3 Initiate actions to restore required AC and DC electrical power distribution subsystems to OPERABLE status.	Immediately
	AND	
	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 shall be OPERABLE.

APPLICABILITY: During in-vessel fuel movement with equipment associated with the interlocks.

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
	OR	
	A.2.1 Insert a control rod withdrawal block.	Immediately
	AND	
	A.2.2 Verify all control rods are fully inserted in core cells containing one or more fuel assemblies.	Immediately

Correction letter of 6-18-99

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, and c. Refuel platform main 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

(continued)

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 One 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 required channel.

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more required control rod position indication channels inoperable.	A.1.1 Suspend in-vessel fuel movement.	Immediately
	AND	
	A.1.2 Suspend control rod withdrawal.	Immediately
	AND	
	A.1.3 Initiate action to fully insert all insertable control rods in core cells containing one or more fuel assemblies.	Immediately
	OR	
		(continued)

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. (continued)	A.2.1 Initiate action to fully insert the control rod associated with the inoperable position indicator.	Immediately
	AND	
	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 required channel has no "full-in" indication for 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 ≥ 1520 psig.	In accordance with the Surveillance Frequency Control Program

3.9 REFUELING OPERATIONS

3.9.6 Reactor Pressure Vessel (RPV) Water Level – Irradiated Fuel

LCO 3.9.6 RPV water level shall be ≥ 22 ft 8 inches above the top of the RPV flange.

APPLICABILITY: During movement of irradiated fuel assemblies within the RPV.

ACTIONS

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

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.9.6.1	Verify RPV water level is ≥ 22 ft 8 inches above the top of the RPV flange.	In accordance with the Surveillance Frequency Control Program

3.9 REFUELING OPERATIONS

3.9.7 Reactor Pressure Vessel (RPV) Water Level – New Fuel or Control Rods

LCO 3.9.7 RPV water level shall be ≥ 23 ft above the top of irradiated fuel assemblies seated within the RPV.

APPLICABILITY: 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 new fuel assemblies and handling of control rods within the RPV.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.9.7.1	Verify RPV water level is ≥ 23 ft above the top of irradiated fuel assemblies seated within the RPV.	In accordance with the Surveillance Frequency Control Program

3.9 REFUELING OPERATIONS

3.9.8 Residual Heat Removal (RHR) – High Water Level

LCO 3.9.8 One RHR shutdown cooling subsystem shall be OPERABLE and one decay heat removal subsystem shall be in operation.

----------NOTE----------
The required decay heat removal subsystem may not be in 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 ≥ 22 ft 8 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.	Immediately
	AND		
	B.2	Initiate action to restore secondary containment to OPERABLE status.	Immediately
	AND		
			(continued)

ACTIONS

CONDITION	REQUIRED ACTION		COMPLETION TIME
B. (continued)	B.3	Initiate action to restore one standby gas treatment subsystem to OPERABLE status.	Immediately
	AND		
	B.4	Initiate action to restore isolation capability in each required secondary containment penetration flow path not isolated.	Immediately
C. No decay heat removal 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 decay heat removal subsystem is operating.	In accordance with the Surveillance Frequency Control Program

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.9.8.2	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

3.9.9 Residual Heat Removal (RHR) – Low Water Level

LCO 3.9.9 Two decay heat removal subsystems shall be OPERABLE, and one decay heat removal subsystem shall be in operation.

----------NOTE----------
The required operating decay heat removal subsystem may not be in 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 < 22 ft 8 inches above the top of the RPV flange.

ACTIONS

----------NOTE----------
Separate Condition entry is allowed for each decay heat removal subsystem.

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or two required decay heat removal subsystems inoperable.	A.1 Verify an alternate method of decay heat removal is available for each inoperable required decay heat removal subsystem.	1 hour AND Once per 24 hours thereafter

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION		COMPLETION TIME
B. Required Action and associated Completion Time of Condition A not met.	B.1	Initiate action to restore secondary containment to OPERABLE status.	Immediately
	AND		
	B.2	Initiate action to restore one standby gas treatment subsystem to OPERABLE status.	Immediately
	AND		
	B.3	Initiate action to restore isolation capability in each required secondary containment penetration flow path not isolated.	Immediately
C. No decay heat removal 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 3.9.9.1	Verify one decay heat removal subsystem is operating.	In accordance with the Surveillance Frequency Control Program
SR 3.9.9.2	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 3.4.10, "Residual Heat Removal (RHR) Shutdown Cooling System—Cold Shutdown," may be suspended, to allow reactor coolant temperature > 200°F:

- 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, 2, 3, 4, and 5 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 > 200°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 above requirements not met.	A.1	--------NOTE--------- Required Actions to be in MODE 4 include reducing average reactor coolant temperature to ≤ 200°F. ---	
		Enter the applicable Condition of the affected LCO.	Immediately
	OR		
	A.2.1	Suspend activities that could increase the average reactor coolant temperature or pressure.	Immediately
	AND		
	A.2.2	Reduce average reactor coolant temperature to ≤ 200°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

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 (Section 1.1, Definitions) 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. One or more of the above requirements not met.	A.1	Suspend CORE ALTERATIONS except for control rod insertion.	Immediately
	AND		
	A.2	Fully insert all insertable control rods in core cells containing one or more fuel assemblies.	1 hour
	AND		
			(continued)

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. (continued)	A.3.1 Place the reactor mode switch in the shutdown position.	1 hour
	OR	
	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, 8.a, 8.b, 11, and 12 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 above 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
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,"

OR

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, 8.a, 8.b, 11, and 12 of Table 3.3.1.1-1, and

LCO 3.9.5, "Control Rod OPERABILITY—Refueling,"

OR

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 above 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
	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

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
B. One or more of the above requirements not met with the affected control rod not insertable.	B.1 Suspend withdrawal of the control rod and removal of associated CRD.	Immediately
	AND	
	B.2.1 Initiate action to fully insert all control rods.	Immediately
	OR	
	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 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

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
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. One or more of the above requirements not met.	A.1 Suspend removal of the CRD mechanism. AND	Immediately (continued)

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. (continued)	A.2.1 Initiate action to fully insert all control rods.	Immediately
	OR	
	A.2.2 Initiate action to satisfy the requirements of this LCO.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.10.5.1	Verify all controls 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

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.10.5.4	Perform SR 3.1.1.1.	According to SR 3.1.1.1
SR 3.10.5.5	Verify no 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 spiral 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. One or more of the above requirements not met.	A.1 Suspend withdrawal of control rods and removal of associated CRDs.	Immediately
	AND	
	A.2 Suspend loading fuel assemblies.	Immediately
	AND	
		(continued)

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. (continued)	A.3.1 Initiate action to fully insert all control rods in core cells containing one or more fuel assemblies.	Immediately
	OR	
	A.3.2 Initiate action to satisfy the requirements of this LCO.	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 spiral 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, "Control Rod Pattern," may be suspended and control rods bypassed in the Rod Action Control System as allowed by SR 3.3.2.1.9, to allow performance of SDM demonstrations, control rod scram time testing, and control rod friction testing, provided 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	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

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. LCO 3.3.1.1, "Reactor Protection System (RPS) Instrumentation," MODE 2 requirements for Function 2.a, 2.c, and 2.e of Table 3.3.1.1-1;

b. 1. LCO 3.3.2.1, "Control Rod Block Instrumentation," MODE 2 requirements for Function 1.b of Table 3.3.2.1-1,

<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 single notch withdrawal mode;

e. No other CORE ALTERATIONS are in progress; and

f. CRD charging water header ≥ 1520 psig.

APPLICABILITY: MODE 5 with the reactor mode switch in startup/hot standby position.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
----------NOTE---------- Separate Condition entry is allowed for each control rod. ----------	----------NOTE---------- Inoperable control rods may be bypassed in RACS in accordance with SR 3.3.2.1.9, if required, to allow insertion of inoperable control rod and continued operation. ----------	
A. One control rod not coupled to its associated CRD.	A.1 Fully insert inoperable control rod.	3 hours
	AND	
	A.2 Disarm the associated CRD.	4 hours
B. One or more of the above requirements 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	Perform the MODE 2 applicable SRs for LCO 3.3.1.1, Functions 2.a, 2.c, and 2.e of Table 3.3.1.1-1.	According to the applicable SRs

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
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 1.b of Table 3.3.2.1-1.	According to the applicable SRs
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

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
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 AND 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 ≥ 1520 psig.	In accordance with the Surveillance Frequency Control Program

3.10 SPECIAL OPERATIONS

3.10.9 Suppression Pool Makeup-MODE 3

LCO 3.10.9 The requirements of LCO 3.6.2.2, "Suppression Pool Water Level" and LCO 3.6.2.4, "Suppression Pool Makeup (SPMU) System," may be suspended in MODE 3 to allow drain-down of the Upper Containment Pool, provided the following requirements are met:

a. Suppression Pool Average Temperature is ≤ 95°F;

b. Suppression Pool and Upper Containment Pool water levels are maintained within limits of Figure 3.10.9-1;

c. The fuel storage and transfer canal areas of the Upper Containment Pool are maintained at a minimum of 23 ft 3 inches.

d. Reactor Steam Dome pressure is < 230 PSIG;

e. Reactor has been subcritical > 3 hours; and

f. Each SPMU subsystem valve is OPERABLE per SR 3.6.2.4.3 and SR 3.6.2.4.5 and Upper Containment Pool temperature is in compliance with SR 3.6.2.4.2.

APPLICABILITY: MODE 3 with LCO 3.6.2.2 and 3.6.2.4 not met.

ACTIONS

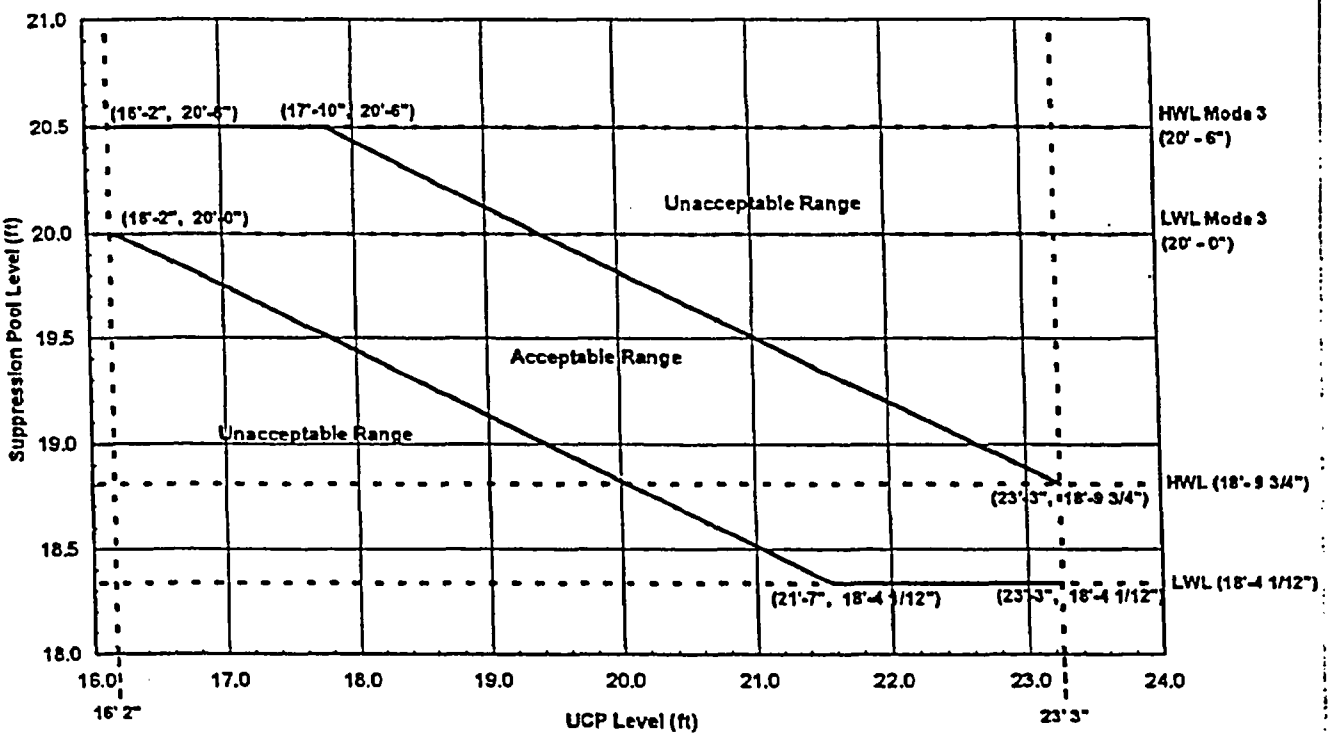
----------NOTE----------
Separate Condition entry is allowed for each requirement of the LCO.

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more of the above requirements not met.	A.1 Suspend draining the Upper Containment Pools.	Immediately
	AND	
	A.2 Restore compliance with LCO requirements.	4 hours
B. Required Actions and Completion Time of condition A not met.	B.1 Restore compliance with suspended MODE 3 requirements.	12 hours
C. Required Action and associated Completion Time not met.	C.1 Be in MODE 4.	24 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.10.9.1	Verify suppression pool temperature ≤ 95°F.	In accordance with the Surveillance Frequency Control Program
SR 3.10.9.2	Verify reactor steam dome pressure is < 230 psig.	In accordance with the Surveillance Frequency Control Program
SR 3.10.9.3	Verify level in the upper containment pool and the suppression pool to be within limits of Figure 3.10.9-1.	In accordance with the Surveillance Frequency Control Program
SR 3.10.9.4	Verify level in the fuel storage and transfer canal areas of the upper containment pool are ≥ 23 ft 3 inches.	In accordance with the Surveillance Frequency Control Program

Figure 3.10.9-1
Upper Containment and Suppression Pool Levels



4.0 DESIGN FEATURES

4.1 Site Location

The site for Grand Gulf Nuclear Station is located in Claiborne County, Mississippi on the east bank of the Mississippi River, approximately 25 miles south of Vicksburg and 37 miles north-northeast of Natchez. The exclusion area boundary shall have a radius of 696 meters from the centerline of the reactor.

4.2 Reactor Core

4.2.1 Fuel Assemblies

The reactor shall contain 800 fuel assemblies. Each assembly shall consist of a matrix of Zircaloy or ZIRLO clad fuel rods with an initial composition of natural or slightly enriched uranium dioxide (UO_2) as fuel material, and water rods. Limited substitutions of zirconium alloy or stainless steel filler rods for fuel rods, in accordance with approved applications of fuel rod configurations, may be used. Fuel assemblies shall be limited to those fuel designs that have been analyzed with applicable NRC staff approved codes and methods and shown by tests or analyses to comply with all 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 193 cruciform shaped control rod assemblies. The control material shall be boron carbide or hafnium metal, or both.

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. $k_{eff} \leq 0.95$ if fully flooded with unborated water, which includes an allowance for uncertainties as described in Section 9.1.2 of the UFSAR;

b. A nominal fuel assembly center to center storage spacing of 6.26 inches in the storage racks.

c. Fuel assemblies having a maximum K-infinity of 1.26 in the normal reactor core configuration at cold conditions;

(continued)

4.0 DESIGN FEATURES

4.3.1.1 (continued)

d. Fuel assemblies having a maximum nominal U-235 enrichment of 4.9 weight percent;

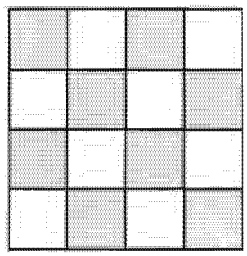
e. Region II racks are controlled as follows:

1. Storage cells with any Boraflex panel which has received a gamma dose in excess of 2.3E10 rads or which has a Boron-10 areal density less than 0.0165, which are designated within the Spent Fuel Pool Rack Boraflex Monitoring Program, are treated as Region II panels.

2. Storage cells face-adjacent to Region II panels are either restricted from fuel storage by physically blocking the isolated cells or are configured to meet, as a minimum (i.e., additional cells may be blocked), the Region II fuel storage configuration requirements in Figure 4.3-1.

3. When a 4x4 array of cells is classified as Region II and face-adjacent to another Region II 4x4 storage array, the new Region II 4x4 array is required to be blocked in the same 8-of-16 pattern and at the same orientation as the adjacent Region II 4x4 storage configuration.

Figure 4.3.1
Region II 4x4 Storage Configuration



Fuel Assembly Storage Location

Location Physically Blocked to Prevent Storage

(continued)

4.0 DESIGN FEATURES (continued)

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

a. $k_{eff} \leq 0.95$ if fully flooded with unborated water, which includes an allowance for uncertainties as described in Section 9.1.1 of the UFSAR;

b. A nominal fuel assembly center to center storage spacing of 6.535 inches within rows and 11.875 inches between rows in the new fuel storage racks.

c. Fuel assemblies having a maximum k-infinity of 1.26 in the normal reactor core configuration at cold conditions;

d. Fuel assemblies having a maximum nominal U-235 enrichment of 4.9 weight percent.

4.3.2 Drainage

The spent fuel storage pool is designed and shall be maintained to prevent inadvertent draining of the pool below elevation 202 ft 5.25 inches.

4.3.3 Capacity

4.3.3.1 The spent fuel storage pool shall be maintained with a storage capacity limited to no more than 4348 fuel assemblies.

4.3.3.2 No more than 800 fuel assemblies may be stored in the upper containment pool.

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 affect nuclear safety.

5.1.2 The shift superintendent shall be responsible for the control room command function. During any absence of the shift superintendent from the control room 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 superintendent from the control room 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 UFSAR;

b. The plant manager shall be responsible for overall safe operation of the plant and shall have control over those onsite activities necessary for safe operation and maintenance of the plant;

c. A specified corporate executive 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. The specified corporate executive shall be documented in the UFSAR; and

d. The individuals who train the operating staff, carry out radiation protection activities, 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.

(continued)

5.2 Organization (continued)

5.2.2 Unit Staff

The unit staff organization shall include the following:

a. A non-licensed operator shall be on site when fuel is in the reactor and an additional non-licensed operator shall be on site while the unit is in MODE 1, 2, or 3.

b. At least one licensed RO shall be present in the control room when fuel is in the reactor. In addition, while the unit is in MODE 1, 2, or 3, at least one licensed SRO shall be present in the control room.

c. Shift crew composition may be one less than the minimum requirement of 10CFR50.54(m)(2)(i) and Specifications 5.2.2.a and 5.2.2.f for a period of time not to exceed 2 hours in order to accommodate unexpected absence of on-duty shift crew members provided immediate action is taken to restore the shift crew composition to within the minimum requirements.

d. A health physicist 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.

(continued)

5.2 Organization

5.2.2 Unit Staff (continued)

e. The operations manager or at least one operations middle manager shall hold an SRO license.

f. When in MODES 1, 2, or 3 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 operations of the unit. This individual shall meet the qualifications specified by ANSI/ANS 3.1-1993 as endorsed by RG 1.8, Rev. 3, 2000.

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/ANS 3.1-1978 for comparable positions with exceptions specified in the Entergy Quality Assurance Program Manual (QAPM).

5.3.2 For the purpose of 10 CFR 55.4, a licensed Senior Reactor Operator (SRO) and a licensed Reactor Operator (RO) are those individuals who, in addition to meeting the requirements of 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;

c. Quality assurance for effluent and environmental monitoring; and

d. All programs specified in Specification 5.5.

5.0 ADMINISTRATIVE CONTROLS

5.5 Programs and Manuals

The following programs and manuals 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 programs and descriptions of the information that should be included in the Annual Radiological Environmental Operating and Radioactive Effluent Release reports.

Licensee initiated changes to the ODCM:

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

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

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

b. Shall become effective after review and acceptance, including approval of the plant manager; and

c. Shall be submitted to the NRC in the form of a complete, legible copy of the entire ODCM as a part of, or concurrent with, the Radioactive Effluent Release Report for the period of the report in which any change in the ODCM was made. Each change shall be identified by markings in the margin of the

(continued)

5.5 Programs and Manuals

5.5.1 Offsite Dose Calculation Manual (ODCM) (continued)

affected pages, clearly indicating the area of the page that was changed, and shall indicate the date (i.e., month and year) the change was implemented.

5.5.2 Primary Coolant Sources Outside Containment

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 the:

a. LPCS System;

b. HPCS System;

c. RHR System outside containment containing steam or water, except the line to the liquid radwaste system and headers that are isolated by manual valves;

d. RCIC System outside containment containing steam or water, except the drain line to the main condenser;

e. Hydrogen analyzers of the Combustible Gas Control System;

f. Post Accident Sampling System (until such time as a modification eliminates the PASS penetration as a potential leakage path);

g. Feedwater Leakage Control System; and

h. Suppression pool level detection portion of the Suppression Pool Makeup System.

The program shall include the following:

a. Preventive maintenance and periodic visual inspection requirements; and

b. Integrated leak test requirements for each system at refueling cycle intervals or less.

(continued)

5.5 Programs and Manual (continued)

5.5.3 Deleted

5.5.4 Radioactive Effluent Controls Program

This program conforms to 10 CFR 50.36a for the control of radioactive effluents and for maintaining the doses to members of the public from radioactive effluents as low as reasonably achievable. The program shall be contained in the ODCM, shall be implemented by procedures, and shall include remedial actions to be taken whenever the program limits are exceeded. The program shall include the following elements:

a. Limitations on the functional capability of radioactive liquid and gaseous monitoring instrumentation including surveillance tests and setpoint determination in accordance with the methodology in the ODCM;

b. Limitations on the concentrations of radioactive material released in liquid effluents to unrestricted areas, conforming to ten times the concentration values in 10 CFR 20, Appendix B, Table 2, Column 2;

c. Monitoring, sampling, and analysis of radioactive liquid and gaseous effluents in accordance with 10 CFR 20.1302 and with the methodology and parameters in the ODCM;

d. Limitations on the annual and quarterly doses or dose commitment to a member of the public from radioactive materials in liquid effluents released from the unit to unrestricted areas, conforming to 10 CFR 50, Appendix I;

(continued)

5.5 Programs and Manuals

5.5.4 Radioactive Effluent Controls Program (continued)

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

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

g. Limitations on the dose rate resulting from radioactive material released in gaseous effluents to areas beyond the site boundary as follows:

   1. for noble gases: $\leq$ 500 mrem/yr to the total body and $\leq$ 3000 mrem/yr to the skin, and

   2. for Iodine-131, for Iodine-133, for tritium, and for all radionuclides in particulate form with half-lives > 8 days: $\leq$ 1500 mrem/yr to any organ;

h. Limitations on the annual and quarterly air doses resulting from noble gases released in gaseous effluents from the 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 the unit to areas beyond the site boundary, conforming to 10 CFR 50, Appendix I; and

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

(continued)

5.5 Programs and Manuals (continued)

5.5.5 Component Cyclic or Transient Limit

This program provides controls to track the cyclic and transient occurrences identified on UFSAR Table 3.9-35 to ensure that the reactor vessel is maintained within the design limits.

5.5.6 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.

(continued)

5.5 Programs and Manuals (continued)

5.5.7 Ventilation Filter Testing Program (VFTP)

A program shall be established to implement the following required testing of Engineered Safety Feature (ESF) filter ventilation systems at the frequencies specified in Regulatory Guide 1.52, Revision 2, except that testing specified at a frequency of 18 months is required at a frequency of 24 months.

a. Demonstrate for each of the ESF systems that an inplace test of the high efficiency particulate air (HEPA) filters shows a penetration and system bypass < 0.05% when tested in accordance with Regulatory Guide 1.52, Revision 2, and ANSI N510-1975 at the system flowrate specified below ± 10%:

ESF Ventilation System	Flowrate
SGTS	4000 cfm
CRFA	4000 cfm

b. Demonstrate for each of the ESF systems that an inplace test of the charcoal adsorber shows a penetration and system bypass < 0.05% when tested in accordance with Regulatory Guide 1.52, Revision 2, and ANSI N510-1975 at the system flowrate specified below ± 10%:

ESF Ventilation System	Flowrate
SGTS	4000 cfm

c. Demonstrate for each of the ESF systems that a laboratory test of a sample of the charcoal absorber, when obtained as described in Regulatory Guide 1.52, Revision 2, shows the methyl iodide penetration less than the value specified below when tested in accordance with ASTM D3803-1989 at a temperature of 30°C and the relative humidity specified below:

ESF Ventilation System	Penetration	RH
SGTS	0.5%	70%

(continued)

5.5 Programs and Manuals

5.5.7 Ventilation Filter Testing Program (VFTP) (continued)

d. Demonstrate for each of the ESF systems that the pressure drop across the combined HEPA filters, the prefilters, and the charcoal adsorbers (if used) is less than the value specified below when tested in accordance with Regulatory Guide 1.52, Revision 2, and ANSI N510-1975 at the system flowrate specified below ± 10%:

ESF Ventilation System	Delta P	Flowrate
SGTS	9.2" WG	4000 cfm
CRFA	7.2" WG	4000 cfm

e. Demonstrate that the heaters for each of the ESF systems dissipate the value specified below when tested in accordance with ANSI N510-1975 (except for the phase balance criteria stated in Section 14.2.3):

ESF Ventilation System	Wattage
SGTS	48 ± 5.0 kW

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

5.5.8 Explosive Gas and Storage Tank Radioactivity Monitoring Program

This program provides controls for potentially explosive gas mixtures contained in the main condenser offgas treatment system and the quantity of radioactivity contained in unprotected outdoor liquid storage tanks.

The program shall include:

a. The limits for concentrations of hydrogen in the main condenser 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); and

(continued)

5.5 Programs and Manuals

5.5.8 Explosive Gas and Storage Tank Radioactivity Monitoring Program (continued)

b. A surveillance program to ensure that the quantity of radioactive material contained in any outside temporary tank not including liners for shipping radwaste is ≤ 10 curies, excluding tritium and dissolved or entrained noble gases.

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

5.5.9 Diesel Fuel Oil Testing Program

A diesel fuel oil testing program to implement required testing of both new fuel oil and stored fuel oil shall be established. The program shall include sampling and testing requirements, and acceptance criteria, all in accordance with applicable ASTM Standards. The purpose of the program is to establish the following:

a. Acceptability of new fuel oil for use prior to addition to storage tanks, and acceptability of stored fuel oil at a frequency in accordance with the Surveillance Frequency Control Program, by determining that the fuel oil has:

   1. a water and sediment contents within limits, and

   2. a kinematic viscosity within limits for ASTM 2D fuel oil;

b. Total particulate concentration of the new fuel is ≤ 2 mg/100 ml when tested in accordance with ASTM D-2274-70 within 7 days after addition of the new fuel to the storage tank; and

c. Total particulate concentration of the fuel oil in the storage tanks is ≤ 2 mg/100 ml when tested in accordance with ASTM D-2274-70 at a frequency in accordance with the Surveillance Frequency Control Program.

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

(continued)

5.5 Programs and Manual (continued)

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 limitations and remedial or compensatory actions may be identified to be taken as a result of the support system inoperability and corresponding exception to entering supported system Condition and Required Actions. This program implements the requirements of LCO 3.0.6. The SFDP shall contain the following:

a. Provisions for cross division checks to ensure a loss of the capability to perform the safety function assumed in the accident analysis does not go undetected;

b. Provisions for ensuring the plant is maintained in a safe condition if a loss of function condition exists;

c. Provisions to ensure that an inoperable supported system's Completion Time is not inappropriately extended as a result of multiple support system inoperabilities; and

d. Other appropriate limitations and remedial or compensatory actions.

A loss of safety function exists when, assuming no concurrent single failure, a safety function assumed in the accident analysis cannot be performed. For the purpose of this program, a loss of safety function may exist when a support system is inoperable, and:

a. A required system redundant to system(s) supported by the inoperable support system is also inoperable; or

b. A required system redundant to system(s) in turn supported by the inoperable supported system is also inoperable; or

c. A required system redundant to support system(s) for the supported systems (a) and (b) above is also inoperable.

The SFDP identifies where a loss of safety function exists. If a loss of safety function is determined to exist by this program, the appropriate Conditions and Required Actions of the LCO in which the loss of safety function exists are required to be entered.

(continued)

5.5 Programs and Manuals (continued)

5.5.11 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 updated FSAR or Bases that requires NRC approval pursuant to 10 CFR 50.59.

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

d. Proposed changes that do not meet the criteria of either Specification 5.5.11.b.1 or Specification 5.5.11.b.2 above shall be reviewed and approved by the NRC prior to implementation. Changes to the Bases implemented without prior NRC approval shall be provided to the NRC on a frequency consistent with 10 CFR 50.71(e).

5.5.12 10 CFR 50, Appendix J, Testing Program

A program shall be established to implement the leakage rate testing of the containment as required by 10 CFR 50.54(o) and 10 CFR 50, Appendix J, Option B, as modified by approved exemptions except that the next Type A test performed after the October 19, 2008 Type A test shall be performed no later than the plant restart after the End of Cycle 23 Refueling Outage. This program shall be in accordance with the guidelines contained in NEI 94-01, Revision 3-A, "Industry Guideline for Implementing Performance-Based Option of 10 CFR Part 50, Appendix J," dated July 2012, and the conditions and limitations specified in NEI 94-01, Revision 2-A, Section 4.1, dated October 2008.

The calculated peak containment internal pressure for the design basis loss of coolant accident, P_a, is 12.1 psig.

The maximum allowable primary containment leakage rate, L_a, at P_a, shall be 0.682% of primary containment air weight per day.

(continued)

5.5 Programs and Manuals (continued)

5.5.12 10 CFR 50, Appendix J, Testing Program (continued)

The Primary Containment leakage rate acceptance criterion is ≤ 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 Type C tests and ≤ 0.75 L_a for Type A tests.

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

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

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 Fresh Air (CRFA) 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 for the duration of the accident. The program shall include the following elements:

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

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

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

d. Since the CRE is at a neutral pressure during isolation mode, the CRE will be maintained, including the following:

(continued)

5.5 Programs and Manuals

5.5.13 Control Room Envelope Habitability Program (continued)

1. Plant maintenance activities such as modifications, rework, and preventive maintenance tasks on components that could affect the CRE shall be controlled under fleet, plant and system specific procedures to ensure that the CRE boundary is not degraded by such activities.

2. Testing of CRFA system sealing areas shall be performed following maintenance activities (rework and preventative) and periodically to ensure that the areas of negative pressures do not leak bypassing emergency filtration system components.

3. Fire damper inspection procedures that require opening of duct panels and doors shall ensure that upon restoration no leakage path exists.

4. The remainder of ducting components such as plenum access doors, duct access doors (rectangular and round), flex connections (ventglass, etc), plugs, and patches will be maintained per paragraph b.

5. An assessment of the CRE Boundary will be conducted at a frequency in accordance with the Surveillance Frequency Control Program. The results of assessing items 1 through 4 shall be trended and used as part of the assessment of the CRE boundary as indicated in paragraph c.

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

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

5.0 ADMINISTRATIVE CONTROLS

5.6 Reporting Requirements

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

5.6.1 Deleted

5.6.2 Annual Radiological Environmental Operating Report

The Annual Radiological Environmental Operating Report covering the operation of the unit during the previous calendar year shall be submitted by May 1 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

(continued)

5.6 Reporting Requirements

5.6.2 Annual Radiological Environmental Operating Report (continued)

results are not available for inclusion with the report, the report shall be submitted noting and explaining the reasons for the missing results. The missing data shall be submitted in a supplementary report as soon as possible.

5.6.3 Radioactive Effluent Release Report

The Radioactive Effluent Release Report covering the operation of the unit during the previous calendar year shall be submitted by May 1 of each year. 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 50, Appendix I, Section IV.B.1.

5.6.4 Deleted

5.6.5 Core Operating Limits Report (COLR)

a. Core operating limits shall be established prior to each reload cycle, or prior to any remaining portion of a reload cycle, and shall be documented in the COLR for the following:

1) LCO 3.2.1, Average Planar Linear Heat Generation Rate (APLHGR),

2) LCO 3.2.2, Minimum Critical Power Ratio (MCPR)(including power and flow dependent limits, and the cycle-specific $MCPR_{99.9\%}$),

3) LCO 3.2.3, Linear Heat Generation Rate (LHGR),

4) Deleted

5) LCO 3.3.1.1, RPS Instrumentation, Table 3.3.1.1-1 APRM Function 2.f

6) The Manual Backup Stability Protection (BSP) Scram Region (Region I), the Manual BSP Controlled Entry Region (Region II), the modified APRM Flow Biased Simulated Thermal Power - High trip function (Function 2.d) setpoints used in the OPRM Automated BSP Scram Region, and the BSP Boundary for Specification 3.3.1.1.

(continued)

5.6 Reporting Requirements

5.6.5 Core Operating Limits Report (COLR) (continued)

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. XN-NF-81-58(P)(A), "RODEX2 Fuel Rod Thermal-Mechanical Response Evaluation Model", Exxon Nuclear Company, Inc., Richland, WA.

2. XN-NF-85-67(P)(A), "Generic Mechanical Design for Exxon Nuclear Jet Pump BWR Reload Fuel", Exxon Nuclear Company, Richland, WA.

3. EMF-8574(P) Supplement 1 (P)(A) and Supplement 2(P)(A), "RODEX2A (BWR) Fuel Rod Thermal-Mechanical Evaluation Model", Siemens Power Corporation, Richland, WA.

4. ANF-89-98(P)(A), "Generic Mechanical Design Criteria for BWR Fuel Designs", Advanced Nuclear Fuels Corporation, Richland, WA.

5. XN-NF-80-19(P)(A), Volume 1, "Exxon Nuclear Methodology for Boiling Water Reactors - Neutronic Methods for Design and Analysis", Exxon Nuclear Company, Richland, WA.

6. XN-NF-80-19(P)(A), Volume 4, "Exxon Nuclear Methodology for Boiling Water Reactors: Application for the ENC Methodology to BWR Reloads", Exxon Nuclear Company, Richland, WA.

7. EMF-2158(P)(A), "Siemens Power Corporation Methodology for Boiling Water Reactors: Evaluation and Validation of CASMO-4/MICROBURN-B2", Siemens Power Corporation, Richland, WA.

8. XN-NF-80-19(P)(A), Volume 3, "Exxon Nuclear Methodology for Boiling Water Reactors, THERMEX: Thermal Limits Methodology Summary Description", Exxon Nuclear Company, Richland, WA.

9. XN-NF-84-105(P)(A), Volume 1, "XCOBRA-T: A Computer Code for BWR Transient Thermal-Hydraulic Core Analysis", Exxon Nuclear Company, Inc., Richland, WA.

(continued)

5.6 Reporting Requirements

5.6.5 Core Operating Limits Report (COLR) (continued)

10. ANF-524(P)(A), "ANF Critical Power Methodology for Boiling Water Reactors", Advanced Nuclear Fuels Corporation, Richland, WA .

11. ANF-913(P)(A), Volume 1, "CONTRANSA2: A Computer Program for Boiling Water Reactor Transient Analysis", Advanced Nuclear Fuels Corporation, Richland, WA.

12. XN-NF-825(P)(A), "BWR/6 Generic Rod Withdrawal Error Analysis, $MCPR_p$ for Plant Operations within the Extended Operating Domain", Exxon Nuclear Company, Inc., Richland, WA.

13. ANF-1358(P)(A), "The Loss of Feedwater Heating Transient in Boiling Water Reactors", Advanced Nuclear Fuels Coporation, Richland, WA.

14. EMF-1997(P)(A), "ANFB-10 Critical Power Correlation", Siemens Power Corporation, Richland, WA.

15. EMF-1997(P) Supplement 1 (P)(A), "ANFB-10 Critical Power Correlation: High Local Peaking Results", Siemens Power Corporation, Richland, WA.

16. EMF-2209(P)(A), "SPCB Critical Power Correlation", Siemens Power Corporation, Richland, WA.

17. EMF-2245(P)(A), "Application of Siemens Power Corporation's Critical Power Correlations to Co-Resident Fuel", Siemens Power Corporation, Richland, WA.

18. EMF-2361(P)(A), "EXEM BWR-2000 ECCS Evaluation Model," Framatome ANP Richland, Inc.

19. Deleted

20. Deleted

(continued)

5.6 Reporting Requirements

5.6.5 Core Operating Limits Report (COLR) (continued)

21. NEDE-33383-P, "GEXL97 Correlation Applicable to ATRIUM-10 Fuel," Global Nuclear Fuel.

22. EMF-CC-074(P)(A), Volume 4, "BWR Stability Analysis Assessment of STAIF with Input from MICROBURN-B2", Siemens Power Corporation, Richland, WA.

23. EMF-2292(P)(A), "ATRIUM-1O Appendix K Spray Heat Transfer Coefficients", Siemens Power Corporation, Richland, WA.

24. NEDE-24011 -P-A, General Electric Standard Application for Reactor Fuel (GESTAR-II).

25. NEDO-31960-A, "BWR Owners' Group Long-Term Stability Solutions Licensing Methodology"

26. NEDO-32465-A, "Reactor Stability Detect and Suppress Solutions Licensing Basis Methodology and Reload Applications"

27. NEDC-33075P-A, Revision 8, "GE Hitachi Boiling Water Reactor Detection and Suppress Solution – Confirmation Density."

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

5.6.6 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:

i) Limiting Conditions for Operations Section 3.4.11, "RCS Pressure and Temperature (P/T) Limits"
ii) Surveillance Requirements Section 3.4.11, "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 document:

i) NEDC-33178P-A, "GE Hitachi Nuclear Energy Methodology for Development of Reactor Pressure Vessel Temperature Curves" Revision 1, June 2009

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

5.6.7 Oscillation Power Range Monitor (OPRM) Report

When an OPRM report is required by CONDITION J of LCO 3.3.1.1, "RPS Instrumentation," it shall be submitted within the following 90 days. The report shall outline the preplanned means to provide backup stability protection, the cause of the inoperability, and the plans and schedule for restoring the required instrumentation channels to OPERABLE status.

5.0 ADMINISTRATIVE CONTROLS

5.7 High Radiation Area

5.7.1 Pursuant to 10 CFR 20, paragraph 20.1601(c), in lieu of the requirements of 10 CFR 20.1601(a), each high radiation area, as defined in 10 CFR 20, in which the intensity of radiation is > 100 mrem/hr but < 1000 mrem/hr, shall be barricaded and conspicuously posted as a high radiation area and entrance thereto shall be controlled by requiring issuance of a Radiation Work Permit (RWP). Individuals qualified in radiation protection procedures (e.g., health physicists) or personnel continuously escorted by such individuals may be exempt from the RWP issuance requirement during the performance of their assigned duties in high radiation areas with exposure rates ≤ 1000 mrem/hr, provided they are otherwise following plant radiation protection procedures for entry into such high radiation areas.

Any individual or group of individuals permitted to enter such areas shall be provided with or accompanied by one or more of the following:

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

b. A radiation monitoring device that continuously integrates the radiation dose rate in the area and alarms when a preset integrated dose is received. Entry into such areas with this monitoring device may be made after the dose rate levels in the area have been established and personnel are aware of them.

c. An individual qualified in radiation protection procedures with a radiation dose rate monitoring device, who is responsible for providing positive control over the activities within the area and shall perform periodic radiation surveillance at the frequency specified by the radiation protection supervision in the RWP.

5.7.2 In addition to the requirements of Specification 5.7.1, areas with radiation levels ≥ 1000 mrem/hr shall be provided with locked or continuously guarded doors to prevent unauthorized entry and the keys shall be maintained under the administrative control of the operations shift management or radiation protection supervision. Doors shall remain locked except during periods of access by personnel under an approved RWP that shall specify the dose rate

(continued)

5.7 High Radiation Area

5.7.2 (continued)

levels in the immediate work areas and the maximum allowable stay times for individuals in those areas. In lieu of the stay time specification of the RWP, direct or remote (such as closed circuit TV cameras) continuous surveillance may be made by personnel qualified in radiation protection procedures to provide positive exposure control over the activities being performed within the area.

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

APPENDIX B

TO

FACILITY LICENSE NO. NPF-29

GRAND GULF NUCLEAR STATION

UNIT 1

ENTERGY OPERATIONS, INC.

DOCKET NO. 50-416

ENVIRONMENTAL PROTECTION PLAN

GRAND GULF NUCLEAR STATION

UNIT 1

ENVIRONMENTAL PROTECTION PLAN

(NON-RADIOLOGICAL)

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1.0. Objectives Of The Environmental Protection Plan

The Environmental Protection Plan (EPP) is to provide for protection of environmental values during operation of the nuclear facility. The principal objectives of the EPP are as follows:

(1) Verify that the Plant is operated in an environmentally acceptable manner, as established by the FES and other NRC environmental impact assessments.

(2) Coordinate NRC requirements and maintain consistency with other Federal, State and local requirements for environmental protection.

(3) Keep NRC informed of the environmental effects of facility operation and of action taken to control those effects.

Environmental concerns identified in the FES which relate to water quality matters are regulated by way of the GGNS NPDES permit.

2.0 Environmental Protection Issues

In the FES-OL dated September 1981, the staff considered the environmental impacts associated with the operation of the Grand Gulf Nuclear Station. Certain environmental issues were identified which required study or license conditions to resolve environmental concerns and to assure adequate protection of the environment.

2.1 Aquatic Issues

No aquatic issues were identified in the FES-OL. Effluent limitations and monitoring requirements are contained in the effective NPDES permit issued by the Federal or State permitting authority. The NRC will rely on these agencies for regulation of these matters as they involve water quality and aquatic biota.

2.2 Terrestrial Issues

(1) Potential erosion along transmission line corridors during and immediately following their construction.

(2) Potential impact of cooling tower drift on vegetation surrounding the sites. In the FES the staff recommended an aerial remote sensing program. The applicant opted to do a more detailed surveillance program.

NRC requirements with regard to the terrestrial issues are specified in Subsection 4.2 of this EPP.

3.0 Consistency Requirements

3.1 Plant Design and Operation

The licensee may make changes in plant design or operation or perform tests or experiments affecting the environment provided such changes, tests or experiments do not involve an unreviewed environmental question, and do not involve a change in the Environmental Protection Plan.* Changes in plant design or operation and performance of tests or experiments which do not affect the environment are not subject to the requirements of this EPP. Activities governed by Section 3.3 are not subject to the requirements of this section.

Before engaging in additional construction or operational activities which may affect the environment, the licensee shall prepare and record an environmental evaluation of such activity.** When the evaluation indicates that such activity involves an unreviewed environmental question, the licensee shall provide a written evaluation of such activities and obtain prior approval from the Director, Office of Nuclear Reactor Regulation. When such activity involves a change in the Environmental Protection Plan, such activity and change to the Environmental Protection Plan may be implemented only in accordance with an appropriate license amendment as set forth in Section 5.3.

A proposed change, test or experiment shall be deemed to involve an unreviewed environmental question if it concerns (1) a matter which may result in a significant increase in any adverse environmental impact previously evaluated in the Final Environmental Statement (FES) as modified by staff's testimony to the Atomic Safety and Licensing Board, supplements

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*This provision does not relieve the licensee of the requirements of 10 CFR 50.59.
**Activities are excluded from this requirement if all measurable environmental effects are confined to on-site areas previously disturbed during site preparation and plant construction.

to the FES, environmental impact appraisals, or in any decisions of the Atomic Safety and Licensing Board; or (2) a significant change in effluents or power level; or (3) a matter not previously reviewed and evaluated in the documents specified in (1) of this Subsection, which may have a significant adverse environmental impact.

The licensee shall maintain records of changes in plant design or operation and of tests and experiments carried out pursuant to this Subsection. These records shall include a written evaluation which provide bases for the determination that the change, test, or experiment does not involve an unreviewed environmental question nor constitute a decrease in the effectiveness of this EPP to meet the objectives specified in Section 1.0.

3.2 Reporting Related to the NPDES Permits and State Certification

The NRC shall be provided with a copy of the current NPDES permit or State Clean Water Act, Section 401 certification within 30 days of approval. Changes to the NPDES permit or state certification shall be reported to the NRC within 30 days of the date the change is approved.

3.3 Changes Required for Compliance with Other Environmental Regulations

Changes in plant design or operation and performance of tests or experiments that are either regulated or mandated by other Federal, State, or local environmental regulations are not subject to requirements of Section 3.1. However, if any environmental impacts of a change are not evaluated under other federal, state, or local environmental regulations, then those impacts are subject to the requirements of Section 3.1.

4.0 Environmental Conditions

4.1 Unusual or Important Environmental Events

Any occurrence of an unusual or important event that indicates or could result in significant environmental impact causally related to station operation shall be recorded and promptly reported to the NRC Operations Center within 24 hours followed by a written report per Subsection 5.4.2. If an event is reportable under 10 CFR 50.72, then a duplicate immediate report under this Subsection is not required. However, the follow-up, written report per Subsection 5.4.2 is still required. The following are examples: excessive bird impaction events, onsite plant or animal disease outbreaks, mortality or unusual occurrence of any species protected by the Endangered Species Act of 1973, fish kills, increase in nuisance organisms or conditions and unanticipated or emergency discharge of waste water or chemical substances.

No routine monitoring programs are required to implement this condition.

4.2 Environmental Monitoring

The Erosion Control and Cooling Tower Drift Monitoring Programs identified in Subsection 2.2 have been completed and no further monitoring under these programs is required.

5.0 Administrative Procedures

5.1 Review and Audit

The licensee shall provide for review and audit of compliance with the Environmental Protection Plan. The audits shall be conducted independently of the individual or groups responsible for performing the specific activity. A description of the organization structure utilized to achieve the independent review and audit function and results of the audit activities shall be maintained and made available for inspection.

5.2 Records Retention

Records associated with this EPP shall be made and retained in a manner convenient for review and inspection. These records shall be made available to NRC on request.

Records of modifications to plant structures, systems and components determined to potentially affect the continued protection of the environment shall be retained until the date of the termination of the License. All other records relating to this EPP shall be retained for five years or, where applicable, in accordance with the requirements of other agencies.

5.3 Changes in Environmental Protection Plan

Requests for changes in the Environmental Protection Plan shall include an assessment of the environmental impact of the proposed change and a supporting justification. Implementation of such changes in the EPP shall not commence prior to NRC approval of the proposed changes in the form of a licensee amendment incorporating the appropriate revision to the Environmental Protection Plan.

5.4 Station Reporting Requirements

5.4.1 Deleted

5.4.2 Nonroutine Reports

A written report shall be submitted to the NRC within 30 days of occurrence of any event described in Section 4.1 of this plan. The report shall (a) describe, analyze, and evaluate the event, including extent and magnitude of these impact and plant operating characteristics, (b) describe the probable cause of the event, (c) indicate the action taken to correct the reported event, (d) indicate the corrective action taken to preclude repetition of the event and to prevent similar occurrences involving similar components or systems, and (e) indicate the agencies notified and their preliminary responses.

Events reportable under this subsection which also require reports to other federal, state, or local agencies shall be reported in accordance with those reporting requirements in lieu of the requirements of this subsection. The NRC shall be provided with a copy of each report at the same time it is submitted to the other agency.

APPENDIX C

ANTITRUST CONDITIONS
OPERATING LICENSE NO. NPF-29

Entergy Mississippi, LLC and SERI (the term licensees in Appendix C refers to Entergy Mississippi, LLC and SERI) shall comply with the following conditions:

I. DEFINITIONS

(a) "Western Mississippi Area" means the counties of: Walthall, Lawrence, Jefferson Davis, Covington; Simpson, Smith, Scott, Leake, Attala, Choctaw, Montgomery, Grenada, Yalobusha, Panola, Tate, DeSoto, Pike, Amite, Wilkinson, Adams, Franklin, Lincoln, Copiah, Jefferson, Claiborne, Hinds, Rankin, Madison, Yazoo, Warren, Issaquena, Sharkey, Humphreys, Holmes, Carroll, Leflore, Sunflower, Washington, Bolivar, Tallahatchie, Quitman, Coahoma, and Tunica. An entity shall be deemed to be in the "Western Mississippi Area" if it has electric power generation, transmission, or distribution facilities located in whole or in part in the above described area.

(b) "Bulk Power" means the electric power, and any attendant energy, supplied or made available at transmission or subtransmission voltage by one entity to another.

(c) "Entity" means a person, a private or public corporation a municipality, a cooperative, an association, a joint stock association or business trust owning, operating or proposing to own or operate equipment or facilities for the generation, transmission or distribution of electricity, provided that, except for municipalities or rural electric cooperatives, "entity" is restricted to those which are or will be public utilities under the laws of the state in which the entity transacts or will transact business or under the Federal Power Act, and are or will be providing electric service under a contract or rate schedule on file with and subject to the regulation of a state regulatory commission or the Federal Power Commission.

(d) "Cost" means any operating and maintenance expenses involved together with any ownership costs which are reasonably allocable to the transaction consistent with power pooling practices (where applicable). No value shall be included for loss of revenues from sale of power at wholesale or retail by one party to a customer which another party might otherwise serve. Cost shall include a reasonable return on Licensees' investment. The sale of portion of the capacity of a generating unit shall be upon the basis of a rate that will recover to the seller the pro rata part of the fixed costs and operating and maintenance

expenses of the unit, provided that, in circumstances in which licensees and one or more entities in the Western Mississippi Area take undivided interest in a unit in fee, construction costs and operation and maintenance expenses shall be paid pro rata.

II. INTERCONNECTIONS

(a) Licensees shall interconnect with and coordinate reserves by means of the sale and purchase of emergency and/or scheduled maintenance bulk power with any entity(ies) in the Western Mississippi Area engaging in or proposing to engage in electric bulk power supply on terms that will provide for Licensees' costs in connection therewith and allow the other party(ies) full access to the benefits of reserve coordination.

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

(c) Licensees and the other party(ies) to a reserve sharing arrangement shall from time to time jointly establish the minimum reserves to be installed and/or provided under contractual arrangements as necessary to maintain in total a reserve margin sufficient to provide adequate reliability of power supply to the interconnected systems of the parties. If Licensees plan their reserve margin on a pooled basis with other Entergy Corporation companies, the reserves jointly established hereunder shall be on the same basis. Unless otherwise agreed upon, minimum reserves shall be calculated as a percentage of estimated peak load responsibility. No party to the arrangement shall be required to maintain greater reserves than the percentage of its estimated peak load responsibility which results from the aforesaid calculation, provided that, if the reserve requirements of Licensees are increased over the amount Licensees would be required to maintain without such interconnection, then the other party(ies) shall be required to carry or provide for as its (their) reserves the full amount in kilowatts or such increase.

(d) The parties to such a reserve sharing arrangement shall provide such amounts of ready reserve capacity as may be adequate to avoid the imposition of unreasonable

demands on the other in meeting the normal contingencies of operating its system. However, in no circumstances shall the ready reserve requirement exceed the installed reserve requirement.

(e) Interconnections will not be limited to low voltages when higher voltages are available from licensees' installed facilities in the area where interconnection is desired, when the proposed arrangement is found to be technically and economically feasible. Control and telemetering facilities shall be provided as required for safety and prudent operation of the interconnected systems.

(f) Interconnection and coordination agreements shall not embody any restrictive provisions pertaining to intersystem coordination. Good industry practice as developed in the area from time to time (if non-restrictive) will satisfy this provision.

III. POWER TRANSACTIONS

Licensees will sell bulk power at their costs to or purchase bulk power from any other entity(ies) in the Western Mississippi Area engaging in or proposing to engage in generation of electric power when such transactions would serve to reduce the overall costs of new bulk power supply for themselves or for the other party(ies) to the transaction. This refers specifically to the opportunity to coordinate in the planning of new generation, transmission and related facilities. This provision shall not be construed to require Licensees to purchase or sell bulk power if they find such purchase or sale infeasible or their costs in connection with such purchase or sale would exceed their benefit therefrom.

IV. PARTICIPATION IN OWNERSHIP

(a) Licensees and any successor in title shall offer an opportunity to participate in the Grand Gulf Nuclear Units and any other nuclear generating unit(s) which they or either of them, may construct, own and operate in the State of Mississippi, severally or jointly, during the term of the instant license, or any extension or renewal thereof, to any entity(ies) in the Western Mississippi Area by either a reasonable ownership interest in such unit(s), or by a contractual right to purchase a reasonable portion of the output of such unit(s) at the cost thereof if the entity(ies) so elects. In connection with such access, licensees will also offer transmission service as may be required for delivery of such power to such entity(ies) on a basis that will fully compensate licensees for their cost.

(b) In the event that during the term of the instant license, or any extension or renewal thereof, licensees obtain participation in the ownership of or rights to a portion of the output of one or more nuclear generating units constructed, owned and operated by any affiliate or subsidiary of the Entergy Corporation other than licensees, or by any successor in title to the Grand Gulf Nuclear Units, licensees shall exert their best efforts to obtain participation in such nuclear unit(s) by any entity(ies) in the Western Mississippi Area requesting such participation on terms no less favorable than the terms of licensees' participation therein.

V. TRANSMISSION SERVICES

(a) Licensees shall facilitate the exchange of bulk power by transmission over its transmission facilities between or among two or more entities in the Western Mississippi Area with which it is interconnected; and between any such entity(ies) and any such entity(ies) engaging in bulk power supply outside the Western Mississippi Area between whose facilities Licensees' transmission lines and other transmission lines would form a continuous electrical path, provided that (1) permission to utilize such other transmission lines has been obtained, and (2) the arrangements reasonably can be accommodated from a functional and technical standpoint. Such transmission shall be on terms that fully compensate Licensees for their cost. Any entity(ies) requesting such transmission arrangements shall give reasonable advance notice of its (their) schedule and requirements. (The foregoing applies to any entity(ies) to which Licensees may be interconnected in the future as well as those to which they are now interconnected.)

(b) Licensees shall include in their planning and construction program sufficient transmission capacity as required for the transactions referred to in subparagraph (a) of this paragraph, provided that any entity(ies) in the Western Mississippi Area give Licensees sufficient advance notice as may be necessary to accommodate its (their) requirements from a functional and technical standpoint and that such entity(ies) fully compensates Licensees for their cost. Licensees shall not be required to construct transmission facilities which will be of no demonstrable present or future benefit to Licensees.

VI. POWER FOR RESALE

Licensees will sell power for resale to any entity(ies) in the Western Mississippi Area now engaging in or proposing to engage in retail distribution of electric power.

VII. REGULATORY PROVISIONS

The foregoing conditions shall be implemented in a manner consistent with the provisions of the Federal Power Act and the Mississippi Public Utilities Act of 1956 and all rates, charges or practices in connection therewith are to be subject to the approval of regulatory agencies having jurisdiction over them.