



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

CONSTELLATION ENERGY GENERATION, LLC

DOCKET NO. 50-461

CLINTON POWER STATION, UNIT NO. 1

FACILITY OPERATING LICENSE

License No. NPF-62

1. The Nuclear Regulatory Commission (The Commission or the NRC) has found that:
 - A. The application for license filed by the applicant 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 Clinton Power Station, Unit No. 1 (the facility) has been substantially completed in conformity with Construction Permit No. CPPR-137 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 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. Constellation Energy Generation, LLC is technically qualified to engage in the activities authorized by this operating license in accordance with the Commission's regulations set forth in 10 CFR Chapter I;
 - F. Constellation Energy Generation, LLC has 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 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 Facility Operating License No. NPF-62, 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, byproduct, and special nuclear material as authorized by this license will be in accordance with the Commission's regulations in 10 CFR Parts 30, 40, and 70; and
 - J. The receipt, production, possession, transfer, and use of Cobalt-60 as authorized by this license will be in accordance with the Commission's regulations in 10 CFR Part 30.
2. Based on the foregoing findings regarding this facility, and pursuant to approval by the Nuclear Regulatory Commission at a meeting on April 10, 1987, Facility Operating License No. NPF-62, which supersedes the license for fuel loading and low power testing, License No. NPF-55, issued on September 29, 1986, is hereby issued to Constellation Energy Generation, LLC to read as follows:
- A. This license applies to the Clinton Power Station, Unit No. 1, a boiling water nuclear reactor and associated equipment (the facility), owned by Constellation Energy Generation, LLC. The facility is located in Harp Township, DeWitt County, approximately six miles east of the city of Clinton in east-central Illinois and is described in the licensee's Final Safety Analysis Report, as supplemented and amended, and in the licensee's Environmental Report-Operating License Stage, as supplemented and amended.
 - B. Subject to the condition and requirements incorporated herein, the Commission hereby licenses:
 - (1) Constellation Energy Generation, LLC, pursuant to section 103 of the Act and 10 CFR Part 50, to possess, use and operate the facility at the designated location in Harp Township, DeWitt County, Illinois, in accordance with the procedures and limitations set forth in this license;
 - (2) Deleted
 - (3) Constellation Energy Generation, LLC, pursuant to the Act and 10 CFR Part 70, to receive, possess and to use at any time special nuclear material as reactor fuel, in accordance with the limitations for storage and amounts required for reactor operation, as described in the Final Safety Analysis Report, as supplemented and amended;

- (4) Constellation Energy Generation, LLC, pursuant to the Act and to 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) Constellation Energy Generation, LLC, pursuant to the Act and 10 CFR Parts 30, 40, and 70, to receive, possess, and use in amounts as required any byproduct, source or special nuclear material without restriction to chemical or physical form, for sample analysis or instrument calibration or associated with radioactive apparatus or components;
 - (6) Constellation Energy Generation, LLC, 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. Mechanical disassembly of the GE14i isotope test assemblies containing Cobalt-60 is not considered separation; and
 - (7) Constellation Energy Generation, LLC, pursuant to the Act and 10 CFR Parts 30, to intentionally produce, possess, receive, transfer, and use Cobalt-60.
- C. This 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

Constellation Energy Generation, LLC is authorized to operate the facility at reactor core power levels not in excess of 3473 megawatts thermal (100 percent rated power) in accordance with the conditions specified herein.
 - (2) Technical Specifications and Environmental Protection Plan

The Technical Specifications contained in Appendix A and the Environmental Protection Plan contained in Appendix B, as revised through Amendment No. 256, are hereby incorporated into this license. Constellation Energy Generation, LLC shall operate the facility in accordance with the Technical Specifications and the Environmental Protection Plan.

(3) Antitrust Conditions

Deleted

(4) Control System Failures (Section 7.7.3.1, SER and SSER 6)*

Deleted

(5) New Fuel Storage (Section 9.1.1, SER, SSER 6 and SSER 7)

Constellation Energy Generation, LLC shall store new fuel assemblies in accordance with the requirements specified in Attachment 2. Attachment 2 is hereby incorporated into this license.

(6) Plant Operation Experience (Section 13.1.2.1, SSER 5)

Deleted

(7) Emergency Planning (Section 13.3, SSER 6)

Deleted

(8) Post-Fuel Loading Initial Test Program (Section 14, SER, SSER 5 and SSER 6)

Deleted

(9) Emergency Response Capabilities (Generic Letter 82-33, Supplement 1 to NUREG-0737, Section 7.5.3.1, SSER 5 and SSER 8, and Section 18, SER, SSER 5 and Safety Evaluation Dated April 17, 1987)

a. Deleted

b. Deleted

* The parenthetical notation following the title of many license conditions denotes the section of the Safety Evaluation Report and/or its supplements wherein the license condition is discussed.

License Transfer Conditions

- (10) Deleted.
- (11) Deleted.
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(22) Mitigation Strategy License Condition

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

- (a) Fire fighting response strategy with the following elements:
 - 1. Pre-defined coordinated fire response strategy and guidance
 - 2. Assessment of mutual aid fire fighting assets
 - 3. Designated staging areas for equipment and materials
 - 4. Command and control
 - 5. Training of response personnel
- (b) Operations to mitigate fuel damage considering the following:
 - 1. Protection and use of personnel assets
 - 2. Communications
 - 3. Minimizing fire spread
 - 4. Procedures for implementing integrated fire response strategy
 - 5. Identification of readily-available pre-staged equipment
 - 6. Training on integrated fire response strategy
 - 7. Spent fuel pool mitigation measures

- (c) Actions to minimize release to include consideration of:
 - 1. Water spray scrubbing
 - 2. Dose to onsite responders
- (23) 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 3.7.3.5, in accordance with TS 5.5.15.c.(i), the assessment of CRE habitability as required by Specification 5.5.15.c.(ii), and the measurement of CRE pressure as required by Specification 5.5.15.d, shall be considered met. Following implementation:
 - (a) The first performance of SR 3.7.3.5, in accordance with Specification 5.5.15.c.(i), shall be within the specified Frequency of 6 years, plus the 18-month allowance of SR 3.0.2, as measured from November 16, 2004, the date of the most recent successful tracer gas test, as stated in the February 8, 2005 letter response to Generic Letter 2003-01, or within the next 18 months if the time period since the most recent successful tracer gas test is greater than 6 years.
 - (b) The first performance of the periodic assessment of CRE habitability, Specification 5.5.15.c.(ii), shall be within 3 years, plus the 9-month allowance of SR 3.0.2, as measured from November 16, 2004, the date of the most recent successful tracer gas test, as stated in the February 8, 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 measurement of CRE pressure, Specification 5.5.15.d, shall be within 24 months, plus the 6 months allowed by SR 3.0.2, as measured from the date of the most recent successful pressure measurement test, or within 6 months if not performed previously.
- (24) At the time of the closing of the transfer of CPS and the respective license from AmerGen Energy Company, LLC (AmerGen) to Exelon Generation Company, AmerGen shall transfer to Exelon Generation Company ownership and control of AmerGen Clinton NQF, LLC, and AmerGen Consolidation, LLC shall be merged into Exelon Generation Consolidation, LLC. Also at the time of the closing, decommissioning funding assurance provided by Exelon Generation Company, using an additional method allowed under 10 CFR 50.75 if necessary, must be equal to or greater than the minimum amount calculated on that date pursuant to, and required by 10 CFR 50.75 for CPS. Furthermore, funds dedicated for CPS prior to closing shall remain dedicated to CPS following the closing. The name of AmerGen Clinton NQF, LLC shall be changed to Exelon Generation Clinton NQF, LLC at the time of the

closing. The NRC approved a transaction on November 16, 2021, that resulted in Exelon Generation Company, LLC being renamed Constellation Energy Generation, LLC. The name change resulted in a corresponding name change for the Clinton NQF.

- (25) Irradiated GE14i fuel bundles shall be stored at least four feet from the wall of the Spent Fuel Pool.
- (26) Adoption of 10 CFR 50.69, "Risk-informed categorization and treatment of structures, systems, and components for nuclear power plants"

Constellation Energy Generation, LLC is approved to implement 10 CFR 50.69 using the processes for categorization of Risk-Informed Safety Class (RISC)-1, RISC-2, RISC-3, and RISC-4 Structures, Systems, and Components (SSCs) using: Probabilistic Risk Assessment (PRA) models to evaluate risk associated with internal events, including internal flooding, and internal fire; the shutdown safety assessment process to assess shutdown risk; the Arkansas Nuclear One, Unit 2 (ANO-2) passive categorization method to assess passive component risk for Class 2 and Class 3 and non-Class SSCs and their associated supports; the results of the non-PRA evaluations that are based on the IPEEE Screening Assessment for External Hazards updated using the external hazard screening significance process identified in ASME/ANS PRA Standard RA-Sa-2009 for other external hazards except seismic; and the alternative seismic approach as described in EGC's submittal letter dated April 30, 2020, and all its subsequent associated supplements as specified in License Amendment No. 237 dated May 19, 2021.

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

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

- D. The facility requires exemptions from certain requirements of 10 CFR Part 50 and 10 CFR Part 70. These include: (a) an exemption from the requirements of 10 CFR 70.24 for the criticality alarm monitors around the fuel storage area; (b) an exemption from the requirement of 10 CFR Part 50, Appendix J – Option B, paragraph III.B, exempting the measured leakage rates from the main steam isolation valves from inclusion in the combined leak rate for local leak rate tests (Section 6.2.6 of SSER 6); and (c) an exemption from the requirements of paragraph III.B of Option B of 10 CFR Part 50, Appendix J, exempting leakage from the valve packing and the body-to-bonnet seal of valve 1E51-F374 associated with containment penetration 1MC-44 from inclusion in the combined leakage rate for penetrations and valves subject to Type B and C tests (SER supporting Amendment 62 to Facility Operating License No. NPF-62). The special circumstances regarding each exemption, except for item (a) above, are identified in the referenced section of the safety evaluation report and the supplements thereto.

An exemption was previously granted pursuant to 10 CFR 70.24. The exemption was granted with NRC Material License No. SNM-1886, issued November 27, 1985, and relieved the licensee from the requirement of having a criticality alarm system. Constellation Energy Generation, LLC is hereby exempted from the criticality alarm system provision of 10 CFR 70.24 so far as this section applies to the storage of fuel assemblies held under this license.

These exemptions are authorized by law, will not present an undue risk to the public health and safety, and are consistent with the common defense and security. The exemptions in items (b) and (c) above are granted pursuant to 10 CFR 50.12. With 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. Constellation Energy Generation, LLC shall fully implement and maintain in effect all provisions of the Commission-approved physical security, training and qualification, and safeguards contingency plans including amendments made pursuant to provisions of the Miscellaneous Amendments and Search Requirements revisions to 10 CFR 73.55 (51 FR 27817 and 27822), and the authority of 10 CFR 50.90 and 10 CFR 50.54(p). The combined set of plans¹, which contain Safeguards Information protected under 10 CFR 73.21, is entitled: "Clinton Power Station Security Plan, Training and Qualification Plan, and Safeguards Contingency Plan, Revision 2," submitted by letter dated May 17, 2006.

Constellation Energy Generation, LLC shall fully implement and maintain in effect all provisions of the Commission-approved cyber security plan (CSP), including changes made pursuant to the authority of 10 CFR 50.90 and 10 CFR 50.54(p).

The CSP was approved by License Amendment No. 194 and modified by License Amendment No. 206.

¹ The Training and Qualification Plan and Safeguards Contingency Plan are Appendices to the Security Plan.

- F. Constellation Energy Generation, LLC shall implement and maintain in effect all provisions of the approved fire protection program as described in the Final Safety Analysis Report as amended, for the Clinton Power Station, Unit No. 1, and as approved in the Safety Evaluation Report (NUREG-0853) dated February 1982 and Supplement Nos. 1 thru 8 thereto subject to the following provision:

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.

- G. Deleted.

- H. Constellation Energy Generation, LLC 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.

- I. This license is effective as of the date of issuance and shall expire at midnight on April 17, 2027.

FOR THE NUCLEAR REGULATORY COMMISSION

Original signed by:

Thomas E. Murley, Director
Office of Nuclear Reactor Regulation

Enclosures:

1. Attachments 1 (Deleted) and 2
2. Appendix A - Technical Specifications (NUREG-1235)
3. Appendix B - Environmental Protection Plan
4. Appendix C - Deleted

Date of Issuance: April 17, 1987

ATTACHMENT 1
TO NPF-62

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ATTACHMENT 2
TO NPF-62
NEW FUEL STORAGE

Constellation Energy Generation, LLC shall store new fuel assemblies in accordance with the following requirements. |

- a. No more than three fuel assemblies shall be outside their shipping containers, storage racks, or the reactor vessel at any one time.
- b. The minimum edge-to-edge distance between the group of three fuel assemblies and all other fuel assemblies shall be 12 inches.
- c. Fuel assemblies, when stored in the New Fuel Storage Vault, shall be stored such that: no more than 12 rows of fuel assemblies shall remain uncovered during the loading or unloading of fuel assemblies; metal covers shall cover all other rows containing fuels assemblies during loading and unloading of fuel assemblies; and when loading or unloading of fuel assemblies is not in progress, metal covers shall cover all rows of fuel assemblies.
- d. Fuel assemblies shall be stored in such a manner that water would drain freely from the assemblies in the event of flooding and subsequent draining of the fuel storage area.
- e. Fuel assemblies shall be stored in the containment fuel storage pool only under water.
- f. No fuel assemblies shall be stored in the control rod racks.
- g. All fire hoses servicing the New Fuel Storage Vault shall be equipped with solid stream nozzles.

TECHNICAL SPECIFICATIONS

FOR

CLINTON 1

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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.

<u>Term</u>	<u>Definition</u>
ACTIONS	ACTIONS shall be that part of a Specification that prescribes Required Actions to be taken under designated Conditions within specified Completion Times.
AVERAGE PLANAR LINEAR HEAT GENERATION RATE (APLHGR)	The APLHGR shall be applicable to a specific planar height and is equal to the sum of the LHGRs for all the fuel rods in the specified bundle at the specified height divided by the number of fuel rods in the fuel bundle at the height.
CHANNEL CALIBRATION	A CHANNEL CALIBRATION shall be the adjustment, as necessary, of the channel output such that it responds within the necessary range and accuracy to known values of the parameter that the channel monitors. The CHANNEL CALIBRATION shall encompass all devices in the channel required for channel OPERABILITY and the CHANNEL FUNCTIONAL TEST. Calibration of instrument channels with resistance temperature detector (RTD) or thermocouple sensors may consist of an in-place 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.

(continued)

1.1 Definitions (continued)

CHANNEL CHECK	A CHANNEL CHECK shall be the qualitative assessment, by observation, of channel behavior during operation. This determination shall include, where possible, comparison of the channel indication and status to other indications or status derived from independent instrument channels measuring the same parameter.
CHANNEL FUNCTIONAL TEST	A CHANNEL FUNCTIONAL TEST shall be the injection of a simulated or actual signal into the channel as close to the sensor as practicable to verify OPERABILITY of all devices in the channel required for channel OPERABILITY. The CHANNEL FUNCTIONAL TEST may be performed by means of any series of sequential, overlapping, or total channel steps, and each step must be performed within the Frequency in the Surveillance Frequency Control Program for the devices included in the step.
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.

(continued)

1.1 Definitions (continued)

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 inhalation CEDE dose as the quantity and isotopic mixture of I-131, I-132, I-133, I-134, and I-135 actually present. The inhalation CEDE dose conversion factors used for this calculation shall be those listed in Table 2.1 of Federal Guidance Report 11, "Limiting Values of Radionuclide Intake and Air Concentration and Dose Conversion Factors for Inhalation, Submersion, and Ingestion," ORNL, 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 for all penetration flow paths below the TAF except: 1. Penetration flow paths connected to an intact closed system, or isolated by manual or automatic valves that are closed and administratively controlled in the closed position, blank flanges, or other devices that prevent flow of reactor coolant through the penetration flow paths; 2. Penetration flow paths capable of being isolated by valves that will close automatically without offsite power prior to the RPV water level being equal to the TAF when actuated by RPV water level isolation instrumentation; or

(continued)

Definitions

DRAIN TIME
(continued)

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;
- 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. In lieu of measurement, response time may be verified for selected components provided that the components and methodology for verification have been previously reviewed and approved by the NRC.

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 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.

(continued)

1.1 Definitions (continued)

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. In lieu of measurement, response time may be verified for selected components provided that the components and methodology for verification have been previously reviewed and approved by the NRC.
LEAKAGE	LEAKAGE shall be: a. <u>Identified LEAKAGE</u> 1. LEAKAGE into the drywell such as that from pump seals or valve packing, that is captured and conducted to a sump or collecting tank; or 2. LEAKAGE into the drywell atmosphere from sources that are both specifically located and known to not interfere with the operation of leakage detection systems; b. <u>Unidentified LEAKAGE</u> All LEAKAGE into the drywell that is not identified LEAKAGE; c. <u>Total LEAKAGE</u> Sum of the identified and unidentified LEAKAGE; and d. <u>Pressure Boundary LEAKAGE</u> LEAKAGE through a fault in a Reactor Coolant System (RCS) component body, pipe wall, or vessel wall. LEAKAGE past seals, packing, and gaskets is not pressure boundary LEAKAGE.
LINEAR HEAT GENERATION RATE (LHGR)	The LHGR shall be the heat generation rate per unit length of fuel rod. It is the integral of the heat flux over the heat transfer area associated with the unit length.

(continued)

1.1 Definitions (continued)

LOGIC SYSTEM FUNCTIONAL TEST	A LOGIC SYSTEM FUNCTIONAL TEST shall be a test of all logic components required for OPERABILITY of a logic circuit, from as close to the sensor as practicable up to, but not including, the actuated device, to verify OPERABILITY. The LOGIC SYSTEM FUNCTIONAL TEST may be performed by means of any series of sequential, overlapping, or total system steps so that the entire logic system is tested.
MINIMUM CRITICAL POWER RATIO (MCPR)	The MCPR shall be the smallest critical power ratio (CPR) that exists in the core for each class of fuel. The CPR is that power in the assembly that is calculated by application of the appropriate correlation(s) to cause some point in the assembly to experience boiling transition, divided by the actual assembly operating power.
MODE	A MODE shall correspond to any one inclusive combination of mode switch position, average reactor coolant temperature, and reactor vessel head closure bolt tensioning specified in Table 1.1-1 with fuel in the reactor vessel.
OPERABLE—OPERABILITY	A system, subsystem, division, component, or device shall be OPERABLE or have OPERABILITY when it is capable of performing its specified safety function(s) and when all necessary attendant instrumentation, controls, normal or emergency electrical power, cooling and seal water, lubrication, and other auxiliary equipment that are required for the system, subsystem, division, component, or device to perform its specified safety function(s) are also capable of performing their related support function(s).
RATED THERMAL POWER (RTP)	RTP shall be a total reactor core heat transfer rate to the reactor coolant of 3473 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. In lieu of measurement, response time may be verified for selected components provided that the components and methodology for verification have been previously reviewed and approved by the NRC.

(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: - The reactor is xenon free; - The moderator temperature is $\geq 68^{\circ}\text{F}$, corresponding to the most reactive state; and - 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.
TURBINE BYPASS SYSTEM RESPONSE TIME	The TURBINE BYPASS SYSTEM RESPONSE TIME consists of two components: - The time from initial movement of the main turbine stop valve or control valve until 80% of the turbine bypass capacity is established; and - The time from initial movement of the main turbine stop valve or control valve until initial movement of the turbine bypass valve. The response time may be measured by means of any series of sequential, overlapping, or total steps so that the entire response time is measured.

Table 1.1-1 (page 1 of 1)
MODES

MODE	TITLE	REACTOR MODE SWITCH POSITION	AVERAGE REACTOR COOLANT TEMPERATURE (°F)
1	Power Operation	Run	NA
2	Startup	Refuel ^(a) or Startup/Hot Standby	NA
3	Hot Shutdown ^(a)	Shutdown	> 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 . . . <u>AND</u> 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 . . .	
	<u>OR</u>	
	A.2.1 Verify . . .	
	<u>AND</u>	
	A.2.2.1 Reduce . . .	
	<u>OR</u>	
	A.2.2.2 Perform . . .	
	<u>OR</u>	
	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 features(s)." In this case the Completion Time does not begin until the conditions in the Completion Time are satisfied. Required Actions must be completed prior to the expiration of the specified Completion Time. An ACTIONS Condition remains in effect and the Required Actions apply until the Condition no longer exists or the unit is not within the LCO Applicability. If situations are discovered that require entry into more than one Condition at a time within a single LCO (multiple Conditions), the Required Actions for each Condition must be performed within the associated Completion Time. When in multiple Conditions, separate Completion Times are tracked

(continued)

1.3 Completion Times

DESCRIPTION (continued)	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 <u>not</u> result in separate entry into the Condition unless specifically stated. The Required Actions of the Condition continue to apply to each additional failure, with Completion Times based on initial entry into the Condition, unless otherwise specified. However, when a <u>subsequent</u> 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 <u>first</u> 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
	<u>AND</u> 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.	12 hours
	<u>AND</u> B.2 Be in MODE 4.	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
<u>AND</u>	<u>OR</u>	
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.	12 hours
	<u>AND</u> B.2 Be in MODE 4.	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.	12 hours
	AND B.2 Be in MODE 4.	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 $\leq 50\%$ 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 <u>AND</u> Once per 8 hours thereafter
	<u>AND</u> 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
	<u>AND</u> 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.

EXAMPLE 1.3-8

ACTIONS

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

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

(continued)

1.3 Completion Times

EXAMPLES

EXAMPLE 1.3-8 (continued)

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

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

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

IMMEDIATE COMPLETION TIME

When "Immediately" is used as a Completion Time, the Required Action should be pursued without delay and in a controlled manner.

1.0 USE AND APPLICATION

1.4 Frequency

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

DESCRIPTION	Each Surveillance Requirement (SR) has a specified Frequency in which the Surveillance must be met in order to meet the associated 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. The examples do not reflect the potential application of LCO 3.0.4.b.

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, the Surveillance must be performed within the Frequency requirements of SR 3.0.2 prior to entry into the MODE or other specified condition. Failure to do so would result in a violation of SR 3.0.4.

EXAMPLE 1.4-2SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
Verify flow is within limits.	Once within 12 hours after ≥ 25% RTP <u>AND</u> 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 1.4-3SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
-----NOTE----- Not required to be performed until 12 hours after $\geq$ 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 $\geq$ 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 $\geq$ 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 1.4-4SURVEILLANCE 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 < 700 psia or core flow < 10% rated core flow:

THERMAL POWER shall be $\leq 21.6\%$ RTP.

2.1.1.2 With the reactor steam dome pressure ≥ 700 psia and core flow $\geq 10\%$ 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:

2.2.1 Within 1 hour, notify the NRC Operations Center, in accordance with 10 CFR 50.72.

2.2.2 Within 2 hours:

2.2.2.1 Restore compliance with all SLs; and

2.2.2.2 Insert all insertable control rods.

2.2.3 Within 24 hours, notify the plant manager and the corporate executive responsible for overall plant nuclear safety.

(continued)

2.0 SLs

2.2 SL Violations (continued)

2.2.4 Within 30 days, a Licensee Event Report (LER) shall be prepared pursuant to 10 CFR 50.73. The LER shall be submitted to the NRC, the plant manager and the corporate executive responsible for overall plant nuclear safety.

2.2.5 Operation of the unit shall not be resumed until authorized by the NRC.

3.0 LIMITING CONDITION FOR OPERATION (LCO) APPLICABILITY

-
LCO 3.0.1	LCOs shall be met during the MODES or other specified conditions in the Applicability, except as provided in LCO 3.0.2, LCO 3.0.7, LCO 3.0.8, and LCO 3.0.9.
-
LCO 3.0.2	Upon discovery of a failure to meet an LCO, the Required Actions of the associated Conditions shall be met, except as provided in LCO 3.0.5 and LCO 3.0.6. If the LCO is met or is no longer applicable prior to expiration of the specified Completion Time(s), completion of the Required Action(s) is not required, unless otherwise stated.
-
LCO 3.0.3	When an LCO is not met and the associated ACTIONS are not met, an associated ACTION is not provided, or if directed by the associated ACTIONS, the unit shall be placed in a MODE or other specified condition in which the LCO is not applicable. Action shall be initiated within 1 hour to place the unit, as applicable, in: a. MODE 3 within 13 hours; and b. 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, additional evaluations and limitations may be required 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.

(continued)

3.0 LCO APPLICABILITY (continued)

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

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.

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 SR APPLICABILITY (continued)

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.

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. <u>AND</u>	Immediately (continued)

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
D. (continued)	D.2 Initiate action to restore secondary containment to OPERABLE status.	1 hour
	<u>AND</u>	
	D.3 Initiate action to restore one standby gas treatment (SGT) subsystem to OPERABLE status.	1 hour
	<u>AND</u>	
	D.4 Initiate action to restore isolation capability in each required secondary containment and secondary containment bypass penetration flow path not isolated.	1 hour
	<u>AND</u>	
	D.5 -----NOTE----- Entry and exit is permissible under administrative control. -----	
	Initiate action to close one door in the upper containment personnel air lock.	1 hour

(continued)

ACTIONS (continued)

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

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
E. (continued)	E.6 -----NOTE----- Entry and exit is permissible under administrative control. ----- Initiate action to close one door in the upper containment personnel air lock.	1 hour

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.1.1.1 Verify SDM is: 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.	Prior to each in vessel fuel movement during fuel loading sequence <u>AND</u> 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 $\pm 1\% \Delta k/k$.

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 $\pm 1\% \Delta k/k$.	Once within 24 hours after reaching equilibrium conditions following startup after fuel movement within the reactor pressure vessel or control rod replacement <u>AND</u> 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 Disarm the associated control rod drive (CRD). <u>AND</u>	2 hours
	A.2 Perform SR 3.1.3.3 for each withdrawn OPERABLE control rod. <u>AND</u>	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)
	A.3 Perform SR 3.1.1.1.	72 hours

(continued)

ACTIONS (Continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
B. Two or more withdrawn control rods stuck.	B.1 Be in MODE 3.	12 hours
C. One or more control rods inoperable for reasons other than Condition A or B.	C.1 -----NOTE----- 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. ----- Fully insert inoperable control rod.	3 hours
	<u>AND</u>	
	C.2 Disarm the associated CRD.	4 hours
D. -----NOTE----- Not applicable when THERMAL POWER > 16.7% RTP. ----- Two or more inoperable control rods not in compliance with banked position withdrawal sequence (BPWS) and not separated by two or more OPERABLE control rods.	D.1 Restore compliance with BPWS.	4 hours
	<u>OR</u> D.2 Restore control rod to OPERABLE status.	4 hours

(continued)

ACTIONS (Continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
E. Required Action and associated Completion Time of Condition A, C, or D not met. <u>OR</u> Nine or more control rods inoperable.	E.1 Be in MODE 3.	12 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.1.3.1 Determine the position of each control rod.	In accordance with the Surveillance Frequency Control Program
SR 3.1.3.2 Deleted	

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE	FREQUENCY
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
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 <u>AND</u> Prior to declaring control rod OPERABLE after work on control rod or CRD System that could affect coupling

3.1 REACTIVITY CONTROL SYSTEMS

3.1.4 Control Rod Scram Times

- LCO 3.1.4
- a. No more than 10 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" or a withdrawn control rod that is stuck.

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 $\geq$ 950 psig.	Prior to exceeding 40% RTP after fuel movement within the reactor pressure vessel <u>AND</u> Prior to exceeding 40% RTP after each reactor shutdown $\geq$ 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 $\geq$ 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 $\geq$ 950 psig.	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. -----	8 hours
	Declare the associated control rod scram time "slow."	
	<u>OR</u> 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 $\geq$ 600 psig.	B.1 Restore charging water header pressure to $\geq$ 1520 psig.	20 minutes from discovery of Condition B concurrent with charging water header pressure < 1520 psig
	<u>AND</u>	
	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
	<u>OR</u> B.2.2 Declare the associated control rod inoperable.	1 hour

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
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. <u>AND</u> C.2 Declare the associated control rod inoperable.	Immediately upon discovery of charging water header pressure < 1520 psig 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 $\geq$ 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 $\leq$ 16.7% 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
	<u>OR</u> 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. -----	Immediately
	Suspend withdrawal of control rods.	
	<u>AND</u> B.2 Place the reactor mode switch in the shutdown position.	1 hour

SURVEILLANCE REQUIREMENTS

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

3.1 REACTIVITY CONTROL SYSTEMS

3.1.7 Standby Liquid Control (SLC) System

LCO 3.1.7 Two SLC subsystems shall be OPERABLE.

APPLICABILITY: MODES 1, 2, and 3.

ACTIONS

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

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.1.7.1 Verify available volume of sodium pentaborate solution is within the limits of Figure 3.1.7-1.	In accordance with the Surveillance Frequency Control Program

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.1.7.2	Verify temperature of sodium pentaborate solution is $\geq 70^{\circ}\text{F}$.	In accordance with the Surveillance Frequency Control Program
SR 3.1.7.3	Verify temperature of pump suction piping is $\geq 70^{\circ}\text{F}$.	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
SR 3.1.7.5	Verify the concentration of boron in solution is within the limits of Figure 3.1.7-1.	In accordance with the Surveillance Frequency Control Program <u>AND</u> Once within 24 hours after water or boron is added to solution <u>AND</u> Once within 24 hours after solution temperature is restored to $\geq 70^{\circ}\text{F}$
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

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE	FREQUENCY
SR 3.1.7.7 Verify each pump develops a flow rate ≥ 41.2 gpm at a discharge pressure ≥ 1220 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
SR 3.1.7.9 Verify all piping between storage tank and pump suction is unblocked.	In accordance with the Surveillance Frequency Control Program <u>AND</u> Once within 24 hours after pump suction piping temperature is restored to ≥ 70°F

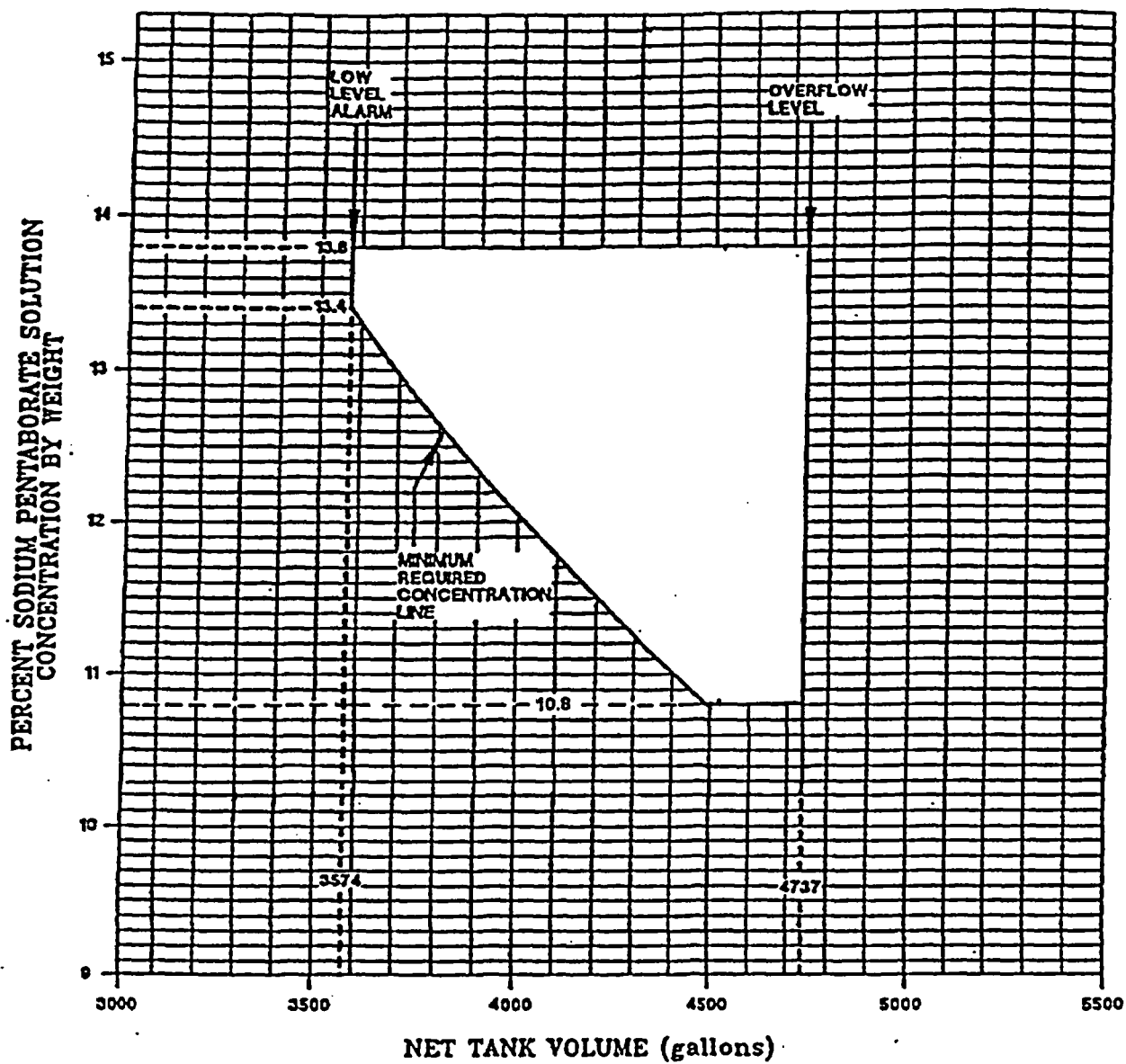


Figure 3.1.7-1 (page 1 of 1)
Weight Percent Sodium Pentaborate Solution
Concentration/Net Tank Volume Requirements

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 $\geq$ 21.6% 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 < 21.6% 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 $\geq$ 21.6% RTP <u>AND</u> In accordance with the Surveillance Frequency Control Program

3.2 POWER DISTRIBUTION LIMITS

3.2.2 MINIMUM CRITICAL POWER RATIO (MCPR)

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

APPLICABILITY: THERMAL POWER $\geq$ 21.6% 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 < 21.6% 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 $\geq$ 21.6% RTP <u>AND</u> 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 <u>AND</u> Once within 72 hours after each completion of SR 3.1.4.2 <u>AND</u> Once within 72 hours after each completion of SR 3.1.4.4

3.2 POWER DISTRIBUTION LIMITS

3.2.3 LINEAR HEAT GENERATION RATE (LHGR)

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

APPLICABILITY: THERMAL POWER $\geq$ 21.6% 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 < 21.6% 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 $\geq$ 21.6% RTP <u>AND</u> In accordance with the Surveillance Frequency Control Program

3.3 INSTRUMENTATION

3.3.1.1 Reactor Protection System (RPS) Instrumentation

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

APPLICABILITY: According to Table 3.3.1.1-1.

ACTIONS

- NOTES-----
1. Separate Condition entry is allowed for each Function.
 2. When Functions 2.b and 2.c channels are inoperable due to the calculated power exceeding the APRM output by more than 2% RTP while operating at $\geq 21.6\%$ RTP, entry into associated Conditions and Required Actions may be delayed for up to 2 hours.
-

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more Functions with one channel inoperable.	A.1 Place one channel in affected Function in trip.	48 hours <u>OR</u> In accordance with the Risk Informed Completion Time Program
B. One or more Functions with two channels inoperable.	B.1 Place one channel in affected Function in trip.	6 hours <u>OR</u> In accordance with the Risk Informed Completion Time Program
C. One or more Functions with three or more channels inoperable.	C.1 Restore two channels in affected Function to OPERABLE status.	1 hour

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
D. Required Action and associated Completion Time of Condition A, B, or C not met.	D.1 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 < 33.3% RTP.	8 hours
F. As required by Required Action D.1 and referenced in Table 3.3.1.1-1.	F.1 Reduce THERMAL POWER to < 21.6% RTP.	8 hours
G. As required by Required Action D.1 and referenced in Table 3.3.1.1-1.	G.1 Be in MODE 2.	8 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
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

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 $\geq$ 21.6% RTP. ----- Verify the calculated power does not exceed the average power range monitor (APRM) channels by greater than 2% RTP while operating at $\geq$ 21.6% RTP.	In accordance with the Surveillance Frequency Control Program
SR 3.3.1.1.3	Adjust the channel to conform to a calibrated flow signal.	In accordance with the Surveillance Frequency Control Program
SR 3.3.1.1.4	-----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

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE			FREQUENCY
SR 3.3.1.1.5	Perform CHANNEL FUNCTIONAL TEST.		In accordance with the Surveillance Frequency Control Program
SR 3.3.1.1.6	Deleted		
SR 3.3.1.1.7	Deleted		
SR 3.3.1.1.8	Calibrate the local power range monitors.		In accordance with the Surveillance Frequency Control Program
SR 3.3.1.1.9	Perform CHANNEL FUNCTIONAL TEST.		In accordance with the Surveillance Frequency Control Program
SR 3.3.1.1.10	Calibrate the analog trip module.		In accordance with the Surveillance Frequency Control Program

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE	FREQUENCY
SR 3.3.1.1.11 -----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. ----- Perform CHANNEL CALIBRATION.	In accordance with the Surveillance Frequency Control Program
SR 3.3.1.1.12 Perform CHANNEL FUNCTIONAL TEST.	In accordance with the Surveillance Frequency Control Program
SR 3.3.1.1.13 -----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 3.3.1.1.14 Verify the APRM Flow Biased Simulated Thermal Power-High time constant is within the limits specified in the COLR.	In accordance with the Surveillance Frequency Control Program
SR 3.3.1.1.15 Perform LOGIC SYSTEM FUNCTIONAL TEST.	In accordance with the Surveillance Frequency Control Program

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.3.1.1.16	Verify Turbine Stop Valve Closure and Turbine Control Valve Fast Closure Trip Oil Pressure-Low Functions are not bypassed when THERMAL POWER is $\geq$ 33.3% RTP.	In accordance with the Surveillance Frequency Control Program
SR 3.3.1.1.17	-----NOTE----- Neutron detectors are excluded. ----- Verify the RPS RESPONSE TIME is within limits.	In accordance with the Surveillance Frequency Control Program

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

FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	REQUIRED CHANNELS PER FUNCTION	CONDITIONS REFERENCED FROM REQUIRED ACTION D.1	SURVEILLANCE REQUIREMENTS		ALLOWABLE VALUE
1. Intermediate Range Monitors						
a. Neutron Flux-High	2	4	H	SR	3.3.1.1.1 SR 3.3.1.1.4 SR 3.3.1.1.13 SR 3.3.1.1.15	≤ 122/125 divisions of full scale
	5 ^(a)	4	I	SR	3.3.1.1.1 SR 3.3.1.1.5 SR 3.3.1.1.13 SR 3.3.1.1.15	≤122/125 divisions of full scale
b. Inop	2	4	H	SR	3.3.1.1.4 SR 3.3.1.1.15	NA
	5 ^(a)	4	I	SR	3.3.1.1.5 SR 3.3.1.1.15	NA
2. Average Power Range Monitors						
a. Neutron Flux-High, Setdown	2	4	H	SR	3.3.1.1.1 SR 3.3.1.1.4 SR 3.3.1.1.8 SR 3.3.1.1.11 SR 3.3.1.1.15	≤ 20% RTP
b. Flow Biased Simulated Thermal Power - High	1	4	G	SR	3.3.1.1.1 SR 3.3.1.1.2 SR 3.3.1.1.3 SR 3.3.1.1.8 SR 3.3.1.1.9 SR 3.3.1.1.11 SR 3.3.1.1.14 SR 3.3.1.1.15 SR 3.3.1.1.17	≤0.55 W + 62% RTP and ≤ 113% RTP ^(b)
c. Fixed Neutron Flux - High	1	4	G	SR	3.3.1.1.1 SR 3.3.1.1.2 SR 3.3.1.1.8 SR 3.3.1.1.9 SR 3.3.1.1.11 SR 3.3.1.1.15 SR 3.3.1.1.17	≤ 120% RTP
d. Inop	1,2	4	H	SR	3.3.1.1.8 SR 3.3.1.1.9 SR 3.3.1.1.15	NA

(continued)

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

(b) Allowable Value is ≤ 0.55 (W-8) + 42.5% RTP when reset for single loop operation per LCO 3.4.1, "Recirculation Loops Operating."

Table 3.3.1.1-1 (page 2 of 3)
Reactor Protection System Instrumentation

FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	REQUIRED CHANNELS PER FUNCTION	CONDITIONS REFERENCED FROM REQUIRED ACTION D.1	SURVEILLANCE REQUIREMENTS	ALLOWABLE VALUE
3. Reactor Vessel Steam Dome Pressure - High	1,2	4	H	SR 3.3.1.1.1 SR 3.3.1.1.9 SR 3.3.1.1.10 SR 3.3.1.1.13 SR 3.3.1.1.15 SR 3.3.1.1.17	≤ 1080 psig
4. Reactor Vessel Water Level-Low, Level 3	1,2	4	H	SR 3.3.1.1.1 SR 3.3.1.1.9 SR 3.3.1.1.10 SR 3.3.1.1.13 SR 3.3.1.1.15 SR 3.3.1.1.17	≥ 8.3 inches
5. Reactor Vessel Water Level-High, Level 8	≥ 21.6 % RTP	4	F	SR 3.3.1.1.1 SR 3.3.1.1.9 SR 3.3.1.1.10 SR 3.3.1.1.13 SR 3.3.1.1.15 SR 3.3.1.1.17	≤ 52.6 inches
6. Main Steam Isolation Valve-Closure	1	4	G	SR 3.3.1.1.9 SR 3.3.1.1.13 ^(c) SR 3.3.1.1.15 SR 3.3.1.1.17	≤ 13% closed
7. Drywell Pressure-High	1,2	4	H	SR 3.3.1.1.1 SR 3.3.1.1.9 SR 3.3.1.1.10 SR 3.3.1.1.13 SR 3.3.1.1.15	≤ 1.88 psig
8. Scram Discharge Volume Water Level-High					
a. Transmitter	1,2	4	H	SR 3.3.1.1.1 SR 3.3.1.1.9 SR 3.3.1.1.10 SR 3.3.1.1.13 SR 3.3.1.1.15	≤ 40-1/4 inches for 1C11- N601A,B and ≤ 39-3/16 inches for 1C11-N601C,D
	5 ^(a)	4	I	SR 3.3.1.1.1 SR 3.3.1.1.9 SR 3.3.1.1.10 SR 3.3.1.1.13 SR 3.3.1.1.15	≤ 40-1/4 inches for 1C11- N601A,B and ≤ 39-3/16 inches for 1C11-N601C,D

(continued)

- (a) With any control rod withdrawn from a core cell containing one or more fuel assemblies.
- (c) 1. If the as-found channel setpoint is conservative with respect to the Allowable Value but outside its predefined As-Found Tolerance band, then the channel shall be evaluated to verify that it is functioning as required before returning the channel to service. If the as-found instrument channel setpoint is not conservative with respect to the Allowable Value, the channel shall be declared inoperable.
2. The instrument channel setpoint shall be reset to a value within the As-Left Tolerance of the Actual Trip Setpoint; otherwise, the channel shall be declared inoperable.
3. The Nominal Trip Setpoint and the methodology used to determine the Nominal Trip Setpoint, the predefined As-Found Tolerance and As-Left Tolerance bands shall be specified in the ORM.

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

FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	REQUIRED CHANNELS PER FUNCTION	CONDITIONS REFERENCED FROM REQUIRED ACTION D.1	SURVEILLANCE REQUIREMENTS	ALLOWABLE VALUE
8. Scram Discharge Volume Water Level-High (continued)					
b. Float Switch	1,2	4	H	SR 3.3.1.1.12 SR 3.3.1.1.13 SR 3.3.1.1.15	≤ 763 ft. 3-1/4 inches msl for 1C11-N013A,B and ≤ 763 ft. 1-11/16 inches msl for 1C11- N013C,D
	5 ^(a)	4	I	SR 3.3.1.1.12 SR 3.3.1.1.13 SR 3.3.1.1.15	≤ 763 ft. 3-1/4 inches msl for 1C11-N013A,B and ≤ 763 ft. 1-11/16 inches msl for 1C11- N013C,D
9. Turbine Stop Valve Closure ≥ 33.3% RTP		4	E	SR 3.3.1.1.9 SR 3.3.1.1.13 SR 3.3.1.1.15 SR 3.3.1.1.16 SR 3.3.1.1.17	≤ 7% closed
10. Turbine Control Valve Fast Closure, Trip Oil Pressure-Low	≥ 33.3% RTP	4	E	SR 3.3.1.1.9 SR 3.3.1.1.13 SR 3.3.1.1.15 SR 3.3.1.1.16 SR 3.3.1.1.17	≥ 465 psig
11. Reactor Mode Switch-Shutdown Position	1,2	4	H	SR 3.3.1.1.12 SR 3.3.1.1.15	NA
	5 ^(a)	4	I	SR 3.3.1.1.12 SR 3.3.1.1.15	NA
12. Manual Scram	1,2	4	H	SR 3.3.1.1.9 SR 3.3.1.1.15	NA
	5 ^(a)	4	I	SR 3.3.1.1.9 SR 3.3.1.1.15	NA

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

3.3 INSTRUMENTATION

3.3.1.2 Source Range Monitor (SRM) Instrumentation

LC0 3.3.1.2 The SRM instrumentation in Table 3.3.1.2-1 shall be OPERABLE.

APPLICABILITY: According to Table 3.3.1.2-1.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more required SRMs inoperable in MODE 2 with intermediate range monitors (IRMs) on Range 2 or below.	A.1 Restore required SRMs to OPERABLE status.	4 hours
B. Three required SRMs inoperable in MODE 2 with IRMs on Range 2 or below.	B.1 Suspend control rod withdrawal.	Immediately
C. Required Action and associated Completion Time of Condition A or B not met.	C.1 Be in MODE 3.	12 hours

(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
	<u>AND</u> 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
	<u>AND</u> E.2 Initiate action to fully insert all insertable control rods in core cells containing one or more fuel assemblies.	Immediately

SURVEILLANCE REQUIREMENTS

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

SURVEILLANCE		FREQUENCY
SR 3.3.1.2.1	Perform CHANNEL CHECK.	In accordance with the Surveillance Frequency Control Program
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 ≥ 3.0 cps.	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)	3	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

3.3.1.3 Oscillation Power Range Monitor (OPRM) Instrumentation

LCO 3.3.1.3 Four channels of the OPRM instrumentation shall be OPERABLE within the limits specified in the COLR.

APPLICABILITY: THERMAL POWER $\geq$ 21.6% RTP.

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. <u>OR</u>	30 days
	A.2 Place associated RPS trip system in trip. <u>OR</u>	30 days
	A.3 Initiate alternate method to detect and suppress thermal hydraulic instability oscillations.	30 days
B. OPRM trip capability not maintained.	B.1 Initiate alternate method to detect and suppress thermal hydraulic instability oscillations <u>AND</u>	12 hours
	B.2 Restore OPRM trip capability.	120 days
C. Required Action and associated Completion Time not met.	C.1 Reduce THERMAL POWER < 21.6% 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 OPRM maintains trip capability.

SURVEILLANCE	FREQUENCY
SR 3.3.1.3.1 Perform CHANNEL FUNCTIONAL TEST.	In accordance with the Surveillance Frequency Control Program
SR 3.3.1.3.2 Calibrate the local power range monitors.	In accordance with the Surveillance Frequency Control Program
SR 3.3.1.3.3 -----NOTE----- Neutron detectors are excluded. ----- Perform CHANNEL CALIBRATION. The setpoints for the trip function shall be as specified in the COLR.	In accordance with the Surveillance Frequency Control Program
SR 3.3.1.3.4 Perform LOGIC SYSTEM FUNCTIONAL TEST.	In accordance with the Surveillance Frequency Control Program
SR 3.3.1.3.5 Verify OPRM is not bypassed when THERMAL POWER is $\geq$ 25% RTP and recirculation drive flow is $\leq$ the value corresponding to 60% of rated core flow.	In accordance with the Surveillance Frequency Control Program
SR 3.3.1.3.6 -----NOTE----- Neutron detectors are excluded. ----- Verify the RPS RESPONSE TIME is within limits.	In accordance with the Surveillance Frequency Control Program

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
	<u>AND</u> 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 > 29.2% 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 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 $\leq$ 16.7% 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 analog trip modules. The Allowable Value shall be $>$ 16.7% RTP and $\leq$ 29.2% 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
SR 3.3.2.1.9 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

Control Rod Block Instrumentation
3.3.2.1

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 RWL HPSP.

(b) THERMAL POWER > 29.2% RTP and less than or equal to the RWL HPSP.

(c) With THERMAL POWER ≤ 16.7% RTP, except during the reactor shutdown process if the coupling of each withdrawn control rod has been confirmed.

(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

SURVEILLANCE		FREQUENCY
SR 3.3.3.1.1	-----NOTE----- Applicable for each Function in Table 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----- Applicable for each Function in Table 3.3.3.1-1. ----- 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 Steam Dome Pressure	2	E
2. Reactor Vessel Water Level	2	E
3. Suppression Pool Water Level		
a. High Range	2	E
b. Low Range	2	E
4. Drywell Pressure	2	E
5. Primary Containment Area Radiation	2	F
6. Drywell Area Radiation	2	F
7. Penetration Flow Path, Automatic PCIV Position	2 per penetration flow path ^{(a) (b)}	E
8. Deleted		
9. Primary Containment Pressure		
a. High Range	2	E
b. Low Range	2	E
10. Suppression Pool Water Bulk Average Temperature	2 ^(c)	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 quadrant.

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 Four channels for each EOC-RPT instrumentation Function listed below shall be OPERABLE:

- a. Turbine Stop Valve (TSV) Closure; and
- b. Turbine Control Valve (TCV) Fast Closure, Trip Oil Pressure-Low.

APPLICABILITY: THERMAL POWER $\geq$ 33.3% RTP with any recirculation pump in fast speed.

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 channel to OPERABLE status.	48 hours
		<u>OR</u>
		In accordance with the Risk Informed Completion Time Program
	<u>OR</u>	
	A.2 -----NOTE----- Not applicable if inoperable channel is the result of an inoperable breaker. ----- Place one channel in affected Function in trip.	48 hours
		<u>OR</u>
		In accordance with the Risk Informed Completion Time Program

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
B. One or more Functions with two channels inoperable.	B.1 Place one channel in affected Function in trip.	6 hours <u>OR</u> In accordance with the Risk Informed Completion Time Program
C. One or more Functions with three or more channels inoperable.	C.1 Restore two channels in affected Function to OPERABLE status.	2 hours
D. Required Action and associated Completion Time not met.	D.1 Remove the associated recirculation pump fast speed breaker from service. <u>OR</u> D.2 Reduce THERMAL POWER to < 33.3% RTP.	8 hours 8 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

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.3.4.1.2	Perform CHANNEL CALIBRATION. The Allowable Values shall be: a. TSV Closure: $\leq 7\%$ closed; and b. TCV Fast Closure, Trip Oil Pressure-Low: ≥ 465 psig.	In accordance with the Surveillance Frequency Control Program
SR 3.3.4.1.3	Perform LOGIC SYSTEM FUNCTIONAL TEST, including breaker actuation.	In accordance with the Surveillance Frequency Control Program
SR 3.3.4.1.4	Verify TSV Closure and TCV Fast Closure, Trip Oil Pressure-Low Functions are not bypassed when THERMAL POWER is $\geq 33.3\%$ RTP.	In accordance with the Surveillance Frequency Control Program
SR 3.3.4.1.5	Verify the EOC-RPT SYSTEM RESPONSE TIME is within limits.	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 Steam Dome Pressure-High.

APPLICABILITY: MODE 1.

ACTIONS

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

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One Function with ATWS-RPT trip capability not maintained in one trip system.	A.1 Restore ATWS-RPT trip capability.	72 hours
B. Both Functions with ATWS-RPT trip capability not maintained in one trip system. <u>OR</u> One or both Functions with ATWS-RPT trip capability not maintained in both trip systems.	B.1 Restore ATWS-RPT trip capability for one Function.	1 hour

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
C. Required Action and associated Completion Time not met.	C.1 Remove the associated recirculation pump from service.	6 hours
	<u>OR</u> C.2 Be in MODE 2.	6 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.3.4.2.1	Perform CHANNEL CHECK.	In accordance with the Surveillance Frequency Control Program
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: ≥ -50.0 inches; and b. Reactor Steam Dome Pressure-High: ≤ 1143 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

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3.3 INSTRUMENTATION

3.3.5.1 Emergency Core Cooling System (ECCS) Instrumentation

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

APPLICABILITY: According to Table 3.3.5.1-1.

ACTIONS

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

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more channels inoperable.	A.1 Enter the Condition referenced in Table 3.3.5.1-1 for the channel.	Immediately

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
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
	<u>AND</u>	
	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
	<u>AND</u>	
	B.3 Place channel in trip.	24 hours
		<u>OR</u>
		-----NOTE----- Not applicable when trip capability is not maintained. -----
		In accordance with the Risk Informed Completion Time Program

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
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
	<u>AND</u>	
	C.2 Restore channel to OPERABLE status.	24 hours <u>OR</u> -----NOTE----- Not applicable when trip capability is not maintained. ----- In accordance with the Risk Informed Completion Time Program

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
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
	<u>AND</u>	
	D.2.1 Place channel in trip.	24 hour <u>OR</u> -----NOTE----- Not applicable when trip capability is not maintained. ----- In accordance with the Risk Informed Completion Time Program
	<u>OR</u> 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
	<u>AND</u>	
	E.2 Restore channel to OPERABLE status.	7 days <u>OR</u> -----NOTE----- Not applicable when trip capability is not maintained. ----- In accordance with the Risk Informed Completion Time Program

(continued)

ACTIONS (continued)

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

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
G. As required by Required Action A.1 and referenced in Table 3.3.5.1-1.	G.1 -----NOTES----- Only applicable for Functions 4.c, 4.e, 4.f, 4.g, 5.c, 5.e, and 5.f. ----- Declare ADS valves inoperable.	1 hour from discovery of loss of ADS initiation capability in both trip systems
	<u>AND</u> G.2 Restore channel to OPERABLE status.	96 hours or in accordance with the Risk Informed Completion Time Program from discovery of inoperable channel concurrent with HPCS or RCIC inoperable <u>AND</u> -----NOTE----- The Risk Informed Completion Time Program is not applicable when trip capability is not maintained. ----- 8 days or in accordance with the Risk Informed Completion Time Program

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
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

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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 analog trip module.	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 LOGIC SYSTEM FUNCTIONAL TEST.	In accordance with the Surveillance Frequency Control Program
SR 3.3.5.1.6	Perform CHANNEL CALIBRATION.	In accordance with the Surveillance Frequency Control Program

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 ^(c) SR 3.3.5.1.5 SR 3.3.5.1.6 ^(c)	≥ -148.1 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 3.3.5.1.4 SR 3.3.5.1.5	≤ 1.88 psig
c. LPCI Pump A Start-Time Delay Logic Card	1,2,3	1	C	SR 3.3.5.1.2 SR 3.3.5.1.4 SR 3.3.5.1.5	≥ 4.5 seconds and ≤ 5.5 seconds
d. Reactor Vessel Pressure-Low (Injection Permissive)	1,2,3	4	C	SR 3.3.5.1.1 SR 3.3.5.1.2 SR 3.3.5.1.3 ^(c) SR 3.3.5.1.4 ^(c) SR 3.3.5.1.5	≥ 454 psig and ≤ 494 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 3.3.5.1.4 SR 3.3.5.1.5	≥ 750 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 3.3.5.1.4 SR 3.3.5.1.5	≥ 900 gpm
g. Manual Initiation	1,2,3	1	C	SR 3.3.5.1.5	NA

(continued)

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

- (c) 1. If the as-found channel setpoint is conservative with respect to the Allowable Value but outside its predefined As-Found Tolerance band, then the channel shall be evaluated to verify that it is functioning as required before returning the channel to service. If the as-found instrument channel setpoint is not conservative with respect to the Allowable Value, the channel shall be declared inoperable.
2. The instrument channel setpoint shall be reset to a value within the As-Left Tolerance of the Actual Trip Setpoint; otherwise, the channel shall be declared inoperable.
3. The Nominal Trip Setpoint and the methodology used to determine the Nominal Trip Setpoint, the predefined As-Found Tolerance and As-Left Tolerance bands shall be specified in the ORM.

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, 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 ^(c) SR 3.3.5.1.5 SR 3.3.5.1.6 ^(c)	≥ -148.1 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 3.3.5.1.4 SR 3.3.5.1.5	≤ 1.88 psig
c. LPCI Pump B Start-Time Delay Logic Card	1,2,3	1	C	SR 3.3.5.1.2 SR 3.3.5.1.4 SR 3.3.5.1.5	≥ 4.5 seconds and ≤ 5.5 seconds
d. Reactor Vessel Pressure-Low (Injection Permissive)	1,2,3	4	C	SR 3.3.5.1.1 SR 3.3.5.1.2 SR 3.3.5.1.3 ^(c) SR 3.3.5.1.4 ^(c) SR 3.3.5.1.5	≥ 454 psig and ≤ 494 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 3.3.5.1.4 SR 3.3.5.1.5	≥ 900 gpm
f. Manual Initiation	1,2,3	1	C	SR 3.3.5.1.5	NA

(continued)

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

- (c)
1. If the as-found channel setpoint is conservative with respect to the Allowable Value but outside its predefined As-Found Tolerance band, then the channel shall be evaluated to verify that it is functioning as required before returning the channel to service. If the as-found instrument channel setpoint is not conservative with respect to the Allowable Value, the channel shall be declared inoperable.
 2. The instrument channel setpoint shall be reset to a value within the As-Left Tolerance of the Actual Trip Setpoint; otherwise, the channel shall be declared inoperable.
 3. The Nominal Trip Setpoint and the methodology used to determine the Nominal Trip Setpoint, the predefined As-Found Tolerance and As-Left Tolerance bands shall be specified in the ORM.

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. 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 ^(c) SR 3.3.5.1.5 SR 3.3.5.1.6 ^(c)	≥ -48.1 inches
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 3.3.5.1.4 SR 3.3.5.1.5	≤ 1.88 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 ^(c) SR 3.3.5.1.5 SR 3.3.5.1.6 ^(c)	≤ 54.6 inches
d. RCIC 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 ^(c) SR 3.3.5.1.4 ^(c) SR 3.3.5.1.5	≥ 3.0 inches
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 ^(c) SR 3.3.5.1.4 ^(c) SR 3.3.5.1.5	≤ 11 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 3.3.5.1.4 SR 3.3.5.1.5	≥ 120 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 3.3.5.1.4 SR 3.3.5.1.5	≥ 500 gpm
h. Manual Initiation	1,2,3	1	C	SR 3.3.5.1.5	NA

(continued)

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

- (c) 1. If the as-found channel setpoint is conservative with respect to the Allowable Value but outside its predefined As-Found Tolerance band, then the channel shall be evaluated to verify that it is functioning as required before returning the channel to service. If the as-found instrument channel setpoint is not conservative with respect to the Allowable Value, the channel shall be declared inoperable.
2. The instrument channel setpoint shall be reset to a value within the As-Left Tolerance of the Actual Trip Setpoint; otherwise, the channel shall be declared inoperable.
3. The Nominal Trip Setpoint and the methodology used to determine the Nominal Trip Setpoint, the predefined As-Found Tolerance and As-Left Tolerance bands shall be specified in the ORM.

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
4. Automatic Depressurization System (ADS) Trip System 1 (Logic A and E)					
a. Reactor Vessel Water Level-Low Low Low, Level 1	1,2 ^(b) ,3 ^(b)	2	F	SR 3.3.5.1.1 SR 3.3.5.1.2 SR 3.3.5.1.3 ^(c) SR 3.3.5.1.5 SR 3.3.5.1.6 ^(c)	≥ -148.1 inches
b. Drywell Pressure-High	1,2 ^(b) ,3 ^(b)	2	F	SR 3.3.5.1.1 SR 3.3.5.1.2 SR 3.3.5.1.3 SR 3.3.5.1.4 SR 3.3.5.1.5	≤ 1.88 psig
c. ADS Initiation Timer	1,2 ^(b) ,3 ^(b)	1	G	SR 3.3.5.1.2 SR 3.3.5.1.4 SR 3.3.5.1.5	≤ 117 seconds
d. Reactor Vessel Water Level-Low, Level 3 (Confirmatory)	1,2 ^(b) ,3 ^(b)	1	F	SR 3.3.5.1.1 SR 3.3.5.1.2 SR 3.3.5.1.3 SR 3.3.5.1.4 SR 3.3.5.1.5	≥ 8.3 inches
e. LPCS Pump Discharge Pressure-High	1,2 ^(b) ,3 ^(b)	2	G	SR 3.3.5.1.1 SR 3.3.5.1.2 SR 3.3.5.1.3 ^(c) SR 3.3.5.1.4 ^(c) SR 3.3.5.1.5	≥ 125 psig and ≤ 176.3 psig
f. LPCI Pump A Discharge Pressure- High	1,2 ^(b) ,3 ^(b)	2	G	SR 3.3.5.1.1 SR 3.3.5.1.2 SR 3.3.5.1.3 ^(c) SR 3.3.5.1.4 ^(c) SR 3.3.5.1.5	≥ 115 psig and ≤ 135 psig
g. ADS Drywell Pressure Bypass Timer	1,2 ^(b) ,3 ^(b)	2	G	SR 3.3.5.1.2 SR 3.3.5.1.4 SR 3.3.5.1.5	≤ 6.5 minutes
h. Manual Initiation	1,2 ^(b) ,3 ^(b)	2	G	SR 3.3.5.1.5	NA

(continued)

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

- (c) 1. If the as-found channel setpoint is conservative with respect to the Allowable Value but outside its predefined As-Found Tolerance band, then the channel shall be evaluated to verify that it is functioning as required before returning the channel to service. If the as-found instrument channel setpoint is not conservative with respect to the Allowable Value, the channel shall be declared inoperable.
2. The instrument channel setpoint shall be reset to a value within the As-Left Tolerance of the Actual Trip Setpoint; otherwise, the channel shall be declared inoperable.
3. The Nominal Trip Setpoint and the methodology used to determine the Nominal Trip Setpoint, the predefined As-Found Tolerance and As-Left Tolerance bands shall be specified in the ORM.

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
5. ADS Trip System 2 (Logic B and F)					
a. Reactor Vessel Water Level-Low Low Low, Level 1	1,2 ^(b) ,3 ^(b)	2	F	SR 3.3.5.1.1 SR 3.3.5.1.2 SR 3.3.5.1.3 ^(c) SR 3.3.5.1.5 SR 3.3.5.1.6 ^(c)	≥ -148.1 inches
b. Drywell Pressure-High	1,2 ^(b) ,3 ^(b)	2	F	SR 3.3.5.1.1 SR 3.3.5.1.2 SR 3.3.5.1.3 SR 3.3.5.1.4 SR 3.3.5.1.5	≤ 1.88 psig
c. ADS Initiation Timer	1,2 ^(b) ,3 ^(b)	1	G	SR 3.3.5.1.2 SR 3.3.5.1.4 SR 3.3.5.1.5	≤ 117 seconds
d. Reactor Vessel Water Level-Low, Level 3 (Confirmatory)	1,2 ^(b) ,3 ^(b)	1	F	SR 3.3.5.1.1 SR 3.3.5.1.2 SR 3.3.5.1.3 SR 3.3.5.1.4 SR 3.3.5.1.5	≥ 8.3 inches
e. LPCI Pumps B & C Discharge Pressure-High	1,2 ^(b) ,3 ^(b)	2 per pump	G	SR 3.3.5.1.1 SR 3.3.5.1.2 SR 3.3.5.1.3 ^(c) SR 3.3.5.1.4 ^(c) SR 3.3.5.1.5	≥ 115 psig and ≤ 135 psig
f. ADS Drywell Pressure Bypass Timer	1,2 ^(b) ,3 ^(b)	2	G	SR 3.3.5.1.2 SR 3.3.5.1.4 SR 3.3.5.1.5	≤ 6.5 minutes
g. Manual Initiation	1,2 ^(b) ,3 ^(b)	2	G	SR 3.3.5.1.5	NA

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

- (c) 1. If the as-found channel setpoint is conservative with respect to the Allowable Value but outside its predefined As-Found Tolerance band, then the channel shall be evaluated to verify that it is functioning as required before returning the channel to service. If the as-found instrument channel setpoint is not conservative with respect to the Allowable Value, the channel shall be declared inoperable.
2. The instrument channel setpoint shall be reset to a value within the As-Left Tolerance of the Actual Trip Setpoint; otherwise, the channel shall be declared inoperable.
3. The Nominal Trip Setpoint and the methodology used to determine the Nominal Trip Setpoint, the predefined As-Found Tolerance and As-Left Tolerance bands shall be specified in the ORM.

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 Initiate action to place channel in trip.	Immediately
	<u>OR</u>	
	A.2.1 Declare associated penetration flow path(s) incapable of automatic isolation.	Immediately
	<u>AND</u>	
	A.2.2 Initiate action to calculate DRAIN TIME.	Immediately

SURVEILLANCE REQUIREMENTS

-----NOTE-----
These SRs apply to each Function in Table 3.3.5.2-1.

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

RPV Water Inventory Control Instrumentation
3.3.5.2

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

FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	REQUIRED CHANNELS PER FUNCTION	ALLOWABLE VALUE
1. RHR System Isolation			
a. Reactor Vessel Water Level - Low, Level 3	(a)	2 in one trip system	≥ 8.3 inches
2. Reactor Water Cleanup (RWCU) System Isolation			
a. Reactor Vessel Water Level - Low Low, Level 2	(a)	2 in one trip system	≥ -48.1 inches

(a) 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. <u>AND</u> B.2 Place channel in trip.	1 hour from discovery of loss of RCIC initiation capability 24 hours <u>OR</u> -----NOTE----- Not applicable when trip capability is not maintained. ----- In accordance with the Risk Informed Completion Time Program

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
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
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. <u>AND</u> D.2.1 Place channel in trip. <u>OR</u> D.2.2 Align RCIC pump suction to the suppression pool.	1 hour from discovery of loss of RCIC initiation capability 24 hours <u>OR</u> -----NOTE----- Not applicable when trip capability is not maintained. ----- In accordance with the Risk Informed Completion Time Program 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 analog trip module.	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
SR 3.3.5.3.6	Perform CHANNEL CALIBRATION.	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 3.3.5.3.5 SR 3.3.5.3.6	≥ -48.1 inches
2. Reactor Vessel Water Level-High, Level 8	2	C	SR 3.3.5.3.1 SR 3.3.5.3.2 SR 3.3.5.3.3 SR 3.3.5.3.4 SR 3.3.5.3.5	≤ 52.6 inches
3. RCIC Storage Tank Level-Low	2	D	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	≥ 3.0 inches
4. Suppression Pool Water Level-High	2	D	SR 3.3.5.3.1 SR 3.3.5.3.2 SR 3.3.5.3.3 SR 3.3.5.3.4 SR 3.3.5.3.5	≤ -5 inches
5. Manual Initiation	1	C	SR 3.3.5.3.5	NA

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 controls.
 2. Separate Condition entry is allowed for each channel.
-

CONDITION	REQUIRED ACTION	COMPLETION TIME
-----NOTE----- Only applicable to Main Steam Line (MSL) isolation Functions. ----- A. One or more Functions with one channel inoperable.	A.1 Place one channel in affected Function in trip.	48 hours <u>OR</u> In accordance with the Risk Informed Completion Time Program
-----NOTE----- Only applicable to MSL isolation Functions. ----- B. One or more Functions with two channels inoperable.	B.1 Place one channel in affected Function in trip.	6 hours <u>OR</u> In accordance with the Risk Informed Completion Time Program
-----NOTE----- Only applicable to MSL isolation Functions. ----- C. One or more Functions with three or more channels inoperable.	C.1 Restore two channels in affected Function to OPERABLE status.	1 hour

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
-----NOTE----- Not applicable to MSL isolation Functions. ----- D. One or more required channels inoperable.	D.1 Place channel in trip.	24 hours <u>OR</u> -----NOTE----- Not applicable when trip capability is not maintained. ----- In accordance with the Risk Informed Completion Time Program
-----NOTE----- Not applicable to MSL isolation Functions. ----- E. One or more automatic Functions with isolation capability not maintained.	E.1 Restore isolation capability.	1 hour
F. Required Action and associated Completion Time of Condition A, B, C, D, or E not met.	F.1 Enter the Condition referenced in Table 3.3.6.1-1 for the channel.	Immediately
G. As required by Required Action F.1 and referenced in Table 3.3.6.1-1.	G.1 Isolate associated MSL. <u>OR</u> G.2.1 Be in MODE 3. <u>AND</u> G.2.2 Be in MODE 4.	12 hours 12 hours 36 hours

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
H. As required by Required Action F.1 and referenced in Table 3.3.6.1-1.	H.1 Be in MODE 2.	6 hours
I. As required by Required Action F.1 and referenced in Table 3.3.6.1-1.	I.1 Isolate the affected penetration flow path(s).	1 hour
J. As required by Required Action F.1 and referenced in Table 3.3.6.1-1.	J.1 Isolate the affected penetration flow path(s).	24 hours
K. As required by Required Action F.1 and referenced in Table 3.3.6.1-1. <u>OR</u> Required Action and associated Completion Time of Condition I or J not met.	K.1 Be in MODE 3. <u>AND</u> K.2 Be in MODE 4.	12 hours 36 hours
L. As required by Required Action F.1 and referenced in Table 3.3.6.1-1.	L.1 Declare associated standby liquid control subsystem inoperable. <u>OR</u> L.2 Isolate the Reactor Water Cleanup System.	1 hour 1 hour
M. As required by Required Action F.1 and referenced in Table 3.3.6.1-1.	M.1 Initiate action to restore channel to OPERABLE status.	Immediately

(continued)

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ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
N. As required by Required Action F.1 and referenced in Table 3.3.6.1-1.	N.1 Isolate the affected penetration flow path(s).	Immediately
	<u>OR</u> N.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 Primary Containment and Drywell 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 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

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE			FREQUENCY
SR	3.3.6.1.3	Calibrate the analog trip module.	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
SR	3.3.6.1.7	Verify the ISOLATION SYSTEM RESPONSE TIME for the main steam isolation valves is within limits.	In accordance with the Surveillance Frequency Control Program
SR	3.3.6.1.8	Perform CHANNEL CALIBRATION.	In accordance with the Surveillance Frequency Control Program

Primary Containment and Drywell Isolation Instrumentation
3.3.6.1

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 FUNCTION	CONDITIONS REFERENCED FROM REQUIRED ACTION F.1	SURVEILLANCE REQUIREMENTS	ALLOWABLE VALUE
1. Main Steam Line Isolation					
a. Reactor Vessel Water Level-Low Low Low, Level 1	1,2,3	4	G	SR 3.3.6.1.1	≥ -148.1 inches
				SR 3.3.6.1.2	
				SR 3.3.6.1.3	
				SR 3.3.6.1.6	
				SR 3.3.6.1.7	
				SR 3.3.6.1.8	
b. Main Steam Line Pressure-Low	1	4	H	SR 3.3.6.1.1	≥ 841 psig
				SR 3.3.6.1.2	
				SR 3.3.6.1.3	
				SR 3.3.6.1.5	
				SR 3.3.6.1.6	
				SR 3.3.6.1.7	
c. Main Steam Line Flow-High	1,2,3	4	G	SR 3.3.6.1.1	≤ 284 psid
				SR 3.3.6.1.2	
				SR 3.3.6.1.3	
				SR 3.3.6.1.5	
				SR 3.3.6.1.6	
				SR 3.3.6.1.7	
d. Condenser Vacuum-Low	1,2 ^(a) , 3 ^(a)	4	G	SR 3.3.6.1.1	≥ 7.6 inches Hg vacuum
				SR 3.3.6.1.2	
				SR 3.3.6.1.3	
				SR 3.3.6.1.5	
				SR 3.3.6.1.6	
e. Main Steam Tunnel Temperature-High	1,2,3	4	G	SR 3.3.6.1.1	≤ 171°F
				SR 3.3.6.1.2	
				SR 3.3.6.1.5	
				SR 3.3.6.1.6	
f. Main Steam Line Turbine Building Temperature-High	1,2,3	4	G	SR 3.3.6.1.1	Modules 1-4
				SR 3.3.6.1.2	≤ 142°F,
				SR 3.3.6.1.5	Module 5
				SR 3.3.6.1.6	≤ 150°F
g. Manual Initiation	1,2,3	4	J	SR 3.3.6.1.6	NA

(continued)

(a) With any turbine stop valve not closed.

Primary Containment and Drywell Isolation Instrumentation
3.3.6.1

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 FUNCTION	CONDITIONS REFERENCED FROM REQUIRED ACTION F.1	SURVEILLANCE REQUIREMENTS	ALLOWABLE VALUE
2. Primary Containment and Drywell Isolation					
a. Reactor Vessel Water Level-Low Low, Level 2	1,2,3	4 ^(b)	K	SR 3.3.6.1.1 SR 3.3.6.1.2 SR 3.3.6.1.3 SR 3.3.6.1.6 SR 3.3.6.1.8	≥ -48.1 inches
b. Drywell Pressure-High	1,2,3	4 ^(b)	K	SR 3.3.6.1.1 SR 3.3.6.1.2 SR 3.3.6.1.3 SR 3.3.6.1.5 SR 3.3.6.1.6	≤ 1.88 psig
c. Deleted					
d. Drywell Pressure-High (ECCS Divisions 1 and 2)	1,2,3	4 ^(b)	I	SR 3.3.6.1.1 SR 3.3.6.1.2 SR 3.3.6.1.3 SR 3.3.6.1.5 SR 3.3.6.1.6	≤ 1.88 psig
e. Reactor Vessel Water Level-Low Low, Level 2 (HPCS NSPS Div 3 and 4)	1,2,3	4	I	SR 3.3.6.1.1 SR 3.3.6.1.2 SR 3.3.6.1.3 SR 3.3.6.1.6 SR 3.3.6.1.8	≥ -48.1 inches
f. Drywell Pressure-High (HPCS NSPS Div 3 and 4)	1,2,3	4	I	SR 3.3.6.1.1 SR 3.3.6.1.2 SR 3.3.6.1.3 SR 3.3.6.1.5 SR 3.3.6.1.6	≤ 1.88 psig

(continued)

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

Primary Containment and Drywell Isolation Instrumentation
3.3.6.1

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 FUNCTION	CONDITIONS REFERENCED FROM REQUIRED ACTION F.1	SURVEILLANCE REQUIREMENTS	ALLOWABLE VALUE
2. Primary Containment and Drywell Isolation (continued)					
g. Containment Building Fuel Transfer Pool Ventilation Plenum Radiation-High	(c)	4	N	SR 3.3.6.1.1	≤ 500 mR/hr
				SR 3.3.6.1.2	
				SR 3.3.6.1.5	
				SR 3.3.6.1.6	
h. Containment Building Exhaust Radiation-High	1,2,3	4 ^(b)	I	SR 3.3.6.1.1	≤ 400 mR/hr
				SR 3.3.6.1.2	
				SR 3.3.6.1.5	
				SR 3.3.6.1.6	
	(c)	4	N	SR 3.3.6.1.1	≤ 400 mR/hr
				SR 3.3.6.1.2	
				SR 3.3.6.1.5	
				SR 3.3.6.1.6	
i. Containment Building Continuous Containment Purge (CCP) Exhaust Radiation-High	1,2,3	4 ^(b)	I	SR 3.3.6.1.1	≤ 400 mR/hr
				SR 3.3.6.1.2	
				SR 3.3.6.1.5	
				SR 3.3.6.1.6	
	(c)	4	N	SR 3.3.6.1.1	≤ 400 mR/hr
				SR 3.3.6.1.2	
				SR 3.3.6.1.5	
				SR 3.3.6.1.6	
j. Reactor Vessel Water Level-Low Low Low, Level 1	1,2,3	4 ^(b)	I	SR 3.3.6.1.1	≥ -148.1 inches
				SR 3.3.6.1.2	
				SR 3.3.6.1.3	
				SR 3.3.6.1.6	
				SR 3.3.6.1.8	
k. Containment Pressure-High	(d)	2	I	SR 3.3.6.1.1	≤ 3.0 psid
				SR 3.3.6.1.2	
				SR 3.3.6.1.5	
				SR 3.3.6.1.6	
l. Manual Initiation	1,2,3	2 ^(b)	J	SR 3.3.6.1.6	NA
	(c)	2	N	SR 3.3.6.1.6	NA

(continued)

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

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

(d) MODES 1, 2, and 3 with the associated PCIVs not closed.

Primary Containment and Drywell Isolation Instrumentation
3.3.6.1

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 FUNCTION	CONDITIONS REFERENCED FROM REQUIRED ACTION F.1	SURVEILLANCE REQUIREMENTS	ALLOWABLE VALUE
3. Reactor Core Isolation Cooling (RCIC) System Isolation					
a. Auxiliary Building RCIC Steam Line Flow-High	1,2,3	2	I	SR 3.3.6.1.1 SR 3.3.6.1.2 SR 3.3.6.1.3 SR 3.3.6.1.5 SR 3.3.6.1.6	≤ 118.5 inches water
b. RCIC Steam Line Flow-High, Time Delay	1,2,3	2	I	SR 3.3.6.1.2 SR 3.3.6.1.5 SR 3.3.6.1.6	≤ 13 seconds
c. RCIC Steam Supply Line Pressure-Low	1,2,3	2	I	SR 3.3.6.1.1 SR 3.3.6.1.2 SR 3.3.6.1.3 SR 3.3.6.1.5 SR 3.3.6.1.6	≥ 52 psig
d. RCIC Turbine Exhaust Diaphragm Pressure-High	1,2,3	4	I	SR 3.3.6.1.1 SR 3.3.6.1.2 SR 3.3.6.1.3 SR 3.3.6.1.5 SR 3.3.6.1.6	≤ 20 psig
e. RCIC Equipment Room Ambient Temperature-High	1,2,3	2	I	SR 3.3.6.1.1 SR 3.3.6.1.2 SR 3.3.6.1.5 SR 3.3.6.1.6	≤ 207°F
f. Main Steam Line Tunnel Ambient Temperature-High	1,2,3	2	I	SR 3.3.6.1.1 SR 3.3.6.1.2 SR 3.3.6.1.5 SR 3.3.6.1.6	≤ 171°F
g. Main Steam Line Tunnel Temperature Timer	1,2,3	2	I	SR 3.3.6.1.2 SR 3.3.6.1.5 SR 3.3.6.1.6	≤ 28 minutes
h. Reactor Vessel Water Level-Low Low, Level 2	1,2,3	4	I	SR 3.3.6.1.1 SR 3.3.6.1.2 SR 3.3.6.1.3 SR 3.3.6.1.6 SR 3.3.6.1.8	≥ -48.1 inches
i. Drywell RCIC Steam Line Flow - High	1,2,3	2	I	SR 3.3.6.1.1 SR 3.3.6.1.2 SR 3.3.6.1.3 SR 3.3.6.1.5 SR 3.3.6.1.6	≤ 188 inches water

(continued)

Primary Containment and Drywell Isolation Instrumentation
3.3.6.1

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 FUNCTION	CONDITIONS REFERENCED FROM REQUIRED ACTION F.1	SURVEILLANCE REQUIREMENTS	ALLOWABLE VALUE
3. RCIC System Isolation (continued)					
j. Drywell Pressure - High	1,2,3	2	I	SR 3.3.6.1.1 SR 3.3.6.1.2 SR 3.3.6.1.3 SR 3.3.6.1.5 SR 3.3.6.1.6	≤ 1.88 psig
k. Manual Initiation	1,2,3	1	J	SR 3.3.6.1.6	NA
4. Reactor Water Cleanup (RWCU) System Isolation					
a. Differential Flow - High	1,2,3	2	I	SR 3.3.6.1.1 SR 3.3.6.1.2 SR 3.3.6.1.6 SR 3.3.6.1.8	≤ 66.1 gpm
b. Differential Flow Timer - High	1,2,3	2	I	SR 3.3.6.1.2 SR 3.3.6.1.4 SR 3.3.6.1.6	≤ 863 seconds
c. RWCU Heat Exchanger Equipment Room Temperature-High	1,2,3	2 per room	I	SR 3.3.6.1.1 SR 3.3.6.1.2 SR 3.3.6.1.5 SR 3.3.6.1.6	≤ 205°F
d. RWCU Pump Rooms Temperature-High	1,2,3	2 per room	I	SR 3.3.6.1.1 SR 3.3.6.1.2 SR 3.3.6.1.5 SR 3.3.6.1.6	≤ 202°F
e. Main Steam Line Tunnel Ambient Temperature- High	1,2,3	2	I	SR 3.3.6.1.1 SR 3.3.6.1.2 SR 3.3.6.1.5 SR 3.3.6.1.6	≤ 171°F
f. Reactor Vessel Water Level-Low Low, Level 2	1,2,3	4	I	SR 3.3.6.1.1 SR 3.3.6.1.2 SR 3.3.6.1.3 SR 3.3.6.1.6 SR 3.3.6.1.8	≥ -48.1 inches
g. Standby Liquid Control System Initiation	1,2,3	2	L	SR 3.3.6.1.6	NA
h. Manual Initiation	1,2,3	2	J	SR 3.3.6.1.6	NA
	(c)	2	N	SR 3.3.6.1.6	NA
i. Differential Flow - High-High	1,2,3	2	I	SR 3.3.6.1.1 SR 3.3.6.1.2 SR 3.3.6.1.6 SR 3.3.6.1.8	≤ 182.4 gpm
j. Differential Flow Timer - High-High	1,2,3	2	I	SR 3.3.6.1.2 SR 3.3.6.1.4 SR 3.3.6.1.6	≤ 47 seconds

(continued)

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

Primary Containment and Drywell Isolation Instrumentation
3.3.6.1

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 FUNCTION	CONDITIONS REFERENCED FROM REQUIRED ACTION F.1	SURVEILLANCE REQUIREMENTS	ALLOWABLE VALUE
5. RHR System Isolation					
a. RHR Heat Exchanger Ambient Temperature-High	1,2,3	2 per room	I	SR 3.3.6.1.1 SR 3.3.6.1.2 SR 3.3.6.1.5 SR 3.3.6.1.6	≤ 160°F
b. Reactor Vessel Water Level - Low, Level 3	1,2,3 ^(e)	4	I	SR 3.3.6.1.1 SR 3.3.6.1.2 SR 3.3.6.1.3 SR 3.3.6.1.5 SR 3.3.6.1.6	≥ 8.3 inches
c. Reactor Vessel Water Level - Low, Level 3	3 ^(f)	4	M	SR 3.3.6.1.1 SR 3.3.6.1.2 SR 3.3.6.1.3 SR 3.3.6.1.5 SR 3.3.6.1.6	≥ 8.3 inches
d. Reactor Vessel Water Level - Low Low Low, Level 1	1,2,3	4	I	SR 3.3.6.1.1 SR 3.3.6.1.2 SR 3.3.6.1.3 SR 3.3.6.1.6 SR 3.3.6.1.8	≥ -148.1 inches
e. Reactor Vessel Pressure-High	1,2,3	4	I	SR 3.3.6.1.1 SR 3.3.6.1.2 SR 3.3.6.1.3 SR 3.3.6.1.5 SR 3.3.6.1.6	≤ 113 psig
f. Drywell Pressure-High	1,2,3	8	I	SR 3.3.6.1.1 SR 3.3.6.1.2 SR 3.3.6.1.3 SR 3.3.6.1.5 SR 3.3.6.1.6	≤ 1.88 psig
g. Manual Initiation	1,2,3	2	J	SR 3.3.6.1.6	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.	24 hours
B. One or more automatic Functions with secondary containment isolation capability not maintained.	B.1 Restore secondary containment 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.1.1 Isolate the associated penetration flow path(s).	1 hour
	<u>OR</u>	
	C.1.2 Declare associated secondary containment isolation dampers inoperable.	1 hour
	<u>AND</u>	
	C.2.1 Place the associated standby gas treatment (SGT) subsystem in operation.	1 hour
	<u>OR</u>	
	C.2.2 Declare associated SGT subsystem inoperable.	1 hour

SURVEILLANCE REQUIREMENTS

- NOTES-----
1. Refer to Table 3.3.6.2-1 to determine which SRs apply for each Secondary Containment Isolation Function.
 2. When a channel is placed in an inoperable status solely for performance of required Surveillances, entry into associated Conditions and Required Actions may be delayed for up to 6 hours, provided the associated Function maintains secondary containment isolation capability.
-

SURVEILLANCE		FREQUENCY
SR 3.3.6.2.1	Perform CHANNEL CHECK.	In accordance with the Surveillance Frequency Control Program
SR 3.3.6.2.2	Perform CHANNEL FUNCTIONAL TEST.	In accordance with the Surveillance Frequency Control Program
SR 3.3.6.2.3	Calibrate the analog trip module.	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 LOGIC SYSTEM FUNCTIONAL TEST.	In accordance with the Surveillance Frequency Control Program
SR 3.3.6.2.6	Perform CHANNEL CALIBRATION.	In accordance with the Surveillance Frequency Control Program

Secondary Containment Isolation Instrumentation
3.3.6.2

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

FUNCTION		APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	REQUIRED CHANNELS PER TRIP SYSTEM	SURVEILLANCE REQUIREMENTS	ALLOWABLE VALUE
1.	Reactor Vessel Water Level-Low Low, 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	≥ -48.1 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 3.3.6.2.4 SR 3.3.6.2.5	≤ 1.88 psig
3.	Containment Building Fuel Transfer Pool Ventilation Plenum Exhaust Radiation-High	(a)	2	SR 3.3.6.2.1 SR 3.3.6.2.2 SR 3.3.6.2.4 SR 3.3.6.2.5	≤ 500 mR/hr
4.	Containment Building Exhaust Radiation-High	1,2,3, (a)	2	SR 3.3.6.2.1 SR 3.3.6.2.2 SR 3.3.6.2.4 SR 3.3.6.2.5	≤ 400 mR/hr
5.	Containment Building Continuous Containment Purge (CCP) Exhaust Radiation-High	1,2,3, (a)	2	SR 3.3.6.2.1 SR 3.3.6.2.2 SR 3.3.6.2.4 SR 3.3.6.2.5	≤ 400 mR/hr
6.	Fuel Building Exhaust Radiation-High	1,2,3, (b)	2	SR 3.3.6.2.1 SR 3.3.6.2.2 SR 3.3.6.2.4 SR 3.3.6.2.5	≤ 17 mR/hr
7.	Manual Initiation	1,2,3, (a)	1	SR 3.3.6.2.5	NA

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

(b) During movement of recently irradiated fuel assemblies in the fuel building.

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 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
	<u>AND</u>	
	B.2 Place channel in trip.	24 hours
		<u>OR</u>
		-----NOTE----- Not applicable when trip capability is not maintained. -----
		In accordance with the Risk Informed Completion Time Program

(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 -----NOTE----- Only applicable for Functions 4 and 5. ----- Declare associated RHR containment spray subsystem inoperable. <u>AND</u> C.2 Restore channel to OPERABLE status.	1 hour from discovery of loss of RHR containment spray initiation capability in both trip systems 24 hours <u>OR</u> -----NOTE----- Not applicable when trip capability is not maintained. ----- In accordance with the Risk Informed Completion Time Program
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 analog trip module.	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 LOGIC SYSTEM FUNCTIONAL TEST.	In accordance with the Surveillance Frequency Control Program
SR 3.3.6.3.6 Perform CHANNEL CALIBRATION.	In accordance with the Surveillance Frequency Control Program

RHR Containment Spray System Instrumentation
3.3.6.3

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 3.3.6.3.4 SR 3.3.6.3.5	≤ 1.88 psig
2. Containment Pressure-High	2	B	SR 3.3.6.3.1 SR 3.3.6.3.2 SR 3.3.6.3.3 SR 3.3.6.3.4 SR 3.3.6.3.5	≤ 22.4 psia
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	≥ -148.1 inches
4. Timers, System A and System B	1	C	SR 3.3.6.3.2 SR 3.3.6.3.4 SR 3.3.6.3.5	≥ 606 seconds and ≤ 614 seconds
5. Timer, System B Only	1	C	SR 3.3.6.3.2 SR 3.3.6.3.4 SR 3.3.6.3.5	≤ 90.6 seconds
6. Manual Initiation	1	C	SR 3.3.6.3.5	NA

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 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
	<u>AND</u> B.2 Place channel in trip.	24 hours <u>OR</u> -----NOTE----- Not applicable when trip capability is not maintained. ----- In accordance with the Risk Informed Completion Time Program

(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 Function 4. ----- Declare associated SPMU subsystem inoperable.	1 hour from discovery of loss of SPMU initiation capability in both trip systems
	<u>AND</u> C.2 Restore channel to OPERABLE status.	24 hours <u>OR</u> -----NOTE----- Not applicable when trip capability is not maintained. ----- In accordance with the Risk Informed Completion Time Program
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 analog trip module.	In accordance with the Surveillance Frequency Control Program
SR 3.3.6.4.4	Calibrate the analog comparator unit.	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 CHANNEL CALIBRATION.	In accordance with the Surveillance Frequency Control Program

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.3.6.4.7	Perform LOGIC SYSTEM FUNCTIONAL TEST.	In accordance with the Surveillance Frequency Control Program
SR 3.3.6.4.8	Perform CHANNEL CALIBRATION.	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 3.3.6.4.6 SR 3.3.6.4.7	≤ 1.88 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 3.3.6.4.7 SR 3.3.6.4.8	≥ -148.1 inches
3. Suppression Pool Water Level-Low Low	2	B	SR 3.3.6.4.1 SR 3.3.6.4.2 SR 3.3.6.4.4 SR 3.3.6.4.6 SR 3.3.6.4.7	≥ 29 inches
4. Timer	1	C	SR 3.3.6.4.2 SR 3.3.6.4.5 SR 3.3.6.4.7	≤ 30 minutes
5. Manual Initiation	2	C	SR 3.3.6.4.7	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 <u>OR</u> In accordance with the Risk Informed Completion Time Program
	<u>OR</u> A.2 Declare associated relief and LLS valve(s) inoperable.	7 days
B. Required Action and associated Completion Time of Condition A not met. <u>OR</u> Two trip systems inoperable.	B.1 Be in MODE 3.	12 hours
	<u>AND</u> 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
-----NOTES----- 1. If the as-found channel setpoint is conservative with respect to the Allowable Value but outside its predefined As-Found Tolerance band, then the channel shall be evaluated to verify that it is functioning as required before returning the channel to service. If the as-found instrument channel setpoint is not conservative with respect to the Allowable Value, the channel shall be declared inoperable. 2. The instrument channel setpoint shall be reset to a value within the As-Left Tolerance of the Actual Trip Setpoint; otherwise, the channel shall be declared inoperable. 3. The Nominal Trip Setpoint and the methodology used to determine the Nominal Trip Setpoint, the predefined As-Found Tolerance and As-Left Tolerance bands shall be specified in the ORM. -----	
SR 3.3.6.5.2 Calibrate the analog trip module.	In accordance with the Surveillance Frequency Control Program

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE	Frequency
-----NOTES----- 1. If the as-found channel setpoint is conservative with respect to the Allowable Value but outside its predefined As-Found Tolerance band, then the channel shall be evaluated to verify that it is functioning as required before returning the channel to service. If the as-found instrument channel setpoint is not conservative with respect to the Allowable Value, the channel shall be declared inoperable. 2. The instrument channel setpoint shall be reset to a value within the As-Left Tolerance of the Actual Trip Setpoint; otherwise, the channel shall be declared inoperable. 3. The Nominal Trip Setpoint and the methodology used to determine the Nominal Trip Setpoint, the predefined As-Found Tolerance and As-Left Tolerance bands shall be specified in the ORM. -----	
SR 3.3.6.5.3 Perform CHANNEL CALIBRATION. The Allowable Values shall be: a. Relief Function Low: < 1118 psig Medium: < 1128 psig High: < 1138 psig b. LLS Function Low open: < 1044 psig close: < 937 psig Medium open: < 1084 psig close: < 947 psig High open: < 1124 psig close: < 957 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

Control Room Ventilation System Instrumentation
3.3.7.1

3.3 INSTRUMENTATION

3.3.7.1 Control Room Ventilation System Instrumentation

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

APPLICABILITY: According to Table 3.3.7.1-1.

ACTIONS

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

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more required channels inoperable.	A.1 Declare associated Control Room Ventilation subsystem inoperable.	1 hour from discovery of loss of Control Room Ventilation initiation capability in both trip systems
	<u>AND</u>	
	A.2 Place channel in trip.	6 hours

(continued)

Control Room Ventilation System Instrumentation
3.3.7.1

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
B. Required Action and associated Completion Time not met.	B.1 Place one Control Room Ventilation subsystem in the high radiation mode of operation.	1 hour
	<u>OR</u> B.2 Declare associated Control Room Ventilation subsystem inoperable.	1 hour

SURVEILLANCE REQUIREMENTS

- NOTES-----
1. Refer to Table 3.3.7.1-1 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 Control Room Ventilation initiation capability.
-

SURVEILLANCE	FREQUENCY
SR 3.3.7.1.1 Perform CHANNEL CHECK.	In accordance with the Surveillance Frequency Control Program
SR 3.3.7.1.2 Perform CHANNEL FUNCTIONAL TEST.	In accordance with the Surveillance Frequency Control Program
SR 3.3.7.1.3 Perform CHANNEL CALIBRATION.	In accordance with the Surveillance Frequency Control Program

Control Room Ventilation System Instrumentation
3.3.7.1

Table 3.3.7.1-1 (page 1 of 1)
Control Room Ventilation System Instrumentation

FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	REQUIRED CHANNELS PER TRIP SYSTEM	SURVEILLANCE REQUIREMENTS	ALLOWABLE VALUE
1. Control Room Air Intake Radiation Monitors	1,2,3, (a)	1/Intake	SR 3.3.7.1.1 SR 3.3.7.1.2 SR 3.3.7.1.3	≤ 26 mR/hr

(a) During CORE ALTERATIONS and during movement of irradiated fuel assemblies in the primary or secondary containment.

3.3 INSTRUMENTATION

3.3.8.1 Loss of Power (LOP) Instrumentation

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

APPLICABILITY: MODES 1, 2, and 3.

ACTIONS

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

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more channels inoperable.	A.1 Place channel in trip.	1 hour
		<u>OR</u>
		-----NOTE----- Not applicable when trip capability is not maintained. ----- In accordance with the Risk Informed Completion Time Program
	<u>AND</u>	(continued)

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. (continued)	A.2 -----NOTE----- Only applicable for Functions 1.c, 1.d, 1.e, 2.c, 2.d, and 2.e ----- Restore channel to OPERABLE status.	7 days <u>OR</u> -----NOTE----- Not applicable when trip capability is not maintained. ----- In accordance with the Risk Informed Completion Time Program
B. Required Action and associated Completion Time not met.	B.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 2 hours provided the associated Function maintains DG initiation capability.
-

SURVEILLANCE			FREQUENCY
SR	3.3.8.1.1	Deleted	
SR	3.3.8.1.2	Perform CHANNEL FUNCTIONAL TEST.	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	6	SR 3.3.8.1.3 SR 3.3.8.1.4	$\geq 2345 \text{ V}$ and $\leq 3395 \text{ V}$
b. Loss of Voltage - Time Delay	6	SR 3.3.8.1.3 SR 3.3.8.1.4	$\leq 5.0 \text{ seconds}$
c. Degraded Voltage Reset - 4.16 kV basis	2	SR 3.3.8.1.2 SR 3.3.8.1.3 SR 3.3.8.1.4	$\geq 4087 \text{ V}$ and $\leq 4113.4 \text{ V}$
d. Degraded Voltage Drop-out - 4.16 kV basis	2	SR 3.3.8.1.2 SR 3.3.8.1.3 SR 3.3.8.1.4	$\geq 4038 \text{ V}$
e. Degraded Voltage-Time Delay	1	SR 3.3.8.1.2 SR 3.3.8.1.3 SR 3.3.8.1.4	$\geq 14 \text{ seconds}$ and $\leq 16 \text{ seconds}$
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	$\geq 2345 \text{ V}$ and $\leq 2730 \text{ V}$
b. Loss of Voltage - Time Delay	1	SR 3.3.8.1.3 SR 3.3.8.1.4	$\leq 3.0 \text{ seconds}$
c. Degraded Voltage Reset - 4.16 kV basis	2	SR 3.3.8.1.2 SR 3.3.8.1.3 SR 3.3.8.1.4	$\geq 4087 \text{ V}$ and $\leq 4113.4 \text{ V}$
d. Degraded Voltage Drop-out - 4.16 kV basis	2	SR 3.3.8.1.2 SR 3.3.8.1.3 SR 3.3.8.1.4	$\geq 4038 \text{ V}$
e. Degraded Voltage - Time Delay	1	SR 3.3.8.1.2 SR 3.3.8.1.3 SR 3.3.8.1.4	$\geq 13.2 \text{ seconds}$ and $\leq 16.8 \text{ seconds}$

3.3 INSTRUMENTATION

3.3.8.2 Reactor Protection System (RPS) Electric Power Monitoring

LCO 3.3.8.2 One RPS electric power monitoring assembly shall be OPERABLE for each inservice RPS special solenoid power supply 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 the electric power monitoring assembly inoperable.	A.1 Remove associated inservice power supply(s) from service.	1 hour
B. Required Action and associated Completion Time of Condition A not met in MODE 1, 2, or 3.	-----NOTE----- LCO 3.0.4a is not applicable when entering MODE 3 ----- B.1 Be in MODE 3.	12 hours
C. Required Action and associated Completion Time of Condition A not met in MODE 4 or 5 with any control rod withdrawn from a core cell containing one or more fuel assemblies.	C.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
SR 3.3.8.2.2 Perform CHANNEL CALIBRATION. The Allowable Values shall be: a. Overvoltage Bus A ≤ 127.3 V Bus B ≤ 126.7 V b. Undervoltage Bus A ≥ 115.0 V Bus B ≥ 114.7 V c. Underfrequency (with time delay ≤ 4.0 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 A. Two recirculation loops shall be in operation with matched flows;
- OR
- B. One recirculation loop shall be in operation with:
1. THERMAL POWER $\leq$ 58% RTP;
 2. Required limits modified for single recirculation loop operation as specified in the COLR; and
 3. LCO 3.3.1.1, "Reactor Protection System (RPS) Instrumentation," Function 2.b (Average Power Range Monitors Flow Biased Simulated Thermal Power-High), Allowable Value of Table 3.3.1.1-1 reset for single 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 Shut down one recirculation loop.	2 hours

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
B. THERMAL POWER > 58% RTP during single recirculation loop operation.	B.1 Reduce THERMAL POWER to $\leq$ 58% RTP.	4 hours
C. Requirements B.2 or B.3 of the LCO not met.	C.1 Satisfy the requirements of the LCO.	24 hours
D. Required Action and associated completion time of Condition A, B, or C not met. <u>OR</u> No recirculation loops in operation.	D.1 Be in MODE 3.	12 hours

SURVEILLANCE REQUIREMENTS

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

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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

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3.4 REACTOR COOLANT SYSTEM (RCS)

3.4.3 Jet Pumps

LC0 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 > 21.6% 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 $\leq 10\%$ from established patterns. b. Recirculation loop drive flow versus total core flow differs by $\leq 10\%$ from established patterns. c. Each jet pump diffuser to lower plenum differential pressure differs by $\leq 20\%$ from established patterns, or each jet pump flow differs by $\leq 10\%$ 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 six S/RVs shall be OPERABLE,

AND

The relief function of five 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.	12 hours
	<u>AND</u>	
	A.2 Be in MODE 4.	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: <table><thead><tr><th><u>Number of S/RVs</u></th><th><u>Setpoint (psig)</u></th></tr></thead><tbody><tr><td>7</td><td>1165 ± 34.9</td></tr><tr><td>5</td><td>1180 ± 35.4</td></tr><tr><td>4</td><td>1190 ± 35.7</td></tr></tbody></table> Following testing, lift settings shall be within ± 1%.	<u>Number of S/RVs</u>	<u>Setpoint (psig)</u>	7	1165 ± 34.9	5	1180 ± 35.4	4	1190 ± 35.7	In accordance with the INSERVICE TESTING PROGRAM
<u>Number of S/RVs</u>	<u>Setpoint (psig)</u>									
7	1165 ± 34.9									
5	1180 ± 35.4									
4	1190 ± 35.7									
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 actuator strokes when manually actuated.	In accordance with the Surveillance Frequency Control Program								

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

(continued)

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

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.4.5.1	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.
-

(continued)

ACTIONS (continued)

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 reactor coolant pressure boundary or 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
	<u>AND</u> 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
	<u>AND</u> B.2 Be in MODE 4.	36 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.4.6.1 -----NOTE----- Not required to be performed in MODE 3. ----- Verify equivalent leakage of each RCS PIV is ≤ 0.5 gpm per nominal inch of valve size up to a maximum of 5 gpm, at an RCS pressure ≥ 1000 psig and ≤ 1025 psig.	In accordance with the 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 monitoring system or drywell 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 24 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. Required drywell atmospheric monitoring system inoperable. <u>AND</u> Drywell air cooler condensate flow rate monitoring system inoperable.	D.1 Restore required drywell atmospheric monitoring system to OPERABLE status. <u>OR</u> D.2 Restore drywell air cooler condensate flow rate monitoring system to OPERABLE status.	30 days 30 days
E. Required Action and associated Completion Time of Condition A, B, C, or D not met.	E.1 Be in MODE 3. <u>AND</u> E.2 Be in MODE 4.	12 hours 36 hours
F. All required leakage detection systems inoperable.	F.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
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 $\leq 0.2 \mu\text{Ci/gm}$.

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 $> 0.2 \mu\text{Ci/gm}$ and $\leq 4.0 \mu\text{Ci/gm}$ DOSE EQUIVALENT I-131.	-----NOTE----- LCO 3.0.4.c is applicable. -----	
	A.1 Determine DOSE EQUIVALENT I-131. <u>AND</u> A.2 Restore DOSE EQUIVALENT I-131 to within limits.	Once per 4 hours 48 hours
B. Required Action and associated Completion Time of Condition A not met. <u>OR</u> Reactor coolant specific activity $> 4.0 \mu\text{Ci/gm}$ DOSE EQUIVALENT I-131.	B.1 Determine DOSE EQUIVALENT I-131. <u>AND</u>	Once per 4 hours
	B.2.1 Isolate all main steam lines.	12 hours
	<u>OR</u> B.2.2.1 Be in MODE 3.	12 hours
	<u>AND</u> B.2.2.2 Be in MODE 4.	36 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.4.8.1 -----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 be removed from operation for up to 2 hours per 8 hour period.
2. One RHR shutdown cooling subsystem may be inoperable for up to 2 hours for 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
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 <u>AND</u> Once per 24 hours thereafter

(continued)

ACTIONS (continued)

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

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.4.9.1	-----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 less than 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 be removed from operation for up to 2 hours per 8 hour period.
 2. One RHR shutdown cooling subsystem may be inoperable for up to 2 hours for the performance of Surveillances.
 3. Both RHR shutdown cooling subsystems and recirculation pumps may be removed from operation during 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 <u>AND</u> 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. <u>AND</u> No recirculation pump in operation.	C.1 Verify reactor coolant circulating by an alternate method. <u>AND</u> C.2 Monitor reactor coolant temperature and pressure.	1 hour from discovery of no reactor coolant circulation <u>AND</u> Once per 12 hours thereafter Once per hour

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.4.10.1 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 limits.

APPLICABILITY: At all times.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. -----NOTE----- Required Action A.2 shall be completed if this Condition is entered. ----- Requirements of the LCO not met in MODES 1, 2, and 3.	A.1 Restore parameter(s) to within limits.	30 minutes
	<u>AND</u> 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
	<u>AND</u> B.2 Be in MODE 4.	36 hours

(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 of Figure 3.4.11-3.	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 during recirculation pump start. ----- Verify the difference between the bottom head coolant temperature and the reactor pressure vessel (RPV) coolant temperature is $\leq 100^{\circ}\text{F}$.	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 $\leq 50^{\circ}\text{F}$.	Once within 15 minutes prior to each startup of a recirculation pump

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE	FREQUENCY
SR 3.4.11.5 -----NOTES----- 1. Only required to be performed when tensioning the reactor vessel head bolting studs. 2. Only required to be met with > 10% of the reactor vessel head bolting studs fully tensioned. ----- Verify reactor vessel flange and head flange temperatures are $\geq 70^{\circ}\text{F}$.	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 $\leq 80^{\circ}\text{F}$ in MODE 4. ----- Verify reactor vessel flange and head flange temperatures are $\geq 70^{\circ}\text{F}$.	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 $\leq 90^{\circ}\text{F}$ in MODE 4. ----- Verify reactor vessel flange and head flange temperatures are $\geq 70^{\circ}\text{F}$.	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 THERMAL POWER $\leq$ 25% of RTP or recirculation loop flow in the operating loop $\leq$ 30% of rated flow. Verify the difference between the bottom head coolant temperature and the RPV coolant temperature is $\leq$ 100°F.	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 THERMAL POWER $\leq$ 25% of RTP or recirculation loop flow in the operating loop $\leq$ 30% of rated flow, and with 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 $\leq$ 50°F.	Once within 15 minutes prior to an increase in THERMAL POWER or an increase in loop flow

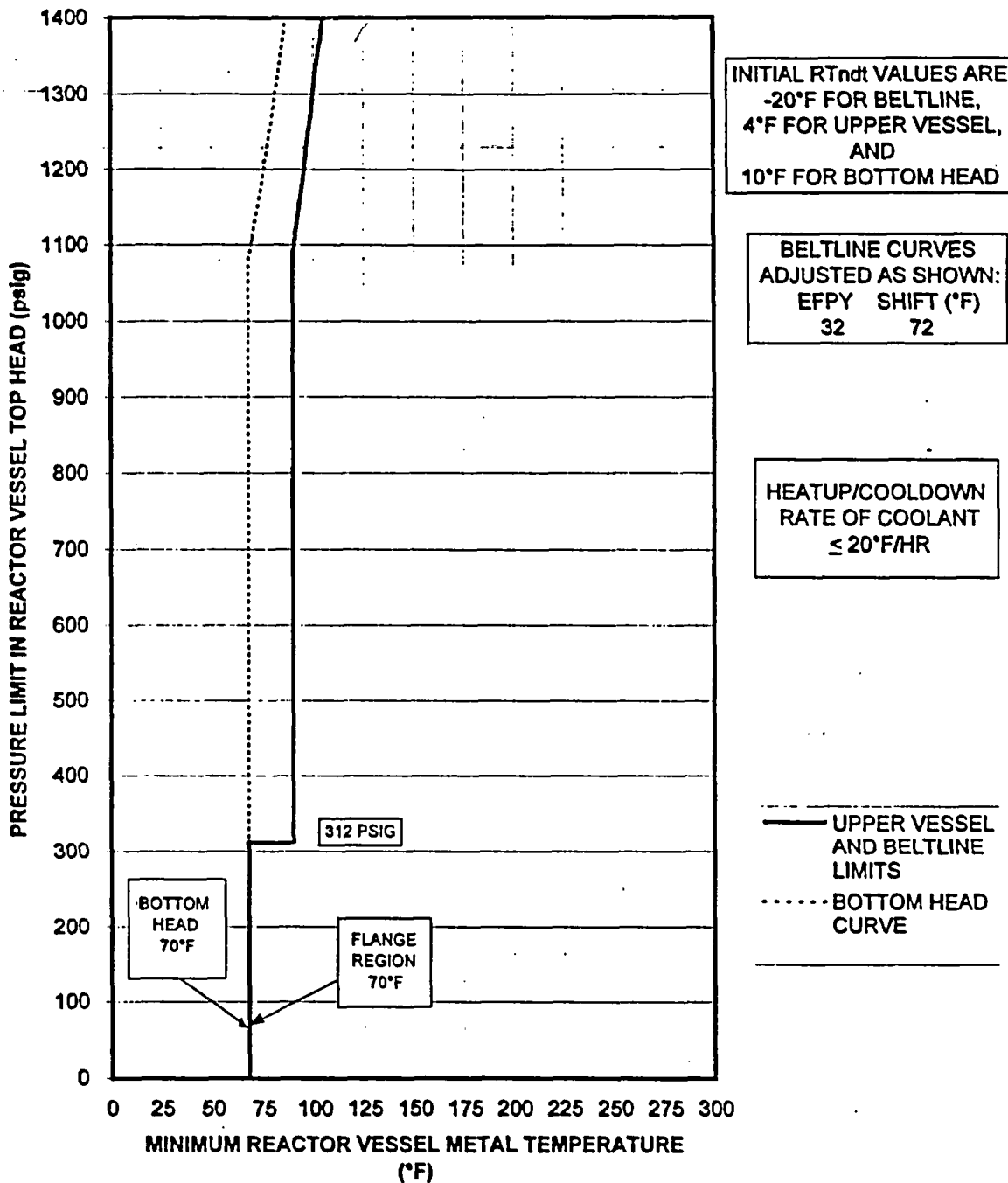


Figure 3.4.11-1
Bottom Head and RCS Composite P/T Curves
for Pressure Tests [Curve A] up to 32 EFPY

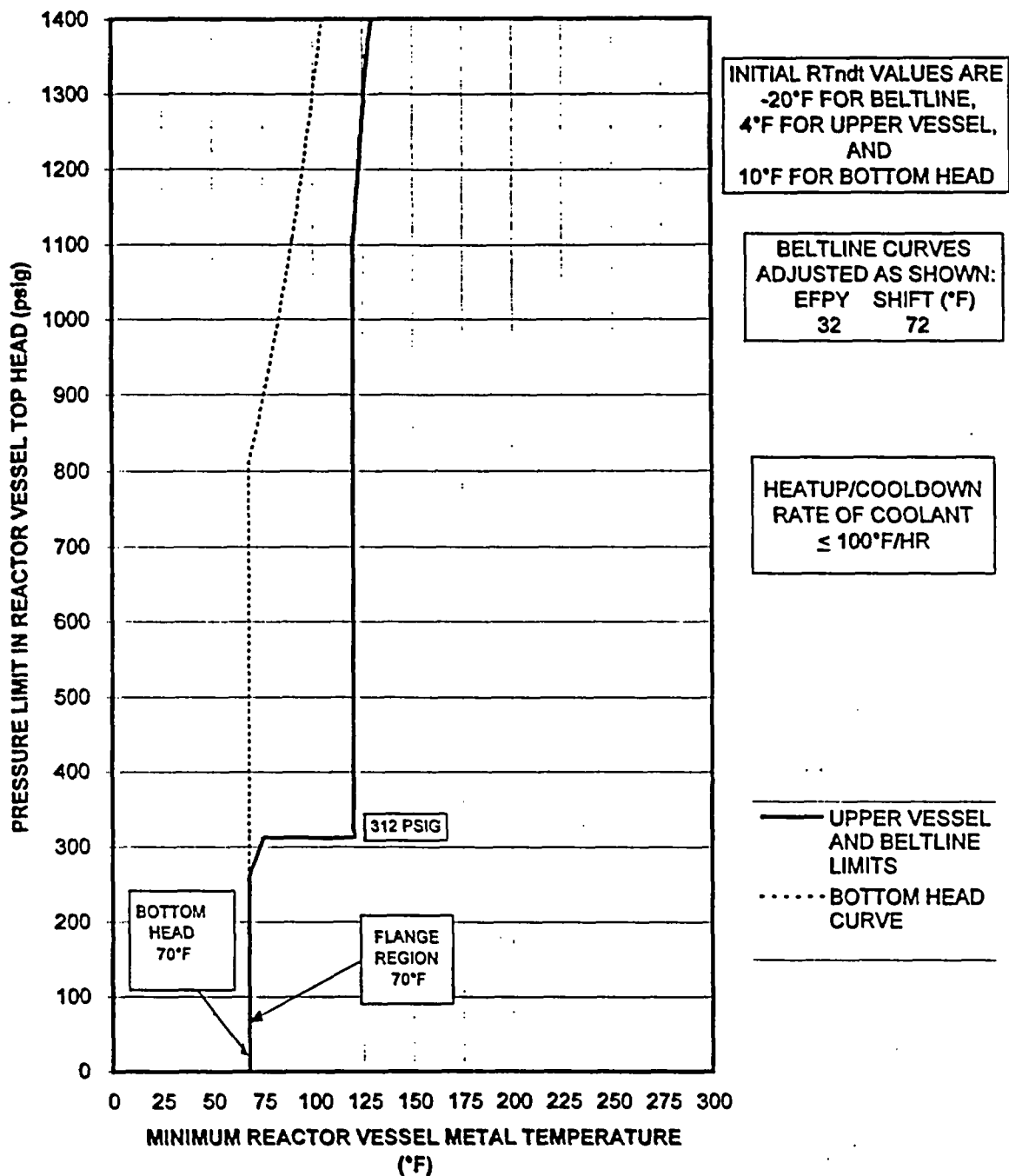


Figure 3.4.11-2
Bottom Head and RCS Composite P/T Curves
for Core Not Critical Operation [Curve B] up to 32 EFPY

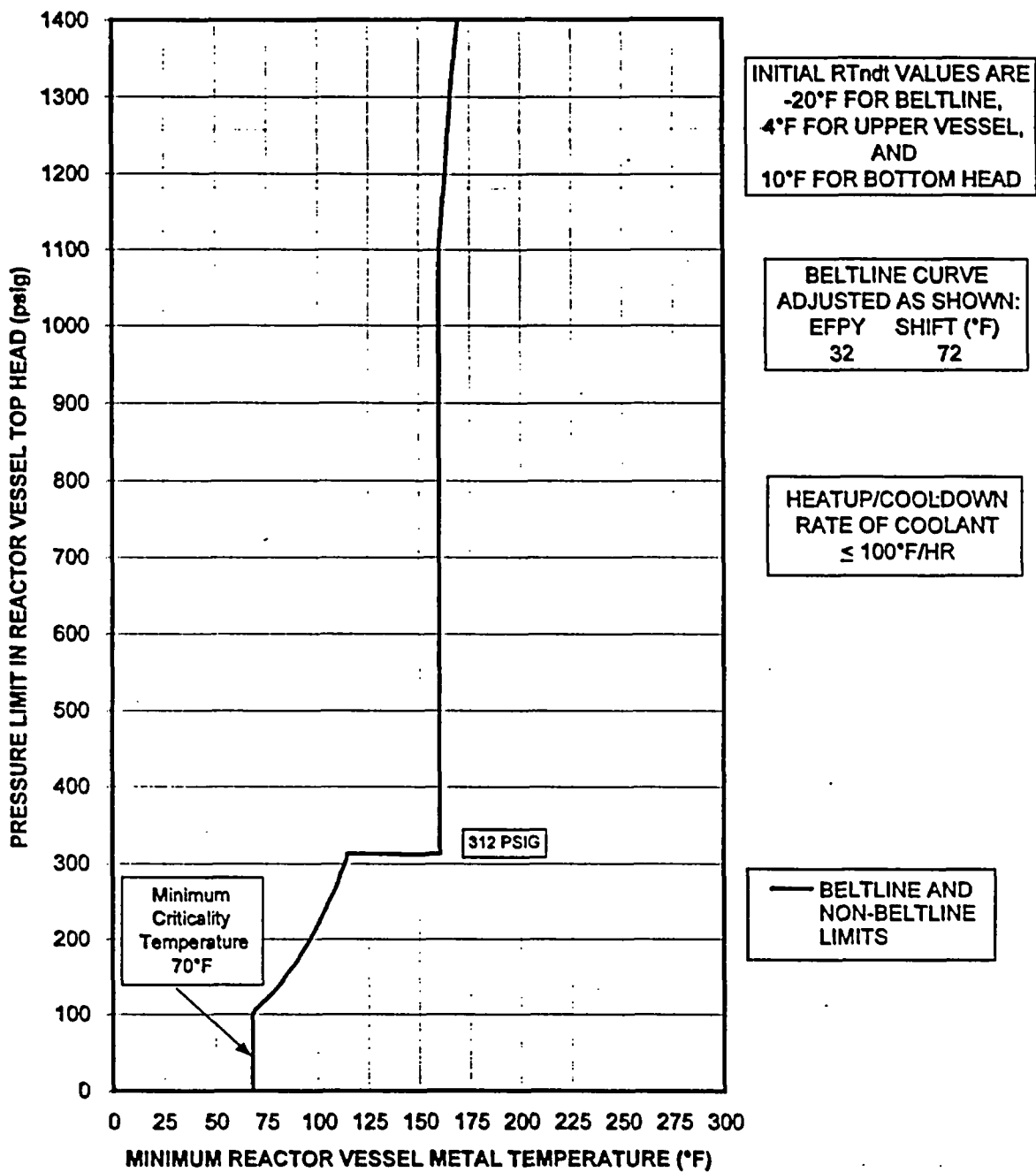


Figure 3.4.11-3
RCS Composite P/T Curves for Core Critical
Operation [Curve C] up to 32 EFPY

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), REACTOR PRESSURE VESSEL (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 seven safety/
relief valves shall be OPERABLE.

-----NOTE-----
One low pressure coolant injection (LPCI) subsystem may be
inoperable during alignment and operation for decay heat
removal with reactor steam dome pressure less than the
residual heat removal cut in permissive pressure.

APPLICABILITY: MODE 1,
MODES 2 and 3, except ADS valves are not required to be
OPERABLE with reactor steam dome pressure $\leq$ 150 psig.

ACTIONS

-----NOTE-----
LCO 3.0.4.b is not applicable to High Pressure Core Spray (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 <u>OR</u> In accordance with the Risk Informed Completion Time Program

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
B. HPCS System inoperable.	B.1 Verify by administrative means RCIC System is OPERABLE when RCIC is required to be OPERABLE.	1 hour
	<u>AND</u> B.2 Restore HPCS System to OPERABLE status.	14 days <u>OR</u> In accordance with the Risk Informed Completion Time Program
C. Two ECCS injection subsystems inoperable. <u>OR</u> One ECCS injection and one ECCS spray subsystem inoperable.	C.1 Restore one ECCS injection/spray subsystem to OPERABLE status.	72 hours <u>OR</u> In accordance with the Risk Informed Completion Time Program
D. Required Action and associated Completion Time of Condition A, B, or C not met.	-----NOTE----- LCO 3.0.4.a is not applicable when entering MODE 3. ----- D.1 Be in MODE 3.	12 hours
E. One ADS valve inoperable.	E.1 Restore ADS valve to OPERABLE status.	14 days <u>OR</u> In accordance with the Risk Informed Completion Time Program

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
F. One ADS valve inoperable. <u>AND</u> One low pressure ECCS injection/spray subsystem inoperable.	F.1 Restore ADS valve to OPERABLE status.	72 hours <u>OR</u> In accordance with the Risk Informed Completion Time Program
	<u>OR</u> F.2 Restore low pressure ECCS injection/spray subsystem to OPERABLE status.	72 hours <u>OR</u> In accordance with the Risk Informed Completion Time Program
G. Two or more ADS valves inoperable. <u>OR</u> Required Action and associated Completion Time of Condition E or F not met.	-----NOTE----- LCO 3.0.4.a is not applicable when entering MODE 3. ----- G.1 Be in MODE 3.	12 hours

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
H. HPCS and Low Pressure Core Spray (LPCS) Systems inoperable. <u>OR</u> Three or more ECCS injection/spray subsystems inoperable. <u>OR</u> HPCS System and one or more ADS valves inoperable. <u>OR</u> 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 ≥ 140 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 pump differential pressure. <table><thead><tr><th><u>SYSTEM</u></th><th><u>FLOW RATE</u></th><th><u>PUMP DIFFERENTIAL PRESSURE</u></th></tr></thead><tbody><tr><td>LPCS</td><td>≥ 5010 gpm</td><td>≥ 290 psid</td></tr><tr><td>LPCI</td><td>≥ 5050 gpm</td><td>≥ 113 psid</td></tr><tr><td>HPCS</td><td>≥ 5010 gpm</td><td>≥ 363 psid</td></tr></tbody></table>	<u>SYSTEM</u>	<u>FLOW RATE</u>	<u>PUMP DIFFERENTIAL PRESSURE</u>	LPCS	≥ 5010 gpm	≥ 290 psid	LPCI	≥ 5050 gpm	≥ 113 psid	HPCS	≥ 5010 gpm	≥ 363 psid	In accordance with the INSERVICE TESTING PROGRAM
<u>SYSTEM</u>	<u>FLOW RATE</u>	<u>PUMP DIFFERENTIAL PRESSURE</u>													
LPCS	≥ 5010 gpm	≥ 290 psid													
LPCI	≥ 5050 gpm	≥ 113 psid													
HPCS	≥ 5010 gpm	≥ 363 psid													

(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 actuator strokes when manually actuated.	In accordance with the Surveillance Frequency Control Program
SR 3.5.1.8	Verify the ECCS RESPONSE TIME for each ECCS injection/spray subsystem is within limits.	In accordance with the Surveillance Frequency Control Program

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

3.5.2 RPV Water Inventory Control

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

AND

One ECCS injection/spray subsystem shall be OPERABLE.

-----NOTE-----
One low pressure coolant injection (LPCI) subsystem may be inoperable during alignment and operation for decay heat removal with reactor steam dome pressure less than the residual heat removal cut in permissive pressure.

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
	<u>AND</u>	
	C.2 Verify each secondary containment penetration flow path is capable of being isolated in less than the DRAIN TIME.	4 hours
	<u>AND</u>	
	C.3 Verify one standby gas treatment (SGT) subsystem is capable of being placed in operation in less than the DRAIN TIME.	4 hours

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
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
	<u>AND</u>	
	D.2 Initiate action to establish secondary containment boundary.	Immediately
	<u>AND</u>	
	D.3 Initiate action to isolate each secondary containment penetration flow path or verify it can be automatically or manually isolated from the control room.	Immediately
	<u>AND</u>	
	D.4 Initiate action to verify one SGT subsystem is capable of being placed in operation.	Immediately

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
E. Required Action and associated Completion Time of Condition C or D not met. <u>OR</u> 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 a required High Pressure Core Spray (HPCS) System, the: a. Suppression pool water level is ≥ 12 ft 8 inches; or b. RCIC storage tank available water volume is $\geq 125,000$ gal.	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 sufficiently filled with water.	In accordance with the Surveillance Frequency Control Program

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE	FREQUENCY
SR 3.5.2.5 -----NOTES----- 1. Operation may be through the test return line. 2. Credit may be taken for normal system operation to satisfy this SR. ----- Operate the required ECCS injection/spray subsystem for ≥ 10 minutes.	In accordance with the Surveillance Frequency Control Program
SR 3.5.2.6 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 3.5.2.7 -----NOTE----- Vessel injection/spray may be excluded. ----- Verify the required ECCS injection/spray subsystem can be manually operated, except for valves that are locked, sealed, or otherwise secured in the actuated position.	In accordance with the Surveillance Frequency Control Program

3.5 EMERGENCY CORE COOLING SYSTEMS (ECCS), REACTOR PRESSURE VESSEL (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 ACTION	COMPLETION TIME
A. RCIC System inoperable.	A.1 Verify by administrative means High Pressure Core Spray System is OPERABLE.	1 hour
	<u>AND</u>	123
	A.2 Restore RCIC System to OPERABLE status.	14 days
		<u>OR</u>
		In accordance with the Risk Informed Completion Time Program
B. Required Action and associated Completion Time not met.	B.1 Be in MODE 3.	12 hours
	<u>AND</u>	
	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 ≥ 920 psig, the RCIC pump can develop a flow rate ≥ 600 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 ≤ 150 psig and ≥ 135 psig, the RCIC pump can develop a flow rate ≥ 600 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

-----NOTE-----
Applicable Conditions and Required Actions are not required to be entered for the Inclined Fuel Transfer System (IFTS) penetration for up to 12 hours per cycle when the IFTS blind flange is unbolted.

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
	<u>AND</u> B.2 Be in MODE 4.	36 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.6.1.1.1 -----NOTE----- The results of SR 3.6.1.1.2 shall be included when evaluating compliance with this limit. ----- Perform required visual examinations and leakage rate testing, except for primary containment air lock testing, in accordance with the Primary Containment Leakage Rate Testing Program.	In accordance with the Primary Containment Leakage Rate Testing Program
SR 3.6.1.1.2 Perform leakage rate testing of Primary Containment Hydrogen Recombiner System outside its containment isolation valves at P_a.	In accordance with the Primary Containment Leakage Rate Testing Program

3.6 CONTAINMENT SYSTEMS

3.6.1.2 Primary Containment Air Locks

LCO 3.6.1.2 Each primary containment air lock shall be OPERABLE.

APPLICABILITY: MODES 1, 2, and 3,

-----NOTE-----
The following Applicability applies only to the upper
containment personnel air lock.

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

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 in MODES 1, 2, and 3.
-

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more required 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. -----	
	A.1 Verify the OPERABLE door is closed in the affected air lock.	1 hour
	<u>AND</u>	
	A.2 Lock the OPERABLE door closed in the affected air lock.	24 hours
	<u>AND</u>	
	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

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
B. One or more required 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. -----	
	B.1 Verify an OPERABLE door is closed in the affected air lock.	1 hour
	<u>AND</u>	
	B.2 Lock an OPERABLE door closed in the affected air lock.	24 hours
	<u>AND</u>	
	B.3 -----NOTE----- Air lock doors in high radiation areas may be verified locked closed by administrative means. ----- Verify an OPERABLE door is locked closed in the affected air lock.	Once per 31 days

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
C. One or more required 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
	<u>AND</u>	
	C.2 Verify a door is closed in the affected air lock.	1 hour
	<u>AND</u>	
	C.3 Restore air lock to OPERABLE status.	24 hours
		<u>OR</u>
		-----NOTE----- Not applicable if leakage exceeds limits or if loss of function. -----
		In accordance with the Risk Informed Completion Time Program
D. Required Action and associated Completion Time of Condition A, B, or C not met in MODE 1, 2, or 3.	D.1 Be in MODE 3.	12 hours
	<u>AND</u>	
	D.2 Be in MODE 4.	36 hours

(continued)

ACTIONS (continued)

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

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.6.1.2.1 -----NOTES----- 1. Only required to be met during MODES 1, 2, and 3. 2. An inoperable air lock door does not invalidate the previous successful performance of the overall air lock leakage test. 3. Results shall be evaluated against acceptance criteria applicable to SR 3.6.1.1.1. ----- Perform required primary containment air lock leakage rate testing in accordance with the Primary Containment Leakage Rate Testing Program.	In accordance with the Primary Containment Leakage Rate Testing Program
SR 3.6.1.2.2 -----NOTE----- Only required to be performed upon entry or exit through the primary containment air lock. ----- Verify only one door in the primary containment air lock can be opened at a time.	In accordance with the Surveillance Frequency Control program

3.6 CONTAINMENT SYSTEMS

3.6.1.3 Primary Containment Isolation Valves (PCIVs)

LCO 3.6.1.3 Each PCIV shall be OPERABLE.

APPLICABILITY: MODES 1, 2, and 3,

-----NOTE-----
The following Applicability applies only to secondary
containment bypass leakage isolation valves.

During CORE ALTERATIONS,
During movement of 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 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.
 5. Not applicable for the Inclined Fuel Transfer System (IFTS) penetration when the associated primary containment blind flange is removed, provided that the fuel building fuel transfer pool water is maintained $\geq$ el. 753 ft., the steam dryer pool to reactor cavity pool gate is installed with the seal inflated and a backup air supply provided, the total time the flange is open does not exceed 40 days per operating cycle, and the IFTS transfer tube drain valve(s) remain(s) closed, except that the IFTS tube drain valve(s) may be opened under administrative controls.

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more penetration flow paths with one PCIV inoperable, except due to leakage not within limit.	A.1 Isolate the affected penetration flow path by use of at least one closed and de-activated automatic valve, closed manual valve, blind flange, or check valve with flow through the valve secured.	4 hours or in accordance with the Risk Informed Completion Time Program except for main steam line and excess flow check valves (EFCVs)
		<u>AND</u>
		8 hours or in accordance with the Risk Informed Completion Time Program for main steam line
		<u>AND</u>
	<u>AND</u>	12 hours or in accordance with the Risk Informed Completion Time Program for EFCVs
		(continued)

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. (continued)	A.2 -----NOTES----- 1. Isolation devices in high radiation areas may be verified by use of administrative means. 2. Isolation devices that are locked, sealed, or otherwise secured may be verified by use of administrative means. ----- Verify the affected penetration flow path is isolated.	Once per 31 days following isolation for isolation devices outside primary containment, drywell, and steam tunnel <u>AND</u> 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

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
B. One or more penetration flow paths with two PCIVs inoperable, except due to leakage not within limit.	B.1 Isolate the affected penetration flow path by use of at least one closed and de-activated automatic valve, closed manual valve, or blind flange.	1 hour
C. 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
	<u>AND</u>	<u>OR</u> In accordance with the Risk Informed Completion Time Program
	D.2 -----NOTES----- 1. Isolation devices in high radiation areas may be verified by use of administrative means. 2. Isolation devices that are locked, sealed, or otherwise secured may be verified by use of administrative means. ----- Verify the affected penetration flow path is isolated.	Once per 31 days following isolation for isolation devices outside primary containment
	<u>AND</u>	<u>AND</u> Prior to entering MODE 2 or 3 from MODE 4 if not performed within the previous 92 days for isolation devices inside primary containment (continued)

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
D. (continued)	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 following isolation
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. <u>AND</u>	12 hours
	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 36 inch primary containment purge valves are open for pressure control, ALARA or air quality considerations for personnel entry. Also not required to be met during Surveillances or special testing on the purge system that requires the valves to be open. The 36 inch primary containment purge lines shall not be opened with a 12 inch primary containment purge line open nor with a drywell vent and purge supply or exhaust line open. ----- Verify each 36 inch primary containment purge valve is closed.	In accordance with the Surveillance Frequency Control program

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE	FREQUENCY
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 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 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

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE	FREQUENCY
SR 3.6.1.3.4 Verify the isolation time of each power operated and each automatic PCIV, except MSIVs, is within limits.	In accordance with the INSERVICE TESTING PROGRAM
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.	Once within 92 days after opening the valve <u>AND</u> In accordance with the Primary Containment Leakage Rate Testing Program
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

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE	FREQUENCY
SR 3.6.1.3.8 -----NOTE----- 1. Leakage through penetrations 1MC-101 and 1MC-102 is excluded. 2. Only required to be met in MODES 1, 2, and 3. ----- Verify the combined leakage rate for all secondary containment bypass leakage paths is $\leq 0.08 L_a$ when pressurized to $\geq P_a$.	In accordance with the Primary Containment Leakage Rate Testing Program
SR 3.6.1.3.9 -----NOTE----- Only required to be met in MODES 1, 2, and 3. ----- Verify the leakage rate through each MSIV leakage path is ≤ 100 scfh when tested at $\geq P_a$ and the combined leakage rate for all MSIV leakage paths is ≤ 200 scfh when tested at $\geq P_a$.	In accordance with the Primary Containment Leakage Rate Testing Program
SR 3.6.1.3.10 -----NOTE----- Only required to be met in MODES 1, 2, and 3. ----- Verify combined leakage rate through hydrostatically tested lines that penetrated the primary containment is within limits.	In accordance with the Primary Containment Leakage Rate Testing Program

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE	FREQUENCY
SR 3.6.1.3.11 -----NOTE----- Only required to be met in MODES 1, 2, and 3. ----- Verify that the combined leakage rate for both primary containment feedwater penetrations is ≤ 1.5 gpm when pressurized to ≥ 1.1 Pa.	In accordance with the Primary Containment Leakage Rate Testing Program.
SR 3.6.1.3.12 Verify each instrumentation line excess flow check primary containment isolation valve actuates within the required range.	In accordance with the Surveillance Frequency Control program

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Amendment No. 107
OCT 3 1996

3.6 CONTAINMENT SYSTEMS

3.6.1.4 Primary Containment Pressure

LCO 3.6.1.4 Primary containment to secondary containment differential pressure shall be ≥ -0.25 psid and ≤ 0.25 psid.

APPLICABILITY: MODES 1, 2, and 3.

ACTIONS

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

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.6.1.4.1 Verify primary containment to secondary containment 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
≤ 122°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. <u>AND</u> B.2 Be in MODE 4.	12 hours 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 five 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 <u>OR</u> In accordance with the Risk Informed Completion Time Program
B. Required Action and associated Completion Time of Condition A not met.	-----NOTE----- LCO 3.0.4.a is not applicable when entering MODE 3. ----- B.1 Be in MODE 3.	 12 hours
C. Two or more LLS valves inoperable.	C.1 Be in MODE 3. <u>AND</u> C.2 Be in MODE 4.	12 hours 36 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.6.1.6.1 -----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 actuator strokes when manually actuated.	In accordance with the Surveillance Frequency Control Program
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.

-----NOTE-----
One RHR containment spray subsystem may be inoperable during alignment and operation for decay heat removal with reactor steam dome pressure less than the residual heat removal cut in permissive pressure.

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 <u>OR</u> In accordance with the Risk Informed Completion Time Program
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.	-----NOTE----- LCO 3.0.4.a is not applicable when entering MODE 3. ----- C.1 Be in MODE 3.	 12 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.6.1.7.1	-----NOTE----- 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 each RHR pump develops a flow rate of ≈ 3800 gpm on recirculation flow through the associated heat exchanger to the suppression pool.	In accordance with the INSERVICE TESTING PROGRAM
SR 3.6.1.7.3	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
SR 3.6.1.7.4	Verify each spray nozzle is unobstructed.	Following activities that could result in nozzle blockage
SR 3.6.1.7.5	Verify RHR containment spray subsystem locations susceptible to gas accumulation are sufficiently filled with water.	In accordance with the Surveillance Frequency Control Program

3.6 CONTAINMENT SYSTEMS

3.6.1.8 (Deleted)

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3.6 CONTAINMENT SYSTEMS

3.6.1.9 Feedwater Leakage Control System (FWLCS)

LCO 3.6.1.9 Two FWLCS subsystems shall be OPERABLE.

-----NOTE-----
One FWLCS subsystem may be inoperable during alignment and operation for decay heat removal with reactor steam dome pressure less than the residual heat removal cut in permissive pressure.

APPLICABILITY: MODES 1, 2, and 3.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One FWLCS subsystem inoperable.	A.1 Restore FWLCS subsystem 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.	-----NOTE----- LCO 3.0.4.a is not applicable when entering MODE 3. ----- C.1 Be in MODE 3.	12 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.6.1.9.1 Perform a system functional test of each FWLCS subsystem.	In accordance with the Surveillance Frequency Control Program

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3.6 CONTAINMENT SYSTEMS

3.6.2.1 Suppression Pool Average Temperature

LC0 3.6.2.1 Suppression pool average temperature shall be:

- a. $\leq 95^{\circ}\text{F}$ when THERMAL POWER $> 1\%$ RTP and no testing that adds heat to the suppression pool is being performed;
- b. $\leq 105^{\circ}\text{F}$ when THERMAL POWER $> 1\%$ RTP and testing that adds heat to the suppression pool is being performed;
and
- c. $\leq 110^{\circ}\text{F}$ when THERMAL POWER $\leq 1\%$ RTP.

APPLICABILITY: MODES 1, 2, and 3.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Suppression pool average temperature $> 95^{\circ}\text{F}$ but $\leq 110^{\circ}\text{F}$. <u>AND</u> THERMAL POWER $> 1\%$ RTP. <u>AND</u> Not performing testing that adds heat to the suppression pool.	A.1 Verify suppression pool average temperature is $\leq 110^{\circ}\text{F}$.	Once per hour
	<u>AND</u> A.2 Restore suppression pool average temperature to $\leq 95^{\circ}\text{F}$.	24 hours
B. Required Action and associated Completion Time of Condition A not met.	B.1 Reduce THERMAL POWER to $\leq 1\%$ RTP.	12 hours

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
C. Suppression pool average temperature > 105°F. <u>AND</u> THERMAL POWER > 1% RTP. <u>AND</u> 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. <u>AND</u> D.2 Verify suppression pool average temperature is ≤ 120°F. <u>AND</u> D.3 Be in MODE 4.	Immediately Once per 30 minutes 36 hours
E. Suppression pool average temperature > 120°F.	E.1 Depressurize the reactor vessel to < 200 psig. <u>AND</u> E.2 Be in MODE 4.	12 hours 36 hours

Suppression Pool Average Temperature
3.6.2.1

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 <u>AND</u> 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:
 a. ≥ 18 ft 11 inches and ≤ 19 ft 5 inches,
 b. ≥ 18 ft 11 inches and ≤ 20 ft 1 inches, in MODE 3 with
 reactor pressure less than 235 psig

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
	<u>AND</u> 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.

-----NOTE-----
One RHR suppression pool cooling subsystem may be inoperable during alignment and operation for decay heat removal with reactor steam dome pressure less than the residual heat removal cut in permissive pressure.

APPLICABILITY: MODES 1, 2, and 3.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One RHR suppression pool cooling subsystem inoperable.	A.1 Restore RHR suppression pool cooling subsystem to OPERABLE status.	7 days <u>OR</u> In accordance with the Risk Informed Completion Time Program
B. Required Action and associated Completion Time of Condition A not met.	-----NOTE----- LCO 3.0.4.a is not applicable when entering MODE 3. ----- B.1 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. <u>AND</u> D.2 Be in MODE 4.	12 hours 36 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.6.2.3.1	Verify each RHR suppression pool cooling subsystem manual, 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 each RHR pump develops a flow rate ≥ 4550 gpm through the associated heat exchanger to the suppression pool.	In accordance with the INSERVICE TESTING PROGRAM
SR 3.6.2.3.3	Verify RHR suppression pool cooling subsystem locations susceptible to gas accumulation are sufficiently filled with water.	In accordance with the Surveillance Frequency Control Program

3.6 CONTAINMENT SYSTEMS

3.6.2.4 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. Combined upper containment pool and suppression pool water levels not within limit.	A.1 Restore upper containment pool and suppression pool water levels 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 <u>OR</u> In accordance with the Risk Informed Completion Time Program
D. Required Action and associated Completion Time not met.	D.1 Be in MODE 3. <u>AND</u> D.2 Be in MODE 4.	12 hours 36 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.6.2.4.1 Verify upper containment pool water level is: a. $\geq$ el. 825 ft 6 inches; b. $\geq$ el. 825 ft 10 inches when the inclined fuel transfer pool to steam dryer storage pool gate is not open; and c. $\geq$ el. 827 ft 1 inch when the reactor cavity to steam dryer storage pool gate is not open. <u>OR</u> d. Reactor cavity pool level $\geq$ el. 824 ft 7 inches in MODE 3 with reactor pressure less than 235 psig. <u>OR</u> e. Suppression pool water level $\geq$ 19 ft 9 inches in MODE 3 with reactor pressure less than 235 psig.	In accordance with the Surveillance Frequency Control Program
SR 3.6.2.4.2 Verify upper containment pool water temperature is $\leq 120^{\circ}\text{F}$.	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----- 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

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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
	<u>AND</u> B.2 Restore one primary containment and drywell hydrogen igniter division to OPERABLE status.	7 days

(continued)

Primary Containment and Drywell Hydrogen Igniters
3.6.3.2

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 $\geq 1700^{\circ}\text{F}$ surface temperature.	In accordance with the Surveillance Frequency Control Program

(continued)

Primary Containment and Drywell Hydrogen Igniters
3.6.3.2

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.6.3.2.4	Verify each required igniter in accessible areas develops a surface temperature of $\geq 1700^{\circ}\text{F}$.	In accordance with the Surveillance Frequency Control Program

3.6 CONTAINMENT SYSTEMS

3.6.3.3 Containment/Drywell Hydrogen Mixing Systems

LCO 3.6.3.3 Two Containment/Drywell Hydrogen Mixing Systems shall be OPERABLE.

APPLICABILITY: MODES 1 and 2.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One Containment/Drywell Hydrogen Mixing System inoperable.	A.1 Restore Containment/Drywell Hydrogen Mixing System to OPERABLE status.	30 days
B. Two Containment/Drywell Hydrogen Mixing Systems inoperable.	B.1 Verify by administrative means that the hydrogen control function is maintained.	1 hour
	<u>AND</u> B.2 Restore one Containment/Drywell Hydrogen Mixing System 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	Operate each Containment/Drywell Hydrogen Mixing System.	In accordance with the Surveillance Frequency Control Program
SR 3.6.3.3.2	Verify each Containment/Drywell Hydrogen Mixing System flow rate is ≥ 800 scfm.	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.	-----NOTE----- LCO 3.0.4.a is not applicable when entering MODE 3. ----- B.1 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 -----NOTE----- Not required to be met for 4 hours if analysis demonstrates one standby gas treatment (SGT) subsystem is capable of establishing the required secondary containment vacuum. ----- Verify secondary containment vacuum is ≥ 0.25 inch of vacuum water gauge.	In accordance with the Surveillance Frequency Control Program
SR 3.6.4.1.2 Verify all secondary containment equipment hatches are closed and sealed.	In accordance with the Surveillance Frequency Control Program

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.6.4.1.3	Verify one door in each access to secondary containment is closed, except during normal entry and exit.	In accordance with the Surveillance Frequency Control Program
SR 3.6.4.1.4	Verify the secondary containment can be drawn down to ≥ 0.25 inch of vacuum water gauge within the time required using one SGT subsystem.	In accordance with the Surveillance Frequency Control Program
SR 3.6.4.1.5	Verify the secondary containment can be maintained ≥ 0.25 inch of vacuum water gauge for 1 hour using one SGT subsystem at a flow rate ≤ 4400 cfm.	In accordance with the Surveillance Frequency Control Program

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3.6 CONTAINMENT SYSTEMS

3.6.4.2 Secondary Containment Isolation Dampers (SCIDs)

LCO 3.6.4.2 Each SCID 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 SCIDs.
-

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more penetration flow paths with one SCID inoperable.	A.1 Isolate the affected penetration flow path by use of at least one closed and de-activated automatic damper, closed manual valve or damper, or blind flange.	8 hours
	<u>AND</u> A.2 -----NOTES----- 1. Isolation devices in high radiation areas may be verified by use of administrative means. 2. Isolation devices that are locked, sealed, or otherwise secured may be verified by use of administrative means. ----- Verify the affected penetration flow path is isolated.	Once per 31 days
B. One or more penetration flow paths with two SCIDs inoperable.	B.1 Isolate the affected penetration flow path by use of at least one closed and de-activated automatic 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
	<u>AND</u> 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, and blind flanges in high radiation areas may be verified by use of administrative means. 2. Not required to be met for SCIDs that are open under administrative controls. ----- Verify each secondary containment isolation manual valve, damper, 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 and each automatic SCID is within limits.	In accordance with the Surveillance Frequency Control Program
SR 3.6.4.2.3 Verify each automatic SCID 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.	-----NOTE----- LCO 3.0.4.a is not applicable when entering MODE 3. ----- B.1 Be in MODE 3.	12 hours

(continued)

ACTIONS (continued)

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

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
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 $\approx$ 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 actuated position.	In accordance with the Surveillance Frequency Control Program
SR 3.6.4.3.4	Verify each SGT filter cooling bypass damper can be opened and the fan started, except for dampers that are locked, sealed, or otherwise secured in the actuated position.	In accordance with the Surveillance Frequency Control Program

3.6 CONTAINMENT SYSTEMS

3.6.5.1 Drywell

LC0 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.	12 hours
	<u>AND</u> B.2 Be in MODE 4.	36 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.6.5.1.1 Perform leakage rate test for each drywell air lock door seal by pressurizing the gap between the door seals to ≥ 3.0 psig.	Once within 72 hours after each drywell air lock door closing

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE	FREQUENCY
SR 3.6.5.1.2 -----NOTE----- An inoperable air lock door does not invalidate the previous successful performance of the overall drywell air lock leakage rate test. ----- Perform overall drywell air lock leakage rate test at ≥ 3.0 psig.	In accordance with the Surveillance Frequency Control Program

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE	FREQUENCY
SR 3.6.5.1.3 Verify bypass leakage is less than or equal to the bypass leakage limit. However, during the first unit startup following bypass leakage testing performed in accordance with this SR, the acceptance criterion is $\leq 10\%$ of the drywell bypass leakage limit.	24 months following 2 consecutive tests with bypass leakage greater than the bypass leakage limit until 2 consecutive tests are less than or equal to the bypass leakage limit <u>AND</u> 48 months following a test with bypass leakage greater than the bypass leakage limit <u>AND</u> -----NOTE----- SR 3.0.2 is not applicable for extensions > 12 months. ----- In accordance with the Surveillance Frequency Control Program

(continued)

SURVEILLANCE REQUIREMENTS (continued)

Drywell
3.6.5.1

SURVEILLANCE		FREQUENCY
SR 3.6.5.1.4	Visually inspect the exposed accessible interior and exterior surfaces of the drywell.	Once prior to each Type A test required by SR 3.6.1.1.1.

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.

(continued)

ACTIONS (continued)

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.	1 hour
	<u>AND</u>	
	A.2 Lock the OPERABLE door closed.	24 hours
	<u>AND</u>	
	A.3 Verify by administrative means the OPERABLE door is locked closed.	Once per 31 days

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
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.	1 hour
	<u>AND</u>	
	B.2 Lock an OPERABLE door closed.	24 hours
	<u>AND</u>	
	B.3 Verify by administrative means an OPERABLE door is locked closed.	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
	<u>AND</u> C.2 Restore air lock to OPERABLE status.	24 hours <u>OR</u> -----NOTE----- Not applicable if leakage exceeds limits or if loss of function. ----- In accordance with the Risk Informed Completion Time Program
D. Required Action and associated Completion Time not met.	D.1 Be in MODE 3.	12 hours
	<u>AND</u> 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 One drywell isolation valve in each drywell penetration flow path shall be OPERABLE, except for the drywell vent and purge penetrations in which two drywell isolation valves shall be OPERABLE.

-----NOTE-----
This LCO does not apply to OPERABILITY of Drywell Post-LOCA Vacuum Relief System valves.

APPLICABILITY: MODES 1, 2, and 3.

ACTIONS

- NOTES-----
1. Penetration flow paths, except the 10 inch, 24 inch, and 36 inch drywell vent and purge 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.
-

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more penetration flow paths with one required 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.	8 hours <u>OR</u> In accordance with the Risk Informed Completion Time Program
	<u>AND</u> A.2 -----NOTES----- 1. Isolation devices in high radiation areas may be verified by use of administrative means. 2. Isolation devices that are locked, sealed, or otherwise secured may be verified by use of administrative means. ----- Verify the affected penetration flow path is isolated.	Prior to entering MODE 2 or 3 from MODE 4, if not performed within the previous 92 days

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
B. -----NOTE----- Only applicable to drywell vent and purge penetration flow paths. ----- 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. <u>AND</u> C.2 Be in MODE 4.	12 hours 36 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.6.5.3.1 Verify each 24 inch drywell vent and purge supply isolation valve is sealed closed.	In accordance with the Surveillance Frequency Control Program
SR 3.6.5.3.2 -----NOTE----- Not required to be met when the 36 inch and either the 10 inch or 24 inch drywell vent and purge exhaust valves are open for pressure control, ALARA or air quality considerations for personnel entry. Also not required to be met during Surveillances or special testing of the purge system that requires the valves to be open. The drywell vent and purge exhaust valves shall not be opened with a 12 inch or 36 inch primary containment purge system supply or exhaust line open. ----- Verify each 10 inch, 24 inch, and 36 inch drywell vent and purge exhaust isolation valve is closed.	In accordance with the Surveillance Frequency Control Program

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE	FREQUENCY
SR 3.6.5.3.3 -----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 drywell isolation valves that are open under administrative controls. ----- Verify each required 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
SR 3.6.5.3.4 Verify the isolation time of each required power operated and each required automatic drywell isolation valve is within limits.	In accordance with the INSERVICE TESTING PROGRAM
SR 3.6.5.3.5 Verify each required 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 ≥ -0.2 psid and ≤ 1.0 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.	12 hours
	<u>AND</u> B.2 Be in MODE 4.	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 $\leq 150^{\circ}\text{F}$.

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
	<u>AND</u> 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 Post-LOCA Vacuum Relief System

LCO 3.6.5.6 Four drywell post-LOCA 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 drywell post-LOCA vacuum relief subsystem(s) result in exceeding overall drywell bypass leakage rate acceptance criteria.

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

(continued)

Drywell Post-LOCA Vacuum Relief System
3.6.5.6

ACTIONS (continued)

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

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.6.5.6.1 -----NOTES----- 1. Not required to be met for drywell post-LOCA vacuum relief valves open during Surveillances. 2. Not required to be met for drywell post-LOCA vacuum relief valves open when performing their intended function. ----- Verify each drywell post-LOCA vacuum relief valve is closed.	In accordance with the Surveillance Frequency Control program
SR 3.6.5.6.2 Perform a functional test of each drywell post-LOCA vacuum relief valve.	In accordance with the Surveillance Frequency Control program
SR 3.6.5.6.3 Verify the opening pressure differential of each drywell post-LOCA vacuum relief valve is ≤ 0.2 psid.	In accordance with the Surveillance Frequency Control Program

3.7 PLANT SYSTEMS

3.7.1 Division 1 and 2 Shutdown Service Water (SX) Subsystems and Ultimate Heat Sink (UHS)

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

APPLICABILITY: MODES 1, 2, and 3.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. UHS water volume not within limit	A.1 Restore UHS water volume to within limit.	90 days
-----NOTE----- Not applicable during replacement of Division 2 SX pump during the Division 2 SX system outage window from October 26 through November 8, 2015. ----- B. Division 1 or 2 SX subsystem inoperable.	-----NOTES----- 1. Enter applicable Conditions and Required Actions of LCO 3.8.1, "AC Sources-Operating," for diesel generator made inoperable by SX. 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 SX. ----- B.1 Restore SX subsystem to OPERABLE status.	72 hours OR In accordance with the Risk Informed Completion Time Program

(continued)

Division 1 and 2 SX Subsystems and UHS
3.7.1

Actions (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
-----NOTE----- Only applicable during replacement of Division 2 SX pump during the Division 2 SX system outage window from October 26 through November 8, 2015. ----- C. Division 2 SX subsystem inoperable.	-----NOTES----- 1. Enter applicable Conditions and Required Actions of LCO 3.8.1, "AC Sources—Operating," for diesel generator made inoperable by SX. 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 SX. ----- C.1 Restore Division 2 SX subsystem to OPERABLE status.	7 Days
D. Required Action and associated Completion Time of Condition B or C not met.	-----NOTE----- LCO 3.0.4.a is not applicable when entering MODE 3. ----- D.1 Be in MODE 3.	12 hours
E. Required Action and associated Completion Time of Condition A not met. <u>OR</u> Division 1 and 2 SX subsystems inoperable.	E.1 Be in MODE 3. <u>AND</u> E.2 Be in MODE 4.	12 hours 36 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.7.1.1	Verify UHS water volume is $\approx$ 593 acre-ft.	In accordance with UHS Erosion, Sediment Monitoring, and Dredging Program
SR 3.7.1.2	Verify each required SX 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 3.7.1.3	Verify each SX 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

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3.7 PLANT SYSTEMS

3.7.2 Division 3 Shutdown Service Water (SX) Subsystem

LCO 3.7.2 The Division 3 SX subsystem shall be OPERABLE.

APPLICABILITY: MODES 1, 2, and 3.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Division 3 SX subsystem inoperable.	A.1 Declare High Pressure Core Spray System inoperable.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.7.2.1	Verify each required Division 3 SX 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 3.7.2.2	Verify the Division 3 SX 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 SYSTEM

3.7.3 Control Room Ventilation System

LCO 3.7.3 Two Control Room Ventilation subsystems shall be OPERABLE.

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

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

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One Control Room Ventilation subsystem inoperable for reasons other than Condition C.	A.1 Restore Control Room Ventilation subsystem to OPERABLE status.	7 days
B. Required Action and associated Completion Time of Condition A not met in MODE 1, 2, or 3.	-----NOTE----- LCO 3.0.4.a is not applicable when entering MODE 3. ----- B.1 Be in MODE 3.	12 hours
C. One or more Control Room Ventilation subsystems inoperable due to inoperable CRE boundary in MODE 1, 2, or 3.	C.1 Initiate action to implement mitigating actions. <u>AND</u> C.2 Verify mitigating actions ensure CRE occupant exposures to radiological, chemical, and smoke hazards will not exceed limits. <u>AND</u> C.3 Restore CRE boundary to OPERABLE status.	Immediately 24 hours 90 days

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
D. Required Action and Associated Completion Time of Condition C not met in MODE 1, 2, or 3.	D.1 Be in MODE 3.	12 hours
	<u>AND</u>	
	D.2 Be in MODE 4.	36 hours
E. Required Action and associated Completion Time of Condition A not met during movement of irradiated fuel assemblies in the primary or secondary containment, or during CORE ALTERATIONS.	-----NOTE----- LCO 3.0.3 is not applicable. -----	
	E.1 Place OPERABLE Control Room Ventilation subsystem in high radiation mode.	Immediately
	<u>OR</u>	
	E.2.1 Suspend movement of irradiated fuel assemblies in the primary and secondary containment.	Immediately
	<u>AND</u>	
	E.2.2 Suspend CORE ALTERATIONS.	Immediately
F. Two Control Room Ventilation subsystems inoperable in MODE 1, 2, or 3 for reasons other than Condition C.	-----NOTE----- LCO 3.0.4.a is not applicable when entering MODE 3. -----	
	F.1 Be in MODE 3.	12 hours

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
G. Two Control Room Ventilation subsystems inoperable during movement of irradiated fuel assemblies in the primary or secondary containment, or during CORE ALTERATIONS.	G.1 Suspend movement of irradiated fuel assemblies in the primary and secondary containment.	Immediately
<u>AND</u>		
<u>OR</u> One or more Control Room Ventilation subsystems inoperable due to inoperable CRE boundary during movement of irradiated fuel assemblies in the primary or secondary containment, or during CORE ALTERATIONS.	G.2 Suspend CORE ALTERATIONS.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.7.3.1 Operate each Control Room Ventilation subsystem with flow through the makeup filter for ≥ 15 continuous minutes with the heaters operating.	In accordance with the Surveillance Frequency Control Program
SR 3.7.3.2 Operate each Control Room Ventilation subsystem with flow through the recirculation filter for ≥ 15 minutes.	In accordance with the Surveillance Frequency Control Program

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.7.3.3	Perform required Control Room Ventilation filter testing in accordance with the Ventilation Filter Testing Program (VFTP).	In accordance with the VFTP
SR 3.7.3.4	Verify each Control Room Ventilation 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 3.7.3.5	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,
During movement of irradiated fuel assemblies in the primary
or secondary containment,
During CORE ALTERATIONS.

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 $\leq 86^{\circ}\text{F}$. <u>AND</u> 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.	-----NOTE----- LCO 3.0.4.a is not applicable when entering MODE 3. ----- C.1 Be in MODE 3.	12 hours

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
D. Required Action and associated Completion Time of Condition A not met during movement of irradiated fuel assemblies in the primary or secondary containment, or during CORE ALTERATIONS.	-----NOTE----- LCO 3.0.3 is not applicable. -----	
	D.1 Place OPERABLE control room AC subsystem in operation.	Immediately
	<u>OR</u>	
	D.2.1 Suspend movement of irradiated fuel assemblies in the primary and secondary containment.	Immediately
	<u>AND</u>	
	D.2.2 Suspend CORE ALTERATIONS.	Immediately

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
E. Required Action and associated Completion Time of Condition B not met during movement of irradiated fuel assemblies in the primary or secondary containment, or during CORE ALTERATIONS.	-----NOTE----- LCO 3.0.3 is not applicable. -----	
	E.1 Suspend movement of irradiated fuel assemblies in the primary and secondary containment.	Immediately
	<u>AND</u> E.2 Suspend CORE ALTERATIONS.	Immediately

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 radioactivity rate of the noble gases measured at the offgas recombiner effluent shall be ≤ 289 mCi/second after decay of 30 minutes.

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

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Radioactivity rate of the noble gases not within limit.	A.1 Restore radioactivity rate of the noble gases to within limit.	72 hours
B. Required Action and associated Completion Time not met.	B.1 Isolate all main steam lines.	12 hours
	<u>OR</u>	
	B.2 Isolate SJAE.	12 hours
	<u>OR</u>	
	-----NOTE----- LCO 3.0.4.a is not applicable when entering MODE 3. -----	
	B.3 Be in MODE 3.	12 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.7.5.1 Verify the radioactivity rate of the noble gases is ≤ 289 mCi/second after decay of 30 minutes.	Once within 4 hours after a $\geq 50\%$ 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 main steam line not isolated and SJAE in operation. ----- Verify the radioactivity rate of the noble gases is ≤ 289 mCi/second after decay of 30 minutes.	In accordance with the Surveillance Frequency Control Program

3.7 PLANT SYSTEMS

3.7.6 Main Turbine Bypass System

LCO 3.7.6 The Main Turbine Bypass System shall be OPERABLE.

OR

The following limits are made applicable:

- a. Reactor THERMAL POWER limit for an inoperable Main Turbine Bypass System as specified in the COLR; and
- b. LCS 3.2.2, "MINIMUM CRITICAL POWER RATIO (MCPR)," limit for an inoperable Main Turbine Bypass System as specified in the COLR; and
- c. LCO 3.2.3, "LINEAR HEAT GENERATION RATE (LHGR)," limit for an inoperable Main Turbine Bypass System as specified in the COLR.

APPLICABILITY: THERMAL POWER $\geq$ 21.6% RTP.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Requirements of the LCO not met.	A.1 Satisfy the requirements of the LCO.	2 hours <u>OR</u> In accordance with the Risk Informed Completion Time Program
B. Required Action and associated Completion Time not met.	B.1 Reduce THERMAL POWER to < 21.6% RTP.	4 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.7.6.1	Verify one complete cycle of each main turbine bypass valve.	In accordance with the Surveillance Frequency Control Program
SR 3.7.6.2	Perform a system functional test.	In accordance with the Surveillance Frequency Control Program
SR 3.7.6.3	Verify the TURBINE BYPASS SYSTEM RESPONSE TIME is within limits.	In accordance with the Surveillance Frequency Control Program

3.7 PLANT SYSTEMS

3.7.7 Fuel Pool Water Level

LCO 3.7.7 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 3.7.7.1 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

3.8 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; and
- b. Three diesel generators (DGs).

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 offsite circuit inoperable.	A.1 Perform SR 3.8.1.1 for OPERABLE offsite circuit.	1 hour
		<u>AND</u>
		Once per 8 hours thereafter
	<u>AND</u>	
	A.2 Restore offsite circuit to OPERABLE status.	72 hours
		<u>OR</u>
		In accordance with the Risk Informed Completion Time Program

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
B. One required DG inoperable.	B.1 Perform SR 3.8.1.1 for OPERABLE offsite circuit(s).	1 hour <u>AND</u> Once per 8 hours thereafter
	<u>AND</u>	
	B.2 Declare required feature(s), supported by the inoperable 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)
	<u>AND</u>	
	B.3.1 Determine OPERABLE DG(s) are not inoperable due to common cause failure.	24 hours
	<u>OR</u>	
	B.3.2 Perform SR 3.8.1.2 for OPERABLE DG(s).	24 hours
	<u>AND</u>	
		(continued)

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
B. (continued)	B.4 Restore required DG to OPERABLE status.	72 hours or in accordance with the Risk Informed Completion Time Program from discovery of an inoperable Division 3 DG <u>AND</u> 14 days or in accordance with the Risk Informed Completion Time Program
C. Two offsite circuits inoperable.	C.1 Declare required feature(s) inoperable when the redundant required feature(s) are inoperable. <u>AND</u> C.2 Restore one offsite circuit to OPERABLE status.	12 hours from discovery of Condition C concurrent with inoperability of redundant required feature(s) 24 hours <u>OR</u> In accordance with the Risk Informed Completion Time Program

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
D. One offsite circuit inoperable. <u>AND</u> One required DG inoperable.	D.1 Restore offsite circuit to OPERABLE status.	12 hours <u>OR</u> In accordance with the Risk Informed Completion Time Program
	<u>OR</u> D.2 Restore required DG to OPERABLE status.	12 hours <u>OR</u> In accordance with the Risk Informed Completion Time Program
E. Two required DGs inoperable.	E.1 Restore one required DG to OPERABLE status.	2 hours <u>OR</u> 24 hours if Division 3 DG is inoperable
F. Required Action and Associated Completion Time of Condition A, B, C, D, or E not met.	-----NOTE----- LCO 3.0.4.a is not applicable when entering MODE 3. ----- F.1 Be in MODE 3.	 12 hours
G. Three or more required AC sources inoperable.	G.1 Enter LCO 3.0.3.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.8.1.1	Verify correct breaker alignment and indicated power availability for each offsite circuit.	In accordance with the Surveillance Frequency Control Program
SR 3.8.1.2	-----NOTES----- - Performance of SR 3.8.1.7 satisfies this SR. - All DG starts may be preceded by an engine prelube period and followed by a warmup period prior to loading. - 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 3.8.1.7 must be met. ----- Verify each DG starts from standby conditions and achieves steady state voltage ≥ 4084 V and ≤ 4300 V and frequency ≥ 58.8 Hz and ≤ 61.2 Hz.	In accordance with the Surveillance Frequency Control Program
SR 3.8.1.3	-----NOTES----- - DG loadings may include gradual loading as recommended by the manufacturer. - Momentary transients outside the load range do not invalidate this test. - This Surveillance shall be conducted on only one DG at a time. - This SR shall be preceded by, and immediately follow, without shutdown, a successful performance of SR 3.8.1.2 or SR 3.8.1.7. ----- Verify each DG operates for ≥ 60 minutes at a load ≥ 3482 kW for DG 1A, ≥ 3488 kW for DG 1B, and ≥ 1980 kW for DG 1C.	In accordance with the Surveillance Frequency Control Program

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.8.1.4	Verify each day tank contains ≥ 385 gal of fuel oil for DG 1A and DG 1B and ≥ 240 gal for DG 1C.	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	-----NOTE----- All DG starts may be preceded by an engine prelube period. ----- Verify each DG starts from standby condition and achieves: a. In ≤ 12 seconds, voltage ≥ 4084 V and frequency ≥ 58.8 Hz; and b. Steady state voltage ≥ 4084 V and ≤ 4300 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 3.8.1.8 -----NOTE----- This Surveillance shall not be performed in MODE 1 or 2 (not applicable to Division 3 AC sources). However, credit may be taken for unplanned events that satisfy this SR. ----- Verify automatic and manual transfer of unit power supply from the normal offsite circuit to the alternate offsite circuit.	In accordance with the Surveillance Frequency Control Program
SR 3.8.1.9 -----NOTE----- 1. Credit may be taken for unplanned events that satisfy this SR. 2. If performed with DG synchronized with offsite power, it shall be performed at a power factor ≤ 0.9. ----- Verify each DG rejects a load greater than or equal to its associated single largest post accident load and following load rejection, the engine speed is maintained less than nominal plus 75% of the difference between nominal speed and the overspeed trip setpoint or 15% above nominal, whichever is lower.	In accordance with the Surveillance Frequency Control Program
SR 3.8.1.10 -----NOTE----- Credit may be taken for unplanned events that satisfy this SR. ----- Verify each DG operating at a power factor ≤ 0.9 does not trip and voltage is maintained ≤ 5000 V for DG 1A and DG 1B and ≤ 5824 V for DG 1C during and following a load rejection of a load ≥ 3482 kW for DG 1A, ≥ 3488 kW for DG 1B, and ≥ 1980 kW for DG 1C.	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 the Division 3 DG). 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 ≤ 12 seconds, 2. energizes auto-connected shutdown loads, 3. maintains steady state voltage ≥ 4084 V and ≤ 4300 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 the Division 3 DG). 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 ≤ 12 seconds after auto-start and during tests, achieves voltage ≥ 4084 V and frequency ≥ 58.8 Hz; b. Achieves steady state voltage ≥ 4084 V and ≤ 4300 V and frequency ≥ 58.8 Hz and ≤ 61.2 Hz; and c. Operates for ≥ 5 minutes.	In accordance with the Surveillance Frequency Control Program
SR 3.8.1.13 -----NOTE----- Credit may be taken for unplanned events that satisfy this SR. ----- Verify each DG's automatic trips are bypassed on an actual or simulated ECCS initiation signal except: a. Engine overspeed; b. Generator differential current; and c. Overcrank for DG 1A and DG 1B.	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. ----- Verify each DG operating at a power factor ≤ 0.9 operates for ≥ 24 hours: a. For ≥ 2 hours loaded ≥ 4062 kW for DG 1A, ≥ 4069 kW for DG 1B, and ≥ 2310 kW for DG 1C; and b. For the remaining hours of the test loaded ≥ 3482 kW for DG 1A, ≥ 3488 kW for DG 1B, and ≥ 1980 kW for DG 1C.	In accordance with the Surveillance Frequency Control Program

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE	FREQUENCY
SR 3.8.1.15 -----NOTE----- 1. This Surveillance shall be performed within 5 minutes of shutting down the DG after the DG has operated ≥ 2 hours loaded ≥ 3482 kW for DG 1A, ≥ 3488 kW for DG 1B, and ≥ 1980 kW for DG 1C. 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 ≤ 12 seconds, voltage ≥ 4084 V and frequency ≥ 58.8 Hz and b. Steady state voltage ≥ 4084 V and ≤ 4580 V and frequency ≥ 58.8 Hz and ≤ 61.2 Hz.	24 months

(continued)

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Amendment No. 120
JAN 20 1999

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE	FREQUENCY
SR 3.8.1.15 -----NOTE----- 1. This Surveillance shall be performed within 5 minutes of shutting down the DG after the DG has operated ≥ 2 hours loaded ≥ 3482 kW for DG 1A, ≥ 3488 kW for DG 1B, and ≥ 1980 kW for DG 1C. 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 ≤ 12 seconds, voltage ≥ 4084 V and frequency ≥ 58.8 Hz and b. Steady state voltage ≥ 4084 V and ≤ 4300 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 the Division 3 DG). 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
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

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE	FREQUENCY
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 the sequence time is within $\pm 10\%$ of design for each load sequence timer.	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 the Division 3 DG). 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 ≤ 12 seconds, 2. energizes auto-connected emergency loads, 3. achieves steady state voltage ≥ 4084 V and ≤ 4300 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 ≤ 12 seconds, voltage ≥ 4084 V and frequency ≥ 58.8 Hz; and b. Steady state voltage ≥ 4084 V and ≤ 4300 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 3.8.10, "Distribution Systems—Shutdown";
- 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 3.8.10; 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 AC 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 High Pressure Core Spray System is OPERABLE for compliance with LCO 3.5.2, "RPV Water Inventory Control."

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

ACTIONS

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

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. LCO Item a not met.	-----NOTE----- Enter applicable Condition and Required Actions of LCO 3.8.10, 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
	<u>OR</u>	
	A.2.1 Suspend CORE ALTERATIONS.	Immediately
	<u>AND</u>	
	A.2.2 Suspend movement of irradiated fuel assemblies in the primary and secondary containment.	Immediately
	<u>AND</u>	
	A.2.3 Initiate action to restore required offsite power circuit to OPERABLE status.	Immediately

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
B. LCO Item b not met.	B.1 Suspend CORE ALTERATIONS.	Immediately
	<u>AND</u>	
	B.2 Suspend movement of irradiated fuel assemblies in primary and secondary containment.	Immediately
	<u>AND</u>	
	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 -----NOTE----- The following SRs are not required to be performed: SR 3.8.1.3, SR 3.8.1.9, SR 3.8.1.10, SR 3.8.1.14, and SR 3.8.1.16. ----- The following SRs are applicable for AC sources required to be OPERABLE: <table> <tr> <td>SR 3.8.1.1</td><td>SR 3.8.1.6</td></tr> <tr> <td>SR 3.8.1.2</td><td>SR 3.8.1.9</td></tr> <tr> <td>SR 3.8.1.3</td><td>SR 3.8.1.10</td></tr> <tr> <td>SR 3.8.1.4</td><td>SR 3.8.1.14</td></tr> <tr> <td>SR 3.8.1.5</td><td>SR 3.8.1.16</td></tr> </table>	SR 3.8.1.1	SR 3.8.1.6	SR 3.8.1.2	SR 3.8.1.9	SR 3.8.1.3	SR 3.8.1.10	SR 3.8.1.4	SR 3.8.1.14	SR 3.8.1.5	SR 3.8.1.16	In accordance with applicable SRs
SR 3.8.1.1	SR 3.8.1.6										
SR 3.8.1.2	SR 3.8.1.9										
SR 3.8.1.3	SR 3.8.1.10										
SR 3.8.1.4	SR 3.8.1.14										
SR 3.8.1.5	SR 3.8.1.16										

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 system 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 or equal to a 6 day supply.	A.1 Restore fuel oil level to within limits.	48 hours

(continued)

ACTIONS (continued)

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

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
E. Required Actions and associated Completion Time not met. <u>OR</u> One or more DGs with diesel fuel oil, lube oil, or starting air system 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 $\geq$ a 7 day supply of fuel.	In accordance with the Surveillance Frequency Control Program
SR 3.8.3.2 Verify lube oil inventory is $\geq$ a 7 day supply for each diesel engine.	In accordance with the Surveillance Frequency Control Program

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
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 air start system pressure is ≥ 200 psig.	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

3.8 ELECTRICAL POWER SYSTEMS

3.8.4 DC Sources—Operating

LCO 3.8.4 The Division 1, Division 2, Division 3, and Division 4
DC electrical power subsystems shall be OPERABLE.

APPLICABILITY: MODES 1, 2, and 3.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One battery charger on Division 1 or 2 inoperable.	A.1 Restore battery terminal voltage to greater than or equal to the minimum established float voltage.	2 hours
	<u>AND</u>	
	A.2 Verify battery float current ≤ 2 amps.	Once per 12 hours
	<u>AND</u>	
	A.3 Restore battery charger to OPERABLE status.	7 days
		<u>OR</u> In accordance with the Risk Informed Completion Time Program
B. One battery on Division 1 or 2 inoperable.	B.1 Restore battery to OPERABLE status.	2 hours <u>OR</u> In accordance with the Risk Informed Completion Time Program

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
C. Division 1 or 2 DC electrical power subsystem inoperable for reasons other than Condition A or B.	C.1 Restore Division 1 and 2 DC electrical power subsystems to OPERABLE status.	2 hours <u>OR</u> In accordance with the Risk Informed Completion Time Program
D. Required Action and associated Completion Time for Condition A, B, or C not met.	-----NOTE----- LCO 3.0.4.a is not applicable when entering MODE 3. ----- D.1 Be in MODE 3.	12 hours
E. Division 3 or 4 DC electrical power subsystem inoperable.	E.1 Declare High Pressure Core Spray System inoperable.	Immediately
F. Required Action and associated Completion Time for Condition E not met.	F.1 Be in MODE 3. <u>AND</u> F.2 Be in MODE 4.	12 hours 36 hours

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SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.8.4.1 Verify battery terminal voltage is greater than or equal to the minimum established float voltage.	In accordance with the Surveillance Frequency Control Program
SR 3.8.4.2 Verify each Division 1 and 2 battery charger supplies ≥ 300 amps at greater than or equal to the minimum established float voltage for ≥ 4 hours and each Division 3 and 4 battery charger supplies ≥ 100 amps at greater than or equal to the minimum established float voltage for ≥ 4 hours. <u>OR</u> Verify each battery charger can recharge the battery to the fully charged state within 12 hours while supplying the largest combined demands of the various continuous steady state loads, after a battery discharge to the bounding design basis event discharge state.	In accordance with the Surveillance Frequency Control Program
SR 3.8.4.3 -----NOTES----- 1. The modified performance discharge test in SR 3.8.6.6 may be performed in lieu of SR 3.8.4.3. 2. This Surveillance shall not be performed in MODE 1, 2, or 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

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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 3.8.10, "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 Division 2 onsite Class 1E DC electrical power distribution subsystem(s) when required by LCO 3.8.10; and
- c. The Division 3 and 4 DC electrical power subsystems capable of supplying the Division 3 and 4 onsite Class 1E DC electrical power distribution subsystems, when the High Pressure Core Spray System is OPERABLE for compliance with LCO 3.5.2, "RPV Water Inventory Control."

APPLICABILITY: MODES 4 and 5,
During movement of 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 battery charger on one division inoperable.	A.1 Restore battery terminal voltage to greater than or equal to the minimum established float voltage.	2 hours
	<u>AND</u>	
	A.2 Verify battery float current $\leq$ 2 amps.	Once per 12 hours
	<u>AND</u>	
	A.3 Restore battery charger to OPERABLE status.	7 days

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
B. One or more required DC electrical power subsystems inoperable for reasons other than Condition A. <u>OR</u> Required Action and associated Completion Time of Condition A not met.	B.1 Declare affected required feature(s) inoperable. <u>OR</u>	Immediately
	B.2.1 Suspend CORE ALTERATIONS. <u>AND</u>	Immediately
	B.2.2 Suspend movement of irradiated fuel assemblies in the primary and secondary containment. <u>AND</u>	Immediately
	B.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 3.8.4.2 and SR 3.8.4.3 ----- For DC sources required to be OPERABLE, the following SRs are applicable: SR 3.8.4.1 SR 3.8.4.2 SR 3.8.4.3.	In accordance with applicable SRs

3.8 ELECTRICAL POWER SYSTEMS

3.8.6 Battery Parameters

LCO 3.8.6 Battery parameters for the Division 1, 2, 3, and 4 batteries shall be within limits.

APPLICABILITY: When associated battery is required to be OPERABLE.

ACTIONS

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

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One battery on one division with one or more battery cells float voltage < 2.07 V	A.1 Perform SR 3.8.4.1	2 hours
	<u>AND</u>	
	A.2 Perform SR 3.8.6.1	2 hours
	<u>AND</u>	
	A.3 Restore affected cell voltage $\geq$ 2.07 V	24 hours
B. One battery on one division with float current > 2 amps	B.1 Perform SR 3.8.4.1.	2 hours
	<u>AND</u>	
	B.2 Restore battery float current to $\leq$ 2 amps.	12 hours

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
----- NOTE ----- Required Action C.2 shall be completed if electrolyte level was below the top of plates. ----- C. One battery on one division with one or more cells electrolyte level less than minimum established design limits.	----- NOTE ----- Required Actions C.1 and C.2 are only applicable if the electrolyte level was below the top of plates. ----- C.1 Restore electrolyte level to above top of plates. <u>AND</u> C.2 Verify no evidence of leakage. <u>AND</u> C.3 Restore electrolyte level to greater than or equal to minimum established design limits.	8 hours 12 hours 31 days
D. One battery on one division with pilot cell electrolyte temperature less than minimum established design limits.	D.1 Restore battery pilot cell temperature to greater than or equal to minimum established design limits.	12 hours
E. Batteries in redundant divisions with battery parameters not within limits.	E.1 Restore battery parameters for batteries in one division to within limits.	2 hours
F. Required Action and associated Completion Time of Condition A, B, C, D, or E not met. <u>OR</u> One battery on one division with one or more battery cells float voltage < 2.07 V and float current > 2 amps.	F.1 Declare associated battery inoperable.	Immediately

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE	FREQUENCY
SR 3.8.6.1 ----- NOTE ----- Not required to be met when battery terminal voltage is less than the minimum established float voltage of SR 3.8.4.1. ----- Verify each battery float current is ≤ 2 amps.	In accordance with the Surveillance Frequency Control Program
SR 3.8.6.2 Verify each battery pilot cell voltage is ≥ 2.07 V.	In accordance with the Surveillance Frequency Control Program
SR 3.8.6.3 Verify each battery connected cell electrolyte level is greater than or equal to minimum established design limits.	In accordance with the Surveillance Frequency Control Program
SR 3.8.6.4 Verify each battery pilot cell temperature is greater than or equal to minimum established design limits.	In accordance with the Surveillance Frequency Control Program
SR 3.8.6.5 Verify each battery connected cell voltage is ≥ 2.07 V.	In accordance with the Surveillance Frequency Control Program

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE	FREQUENCY
SR 3.8.6.6 -----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 battery capacity is $\geq 80\%$ of the manufacturer's rating when subjected to a performance discharge test or a modified performance discharge test.	In accordance with the Surveillance Frequency Control Program <u>AND</u> 12 months when battery shows degradation or has reached 85% of the expected life with capacity $< 100\%$ of manufacturer's rating <u>AND</u> 24 months when battery has reached 85% of the expected life with capacity $\geq 100\%$ of manufacturer's rating

3.8 ELECTRICAL POWER SYSTEMS

3.8.7 Inverters—Operating

LCO 3.8.7 The Division 1, 2, 3, and 4 inverters, and A and B RPS solenoid bus inverters shall be OPERABLE.

APPLICABILITY: MODES 1, 2, and 3.

ACTIONS

-----NOTE-----
Enter applicable Conditions and Required Actions of LCO 3.8.9, "Distribution Systems—Operating," with any uninterruptible AC bus de-energized.

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Division 1 or 2 inverter inoperable.	A.1 Restore Division 1 and 2 inverters to OPERABLE status.	7 days <u>OR</u> In accordance with the Risk Informed Completion Time Program
B. Required Action and associated Completion Time of Condition A not met.	-----NOTE----- LCO 3.0.4.a is not Applicable when entering MODE 3. ----- B.1 Be in MODE 3.	 12 hours
C. One or more Division 3 or 4 inverters inoperable.	C.1 Declare High Pressure Core Spray System inoperable.	Immediately

(continued)

ACTIONS (continued)		
CONDITION	REQUIRED ACTION	COMPLETION TIME
D. One RPS solenoid bus inverter inoperable.	D.1.1 Transfer RPS bus to alternate power source.	1 hour
	<u>AND</u>	
	D.1.2 Verify RPS bus supply frequency ≥ 57 Hz.	Once per 8 hours thereafter
	<u>OR</u>	
	D.2 De-energize RPS bus.	1 hour
E. Both RPS solenoid bus inverters inoperable.	E.1 De-energize one RPS solenoid bus.	1 hour
F. Required Action and associated Completion Time for Condition C, D, or E not met.	F.1 Be in MODE 3.	12 hours
	<u>AND</u>	
	F.2 Be in MODE 4.	36 hours

SURVEILLANCE REQUIREMENTS

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

3.8 ELECTRICAL POWER SYSTEMS

3.8.8 Inverters—Shutdown

- LCO 3.8.8 The following Divisional inverters shall be OPERABLE:
- a. One Divisional inverter capable of supplying one division of the Division 1 or 2 onsite Class 1E uninterruptible AC bus electrical power distribution subsystem(s) required by LCO 3.8.10, "Distribution Systems - Shutdown"; and
 - b. The Division 3 and 4 Divisional inverters capable of supplying the Division 3 and 4 onsite Class 1E uninterruptible AC bus electrical power distribution subsystems, when the High Pressure Core Spray System is OPERABLE for compliance with LCO 3.5.2, "RPV Water Inventory Control."

APPLICABILITY: MODES 4 and 5,
During movement of 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 divisional inverters inoperable.	A.1 Declare affected required feature(s) inoperable.	Immediately
	<u>OR</u>	
	A.2.1 Suspend CORE ALTERATIONS.	Immediately
	<u>AND</u>	
	A.2.2 Suspend handling of irradiated fuel assemblies in the primary and secondary containment.	Immediately
	<u>AND</u>	
	A.2.3 Initiate action to restore required divisional inverters to OPERABLE status.	Immediately

SURVEILLANCE REQUIREMENTS

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

3.8 ELECTRICAL POWER SYSTEMS

3.8.9 Distribution Systems—Operating

LCO 3.8.9 Division 1, 2, and 3 AC, Division 1, 2, 3, and 4 DC, and Division 1, 2, 3, and 4 uninterruptible AC bus electrical power distribution subsystems shall be OPERABLE.

APPLICABILITY: MODES 1, 2, and 3.

-----NOTE-----
Division 3 and 4 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 subsystems inoperable.	A.1 Restore Division 1 and 2 AC electrical power distribution subsystems to OPERABLE status.	8 hours <u>OR</u> -----NOTE----- Not applicable if loss of function. ----- In accordance with the Risk Informed Completion Time Program

(continued)

ACTIONS (continued)		
CONDITION	REQUIRED ACTION	COMPLETION TIME
B. One or more Division 1 or 2 uninterruptible AC bus distribution subsystems inoperable.	B.1 Restore Division 1 and 2 uninterruptible AC bus distribution subsystems to OPERABLE status.	8 hours <u>OR</u> -----NOTE----- Not applicable if loss of function. ----- In accordance with the Risk Informed Completion Time Program
C. One or more Division 1 or 2 DC electrical power distribution subsystems inoperable.	C.1 Restore Division 1 and 2 DC electrical power distribution subsystems to OPERABLE status.	2 hours <u>OR</u> -----NOTE----- Not applicable if loss of function. ----- In accordance with the Risk Informed Completion Time Program
D. Required Action and associated Completion Time of Condition A, B, or C not met.	-----NOTE----- LCO 3.0.4.a is not applicable when entering MODE 3. ----- D.1 Be in MODE 3.	 12 hours
E. One or more Division 3 or 4 AC, DC, or uninterruptible AC bus electrical power distribution subsystems inoperable.	E.1 Declare High Pressure Core Spray System inoperable.	Immediately

(continued)

ACTIONS (continued)		
CONDITION	REQUIRED ACTION	COMPLETION TIME
F. Two or more divisions with inoperable distribution subsystems that result in a loss of function.	F.1 Enter LCO 3.0.3.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.8.9.1	Verify correct breaker alignments and voltage to required AC, DC, and uninterruptible AC bus electrical power distribution subsystems.	In accordance with the Surveillance Frequency Control Program

3.8 ELECTRICAL POWER SYSTEMS

3.8.10 Distribution Systems—Shutdown

LCO 3.8.10 The necessary portions of the Division 1, 2, and 3 AC, Division 1, 2, 3, and 4 DC, and Division 1, 2, 3, and 4 uninterruptible AC bus electrical power distribution subsystems shall be OPERABLE to support equipment required to be OPERABLE.

APPLICABILITY: MODES 4 and 5,
During movement of 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, DC, or uninterruptible AC bus electrical power distribution subsystems inoperable.	A.1 Declare associated supported required feature(s) inoperable.	Immediately
	<u>OR</u>	
	A.2.1 Suspend CORE ALTERATIONS.	Immediately
	<u>AND</u>	
	A.2.2 Suspend movement of irradiated fuel assemblies in the primary and secondary containment.	Immediately
	<u>AND</u>	
		(continued)

ACTIONS (continued)

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

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.8.10.1 Verify correct breaker alignments and voltage to required AC, DC, and uninterruptible AC bus electrical power distribution subsystems.	In accordance with the Surveillance Frequency Control Program

3.8 ELECTRICAL POWER SYSTEMS

3.8.11 Static VAR Compensator (SVC) Protection Systems

LCO 3.8.11 An SVC Protection System consisting of two redundant protection subsystems shall be OPERABLE for each inservice SVC.

APPLICABILITY: During SVC operation

ACTIONS

-----NOTE-----
Separate Condition entry is allowed for each SVC Protection System.

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One subsystem of an SVC Protection System inoperable.	A.1 Restore SVC protection subsystem to OPERABLE status.	30 days
B. Both subsystems of an SVC Protection System inoperable.	B.1 Restore one SVC protection subsystem to OPERABLE status.	24 hours
C. Required Action and associated Completion Time not met.	C.1 Open SVC output breaker(s) to remove SVC from service.	1 hour

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.8.11.1	For each required SVC Protection System, perform a local, visual check of the SVC system control and status panel to confirm satisfactory operation.	In accordance with the Surveillance Frequency Control Program
SR 3.8.11.2	Perform a system functional test of each SVC protection subsystem, including breaker actuation.	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
	<u>OR</u>	
	A.2.1 Insert a control rod withdrawal block <u>AND</u> A.2.2 Verify all control rods are fully inserted.	Immediately Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.9.1.1 Perform CHANNEL FUNCTIONAL TEST on each of the following required refueling equipment interlock inputs: a. All-rods-in, b. Refuel platform position, 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
	<u>AND</u> 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
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

CONDITIONS	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
	<u>AND</u>	
	A.1.2 Suspend control rod withdrawal.	Immediately
	<u>AND</u>	
	A.1.3 Initiate action to fully insert all insertable control rods in core cells containing one or more fuel assemblies.	Immediately
	<u>OR</u>	
	A.2.1 Initiate action to fully insert the control rod associated with the inoperable position indicator.	Immediately
	<u>AND</u>	
	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 $\geq$ 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 $\geq$ 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 $\geq$ 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 $\geq$ 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 be in operation.

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

APPLICABILITY: MODE 5 with irradiated fuel in the reactor pressure vessel (RPV) and the water level $\geq$ 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 <u>AND</u> 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
	<u>AND</u>	
	B.2 Initiate action to restore secondary containment to OPERABLE status.	Immediately
	<u>AND</u>	(continued)

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
B. (continued)	B.3 Initiate action to restore one standby gas treatment subsystem to OPERABLE status.	Immediately
	<u>AND</u>	
	B.4 Initiate action to restore isolation capability in each required secondary containment and secondary containment bypass penetration flow path not isolated.	Immediately
	<u>AND</u>	
	B.5 -----NOTE----- Entry and exit is permissible under administrative control. -----	
	Initiate action to close one door in the upper containment personnel air lock.	Immediately

(continued)

ACTIONS (continued)

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

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.9.8.1 Verify one RHR shutdown cooling subsystem is operating.	In accordance with the Surveillance Frequency Control Program
SR 3.9.8.2 Verify 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 RHR shutdown cooling subsystems shall be OPERABLE, and one RHR shutdown cooling subsystem shall be in operation.

-----NOTE-----

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

APPLICABILITY: MODE 5 with irradiated fuel in the reactor pressure vessel (RPV) and the water level < 22 ft 8 inches above the top of the RPV flange.

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 <u>AND</u> Once per 24 hours thereafter

(continued)

Correction letter of 10-20-2000

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
	<u>AND</u>	
	B.2 Initiate action to restore one standby gas treatment subsystem to OPERABLE status.	Immediately
	<u>AND</u>	
	B.3 Initiate action to restore isolation capability in each required secondary containment and secondary containment bypass penetration flow path not isolated.	Immediately
	<u>AND</u>	
	B.4 -----NOTE----- Entry and exit is permissible under administrative control. ----- Initiate action to close one door in the upper containment personnel air lock.	Immediately

(continued)

ACTIONS (continued)

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

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.9.9.1 Verify one RHR shutdown cooling 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 3.6.1.2, "Primary Containment Air Locks," for the upper containment personnel air lock;
 - b. LCO 3.6.1.3, "Primary Containment Isolation Valves (PCIVs)," and LCO 3.3.6.1, "Primary Containment and Drywell Isolation Instrumentation," for those valves and Functions which isolate secondary containment bypass leakage paths;
 - c. LCO 3.3.6.2, "Secondary Containment Isolation Instrumentation," Functions 1, 2, 3, 4, 5, and 7 of Table 3.3.6.2-1;
 - d. LCO 3.6.4.1, "Secondary Containment";
 - e. LCO 3.6.4.2, "Secondary Containment Isolation Dampers (SCIDs)"; and
 - f. 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 $\leq 200^{\circ}\text{F}$. -----	
	Enter the applicable Condition of the affected LCO.	Immediately
	<u>OR</u>	
	A.2.1 Suspend activities that could increase the average reactor coolant temperature or pressure.	Immediately
	<u>AND</u>	
	A.2.2 Reduce average reactor coolant temperature to $\leq 200^{\circ}\text{F}$.	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
	<u>AND</u>	
	A.2 Fully insert all insertable control rods in core cells containing one or more fuel assemblies.	1 hour
	<u>AND</u>	
	A.3.1 Place the reactor mode switch in the shutdown position.	1 hour
	<u>OR</u>	
	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,"

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 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
	<u>OR</u>	
	A.2.1 Initiate action to fully insert all insertable control rods.	Immediately
	<u>AND</u> A.2.2 Place the reactor mode switch in the shutdown position.	1 hour

Single Control Rod Withdrawal—Hot Shutdown
3.10.3

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
	<u>OR</u>	
	A.2.1 Initiate action to fully insert all insertable control rods.	Immediately
	<u>AND</u> A.2.2 Place the reactor mode switch in the shutdown position.	1 hour

(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
	<u>AND</u>	
	B.2.1 Initiate action to fully insert all control rods.	Immediately
	<u>OR</u>	
	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)

Single Control Rod Withdrawal—Cold Shutdown
3.10.4

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.	Immediately
	<u>AND</u>	
	A.2.1 Initiate action to fully insert all control rods.	Immediately
	<u>OR</u>	
	A.2.2 Initiate action to satisfy the requirements of this LCO.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.10.5.1 Verify all 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

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE	FREQUENCY
SR 3.10.5.3 Verify a control rod withdrawal block is inserted.	In accordance with the Surveillance Frequency Control Program
SR 3.10.5.4 Perform SR 3.1.1.1.	According to SR 3.1.1.1
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
	<u>AND</u>	
	A.2 Suspend loading fuel assemblies.	Immediately
	<u>AND</u>	
	A.3.1 Initiate action to fully insert all control rods in core cells containing one or more fuel assemblies.	Immediately
	<u>OR</u>	
	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

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE	FREQUENCY
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 Functions 2.a and 2.d 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,

OR

- 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 pressure $\geq$ 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. ----- A. One control rod not coupled to its associated CRD.	-----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.1 Fully insert inoperable control rod. <u>AND</u> A.2 Disarm the associated CRD.	3 hours 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 and 2.d 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 <u>AND</u> Prior to satisfying LCO 3.10.8.c requirement after work on control rod or CRD System that could affect coupling
SR 3.10.8.6 Verify CRD charging water header pressure $\geq$ 1520 psig.	In accordance with the Surveillance Frequency Control Program

3.10 SPECIAL OPERATIONS

3.10.9 Training Startups

LCO 3.10.9 The low pressure coolant injection (LPCI) OPERABILITY requirements specified in LCO 3.5.1, "ECCS—Operating," may be changed to allow one residual heat removal subsystem to be aligned in the shutdown cooling mode for training startups, provided the following requirements are met:

- a. THERMAL POWER is $\leq 1\%$ RTP; and
- b. Average reactor coolant temperature is $< 200^{\circ}\text{F}$.

APPLICABILITY: MODE 2 with one LPCI subsystem suction valve closed.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more of the above requirements not met.	A.1 Place the reactor mode switch in the shutdown position.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.10.9.1 Verify THERMAL POWER is $\leq 1\%$ RTP.	In accordance with the Surveillance Frequency Control Program
SR 3.10.9.2 Verify average reactor coolant temperature is $< 200^{\circ}\text{F}$.	In accordance with the Surveillance Frequency Control Program

3.10 SPECIAL OPERATIONS

3.10.10 Single Control Rod Withdrawal - Refueling

LCO 3.10.10 The requirements applicable during CORE ALTERATIONS of LCO 3.3.6.1, "Primary Containment and Drywell Isolation Instrumentation"; LCO 3.3.6.2, "Secondary Containment Isolation Instrumentation"; LCO 3.3.7.1, "Control Room Ventilation System Instrumentation"; LCO 3.6.1.2, "Primary Containment Air Locks"; LCO 3.6.1.3, "Primary Containment Isolation Valves"; LCO 3.6.4.1, "Secondary Containment"; LCO 3.6.4.2, "Secondary Containment Isolation Dampers (SCIDs)"; LCO 3.6.4.3, "Standby Gas Treatment (SGT) System"; LCO 3.7.3, "Control Room Ventilation System"; and LCO 3.7.4, "Control Room Air Conditioning (AC) System" may be suspended in MODE 5 with a single control rod withdrawn from a core cell containing one or more fuel assemblies, provided the following requirements are met:

- a. All other control rods remain fully inserted; and
- b. No other CORE ALTERATIONS are in progress.

APPLICABILITY: MODE 5 with a control rod withdrawn from a core cell containing one or more fuel assemblies.

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 CORE ALTERATIONS except for control rod insertion.	Immediately
	<u>AND</u> A.2 Initiate action to fully insert all control rods.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.10.10.1 Verify all control rods other than the control rod being withdrawn, are fully inserted.	In accordance with the Surveillance Frequency Control Program
SR 3.10.10.2 Verify no other CORE ALTERATIONS are in progress.	In accordance with the Surveillance Frequency Control Program

4.0 DESIGN FEATURES

4.1 Site Location

The site for the Clinton Power Station is located in Harp Township, DeWitt County, approximately six miles east of the city of Clinton in east-central Illinois. The exclusion area boundary shall have a radius of 975 meters from the Standby Gas Treatment System vent.

4.2 Reactor Core

4.2.1 Fuel Assemblies

The reactor shall contain 624 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 rod(s). 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.

A maximum of eight GE14i isotope test assemblies will be placed in non-limiting core regions, beginning with the Reload 12 Cycle 13 core reload, with the purpose of obtaining surveillance data to verify that the GE14i assemblies perform satisfactorily in service prior to use of these design features on a production basis. Each GE14i assembly contains a small number of zircaloy-2 clad isotope rods that contain Cobalt-59 targets. These Cobalt-59 targets will transition into Cobalt-60 isotope targets during the cycle irradiation of the assemblies. Details of the GE14i assemblies are contained in NEDC-33505P, "Safety Analysis Report to Support Introduction of GE14i Isotope Test Assemblies (ITAs) in Clinton Power Station," Revision 0, dated June 2009.

4.2.2 Control Rod Assemblies

The reactor core shall contain 145 cruciform shaped control rod assemblies. The control material shall be boron carbide or hafnium metal, or both.

(continued)

4.0 DESIGN FEATURES (continued)

4.3 Fuel Storage

4.3.1 Criticality

- 4.3.1.1 The spent fuel storage racks are designed and shall be maintained with:
- $k_{eff} \leq 0.95$ if fully flooded with unborated water, which includes an allowance for uncertainties as described in Section 9.1.2 of the USAR;
 - A nominal fuel assembly center to center storage spacing of 7 inches within rows and 12.25 inches between rows in the low density storage racks in the upper containment pool; and
 - For the fuel storage racks supplied by Nuclear Energy Services (NES), a nominal fuel assembly spacing of 6.4375 inches in the high density storage racks in the spent fuel pool or fuel cask storage pool. For the fuel storage racks supplied by Holtec International, a nominal fuel assembly spacing of 6.243 inches in the high density storage racks in the spent fuel pool or fuel cask storage pool.
- 4.3.1.2 The new fuel storage racks are designed and shall be maintained with:
- $k_{eff} \leq 0.95$ if fully flooded with unborated water, which includes an allowance for uncertainties as described in Section 9.1.1 of the USAR; and
 - A nominal fuel assembly center to center storage spacing of 7 inches within rows and 12.25 inches between rows in the new fuel storage racks.

4.3.2 Drainage

The spent fuel storage pool is designed and shall be maintained to prevent inadvertent draining of the pool below elevation 741 ft 0 inches.

4.3.3 Capacity

- 4.3.3.1 The spent fuel storage pool is designed and shall be maintained with a storage capacity limited to no more than 3796 fuel assemblies. The fuel cask storage pool is designed and shall be maintained with a storage capacity limited to no more than 363 fuel assemblies.
- 4.3.3.2 No more than 160 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, and modification to systems or equipment that affect nuclear safety.

- 5.1.2 The shift supervisor (SS) shall be responsible for the control room command function. During any absence of the SS from the control room while the 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 SS 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 USAR;
- 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; and
- d. The individuals who train the operating staff, carry out radiation protection, or perform quality assurance functions may report to the appropriate onsite manager; however, these individuals shall have sufficient organizational freedom to ensure their independence from operating pressures.

5.2.2 Unit Staff

The unit staff organization shall include the following:

- a. A non-licensed operator shall be 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.

(continued)

5.2 Organization

5.2.2 Unit Staff (continued)

- 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 requirements of 10 CFR 50.54(m)(2)(i) and Specifications 5.2.2.a and 5.2.2.g for a period of time not to exceed 2 hours to accommodate unexpected absence of on-duty shift crew members, provided immediate action is taken to restore the shift crew composition within the minimum requirements.
 - d. A radiation protection technician shall be on site when fuel is in the reactor. The position may be vacant for not more than 2 hours, in order to provide for unexpected absence, provided immediate action is taken to fill the required position.
 - e. Deleted.
 - f. The operations manager or at least one operations middle manager shall hold an SRO license for Clinton Power Station.
 - g. The Shift Technical Advisor (STA) shall provide advisory technical support to the SS in the areas of thermal hydraulics, reactor engineering, and plant analysis with regard to the safe operation of the unit. In addition, the STA shall meet the qualifications specified by the Commission Policy Statement on Engineering Expertise on Shift.
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5.0 ADMINISTRATIVE CONTROLS

5.3 Unit Staff Qualifications

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

5.0 ADMINISTRATIVE CONTROLS

5.4 Procedures

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

- a. The applicable procedures recommended in Regulatory Guide 1.33, Revision 2, Appendix A, February 1978;
 - b. The emergency operating procedures required to implement the requirements of NUREG-0737 and NUREG-0737, Supplement 1;
 - 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 by the plant manager; and

(continued)

5.5 Programs and Manuals

5.5.1 Offsite Dose Calculation Manual (ODCM) (continued)

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

5.5.2 Primary Coolant Sources Outside Containment

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;
- d. RCIC System;
- e. Suppression Pool Makeup System;
- f. Combustible Gas Control System;
- g. Containment Monitoring System; and
- h. Post-accident Sampling System (until such time as a modification eliminates the PASS penetration as a potential leakage path).

The program shall include the following:

- a. Preventive maintenance and periodic visual inspection requirements;
- b. Integrated leak test requirements for each system at least once per 24 months; and
- c. In the event work is performed which could result in leakage from a component or system covered by this program, a visual inspection shall be performed and repairs made as required.

The specified frequency for integrated leak testing is met if the testing is performed within 1.25 times the interval specified.

(continued)

5.5 Programs and Manuals (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 dose contributions from radioactive effluents for the current calendar quarter and current calendar year in accordance with the methodology and parameters in the ODCM at least every 31 days. Determination of projected dose contributions from radioactive effluents in accordance with the methodology in the ODCM at least every 31 days;
- 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: ≤ 500 mrem/yr to the total body and ≤ 3000 mrem/yr to the skin, and
 - 2. For iodine-131, iodine-133, tritium, and all radionuclides in particulate form with half-lives > 8 days: ≤ 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 USAR Table 3.9-1(b) to ensure that the reactor vessel is maintained within the design limits.

5.5.6 DELETED

(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 N510-1980 at the system flowrate specified below $\pm 10\%$:

<u>ESF Ventilation System</u>	<u>Flowrate</u>
SGTS	4,000 cfm
Control Room Ventilation (CRV) Makeup Filter	3,000 cfm

- b. Demonstrate for each of the ESF systems that an inplace test of the charcoal adsorber shows a penetration and system bypass less than specified below when tested in accordance with Regulatory Guide 1.52, Revision 2, and ANSI N510-1980 at the system flowrate specified below $\pm 10\%$:

<u>ESF Ventilation System</u>	<u>Flowrate</u>	<u>Penetration and Bypass</u>
SGTS	4,000 cfm	0.05%
CRV Makeup Filter	3,000 cfm	0.05%
CRV Recirculation Filter	64,000 cfm	2%

- c. Demonstrate for each of the ESF systems that a laboratory test of a sample of the charcoal adsorber, when obtained as described in Regulatory 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 a relative humidity of 70%:

<u>ESF Ventilation System</u>	<u>Penetration</u>
SGTS	0.175%
CRV Makeup Filter	0.175%
CRV Recirculation Filter	6%

(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 and the charcoal adsorbers is < 6.0 inches water gauge when tested in accordance with Regulatory Guide 1.52, Revision 2, and ANSI N510-1980 at the system flowrate specified below $\pm 10\%$:

<u>ESF Ventilation System</u>	<u>Flowrate</u>
SGTS	4,000 cfm
CRV Makeup Filter	3,000 cfm

- e. Demonstrate that the heaters for each of the ESF systems dissipate the value specified below when tested in accordance with ANSI N510-1980:

<u>ESF Ventilation System</u>	<u>Wattage</u>
SGTS	18.0 kW
CRV Makeup Filter	14.4 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 each outdoor tank that is not surrounded by a liner, dike, or walls capable of holding the tank's contents and that does not have a tank overflow and surrounding area drains connected to the liquid radwaste treatment system 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 by determining that the fuel oil has:
 - 1. an API gravity or an absolute specific gravity within limits,
 - 2. a kinematic viscosity within limits for ASTM 2D fuel oil, and
 - 3. a water and sediment content within limits or a clear and bright appearance with proper color;
- b. Other properties of the new fuel oil are within limits for ASTM 2D fuel oil within 31 days of addition to the storage tanks; and
- c. Total particulate concentration of the fuel oil in the storage tanks is ≤ 10 mg/l when tested every 31 days.

(continued)

5.5 Programs and Manuals (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, no concurrent loss of offsite power or no concurrent loss of onsite diesel generator(s), a safety function assumed in the accident analysis cannot be performed. For the purpose of this program, a loss of safety function may exist when a support system is inoperable, and:

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

5.5.10 Safety Function Determination Program (SFDP) (continued)

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

5.5.11 Technical Specifications (TS) Bases Control Program

This program provides a means for processing changes to the Bases of these Technical Specifications.

- a. Changes to the Bases of the TS shall be made under appropriate administrative controls and reviews.
- b. Licensees may make changes to Bases without prior NRC approval provided the changes do not require either of the following:
 - 1. A change in the TS incorporated in the license; or
 - 2. A change to the USAR or Bases that requires NRC approval pursuant to 10 CFR 50.59.
- c. The Bases Control Program shall contain provisions to ensure that the Bases are maintained consistent with the USAR.
- d. Proposed changes that meet the criteria of 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 Ultimate Heat Sink (UHS) Erosion, Sediment Monitoring, and Dredging Program

A program to provide maintenance on the UHS in the event inspections of the UHS dam, its abutments, or the UHS shoreline indicate erosion or local instability. This program shall ensure that the UHS is maintained in such a way as to achieve the following objectives:

- a. During normal operation, there will be a volume of water in the UHS below elevation 675 sufficient to receive the sediment load from a once-in-25-year flood event; and
- b. Still be adequate to maintain the plant in a safe-shutdown condition for 30 days under meteorological conditions of the severity suggested by Regulatory Guide 1.27.

(continued)

5.5 Programs and Manuals (continued)

5.5.13 Primary Containment Leakage Rate Testing Program

A program shall be established to implement the leakage rate testing of the primary containment as required by 10 CFR 50.54(o) and 10 CFR 50, Appendix J, Option B, as modified by approved exemptions. This program shall be in accordance with the guidelines contained in NEI 94-01, "Industry Guideline for Implementing Performance-Based Option of 10 CFR 50, Appendix J," Revision 3-A, dated July 2012, and the conditions and limitations specified in NEI 94-01, Revision 2-A, dated October 2008, as modified by the following exceptions: (1) Bechtel Topical Report BN-TOP-1 is also an acceptable option for performance of Type A tests, (2) the next Type A test performed after the February 2008 Type A test shall be performed no later than October 31, 2023, and (3) if the Type A test has not been performed by October 31, 2023, and the unit is in MODE 4 or 5, the Type A test shall be performed prior to entering MODE 2.

The peak calculated containment internal pressure for the design basis loss of coolant accident, P_a , is 9.0 psig.

The maximum allowable primary containment leakage rate L_a , at P_a , shall be 0.65% of primary containment air weight per day.

Leakage Rate acceptance criteria are:

- a. Primary containment leakage rate acceptance criterion is $\leq 1.0 L_a$. During the first unit startup following testing in accordance with this program, the leak rate acceptance criteria are $\leq 0.60 L_a$ for the Type B and Type C tests and $\leq 0.75 L_a$ for Type A tests;
- b. Air lock testing acceptance criteria are:
 - 1) Overall air lock leakage rate is ≤ 5 scfh when tested at $\geq P_a$,
 - 2) For each door, leakage rate is ≤ 5 scfh when the gap between door seals is pressurized $\geq P_a$.

The provisions of SR 3.0.2 do not apply to the 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.

(continued)

5.5 Program and Manuals

5.5.14 Battery Monitoring and Maintenance Program

This program provides for battery restoration and maintenance, based on the recommendations of IEEE Standard 450-1995, "IEEE Recommended Practice for Maintenance, Testing and Replacement of Vented Lead-Acid Batteries for Stationary Applications," including the following:

- a. Actions to restore battery cells with float voltage < 2.13 V,
- and
- b. Actions to equalize and test battery cells that had been discovered with electrolyte level below the minimum established design limit.

5.5.15 Control Room Envelope Habitability Program

A Control Room Envelope (CRE) Habitability Program shall be established and implemented to ensure that CRE habitability is maintained such that, with an OPERABLE Control Room Ventilation System, CRE occupants can control the reactor safely under normal conditions and maintain it in a safe condition following a radiological event, hazardous chemical release or a smoke challenge. The program shall ensure that adequate radiation protection is provided to permit access and occupancy of the CRE under design basis accident (DBA) conditions without personnel receiving radiation exposures in excess of 5 rem total effective dose equivalent (TEDE) for the duration of the accident. The program shall include the following elements:

- a. The definition of the CRE and the CRE boundary.
- b. Requirements for maintaining the CRE boundary in its design condition including configuration control and preventive maintenance.
- c. Requirements for (i) determining the unfiltered air inleakage past the CRE boundary into the CRE in accordance with the testing methods and at the Frequencies specified in Section 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 Section C.1 and C.2 of Regulatory Guide 1.197, Revision 0.

(continued)

5.5 Programs and Manuals (continued)

5.5.15 Control Room Envelope Habitability Program (continued)

- d. Measurement, at designated locations, of the CRE pressure relative to all external areas adjacent to the CRE boundary during the pressurization mode of operation by one subsystem of the Control Room Ventilation System, operating at the flow rate required by the VFTP, at a Frequency of 24 months on a STAGGERED TEST BASIS. The results shall be trended and used as a part of the 24 month assessment of the CRE boundary.
- e. The quantitative limits on unfiltered air inleakage into the CRE. These limits shall be stated in a manner to allow direct comparison to the unfiltered air inleakage measured by the testing described in paragraph c. The unfiltered air inleakage limit for radiological challenges is the inleakage flow rate assumed in the licensing basis analyses of DBA consequences. Unfiltered air inleakage limits for hazardous chemicals must ensure that exposure of CRE occupants to these hazards will be within the assumptions in the licensing basis.
- f. The provisions of SR 3.0.2 are applicable to the Frequencies for assessing CRE habitability, determining CRE unfiltered inleakage, and measuring CRE pressure and assessing the CRE boundary as required by paragraph c and d, respectively.

5.5.16 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)

5.5.17 Risk Informed Completion Time Program

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

- a. The RICT may not exceed 30 days;
- b. A RICT may only be utilized in MODE 1 and 2;
- c. When a RICT is being used, any change to the plant configuration, as defined in NEI 06-09-A, Appendix A, must be considered for the effect on the RICT.
 1. For planned changes, the revised RICT must be determined prior to implementation of the change in configuration.
 2. For emergent conditions, the revised RICT must be determined within the time limits of the Required Action Completion Time (i.e., not the RICT) or 12 hours after the plant configuration change, whichever is less.
 3. Revising the RICT is not required if the plant configuration change would lower plant risk and would result in a longer RICT.
- d. For emergent conditions, if the extent of condition evaluation for inoperable structures, systems, or components (SSCs) is not complete prior to exceeding the Completion Time, the RICT shall account for the increased possibility of common cause failure (CCF) by either:
 1. Numerically accounting for the increased possibility of CCF in the RICT calculation; or
 2. Risk Management Actions (RMAs) not already credited in the RICT calculation shall be implemented that support redundant or diverse SSCs that perform the function(s) of the inoperable SSCs, and, if practicable, reduce the frequency of initiating events that challenge the function(s) performed by the inoperable SSCs.
- e. A RICT calculation must include the following hazard groups: internal flood and internal events using a PRA model, internal fires using a PRA model, and seismic hazards using penalty factors. Changes to these means of assessing the hazard groups require prior NRC approval.

(continued)

5.5 Programs and Manuals

5.5.17 Risk Informed Completion Time Program (continued)

- f. The PRA models used to calculate a RICT shall be maintained and upgraded in accordance with the processes endorsed in the regulatory positions of Regulatory Guide 1.200, Revision 3, "Acceptability of Probabilistic Risk Assessment Results for Risk-Informed Activities."
 - g. A report shall be submitted in accordance with Specification 5.6.6 before a newly developed method is used to calculate a RICT.
-
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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 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

(continued)

5.6 Reporting Requirements (continued)

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) and MCPR_{99.9%},
 - 3. LCO 3.2.3, Linear Heat Generation Rate (LHGR),
 - 4. LCO 3.3.1.1, RPS Instrumentation (SR 3.3.1.1.14),
 - 5. LCO 3.3.1.3, Oscillation Power Range Monitor (OPRM) Instrumentation, and
 - 6. LCO 3.7.6, Main Turbine Bypass System, (cycle dependent thermal power limits for an inoperable Main Turbine Bypass System).
- b. The analytical methods used to determine the core operating limits shall be those previously reviewed and approved by the NRC in
 - (1) General Electric Standard Application for Reactor Fuel (GESTAR), NEDE-24011-P-A, or
 - (2) NEDO-32465, "BWR Owners' Group Reactor Stability Detect and Suppress Solutions Licensing Basis Methodology and Reload Applications."
- 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.

(continued)

5.6 Reporting Requirements (continued)

5.6.6 Risk Informed Completion Time (RICT) Program Upgrade Report

A report describing newly developed methods and their implementation must be submitted following a probabilistic risk assessment (PRA) upgrade associated with newly developed methods and prior to the first use of those methods to calculate a RICT. The report shall include:

- a. The PRA models upgraded to include newly developed methods;
 - b. A description of the acceptability of the newly developed methods consistent with Section 5.2 of PWROG-19027-NP, Revision 2, "Newly Developed Method Requirements and Peer Review;"
 - c. Any open findings from the peer-review of the implementation of the newly developed methods and how those findings were dispositioned; and
 - d. All changes to key assumptions related to newly developed methods or their implementations.
-
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5.0 ADMINISTRATIVE CONTROLS

5.7 High Radiation Area

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

- 5.7.1 Access to each high radiation area, as defined in 10 CFR 20, in which an individual could receive a deep dose equivalent > 0.1 rem in one hour (at 30 centimeters from the radiation source or from any surface penetrated by the radiation) shall be controlled as described below to prevent unauthorized entry.
- a. Each area shall be barricaded and conspicuously posted as a high radiation area. Such barricades may be opened as necessary to permit entry or exit of personnel or equipment.
 - b. Entrance shall be controlled by requiring issuance of a Radiation Work Permit (RWP) or equivalent that includes specification of radiation dose rate in the immediate work area(s) and other appropriate radiation protection equipment and measures.
 - c. Individuals qualified in radiation protection procedures or personnel continuously escorted by such individuals may, for the performance of their assigned duties in high radiation areas, be exempt from the preceding requirements for issuance of an RWP or equivalent provided they are otherwise following plant radiation protection procedures for entry into, exit from, and work in such high radiation areas.
 - d. Each individual or group of individuals permitted to enter such areas shall possess, or be accompanied by, one or more of the following:
 - 1. A radiation monitoring device that continuously indicates the radiation dose rate in the area.
 - 2. A radiation monitoring device that continuously integrates the radiation dose rate in the area and alarms when a preset setpoint is reached. Entry into high radiation areas with this monitoring device may be made after the dose rate in the area has been determined and personnel have been made knowledgeable of it.
 - 3. A radiation monitoring device that continuously transmits dose rate and cumulative dose information to a remote receiver monitored by radiation protection personnel responsible for controlling personnel radiation exposure within the area.

(continued)

5.7 High Radiation Area

5.7.1 (continued)

4. An individual qualified in radiation protection procedures equipped with a radiation dose rate monitoring device. This individual shall be responsible for providing positive radiation protection control over the activities within the area and shall perform periodic radiation surveillance at the frequency specified by radiation protection supervision.

5.7.2 In addition to the requirements of Specification 5.7.1, high radiation areas in which an individual could receive a deep dose equivalent > 1.0 rem in one hour (at 30 centimeters from the radiation source or from any surface penetrated by the radiation), but less than 500 rads/hour (at 1 meter from the radiation source or from any surface penetrated by the radiation) shall be provided with a locked or continuously guarded door, or gate, or equivalent to prevent unauthorized entry.

- a. The keys to such locked doors or gates, or equivalent, shall be administratively controlled in accordance with a program approved by the radiation protection manager.
 - b. Doors and gates, or equivalent, shall remain locked except during periods of access by personnel under an approved RWP, or equivalent, to ensure individuals are informed of the dose rate in the immediate work areas prior to entry.
 - c. Individual high radiation areas in which an individual could receive a deep dose equivalent > 1.0 rem in one hour (at 30 centimeters from the radiation source or from any surface penetrated by the radiation), accessible to personnel, that are located within larger areas where no enclosure exists to enable locking, or that are not continuously guarded, and where no lockable enclosure can be reasonably constructed around the individual area require both of the following access controls:
 1. Each area shall be barricaded and conspicuously posted.
 2. A flashing light shall be activated as a warning device.
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APPENDIX B

TO FACILITY LICENSE NO. NPF-62

CLINTON POWER STATION

UNIT NO. 1

CONSTELLATION ENERGY GENERATION, LLC

DOCKET NO. 50-461

ENVIRONMENTAL PROTECTION PLAN
(NON-RADIOLOGICAL)

April 17, 1987

CLINTON POWER STATION
UNIT NO. 1
ENVIRONMENTAL PROTECTION PLAN
(NON-RADIOLOGICAL)
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1.0 OBJECTIVES OF THE ENVIRONMENTAL PROTECTION PLAN

The Environmental Protection Plan (EPP) provides for protection of non-radiological environmental values during operation of the nuclear facility. The principal objectives of the EPP are as follows:

- (a) Verify that the Plant is operated in an environmentally acceptable manner, as established by the Final Environmental Statement – Operating License Stage* (FES-OL) and other NRC environmental impact assessments.
- (b) Coordinate NRC requirements and maintain consistency with other Federal, State, and local requirements for environmental protection.
- (c) Keep NRC informed of the environmental effects of facility operation and of action taken to control those effects.

Environmental concerns identified in the FES-OL which relate to water quality matters are regulated by way of the licensee's NPDES permit.

* Final Environmental Statement related to the operation of Clinton Power Station, Unit No. 1. NUREG-0854, May 1982 (FES-OL)

2.0 ENVIRONMENTAL PROTECTION ISSUES

In the FES-OL dated May 1982, the staff considered the environmental impacts associated with the operation of the Clinton Power 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

- (a) Effluent limitations and aquatic 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 involving water quality and aquatic biota.
- (b) One specific aquatic issue raised by the staff concerned the potential for the establishment of encephalitic human pathogenic thermophilic amoeba in Clinton Lake after power generation begins. The NRC will rely on the licensee to conduct monitoring in accordance with the recommendations of the Illinois Department of Public Health as stated in the FES-OL.

2.2 Terrestrial Issues

Steam fog from the station's cooling lake has the potential of reducing visibility over nearby roads and bridges. A fog monitoring program shall be initiated to determine the frequency and density of cooling lake-induced fog which could potentially cause highway safety hazards adjacent to the cooling lake. The NRC shall rely on the licensee to conduct a fog monitoring program in cooperation with the Illinois Department of Transportation and local highway safety officials as stated in the FES-OL.

2.3 Atomic Safety Licensing Board Ordered Unit 2 Issues

In the event of harmful effects or evidence of trends toward irreversible damage to the environment due to the Unit 2 excavation, the NRC will be provided with a detailed analysis of data and proposed course of action to alleviate the problem.

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 EPP.* 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 if the activity has measurable environmental effects which are not confined to onsite areas previously disturbed during site preparation and plant construction. 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 Nuclear Regulatory Commission. When such activity involves a change in the EPP, such activity and change to the EPP may be implemented only in accordance with an appropriate license amendment as set forth in Section 5.3 of this EPP.

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 FES-OL as modified by staff's testimony to the Atomic Safety and Licensing Board, supplements to the FES-OL, 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 written evaluations 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.

* This provision does not relieve the licensee of the requirements of 10CFR50.59.

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 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 an environmental impact of a change is not evaluated under other Federal, State, or local environmental regulations, then the impact is 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 within 24 hours followed by a written report per Section 5.4. If an event is reportable under 10CFR50.72, then a duplicate immediate report under this section is not required. However, a follow-up written report is required in accordance with Section 5.4. 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, significant fish kills, increase in nuisance organisms or conditions and unanticipated or emergency discharge of waste water or chemical substances.

4.2 Environmental Monitoring

Environmental monitoring programs are conducted in accordance with the guidance and controls of agencies outside the Nuclear Regulatory Commission (NRC). The NRC has recognized the Federal or State permitting authority as the authorities having jurisdiction in Section 2.0 of this EPP. Therefore, no specific environmental monitoring is required by the NRC under this EPP.

5.0 ADMINISTRATIVE PROCEDURES

5.1 Review and Audit

The licensee shall provide for review and audit of compliance with the EPP. 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

The documentation listed below shall be made and retained in a manner convenient for review and inspection by the NRC. This documentation shall be retained as indicated below and made available to the NRC upon request.

- (a) Records of modifications to plant structures, systems, and components determined to potentially affect the continued protection of the environment (until the date of termination of the operating license).
- (b) Records and procedures relating to the EPP (5 years).
- (c) All other records and procedures relating to the EPP (5 years, or where applicable, in accordance with the requirements of other agencies).

5.3 Changes in Environmental Protection Plan

Requests for changes in the EPP 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 EPP.

5.4 Plant Reporting Requirements

A written report shall be submitted to the NRC within 30 days of occurrence of an unusual or important environmental event. The report shall (a) describe, analyze, and evaluate the event, including extent and magnitude of the 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 required 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.

April 17, 1987

APPENDIX C

ANTITRUST CONDITIONS

FACILITY OPERATING LICENSE NO. NPF-62

Deleted

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